TILT-UP CONCRETE

Implement, Hay, or Cattle Shelter

MATERIAL ESTIMATE
for
40' x 48'

Concrete

11 piers
9 pole embedments
11 columns
8 panels

3.6 cubic yard
.28 cubic yard
2.84 cubic yard
12.6 cubic yard
19.32 cubic yard

Reinforcing bars (all are ½" diameter)

Total: 73 - 20 ft. lengths
1460 lin. ft.

Cut to:

piers: 33 pieces - 5'-0"
columns: 33 pieces - 9'-0"
panels: 40 pieces - 9'-6" - vertical pieces
10 pieces - 11'-5"
10 pieces - 11'-6" - horizontal pieces
10 pieces - 11'-7"
10 pieces - 11'-9"

Note: (To require above, long waste lengths
must be spliced or welded to short
waste lengths.)

Lumber

plates: 188 lin. ft. 2" x 4"
purline: 192 lin. ft. 2" x 10"
96 lin. ft. 2" x 12"
rafters: 30 - 2" x 6" - 10'-0"
30 - 2" x 6" - 14'-0"
nailer: 1176 lin. ft. 2" x 4"
gables: 236 lin. ft. 2" x 4"
braces: 6 - 2" x 6" - 12'-0"
3 - 2" x 6" - 16'-0"
scabs & cleats: 48 lin. ft. 2" x 6"
33 lin. ft. 1" x 8"
gussets: 4½ sheets exterior grade ½" plywood

Roofing

92 - 12 ft. sheets corrugated iron

Hardware

16 - ½" x 20" anchor bolts -- form ties -- column ties --
misc. -- plastic bond breaker -- misc. hardware as desired

CONCRETE TILT-UP STORAGE BUILDING

PLAN NO. 616008
Agricultural Extension Service
U. S. Department of Agriculture
Cooperating
FLOOR PLAN
Scale: 1/16 = 1'-0"
1. After laying out building, piers are dug and placed. The 2" x 4" forms help in leveling and maintaining the size of the piers. Pier tops must be on the same level. The 3 bars shown in the column detail on the pier are embedded in the piers and tied.

2. Reinforcing bars are cut and tied as shown in the detail. Blocks of 4" lumber can be used to hold the steel mat up in position. These must be removed as the concrete is placed. Forms are leveled and staked. Spacers are placed between 2" x 4"s of adjoining panels. Caution: Do not step into casting bed. Footprints will show up on panels. Horizontal bars extend through holes drilled in the forms. Forms may be reused in the roof framing.

3. Polyethylene plastic is spread on a sand bed, forms set and concrete placed on panels. Concrete for the panels must be a fluid consistency, contain not more than 6 gallons of water for each sack of cement and not less than 5 sacks of cement per cubic yard. This is commonly called 4000 p.a.i. mix. If a floor is placed in the building, use it as a casting bed with plastic as a bond breaker. Any needed openings in the panels should be formed with 2" x 4"s as shown.

4. The panels are finished with a broom or wood float and cured with compound, wet burlap, straw or plastic for at least three (3) days prior to tilting.

5. Panels are tilted with a winch truck. Connect lifting attachment to the panel as shown by the pickup detail. Skip form and use steady uniform power for tilting. Avoid jerking. Final placement and leveling on the piers is done with crowbars.

6. After panels are tilted and leveled temporary braces as shown in details will hold panels until columns are cast. This view shows a cutaway of a column form on the outside. The building should be planned so that all forms can be used for more than one column.
Disclaimer

This site makes available conceptual plans that can be helpful in developing building layouts and selecting equipment for various agricultural applications. These plans may be outdated and do not necessarily represent the most current technology, construction codes, or agricultural practices. They are not construction plans and do not replace the need for competent design assistance in developing safe, legal and well-functioning agricultural building system. The University of Arkansas Cooperative Extension Service, the United States Department of Agriculture and none of the cooperating land-grant universities warranty these plans.