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RESIDENTIAL CONSTRUCTION SPECIFICATION

The Owner:

The Bermuda Housing Corporation
Seven Arch Building 44
Church Street
Hamilton, Bermuda
HM11
441-295-8623

And the Contractor:

For the Project:

UNITS 2, 3, 4, and 5
#7 Middletown Lane
Pembroke
HM17

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DIVISION 01. GENERAL REQUIREMENTS

01500 - Temporary Facilities and Controls

This work shall consist of the application of temporary measures throughout the life of the project.

01510 - Temporary Utilities

All connections and extensions required to provide temporary utilities shall be made by the Contractor at the Contractor’s expense.

01511 - Temporary Electricity

Contractor to provide and install temporary power for a construction site. Connect to existing power service without disrupting local service requirements. Power feeder service characteristics shall be compatible with the service from which it is taken. Size, type, and loading shall be per requirements as established by the National Electric Code (NEC). The contractor shall provide main service disconnect and over-current protection at a convenient location in accordance with the NEC. The Contractor shall provide power outlets for construction operations, with branch wiring and distribution boxes located as necessary, and shall provide flexible power cords as required. Provide and install distribution equipment, wiring, and outlets to provide single-phase branch circuits for power and lighting.

01515 - Temporary Lighting

The contractor to provide and install temporary lighting for a construction site. Provide and install temporary lighting in all work areas sufficient to maintain a lighting level during working hours not less than the lighting level required by OSHA standards. As permanent lighting facilities are completed, they may be used in lieu of temporary facilities. Provide temporary lighting as required to satisfy safety and security requirements. Maintain a minimum illumination level of 30-foot candles measured 3 ft. above the floor in areas where finish trades are performing work. At exterior areas, provide 1 foot-candle of light after dark for security purposes.

01518 - Temporary Water

The contractor to provide and install temporary water for a construction site. Connect to an existing water source for construction operations.

01520 - Construction Facilities

Field offices and sheds shall be portable or mobile buildings or buildings constructed with floors raised above the ground, securely fixed to foundations, with steps and landings at entrance doors. Structurally sound, secure, weather-tight enclosures for office and storage spaces shall be maintained during the progress of work and removed at the completion of work. The size of field offices and sheds shall depend on the contractor's needs. Install an appropriate fire extinguisher. HVAC shall be adequate to maintain comfortable conditions. At the completion of work, all temporary facilities shall be removed and the area restored to new condition.

01523 - Sanitary Facilities

The contractor shall provide and maintain in a neat and sanitary condition such accommodations for the use of his employees as will comply with laws and regulations.

01530 - Temporary Construction

The contractor shall provide and maintain for the duration of work all required temporary stairs, ladders, ramps, runways, and hoists for use of all trades.

01540 - Construction Aides

The contractor is to provide all construction aids needed during construction which shall include but not be limited to, elevators, hoists, cranes, etc.

01542 - Construction Scaffolding and Platforms

The contractor shall provide and maintain for the duration of work all required temporary standing scaffolding. 'Independent tied' scaffolds will normally be provided for painting, pointing, or other maintenance work.

01560 - Temporary Barriers and Enclosures

The contractor shall provide barriers to prevent unauthorized entry into construction areas and to protect existing facilities and adjacent properties from damage from construction operations and demolition.

01600 - Product Requirements (Scope of Work)

All materials shall be installed in strict accordance with the manufacturer's written specifications or Material Institute Standards. Where the manufacturer's recommended details are used, the manufacturer shall be responsible for the performance of their product. All Items not specifically mentioned that are required to make the work complete and operational shall be included.

Prior to submitting a bid, you must visit the site and satisfy yourself as to the nature complexity and quantity of the works to be finally performed and the relevant equipment and labor skills, productivity, and hours required to complete these works.

Installation and Storage - All materials, supplies, and equipment shall be installed per the manufacturer's recommendations and applicable codes and requirements. Material stored on site shall be protected from damage by moisture, wind, sun, abuse, or any other harmful effects.

01630 - Product Substitution Procedures

The contractor is to investigate any proposed products by him and determine that they are equal or superior in all respects to the products specified. Coordinate installation of accepted substitutions into the Work, making such changes as may be required for the Work to be complete in all respects. Meet with clients and get a change order request signed.

01700 - Execution Requirements

The execution of all work shall be in strict accordance with these specifications and the manufacturer's written specifications or Material's Institute Standards. Where the manufacturer's recommended details are used, the manufacturer shall be responsible for the performance of their product. All work not specifically mentioned that is required to make the work complete and operational shall be included.

Codes - Construction shall comply with the Bermuda Building Code. It is the responsibility of the Contractor to ensure compliance with said codes and modify the specifications as needed to comply with such codes.

Measurements - The Contractor shall check and verify all dimensions and conditions before proceeding with construction. Do not scale drawings. Noted dimensions take precedence.

Workmanship - Workmanship shall conform to the best and highest standards of quality in each trade and shall include all items of fabrication, construction, and installation. All work shall be completed by skilled tradesmen and mechanics. Installation of all equipment and materials shall be in strict accordance with the manufacturer's recommendations.

Insurance - Builders Risk Insurance shall be maintained by the contractor during the course of construction until final acceptance by the owner. All bonding and insurance requirements shall be coordinated with the Owner prior to beginning construction. All contractors shall provide and be solely responsible for necessary barricades and safety precautions and strictly adhere to all governing codes on safety, including the OSHA Act.

01740 - Cleaning

The construction site to be in a clean and orderly condition throughout the construction process. Clean interior spaces prior to the start of finish painting and the application of other finishes. At the conclusion of construction, the project shall be properly cleaned. This should include but not be limited to; cleaning the interior and exterior glass, surfaces exposed to view, removing temporary labels, stains, and foreign substances, polishing transparent and glossy surfaces, vacuuming carpeted and soft surface areas, sweeping and mopping all tiled surfaces, etc. Replace filters of operating equipment. Clean equipment and fixtures to a sanitary condition. Clean exterior such as debris from roof, gutters, landscape areas, driveways, walks, etc. Remove all waste and surplus materials.

01760 - Protecting Installed Construction

- (i) Contractor to protect all installed construction. If products or materials come with a protective coating, the contractor shall maintain a protective coating until construction is complete. The contractor shall replace any items that become defective or damaged. All materials and labor shall be provided by the successful contractor and shall therefore be included in his price.

- (ii) The successful contractor will be responsible for the protection of all adjacent surfaces, clean up, and supply of all materials and equipment to undertake the work and maintain the site in a tidy state.

01904 - Hazardous Materials Removal and Disposal

Remove and dispose of any hazardous material before beginning construction. The contractor shall contract with a properly licensed and qualified hazardous material contractor.

DIVISION 02. SITE WORK

02000 – General

The purpose of this project is to include the excavation, and demolition, to construct 12 new units for 18 Battery Road St David's, including, construction of exterior stairs, storage catwalks, landscaping, parking, brick paving, concrete walkways, wiring/electrical and data communication (CAT6 cabling pulling and termination), installation/coordination of EV charging stations, plumbing, fitting of the interior (finishes – lighting, cabinets, accessories, plumbing fixture floor), New windows, window frames, and doors, and blinds as well as the painting as per the plans and specification.

02200 – DEMOLITION

Carefully dismantle and remove the following:

- i. Exterior wall – Existing walls have been compromised with organic growth to the point where the walls are unsatisfactory in maintaining structure integrity. As such these walls shall be demolished and the new walls shall rest and anchor into the existing footings.
- ii. Excavate out the remnants of all galvanized materials within the existing slab and excavate any organic growth. The slab has been compromised in a few areas. These areas, along with the seedlings, must be removed and replaced with new slab sections. Remaining bath, basin, W.C. kitchen sink, and all existing pipework are to be removed.
- iii. An asbestos abatement was rendered in 2016 by an asbestos consultant and contractor.
- iv. Remove all existing electrical cabling, luminaries, and receptacles.
- v. The removal and disposal of all the existing windows, doors, and all debris.
- vi. Remove and dispose of all existing external above-ground drainage pipes.

DIVISION 03. CONCRETE

SECTION 03300 - CAST-IN-PLACE CONCRETE

1.1 GENERAL

A. Related Documents: Comply with Construction Documents and Sections of Specification that relates directly or indirectly to the work being performed and/or specified within this section.

B. Submittals: Submit the following:

1. Laboratory test reports or evaluation reports for concrete materials and concrete mix designs.
2. Written report to Architect/Engineer for each proposed concrete mix at least 15 days prior to start of concreting. Do not begin concrete production until mixes have been reviewed by Architect/Engineer.

C. Quality Assurance: Comply with provisions of standards specified in structural drawing notes.

1. Concrete Testing Service: Engage a testing agency acceptable to Structural Engineer to perform materials evaluation testing and to design concrete mixes.
 - a. Materials certificates signed by concrete producer and Contractor may be submitted in lieu of materials laboratory testing when acceptable to Structural Engineer.

1.2 PRODUCTS

A. Form Materials: Furnish form materials with sufficient stability to withstand pressure of placed concrete without bow or deflection.

1. Forms for Exposed Concrete Surfaces: Suitable panel-type material to provide continuous, straight, smooth, exposed surfaces.

B. Reinforcing Materials: As specified in structural drawing notes:

C. Concrete Materials: As specified in structural drawing notes:

1. Sidewalks: 2500 psi. – when applicable

D. Admixtures: Provide admixtures that contain no more than 0.1 percent chloride ions.

1. Air-Entraining Admixture: ASTM C 260.
2. Water-Reducing, Retarding, and Accelerating Chemical Admixtures: ASTM C 494

E. Related Materials: As follows:

1. Water-stops: Flat dumbbell or center bulb type, size to suit joints, of either rubber (CRD C 513) or PVC (CRD C 572).
2. Moisture Barrier - clear 6 mil. thick; polyethylene barrier.
3. Membrane-Forming Curing Compound: ASTM C 309, Type I. Moisture loss not more than 0.55 kg/sq. meter when applied at 200 sq. ft./gal. Water-soluble as manufactured by the Burke Manufacturing Co.
4. Evaporation Control: Monomolecular film-forming compound applied to exposed concrete slab surfaces for temporary protection from rapid moisture loss.

F. Mix Proportions and Design: Proportion mixes complying with mix design procedures specified in ACI 301.

1. Design mixes to provide normal weight concrete with the properties specified in structural drawing notes:
2. Slump Limits: Proportion and design mixes to result in concrete slump at point of placement as specified in structural drawing notes:
3. Adjust mix designs when material characteristics, job conditions, weather, test results, or other circumstances warrant. Do not use revised concrete mixes until laboratory test data and strength results have been submitted to and reviewed by the Structural Engineer.

G. Use water-reducing, accelerating, and retarding admixtures that have been tested and accepted in mix designs in strict compliance with the manufacturer's directions.

1.3 EXECUTION

A. Formwork: Construct formwork so that concrete members and structures are of correct size, shape, alignment, elevation, and position. Select form materials to obtain required finishes.

1. Maintain formwork tolerances and surface irregularities within ACI 347 limits, Class A tolerances for concrete exposed to view and Class C tolerances for other concrete surfaces.
2. Provide openings in formwork to accommodate the work of other trades. Accurately place and securely support items built into forms.
3. Clean and adjust forms prior to concrete placement. Apply form-release agents or wet forms as required. Retighten forms during concrete placement, if required, to eliminate mortar leaks.

B. Vapor Retarders/Barriers: Place vapor retarder/barrier membrane for slabs

on grade, with joints lapped 6 inches and sealed.

C. Reinforcement: Accurately position and support reinforcement, and secure against displacement. Locate and support reinforcement to maintain minimum cover with metal chairs, runners, bolsters, spacers, and hangers as required. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

1. Install welded wire fabric in lengths as long as practicable; lap at least one full mesh plus 2 inches and tie splices with wire.

D. Joints: Locate and install construction, isolation, and control joints as indicated or required. Locate construction joints so they do not impair the strength and appearance of the structure. Place isolation and control joints in slabs-on-ground to stabilize differential settlement and prevent random cracking.

E. Installation of Embedded Items: Set and build anchorage devices and other embedded items required for other work that is attached to or supported by cast-in-place concrete. Use setting diagrams, templates, and instructions provided by others for locating and setting.

F. Concrete Placement: Comply with ACI 304, "Guide for Measuring, Mixing, Transporting, and Placing Concrete," for placing concrete in a continuous operation within planned joints or sections. Do not begin concrete placement until other affected work is completed.

1. Consolidate placed concrete using mechanical vibrating equipment with hand rodding and tamping so that concrete is worked around reinforcement and other embedded items and into forms.
2. Protect concrete from physical damage or reduced strength due to weather extremes during mixing, placing, and curing.
 - a. In cold weather, comply with ACI 306.
 - b. In hot weather, comply with ACI 305.

G. Finish of Formed Surface: As follows:

1. Smooth-Formed Finish: Provide a smooth finish for concrete surfaces exposed to view and surfaces to be covered with a coating or covering material applied directly to concrete. Repair and patch defective areas, with fins and other projections completely removed and smoothed.

H. Monolithic Slab Finishes: As follows:

1. Float Finish: Apply float finish to monolithic slab surfaces to receive trowel finish when surface water has disappeared and when concrete has stiffened sufficiently to permit operation of power-driven floats. Consolidate surface

with power-driven floats or by hand-floating.

- a. Check and level surface plane to tolerances of F(F) 18 (floor flatness) and F(L) 15 (floor levelness). Cut down high spots and fill low spots. Uniformly slope surfaces to drains. Immediately after leveling, refloat the surface to a uniform, smooth, granular texture.
2. Trowel Finish: Apply trowel finish to monolithic slab surfaces to be exposed to view and slab surfaces to be covered with resilient flooring, carpet, paint, or other thin film-finish coating system.
 - a. After floating, begin the first trowel-finish operation using a power-driven trowel. Begin final troweling when the surface produces a ringing sound as the trowel is moved over the surface. Consolidate concrete surface by final hand-troweling operation, free of trowel marks, uniform in texture and appearance, and with surface leveled to tolerances of F(F) 20 (floor flatness) and F(L) 17 (floor levelness). Grind smooth surface defects that would telegraph through the applied floor covering system.
3. Trowel and Fine Broom Finish: Where ceramic or quarry tile is to be installed with thin-set mortar, apply trowel finish as specified, then immediately follow with a slightly scarifying surface by fine brooming.
4. Nonslip Broom Finish: Apply nonslip broom finish to exterior concrete platforms, steps, and ramps, and elsewhere as indicated.
 - a. Immediately after float finishing, slightly roughen concrete surface by brooming with a fiber-bristle broom perpendicular to the main traffic route.
 - I. Curing: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. In hot, dry, and windy weather, apply an evaporation-control compound according to the manufacturer's instructions after screeding and bull floating, but before power floating and troweling.
1. Begin initial curing as soon as free water has disappeared from exposed surfaces.
2. Continue curing unformed concrete surfaces by water ponding, continuous fog spraying, continuously wetted absorptive cover, or by moisture-retaining cover curing. Cure formed surfaces by moist curing until forms are removed. Keep concrete continuously moist for not less than 72 hours for high-early strength concrete and 7 days for all other concrete.
3. Apply membrane-forming curing compound to exposed interior slabs and to exterior labs, walks, and curbs as soon as final finishing operations are complete. Apply uniformly according to the manufacturer's directions. Recoat areas subjected to heavy rainfall within 3 hours after initial application. Maintain continuity of coating and repair damage during the curing period.

- a. Use membrane-curing compounds that will not affect surfaces to be covered with finish materials applied directly to concrete.

J. Field Quality Control: Perform sampling and testing during concrete placement, as follows:

1. Sampling Fresh Concrete: ASTM C 172, except modified for slump to comply with ASTM C 94.
 - a. Slump: ASTM C 143; one test at point of discharge for each truckload of concrete.
 - b. Air Content: ASTM C 173, volumetric method for lightweight or normal weight concrete; ASTM C 231, pressure method for normal weight concrete; one for each day's pour of each type of air-entrained concrete.
 - c. Concrete Temperature: ASTM C 1064; one test hourly when air temperature is 40 deg F (4 deg C) and below, when 80 deg F (27 deg C) and above, and one test for each set of compressive-strength specimens.
 - d. Compression Test Specimen: ASTM C 31; one set of four standard cylinders for each compressive-strength test, unless otherwise directed. Mold and store cylinders for laboratory-cured test specimens except when field-cured test specimens are required.
 - e. Compressive-Strength Tests: ASTM C 39; one set for each day's pour exceeding 5 cu. yd. plus additional sets for each 50 cu. yd. more than the first 25 cu. yd. of each concrete class placed in any one day; one specimen tested at 7 days, two specimens tested at 28 days, and one specimen retained in reserve for later testing if required.
2. When frequency of testing will provide fewer than five strength tests for a given class of concrete, conduct testing from at least five randomly selected batches or from each batch if fewer than five are used.
3. Strength level of concrete will be considered satisfactory if averages of sets of three consecutive strength test results equal or exceed specified compressive strength and no individual strength test result falls below the specified compressive strength by more than 500 psi.
4. Test results will be reported in writing to the Structural Engineer, and Contractor Within 24 hours after tests. Reports of compressive strength tests shall contain the Project identification name and number, date of concrete placement, name of concrete testing service, concrete type and class, location of the concrete batch in structure, design compressive strength at 28 days, concrete mix proportions and materials, compressive breaking strength, and type of break for both 7-day tests and 28-day tests.

5. Nondestructive Testing: Impact hammer, Sonoscope, or other nondestructive device may be permitted but shall not be used as the sole basis for acceptance or rejection.
6. Additional Tests: The testing agency will make additional tests of in-place concrete when test results indicate specified concrete strengths and other characteristics have not been attained in the structure, as directed by Structural Engineer. Testing agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42, or by other methods as directed.

END OF SECTION 03300

DIVISION 04. MASONRY

04000 - General

The contractor shall provide labor and materials pertaining to masonry work as specified herein while complying with all applicable building codes.

04060 - Mortar and Masonry Grout

Mortar shall be Type "M" or "S" in accordance with ASTM C270, 2500 psi. Grout shall be in accordance with ASTM C270, Type M, 2500 psi concrete using pea gravel for coarse aggregate with a maximum aggregate size of 3/8" and an 8" minimum to 11" maximum slump. Mortar joints shall be 3/8" thick, finished to produce a flush form. Mortar or grout not used within 2 1/2 hours after mixing shall not be used in masonry work. In hot weather add water as needed to supplement evaporation losses.

04220 - Concrete Masonry Units (CMU)

Shall be in accordance with ASTM C90 or C145, 1500 psi compressive strength, grade N, Type 1, hollow core load bearing CMU, and shall have a minimum net compression strength of 1900 psi. Use Grade N, type 1, specialty-shaped load-bearing concrete masonry units as specified. The standard width of mortar joints for both horizontal and vertical joints shall be 3/8-inch Joints shall have full mortar coverage. Lay CMU plumb with all course levels using appropriate corner blocks at door jambs. The reinforcing mesh shall be installed in the three courses above all openings and shall extend 3 feet 9 inches beyond each side of the opening. The mesh shall be installed in every third course of all masonry unit walls. Cut block with a carborundum saw. Use solid load-bearing blocks when required for structural purposes.

DIVISION 05. METALS

SECTION 05500 - METAL FABRICATIONS

1.1 GENERAL

A. Related Documents: Comply with Construction Documents and Sections of Specification that relates directly or indirectly to the work being performed and/or specified within this section.

B. Submittals: In addition to product data, submit the following:

1. Shop drawings detailing fabrication and erection, including templates for anchor bolt placement.

2. Samples materials and finishes as may be requested by Architect.

1.2 PRODUCTS

A. General: Provide materials selected for their surface flatness, smoothness, and freedom from surface blemishes, as specified herein and as required by the construction documents.

B. Steel and Iron: As follows:

1. Plates, Shapes, and Bars: ASTM A 36/A 36M.
2. Rolled Floor Plates: ASTM A 786/A 786M.
3. Cold-Formed Tubing: ASTM A 500, Grade B.
4. Hot-Formed Tubing: ASTM A 501.
5. Pipe: ASTM A 53, standard weight (schedule 40), unless otherwise indicated. Black finish, unless otherwise indicated, galvanized for exterior installations where indicated.
6. Gray-Iron Castings: ASTM A 48, Class 30.
7. Concrete Inserts: Threaded or wedge type; galvanized ferrous castings, either ASTM A 47 (ASTM A 47M) malleable iron or ASTM A 27/A 27M cast steel. Provide bolts, washers, and shims as required; hot dip galvanized per ASTM A 153.

C. Aluminum: As follows:

1. Extrusions: ASTM B 221 (ASTM B 221M), alloy 6063-T6.

D. Fasteners: Provide plated fasteners complying with ASTM B 633, Class Fe/Zn 25 for electrode-posited zinc coating, for exterior use, or where built into exterior walls. Select fasteners for the type, grade, and class required.

E. Shop Primer for Ferrous Metal: Fast-curing, lead- and chromate-free, universal modified-alkyd primer with good resistance to corrosion, compatible with finish paint systems, and complying with the performance requirements of FS TT-P-664.

F. Galvanizing Repair Paint: High-zinc-dust-content paint, with a dry film containing not less than 94 percent zinc dust by weight.

G. Concrete Fill: Comply with requirements of Division 3 Section "Cast-in-Place Concrete" for normal-weight concrete with a minimum 28-day compressive strength of 3,000 psi (20 MPa).

H. No-shrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107.

I. Fabrication, General: Form from materials of type, size, thickness, and shapes indicated. Work to dimensions indicated or accepted on shop drawings, using proven details of fabrication and support.

1. Weld corners and seams continuously. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals. Obtain fusion without undercutting or overlapping. Remove welding flux immediately. Finish exposed welds and surfaces smooth and blended.

2. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners where possible. Locate joints where least conspicuous.

J. Rough Hardware: Furnish custom-fabricated bolts, plates, anchors, hangers, dowels, and other miscellaneous steel and iron shapes for supporting and anchoring woodwork.

1. Galvanize, unless otherwise indicated.

K. Loose Bearing and Leveling Plates: Provide for steel items bearing on masonry or concrete, as indicated. Drill plates to receive anchor bolts.

1. Galvanize after fabrication.

L. Miscellaneous Steel Trim: Fabricate from steel shapes, plates, and bars of profiles shown with continuously welded joints, and smooth exposed edges. Miter corners and use concealed field splices wherever possible. Provide cutouts, fittings,

and anchorages; coordinate assembly and installation with other work.

1.3 EXECUTION

A. Installation, General: Perform cutting, drilling, and fitting required for installing metal fabrications. Set units accurately in location, with edges and surfaces level, plumb, and true.

1. Fit exposed connections accurately together and weld, unless otherwise indicated.

Do not weld, cut, or abrade the surfaces of galvanized units that are intended for bolted connections.

2. Provide temporary bracing or anchors in formwork for items that are to be built into concrete masonry or similar construction.

B. Set loose items on cleaned bearing surfaces using wedges or other adjustable devices. After the items have been positioned and plumbed, tighten the anchor bolts and pack the space with grout.

1. Use non shrink, metallic grout in concealed locations where not exposed to moisture; use non shrink, nonmetallic grout in exposed locations, unless otherwise indicated.

C. Anchor bollards in concrete with pipe sleeves preset into concrete. Fill the space between the bollard and sleeve solidly with non shrink, nonmetallic grout.

1. Fill bollards solidly with concrete, mounding the top surface.

D. Touch up shop paint after erection. Clean field welds, bolted connections, and abraded areas and paint with the same material as used for shop painting.

E. For galvanized surfaces, clean welds, bolted connections, and abraded areas, and apply galvanizing repair paint.

END OF SECTION 05500

05520 - Metal Stairs Handrail

Metal &/or PVC stairs handrail to meet all applicable building codes.

DIVISION 06. CARPENTRY

06000 – General

The contractor shall provide labor and materials pertaining to carpentry requirements as specified herein while complying with all applicable building codes.

06110 – Wood Framing

See drawings.

06410 - Interior Cabinetry

Supplied by BHC (Owner) assembled and installed by Contractor.

06411 - Cabinet Hardware

Supplied by BHC (Owner).

06415 – Countertops

Supplied by BHC (Owner)

DIVISION 08. DOORS & WINDOWS

08000 - General

The contractor shall provide labor and materials pertaining to the doors and windows as specified herein while complying with all applicable building codes.

08100 - Doors

Supplied by BHC (Owner)

08210 - Interior Doors

Interior doors shall be solid core. 6-panel timber, including casing on both sides of the door. Casing shall be WM 445, 11/16" x 3 1/4" finger joint for a paint finish or clear/concealed joint for stain finish.

Standard Interior Door – Supplied by Owner. Provide necessary hardware per the door schedule on plans.

Type: Solid Core

Standard Exterior Doors – Supplied by Owner

Interior Door Frames – Contractor to supply and install all interior door frames.

08500 - Windows

Supplied by BHC (Owner).

08501 – Blinds/Shutters

N/A.

08710 - Door Hardware

Interior doors shall be a combination of privacy and passage locks. Hardware shall be as per allowance. Specify in the chart below the type of hardware for each door.

Type: Knob door hardware. As per door schedule on plans

Finish: Stainless Satin

Door Hardware: Passage Set, Privacy Lockset, Dead Bolt

Specify: Manufacturer: Schlage

08750 - Window Hardware

BHC to Supply (Owner Supply)

DIVISION 09. FINISHES

09000 - General

The contractor shall provide labor and materials pertaining to the finishes as specified herein, while complying with all applicable building codes.

09250 - Gypsum Wallboard

Gypsum board must be held firmly against the framing while fastening to avoid later movement of gypsum board on the shank of the nails or screws.

Nails or Screws: Nails and screws shall be a minimum 3/8" and a maximum of 1/2" from edges and ends of wallboard and the heads shall be seated slightly below the surface without breaking the paper. Nails shall be spaced not to exceed 7" on ceilings or 8" on sidewalls. Head diameter shall be a nominal 1/4" with the length 1 1/2" to penetrate a minimum of 7/8" into nailing member. Drywall screws shall meet the minimum requirements of ASTM C1002. Bugle-shaped heads shall be 0.315" in nominal diameter and contain a No. 2 Phillips driving recess. Type "W" screws are designed for easier fastening in wood.

Joints: At gypsum wallboard joints install a 2" strong, cross-threaded tape with a cross-tensile strength of 45 lbs per lineal inch. Press a strong, good-quality tape firmly onto sheathing joints and around openings, embedded in joint cement. At corners and angles, install metal corner beads as specified by the manufacturer. If corners are rounded, install corner reinforcement as required. Spread gypsum wallboard mud at all tape joints, corner beads, nails and screw penetrations and where a smooth surface is needed. Apply a second coat of wallboard mud after a minimum of 24 hours. After drying (minimum 48 hours), and sand all joints and other areas to a smooth consistent surface.

Interior Walls: Sheath walls and ceilings with 1/2" gypsum wallboard, either vertically with long edges parallel to framing, or horizontally with long edges at right angles to framing members. Apply one layer of 1/2" x 4' x, 8' foot lengths to all wall surfaces. Offset joints between layers at least 10".

Ceilings: Apply a single layer of 1/2" gypsum wallboard across the supports and fasten with nails or screws. Offset joints between layers at least 10". Nails are spaced 6" on center (OC) with 1 1/4" heads. Screws are spaced 12" on center (OC). The ceiling finish shall be smooth.

Provide new ceiling hatches sized 2'6" x 3'0" within each unit under the roof carcass area. Including all timber framing and a hinged access door constructed from 3/4 inch plywood left ready to receive the painting. Include stainless satin pull handles for each.

09300 – Tile (supplied by BHC/Owner)

Tile shall be appropriate grade and finish in accordance with applicable building codes and owner requirements. The contractor shall properly clean all surfaces to be covered and install appropriate underlayment per the manufacturer's recommendations. Installation should be carried out with a slow-setting cement adhesive, well mixed per manufacturer recommendations. Grouting of control joints can be executed either with cement-based grout or with resin-based organic materials.

Floors: The contractor shall properly clean all surfaces to be covered and install appropriate underlayment per the manufacturer's recommendations.

Location: Per unit.

Walls: The contractor shall properly clean all surfaces to be covered and install appropriate underlayment per the manufacturer's recommendations.

Bathroom Walls: Walls shall be tiled from floor to ceiling (the full height of the wall as shown on construction documents.).

Tile: Owner to select/provide)

Grout: minimal grout lines color to compliment tile selection (¼ inch)

Kitchen Backsplash: Tile shall be installed to the height of 18" high above the countertop as shown on construction documents.

Tile: Owner to select/provide)

Grout: minimal grout lines color to compliment tile selection (¼ inch)

09600 - Floor Finishes

The contractor shall properly clean all surfaces to be covered and install appropriate underlayment or preparation per the manufacturer's recommendations.

09700 - Wall Finishes

Walls shall be clean and free of defects such as cracks or unfinished joints prior to installation of wall finishes. If mildew is evident, mildew must be removed, and surface properly treated to inhibit further mildew growth.

07100 - Waterproofing & Damp Proofing

All roof joints and penetrations shall be made watertight using approved methods and materials.

07920 - Caulking and Sealants

For exterior windows, door frames and other paintable surfaces use a marine quality latex-based caulk as supplied by M3 or similar approved. Color shall match window/doors.

09900 - Paints and Coatings

Prepare each surface to receive scheduled work as set forth below.

Notes:

- (iii) All work inclusive of surface preparation.
- (iv) All surfaces are to be coated with a minimum of one **primer and two finishing coats** (we recommend tinting the primer with the finish color.
- (v) Note: The contractor shall be held accountable for providing proof that walls are completed with 3-coat system.

Finish Schedule

Room	Walls	Floors	Ceiling	Additional info
Kitchen	Satin – Color on File	As per owner selection- LVT or Ceramic tile	White Satin Finishes	BHC interior colors on file @ Pembroke Paint
Living Room	Satin – Color on File	As per owner selection- LVT or Ceramic tile	White Satin Finishes	“ “
Bedrooms	Satin – Color on File	LVT or Ceramic tile	White Satin Finishes	“ “
Bathrooms	Tile	Tile	White Semi-Gloss	“ “
Exterior closets/Room	Semi-Gloss	Sealed concrete	White Semi-Gloss	

09911 - Exterior Walls

All nail heads shall be set below the surface and finished smooth. Exterior walls shall receive a primer coat and two coats of Satin elastomeric paint. Stucco systems are permitted and shall be installed per manufacturers’ specifications. Where efflorescence has occurred, wash with a 10% muriatic solution, rinse thoroughly with clean water, and allow to thoroughly dry at least one week before painting or sealing.

09912 - Interior Walls

All nail heads shall be set below the surface and finished smooth. Joints should be taped and covered with a suitable drywall joint compound. Sand the spackled nail heads and joint compound smooth and dust well before priming. Interior walls shall receive a primer coat and two coats of flat or semi-gloss paint. Surfaces shall be sanded before each finish layer is applied.

Wall Paint: Interior, BHC Color on file, Satin finish or as specified above

09913 – Roof

SKB Roofing. Coating application as per manufacturer specification full warranty as detailed in Division 07.

(Apply Lasti-Shield Basecoat, Fill coat, and topcoats all in accordance with SKB’s recommendations.)

Paint – SKB Coatings Color White roof

Specify Trim Paint: SKB Coatings color and finish - white

09930 - Interior Wood

Wood surfaces shall be sanded smoothly before the finish is applied. Putty areas with a wood-based filler where nails or other defects appear in the surface.

Paint - Prime wood surfaces including faces, edges and ends before installation. After installation, apply at least one coat of wood primer and two coats of finish paint. Surfaces shall be sanded before each finish layer is applied.

Trim Paint: Oil-based, white, semi-gloss. (Unless PVC Base/Trims are used)

DIVISION 10. SPECIALTIES

10000 - General

The contractor shall provide labor and materials pertaining to the specialties as required in said documents and as specified herein while complying with all applicable building codes.

10810 – Bathroom Accessories

Owner to supply.

10822 - Tub and Shower Doors

Owner to supply

DIVISION 11. EQUIPMENT

11000 - General

Contractor shall provide labor and materials pertaining to the equipment as required in said documents and as specified herein, while complying with all applicable building codes.

11451 - Appliances

Owner to Supply

DIVISION 13. SPECIAL CONSTRUCTION

13000 - General

The contractor shall provide labor and materials pertaining to the specialty systems as required and as specified herein, while complying with all applicable building codes.

13001 – Asbestos Abatement – Scope of Work

Not applicable

13854 - Smoke Alarms

Owner to supply.

DIVISION 15. MECHANICAL

15000 - General

Contractor shall provide labor and materials pertaining to the mechanical systems as required and as specified herein, while complying with all applicable building codes.

15100 - Plumbing

Plumbing shall be a fully operational system of hot and cold water. Provide and install all piping, soil, vents, drains, sewage removal, and water supply systems to connect with appropriate water and sewage systems. Provide and install appropriate insulation around piping. All permits and inspections are to be obtained by the contractor as required by local building codes and the Uniform Plumbing Code.

Sewer and Waste Piping - The drainage system shall be Schedule 40 PVC pipe. All connections shall have PVC cement or appropriate joint compound and be assembled tight for no leakage. Condensate drains shall be constructed of Schedule 40 PVC. Valves shall be Milwaukee Brand or equal.

Water Pipes - Use 3/4" minimum lines from supply lines to each plumbing fixture as required. At water heaters and hose bibs install a minimum 3/4" pipe. From water heater install 3/4"-1" pipe to each room with branches to fixtures as described above. Use polished chrome adjustable brass P-traps with wall escutcheons at all exposed locations.

Provide shut-off valves at sinks, toilets, water heaters, and other fixtures as required. Test all pipes under 100 lbs pressure per building code requirements.

Waste Drainage - Install sewage clean-out at the end of each horizontal drainage run and every 100 feet per building code requirements. Vents shall be installed throughout plumbing connections and connected with the vertical stacks and vented through the roof. Check with local building code officials for specific venting requirements.

Water Heater - Install one 40-gallon electric water heater. Water heater(s) shall have appropriate safety valves, backflow preventers, pressure relief valves, and drain assemblies. Follow manufacturer recommendations and building code requirements for installation and use.

15410 - Plumbing Fixtures

Provide necessary piping, water, and drains for plumbing fixtures listed herein.

Fixtures and Fittings - Provide and install plumbing fixtures as listed below.

Location	Fixture/Fittings	Description	Model #
Kitchen	Sink		Owner to supply
Kitchen	Faucets		Owner to supply
Kitchen	Sink Strainer		Owner to supply
Bathroom	Faucets/shower		Owner to supply
Bathroom	Sink / Vanity		Owner to supply

DIVISION 16. ELECTRICAL

16000 - General

The contractor shall provide labor and materials pertaining to the electrical system as required and as specified herein while complying with all applicable building codes, local utility requirements, and building restrictions.

16100 - Electrical

From the electrical meter box, install wiring to the building. Raceways to be buried shall be PVC #2 Plastic Electrical conduit. Where permitted by code, non-metallic sheathed cable may be used. Type THW or THWN 600-volt insulation conductors shall be used; the minimum wire size shall be #12. The wiring shall connect to a metal recessed electrical panel. Electrical service shall be rated at 200 amps. Wiring from the outside meter box shall be SE cable. Install Arc-fault protector circuits as per code requirements.

16120 - Conductors and Cables

Provide and install necessary circuits and breakers for appliances as stated in the manufacturer's recommendations per applicable building code requirements. For general illumination, provide a minimum 15-amp circuit for each 500 sq. ft. of living area (load 3 watts per sq. ft.)

Branch circuits shall be wired with No. 12 gauge wire.

Install GFI circuits with No. 12 gauge wire in all wet areas, baths, and exterior outlets.

Appliance circuits shall be installed as per applicable building code requirements.

The dryers are to be located as per plan.

16130 - Raceway and Boxes

Flexible or rigid conduits, couplings, supports, and nonmetallic ducts. Install conduit concealed in all areas, excluding mechanical and electrical rooms/areas, connections to motors and connections to surface cabinets. Coordinate installation of conduit in masonry work. Unless indicated otherwise, do not install conduit larger than 2 1/2 inches in concrete slabs. Provide a minimum concrete cover around conduits of 2 inches. Install conduit free from dents and bruises. Plug ends to prevent entry of dirt and moisture. Minimize crossovers. Provide flashing and pitch pockets, making watertight joints where conduits pass through roof or waterproofing membranes. Route all exposed conduits parallel or perpendicular to building lines. All fittings shall be UL approved.

Fasten raceways securely in place. Firmly fasten within 3 feet of each outlet, junction box, cabinet, or fitting. Support every 10 feet.

16140 - Wiring Devices

Install white receptacles, switches, and cover plates and finish schedules. For exterior receptacles install gray cover plates. When two or more switches or receptacles are located together, a gang with one common faceplate. If they cannot be ganged, install them with a minimum distance between units. Install all receptacles at 18" on center (OC) vertically above the finished floor (AFF), unless otherwise noted. At counters, locate receptacles at 44" on center

(OC), above the finished floor (AFF). Install switches at 48" on center (OC) above the finished floor (AFF). Locate light switch cover plates 6" from the frame of the door or corner of the wall. Switches shall be Rocker switches.

Receptacles: Required to each room in accordance with the current NEC requirements.

Light Fittings: Light switches are required to each room. Two-way light switches are required to each end (adjacent doorways – back and front doors, top and bottom stairs).

16440 - Panel boards

Panel boards shall be Square "D", G.E., or ITE. Provide a typewritten directory of circuits mounted in the box. Use dead front panel boards with one-piece cabinets constructed from code gauge steel, finished with rust-inhibiting primer and baked enamel finish and manufacturer's standard color. Use factory-assembled panel boards with amp rating units indicated. Provide spare units and blank spaces as indicated.

Use breakers that are UL-rated for use as switches. Equipped with automatic circuit breakers.

16500 - Light Fixtures

Provide necessary circuits and wiring for light fixtures as listed below. All lighting shall be switched.

Special Items - Provide necessary receptacle requirements and wiring for additional items as listed below. Locate as shown on construction documents.

Bath Vent Fans - install in bathroom,

Smoke Detectors/Heat Detectors- install per code at bedrooms and kitchen,

Telephone outlets - located in the Studio, living room, kitchen, and bedrooms/lofts.

Cable outlets - located in the living room and bedrooms/Studio/Lofts as per plan

Specialty Appliances - appropriate wiring

Fixtures - Provide and install electrical fixtures as listed below.

Location	Fixture	Description	Model #
Kitchen	1' x 4' LED	Owner to Supply	
Living room / Bedrooms	42"-52" ceiling fan with light attachment	Owner to supply	
Closets/stairs/hall- ways	11"-13" LED lights	Owner to supply	
Bathroom	3 - 4 bulb vanity light LED	Owner to supply	
Bathroom	Integrated ceiling vent / light / heater unit	Owner to supply	
Exterior Pump & Meter Rooms	LED	Owner to supply	
Porch	Exterior Wall Lamp x 2	Owner to supply	

E. Blake Lambert

E. Blake Lambert - Asst. Project Manager

