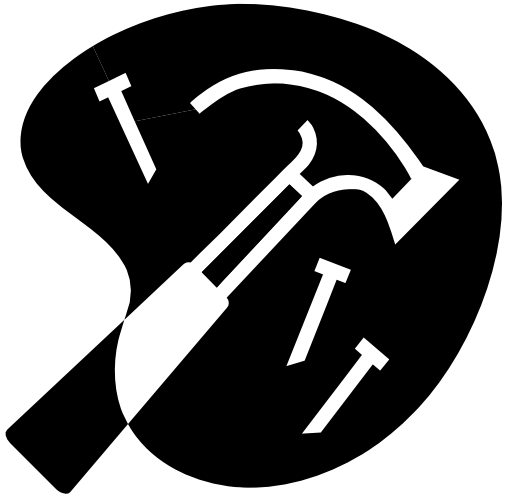
CITY OF OAK CREEK

DECKS

GENERAL REQUIREMENTS



DEFINITION

Deck: Any structure which serves as a raised horizontal platform on floor constructed of wood or other materials, without enclosing walls or roof.

Attached Deck: Any deck which is physically connected to the principal building or accessory structure.

Detached Deck: Any deck which is not physically attached to the principal building accessory structure.

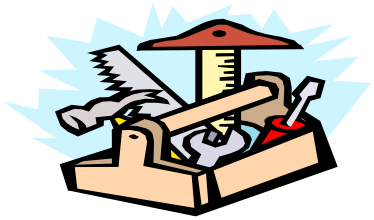


TABLE NO. 1
FASTENER SCHEDULE

DESCRIPTION OF BUILDING	NUMBER & TYPE OF FASTENER[1 2 3]
Joist to sill or girder, toe nail	2-16d, 3-8d
Bridging to joist, toe nail each end	2-8d
1" x 6" floor or less to each joist, face nail	2-8d , 16" o.c.
2" floor to joist or girder, blind and face nail	2-16d
Continuous header, two pieces	16d at 16" o.c. along each edge
Built-up girder and beams	20d at 32" o.c. at top and bottom and staggered 2-20d at ends and at each splice
5/4 x 6" decking	2-8d per joist
Faced nailed joist	4-12d
Ledger Board (lag screws) (carriage bolts)	2 x 5", 16" o.c. Nails 16d
Beam to post connection (carriage bolts)	2 - 2 x 8"
Guardrail post to rim joist (carriage bolts)	2 - 2 x 5"

If joist hangers are used refer to the manufacturer's requirements.

Please note, these are common methods of fastening and there may be other acceptable means of fastening based on approval by the Department.

All fasteners shall be corrosion resistant.

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[1]All nails are smooth-common, box or deformed shank except where otherwise stated.

[2]Nail is a general description and may be T-head, modified round head or round head.

[3]Common or box nails may be used except where otherwise stated.

PERMIT PROCEDURE

Please submit application, your plans, and your plat of survey for your property showing the location of the deck.

There is a plan review fee of $35. The deck permit fee is $50.

Please allow 7-10 days for processing of your permit application.

If you have any questions, please call the Building Inspector at 768-6547 between the hours of 8 to 10 a.m. and 1 to 2 p.m.

SOIL & EXCAVATION REQUIREMENTS FOR DECK PIERS OR FOUNDATIONS

- No pier shall be placed on soil with a bearing capacity of less than 2,000 pounds per square foot unless the pad support is designed through structural analysis

- All organic material (roots, etc.) shall be cut off at the sidewalls of the borings or trench. All organic and loose material must be removed from the cavity area prior to pouring concrete.

DECK PIERS, PADS AND FOUNDATIONS

General footings, pads or piers shall be of adequate bearing area to safely distribute all live and dead loads to the supporting soil without exceeding the bearing capacity of the soil.

Type and size of concrete pads, piers, or foundations:

DECKS ATTACHED TO PRINCIPAL BUILDINGS

- *Concrete pads* - the minimum depth of a pad shall be 48" below grade. The minimum dimensions of this pad shall be 4" in depth and 8" in diameter.

- *Piers* - the minimum depth of concrete piers shall be 48" below grade. The minimum dimension of this pier shall be 8" in diameter. (The concrete piers(s) shall extend a minimum of 6" above grade unless an approved mounting bracket is secured at the top surface of the piers(s).)

◊ *Deck foundations* - shall be in accordance to the requirement of Section 30.18(1) (2) (a) or (e) in this code if used instead of piers or pads.

◊ *Direct burial wood posts* - shall be placed on a minimum 2" nominal thickness treated plate or other approved materials at a uniform depth below grade. Posts shall be treated to C2-C15 AWPA STD for direct soil contact 4" below grade. Post shall be a minimum of 4' below established grade.

DETACHED DECKS

Note - Detached decks which are adjacent to the dwelling and used for exiting purposes shall follow the requirements of an attached deck.

◊ *Concrete pads* - shall be provided at a uniform depth below grade with all loose or organic material removed from the pad area prior to placement of concrete. The pad shall have a minimum depth of 4' thick and 8" in diameter.

◊ *Piers* - the minimum 8" diameter concrete piers shall be at a uniform depth below grade.

◊ *Direct burial wood posts* - shall be placed on a minimum 2" nominal pressure treated plate or other approved materials at a uniform depth below grade. Posts shall be treated to C2-C15 AWPA STD.

◊ *Ground contact framing* - shall be allowed for decks which are less than 24" above grade. All materials in direct contact with the soil shall be treated to C2-C15 AWPA STD.

Alternate Provisions and Methods

Wood Decks. Wood decks attached or used as an exit way to the dwelling may be constructed to the Uniform Dwelling Code standards listed below.

⇒ Excavation requirements of s. ILHR 21.14
⇒ Footing requirements of s. ILHR 21.15
⇒ Frost penetration requirements of s. ILHR 21.16
⇒ Load requirements of s. ILHR 21.02
⇒ Stair, handrail and guardrail requirements of s. ILHR 21.04
⇒ Decay protection requirements of s. ILHR 21.10

New materials and methods shall comply with the provisions of Section 30.44.

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INSPECTIONS REQUIRED

1) Post holes prior to setting posts
2) Rough Framing prior to decking
3) Final when deck is completed

Please note: The contractor (or owner) responsible should arrange for inspections by notifying the Inspection Department a minimum of 24 hours in advance. The Inspection Department has two (2) business days by State Code requirements to complete the inspection before you proceed.

Guardrail and handrail detail.

- *Height*. Handrails shall be located at least thirty (30) inches, but not more than thirty four (34) inches, above the nosing of the treads. Guardrails shall be located at least thirty six (36) inches above the surface of the deck.

- *Open railings*. Open guardrails or handrails shall be provided with intermediate rails or an ornamental pattern to prevent the passage of a sphere with a diameter greater than four (4) inches per ILHR 21.04(2) 2.

- *Railing loads*. Handrails and guardrails shall be designed and constructed to withstand a 200 pound load applied in any direction.

Stairway-Treads and Risers

Risers. Risers shall not exceed eight (8) inches in height measured from tread to tread.

Treads. Treads shall be at least nine (9) inches wide, measured horizontally from nose to nose.

Variation. There shall be no variation in uniformity exceeding 3/16 inch in the width of a tread or in the height of risers.

Stair stringers shall be supported in accordance to the same manner as used for the deck.

FRAMING

General requirements:

Materials. All wood framing used in deck construction shall be pressure treated against decay or shall be a species of wood that is naturally decay resistant or shall be protected from the weather.

Design loading. Decks shall be designed for a minimum of a 40 pound per square foot loading.

Fastener requirements. See Fastener Schedule Table No. 1. If joist hangers are used refer to the manufacturer's requirements.

Column post

Column spacing. Column posts shall be spaced per Table No. 2.

Column size.

- All column posts not exceeding six (6) feet in height shall be a minimum of four inches by four inches (4x4) nominal thickness.

- All column posts exceeding six (6) feet in height shall be a minimum of six inches by six inches (6x6) nominal thickness.

Lateral support. Column posts shall be constructed in such a manner or mechanically attached to the deck foundation to resist lateral movement.

Beams

Beam size. All beams shall be sized per Table No. 2.

- Beams, except as otherwise noted in Table No. 2, shall be a minimum of two (2), two (2) inch thick member or one (1), four (4) inch thick member (i.e. 2-2x8 or 1-4x8).

- Beams may be spaced on each side of the post provided that blocking is installed a minimum of twenty four (24) inches on center between the beam member.

Bearing. Beams bearing directly on the posts shall be attached by means of approved metal anchors or other approved methods.

Ledger Boards. Ledger board/s attached directly to the house or other structure may be used to replace a beam or beams. A single member of equal depth to the required size beam shall be used. The ledger board shall be attached with bolts, lag bolts or nails, spaced no less than 16 inches on center, secured directly into the building structure. Flashing shall be installed between the ledger and building structure.

Joists

Joist size. All deck joists shall be sized and spaced per Table No. 2.

Bearing. Deck joists shall bear a minimum of one and one half (1-1/2) inches on the beam or ledger board. Joists fastened to the face of the beam or ledger shall be attached with approved metal hangers.

Bridging. Bridging shall be provided at intervals not exceeding eight (8) feet.

Overhanging of joists. Joists which are at right angles to the supporting beam shall not be cantilevered more than two (2) feet past the supporting beam, unless designed by structural analysis.

Decking

Material. All decking material shall be a minimum of one and one quarter (1-3) inches thick, nominal thickness. One inch decking may be used provided that the joists are spaced no more than 16" on center.

Decking orientation.

- Decking shall be installed diagonally or at right angles to the joists.

- Decking shall be centered over joists with cuts made parallel to joists. Not more than two adjacent boards may break joints on the same joist except at ends and at openings.

Guardrails & Handrails

Guardrails. All decks which are more than twenty four (24) inches above grade shall be protected with guardrails.

Handrails. Every stairway of more than three (3) risers shall be provided with at least one handrail. Handrails shall be provided on the open sides of stairways.

TABLE NO. 2

JOIST LENGTH

POST SPACING		6'	7'	8'	9'	10'	11'	12'	13'	14'	15'	16'
4'	JOIST SIZE	2x6 24" oc	2x6 16" oc 2x8 24" oc	2x6 16" oc 2x8 24" oc	2x8 16" oc 2x10 24" oc	2x8 16" oc 2x10 24" oc	2x8 16" oc 2x10 24" oc	2x8 12" oc 2x10 16" oc	2x10 16"oc 2x12 24" oc	2x10 16" oc	2x10 12" oc 2x12 16" oc	2x12 16" oc
	BEAM SIZE	1 - 2x6	1 - 2x6 1 - 2x8	1 -2x6 1 - 2x8	1 - 2x8 1 - 2x10	1 - 2x8 1 - 2x10	1 - 2x8 1 - 2x10	1 - 2x8 1 - 2x10	1 - 2x10 1 - 2x12	1 - 2x10	1 - 2x10 1 - 2x12	1 - 2x12
5'	JOIST SIZE	2x6 24" oc	2x6 16" oc 2x8 24" oc	2x6 16" oc 2x8 24" oc	2x8 16" oc 2x10 24" oc	2x8 16" oc 2x10 24" oc	2x8 16" oc 2x10 24" oc	2x8 12" oc 2x10 16" oc	2x10 16"oc 2x12 24" oc	2x10 16" oc	2x10 12" oc 2x12 16" oc	2x12 16" oc
	BEAM SIZE	1 - 2x6	2 - 2x6 1 - 2x8	2 -2x6 1 - 2x8	1 - 2x8 1 - 2x10	1 - 2x8 1 - 2x10	1 - 2x8 1 - 2x10	1 - 2x8 1 - 2x10	1 - 2x10 1 - 2x12	1 - 2x10	1 - 2x10 1 - 2x12	1 - 2x12
6'	JOIST SIZE	2x6 24" oc	2x6 16" oc 2x8 24" oc	2x6 16" oc 2x8 24" oc	2x8 16" oc 2x10 24" oc	2x8 16" oc 2x10 24" oc	2x8 16" oc 2x10 24" oc	2x8 12" oc 2x10 16" oc	2x10 16"oc 2x12 24" oc	2x10 16" oc	2x10 12" oc 2x12 16" oc	2x12 16" oc
	BEAM SIZE	2 - 2x6	2 - 2x6 1 - 2x8	2 -2x6 2 - 2x8	2 - 2x8 1 - 2x10	2 - 2x8 1 - 2x10	2 - 2x8 1 - 2x10	2 - 2x8 1 - 2x10	2 - 2x10 1 - 2x12	2 - 2x10 1 - 2x12	2 - 2x10 1 - 2x12	2 - 2x10 1 - 2x12
7'	JOIST SIZE	2x6 24" oc	2x6 16" oc 2x8 24" oc	2x6 16" oc 2x8 24" oc	2x8 16" oc 2x10 24" oc	2x8 16" oc 2x10 24" oc	2x8 16" oc 2x10 24" oc	2x8 12" oc 2x10 16" oc	2x10 16"oc 2x12 24" oc	2x10 16" oc	2x10 12" oc 2x12 16" oc	2x12 16" oc
	BEAM SIZE	2 - 2x6	3 - 2x6 2 - 2x8	3 -2x6 2 - 2x8	2 - 2x8 2 - 2x10	2 - 2x8 2 - 2x10	2 - 2x8 2 - 2x10	3 - 2x8 2 - 2x10	2 - 2x10 1 - 2x12	2 - 2x10 2 - 2x12	2 - 2x10 2 - 2x12	2 - 2x10 2 - 2x12
8'	JOIST SIZE	2x6 24" oc	2x6 16" oc 2x8 24" oc	2x6 16" oc 2x8 24" oc	2x8 16" oc 2x10 24" oc	2x8 16" oc 2x10 24" oc	2x8 16" oc 2x10 24" oc	2x8 12" oc 2x10 16" oc	2x10 16"oc 2x12 24" oc	2x10 16" oc	2x10 12" oc 2x12 16" oc	2x12 16" oc
	BEAM SIZE	3 - 2x6 2 - 2x8	3 - 2x6 2 - 2x8	3 -2x6 2 - 2x8	3 - 2x8 2 - 2x10	3 - 2x8 2 - 2x10	3 - 2x8 2 - 2x10	3 - 2x8 2 - 2x10	2 - 2x10 2 - 2x12	3 - 2x10 2 - 2x12	3 - 2x10 2 - 2x12	3 - 2x10 2 - 2x12
9'	JOIST SIZE	2x6 24" oc	2x6 16" oc 2x8 24" oc	2x6 16" oc 2x8 24" oc	2x8 16" oc 2x10 24" oc	2x8 16" oc 2x10 24" oc	2x8 16" oc 2x10 24" oc	2x8 12" oc 2x10 16" oc	2x10 16"oc 2x12 24" oc	2x10 16" oc	2x10 12" oc 2x12 16" oc	2x12 16" oc
	BEAM SIZE	3 - 2x6 2 - 2x8	4 - 2x6 3 - 2x8	4 -2x6 3 - 2x8	3 - 2x8 2 - 2x10	3 - 2x8 2 - 2x10	3 - 2x8 2 - 2x10	4 - 2x8 3 - 2x10	3 - 2x10 2- 2x12	3 - 2x10 2 - 2x12	3 - 2x10 2 - 2x12	3 - 2x10 2 - 2x12
10'	JOIST SIZE	2x6 24" oc	2x6 16" oc 2x8 24"oc	2x6 16" oc 2x8 24" oc	2x8 16" oc 2x10 24" oc	2x8 16" oc 2x10 24" oc	2x8 16" oc 2x10 24" oc	2x8 12" oc 2x10 16" oc	2x10 16"oc 2x12 24" oc	2x10 16" oc	2x10 12" oc 2x12 16" oc	2x12 16" oc
	BEAM SIZE	4 - 2x6 3 - 2x8	3 - 2x8 2 - 2x10	3 -2x8 2 - 2x10	3 - 2x8 3 - 2x10	4 - 2x8 3 - 2x10	4 - 2x8 3 - 2x10	4 - 2x8 3 - 2x10	3 - 2x10 2 - 2x12	3 - 2x10 3 - 2x12	4 - 2x10 3 - 2x12	4 - 2x10 3 - 2x12
11'	JOIST SIZE	2x6 24" oc	2x6 16" oc 2x8 24" oc	2x6 16" oc 2x8 24" oc	2x8 16" oc 2x10 24" oc	2x8 16" oc 2x10 24" oc	2x8 16" oc 2x10 24" oc	2x8 12" oc 2x10 16" oc	2x10 16"oc 2x12 24" oc	2x10 16" oc	2x10 12" oc 2x12 16" oc	2x12 16" oc
	BEAM SIZE	3 - 2x8 2 - 2x10	3 - 2x8 2 - 2x10	4 -2x8 3 - 2x10	4 - 2x8 3 - 2x10	3 - 2x10 2 - 2x12	3 - 2x10 3 - 2x12	3 - 2x10 3 - 2x12	4 - 2x10 3 - 2x12	4 - 2x10 3 - 2x12	4 - 2x10 3 - 2x12	4 - 2x10 3 - 2x12
12'	JOIST SIZE	2x6 24" oc	2x6 16" oc 2x8 24" oc	2x6 16" oc 2x8 24" oc	2x8 16" oc 2x10 24" oc	2x8 16" oc 2x10 24" oc	2x8 16" oc 2x10 24" oc	2x8 12" oc 2x10 16" oc	2x10 16"oc 2x12 24" oc	2x10 16" oc	2x10 12" oc 2x12 16" oc	2x12 16" oc
	BEAM SIZE	3 - 2x8 2 - 2x10	4 - 2x8 3 - 2x10	4 - 2x8 3 - 2x10	3- 2x10 2 - 2x12	3 - 2x10 3 - 2x12	4 - 2x10 3 - 2x12	4 - 2x10 3 - 2x12	4 - 2x10 3 - 2x12	3 - 2x12	3 - 2x12	3 - 2x12
13'	JOIST SIZE	2x6 24" oc	2x6 16" oc 2x8 24" oc	2x6 16" oc 2x8 24" oc	2x8 16" oc 2x10 24" oc	2x8 16" oc 2x10 24" oc	2x8 16" oc 2x10 24" oc	2x8 12" oc 2x10 16" oc	2x10 16"oc 2x12 24" oc	2x10 16" oc	2x10 12" oc 2x12 16" oc	2x12 16" oc
	BEAM SIZE	3 - 2x8 3 - 2x10	4 - 2x8 3 - 2x10	3 - 2x10 3 - 2x12	4- 2x10 3 - 2x12	4 - 2x10 3 - 2x12	4 - 2x10 3 - 2x12	3 - 2x10	3 - 2x12	4 - 2x12	4 - 2x12	4 - 2x12
14'	JOIST SIZE	2x6 24" oc	2x6 16" oc 2x8 24" oc	2x6 16" oc 2x8 24" oc	2x8 16" oc 2x10 24" oc	2x8 16" oc 2x10 24" oc	2x8 16" oc 2x10 24" oc	2x8 12" oc 2x10 16" oc	2x10 16"oc 2x12 24" oc	2x10 16" oc	2x10 12" oc 2x12 16" oc	2x12 16" oc
	BEAM SIZE	4 - 2x8 3 - 2x10	3 - 2x10 3 - 2x12	4 - 2x10 3 - 2x12	4 - 2x10 3 - 2x12	4 - 2x10 3 - 2x12	3 - 2x12	4 - 2x12	4 - 2x12	4 - 2x12	Eng. Beam Required	Eng. Beam Required

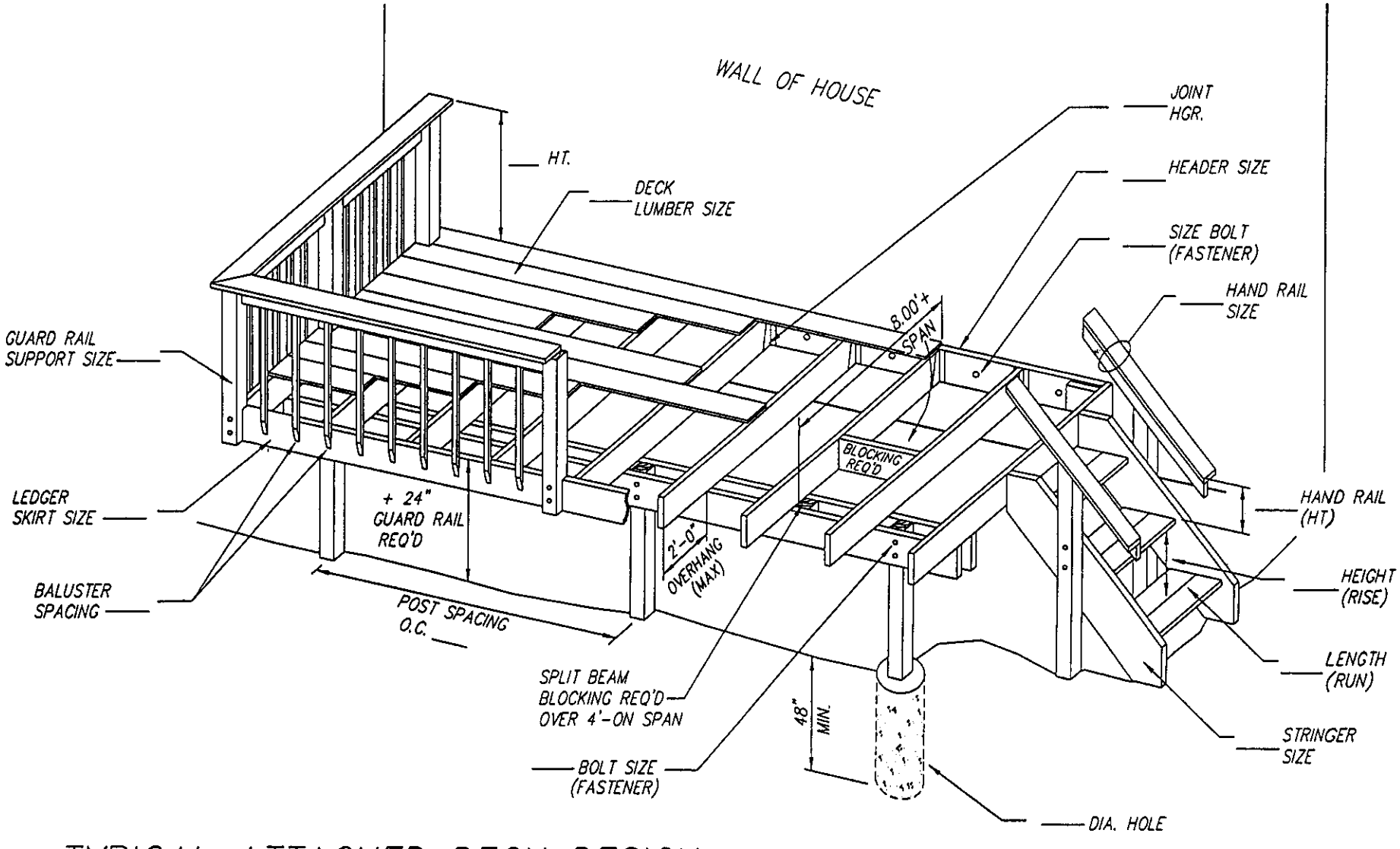
This table is based on the use of Pondersoa Pine No. 2 or better (treated for weather and/or ground exposure).

BEAM SIZE ____ ____ BEAM SPAN ____

JOIST SIZE ____ ____ O.C. JOIST SPAN ____

POST SIZE ____ POST DEPTH ____

TYPE OF LUMBER ____ DETACHED ____ ATTACHED ____



TYPICAL ATTACHED DECK DESIGN

(NOT TO SCALE)

K.C.S./E.M.C. 7/96