Building Department

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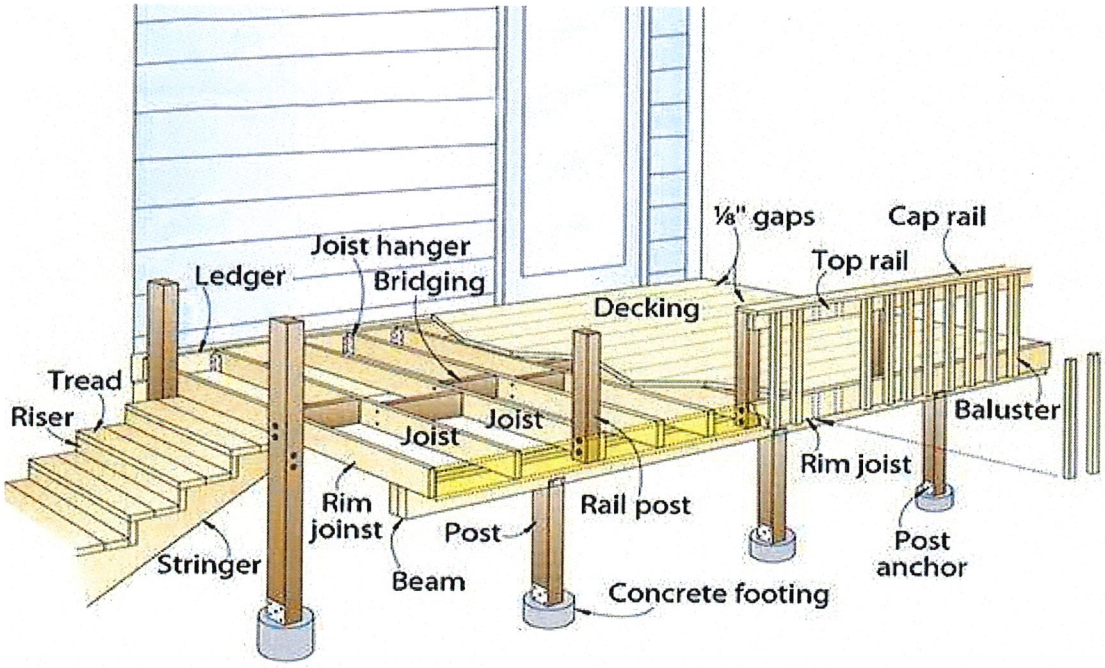
www.huntsville.ca

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 is not more than 24" ***and***
- The deck is not supporting a roof,
- The deck is no larger than 10 sqm (108 sqft) and not attached to another building.

Note: A deck must comply with building codes and zoning requirements. All waterfront properties are under Site Plan Control. For more information, contact The Huntsville Planning Department at 705-789-1751.

Designers Qualification and Registration Requirements:

Homeowners submitting designs for their own residence are exempt from qualification and registration 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 buildings and structures, and their setbacks drawn to scale. The proposed deck is to be plotted on the site plan and setback dimensions to all property lines are to be shown. (see attached sample site plan on page 5)
- 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 permit fee, payable at time of application by cheque (payable to "Town of Huntsville"), cash or debit.

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**

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. **A guard** is required where there is a difference in elevation of 600mm (23.6in) from the walking surface of the deck to the adjacent surface. The height of the guard shall not be less than 900mm (35.6in) where the height above finished grade is 1800mm (5' 11") or less. The guard shall be 1070mm (42in) in height where the height is above 1800mm (5' 11").
7. 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.

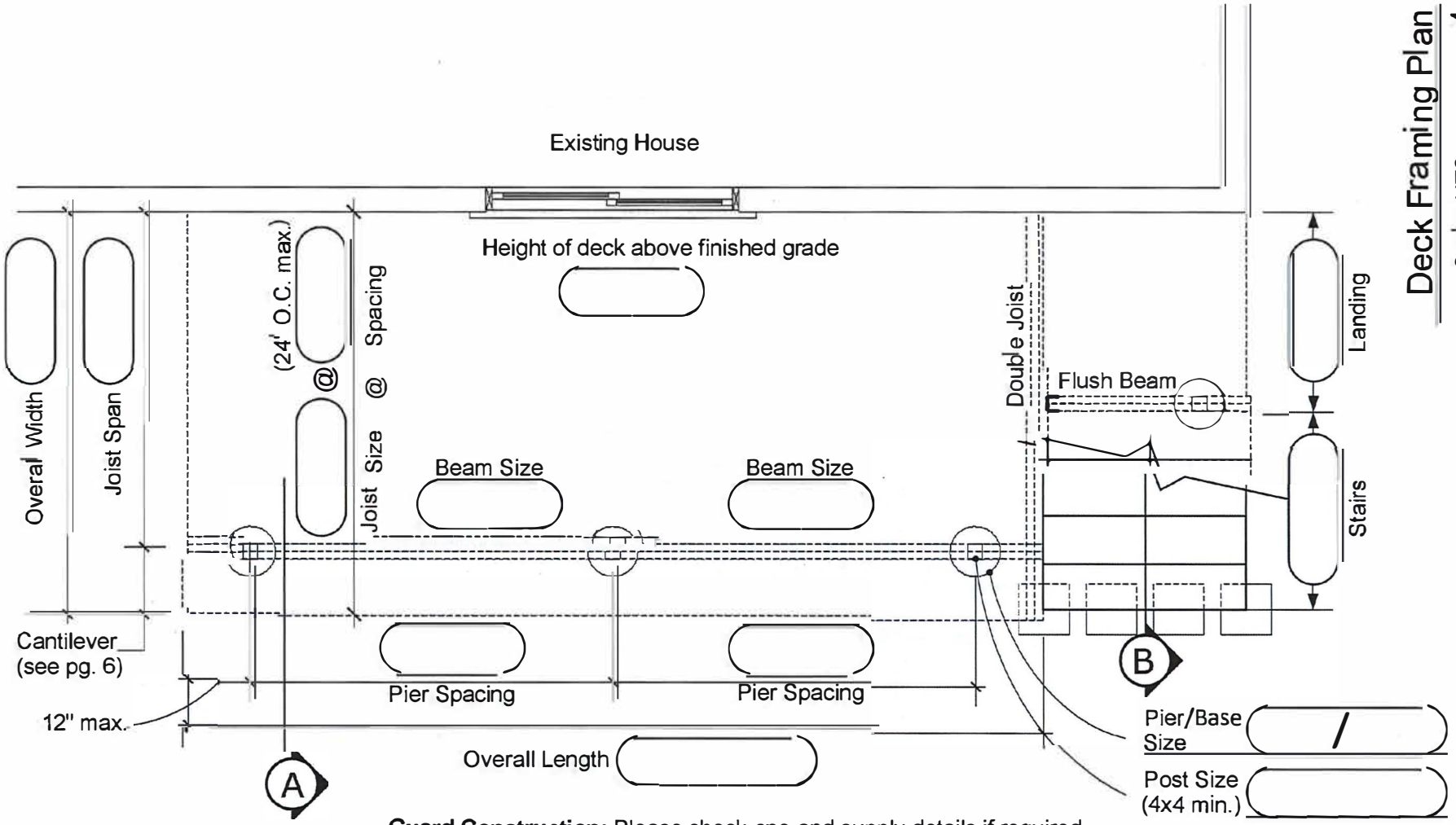
Note: *Please provide your own deck framing plan if your deck layout is different from what is shown in this package (Use the same concept and provide the same information). You will also need to provide your own details if the proposed construction methods differ than those provided.* ***Please note****, 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).*

Auger-Installed Steel Pile Foundations:

- Every project is required to to have: helical blades, approval of a registered professional engineer, welding that conforms to standards; required corrosion protection, and a certified installer.
- Registered professional engineer licensed to practice in the province of Ontario skilled in such design to determine the number and spacing of auger installed steel piles required to carry all loads. (Minimum torque settings)
- Every installer must be certified by the manufacture and using approved equipment in order to achieve installation that meets the building code.
- Each auger-installed steel pile shall be identified with a label that contains the manufactures' information and referenced material standard and the phase "CCMC XXXXXX-R".
- A signed and sealed certificate attesting to the conformity of the installation and the allowable loads for all piles must be provided from the engineer to the authority for every project.
- National Research Council Canada, M. "CCMC TECHNICAL BULLETIN." Construction Technology Updates, 18 Feb. 2019, www.nrc-cnrc.gc.ca/eng/solutions/advisory/ccmc/bulletins/auger_installed_steel_pile_foundations.html.

Deck Framing Plan

Scale: NTS



Guard Construction: Please check one and supply details if required

Exterior Post and Rail System Connection

☐ Top Rail/ Bottom rail to Post as per EA-1 - EA -5

Please Specify_____

☐ Post & Rail guard as per details EB1 - EB-6

Please Specify _____

☐ Infill Pickets as per details EC-1 - EC-4

Please Specify _____

Exterior Cantilevered Picket System Connection

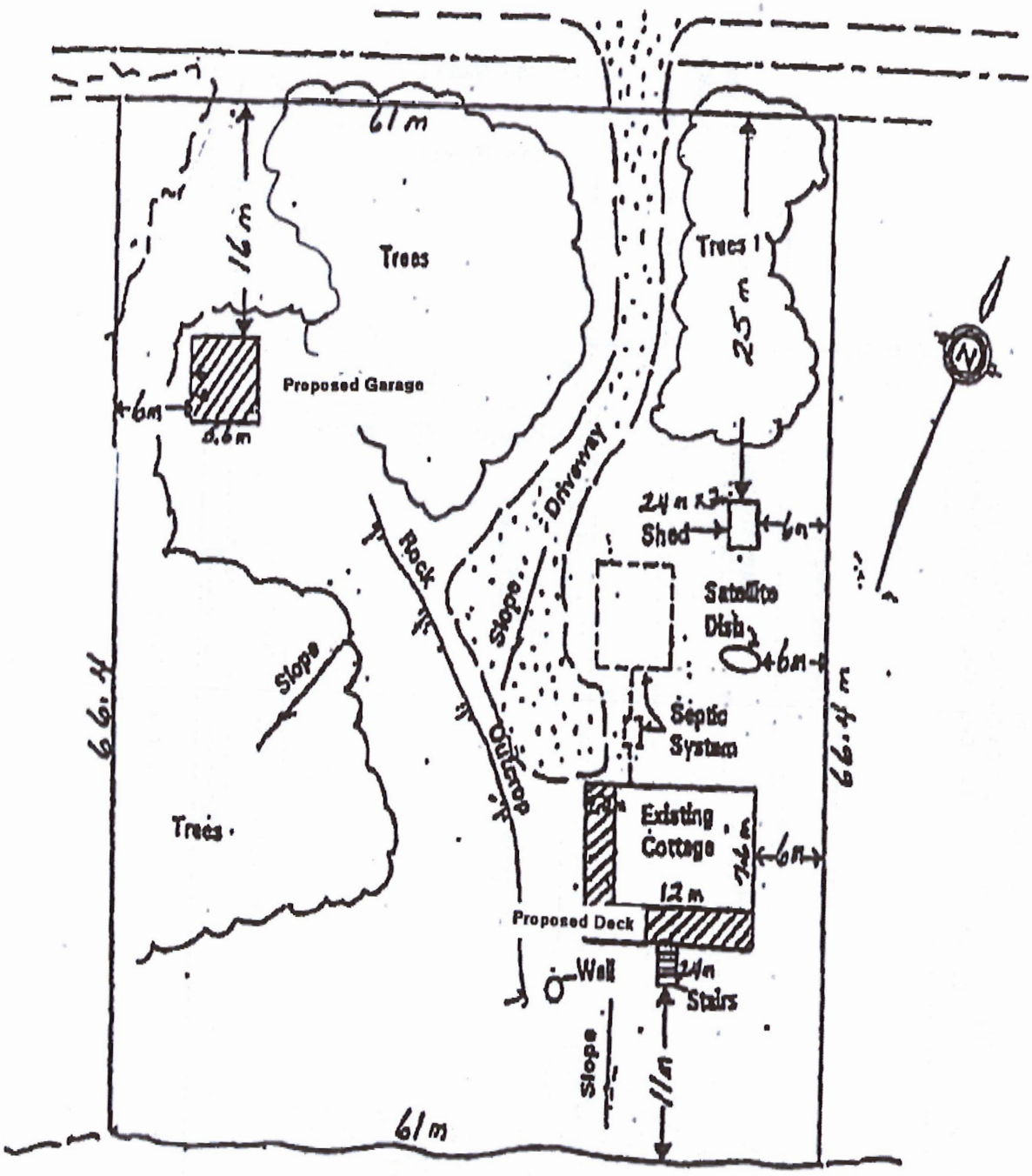
☐ Exterior Cantilever Picket as per ED - 1, ED - 2, ED - 5

Please Specify_____

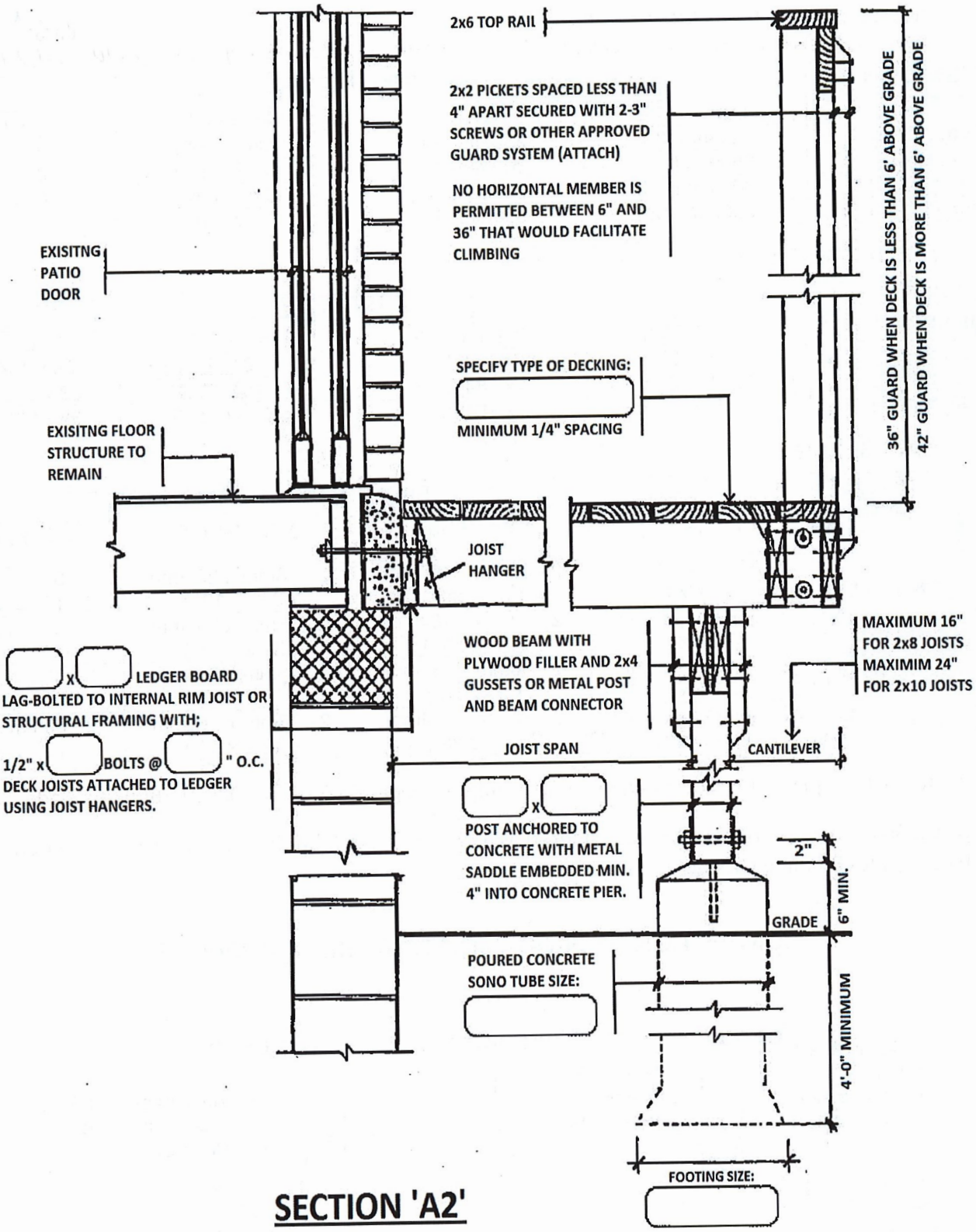
Pre-Manucatured Railing Detail Requirements

☐ Railing Manufactures - Engineering Sepcication for system

☐ Engineered Railing Connection detail to structure



Sample Detailed Site Sketch


2x6 TOP RAIL
2x2 PICKETS SPACED LESS THAN 4" APART SECURED WITH 2-3" SCREWS OR OTHER APPROVED GUARD SYSTEM (ATTACH)
NO HORIZONTAL MEMBER IS PERMITTED BETWEEN 6" AND 36" THAT WOULD FACILITATE CLIMBING
36" GUARD WHEN DECK IS LESS THAN 6' ABOVE GRADE
42" GUARD WHEN DECK IS MORE THAN 6' ABOVE GRADE
EXISITNG PATIO DOOR
SPECIFY TYPE OF DECKING:
MINIMUM 1/4" SPACING
EXISITNG FLOOR STRUCTURE TO REMAIN
JOIST HANGER
WOOD BEAM WITH PLYWOOD FILLER AND 2x4 GUSSETS OR METAL POST AND BEAM CONNECTOR
MAXIMUM 16" FOR 2x8 JOISTS
MAXIMIM 24" FOR 2x10 JOISTS
X LEDGER BOARD LAG-BOLTED TO INTERNAL RIM JOIST OR STRUCTURAL FRAMING WITH;
1/2" x BOLTS @ " O.C.
DECK JOISTS ATTACHED TO LEDGER USING JOIST HANGERS.
JOIST SPAN
CANTILEVER
X
POST ANCHORED TO CONCRETE WITH METAL SADDLE EMBEDDED MIN. 4" INTO CONCRETE PIER.
2"
6" MIN.
GRADE
POURED CONCRETE SONO TUBE SIZE:
4'-0" MINIMUM
FOOTING SIZE:

SECTION 'A2'

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 (8")	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")

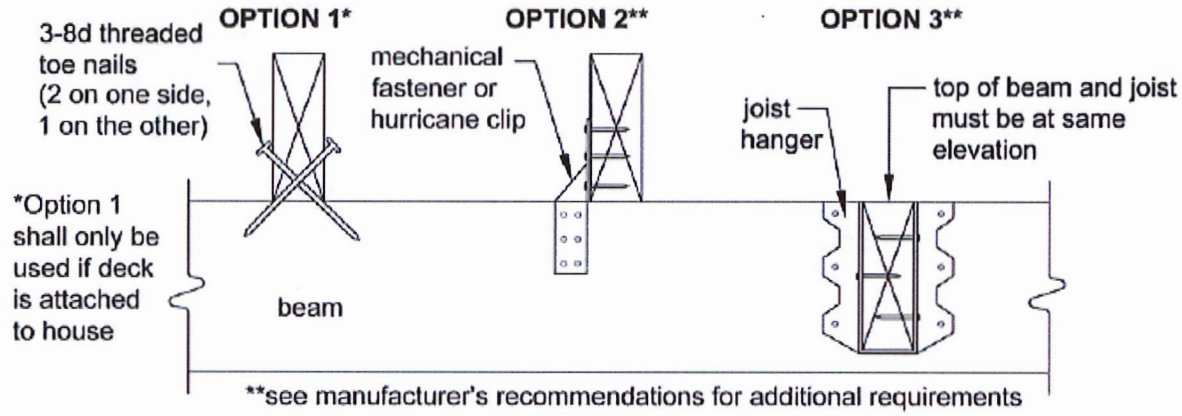
BEAM SIZING

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"x 8")	**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



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.

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")	812mm (32"o.c.)	400mm (16"o.c.)	400mm (16"o.c.)	300mm (12"o.c.)
Equivalent 16" o.c. Joist Spacing	Every Other Joist Space	Every Joist Space	Every Joist Space	Each Joist Space with Two Every Other Space
9.5mm(3/8")	610mm (24"o.c.)	300mm (12"o.c.)	300mm (12"o.c.)	200mm (8"o.c.)
Equivalent 16" o.c. Joist Spacing	Two Every Third Joist Space	Each Joist Space with Two Every Other Space	Each Joist Space with Two Every Other Space	Two Each Joist Space ThreeEvery Other Space

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

- 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.

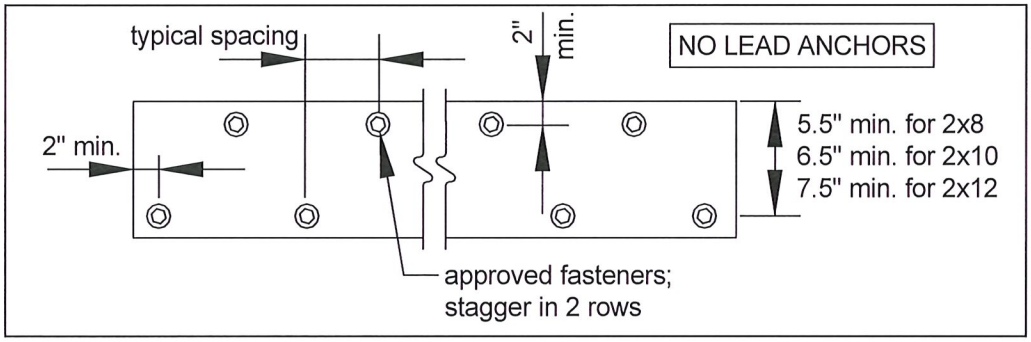
- Pilot holes shall be pre-drilled with a size between 17/32" to 9/16".

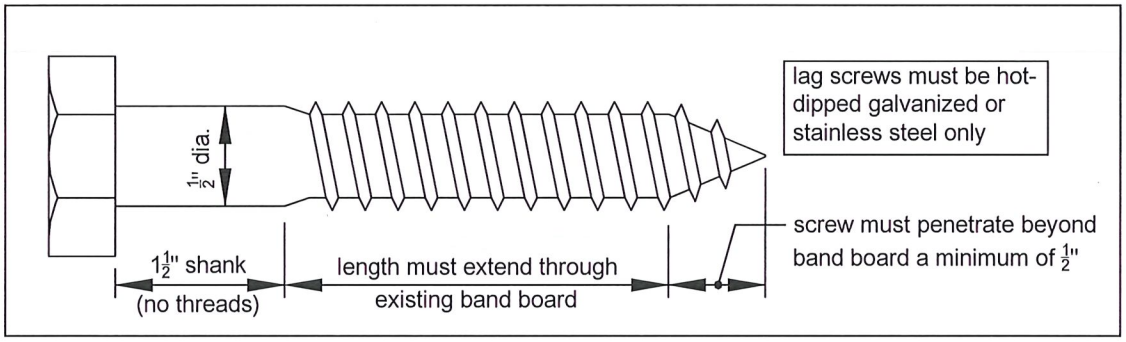
- Lag screws are only permitted where existing site conditions can be confirmed.

STRUCTURAL REQUIREMENTS

****REFER TO LAG BOLT SPACING TABLE****

LEDGER BOARD FASTENER SPACING





LAG SCREW

Each lag screw shall have pilot holes drilled as follows:

1) Drill a ½" diameter hole in the ledger board,
2) Drill a 5/16" diameter hole into the band board of the existing house.

DO NOT DRILL A ½" DIAMETER HOLE INTO THE BAND BOARD.

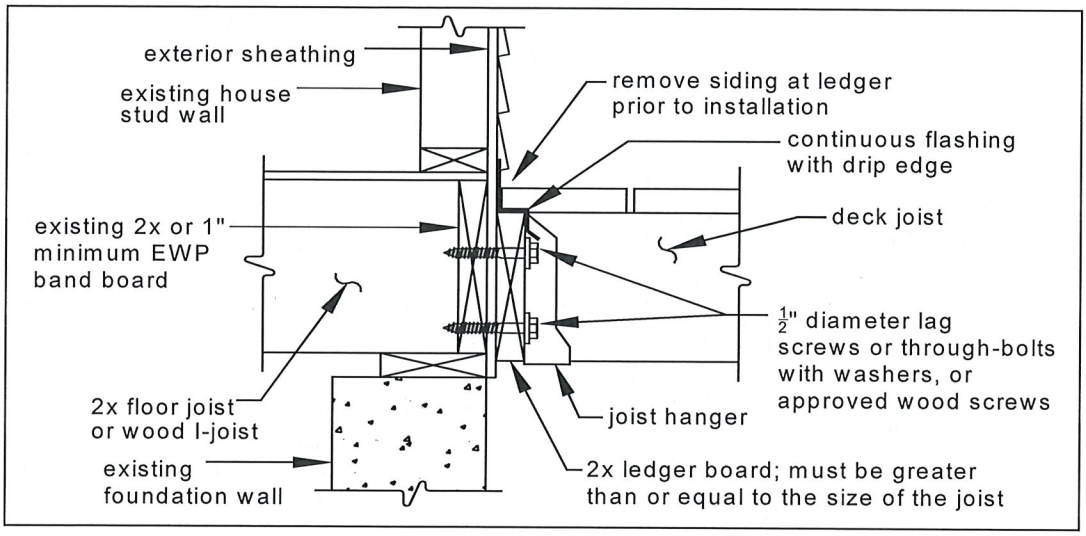
The threaded portion of the lag screw shall be inserted into the pilot hole by turning.

DO NOT DRIVE LAG SCREWS WITH A HAMMER.

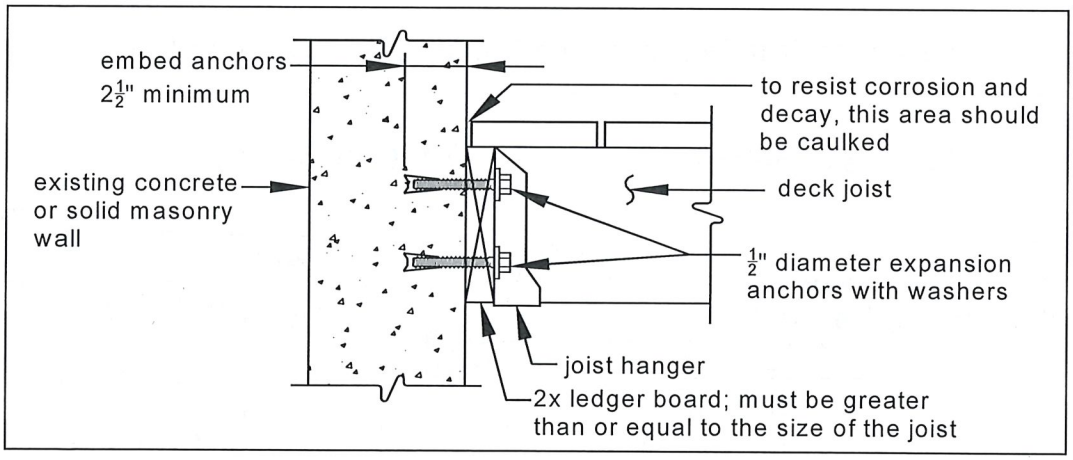
Use soap or a wood- compatible lubricant as required to facilitate tightening. Each lag screw shall be thoroughly tightened (snug but not over-tightened to avoid wood damage).

General Attachment of Ledger Board to House Structure

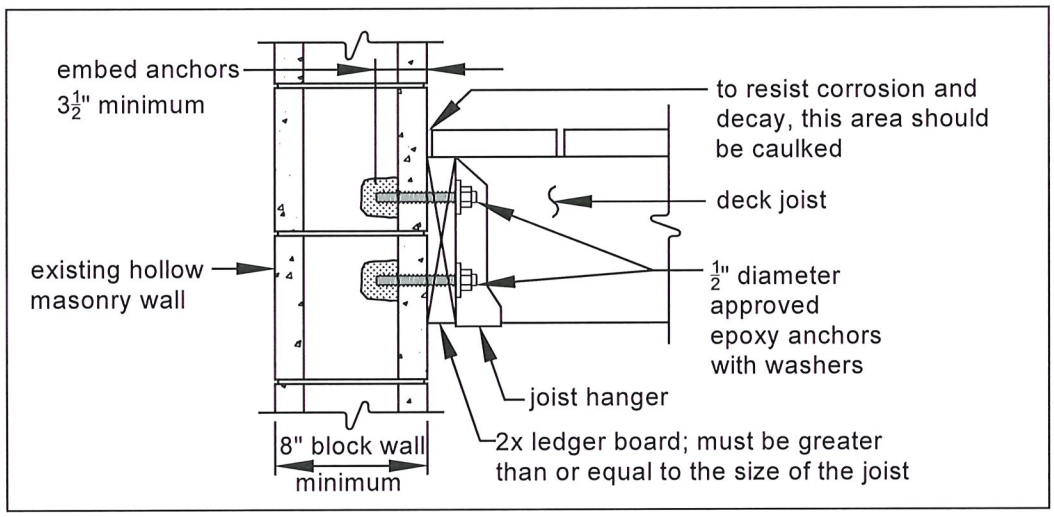
LEDGER BOARD ATTACHMENT



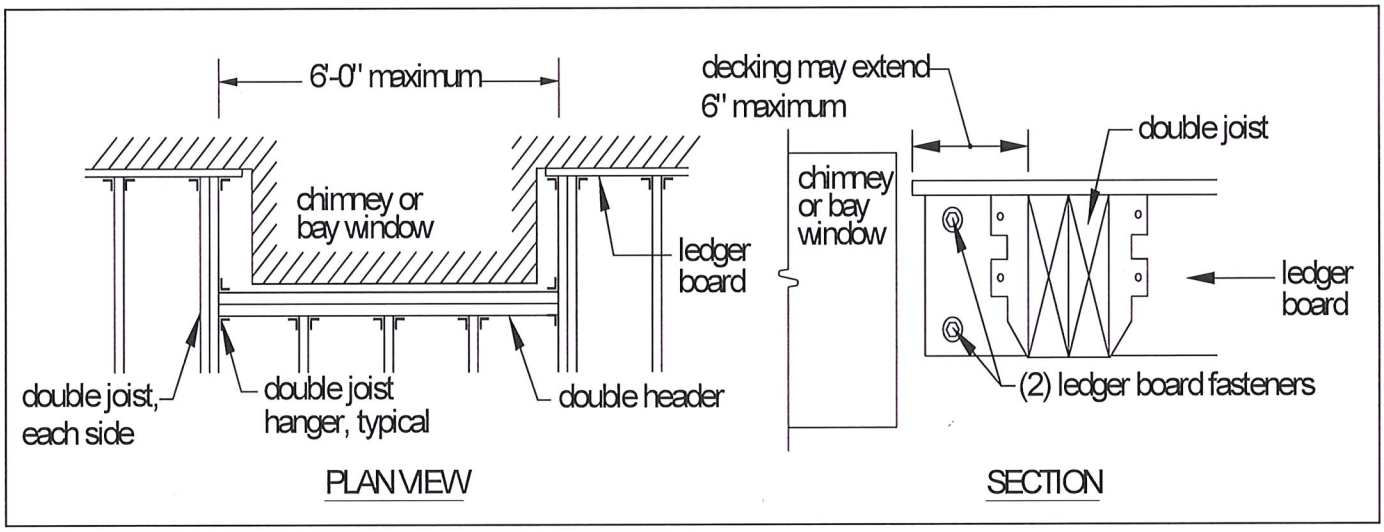
Attachment of Ledger Board to Foundation Wall (Concrete or Solid Masonry)



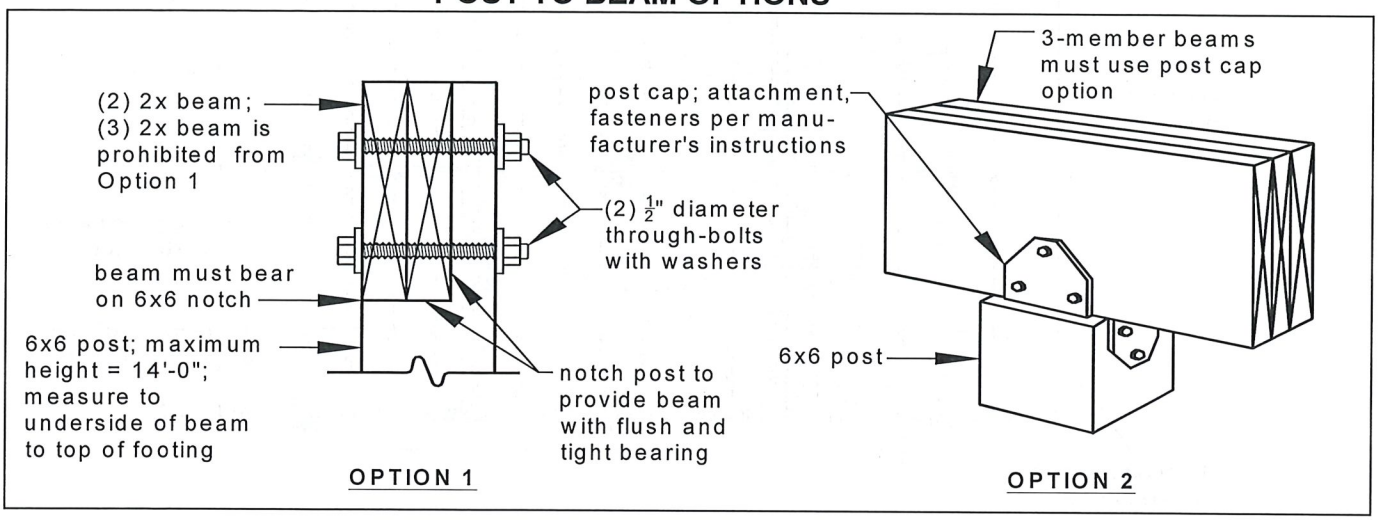
Attachment of Ledger Board to Foundation Wall (Hollow Masonry)



Detail for Framing Around a Chimney or a Bay Window



POST TO BEAM OPTIONS

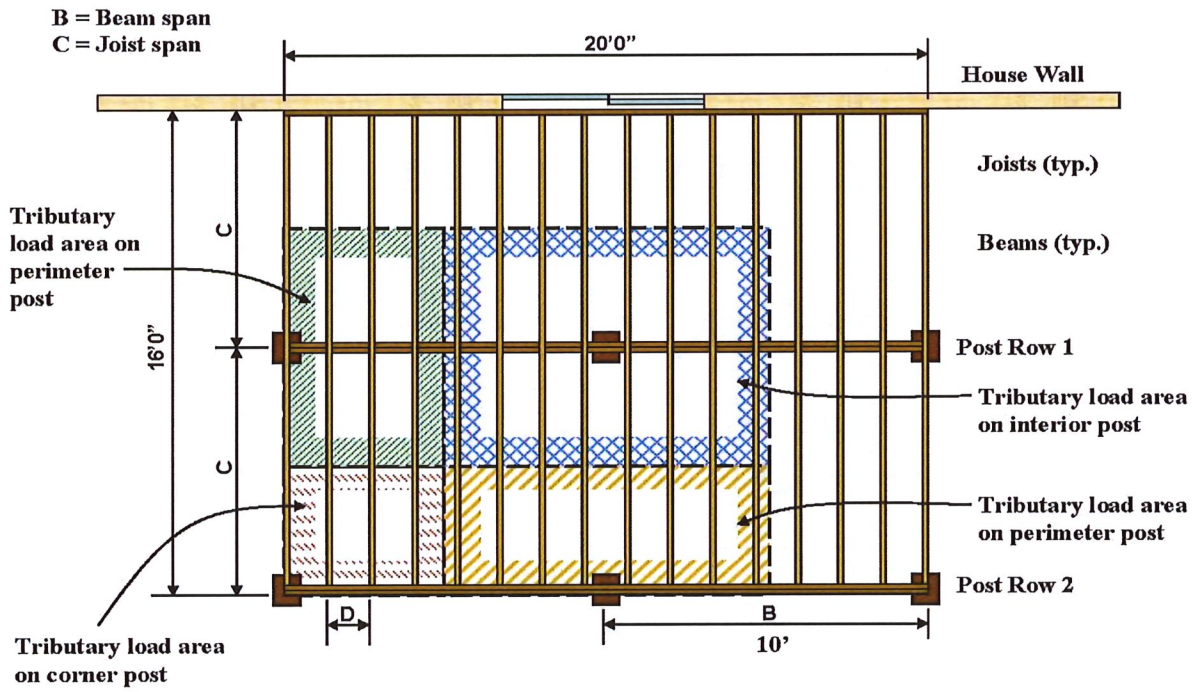


DECK SUPPORTS: POST SIZING

TRIBUTARY LOAD: SUPPORTED DECK AREA m^2 (See Diagram Below)		
TOWN OF HUNTSVILLE SNOW LOAD = 2.0 kPa (41.8lbs/ft^2) Deck supporting HOT TUBS must be designed by a qualified person		
POST SIZE	**MAXIMUM HEIGHT**	**AREAm^2 (ft^2)**
89mm x 89mm **(4"x4")**	**1.0m (3'-3")**	8.09 (87)
	1.5m (5'-0")	4.42 (48)
	2.0m (6'-7")	2.35 (25.3)
140mm x 140mm **(6"x6")**	**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)

MAXIMUM UNSUPPORTED HEIGHT OF 6"X6" POST = 12'-0"

Tributary load area for posts

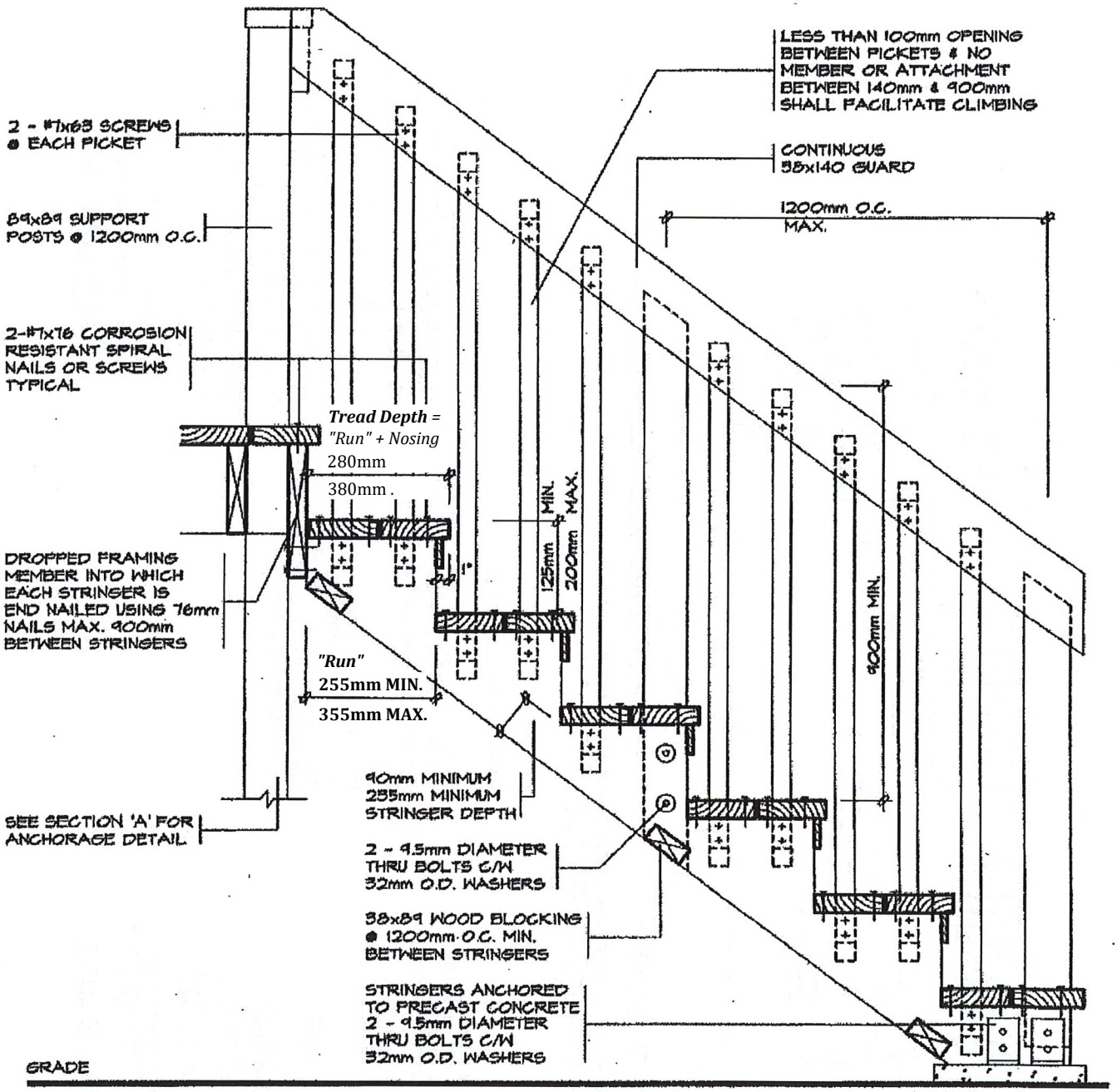


Example for loading on "P1":

Tributary Area

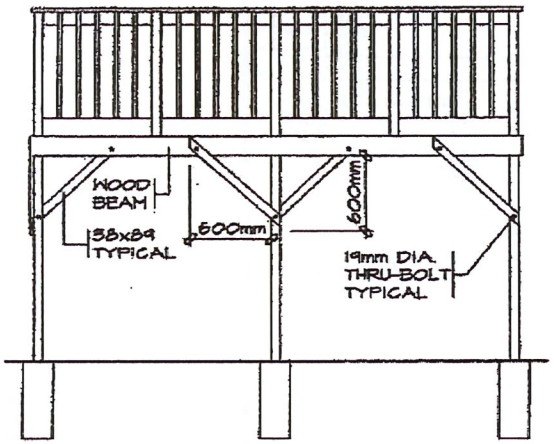
= [(8/2) + (8/2)] x [(10/2) + (10/2)]
= [(4 + 4)] x [(5 + 5)]
= 8 x10
= 80 ft^2

From the above table; a 6"x6" post with a maximum height of 12'-0" is permitted

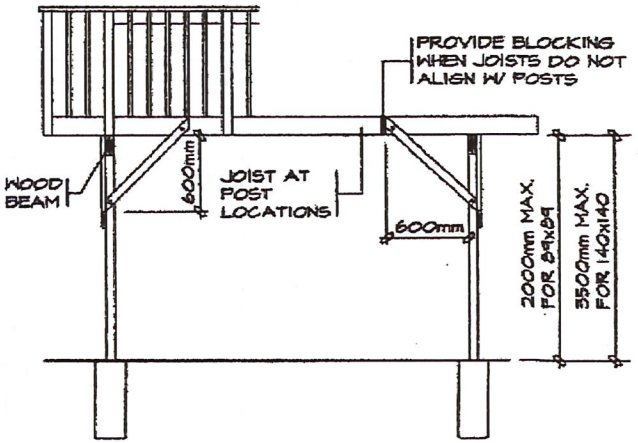


SECTION 'B'

TYPICAL STAIR



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

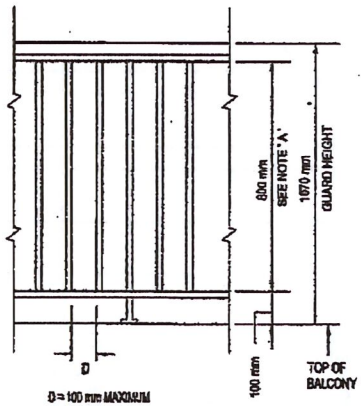
GENERAL NOTES

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

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, ATTACHEMENT OR OPENING SHALL FACILITATE CLIMBING WITHIN THE 800 mm SHOWN IN THE SKETCH

SB-7 Guards for Housing and Small Buildings

Section 1 General

1.1. Introduction

1.1.1. Scope (See Appendix A.)

(1) This Supplementary Standard includes details for the construction of wood guards.

(2) Guards located on the exterior of a building, where they may be subject to deterioration, shall be constructed in accordance with Section 2 of this Supplementary Standard. (See Appendix A.)

(3) Guards located inside a building shall be constructed in conformance with Section 2 or Section 3 of this Supplementary Standard.

1.2. Design of Guards

1.2.1. Cantilever Action (See Appendix A.)

(1) The construction details for guards in this Supplementary Standard are based on the assumption that the guard acts as a cantilever in resisting lateral loads.

1.2.2. Classification (See Appendix A.)

(1) The structural systems of guards described in this Supplementary Standard are grouped into the following classifications:
(a) Post and Rail Systems, and
(b) Cantilevered Picket Systems.

Section 2 Exterior Guards

2.1. Materials

2.1.1. Lumber Grades (See Appendix A)

(1) The minimum grade of softwood dimension lumber for posts, rails and joists shall be Northern Species, No. 2.

(2) The minimum grade of softwood dimension lumber for pickets shall be Northern Species, No. 2 Picket grade.

(3) Wood for pickets shall be free of loose knots.

2.1.2. Lumber Dimensions

(1) Except as permitted in Sentence (2), the minimum sizes of loadbearing elements of wood guards shall conform to Table 2.1.2.

Table 2.1.2.
Minimum Size of Loadbearing Elements

Guard Element	Minimum Size, mm (in)
Post	89 x 89 (4" x 4" nominal)
Top Rail	38 x 89 (2" x 4" nominal)
Bottom Rail	38 x 89 (2" x 4" nominal)
Picket / Baluster	32 x 32 ($1^{9}/_{32}$" x $1^{9}/_{32}$")
Column 1	2

(2) Where a bottom rail is bevelled, the minimum sizes shown in Table 2.1.2. may be reduced to allow for a bevel, as detailed in Figure 2.1.2.

Figure 2.1.2.
Bevel Detail

2.1.3. Floor Construction (See Appendix A.)

(1) The minimum dimensions of wood floor joists and wood decking shall conform to Table 2.1.3.

(2) Except as provided in Details EA-1 to ED-5, wood decking shall be fastened to each floor joist with nailing conforming to Table 2.1.3.

Table 2.1.3.
Minimum Size of Floor Elements

Floor Element	Minimum size, mm (in)
Dimension Lumber Decking	25 x 140 (5/4" x 6" nominal), when each plank is fastened with 2 - 63 mm (2½") nails
	38 x 89 (2" x 4" nominal), when each plank is fastened with 2 - 76 mm (3") nails
Dimension Lumber Joists	38 x 184 (2" x 8" nominal)
– Column 1	2

2.1.4. Connectors (See Appendix A.)

(1) Nails, screws, lag bolts and machine bolts shall not cause splitting of wood elements.

(2) Fasteners shall be resistant to corrosion.

(3) All nails shall be common spiral.

(See also A-2.1.4. in Appendix A for glued joints.)

2.1.5. Decay-Resistant Lumber (See Appendix A.)

(1) Lumber for guard systems and floor systems shall be
(a) a species resistant to decay,
(b) preservative treated to prevent decay, or
(c) pressure-treated.

(2) All cut ends of preservative treated lumber shall be treated to prevent decay.

2.2. Structural Details

2.2.1. Post and Rail System

(1) An exterior guard constructed as a Post and Rail System shall conform to the applicable connection details listed in Table 2.2.1.

2.2.2. Cantilevered Picket System

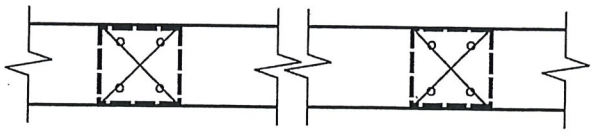
(1) An exterior guard constructed as a Cantilevered Picket System shall conform to the applicable connection details listed in Table 2.2.2.

Table 2.2.1.
Exterior Post and Rail System Connection Details

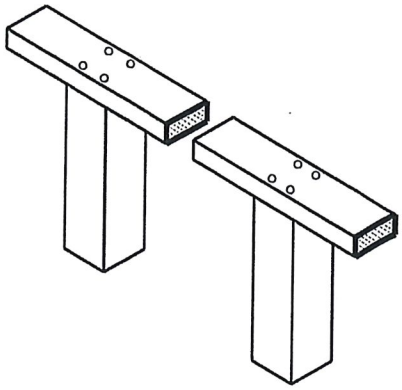
Connection Detail	Detail Number	Description
Top Rail to Post and / or Bottom Rail to Post	EA-1	Top rail nailed to post
	EA-2	Top/bottom rail skew nailed to post with 76 mm (3") nails
	EA-3	Top/bottom rail skew nailed to post with 63 mm (2½") nails
	EA-4	Top/bottom rail face nailed or screwed to post
	EA-5	Top/bottom rail fastened to post with framing anchors
Post to Floor	EB-1	Post nailed to rim joist
	EB-2	Post screwed to rim joist
	EB-3	Post bolted to floor joist with 8 mm (5/16") machine bolts
	EB-4	Post bolted to floor joist with 9.5 mm (3/8") machine bolts
	EB-5	Post bolted to 2 floor joists
	EB-6	Post fastened to floor, where guard is parallel to floor joists
Infill Picket	EC-1	Picket nailed to endcap; endcap screwed to rail
	EC-2	Picket nailed to rail
	EC-3	Picket screwed to rail
	EC-4	Picket screwed to top rail and rim joist
Column 1	2	3

Table 2.2.2.
Exterior Cantilevered Picket System Connection Details

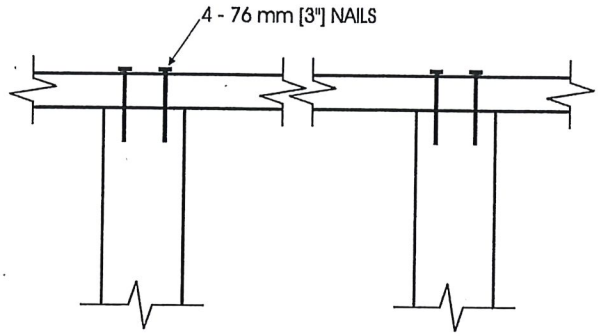
Connection Detail	Detail Number	Description
Cantilevered Picket (Douglas Fir-Larch, Spruce-Pine-Fir, Hem-Fir Species)	ED-1	Picket screwed to rim joist
	ED-2	Picket screwed to rim joist, where guard is parallel to floor joists
Cantilevered Picket (Northern Species)	ED-3	Picket screwed to rim joist and deck
	ED-4	Picket screwed to rim joist and deck, where guard is parallel to floor joists
Cantilevered Picket (Douglas Fir-Larch, Spruce-Pine-Fir, Hem-Fir Species, Northern Species)	ED-5	Corner
Column 1	2	3



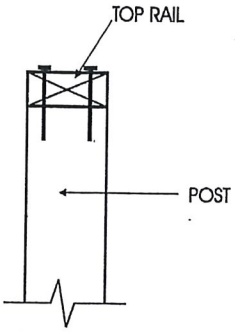
PLAN



AXONOMETRIC



FRONT ELEVATION



SIDE ELEVATION

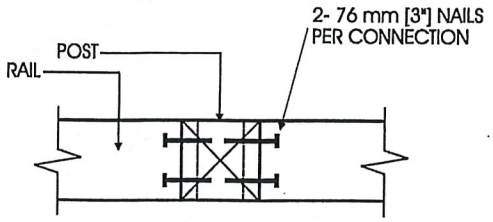
Detail EA-1

Exterior Connection: Top Rail Nailed to Post

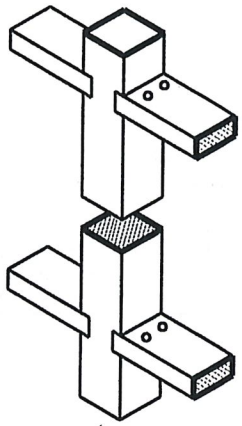
Notes:

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



PLAN



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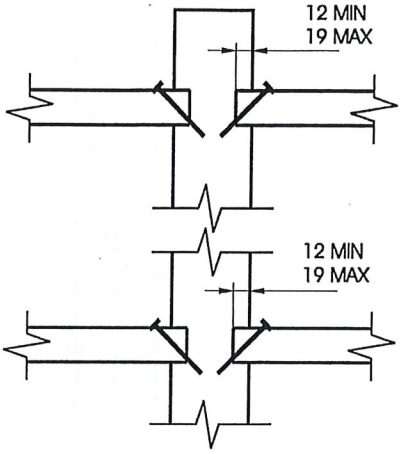
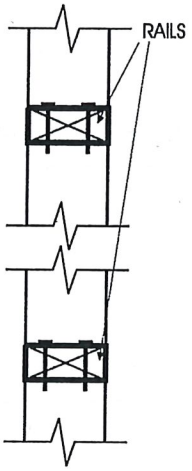


FRONT ELEVATION



SIDE ELEVATION

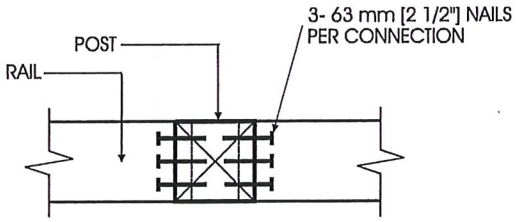
Detail EA-2

Exterior Connection: Top/Bottom Rail Skew Nailed to Post - 76 mm (3") Nails

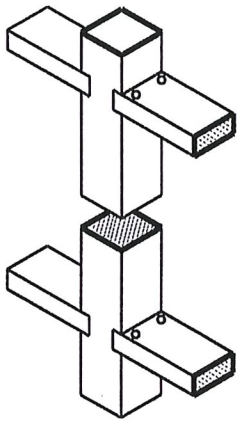
Notes:

1. The maximum span is more often governed by post spacing.
2. Provide support to bottom rail at intervals not more than 2.0 m (6'-7").
3. The bottom rail may be bevelled as detailed in Figure 2.1.2.
4. 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	2.72 (8'-11")
Northern Species	2.18 (7'-2")
Column 1	2



PLAN



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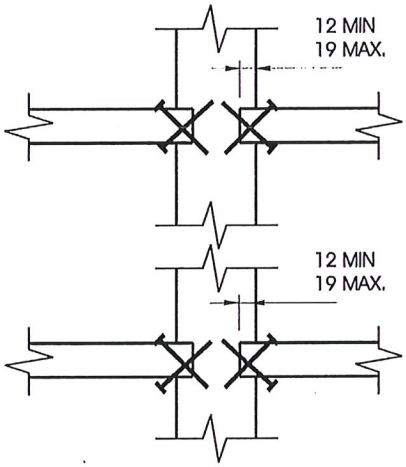
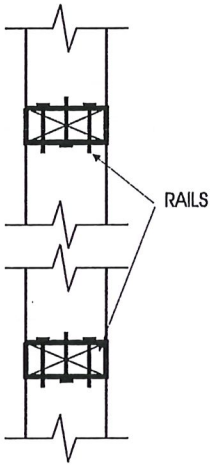


FRONT ELEVATION



SIDE ELEVATION

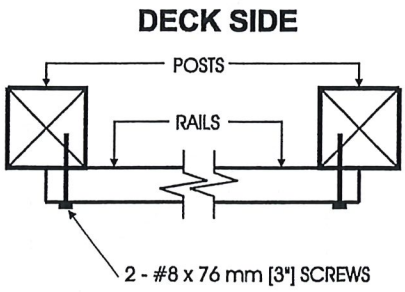
Detail EA-3

Exterior Connection: Top/Bottom Rail Skew Nailed to Post - 63 mm (2½") Nails

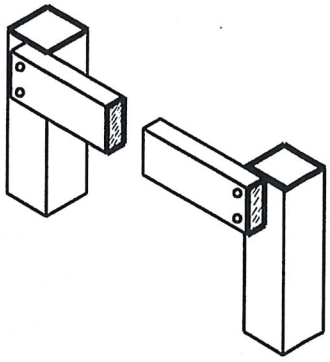
Notes:

1. Provide support to bottom rail at intervals not more than 2.0 m (6'-7").
2. The bottom rail may be bevelled as detailed in Figure 2.1.2.
3. 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	2.72 (8'-11")
Northern Species	2.18 (7'-2")
Column 1	2



PLAN



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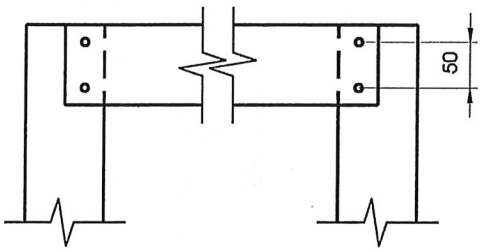
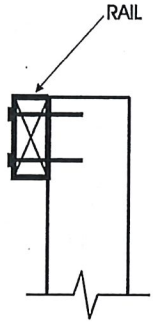


FRONT ELEVATION



SIDE ELEVATION

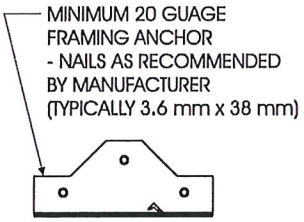
Detail EA-4

Exterior Connection: Top/Bottom Rail Face Nailed or Screwed to Post

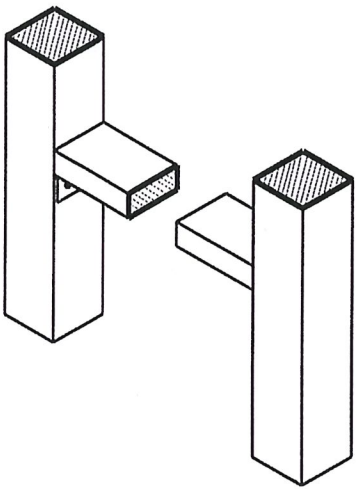
Notes:

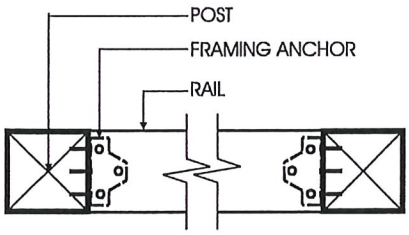
1. If the rails are located on the deck side of the posts, 76 mm (3") nails may be used in place of the screws.
2. Where the top rail is continuous, the top rail may be fastened to each post with 3 - #8 x 76 mm (3") screws.
3. Dimensions shown are in mm unless otherwise specified.

MAXIMUM SPAN OF RAIL BETWEEN POSTS	
Species	Maximum Span, m (ft-in)
Douglas Fir-Larch, Hem-Fir, Spruce-Pine-Fir	1.77 (5'-10")
Northern Species	1.41 (4'-8")
Column 1	2



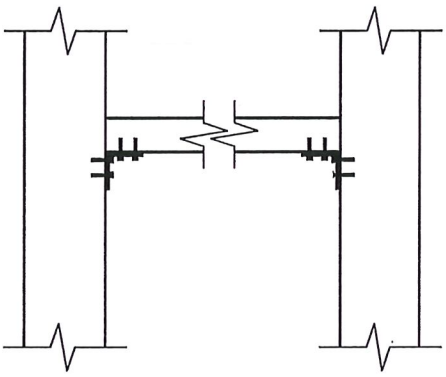
CORROSION RESISTANT
FRAMING ANCHOR



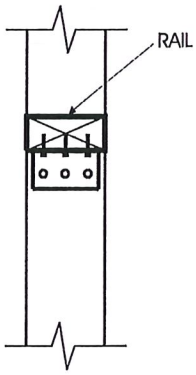


PLAN

AXONOMETRIC



FRONT ELEVATION



SIDE ELEVATION

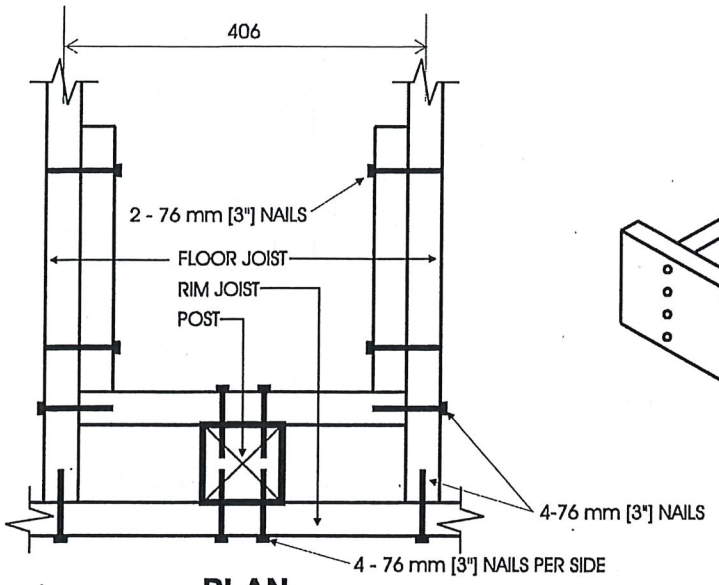
Detail EA-5

Exterior Connection: Top/Bottom Rail Fastened to Post with Framing Anchors

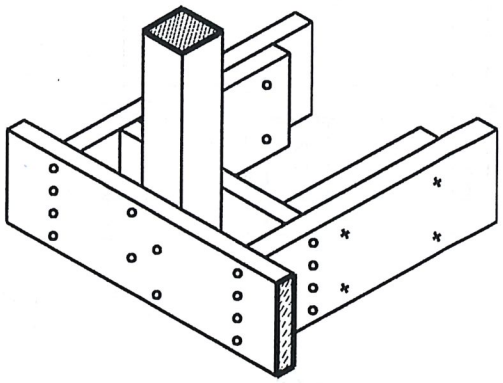
Notes:

1. Provide support to bottom rail at intervals not more than 2.0 m (6'-7").
2. The bottom rail may be bevelled as detailed in Figure 2.1.2.
3. Dimensions shown are in mm unless otherwise specified.

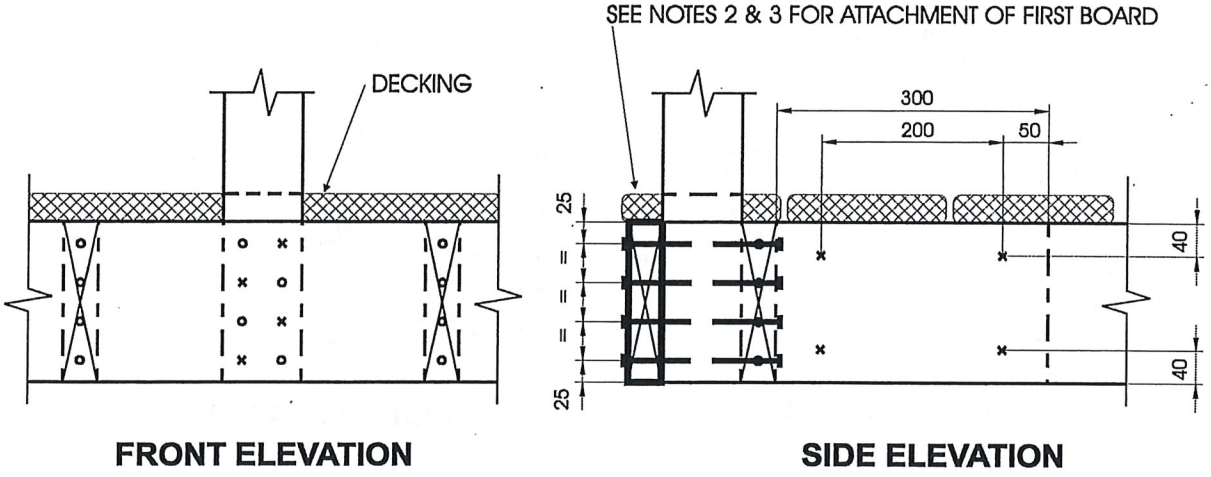
MAXIMUM SPAN OF RAIL BETWEEN POSTS	
Species	Maximum Span, m (ft-in)
Douglas Fir-Larch, Hem-Fir, Spruce-Pine-Fir	2.72 (8'-11")
Northern Species	2.18 (7'-2")
Column 1	2



PLAN



AXONOMETRIC



FRONT ELEVATION

SIDE ELEVATION

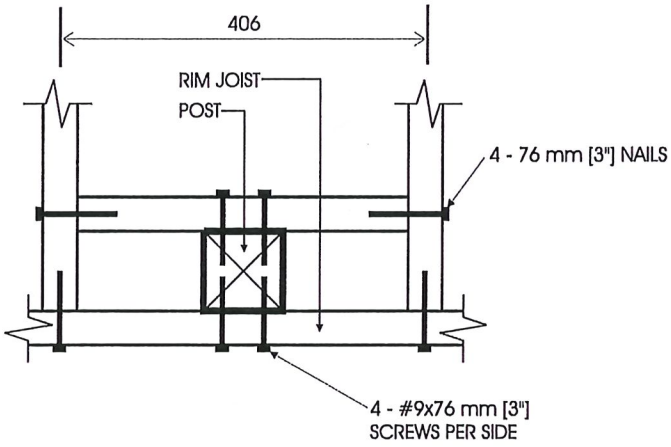
Detail EB-1

Exterior Connection: Post Nailed to Rim Joist

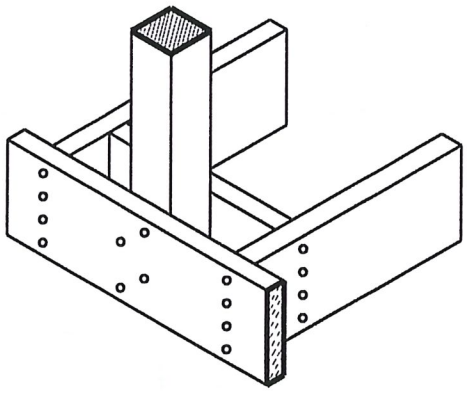
Notes:

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 (2½") 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 (2½") nail at each joist.
4. The post may be positioned anywhere between the joists.
5. 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	1.22 (4'-0")
Northern Species	1.20 (3'-11")
Column 1	2



PLAN



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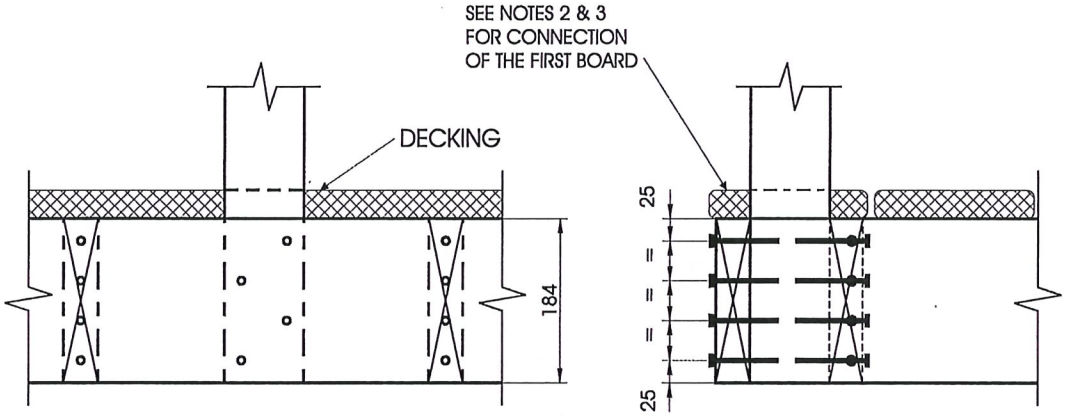


FRONT ELEVATION

SIDE ELEVATION

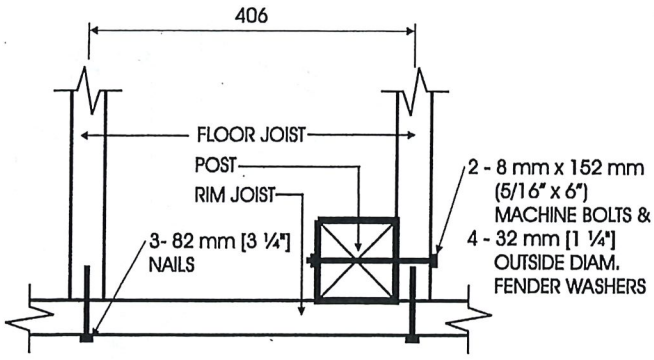
Detail EB-2

Exterior Connection: Post Screwed to Rim Joist

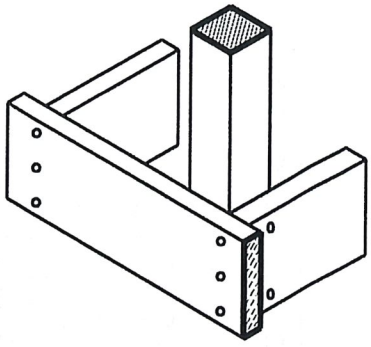
Notes:

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



PLAN



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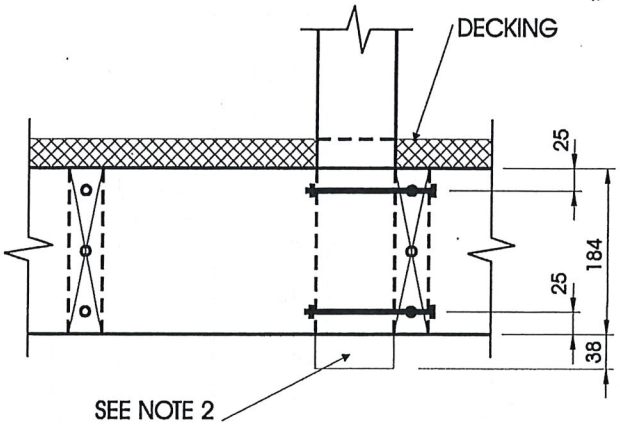
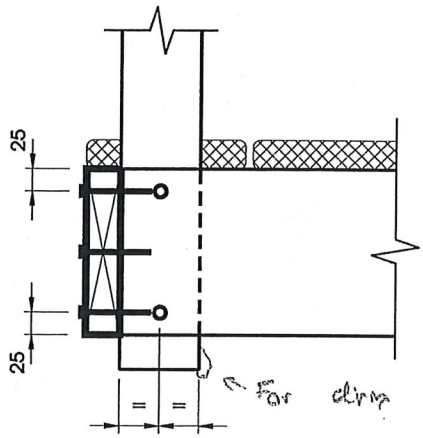


FRONT ELEVATION



SIDE ELEVATION

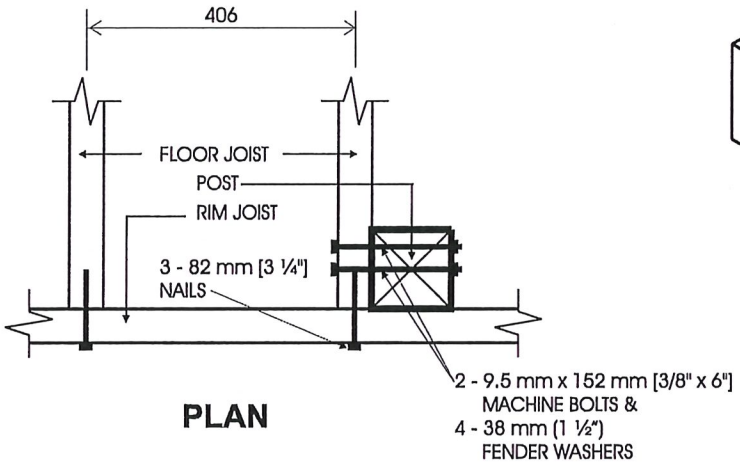
Detail EB-3

Exterior Connection: Post Bolted to Floor Joist - 8 mm (5/16") Bolts

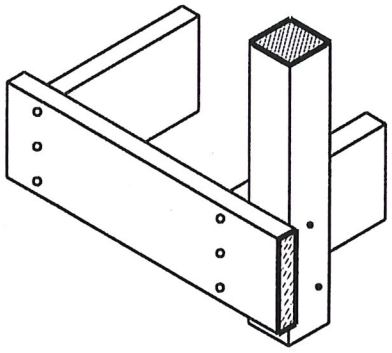
Notes:

1. Decking is omitted from the plan view and the axonometric view for clarity.
2. 38 mm (1½") post projection is not required where the maximum spacing between posts does not exceed 1.20 m (3'-11").
3. Joists may be spaced at 610 mm (24") o.c. or 406 mm (16") o.c.
4. Where floor joists are spaced at 610 mm (24") o.c., decking shall have a minimum thickness of 38 mm (1½") and shall be fastened to the floor with 2 - 76 mm (3") nails.
5. Dimensions shown are in mm unless otherwise specified.

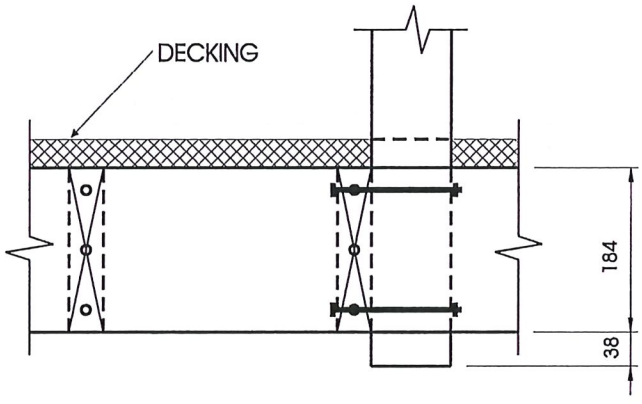
MAXIMUM SPACING BETWEEN POSTS	
Species	Maximum Span, m (ft-in)
Douglas Fir-Larch, Hem-Fir, Spruce-Pine-Fir	1.29 (4'-3")
Northern Species	1.20 (3'-11")
Column 1	2



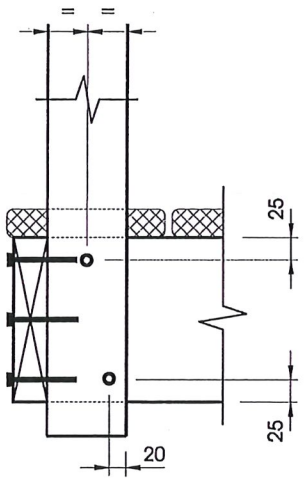
PLAN



AXONOMETRIC



FRONT ELEVATION



SIDE ELEVATION

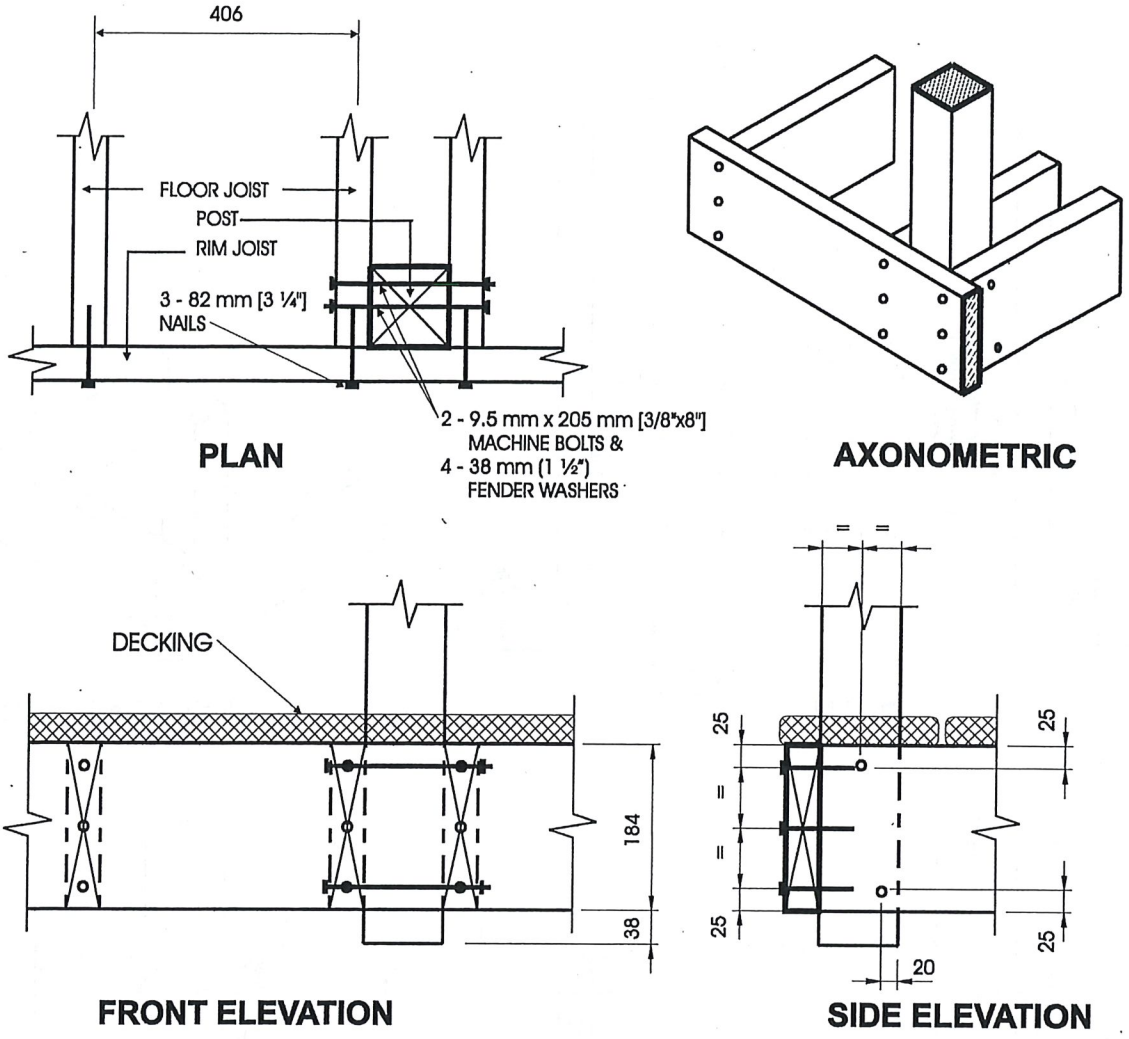
Detail EB-4

Exterior Connection: Post Bolted to Floor Joist - 9.5 mm (3/8") Bolts

Notes:

1. Decking is omitted from the plan view and the axonometric view for clarity.
2. 38 mm (1½") post projection is not required where the maximum spacing between posts does not exceed 1.20 m (3'-11").
3. Joists may be spaced at 610 mm (24") o.c. or 406 mm (16") o.c.
4. Where floor joists are spaced at 610 mm (24") o.c., decking shall have a minimum thickness of 38 mm (1½") and shall be fastened to the floor with 2 - 76 mm (3") nails.
5. Dimensions shown are in mm unless otherwise specified.

MAXIMUM SPACING BETWEEN POSTS	
Species	Maximum Span, m (ft-in)
Douglas Fir-Larch, Hem-Fir, Spruce-Pine-Fir	1.49 (4'-11")
Northern Species	1.20 (3'-11")
Column 1	2



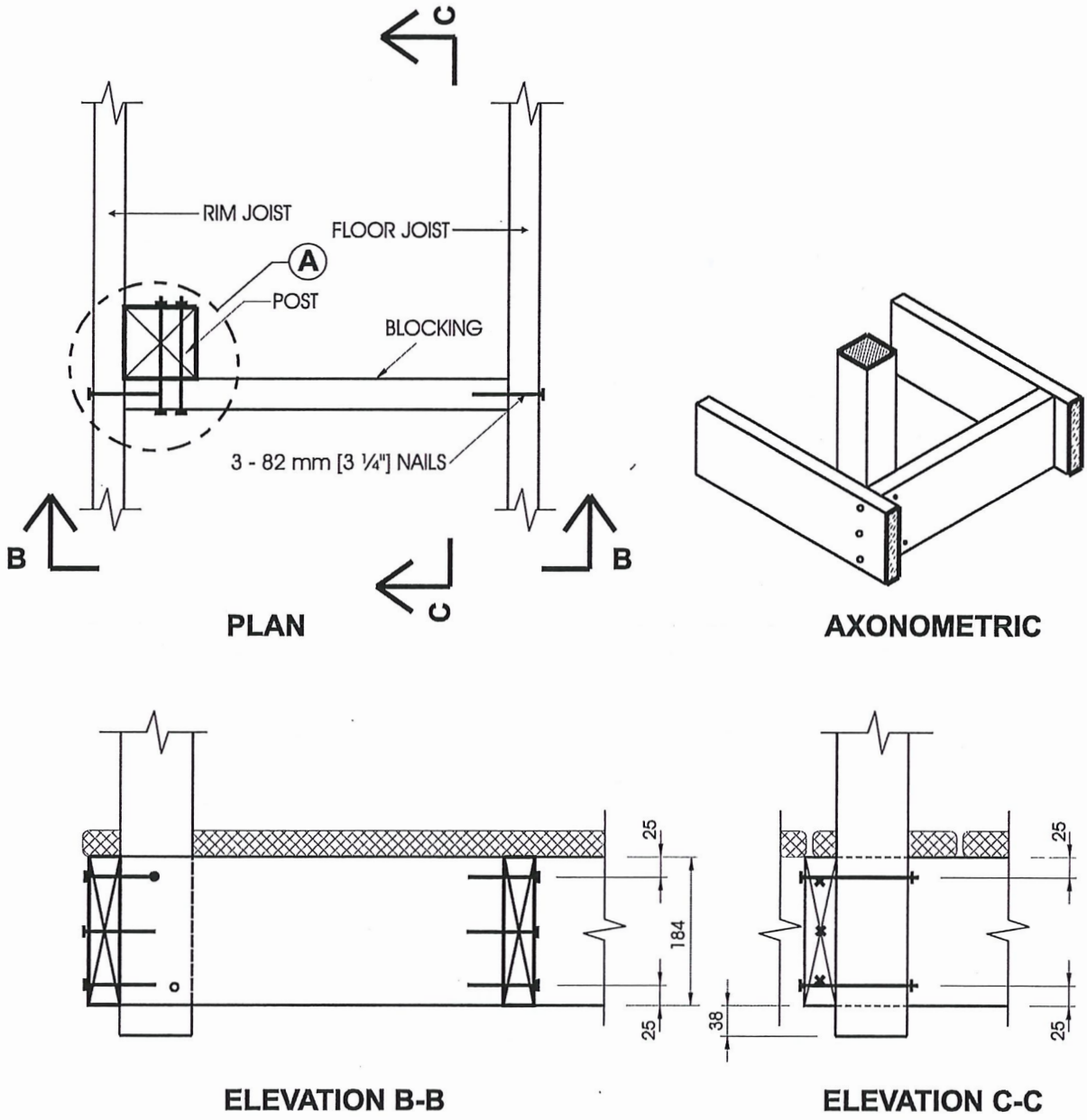
Detail EB-5

Exterior Connection: Post Bolted to 2 Floor Joists

Notes:

1. Decking is omitted from the plan view and the axonometric view for clarity.
2. 38 mm (1½") post projection is not required where the maximum spacing between posts does not exceed 1.20 m (3'-11").
3. Joists may be spaced at 610 mm (24") o.c. or 406 mm (16") o.c..
4. Where floor joists are spaced at 610 mm (24") o.c. decking shall have a minimum thickness of 38 mm (1½") and shall be fastened to the floor with 2 - 76 mm (3") nails.
5. Dimensions shown are in mm unless otherwise specified.

MAXIMUM SPACING BETWEEN POSTS	
Species	Maximum Span, m (ft-in)
Douglas Fir-Larch, Hem-Fir, Spruce-Pine-Fir	2.14 (7'-0")
Northern Species	1.20 (3'-11")
Column 1	2

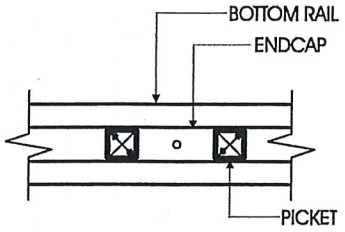


Detail EB-6

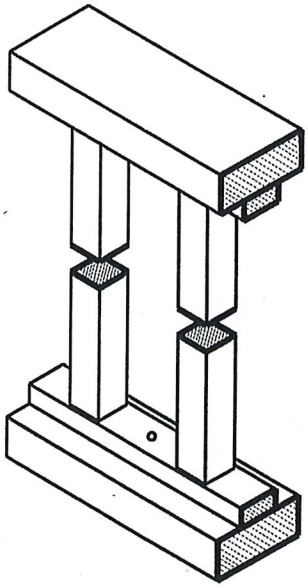
Exterior Connection: Post Fastened to Floor, Guard Parallel to Floor Joists

Notes:

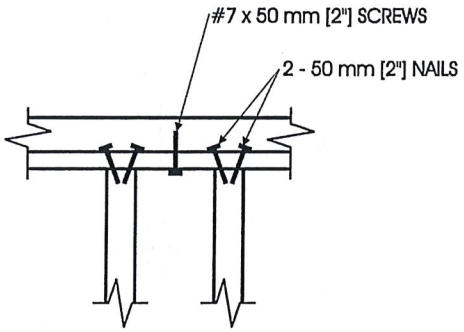
1. Use any of the connection details shown on Details EB-1 to EB-5 at location "A". Connection Detail EB-4 is shown in this detail, as an example.
2. Maximum spacing between posts is determined from connection detail used at location "A".
3. Decking is omitted from the plan view and the axonometric view for clarity.
4. Blocking shall be not less than 38 mm x 184 mm (2" x 8" nominal).
5. Dimensions shown are in mm unless otherwise specified.



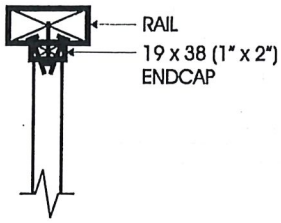
PLAN
BOTTOM RAIL



AXONOMETRIC



FRONT ELEVATION



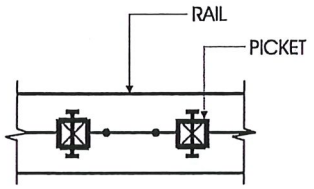
SIDE ELEVATION

Detail EC-1

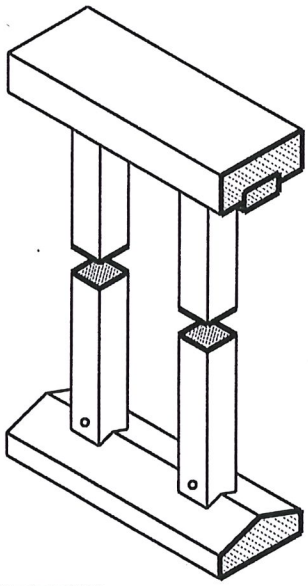
Exterior Connection: Infill Picket Nailed to Endcap - Endcap Screwed to Rail

Notes:

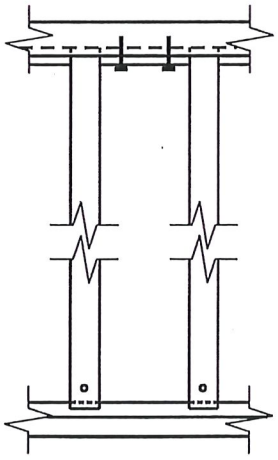
1. Fasten each end of each picket to endcaps with 2 - 50 mm (2") nails.
2. Fasten endcaps to rails with #7 x 50 mm (2") screws at 300 mm (12") o.c.
3. See Table 2.1.2. for minimum sizes of pickets.



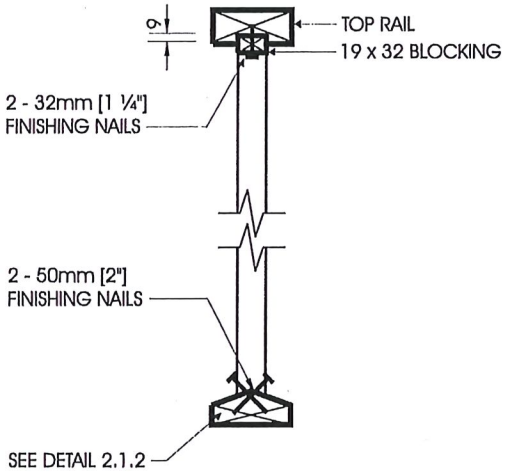
PLAN
BOTTOM RAIL



AXONOMETRIC



FRONT ELEVATION



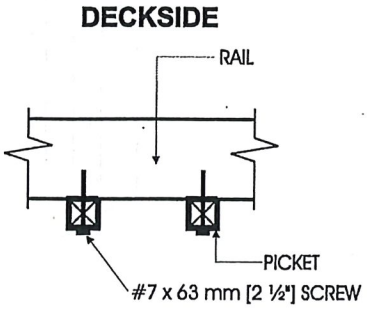
SIDE ELEVATION

Detail EC-2

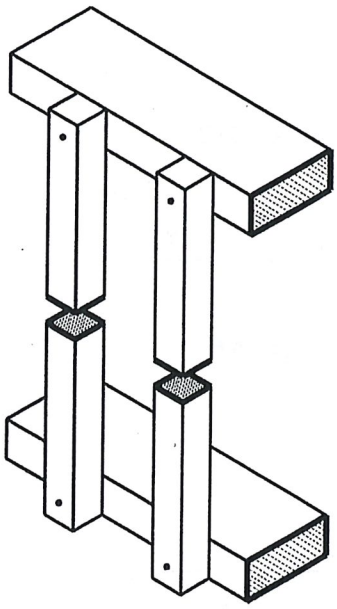
Exterior Connection: Infill Picket Nailed to Rail

Notes:

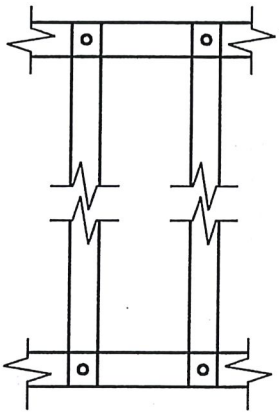
1. See Table 2.1.2. for minimum sizes of pickets.
2. Dimensions shown are in mm unless otherwise specified.



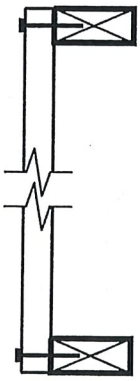
PLAN



AXONOMETRIC



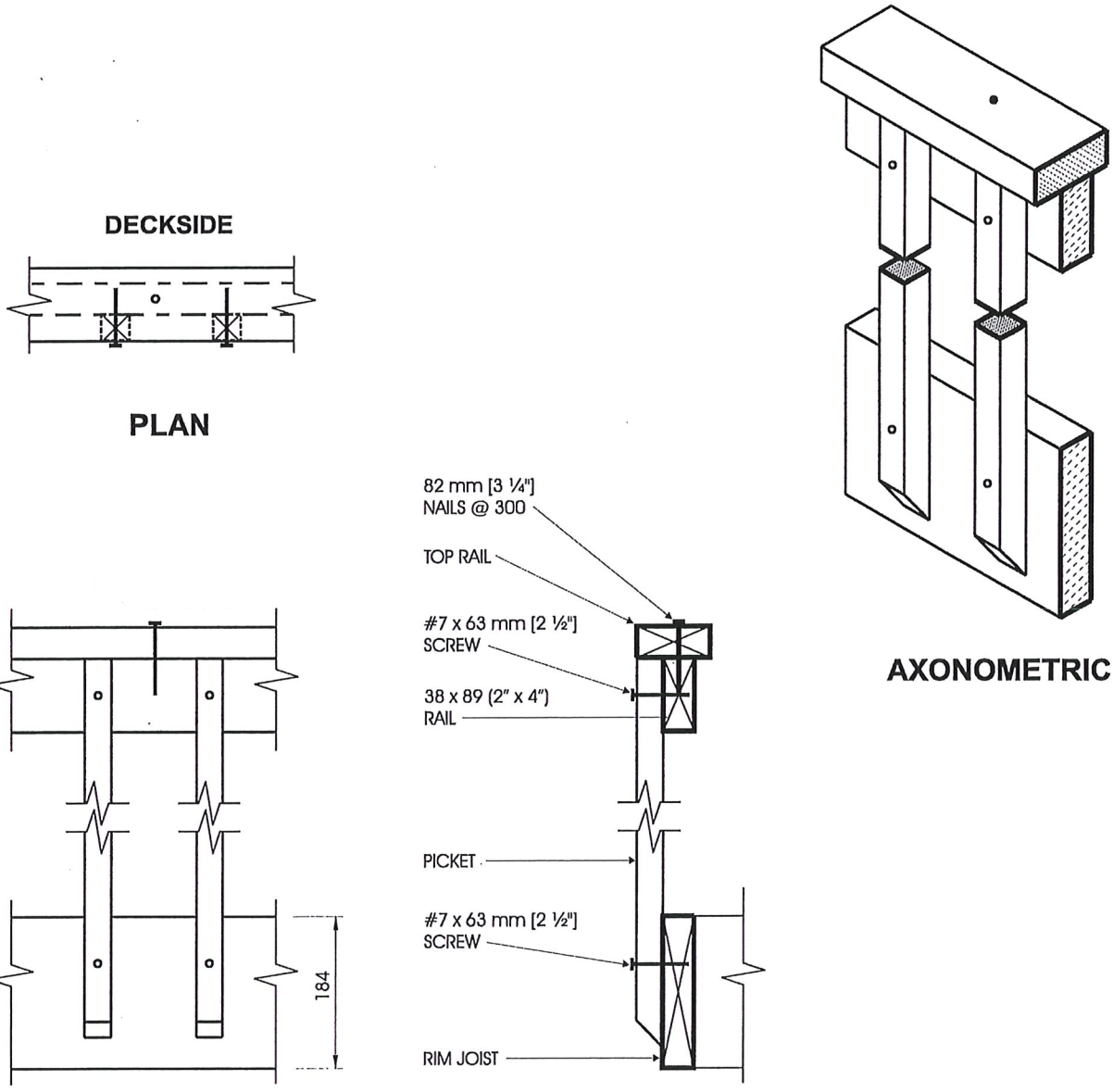
FRONT ELEVATION



SIDE ELEVATION

Detail EC-3

Exterior Connection: Infill Picket Screwed to Rail

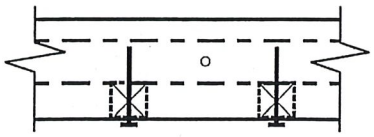


Detail EC-4

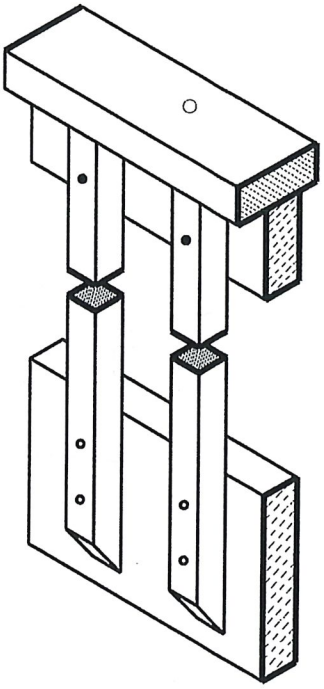
Exterior Connection: Infill Picket Screwed to Top Rail and Rim Joist

Note:

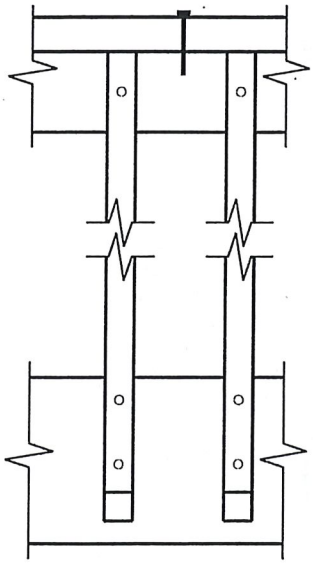
1. Dimensions shown are in mm unless otherwise specified.



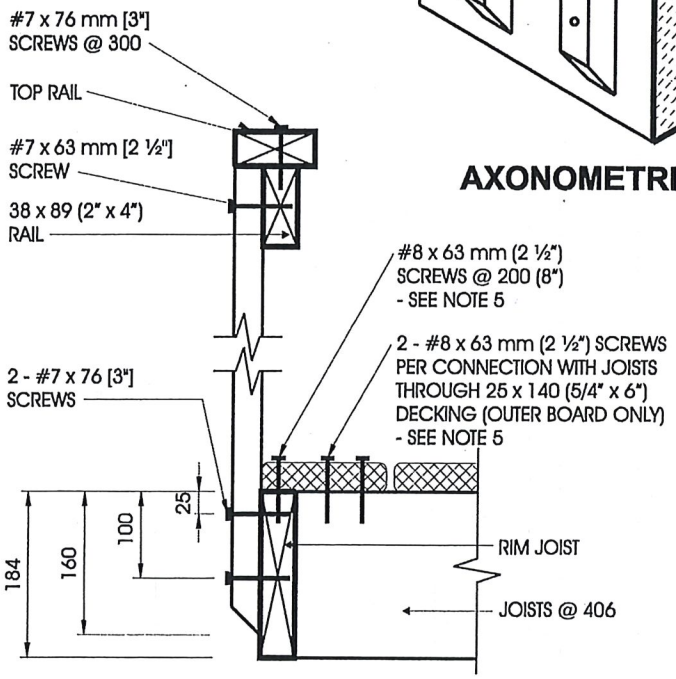
PLAN



AXONOMETRIC



FRONT ELEVATION



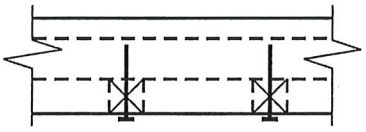
SIDE ELEVATION

Detail ED-1

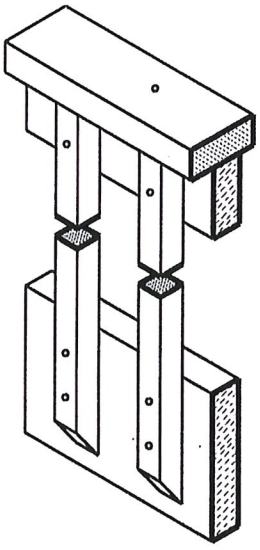
Exterior Connection: Cantilevered Picket Screwed to Rim Joist

Notes:

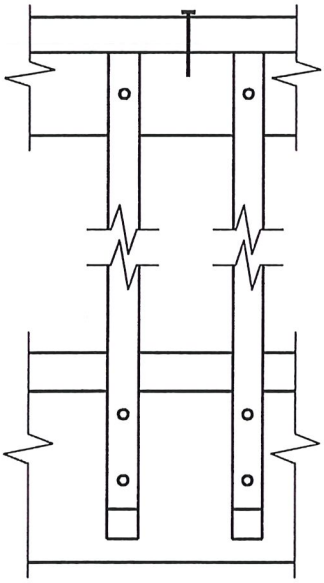
1. Provide a suitable post, return, or solid support at each end of the guard.
2. Wood for cantilevered pickets shall be Douglas Fir-Larch, Spruce-Pine-Fir, or Hem-Fir Species.
3. Fasten rim joist to each floor joist with 3 - 82 mm (3¼") nails.
4. Dimensions shown are in mm unless otherwise specified.
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").



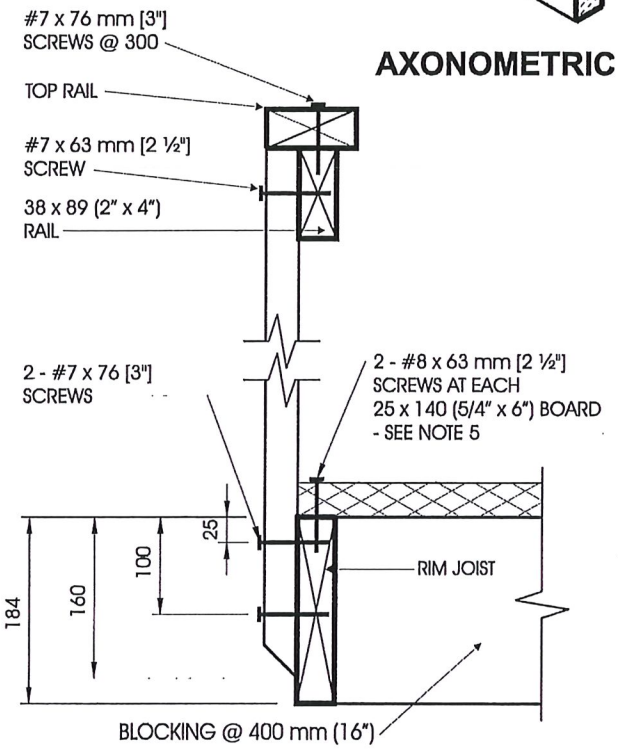
PLAN



AXONOMETRIC



FRONT ELEVATION



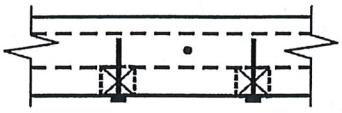
SIDE ELEVATION

Detail ED-2

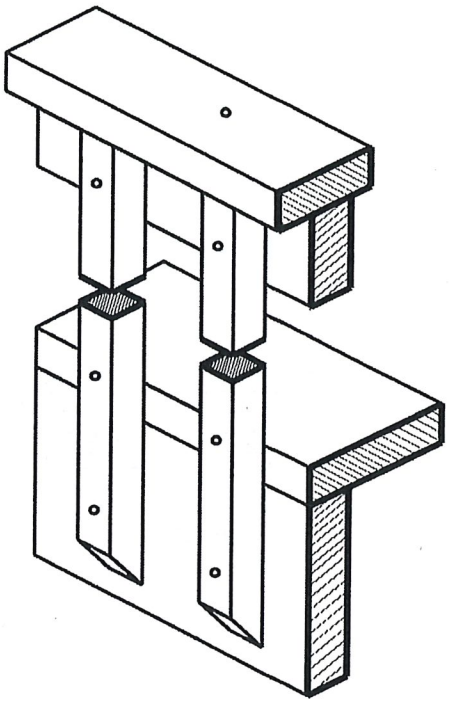
Exterior Connection: Cantilevered Picket Screwed to Rim Joist, Guard Parallel to Floor Joists

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 (3¼") 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



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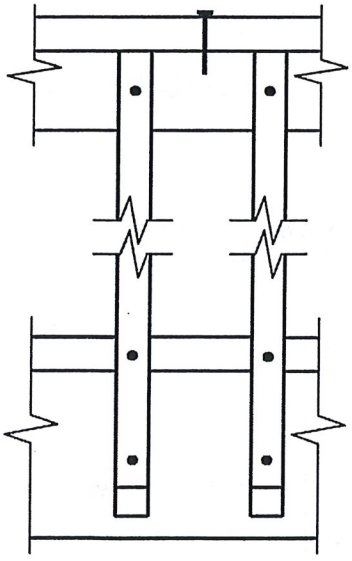
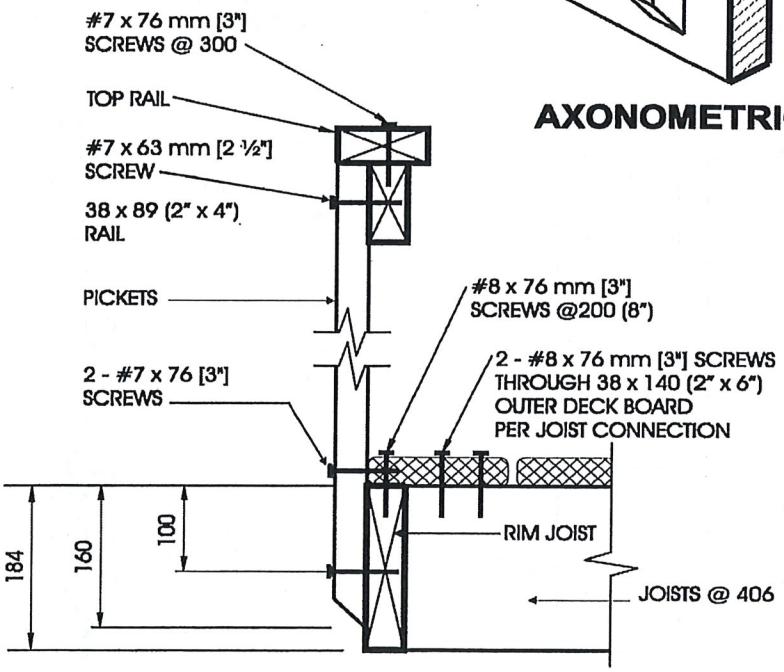


FRONT ELEVATION



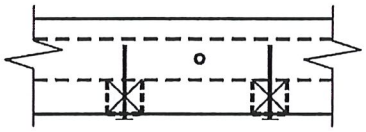
SIDE ELEVATION

Detail ED-3

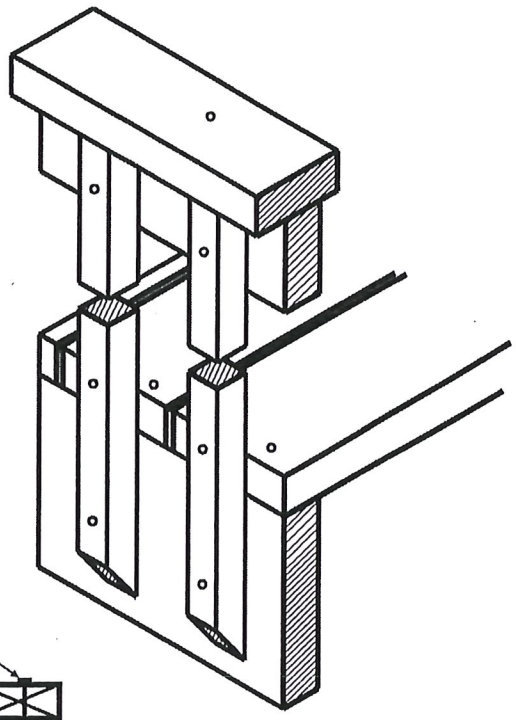
Exterior Connection: Cantilevered Picket Screwed to Rim Joist and Deck

Notes:

1. Provide a suitable post, return, or solid support at each end of the guard.
2. Wood for cantilevered pickets shall be Northern Species.
3. Fasten rim joist to each floor joist with 3- 82 mm (3¼") nails.
4. Dimensions shown are in mm unless otherwise specified.



PLAN



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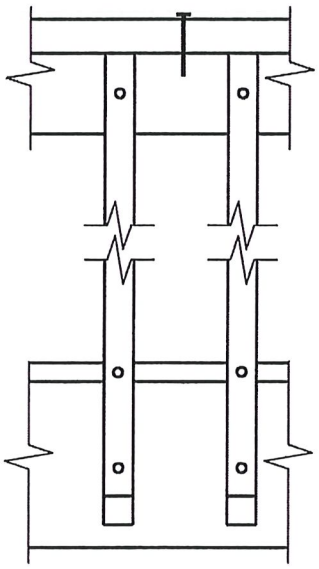
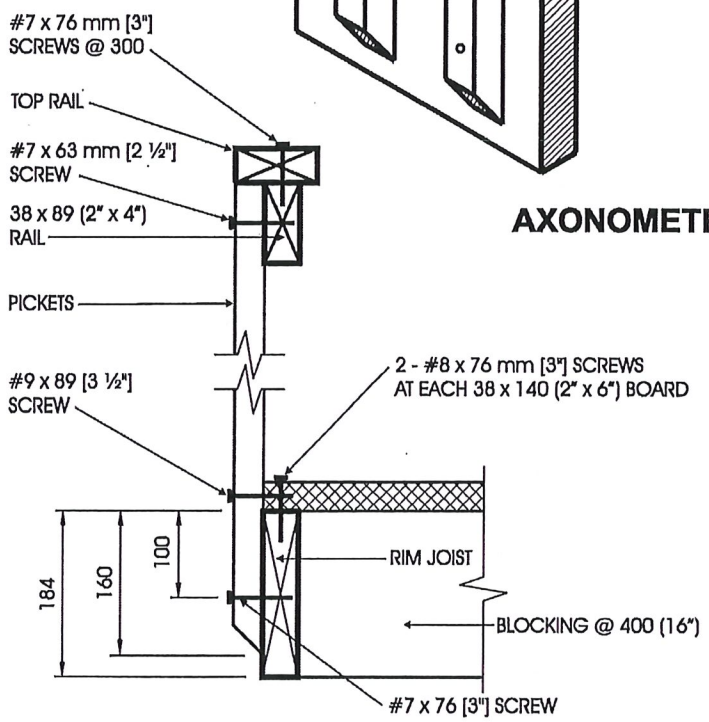


FRONT ELEVATION



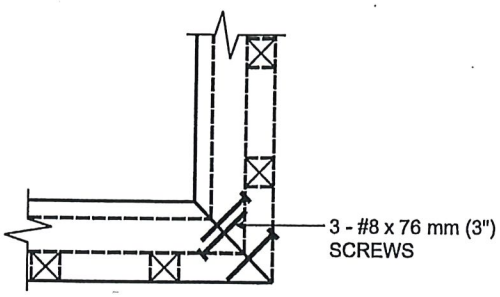
SIDE ELEVATION

Detail ED-4

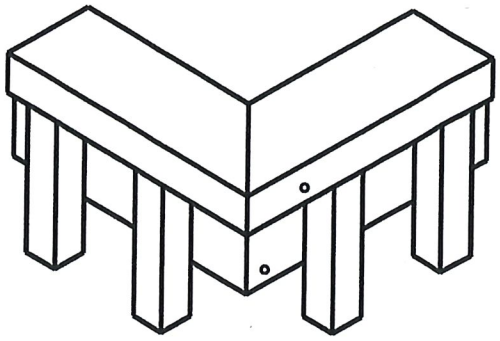
Exterior Connection: Cantilevered Picket Screwed to Rim Joist and Deck, Guard Parallel to Floor Joists

Notes:

1. Provide a suitable post, return, or solid support at each end of the guard.
2. Wood for cantilevered pickets shall be Northern Species.
3. Fasten rim joist to blocking with 3 - 82 mm (3¼") nails.
4. Dimensions shown are in mm unless otherwise specified.

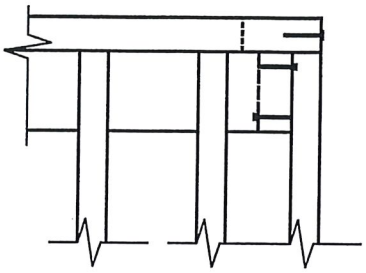


PLAN TOP RAIL

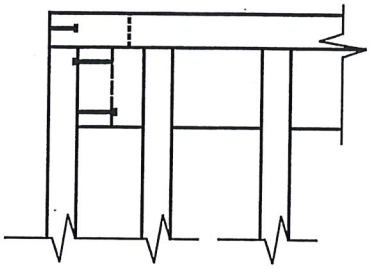


AXONOMETRIC

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.