



DRYWALL FINISH SPECIFICATIONS

Contractor to furnish and install all labor, materials, equipment and consumables to complete the scope of work as listed below:

1. Furnish 1 hour of labor per house to address drywall hanging punchlist including but not limited to countersinking screw heads, shimming drywall, patching at seams, etc.
2. Furnish labor and materials to tape and finish all walls and ceilings.
3. Spray orange peel texture on all drywall surfaces. Protect finish surfaces as required prior to spraying texture.
4. Remove and dispose of debris/waste generated during finishing.
5. Include labor and materials to repair drywall surfaces after finish carpentry is complete. Include refinishing minimal damages made by other contractors.

Send all bids to:

Chris Garrison

Milwaukee Habitat for Humanity

3726 N. Booth St

Milwaukee, Wisconsin 53212

cgarrison@milwaukeehabitat.org

414.562.4440 Fax



ENERGY STAR CONSULTANTING SPECIFICATIONS

Contractor to furnish and install all labor, materials, equipment and consumables to complete the scope of work as listed below:

1. Perform all necessary site visits as required per Energy Star 3.0 and Focus on Energy program guidelines including but not limited to: pre-insulation duct tightness testing, insulation and building air tightness inspection.
2. Final inspection and testing to include blower door test, HVAC and ventilation airflow testing, infrared scan, and final Energy Star V3.0 review.
3. Complete and submit all required documentation to Energy Star and Focus on Energy as required for certification purposes.
4. Contractor to complete site visits within 72hrs of notice from Habitat.
5. Contractor to inform Habitat of any concerns within 24hrs of inspection.
6. Provide an option to perform all building modeling per RESNET standards on a per model basis.
7. Contractor responsible for covering openings as required for testing

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EXCAVATION SPECIFICATIONS

Contractor to furnish and install all labor, materials, equipment and consumables to complete the following scope of work as listed below:

1. Furnish and install orange safety fence around each excavation. Safety fence to be a minimum of 4' high and must be constructed to completely enclose the entire excavation on all sides. No fence is required between double lots and adjacent structures may be used to secure site.
2. Furnish and install silt socks as required for proper erosion control at lot line along public right of way (public sidewalk and adjacent alley if applicable)
3. Excavate for tracking pad. Furnish and place 3" stone tracking pad on each site. Tracking pad to be installed in accordance to the City of Milwaukee requirements. Tracking pad to be placed to align with proposed parking slab as noted on survey. Crushed concrete is not an approved substitute.
4. Excavate for footing and foundation for new construction houses per the applicable surveys. Excavation to be completed in accordance with all applicable OSHA requirements (see page 2). Stockpile clean soil onsite for backfill.
5. Truck soils to landfill as needed. Trucking to be included in base bid of contract with the exception of additional trucking due to unstable soil conditions. In the event of unstable soil conditions, contractor to notify Habitat immediately of the issue and invoice all additional expenses to Habitat on a T&M basis not to exceed \$500. If work is estimated to exceed \$500, contractor must get written approval from Habitat before proceeding with work. At the request of Habitat, contractor must furnish copies of all supporting documentation for change order expenses including but not limited to trucking tickets, dump tickets, certified payroll, and etcetera. All supporting documentation must have the proper address listed.
6. Leave clean soil onsite for backfill only. Transport fill to site for backfill as needed.
7. Backfill each house with clean soils. Backfill to be gradually placed and compacted as best as possible. Backfill to top of foundation wall in anticipation of settling. Backfill includes enclosed porch opening.
8. Backfill area between rear haunches with compactable fill. (TB or #1 stone)
9. Window wells to be backfilled with #1 stone from footing to window well.
10. After backfill, grade yard per proposed yard grade on survey. Cut and remove fill as required. Remove any large rocks/debris.
11. Include all dump and tipping fees necessary to complete this scope of work.
12. Contractor responsible for all damages to any erosion control, public right of way and neighboring property if damage is caused by this contractor.



EXCAVATION SAFETY REQUIREMENTS

OSHA requires that all excavations more than 5 feet deep that are to be entered by personnel shall be shored, sheeted, braced or supported. The preferred method is to slope the sides of the excavation to an angle of control at which the soil will remain at rest. There are generally 3 different soil classifications in Southeastern Wisconsin and the restrictions for each are as follows:

- **Type A soil: Clay, silty clay, sandy clay and clay loam.** In this type of soil an excavated bank may only extend vertically 5 feet high without being shelved. Any bank over 5 feet must have a minimum of a 2 foot deep horizontal shelf for every 5 feet of vertical rise or must be sloped at a ratio of $\frac{3}{4}$ to 1 or a 53 degree slope. There must also be a minimum of 2 feet between the beginning of the vertical bank and any form work that is to be placed in the excavation.
- **Type B soil: Angular gravel (similar to crushed rock) silt, silt loam and sandy loam.** In this type of soil excavated banks must be shelved or sloped at a 1 to 1 (45 degree) ratio. In other words, for every 4 feet of vertical height the excavated bank must be shelved 4' horizontally or dug at a 45 degree slope. There must also be a minimum of 2 feet between the beginning of the vertical or sloped bank and any form work that is to be placed in the excavation.
- **Type C soil: Gravel, sand and loamy sand.** In this type of soil the excavated banks are to be sloped at a $1\frac{1}{2}$ to 1 or 34 degree slope. This means that for every 4 feet of height the grade must slope 6 feet back. There must also be a minimum of 2 feet between the beginning of the slope and any form work that is to be placed in the excavation.
- All spoil piles must be at least 2 feet away from the edge of the excavation.

TIME AND MATERIAL RATES

The agreed T&M Rates are as follows:

1. T&M rate for a backhoe (4' bucket) with an operator is \$_____/hr.
2. T&M rate for mini-backhoe (2' bucket) with an operator is \$_____/hr.
3. T&M rate for a skid steer with an operator is \$_____/hr.
4. T&M rate for a general laborer is \$_____/hr.
5. T&M rate for quad axel dump truck is \$_____/hr.

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EXTERIOR FLATWORK

ROUGH GRADING SPECIFICATIONS

1. Grade yard and/or provide fill as necessary to achieve proper sub base grading for concrete flatwork per plans. Includes removing all excess spoils from site and all necessary trucking.
2. Furnish and install 3" min. of traffic bond base at all concrete flatwork areas. Mechanically compact all sub base. #1 stone is also an approved sub base.
3. Replace all erosion control damaged during the completion of this scope of work.
4. Provide fill around all sides of house where original backfill may have dropped
5. Excavate and remove tracking pad stone as required for garage pad and walkways

CONCRETE FLATWORK SPECIFICATIONS

1. Form and pour all concrete flatwork, 4" thick per attached survey and flatwork plan. Increased thickness around edges of garage pad per plan. Contractor responsible for ensuring all elevations are set according to the attached flatwork plan. Contractor to notify Habitat immediately if there is any conflicts in the plans.
2. Furnish and install felt between the house and the landing on the haunches as well as between the landing on the haunches and the rest of the rear walk.
3. Concrete shall be broom finished with control joints per industry standard. Any time there are steps present, the sides of the steps will need to be finished.
4. All sidewalks to be 48" wide unless noted otherwise on the plans.
5. All garage pads to be 22'x22' with a 6' apron unless noted otherwise on the plans.
6. All stairs to be set back 36" from the sidewalk unless noted otherwise on the plans.
7. Rebar Requirements: Where the following conditions occur, rebar is required as specified.
 - 7.1. Parking Pads: 6x6 welded wire mesh or fiber mesh in all parking pads.
 - 7.2. Stairs: Three #4 bar continuous.
 - 7.3. Change in Grades: Three #4 bar horizontally extending a minimum of 12" in both directions at the connection between the landing and the rest of the sidewalk.

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INTERIOR FLATWORK

1. Grade interior stone as needed prior to pouring floor.
2. Place 2" rigid board insulation over cast stone for entire area of basement floor. Rigid board furnished by Habitat.
3. Furnish and install 4 mil vapor barrier over rigid insulation. Lap a minimum of 12" each direction. Tape all seams and penetrations per code.
4. Furnish, pour and finish basement floor. Slab to be 3" thick, #3000 minimum.
5. Tool or saw cut control joints into slab per industry standards.

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FOUNDATION SPECIFICATIONS

Contractor to furnish and install all labor, materials, equipment and consumables to complete the scope of work as listed below:

1. Furnish and install Form-A-Drain tile system with bleeders and sump crock.
2. Form, pour and finish concrete footings per plan. Strip footings to include two rows of #4 rebar continuous throughout footings.
3. Furnish and install basement window and steel window well at each basement window location with drain tile connected to the footing tile.
4. Form, pour and strip concrete foundation walls and haunches per plans with brick pattern on the exterior. Include anchor bolts as required per code.
5. Include the following rebar placement. All rebar to be centered in concrete.
 - 5.1. One #4 horizontal bar on top tie in walls. 8" to 16" from top of wall.
 - 5.2. Three #4 horizontal bars at inside corners.
 - 5.3. Two #4 horizontal bars bridging step footings and haunches.
 - 5.4. Four #4 bars over each door or window header.
6. Place control joints at basement window and all spans over 20' long.
7. Install Thermax rigid insulation per plans. Thermax material furnished by contractor.
8. Furnish and install 15 year spray waterproofing membrane.
9. Install 2" rigid insulation on exterior of foundation as noted on the plans. Exterior rigid insulation will be furnished by Habitat.
10. Furnish and fasten filter fabric to exterior side of form a drain. Furnish and place #1 stone over filter fabric a minimum of 12" in each direction. Place second layer of filter fabric over stone.
11. Furnish and spread in place #1 stone as required for the interior concrete slab.
12. Include all conveying charges necessary to complete this scope of work.
13. Contractor includes all winter conditions extras including concrete additives and surcharges, and concrete blankets to protect the concrete from frost as necessary.
14. Contractor to work with Habitat to schedule necessary inspections

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HVAC SPECIFICATIONS

Contractor to furnish and install all labor, materials, equipment and consumables to complete the scope of work as listed below:

1. **Contractor must be a certified Energy Star V3.0 HVAC Contractor.** More information on how to become certified can be found at the link below:

http://www.energystar.gov/index.cfm?c=bldrs_lenders_raters.nh_hvac_contractors_become

2. Contractor to furnish and install all HVAC systems, equipment, parts, materials, and accessories required per the plans, specifications and all applicable codes including but not limited to furnaces, intake, supply and return ductwork, duct insulation, cabling, wiring and controls, drain and condensing lines as needed, registers, louvers, grills and diffusers, duct sealing, dampers, dryer vent ducting, and etcetera, unless noted otherwise.
3. Furnaces and thermostats will be furnished by Habitat. Contractor to install.
4. Exhaust fans will be furnished and installed by Habitat.
5. Contractor will furnish and install all dryer vents with hook-ups.
6. Contractor is responsible for sealing of penetrations relating to this scope of work.
7. Contractor is responsible for all low voltage wiring including all motor controls and disconnects to all HVAC equipment. Line voltage by others.
8. Contractor will furnish two furnace filters during furnace installation.
9. Contractor responsible for all quality control and examination of HVAC equipment including but not limited to control sequencing, report submittals, air design quantities and final air quantities, balance reports, and etcetera.
10. Contractor agrees to be in full compliance with all current Energy Star requirements including testing and certification, HVAC design and engineered performance calculations, and passing all third party testing requirements. All costs associated with any corrective measures are the responsibility of this Contractor.
11. Contractor to pickup donated furnace and A/C condenser unit from Johnson Controls
12. Install air conditioning unit furnished by Habitat onto pad furnished by contractor (after closing of home).
Date to be finalized before contracts signed.

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INSULATION SPECIFICATIONS

Contractor to furnish and install all labor, materials, equipment and consumables to complete the scope of work as listed below:

1. Spray foam the attic side of the 2nd floor top plates and all penetrations through the 2nd floor ceiling.
2. Blow unconditioned, truss-style attic with cellulose insulation to R-50. Include rulers on multiple trusses to insure that appropriate depth is achieved throughout.
3. Caulk and/or seal all penetrations in exterior wall cavities including but not limited to gaps between multiple studs, inside corners, and top and bottom plates.
4. Blow 2x6 wall cavities with dense-pack cellulose insulation and install 4 mil poly vapor-barrier.
5. Spray 2nd floor rim joists with open cell foam insulation to R-21 value.
6. Provide option to utilize fiberglass in 2nd floor rim joists instead of open-cell foam
7. Spray 1st floor rim joists with open-cell foam insulation to R-21 value.
8. All insulation work to be approved by third party Energy Star Rater.

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SEWER AND WATER LATERAL SPECIFICATIONS

Contractor to furnish and install all labor, materials, equipment and consumables to complete the following scope of work as listed below:

1. Contractor will provide all necessary barricades and safety components to complete this scope of work.
2. Contractor will complete all necessary road cutting, excavation and backfill with proper shoring per OSHA requirements. Includes all road work, curb and gutter repair and all necessary road permits.
3. Contractor responsible for all necessary plan review, permit and testing fees.
4. Hotline and staking of utilities is the responsibility of this Contractor.
5. Contractor will furnish and install (1) 1" water main tap, (1) 1" copper water main with meter horn, and (1) 6" sanitary sewer, each with all necessary tie-ins to each home. New water and sewer laterals will run underneath new concrete footings and stub up into the basement, as close to wall as is feasible. Contractor responsible for proper backfill.
6. Contractor is responsible for sealing all penetrations with approved sealer on interior and exterior of foundation wall.
7. Live taps are included as necessary. All tap fees to be included by contractor.
8. Contractor will coordinate all road cutting, trenching and lateral locations with the interior plumber and Habitat.
9. Contractor will backfill all trenching completed during their scope of work and patch/repair all road, sidewalk and landscaping surfaces damaged by their scope of work. Backfill to be approved by Habitat. Street and sidewalk patching to match existing conditions prior to removal.
10. Removal of excess spoils caused by this scope of work is the responsibility of this Contractor.
11. Contractor to provide a two year warranty on all labor.
12. Contractor responsible for all damages to any erosion control, public right of way and neighboring property if damage is caused by this contractor.

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PLUMBING SPECIFICATIONS

Contractor to furnish and install all labor, materials, equipment and consumables to complete the scope of work as listed below:

1. Contractor to furnish and install all sanitary (soil, waste, and vent) piping as needed per plan and all applicable building codes and municipal ordinances.
2. Contractor to furnish and install all water supply piping as required. All water pipe to be CPVC.
3. Contractor responsible for trenching and replacing stone under basement slab as needed for underground plumbing. Contractor also responsible for proper removal of all excess spoils from interior basement excavation relating to this scope of work.
4. Contractor to furnish and install gas pipe to the hot water heater, furnace, dryer and stove. Gas to range must penetrate wall cavity and not through the floor. Contractor to perform pressure testing on all pipe and double check fittings to ensure proper seal. Any and all cost associated with plumbing leaks will be the responsibility of this plumbing contractor including back charges from other trades for any necessary repairs.
5. Contractor to install all finish plumbing fixtures including but not limited to; kitchen sink, dishwasher, shower mixer and finish trim, shower faucet, vanity countertop (if cultured marble), vanity faucets, water closet, and water heater. These fixtures (including water heater) will be provided by Habitat and must be picked up from Habitat warehouse by contractor. Pickup to be coordinated with supervisor.
6. Contractor to furnish and install the following items; bath tubs and shower modules per plan, shower curtain rods, sealed sump crock and sump pump, in-line backwater flow valve, laundry tub, laundry tub faucet, frost proof hose bib with interior shut off valve, backup 'float' style check valve (to be installed during finish stage).
7. Contractor to install separate trap for basement laundry drain.
8. Once in contractor's possession, contractor assumes full responsibility of all goods provided by Habitat in the event of theft, damage or defect not covered under manufacturer's warranty.
9. Contractor to caulk all penetrations.
10. Contractor to rough in all future plumbing as shown on the plans.
11. Contractor to pull necessary permits and schedule inspections.

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ROOFING SPECIFICATIONS

Contractor to furnish and install all labor, materials, equipment and consumables to complete the scope of work as listed below:

1. Contractor will furnish and install 15lb felt, 3 feet of Ice and Water shield along eaves, 30yr dimensional shingles, metal drip edge, metal gutter apron, continuous ridge vent and all other appropriate flashings.
2. Contractor will remove all waste and excess material.
3. Contractor must include 2 year warranty on all labor.
4. Contractor must provide a copy of their safety & fall-protection programs.
5. Option #1: Contractor to install 7/16" OSB roof sheathing. Sheathing and H clips furnished by Habitat. Fasteners and other consumables furnished by Contractor.

GUTTERS & DOWNSPOUTS

1. Furnish and install 5" prefinished white "K-Style" seamless aluminum gutters along all eaves as necessary.
2. Pitch gutters as necessary for adequate draining per industry standards.
3. Furnish and install 4" prefinished white downspouts with 72" metal downspout extensions pitched away from foundation at grade level.

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SECURITY SPECIFICATIONS

Contractor to furnish and install all labor, materials, equipment and consumables to complete the scope of work as listed below:

1. Complete home monitoring system including full coverage of home with below requirements
2. Audio sensors to cover entire house
3. Motion sensors to cover basement and first floor
4. Door sensors to cover front and rear entry doors
5. One keypad per home
6. Cellular module
7. Monitoring service, with call list to be provided by MHFH.
8. Availability of representative during business hours for service calls
9. Availability of representative to do walk-through of system on closing day

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