

CITY OF HIGHLAND HEIGHTS  
DECK CONTRUCTION GUIDELINES

MATERIAL

All decking lumber must be treated or wolmanized. Building Department standards required all lumber within 18" of grade be stamped "ground contact" or 40% retention lumber. In nearly all cases, 40% retention lumber will be used on the entire deck, primarily due to most lumber wholesalers and do-it-yourself centers selling only that type of treated lumber.

The lumber will most generally be a southern yellow pine (SYP).

All fasteners; screw; nails or bolts, must be galvanized. Nails should be spiral shanked or similar. Both nails and screws should be a size that will provide proper depth and penetration when joining wooden members together.

Mechanical fasteners such as joist hangers are permitted.

FOUNDATION SYSTEM

Decks are frequently constructed of post foundations. 4" x 4" posts are most common. On decks in excess of 6' in height or with larger roofed structures located upon the 6" x 6" post should be used.

The foundation must be constructed to a depth of 42" below finished grade or to solid hearing whichever is deeper.

The traditional method of post construction places the post up a flagstone within an 18" diameter posthole. Cement is poured around the post for stability.

The modern technique of construction allows for the posthole to be entirely filled with cement and a galvanized fitting designed to adapt a 4" x 4" or 6" x 6" post place into the cement before it sets.

Other foundation methods must be approved by the Building Commissioner prior to construction.

## FLOOR SYSTEM

The floor system is comprised of 3 basic components:

**Beam:** Fastened to foundation posts, they support and run  
Perpendicular to floor joists.

**Floor joist:** Commonly fastened to the house, if desired, and the beam (s) to  
Support the decking.

**Decking:** Flooring of the deck.

The beam is often constructed of two 2" x 8", 2" x 10" or 2" x 12" beams and is fastened to the posts with nails or bolts. The Building Department recommends bolting the beam to the posts with 4 bolts per post. The size of beam is dependent upon the spacing of the posts and beams and the size and spacing of the floor joists.

Floor joists are often constructed of 2" x 6", 2" x 8" or 2" x 10" joists and are spaced at 16" intervals upon the beam (s).

Floor joists should be fastened to the beam with 2 nails per joists, toe nailed at the sides if joist spans exceed 16'. Blocking or bridging shall be added between joists for added stiffness.

The floor joists can be fastened to the house with a ledger or joist hangers. A ledger board must be bolted to the house and the floor joists will be constructed on to the ledger board.

The decking is often 2" x 6" or 5/4" has a radius (rounded) edge. The decking should be fastened to the floor joist with 2 fasteners per floor joists. Three fasteners should be used at butt ends.

Decking should be constructed with each decking member placed tightly against other decking materials.

Shrinkage is common with wolmanized lumber and will occur providing a 1/8" to 3/8" gap between members for rain run off or snow melt.

Decking is constructed perpendicular with floor joists. On contemporary designs, it is run on diagonal angles.

## GUARDRAILS AND HANDRAILS

If the deck is more than 30" above grade, a guardrail is required. The rail must be a minimum of 36" in height with spindles spaced vertically or horizontally with maximum intervals of 4".

If the deck contains a stair in excess of 3 steps, a handrail is required. It must be constructed similar to the guardrail with regard to the vertical and horizontal members; however, the height can vary from a minimum of 34" to a maximum of 38".

ORC 311.7.7: At least one side of each continuous run of treads with 4 or more risers.

ORC 311.7.7.1: Height minimum 34" to maximum 38".

### STAIRS

The Building Department requires all decks be provided with a stairway from the deck to the ground.

### VAPOR BARRIER

To keep grass or other vegetation from growing, the Building Department recommends a vapor barrier below the deck.

The barrier is usually 4-6 mil plastic sheet sold at any do-it-yourself centers. Gravel is generally used to keep the barrier in place.

### SHRINKAGE

All treated or wolmanized lumber is subject to shrinkage primarily due to the treatment process and lack of drying time. Factors such as sun, wind and heat will affect the shrinkage process. It is important to plan accordingly and be certain to use adequate and proper fastening techniques.

### PLANS AND PERMITS

Your permit application for a deck shall consist of 2 sets of plans including:

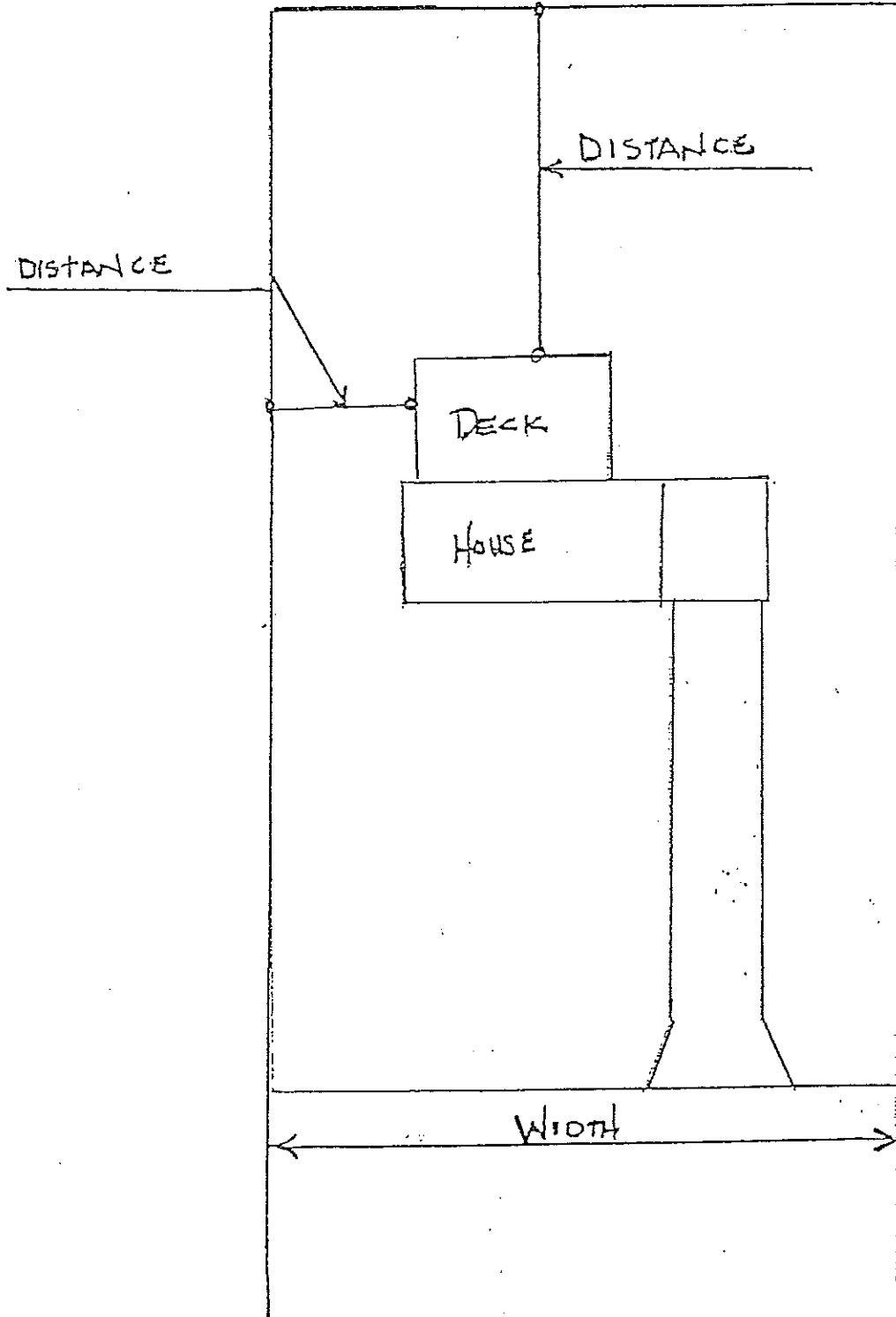
1. Site plan (similar to sample copy)
2. Construction detail with:
  - a. Foundation system
  - b. Floor system
  - c. Railing and steps

Review time is generally 1 – 2 days.

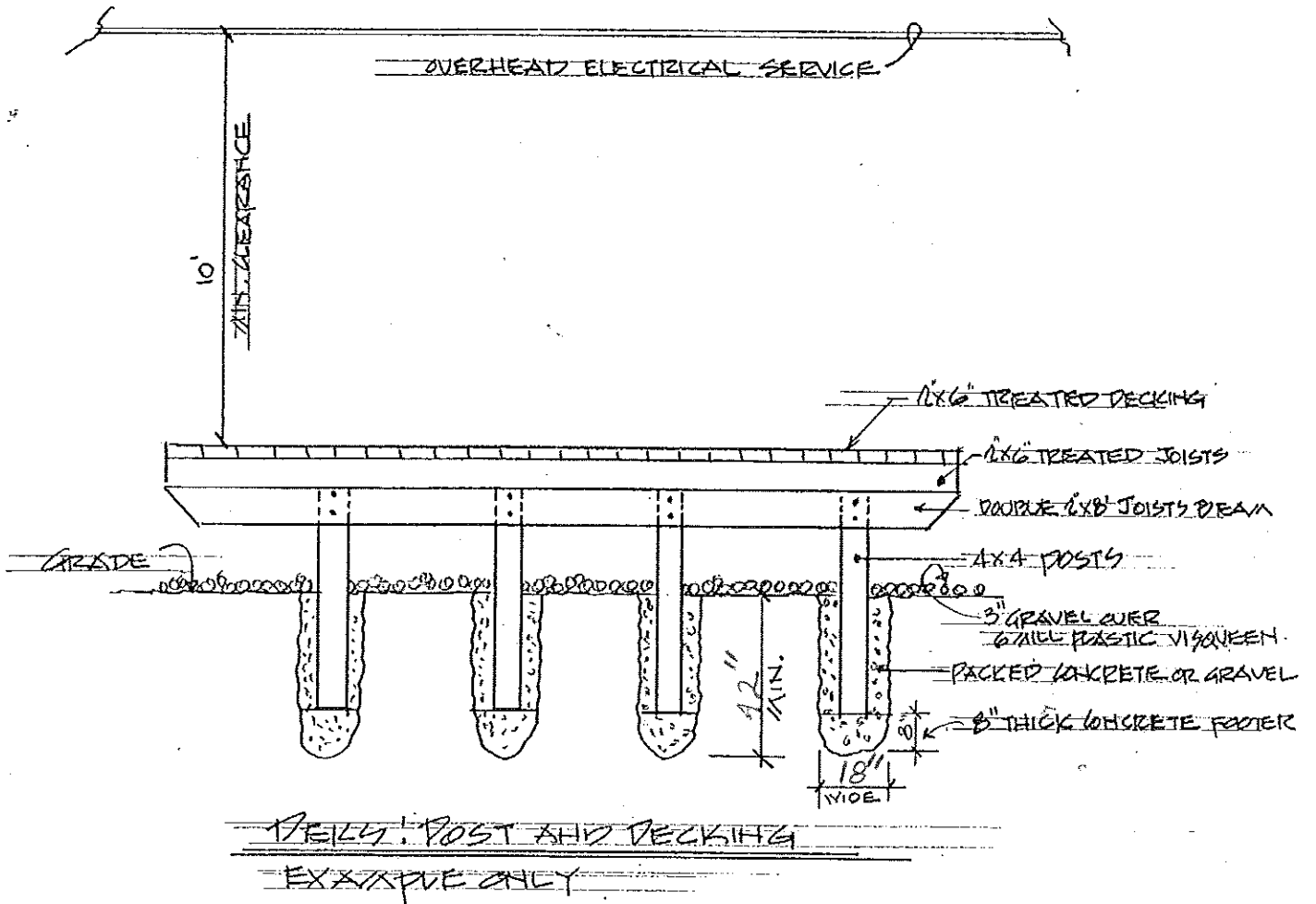
A permit is necessary to insure proper plan review for compliance with codes and standards and to provide for inspection of foundation system and rough carpentry.

# SAMPLE

## SITE PLAN FOR DECK CONSTRUCTION



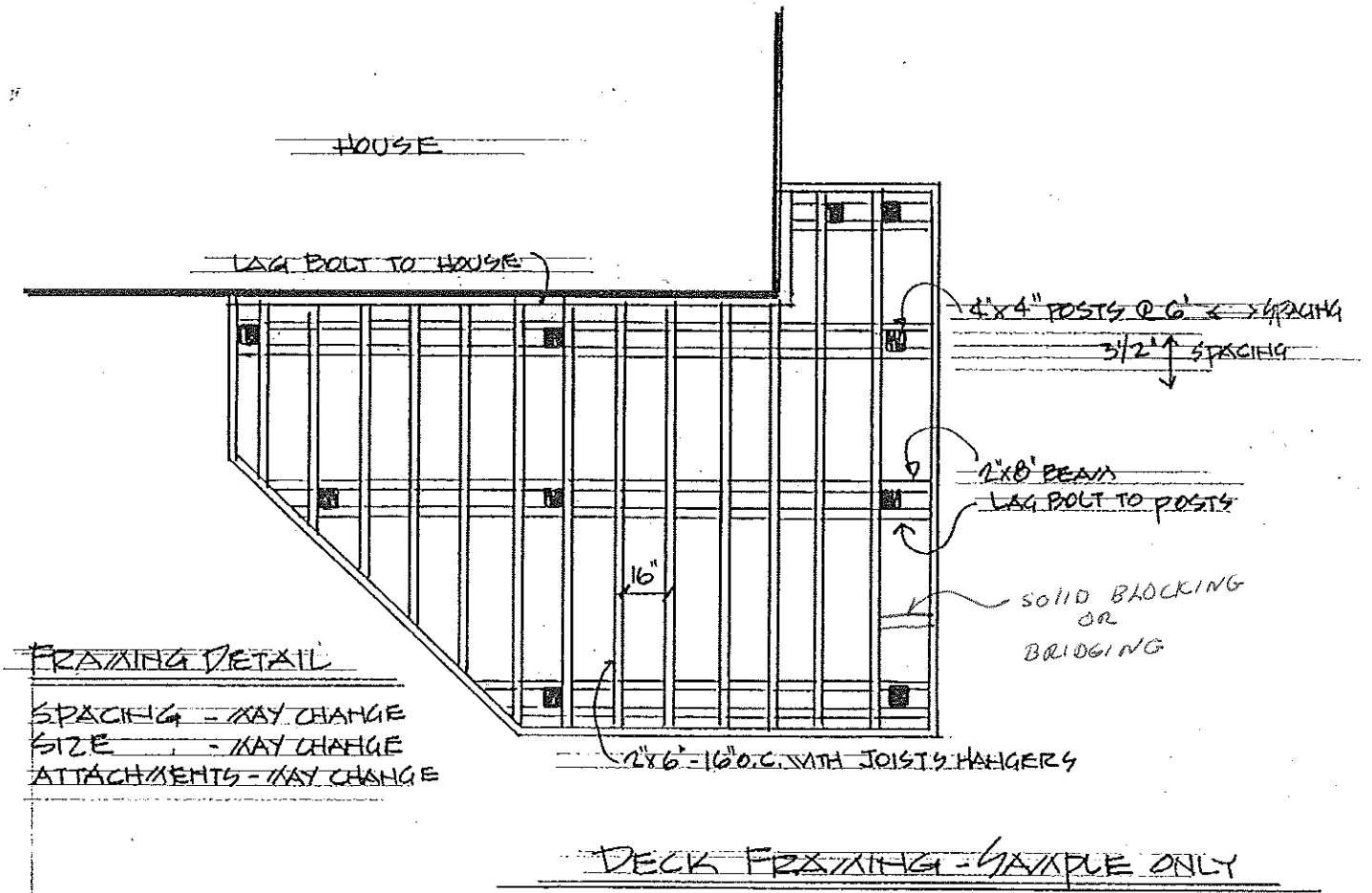
DECKS - POST AND DECKING



NOTE:

- ① BEAM SIZING MAY CHANGE DUE TO SIZE OF DECK.
- ② POST SIZING MAY CHANGE DUE TO SIZE OF DECK.

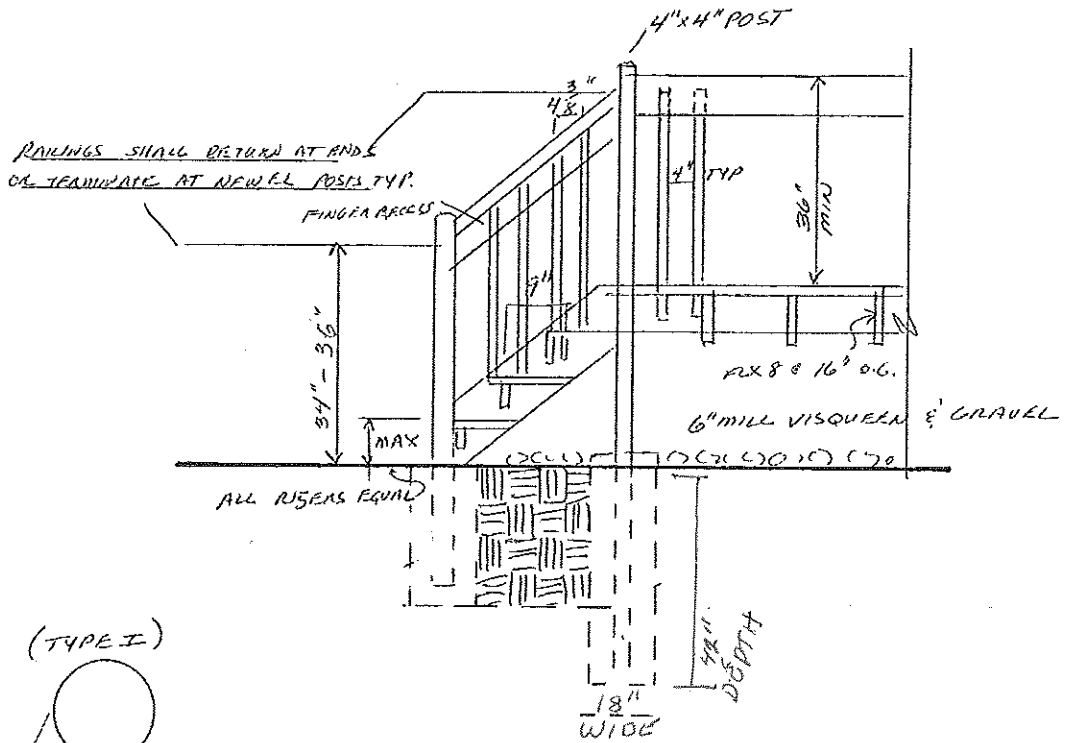
DECK - FRAMING



FRAMING DETAIL  
SPACING - MAY CHANGE  
SIZE - MAY CHANGE  
ATTACHMENTS - MAY CHANGE

DECK FRAMING - SAMPLE ONLY

DECKS - STEPS



(TYPE I)

(TYPE II)

RAIL TYPES  
FOR HANDRAIL

DECKS - STEPS

TREATED LUMBER SAMPLE