**PART 1 - GENERAL**

**1.01 SUMMARY**

A. Provisions of Division 01 apply to this section.

B. Section Includes:

1. Wood flooring.

C. Related Sections:

1. Section 03 30 00: Cast-In-Place Concrete.
2. Section 06 10 00: Rough Carpentry.
3. Section 08 71 00: Door Hardware.

**1.02 SUBMITTALS**

A. Material Samples: Submit Samples of each type of flooring material specified.

**1.03 QUALITY ASSURANCE**

A. Comply with the following as a minimum requirement:

1. All materials shall be ADA compliant.

2. ASTM C518 – Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow-Meter Apparatus.

3. ASTM D226 – Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.

4. ASTM E84 – Standard Test Method for Surface Burning Characteristics of Building Materials.

5. ASTM E648 – Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source.

6. ASTM F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.

B. Maple and Douglas Fir flooring shall be manufactured from kiln-dried lumber, in accordance with the following:

1. Maple Strip Flooring: Manufactured and graded in accordance with the "Official Grading Rules for Northern Hard Maple, Beech and Birch Flooring" of the Maple Flooring Manufacturers Association.

2. Douglas Fir Flooring: Manufactured and graded in accordance with Standard Grading Rules of the West Coast Lumber Inspection Bureau. Douglas fir flooring shall be grade marked.

C. Qualifications of Installer: Minimum 5 years experience installing and finishing wood floors for institutional or commercial use.

**1.04 DELIVERY, STORAGE AND HANDLING**

A. Deliver materials to the Project site with manufacturer's labels intact and legible.

B. Comply with wood manufacturer's recommendations for material acclimation during storage and before installation. Flooring material shall be stored under ambient building design conditions for at least 7 days before installation.

**1.05 WARRANTY**

1. Manufacturer shall provide a 2 year material warranty.
2. Installer shall provide a 2 year labor warranty.

**PART 2 - PRODUCTS**

**2.01 MATERIALS**

A. Maple Strip Flooring: 3/4 inch x 2-1/4 inch, second grade, tongue and groove, end- matched, northern hard maple strip flooring.

B. Douglas Fir Strip Flooring: "B and Better", vertical grain, kiln-dried, tongue and groove, Douglas fir, 1 x 4 or 2 x 6 as indicated.

C. Nails:

1. For maple strip flooring, provide 2 inch barbed power cleat or finish nails.

2. For Douglas fir flooring, provide unhardened "Screw-Tite" flooring nails.

D. Wood Filler: Shall be compatible with floor finish.

E. Finish: Sealer and finish shall be by same manufacturer.

1. Bonakemi USA, Inc.:

a. Sealer: One coat of Supersport Sealer (waterborne),

b. Finish: Four coats of Supersport One (waterborne),

1. Hillyard, Inc.:

a. Sealer: Two coats of Tip-Off.

b. Finish: Three coats of Contender Finish.

1. Gloss finish unless otherwise noted on the Drawings.

F. Base shall be Maple, Douglas Fir, or heavy-duty molded rubber cove base as indicated on the Drawings:

1. Where Maple or Douglas Fir perimeter molding is indicated, install as detailed.

2. Where rubber base is indicated, provide 3 inch x 4 inch ventilating type and pre-molded outside corners.

**PART 3 - EXECUTION**

**3.01 COORDINATION**

A. Coordinate with related Work to provide level, smooth, and clean finish surfaces ready to receive wood flooring.

**3.02 EXAMINATION**

A. Examine surfaces and related Work designated to receive flooring. Correct defective Work before installing the Work of this section.

**3.03 PREPARATION**

A. Wood subfloors to receive wood flooring shall be covered with a layer of 15 pound asphalt saturated felt, complying with ASTM D226.

**3.04 INSTALLATION**

A. Flooring shall not be installed unless interior building temperature and humidity levels are within the ranges recommended by the manufacturer and/or recognized standards. If wood strip floor is installed over concrete, perform a moisture test before installation of wood sleepers as follows:

1. Moisture Testing: Test new and old concrete slabs for moisture content. Testing shall conform to ASTM F1869 and the following minimum testing requirements which are 3 calcium chloride tests for the first 1,000 square feet of floor area, and one for each additional 1,000 square feet or fraction thereof. Unless flooring manufacturer recommends more stringent requirements, maximum allowable moisture release at time of flooring installation shall be 3 pounds per 24 hours per 1,000 square feet. Provide report of test as specified above. For each test, perform the following steps:

a. Weigh the sealed dish of crystals immediately prior to exposure. Record starting weight, date, and time.

b. Open kit and set crystal dish on clean concrete surface. Immediately install plastic dome over the dish. Make sure the dome is gasketed to the concrete and is airtight.

c. Leave test to absorb moisture for 60 to 72 hours. Keep room temperature above 55 degrees F for duration of test.

d. After exposure, remove and discard housing. Replace dish lid and tape shut. Weigh the sample within one hour of removal from floor.

e. Compute the vapor emission in pounds, indicate location of test and vapor emission on report.

f. Delay application of flooring until sub-floors are within permitted ranges, or perform remedial measures as recommended by flooring material manufacturer.

B. Maple Strip Flooring: Maple strip flooring shall be installed in areas where "hardwood" flooring is indicated. Flooring strips shall run long dimension of room, space or platform. Each strip shall be laid out so that joints in adjoining strips are as far apart as stock will permit. Each strip shall be driven into position and blind-nailed with 7d floor nails, spacing not to exceed 18 inches. Nails shall be installed at an angle of 45 to 55 degrees, and first nails driven into piece of flooring shall be "toe-nailed" toward preceding piece to which it joins, to make tight end joints.

C. Douglas Fir Strip Flooring: Douglas fir flooring shall be installed in areas indicated "Douglas fir.” Flooring strips shall run long dimension of room or space, and shall be laid out so those joints in adjoining strips are as far apart as possible, but not less than 32 inches. Butt joints shall be square and tight, and each strip shall be driven up tight and blind-nailed with nails spaced not to exceed 16 inches. Each strip at butt joints shall be face-nailed with 2 nails, which shall be set. Furnish 7d flooring nails for nailing of 1-inch flooring, and 12d flooring nails for 2-inch flooring.

**3.05 SANDING**

A. After other Work on interior of building has been completed, floors shall be swept clean and sanded as follows:

1. Floors shall be sanded diagonally from wall to wall in one direction, and then shall be sanded diagonally from wall to wall in the opposite direction with No. 2-1/2 sandpaper.

2. Floors shall then be sanded longitudinally, first with No. 1-1/2 sandpaper, second with No. 1/2 sandpaper and third with No. 0 sandpaper, to remove sanding marks.

3. Provide a 12 inch drum sander, and sweep floor clean between each sanding.

4. Wherever a drum sander cannot be used, floor shall be sanded as specified above, by use of a spinner to provide uniformly finished floor surfaces.

**3.06 WOOD FILLER**

A. Apply wood filler by brush, followed by wiping across grain to penetrate filler material into pores and cracks of flooring.

**3.07 FINISHING**

A. Examine entire area of floor to ensure that surface is acceptable for finishing, completely free from sanding dust and perfectly clean.

B. Install sealer and finish coats per manufacturer’s recommendation. Spray application is not permitted.

C. Buff and clean floor between each coat.

D. Flooring shall be entirely abraded if floor sits for longer than 24 hours between any two consecutive coatings.

E. Base shall be as indicated on Drawings:

1. Maple perimeter molding installed with miter joints at 45 degrees angle and double-nailed corners. Nail securely into blocking or last board.

2. Rubber base with pre-molded outside corners.

**3.08 CLEAN UP**

A. Remove rubbish, debris, and waste material and legally dispose of off the project site.

**3.09 PROTECTION**

1. Protect the Work of this section until Substantial Completion.

**3.10 INSTRUCTION**

A. After Work of this section is complete, but before Substantial Completion, flooring manufacture’s technical representative shall provide a 4 hour instruction period to designated Owner staff in maintenance of flooring.

**END OF SECTION**