

# Flatwork vs. Structural Slab Guide

Greetings and Salutations,

Today we will delve into concrete construction and their differing uses and purposes.

You are considering adding onto your house and are wanting to eventually add a patio, you are extending your driveway, or you are putting more walkway around your pool. There are different types of slabs for different uses.

There is a regional amendment on page 2 regarding adding foundation to a post tension slab requiring a Texas Engineer. What a post tension slab is: is a concrete structural slab with steel cables tensioned to between 4000 and 7000 PSI each to hold your slab firm and in place. The reasoning behind requiring an engineer to alter these slabs is if you were to accidentally cut into or damage one of these tendons severe injury to your self, your home, or loss of life could result as damaging these lines can have explosive effects.

First we will touch on non structural flat work. This type of concrete construction is what you would find in your driveway, sidewalk, or surrounding your pool. (See Detail on page 3). Flatwork is not designed to hold any construction loads such as porches, pergolas, ect. It is normally 4 – 8” of concrete and the only concrete option you can add to a post tension slab house without an engineer.

Non structural flatwork is also normally structurally independent of a slab as the two differing concrete elements move at differing amounts.



**\*\*\*Section R315.2.2 Alterations, repairs and additions; amend to read as follows:**

**Exception:**

1. [existing text remains]
2. Installation, alteration or repairs of all electrically powered mechanical systems or plumbing appliances.

*(Reason: Revised exception for clarity. Code intent is to protect against the products of combustion.)*

**\*\*Section R322 Flood Resistant Construction; deleted section.**

*(Reason: Floodplain hazard ordinances may be administered by other departments within the city.)*

**\*\*\*Section 327.1.1; add to read as follows:**

**Section 327.1.1 Adjacency to Structural Foundation.** Depth of the swimming pool and spa shall maintain a ratio of 1:1 from the nearest building foundation or footing of a retaining wall.

**Exception:**

A sealed engineered design drawing of the proposed new structure shall be submitted for approval.

*(Reason: To clarify specific distances for pools and spas.)*

**\*\*Section R401.2; amended by adding a new paragraph following the existing paragraph to read as follows.**

**Section R401.2. Requirements.** *{existing text unchanged}* ...

Every foundation and/or footing, or any size addition to an existing post-tension foundation, regulated by this code shall be designed and sealed by a Texas-registered engineer.

*(Amendment to 2015 IRC carried forward to 2018 IRC.)*

**\*\*Section R602.6.1; amend the following:**

**R602.6.1 Drilling and notching of top plate.** When piping or ductwork is placed in or partly in an exterior wall or interior load-bearing wall, necessitating cutting, drilling or notching of the top plate by more than 50 percent of its width, a galvanized metal tie not less than 0.054 inch thick (1.37 mm) (16 Ga) and ~~1 ½ inches (38 mm)~~ 5 inches (127 mm) wide shall be fastened across and to the plate at each side of the opening with not less than eight 10d (0.148 inch diameter) having a minimum length of 1 ½ inches (38 mm) at each side or equivalent. ~~Fasteners will be offset to prevent splitting of the top plate material.~~ The metal tie must extend a minimum of 6 inches past the opening. See figure R602.6.1. *{remainder unchanged}*

*(Amendment to 2015 IRC carried forward to 2018 IRC.)*

**\*\*Figure R602.6.1; delete the figure and insert the following figure:**

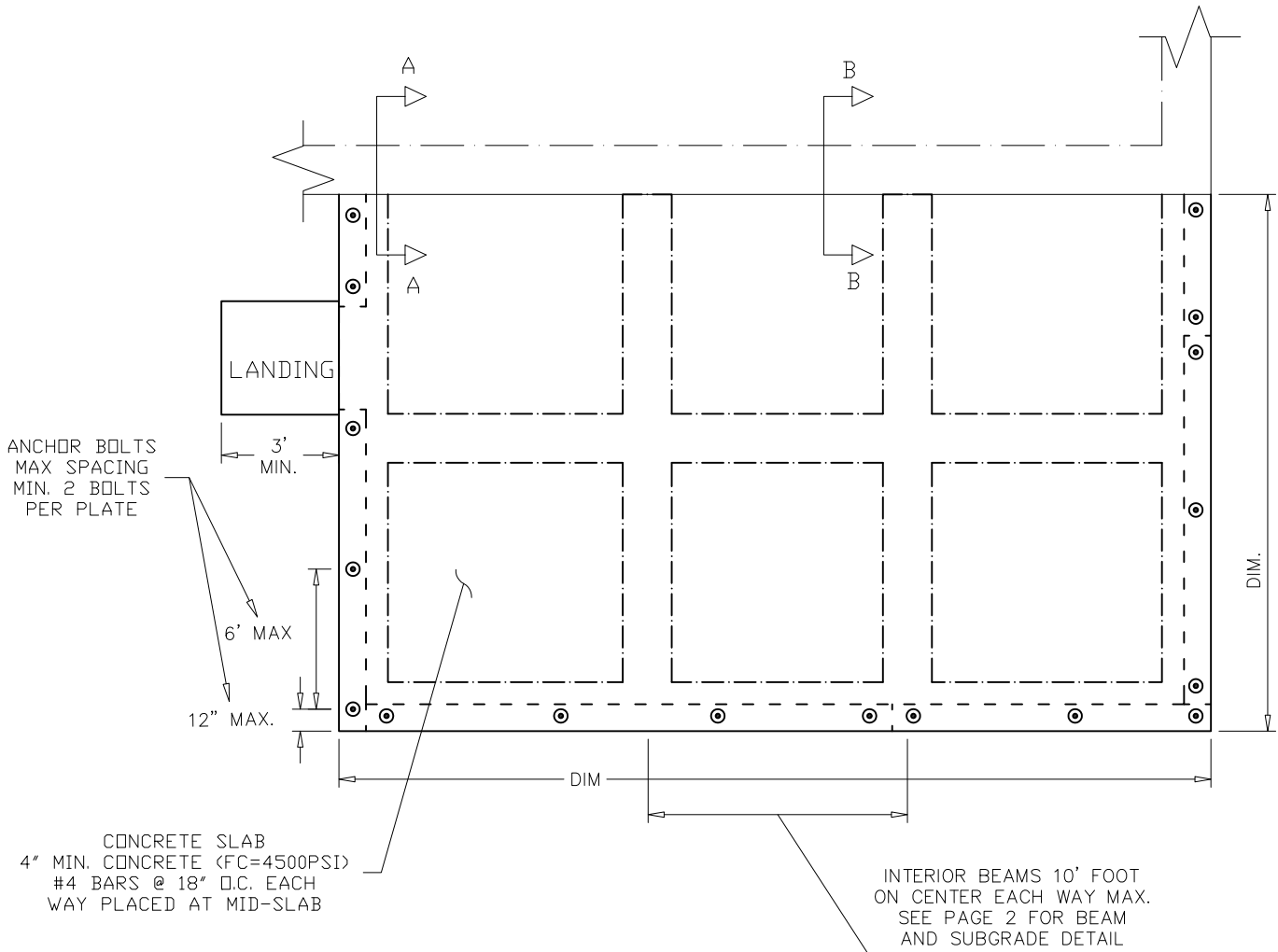


So as the homeowner you are looking to have a patio cover and new concrete. 100% of the time this entails a structural slab and this cannot be structurally independent of the primary structure. At this point you must retain the services of an engineer if you have a post tension slab on your house. Any homes in City of Venus newer than 1990, and are located in any of the existing or new subdivisions all have post tension slabs.

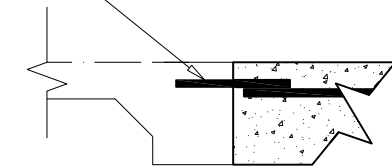
Unfortunately there are no exceptions to this rule per the regional amendment from North Central Texas Council of Governments amendments. Note our city amendment and residential room construction guide only covers installation to a traditional rebar slab.

Please refer to pages 5-7 for examples of structural and post tension slabs.

- BEAMS AND FOOTING
- NEW BEAMS AND FOOTING
- OUT SIDE FOOTING
- OUT SIDE NEW FOOTING
- NEW WALL FRAME
- ⊙ 1/2"x10" ANCHOR BOLTS WITH 2"x2"x3/16" PLATE WASHERS

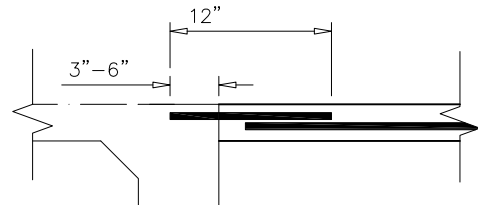


#4 REBAR,  
HOLE 6" DEEP, NO  
EPOXY REQUIRED

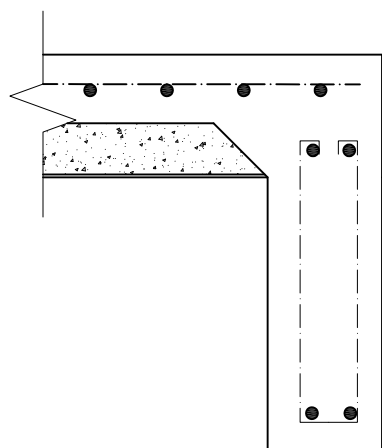
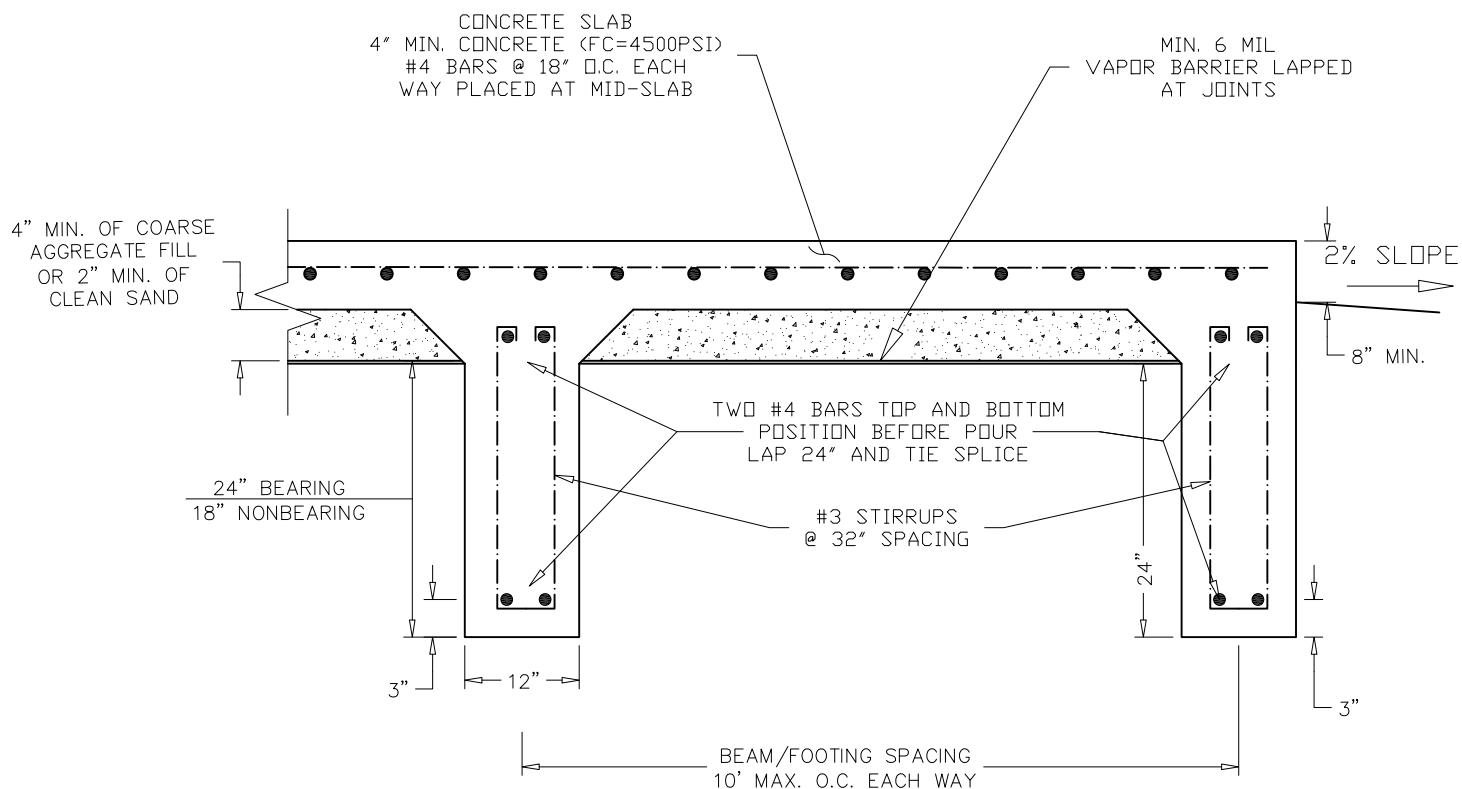


SECTION A-A  
NEW FOOTING TIE IN TO  
EXISTING FOOTING

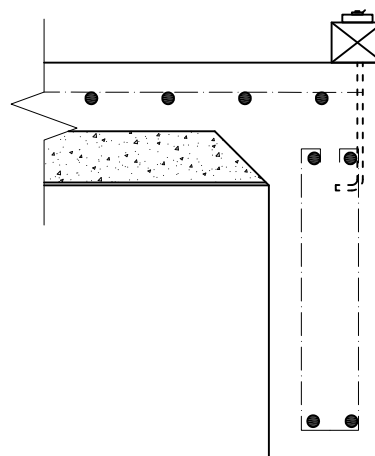
#4 BARS DRILLED 3" MIN. TO  
6" MAX. INTO EXISTING  
FOOTING @ 18" O.C. OF NEW  
SLAB



SECTION B-B  
NEW SLAB TIE IN TO  
EXISTING



TYPICAL SLAB REBAR  
TIE-IN TO FOOTING



TYPICAL ANCHOR BOLTS  
TIE-IN TO FOOTING

