



Deck – Porch – Remodel – Addition Specifications

Building Inspections | City of Eden Prairie | 8080 Mitchell Road | Office: 952-949-8342

Permit Approval Process

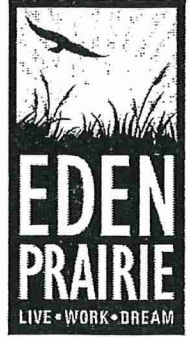
A. Plan Approval and Permit Issuance

1. Complete the appropriate forms and upload the following information into ProjectDox:
 - a. Plans must be drawn to scale indicating:
 - Addition size and square footage (this includes new decks)
 - Footing & post location(s)
 - Beam/header sizes & location(s)
 - Joist sizes, spacings, & locations
 - Flooring type, sizes & directions
 - Thermal wood plastics (composite materials) **code approved**
 - Roof framing construction (additions)
 - Existing Conditions with new remodel work shown
 - Energy calculations for additions and four-season porches
 - b. Several deck/porch/additions design manuals and books may be obtained from the library of your nearest building materials retailer to help you with your design.
2. Obtain or contact is to get a copy of your survey (if any) and draw the location of the proposed new deck/porch/addition.
3. When approved, the applicant shall pay the permit fee through ePermits. Post a copy of the City approved plans, survey & permit card on the job site for the inspector.
4. Obtain mechanical & plumbing permits is applicable through ePermits.
5. Call 651-284-5064 for electrical permits.

B. Inspections

1. Call 952-949-8341 or go [online](#) to schedule the following required inspections:
 - a. **Additions/Porches:**
 - **Footing** – Prior to pouring concrete
 - **Rough-in inspections** of mechanical & plumbing
 - Call **Jim Noonan** at 612-798-1877 for the electrical rough-in
 - **Framing** – Before installing insulation, sheetrock, or siding and after rough-ins.
 - **Insulation** – After insulation is in place, before covering with sheetrock
 - **Final Inspection** – of plumbing, mechanical and building when the building is complete and ready for occupancy
 - Call 612-798-1877 for the electrical final inspection
 - b. **Decks**
 - **Footing** – prior to pouring concrete
 - **Final** – when job is fully complete

FINAL DECK INSPECTION



City of Eden Prairie

Inspection: 952/949-8341

8080 Mitchell Road

Inspector _____

Eden Prairie, MN 55344-4485

Phone No.: _____

Site Address:	Final Inspection For:	Permit Number:
Contractor:	Date:	Time Requested:

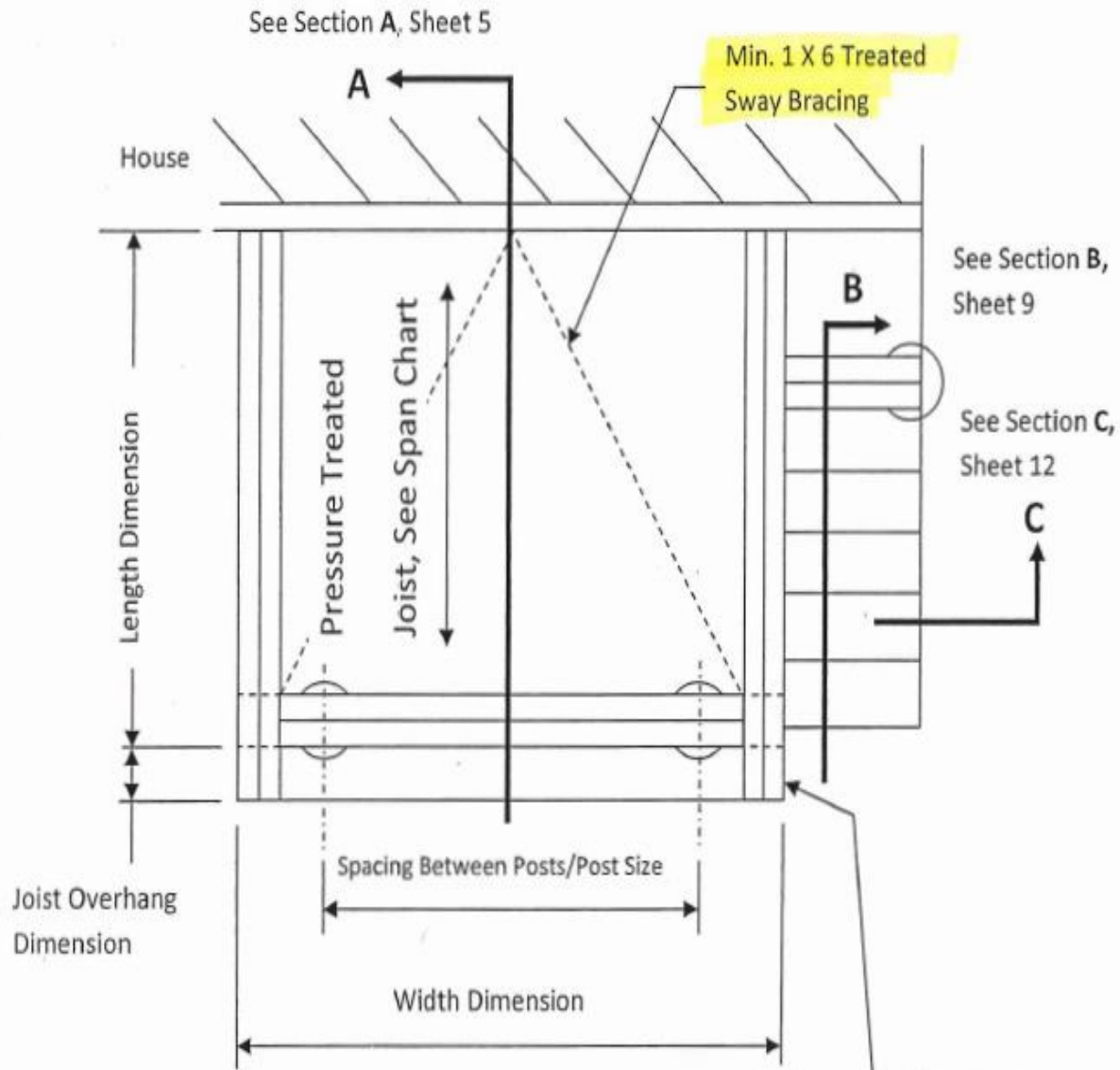
√	Code Violation – Correction Required	
	D-1 Framing <ul style="list-style-type: none"> According to City approved plans Treated cedar or redwood Permit card and plans available All joist hangers nailed Beam splices must be over posts Post-beam connector Landings on both sides of door Sway bracing 	D-4 Guardrail <ul style="list-style-type: none"> Required if greater than 30" above grade 36" minimum height Less than 4" opening Strength/stability Double rim or block rim joist @ 6' o.c.
	D-2 Footing/post connection <ul style="list-style-type: none"> Footings inspected and approved Sono tubes present 6" earth separation for cedar/redwood posts 	D-5 Stairways <ul style="list-style-type: none"> Handrails <ol style="list-style-type: none"> 1. 34"-38" high 2. Grippable (see sheets 9, 12 & 13) 3. 1 1/2" clearance 4. Continuous full length of stair 5. Baluster spacing less than 4-3/8" 7 3/4" maximum rise 10" minimum run Maximum 3/8" variation in risers and treads Positive connection at top of stairs Cedar or redwood stringers not on ground Solid level landing @ top and bottom of stairs
	D-3 House Connection <ul style="list-style-type: none"> Cantilevered bays and overhangs reinforced Ledger detail-flashing, lag screws Solid rim for lag screws Approved lateral bracing hardware 	

Code Violations:

	Inspectors Signature	Date
<input type="checkbox"/> Re-inspection required. The above violations must be corrected within 10 days. Call for re-inspection.		
<input type="checkbox"/> Re-inspection required. A \$50.00 re-inspection fee must be paid prior to a re-inspection. Call for re-inspection.		
<input type="checkbox"/> Final inspection approved.		

Deck Plan Example

(looking down at top of deck with stairs)



Where Guardrail Runs Parallel With Joists, Provide Double Outside Rim Or Solid Blocking Between Outside Rim and Next Immediate Floor Joist.

NOTE:

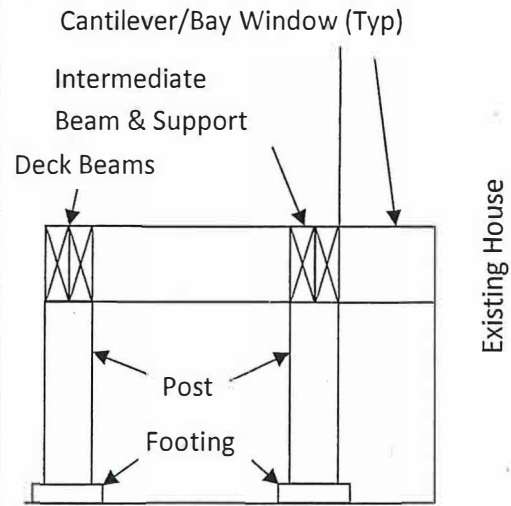
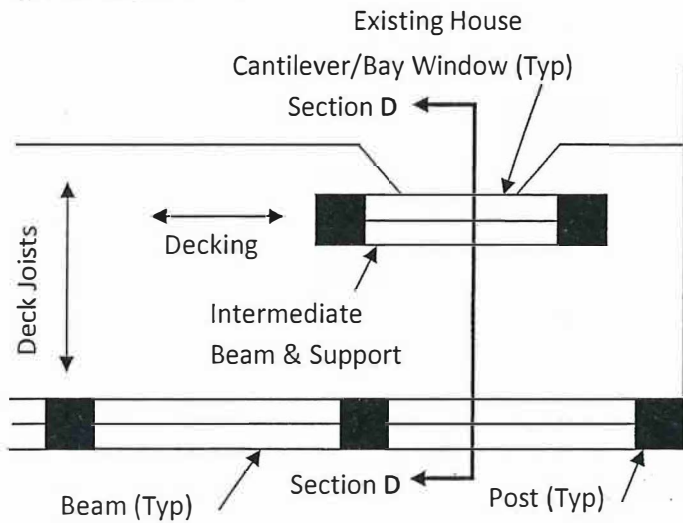
1. All beam splices must be over posts with 1 ½" min. bearing.

Cantilever Construction

Drawing Is Not To Scale

Example #1:

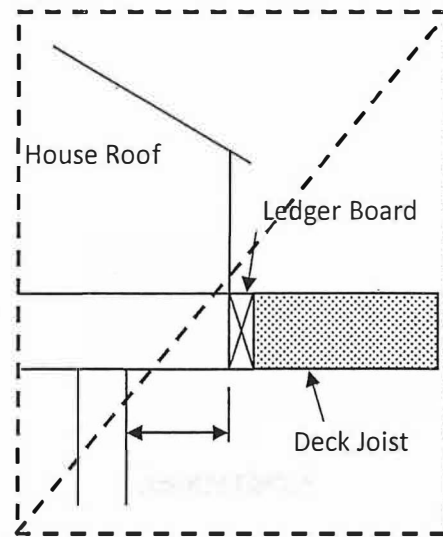
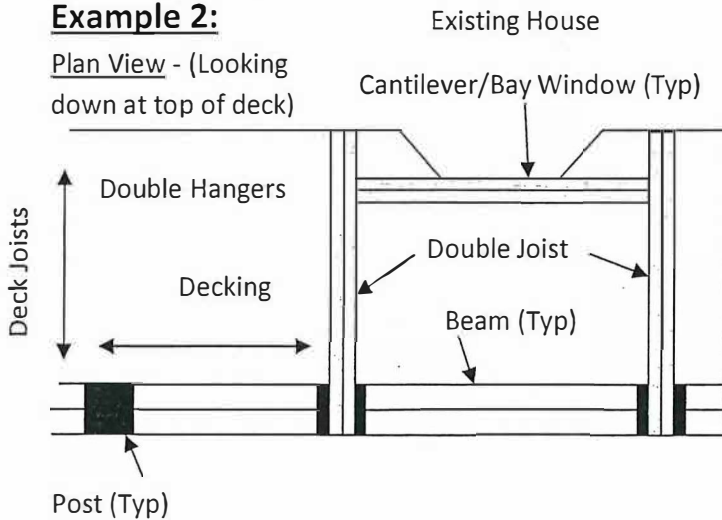
Plan View (Looking



Example #1, Section D

Example 2:

Plan View - (Looking down at top of deck)



Not Permitted

Notes:

Some homes have projections called cantilevers which should never be used to support decks. The above two examples show possible methods of providing proper deck support when cantilevers are present.

Example #1: Add and properly size an intermediate beam, support, and footings

Span Table

Span Table for Exterior Deck Joists (Pressure Treated)
Floor joist spans based on Southern Forest Products Association (SFPA) Updated June 1st 2013

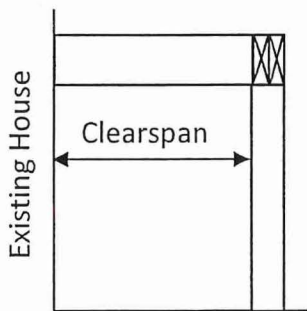
		Span (Feet and Inches)											
Species/Group	Member	2 x 6			2 x 8			2 x 10			2 x 12		
	o.c.(in.)	12	16	24	12	16	24	12	16	24	12	16	24
Western Woods Ponderosa Pine PP	No. 2	9-2	8-4	7-2	12-1	11-0	9-0	15-5	13-6	11-0	18-1	15-8	12-10
Southern Yellow Pine - SYP	No. 2	9-11	9-0	7-7	13-1	11-10	9-8	16-2	14-0	11-5	19-1	16-6	13-6

Note: Table to be used only for checking maximum spans of exterior joists in a wet condition – consult the building code for actual design.

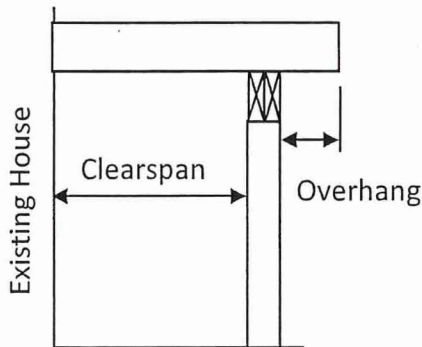
Beam/Header Table

Sizes (max.) Pressure Treated Lumber Southern Yellow Pine (SYP) No. 2 or Better

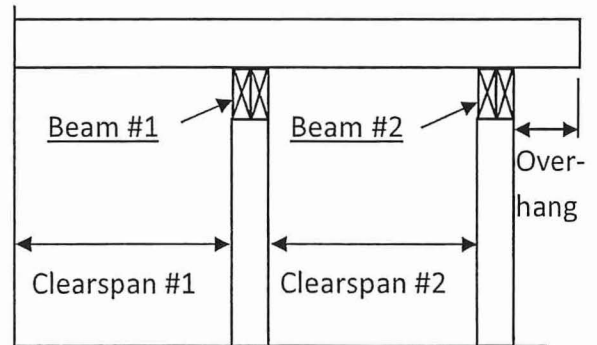
		Joist Span Loading the Beam (Feet) (1/2 The Clearspan Plus The Overhang)									
		3	4	5	6	7	8	9	10	11	12
Post Spacing (Feet)	4			1-4x6	1-4x6 2-2x6	1-4x6 2-2x6	1-4x6 2-2x6	1-4x6 2-2x6	1-4x6 2-2x6	1-4x6 2-2x8	1-4x6 2-2x8
	5		1-4x6 2-2x6	1-4x6 2-2x6	1-4x6 2-2x6	1-4x6 2-2x8	1-6x6 2-2x8	1-6x6 2-2x8	1-6x6 2-2x8	1-6x6 2-2x10	1-6x6 2-2x10
	6	1-4x6 2-2x6	1-4x6 2-2x6	1-4x6 2-2x8	1-6x6 2-2x8	1-6x6 2-2x8	1-6x6 2-2x10	3-2x8 2-2x10	3-2x8 2-2x10	3-2x8 2-2x10	3-2x10 2-2x12
	7	1-4x6 2-2x6	1-4x6 2-2x8	1-6x6 2-2x8	1-6x6 2-2x10	3-2x8 2-2x10	3-2x8 2-2x10	2-2x10 2-2x12	3-2x10 2-2x12	3-2x10 2-2x12	3-2x12
	8	1-4x6 2-2x8	1-6x6 2-2x8	3-2x8 2-2x10	3-2x8 2-2x10	3-2x10 2-2x12	3-2x10 2-2x12	3-2x10 3-2x12	3-2x12	3-2x12	3-2x12
	9	1-6x6 3-2x6	3-2x8 2-2x10	3-2x8 2-2x10	3-2x10 2-2x12	3-2x10 3-2x12	3-2x12	3-2x12	3-2x12		
	10	1-6x6 3-2x8	3-2x8 2-2x10	3-2x10 2-2x12	3-2x10 3-2x12	3-2x12	3-2x12				
	11	3-2x8 2-2x10	3-2x10 2-2x12	3-2x10 3-2x12	3-2x12						
	12	3-2x10 2-2x12	3-2x10 3-2x12	3-2x12							
	13	3-2x10 2-2x12	3-2x12								
	14	3-2x12	3-2x12								



Joist Loading Beam
= 1/2 Clearspan



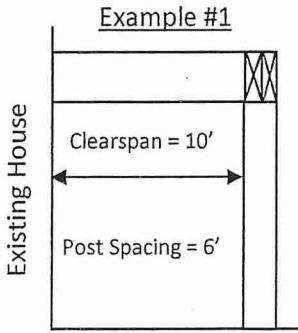
Joist Loading Beam
= 1/2 Clearspan + Overhang



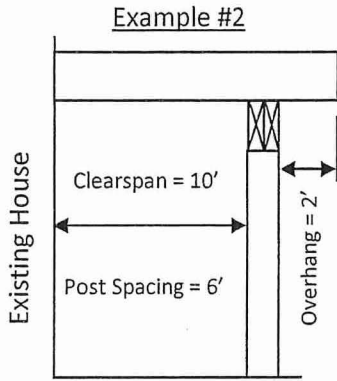
Joist Loading Beam
#1
= 1/2 (Clearspan 1 +

Joist Loading Beam #2
= 1/2 (Clearspan 2 +
Overhang)

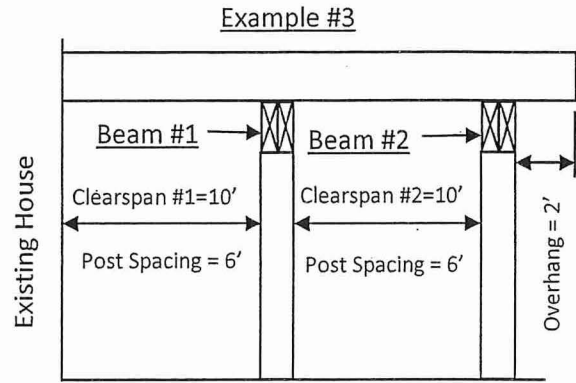
Examples of Beam/Joist Sizing



Joist Loading Beam
= 1/2 Clearspan
= 5'



Joist Loading Beam
= 1/2 Clearspan + Overhang



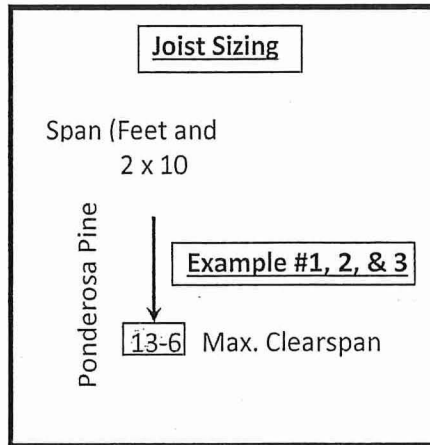
Joist Loading Beam

Joist Loading Beam #2

=
= 1/2 (Clearspan #1
+

Overhang)
= 5' + 2' = 7'

Beam Sizing			
Joist Span Loading the Beam			
Post Spacing	5	7	10
	<u>Example #1</u>	<u>Example #2 &</u>	<u>Example #3,</u>
6	2 - 2 x 6 1 - 2 x 8	2 - 2 x 6 2 - 2 x 8 1 - 2 x 10	2 - 2 x 8 2 - 2 x 10 1 - 2 x 12

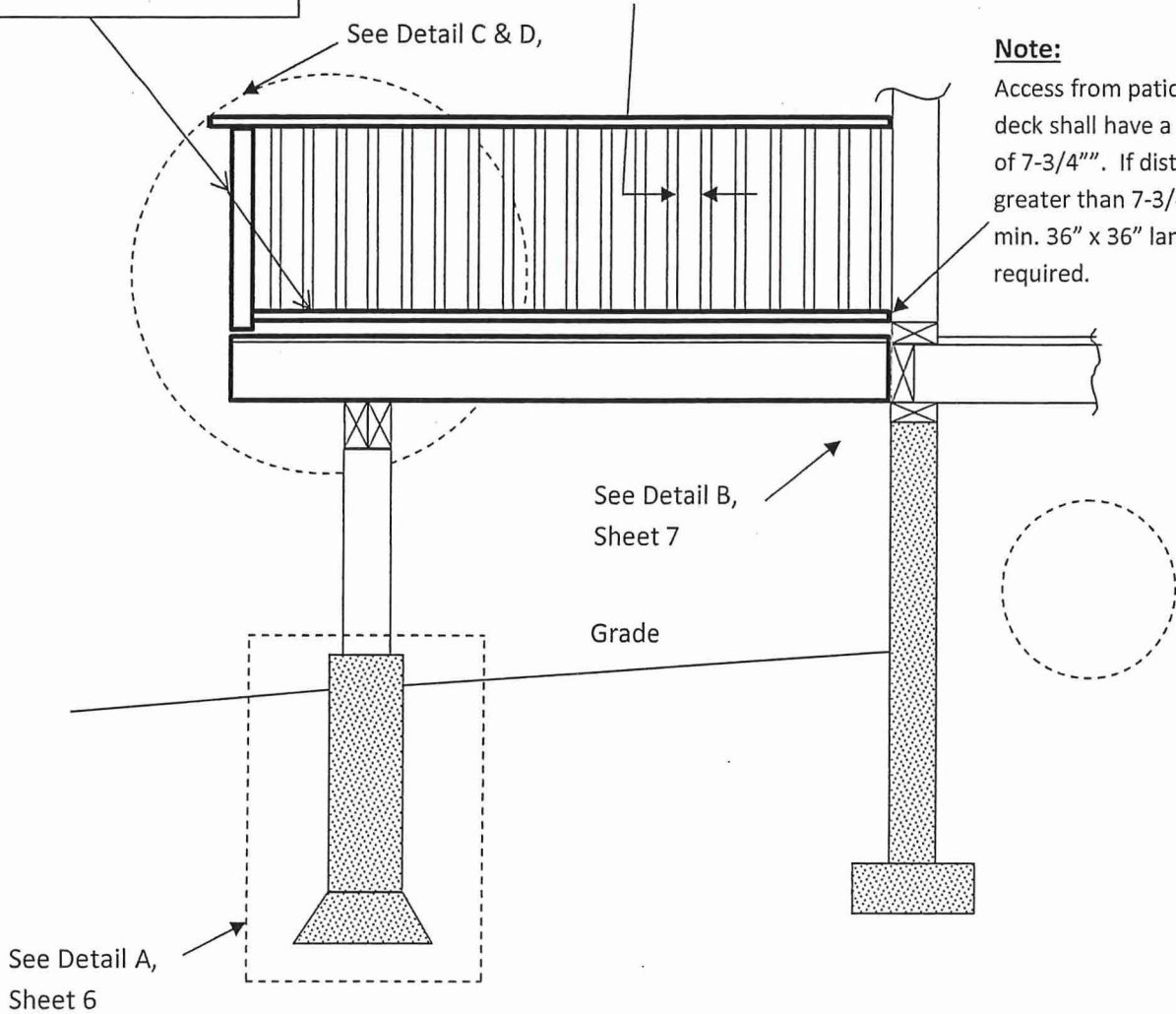


Deck Section A

Note: 4x4 posts shall not be notched with this rail style.

The Open Space Between Guardrail Spindles Whether Installed Horizontally, Vertically, Or Diagonally Must Be Less Than 4" (Inches).

Note: Access from patio door to deck shall have a max. rise of 7-3/4". If distance is greater than 7-3/4", a min. 36" x 36" landing is required.

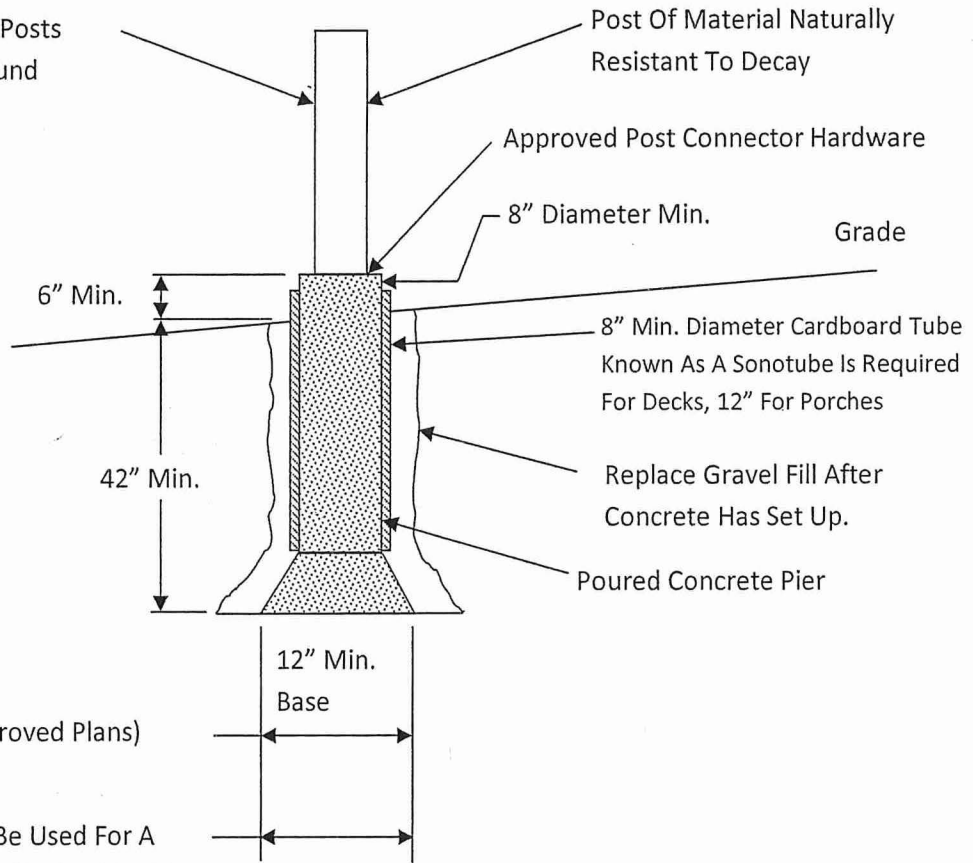


Note:

- 1) Redwood or cedar can be substituted for pressure treated lumber.
- 2) There are additional design requirements for hot tubs on decks.

Footing Detail A

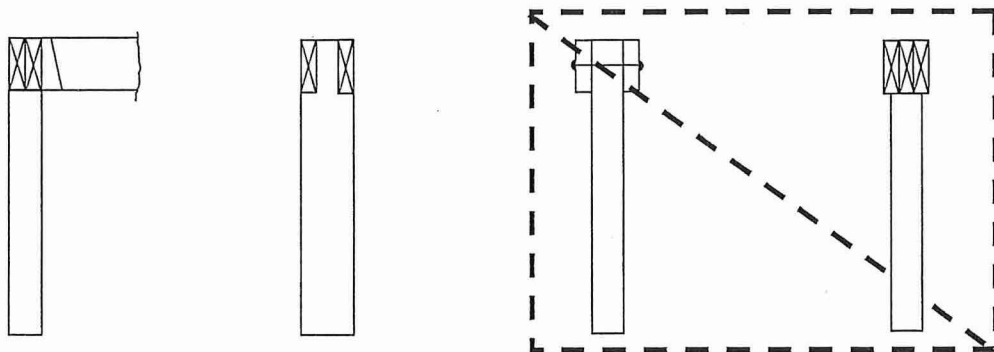
If Cedar & Redwood, Posts Shall Be 6" From Ground Surface



If Footing Might Be Used For A Future Porch, The Design Must Be Approved By The Eden Prairie Inspections Department.

Notes:
Footings to be inspected before concrete is poured

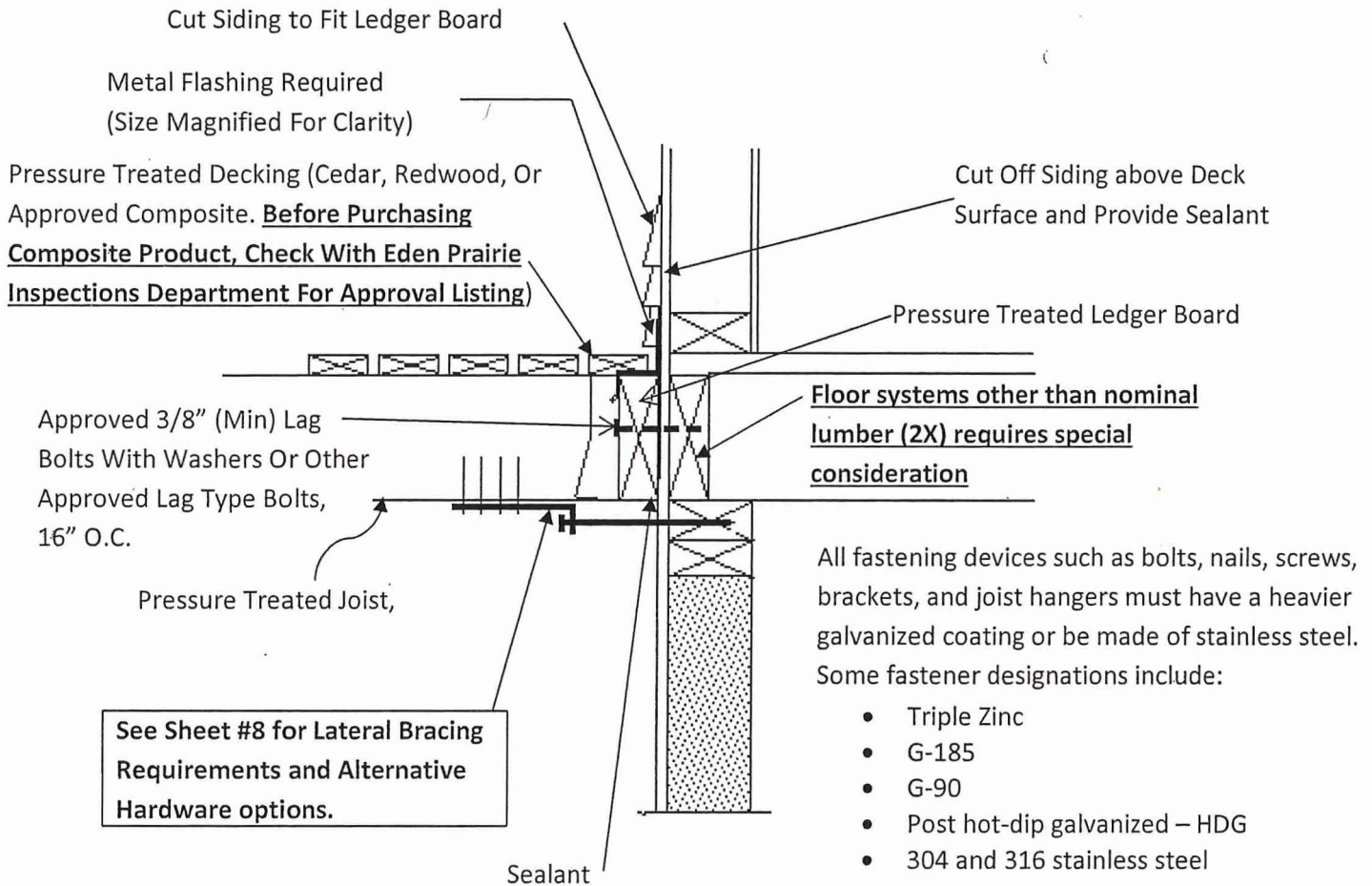
Post Beam Connections:



Not Permitted

Ledger Board Detail B

Drawing Is Not To Scale



Notes:

- 1) Contact Eden Prairie Inspections Department about special requirements for decks attached to house overhangs/cantilevers/bay windows
- 2) Floor systems other than nominal lumber (2X) requires special Consideration
- 3) Joist hangers to be sized and installed per manufacturer specifications

LATERAL BRACING REQUIREMENTS

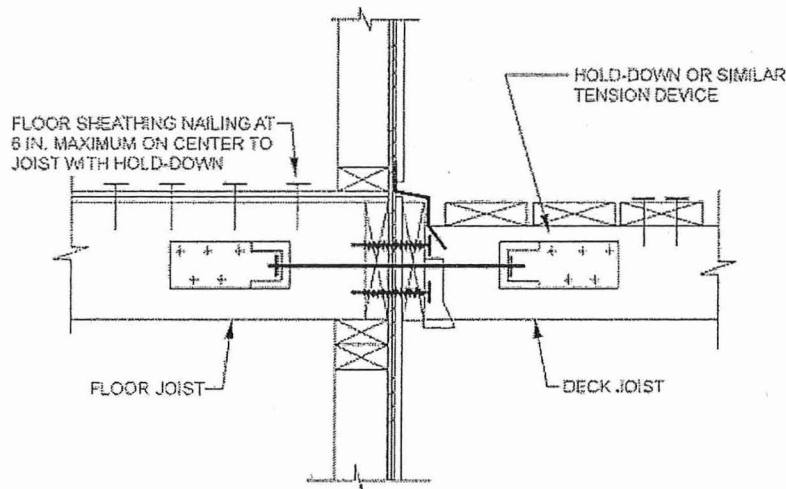
FIGURE R507.2.1(2) PLACEMENT OF LAG SCREWS AND BOLTS IN BAND JOISTS

R507.2.2 Alternate deck ledger connections.

Deck ledger connections not conforming to Table R507.2 shall be designed in accordance with accepted engineering practice. Girders supporting deck joists shall not be supported on deck ledgers or band joists. Deck ledgers shall not be supported on stone or masonry veneer.

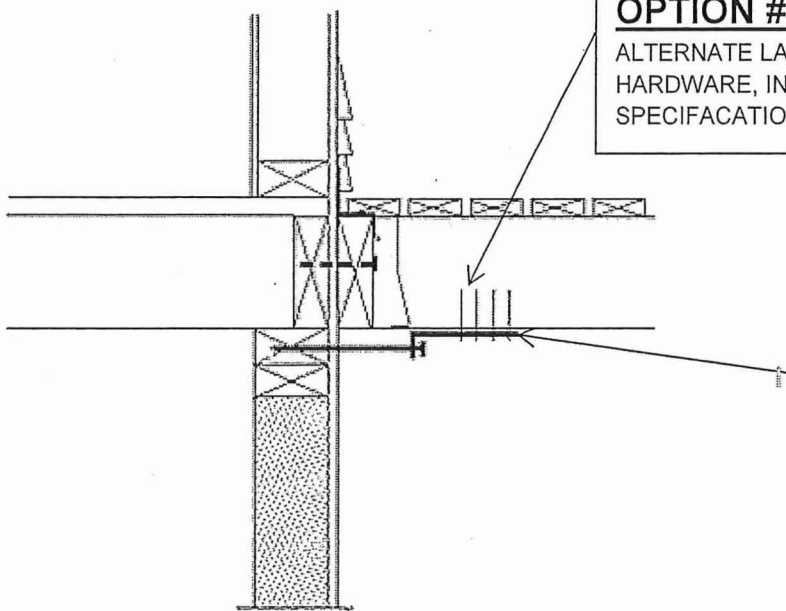
R507.2.3 Deck lateral load connection.

The lateral load connection required by Section R507.1 shall be permitted to be in accordance with Figure R507.2.3. Where the lateral load connection is provided in accordance with Figure 507.2.3, hold-down tension devices shall be installed in not less than two locations per deck, and each device shall have an allowable stress design capacity of not less than 1500 pounds (6672 N).



OPTION # 2

ALTERNATE LATERAL BRACING USING "APPROVED" HARDWARE, INSTALLED TO MANUFACTURERS SPECIFICATIONS / CODE.

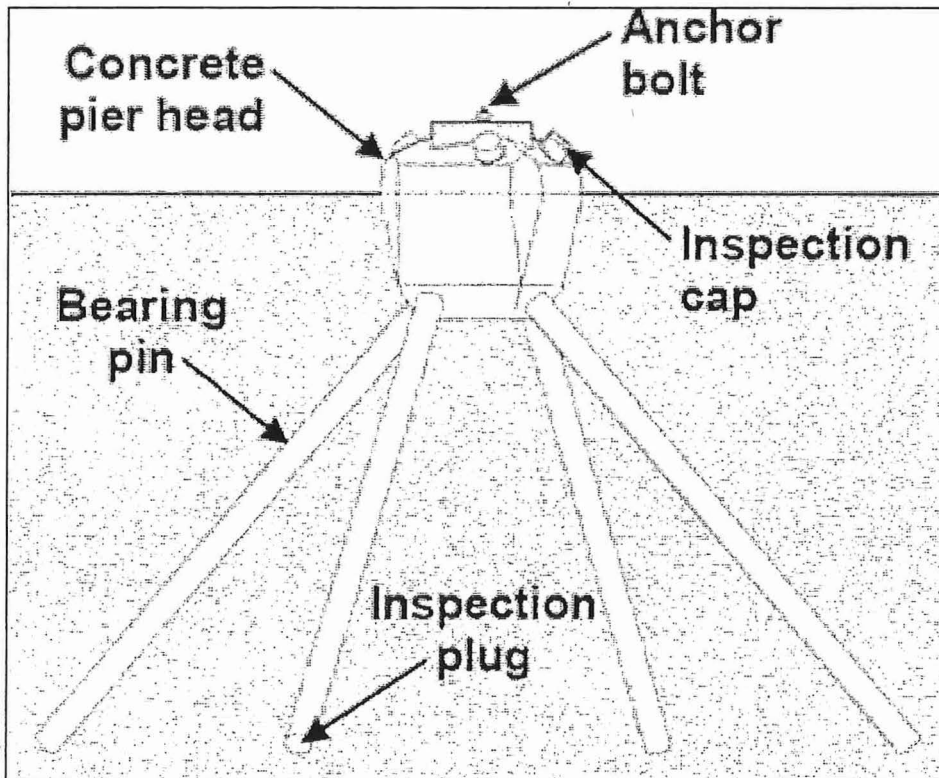


Example of alternate -
"approved" lateral bracing
hardware.

DIAMOND PIER FOOTING REQUIREMENTS

THE CITY OF EDEN PRAIRIE REQUIRES ALL DIAMOND PIER FOOTINGS USED TO BE A MINIMUM OF A DP-75 WITH A MINIMUM PIN LENGTH OF 63"

DIAMOND PIER FOOTINGS ARE NOT A SUBSTITUTE FOR USE WHERE POOR SOIL CONDITIONS EXIST- SEE MANUFACTURE REQUIREMENTS FOR INSTALLATION REQUIREMENTS



NOTE:

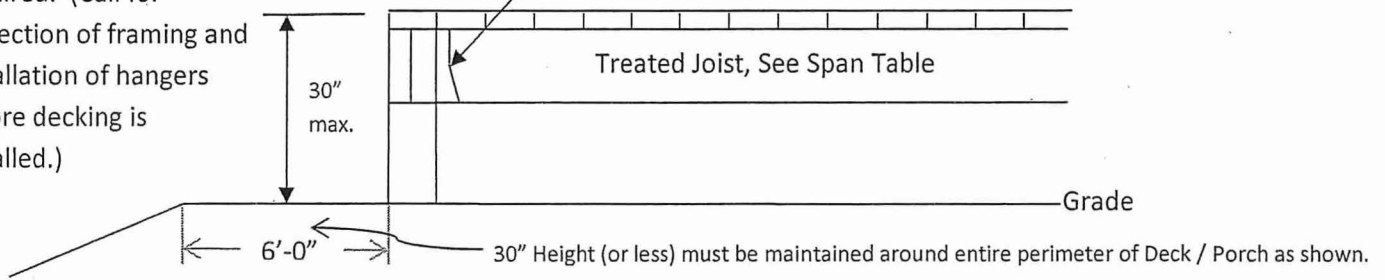
1. Diamond Pier Footings require properly drained, sound soils with a minimum of 1500 PSF bearing capacity. See IRC Table R401.4.1 for bearing soils listing and Table notes.
2. Diamond Pier Footings are for simple structures only. No asymmetrical, rotational, overturning, or dynamic loads. For additional information, see the full Diamond Pier Installation Manual.
3. All capacities use four pins of the specified length per foundation. Length includes that portion embedded within the foundation head.

Note: Verification of soil conditions shall be the responsibility of the installer.

If distance from the top of deck to grade is less than 30", guardrails are not required. (Call for inspection of framing and installation of hangers before decking is installed.)

Flush Beam Detail C

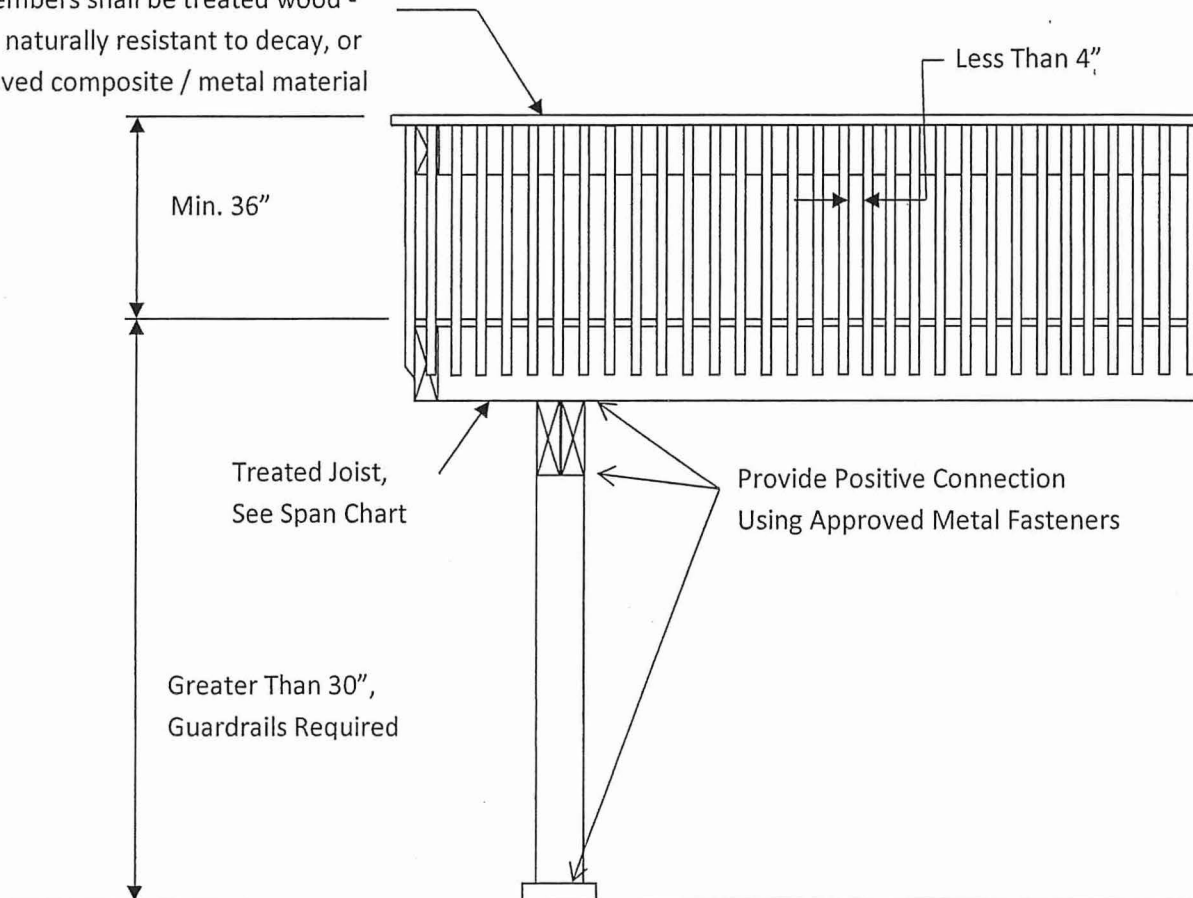
All fastening devices such as bolts, nails, screws, brackets, and joist hangers must have a heavier galvanized coating or be made of stainless steel. See Sheet 7 for some fastener designations.



Dropped Beam Detail D

Drawing Is Not To Scale

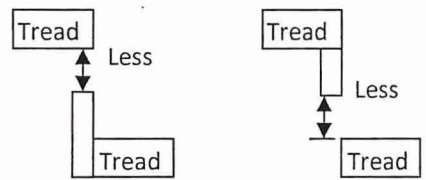
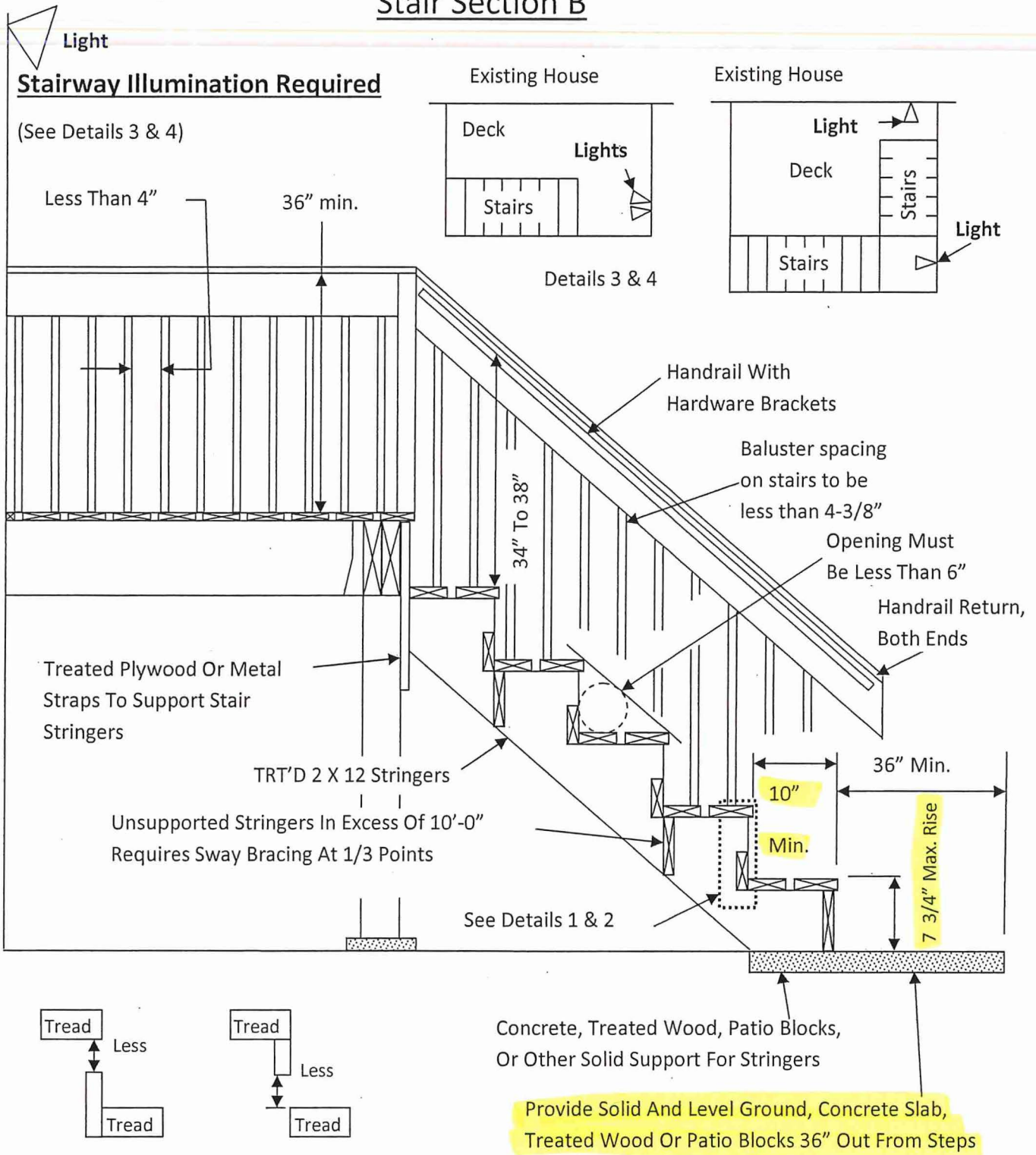
All members shall be treated wood - wood naturally resistant to decay, or approved composite / metal material



Note:

Beam to be sized by contractor, owner, or supplier

Stair Section B



Details 1 & 2

- Notes:**
- 1) The maximum variation from the largest rise/run to the smallest rise/run shall be 3/8"
 - 2) Minimum stairway width is 36 inches
 - 3) 4 or more risers requires a handrail
 - 4) A flight of stairs shall not have a vertical rise greater than 12 feet between floor levels or landings

Deck Stair Calculations

To calculate the number and size of risers and treads (less nosing) for a given stair run, divide the total rise (distance from grade to top of deck) by 7. For example, if the total rise for a stairway is 7'10" or 94" the answer will be 13.43. Since there must be a whole number of risers select the one closest to this figure (13.43) and divide it into the total rise.

Example #1

Total Rise of Stairway (94") Divided by (13) Number of Risers = (7.23" or 7 ¼") Riser Height
Number of Risers = 13
Riser Height = 7 ¼" (Max riser height = 7 ¾")

In each stair run the number of treads will always be one less than the number of risers. (Min. depth is 10") The total run would be calculated as followed:

Number of Treads = 12
Total Run = (10") Tread depth Multiplied By (12) Number of Treads = 120"
120" divided by 12" = 10' (Total Run)

The stairs in this example will have 13 risers 7 ¼" high, 10" wide and a total run of 10'

Example #2

The total run could be lengthened by increasing the number of risers and treads. This change would decrease the steepness of the stairway. Using the example above the calculations would be as followed:

Total Rise of Stairway From Above Example (94") Divided by (14) Increase In Number of Risers = (6.71" or 6 11/16") Riser Height
Number of Risers = 14
Riser Height = 6 11/16" (Max riser height = 7 ¾")

As stated above in each stair run the number of treads will always be one less than the number of risers. (Min tread is 10") The total run would be calculated as follows:

Number of treads = 13
Total Run = (10") Tread Depth Multiplied By (13) Number of Treads = 130"
130" divided by 12" = 10'10" (Total Run)

The Stairs in this example will have 14 risers 6 11/16" high, 13 treads 10" wide and a total run of 10'10"

Stringer Layout

Example Only:

In the actual laying out of the stair stringer, it is first necessary to determine the riser height. Set a story pole (straight strip of 1 X 4 lumber) in a vertical position on the final elevation and mark the location of the top surface of the deck above.

Set a pair of dividers to the calculated riser height and step *off* the distances. There will likely be a slight error in the first layout so adjust the setting and try again.

Continue adjusting the dividers and stepping *off* the distance on the story pole until the last space is equal to all the others. Measure the setting of the dividers which will be the exact riser height to be used in laying out.

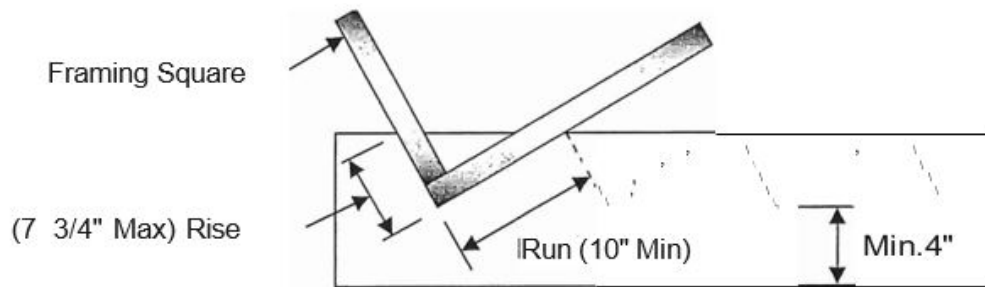


Fig. 1. Using a framing square to lay out a stringer

Continue until the required number of risers and unit treads has been drawn. The stair begins with a riser at the bottom so extend the last tread line to the back edge of the stringer. At the top extend the last tread and riser line to the back edge.

One Other adjustment must be made before the stringer is cut. When the bottom tread is installed the tread thickness needs to be cut off.

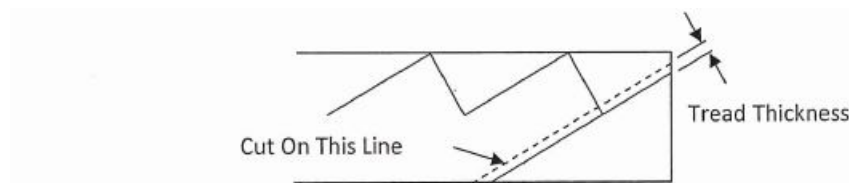
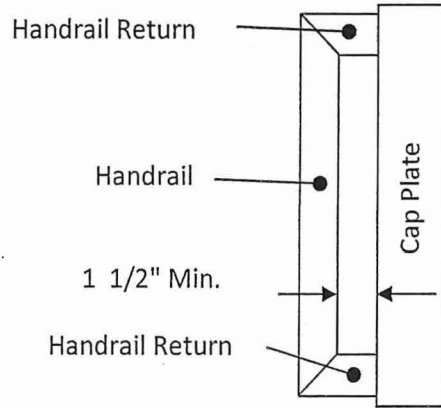
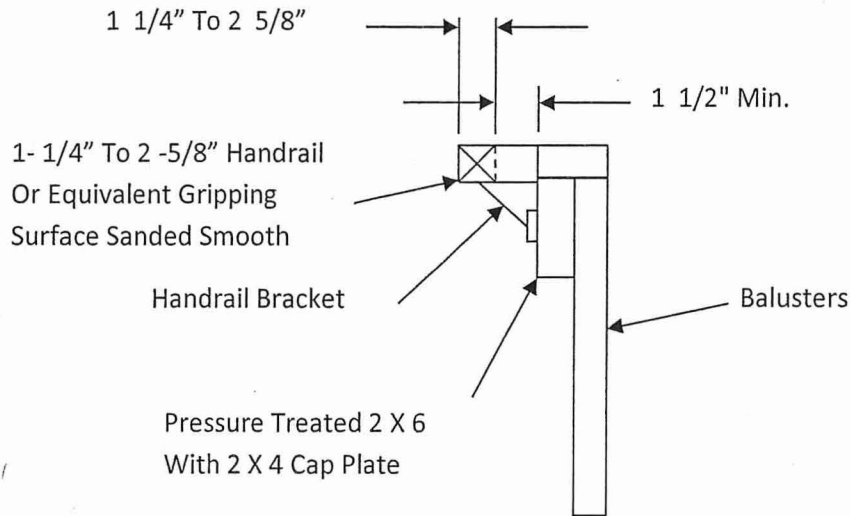


Fig. 2. Trimming the bottom end of a stringer to adjust for tread thickness

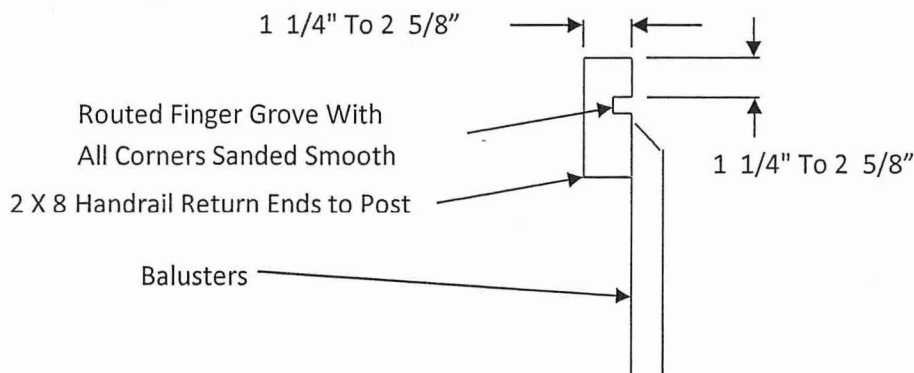
Handrail Examples



Top View of Handrail Section C



End View of Handrail Section C



R507.3 Wood / plastic composites.

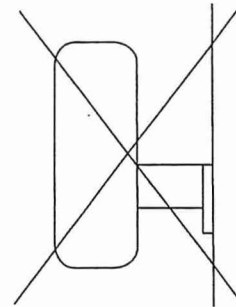
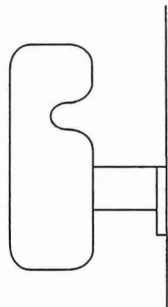
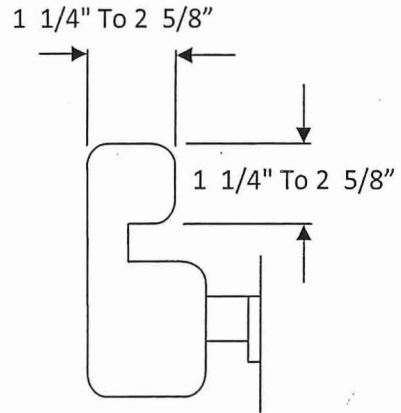
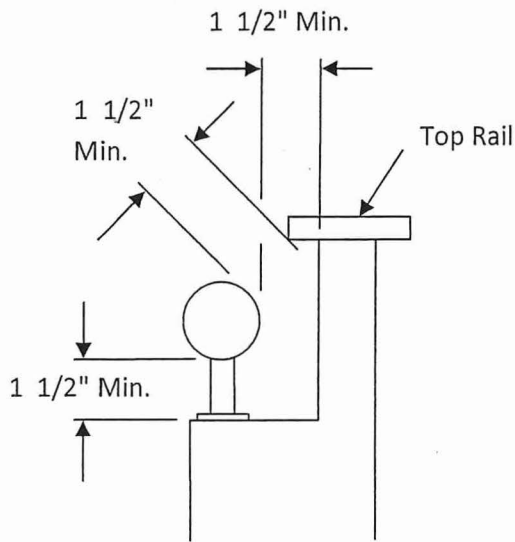
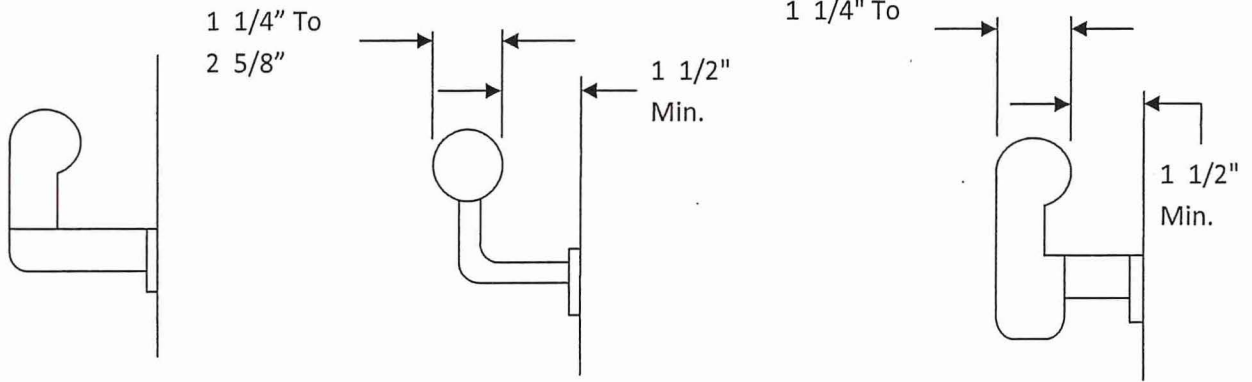
Wood / plastic composites used in exterior deck boards, stair treads, handrails and guardrail systems shall bear a label indicating the required performance levels and demonstrating compliance with provisions of ASTM D 7032

R507.3.1 Installation of wood / plastic composites

Wood / plastic composites shall be installed in accordance with the manufactures instructions.

Acceptable Handrail Details

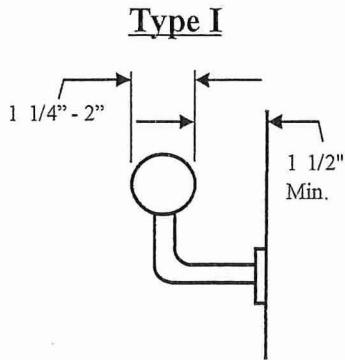
(Must Return to Newel Posts or Guardrail)



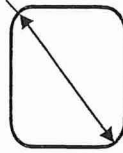
Note:
Other shapes may be acceptable if they provide an equivalent gripping service and must be approved by the Eden Prairie Inspections Department.

Not Acceptable

Acceptable Handrail Details



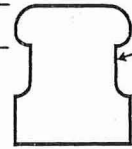
Max. 2 1/4"



Type I: If not circular the handrail shall have a perimeter dimension of at least 4" and not greater than 6 1/4".

Type II

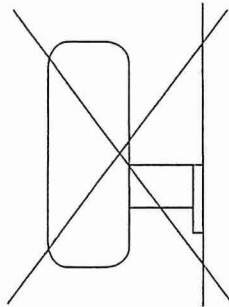
3/4"



Handrail with a perimeter > 6 1/4". Min. width of the handrail above the recess shall be 1 1/4" to a max. of 2 3/4" with edges having a radius of 1/64".

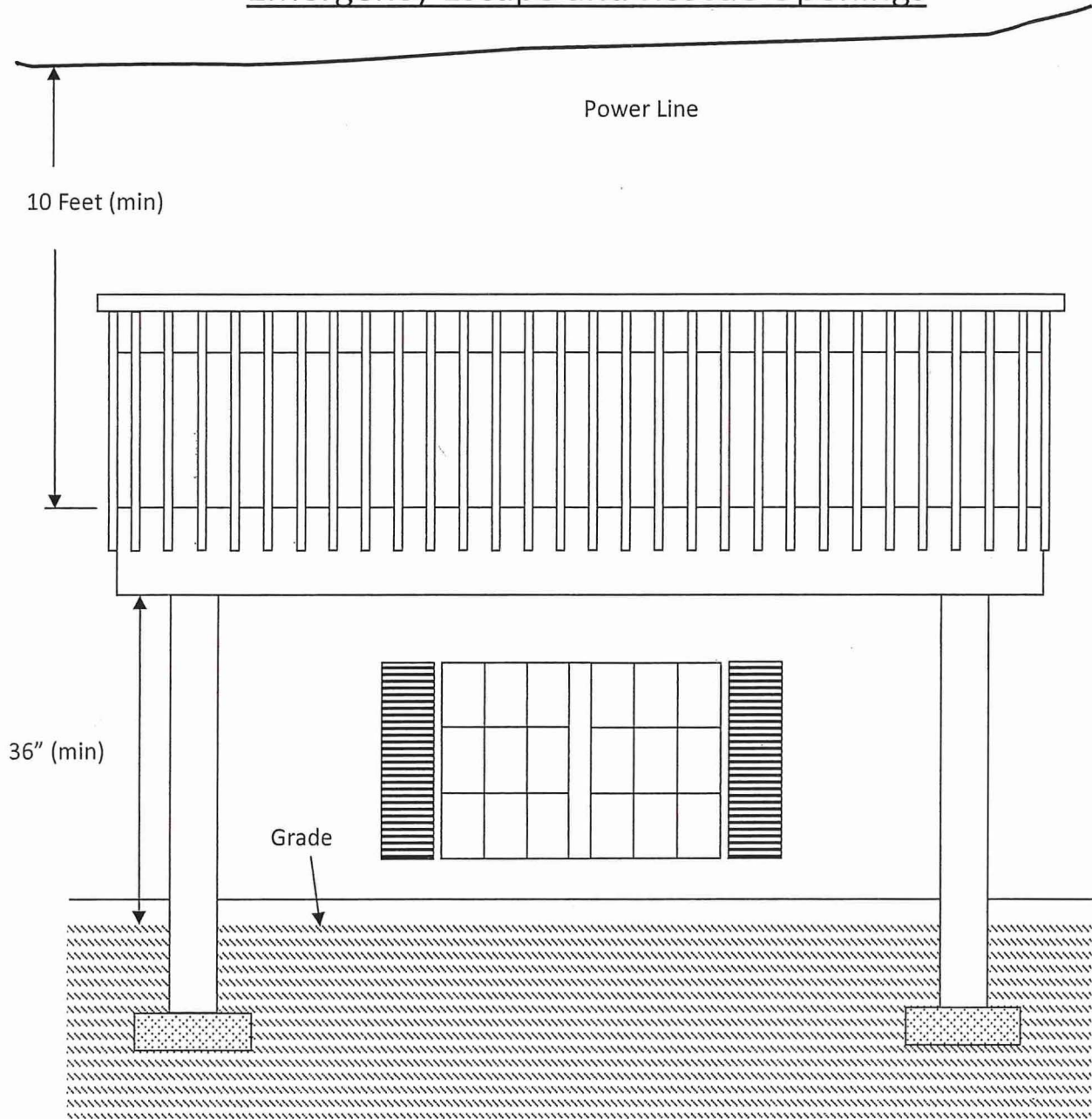
Depth of at least 5/16" within 7/8" below widest portion of profile, shall continue for at least 3/8" to a point not less than 1 3/4" below tallest portion of profile.

Acceptable Handrail Details



Not Acceptable

Emergency Escape and Rescue Openings



Notes:

- 1) A grade floor opening is a window or other opening located such that the sill height of the opening is not more than 44 inches above or below the finished ground level adjacent to the opening



Tested and Approved Deck Products

Building Inspections | City of Eden Prairie | 8080 Mitchell Road | Office: 952-949-8342

The evaluation report numbers indicate structural approval of the products listed. Changes are continuously being made to the list. If the product you are interested in is not on the list, talk to the company selling the product and inquire about their ability to provide an evaluation report.

Updated December 20, 2022

<u>Product Name</u>	<u>Manufacturer</u>	<u>ESR</u>
All Season	Avon Plastics, Paynesville, MN.	ESR-1461
Armidillo	Avon Plastics. Paynesville, MN.	ESR-1461
Aura Decking	Gracious Living Innovations Inc. Mississauga, Ont	CCRR-1039
Azek Decking Systems	Azek Building Products, Scranton, PA	CCRR-0101
Cali Bamboo Deck boards	Cali Bamboo, San Diego, CA.	ESR-4197
DeckKorator Deck Boards	Eovations, LLC., Selma, AL.	CCRR-0195
Deck-X Strong	Interplast Group, Livingston, NJ	ESR-2824
DockSider Plank	Azek Co. Columbus, OH	CCRR-0128
DuxxBak Composite Decking	Green Bay Decking LLC., Green Bay, WI.	PFS Teco ER 0125
Edge Prime Plank	Azek Co., Columbus, OH	CCRR-0128
EnDeck	Enduris Extrusions, Jacksonville, FL	CCRR-0144
Eovations Deck Boards	Eovations LLC., Selma, AL.	CCRR-0195
Evergrain Composite Deck Boards	Tamko Bldg Products Inc., Joplin, MO	CCRR-0177
EverNew Vinyl Decking	Certainteed Corp., Valley Forge, PA.	CCRR-0219
Fiberon Decking	Fiber Composites LLC., New London, NC	ESR-4947
Gorilla Deck	Homeland Vinyl Products, Birmingham, AL.	ESR-5017
Inteplast Deck X-Strong	Inteplast Group Corp., Livingston, NJ.	ESR-2824
Legacy Plank	Azek Co., Columbus, OH.	CCRR-0128
Lifecycle Decking	MoistureShield Inc., Springdale, AZ.	PFS Teco ER 0110
Modern View Decking	MoistureShield Inc., Springdale, AZ.	PFS Teco ER 0110
Moistureshield Decking	MoistureShield Inc., Springdale, Az	PFS Teco ER 0110
Newtechwood Ultra Shield	Newtechwood Corp., Huizhou, China	ESR-3487
North Dex	Avon Plastics, Albany MN.	ESR-1461
Renew Evolve Deck Boards	Renew Plastics, Luxemburg, WI.	PFS Teco ER 0132
Renew Revolve Deck Boards	Renew Plastics, Luxemburg, WI.	PFS Teco ER 0119
Reliable Plank	Azek Co., Columbus, OH.	CCRR-0128
Reserve Plank	Azek Co., Columbus, OH	CCRR-0128
Rhino Composite Decking	Azek Co., Columbus, OH	ESR-1461

Seasons Decking	Avon Plastics, Paynesville, MN.	ESR-1461
SLS Composite Deck Boards	Avon Plastics, Paynesville, MN.	CCRR-0195
Sylvanix Embellish	Eovations LLC., Selma, AL.	ESR-3771
Terrain Plank	Sylvanix Outdoor Products, Inc., Covina, CA.	CCRR-0128
Timber Tech Decking Planks	Azek Co., Columbus OH.	CCRR-0128
Trex Enhance Decking	Azek Co., Columbus, OH.	CCRR-0301
Trex Select Decking	Trex Company, Winchester, VA.	ESR-3168
Trex Transcend Decking	Trex Company, Winchester, VA.	ESR-3168
Twin Finish Plank	Trex Company, Winchester, VA	CCRR-0128
UltraDeck	Azek Co., Columbus OH.	CCRR-0250
Vantage Decking	Midwest Manf. Extrusion, Eau Claire, WI.	PFS Teco ER 0110
VEKAdeck	MoistureShield Inc., Springdale, AZ.	CCRR-0137
Vision Decking	Veka Inc., Fombell, PA.	PFS Teco ER 0110
Vue Decking	MoistureShield Inc., Springdale, AZ.	PFS Teco ER 0110
West Star	MoistureShield Inc., Springdale, AZ	ESR-1461
Wolf Decking	Avon Plastics, Paynesville, MN.	ESR-2824
Woodland Seasons	Wolf Organization, York, PA.	ESR-1461
	Avon Plastics, Paynesville, MN.	

NOTE: It is extremely important to read all reports thoroughly!

Not all products are approved for use on stairs.

Check ICC-ES, Intertek & other third-party testing websites for current status of product reports.

You may also find wood plastic composite materials with a UL designation. UL also conducts structural testing for these types of products.

Another listing you may see is ANSI. ANSI correlates with the CCRR

designations. NER and ESR numbers correlate to International Code

Council Evaluation Services.

Websites for Evaluation Service Reports:

ESR - International Code Council Evaluation Services: www.icc-es.org

CCRR - Intertek Code Compliance Research Report: www.bpdirectory.intertek.com

PFS TECO - PFS Corporaation and Timberco Inc. (Third party): www.pfsteco.com

Current list posted on 10,000 Lakes Chapter of ICC website www.10klakes.org