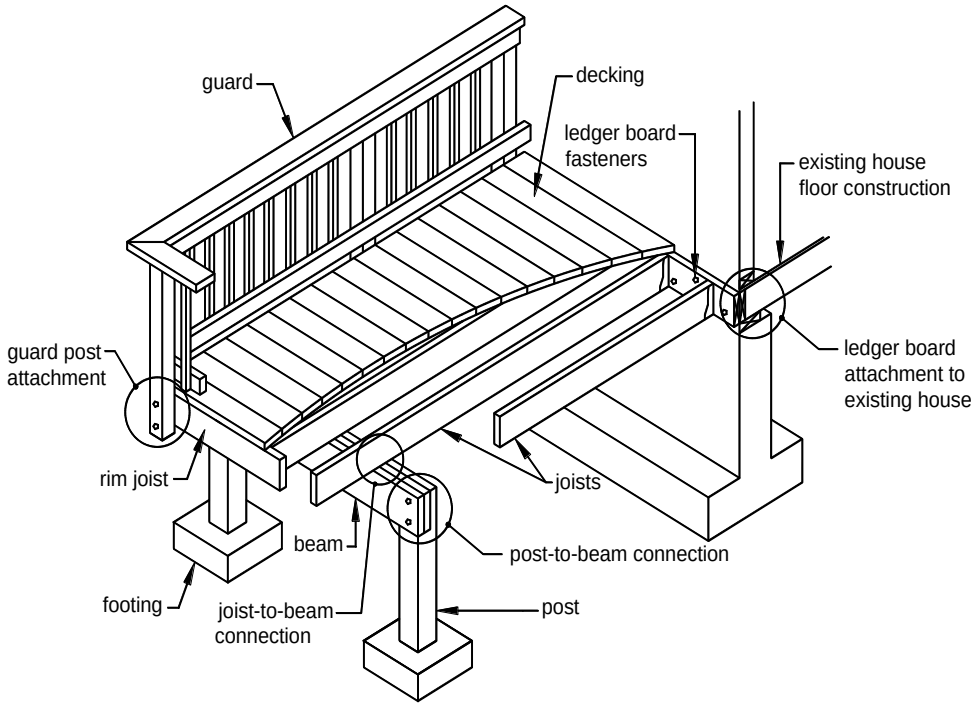
STANDARD RESIDENTIAL DECK DETAILS



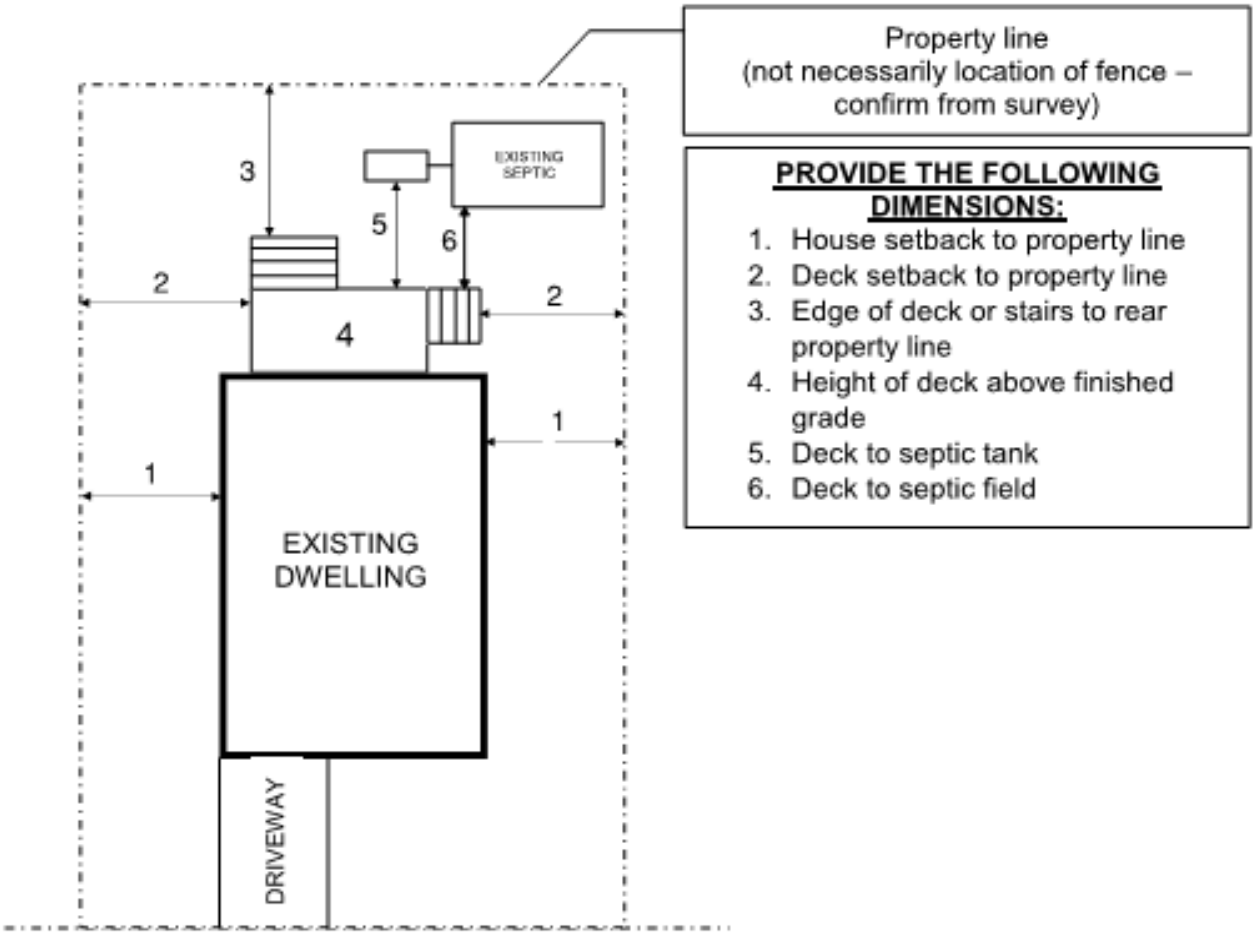
This document may be used for assistance with submitting construction drawings provided:

- **The proposed deck is for residential use only and is UNENCLOSED (No roof); and**
- **No hot tubs, pergolas, gazebos, trellis or other roof structures are installed.**

The information contained in this document is for reference only. It is intended to assist homeowners with their deck project while ensuring compliance with the requirements of the Ontario Building Code. The drawings and details specified are typical construction details and other methods may be permitted upon authorization from Building Services at the discretion of the Building Official. Any deviation from this package may require the plans to be sealed by a Professional Engineer or accompany a designer sheet signed by a qualified designer with Building Structural qualifications. All construction shall be inspected prior to placing concrete, upon completion of framing and prior to use.

All construction shall conform to the 2012 Ontario Building Code, as amended.

SAMPLE SITE PLAN



- Provide a copy of your survey or accurate site plan with the location of the deck and all distances from each property line as indicated above. Include any accessory buildings and septic systems if applicable.
- Contact Town of Blue Mountains Building Services Division via email to zoninginfo@thebluemountains.ca for confirmation of zoning and setback requirements before applying for a building permit. Note: zoning information is also available on the Town's website.
- Grey Sauble Conservation Authority, Ministry of Transportation, Niagara Escarpment Commission, Nottawasaga Valley Conservation Authority, or other agency approvals may be required depending on your property location. Please review Applicable Law for more information.

BUILDING PERMIT APPLICATION REQUIREMENTS

Description		Comments
Applicable Law	Zoning By-Law Compliance	Town of The Blue Mountains Zoning By-law 2018-65 or Niagara Escarpment Commission (NEC)
	Grey Sauble Conservation Authority (GSCA)	View GSCA website or contact GSCA: 519-376-3076
	Municipal Frontage Permit	Contact Building Services: 519-599-3131 ext 296 Email: build@thebluemountains.ca
	Ministry of Transportation *(MTO)*	View MTO website for permit application details and more information
	Permit Fee	$175.00 (subject to current fee as per Fee By-law in place at time of permit)
Forms	Building Permit Application	The homeowner or authorized agent shall provide a complete and signed application form.
	Schedule 1: Designer Information (House)	A homeowner may design their own deck provided sufficient information has been provided in accordance with the current Building Permits By-law. The homeowner or authorized agent shall provide a complete application including the Schedule 1 for the proposed deck.
	Owners Authorization Form	This form is required if the Owner is not the Applicant for permit.
Plans	Site Plan	Include setbacks from all property lines, septic bed and tank location, as applicable
	Deck Framing Plan	All submitted plans shall be to scale and include material description, sizes and dimensions and shall be submitted electronically with the required forms
	Exterior Elevations	
	Cross Section – including guards and connection to structures	

DECK AND SEPTIC SYSTEMS

- Decks may not be constructed on septic systems

- A 4'-11" (1.5m) setback is required from the deck pier to the septic tank in accordance with 8.2.1.6.A, Div. B, OBC

- A 16'-5" (5m) setback is required from the deck pier to the edge of the leaching bed in accordance with 8.2.1.6.B, Div. B, OBC, unless otherwise approved by the CBO

APPLICATION SUBMISSION TO PERMIT ISSUANCE

Applications are accepted electronically only, by using the following submission methods:

- By email to build@thebluemountains.ca for projects with small file size attachments (file sizes for all attachments totalling less than 30 MB in size);
- By use of the Town's secure *ShareFile* system; or
- Register for our Online Portal to submit applications (and inspection requests after issuance of permit)

An acknowledgement of an application submission is typically provided by email within 2 business days from submission time. Applicants will receive a reference number for the application and any cursory comments are provided. This reference number is important as it will become the permit number when issued and will be used for requesting inspections for the project.

Once a complete application has been received, the project will be placed in queue for plans examination. A plans examiner will contact the applicant with any review comments during the technical review of the project. When the technical review is complete and the permit fee has been paid, a building permit will be issued for the project. After the permit has been issued, inspections may be requested in a variety of ways. We require 2 business days' notice for scheduling inspections. Inspection requests may be emailed to inspections@thebluemountains.ca, or request an inspection by phone to 519-599-3131 Extension 296. Please be sure to include the reference number, the type of inspection, day requested and whether you prefer morning or afternoon timeframe.
Inspections may also be requested for an issued permit by registered Online Portal users.

JOISTS, BEAMS AND PIER SIZING

The Town of The Blue Mountains has created the following tables based on a combined live load and dead load of 2.4kPa. Loading placed on a deck greater than 2.4 kPa, such as a hot tub, shall be designed by a professional engineer.

JOIST SPAN

Size	Spacing	Span
2 x 8	12” o/c	12’-5”
	16” o/c	11’-9”
	24” o/c	10’-9”
2 x 10	12” o/c	14’-6”
	16” o/c	13’-8”
	24” o/c	12’-10”
2 x 12	12” o/c	16’-0”
	16” o/c	15’-5”
	24” o/c	14’-6”

Note: All lumber Spruce – Pine – Fir No 1&2 or better - Solid blocking or bridging required if span exceeds 6’-11”. Refer to OBC for compliance for lumber other than SPF.

BEAM SPANS

Supported Joist Length	Pier spacing				
	6’-0”	**8’-0”**	**10’-0”**	**12’-0”**	**14’-0”**
8’-0”	2 Ply 2x8	3 Ply 2x8	3 Ply 2x8	3 Ply 2x10	4 Ply 2x10
10’-0”	2 Ply 2x8	3 Ply 2x8	4 Ply 2x8	4 Ply 2x10	4 Ply 2x12
12’-0”	2 Ply 2x8	3 Ply 2x8	3 Ply 2x10	4 Ply 2x10	4 Ply 2x12
14’-0”	2 Ply 2x10	3 Ply 2x8	4 Ply 2x10	4 Ply 2x12	5 Ply 2x12
16’-0”	2 Ply 2x10	4 Ply 2x8	4 Ply 2x10	4 Ply 2x12	

PIER SIZES (Diameter in inches)

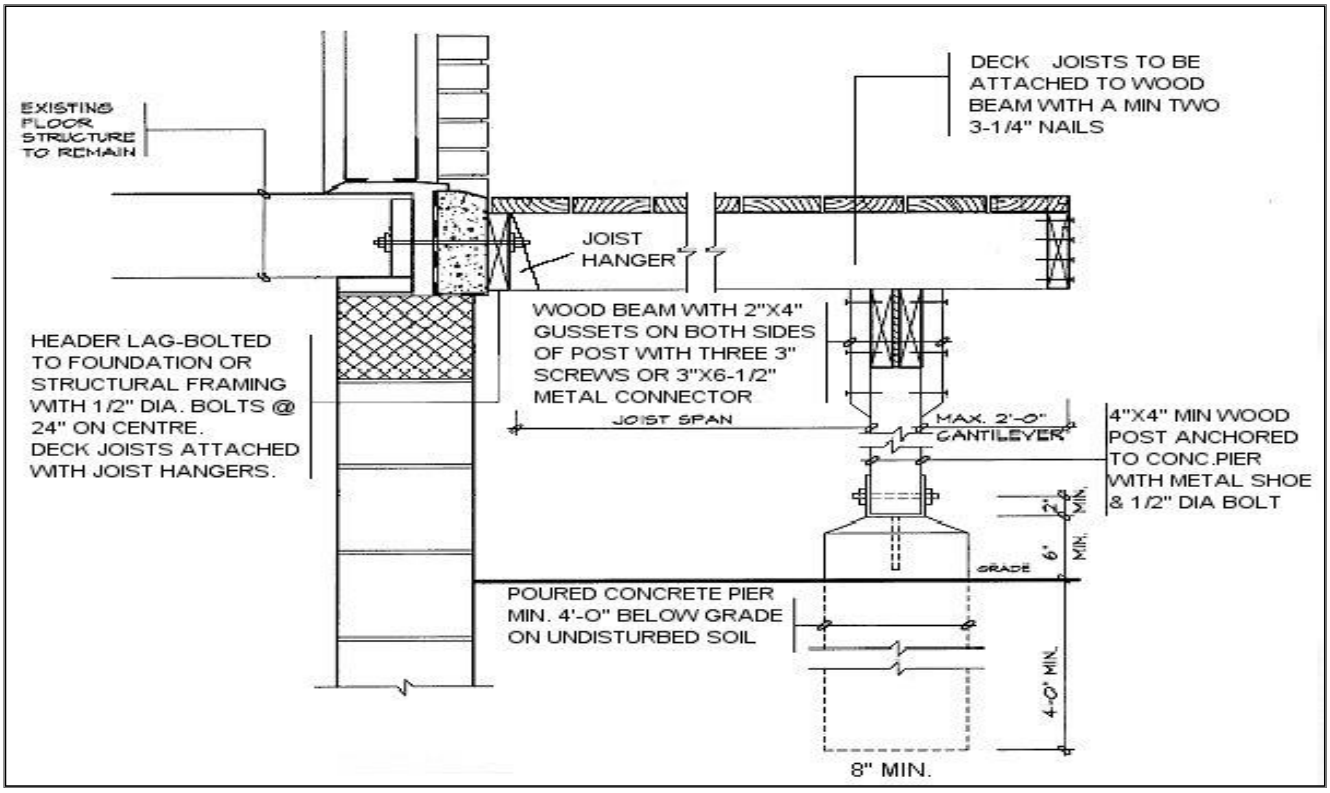
Supported Joist Length	Pier Spacing				
	6’-0”	**8’-0”**	**10’-0”**	**12’-0”**	**14’-0”**
6’-0”	16”	18”	20”	24”	24”
8’-0”	18”	20”	24”	24”	
10’-0”	20”	24”	24”		
12’-0”	24”	24”			
14’-0”	24”				

Note:
This table is based on min. 1500 psf (75 kPa) soil bearing capacity, 2012 OBC.

Alternate Design - For pier spacing not exceeding 10’-0”, 8” sono tubes may be placed on 24”x24”x8” concrete pads, minimum 4’-0” below grade.

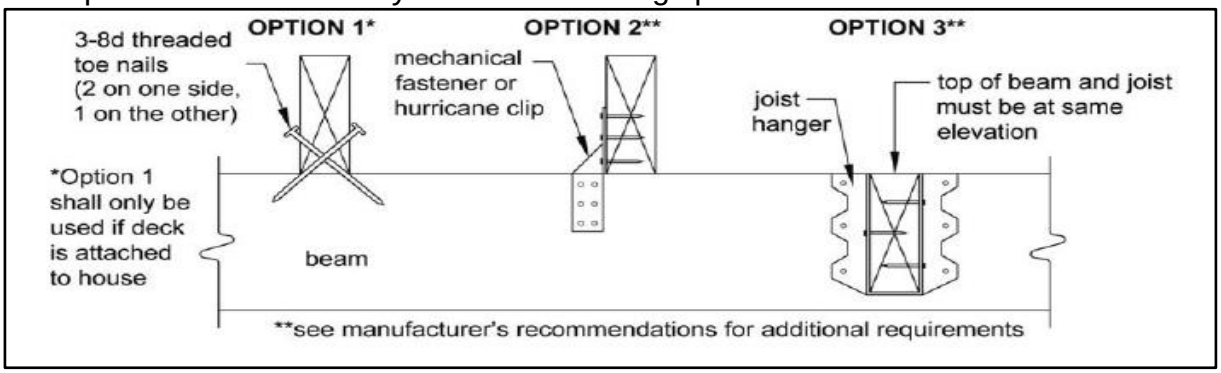
CONSTRUCTION DETAILS

BUILDING SECTION OF DECK CONSTRUCTION



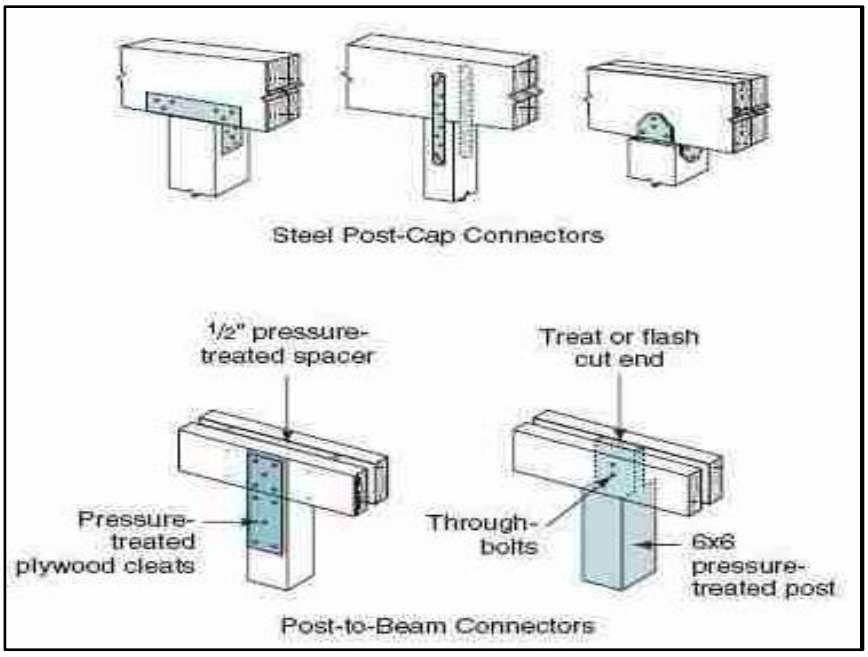
CONSTRUCTION NOTES:

- Decks shall be attached to the house foundation or structural framing (not brick veneer) with minimum ½" diameter bolts at maximum 24" (600mm) on centre
- Maximum cantilever for joists beyond supports is 24" (600mm)
- Where pier spacing doesn't exceed 10'-0" (3m), 8" (200mm) sono tubes may be placed on 24"x24" x8" footings
- Footings/piers shall bear on undisturbed soil minimum 48" (1.2m) below grade
- Deck posts shall be centrally located on footings/piers

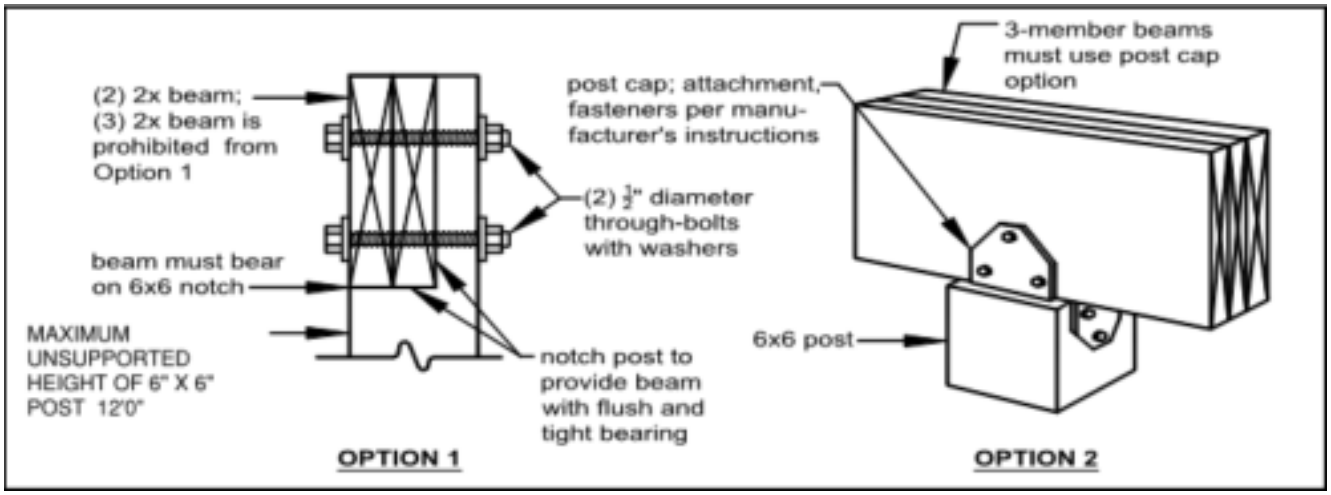


CONNECTIONS

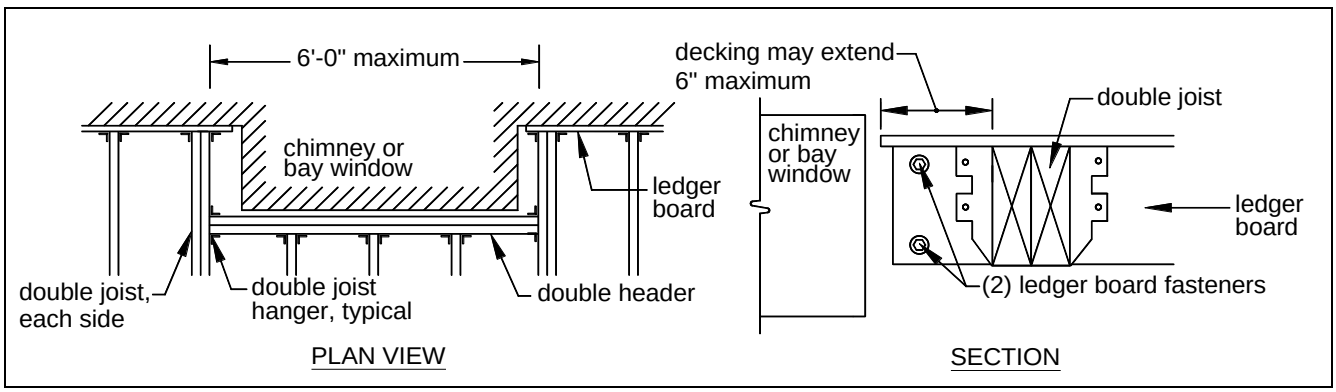
CONNECTION OF FLOOR JOISTS TO BEAM SUPPORT



POST TO BEAM OPTIONS



DETAIL FOR FRAMING AROUND A CHIMNEY OR BAY WINDOW



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 to the house. The table below outlines the minimum fastening requirements for the ledger board attachment.

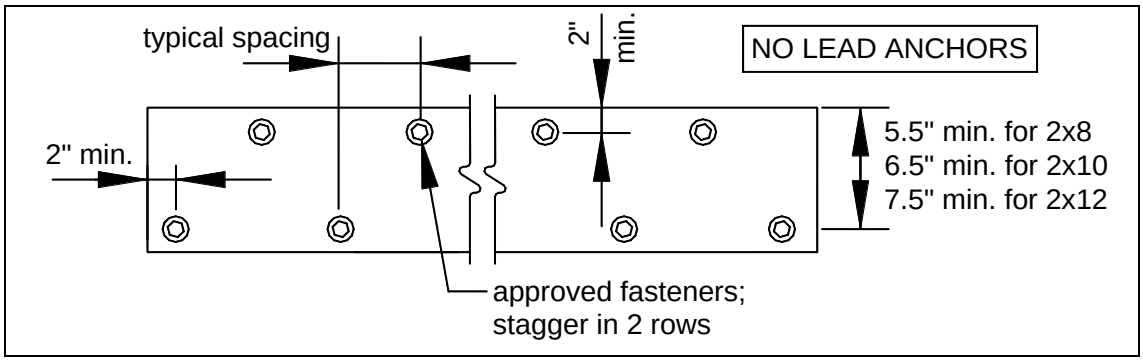
- The deck ledger shall NOT be nailed to the house - it may be lagged screwed or bolted to the structure of the house.
- The size and spacing of the lag screws is based on their capacity. Lag screw values are assumed to be 325 pounds for 1/2-inch lag screws and 190 pounds for 3/8-inch lag screws. The span of the floor joists determines how much load is being transferred to the ledger and thus to the lag screws.

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

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

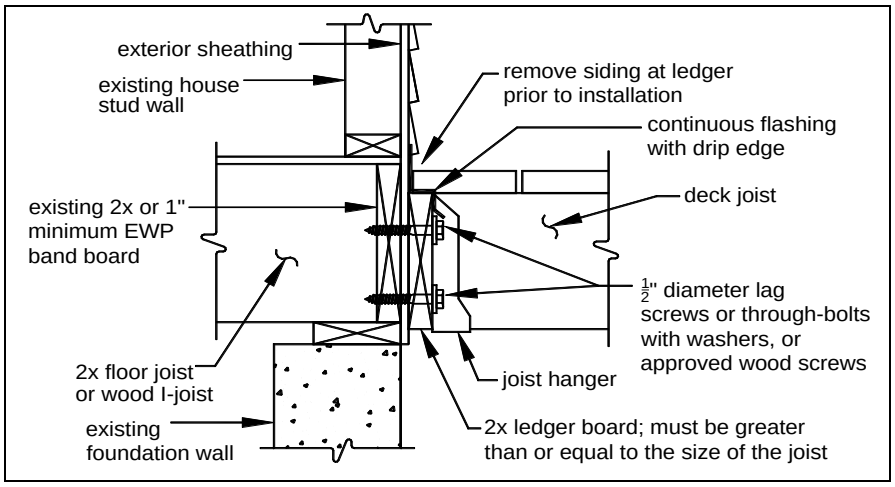
- Deck ledgers shall be minimum 2x8 pressure-preservative-treated No. 2 grade lumber or other approved materials as determined by good engineering practices.
- When solid-sawn pressure-preservative-treated deck ledgers are attached to engineered wood products (structural composite lumber rim board or 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.

LEDGER BOARD FASTENER SPACING

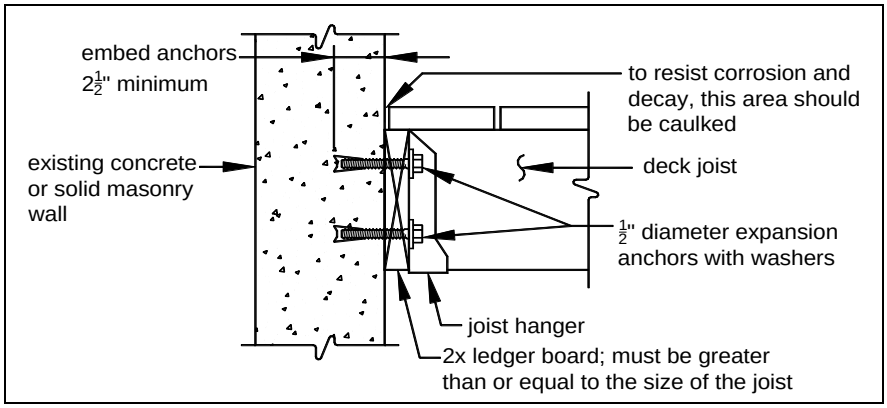


LEDGER BOARD CONNECTIONS

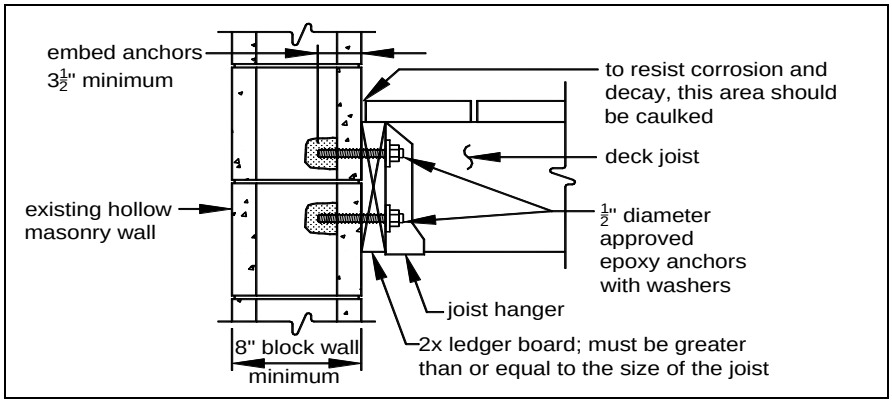
LEDGER BOARD CONNECTION TO RIM BOARD



LEDGER BOARD CONNECTION TO POURED FOUNDATION WALL



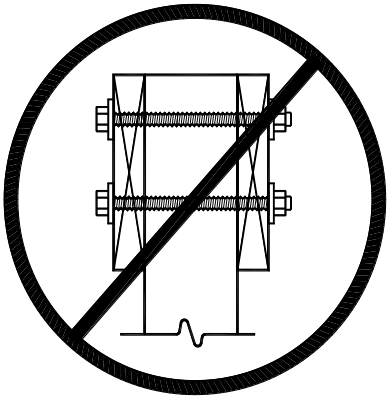
LEDGER BOARD CONNECTION TO BLOCK WALL



STRUCTURAL REQUIREMENTS
POST SIZING

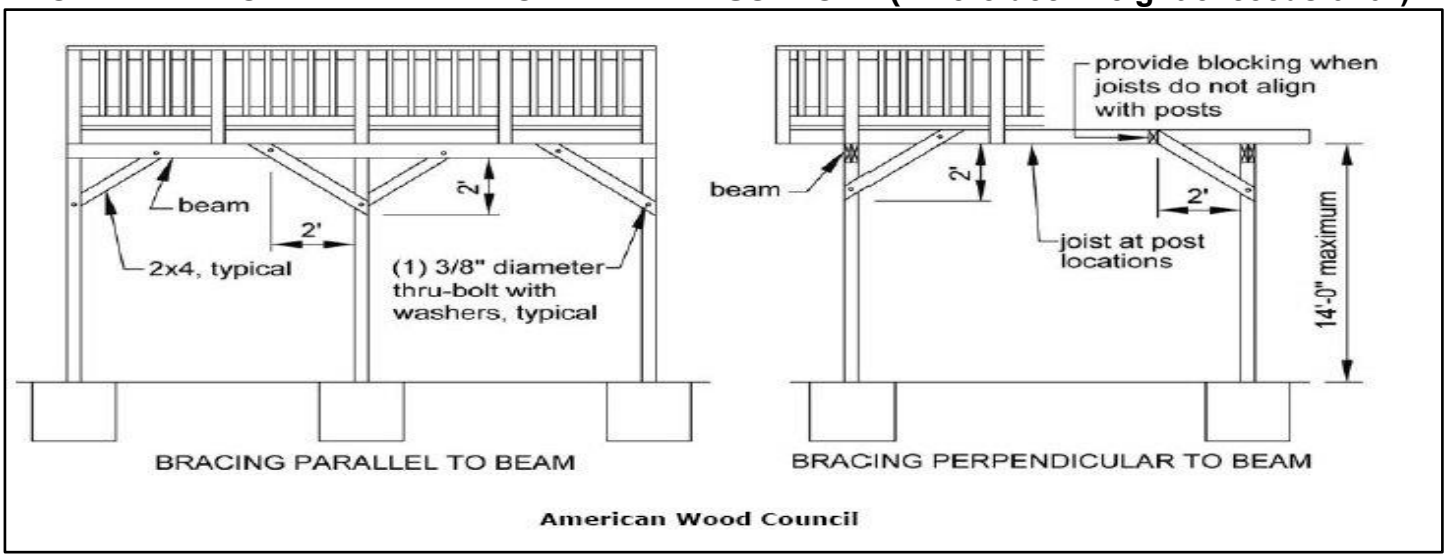
DECK SUPPORTS and POST SIZING

TRIBUTARY LOAD: SUPPORTED DECK AREA ft² (m²) (See Diagram Below)		
POST SIZE	**MAXIMUM HEIGHT**	**AREA ft² (m²)**
4"x4" (89mm x 89mm)	**3'-3" (1.0m)**	87 (8.09)
	5'-0" (1.5m)	48 (4.42)
	6'-7" (2.0m)	25.3 (2.35)
6"x6" (140mm x 140mm)	**12'-0" (2.0m)**	110 (10.2)
	8'-2" (2.5m)	74.8 (6.95)
	10'-0" (3.0m)	51 (4.74)
	11'-6" (3.5m)	35.4 (3.29)



PROHIBITED CONNECTION

DECK ELEVATION PLAN AND DECK LATERAL SUPPORT (Where deck height exceeds 6'-0")



MINIMUM SIZE OF LOAD BEARING ELEMENTS (OBC SB-7 2.1.1):

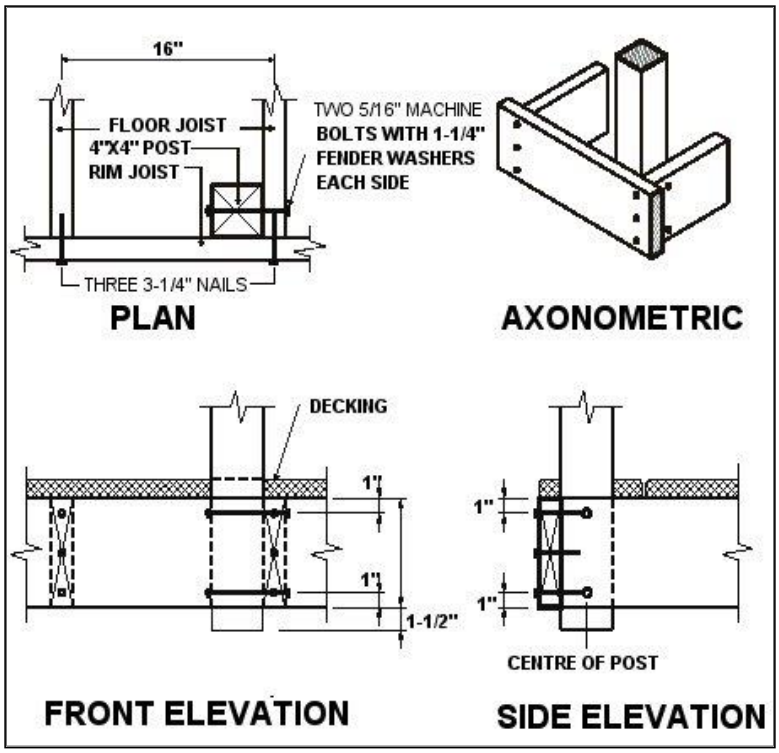
Guard Element	Post	Top Rail	Bottom Rail	Picket / Baluster
Minimum size inches (mm)	4" x 4" nominal (89mm x 89mm)	2" x 4" nominal (38mm x 89mm)	2" x 4" nominal (38mm x 89mm)	1 9/32" x 1 9/32" (32mm x 32mm)

MINIMUM SIZE OF FLOOR ELEMENTS (OBC SB-7 2.1.3):

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

GUARDS
REQUIRED GUARDS

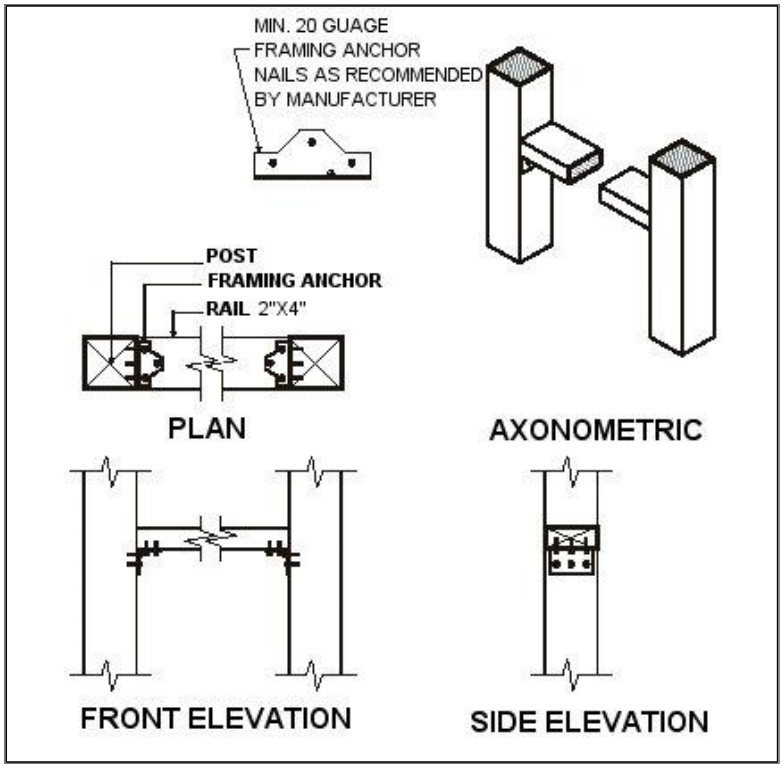
OPTION "A": POST AND RAIL SYSTEM

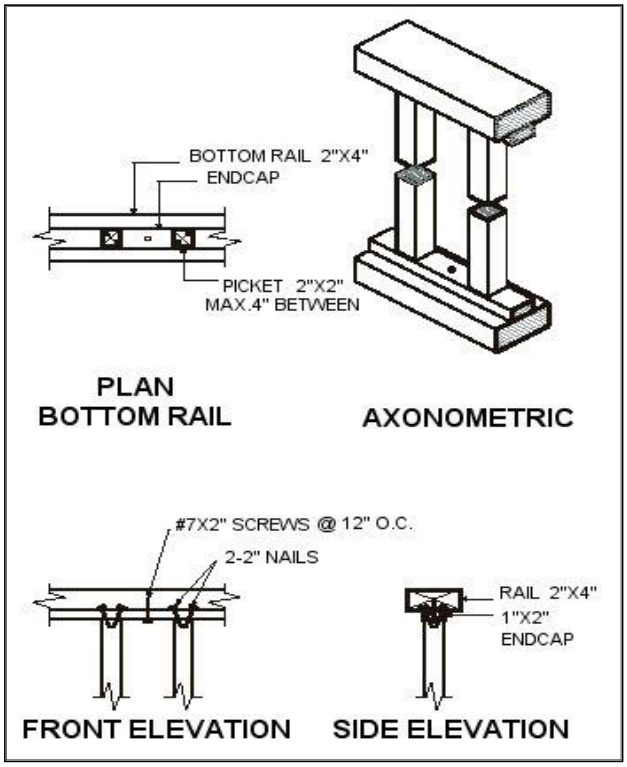


CONSTRUCTION NOTES

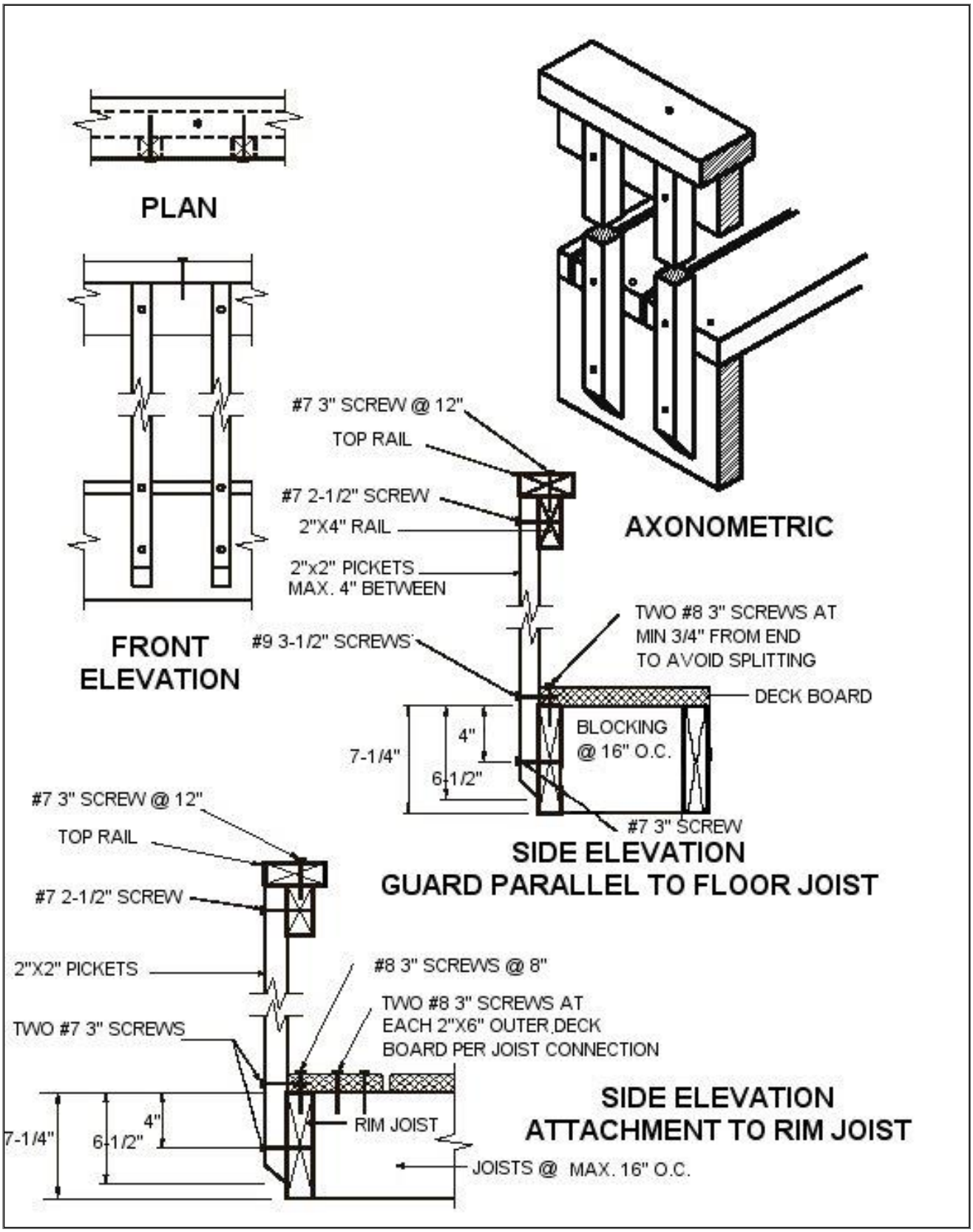
- Decking is omitted from the Post Detail plan view & axonometric view for clarity
- Joists spaced max. 16" (400mm) O.C.
- Max. post spacing 3'-11" (1.2m)
- All fasteners shall be corrosion resistant
- All lumber shall be decay resistant and all cut ends of preservative treated lumber shall be treated to prevent decay
- Min. height of guard where deck height is between 24" (600mm) & 5'-11" above grade: 35" (890mm)
- Min. height of guard where deck height exceeds 5'-11" (1.8m) above grade: 42" (1070mm)
- Maximum 4" opening between pickets and no member or attachment between 5-1/2" and 35" shall facilitate climbing

POST AND RAIL CONNECTION / PICKET DETAILS

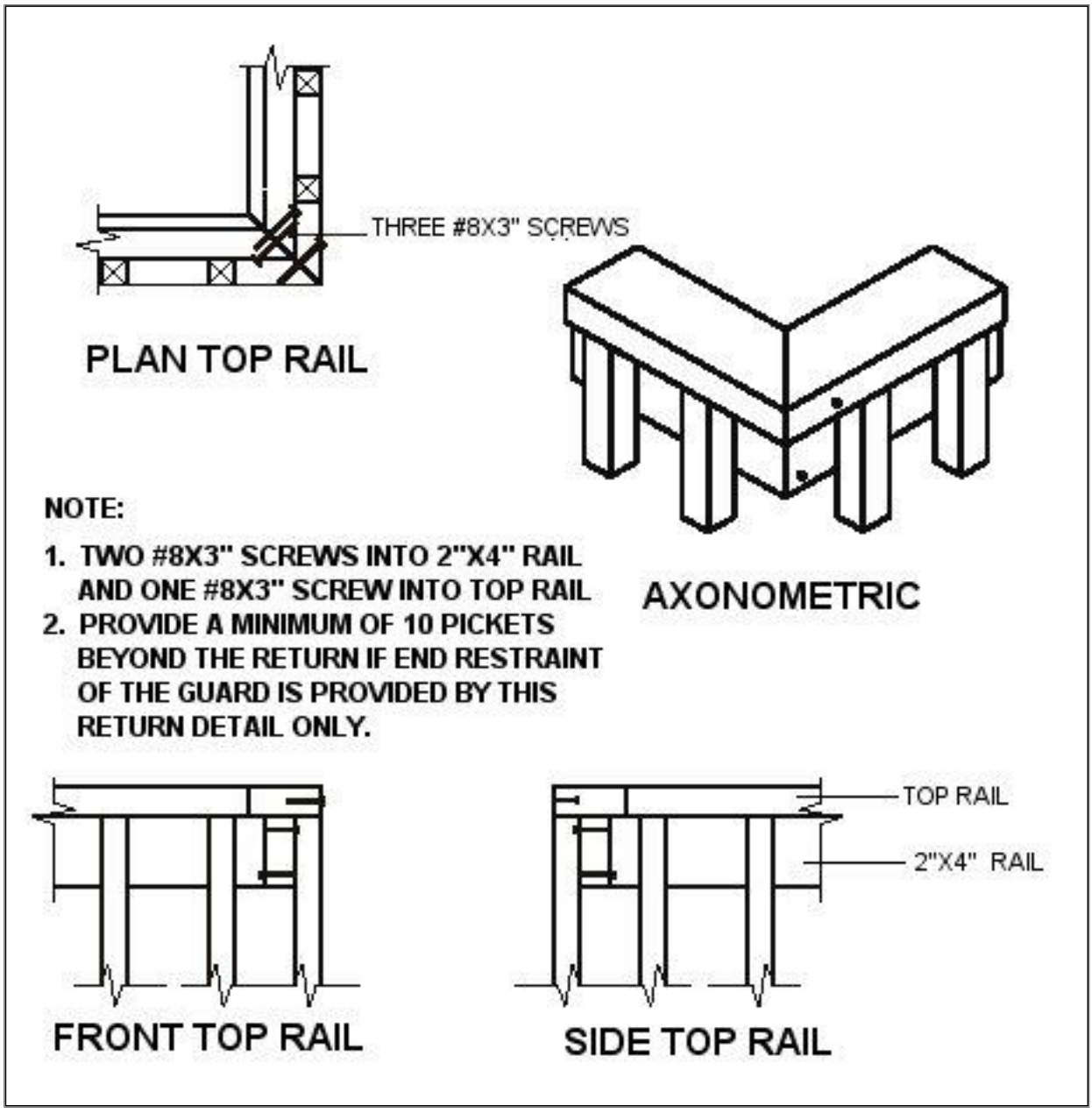




OPTION “B”: CANTILEVERED PICKET SYSTEM



GUARDS
(Cantilevered Picket Continued)

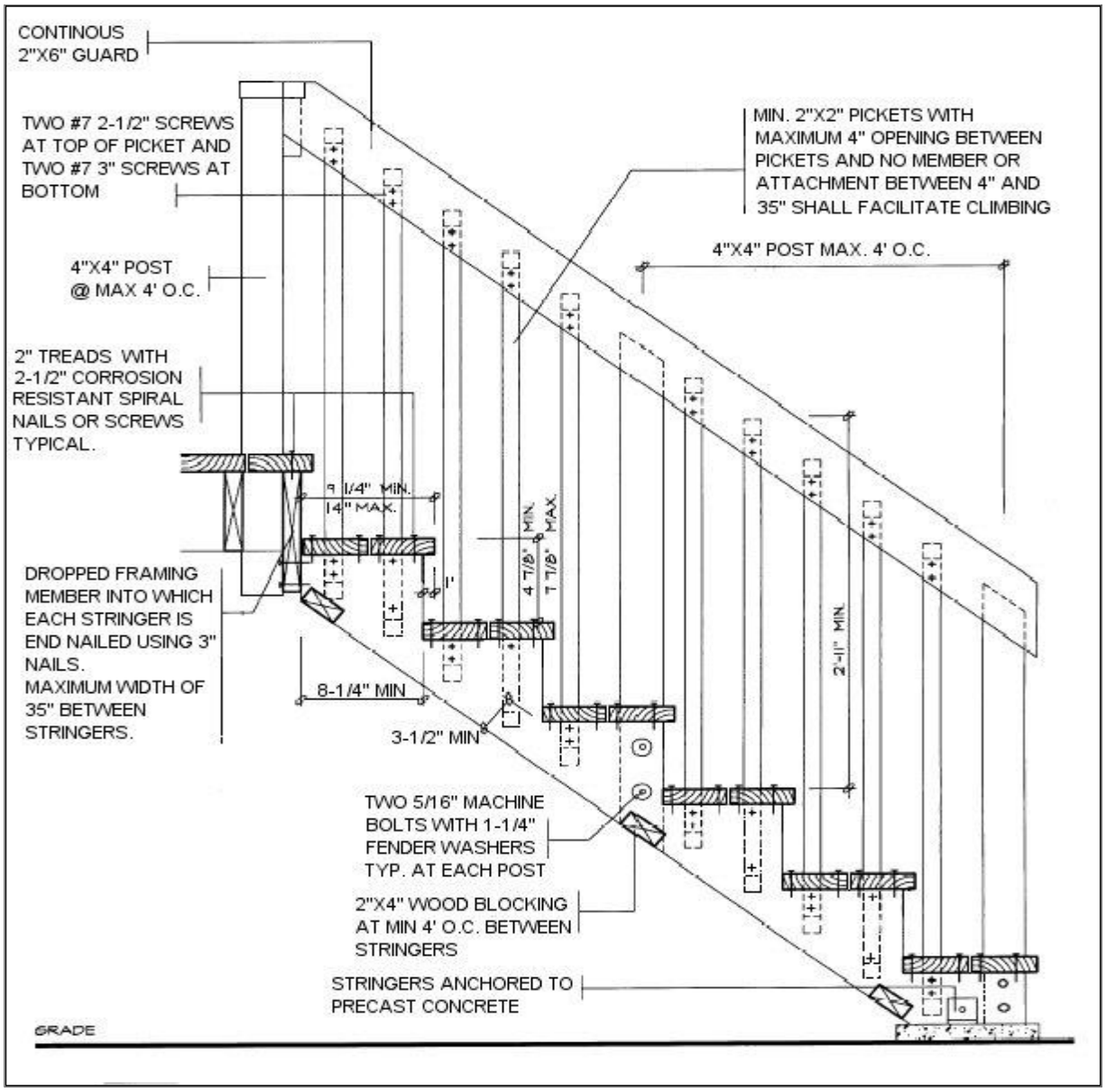


CONSTRUCTION NOTES:

- All fasteners shall be resistant to corrosion
- All lumber shall be decay resistant. All cut ends of preservative treated lumber shall be treated to prevent decay
- Composite decking is required to have BMEC or CCMC approvals
- Pre-engineered guard systems are required to have Ontario Engineering
- Any guard assembly that is site manufactured, such as wood/glass guards are required to be engineered

STAIR DETAILS

HANDRAIL and STAIR CONNECTIONS



CONSTRUCTION NOTES:

- Handrails are required to be installed on every stair with more than 3 risers
- Provide a guard on both sides of stair where the stair height exceeds 24”
- Height of handrails on stairs shall be between 34” (865mm), and 38” (965mm)
- Height of guard for a deck between 24” (600mm) and 5’-11” (1.8m) above grade is 35”
- Height of guard for a deck more than 5’-11” (1.8m) above grade is 42” (1070mm)
- Maximum 4” openings between pickets and no member or attachment between 5.5” (140mm) and 35” (890mm) shall facilitate climbing
- All steps to be equal rise and run between landing