

BID DIVISION HFH – 3A: CONCRETE

SUBMIT PROPOSAL TO: HFH of Douglas County, Minnesota, Inc.
1211 N Nokomis NE, Alexandria, MN 56308

FOR: **Construction of Habitat for Humanity Homes**

EXCLUDED:

1. Rough Grading
2. Class V Gravel and/or sand cushion
3. Polystyrene foam materials (by Owner)
4. Dumpsters

INCLUDED: Provide all labor, materials, equipment, delivery, fuel surcharges and site supervision to complete the concrete footings, slabs, aprons, sidewalks and as shown and specified, including but not limited to the following technical specification sections: 03 30 00

ALSO INCLUDED:

1. Furnish and install vapor barrier under entire house slab. Contractor will be responsible for installing all insulating foam required for slab and foundation. Habitat shall furnish all foam insulation material required for this work.
2. Forming and construction of footing, foundation walls and slab as per home blueprint.
3. Labor and material for 3' apron across front of garage, (1) 15 square foot entrance pad, (1) 3'x15' sidewalk, and (1) 9 square foot entrance pad.
4. Related requirements under **Specification Section 03 30 00** also apply.
5. All concrete reinforcement as required.
6. Required curing applications.
7. Minor final grade work required prior to slab/footing pours.
8. Protection of existing conditions.
9. Placement of all required sleeves and/or block outs in CIP concrete.
10. Cost for additional concrete testing required if initial tests fail.
11. All layout verification.
12. Labor and materials for necessary curbing to provide access to driveway including removal of existing curb, under Specification Section 32 10 00.
13. Protection of other trade work.
14. This project is managed by Habitat. All contractors on this project are considered prime contractors. Coordination between trades and volunteers is to be considered part of this work scope.

SECTION 03 30 00 - CAST-IN-PLACE CONCRETE

0.1 SECTION REQUIREMENTS

- A. This Section includes cast-in-place concrete, including reinforcement, concrete materials, mix designs, placement procedures and finishes. This work includes construction of footings and foundations as detailed, slab on grade to receive housing construction, vapor retarders, exterior concrete pavement, and cast in place anchors as required by code.
- B. Drainage course for slabs-on-grade and sub-base earthwork for walks and pavements shall be provided by others. Coordinate work of this Section with Earthwork, Plumbing, and in-floor heat installer as required
- C. Installation of under slab vapor barrier and placement of rigid insulation (rigid insulation to be supplied by Habitat) required for footing/foundation wall construction to include final pad prep following installation of plumbing and other disturbances of compacted pad material.
- D. Proper grading of floor in both the garage and utility room to accommodate garage floor drains.
- E. Comply with ASTM C 94; ACI 301, "Specifications for Structural Concrete for Buildings"; ACI 318, "Building Code Requirements for Structural Concrete"; and CRSI's "Manual of Standard Practice."
- F. Install grounding rebar in utility room to permit electrician to make grounding connection to rebar in slab.

PART 1 – PRODUCTS

1.1 MATERIALS

- A. Deformed Reinforcing Bars: ASTM A 615, Grade 60 (ASTM A 615M, Grade 420).
- B. Portland Cement: ASTM C 150, Type 1.
- C. Fly Ash: ASTM C 618, Type F. (optional)
- D. Aggregates: ASTM C 33, Class 4S.
- E. Air-Entraining Admixture: ASTM C 260.
- F. Vapor Retarder: Polyethylene sheet, ASTM D 4397, not less than 10 mils thick.
- G. Curing/Sealing Compound:

- 1. Apply uniformly in continuous operation by power spray or roller according to manufacturer's recommendations

1.2 MIXES

- A. Proportion normal-weight concrete mixes to provide the following properties:

- 1. Compressive Strength: 4000 psi at 28 days
- 2. Slump Limit: 4 inches at point of placement
- 3. Water-Cement Ratio: 0.55 maximum at point of placement
- 4. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than Portland cement in concrete as follows:
 - a. Fly Ash: 30 percent (optional)
- 5. Total Air Content: (Use air-entraining admixture in exterior exposed concrete, unless otherwise indicated.): 6.5% +/- 1% for exterior exposed concrete; 2 % other concrete
- 6. No calcium chloride shall be used in the mix.

PART 2 – CONCRETING

- A. Construct form work and maintain tolerances and surface irregularities within ACI 117 limits of Class A for concrete exposed to view and Class C for other concrete surfaces.
- B. Place vapor retarder on prepared drainage course done by others, with joints lapped 6 inches and sealed.
- C. Accurately position, support, and secure slab rebar reinforcement, which shall be #3 on 16" centers or #4 on 24" centers. Reinforcement in thickened edges as noted on prints.
- D. Install construction, isolation, and control joints.
- E. Place concrete in a continuous operation and consolidate using mechanical vibrating equipment.
- F. Protect concrete from physical damage or reduced strength due to weather extremes during mixing, placing, and curing.
- G. Formed Surface Finish: Smooth-formed finish for concrete exposed to view; rough-formed finish elsewhere.
- H. Slab Finishes
 - a. Dense steel troweled finish for floor surfaces and floors to receive floor coverings, paint, or other thin film-finish.
 - b. Nonslip broom finish to exterior concrete platforms, steps, and ramps.
- I. Cure formed surfaces by moist curing or curing/sealing compound.
- J. Begin curing unformed concrete after finishing.
- K. Owner may engage a testing agency to perform tests and to submit test reports.
- L. Protect concrete from damage. Repair surface defects in concrete.
- M. Curing/Sealing Compound: Comply with manufacturer's written instructions for installation of curing/sealing compound.

ALTERNATE 1A PRICING

- 1A Quote labor and all additional materials needed in the event of working in cold weather conditions or ground frost on the Request for Contractor Proposal – Section 00 41 23.

END OF SECTION 03 30 00