300-G-6

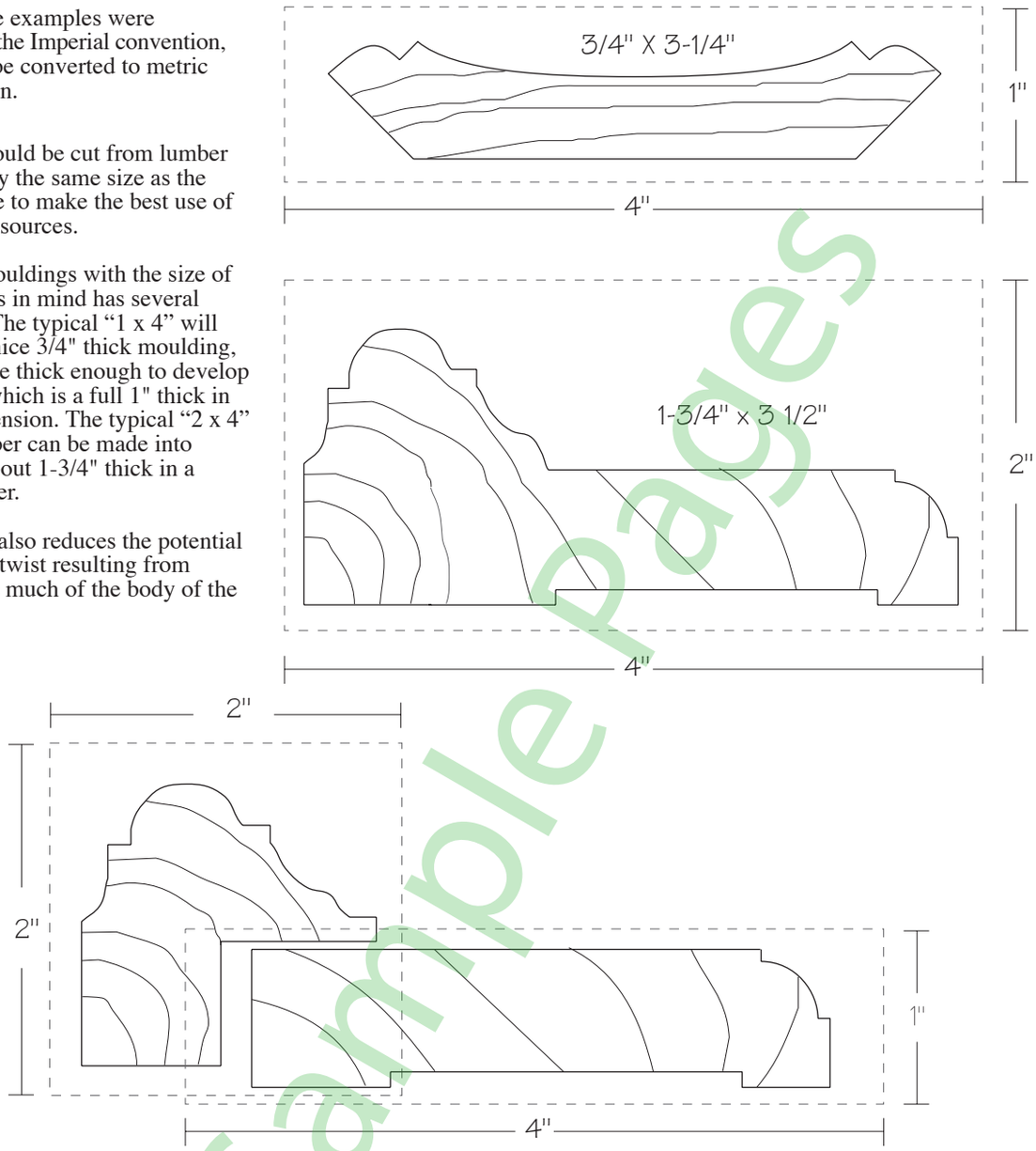
Design and Use of Resources

NOTE: These examples were developed in the Imperial convention, and will not be converted to metric for this edition.

Moulding should be cut from lumber approximately the same size as the finished piece to make the best use of our natural resources.

Designing mouldings with the size of typical boards in mind has several advantages. The typical “1 x 4” will yield a very nice 3/4" thick moulding, but will not be thick enough to develop a moulding which is a full 1" thick in finished dimension. The typical “2 x 4” piece of lumber can be made into mouldings about 1-3/4" thick in a similar manner.

This method also reduces the potential for warp and twist resulting from removing too much of the body of the board.



Deep or large mouldings are often best cut from more than one piece and built up to make the final profile. Just as in the manufacture of single mouldings, this process minimizes waste and reduces the tendency of the finished profiles to twist, warp, cup, or bow as a result of removing too much wood from either side of the initial board.

Consult an AWI/AWMAC woodwork manufacturer early in the design process for tips and suggestions on moulding design, fabrication, and installation.

Resource Management - Figure 300-02

300-G-7
Radius Mouldings

Both traditional and nontraditional architectural styles often call for radius standing and running trim either in plan, elevation, or both. In situations where the size of the moulding and the radius to which it is to be formed is such that a straight moulding will not conform to the substrate, the architectural woodworker can use several methods to fabricate radius mouldings. Mouldings applied to radii can be segmented, bent, laminated and formed, pre shaped, or machined to the radius. Woodworkers will fabricate the mouldings in the longest practical lengths, with the purpose of minimizing the field joints.

The architectural woodworker frequently uses band sawing for fabricating radius mouldings. With this technique, the woodworker starts with a large, often glued-up piece of material and band saws to get a curved piece. In order to cut down on waste, the woodworker tries to get several curved pieces from one large piece by nesting, as shown in Illustration A. Characteristically, this method of fabricating radius mouldings limits the length of pieces that can be developed without a joint. It also yields a piece of material with grain straight on the face, not following the curve.

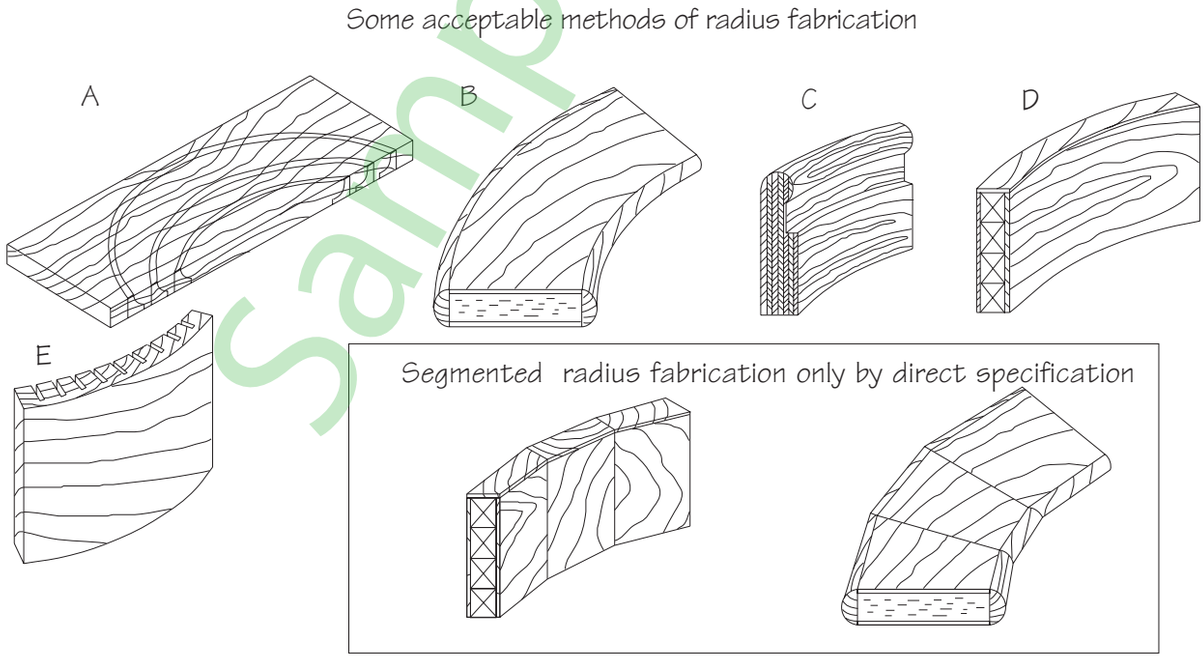
When dealing with profiles with a flat face (see Illustration B,) the woodworker may saw the pieces from a sheet of plywood and then apply an edge band. This will yield larger pieces with more consistent grain.

Another technique for fabricating a radius mould involves laminating thin, bendable plies of lumber in a form (see Illustration C.) Laminated pieces hold their shape without being secured to another surface. This curved piece will then be milled to the desired profile. The glue lines follow the edge grain and the curve, thus minimizing their visibility. The species of wood and the tightness of the radius determine the maximum thickness of each ply.

When dealing with some cross sections, it can be advantageous to combine band sawing and laminating. The woodworker band saws a core of common lumber and laminates finish material to the exposed faces. From looking at Illustration D, it is apparent that this technique must be limited to certain profiles. It does, however, offer the ability to minimize glue joints and control grain directions. Finally, the simplest method for obtaining a radius moulding is kerfing.

As seen in Illustration E, kerfing consists of making repeated saw cuts on the back face of the piece, perpendicular to the bend. The tightness of the radius determines the spacing and depth of the kerfs. Kerfing allows the piece to be bent to the required radius, and then secured in place to hold the bend. Kerfing almost always results in "flats" on the face which show in finishing. When dealing with a large radius, it is sometimes possible to stop the kerf prior to going through an exposed edge. In most cases, however, the kerf runs all the way through, and the edge must be concealed .

Unless specifically called out, the architectural woodworker will have the option of which method to use for fabricating radius moulding. Since the fabrication method determines the final appearance of the pieces, especially regarding the direction of grain and visibility of glue joints, the architect or designer may wish to specify the method. It is recommended that an architectural woodwork firm be consulted before making a selection. Mock-ups may be required to visualize the end product.

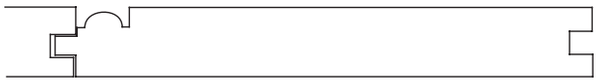


Radius Work - Figure 300-03

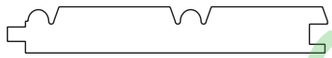
300-G-8

Solid Lumber Paneling Patterns

The variety of solid lumber paneling is only limited by the imagination of the design professional. Virtually any machinable profile can be custom manufactured. The following profiles are some of the traditional patterns associated with solid board paneling. They are not dimensioned intentionally, allowing the design professional to determine the scale and proportions most appropriate for the project.



Single Bead



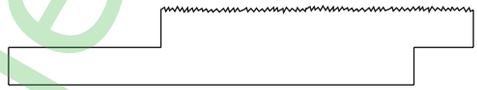
Beaded Ceiling or Wainscot

Some Reveal Detail Options

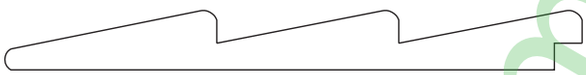
Pickwick Paneling

Tongue and Groove "V" Joint

Beaded Siding

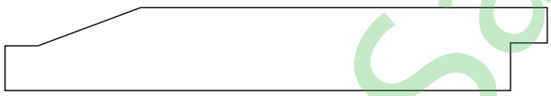


Rough Sawn Reveal



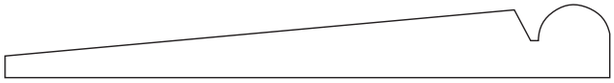
Simulated Lap Siding

Bevel Siding with plough



Drop/Lap Siding

Moulded Insert



Beaded Bevel Siding

Coved Paneling

Board Paneling Examples - Figure 300-04

Technical Criteria

300-T-1

Specification Requirements

Architect or Design Professional shall …

- specify the Grade required;
- specify the species and type of cut;
- specify the type of moulding or trim;
- specify the ornamental details and joinery which affect the æsthetics and function;
- specify the fire retardant rating, if required; and
- specify the preservative treatment for exterior use, if required.

300-T-2

Materials

Hardwood members exceeding dimensions defined in Section 100 may be glued for width and thickness.

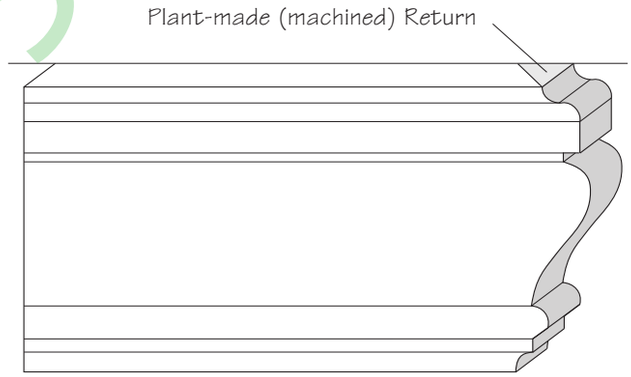
If total length exceeds the available length of the species as defined in Section 100, members can have plant-prepared joints for field assembly. Unless otherwise specified or detailed, the following standards shall apply:

	Premium		Custom		Economy	
	Transparent	**Opaque**	**Transparent**	**Opaque**	**Transparent**	**Opaque**
Lumber Grade	I	II	II	II	II	II
Cut of Lumber	Plain sawn	Plain sawn or MDF	Plain sawn	Plain sawn or MDF	Plain sawn	Plain sawn or MDF

300-T-3

Workmanship

	Premium	Custom	Economy
Finger-jointed lengths	Not permitted	Not permitted	Permitted
Exposed end (Return)	Plant made	Not required	Not required
With non-exposed ends*	Backed out	Backed out	Flat back
Plant assembly of trim members (Must be specified)	Lemon Spline, Butterfly, Scarf or Dowel	Clamp nails or Lemon spline, Butterfly, Scarf or Dowel	Not required
Factory manufactured radius mouldings	Factory shaped and glued to longest practical lengths, for installation with smooth transitions.		Not required
Minimum lengths	Lengths of trim pieces are governed by material availability. Consult Section 100 for data.		
* Note: Door and window trim with non-exposed ends shall be backed out in Premium and Custom Grades when the width exceeds 2 inches. Other trims are backed out at manufacturer option.			



Machined Return - Figure 300-05