THE TOWNSHIP OF OTONABEE SOUTH MONAGHAN

DECKS

2025 EDITION

The Township of Otonabee-South Monaghan

Deck Permit Information Guide

2025 Edition

This Guide is a REFERENCE Only!

This guide is NOT an instruction manual for deck building and it is NOT the Ontario Building Code. It is ONLY a reference guide for typical and/or important considerations when designing your deck.

PLEASE NOTE THAT THE BUILDING DEPARTMENT CANNOT ASSIST WITH THE DESIGN OR YOUR DECK. IF YOU ARE UNCERTAIN ABOUT ONTARIO BUILDING CODE REQUIREMENTS OR CONSTRUCTION TECHNIQUES, PLEASE CONSULT WITH A QUALIFIED BCIN DESIGNER AND/OR EXPERIENCED CONTRACTOR.

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Using This Guide

The following guide is provided to assist in clarifying the most critical health and safety requirements that will apply to an open, uncovered wood deck, for a residential building containing one or two dwelling units built to the standards of the Ontario Building Code, Part 9. **For other projects, consult the Ontario Building Code for specific requirements.**

This guide is intended to outline the **minimum** requirements for construction that are specified in the Ontario Building Code

This guide is provided for informational purposes only. It is the responsibility of the owner, applicant, designer, and contractor to review the Ontario Building Code to ensure that all construction meets or exceeds the current requirements.

SYMBOLS

When you see this symbol, it indicates a best practice tip. While not required by the building code, a best practice is a recommendation based upon standard construction techniques and experience, and often provides the best results.

Best Practice note reference number.

Page number where you will find the referenced Best Practice note.

When you see this symbol, it indicates a best practice tip. While not required by the building code, a best practice is a recommendation based upon standard

Getting Started

DEFINITIONS

DECK \ ˈdek \

: a flat floored roofless area adjoining a house

but may also be free-standing. A deck **may** or **may not** require a Building Permit to construct. This will depend on multiple factors. (See "When is a permit required?" on page-7) Your deck may also require protective guards (See "Handrails & Guards" on page - 42)

PORCH \ ˈpȯrch \

: a covered area adjoining an entrance to a building and usually having a separate roof

The structure may be enclosed or unenclosed. All porch construction requires a Building Permit, and will require protective guards if it has a walking surface greater than 600mm ($23^{5/8"}$) above grade

PATIO pa·tio | \ ˈpa-tē-ˌō also ˈpä- \

: a recreation area that adjoins a dwelling, is often paved, and is adapted especially to outdoor dining

Patios are on grade level and are usually constructed of concrete or stone. A patio generally does not require a Building Permit, unless it interferes with an existing structure. Because patios are installed directly on grade, in order to achieve a flat and level surface, it may be necessary to adjust and level out the grade in your proposed patio location.

Please remember that a patio or any adjustment to grade to accommodate the patio, must not negatively impact any existing or proposed required drainage swales OR septic systems.

Important Notes

A Deck is a floor system, the same as that within the dwelling unit, and must be designed accordingly. However, a deck is also directly subjected to wind, snow and rain loads, as well as being fully exposed to the elements. Often decks will fail slowly over time resulting in damage to not only the deck, but often the house. Occasionally decks can have catastrophic failures as seen in the picture below, which could not only result in loss of life or injury, but also in liability if the deck was constructed improperly or without a Building Permit.

Don't let this happen to you!

The design and construction of the Deck must conform to the requirements of the current amended version of the Ontario Building Code as well as all other applicable by-laws.

If the Deck is to be used to support a hot tub or similar structure, a professional review will be required (Engineer) due to the increased load.

This guide is for informational purposes only. It is the responsibility of the Applicant/Designer to review the building code to ensure all information is complete, accurate, and up to date.

General Permit Information

How Do I Get a Building Permit for My Project?

Cloudpermit

A Building Permit application must now be submitted to the Building Department ONLINE through the **Cloudpermit** online permitting portal accessible via the

Otonabee-South Monaghan Township website at:

www.osmtownship.ca

To obtain a Building Permit you are required to submit a completed application using Cloudpermit. Access to Cloudpermit is through the township website. Here you will also find **video and text tutorials** to assist you through the application process.

When is a Building Permit Required?

A building permit is required for **any** construction on your deck project **unless**:

The deck area is less then $10m^2$ ($108ft^2$) **and** not adjacent to **and/or** directly attached to any other structure **and** is 600mm ($23^{5/8}$″) or less above finished grade.

For example…

A deck that is less than $10m^2$ ($108ft^2$) in area and less than 600mm (23-5/8″) above adjacent grade, but **is attached** to another structure, **will** require a permit.
A stand-alone deck (not attached to another structure) that is less than $10m^2$ ($108ft^2$) in area but **is greater** than 600mm (23-5/8″) above adjacent grade, **will** require a permit.
A deck that is less than 600mm (23-5/8″) above adjacent grade and is not attached to another structure but **is greater** than $10m^2$ ($108ft^2$) in area, **will** require a permit.

Keep in mind that a deck that does not require a building permit **must** still comply with all zoning by-laws with regard to location as it pertains to lot lines, wells, and septic systems.

ALL DECKS AND PLATFORMS, NO MATTER THE SIZE, THAT ARE LOCATED ADJACENT TO AN EXTERIOR EXIT/ENTRY DOOR WILL REQUIRE A BUILDING PERMIT.

How Much Does a Building Permit Cost?

Building permit fees are determined by Council each year. Currently, a Deck Building Permit costs **$1.45** per square foot of deck area, with a minimum charge of **$270.00**.

How Long Does it Take to Get a Building Permit?

Provided that the Building Permit application **is complete,** the application will be reviewed and a permit issued or denied within 10 business days.

What is Required For a Complete Building Permit Application?

A complete permit application requires the Building Permit application to be filled out, and all supporting documents to be provided. **You will still require the same supporting documents such as building plans, site plan, structural document, etc.. Cloudpermit will indicate what documents are required for your project type. Partial applications will not be accepted.**

All permit fees are calculated and **payable when permit is issued and picked up**

Note: Plans will be accepted in either Metric or Imperial measurements

1) Site Plan

A site plan **must** have at least the following information to be accepted:

a)Lot size and the dimensions of the property and location/ dimensions of all existing buildings, wells, and septic systems.

b)Location/ dimensions of the proposed deck, including setbacks from the property lines.

c)Location of drainage swales

2) Foundation Plan

Foundation plans must have at least the following information to be accepted:

a) Foundation type and sizes.

i) Also include footing sizes as required.

ii) If pier style foundations are used, indicate spacing between piers.

b) Structural Framing Layout showing the following:

i) Joists - Sizes, spans, spacing, and materials

ii) Beams - Sizes/# of Plys **(3 plys min. accepted)**, spans, spacing, and materials

iii)Stair Foundation and Landing Details

iv)Detail of connections to house (Ledger Board, Bolts, Eng., etc.)

v) Locations of any basement windows that will be covered over and the use of room connected to window.

3) Floor Plan

Floor plans must have at least the following information to be accepted:

a) Decking material.

b) Guard style (if required).

c) Handrail construction detail.
d) Stair sizing:
   i) Tread depth
   ii) Riser height.
   iii) Stair width.

4) Cross Section

Cross section detail drawing must have at least the following information to be accepted:

a) Height of deck above grade clearly shown.
b) Foundation type and sizes. Also include footing sizes as required.
   i) If pier style foundations are used, indicate spacing between piers.
   ii) Show foundation depth.
   iii) Show existing foundation of house.
c) Structural framing:
   i) Joist sizes and beam to joist connection details.
   ii) Beam sizes and post connection details.
d) Guard style (if required).
e) Details of ledger board connection to house. **(What will it be connected to and how?)**

5) Completed Application Form

A Building Permit must now be submitted to the Building Department ONLINE through the **Cloudpermit** online permitting portal accessible via the Otonabee-South Monaghan Township website at: www.osmtownship.ca

The Approval Process

Depending on the complexity of your project, your application may be reviewed in the following stages:

1) Building and Planning Department staff will check for compliance with the regulations an provisions of the zoning By-law such as proposed use, minimum setback requirements, lot coverage and building height, etc.
2) Building Department staff will review the proposed construction drawings to ensure compliance with the Ontario Building Code.
3) If zoning compliance is not possible, then your application will require further review by Planning Staff to determine compliance options through Minor Variance, Zoning Amendments, or Official Plan Amendments. (Most zoning compliance concerns can be addressed through the Minor Variance process however this is dete mined on a case by case basis.

See "Minor Variance" on page 13

The Approval Process Cont.

If during the review an examiner identifies deficiencies on the drawings or requires additional information, the designer and/or applicant will be notified.
Please ensure that the necessary information is submitted promptly, as subject to the type of deficiency no further processing may occur until the information is received.

When the review of your application is completed and all requirements have been met, your building permit will be available. Applicant will be notified.

It is unlawful to start construction without the necessary permits. **If you start construction without the necessary permits, you may be ordered to stop work, ordered to remove work already done, or prosecuted.**

PERMIT FEES WILL BE DOUBLED!

Once you receive your permit, ensure that the permit and approved drawings are available on the construction site.

Contractors & Designers

There are many great Contractors and Designers out there...but sadly there are many that are not so great. We strongly suggest that you take time to fully research the Contractor and/or Designer you intend on using.
Ask for written quotes before starting and check their references. Ensure that the contractor carries valid insurance and is knowledgeable in the process of obtaining a Building Permit. Remember that the Building Code sets out the minimum standards of construction, so exercise care in your choice of contractor. As the property owner, you are ultimately responsible to ensure that a Building Permit has been granted before starting construction.
Designers **must** be **BCIN qualified** to produce drawings that will be accepted by the Building Department. Designers with this qualification understand the Ontario Building Code and can legally provide these services in the Province of Ontario. Designers providing these services are required to carry errors & omissions insurance for certain levels of qualifications.

When is an Engineer Required?

Decks serving one dwelling only must meet the load requirements of 2.4KPa (50lbs/sqft). If the proposed deck falls outside of the scope of Part 9 of the Ontario Building Code, then an engineer may be required to design some or all of the structure as part of a complete permit application. A BCIN designer can help you understand when this is necessary.

When is an Engineer Required? Cont.

Some examples that would require an engineering review:

- Decks supporting hot tubs
- A ledger board connection into a rubble foundation wall or brick veneered wall.
- Ledger board anchored to wall studs rather then the rim board
- Undersized or over spanned structural members such as posts, joists, and beams etc..
- Site-built or non-SB-7 guards such as glass guards.
- Ledger Boards anchored through continuous insulation on buildings ***without*** brick or stone.

Site Plan

Why is a Site Plan Required?

A site plan is required for the Building Department to verify the size and location of the proposed deck and ensure that as proposed, the deck conforms to all set-backs, lot coverage and any other applicable By-laws. A site plan typically can be supplied by the BCIN qualified Designer preparing your construction drawings but in some cases, a licensed Ontario Land Surveyor may be required. Contact the Building Department for more information.

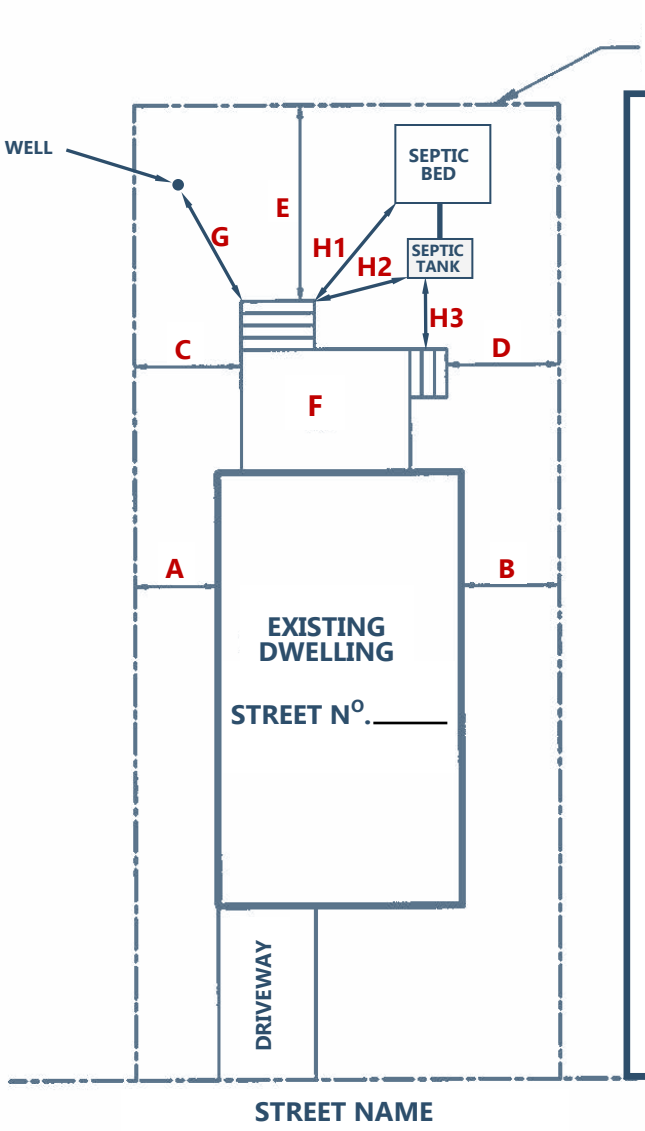
Site Plan Requirements

For a Site Plan to be accepted as part of a complete Permit Application it must show the following information:

- Lot Lines or Property Boundaries
- Lot Dimensions
- Lot Coverage for **all** structures on the property
- Size and Scale of any Existing structures on the property and their Distance from the Lot Lines
- Proposed Deck Location
- Distance from Lot Lines
- Distance from Existing Buildings (if applicable)
- **Distance from septic system and well**
- **Over head hydro lines**
- Overall Dimensions
- North Arrow
- Scale

Below is a Sample of a Site Plan showing all the necessary information. If you have any additional questions about site plans, please contact the Building Department at any time.

Sample Site Plan



Provide the following dimensions

- House setbacks from property lines

A _____

B. _____

- Edge of deck or stairs to side property lines

C _____

D _____

- Edge of deck or stairs to rear property line

E _____

- Height of deck ***above finished grade***

F _____

- Distance from deck to well

G _____

- Distance from deck to septic tank & bed

H1 _____

H2 _____

H3 _____

- Use an existing survey to show setbacks or provide a sketch drawn to scale.
- The setbacks from the edge of the deck or the edge of stairs (where applicable) are set out by the Township of Otonabee South-Monaghan By-law 2010-65.
- Otonabee Region Conservation Authority (ORCA) approval may be required depending on your location.
- You must also contact the Health Unit regarding your septic location.*
- Consider contacting someone in the building/planning departments for your zoning and setback requirements before proceeding with a design and building permit application.

*A permit cannot be issued without Health Unit and/or ORCA approvals

Set-Backs & Lot Restrictions

Every property in the Township of Otonabee-South Monaghan has a specific or special zoning category assigned to it. This zoning category will determine the set-back and Lot restrictions for the property. Listed here are only the most common zones where construction takes place most often within the municipality. This information is for permanent detached dwellings or seasonal dwellings only. Site specific requirements may apply. Always check with the Building and Planning Department. For the requirements for the other exception zones and other permitted uses within the municipality, please contact the Building/Planning Department.

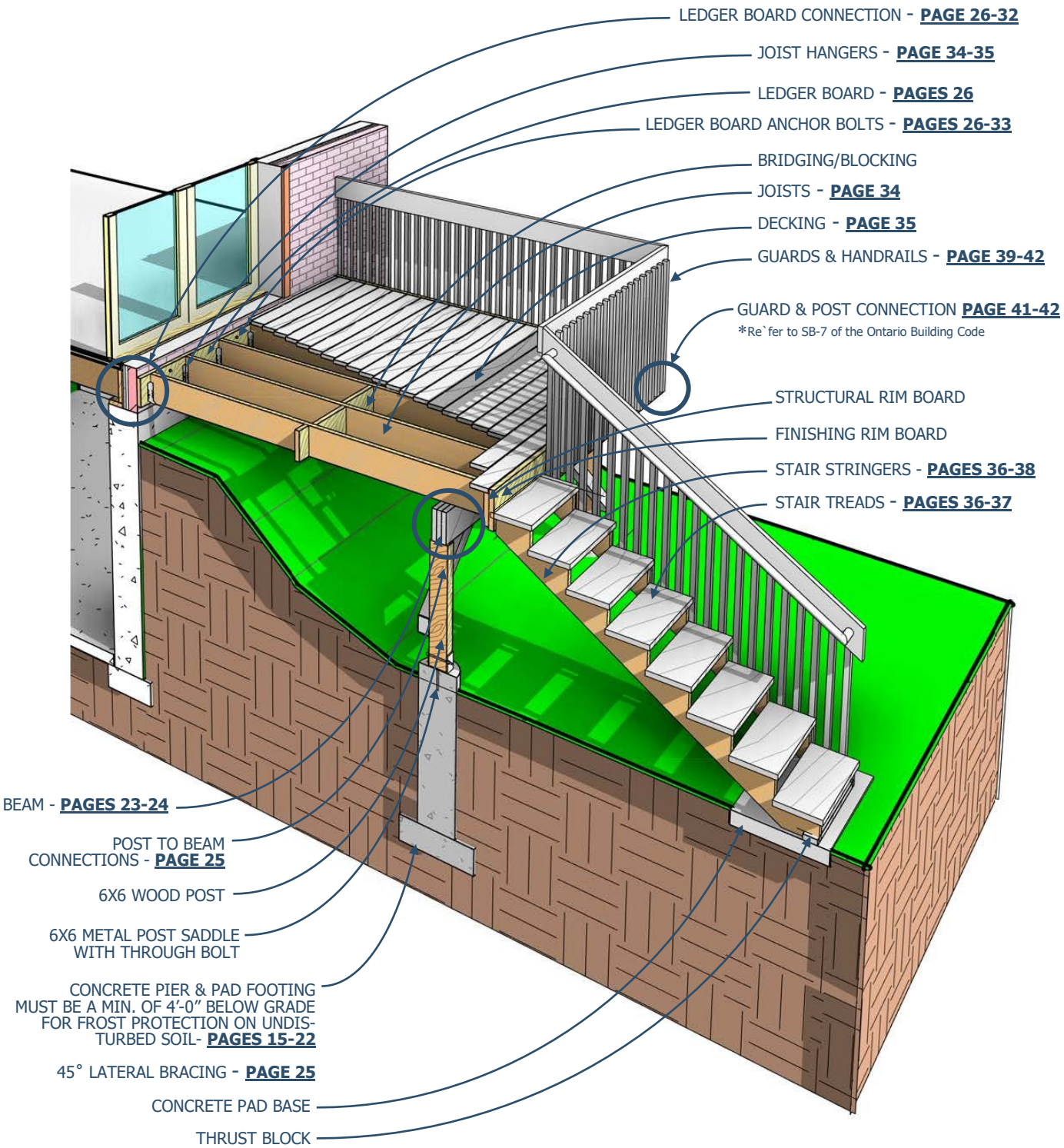
ZONING / YARD	Front Yard Setback	Rear Yard Setback	Interior Side Yard Setback	Exterior Side Yard Setback	Max. Lot Coverage ALL	Max. Lot Coverage ACCESSORY
Agricultural (A)	18.0 m (59.05 ft)	12.0 m (39.37 ft)	15.0 m (49.21 ft)	15.0 m (49.21 ft)	15 %	5%
Rural (RU)	18.0 m (59.05 ft)	12.0 m (39.37 ft)	15.0 m (49.21 ft)	18.0 m (59.05 ft)	15 %	5%
Rural Residential (RR)	9.0 m (29.52 ft)	9.0 m (29.52 ft)	3.0 m (9.84 ft)	9.0 m (29.52 ft)	30 %	5%
Limited Service Residential (LSR)	Back lot: 12.0 m (39.37 ft) Water yard: 30 m (98.42 ft)	12.0 m (39.37 ft) Water yard: 30 m (98.42 ft)	3.0 m (9.84 ft)	12.0 m (39.37 ft)	30 %	5%
Hamlet Residential (HR)	7.5 m (24.60 ft)	7.5 m (24.60 ft)	3.0 m (9.84 ft)	7.5 m (24.60 ft)	40 %	5%
Shoreline Residential (SR)	Backlot: 12.0 m (39.37 ft)	9.0 m (29.52 ft)	6.0 m (19.69 ft)	12.0 m (39.37 ft)	30 %	5%
Height Requirements (Main structures) RU, A, LSR, RR, SR, HR	11.0m (36.09 ft) Height is measured between the finished grade at the front of the building, and: Flat roof- highest point of roof surface Mansard roof – deck roof line Gable, hip, or gambrel roof – average height between the eaves and ridge Chimneys, towers, and steeples are disregarded.					
Other Required Setbacks	30 m setback from Rail line 30 m setback from all water courses MDS setbacks from livestock facilities					

Minor Variance

In some cases, the restrictions on a property can prohibit the construction of a deck or require that it be built to a size or location that is unsuitable for its intended use and/or safety of use. In these cases, there is an opportunity to apply for a minor variance to the restricting by-law. The first thing to do is to understand your restrictions and determine if a variance is necessary. Please contact the Building or Planning Department if you need more clarification.

Construction Details

Components of a Deck



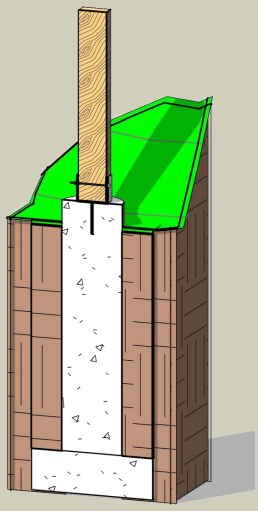
Foundations & Footings

Foundations and Footings provide a strong and stable base for your deck and ensures it is well anchored to the ground below line of frost penetration.

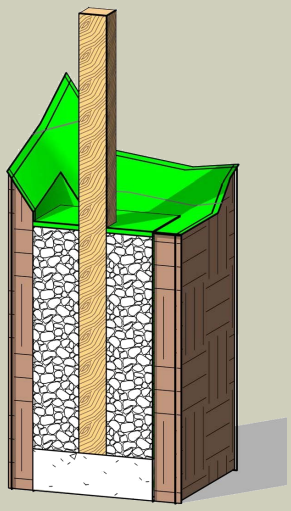
Foundation Types

Depending on the soil, a different foundation type may be preferred or required. Below are foundation types that are suitable in most conditions. There are multiple types of foundations that are acceptable for supporting a deck. The most common is a pier type foundation. Columns are the vertical members that transfer and carry the load of the deck from the beam system to the foundation system. Columns can be constructed of steel, solid concrete, concrete masonry units, or wood. A concrete column can be either solid concrete, **or** concrete masonry units (CMUs).

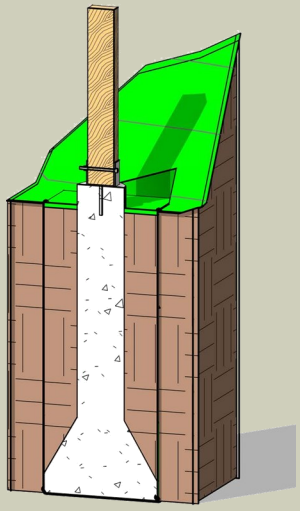
- Solid concrete, must be at least 254mm (10") in diameter or 200mm**x**200mm (8"x8").
- Unit masonry columns must be at least 290mm x 290mm (12"x12") ***or*** 240mm x 380mm (10"x16") .
- Wood columns must be the greater of: 140mm x140mm (5.5"x5.5"), aka 6"x6" nominal **or** the width of the supported member (beam).
- **A pier shall not exceed 3 times its least dimension at its base above grade.**



Pier with Pad Footing



Post with Pad Footing



Pier & Pre-Formed Footing

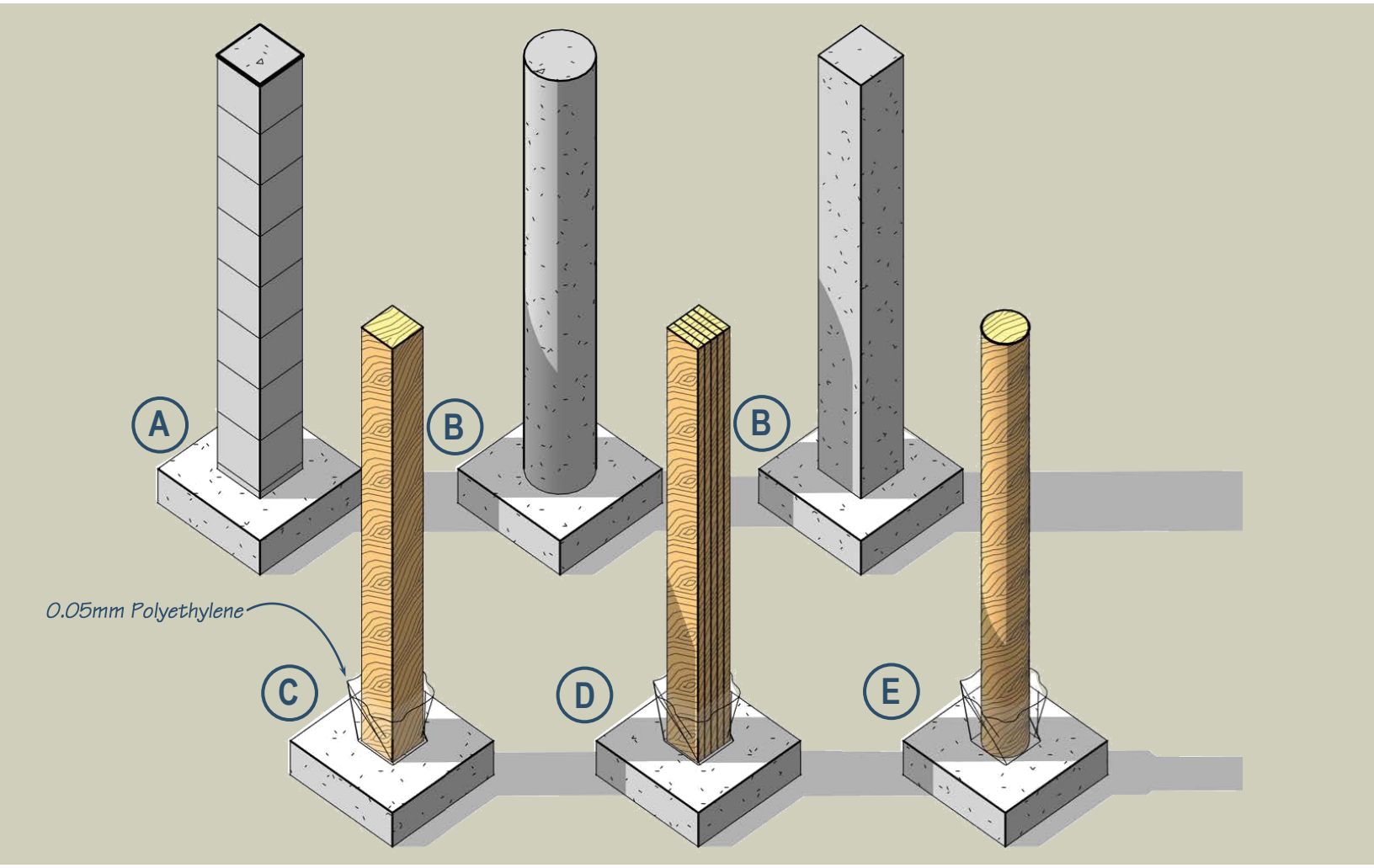
Important

Deck Blocks shall not be used unless installed according to manufacturers instructions or approved by CBO. A floating deck on deck blocks shall not be attached to another structure. Block quantities and location layout must be according to manufactures instructions. All posts to be a min. of 6x6.

Pier & Column Details

A. Unit masonry columns shall be built of loadbearing masonry units (9.17.5.1.) Unit masonry columns shall be at least 290x290mm(12x12) or 240x380mm (10x16) in size (9.17.5.2.)

B. Concrete shall conform to Article 9.17.6.1. and Section 9.3. of the O.B.C.. Concrete Columns shall be not less than 200x200mm (7-7/8″x7-7/8″) for rectangular columns 254mm (10″) diameter for circular columns (9.17.6.2.)



Where termites are known to exist, exterior wood columns must be pressure treated with a chemical toxic to termites and supported on a non-cellulosic base that extends to 150mm (6″) above grade and is located at least 50mm (2″) from the exterior wall of an adjacent building. **Separate wood columns from concrete at their base with 0.05mm polyethylene as shown.**

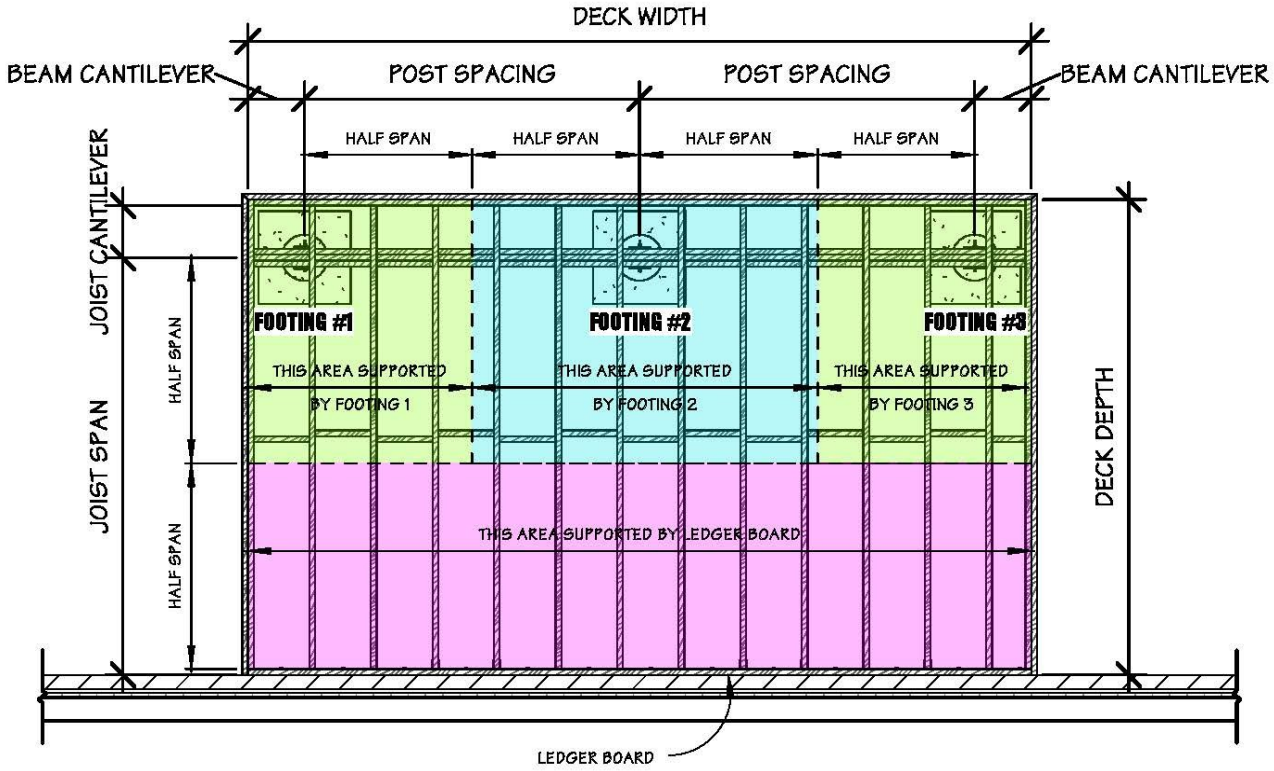
C. Min. 140x140mm (5-1/2″x5-1/2″) solid wood column - (9.17.4.1.)

D. Min. requirements for built-up wood columns: full length 38mm (1-1/2″) width members bolted together with 9.52mm (3/8″) bolts @ 450mm (17-3/4″) o.c. or nailed with 76mm (3″) nails @300mm (11-3/4″) o.c.

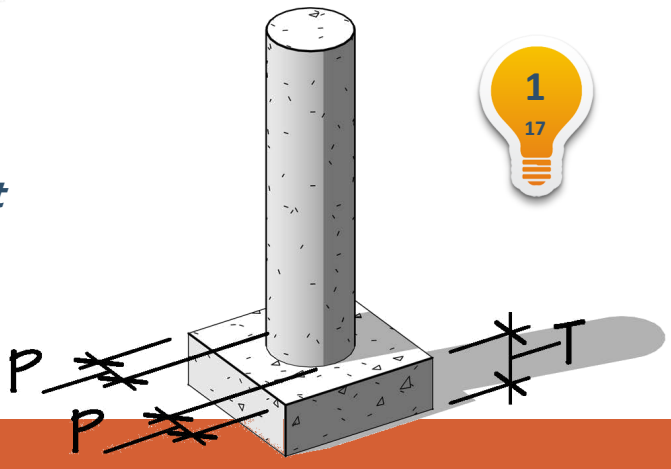
E. Min. 184mm (7-1/4″) diameter solid round wood column - (9.17.4.1.)

FOOTING SIZING

Footings are sized based on the load that will be imposed upon them. This is determined based on the area of the structure overtop of the support, also known as the tributary area. The tributary area is calculated as the area half way between adjacent supports. If the members are cantilevered beyond the supports, the area of the cantilever is also included, as this is bearing directly on those supports.



T = *Thickness* of Footing
P = *Projection* of Footing beyond the face of concrete pier



- **T** is greater then or equal to **P** but is ***not less*** than 100mm (4")
- Footings must bear on Undisturbed Soil, Rock, or Compacted Granular Fill without pyritic material.

1

Oversize the footings by 25%. This will help to accommodate any changes/error to the framing and provide a sturdier structure.

Ground Frost Penetration

Foundations for decks must comply with 9.15. "Footings and Foundations" of the OBC. The depth of excavation must meet 9.12. "Excavation" requirements.

Undisturbed Soil

Regardless of the foundation style, the footing of the foundation **must always bear on undisturbed soil**. If the footing is to be located within 1.2m (4') of an existing building, then the footing for the deck must extend to the depth of the footing for the building it is adjacent to. See diagrams on pages 20 & 21.

Footings must always bear on undisturbed soil, as disturbed soil will compact after construction, causing the structure to list or tilt. Disturbed soil is any soil that has, at any time, been backfilled.

Depth

Footing depth is determined based on geographical area. For the Township of Otonabee South-Monaghan, minimum footing depth is 1.2m (4').

The reason that the footing depth is required is to prevent frost heave. During the winter, moisture in the ground will freeze and expand, causing heave. This is a phenomenon known as 'Ice Lensing'. If the footing has not been placed deep enough, the heave will cause the deck footing to fail by pushing it up during the winter and allowing it to settle during the spring.

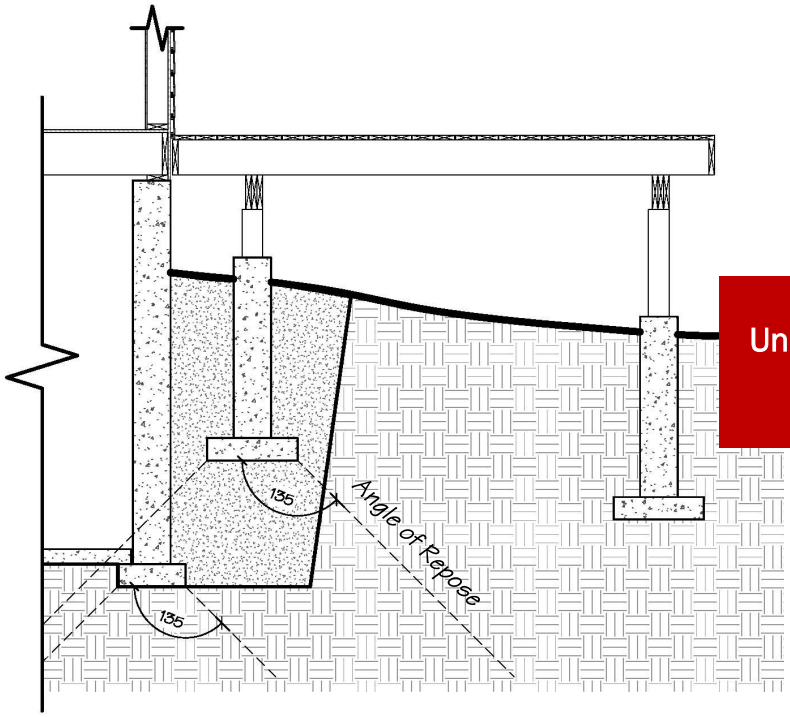
Frost protection for footings is not required if the deck meets *all* of the following four conditions:
1) The deck is under 600mm (23-5/8") in height
2) The deck is not attached to any structure
3) The deck is not supporting a roof (which includes a pergola/trellis), and
4) The area of the deck is not more than 55m² (592 ft²)

A deck that meets all of the above conditions is permitted to be constructed with a surface foundation system (poured concrete pads). In order to construct a deck foundation like this, the surface must still be prepared by removing all the topsoil and organic matter, but there is no requirement for the minimum footing depth. The footing must rest on undisturbed soil. Soil is only considered to be undisturbed if it is native soil and **not backfill.** Footing needs to be placed at the same level as the footing for the adjacent structure. O-pipe and stone cover surrounding the existing adjacent structure footing, must remain intact after new deck footings installed.
If you intend to build a deck with a "full depth" foundation system, you are permitted to attach the deck to the structure of your house. This will eliminate the need for an additional row of supports near the building. The footings must extend to a minimum of 1.2m (4') below the surface.

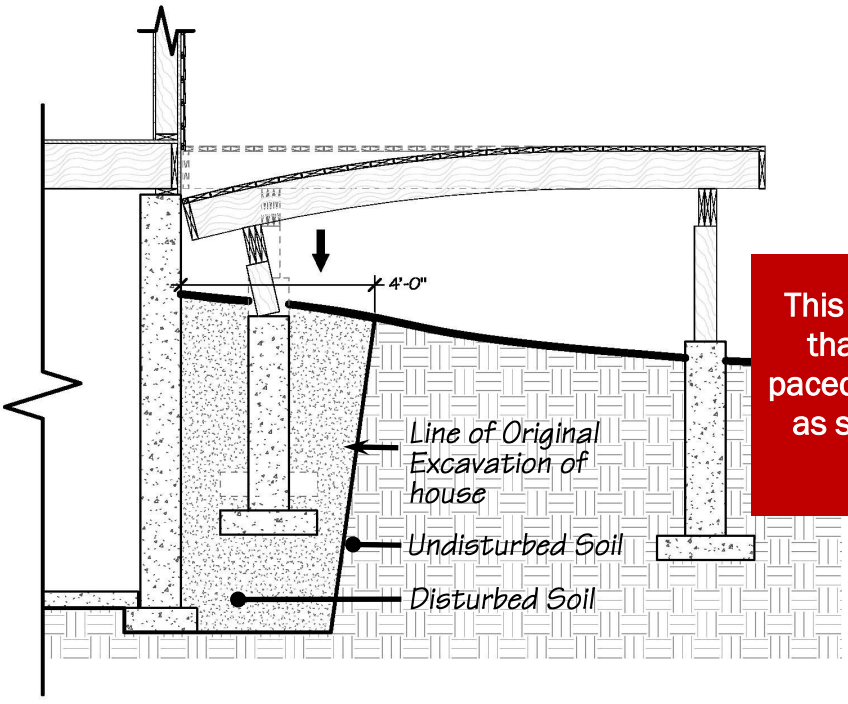
ANGLE OF REPOSE

The Angle of repose is the maximum slope, measured in degrees from the horizontal, at which loose solid material will remain in place without sliding.

Piers and footings placed within 4'-0" of an existing foundation wall will fall inside the excavation fill area of the foundation. Fill in this area will settle over time affecting the structural integrity of the pier and footing for the deck.



Unacceptable placement of footings - Engineering Required

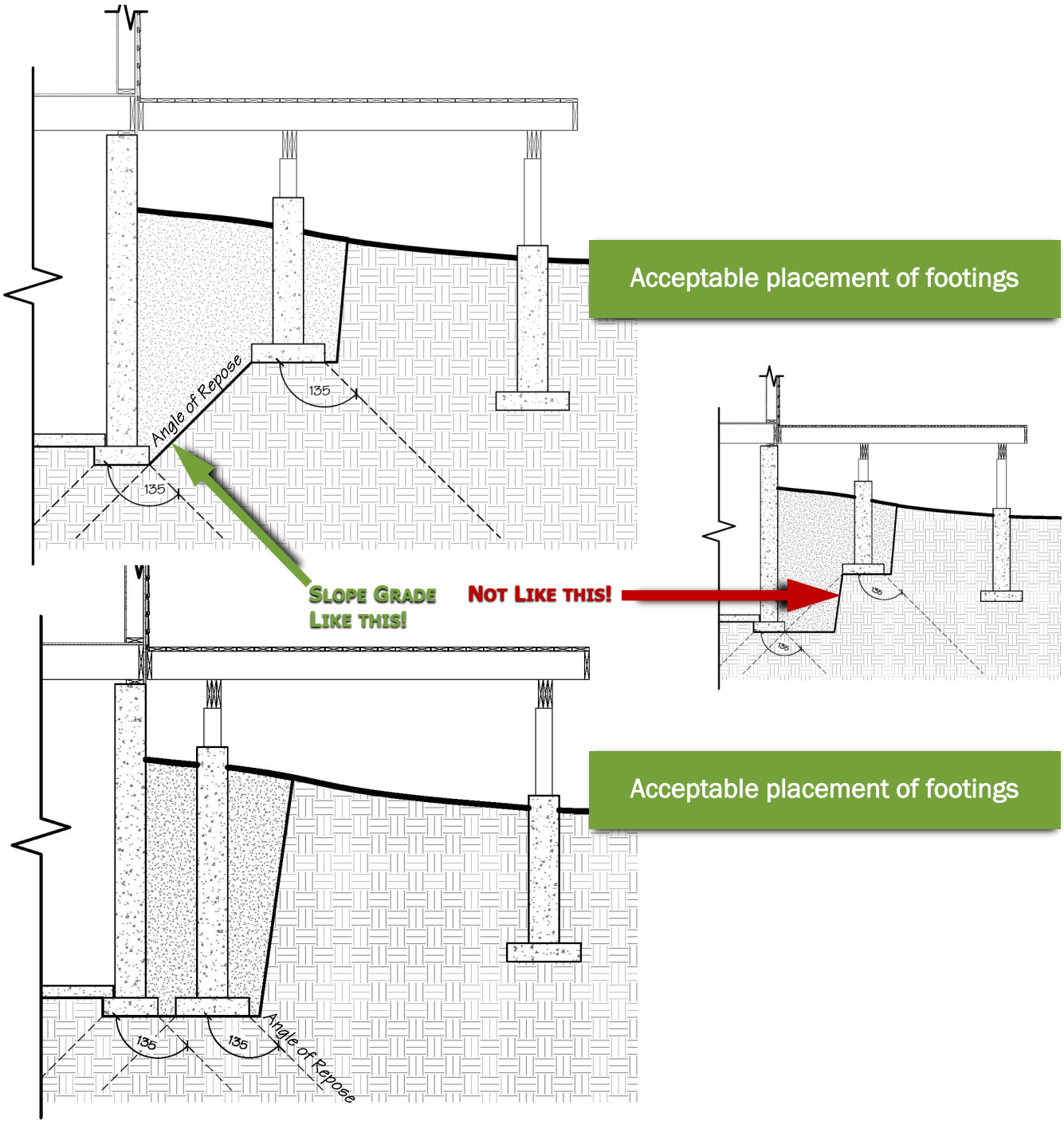


This illustrates the potential failure that could occur if the footing is paced with-in the original excavation as shown above. (exaggerated for clarity)

Angle of Repose Cont.

Piers and footings placed in this area must extend down the depth of the existing footings to prevent failure due to settling. Alternatively, the pier and footing can be positioned further from the existing foundation so that the angle of repose will not adversely affect the existing structure.

Building inside the area of disturbed soil and the angle of repose will require design by a professional engineer.



Backfill

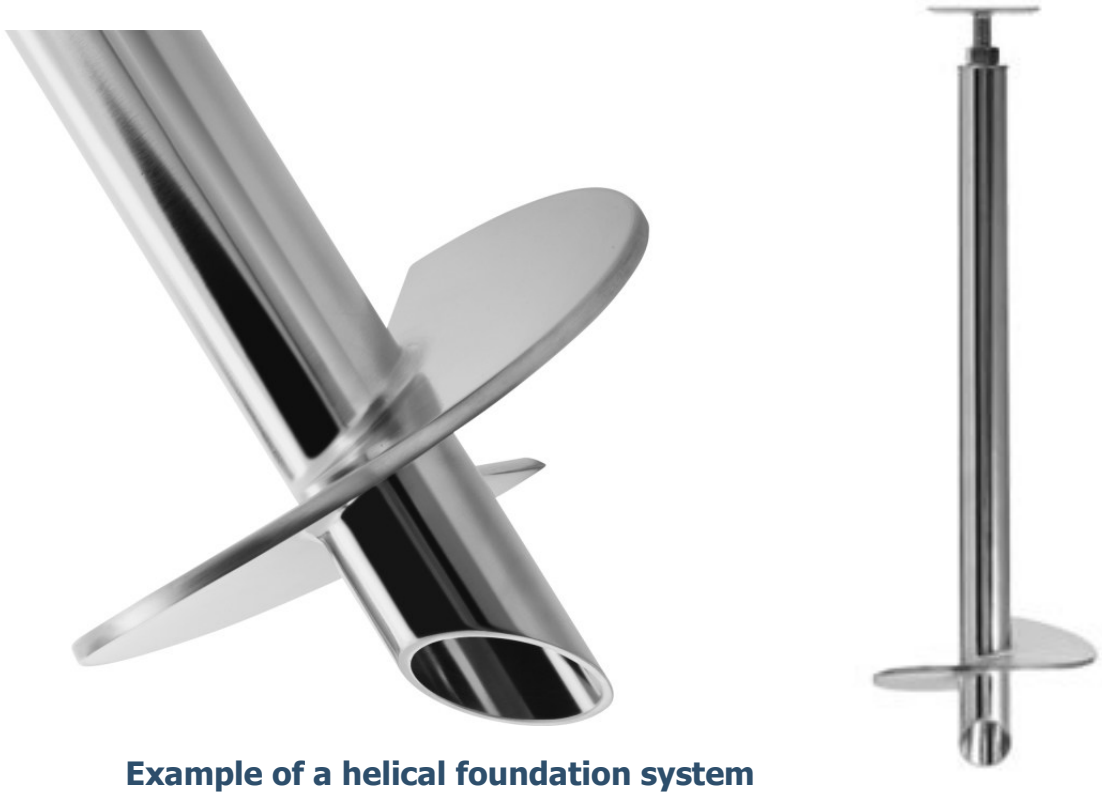
After a foundation system has been installed, it should be backfilled in such a way that will prevent damaging the foundation. The fill should be free of organic matter, pyritic material (rock containing iron) or any objects larger than 250mm (10”).

Ideally the fill should be comprised of gravel, which is a mix of 1” stone and small aggregates.

Alternative Foundation Systems

Pre-engineered foundations systems are becoming increasingly popular for a variety of reasons. Some products utilize a preformed plastic base to assist with forming concrete. Other products, such as helical steel piles, eliminate the need for concrete all together.

When using a Pre-engineered foundation system, it is important to follow the manufacturer’s specifications for determining allowable loads and/or spacing requirements. Installer/Owner must provide documentation that the correct bearing capacity has been achieved before final inspection.



Example of a helical foundation system

Cross-Section example showing helical pile foundation

DECK BLOCKS

Deck blocks ***may*** be permitted for use as a foundation system in special circumstances.

PLEASE CONTACT THE BUILDING DEPARTMENT FOR MORE INFORMATION

Example of a typical deck block - CONTACT THE BUILDING DEPARTMENT TO DETERMINE IF DECK BLOCKS ARE PERMITTED TO BE USED ON YOUR PROJECT

Framing and Connection to Building

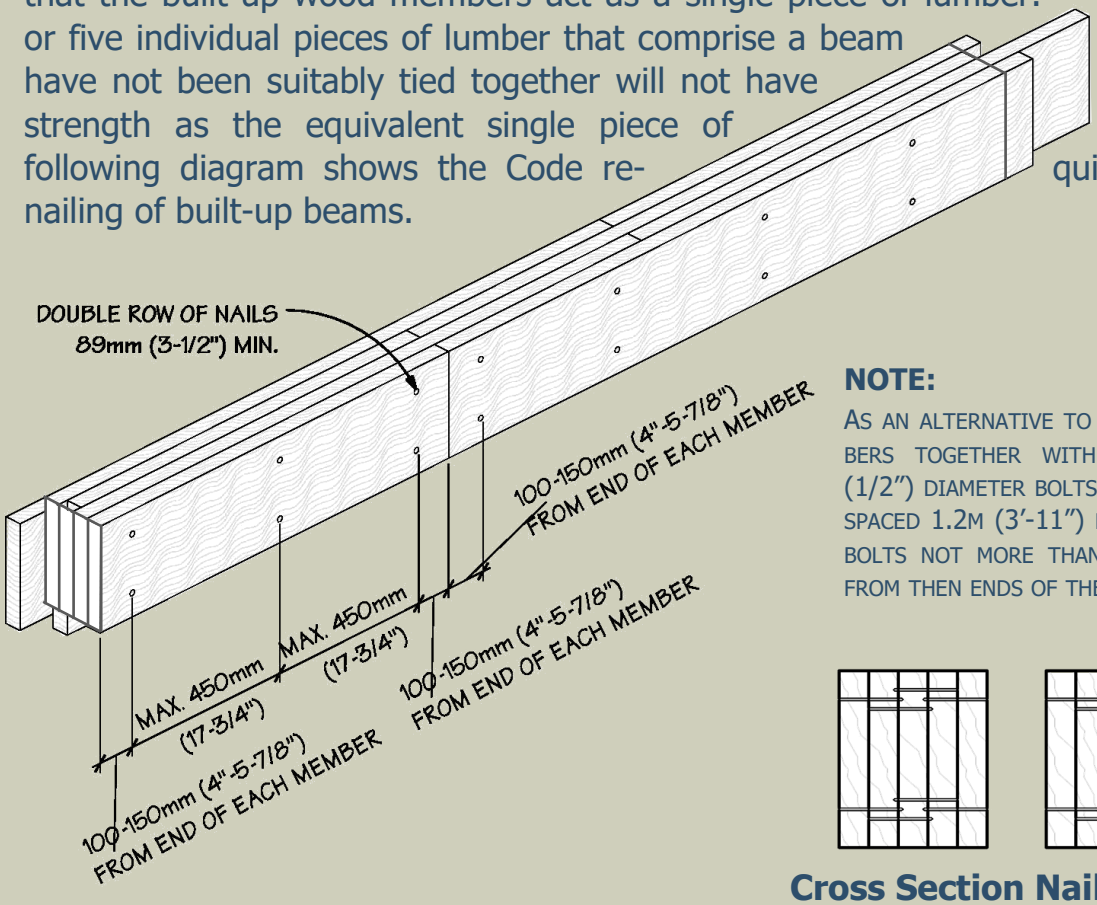
Beam Construction Requirements

Beams are the horizontal structural members that transfer the load from the floor system to the columns. Beams can be constructed of either wood or steel. Wood beams must be of a built-up style as shown below. The use of Solid Sawn timbers must be supported by calculations, which would involve retaining the services of a Professional Engineer. Beams are sized based on the amount of load transferred onto them. This involves knowing how long the floor joists are that will bear weight on them. The supported length is measured as half the sum of the joist spans on both sides of the beam. If the joists are cantilevered beyond the beam, you would also include the length of the cantilever. (see diagram on page 17) Framing for decks must comply with 9.23. "Wood-Frame Construction" of the OBC. The Columns must meet 9.17. "Columns" requirements.

If LVL beams are used, they must be protected from the elements.

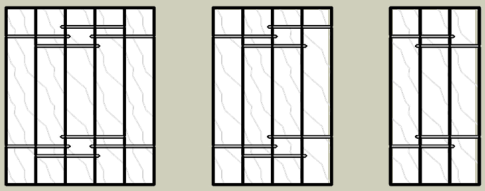
Beam Nailing Requirements

The requirements for the nailing of built-up wood beams are intended to ensure that the built-up wood members act as a single piece of lumber. Three, four, or five individual pieces of lumber that comprise a beam and that have not been suitably tied together will not have the same strength as the equivalent single piece of lumber. The following diagram shows the Code requirements for nailing of built-up beams.



NOTE:

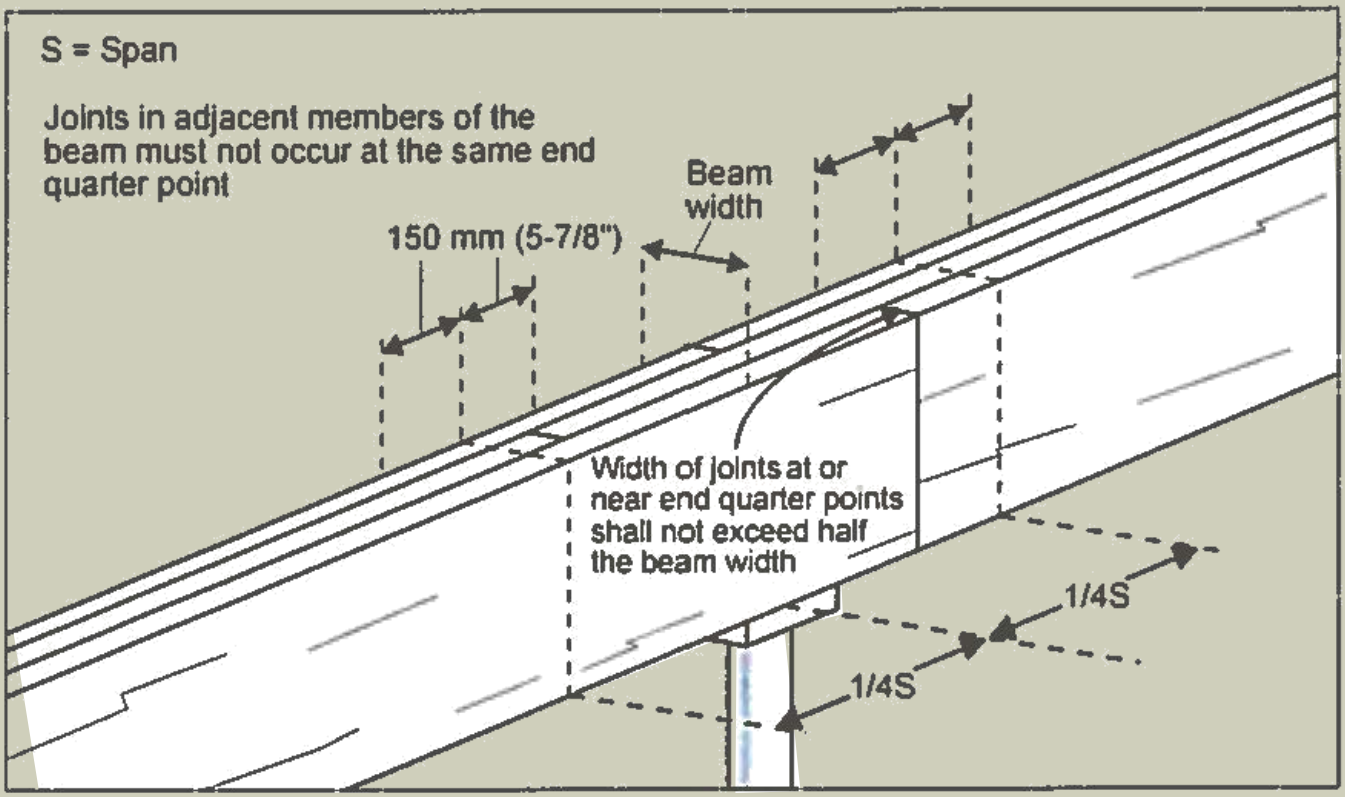
As an alternative to nailing, bolt members together with minimum 12.7mm (1/2") diameter bolts with washers and spaced 1.2m (3'-11") max. o.c. with end bolts not more than 600mm (23-5/8") from then ends of them members.



Cross Section Nailing Patterns

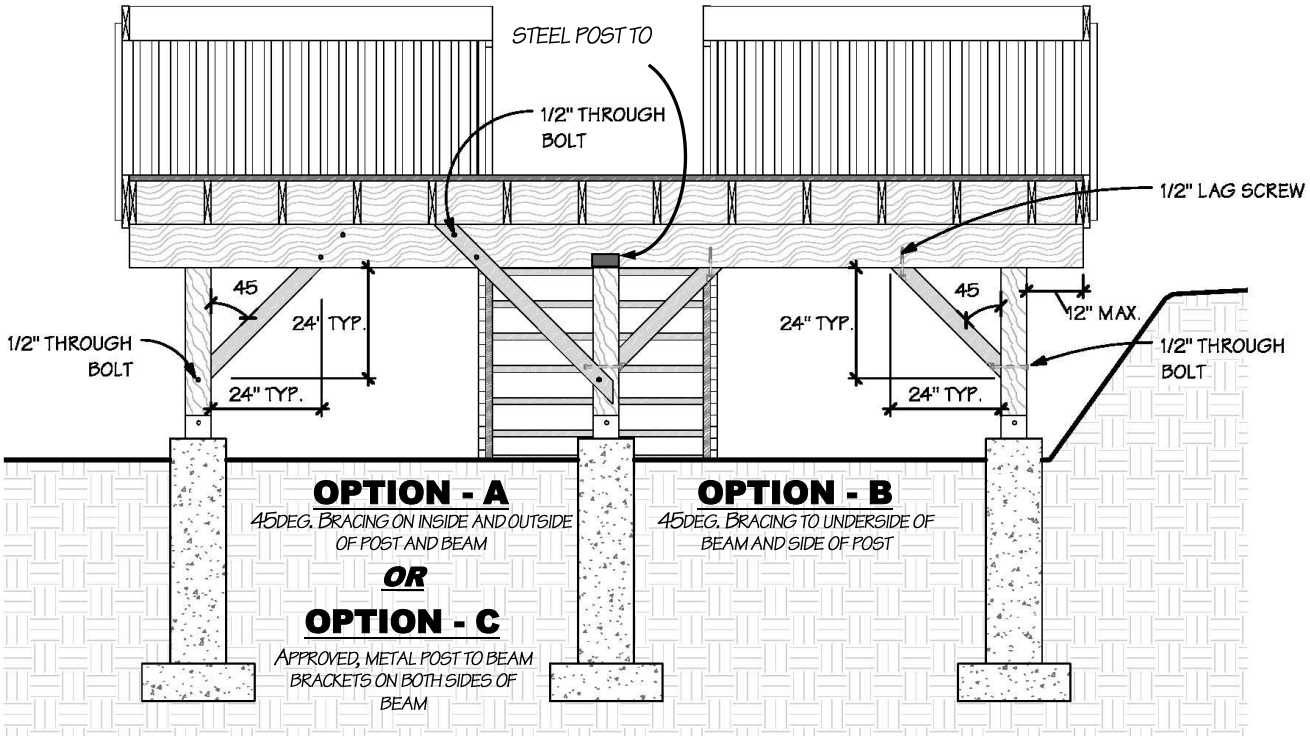
BEAM JOINTS

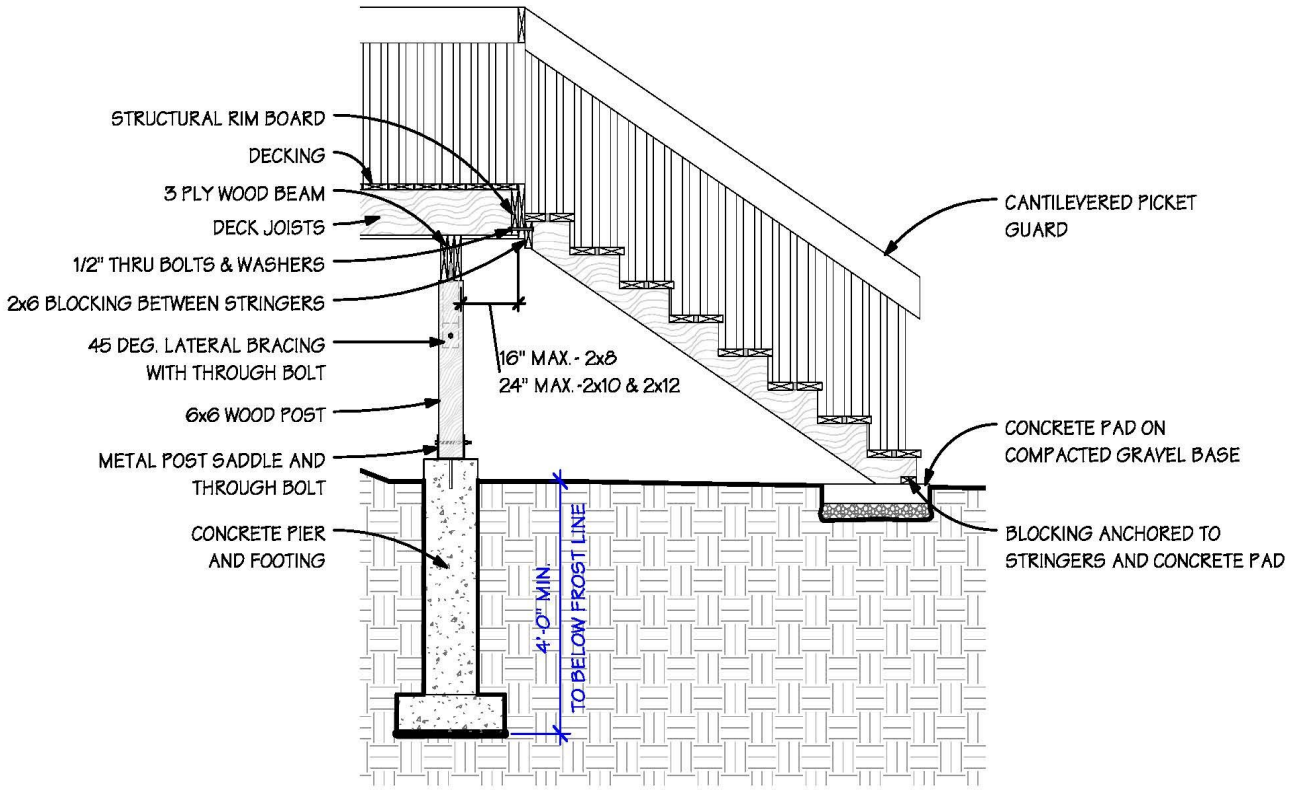
It is recommended that beams be installed so that they are comprised of full length plies. Lumber up to 16' lengths are commonly available at most yards, and some yards are able to order lengths up to 24'. When it is not feasible to use a full length, it is permissible to splice a beam to increase the length; however, this must be done carefully to ensure the construction will comply with the prescriptive requirements of the code. A beam can only be spliced in one of two locations. Ideally it would be spliced directly over a mid-support (eg. center column in a deck with 3 or more supports). A single individual ply of a beam can also be spliced within 150mm (5-7/8") of the ¼ point of a span adjacent to a mid-support. Joints in individual members of a built up beam must occur over a support, except where a beam is continuous over more then one span, the joints of individual members may be placed within 150mm (5-7/8") of the end quarter points of the clear span closest to interior supports (ie. Not close to beam ends)



45˚ Lateral Bracing

A lateral bracing connection from post to beam is necessary for the structural rigidity of the deck framing especially as the platform becomes higher off of finished grade and the support posts become longer.. This connection can be accomplished more then one way. Shown below are the most common connection details.



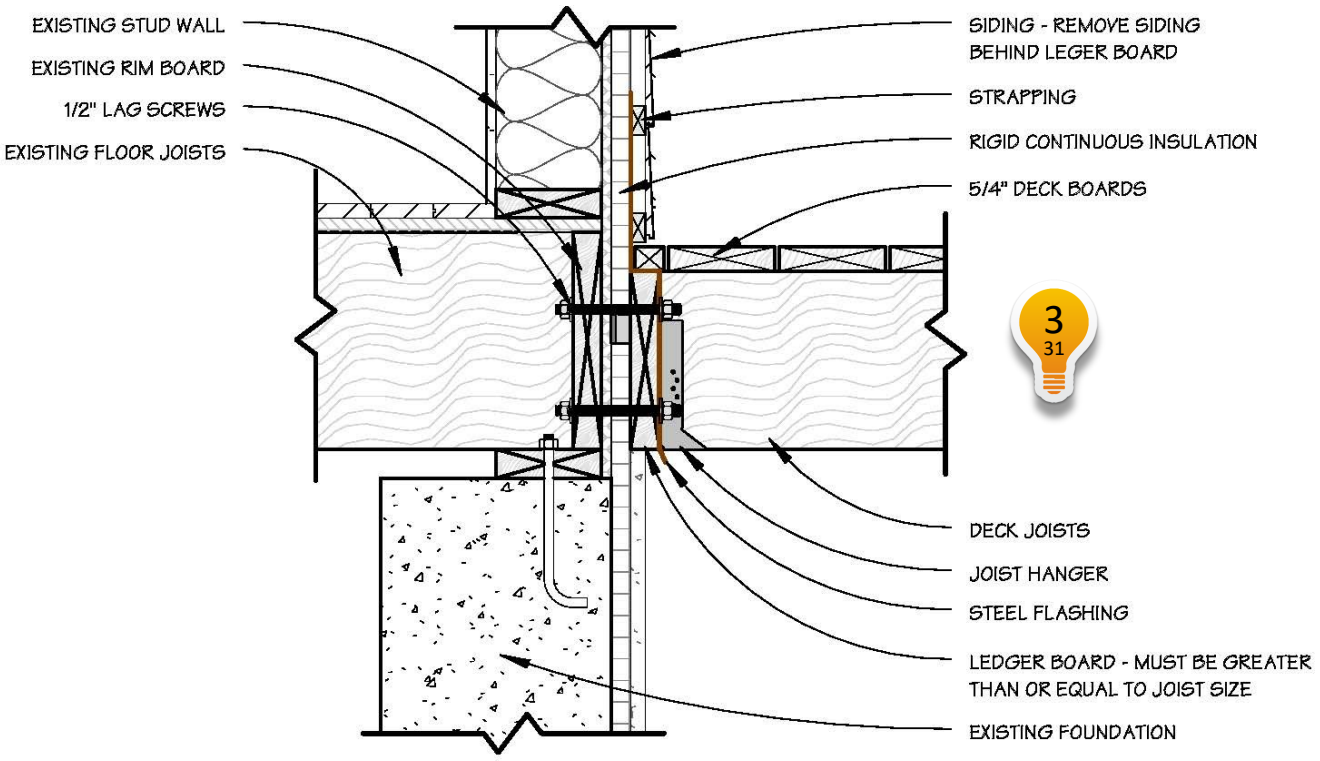


Ledger Board - Connection to Building

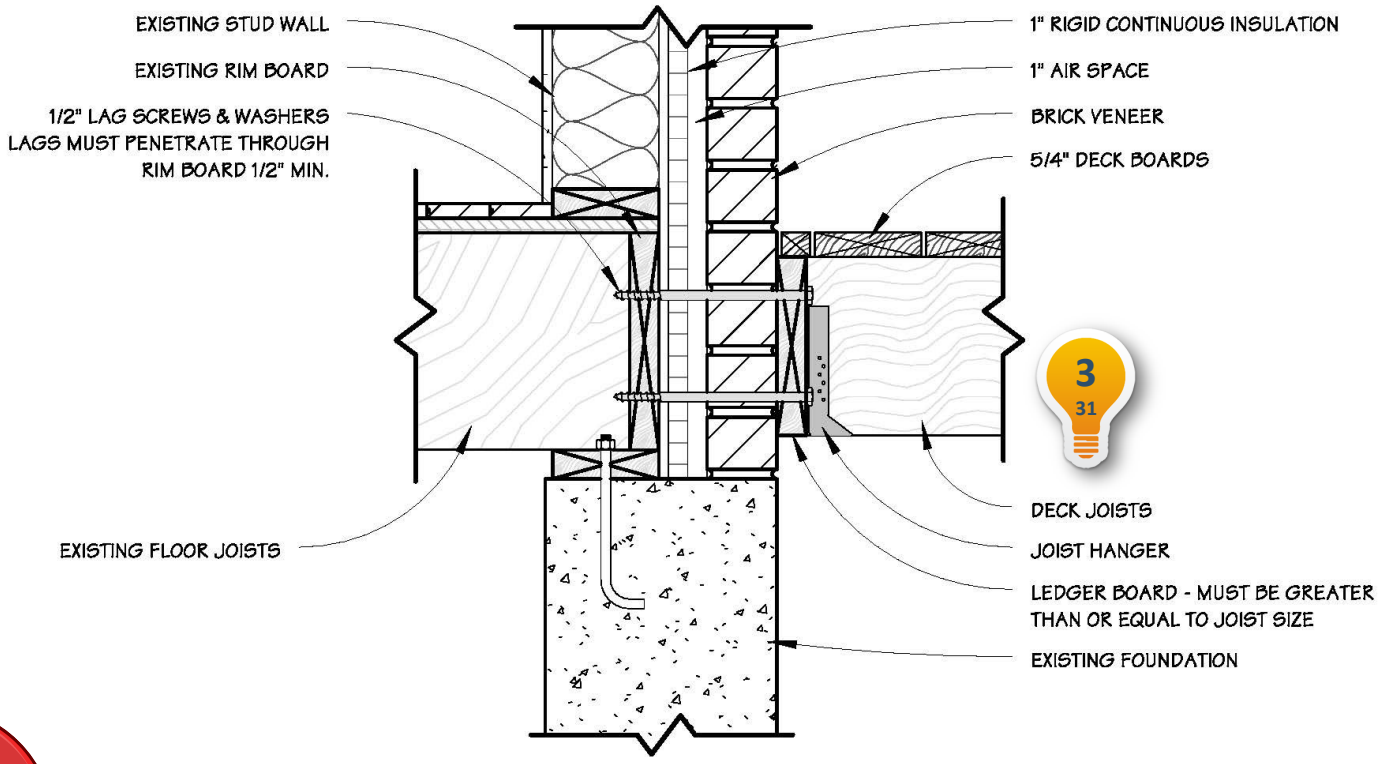
Ledger Boards are a major component of the structural support system for your deck at the point where it connects to a structure.

A structure which has no frost protection at its foundation, *shall not* be connected to a structure that is frost protected at its foundation. If this were to occur, one of the structures would float up and down during the freeze and thaw between seasons while the other structure would remain solidly anchored in it's position all year. This will eventually cause a structural failure at the Ledger Board. If the Ledger Board fails, the deck will collapse. (See page 6)

Siding with Rigid Continuous Insulation

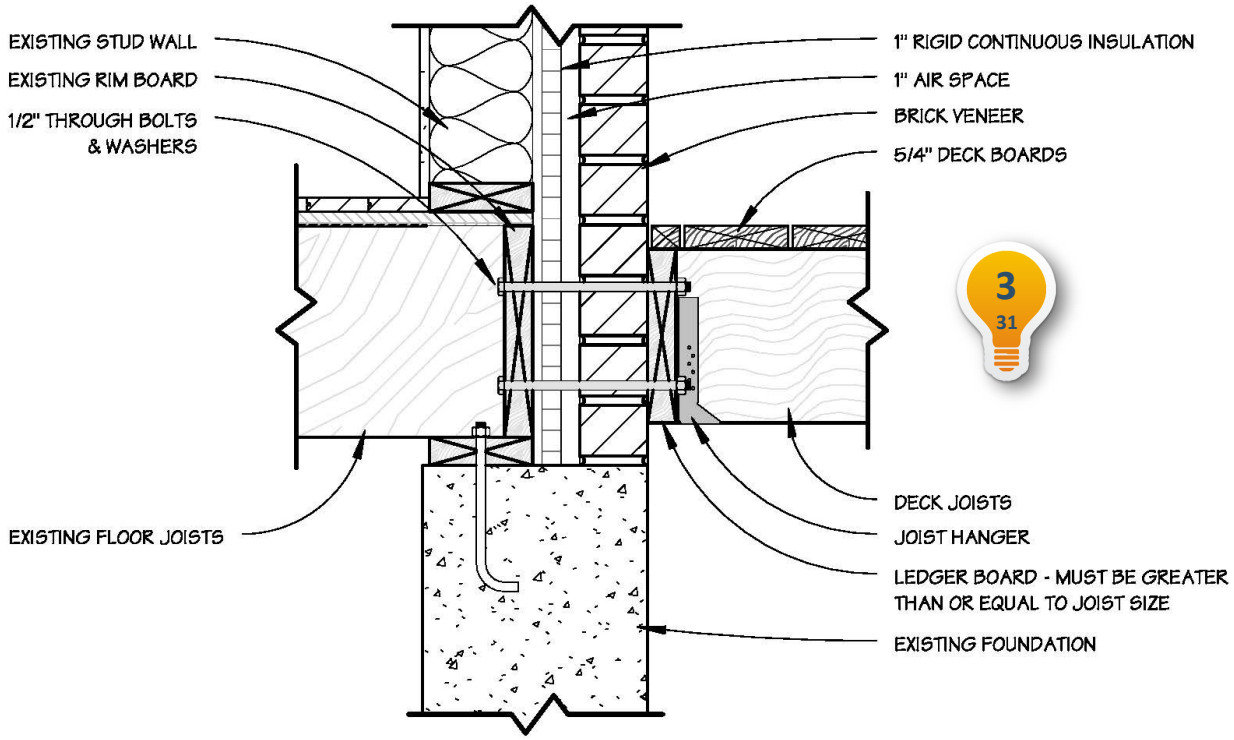


Brick with Lag Screws - If rim joist is not accessable to install nut & washers

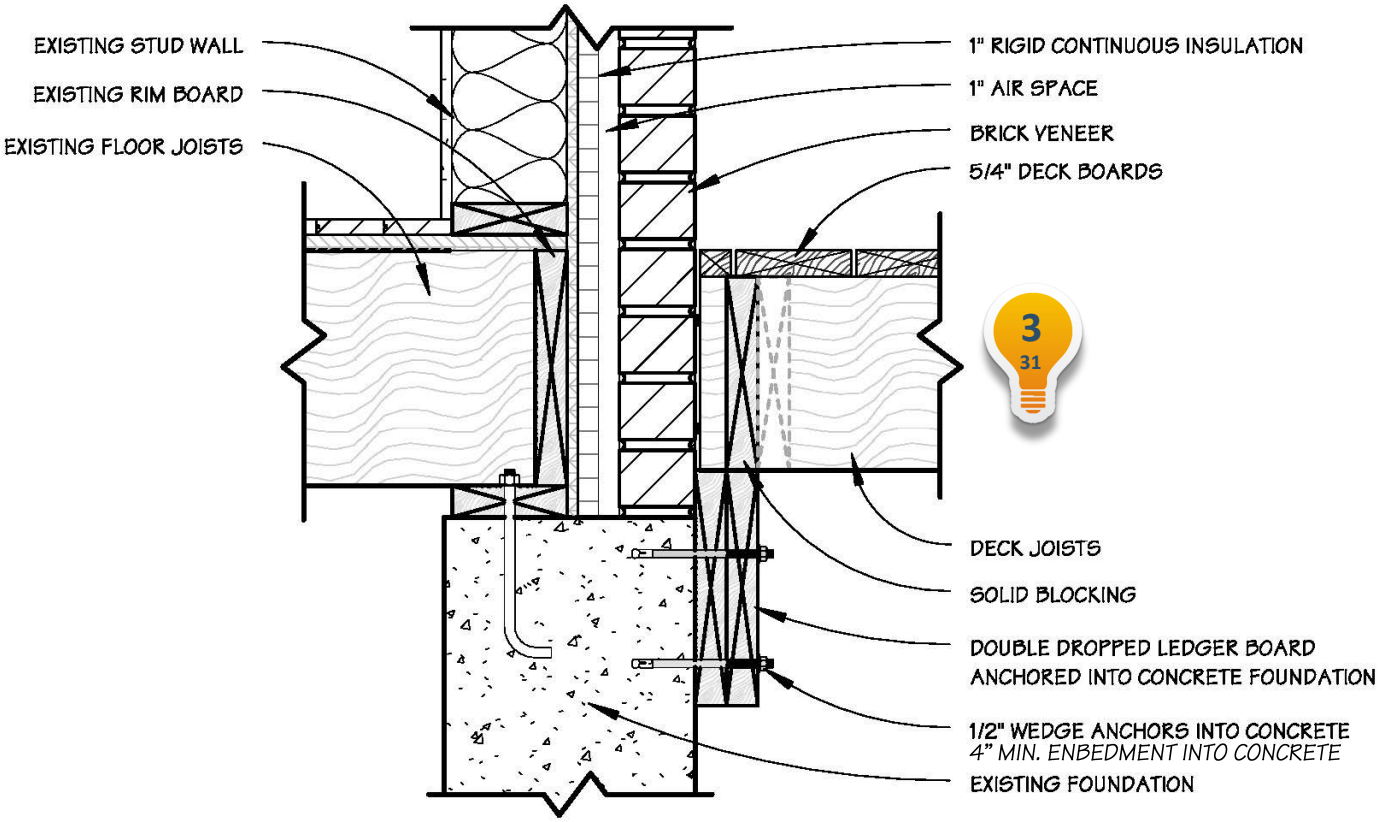


LEDGER BOARD CONNECTIONS TO WALLS WITH NON-STRUCTURAL BRICK VENEER MUST BE REVIEWED AND SEALED BY A LICENSED STRUCTURAL ENGINEER.

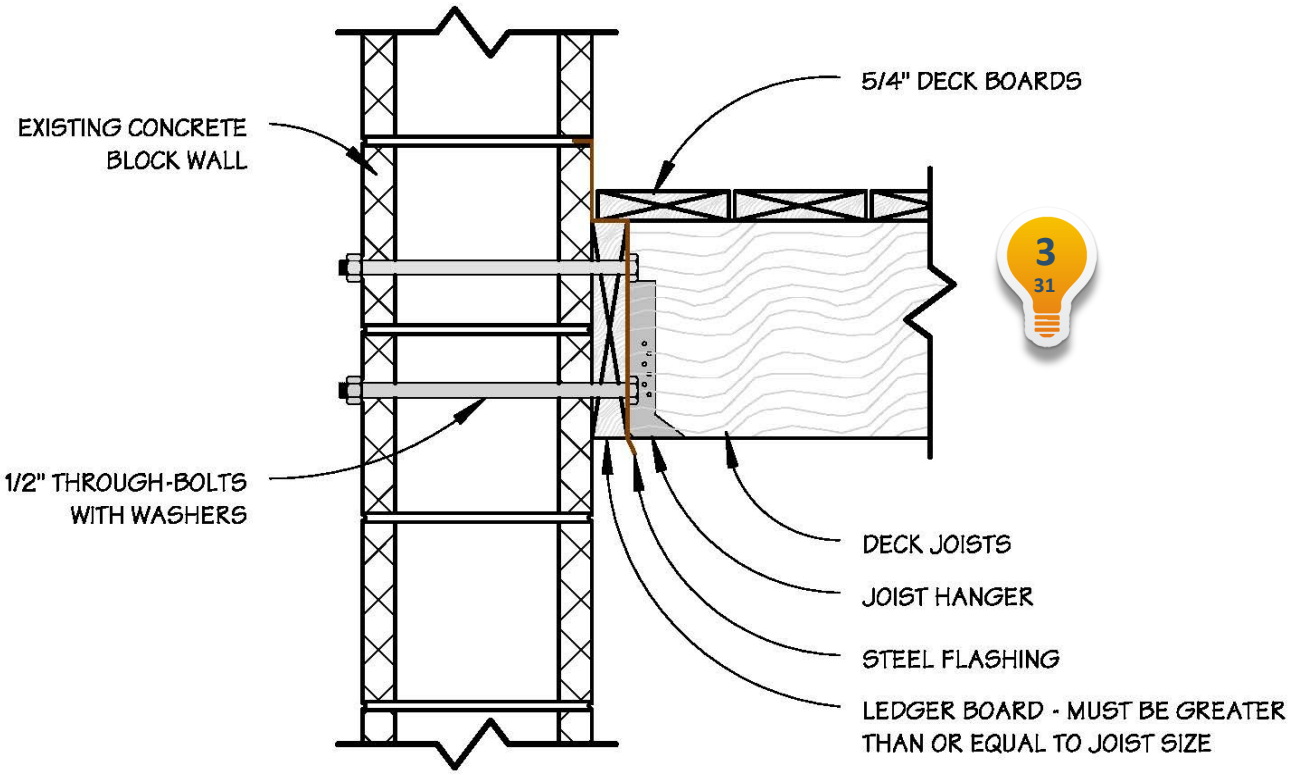
Brick with Through Bolts



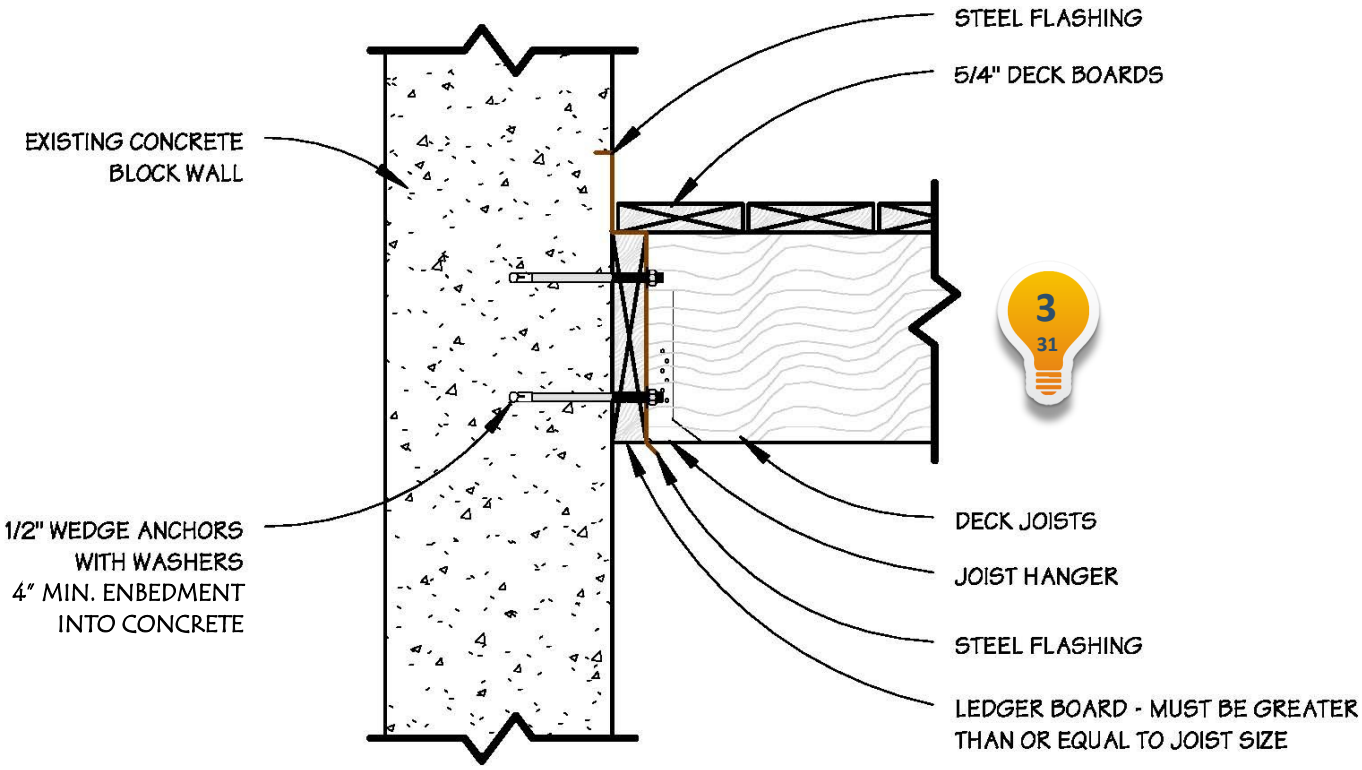
Brick with Ledger below Joists - Expansion Bolts



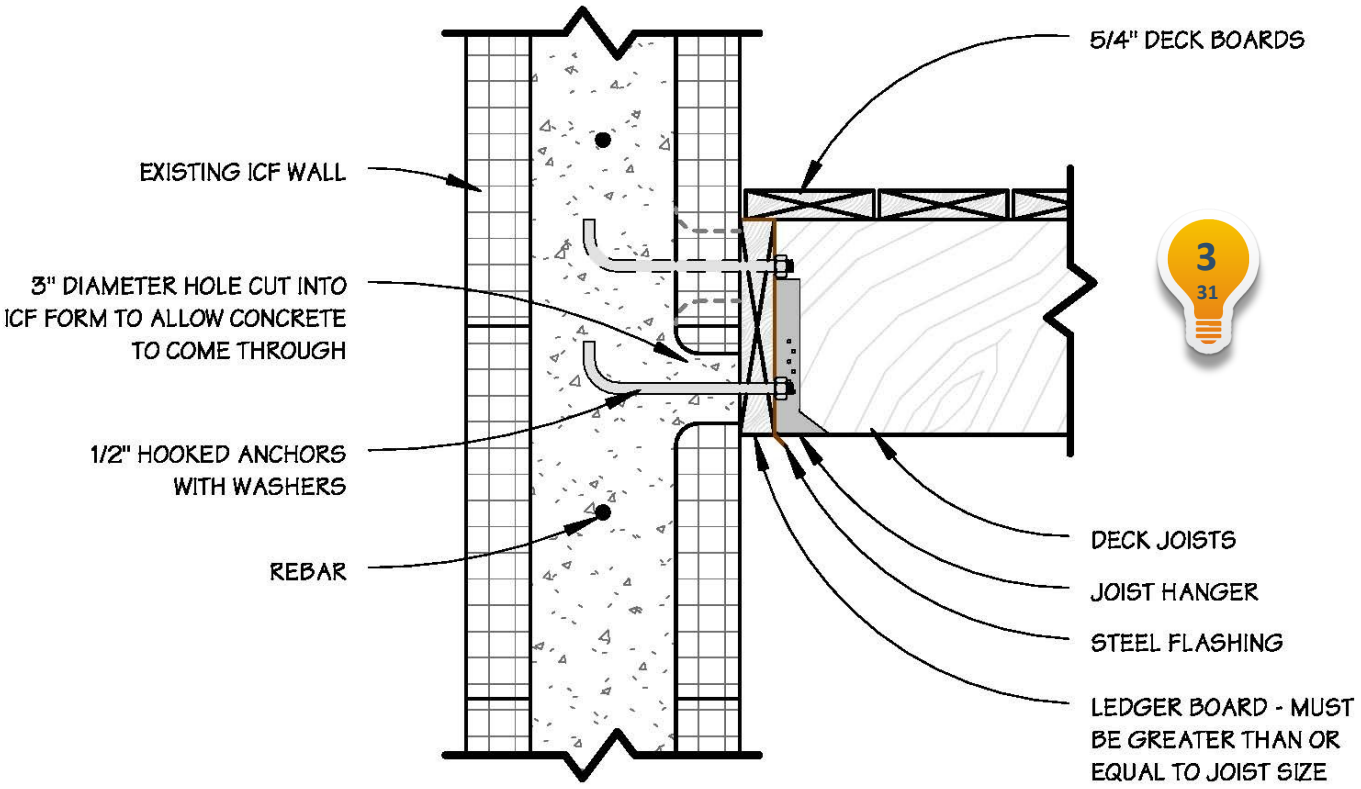
Concrete Block with Through Bolts



POURED CONCRETE WITH EXPANSION BOLTS



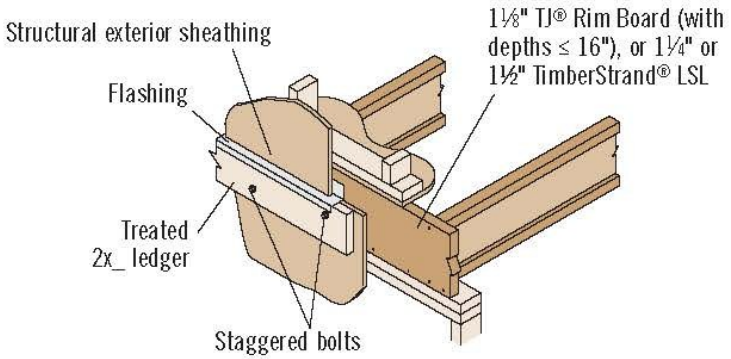
ICF WITH HOOKED ANCHORS - NEW CONSTRUCTION *



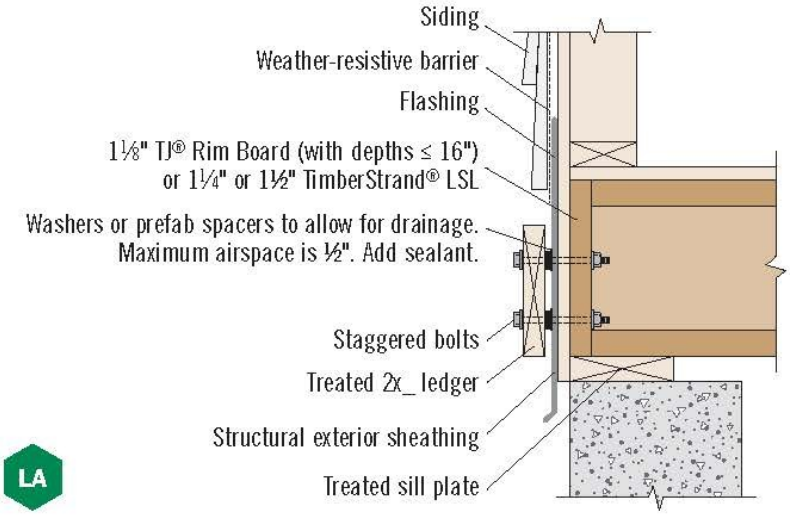
*DECKS ADDED TO ICF BUILDINGS POST CONSTRUCTION MUST HAVE LEDGER BOARD CONNECTION ENGINEERED.

ACCEPTABLE TJI OR LSL LEDGER DETAIL - SIDED WALLS ONLY

Exterior Deck Attachment



Shimmed Deck Attachment



LA

Ledger Fastener(1) Capacities

Rim Board Material	Fastener Allowable Load(2) (lbs/bolt)		
	½" Lag Bolt	½" Through Bolt	½" Through Bolt with Air Space
1⅛" TJ® Rim Board(3)	480	695	615(4)
1¼" TimberStrand® LSL	610	725	
1½" TimberStrand® LSL	675	725	

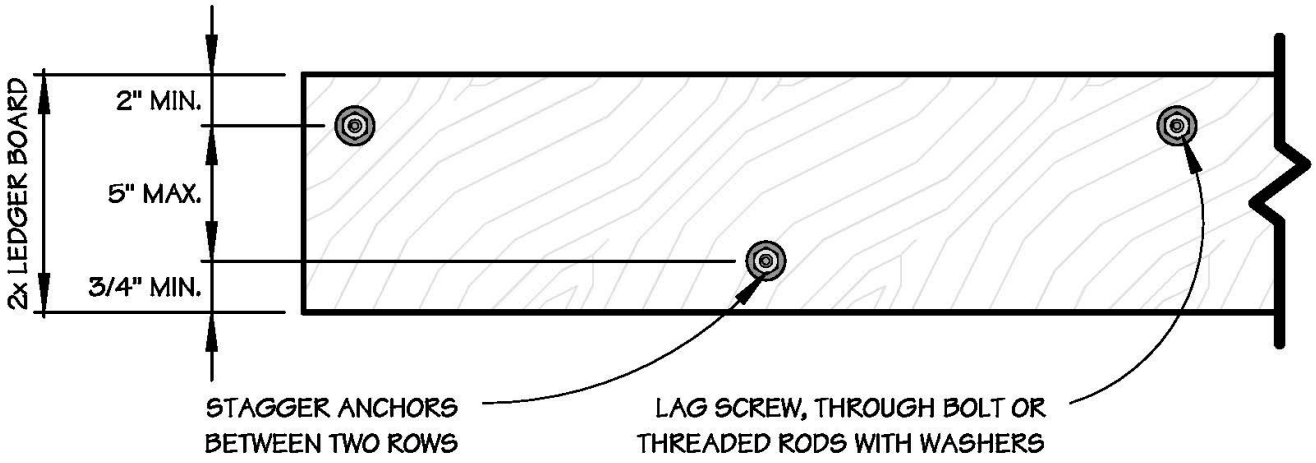
(1) Corrosion-resistant fasteners required in wet-service applications.
(2) Allowable load determined in accordance with ASTM D7672.
(3) 1⅛" TJ® Rim Board is allowed with joist depths ≤ 16" only.
(4) Maximum ½" shimmed air space.

General Notes

- Maintain 2" distance (minimum) from edge of ledger to fastener. Stagger bolts.
- Local building codes may require through bolts with washers.
- Lateral restraining connections may be required. Refer to 2015 IRC R507.2.4 and the WIJMA deck connection details.
- See Weyerhaeuser's Rim Board Specifier's Guide, TJ-8000, for more information.

Anchor Bolt Spacing

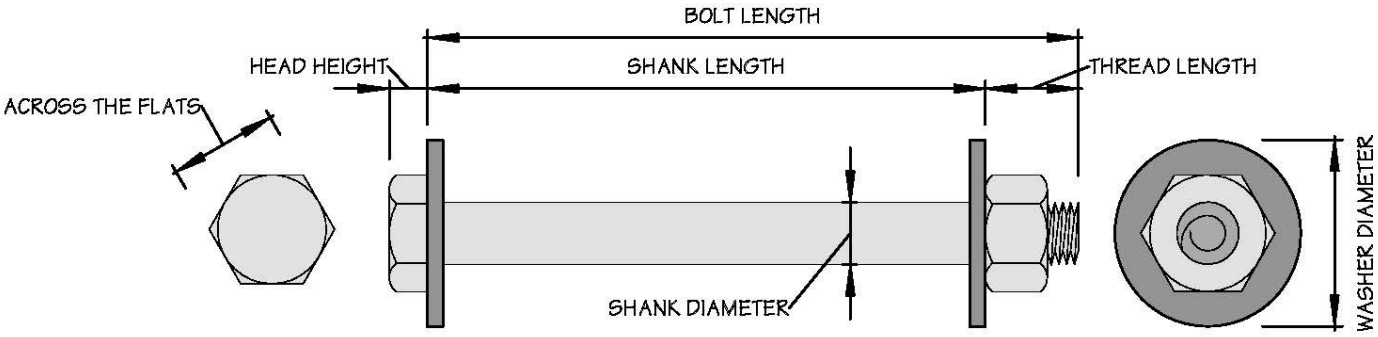
Positioning of the 1/2” anchors through the ledger plate @ 16” o/c staggered into the framing beyond.



3 For a stronger connection, use 5/8” dia. Anchors and Bolts instead of 1/2”

Through Bolts

Through bolts with compatible nut and two washers @ 1/2” dia. Min..

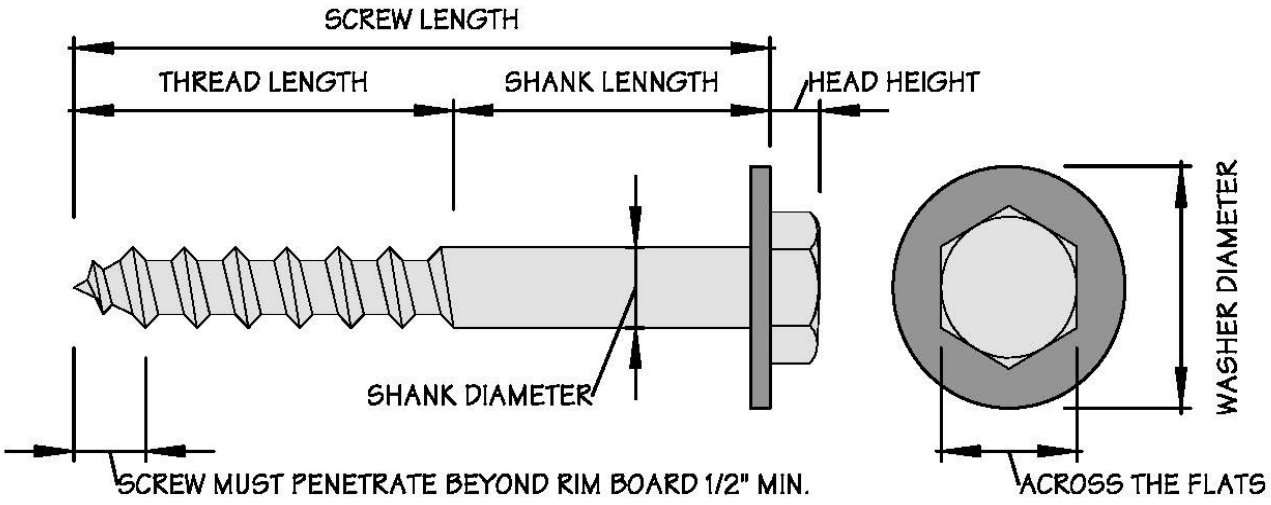


Important

If the ledger is connected to a rubble foundation or multiple wythes of masonry an engineer reviewed design is required.

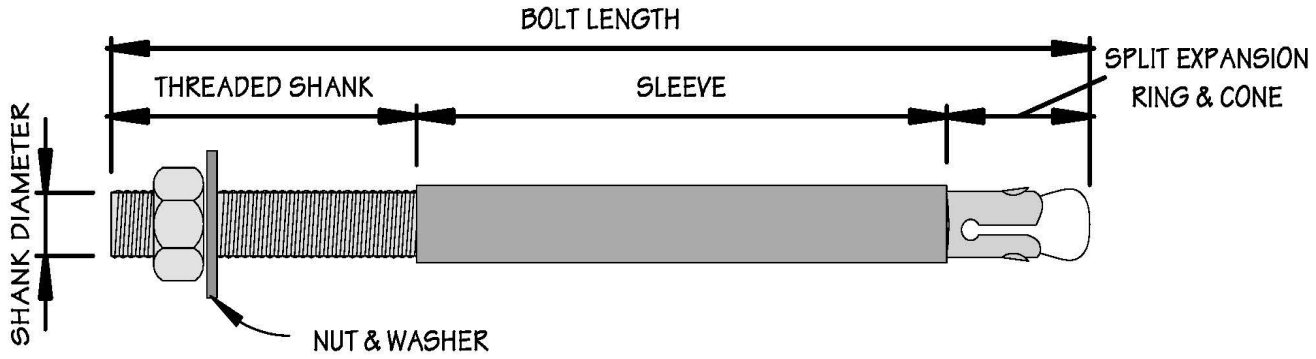
LAG SCREWS

Lag Screws are designed to go through ledger board into solid wood rim boards. The threads of the lag should penetrate a minimum of 1" through the rim board.



WEDGE ANCHORS

Wedge Anchors are designed to go through the ledger board and be embedded into the concrete of a foundation wall. ***Wedge anchors must be embedded into the concrete by 4" minimum.***



COMPATIBLE MATERIALS

Choosing deck fasteners and hardware, such as joist hangers, used to be pretty straightforward. After 2004, all that changed with the phase out of CCA-treated lumber and the introduction of a new family of wood preservatives for pressure-treated lumber. The two main preservatives used, ACQ (alkaline copper quat) and CA (copper azole), are far more corrosive to steel, aluminum, and galvanized coatings, making selection of hardware and fasteners a more complicated and critical decision.
When fasteners corrode, they contribute to decay in the surrounding wood, further weakening the connection. The failure of a joist hanger or deck ledger connection can have catastrophic results such as a deck collapse.

New Preservatives and Corrosion. The two leading wood preservatives used today, ACQ and CA, are estimated to be two to five times more corrosive to metals and galvanized coatings than the CCA they replaced, based on numerous tests. The increase results from higher concentrations of copper, which is corrosive to steel and other metals, and the removal of chromium and arsenic, which helped suppress corrosion. Formulations with ammonia-based carriers (used for better penetration in heart-wood species such as Douglas fir) are even more corrosive than standard formulas.
Other than the treatment chemicals use, several other factors affect the rate of corrosion, but moisture is the most important. Since water is necessary for corrosion to occur, the wetter the environment and the closer the fasteners are to moist ground, the faster metals will corrode. Salt air and spray in coastal and environments significantly speed up corrosion.
The concentration of preservatives in the wood also has a big effect. A 6×6 rated for ground contact has a higher level of chemicals, and therefore greater corrosion potential, than a 2×8 or decking plank rated for above-ground use. Check the label, typically stapled to one end of a stick of lumber if you're unsure.

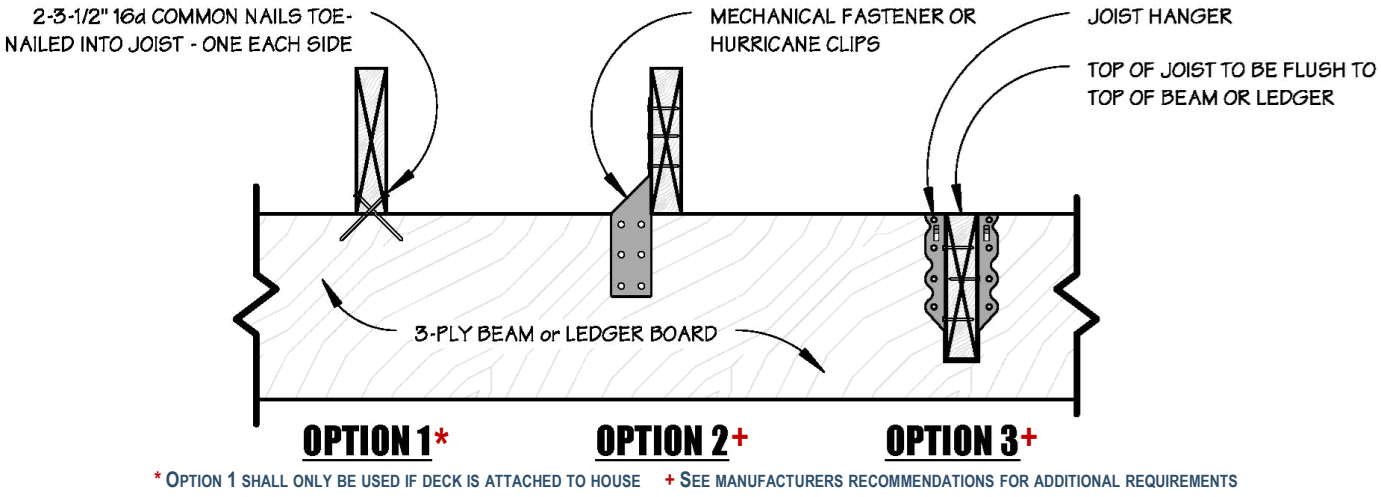
CORROSION PROTECTION
These problems have spawned the development of a wide array of coated and heavily galvanized hardware rated for contact with ACQ and CA. For and hardware, the standard G-90 galvanized steel fasteners and connectors had to be upgraded to more expensive protective finishes: either G-185 galvanized, proprietary polymer-coatings, or stainless-steel – the best and most expensive option. Widely used aluminum flashings should also not be used in contact with today's pressure-treated lumber.

Hot-Dipped Galvanized. When using lumber treated with ACQ or copper azole, use hot-dipped galvanized fas-teners that meet ASTM A153 (or the newer ASTM F2329, or connectors that meet ASTM A653. These have a minimum coating of 1.85 ounces of zinc per square foot of metal sur-face (G185) an are sometimes marketed as "double--hot-dipped" and other tradenames such as ZMax and HDG for Simpson, and Triple-Zinc for USP.
Remember, however, that all galvanized coatings are sacrificial. They are designed to slowly wear away to protect the underlying steel. Once the coating is gone, the steel will fail quickly. Manufacturers will not guarantee any specific lifespan because there are too many variables. So in a very wet environment, coastal areas, or other harsh exposure, the added cost of stainless steel is a worthwhile investment. Also galvanized fasteners may stain redwood and cedar, a concern if you are using these species.

Polymer-Coatings Manufacturers have introduced a wide variety of coated screws and connectors, such as joist hangers, for use with today's more corrosive wood treatments. Most common are polymer coatings over a thin electrogalvanized finish. The coatings protect the metal by keeping water and dissolved copper away. The more layers of coating the better, but since you won't be able to determine this, make sure you use coated fasteners listed for code compliance.
Because the coatings are thinner and more slippery, they make much better decking screws. Also these coatings can be applied to tempered steel, not an option for hot-dipped galvanized fasteners which would undo the tempering. The tempered steel and slippery surface has also made coated screws, such as LedgerLOKs, popular for structural connections in place of traditional lag bolts. Polymer coatings can also be used for steel connectors with large surface areas, such as joist hangers and other connectors widely used on decks. Only one manufacturer, USP offers polymer-coated GoldCoat connectors. Simpson offers polymer coatings on screws and bolts, but, not on connectors.

JOISTS

Joists are the part of the flooring system that transfers the load of the decking to the beams. The spacing of the joists will often be determined based on the choice of decking and installation. Composite decking, or decking installed at a 45 degree angle can require closer spacing. The spacing of the joists also has an effect on the span of the joists. If the joists are closer, then the joists can span further. The following chart may be used to determine the size of joists you will require. ***The minimum joist size is 2x8 as per SB-7 of the Ontario Building Code, but may be required to be larger based on the proposed spans. If SB-7 is not applicable, then 2x6 joist may be used in accordance with Tables A1-A2 of the O.B.C..***



JOIST CANTILEVER

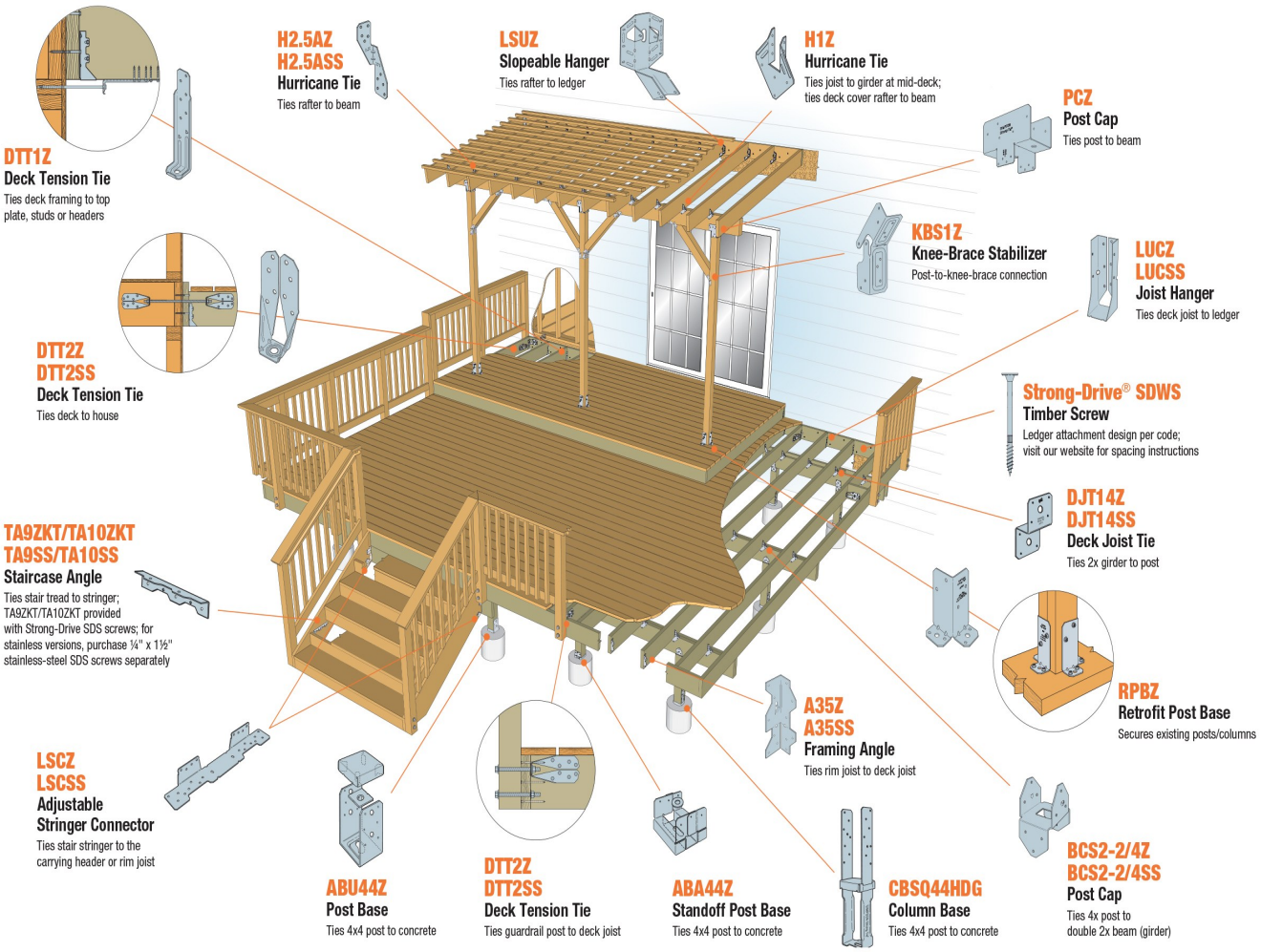
Joists are permitted to cantilever beyond the beam provided that::

1. For a 2”x8” the cantilever does not exceed 400mm (16”),

OR

2. For a 2”x10” or larger the cantilever does not exceed 600mm (24”).

Connections & Hangers



Choose the Right Level of Corrosion Protection
Visit www.strongtie.com/info for critical information.

NOTE: *Illustration shows all available deck products. Actual products selected will depend upon application or construction method used for a particular deck. Check local building codes before you begin a project.*

Decking

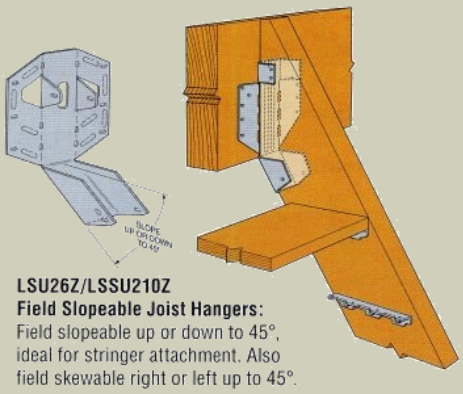
SPF wood decking is required to be installed so that the maximum distance between supports is not more than 600mm (24”), but in many instances joist spacing must be reduced.

If the decking is installed at a 45 degree angle to the joists, the joists may have to be installed at 300mm (12”) or 400mm (16”) on center, if a cantilever picket guard is installed, joists may have to be installed at 400mm (16”) on center, if a Northern Species of wood decking is used (such as cedar), supports must be not more than 400mm (16”) on center, and if composite decking is used, the manufacturer’s specifications determine the support spacing, which in some cases may be 300mm (12”) on center.

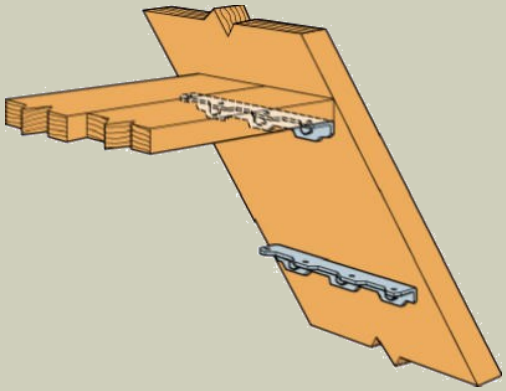
Stair Construction

All stairs must be designed and constructed such that treads and risers have a uniform rise and run. Stairways shall consist of Curved **or** Straight flights. Riser height must be uniform throughout the entire flight. All stairs must conform to Section 9.8. of the Ontario Building Code. This also includes stairs constructed of stone or other landscaping materials.

Hanger Options for Stair Construction - See page 38



LSU26Z/LSSU210Z
Field Slopeable Joist Hangers:
Field slopeable up or down to 45°, ideal for stringer attachment. Also field skewable right or left up to 45°.



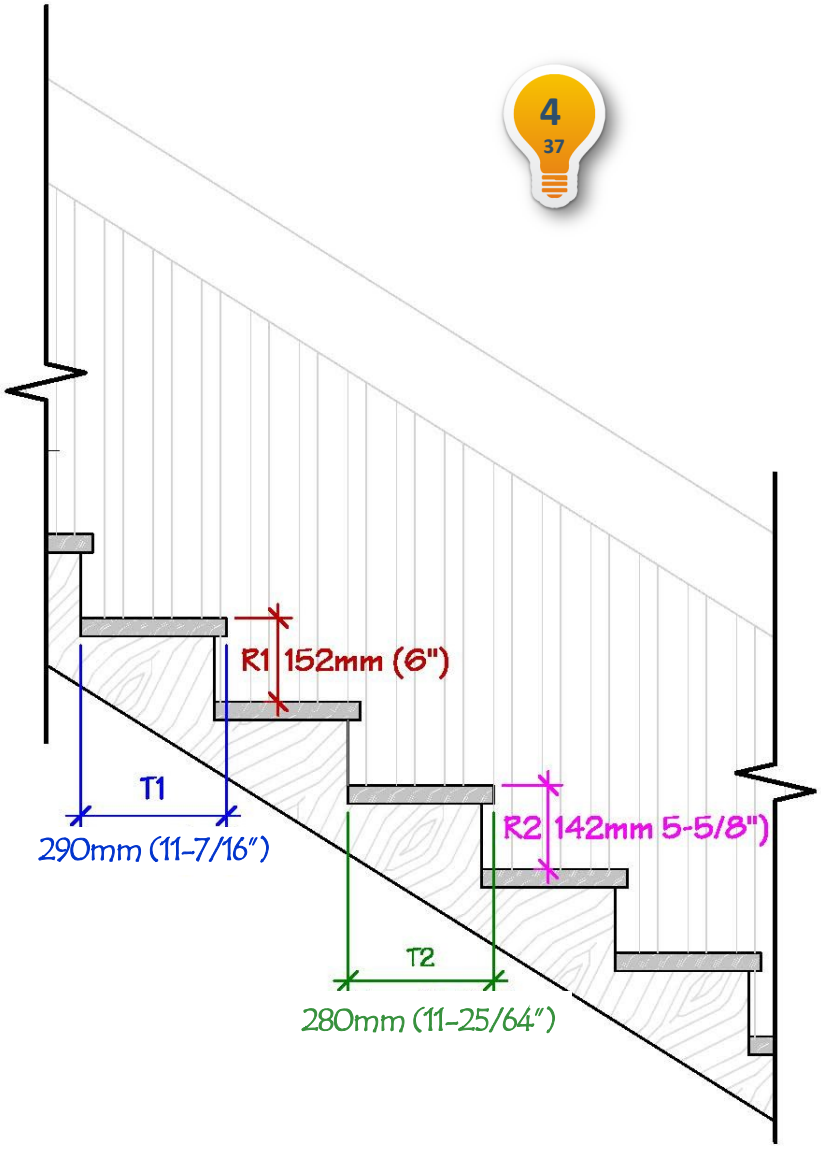
Construction, Uniformity & Tolerances

The construction of stairs must conform to the corresponding section of the Code. Stairs and ramps serving a single dwelling unit must be designed for strength and rigidity to support 1.9 kPa (40 psf). Risers must have a uniform height within any one flight with a maximum tolerance of 6 mm (1/4") between adjacent treads or landings and 6 mm (1/4") between the tallest and shortest risers. Similarly, treads must have a uniform run and tread depth with a maximum tolerance of 6 mm (1/4") between adjacent treads and 6 mm (1/4") between the deepest and shallowest runs and treads in a flight. It is also important to provide appropriate finishes for stairs which are both safe and durable.

Construction, Uniformity & Tolerances, Continued

The maximum tolerance between the tallest and shortest *Rise* must **not** be more than 10mm (3/8″)

Example: If the tallest *Rise* is **R1** - 52mm (6″) then the shortest *Rise* must be **not** less than **R2** - 142mm (5-5/8″)



Rise and Run

Minimum Riser height
125mm (4-59/64″)
Maximum Riser height
200mm (7-7/8″)

As of January 2022, the Run lengths are:

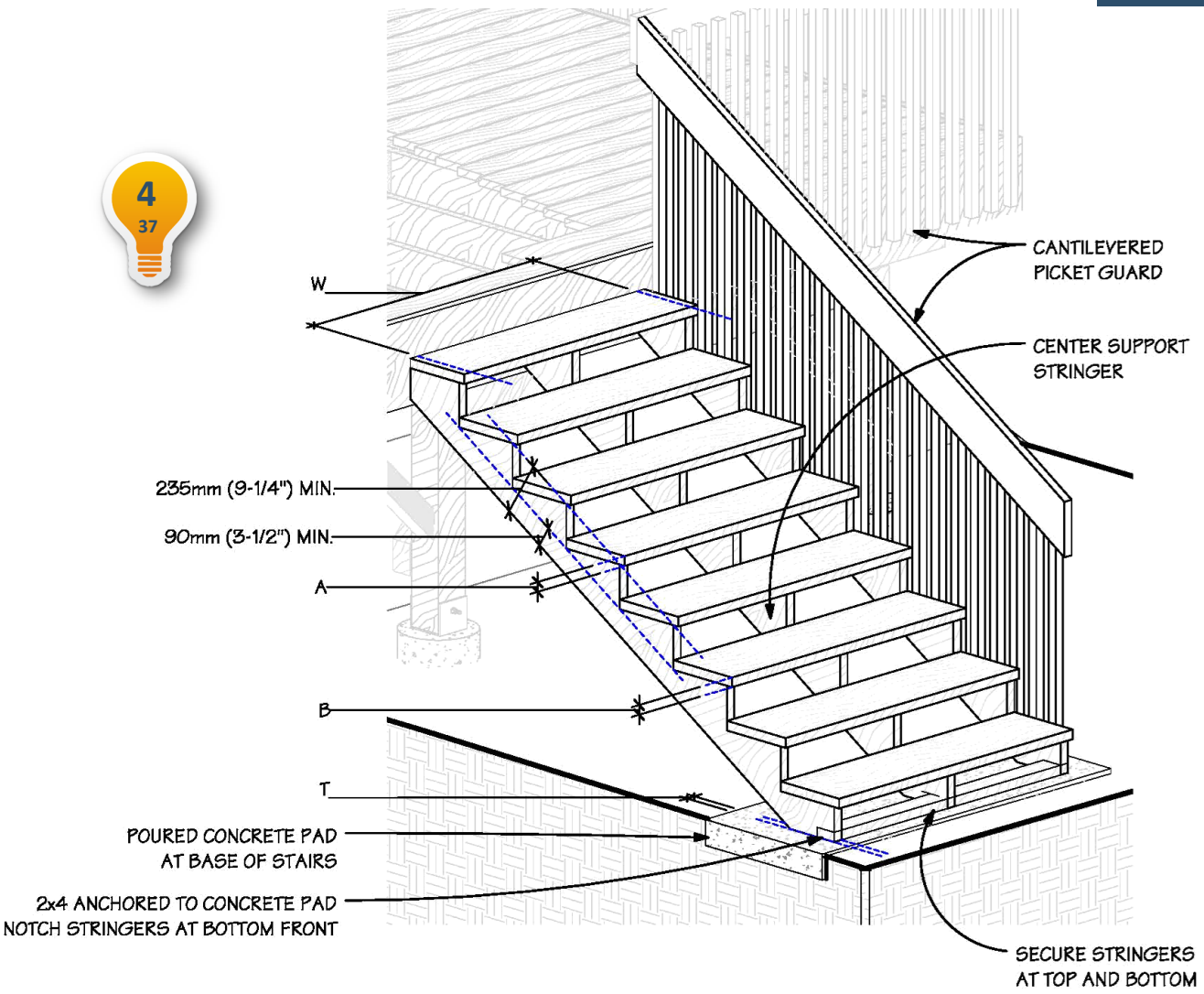
Minimum Run* Length
255mm (10-1/16″)
Maximum Run* Length
355mm (14″)
*Nosing of one step to the nosing of the next step.

The maximum tolerance between the deepest *Tread* and the shallowest *Tread* must **not** be more than 10mm (3/8″)

Example: If the Tread is **T1** - 280mm (11″) then the shallowest Tread must be **not** less than **T2** - 290mm (11-25/64″)

Most people find a 7-1/2”+/- rise with a tread depth of 10”to 12” to be the most comfortable stair dimensions.

NOTE: The top of the finished deck floor surface must be flush with the floor of the house which the deck serves or it must be lowered to create a step with a riser between 4-59/64” and 7-7/8”



TREAD THICKNESS

A = 25mm (1") Min. if *Riser* supports the front of *Tread*
B = 38mm (1-1/2") when *Treads* are unsupported at the front and the distance between stringers is greater than 750mm (2'-6")

STRINGER THICKNESS

T = 25mm (1") if supported along the length (*Example: Anchored to a wall*)
T = 38mm (1-1/2") if unsupported along the length

STRINGER SPACING

W = Max.. 900mm (2'-11") between stringers

LANDINGS

Width of landings to be equal to width of Stair or Ramp in which the landing occurs. Depth of landing shall be **not less** 1100mm (3'-7 5/16")- **STRAIGHT RUNS ONLY - Refer to table 9.8.6.3. of the Ontario Building Code**

NOTE: Exterior wood steps **shall not** be in contact with the ground unless treated for decay.

GUARDS & HANDRAILS

There is a distinction between handrails and guards required by the Ontario Building Code.

- **Handrails** are used for support to assist in negotiating a stair or ramp.
- **Guards** are structural barriers to help prevent accidental falls from one level to another *but they can also serve as handrails*.

Handrails **are required** on stairs having **more than 3 risers**;
Guards **are required** on stairs and on raised decks where the walking surface is **more than 600mm (1' 11") above the adjacent ground or other deck surface**;
Guards must be solid barriers or include vertical elements (*Example*: pickets) spaced not more than 100mm (4");
Where a guard is not required, vertical pickets must be spaced at not more than 100mm (4").
Horizontal members located at the bottom of a guard must not be more then 4" above the finished walking surface.

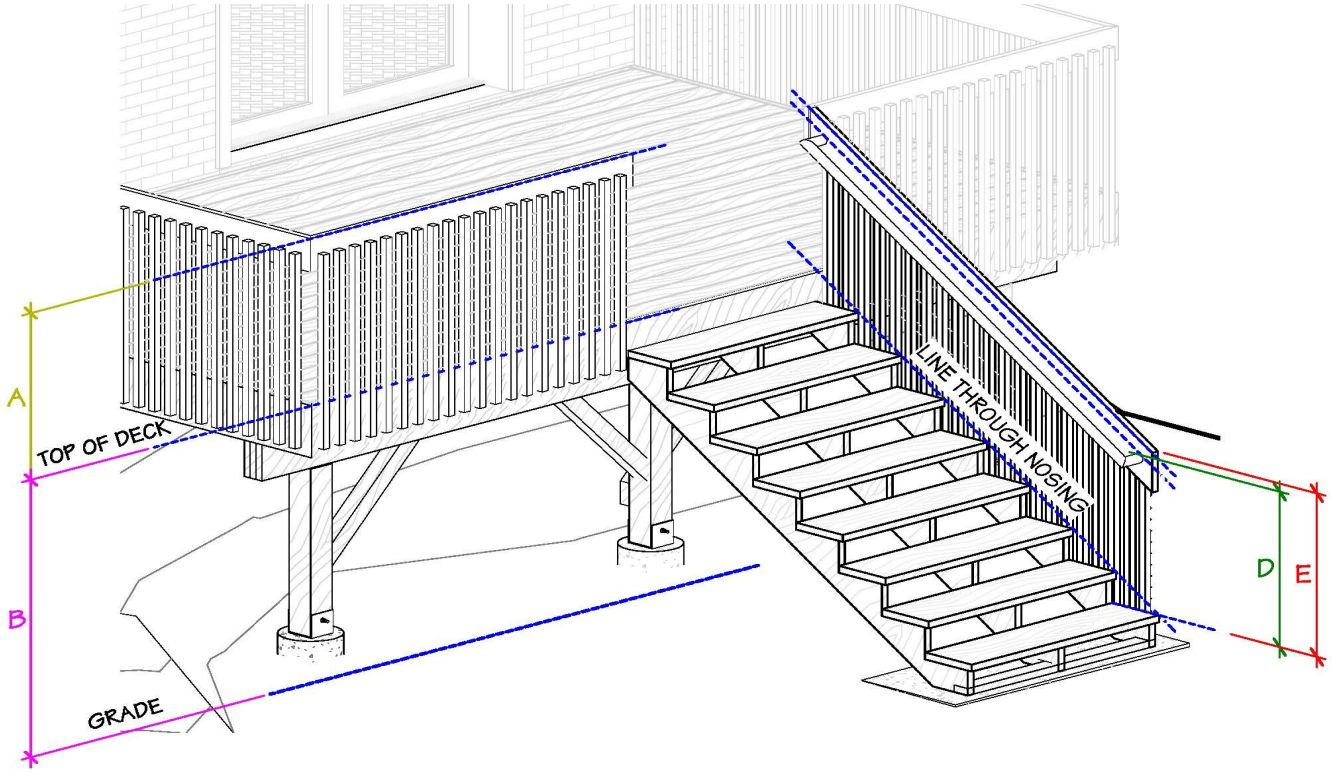
Glass used in a guard must be laminated or tempered. Such guards must be either pre-manufactured with pre-engineered specs that can be supplied to the building department or, if not pre-manufactured, designs must be reviewed by a professional engineer prior to submission for permit.

HEIGHT OF GUARDS & HANDRAILS

Guard height must be 900mm (2' 11") minimum where the difference in elevation is not more than 1800mm (5' 11") and 1070mm (3' 6") where the difference exceeds 1800mm (5' 11");

Guards must be structurally adequate to resist horizontal and vertical loads (ie. from people leaning or falling against them). They must be designed to meet the loads prescribed by the Ontario Building Code or in accordance with the Supplementary Standards **SB-7**.
Guards are intended to reduce accidental falls from differences in elevation between adjacent floor levels or the exterior ground. Generally, guards are required for stairs, ramps, landings, balconies, porches, decks, mezzanines, galleries and raised walkways where the difference in elevation be-tween the two walking surfaces is more than 600 mm (23-5/8").

GUARDS MUST BE DESIGNED SO AS NOT TO FACILITATE CLIMBING.



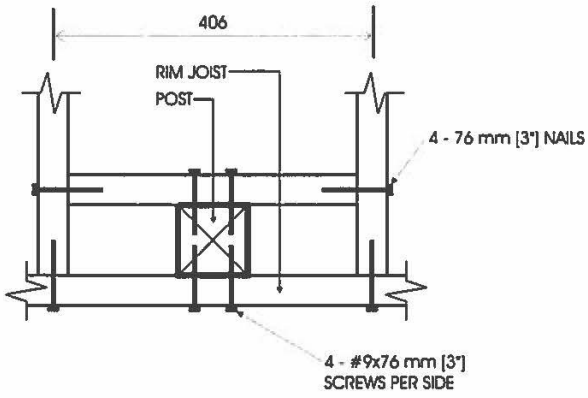
Guard height shall be measured as follows:
A = 900mm (35-7/16″) **if** **B** = less than 1800mm (70-55/64″)
A = 1070mm (42-1/8″) **if** **B** = more than 1800mm (70-55/64″)
E = **A** measured vertically from the top of guard to a line drawn tangent to the tread nosing of stair **or** surface of landing.

Handrails shall be measured as follows:
D = not less than 865mm (34-1/16″) and not more than 1070mm (42-1/8″) measured vertically from the top of handrail to a line drawn tangent to the tread nosing of stair ***or*** surface of landing.

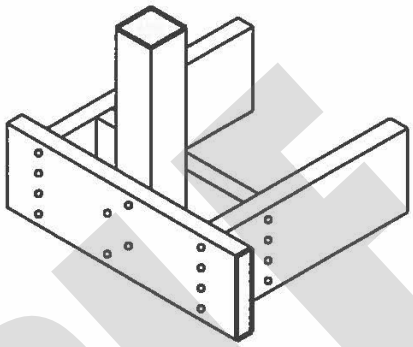
Only one (1) Handrail is required for exterior stairs having **more than** three (3) risers.
No Handrail is required for stairs with **less than** three (3) risers.
Provide a minimum of 50mm (1-31/32″) clearance between Handrail and any surface behind it. 60mm is surface behind is rough or abrasive.
Handrails shall be continuous throughout the length of the stairs.
Handrails must be graspable.

SB-7 Details

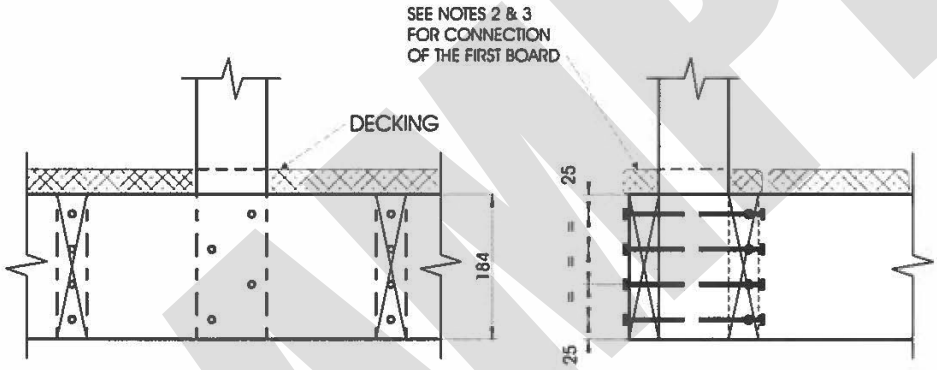
The Ontario Building Code Supplementary Standard SB-7 sets out the requirements for guards on decks and stairs. There are several connection options each with different framing requirements. Consult with your designer and select the option most appropriate for your proposed construction. SB-7 connection details must be included with your permit drawings.



PLAN



AXONOMETRIC



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 (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. #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

A-1.2.2. Classification. A Post and Rail System consists of a top rail that transfers horizontal loads to posts. The posts transfer the loads from the rail to the floor system. This system may incorporate a bottom rail that is anchored at each end to the posts. Infill panels or infill pickets are installed between the top rail and the floor or bottom rail. Examples of Post and Rail Systems are shown in Figure A-1.2.2.A.

The term "infill pickets" refers to an assembly of vertically oriented elements that span between the floor or bottom rail and the top rail. For the purpose of this Supplementary Standard, the words "picket" and "baluster" both relate to these individual elements.

The spacing of the posts in a Post and Rail System is detailed in this Supplementary Standard and is dictated by the ability of the posts to accept the design loads. The maximum spanning capacity of the rails is often not realised because it is dictated by the post spacing.

A Cantilevered Picket System consists of a top rail that transfers horizontal loads to pickets. The pickets transfer the loads from the top rail to the floor system. An example of a Cantilevered Picket System is shown in Figure A-1.2.2.B.

A guard classified as a Post and Rail System or a Cantilevered Picket System need not always terminate at a post if:

(a) the top rail is connected adequately to an element capable of accepting the forces applied to it, or
(b) the guard changes direction and the rails are adequately fastened at the return.

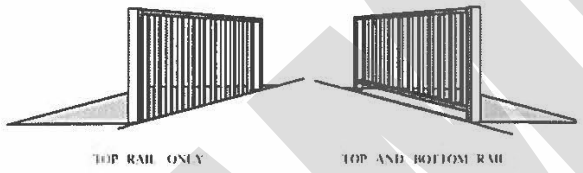


Figure A-1.2.2.A
Typical Post and Rail Systems

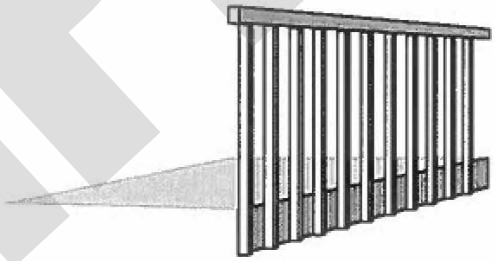


Figure A-1.2.2.B
Cantilevered Picket System

INSPECTIONS

Construction may commence upon issuance of the Building Permit. Several inspections are required to ensure that all work is done according to the approved plans including changes noted by the plans examiner. You will be issued a list of the required inspections for your specific project. **INSPECTIONS DO NOT HAPPEN AUTOMATICALLY.**

It is YOUR RESPONSIBILITY to ensure that either you or your contractor contacts the Township to request an inspection at least *48* hours before work proceeds from one inspection stage to the next. This will ensure that your project proceeds as approved.
FAILURE TO HAVE INSPECTIONS PERFORMED MAY RESULT IN HAVING TO UNCOVER AND EXPOSE WORK FOR INSPECTIONS.

EXAMPLES OF CONSTRUCTION STAGES

After your permit has been issued, you will be required to notify the Building Inspector at various stages that you are ready to have your deck inspected. As you construct the deck, you will be required to have the deck inspected multiple times.

EXCAVATION (PRE-FOOTING)

- You must call for this inspection after you have dug out all of the holes for footings, but before you pour concrete.
- If you are using a preformed footing base, this should be backfilled according to the manufacturers instructions.
- The Building Inspector will be checking the depth of the hole, ensuring that it is free of water, leaves, and that the size and the location match the approved drawings.

FRAMING (PLATFORM)

- Every element of the framing is required to be inspected. At this inspection, the Building Inspector will review the columns, beams, and joists. They will review the connections and ensure that the proper fasteners and hardware have been used.

FRAMING (GUARDS)

- If guards are required, or if they are not required but have been installed, they will need to be inspected fully. All components of the guard system are inspected, including the posts, rails, and balusters. They will review the connections and ensure that the proper fasteners and hardware have been used.

Final

- At the last inspection, the Building Inspector will review any remaining elements and verify the construction has been completed. The Inspector will review the final framing, including the stairs, handrails, and decking.

Important Contacts

Septic Permit: Otonabee-South Monaghan Township

Tel: 705-295-6852 **Fax:** 705-295-6405
20 Third Street, Keene - Office hours: 8:30 to 4:30 Monday to Friday

As of November 2024, all sewage system permits, inspections, and maintenance programs are now the jurisdiction of the Township of Otonabee-South Monaghan building department. Please contact the township office with any questions.

Otonabee Region Conservation Authority Permit

Tel: 705-745-5791 **Fax**: 705-743-7488
250 Milroy Drive, Peterborough – Don Allin @ ext. 225
Permits required for:

Minor filling
Minor construction - accessory buildings such as boathouse, garages, decks
Development within a development control area, 30m from a water course or flood line

Ministry of Natural Resources

Tel: 1-800-667-1940, **or locally** 705-755-2001
A permit is required:

for any docks not located on a body of water within the Trent Severn Waterway System any retaining wall construction

Note: While M.N.R. does not require a permit for docks less than 140 sq. ft. they still have jurisdiction. Concrete is not permitted to be placed in the water for new construction or repairs to existing facilities. Contact M.N.R. in respect to their jurisdiction.

Trent Severn Waterway

Tel: 705-750-4900 **Fax:** 705-742-9644
A permit is required:

For any 'in water' work, new construction and repairs to existing facilities along the Trent Severn Waterway, including Rice Lake and the Otonabee River

Other Permits/Approvals Applicant should be aware of:

Electrical Safety Authority (ESA)

Tel: - 1-877-372-7233 **Fax:** 1-800-667-4278

All structures must be located a minimum of:

- 16.5 ft. separation between main feeder hydro lines and any construction.
- 10 ft. separation between secondary lines and construction.

Wells: The Ministry of The Environment

1-888-396-WELL (9355)

Municipal Fire Department

Fire Chief Ted Bryan - 705-295-6880

Enbridge Gas

1-888-427-8888

Ontario Hydro One

1-888-664-9376

Need to Contact Us?

There is a lot of information covered in this guide. If you have any questions regarding this information, please do not hesitate to contact the building department for assistance. If you would like to make an appointment to discuss your plans with Building Department Staff, please contact Christine to make the arrangements.

Building Department Contacts

Phone: 705.295.6852
Fax: 705.295.6786

Building & Planning Department Staff

Paul Monks
Chief Building Official
Ext. 231
cbo@osmtownship.ca

Steve Wigboldus
Building Inspector
Ext. 212
buildinginspector@osmtownship.ca

Christine Zurosky
Building & Planning Assistant
Ext. 233
building.planningassistant@osmtownship.ca

Emily Baker
Junior Planner
Ext. 232
juniorplanner@osmtownship.ca

You can also send us mail or visit us at the Township Municipal Office located at:

20 Third Street . Keene . Ontario . K0L 2G0

Our office hours are:

Monday to Friday - 8:30 -4:30

OntarioBuildingCode - Reference Index

This is for reference only. Code provisions are updated periodically and these updates may not be reflected here. Please consult a BCIN designer.

FOOTINGS & FOUNDATIONS

DIVISION B

COLUMNS

DIVISION B

FRAMING

DIVISION B

STAIRS

DIVISION B

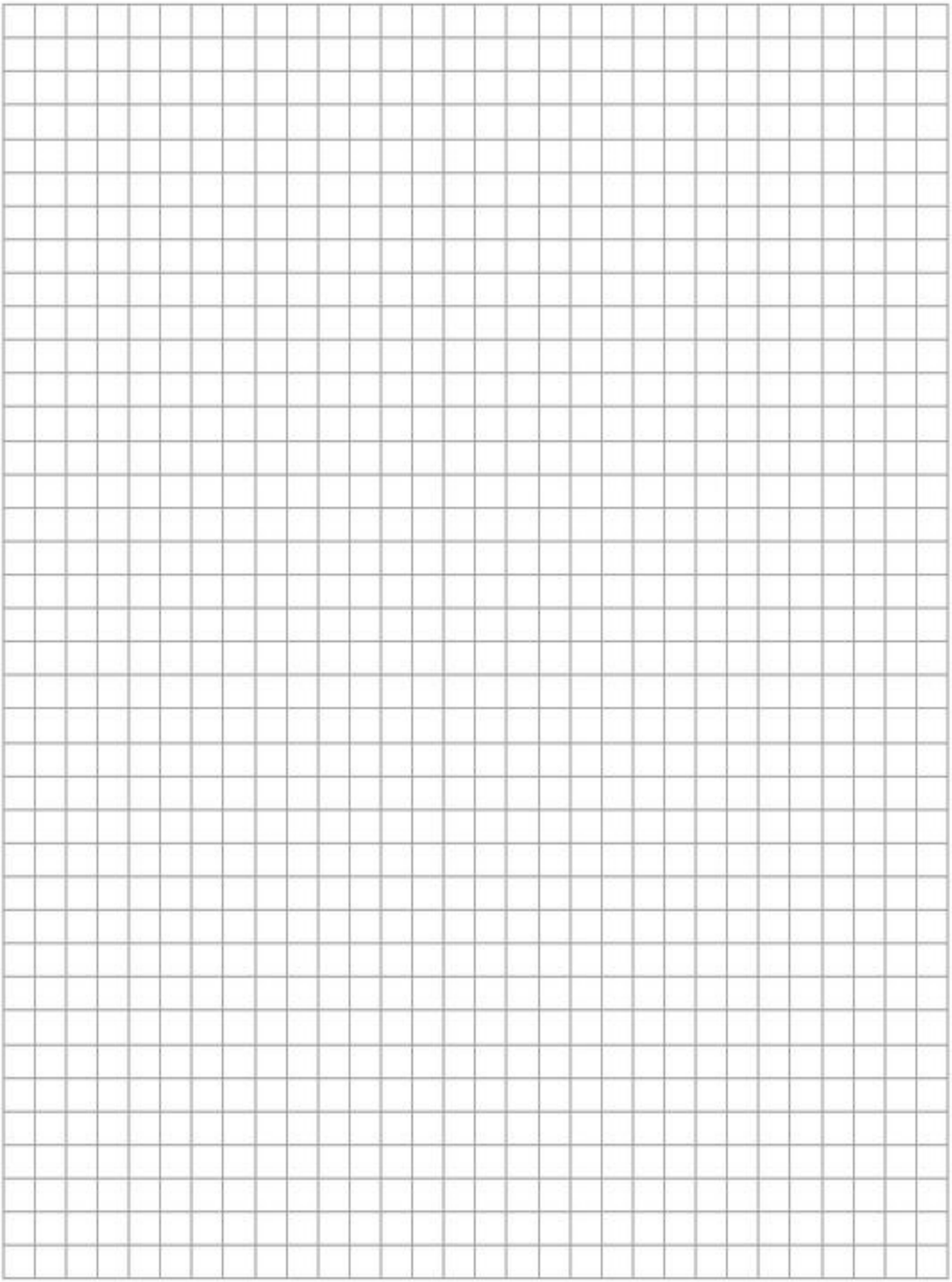
STAIRS CONT.

DIVISION B

HANDRAILS & GUARDS

DIVISION B

Notes - Sketch Your Ideas



~ 1/4" SCALE

Do You Have Questions?

If you have any questions regarding the information contained in this document, please contact the Township of Otonabee South-Monaghan Building Department for assistance

See pages 44 - 46 for contact information.

DECKS

20 Third Street . Keene . Ontario . K0L 2G0 . **Tel:** 705-295-6852 . **Tel. TF:** 1-800-999-4861 . **Fax:** 705-295-6405 . **Email:** info@osmtownship.ca