

**DIVISION 01****SECTION 01 0000****GENERAL REQUIREMENTS: R&I PROJECT****01 1000 SUMMARY****01 1200 MULTIPLE CONTRACT SUMMARY****01 1400 WORK RESTRICTIONS****01 3000 ADMINISTRATIVE REQUIREMENTS****01 3100 PROJECT MANAGEMENT AND COORDINATION****01 3300 SUBMITTAL PROCEDURES****01 3500 SPECIAL PROCEDURES****01 4000 QUALITY REQUIREMENTS****01 4301 QUALITY ASSURANCE – QUALIFICATIONS****01 4523 TESTING AND INSPECTING SERVICES****01 5000 TEMPORARY FACILITIES AND CONTROLS****01 6100 PRODUCT REQUIREMENTS****01 6200 PRODUCT OPTIONS****01 6400 OWNER-FURNISHED PRODUCTS****01 6600 DELIVERY, STORAGE, AND HANDLING REQUIREMENTS****01 7000 EXECUTION REQUIREMENTS****01 7400 CLEANING AND WASTE MANAGEMENT****01 7700 CLOSEOUT PROCEDURES****01 7800 CLOSEOUT SUBMITTALS****SECTION 01 1000 SUMMARY**

- A. Provisions contained in Division 01 apply to all other sections and divisions of Specifications. All instructions contained in Specifications are directed to Contractor. Unless specifically provided otherwise, all obligations set forth in Specifications are obligations of Contractor.
- B. Comply with applicable laws and regulations.
- C. Owner may provide furnishings and/or equipment for Project. Contractor will receive, store, and protect such items on site until the date Owner accepts Project.
- D. Work by Owner: Owner will furnish and install some portions of the Work with its own forces. Complete the Work necessary to accommodate the Work to be performed by Owner before scheduled date for performance of such Work.

**SECTION 01 1200 MULTIPLE CONTRACT SUMMARY**

- A. Separate contracts may be issued by Owner for performance of certain construction operations at Project site. Contractor will afford other contractors reasonable opportunity to place and store their materials and equipment on site and to perform their work and will properly connect and coordinate its work with theirs where applicable.

**SECTION 01 1400 WORK RESTRICTIONS**

- A. During construction period, Contractor will have use of premises for construction operations. Contractor will ensure that Contractor, its employees, subcontractors, and employees comply with following requirements:
  - 1. Confine operations to areas within Contract limits shown on Drawings. Do not disturb portions of site beyond Contract limits.
  - 2. Do not allow alcoholic beverages, illegal drugs, or persons under their influence on Project Site.
  - 3. Do not allow use of tobacco in any form on Project Site.
  - 4. Do not allow pornographic or other indecent materials on site.
  - 5. Do not allow work on Project Site on Sundays except for emergency work.

6. Refrain from using profanity or being discourteous or uncivil to others on Project Site or while performing The Work.
7. Wear shirts with sleeves, wear shoes, and refrain from wearing immodest, offensive, or obnoxious clothing, while on Project Site.
8. Do not allow playing of obnoxious and loud music on Project Site. Do not allow playing of any music within existing facilities.
9. Do not build fires on Project Site.
10. Do not allow weapons on Project Site, except those carried by law enforcement officers and/or other uniformed security personnel who have been retained by Owner or Contractor to provide security services.

B. Existing Facilities:

1. If Owner will occupy existing building, reasonably accommodate use of existing facilities by Owner.

## **SECTION 01 3000 ADMINISTRATIVE REQUIREMENTS**

- A. Coordinate construction activities to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations that are dependent upon each other for proper installation, connection, and operation. Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.

## **SECTION 01 3100 PROJECT MANAGEMENT AND COORDINATION**

A. Multiple Contract Coordination:

1. Contractor shall be responsible for coordination of Temporary Facilities and Controls, Construction Waste Management and Disposal services, and Final Cleaning for entire Project unless directed otherwise by Owner's Representative for those who perform work on Project from Notice to Proceed to date of Substantial Completion.

B. Preconstruction Conference:

1. Attend preconstruction conference and organizational meeting scheduled by Architect or Owner Representative at Project site or other convenient location.
2. Be prepared to discuss items of significance that could affect progress, including such topics as:
  - a. Construction schedule, equipment deliveries, general inspection of tests, preparation of record documents and O&M manuals, project cleanup, security, shop drawings, samples, use of premises, work restrictions, and working hours.

## **SECTION 01 3300 SUBMITTAL PROCEDURES**

- A. Coordination preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently before performance of related construction activities to avoid delay.
- B. Allow sufficient review time so installation will not be delayed by time required to process submittals.
- C. Place permanent label or title block on each submittal for identification. Include name of entity that prepared each submittal on label or title block.
- D. Package each submittal appropriately for transmittal and handling.

## **SECTION 01 3500 SPECIAL PROCEDURES**

A. Hot Work Permit (Available from Owner's Representative):

1. Required for doing hot work involving open flames or producing heat or sparks such as:
  - a. Brazing.
  - b. Cutting.
  - c. Grinding.
  - d. Soldering.
  - e. Thawing pipe
  - f. Torch applied roofing.

- g. Welding.

## SECTION 01 4000 QUALITY REQUIREMENTS

- A. Testing and inspecting services are used to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with Contract Document requirements.
- B. Conflicting Requirements: If compliance with two or more standards is specified and standards establish different or conflicting requirements for minimum quantities or quality levels, comply with most stringent requirement.
- C. Minimum Quantity or Quality Levels: Quantity or quality level shown or specified shall be the minimum provided or performed. Actual installation may comply exactly with minimum quantity or quality specified, or it may exceed minimum within reasonable limits.
- D. Quality Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to verify compliance and guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- E. Quality Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements performed by Contractor. They do not include inspections, tests or related actions performed by Architect or Owner Representative, governing authorities or independent agencies hired by Owner or Architect.
1. Where services are indicated as Contractor's responsibility, engage qualified Testing Agency to perform these quality control services.
    - a. Contractor will not employ same testing entity engaged by Owner, without Owner's written approval.
- F. Notify Owner immediately if asbestos-containing materials or other hazardous materials are encountered while performing the Work.
- G. Submit to Owner permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, and similar documents, correspondence, and records establishing compliance with standards and regulations bearing upon performance of the Work.
- H. Repair And Protection:
1. On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
  2. Protect construction exposed by or for Quality Assurance and Quality Control activities.
  3. Repair and protection are Contractor's responsibility, regardless of assignment of responsibility for Quality Assurance and Quality Control Services.

## SECTION 01 4301 QUALITY ASSURANCE - QUALIFICATIONS

- A. Qualifications: Qualifications in this Section establish minimum qualification levels required; individual Specification Sections specify additional requirements:
1. Fabricator / Supplier / Installer Qualifications.
    - a. Firm experienced in producing products similar to those indicated for this Project and with record of successful in-service performance, as well as sufficient production capacity to produce required units:
      - 1) Where heading '*VMR (Value Managed Relationship) Suppliers / Installers*' is used to identify list of specified suppliers or installers, Owner has established relationships that extend beyond requirements of this Project. No other suppliers / installers will be acceptable. Follow specified procedures to preserve relationships between Owner and specified suppliers / installers and advantages that accrue to Owner from those relationships.
      - 2) Where heading '*Acceptable or Approved Suppliers / Installers / Fabricators*' is used to identify list of specified suppliers / installers / fabricators, use only one of listed suppliers / installers / fabricators. No others will be acceptable.
  2. Factory-Authorized Service Representative Qualifications:

- a. Authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
3. Installer Qualifications:
  - a. Firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with record of successful in-service performance.
4. Manufacturer Qualifications:
  - a. Firm experienced in manufacturing products or systems similar to those indicated for this Project and with record of successful in-service performance, as well as sufficient production capacity to produce required units.
5. Manufacturer's Field Services Qualifications:
  - a. Experienced authorized representative of manufacturer to inspect field-assembled components and equipment installation, including service connections.
6. Professional Engineer Qualifications:
  - a. Professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of kind indicated. Engineering services are defined as those performed for installations of system, assembly, or products that are similar to those indicated for this Project in material, design, and extent.
7. Specialists:
  - a. Certain sections of Specifications require that specific construction activities will be performed by entities who are recognized experts in those operations. Specialists will satisfy qualification requirements indicated and will be engaged for activities indicated. Requirement for special will not supersede building codes and regulations governing the Work.
8. Testing Agency Qualifications:
  - a. Independent Testing Agency with experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E329; and with additional qualifications specified in individual Sections; and where required by authorities having jurisdiction, that is acceptable to authorities.
  - b. Testing Laboratory:
    - 1) AASHTO Materials Reference Laboratory (AMRL) Accreditation Program.
    - 2) Cement and Concrete Reference Laboratory (CCRL).
    - 3) Nationally Recognized Testing Laboratory (NRTL): Nationally recognized testing laboratory according to 29 CFR 1910.7.
    - 4) National Voluntary Laboratory (NVLAP): Testing Agency accredited according to National Institute of Standards and Technology (NIST) Technology Administration, U. S. Department of Commerce Accreditation Program.

## **SECTION 01 4523 TESTING AND INSPECTION SERVICES**

- A. Submittals:
  1. Certificates: Testing Agency will submit certified written report of each inspection, test, or similar service.
  2. Tests and Evaluation Reports:
    - a. Testing Agency or Agencies will prepare logs, test reports, and certificates applicable to specific tests and inspections and deliver copies to Owner's Representative and to each of following if involved on project: Architect, Consulting Engineers (Engineer of Record), General Contractor, Authorities Having Jurisdiction (if required).
  3. Testing Agency:
    - a. Qualifications of Testing Agency management, personnel, inspector and technicians designated to project.
    - b. Provide procedures for non-destructive testing, equipment calibration records, personnel training records, welding inspection, bolting inspection, shear connector stud inspection, and seismic connection inspections.
- B. Quality Assurance:
  1. Owner or Owner's designated representative(s) will perform quality assurance. Owner's quality assurance procedures may include observations, inspections, testing, verification, monitoring and any other procedures deemed necessary by Owner to verify compliance with Contract Documents.
  2. Owner will employ independent Testing Agencies to perform certain specified testing, as Owner deems necessary. Owner's employment of an independent Testing Agency does not relieve Contractor of

Contractor's obligation to perform the Work in strict accordance with requirements of Contract Documents.

3. Certification:

- a. Product producers and associations, which have instituted approved systems of quality control and which have been approved by document approval agencies, are not required to have further testing.
- b. Concrete mixing plants, plants producing fabricated concrete and wood or plywood products certified by agency, lumber, plywood grade marked by approved associates, and materials or equipment bearing underwriters' laboratory labels require no further testing and inspection.

4. Written Practice for Quality Assurance:

- a. Testing Agency will maintain written practice for selection and administration of inspection personnel, describing training, experience, and examination requirements for qualification and certification of inspection personnel.
- b. Written practice will describe testing agency procedures for determining acceptability of structure in accordance with applicable codes, standards, and specifications.
- c. Written practice will describe Testing Agency inspection procedures, including general inspection, material controls, visual welding inspection, and bolting inspection.

C. Quality Control:

1. Quality Control will be sole responsibility of Contractor. Contractor will be responsible for testing, coordination, start-up, operational checkout, and commissioning of all items of the Work included in Project. All costs for these services will be included in Contractor's cost of the Work:
  - a. Notify results of all Testing and Inspection performed by Contractor's independent Testing Agencies to Architect and/or Owner's Representative within 24 hours of test or inspection having been performed.
  - b. Testing Laboratory:
    - 1) Testing and Inspection Reports will be distributed as follows:
      - a) 1 copy to Owner's Representative.
      - b) 1 copy to Architect.
      - c) 1 copy to Consulting Engineer(s) (Engineer of Record).
      - d) 1 copy to Authorities Having Jurisdiction (if required).

D. Tests And Inspections - General:

1. Testing specifically identified to be conducted by Owner, will be performed by an independent entity and will be arranged and paid for by Owner.
2. Individual Sections in Division 01 through Division 50 indicate if Owner will provide testing and inspection of the Work of that Section.
3. Owner may engage additional consultants for testing, air balancing, commissioning, or other special services. Activities of any such Owner consultants are in addition to Contractor testing of materials or systems necessary to prove that performance is in compliance with Contract requirements. Contractor must cooperate with persons and firms engaged in these activities.
4. Tests include but not limited to those described in detail in 'Field Quality Control' in Part 3 of Individual Sections in Divisions 01 through Division 50.
5. Taking Specimens:
  - a. Only testing laboratory shall secure, handle, transport, or store any samples and specimens for testing
6. Scheduling Testing Agency:
  - a. Contractor will coordinate the Work and facilitate timeliness of such testing and inspecting services so as not to delay the Work:
  - b. Contractor will notify Testing Agency and Architect or Owner Representative to schedule tests and / or inspections:
    - 1) Architect will notify Owner's Representative before each test and / or inspection.

E. Architect's Responsibility:

1. Architect Duties:
  - a. Notify Owner's Representative before each test and/or inspection.

F. Contractor's Responsibility:

1. Owner's employment of an independent Testing Agency does not relieve Contractor of Contractor's obligation to perform the Work in strict accordance with requirements of Contract Documents.
2. Tests and inspections that are not explicitly assigned to Owner are responsibility of Contractor.

3. Cooperate with Testing Agency(s) performing required inspections, tests, and similar services and provide reasonable auxiliary services as requested. Notify Testing Agency before operations to allow assignment of personnel. Auxiliary services required include but are not limited to:
  - a. Providing access to the Work and furnishing incidental labor, equipment, and facilities deemed necessary by Testing Agency to facilitate inspections and tests at no additional cost to Owner.
  - b. Taking adequate quantities of representative samples of materials that require testing or helping Testing Agency in taking samples.
  - c. Providing facilities for storage and curing of test samples, and delivery of samples to testing laboratories.
  - d. Providing Testing Agency with preliminary design mix proposed for use for materials mixes that require control by Testing Agency.
4. For any requested inspection, Contractor will complete prior inspections to ensure that items are ready for inspection.
5. All Work is subject to testing and inspection and verification of correct operation.
6. Comply:
  - a. Upon completion of Testing Agency's inspection, testing, sample-taking, and similar services, repair damaged construction and restore substrates and finishes to eliminate deficiencies, including deficiencies in visual qualities of exposed finishes.
  - b. Comply with Contract Documents in making such repairs.
7. Data:
  - a. Furnish records, drawings, certificates, and similar data as may be required by testing and inspection personnel to assure compliance with Contract Documents.
8. Defective Work (Non-Conforming Work): Non-conforming Work as covered in General Conditions applies, but is not limited to following requirements:
  - a. Where results of inspections, tests, or similar services show that the Work does not comply with Contract Document requirements, correct deficiencies in the Work promptly to avoid work delays.
  - b. Where testing personnel take cores or cut-outs to verify compliance, repair prior to acceptance.
  - c. Contractor will be responsible for any and all costs incurred resulting from inspection that was scheduled prematurely or retesting due to failed tests.
  - d. Remove and replace any Work found defective or not complying with contract document requirements at no additional cost to Owner.
  - e. Should test return unacceptable results, Contractor will bear all costs of retesting and re-inspection as well as cost of all material consumed by testing, and replacement of unsatisfactory material and/or workmanship.
9. Protection:
  - a. Protect construction exposed by or for quality assurance and quality control service activities, and protect repaired construction.
10. Scheduling: Contractor is responsible for scheduling times for inspections, tests, taking samples, and similar activities:
  - a. Schedule testing and inspections in advance so as not to delay the Work and to eliminate any need to uncover the Work for testing or inspection.
  - b. Notify Testing Agency and Architect or Owner as noted in Sections in Division 01 thru Division 50 prior to any time required for such services.
  - c. Incorporate adequate time for performance of all inspections and correction of noted deficiencies.
  - d. Schedule sequence of activities to accommodate required services with minimum of delay.
  - e. Schedule sequence of activities to avoid necessity of removing and replacing construction to accommodate testing and inspections.
11. Test and Inspection Log:
  - a. Provide system of tracking all field reports, describing items noted, and resolution of each item. Prepare record of tests and inspections. Include following requirements:
    - 1) Date test or inspection was conducted.
    - 2) Description of the Work tested or inspected.
    - 3) Date test or inspection results were transmitted to Architect or Owner Representative.
    - 4) Identification of Testing Agency or inspector conducting test or inspection.
  - b. Maintain log at Project site. Post changes and modifications as they occur. Provide access to test and inspection log for Architect's or Owner's reference during normal working hours.

G. Testing Agency Services And Responsibility:

1. Testing Agency, including independent testing laboratories, will be licensed and authorized to operate in jurisdiction in which Project is located.

- a. Approved Testing Agency Qualifications: Requirements of Section 01 4301 apply.
2. Testing and Inspection Services:
  - a. Testing Agency will not release, revoke, alter, or increase Contract Document requirements or approve or accept any portion of the Work.
  - b. Testing Agency will not give direction or instruction to Contractor.
  - c. Testing Agency will have full authority to see that the Work is performed in strict accordance with requirements of Contract Documents and directions of Owner's Representative and/or Architect.
  - d. Testing Agency will not provide additional testing and inspection services beyond scope of the Work without prior approval of Owner's Representative and/or Architect.
3. Testing Agency Duties:
  - a. Independent Testing Agency engaged to perform inspections, sampling, and testing of materials and construction specified in individual specification Sections will cooperate with Architect or Owner Representative and Contractor in performance of its duties and will provide qualified personnel to perform required inspections and tests.
  - b. Testing Agency will test or obtain certificates of tests of materials and methods of construction, as described herein or elsewhere in technical specification.
  - c. Testing Agency will provide management, personnel, equipment, and services necessary to perform testing functions as outlined in this section.
  - d. Testing Agency must have experience and capability to conduct testing and inspecting indicated by ASTM standards and that specializes in types of tests and inspections to be performed.
  - e. Testing Agency will comply with requirements of ASTM E329, ASTM E543, ASTM C1021, ASTM C1077, ASTM C1093, ASTM D3666, ASTM D3740, and other relevant ASTM standards.
  - f. Testing Agency must calibrate all testing equipment at reasonable intervals (minimum yearly) with accuracy traceable to either National Bureau of Standards or accepted values of natural physical constants.
  - g. Welding Procedure Review: Testing Agency will provide review and approval or rejection of all welding procedures to be used and verify compliance with all reference standard requirements.
4. Testing and Inspection Reports:
  - a. Conduct and interpret tests and inspections and state in each report whether tested and inspected Work complies with or deviates from requirements.
  - b. Laboratory Reports: Testing Agency will furnish reports of materials and construction as required, including:
    - 1) Description of method of test.
    - 2) Identification of sample and portion of the Work tested.
      - a) Description of location in the Work of sample.
      - b) Time and date when sample was obtained.
      - c) Weather and climatic conditions at time when sample was obtained.
    - 3) Evaluation of results of tests including recommendations for action.
  - c. Inspection Reports: Testing Agency will furnish "Inspection at Site" reports for each site visit documenting activities, observations, and inspections. Include notation of weather and climatic conditions, time and date conditions and status of the Work, actions taken, and recommendations or evaluation of the Work.
  - d. Reporting Testing and Inspection (Conforming Work):
    - 1) Submit testing and inspection reports as required within twenty four (24) hours of test or inspection having been performed.
  - e. Reporting Testing and Inspection Defective Work (Non-Conforming Work):
    - 1) Testing Agency, upon determination of irregularities, deficiencies observed or test failure(s) observed in the Work during performance of its services of test or inspection having been performed, will:
      - a) Verbally notify results to Architect, Contractor, and Owner's Representative within one hour of test or inspection having been performed (if Defective Work (Non-Conforming Work) is incorporated into project).
      - b) Submit written inspection report and test results as required within twenty four (24) hours of test or inspection having been performed.
  - f. Final Report:
    - 1) Submit final report of tests and inspections at Substantial Completion, which identify unresolved deficiencies.

H. Field Tests and Inspections requirements are described in 'Field Quality Control' in Division 01 thru Division 50 Sections.

**SECTION 01 5000 TEMPORARY FACILITIES AND CONTROLS**

- A. Owner will provide electric power for construction activities within limits available at existing facility.
- B. Exercise caution to avoid fire damage. Do not build fires on site.
- C. Permanent mechanical system may be operated upon following conditions:
  - 1. Do not interfere with normal set-back temperature patterns except as approved by Project Manager.
  - 2. Do not operate system when the Work causing airborne dust is occurring or when dust caused by such Work is present without first installing temporary filtering system.
- D. Existing lighting system may be used by Contractor.
- E. Contractor will use existing water supply for construction purposes to extent of existing facilities.
- F. Existing restroom facilities may be used by Contractor. Clean restrooms and portions of existing building used in accessing restrooms daily. If existing facilities are not usable, provide and maintain temporary sanitary toilet.
- G. Erect adequate barricades, warning signs, and lights necessary to protect persons from injury or harm.
- H. Contractor is responsible for security of materials, tools, and equipment. Do not permit others to use building keys provided by Owner. Safeguard building and contents while the Work is being performed and secure building when the Work is finished for day.
- I. Protect existing trees and plants. Remove and replace vegetation that dies or is damaged beyond repair due to construction activities.
- J. Provide temporary enclosures at exterior building openings for security and protection from weather, theft, and vandalism. Erect and maintain dust-proof partitions and enclosures as required to prevent spread of dust and fumes to occupied portions of building.
- K. Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and reduce possibility that air, waterways, and subsoil might be contaminated or polluted, or that other undesirable effects might result. Avoid use of tools and equipment that produce harmful noise. Restrict use of noisemaking tools and equipment to hours that will minimize complaints from persons or firms near site. Protect the Work, materials, apparatus, and fixtures from injury due to weather, theft, and vandalism.

**SECTION 01 6100 PRODUCT REQUIREMENTS**

- A. Provide products that comply with Contract Documents, are undamaged, and, unless otherwise indicated, are new and unused at time of installation. Provide products complete with accessories, trim, finish, safety guards, and other devices and details needed for complete installation and for intended use and effect:

**SECTION 01 6200 PRODUCT OPTIONS**

- A. Product selection is governed by Contract Documents and governing regulations, not by previous Project experience. Procedures governing product selection include:
  - 1. Substitutions And Equal Products:
    - a. Generally speaking, substitutions for specified products and systems, as defined in Uniform Commercial Code, are not acceptable. However, equal products may be approved upon compliance with Contract Document requirements.
    - b. Approved Products / Manufacturers / Suppliers / Installers:
      - 1) Category One:
        - a) Owner has established 'Value Managed Relationships' that extend beyond requirements of this Project. No substitutions or equal products will be allowed on this Project.
        - b) Follow specified procedures to preserve relationships between Owner and specified manufacturers / suppliers and advantages that accrue to Owner from those relationships.



- 2) Category Two:
  - a) Owner has established National Contracts that contain provisions extending beyond requirements of this Project. No substitutions or equal products will be allowed on this Project.
  - b) Follow specified procedures to preserve relationships between Owner and specified manufacturers / suppliers and advantages that accrue to Owner from those relationships.
- 3) Category Three:
  - a) Specified products are provided to Church Projects under a National Account Program. Use these products to preserve advantages that accrue to Owner from those programs. No substitutions or equal products will be allowed on this Project.
- 4) Category Four:
  - a) Provide only specified products available from manufacturers listed. No substitutions, private-labeled, or equal products, or mixing of manufacturers' products is allowed on this Project.
  - b) In Sections where lists recapitulating Manufacturers previously mentioned in Section are included under heading '*Manufacturers*' or '*Approved Manufacturers*', this is intended as convenience to Contractor as listing of contact information only. It is not intended that all manufacturers in list may provide products where specific products and manufacturers are listed elsewhere in Section.
- c. Acceptable Products / Manufacturers / Suppliers / Installers:
  - 1) Type One: Use specified products / manufacturers unless approval to use other products / manufacturers has been obtained from Architect or Owner Representative by Addendum.
  - 2) Type Two: Use specified products / manufacturers unless approval to use other products and manufacturers has been obtained from Architect or Owner Representative in writing before installing or applying unlisted or private-labeled products.
  - 3) Use 'Equal Product Approval Request Form' to request approval of equal products, manufacturers, or suppliers before bidding or before installation, as noted in individual Sections.
- d. Quality / Performance Standard Products / Manufacturers:
  - 1) Class One: Use specified product / manufacturer or equal product from specified manufacturers only.
  - 2) Class Two: Use specified product / manufacturer or equal product from any manufacturer.
  - 3) Products / manufacturers used will conform to Contract Document requirements.

## **SECTION 01 6400 OWNER-FURNISHED PRODUCTS**

- A. Install items furnished by Owner or receive and store in safe condition items purchased directly by Owner according to requirements of Contract Documents.

## **SECTION 01 6600 DELIVERY, STORAGE, AND HANDLING REQUIREMENTS**

- A. Deliver, store, and handle products according to manufacturer's recommendations, using means and methods that will prevent damage, deterioration, and loss, including theft.
- B. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
- C. Deliver products to site in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
- D. Inspect products upon delivery to ensure compliance with Contract Documents, and to ensure that products are undamaged and properly protected.
- E. Store products at site in manner that will simplify inspection and measurement of quantity or counting of units.
- F. Store heavy materials away from Project structure so supporting construction will not be endangered.
- G. Store products subject to damage by elements above ground, under cover in weather tight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.

**SECTION 01 7000 EXECUTION REQUIREMENTS**

- A. Design, furnish, and install all shoring, bracing, and sheathing as required for safety and for proper execution of the Work and, unless otherwise required, remove same when the Work is completed.
- B. Require installer of each major component to inspect both substrate and conditions under which the Work is to be done. Notify Owner in writing of unsatisfactory conditions. Do not proceed until unsatisfactory conditions have been corrected.
- C. Provide attachment and connection devices and methods necessary for securing the Work. Secure the Work true to line and level. Allow for expansion and building movement.
- D. Recheck measurements and dimensions before starting each installation.
- E. Where mounting heights are not shown, install individual components at standard mounting heights recognized within industry or local codes for that application. Refer questionable mounting height decisions to Owner for final decision.
- F. Cover and protect furniture, equipment, and fixtures from soiling and damage when demolition the Work is performed in rooms and areas from which such items have not been removed.
- G. Completion Inspection:
  - 1. Upon 100 percent completion of Project, Contractor will request Substantial Completion Inspection.
  - 2. Owner will conduct Substantial Completion Inspection in presence of Contractor and furnish list of items to be corrected.
  - 3. Contractor will notify Owner in writing when items have been corrected.

**SECTION 01 7400 CLEANING AND WASTE MANAGEMENT**

- A. Disposal Of Waste:
  - 1. Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in landfill or incinerator acceptable to authorities having jurisdiction:
    - a. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site
    - b. Remove and transport debris in manner that will prevent spillage on adjacent surfaces and areas.
  - 2. Burning: Do not burn waste materials.
  - 3. Disposal: Transport waste materials off Owner's property and legally dispose of them.
- B. Progress Cleaning:
  - 1. Keep premises broom-clean during progress of the Work.
  - 2. During handling and installation, protect construction in progress and adjoining materials in place. Apply protective covering where required to ensure protection from soiling, damage, or deterioration until Substantial Completion.
  - 3. Clean and maintain completed construction as frequently as necessary throughout construction period.
  - 4. Remove waste materials and rubbish caused by employees, subcontractors, and contractors under separate contract with Owner and dispose of legally.
- C. Final Cleaning:
  - 1. Clean each surface or unit to condition expected in normal, commercial-building cleaning and maintenance program. Comply with manufacturer's instructions. Remove all rubbish from under and about building and leave building clean and habitable.
  - 2. In addition to general cleaning noted above, perform cleaning for all trades at completion of the Work in areas where construction activities have occurred.
  - 3. If Contractor fails to clean up, Owner may do so and charge cost to Contractor.

**SECTION 01 7700 CLOSEOUT PROCEDURES**

- A. General:

1. Closeout process consists of three specific project closeout inspections. Contractor shall plan sufficient time in construction schedule to allow for required inspections before expiration of Contract Time.
2. Contractor shall conduct his own inspections of The Work and shall not request closeout inspections until The Work of the contract is reasonably complete and correction of obvious defects or omissions are complete or imminent.
3. Date of Substantial Completion shall not occur until completion of construction work, unless agreed to by Architect / Owner's Representative and included on Certificate of Substantial Completion.

**B. Preliminary Closeout Review:**

1. When Architect, Owner and Contractor agree that project is ready for closeout, Pre-Substantial Inspection shall be scheduled. Preparation of floor substrate to receive carpeting and any work which could conceivably damage or stain carpet must be completed, as carpet installation will be scheduled immediately following this inspection.
2. Prior to this inspection, completed test and evaluation reports for HVAC system and font, where one occurs, are to be provided to Project Manager, Architect, and applicable consultants.
3. Architect and his appropriate consultants, together with Contractor and mechanical, plumbing, fire protection, and electrical sub-contractors shall conduct a space by space and exterior inspection to review materials and workmanship and to demonstrate that systems and equipment are operational.
  - a. Punch list of items requiring completion and correction will be created.
  - b. Time frame for completion of punch list items will be established, and date for Substantial Completion Inspection shall be set.

**C. Substantial Completion Inspection:**

1. When Architect, Owner and Contractor agree that project is ready for Substantial Completion, an inspection is held. Punch list created at Pre-Substantial Inspection is to be substantially complete.
2. Prior to this inspection, Contractor shall discontinue or change over and remove temporary facilities from the site, along with construction tools, mock-ups and similar elements.
3. Architect, Owner and Contractor review completion of punch list items. When Owner and Architect confirm that Contractor has achieved Substantial Completion of The Work, Owner, Architect and Contractor will execute Certificate of Substantial Completion that contains:
  - a. Date of Substantial Completion.
  - b. Punch List Work not yet completed, including seasonal and long lead items.
  - c. Amount to be withheld for completion of Punch List Work.
  - d. Time period for completion of Punch List Work.
  - e. Amount of liquidated damages set forth in Supplementary Conditions to be assessed if Contractor fails to complete Punch List Work within time set forth in Certificate.
4. Contractor shall present Closeout Submittals to Architect and place tools, spare parts, extra stock, and similar items required by Contract Documents in locations as directed by Facilities Manager.

**D. Final Acceptance Meeting:**

1. When punch list items except for any seasonal items or long lead items which will not prohibit occupancy are completed, Final Acceptance Meeting is held.
2. Owner, Architect and Contractor execute Owner's Project Closeout - Final Acceptance form, and verify:
  - a. All seasonal and long lead items not prohibiting occupancy, if any, are identified, with committed to completion date and amount to be withheld until completion.
  - b. Owner's maintenance personnel have been instructed on all system operation and maintenance as required by the Contract Documents.
  - c. Final cleaning requirements have been completed.
3. If applicable, once any seasonal and long lead items are completed, Closeout Inspection is held where Owner and Architect verify that The Work has been satisfactorily completed, and Owner, Architect and Contractor execute Closeout portion of the Project Closeout - Final Acceptance form.
4. When Owner and Architect confirm that The Work is satisfactorily completed, Architect will authorize final payment.

**SECTION 01 7800 CLOSEOUT SUBMITTALS**

**E. Operations And Maintenance Data:**

1. Certifications required by Contract Documents.
2. Copies of warranties required by Contract Documents.

3. Copy of complete Project Manual including Addenda, Modifications as defined in General Conditions, and other interpretations issued during construction.
    - a. Mark these documents to show variations in actual Work performed in comparison with text of specifications and Modifications. Show substitutions, selection of options, and similar information, particularly on elements that are concealed or cannot otherwise be readily discerned later by direct observation.
    - b. Note related record drawing information and Product Data.
  4. Copy of Soils Report.
  5. Operations and maintenance submittals required by Contract Documents.
  6. Site Management Plan (SMP):
    - a. Maintenance recommendations for Site Management Plan (SMP) required by Contract Documents.
    - b. Recommended procedures to be established by Owner for maintenance of landscape work for one (1) full year after contract maintenance period ends required by Contract Documents.
  7. Testing and Inspection Reports required by Contract Documents.
- F. Warranties:
1. When written guarantees beyond one (1) year after substantial completion are required by Contract Documents, secure such guarantees and warranties properly addressed and signed in favor of Owner. Include these documents in Operations & Maintenance Manual(s) specified above.
  2. Delivery of guarantees and warranties will not relieve Contractor from obligations assumed under other provisions of Contract Documents.
- G. Project Record Documents:
1. Do not use record documents for construction purposes. Protect from deterioration and loss in secure, fire-resistive location. Provide access to record documents for reference during normal Working hours.
  2. Maintain clean, undamaged set of Drawings. Mark set to show actual installation where installation varies from the Work as originally shown. Give particular attention to concealed elements that would be difficult to measure and record at later date:
    - a. Mark record sets with red erasable pencil. Use other colors to distinguish between variations in separate categories of the Work.
    - b. Mark new information that is important to Owner, but was not shown on Drawings.
    - c. Note related Change Order numbers where applicable.

**END OF SECTION**

**SECTION 06 4005****PLASTIC LAMINATE****PART 1 - GENERAL****1.1 SUMMARY**

- A. Products Furnished But Not Installed Under This Section:
  - 1. Wall-hung counters.
  - 2. Countertops for custom casework.
- B. Related Requirements:
  - 1. Section 06 2001: 'Common Finish Carpentry Requirements':
    - a. Installation of wall-hung counters.
    - b. Installation of countertops for custom casework.
  - 2. Section 06 4001: 'Common Architectural Woodwork Requirements':
    - a. Approved Fabricators.
    - b. General standards for materials and fabrication of Architectural Woodwork.

**1.2 REFERENCES**

- A. Association Publications:
  - 1. Architectural Woodwork Institute / Architectural Woodwork Manufacturers Association of Canada / Woodwork Institute, 46179 Westlake Drive, Suite 120, Potomac Falls, VA [www.awinet.org](http://www.awinet.org).
    - a. Architectural Woodwork Standards (AWS), 1st Edition, 2009.
- B. Definitions:
  - 1. Flame Spread: The propagation of flame over a surface.
  - 2. Flame Spread Index: The numerical value assigned to a material tested in accordance with ASTM E84 or UL 723 or CAN/ULC-S102.2.
  - 3. Grade: Unless otherwise noted, this term means Grade rules for Economy, Custom, and/or Premium Grade.
    - a. Premium Grade: Highest Grade available in both material and workmanship where highest level of quality, materials, workmanship, and installation is required.
  - 4. High-Pressure Decorative Laminate (HPDL): Laminated thermosetting decorative sheets intended for decorative purposes. Sheets consist essentially of layers of fibrous sheet material, such as paper, impregnated with thermosetting condensation resin and consolidation under heat and pressure. Top layers have decorative color or printed design. Exposed surface has attractive exposed surface that is durable and resistant to damage from abrasion and mild alkalis, acids, and solvents.
  - 5. Smoke-Developed Index: The numerical value assigned to a material tested in accordance with ASTM E84 or UL 723 or CAN/ULC-S102.2.
- C. Reference Standards:
  - 1. ASTM International:
    - a. ASTM E84-12, 'Standard Test Method for Surface Burning Characteristics of Building Materials'.
    - b. ASTM E162-12a, 'Standard Test Method for Surface Flammability of Materials Using a Radiant Heat Energy Source'.
  - 2. Kitchen Cabinet Manufacturers Association:
    - a. ASTM/KCMA A161.1-2000 (R2006), 'Performance And Construction Standards For Kitchen And Vanity Cabinets'.
    - b. ANSI/KCMA A161.2-1998, 'Performance Standards for Fabricated High Pressure Decorative Laminate Countertops'.

3. National Electrical Manufacturer's Association / American National Standards Institute:
  - a. ANSI/NEMA LD-3-2005, 'High Pressure Decorative Laminates'.
4. Underwriters Laboratories, Inc.:
  - a. UL 723: 'Standard for Safety Test for Surface Burning Characteristics of Building Materials'; Tenth Edition September 10 2008 (Revision: September 13, 2010).

### 1.3 SUBMITTALS

- A. Action Submittals:
  1. Product Data:
    - a. Color selections.
    - b. Manufacturer's technical data sheet.
- B. Informational Submittals:
  1. Certificates:
    - a. Provide Manufacturer's certification of compliance to ANSI/NEMA LD 3.
  2. Test And Evaluation Reports:
    - a. Test reports: Certified test reports showing compliance with specified performance characteristics and physical properties for Quality Assurance if requested by Owner or Architect.
- C. Closeout Submittals:
  1. Include following in Operations And Maintenance Manual specified in Section 01 7800:
    - a. Record Documentation:
      - 1) Manufacturers documentation:
        - a) Manufacturer's literature for plastic laminate.
        - b) Color selections.

### 1.4 QUALITY ASSURANCE

- A. Regulatory Agency Sustainability Approvals:
  1. Fire-Test-Response Characteristics: Provide plastic laminate with surface burning characteristics as determined by testing identical products by qualified testing agency.
    - a. Surface-Burning Characteristics:
      - 1) Plastic Laminate shall have Class A flame spread rating in accordance with ASTM E84 or UL 723 Type 1.
        - a) Class A (Flame spread index 0-25; Smoke-developed index 0-450).
        - b) Flash point: None.

### 1.5 WARRANTY

- A. Manufacturer Extended Warranty:
  1. Approved Fabricator's written guarantee that all Goods and Services will be free from defects in materials and workmanship for a period of five (5) years from date of substantial completion.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. Fabricators:
  1. Approved Fabricators. See Section 06 4001 for Approved Fabricators.
- B. Manufacturers:
  1. Type Two Acceptable Manufacturers:

- a. Formica, Cincinnati, OH www.formica.com or Formica Canada Inc, St Jean sur Richelieu, PQ (450) 347-7541, all matte finish.
  - b. Nevamar, Odenton, MD www.nevamar.com.
  - c. Pionite Decorative Surfaces, Auburn, ME www.pionite.com.
  - d. WilsonArt, Temple, TX www.wilsonart.com or WilsonArt International Inc, Mississauga, ON (905) 565-1255.
  - e. Equal as approved by Architect before bidding. See Section 01 6200.
- C. Plastic Laminates:
- 1. Design Criteria:
    - a. Countertops:
      - 1) Post-formed front edge and backsplash, except where detailed otherwise, with plastic laminate meeting requirements of ANSI/NEMA LD 3: PF 42.
        - a) Vertical Applications: GP 28.
        - b) Horizontal (other than countertops): GP 38.
      - 2) No raised lip on front edge.
    - b. Balancing Material: BK 20.
    - c. AWS Quality Grade: Premium.
  - 2. Assemblies:
    - a. Countertops shall meet requirements of KCMA A161.1 and A161.2.
    - b. Adhesives for other than post-formed types shall be spray grade, high heat resistant, neoprene contact adhesive.
  - 3. Category Four Approved Colors. See Section 01 6200 for definition of Categories:
    - a. Formica: 300-58.
    - b. Nevamar: ES2001, TQ2001, MR7001, MR7002.
    - c. Pionite: AT951-5, LG110-S, AT161.
    - d. **WilsonArt: 2932-60, 4810-60, 4170-60.**

**PART 3 - EXECUTION: Not Used**

**END OF SECTION**

**SECTION 06 4114****WOOD-VENEER-FACED ARCHITECTURAL CABINETS****PART 1 - GENERAL****1.1 SUMMARY**

- A. Products Furnished But Not Installed Under This Section:
  - 1. Custom casework.
- B. Related Requirements:
  - 1. Section 06 1100: 'Wood Framing' for wall blocking required for Custom Casework.
  - 2. Section 06 2001: 'Common Finish Carpentry Requirements' for installation of Custom casework.
  - 3. Section 06 4001: 'Common Architectural Woodwork Requirements' for:
    - a. Approved Fabricators.
    - b. General standards for materials and fabrication of Architectural Woodwork and for hardware associated with Architectural Woodwork.
  - 4. Section 09 9324: 'Interior Clear-Finished Hardwood' for wood finishes.
  - 5. Sections Under 22 4200 Heading: Plumbing Fixtures.

**1.2 REFERENCES**

- A. Association Publications:
  - 1. Architectural Woodwork Institute / Architectural Woodwork Manufacturers Association of Canada / Woodwork Institute, 46179 Westlake Drive, Suite 120, Potomac Falls, VA [www.awinet.org](http://www.awinet.org).
    - a. Architectural Woodwork Standards (AWS), 1st Edition, 2009.
    - b. HPVA, NWWDA, or APA
  - 2. Hardwood Plywood & Veneer Association (HPVA), Reston, VA [www.hpva@hpva.org](http://www.hpva@hpva.org).
  - 3. The Engineered Wood Association (APA), Tacoma, WA [www.apawood.org](http://www.apawood.org).
  - 4. Window & Door Manufacturers Association (WDMA) Chicago, IL [www.wdma@wdma.com](http://www.wdma@wdma.com):
    - a. WDMA-INF03, 'A Specifier's Guide to Door Face Veneers'.
- B. Definitions:
  - 1. Adhesive, Type I (fully waterproof): Forms a bond that will retain practically all of its strength when occasionally subjected to a thorough wetting and drying; bond shall be of such quality that specimens will withstand shear and the two-cycle boil test specified in ANSI/HPVA HP (latest edition).
  - 2. Adhesive, Type II (water-resistant): Forms a bond that will retain practically all of its strength when occasionally subjected to a thorough wetting and drying; bond shall be of such quality that specimens will withstand the three-cycle cold soak test specified in ANSI/HPVA HP (latest edition).
  - 3. Book-Match: Matching between adjacent veneer leaves on one panel face. Every other piece of veneer is turned over so that the adjacent leaves are "opened" as two pages in a book. The fibers of the wood, slanting in opposite directions in the adjacent leaves, create a characteristic light and dark effect when the surface is seen from an angle.
  - 4. Concealed Surfaces: Top and bottom edges of wood unless the top edge is visible from above.
  - 5. Core: The material (typically, veneer, lumber, particleboard, medium-density fiberboard, or a combination of these) on which an exposed surface material (typically, veneer or high-pressure decorative laminate HPDL) is applied.
  - 6. Core, Solid: The innermost layer or section in flush door construction. Typical constructions are as follows:
    - a. Fiberboard Core: Manufactured from wood reduced to fine fibers mixed with binders and formed by the use of heat and pressure into panels.



- b. Particleboard - A solid core of wood or other lignocellulose particles bonded together with a suitable binder, cured under heat, and pressed into a rigid panel in a flat-platen press.
- 7. Edge Banding: Method of concealing plies or inner cores of plywood or particleboard when edges are exposed.
- 8. Exposed Surfaces: Surfaces normally visible after installation.
- 9. Face: The better side of any panel in which the outer plies are of different veneer grades; also either side of a panel in which there is no difference in veneer grade of the outer plies.
- 10. Face Veneer: The outermost exposed wood veneer surface of a veneered wood door, panel, or other component exposed to view when the project is completed.
- 11. Flitch: A hewn or sawn log made ready for veneer production or the actual veneer slices of one half log, kept in order, and used for the production of fine plywood panels.
- 12. Grade: Unless otherwise noted, this term means Grade rules for Economy, Custom, and/or Premium Grade:
  - a. Custom Grade: Typically specified for and adequately covers most high-quality architectural woodwork, providing a well-defined degree of control over a project's quality of materials, workmanship, or installation.
- 13. Hardwood: General term used to designate lumber or veneer produced from temperate zone deciduous or tropical broad-leaved trees in contrast to softwood, which is produced from trees which are usually needle bearing or coniferous. Term does not infer hardness in its physical sense.
- 14. High-Pressure Decorative Laminate (HPDL): Laminated thermosetting decorative sheets intended for decorative purposes. Sheets consist essentially of layers of fibrous sheet material, such as paper, impregnated with thermosetting condensation resin and consolidation under heat and pressure. Top layers have decorative color or printed design. Exposed surface has attractive exposed surface that is durable and resistant to damage from abrasion and mild alkalies, acids, and solvents. Also known as Plastic Laminate.
- 15. Joint: Line of juncture between edges or ends of two adjacent pieces of veneer.
- 16. Medium Density Fiberboard (MDF): Generic name for a panel or core manufactured from lignocellulosic fibers combined with synthetic resin or other suitable binder and bonded together under heat and pressure in hot press by process in which added binder creates entire bond.
- 17. Melamine: Resin-impregnated paper used in decorative composite panel products.
- 18. Panel Product: Panels manufactured with differences in core materials, adhesives or binders which affect characteristics of the panels. These include wood veneers and many prefinished wood panels and decorative overlays with aesthetic and performance characteristics.
- 19. Plain-Sawn: A hardwood figure developed by sawing a log lengthwise at a tangent to the annual growth rings. It appears as U-shaped or straight markings in the board's face.
- 20. Plain Slicing: Most commonly used for hardwood plywood. The log is cut in half, and one half is placed onto a carriage and moved up and down past a fixed knife to produce the veneers. Veneer is sliced parallel to the pith of the log and approximately tangent to the growth rings to achieve flat-cut veneer. Each piece is generally placed in a stack and kept in order. One half log, sliced this way, is called a "flitch."
- 21. Running Match: Each panel face is assembled from as many veneer leaves as necessary. Any portion left over from one panel may be used to start the next.
- 22. Semi-Exposed Surfaces: Surfaces that is only visible under closer examination.
- 23. Solid Stock: Solid, sound lumber (as opposed to plywood), that may be more than one piece of the same species, securely glued for width or thickness.
- 24. Veneer: A thin sheet or layer of wood, usually rotary cut, sliced or sawn from a log or flitch. Thickness may vary from 1/100 inch (0.3 mm) to 1/4 inch (6.4 mm).

C. Reference Standards:

- 1. American National Standards Institute / Builders Hardware Manufacturers Association:
  - a. ANSI / BHMA A156.11-2010, 'Cabinet Locks'.
- 2. American National Standards Institute / Hardwood Plywood & Veneer Association:
  - a. ANSI / HPVA HP-1-2009, 'Standard for Hardwood and Decorative Plywood'.
- 3. Window & Door Manufacturers Association (WDMA):
  - a. WDMA I.S. 6A-11, 'Industry Standard for Architectural Stile and Rails Doors'.

### 1.3 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
  - 1. Coordinate the efforts of the various trades affected by the Work of this Section.
  - 2. Coordinate completion of 2x6 (50mm x 100mm) wall blocking for custom casework.
  - 3. Coordinate completion of custom casework.

### 1.4 SUBMITTALS

- A. Action Submittals:
  - 1. Product Data:
    - a. Manufacturer's literature or cut sheets for hardware.
  - 2. Shop Drawings:
    - a. Confirm compliance with Contract Document requirements as to configuration and dimensions of custom casework.
    - b. Include plan and elevation views, materials used, standing and running trim profiles, assembly methods, joint details, fastening methods, accessories, and hardware.
  - 3. Samples:
    - a. Interior Hardwood for Transparent Finish:
      - 1) Before performing work of this Section, prepare Control Sample, to match sample available from Owner, to be used as finishing standard for interior clear finished hardwood as specified in Section 09 9324.
      - 2) Design Criteria:
        - a) Provide 8 inch by 10 inch (200 mm by 255 mm) sample(s) of Red Oak to match Owner provided stain color selected for Project.
        - b) Control Sample will be used as performance standard for evaluating finish provided.
- B. Informational Submittals:
  - 1. Source Quality Control Submittals:
    - a. Samples:
      - 1) Interior Hardwood for Transparent Finish:
        - a) Owner will provide Control Sample for finish.

## PART 2 - PRODUCTS

### 2.1 ASSEMBLIES

- A. Components:
  - 1. Design Criteria:
    - a. General:
      - 1) Except as noted otherwise, fabricate the work of this section according to AWS 'Custom Grade'.
        - a) Cabinet door wood grain direction shall run vertically and all doors shall be set matched.
        - b) Cabinet drawer front wood grain direction may run vertically or horizontally, with same direction maintained on all cabinet or elevation of cabinets.
      - 2) Casework Construction Type:
        - a) Type B: Face-frame construction where front edge of cabinet body components are overlaid with frame.
      - 3) Door interface style:
        - a) Type B Construction: Flush Overlay.
    - b. Solid Stock:
      - 1) Exposed: Plain sawn Red Oak.
      - 2) Semi-exposed And Concealed: Species as acceptable for AWS 'Custom Grade'.
    - c. Panel Product:

- 1) Glues (adhesives) used in manufacture and fabrication of panel products shall be Type I or II.
  - 2) Moisture content shall be same as specified for lumber.
  - 3) Cores:
    - a) Cabinet Doors: Medium density fiberboard (MDF) with minimum density of **48 lbs per cu ft** (769 kg per cu meter).
    - b) All Other: Industrial grade particle board with minimum density of **45 lbs per cu ft** (721 kg per cu meter).
  - 4) Facings:
    - a) Hardwood veneer facings shall be plain sliced Red Oak AWS Grade A, or equal by HPVA, WDMA, or APA.
    - b) All other facings shall be Melamine or Kortron.
  - 5) Edgings:
    - edges.
    - a) Cabinet Doors And Drawer Fronts Higher Than **8 Inches** (200 mm):
      - (1) **3/4 inch by 1/8 to 1/4 inch** (19 mm by 3 to 6 mm) edge-banding of wood species matching hardwood face veneer.
    - b) Shelves And Exposed Panel Product Edges:
      - (1) Hot-glued, 3 mm thick, PVC edge-banding. Wood-grain, except color matching Melamine or Kortron surface at shelf edges.
    - c) Semi-Exposed Panel Product Edges:
      - (1) Hot-glued, 3 mm thick, wood grained PVC edge-banding.
  - d. Casework Doors:
    - 1) Face Veneer:
      - a) Design Criteria:
        - (1) Plain sliced Red Oak meeting requirements of AWS Grade A, **1/50 inch** (0.5 mm) thick minimum immediately before finishing.
        - (2) Face veneers shall be running book matched.
    - 2) Doors under **1-3/8 inch** (35 mm) thick: Panel Product.
    - 3) Doors **1-3/8 inch** (35 mm) or more thick:
      - a) Door Grade: AWS Custom hollow-core.
      - b) Stiles:
        - (1) **1-1/4 inches** (32 mm) deep minimum before fitting.
        - (2) **1/4 inch** (6 mm) minimum of stile face to be hardwood matching face veneer material.
      - c) Rails:
        - (1) **1-1/8 inches** (28.5 mm).
        - (2) Mill option material.
- B. Fabrication:
1. Cabinet Body:
    - a. Use AWS Flush Overlay construction on cabinet bodies.
    - b. If used, install Rail System adjustable shelf supports recessed.
  2. Drawers:
    - a. Fabricate with separate, screw-attached drawer front.
    - b. Joints shall be dowel and pressure-glued, or lock shoulder, glued, and pin nailed.
    - c. Set bottoms into sides, backs, and subfront with **1/4 inch** (6 mm) deep groove with **3/8 inch** (9.5 mm) minimum standing shoulder.
    - d. Every drawer shall have specified drawer guides and pull installed. Install drawer guides with 'Euroscrews', and pulls with through-bolts passing through both front and sub-front.
  3. Cabinet Doors:
    - a. Full height, panel product cabinet doors may be fabricated in two pieces and joined on back with metal backplate. Backplate shall match interior door surface color.
    - b. Hinges: Install hinges using plastic insertion dowels for hinges and 'Euroscrews' for baseplates.
    - c. Every cabinet door shall have specified pull installed.
  4. Cabinet Component Thickness And Material:
    - a. Use hardwood veneer facing on panel product, except on following surfaces:
      - 1) Where Kortron or Melamine shall be used.

- 2) Cabinet exposed interiors surfaces (not including cabinet doors) and shelving faces behind cabinet doors in all rooms.
  - 3) Cabinet semi-exposed surfaces.
  - 4) Cabinet concealed surfaces.
  - 5) Cabinet exposed exteriors permanently concealed (not exposed to view).
  - 6) Drawer sides, backs, bottoms, and subfronts.
  - b. Ends, Divisions, Bottoms, Tops: **3/4 inch** (19 mm) thick panel product.
  - c. Rails: **3/4 inch** (19 mm) thick panel product.
  - d. Shelves:
    - 1) Panel product.
    - 2) Thickness:
      - a) **30 Inch** (750 mm) Span And Less: **3/4 inch** (19 mm) thick.
      - b) Spans Over **30 Inches** (750 mm) To **42 Inches** (1 050 mm): **One inch** (25 mm) thick.
      - c) Spans Over **42 inches** (1 050 mm): **One inch** (25 mm) thick and provide Hafele or equal center supports.
  - e. Backs: **1/4 inch** (6 mm) thick panel product.
  - f. Doors: **3/4 inch** (19 mm) thick panel product.
  - g. Drawer Sides, Backs, And Subfronts: **1/2 inch** (12.7 mm) thick minimum panel product.
  - h. Drawer Bottoms: **1/4 inch** (6 mm) thick panel product.
  - i. Separate Drawer Front:
    - 1) **8 Inches** (200 mm) High And Less: **3/4 inch** (19 mm) thick solid hardwood.
    - 2) More Than **8 Inches** (200 mm) High: **3/4 inch** (19 mm) panel product.
  - j. Hardboard Dividers: **1/4 inch** (6 mm) thick panel product.
  - k. Hardboard Shelves: **1/8 inch** (3 mm) thick hardboard, smooth both sides.
  5. Cabinet and Drawer Locks:
    - a. Install only on cabinets and drawers as shown on Contract Documents.
  6. Install plastic grommets in cable access holes in countertops located as located on Contract Documents.
  7. Do not install pulls on Journal Cabinet Doors.
- C. Finishes:
1. Factory Finishing:
    - a. Design Criteria:
      - 1) Applied before leaving factory.
      - 2) Factory-finish to match Owner selected sample as specified in Section 09 9324.
    - b. Match existing Project Color Scheme:
      - 1) Control Sample provided by Owner:
        - a) Control Sample will be existing wood item from Project.

## 2.2 ASSESSORIES

### A. Manufacturers:

1. Manufacturer Contact List for Assessories:
  - a. Accuride, Santa Fe Springs, CA [www.accuride.com](http://www.accuride.com).
  - b. Anybumper, Amite, LA [www.Anybumper.com](http://www.Anybumper.com).
  - c. Blum Inc, Stanley, NC [www.blum.com](http://www.blum.com).
  - d. CompX National, Mauldin, SC [www.nclnet.com](http://www.nclnet.com).
  - e. Glynn Johnson, Chicago, IL [www.glynn-johnson.com](http://www.glynn-johnson.com).
  - f. Grass America Inc, Kernerville, NC [www.grassusa.com](http://www.grassusa.com).
  - g. Hafele America Co., Archdale, NC [hafele.com](http://hafele.com).
  - h. Hager Companies, St Louis, MO [www.hagerhinge.com](http://www.hagerhinge.com) or Hager Hinge (Canada) Ltd, Kitchener, ON (519) 893-7580.
  - i. Ives, Indianapolis, IN [www.iveshardware.com](http://www.iveshardware.com).
  - j. Knappe & Vogt, Grand Rapids, MI [www.knappeandvogt.com](http://www.knappeandvogt.com) or Knappe & Vogt Canada, Mississauga, ON (905) 676-8972.
  - k. Mark Eaton LLC, American Fork, UT [www.markeatonllc.com](http://www.markeatonllc.com).
    - 1) Contact Information: Mark Eaton (801) 756-5639.
  - l. Mckinney, Scranton, PA [www.mckinneyhinge.com](http://www.mckinneyhinge.com) or Markham, ON (905) 940-2040.

- m. Olympus Lock Co, Seattle, WA [www.olympus-lock.com](http://www.olympus-lock.com).
  - n. Salice America Inc, Charlotte, NC [www.saliceamerica.com](http://www.saliceamerica.com).
  - o. Stanley, New Britain, CT [www.stanleyhardware.com](http://www.stanleyhardware.com).
  - p. Techna-Base Inc, Pleasant Grove, UT (801) 361-2289 or [dlundahl@earthlink.net](mailto:dlundahl@earthlink.net).
    - 1) Contact Information: Dewey Lundahl (801) 785-6477 or (801) 361-2289 (cell).
  - q. Trimco, Los Angeles, CA [www.trimcobbw.com](http://www.trimcobbw.com).
2. Cabinet And Drawer Locks:
- a. General:
    - 1) Pin tumbler type suitable for location. Key individually by cabinet grouping shown on signage schedule. Stamp keys with Room number and cabinet designation as shown on Contract Drawings.
    - 2) Key cabinets and drawers within an Office alike.
  - b. Design Criteria:
    - 1) Barrel diameter: **7/8 inch** (22 mm).
    - 2) Cylinder length: **7/8 inch** (22 mm).
    - 3) Key removable in locked or unlocked position.
    - 4) Meet ANSI/BHMA A156.11 Grade 2 requirements.
  - c. Type Two Acceptable Manufacturers:
    - 1) Advantage Plus cam lock by CompX National Lock.
    - 2) 100DR/200DW N Series door and drawer lock by Olympus Lock Inc.
    - 3) Equal as approved by Architect before installation. See Section 01 6200.
3. Cabinet Adjustable Shelf Supports:
- a. Either of following systems are acceptable, at Fabricator's option:
    - 1) 32mm System: Casework Fabricator's standard.
    - 2) Traditional System:
      - a) Class Two Quality Standards: 255 and 256 by Knappe & Vogt.
4. Cabinet Hinges:
- a. Description:
    - 1) Cup Hinge (Concealed Hinge or European style).
    - 2) Steel, nickel-plated, full overlay, self closing with dowel, Mod 17.
  - b. Design Criteria:
    - 1) Doors **48 inches** (1 200 mm) High or Less:
      - a) Two (2) hinges.
      - b) Hinge Opening: 165 degree minimum.
    - 2) Doors over **48 inches** (1 200 mm) High:
      - a) Four (4) hinges.
      - b) Hinge Opening: 165 degree minimum.
  - c. Basis of Design: Model 329.03.558 with Model 329.73.510 mounting plate by Hafele.
    - 1) Category Four Approved Manufacturers. See Section 01 6200 for definitions of Categories:
      - a) Blum.
      - b) Grass America.
      - c) Hafele.
      - d) Knappe & Vogt.
      - e) Salice.
5. Cabinet Inactive Leaf Catches:
- a. Class Two Quality Standards:
    - 1) Full-Height Doors: Two Surface Bolts No 043 - **2 inch** (50 mm) by Ives.
    - 2) All Other Doors: Elbow Catch No 2 by Ives.
6. Drawer Guides:
- a. Keyboard / Pencil Drawers:
    - 1) Steel ball bearings, **45 lb** (20 kg) load rating minimum.
    - 2) 3/4 extension, top mounting.
    - 3) Category Four Approved Products. See Section 01 6200 for definitions of Categories:
      - a) Series 2006 by Accuride.
      - b) Article 422.14.345 by Hafele.
      - c) Series KV8200 by Knappe & Vogt.
  - b. Standard Drawers:
    - 1) Full extension, steel ball bearings, **100 lb** (45 kg) load rating.
    - 2) Category Four Approved Products. See Section 01 6200 for definitions of Categories:

- a) Series 3832-Classic by Accuride.
- b) Article 422.04.552 by Haffele.
- c) Series KV8400 by Knape & Vogt.
- c. Lateral Files / Serving Area Drawers:
  - 1) Files/Drawers 30 inches (762 mm) wide and under:
    - a) Full extension, steel ball bearings, 150 lb (68 kg) load rating.
    - b) Category Four Approved Products. See Section 01 6200 for definitions of Categories:
      - (1) Series 4034 by Accuride.
      - (2) Article 422.17.550 by Haffele.
      - (3) Series KV8505 by Knape & Vogt.
  - 2) Files/Drawers over 30 inches (762 mm) wide:
    - a) Duty, full extension, steel ball bearings, 200 lbs (90 kg) load rating.
    - b) Category Four Approved Products. See Section 01 6200 for definitions of Categories:
      - (1) Series 3640-A by Accuride.
      - (2) Article 422.07.554 by Haffele.
      - (3) Series KV8800 by Knape & Vogt.
- B. Cabinet Door Bumpers:
  - 1. Description:
    - a. Polyurethane bumper to protect gypsum board from cabinet handle damage where cabinet handles hit gypsum wallboard surface.
  - 2. Design Criteria:
    - a. Clear.
    - b. Peel adhesion.
    - c. Size: 3/8 inch (9.5 mm diameter x 1/8 inch (3 mm) thick.
  - 3. Type Two Acceptable Products:
    - a. WS-34 Cylindrical Soft Durometer Cabinet Bumper by Anybumper.
    - b. Equal as approved by Architect before installation. See Section 01 6200.

## 2.3 SOURCE QUALITY CONTROL

- A. Inspections:
  - 1. Clear Finished Hardwood:
    - a. Color matches Owner provided sample specified in Section 09 9324.

## PART 3 - EXECUTION: Not Used

**END OF SECTION**