

ARCHETYPE



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Award Winner

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Excellence Winner

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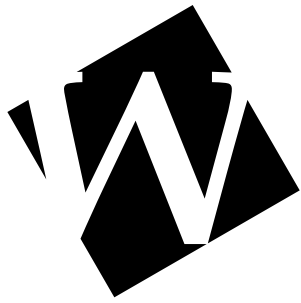
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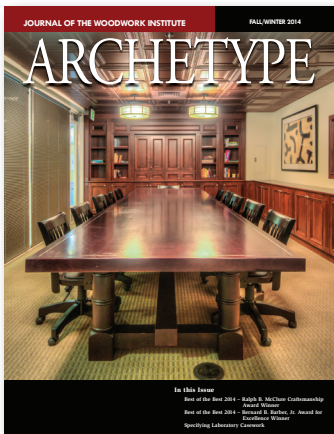
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Ralph B. McClure
Craftsmanship Award**

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Architect/Designer
UCLA Athletics

General Contractor
UCLA Dept. of Intercollegiate
Athletics

Millwork Fabricator
Dennis Reeves, Inc.

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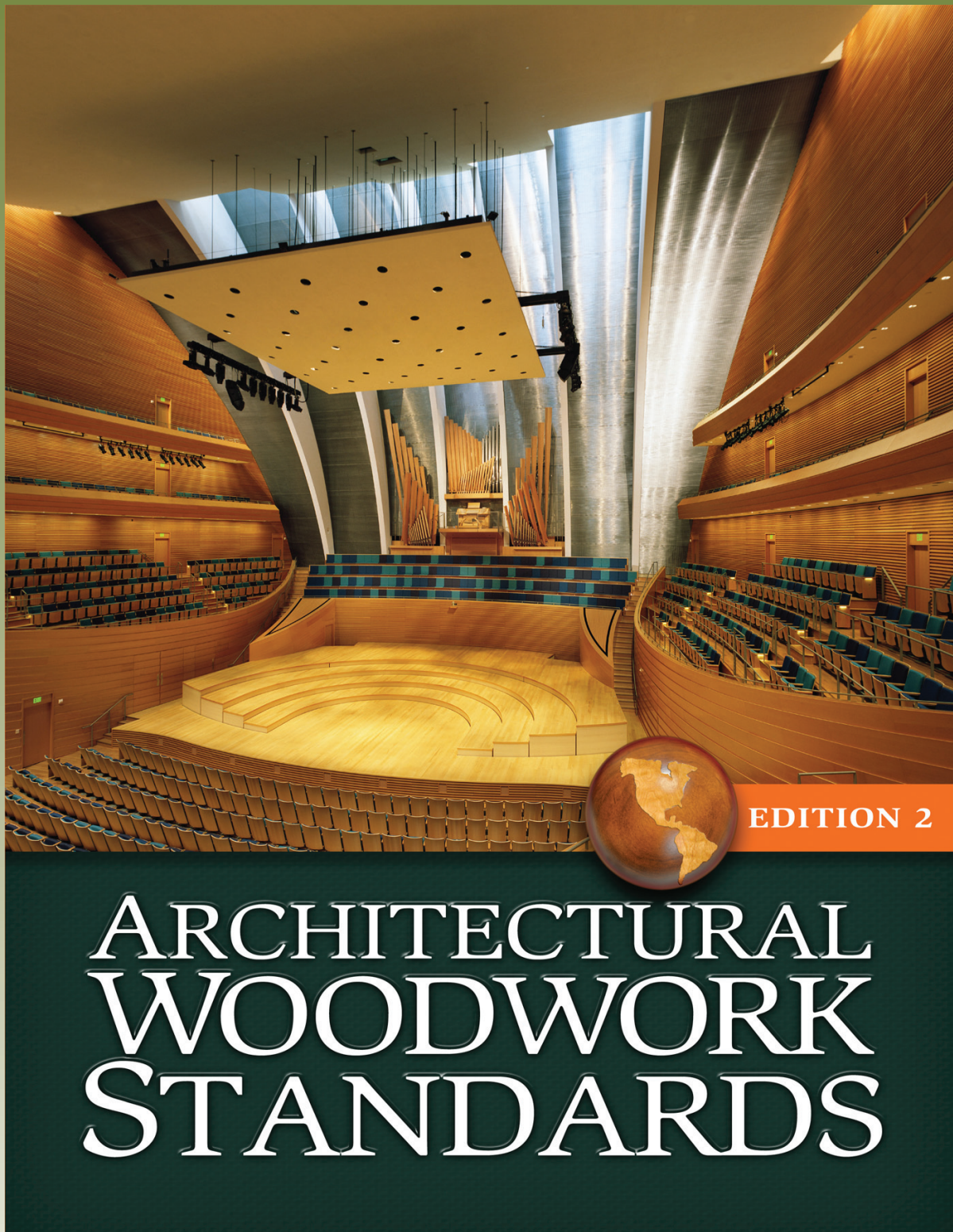
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Best of the Best 2014

Ralph B. McClure Craftsmanship Award Winner

Congratulations to the Woodwork Institute's Best of the Best Award Winners for 2014! This year one project received the Ralph B. McClure Award for Craftsmanship, and another project received the Bernard B. Barber, Jr. Award for Excellence. Each of the projects are chosen by our Board of Directors based on quality of millwork, quality, and craftsmanship of the project.

The Woodwork Institute's Ralph B. McClure Award for Craftsmanship Program honors one Woodwork Institute member each year for their exceptional craftsmanship and/or installation of architectural millwork.

Woodwork Institute's most prestigious award, the Bernard B. Barber Jr. Award for Excellence honors design professionals for projects with outstanding interior and exterior architectural millwork. This award is named in



UCLA Yates Gym

JOB DESCRIPTION

The project consisted of the construction of a 2nd level conference room, lounge area and locker room within the existing Yates Gym.

ARCHITECT/DESIGNER

UCLA Athletics

GENERAL CONTRACTOR

UCLA Dept. of Intercollegiate Athletics

MILLWORK FABRICATOR

Dennis Reeves, Inc.



honor of Mr. Bernard Barber, who dedicated more than 40 years of his life to the Woodwork Institute. Since the first Bernard B. Barber Jr. Award for Excellence was presented in 19965, more than 120 projects have received this recognition.

The Ralph B. McClure Craftsmanship Award and Bernard B. Barber, Jr. Award for Excellence nominees may be submitted by any design professional or Woodwork Institute member who was contractually tied to the project. Specifications must require Certified or Monitored Compliance to be eligible. A full list of past winners and entry forms can be viewed on the WI's website at www.woodworkinstitute.com/awards.

The Yates Gym construction project consisted of a second floor conference room, lounge area and locker room within the existing Yates Gym. According to the Director of Facilities and Project Management of the UCLA Athletic Department, Kevin Borg, a donor who instated in making the proposed study lounge/conference room space a 1940s era campus library atmosphere. The decision was made after their designer/architect had finished the space planning, and Borg didn't want to go back to the designer to have them redesign the space. With the help of Dennis Reeves, Inc. they worked on the concept for the room. In addition to the fabrication, finishing, and installation of the millwork, Reeves assisted in the design and material section of the cabinetry, wainscot and the 18' solid wood conference table.

Ralph B. McClure Craftsmanship Award

The conference room bookcase and paneling are constructed of alder, hand glazed with a dark red stain, then topped with three coats of water base lacquer. The ceiling is made up of a 2 x 2 grid system of molded plastic panels that were then painted a dark chocolate brown. Except for the dentil molding — everything else was milled in-house.

The conference room table is quartered white oak glazed with the same dark red stain, then shot with a black conversion varnish topped with two coats of clear conversion varnish. The top is 52" wide x 18' long from 8/4 solid stock with a 3" band weighing a little more than 500 pounds. The 6" thick legs were hand turned in-house. All of the finishing was also done in-house. With the table-top being in one piece it wouldn't fit into an elevator, so it took eight men to manhandle it up to the second level and into the room.



The project took 875 man hours to fabricate, finish and install. The outcome of the design and installation was a success, so now the Yates Gym conference room is used by several high-level Vice Chancellors and Regents for private meetings.







Bernard B. Barber, Jr. Award for Excellence



Long Beach Fire Station No. 12 and Emergency Resource Center

JOB DESCRIPTION

The project included seven gender-neutral living quarters with private restrooms for six firefighters and the station captain. The central living area includes a kitchen, dining room, day room, laundry room, fitness room, work shop area and medical clean-up room.

ARCHITECT/DESIGNER

Mary McGrath Architects

OWNER

City of Long Beach

GENERAL CONTRACTOR

Toby B. Hayward, Inc.

MILLWORK FABRICATOR

Dennis Reeves, Inc.

VA Bldg. 500 Third Floor South Wing Medicine Beds Renovation

JOB DESCRIPTION

Renovation of the 3rd Floor South Wing patient rooms consisting of 27 patient rooms, 4 nurses stations, 4 soiled utility rooms, 4 clean rooms, offices, work rooms, staff lounges and kitchen.

ARCHITECT/DESIGNER

Leo A. Daly

OWNER

Department of Veterans Affairs

GENERAL CONTRACTOR

Herman Construction

MILLWORK FABRICATOR

Dennis Reeves, Inc.





SPECIFYING LABORATORY CASEWORK

By Steve Taylor

There are many kinds of laboratories, and their requirements for casework and equipment vary. This guide specification covers the materials and methods appropriate for chemistry and biology labs and classrooms. The principal defining characteristics of this type of casework are chemical resistance and the durability of the work surfaces.

Referenced Standard: *Architectural Woodwork Standards* (AWS) vs. proprietary specification: We see many laboratory casework specifications which list a few manufacturers, and don't say much else about casework construction. We acknowledge that many manufacturers are reliable and competent. We strongly believe that by requiring compliance to a referenced quality standard you retain control of the quality level in a way that isn't possible with a proprietary specification. The Woodwork Institute is co-publisher (along with the Architectural Woodwork Institute and the Architectural Woodwork Manufacturers' Association of Canada) of the *Architectural Woodwork Standards*, the comprehensive technical standard for all types of architectural millwork. We also recommend the use of a third-party quality assurance program such as our Certified Compliance Program or the AWI Quality Certification Program. AWMAC has an excellent quality assurance program which is only available in Canada.

Countertops are the most critical element of science classrooms. Depending on the type of classroom they may be subject to chemical spills, standing water, abrasion, impact, and other types of abuse. Epoxy resin countertops are the most chemical resistant, and have good mechanical properties. Solid Phenolic Core (SPC) is available in chemical-resistant finishes that are almost equal to Epoxy resin in chemical resistance, and are superior in standing up to mechanical abuse. Not all SPC products are equal; however, careful evaluation of test data for each product is important. Chemical resistant high pressure laminate is less expensive than either Epoxy resin or SPC, but it is both less chemical resistant and less robust physically.

Exposed surfaces of lab casework need a less robust chemical-resistant finish than countertops. SEFA, the lab furniture manufacturers' association, requires a one hour chemical resistance for vertical surfaces, as opposed to a twenty-four hour resistance for countertops. In theory, good lab practices would prevent any contact between highly reactive chemicals and the cabinet faces. Certainly spills, whether confined to countertops or running down the faces of the cabinets, should be cleaned up promptly.

Semi-exposed surfaces (interiors) shouldn't need to be chemical resistant at all. Chemicals should be stored in a secure locker, not in the lab cabinets, and the cabinet doors and drawers are strictly for glassware and equipment. It is a matter of judgment whether chemical resistance is desirable for semi-exposed surfaces.

Wood casework has several advantages over plastic laminate for lab casework. For one thing, Oak and Maple are unlikely to be discontinued next year, unlike laminate colors and patterns. Casework can be repaired, remodeled, or added on to and the new work will (with a good finisher) match the old. If you want a chemical-resistant finish on the semi-exposed surfaces of your lab casework, you can specify that they are wood veneer of the same species or a compatible species to the exposed surfaces, and finish inside and out with the same chemical-resistant finish. This will provide protection on the interior surfaces at a much lower price than

chemical-resistant laminate for both exposed and semi-exposed surfaces.

Laminated plastic casework is less susceptible to abrasion and impact than wood veneer casework. Chemical resistant LP is typically tested at a 16-hour exposure to the SEFA list of 49 chemicals. This is much more resistant than the finishes used on wood casework. Melamine and cabinet liner, the two materials generally used for semi-exposed surfaces of LP casework, do not make any chemical resistance claims beyond household cleaners and food spills. The cost of using chemical resistant LP for semi-exposed surfaces as well as exposed may be prohibitive.

Broad Scope vs. Narrow Scope: Some biologists are 'lumpers', classifying closely related populations of birds or beetles as one species, and others are 'splitters', classifying populations as different species based on minor differences in physiology or habitat. Similarly, some specifiers like to put many related products in the same specification section, while others prefer to write many separate sections. I'm not qualified (or inclined) to argue the merits of either side of that dispute. The guide specification which accompanies this article is written as a broad scope specification, but it is intended to be easy to dismember if you prefer a narrow scope. Let me also say that I have no expertise on fume hoods or gas cocks; if you choose to put lab hardware in this section you will have to amplify my paragraphs on those subjects.

There is a lot of variation in specification style and format beyond the question of broad or narrow scope. While I try to make my guide specifications clear, concise, correct and complete, I understand that I may have missed something. I'm always pleased to hear from readers with suggestions or criticism. Aside from proving that someone actually reads this article, I'm happy for the opportunity to learn something.

Steve Taylor can be contacted at taylorstailorspecificationservices@gmail.com.

This guide spec is appropriate for laboratory casework for intermediate school, high school, and college science classrooms. It might also be appropriate for medical and industrial laboratories where chemical resistance is required.

In this guide spec, choices are in **[bold text, in brackets.]** Comments are in blue text. Comments are generally below or within the paragraphs to which they apply.

No attempt has been made to address LEED or 'green' issues. It is possible to specify materials and methods that will contribute to several LEED credits. A competent LEED specialist can help you make the right choices for your building.

If you have a project with special considerations not covered by this specification contact your Woodwork Institute Director of Architectural Services for assistance.

We welcome your input. Please contact the Woodwork Institute with questions, comments or suggestions to info@woodinst.com.

This following specification may be found on our website at www.woodworkinstitute.com/publications/aws_guide_specs.asp.

Last revised July 2014

WOOD AND PLASTIC LAMINATE LABORATORY CASEWORK

PART - 1 - GENERAL

1.01 SUMMARY

A Section Includes

- 1 **[Wood] [Plastic Laminate]** laboratory casework.
- 2 Laboratory counter tops.
- 3 Hardware typically furnished by the casework manufacturer.
- 4 **[Fume Hoods.]**
- 5 **[Sinks.]**
- 6 **[Water, and laboratory gas service fittings including gas cocks and vacuum fixtures.]**
- 7 **[Electrical service fittings installed in casework or countertops.]**

Items 4, 5, 6, and 7 may be included here or with the mechanical trades. It is important that it is clear who is supplying them, and that the casework manufacturer has enough information to allow for their installation.

- 1 Structural supports incorporated into wood casework.
- 2 **[Factory finishing.]**

Factory finishing is strongly recommended. It is extremely difficult to get a quality finish under job site conditions. Include this item for wood casework.

B Excluding:

- 1 Metal support brackets and fittings that are part of the building structure.
- 2 Supply and waste pipes.
- 3 Conduit and wiring.

C Related Sections:

- 1 Rough Carpentry: Blocking or grounds inside finished walls or above finished ceilings.
- 2 Metal Framing: Backing or grounds inside finished walls or above finished ceilings.

- 3 Plumbing: Plumbing fixtures, supply and waste pipes installed inside the casework and adjacent walls and floors, including supply and waste pipes required by sinks and fittings provided under this section.
- 4 Electrical: **[Electrical fixtures and equipment installed in casework or on countertops and their wiring and conduit.] [Wiring and conduit to electrical fixtures and equipment included in this section.]**

If electric fixtures and equipment are included in this section use the second option. If they are included in another section use the first option.

5 **[Laboratory Equipment.]**

Delete #5 if all lab equipment is included in this section.

- 6 HVAC: Ducting to fume hoods.

1.02 REFERENCES

- A *Architectural Woodwork Standards (AWS)*, latest edition, published by the Architectural Woodwork Institute, the Architectural Woodwork Manufacturer's Association of Canada, and the Woodwork Institute.
- B SEFA 1 (Fume Hoods), latest edition, published by the Scientific Equipment and Furniture Association.
- C SEFA 3 (Work Surfaces), latest edition, published by the Scientific Equipment and Furniture Association.
- D SEFA 7, (Laboratory and Hospital Fixtures), latest edition, published by the Scientific Equipment and Furniture Association.
- E SEFA 8 W, (Wood Casework), latest edition, published by the Scientific Equipment and Furniture Association.
- F SEFA 8 PL (Plastic Laminate Casework) latest edition, published by the Scientific Equipment and Furniture Association.

1.03 SUBMITTALS

A Shop Drawings:

- 1 Submit shop drawings in conformance with the requirements of the **AWS**.
- 2 **[Furnish a Woodwork Institute Certified Compliance Label on the first page of the shop drawings.]**
Include this item if you are using the Woodwork Institute Certified Compliance or Monitored Compliance quality assurance programs.
- 3 Submit two copies, one of which will be returned with reviewed notations. Make corrections noted (if any) and distribute required copies prior to the start of work.

B **[Documentation:**

Include this if chemical resistance is a requirement.

- 1 **Submit test data showing countertop materials performance subjected to a [sixteen hour] [twenty-four hour] exposure to each of the 49 reagents on the SEFA list. Use the procedures described in SEFA 3, with the period of exposure extended. Report the evaluation for each reagent.**
- 2 **Submit test data confirming that materials used for vertical exposed surfaces and all semi-exposed surfaces will meet the requirements of the one hour chemical resistance test as found in the appendix of the AWS.]**

Chemical resistance may not be necessary for vertical surfaces or semi exposed surfaces. Good laboratory practices should preclude spills that would actually run down the cabinet faces, and such spills should be cleaned up immediately if they do occur. Cabinet interiors (semi exposed surfaces) should be even less likely to be exposed to caustic chemicals. Except for a few chemical storage lockers, cabinet will be used for storage of equipment.

C Samples:

1 **[Submit four [finished] samples of each species and cut of wood to be used. Lumber samples to be minimum 6" by 12", plywood samples to be minimum 12" X 12". Samples shall represent the range of color and grain expected to be provided.]**

2 **[Submit four additional samples of each material for the use of the paint trade.]**

Include item 1 if there is any factory finished wood or veneer included in this section. Include item 2 if any wood is to be provided for job site finishing. Site finishing is NOT recommended. It is extremely difficult to get a satisfactory finish under job site conditions.

3 Submit a sample in the specified finish of each hardware item that will be visible at exposed surfaces when the job is complete.

D [Mock-ups:

Mock-ups shouldn't be necessary for most projects. Include this item if full-sized samples are desired.

1 **Provide mock-ups of one base cabinet, one wall hung cabinet, and one countertop. The base cabinet shall have at least one drawer. Mock-up shall be of the material and finish to be provided. The Approved Mock-up may be incorporated in the project.]**

1.04 QUALITY ASSURANCE

A Work shall be in accordance with Grade or Grades Specified of the *Architectural Woodwork Standards*.

B [Certified Compliance:

Woodwork Institute Certified Compliance provides a pre-qualification for the sub-contractor. Woodwork Institute Licensees have been tested and their work has been inspected by institute staff; they have proven that they are capable of producing acceptable work. Shops which are not licensees of the Institute will understand that their work will be inspected by a Woodwork Institute staff member.

Architects, owners, and inspectors may request an inspection of Certified Compliance work at any point in the construction process. For better Quality Assurance **choose EITHER Certified Compliance or Monitored Compliance, not both.**

1 **Before delivery to the job site the woodwork supplier shall provide a Woodwork Institute Certified Compliance Certificate indicating the millwork products being supplied and Certifying that these products fully meet the requirements of the Grade or Grades specified.**

2 **Each elevation of casework, each laminated plastic top, and each solid surface top shall bear a Woodwork Institute Certified Compliance Label.**

3 **At completion of installation the woodwork installer shall provide a Woodwork Institute Certified Compliance Certificate indicating the products installed, and Certifying that the installation of these products fully meets the requirements of the Grade or Grades specified.**

4 **All fees charged by the Woodwork Institute for their Certified Compliance program are the responsibility of the millwork manufacturer and/or installer and shall be included in their bid.]**

C [Monitored Compliance:

The Monitored Compliance program requires that work be inspected by Woodwork Institute staff. Inspections are performed of the shop drawings, at the beginning of fabrication, at the time of delivery to the job, at the beginning of installation, and at completion. Reports are issued to all interested parties after each inspection. For better quality assurance **select EITHER Certified Compliance or Monitored Compliance.**

- 1 All millwork and the installation thereof for this project shall be monitored for compliance to the contract documents by a Woodwork Institute Director of Architectural Services.
- 2 Full particulars of the Woodwork Institute Monitored Compliance Program may be found at the Institute web site at www.woodworkinstitute.com or by calling the administrative office at 916-372-9943.
- 3 Millwork and/or installation found to be non-compliant (and not corrected) will be rejected.
- 4 Issuance of a Monitored Compliance Certificate is a prerequisite of acceptance.
- 5 All fees charged by the Woodwork Institute for their Certified Compliance program are the responsibility of the millwork manufacturer and/or installer and shall be included in their bid.]

D Qualification:

- 1 A firm with not less than 5 years of production experience similar to this project, whose qualifications indicate the ability to comply with the requirements of this section.
- 2 The woodwork manufacturer must have at least one project in the past 5 years where the value of the woodwork was within 20 percent of the cost of woodwork for this project.
- 3 **[A licensee of the Woodwork Institute Certified Compliance Program.]**

A WI licensee will understand the requirements of the certification programs, and has been pre-qualified to some extent by the licensing requirements. We acknowledge that there are qualified shops that are not licensees, and that their work can be Certified or Monitored.

E Single Source Responsibility: A single manufacturer shall provide and install the work of this section.

1.05 DELIVERY, STORAGE, AND HANDLING

- A Deliver materials only when the project is ready for installation and the general contractor has provided a clean storage area.
- 1 Delivery of architectural millwork shall be made only when the area of operation is enclosed, all plaster and concrete work is dry and the area broom clean.
 - 2 The work area shall be well ventilated and protected from direct sunlight, excessive heat, rain, or moisture. Temperature shall be maintained between 60° and 90°F and relative humidity between 45% and 65%. The HVAC system shall be on and maintaining the building climate within occupancy range.

1.06 SCHEDULING

- A Coordinate fabrication, deliver, and installation with the general contractor and other applicable trades.

PART - 2 - PRODUCTS

2.01 COMPONENTS

- A Provide lumber complying with the requirements of the “*Architectural Woodwork Standards*” Grade specified and the item being fabricated.
- 1 Maintain lumber moisture content within the AWS guidelines for the region where the product will be installed.
- B Veneers shall be in accordance with the AWS Grade specified for the item being fabricated.
- C Panel Cores:
- 1 **[Particle board: ANSI A208.1 Grade M-2.]**
 - 2 **[MDF: ANSI 208.2 Grade 130.]**

Select 1 or 2 above. MDF has slightly better mechanical properties than particle board.

3 Water Resistant MDF: ANSI 208.2 Grade 155 MR 50.

- a Sierra Pine Medex or equal.

Particle board or MDF are recommended as core materials. Water resistant PB or MDF are not required, but may be desirable for wet areas and for sink cabinets.

4 **[Veneer core plywood of a non-telegraphing hardwood manufactured with Type I glue.]**

Plywood is more water resistant than water resistant MDF, but it is more likely to warp. Include 4 if you choose to use plywood core for LP sink tops.

D Plastic Laminate: NEMA LD-3, Grade as required by the AWS.

- 1 Chemical Resistant Plastic Laminate: Provide independent test data indicating chemical resistant plastic laminate meets the requirements of the one hour SEFA chemical resistance test.

E Cabinet Linter: NEMA LD-3 Grade CLS.

F Low pressure decorative surfacing: Melamine.

It isn't clear if cabinet liner or melamine will pass the chemical resistance test. If chemical resistance is important for interior surfaces wood veneer with a chemical resistant finish (wood casework) or chemical resistant PLAM (PLAM casework) are recommended. More discussion of this topic below at 2.02 A 4 and 2.02 B 3.

G **[Epoxy Resin: a panel produced from a composite of epoxy resin, silica, inert fillers, and organic hardeners.]**

H **[Solid Phenolic Core: a panel composed of resin impregnated paper built up of multiple layers to make up the desired thickness meeting the requirements of the AWS including the 24 hour chemical resistance test.]**

I **[Material, Attributes, manufacturer.]**

Select G or H for laboratory tops materials or specify the material to be used (I).

J Edge Band

- 1 Veneer of the same species and cut as the exposed surfaces.
- 2 **[High pressure laminate] [PVC] [ABS]** matching exposed surfaces.

PVC and ABS are generally superior to laminate, but may not be chemical resistant.

K Adhesives: Type **[I –OR- II.]**

Type I glue is water proof; type II is water resistant. Type II is satisfactory except in a very wet environment.

L Hardware:

- 1 Pulls: **[_____]**.
- 2 Drawer Guides: **[Full extension] [³/₄ extension]**, Woodwork Institute approved
 - a Drawer Guides at file drawers: Full extension.

If you specify brand and model of drawer guides, specify for pencil drawers, box drawers, file drawers, and lateral file drawers, as applicable.

3 Hinges: **[Five knuckle Grade 1.] [Concealed European style Grade II.] [Brand, Model.]**

Woodwork Institute strongly recommends Grade I hinges for schools, hospitals, police and fire facilities, and other high usage applications.

4 Door Catches: **[_____]**.

If self-closing hinges are selected catches will not be required. Self-closing Grade I hinges are not available.

- 5 Shelf Supports: **[Bored holes in cabinet sides no more than 1 ½" on center with metal shelf supports.]**
[Metal shelf ladder and interlocking clips; KV 255 & 256 or equal.]

Bored hole shelf support systems and metal shelf ladder have both been determined to provide satisfactory support.

- 6 Locks:
- a Door locks: [_____].
 - b Drawer locks: [_____].
 - c Glass door locks: [_____].
 - d Keying: [_____].
 - e Provide [_____] keys per lock.

- 7 Elbow Catches: [_____].

Elbow catches will only be necessary at the inactive leaf of locking pairs of doors. If no door locks are required, elbow catches will not be necessary.

- 8 Sliding glass door hardware: [_____].

Sliding glass doors that are more than 1 ½ times as tall as they are wide should be installed using top hung hardware. Tall thin glass doors on bottom roller systems will tip and bind.

- 9 Epoxy Resin Drying Rack: One inch thick epoxy resin with 6 ½ inch polypropylene rods set at a 30 degree angle 6 inches o.c. vertically and horizontally mounted over a stainless steel drip tray with a draining tube. Size as shown on drawings.

Items below may be specified here, or with the mechanical trades. Including them in this section assures that all components will fit, and work together. If they are included here make sure they are included in 1.01 A, and that the language in 1.01 C is appropriate. Note that these items are beyond our expertise, and the language here will need to be edited and extended.

- 10 **[Fume Hoods: Meeting the requirements of SEFA 1 (Fume Hoods).**

- a **[[Size, Air Flow] or [Brand, Model]]**

- 11 **[Sinks: [Epoxy Resin] [Stainless Steel] [Polypropylene] [As shown on plan]**

- a **Provide strainers and tailpieces]**

- 12 **[Cup Sinks: [Epoxy] [Polypropylene] [Stainless Steel], [Width, Length, Depth]**

- a **Provide strainers and tailpieces]**

- 13 **[Water, Laboratory Gas, and Vacuum Fittings: Meeting the requirements of SEFA 7 "Laboratory and Hospital Fixtures: Recommended Practices." Provide all parts necessary for installation.]**

Other hardware items may include burette rods, upright rod and crossbar assemblies, reagent shelves, pegboards, wire grommets, keyboard trays, and other specialty items.

2.02 FABRICATION

A Wood Casework:

There are a number of advantages to Wood laboratory casework. For one thing, birch, maple, and oak will not be discontinued. Future remodels, repairs and revisions will be able to match the existing. For another, good chemical resistant finishes are available. If veneer is used as both the exposed and the semi exposed surface, chemical resistance may be less of an issue.

1 Grade: “*Architectural Woodwork Standards*” [**Premium Grade**] [**Custom Grade**] [**Grades indicated.**]

The AWS allows the use of Economy Grade for custodian’s closets and utility rooms regardless of the grade specified for the project as a whole (unless otherwise specified.) This is usually the only application for Economy Grade. Most proprietary laboratory casework approximates Custom Grade.

2 Casework construction: ***Architectural Woodwork Standards*** Style [**A, frameless**] [**B, face frame**]

Style A is most often used for laboratory casework.

3 Exposed Surfaces: [***species, cut, match***].

The species is the species of tree, such as Oak or Maple. The cut is the angle of the face of the board to the growth rings. Flat sawn or plain sliced is the most common cut. Quarter sawn and

Rift cut lumber is cut with the face at an angle to the growth rings, giving a vertical grain appearance. Quartered and rift are also more expensive. Match refers to the way veneer leaves are matched within a panel. Book match is the most common. See the AWS Section 4 for more about cut and matching.

4 Semi-exposed surfaces: [**Veneer of the same species and cut as the exposed faces**] [**Melamine low pressure surfacing**][**Polyester low pressure surfacing.**]

If veneer is desired at semi-exposed surfaces it must be so specified. If wood veneer is used the chemical resistance comes from the finish. If melamine or polyester is used its chemical resistance is questionable. However, the interior surfaces of cabinets may not need to be chemical resistant. Chemicals will be stored in elsewhere. Equipment and glassware stored inside the casework should be clean.

5 Door and drawer front interface: [**Flush overlay.**] [**Reveal overlay.**] [**Lipped.**] [**Flush inset.**]

Flush overlay or reveal overlay is recommended. Inset doors are uncommon, and generally go with Style B casework. Even with Style B, reveal overlay or lipped doors are more commonly used. For more about door interface see AWS Section 10.

6 Core: [**Particle board.**][**MDF.**][**Water resistant MDF.**]

a Core for sink cabinets: [**Water resistant MDF.**][**Exterior grade hardwood plywood with a non-telegraphing grain.**]

Water resistant core shouldn’t be necessary for cabinets, I might consider requiring it for sink cabinets, but that is not industry standard.

B Plastic Laminate Casework:

1 Grade: *Architectural Woodwork Standards* [**Custom**] [**Premium**] Grade.

The AWS allows the use of Economy Grade for custodian’s closets and utility rooms regardless of the grade specified for the project as a whole (unless otherwise specified.) This is usually the only application for Economy Grade. Custom Grade is adequate for most applications. Use Premium Grade only if a very high level of fit and finish is required.

2 Exposed surfaces: [**Chemical resistant**] HPDL, [***manufacturer, pattern***][**Manufacturer and pattern as selected by the architect.**][**Manufacturer and patterns as indicated in the drawings.**]

In many laboratory environments chemical resistance may not be necessary for cabinet surfaces. Caustic chemicals will be stored in chemical lockers and used on the counter tops. Good lab practices should prevent contact with cabinet faces and interiors. Use of chemical resistant laminate is probably good practice in chemistry classrooms, but may not be necessary in biology, physics, or general science classrooms.

- 3 Semi-exposed surfaces: **[Melamine low pressure overlay.] [Polyester low pressure overlay.] [Cabinet liner.] [Chemical resistant HPL.]**

None of these materials other than chemical resistant HPL is known to be resistant to any chemicals beyond household cleaners. In theory chemical resistance shouldn't be necessary for semi-exposed surfaces. Chemicals are stored in secure lockers, so only equipment and glassware should be in contact with cabinet interiors.

- 4 Door and Drawer front interface: **[Flush overlay.] [Reveal overlay.]**

Flush overlay is the most common door style. Reveal overlay allows a bigger gap between doors and drawer fronts (except the meeting edges of pairs of doors.)

- 5 **[Cabinet backs at base cabinets shall be removable.]**

Use this item if plumbing and electrical will run in a chase behind base cabinets.

C Drawers:

- a Sides, sub fronts, and backs: **[Solid hardwood lumber] [Nine-ply hardwood plywood with no internal voids.] [MDF with melamine overlay on semi-exposed surfaces.] [Particle board with melamine overlay on semi-exposed surfaces.]**

Any of these materials make a serviceable drawer. The plywood and solid stock are more durable (and more expensive.)

- b Bottoms: **[MDF with melamine faces.] [Hardwood plywood.]**

Use hardwood plywood if drawer sides are solid lumber or plywood. Use MDF if the sides are MDF or particle board.

- c Construction: **[Dovetailed] [Lock joint] [Dowelled] [Dowel screws].**

Dovetailed construction is probably the best, and certainly the most expensive. The other methods are nearly equivalent. Don't use dovetails with MDF or particle board. If not specified drawer construction and materials are at the option of the manufacturer, within the limits of the AWS grade rules.

D Countertops:

Select the type(s) of countertops to be used.

- 1 Plastic Laminate Countertops:

Plastic laminate countertops are the least chemical resistant and least durable choice for laboratory use. Not all patterns are available in a chemical resistant finish. If some countertops don't need to be chemical resistant, repeat item a, once for chemical resistant tops, and once for ordinary tops. Be sure it is clear which tops need to be chemical resistant, either on the drawings or in a finish schedule.

- a Laminate: **[Chemical resistant laminate,] [manufacturer, pattern.] [manufacturer and pattern to be selected by the architect.]**
- b Core material: **[particle board.] [MDF.] [exterior grade hardwood plywood with a non-telegraphing grain.]**

Particle board and MDF are satisfactory in most environments. Moisture resistant PB and MDF are also available. Plywood is recommended only at the most abusive wet environments.

- (1) Core for Sink Tops: **[Exterior grade hardwood plywood.][Water resistant MDF.]**

Grade 155 MR-50 is the most water resistant grade available. Exterior grade plywood is somewhat more moisture resistant, but it is also more prone to warp.

- c Back splashes: **[Butt joint] [Cove], []** inches high.

If several backsplash details are used leave this item out, and be sure all tops are clearly detailed in the plans.

- d Back and end splash construction: deck mount.

- e Front edges: **[Self-edge.] [No drip bullnose edge.] [Waterfall edge.] [No drip tilt edge.] [Three millimeter PVC edge.] [Wood edge.] [As indicated in the drawings.]**
- f Adhesive: Type I for sink tops.

As above, if several details are to be used make sure they are clearly shown or labeled on the plans.

2 Epoxy Resin Countertops:

Epoxy resin countertops are the most common laboratory tops. They have good chemical resistance; good heat resistance, and are repairable. Because they are homogenous the chemical resistance isn't affected if the surface is damaged. They are more brittle than some materials and may be damaged by extreme cold.

- a Front edges and exposed ends: **[Lipped.] [Waterfall.] [Built up.]**
- b Back splashes: **[Butt jointed][Cove] with a [waterfall edge] [square edge] [removable ledge]**

3 Solid Phenolic Countertops:

Solid Phenolic countertops are extremely strong and durable. They have good chemical resistance; good heat resistance, and are not damaged by extreme cold. In some cases only a thin face layer is chemical resistant; if this layer is damaged replacement may be required.

- a Front edges and exposed ends: **[Lipped.][Waterfall.][Built up.]**
- b Back splashes: butt jointed with a **[Waterfall edge.] [Square edge.] [Removable ledge.]**

4 [Factory Finishing

- a **All wood and wood veneer products provided in this section shall be factory finished using AWS finish system [____].**
- b **Grade: AWS [Premium] [Custom] Grade.**
- c **Finish shall meet the requirements of the AWS one hour chemical resistance test.]**

As noted above, Factory Finishing is strongly recommended. In addition to getting a better finish, you are moving the air quality problems off site, where a proper spray booth will protect the environment and the health of the finishers. Verify that the finish system selected provides a sufficient level of chemical resistance.

PART - 3 - EXECUTION

3.01 EXAMINATION

- A Verify the adequacy and proper location of any required backing or support framing.
- B Verify that mechanical, electrical, plumbing, and other building components effecting work in this section are in place and ready.

3.02 INSTALLATION

- A Install all work in conformance with the **Architectural Woodwork Standards**, latest edition.
 - 1 Installation shall conform to the **AWS** Grade of the items being installed.
- B All work shall be secured in place square, plumb, and level.
- C All work abutting other building components shall be properly scribed.
- D Mechanical fasteners used at exposed and semi exposed surfaces, excluding installation attachment screws and those securing cabinets end to end, shall be countersunk.
- E Equipment cutouts shown on plans shall be cut by the installer.

- F [Fume hoods shall be set in place and firmly secured, ready for connection to wiring and vents.]
- G [Epoxy resin sinks shall be installed by the millwork contractor.]
- H Cut holes and cutouts for plumbing and electrical fixtures. Deliver fixtures included in this section to the plumbing and electrical contractors for installation.

3.03 ADJUSTING & TOUCH UP

- A Before completion of the installation the installer shall adjust all moving and operation parts to function smoothly and correctly
- B All nicks, chips and scratches in the finish shall be filled and retouched. Damaged items which cannot be repaired shall be replaced.

3.04 CLEANUP

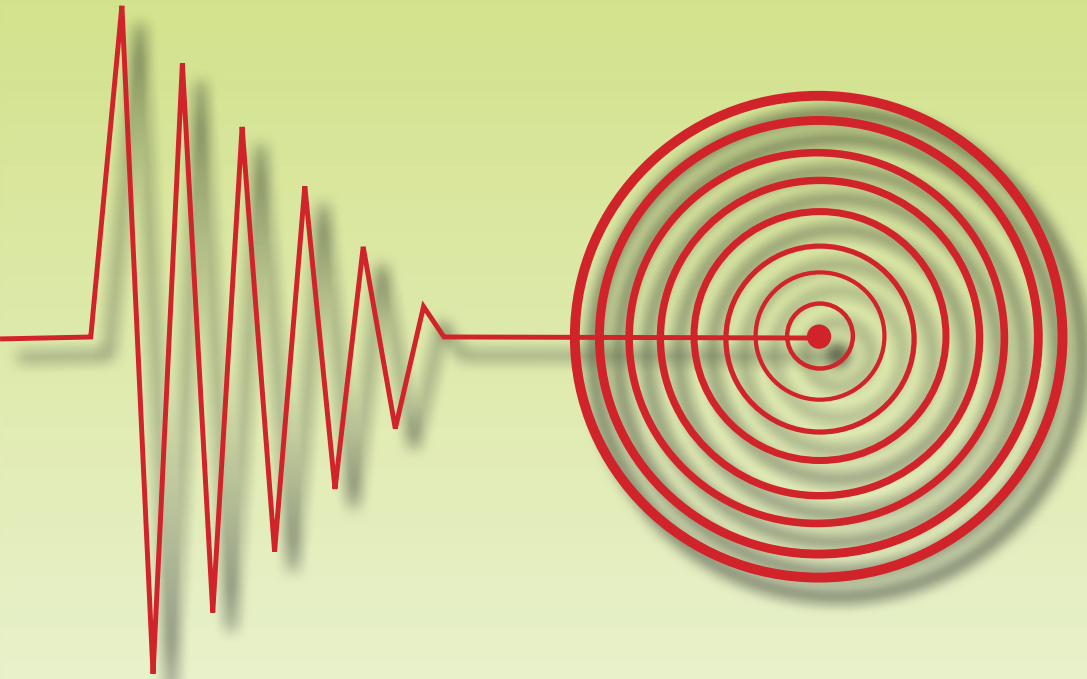
- A Upon completion of installation the installer shall clean all installed items of pencil and ink marks, and broom clean his area of operation, depositing debris in containers provided by the general contractor.

END OF SECTION



**WOODWORK
INSTITUTE**

**Certified Seismic
Installation Program (CSIP)
(OSHPD and DSA Compliant)**



**May be used on existing projects if acceptable
to the Design Professional.**

**For more information call your WI Director of Architectural Services
or our office at (916) 372-9943**



Certified Seismic

Effective Date: June 1 , 2012

Status:

This program is meant to be either a stand-alone quality control option that can be specified separately or in conjunction with our Certified Compliance or Monitored Compliance programs.

Benefits To:

Design Professionals and Property Owners:

- Specified use of WI's seismic casework pre-approvals from the Office of Statewide Health Planning and Development (OSHPD), without any additional engineering costs and/or requirements Compliant to both OSHPD and DSA requirements
- Assurance that proper backing was installed in the walls for compliant casework installation
- Assurance that casework was installed in accordance with WI's seismic casework pre-approvals within OSHPD and/or Division of State Architect (DSA) compliance requirements
- Certified acknowledgement that the project's seismic casework installation requirements have been met

Installers:

- A consistent cabinet installation methodology
- Ease of specification compliance
- Discounted pricing through WI Member and/or Member Licensee status

Applicability: (OSHPD and DSA Compliant)

Woodwork Institute's (WI) OSHPD's pre-approvals are adequate for casework installation within the State of California at any height within the building where the design spectral response acceleration at short periods (S_{ds}) is not greater than 1.93 and includes:

- Concrete or concrete masonry unit (CMU) wall construction
- Wood or metal stud wall construction with either continuous 3 x 6 or 16GA in wall blocking respectively
- Casework construction of plywood, particleboard, MDF, or Solid Phenolic Core (SPC) in compliance with the minimum requirements of the Architectural Woodwork Standards (AWS), including:
 - Base cabinets, up to 36" tall x 24" body depth x 48" wide, including peninsula and those with mechanical chase
 - Wall cabinets up to 48" tall x 18" body depth x 48" wide
 - Tall storage cabinets up to 96" tall x 24" body depth x 48" wide
 - Peninsula base cabinets up to 36" tall x 36" body depth x 48" wide
 - Mechanical chase base cabinets up to 42" tall x 36" body depth and 48" wide

DSA Compliance – In accordance with the California Department of General Services (DGS), Division of State Architecture (DSA), Interpretation of Regulation Manual (IR), Section A-5, entitled Acceptance of Products, Materials, and Evaluation Reports (rev 10/05/12, 2007, 2010 CBC) – WI's Office of Statewide Health Planning and Development (OSHPD), OSHPD Pre-approval of Anchorages (OPA), OPA-2649-10 meets the eligibility criteria when used in accordance with IR A-4 (Geologic Hazard Report Requirements, rev 10/11/11, 2007, 2010 CBC).

Copies of DSA's IR A-4 and A-5 may be found at:

www.dgs.ca.gov/dsa/Resources/IRManual.aspx

Cost (Effective January 1, 2014)*:

- Fees are subject to change and are required to be paid in full at time of request, prior to service.
- If not in addition to a projects CCP or MCP certification requirement, Shop Drawing certification is required as part of the basic fee and will be equivalent to a CCP review, plus the additional review requirements of the seismic installation program.
- Any additional fees are required to be paid in full before release of certificate/inspection report.

* For more details about the different fee schedules, please refer to our Cost Sheets that are available on our web site at: www.woodworkinstitute.com/woodworker/Cost_sheets.asp

WOODWORK INSTITUTE'S SERVICE AREAS California, Nevada, and Arizona

The Base Fee includes:

- Review of the shop drawings and installation.
- Up to 3 hours of DAS on site inspection time. Any additional DAS (inspector) time incurred for additional inspection time beyond the basic program allowances or failed inspections is **billed at an hourly rate of \$200 in quarter hour increments.**

FEES	Without CCP or MCP	With CCP or MCP
Non-Member	\$2,000	\$1,700
Member	\$1,800	\$1,530
Non-Member Licensee	\$1,700	\$1,445
Member Licensee	\$1,500	\$1,275

Outside of WI's Service Areas

The Base Fee includes:

- Review of the shop drawings and installation.
- Up to 8 hours of DAS travel/standby time and up to 3 hours of on site review/inspection time. Any additional DAS (inspector) time incurred for additional inspection time beyond the basic program allowances or failed inspections is **billed at an hourly rate of \$200 in quarter hour increments.**

Non-Member	\$3,000	\$2,700
Member	\$2,700	\$2,430
Non-Member Licensee	\$2,550	\$2,295
Member Licensee	\$2,250	\$2,025

Installation Program (CSIP)

Specification Requirement:

Should a Design Professional wish to take advantage of the Woodwork Institute's Certified Seismic Installation Program (CSIP), the project specifications shall require conformance to the *Architectural Woodwork Standards* and contain the appropriate language in **Part 1** and **3** of your specifications under **Quality Assurance** and **Field Quality Control**:

Part 1 - Quality Assurance

A. Certified Seismic Installation Program:

- Before walls are closed up provide a written Woodwork Institute Certified Seismic Installation Program report confirming that backing is provided in all locations required for casework installation or identifying those locations where backing is missing or improperly located.
- On completion of installation provide a Woodwork Institute Certified Seismic Installation Program Certificate identifying the work covered and certifying that installation meets the requirements of the WI CSIP attachment details and schedules.
- All fees charged by the Woodwork Institute for their Certified Seismic Installation Program are the responsibility of the millwork installer and shall be included in their bid.

Part 3 - Field Quality Control

A. Provide Woodwork Institute Certified Seismic Installation Program (CSIP) inspection reports and certification as required in Part 1 of this Section.

Casework Installer Requirements:

The party responsible for installation of casework for any project requiring CSIP certification shall:

- Contact the Woodwork Institute and coordinate CSIP certification with them prior to submittal of shop drawings.
- Ensure that the casework shop drawings:
 - Are in compliance with the AWS's minimum requirements as established in Section 1
 - Include, in accordance with the minimum requirements WI's OSHPD Pre-approvals:
 - Casework Elevations showing the center line height and horizontal locations of all required, continuous, internal wall blocking furnished by others,
 - A casework fastener schedule, clearly showing the type, size, location and maximum spacing.
- At wood or metal stud walls, prior to application of wall surfacing, Casework Installer shall examine, approve and acknowledge blocking compliance to WI's OSHPD

Pre-approval requirements, while providing documentation of such through:

- An inspection report showing rooms/walls inspected type of blocking (wood or metal), confirmation of compliance or statement of non-compliance, inspectors name, date, and signature, with:
 - Photo documentation (referenced by room/wall) of at least 25% of the walls inspected, and inspection report shall identify which walls include photo documentation.
- Contact WI and arrange for final inspection of the casework installation by a WI Director of Architectural Services (DAS), and:
 - If Installation is found compliant, the DAS will authorize issuance of the CSIP Certificate.

Although it is not required, WI recommends, that those fabricators with the appropriate equipment pre-bore their cabinet backs with the proper number, spacing and location of the installation fastener locations in accordance with WI's OSHPD Pre-approvals to avoid field error.

WI License Requirements:

In order to qualify for the WI Licensee fee discount for CSIP certification, WI Licensee shall hold a WI SB-E Type License, which:

- Will be grandfathered to all existing WI Licensees with a Type B-E License, provided they complete the required examination and execute the additional SB-E Licensee Agreement.
- Will be offered to existing WI Licensee firms without a WI-Type B-E License and new WI Licensee applicants under normal application protocols.

CSIP is not applicable to the Institute's WI Licensee Sub-Sub discount.

For more information call your WI Director of Architectural Services or our office at (916) 372-9943.

DISCLAIMER: The Woodwork Institute is an independent inspection service that determines whether work conforms to specific standards or requirements. The Institute does not certify or guarantee the safety or performance of any manufactured products, components, or installation thereof, or any standard or process related thereto, regardless of whether they comply with the *Architectural Woodwork Standards*, the Certified Seismic Installation Program approved OSHPD (OPA-2649-10) drawings and/or contract documents under said Standard/Program. Additionally, the Institute does not guarantee or certify the services, fitness for purpose, advice, materials or products provided by any third party, including contractors, architects, designers and engineers.



September 2, 1951 - September 22, 2014

As taken from The Sacramento Bee his obituary reads:

With sadness, we announce the death of Skip Spence from a tragic accident in Folsom, on Monday, September 22, 2014. Skip was born in Sacramento to Shirley Baker and Daniel Spence on September 2, 1951. He married his 7th grade sweetheart who became his wife of 43 years, Jennifer. Together they owned and operated their business Custom Plastics for 38 years, retiring in 2011. He was an excellent businessman, past president of the Woodwork Institute, and past member of the Folsom Chamber of Commerce. He enjoyed spending his time as a volunteer docent for the Folsom Powerhouse and was awarded 2014 Volunteer of the Year. He is survived by his wife, Jennifer, daughter, Keri (Chris) Marmas, son, Christopher, granddaughters, Amelia and Keri, mother, Shirley (Ray) Baker, sisters Karen (Rudy) Saenz, Sue (Bob) Welch, in-laws, Sue and Al Franzoia, Mike and Cooke Puthuff and many relatives and friends. His brother Randy, son, Timothy and father Daniel preceded him in death. Skip was an avid outdoorsman, especially enjoying hunting and fishing with his faithful companion, "Gage" by his side. He was a thoughtful, compassionate, generous man and will be missed by all who knew him. A Celebration of his Life will be held on Friday, October 10, 2014, at 2:00 pm at the City of Folsom Rotary Clubhouse, 7150 Baldwin Dam Road, Folsom, CA.

Skip Spence, 63, Woodwork Institute President from 1997 - 2000, passed away on September 22, 2014

It is with great sadness that we have learned of the passing of one of our previous president's Skip Spence.

Skip Spence was on the Board of Directors from 1994-2000. In 1996, he became Vice President, and then spent five terms as the Woodwork Institute of California's (WIC) President from 1997-2001. Under his watch, the Institute initiated a number of new programs and services to the woodworking industry.

One of the programs that was initiated during his term, was the Monitored Compliance Program (MCP). The Board approved the policy to be included into the 10th edition *Manual of Millwork*.

He also expanded the communication in the organization. The inaugural issue of *Archetype* magazine was published on April 1, 1997. The WIC newsletter *Details* was up-scaled and changed to a quarterly publication. The WIC website was also improved to allow Member access.

At the end of his fifth term in 2001 as WIC president, he passed his gavel onto the new President Bill Fenstermacher.

Bill shares his memory of Skip:

"I first met Skip when I joined the WI decades ago. He welcomed me and made me comfortable to be a member. Through the years we did many things together, both business and pleasure. He was always positive and fun to be with. Our best days were spent in the field. Skip was always excited to be in the outdoors even when hunting was not productive. Skip was a fine man and will be missed – we are diminished."

Bill Fenstermacher
Wood Connection, Inc.

"Skip was a generous, giving, and dedicated volunteer leader to the Woodwork Institute and our industry. It was truly an honor to know, work with and call Skip a friend, he will be sorely missed."

Rob Gustafson, CEO
Woodwork Institute

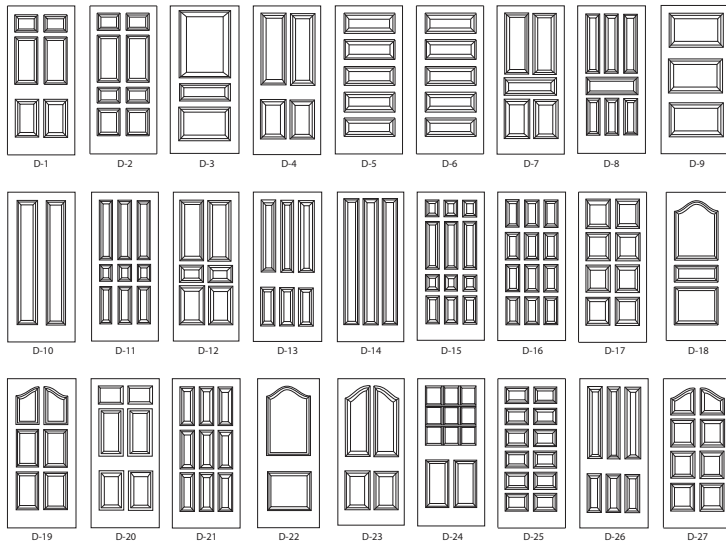
"Skip was very dedicated to the Institute and was willing to mentor anyone for the betterment of the Institute and the Industry. I really appreciated that Skip was always sensitive to another point of view and if it conflicted with his, he was very diplomatic to address the issue outside of the room."

Dick McClure
Woodwork Institute

Skip was a wonderful asset to the Institute and the Woodwork Industry. He is remembered fondly.

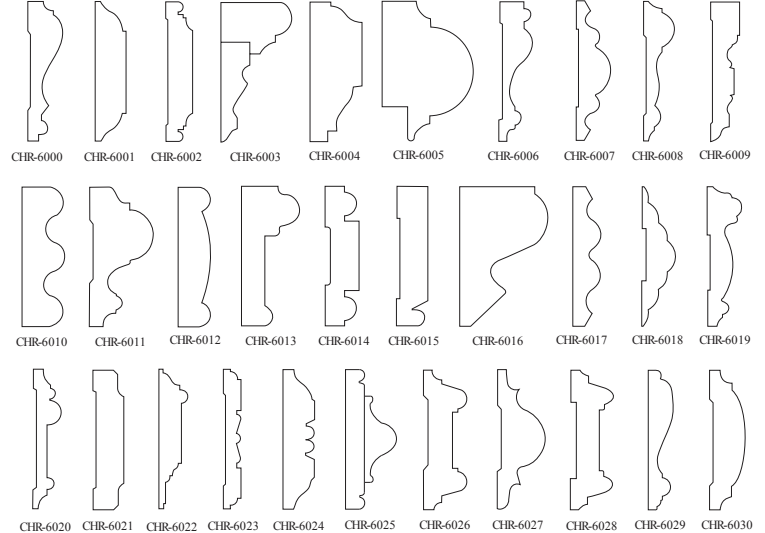
- Door Designs
- Molding Designs

AWS Stile & Rail Door Drawings



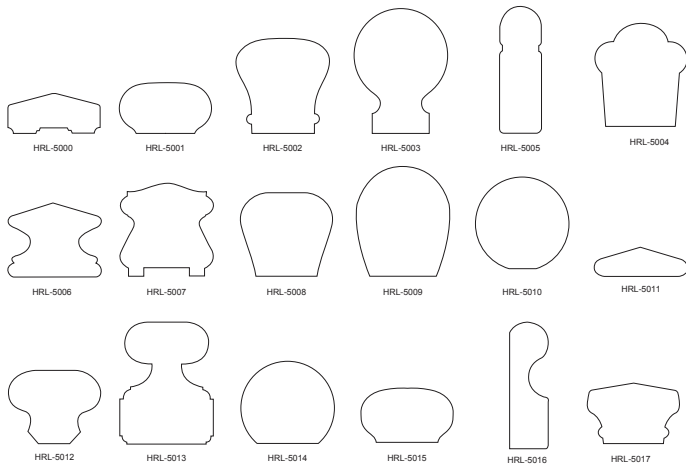
Page 1 of 3

AWS Chair Rail Drawings



Page 1 of 2

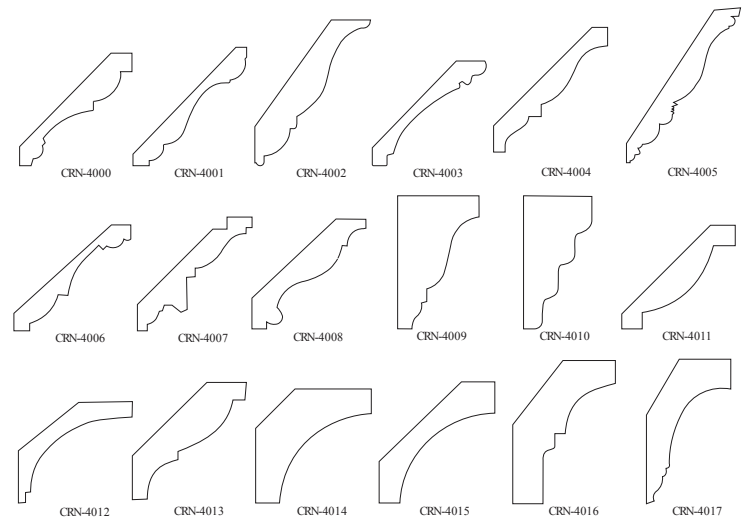
AWS Guard/Handrail Drawings



NOTE: Handrails may not be compliant with current building codes. Check with your local AHJ.

Page 1 of 2

AWS Crown Mold Drawings



Page 1 of 3

Examples of some of the Door and Molding drawings (.dxf) above.
For full set of drawings go to www.woodworkinstitute.com.

**Handrails may not be compliant with current building codes.
Check with your local AHJ.



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