

TERM PROJECT SPECIFICATIONS (MEDICAL CLINIC)

GENERAL NOTES

1. You are welcome to make reasonable assumptions wherever a piece of information is missing or incomplete. Assumptions should be clearly listed for each division in the final report.
2. You may use scale of the plans in addition to the measurements printed on the drawings.
3. You should read the “Estimating Tips” page at the beginning of each RS Means divisions before you start working on that division. This will help you understand the estimating process of specific items and also will point out if items include particular material, accessories or services. For instance, mortar is already included in RS Means masonry work items and there is no need to calculate mortar quantity separately. Other examples would be relevant accessories in different divisions, which you need to first identify whether or not they should be estimated in separate items.
4. Following steps are recommended in order to complete the estimate in each division:
 - a. Identify required work items,
 - b. Find relevant cost items from RS Means then extract item number, unit and cost information,
 - c. Calculate item quantity considering item unit,
 - d. Consider a suitable description for the item (do not use RS Means item description),
 - e. Calculate item cost using quantity and bare unit costs from RS Means, and
 - f. Repeat steps (b) to (e) for all identified items and complete the estimate table.
5. You should complete all minimum required items. In case of showing extra (relevant) items, extra credit will be awarded. This may include, for example, applicable accessories needed for a work item.

DIVISION 1

1. Identify all general condition items needed to complete this project. This includes, but not limited to: salaries for supervisory personnel, temporary facilities, utility bills ...etc. Read the plans, review the lectures, and use your common sense and knowledge to find related items from RS Means.

DIVISION 3

1. This project includes concrete slab and footing per drawings, identified as S1A. The other alternative shown in drawing S1 (footings and foundation walls) should not be used.
2. Footings (including turndown) and slab concrete to be 3500 psi and 4000 psi, respectively.
3. Consider following items, separately, for footings (including turndown) and slab-on-grade: Concrete forming, Concrete reinforcement, and Concrete placement (including curing and finishing, where applicable)

All labor materials and equipment necessary for the installation of footing and foundation wall formwork shall include steel stakes, 3'-0" (0.91 m) long for footing form support, 2x treated lumber or 1" (min) (2.54 cm) treated plywood for footing forms, 3/4" (min) (1.91 cm) plyform for wall forms, formties and any other accessories necessary for proper construction of the foundation walls and footings.

03200 Concrete Reinforcing. Horizontal footing reinforcement shall be 2 #4 rebar, continuous, with 48 diameter laps at all end joints.

#5 rebar dowels shall be installed horizontally at 4'-0" O/C (1.22 m), extending 2'-0" (60.96 cm) A. F. F. Dowels shall start a minimum 1'-0" each way from the corners and from each side of exterior openings. Dowels shall have a 9" (22.86 cm) hook. Dowels shall be placed not more than 3" (7.62 cm) nor less than 1 1/2" (3.81 cm), above the bottom of the footing.

#4 rebar tie hooks, 4'-0" (1.22 m) long w/1'-6" (45.72 cm) hook turned down into footings, shall be placed horizontally along perimeter of slab starting 1'-0" (30.48 cm) from the corners each way at 48" O/C (1.22 m).

03300 Cast-In-Place Concrete. Concrete slab, 4" (10.16 cm) thick, as per plans, with 6x6-W1.4xW1.4 embedded 1 1/2" (3.81 cm) below finish concrete surface. WWF to be lapped 6" (15.24 cm), minimum, at all sides, ends and turndowns along perimeter.

4. All rebar is to be lapped 2 ft. (Standard rebar cut is 20 ft.). Add 5% waste for all reinforcement and assume 2 inches of concrete cover.
5. For concrete Turndown, assume 1:1 slope.

DIVISION 4

The exterior wall of the building should be masonry, as shown in drawing S1B, with the following specifications:

1. **Unit Masonry:** Concrete Masonry Units, load-bearing, 8"x 8"x 16", f/m 1530, natural gray.
 - a. Smooth-face (regular) CMU to be used in West Elevations.
 - b. Split-face (one side) CMU to be used in All Other 3 Elevations.
 - c. Bond beams wherever horizontal reinforcement are installed.
 - d. Lintel blocks above openings.
2. **Masonry Reinforcement:** Add 5% waste for all reinforcement and assume 5 ft lifts.

The wall height is 9'-4" (2.84 m) from the top of slab to top of masonry. 2 #4 continuous rebar to be installed horizontally in first course, 1-#4 each course 2'-0" (0.61 m) vertically, 2 #4 rebar above all openings and 2 #4 rebar at the top course. No rebar shall be heat bent.

1-#5 vertical rebar shall be placed at 4'-0" O/C (1.22 m) horizontally in all walls to match dowel spacing. 1-#5 rebar shall be placed vertically on each side of wall openings and 2 #4 rebar horizontally over openings in bond beam extending a minimum 1'-0" (30.48 cm) beyond each side of opening.

#4 rebar to be lapped 48 diameters and #5 rebar to be lapped 40 diameters. Rebar is lapped 2'-0" (60.96 cm) each way at all corners.

3. **Mortar and Grout:**
 - a. Mortar: Mortar is already included in RS Means masonry block work items.
 - b. Grout: 2,000 psi grout in Units with Reinforcement Only (see relevant Lecture Note).

DIVISION 6

All required items based on specs, plans and your assumptions. Review plans (S4 to S7), lectures and use your knowledge to find related items from RS Means.

1. Interior (Non-Bearing) Partition Walls

Partition walls shall also be 2x4 (5.08 cm x 10.16 cm) studs at 24" (60.96 cm) O/C. All studs shall be DF, construction grade. Sole plate and double top plate shall be 2x6 (5.08 cm x 15.24 cm) HF utility grade for exterior bearing walls and interior bearing walls and 2x4 (5.08 cm x 10.16 cm) HF utility grade for nonbearing interior partitions. All walls shall extend 9'-0" (2.74 m) A.F.F. Where code requires, 2x6 (5.08 cm x 15.24 cm) or 2x4 (5.08 cm or 10.16 cm), fire blocking shall be installed to match the wall size.

3 2x6 (5.08 cm x 15.24 cm) DF construction grade studs or a 6x6 (15.24 cm x 15.24 cm) DF #2 or better post shall be installed in the Restroom/Break Room common wall and 3 2x4 (5.08 cm x 10.16 cm) DF construction grade studs or a 4x6 (10.16 cm x 15.24 cm) DF #2 or better post shall be installed in the Break Room/Reception Room common wall. The posts shall be placed directly below the double ceiling joists. Two (2) sets of 3 2x6 (5.08 cm x 15.24 cm) construction grade studs or 2 6x6 (15.24 cm x 15.24 cm) DF #2 or better posts shall be installed in the Reception Room/Waiting Room common wall. One post shall be installed on each side of the Reception Room window opening.

All furred-down ceiling areas shall be constructed of 2x2 (5.08 cm x 5.08 cm) DF common with vertical members spaced at 24" O/C (60.96 cm). Where required, 2x2 (5.08 cm x 5.08 cm) or 2x4 (5.08 cm x 10.16 cm) furring shall be used for back-up for GWB installations.

2. Ceiling Joists

Ceiling joists shall be 2x6 (5.08 cm x 15.24 cm) DF #2 or better spaced as indicated on the plans. All joists shall be fastened with joist hangers of proper size at end connections where abutting double joists and header joists. Double joists shall be installed over all bearing walls. Header joists shall be installed to hide exposed joist ends and for fastening of joist hangers. Frieze blocking shall be installed along perimeters parallel to the joists at plate line where header joists are not required.

3. Roof Framing Structure

Use pre-fabricated wood trusses for the roof structure in li.

DIVISION 7

1. Below-Grade Moisture Protection:

- a. The surface of the concrete slab and footings that are in contact with soil, must be protected against moisture penetration by the use of primer coat, rubberized asphalt laminated membrane, 3" x 3" cant strip (continuous) and protection board, prior to any backfilling.
- b. Top of the backfilled soil (beneath the slab) shall be protected using membrane and vapor barrier.

~~2. Floor Insulation: Floors shall have R-19 loose blanket batt insulation installed.~~

3. Masonry Walls Insulation: 2 types of insulation to be installed for the masonry:

- a. Mineral loose-fill insulation to be applied within wall cavities where no grouting exists.
- b. Interior side insulation for masonry walls as described and showed in the drawings.

4. Ceilings Insulation: Ceilings shall have R-30 loose blanket batt insulation installed.

5. Roofing Tiles: Use one-piece Clay "S" tile, in color. In drawing S6 (Roof Plan) be sure to use the **Base Roof Structure** (left-side of the drawing) not the alternate roof structure.

DIVISION 9

1. Considering lectures and plans, select appropriate items for:

- a. All flooring types (tiles, carpet, resilient flooring, etc.)
- b. Non-bearing partition walls (e.g. wet and dry walls, as applicable)
- c. Wall covering (assume painting for all interior walls except in wet areas)
- d. Ceilings (assume gypsum boards and painting)
- e. Paint layers (wherever applicable): one layer of primer and two layers of paint.

2. For the wet areas, use ceramic tiles for flooring and also for walls (up to 6 feet above the floor). The rest of the walls in wet areas (higher than 6 feet to the height of the wall) should be covered by paint.

DIVISION 31

1. Rough grading, clearing and grubbing is required for entire site, including landscaping area.
2. Structural excavation of the whole building area (considering 3 ft. working area all sides) at once (excavation slope is 1:1). In Site Plan (Drawing C1), each grid is 50 ft x 50 ft.
3. Structural backfill for both below garage slab (including $\frac{3}{4}$ in. washed gravel) and around foundations (95% compaction).