

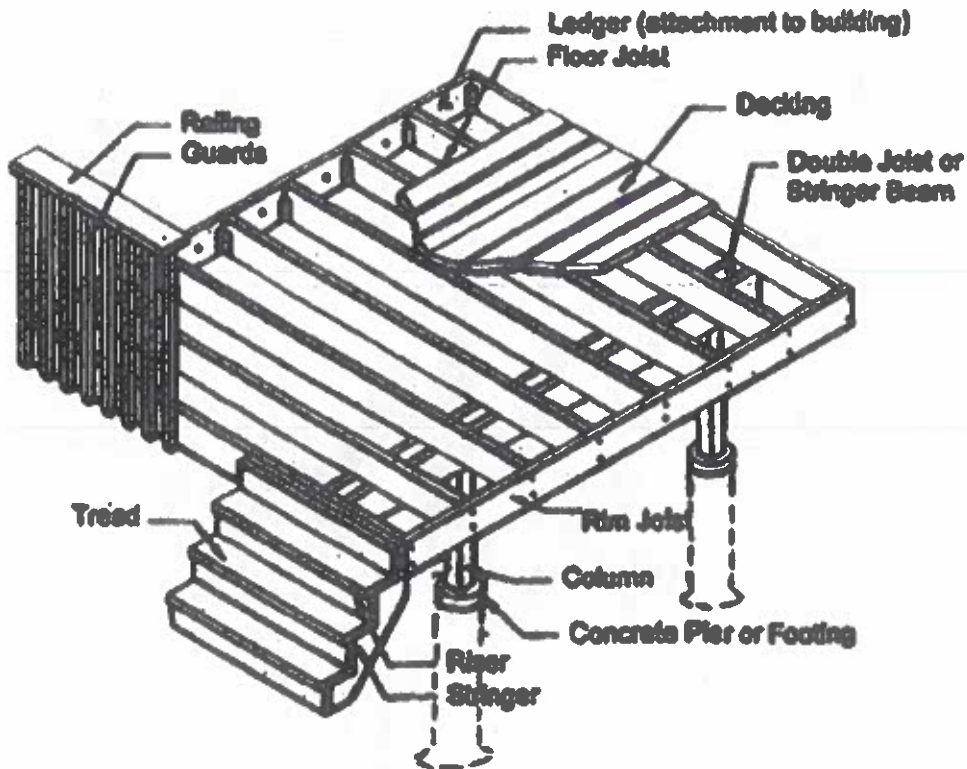


Building Services Department
4304 Hwy #520, P.O Box 70
Magnetawan, Ontario
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DECK CONSTRUCTION GUIDE

For detached and semi-detached dwellings



General Requirements

A Building Permit is required for all decks except where:

- Distance from the finished ground to the finished deck surface is not more than 24” **and**
- The deck is not supporting a roof,
- The deck is no larger than 10sqm (108 sqft) and not attached to another building.

Note: A deck must comply with the Ontario Building Code and zoning requirements. For more information, please visit the Building Department page on the Municipality's website.

Designer's Qualification and Registration Requirements:

Homeowners submitting designs for their own residence are exempt from qualification and registration requirements. However, plans must be detailed to show compliance with the Ontario Building Code and zoning by-law requirements. However, individuals and agencies providing design services to the public have to meet the qualifications 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

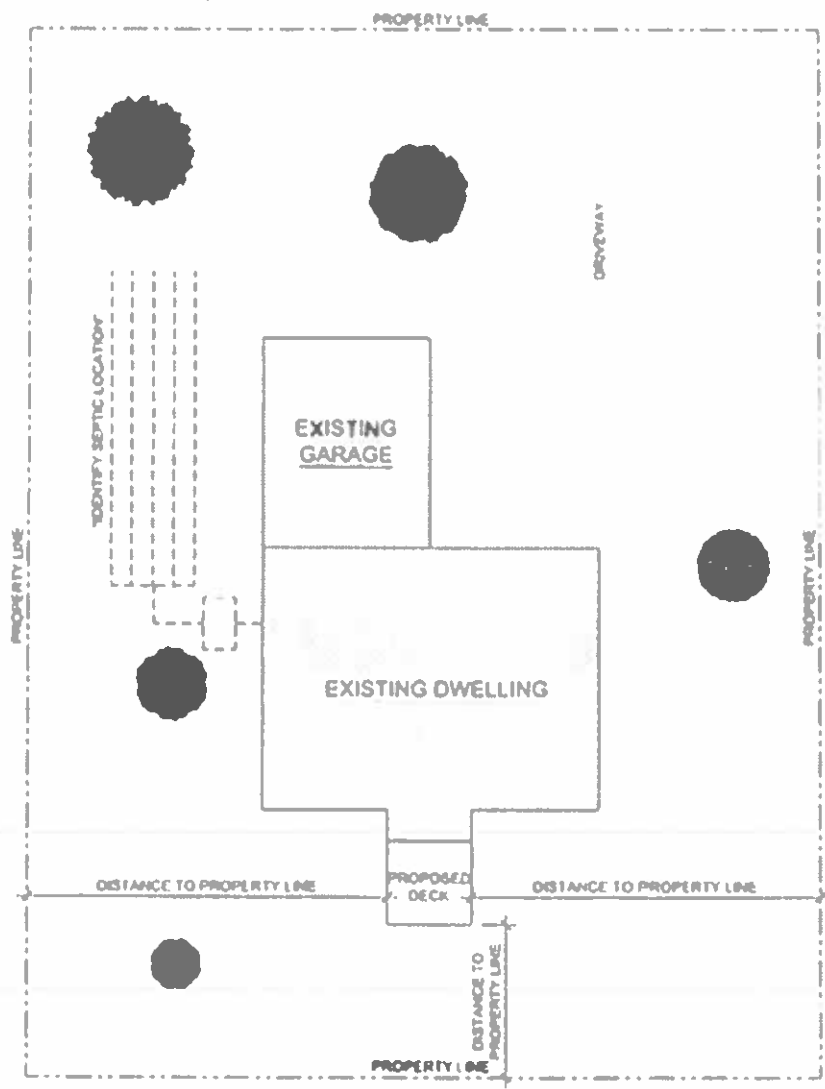
Application Requirements:

- Completed building permit application forms (including Schedule 1 Designer Information)
- Two copies of the most recent survey or detailed site plan for the property showing dimensions of all existing building and structures, and their setbacks drawn to scale. The proposed deck is to be plotted on the site plan and set back dimensions to all property lines are to be shown (see attached sample site plan – Figure A).
- Two copies of construction drawings including structure, elevation, section, and details drawn to scale. The attached template drawing and details could be used, providing all dimensions and information are shown on the “Deck Framing Plan” (page 4)
- The current minimum fee, payable at time of application (payable to the Municipality of Magnetawan) by cheque, cash, or debit in the office or online by using etransfer@magnetawan.com.

Call before you dig:

Note: 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 construction.

- ON1CALL Call before you dig **1-800-400-2255**



**SAMPLE SITE PLAN
(FIGURE A)**

Step by Step Instructions

1. Start by filling in the following information on the blank area shown on "Deck Framing Plan" (pg.4). Overall length and width of deck, length of landing and stair, pier spacing, joist span and maximum height of the deck above grade.
2. Once you have your *joist span*, and *pier spacing* you can size each component of the deck using **Table 1** below
3. The **pier size** is in the intersecting box of the row that corresponds with your *joist span* and the column that corresponds with your *pier spacing*.
4. The **beam size** is in the intersecting box of the row that corresponds with your *joist span* and the column that corresponds with your *pier spacing*.
5. **Joist size** is in the intersecting box of the row that corresponds with your *joist span* and the column labeled *joist size*.
6. Fill out all the above information on the "Deck Framing Plan" (pg.4) and submit two copies of this page and all attached applicable details with the rest of the documents required for your permit application.

Note: Please provide your own deck framing plan if your deck layout is different from what is shown in this package (Use the same concept and provide the same information). You will also need to provide your own details if the proposed construction methods differ than those provided. Please note, that any proposed prefabricated guard/railing system must have a set of stamped details provided by a licensed Engineer with the Province of Ontario (a manufacturer or building supply store would supply you these details at your request).

Table 1

STRUCTURAL REQUIREMENTS

CONCRETE PIER SIZING (SONOTUBES)

Note: This table is based on OBC min. 75kPa (1570 psf) soil bearing capacity

JOIST SPAN	PIER SPACING			
	1.2m (4'-0")	1.8m (6'-0")	2.4m (8'-0")	3.0m (10'-0")
1.8m (6'-0")	200mm (10")	250mm (10")	300mm (12")	350mm (14")
2.4m (8'-0")	250mm (10")	300mm (12")	350mm (14")	400mm (16")
3.0m (10'-0")	300mm (12")	350mm (14")	400mm (16")	460mm (18")
3.6m (12'-0")	300mm (12")	350mm (14")	400mm (16")	460mm (18")

FLOOR JOIST SPAN

JOIST SPACING (on centre)	JOIST SPAN			
	1.8m (6'-0")	2.4m (8'-0")	3.0m (10'-0")	3.6m (12'-0")
300mm (12")	38 x 184 (2"x8")	38 x 184 (2"x8")	38 x 184 (2"x8")	38 x 184 (2"x8")
400mm (16")	38 x 184 (2"x8")	38 x 184 (2"x8")	38 x 184 (2"x8")	38 x 235 (2"x10")
600mm (24")	38 x 184 (2"x8")	38 x 184 (2"x8")	38 x 235 (2"x10")	38 x 235 (2"x10")

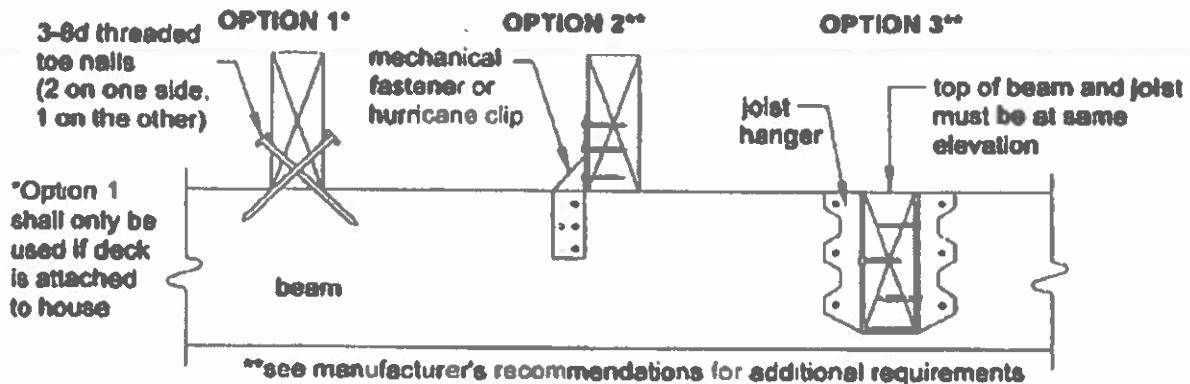
BEAM SIZING

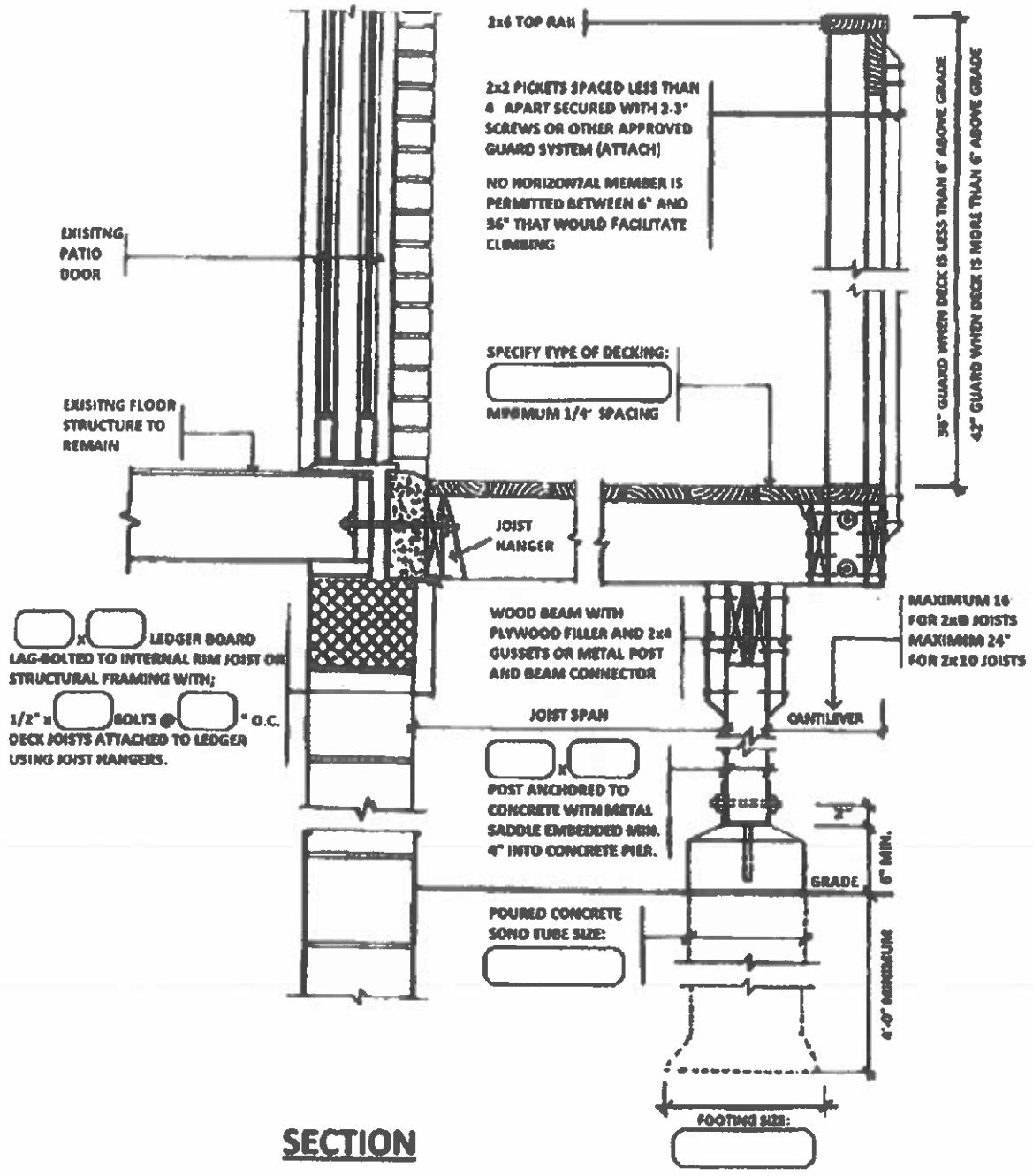
JOIST SIZE	JOIST SPAN	PIER SPACING			
		1.2m (4'-0")	1.8m (6'-0")	2.4m (8'-0")	3.0m (10'-0")
38 x 184 (2"x8")	1.8m (6'-0")	2 - 38mm x 184mm (2 - 2"x8")	2 - 38mm x 184mm (2 - 2"x8")	2 - 38mm x 235mm (2 - 2"x10")	2 - 38mm x 235mm (2 - 2"x10")
	2.4m (8'-0")	2 - 38mm x 184mm (2 - 2"x8")	2 - 38mm x 184mm (2 - 2"x8")	2 - 38mm x 235mm (2 - 2"x10")	3 - 38mm x 235mm (3 - 2"x10")
	3.0m (10'-0")	2 - 38mm x 184mm (2 - 2"x8")	2 - 38mm x 184mm (2 - 2"x8")	2 - 38mm x 235mm (2 - 2"x10")	3 - 38mm x 235mm (3 - 2"x10")
38 x 235 (2"x10")	3.6m (12'-0")	2 - 38mm x 184mm (2 - 2"x8")	2 - 38mm x 184mm (2 - 2"x8")	2 - 38mm x 286mm (2 - 2"x12")	2 - 38mm x 286mm (2 - 2"x12")

* 2X8 joists required for wood railing (guard) support as per SB 7 of the Ontario Building Code

Note: Soil bearing capacity to be considered as 1570 PSF (75 kPa) unless otherwise determined by the Chief Building Official.

CONNECTION OF FLOOR JOISTS TO BEAM SUPPORT





SECTION

LEDGER BOARD ATTACHMENT

- Decks are usually supported on one side by a ledger attached to the house. This ledger attachment is critical to ensure the deck is safely and securely supported at this point. When the ledger is attached to the house, there are very specific requirements that must be met. Follow the diagrams closely for the proper attachment of the ledger.
- The deck ledger shall NOT be nailed to the house - it must be lagged or bolted to the structure of the house.
- The size and spacing of the lag bolts (screws) are based on their capacity. Lag bolts (screws) values are assumed to be 325 pounds for 1/2-inch lag bolts (screws) and 190 pounds for 3/8-inch lag bolts (screws). The span of the floor joists determines how much load is being transferred to the ledger and thus to the lag bolts.

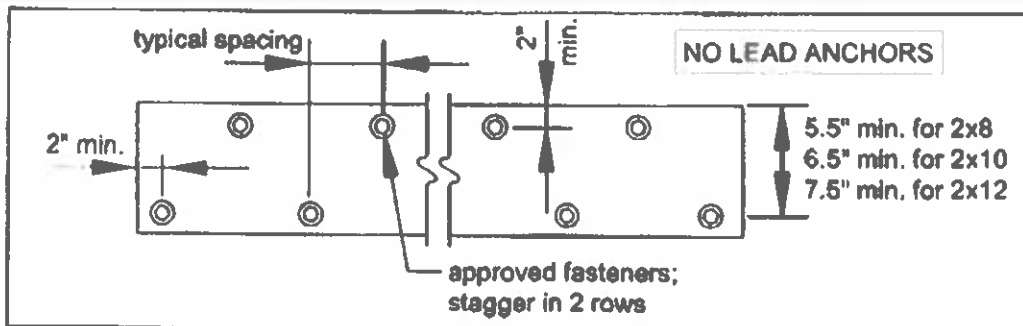
DECK LEDGER TO HOUSE ATTACHMENT – LAG BOLT SPACING (SEE DIAGRAMS)

LAG BOLT SIZE	JOIST SPAN			
	Up to 1.8m (6'-0")	2.4m (8'-0")	3.0m (10'-0")	3.6m (12'-0")
12.7mm (1/2") Equivalent 16" o.c. Joist Spacing	812mm (32" o.c.) Every Other Joist Space	400mm (16" o.c.) Every Joist Space	400mm (16" o.c.) Every Joist Space	300mm (12" o.c.) Each Joist Space with Two Every Other Space
9.5mm (3/8") Equivalent 16" o.c. Joist Spacing	610mm (24" o.c.) Two Every Third Joist Space	300mm (12" o.c.) Each Joist Space with Two Every Other Space	300mm (12" o.c.) Each Joist Space with Two Every Other Space	200mm (8" o.c.) Two Each Joist Space Three Every Other Space

- Deck ledgers shall be minimum 2x8 pressure-preservative-treated No. 2 grade lumber or other approved materials as determined by good engineering practices.
- When solid-sawn pressure-preservative-treated deck ledgers are attached to engineered wood products (structural composite lumber rimboard or laminated veneer lumber), the ledger board attachment shall be designed in accordance with the manufacturer's recommendations or good engineering practices.
- Pilot holes through ledger board shall be pre-drilled with a size between 17/32" to 9/16".
- Lag screws are only permitted where existing site conditions can be confirmed.

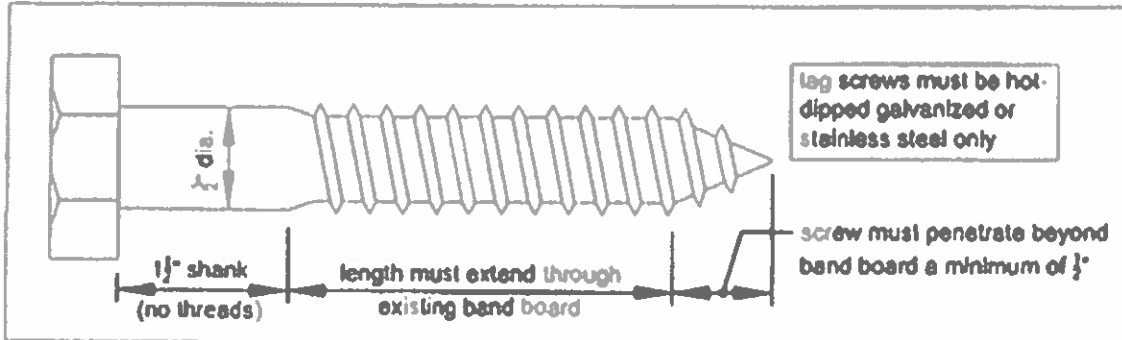
STRUCTURAL REQUIREMENTS

REFER TO LAG BOLT SPACING TABLE



LEDGER BOARD FASTENER SPACING

LEDGER BOARD ATTACHMENT



LAG SCREW

Each lag screw shall have pilot holes drilled as follows:

- 1) Drill a 1/2" diameter hole in the ledger board.
- 2) Drill a 3/16" diameter hole into the band board of the existing house.

DO NOT DRILL A 1/2" DIAMETER HOLE INTO THE BAND BOARD.

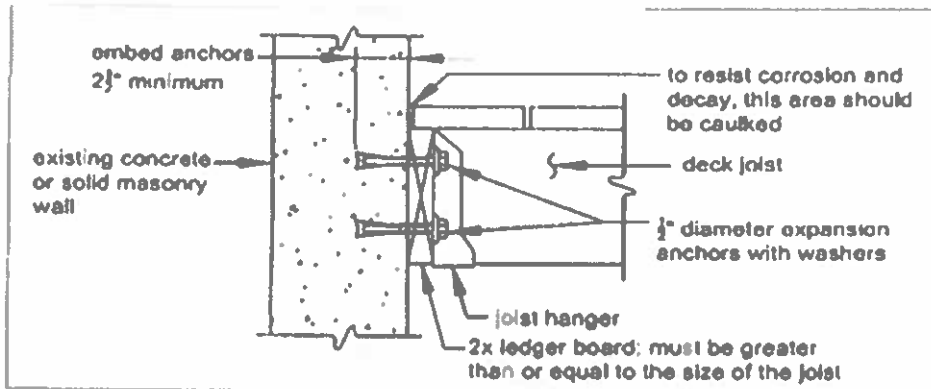
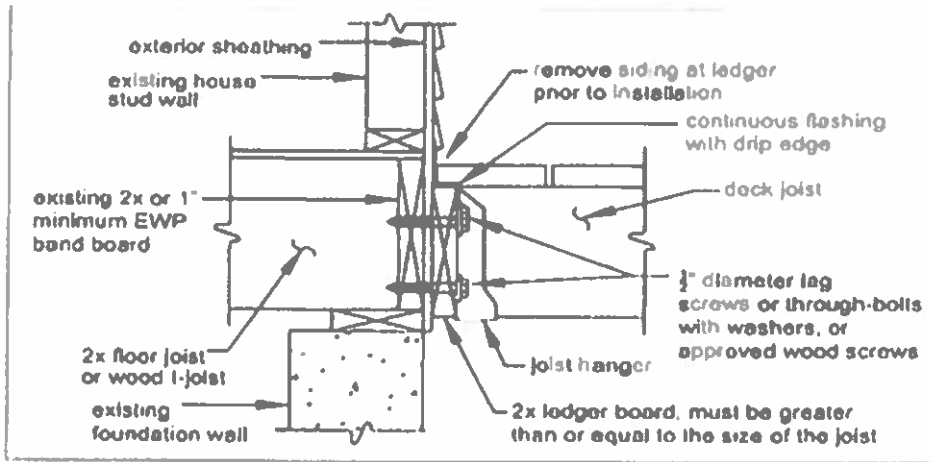
The threaded portion of the lag screw shall be inserted into the pilot hole by turning.

DO NOT DRIVE LAG SCREWS WITH A HAMMER.

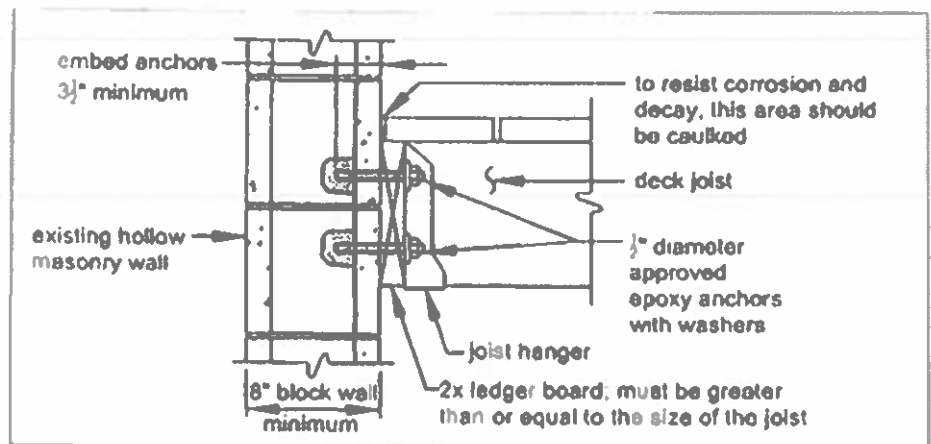
Use soap or a wood-compatible lubricant as required to facilitate tightening. Each lag screw shall be thoroughly tightened (snug but not over-tightened to avoid wood damage).

General Attachment of Ledger Board to House Structure

LEDGER BOARD ATTACHMENT

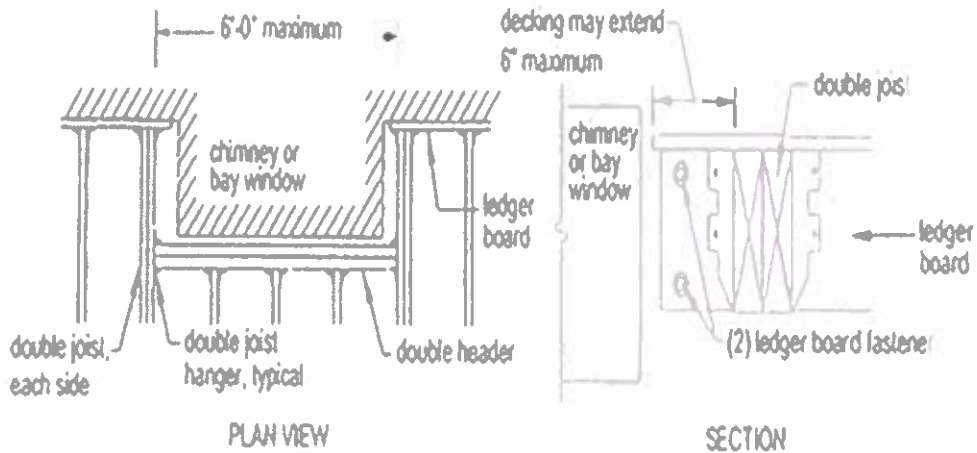


Attachment of Ledger Board to Foundation Wall (Concrete or Solid Masonry)



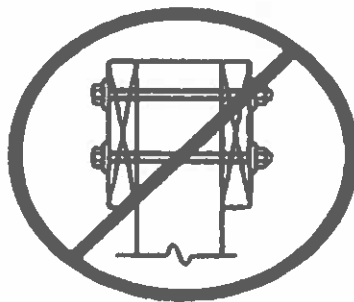
Attachment of Ledger Board to Foundation Wall (Hollow Masonry)

Detail for Framing Around a Chimney or a Bay Window



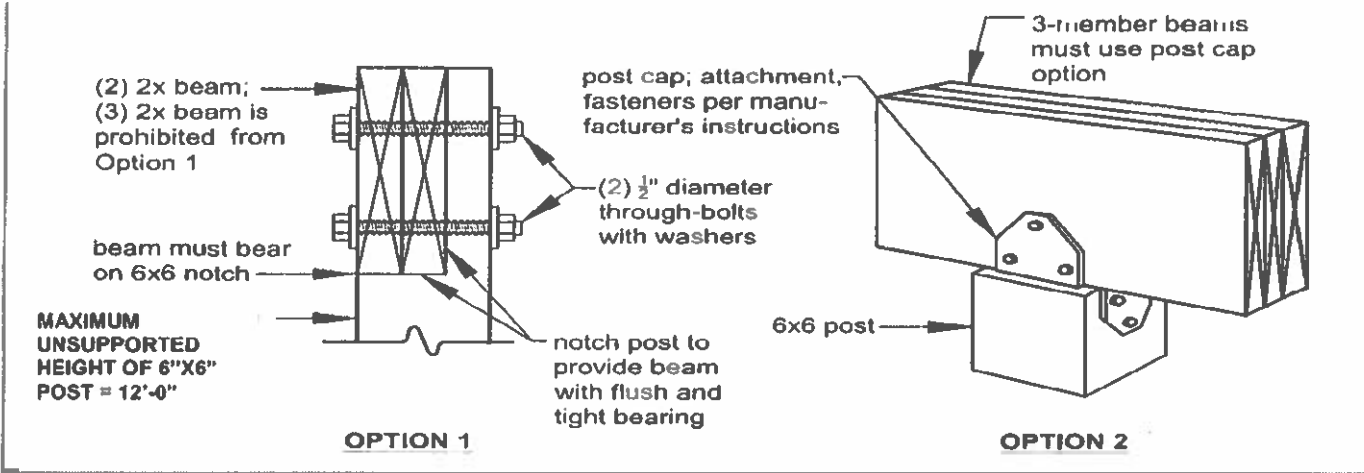
DECK SUPPORTS: POST SIZING

TRIBUTARY LOAD: SUPPORTED DECK AREA m² (See Diagram Below)		
THE MUNICIPALITY OF MAGNETAWAN'S SNOW LOAD= 2.8 kPa (58lbs/ft²) Deck supporting HOT TUBS must be designed by a qualified person		
POST SIZE	MAXIMUM HEIGHT	AREAm ² (ft ²)
140mm x 140mm ("6x6")	2.0m (6'-7")	10.2 (110)
	2.5m (8'-2")	6.95 (74.8)
	3.0m (10'-0")	4.74 (51)
	3.5m (11'-6")	3.29 (35.4)

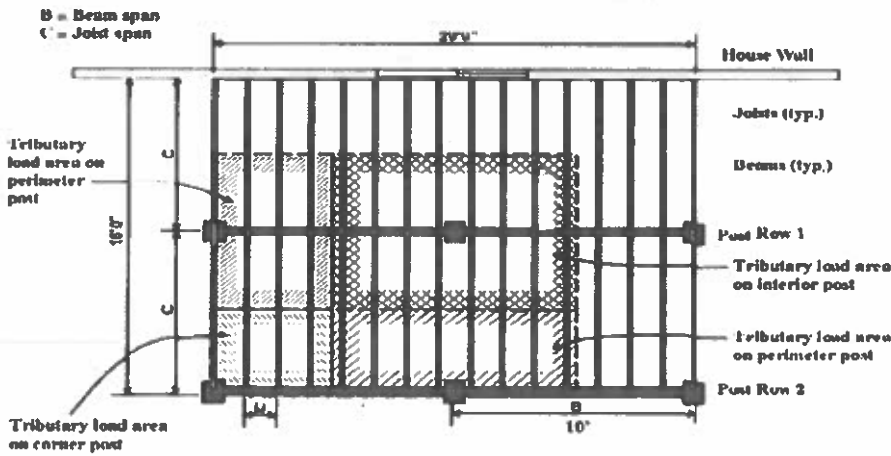


PROHIBITED CONNECTION

POST TO BEAM OPTIONS



Tributary load area for posts

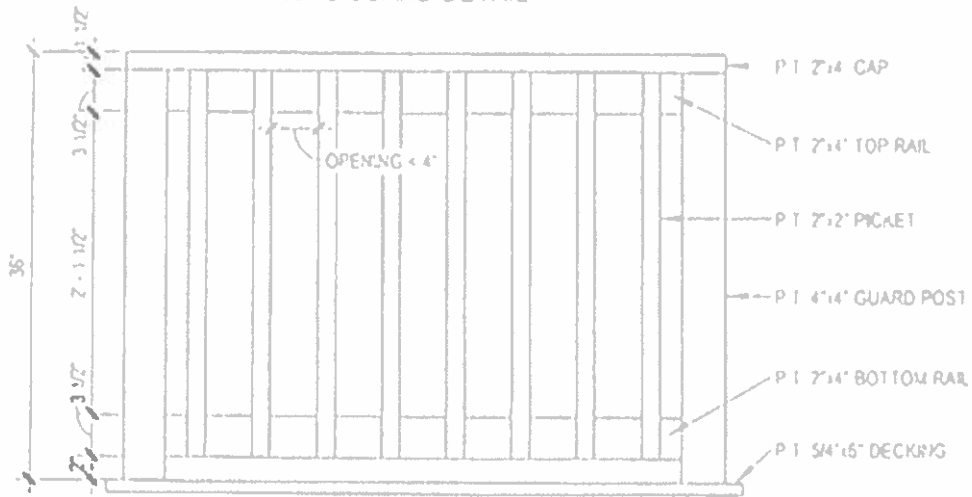


Example for loading on "P1":

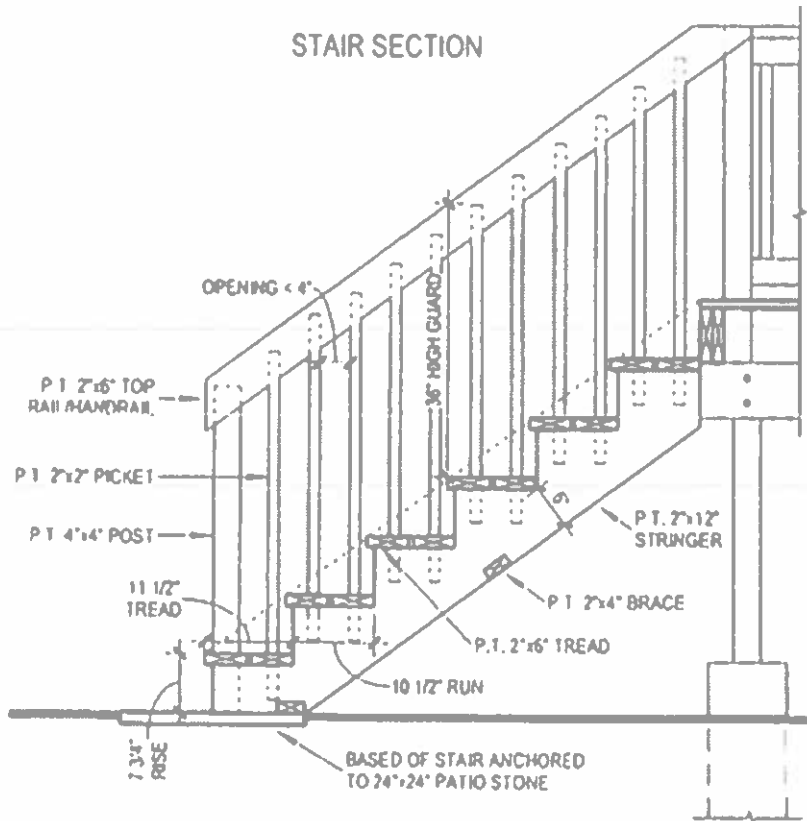
Tributary Area

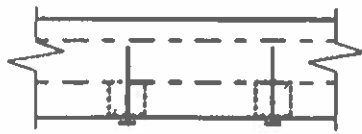
$$\begin{aligned}
 &= [(8/2) + (8/2)] \times [(10/2) + (10/2)] \\
 &= [(4 + 4)] \times [(5 + 5)] \\
 &= 8 \times 10 \\
 &= 80 \text{ ft}^2
 \end{aligned}$$

TYPICAL GUARD DETAIL

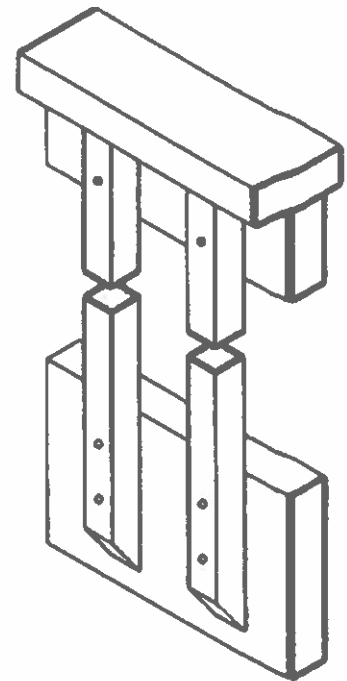


STAIR SECTION





PLAN



AXONOMETRIC

#7 x 76 mm (3")
SCREWS @ 300

TOP RAIL

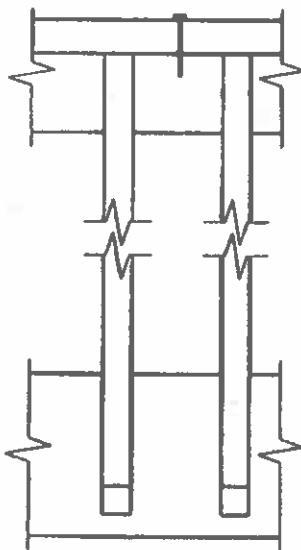
#7 x 63 mm (2 1/2")
SCREW

38 x 89 (2" x 4")
RAIL

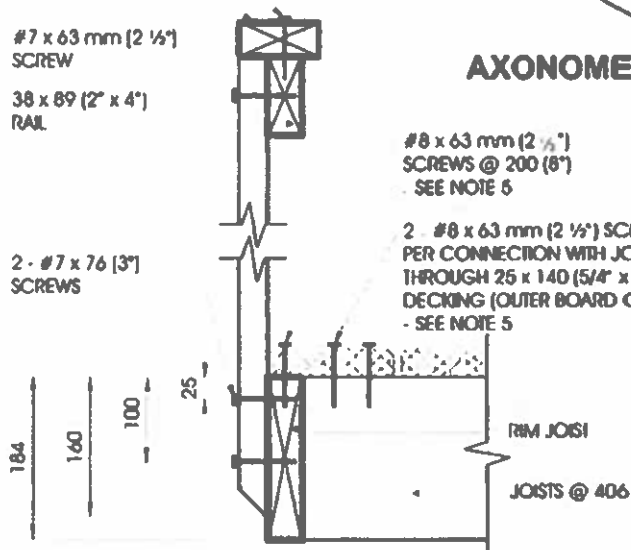
2 - #7 x 76 (3")
SCREWS

#8 x 63 mm (2 1/2")
SCREWS @ 200 (8")
- SEE NOTE 5

2 - #8 x 63 mm (2 1/2") SCREWS
PER CONNECTION WITH JOISTS
THROUGH 25 x 140 (5/4" x 6")
DECKING (OUTER BOARD ONLY)
- SEE NOTE 5



FRONT ELEVATION



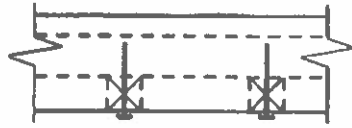
SIDE ELEVATION

Detail ED-1

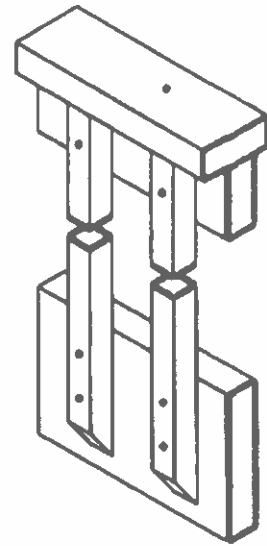
Exterior Connection: Cantilevered Picket Screwed to Rim Joist

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

#7 x 76 mm (3")
SCREWS @ 300

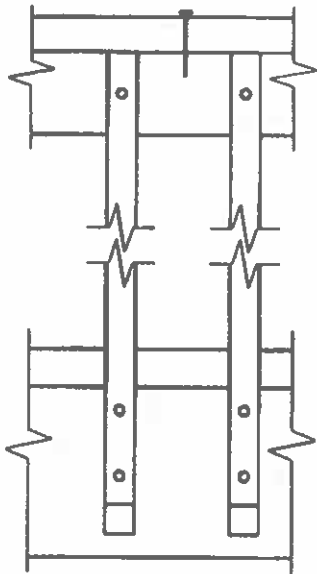
TOP RAIL

#7 x 63 mm (2 1/2")
SCREW

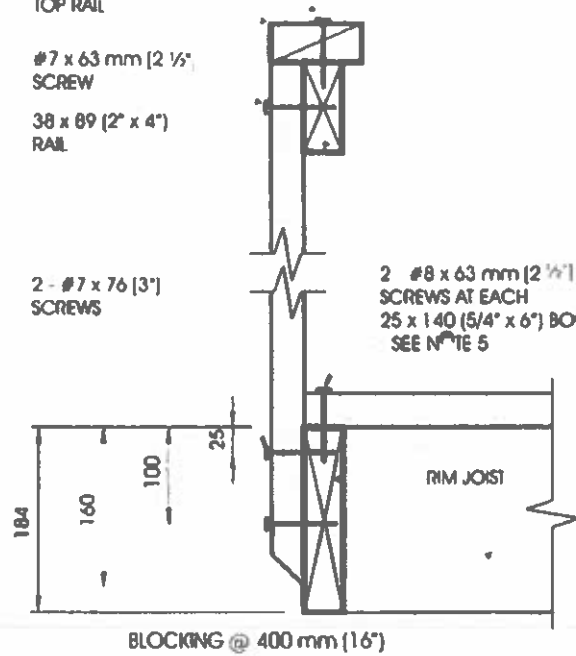
38 x 89 (2" x 4")
RAIL

2 - #7 x 76 (3")
SCREWS

2 - #8 x 63 mm (2 1/2")
SCREWS AT EACH
25 x 140 (5/4" x 6") BOARD
SEE NOTE 5



FRONT ELEVATION



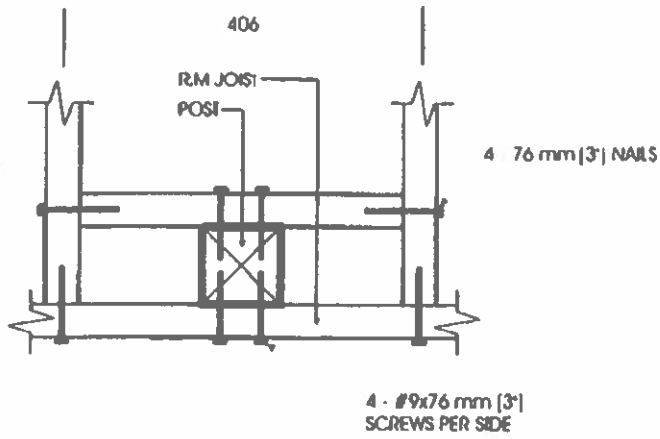
SIDE ELEVATION

Detail ED-2

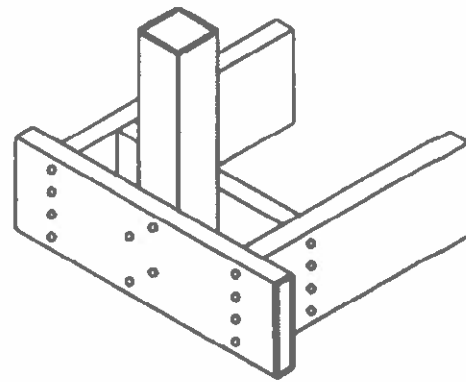
**Exterior Connection: Cantilevered Picket Screwed to Rim Joist,
Guard Parallel to Floor Joists**

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").

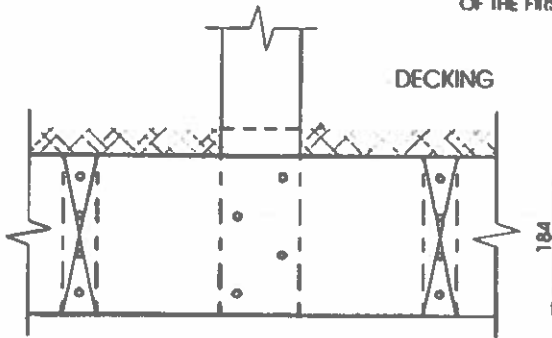


PLAN

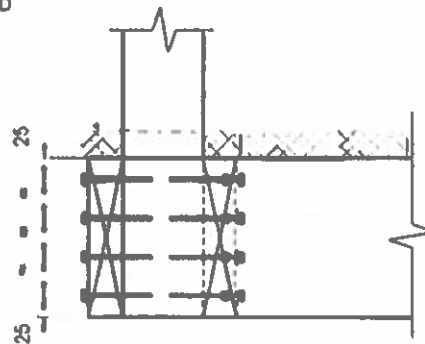


AXONOMETRIC

SEE NOTES 2 & 3
FOR CONNECTION
OF THE FIRST BOARD



FRONT ELEVATION



SIDE ELEVATION

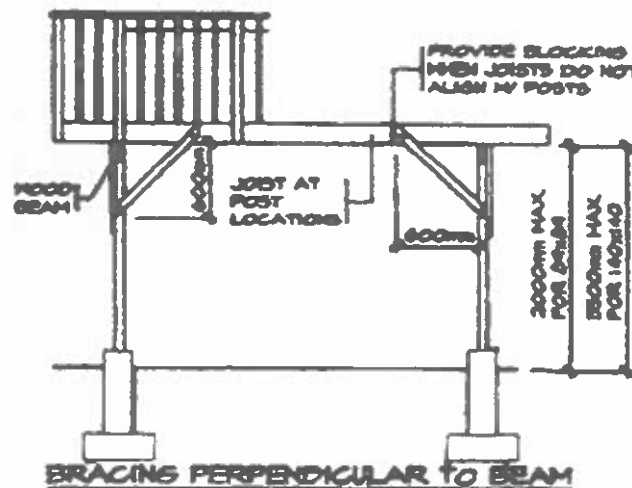
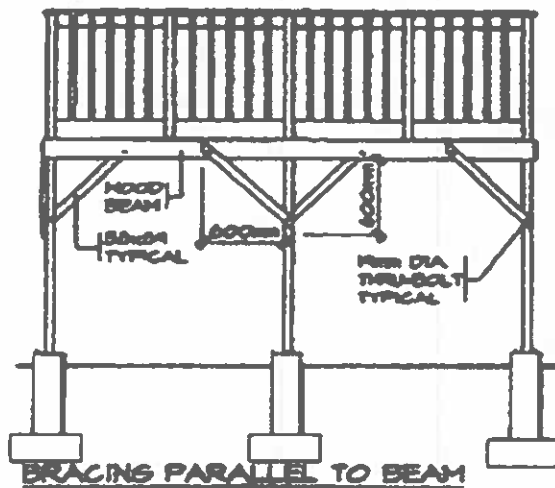
Detail EB-2

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



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

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 SPT OR BETTER, HOOD POSTS MIN 60x84 (SOLID). USE CORROSION RESISTANT SPIRAL NAILS OR SCREWS.
3. DECK IS NOT PERMITTED TO BE SUPPORTED ON BRICK VENCHER.
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. HANDRAIL HEIGHT REFERS TO THE HEIGHT OF THE POST FROM THE TOP OF THE PIER TO THE DECK SURFACE.

S.S.S.E. 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.

