

PROJECT: Public and Behavioral Health Exterior Siding Replacement
Issue for Bid – April 2023

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SECTION 01 10 00 – SUMMARY OF WORK

PART 1 GENERAL

1.1 PROJECT

A. Abbreviated Written Summary: Briefly and without force and effect upon the Contract Documents, the Work of the Contract can be summarized as follows:

1. The County of Glenn intends to award a construction contract which includes the furnishing of all labor, materials, equipment, transportation and services necessary for the Work. The work will include the following:

i. Removal and disposal of all panel shingle siding and moisture barrier. Window trim, rain gutters, metal cap, conduit and other materials shall be removed as needed and reinstalled to their original state. Generator electrical box and Photovoltaic disconnect box are to be disconnected by County and removed/re-installed, with trim, by Contractor. Installation of plywood backing, moisture barrier, and primed fiber cement board horizontal lap siding and trim shall occur where shingle siding was removed, all primed fiber cement board horizontal lap siding and trim shall be painted after installation. Fiber cement board trim is to be installed at inside and outside corners and around all protrusions to the building that currently have no trim.

ii. The bid alternate is for removal and disposal of all panel shingle siding and moisture barrier. Window trim, rain gutters, metal cap, conduit and other materials shall be removed as needed and reinstalled to their original state. Generator electrical box and Photovoltaic disconnect box are to be disconnected by County and removed/re-installed, with trim, by Contractor. Installation of plywood backing, moisture barrier, and primed composite horizontal lap siding and trim shall occur where shingle siding was removed, all primed composite horizontal lap siding and trim shall be painted after installation. composite trim is to be installed at inside and outside corners and around all protrusions to the building that currently have no trim.

2. The Project is located in 240/242 N. Villa Ave. Willows, California

1.2 COUNTY OCCUPANCY

A. County intends to occupy the building during construction. The Project shall be complete within Thirty (30) Calendar Days from the Notice to Proceed.

B. The Contractor shall schedule the Work to accommodate County occupancy.

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1.3 CONTRACTOR USE OF SITE

- A. Construction Operations: Limited to boundary of Work and private property (if private property the Contractor shall obtain written permission from the private property owner to use such site and provide the County with a copy of the agreement with the private property owner), exclusive of designated wetland area. Staging area is shown in attachment A.
- B. Provide access to and from site as required by law and by County:
 - 1. Emergency Building Exits During Construction: Keep all exits required by the 2022 California Building Code open during construction period; provide temporary exit signs if exit routes are temporarily altered.
 - 2. Do not obstruct roadways, sidewalks, or other public ways without permit from County.
- C. Time Restrictions:
 - 1. Limit conduct of construction noise, malodorous, and dusty exterior Work to the hours of 7:00 a.m. to 7:00 p.m. daily, unless otherwise authorized by Owner.
 - 2. Limit conduct of loading and unloading activities to the hours of 7:00 a.m. to 10:00 p.m., Monday through Friday, unless otherwise authorized by Owner.
 - 3. See County of Glenn Municipal Code, Noise Control for additional restrictions that shall be followed.
- D. Utility Outages and Shutdown:
 - 1. Do not disrupt or shut down life safety systems, including but not limited to fire sprinklers and fire alarm system, without 14 calendar day notice and approval by County and authorities having jurisdiction.
 - 2. Prevent accidental disruption of utility services to other facilities.
- E. Nonsmoking Building: Smoking is not permitted on the Project's site.
- F. Controlled Substances: Use of tobacco products and other controlled substances on the Project's site is not permitted.

1.4 SPECIFICATION AND DRAWING CONVENTIONS

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
 - 1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
 - 2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
- B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.
- C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Technical Specifications. One or more of the following are:
 - 1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
 - 2. Abbreviations: Materials and products are identified by abbreviations published as part of the U.S. National CAD Standard and scheduled on Drawings.

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3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Specification.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 23 00 - ALTERNATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

- A. Submission procedures.
- B. Documentation of changes to Contract Price and Contract Time.

1.3 RELATED SECTIONS

- A. Division 0 Sections
- B. Section 01 25 13 - Product Substitution Procedures.
- C. Section 01 33 00 – Submittal Procedures: Work schedule affected by Alternates.

1.4 DESCRIPTION

- A. The items of work indicated below propose modifications to, substitutions for, additions to and/or deletions from the various parts of the Work specified in other Sections of the Specifications. The acceptance or rejection of any of the alternates is strictly at the option of the County subject to County's acceptance of Contractor's stated prices contained in this Proposal.

1.5 REQUIREMENTS

- A. Submit Alternates with full description of the proposed Alternate and the effect on adjacent or related components.
- B. Alternates quoted on Bid Forms will be reviewed and accepted or rejected at County's option. Accepted Alternates will be identified in the County-Contractor Agreement.
- C. Coordinate related work and modify surrounding work to integrate the Work of each Alternate.
- D. Where an item is omitted, or scope of Work is decreased, all Work pertaining to the item whether specifically stated or not, shall be omitted and where an item is added or modified or where scope of Work is increased, all Work pertaining to that required

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to render same ready for use on the Project in accordance with the intention of the Drawings and Specifications shall be included in an agreed upon price amount.

1.6 SELECTION AND AWARD OF ALTERNATES

- A. Indicate variation of Bid Price for Alternates described below and list in Bid Form Document or any supplement to it, which requests a 'difference' in Bid Price by adding to or deducting from the base bid price.
- B. Bid will be evaluated on both the base bid price and alternate bid price.

1.7 SCHEDULE OF ALTERNATES

- A. Alternates:

The bid alternate is for removal and disposal of all panel shingle siding and moisture barrier. Window trim, rain gutters, metal cap, conduit and other materials shall be removed as needed and reinstalled to their original state. Generator electrical box and Photovoltaic disconnect box are to be disconnected by County and removed/re-installed, with trim, by Contractor. Installation of plywood backing, moisture barrier, and primed composite horizontal lap siding and trim shall occur where shingle siding was removed, all primed composite horizontal lap siding and trim shall be painted after installation. composite trim is to be installed at inside and outside corners and around all protrusions to the building that currently have no trim.

PART 2 - ADDITIVE ALTERNATE 1: PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION 01 23 00

SECTION 01 25 00 - SUBSTITUTION PROCEDURES

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specifications Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for substitutions.

1.3 RELATED SECTIONS

- A. Section 01 60 00 - Product Requirements, for submittal procedures and Contract document revisions initiated by Contractor.

1.4 DEFINITIONS

- A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.
 1. Substitutions for Convenience: Changes proposed by Contractor or County that are not required in order to meet other Project requirements but may offer advantage to Contractor or County.
 - a. Substitutions for Convenience shall include any comparable ("or equivalent") product, including proposed changes to named products, proposed changes to listed manufacturers and proposed changes to basis-of-design products, unless a Substitution for Cause regarding the comparable products are proposed in which case the Contractor shall provide information of the cause.
 2. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.

1.5 SUBMITTALS

- A. Substitution Requests: Submit complete request by PDF or three hard copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 1. Substitution Request Form: Appropriate form as approved by Owner.
 2. Documentation: Submit the information indicated below to provide the Owner with the minimum information necessary to fairly review and evaluate the proposed substitutions, proposed comparable products and proposed changes to specified products. Show compliance with requirements and the following, as applicable:
 - a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.
 - b. Coordination information which shall be necessary to accommodate proposed substitution, including a list of changes or modifications needed to other parts of the Work and to construction performed by County and separate Contractors.
 - c. Detailed side by side comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable

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- specification section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
- d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
 - e. Samples and mock-ups, where applicable or requested.
 - f. Certificates and qualification data, where applicable or requested.
 - g. List of similar installations for completed projects with project's names and addresses and names and addresses of Architects and Owners.
 - h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
 - i. Research reports evidencing compliance with California Building Code in effect for Project, from ICC-ES or other recognized code organizations acceptable to authorities having jurisdiction.
 - j. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
 - k. Cost information, including a proposal of change, if any, in the Contract Sum.
 - l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
 - m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
3. Owner's Action: If necessary, Owner will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. Owner will notify Contractor of acceptance or rejection of proposed substitution within fourteen calendar days of receipt of request, or within fourteen calendar days of receipt of additional information or documentation, whichever is later.
 - a. Forms of Acceptance: Change Order or Construction Change Directive. Owner's Supplemental Instructions may be used for minor changes in the Work.
 - b. Use product specified if Owner does not issue a decision on use of a proposed substitution within time allocated.

1.6 QUALITY ASSURANCE

- A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage qualified testing agency to perform compatibility tests recommended by manufacturers.

1.7 PROCEDURES

- A. Coordination: Modify or adjust affected Work as necessary to integrate Work of the approved substitutions.

PART 2 – PRODUCTS

2.1 SUBSTITUTIONS

- A. Substitutions for Convenience: Per General Conditions, Section C - Control of Work; and the following:
1. Conditions: If the following conditions are not satisfied, Owner will return requests as Rejected, noting noncompliance with these requirements:
 - a. Requested substitution offers County a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities County must assume. County's additional responsibilities may include compensation to others for redesign and evaluation services, increased cost of other construction by County, and similar considerations.
 - b. Requested substitution does not require extensive revisions to the Contract Documents.
 - c. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 - d. Requested substitution provides sustainable design characteristics that specified product provided.
 - e. Substitution request is fully documented and properly submitted.
 - f. Requested substitution shall not adversely affect Contractor's construction schedule.
 - g. Requested substitution has received necessary approvals of authorities having jurisdiction.
 - h. Requested substitution is compatible with other portions of the Work.
 - i. Requested substitution has been coordinated with other portions of the Work.
 - j. Requested substitution provides specified warranty.
 - k. If requested substitution involves more than one Contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.
- B. Substitutions for Cause: Submit requests for substitution immediately upon discovery of need for change, but not later than 14 days prior to time required for preparation and review of related submittals.
1. Conditions: Owner will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Owner will return requests without action, except to record noncompliance with these requirements:
 - a. Describe the non-convenience cause that is triggering the request for the change.
 - b. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 - c. Requested substitution provides sustainable design characteristics that specified product provided.
 - d. Substitution request is fully documented and properly submitted.
 - e. Requested substitution will not adversely affect Contractor's construction schedule.

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- f. Requested substitution has received necessary approvals of authorities having jurisdiction.
- g. Requested substitution is compatible with other portions of the Work.
- h. Requested substitution has been coordinated with other portions of the Work.
- i. Requested substitution provides specified warranty.
- j. If requested substitution involves more than one Contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 26 00 - CONTRACT MODIFICATION PROCEDURES

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for handling and processing Contract modifications.
- B. Related Requirements:
 - 1. Division 01 25 00 Section "Substitution Procedures" for administrative procedures for handling requests for substitutions made after Contract award.

1.3 MINOR CHANGES IN THE WORK

- A. Owner may issue supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on the following form:
 - 1. AIA Document G710, "Supplemental Instructions" or similar form acceptable to the Owner.

1.4 PROPOSAL REQUESTS

- A. County-Initiated Proposal Requests: Owner will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
 - 1. Proposal Requests issued by Owner are not instructions either to stop Work in progress or to execute the proposed change.
 - 2. Within the time specified in Proposal Request or twenty calendar days, when not otherwise specified, after receipt of Proposal Request, submit a quote estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
 - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - c. Include costs of labor and supervision directly attributable to the change.
 - d. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
 - e. Quotation Form: Use form acceptable to Owner.
- B. Contractor-Initiated Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate such modification by submitting a request for a change to Owner.

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1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
4. Include costs of labor and supervision directly attributable to the change.
5. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
6. Comply with requirements in Division 01 25 00 Section "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.
7. Proposal Request Form: Use form acceptable to Owner.

1.5 CHANGE ORDER PROCEDURES

- A. On County's approval of a Proposal Request, Owner will issue a Change Order for signatures of County and Contractor on AIA Document G701, or similar form.

1.6 CONSTRUCTION CHANGE DIRECTIVE

- A. Construction Change Directive: Owner may issue a Construction Change Directive on AIA Document G714 or similar form. Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
 1. Construction Change Directive contains a complete description of change in the Work. It also designates the method to be followed to determine change(s) in the Contract Sum or the Contract Time.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 29 00 - PAYMENT PROCEDURES

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specifications Sections, apply to this Section.

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.
- B. Related Requirements:
 - 1. Division 01 26 00 Section "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.
 - 2. Division 01 30 00 Section "Submittal Procedures" for administrative requirements governing the preparation and submittal of the submittal schedule

1.3 DEFINITIONS

- A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

1.4 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule.
 - 1. Correlate line items in the schedule of values with other required administrative forms and schedules, including the following:
 - a. Application for Payment forms with continuation sheets.
 - b. Submittal schedule.
 - c. Items required to be indicated as separate activities in Contractor's construction schedule.
 - 2. Submit the schedule of values to Owner at earliest possible date but no later than ten days before the date scheduled for submittal of initial Application for Payment.
 - 3. Sub-schedules for Separate Design Contracts: Where the County has retained design professionals under separate Contracts who will each provide certification of payment requests, provide sub-schedules showing values coordinated with the scope of each design services Contract as described in Division 01 Section 01 10 00 "Summary."
- B. Format and Content: Use the Specification's table of contents as a guide to establish line items for the schedule of values. Provide at least one line item for each Specification Section. Provide additional detail as required or requested.
 - 1. Identification: Include the following Project identification on the schedule of values:
 - a. Project name and location.
 - b. Name of Owner.
 - c. County's Project number.
 - d. Contractor's name and address.
 - e. Date of submittal.
 - 2. Arrange schedule of values consistent with format of AIA Document G703.

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3. Arrange the schedule of values in tabular form with separate columns to indicate the following for each item listed:
 - a. Item number.
 - b. Description of the Work.
 - c. Dollar value.
 - 1) Labor.
 - 2) Materials.
 - 3) Equipment.
4. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Specification's table of contents. Provide at least two line items for principal subcontract amounts in excess of five percent of Contract Sum, as follows:
 - a. Labor
 - b. Equipment and material.
5. Include separate line items under Division 01 heading for prime Contract and principal subcontracts for Project's closeout requirements in an amount of at least five percent of the Contract Sum and Sub-contract amounts.
6. Round all amounts to nearest whole dollar; total shall equal the Contract Sum.
7. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
 - a. Differentiate between items stored on-site and items stored off-site.
8. Provide separate line items in the schedule of values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
9. Allowances: Provide a separate line item in the schedule of values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities.
10. Purchase Contracts: Provide a separate line item in the schedule of values for each purchase Contract. Show line-item value of purchase Contract. Indicate County payments or deposits, if any, and balance to be paid by Contractor.
11. Each item in the schedule of values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
 - a. Temporary facilities and other major cost items that are not direct cost of actual Work-in-place may be shown either as separate line items in the schedule of values or distributed as general overhead expense, at Contractor's option.
12. Schedule Updating: Update and resubmit the schedule of values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.5 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment shall be consistent with previous applications and payments as certified by Owner and paid for by County.

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1. Initial Application for Payment, Application for Payment at time of Project Completion, and final Application for Payment involve additional requirements.
- B. Payment Application Times: The date for each progress payment is indicated in the Agreement between County and Contractor. The period of construction Work covered by each Application for Payment is the period indicated in the Agreement.
- C. Payment Application Times: Progress payments shall be submitted to Owner by the twenty-fifth day of the month. The period covered by each Application for Payment is one month, ending on the last day of the month.
 1. Submit draft copy of Application for Payment five days prior to due date for review by Owner.
- D. Application for Payment Forms: Use forms acceptable to Owner and County for Applications for Payment. Submit forms for approval with initial submittal of schedule of values.
- E. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Owner will return incomplete applications without action.
 1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
 2. Include amounts for Work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for Work completed at time of Application for Payment.
 3. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
 4. Indicate separate amounts for Work being carried out under County-requested Project acceleration.
- F. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site.
 1. Provide certificate of insurance, evidence of transfer of title to County, and consent of surety to payment, for stored materials.
 2. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials.
 3. Provide summary documentation for stored materials indicating the following:
 - a. Value of materials previously stored and remaining stored as of date of previous Applications for Payment.
 - b. Value of previously stored materials put in place after date of previous Application for Payment and on or before date of current Application for Payment.
 - c. Value of materials stored since date of previous Application for Payment and remaining stored as of date of current Application for Payment.
- G. Transmittal: Submit three signed and notarized original copies of each Application for Payment to Owner by a method ensuring receipt within 24 hours. County's copy shall include waivers of lien and similar attachments.
 1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.

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- H. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from entities lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.
 - 1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
 - 2. When an application shows completion of an item, submit conditional final or full waivers.
 - 3. County reserves the right to designate which entities involved in the Work must submit waivers.
 - 4. Waiver Forms: Submit waivers of lien on forms complying with California law, executed in a manner acceptable to County.
- I. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's liens from Subcontractors, Sub-subcontractors, and suppliers for construction period covered by the previous application.
 - 1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
 - 2. When an application shows completion of an item, submit conditional final or full waivers.
 - 3. County reserves the right to designate which entities involved in the Work must submit waivers.
 - 4. Submit final Application for Payment with or preceded by conditional final waivers from every entity involved with performance of the Work covered by the application who could be lawfully entitled to a lien.
 - 5. Waiver Forms: Submit waivers of lien on forms, executed in a manner acceptable to County.
- J. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
 - 1. List of Subcontractors.
 - 2. Schedule of values.
 - 3. Contractor's construction schedule (preliminary if not final).
 - 4. Submittal schedule (preliminary if not final).
 - 5. List of Contractor's principal consultants.
 - 6. Copies of building permits.
 - 7. Initial progress report.
 - 8. Report of preconstruction conference.
- K. Application for Payment at Project's Completion: Submit an Application for Payment showing 100 percent completion for portion of the Work claimed as complete.
 - 1. Include documentation supporting claim that the Work is complete and a statement showing an accounting of changes to the Contract Sum.
 - 2. This application shall reflect any Certificates of Partial Project Completion issued previously for County occupancy of designated portions of the Work.
 - 3. Submit all outstanding Labor Compliance documents and forms.
- L. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
 - 1. Evidence of completion of Project closeout requirements.

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2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
3. Updated final statement, accounting for final changes to the Contract Sum.
4. Final, unconditional lien releases (in exchange for final payment).
5. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
6. AIA Document G706A, "Contractor's Affidavit of Release of Liens."
7. AIA Document G707, "Consent of Surety to Final Payment."
8. Evidence that claims have been settled.
9. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Project Completion or when County took possession of and assumed responsibility for corresponding elements of the Work.
10. Final liquidated damages settlement statement.
11. Final Labor Compliance documents.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 30 00 - SUBMITTAL PROCEDURES

PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Administrative and procedural requirements for submittals required for the Work, including but not limited to; Shop Drawings, Product Data, Samples, material lists, quality control items, and Labor Compliance items as required by the Contract Documents.
- B. Wherever possible, throughout the Contract Documents, the minimum acceptable quality of Workmanship and products has been defined by the name and catalog number of a manufacturer and by reference of recognized industry standards.
- C. To ensure that specified products are furnished and installed in accordance with the design intent, and procedures have been established for submittal of design data and for its review by Owner and/or others.

1.2 RELATED SECTIONS

- A. Division 00 - General Conditions.
- B. Section 01 31 00: Project Management and Coordination.
- C. Section 01 50 00: Temporary Facilities and Controls.
- D. Section 01 60 00: Product Requirements

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 – EXECUTION

3.1 ELECTRONIC DOCUMENT SUBMITTAL SERVICE

- A. All documents transmitted for purposes of administration of the Contract are to be in electronic (PDF) format and transmitted via an Internet-based submittal service that receives, logs and stores documents, provides electronic stamping and signatures, and notifies addressees via email.
- B. Besides submittals for review, information, and closeout, this procedure applies to requests for information (RFIs), progress documentation, Contract modification documents (e.g. supplementary instructions, change proposals, change orders), applications for payment, field reports and meeting minutes, and any other document any participant wishes to make part of the Project record.
- C. It is Contractor's responsibility to submit documents in PDF format.
- D. Paper document transmittals will not be reviewed (except Deferred Approvals and Close-Out Maintenance & Operations Manuals); emailed PDF documents will not be reviewed.
- E. All other specified submittal and document transmission procedures apply, except that electronic document requirements to not apply to samples or color selection charts.

3.2 GENERAL REQUIREMENT AND PROCEDURES

- A. Contractor shall package each submittal appropriately for transmittal and handling and will then send Construction Manager and County representative submittal for review per

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the Project plans and specifications. Submittals will not be accepted from sources other than from Contractor.

- B. Contractor shall clearly identify any deviations from the Contract Documents on each submittal. Any deviation not so noted, even if stamped reviewed, is not acceptable.
- C. After Owner review, Owner shall transmit submittals to Contractor. Contractor shall further distribute to Subcontractor's and others as required. Work shall not commence, unless otherwise approved by Owner until approved submittals are transmitted to Contractor.
- D. Contractor's Review and Approval: Every submittal upon which proper execution of the Work is dependent shall bear the Contractor's review and approval stamp, dated and signed by Contractor certifying that Contractor (a) has reviewed, checked, and approved the submittal and has coordinated the submittal contents with requirements of Work and Contract Documents including related Work, (b) Contractor coordinated with all other shop drawings received to date and this duty of coordination has not been delegated to Subcontractors, material suppliers, the Owner, (c) determined and verified quantities, field measurements, construction criteria, materials, equipment, catalog numbers and identifications, and similar data, or will do so, and (d) states the Work illustrated or described in the submittal is recommended by Contractor and the Contractor's warranty will fully apply thereto.
- E. Contractor shall coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities requiring sequential activity.
- F. Timing of Submittals:
 - 1. In accordance with General Conditions, Contractor shall submit to the Owner, those Shop Drawings, Product Data, diagrams, materials lists, Samples and other submittals required by the Contract Documents.
 - 2. The Contractor shall submit within ten (10) calendar days after the execution of the contract, an itemized listing of required submittals with a scheduled date for each submittal. The schedule of submittals shall provide adequate time between submittals in order to allow for proper review without negative impact to the Construction Schedule.
 - 3. Schedule of submittals shall be related to Work progress, and shall be so organized as to allow sufficient time for transmitting, reviewing, corrections, resubmission, and re-reviewing.
 - 4. Contractor shall coordinate submittal of related items and Owner reserves the right to withhold action on a submittal requiring coordination with other submittals until all related submittals are received by Owner.
 - 5. Contractor shall revise, update and submit submittal schedule to Owner on the first of each month, or as required by the County.
 - 6. Contractor shall allow in the Construction Schedule, at least fourteen (14) calendar days for Owner review following Owner receipt of submittal. For mechanical, plumbing, electrical, structural, and other submittals requiring joint review with Owner's Consultants, and/or others, Contractor shall allow a minimum of eighteen (18) calendar days following Owner receipt of submittal. Submittals will be reviewed with reasonable promptness, but Owner reserves the right of additional time where required based on, but not limited to, submittal size, and complexity.

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7. No adjustments to the Contract Time and/or Milestones shall be authorized because of a failure to transmit submittals to Owner sufficiently in advance of the Work to permit review and processing.
 8. In case of product substitution, Shop Drawing preparation shall not commence until such time Owner reviews said submittal relative to the General Conditions.
- G. Resubmit submittals in a timely manner. Resubmit as specified for initial submittal but identify as such. Review times for re-submitted items shall be as per the time frames for initial submittal review.
- H. Owner, or authorized agent, will stamp each submittal with a uniform, action stamp marking the stamp appropriately to indicate the action taken, as follows:
1. Final Unrestricted Release: When Owner, or authorized agent, marks a submittal “Reviewed” the Work covered by the submittal may proceed provided it complies with requirements of the Contract Documents. Final payment depends on that compliance.
 2. Final-But-Restricted Release: When Owner, or authorized agent, marks a submittal “Make Corrections Noted” (Reviewed as Noted) the Work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents. Final payment depends on that compliance.
 3. Returned for Re-submittal: When Owner, or authorized agent, marks a submittal “Revise and Resubmit, Submit Specified Item, Rejected” do not proceed with Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal according to the notations; resubmit without delay. Repeat as necessary to obtain different action mark. In case of multiple submittals covering same items of Work, Contractor is responsible for any time delays, schedule disruptions, out of sequence Work, or additional costs due to multiple submissions of the same submittal item. Do not use, or allow others to use, submittals marked “Rejected, Revise and Resubmit” at the Project’s site or elsewhere where Work is in progress.
 4. Other Action: Where a submittal is for information or record purposes or special processing or other activity, the Owner, or authorized agent, will return the submittal marked “Action Not Required”.
 5. Not Required Submittal: Where a submittal is submitted for review but is not required to be submitted, the Owner, or authorized agent, will return the submittal identified with legend “No Action Taken”.
- I. Review and Approval of Submittals by the Owner: Submittals will be reviewed but only for conformance with the design concept of the Project and with the information indicated on the Drawings and stated in the Specifications. Approval of a separate item as such will not indicate approval of the assembly in which the item functions. Approval of submittals shall not relieve the Contractor of responsibility for any deviations from requirements of the Contract Documents or any revisions in resubmittals unless Contractor has given written notice of such deviation or revision at the time of submission or resubmission and written approval has been given to the specific deviation or revision, nor shall approval relieve the Contractor of responsibility for error or omissions in the submittals or for the accuracy of dimensions and quantities, the adequacy of connections, and the proper and acceptable fitting, execution, functioning, and completion to the Work.

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- J. All costs for the preparation, correction, delivery, and return of the submittals shall be borne by the Contractor.

3.3 PRODUCT DATA

- A. Collect Product Data into a single submittal for each element of Work or system. Product Data includes printed information, such as manufacturer's installation instructions, catalog cuts, standard color charts, roughing-in diagrams and templates, wiring diagrams, schedules, illustrations, or performance curves.
1. Mark each copy to show or delineate pertinent materials, products, models, applicable choices, or options. Where Product Data includes information on several products that are not required, clearly mark copies to indicate the applicable information. Include the following information:
 - a. Manufacturer's printed recommendations.
 - b. Compliance with trade association standards.
 - c. Compliance with recognized testing agency standards.
 - d. Application of testing agency labels and seals.
 - e. Notation of dimensions verified by field measurement.
 - f. Notation of coordination requirements.
 - g. Notation of dimensions and required clearances.
 - h. Indicate performance characteristics and capacities.
 - i. Indicate wiring diagrams and controls.
 2. Do not submit Product Data until compliance with requirements of the Contract Documents has been confirmed.

3.4 SAMPLES

- A. Submit Samples of sufficient size, quantity, cured and finished and physically identical to the proposed product or material. Samples include partial or full sections or range of manufactured or fabricated components, cuts or containers of materials, color range sets, and swatches denoting color, texture, and/or pattern.
1. Mount or display Samples in the manner to facilitate review of qualities indicated. Include the following:
 - a. Specification section number and reference.
 - b. Generic description of the Sample.
 - c. Sampling source.
 - d. Product name or name of manufacturer.
 - e. Compliance with recognized standards.
 - f. Availability and delivery time.
 2. Submit Samples for review of size, kind, color, pattern, and texture. Submit Samples for a final check of these characteristics with other elements and a comparison of these characteristics between the final submittal and the actual component as delivered and installed.
 - a. Where variations in color, pattern, texture, or other characteristic is inherent in the material or product represented, submit at least three (3) multiple units that show the approximate limits of the variations.
 - b. Refer to other Specification sections for requirements for Samples that illustrate Workmanship, fabrication techniques, assembly details, connections, operation, and similar construction characteristics.

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- c. Refer to other sections for Samples to be returned to Contractor for incorporation into the Work. Such Samples must be undamaged at time of installation. On the transmittal indicate special requests regarding disposition of Sample submittals.
 - d. Samples not incorporated into the Work, or otherwise not designated as County property, remain the property of Contractor and shall be removed from the Project's site prior to Beneficial Occupancy.
3. Color and Pattern: Whenever a choice of color or pattern is available in a specified product, submit accurate color chips and pattern charts to Owner for review and selection by Owner.
4. Required Copies and Distribution: Same as denoted in Section 3.02.
- A. When specified, erect field Samples and mock-ups at the Project site to illustrate products, materials, or Workmanship and to establish standards by which completed Work shall be judged.
- B. Maintain sets of Samples, as returned, at the Project site, for quality comparisons throughout the course of the Work. Sample sets may be used to obtain final acceptance of the Work associated with each set.

3.5 QUALITY CONTROL SUBMITTALS

- A. Submit quality control submittals, including design data, certifications, manufacturer's field reports, and other quality control submittals as required under other sections of the Contract Documents.
- B. When other sections of the Contract Documents require manufacturer's certification of a product, material, and/or installation complies with specified requirements, submit a notarized certification from the manufacturer certifying compliance with specified requirements.
- C. Certification shall be signed by an officer of the manufacturer or other individual authorized to sign documents on behalf of the represented company.
- D. Requirements for submittal of inspection and test reports are specified in other sections of the Contract Documents.

3.6 CERTIFICATES

- A. Submit all certificates in triplicate to Owner, in accordance with requirements of each Specification Section.

END OF SECTION

SECTION 01 31 00 - PROJECT MANAGEMENT AND COORDINATION

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 1. General Project coordination procedures.
 2. Coordination drawings.
 3. Requests for Interpretation (RFIs).
 4. Project meetings.
- B. Related Requirements:
 1. All the Division 01 sections, but especially the following:
 2. Division 01 30 00 Submittal Procedures.
 3. Division 01 70 00 Section "Execution" for procedures for coordinating general installation and field-Engineering services, including establishment of benchmarks and control points.
 4. Division 01 78 00 Section "Closeout Procedures" for coordinating closeout of the Contract.

1.3 DEFINITIONS

- A. RFI: Request For Interpretation (RFI) from Owner or Contractor, seeking information from each other during construction.

1.4 INFORMATIONAL SUBMITTALS

- A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
 1. Name, address, and telephone number of entity performing Subcontract or supplying products.
 2. Number and title of related Specification Section(s) covered by Subcontract.
 3. Drawing number and detail references, as appropriate, covered by Subcontract.

1.5 GENERAL COORDINATION PROCEDURES

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections that depend on each other for proper installation, connection, and operation.
 1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.

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2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.
- B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
 1. Prepare similar memoranda for County and separate Contractors if coordination of their Work is required.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
 1. Preparation of Contractor's construction schedule.
 2. Preparation of the schedule of values.
 3. Installation and removal of temporary facilities and controls.
 4. Delivery and processing of submittals.
 5. Progress meetings.
 6. Pre-installation conferences.
 7. Project closeout activities.
 8. Startup and adjustment of systems.
- D. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.
 1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. Refer to other Sections for disposition of salvaged materials that are designated as County's property.

1.6 COORDINATION DRAWINGS

- A. Coordination Drawings, General: Prepare coordination drawings in accordance with requirements in individual Sections, where installation is not completely shown on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.
 1. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Prepare coordination drawings to comply with accepted industry drafting standards. Do not base coordination drawings on standard printed data. Include the following information, as applicable:
 - a. Applicable Drawings may be used as a basis for preparation of coordination drawings, provide title blocks, stamps and certifications are removed. Prepare additional sections, elevations, and details as needed to describe relationship of various systems and components.
 - 1) Provide review stamp, with signature and date, of each trade proposed to Work within the opening or penetration.
 - b. Coordinate the addition of trade-specific information to the coordination drawings by multiple Contractors in a sequence that best provides for coordination of the information and resolution of conflicts between installed components before submitting for review.

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- 1) Provide review stamp, with signature and date, of each Contractor and trade proposed to Work within the opening or penetration.
 - c. Indicate functional and spatial relationships of components of Engineering, structural, civil, mechanical, and electrical systems.
 - 1) Grid lines and levels, and references to appropriate Contract drawings.
 - 2) Location and dimensions of openings and penetrations.
 - d. Indicate dimensions shown on the Drawings. Specifically note dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Engineer indicating proposed resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.
 - e. Indicate space requirements for routine maintenance and for anticipated replacement of components during the life of the installation.
 - f. Show location and size of access doors required for access to concealed dampers, valves, and other controls.
 - g. Indicate required installation sequences.
- B. Coordination Drawing Organization: Organize coordination drawings as follows:
1. Floor Plans and Reflected Ceiling Plans: Show Engineering and structural elements, and mechanical, plumbing, fire protection, fire alarm, and electrical Work. Show locations of visible ceiling-mounted devices relative to acoustical ceiling grid. Supplement plan drawings with section drawings where required to adequately represent the Work.
 2. Review: Owner will review coordination drawings to confirm that the Work is being coordinated, but not for the details of the coordination, which are the Contractor's responsibility. If the Owner determines that the coordination drawings are not being prepared in sufficient scope or detail, or are otherwise deficient, the Owner will so inform the Contractor, who shall make changes as directed and resubmit.
 3. Coordination Drawing Prints: Prepare coordination drawing prints in accordance with requirements of Division 01 Section "Submittal Procedures."
- C. Coordination Digital Data Files: At Contractor's option, prepare coordination digital data files in accordance with the requirements of Division 01 Section "Submittal Procedures."
1. File Preparation Format: DWG, Version, operating in Microsoft Windows operating system.

1.7 REQUESTS FOR INTERPRETATION (RFIs)

- A. General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.
1. Owner will return RFIs submitted to Owner by other entities controlled by Contractor with no response.
 2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's Work or Work of Subcontractors.
 3. Submit one item for each RFI number.
- B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
1. Project name.
 2. Project number.

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3. Date.
4. Name of Contractor.
5. Name of Owner
6. RFI number, numbered sequentially.
7. RFI subject.
8. Specification Section number and title and related paragraphs, as appropriate.
9. Drawing number and detail references, as appropriate.
10. Field dimensions and conditions, as appropriate.
11. Contractor's suggested resolution. If Contractor's solution(s) impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
12. Contractor's signature.
13. Attachments: Include sketches, descriptions, measurements, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
 - a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.
 - b. Photographs shall not be accepted as a substitute for Engineering sketches. Photographs may be submitted as supplements to properly prepared sketches and coordination drawings.
- C. RFI Forms: Software-generated form acceptable to Owner.
 1. Attachments shall be electronic files in Adobe Acrobat PDF format.
- D. Owner's and Owner's Action: Owner and Construction Manager will review each RFI, determine action required, and respond. Allow ten (10) calendar days for Engineer's response for each RFI.
 1. The types of RFIs listed below will be returned without action. The RFI process is not the proper mechanism to address such topics. Submit requests under appropriate procedures outlined in Contract Document.
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for approval of Contractor's means and methods.
 - d. Requests for coordination information already indicated in the Contract Documents.
 - e. Requests for adjustments in the Contract Time or the Contract Sum.
 - f. Requests for interpretation of Owner's actions on submittals.
 - g. Incomplete RFIs or inaccurately prepared RFIs.
 2. Owner's action may include a request for additional information, in which case Owner's time for response will date from time of receipt of additional information.
 3. Owner's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Division 01 26 00 Section "Contract Modification Procedures."
 - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Owner in writing within eight calendar days of receipt of the RFI response.
 4. Name and address of Owner.
 5. Date Owner's and Owner's response was received.
- E. On receipt of Owner's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Owner within eight calendar days if Contractor disagrees with response.

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1. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.
2. Identification of related Field Order, Work Change Directive, and Proposal Request, as appropriate.

1.8 PROJECT MEETINGS

- A. General: Owner will schedule and conduct basic meetings and conferences at Project site, unless otherwise indicated.
 1. Attendees: Entity responsible for conducting meeting shall inform participants and others involved, and individuals whose presence is required, of date and time of each meeting.
 2. Agenda: Entity responsible for conducting meeting shall prepare and distribute the meeting agenda.
 3. Minutes: Entity responsible for conducting meeting shall record significant discussions and agreements achieved, and distribute the meeting minutes to everyone concerned, within seven calendar days of the meeting.
- B. Preconstruction Conference: Owner shall schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner, but no later than fifteen calendar days after execution of the Agreement.
 1. Conduct the conference to review responsibilities and personnel assignments.
 2. Attendees: Owner and Owner's consultants; Contractor and its superintendent; major Subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 3. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Tentative construction schedules, including overall and rolling schedules
 - b. Designation of key personnel and their duties.
 - c. Lines of communications.
 - d. Procedures for processing field decisions and Change Orders.
 - e. Procedures for RFIs.
 - f. Procedures for testing and inspecting.
 - g. Procedures for processing Applications for Payment.
 - h. Distribution of the Contract Documents.
 - i. Submittal procedures.
 - j. Sustainable design requirements.
 - k. Use of the premises.
 - l. Work restrictions.
 - m. Working hours.
 - n. County's occupancy requirements.
 - o. Responsibility for temporary facilities and controls.
 - p. Procedures for moisture and mold control.
 - q. Procedures for disruptions and shutdowns.
 - r. Construction waste management and recycling.
 - s. Parking availability.
 - t. Office, Work, and storage areas.
 - u. Equipment deliveries and priorities.
 - v. First aid.

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- w. Security.
 - x. Progress cleaning.
 - y. Labor law, including payment and reporting requirements.
 - 4. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.
- C. Project Closeout Conference: The Project closeout conference shall review requirements and responsibilities related to Project closeout.
- 1. If not conducted as part of a normally scheduled job progress meeting, Owner shall schedule and conduct a Project closeout conference, at a time convenient to Owner and Contractor, but no later than thirty calendar days prior to the scheduled date of Project Completion.
 - 2. Attendees: Authorized representatives of Owner, Contractor and its superintendent; major Subcontractors; suppliers; and other concerned parties shall attend the meeting. Participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
 - 3. Agenda: Discuss items of significance that could affect or delay Project closeout, including the following:
 - a. Preparation of record documents.
 - b. Procedures required prior to inspection for Project Completion and for final inspection for acceptance.
 - c. Submittal of written warranties.
 - d. Requirements for completing sustainable design documentation.
 - e. Requirements for preparing operations and maintenance data.
 - f. Requirements for delivery of material samples, attic stock, and spare parts.
 - g. Requirements for demonstration and training.
 - h. Preparation of Contractor's punch list.
 - i. Procedures for processing Applications for Payment at Project Completion and for final payment.
 - j. Submittal procedures.
 - k. Coordination of separate Contracts.
 - l. Requirements for completing sustainable design documentation.
 - m. County's partial occupancy requirements.
 - n. Installation of County's furniture, fixtures, and equipment.
 - o. Responsibility for removing temporary facilities and controls.
 - 4. Minutes: Entity conducting meeting shall record and distribute meeting minutes.
- D. Progress Meetings: Owner shall conduct progress meetings as needed.
- 1. Coordinate preparation of payment requests with dates of meetings.
 - 2. Attendees: In addition to representatives of Owner, each Contractor, Subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
 - 3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule.

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in relation to Contractor's construction schedule. Determine how construction behind schedule shall be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities shall be completed within the Contract Time.

- 1) Review schedule for next period.
- b. Review present and future needs of each entity present, including the following:
 - 1) Interface requirements.
 - 2) Sequence of operations.
 - 3) Resolution of BIM component conflicts.
 - 4) Status of submittals.
 - 5) Status of sustainable design documentation.
 - 6) Deliveries.
 - 7) Off-site fabrication.
 - 8) Access.
 - 9) Site utilization.
 - 10) Temporary facilities and controls.
 - 11) Progress cleaning.
 - 12) Quality and Work standards.
 - 13) Status of correction of deficient items.
 - 14) Field observations.
 - 15) Status of RFIs.
 - 16) Status of proposal requests.
 - 17) Pending changes.
 - 18) Status of Change Orders.
 - 19) Pending claims and disputes.
 - 20) Documentation of information for payment requests.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

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REQUEST FOR INTERPRETATION

Project Name:			
		RFI No.	
To:	Contractor:		
Subject:			
Specified Section	Paragraph No.	Drawing No.	Detail No.
Category:			
<input type="checkbox"/> Need for Clarification <input type="checkbox"/> Unforeseen Condition <input type="checkbox"/> Conflict Within Documents		<input type="checkbox"/> Coordination Problem <input type="checkbox"/> Other	
Description:			
Contractor's Proposed Resolution:			
<input type="checkbox"/> Attachments: <input type="checkbox"/> Cost Impact: \$ (Estimated) <input type="checkbox"/> Time Impact:			
Contractor Signature			Date:
Engineer's Response:			
<input type="checkbox"/> Attachments:			
Engineer Signature:			Date:

SECTION 01 50 00 - TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Temporary utilities.
- B. Temporary sanitary facilities.
- C. Temporary Controls: Barriers, enclosures, and fencing.
- D. Security requirements.
- E. Vehicular access and parking.
- F. Waste removal facilities and services.

1.2 RELATED REQUIREMENTS

- A. N/A

1.3 TEMPORARY UTILITIES

- A. Provide and pay for all electrical power, lighting, water, ventilation, and janitorial service and supplies required for construction purposes.
- B. Use trigger-operated nozzles for water hoses, to avoid waste of water.

1.4 TEMPORARY SANITARY FACILITIES

- A. Provide and maintain required facilities and enclosures.
- B. Provide at time of Project mobilization.
- C. Provide sanitary facilities within each office trailer where office trailer is provided.
- D. Maintain daily in clean and sanitary condition.
- E. At end of construction, return facilities to same or better condition as originally found.

1.5 BARRIERS

- A. Provide barriers to prevent unauthorized entry to construction areas, to prevent access to areas that could be hazardous to Workers or the public and to protect existing facilities and adjacent properties from damage from construction operations and demolition.
- B. Provide barricades and covered walkways required by governing authorities for public rights-of-way and for public access to existing building.
- C. Provide protection for landscape plantings designated to remain. Replace damaged plants.
- D. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.
- E. Traffic Controls: As needed per local authorities.

1.6 SECURITY

- A. Provide security and facilities to protect Work and County's operations from unauthorized entry, vandalism, or theft.

1.7 VEHICULAR ACCESS AND PARKING

- A. Comply with regulations relating to use of streets and sidewalks, access to emergency facilities, and access for emergency vehicles.
- B. Coordinate access and haul routes with Construction Manager.
- C. Provide and maintain access to fire hydrants, free of obstructions.

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1.8 WASTE REMOVAL

- A. See Section 01 74 19 - Construction Waste Management and Disposal, for additional requirements.
- B. Provide waste removal facilities and services as required to maintain the site and all temporary facilities in clean and orderly condition.
- C. Provide containers with lids. Remove trash from site weekly, or as needed.
- D. If materials to be recycled or re-used on the Project must be stored on-site, provide suitable non-combustible containers; locate containers holding flammable material outside the structure unless otherwise approved by the authorities having jurisdiction.

1.9 PROJECT TEMPORARY SIGNS - SEE SECTION 01 58 13

1.10 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary utilities, equipment, facilities, materials, prior to Final Application for Payment inspection.
- B. Clean and repair damage caused by installation or use of temporary Work.
- C. Restore existing facilities used during construction to original condition.
- D. Restore new permanent facilities used during construction to specified condition.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 60 00 - PRODUCT REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. General product requirements.
- B. Sustainable design-related product requirements.
- C. Transportation, handling, storage and protection.
- D. Product option requirements.
- E. Substitution limitations and procedures.
- F. Procedures for County-supplied products.
- G. Maintenance materials, including extra materials, spare parts, tools, and software.

1.2 RELATED REQUIREMENTS

- A. Section 01 61 16 - Volatile Organic Compound (VOC) Content Restrictions: Requirements for VOC-restricted product categories.
- B. Section 01 74 19 - Construction Waste Management and Disposal: Waste disposal requirements potentially affecting packaging and substitutions.

1.3 REFERENCE STANDARDS

- A. NFPA 70 - National Electrical Code; National Fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.4 SUBMITTALS

- A. Proposed Products List: Submit list of major products proposed for use, with name of manufacturer, trade name, and model number of each product.
 - 1. For products specified only by reference standards, list applicable reference standards.
- B. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
- C. Shop Drawing Submittals: Prepared specifically for this Project; indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
- D. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing Work.
 - 1. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns.

PART 2 PRODUCTS

2.1 NEW PRODUCTS

- A. Provide new products unless specifically required or permitted by the Contract Documents.
- B. DO NOT USE products having any of the following characteristics:

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2. Made using or containing CFC's or HCFC's.
3. Contain asbestos or lead-base paint:
 - a. No materials shall be used in this Project or in any tools, devices, clothing or equipment used to affect this construction that contain asbestos or lead-based paint. All Work or materials found to contain asbestos or lead-base paint, or material installed with asbestos containing equipment or lead-base paint will be immediately rejected and this Work shall be removed by a certified EPA hazard material Contractor under the supervision of a certified hazard material consultant at no additional cost to County.
 - b. Contractor and Subcontractors shall certify that no asbestos containing materials and no lead-base paint were used in this Project. Certification letter must be addressed to County, including Project and Contractors' information; to be notarized.
- C. Where all other criteria are met, Contractor shall give preference to products that:
 1. If used on interior, have lower emissions, as defined in Section 01 61 16.
 2. If wet-applied, have lower VOC content, as defined in Section 01 61 16.
 3. Are extracted, harvested, and/or manufactured closer to the location of the Project.
 4. Have longer documented life span under normal use.
 5. Result in less construction waste.

2.2 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed. Where Basis of Design product is identified, it shall establish the level of quality for proposed equal products.
- C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.
- D. Equivalent Products: For products specified by name and accompanied by the term "approved equivalent," "or equal," or "or approved equal," or "or approved," comply with requirements in "Comparable Products" Article to obtain approval for use of an unnamed product.

2.3 MAINTENANCE MATERIALS

- A. Furnish extra materials, spare parts, tools, and software of types and in quantities specified in individual specification sections.
- B. Deliver to Project site; obtain receipt prior to final payment.

PART 3 EXECUTION

3.1 SUBSTITUTION PROCEDURES

- A. See Section 01 2500 Substitution Procedures.
- B. Instructions to Bidders specify time restrictions for submitting requests for substitutions during the bidding period. Comply with requirements specified in that section.

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3.2 COUNTY-SUPPLIED PRODUCTS

A. County's Responsibilities:

1. Arrange for and deliver County reviewed shop drawings, product data, and samples, to Contractor.
2. Arrange and pay for product delivery to site.
3. On delivery, inspect products jointly with Contractor.
4. Submit claims for transportation damage and replace damaged, defective, or deficient items.

B. Contractor's Responsibilities:

1. Review County reviewed shop drawings, product data, and samples.
2. Receive and unload products at site; inspect for completeness or damage jointly with County.
3. Handle, store, install and finish products.
4. Repair or replace items damaged after receipt.

3.3 TRANSPORTATION AND HANDLING

- A. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.
- B. Transport and handle products in accordance with manufacturer's instructions.
- C. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.
- D. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.
- E. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.
- F. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

3.4 STORAGE AND PROTECTION

- A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to Work area in order to minimize waste due to excessive materials handling and misapplication.
- B. Store and protect products in accordance with manufacturers' instructions.
- C. Store with seals and labels intact and legible.
- D. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to product.
- E. For exterior storage of fabricated products, place on sloped supports above ground.
- F. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- G. Prevent contact with material that may cause corrosion, discoloration, or staining.
- H. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- I. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

END OF SECTION

SECTION 01 61 16 - VOLATILE ORGANIC COMPOUND (VOC) CONTENT RESTRICTIONS

PART 1 GENERAL

1.1 SECTION INCLUDES

1.2 RELATED REQUIREMENTS

- A. Section 01 30 00 - Administrative Requirements: Submittal procedures.
- B. Section 01 60 00 - Product Requirements: Fundamental product requirements, substitutions and product options, delivery, storage, and handling.

1.3 DEFINITIONS

- A. Interior of Building: Anywhere inside the exterior weather barrier.

1.4 REFERENCE STANDARDS

- A. CAL (CDPH SM) - Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions From Indoor Sources Using Environmental Chambers; California Department of Public Health; v1.1, 2010.
- B. CRI (GLP) - Green Label Plus Testing Program - Certified Products; Carpet and Rug Institute; Current Edition.

1.5 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: For each VOC-restricted product used in the Project, submit evidence of compliance.

PART 2 PRODUCTS

2.1 MATERIALS

- A. All Products: Comply with the most stringent of Federal, State, and local requirements, or these specifications.

PART 3 EXECUTION

3.1 FIELD QUALITY CONTROL

- A. County reserves the right to reject non-compliant products, whether installed or not, and require their removal and replacement with compliant products at no extra cost to County.
- B. All additional costs to restore indoor air quality due to installation of non-compliant products shall be borne by Contractor.

END OF SECTION

SECTION 01 70 00 - EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Examination, preparation, and general installation procedures.
- B. Cutting and patching.
- C. Surveying for laying out the Work.
- D. Cleaning and protection.
- E. Closeout procedures

1.2 RELATED REQUIREMENTS

- A. Section 01 74 19 - Construction Waste Management and Disposal: Additional procedures for trash/waste removal, recycling, salvage, and reuse.
- B. Section 01 78 00 - Closeout Submittals 01 78 00: Project record documents, operation and maintenance data, warranties and bonds.

1.3 REFERENCE STANDARDS

- A. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2013.

1.4 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Cutting and Patching: Submit written request in advance of cutting or alteration that affects:
 - 1. Structural integrity of any element of Project.
 - 2. Integrity of weather exposed or moisture resistant element.
 - 3. Efficiency, maintenance, or safety of any operational element.
 - 4. Visual qualities of sight exposed elements.
 - 5. Work of County or separate Contractor.
- D. Project Record Documents: Accurately record actual locations of capped and active utilities.

1.5 PROJECT CONDITIONS

- A. Use of explosives is not permitted.
- B. Protect site from puddling or running water. Provide water barriers as required to protect site from soil erosion.
- C. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.
- D. Dust Control: Execute Work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property.
- E. Pollution Control: Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations. Comply with federal, state, and local regulations.

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1.6 COORDINATION

- A. Coordinate scheduling, submittals, and Work of the various sections of the Specifications to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
- B. Notify affected utility companies and comply with their requirements.
- C. Verify that utility requirements and characteristics of new operating equipment are compatible with building utilities. Coordinate Work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- D. Coordinate space requirements, supports, and installation of mechanical and electrical Work that are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- E. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
- F. Coordinate completion and clean-up of Work of separate sections.
- G. After County occupancy of premises, coordinate access to site for correction of defective Work and Work not in accordance with Contract Documents, to minimize disruption of County's activities.

PART 2 PRODUCTS

2.1 PATCHING MATERIALS

- A. New Materials: As specified in product sections; match existing products and Work for patching and extending Work.
- B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing Work as a standard.
- C. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 01 60 00 - Product Requirements.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent Work. Start of Work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural support or attachment of new Work being applied or attached.
- C. Examine and verify specific conditions described in individual specification sections.
- D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or miss-fabrication.
- E. Verify that utility services are available, of the correct characteristics, and in the correct locations. Furnish information to local utility and County where necessary to adjust, move, or relocate existing utilities and appurtenances.
- F. Prior to Cutting: Examine existing conditions prior to commencing Work, including elements subject to damage or movement during cutting and patching. After uncovering

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existing Work, assess conditions affecting performance of Work. Beginning of cutting or patching means acceptance of existing conditions.

1.2 PREPARATION

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

1.3 LAYING OUT THE WORK

- A. Verify locations of survey control points prior to starting Work.
- B. Promptly notify Construction Manager of any discrepancies discovered.
- C. Contractor shall locate and protect survey control and reference points.
- D. Control datum for survey is that indicated on Drawings.
- E. Protect survey control points prior to starting site Work; preserve permanent reference points during construction.
- F. Promptly report to Construction Manager the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.
- G. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to Construction Manager.
- H. Utilize recognized Engineering survey practices.
- I. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:
 - 1. Site improvements including pavements; stakes for grading, fill and topsoil placement; utility locations, slopes, and invert elevations.
 - 2. Grid or axis for structures.
 - 3. Building foundation, column locations, ground floor elevations.
- J. Periodically verify layouts by same means.
- K. Maintain a complete and accurate log of control and survey Work as it progresses.
- L. On completion of foundation walls and major site improvements, prepare a certified survey illustrating dimensions, locations, angles, and elevations of construction and site work.

1.4 GENERAL INSTALLATION REQUIREMENTS

- A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.
- B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.
- C. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.
- D. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.
- E. Make neat transitions between different surfaces, maintaining texture and appearance.

1.5 CUTTING AND PATCHING

- A. Whenever possible, execute the Work by methods that avoid cutting or patching.

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- B. Perform whatever cutting and patching is necessary to:
 - 1. Complete the Work.
 - 2. Fit products together to integrate with other Work.
 - 3. Provide openings for penetration of mechanical, electrical, and other services.
 - 4. Match Work that has been cut to adjacent Work.
 - 5. Repair areas adjacent to cuts to required condition.
 - 6. Repair new Work damaged by subsequent Work.
 - 7. Remove samples of installed Work for testing when requested.
 - 8. Remove and replace defective and non-conforming Work.
- C. Execute Work by methods that avoid damage to other Work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.
- D. Employ original installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.
- E. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.
- F. Restore Work with new products in accordance with requirements of Contract Documents.
- G. Fit Work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- H. Patching:
 - 1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
 - 2. Match color, texture, and appearance.
 - 3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching Work. If defects are due to condition of substrate, repair substrate prior to repairing finish.

3.7 PROGRESS CLEANING

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.
- C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.
- D. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

3.8 PROTECTION OF INSTALLED WORK

- A. Protect installed Work from damage by construction operations.
- B. Provide special protection where specified in individual specification sections.
- C. Provide temporary and removable protection for installed products. Control activity in immediate Work area to prevent damage.
- D. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.

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- E. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- F. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
- G. Remove protective coverings when no longer needed; reuse or recycle plastic coverings if possible.

3.9 DEMONSTRATION AND INSTRUCTION (Not used)

3.10 ADJUSTING (Not used)

3.11 FINAL CLEANING

- A. Execute final cleaning prior to Substantial Completion.
- B. Use cleaning materials that are nonhazardous.
- C. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.
- D. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.
- E. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.
- F. Clean filters of operating equipment.
- G. Clean debris from roofs, gutters, downspouts, scuppers, overflow drains, area drains, and other drainage systems.
- H. Clean site; sweep paved areas, rake clean landscaped surfaces.
- I. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

3.12 CLOSEOUT PROCEDURES

- A. Make submittals that are required by governing or other authorities.
 - 1. Provide copies to Construction Manager.
- A. In accordance with General Conditions G-6, submit a written request for final review for acceptance. On receipt of request, Construction Manager will either proceed with review or notify Contractor of unfulfilled requirements. Construction Manager will notify Contractor of construction that must be completed or corrected.
 - 1. Re-review: Request re-review when the Work identified in previous reviews as incomplete is completed or corrected.
 - 2. Following completion of all final review items, Contactor shall prepare and submit a final Certificate for Payment.

END OF SECTION

SECTION 01 73 29 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

- A. Requirements and limitations for cutting and patching of Work.
- B. Contractor shall be responsible for cutting, fitting and patching required to complete the following work:
 - 1. Make its parts fit together properly.
 - 2. Uncover work to provide for installation of ill-timed work.
 - 3. Remove and replace defective work.
 - 4. Remove and replace work not conforming to Contract Documents.
 - 5. Remove samples of installed work as required for testing.
 - 6. Provide routine penetrations of non-structural surfaces for installation of piping and electrical conduit. In-fill and patch openings left by removal of piping, conduit, etc.
- C. Coordinate unanticipated cutting and demolition with the Construction Manager prior to executing work.
- D. Provide special care to protect the areas of the building to be retained. Match surrounding materials and finishes.
- E. Contractor shall be responsible for patching of existing walls and ceilings to a reasonably smooth condition. This may require the removal and cutting of existing ceiling framing, hangers and brackets and patching of the remaining indents and holes.
 - 1. Contractor shall be responsible for cutting, fitting and patching required to complete Work.
 - 2. Coordinate unanticipated cutting and demolition with the Contracting Officer prior to execution of the work.
 - 3. Provide special care to protect the historic fabric of the buildings scheduled to be retained. Match surrounding materials and finishes.

1.3 RELATED SECTIONS

- A. Section 01 11 00 - Summary of Work: Work by County or by separate contractors.
- B. Section 01 25 13 – Product Substitution Procedures.
- C. Section 01 33 00 – Submittals Procedures.
- D. Individual Product Specification Sections:
 - 1. Cutting and patching incidental to work of the Section.

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2. Advance notification to other Sections of openings required in work of those Sections.
3. Limitations on cutting structural and other types of members.

1.4 SUBMITTALS

- A. Shop Drawings: Submit prior to cutting of any structurally or visually significant portion of the Work which is not specifically shown on the Drawings. Obtain written permission for exact location and size of openings from the Construction Manager.
 1. Before cutting into any portion of the structure, obtain written permission from the Construction Manager for each hole to be cut or enlarged. Submit shop drawings indicating exact location and size of detail of reinforcement of such openings.
- B. Submit written request in advance of cutting or alteration which affects:
 1. Structural integrity of any element of Project.
 2. Integrity of weather-exposed or moisture-resistant element.
 3. Efficiency, maintenance, or safety of any operational element.
 4. Visual qualities of sight exposed elements.
 5. Work of County or separate contractor.
- C. Include in request:
 1. Identification of Project.
 2. Location and description of affected work.
 3. Necessity for cutting or alteration.
 4. Description of proposed work, and products to be used.
 5. Alternatives to cutting and patching.
 6. Effect on work of County or separate contractor.
 7. Written permission of affected separate contractor.
 8. Date and time work will be executed.

1.5 QUALITY ASSURANCE

- A. Standards: Refer to Specification Sections.

1.6 WARRANTY

- A. Existing Warranties: Replace, patch, and repair material and surfaces cut or damaged by methods and with materials in such a manner as not to void any warranties required or existing.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Primary Products: Identical to those required for original installation.
 1. For exposed surfaces, use materials that virtually match existing adjacent surfaces to fullest extent possible if identical materials are unavailable or cannot be used.
 2. Use materials whose installed performance will equal or surpass that of existing materials.

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- B. Product Substitution: For any proposed change in materials, submit request for substitution under provisions of Section 01 25 13.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Inspect existing conditions prior to commencing Work, including elements subject to damage or movement during cutting and patching.
- B. After uncovering existing work, inspect conditions affecting performance of work.
- C. Report unsatisfactory or questionable conditions to Construction Manager in writing; do not proceed with work until Construction Manager has provided further instruction.
- D. Beginning of cutting or patching means acceptance of existing conditions.

3.2 PREPARATION

- A. Provide temporary supports to ensure structural integrity of the Work. Provide devices and methods to protect other portions of Project from damage.
- B. Provide protection from elements for areas which may be exposed by uncovering work.
- C. Maintain excavations free of water.
- D. Avoid cutting existing pipes, conduit, or ductwork serving building but scheduled to be removed or relocated until provisions have been made to bypass them.
- E. Employ skilled workmen to perform cutting and patching. Proceed with cutting and patching at earliest feasible time and complete.
 - 1. Cut existing construction to provide for installation of other components or performance of other construction activities and subsequent fitting and patching required to restore surfaces to original condition.

3.3 PERFORMANCE

- A. Execute work by methods to avoid damage to other Work, and which will provide appropriate surfaces to receive patching and finishing.
- B. When warranty may be affected by alterations to original installation of weather exposed and moisture resistant elements, and sight-exposed surfaces, employ original installer to perform cutting and patching.
- C. Cut rigid materials using masonry saw or core drill. Pneumatic tools are not allowed without prior approval.
- D. Restore work with new products in accordance with requirements of Contract Documents.
- E. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.

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- F. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material in accordance with Section 07_84_00, to full thickness of the penetrated element.

3.4 CUTTING AND PATCHING

- A. General: Execute cutting, fitting, and patching including excavation and fill to complete work.
1. Fit products together, to integrate with other work.
 2. Uncover work to install ill-timed work.
 3. Remove and replace defective or non-conforming work.
 4. Remove samples of installed work for testing when requested.
 5. Provide openings in the work for penetration of mechanical and electrical work.
- B. Cutting:
1. Perform cutting, associated structural reinforcing, and patching in a manner to prevent damage to other Work, and to provide proper surfaces for the installation of new materials, equipment and repairs. Adjust and fit products to provide a neat installation.
 2. Cut rigid materials using masonry saw or core drill. Pneumatic tools are not allowed without prior written approval.
- C. Gypsum Board and Plaster: At the Contractor's option, on existing walls and ceilings designated for cutting and patching work, the Contractor may use any of the following methods, or combination thereof, to match adjacent wall plane and finish, and as required to meet the required fire ratings:
1. Patch gypsum board walls or ceilings with new gypsum board the same thickness as existing surface.
 2. Patch plaster walls or ceilings using plaster to match and align with the adjacent surface thickness.
 3. Remove entire gypsum board or plaster surface plane and replace with new gypsum board to the corner of the wall or ceiling plane.
- D. At partitions and ceilings indicated as "existing to remain", provide modification of finishes for new Work including, but not necessarily limited to, acoustical treatment, electrical, plumbing, etc. See Drawings for extent of work.
1. At Contractor's option, where modifications are required, finishes may be cut and patched, or removed and replaced on one or both sides.
- E. Patching:
1. Patch surfaces to match adjacent surfaces. Finish to nearest intersection. For an assembly, refinish entire unit.
 2. Patch to achieve security; strength; weather protection, as applicable; efficiency, operational life, maintenance, and safety of operational elements; and to preserve continuity of existing fire ratings.
 3. Patch surfaces to successfully duplicate undisturbed adjacent profiles, materials, textures, finishes and colors. Use materials which match existing construction.
 4. Where there is dispute as to whether duplication is successful or has been achieved to a reasonable degree, the Construction Manager's decision will be final.
 5. Fit work to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.

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6. At penetrations of fire-rated walls, partitions, ceilings, and floor construction completely seal voids with fire-rated material in accordance with Section 07 8400, and U.L. specifications to full thickness of the penetrated element.

3.5 FINISHING

- A. Finish or refinish, as applicable, cut and patched surfaces to match adjacent finishes. Replace materials which are damaged or abused and cannot be neatly repaired as a result of cutting and patching operations.
- B. Refinish entire surfaces as necessary to provide even finish to match adjacent finishes:
 1. For continuous surfaces, refinish to nearest intersection or natural break.
 2. For an assembly, refinish entire unit.
- C. Painting: Paint over complete surface planes, unless otherwise indicated or directed. Over patched wall and ceiling surfaces, paint to nearest cutoff line for entire surface, such as the intersection with adjacent wall or ceiling, beam, or to nearest opening frame, unless otherwise indicated or directed. Painted surfaces shall not appear spotty or touched-up.

END OF SECTION

SECTION 01 74 19 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 GENERAL

1.1 WASTE MANAGEMENT REQUIREMENTS

- A. The Contractor shall review, understand and apply the requirements of the County's Municipal Code Title 30.
- B. County requires that this Project generate the least amount of trash and waste possible.
- C. Comply with Section 5.408 Construction Waste Reduction, Disposal and Recycling, and 5.408.3.1 Enhanced construction waste reduction – Tier 1, of the 2016 California Green Building Standards Code.
- D. Employ processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors.
- E. Minimize trash/waste disposal in landfills; reuse, salvage, or recycle as much waste as economically feasible.
- F. Required Recycling, Salvage, and Reuse: The following may not be disposed of in landfills or by incineration:
 - 1. Aluminum and plastic containers.
 - 2. Corrugated cardboard and paper.
 - 3. Wood pallets.
 - 4. Clean dimensional wood.
 - 5. Bricks.
 - 6. Metals, including packaging banding, metal studs, sheet metal, structural steel, piping, reinforcing bars, door frames, and other items made of steel, iron, galvanized steel, stainless steel, aluminum, copper, zinc, lead, brass, and bronze.
 - 7. Glass.
 - 8. Gypsum drywall and plaster.
 - 9. Plastic buckets.
 - 10. Paint, solvents, cleaners, lubricants, adhesives and all other waste considered to be hazardous under State or Federal Regulations.
 - 11. Plastic sheeting.
 - 12. Rigid foam insulation.
 - 13. Windows.
 - 14. Batteries
- G. Methods of trash/waste disposal that are not acceptable are:
 - 1. Burning on the Project site.
 - 2. Burying on the Project site.
 - 3. Dumping or burying on other property, public or private.
 - 4. Other illegal dumping or burying.
- H. Regulatory Requirements: Contractor is responsible for knowing and complying with regulatory requirements, including but not limited to Federal, State and local requirements.

1.2 RELATED REQUIREMENTS

- A. Section 01 30 00 - Administrative Requirements 01 30 00: Additional requirements for Project meetings, reports, submittal procedures, and Project documentation.

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- B. Section 01 50 00 - Temporary Facilities and Controls: Additional requirements related to trash/waste collection and removal facilities and services.
- C. Section 01 60 00 - Product Requirements: Waste prevention requirements related to delivery, storage, and handling.
- D. Section 01 70 00 - Execution and Closeout Requirements: Trash/waste prevention procedures related to demolition, cutting and patching, installation, protection, and cleaning.

1.3 DEFINITIONS

- A. Clean: Untreated and unpainted; not contaminated with oils, solvents, caulk, or the like.
- B. Construction and Demolition Waste: Solid wastes typically including building materials, packaging, trash, debris, and rubble resulting from construction, remodeling, repair and demolition operations.
- C. Hazardous: Exhibiting the characteristics of hazardous substances, i.e., ignitibility, corrosively, toxicity or reactivity.
- D. Nonhazardous: Exhibiting none of the characteristics of hazardous substances, i.e., ignitibility, corrosively, toxicity, or reactivity.
- E. Nontoxic: Neither immediately poisonous to humans nor poisonous after a long period of exposure.
- F. Recyclable: The ability of a product or material to be recovered at the end of its life cycle and remanufactured into a new product for reuse by others.
- G. Recycle: To remove a waste material from the Project site to another site for remanufacture into a new product for reuse by others.
- H. Recycling: The process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for the purpose of using the altered form. Recycling does not include burning, incinerating, or thermally destroying waste.
- I. Return: To give back reusable items or unused products to vendors for credit.
- J. Reuse: To reuse a construction waste material in some manner on the Project site.
- K. Salvage: To remove a waste material from the Project site to another site for resale or reuse by others.
- L. Sediment: Soil and other debris that has been eroded and transported by storm or well production run-off water.
- M. Source Separation: The act of keeping different types of waste materials separate beginning from the first time they become waste.
- N. Toxic: Poisonous to humans either immediately or after a long period of exposure.
- O. Trash: Any product or material unable to be reused, returned, recycled, or salvaged.
- P. Waste: Extra material or material that has reached the end of its useful life in its intended use. Waste includes salvageable, returnable, recyclable, and reusable material.

1.4 SUBMITTALS

- A. Submit Waste Management Plan prior to any trash or waste removal, whichever occurs sooner; submit projection of all trash and waste that will require disposal and alternatives to landfilling.
 - 1. Waste Management Plan must be approved by the local jurisdiction for the Project to be able to obtain building permit.
 - 1. Recycled and Salvaged Materials: Include the following information for each:

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- a. Identification of material, including those retrieved by installer for use on other Projects.
 - b. Amount, in tons or cubic yards (cubic meters), date removed from the Project site, and receiving party.
 - c. Transportation cost, amount paid or received for the material, and the net total cost or savings of salvage or recycling each material.
 - d. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.
 - e. Certification by receiving party that materials will not be disposed of in landfills or by incineration.
2. Material Reused on Project: Include the following information for each:
 - a. Identification of material and how it was used in the Project.
 - b. Amount, in tons or cubic yards (cubic meters).
 - c. Include weight tickets as evidence of quantity.
 3. Other Disposal Methods: Include information similar to that described above, as appropriate to disposal method.

PART 2 PRODUCTS-NOT USED

PART 3 EXECUTION

3.1 WASTE MANAGEMENT PROCEDURES

- A. See Section 01 50 00 for additional requirements related to trash/waste collection and removal facilities and services.
- B. See Section 01 60 00 for waste prevention requirements related to delivery, storage, and handling.
- C. See Section 01 70 00 for trash/waste prevention procedures related to cutting and patching, installation, protection, and cleaning.

3.2 WASTE MANAGEMENT PLAN IMPLEMENTATION

- A. Manager: Designate an on-site person or persons responsible for instructing Workers and overseeing and documenting results of the Waste Management Plan.
- B. Communication: Distribute copies of the Waste Management Plan to job site foreman, each Subcontractor, and Engineer.
- C. Instruction: Provide on-site instruction of appropriate separation, handling, and recycling, salvage, reuse, and return methods to be used by all parties at the appropriate stages of the Project.
- D. Meetings: Discuss trash/waste management goals and issues at project meetings.
 1. Pre-construction meeting.
 2. Regular job-site meetings.
- E. Facilities: Provide specific facilities for separation and storage of materials for recycling, salvage, reuse, return, and trash disposal, for use by all Contractors and installers.
 1. As a minimum, provide:
 - a. Separate area for storage of materials to be reused on-site, such as wood cut-offs for blocking.
 - b. Separate dumpsters for each category of recyclable.

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- c. Recycling bins at Worker lunch area.
- 2. Provide containers as required.
- 3. Provide temporary enclosures around piles of separated materials to be recycled or salvaged.
- 4. Provide materials for barriers and enclosures that are nonhazardous, recyclable, or reusable to the maximum extent possible; reuse Project construction waste materials if possible.
- 5. Locate enclosures out of the way of construction traffic.
- 6. Provide adequate space for pick-up and delivery and convenience to Subcontractors.
- 7. If an enclosed area is not provided, clearly lay out and label a specific area on-site.
- 8. Keep recycling and trash/waste bin areas neat and clean and clearly marked in order to avoid contamination of materials.
- F. Hazardous Wastes: Separate, store, and dispose of hazardous wastes according to applicable regulations.
- G. Recycling: Separate, store, protect, and handle at the site identified recyclable waste products in order to prevent contamination of materials and to maximize recyclability of identified materials. Arrange for timely pickups from the site or deliveries to recycling facility in order to prevent contamination of recyclable materials.
- H. Reuse of Materials On-Site: Set aside, sort, and protect separated products in preparation for reuse.
- I. Salvage: Set aside, sort, and protect products to be salvaged for reuse off-site.

END OF SECTION

SECTION 01 78 00 - CLOSEOUT SUBMITTALS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Project Record Documents.
- B. Operation and Maintenance Data.
- C. Warranties.

1.2 RELATED REQUIREMENTS

- A. General Conditions and Supplementary Conditions requirements.
- B. Section 01 30 00 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.
- C. Individual Product Sections: Specific requirements for operation and maintenance data.
- D. Individual Product Sections: Warranties required for specific products or Work.

1.3 SUBMITTALS

- A. Project Record Documents: Submit documents to Engineer with Final Payment application. All documents will be in digital format noted below, except as otherwise noted.
- B. Operation and Maintenance Data:
 - 1. For equipment, or component parts of equipment put into service during construction and operated by County, submit completed documents within ten calendar days after acceptance.
 - 2. Submit one copy of completed documents 15 calendar days prior to final inspection. This copy will be reviewed and returned after final inspection, with Engineer comments. Revise content of all document sets as required prior to final submission.
 - 3. Submit two sets of revised final documents in final form within 10 calendar days after final inspection.
- C. Warranties and Bonds:
 - 1. For equipment or component parts of equipment put into service during construction with County's permission, submit documents within 10 calendar days after acceptance.
 - 2. Make other submittals within 10 calendar days after Date of Substantial Completion, prior to final Application for Payment.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.1 PROJECT RECORD DOCUMENTS

- A. Maintain on site one set of the following record documents; record actual revisions to the Work:
 - 1. Drawings.
 - 2. Specifications.
 - 3. Addenda.

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4. Change Orders and other modifications to the Contract.
 5. Reviewed shop drawings, product data, and samples.
 6. Inspection records.
 7. Permits.
- B. Ensure entries are complete and accurate, enabling future reference by County.
- C. Store record documents separate from documents used for construction.
- D. Record information concurrent with construction progress.
- E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
1. Manufacturer's name and product model and number.
 2. Product substitutions or alternates utilized.
 3. Changes made by Addenda and modifications.
- F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
1. Measured depths of foundations in relation to finish first floor datum.
 2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
 4. Field changes of dimension and detail.
 5. Details not on original Contract drawings.
- G. Provide two digital copies of all documents above (A through F) in high resolution PDF Format, with one digital copy on each USB thumb drive.

3.2 OPERATION AND MAINTENANCE DATA

- A. Source Data: For each product or system, list names, addresses and telephone numbers of Sub-Contractors and suppliers, including local source of supplies and replacement parts.
- B. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
- C. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.
- D. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.
- E. Provide two digital copies of all documents above (A through D) in high resolution PDF digital format, with one digital copy on each USB thumb drive. Hard copies are not required.

1.3 OPERATION AND MAINTENANCE DATA FOR MATERIALS AND FINISHES

- A. For Each Product, Applied Material, and Finish:
 1. Product data, with catalog number, size, composition, and color and texture designations.
- B. Instructions for Care and Maintenance: Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental cleaning agents and methods, and recommended schedule for cleaning and maintenance.
- C. Additional information as specified in individual product specification sections.

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- D. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.
- E. Provide two digital copies of all documents above (A through D) in high resolution PDF digital format, with one digital copy on each USB thumb drive. Hard copies are not required.

1.4 ASSEMBLY OF OPERATION AND MAINTENANCE MANUALS

- A. Assemble operation and maintenance data into high resolution PDF digital format for County's personnel use, with data arranged in the same sequence as, and identified by, the specification sections.
- B. Where systems involve more than one specification section, provide separate digital tabbed divider for each system.
- C. Cover: Identify each document with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.
- D. Project Directory: Title and address of Project; names, addresses, and telephone numbers of Engineer, Consultants, Contractor and subcontractors, with names of responsible parties.
- E. Tables of Contents: List every item separated by a digital divider, using the same identification as on the divider tab; where multiple volumes are required, include all volumes Tables of Contents in each volume, with the current volume clearly identified.
- F. Dividers: Provide digital tabbed subfolders for each separate product and system; identify the contents on the subfolder tab; immediately following the subfolder tab include a brief description of product and major component parts of equipment.
- G. Text: Manufacturer's printed data, or typewritten data.
- H. Drawings: Provide in high resolution PDF digital format.
- I. Arrangement of Contents: Organize each volume in parts as follows:
 - 1. Project Directory.
 - 2. Table of Contents, of all volumes, and of this volume.
 - 3. Operation and Maintenance Data: Arranged by system, then by product category.
 - a. Source data.
 - b. Product data, shop drawings, and other submittals.
 - c. Operation and maintenance data.
 - d. Field quality control data.
 - e. Photocopies of warranties and bonds.
- J. Provide two digital copies of all documents above (A through I) in high resolution PDF Format, with one digital copy on each USB thumb drive. Hard copies are not required.

1.5 WARRANTIES

- A. Refer to each specification section for specific warranty requirements.
- B. Provide digital copies of warranties, executed in by responsible Subcontractors, suppliers, and manufacturers, within 10 calendar days after completion of the applicable item of Work. Except for items put into use with County's permission, leave date of beginning of time of warranty until the date of Project Acceptance by the County.

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- C. Verify that documents are in proper format, contain full required information and terms, and are notarized.
- D. Co-execute submittals when required.
- E. Include in operation and maintenance manuals, indexed separately on Table of Contents.
- F. Provide two digital copies of all documents above (A through E) in high resolution PDF Format, with one digital copy on each USB thumb drive. Hard copies are not required except where required by manufacturer in order to honor warranty.

END OF SECTION

Division 06 16 36 Wood Panel Sheathing

Sheathing Plywood (Common: 15/32 in. x 4 ft. x 8 ft.; Actual: 0.438 in. x 48 in. x 96 in.)

- 4-ply plywood construction
- Can be nailed directly to framing - wall studs and roof or floor joists
- NAUF (no added urea formaldehyde) water-resistant phenolic resin
- Manufactured to construction and workmanship requirements for grade, veneer and panel thickness, as outlined in the (APA) - The Engineered Wood Association's Product Standard 1-09
- Product is not sanded
- Storage in a warehouse or under roof is recommended prior to use; if stored outdoors, units should be off the ground and covered loosely with some type of protective material

Specifications



Dimensions

Actual Product Length (in.)	96.000 in	Actual Product Thickness (in.)	0.44 in
Actual Product Width (in.)	48 in	Nominal Product Length (ft.)	8
Nominal Product Thickness (in.)	15/32	Nominal Product Width (ft.)	4

Details

Exposure Durability	Exposure 1	Panel/Veneer Grade	Rated Sheathing
Plywood Features	No Additional Features	Plywood Product Type	Sheathing
Span Rating	32/16		

SECTION 07462

SIDING

(James Hardie HZ10 Engineered for Climate Siding)

1.1 SECTION INCLUDES

- A. Fiber cement lap siding, trim, accessories; James Hardie HZ10 Engineered for Climate Siding.

1.2 REFERENCES

- A. AS D3359 - Standard Test Method for Measuring Adhesion by Tape Test, Tool and Tape.
- B. AS E136 - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 degrees C.

1.3 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store siding on edge or lay flat on a smooth level surface. Protect edges and corners from chipping. Store sheets under cover and keep dry prior to installing.
- C. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.5 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.6 WARRANTY

- A. Product Warranty: Limited, non-pro-rated product warranty.
 - 1. HardiePlank HZ10 lap siding for 30 years.
 - 2. HardieTrim HZ10 boards for 15 years.
- B. Workmanship Warranty: Application limited warranty for 2 years.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: James Hardie Building Products, Inc., which is located at: 26300 La Alameda Suite 400 ; Mission Viejo, CA 92691; Toll Free Tel: 866-274-3464; Tel: 949-367-4980; Fax: 949-367-4981; Email: [request info \(info@jameshardie.com\)](mailto:request_info@jameshardie.com); Web: www.jameshardiepros.com.
- B. Requests for approval of equal substitutions will be considered in accordance with provisions of Section 01 25 00.

2.2 SIDING AND TRIM

- A. HardiePlank HZ10 lap siding requirement for materials:
 - 1. Fiber-cement siding - complies with ASTM C 1186 Type A Grade II.
 - 2. Fiber-cement siding - complies with ASTM E 136 as a noncombustible material.
 - 3. Fiber-cement siding - complies with ASTM E 84 Flame Spread Index = 0, Smoke Developed Index = 5.
 - 4. CAL-FIRE, Fire Engineering Division Building Materials Listing - Wildland Urban Interface (WUI) Listed Product.
 - 5. ICC-ES evaluation reports ESR-2290, ESR-1844, and ESR-2273 (IBC, IRC, CBC, CRC)
 - 6. US Department of Housing and Urban Development Materials Release - 1263f.
 - 7. California DSA PA-019.
- B. Lap Siding: HardiePlank HZ10 Lap as manufactured by James Hardie Building Products, Inc.
 - 1. Type: Select Cedarmill 8-1/4 inches (210 mm) with 7 inches (178 mm) exposure.
- C. Trim:
 - 1. HardieTrim HZ10 boards as manufactured by James Hardie Building Products, Inc.
 - a. Product: 4/4 Boards, 3-1/2 inch (89 mm) width.
 - b. Texture: Rustic.
 - c. Length: 12 feet (3658 mm).
 - d. Thickness: 3/4 inch (19 mm).
 - 2. Fiber-cement trim - complies with ASTM C 1186 Type A Grade II.
 - 3. Fiber-cement trim - complies with ASTM E 136 as a noncombustible material.
 - 4. Fiber-cement trim - complies with ASTM E 84 Flame Spread Index = 0, Smoke Developed Index = 5.

2.3 FASTENERS

- A. Wood Framing Fasteners:
 - 1. Wood Framing: 0.089 inch (2.2 mm) shank by 0.221 inch (5.6 mm) head by 2 inches (51 mm) corrosion resistant siding nails.
 - 2. Wood Framing: No. 11 gauge 1-1/4 inches (32 mm) corrosion resistant roofing nails.

2.4 FINISHES

- A. Factory Primer: Provide factory applied universal primer.
 - 1. Primer: Factory primed by James Hardie.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If framing preparation is the responsibility of another installer, notify Construction Manager of unsatisfactory preparation before proceeding.
- C. Nominal 2 inch by 4 inch (51 mm by 102 mm) wood framing selected for minimal shrinkage and complying with local building codes, including the use of water-resistive barriers or vapor barriers where required. Minimum 1-1/2 inches (38 mm) face and straight, true, of uniform dimensions and properly aligned.
 - 1. Install water-resistive barriers and claddings to dry surfaces.
 - 2. Repair any punctures or tears in the water-resistive barrier prior to the installation of the siding.
 - 3. Protect siding from other trades.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Install a water-resistive barrier is required in accordance with local building code requirements.
- D. The water-resistive barrier must be appropriately installed with penetration and junction flashing in accordance with local building code requirements.
- E. Install moisture barrier in accordance with local building code requirements.
- F. Use Seam Tape and joint and laps.
- G. Install flashing.

3.3 INSTALLATION - HARDIEPLANK HZ10 LAP SIDING

- A. Install materials in strict accordance with manufacturer's installation instructions.
- B. Starting: Install a minimum 1/4 inch (6 mm) thick lath starter strip at the bottom course of the wall. Apply planks horizontally with minimum 1-1/4 inches (32 mm) wide laps at the top. The bottom edge of the first plank overlaps the starter strip.
- C. Allow minimum vertical clearance between the edge of siding and any other material in strict accordance with the manufacturer's installation instructions.
- D. Align vertical joints of the planks over framing members.
- E. Face nail to sheathing.
- F. Locate splices at least 12 inches (305 mm) away from window and door openings.

3.4 INSTALLATION - HARDIETRIM HZ10 BOARDS

- A. Install materials in strict accordance with manufacturer's installation instructions. Install flashing around all wall openings.
- B. Fasten through trim into structural framing or code complying sheathing. Fasteners must penetrate minimum 3/4 inch (19 mm) or full thickness of sheathing. Additional fasteners may be required to ensure adequate security.
- C. Place fasteners no closer than 3/4 inch (19 mm) and no further than 2 inches (51 mm) from side edge of trim board and no closer than 1 inch (25 mm) from end. Fasten maximum 16 inches (406 mm) on center.
- D. Maintain clearance between trim and adjacent finished grade.
- E. Inside Corner Board Attach Trim both side of corner
- F. Outside Corner Board Attach Trim on both sides of corner with 16 gage corrosion resistant finish nail 1/2 inch (13 mm) from edge spaced 16 inches (406 mm) apart, weather cut each end spaced minimum 12 inches (305 mm) apart.
- G. Allow 1/8 inch gap between trim and siding.
- H. Seal gap with high quality, paint-able caulk.
- I. Shim frieze board as required to align with corner trim..
- J. Fasten through overlapping boards. Do not nail between lap joints.
- K. Overlay siding with single board of outside corner board then align second corner board to outside edge of first corner board. Do not fasten HardieTrim boards to HardieTrim boards.
- L. Shim frieze board as required to align with corner trim.
- M. Install HardieTrim Fascia boards to rafter tails or to sub fascia.

3.5 FINISHING

- A. Finish factory primed siding with a minimum of one coat of high quality 100 percent acrylic or latex or oil based exterior grade paint within 180 days of installation. Follow paint manufacturer's written product recommendation and written application instructions.

3.6 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION



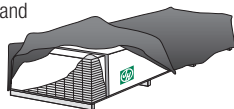
HardiePlank® Lap Siding

EFFECTIVE DECEMBER 2019

IMPORTANT: FAILURE TO FOLLOW JAMES HARDIE WRITTEN INSTALLATION INSTRUCTIONS AND COMPLY WITH APPLICABLE BUILDING CODES MAY VIOLATE LOCAL LAWS, AFFECT BUILDING ENVELOPE PERFORMANCE AND MAY AFFECT WARRANTY COVERAGE. FAILURE TO COMPLY WITH ALL HEALTH AND SAFETY REGULATIONS WHEN CUTTING AND INSTALLING THIS PRODUCT MAY RESULT IN PERSONAL INJURY. BEFORE INSTALLATION, CONFIRM YOU ARE USING THE CORRECT HARDIEZONE® PRODUCT INSTRUCTIONS BY VISITING HARDIEZONE.COM OR CALL 1-866-942-7343 (866-9-HARDIE)

STORAGE & HANDLING:

Store flat and keep dry and covered prior to installation. Installing siding wet or saturated may result in shrinkage at butt joints. Carry planks on edge. Protect edges and corners from breakage. James Hardie is not responsible for damage caused by improper storage and handling of the product.



CUTTING INSTRUCTIONS

OUTDOORS

- Position cutting station so that airflow blows dust away from the user and others near the cutting area.
- Cut using one of the following methods:
 - Best:** Circular saw equipped with a HardieBlade® saw blade and attached vacuum dust collection system. Shears (manual, pneumatic or electric) may also be used, not recommended for products thicker than 7/16 in.
 - Better:** Circular saw equipped with a dust collection feature (e.g. Roan® saw) and a HardieBlade saw blade.
 - Good:** Circular saw equipped with a HardieBlade saw blade.

INDOORS

DO NOT grind or cut with a power saw indoors. Cut using shears (manual, pneumatic or electric) or the score and snap method, not recommended for products thicker than 7/16 in.

- DO NOT dry sweep dust; use wet dust suppression or vacuum to collect dust.
- For maximum dust reduction, James Hardie recommends using the "Best" cutting practices. Always follow the equipment manufacturer's instructions for proper operation.
- For best performance when cutting with a circular saw, James Hardie recommends using HardieBlade® saw blades.
- Go to jameshardiepros.com for additional cutting and dust control recommendations.

IMPORTANT: The Occupational Safety and Health Administration (OSHA) regulates workplace exposure to silica dust. For construction sites, OSHA has deemed that cutting fiber cement with a circular saw having a blade diameter less than 8 inches and connected to a commercially available dust collection system per manufacturer's instructions results in exposures below the OSHA Permissible Exposure Limit (PEL) for respirable crystalline silica, without the need for additional respiratory protection.

If you are unsure about how to comply with OSHA silica dust regulations, consult a qualified industrial hygienist or safety professional, or contact your James Hardie technical sales representative for assistance. James Hardie makes no representation or warranty that adopting a particular cutting practice will assure your compliance with OSHA rules or other applicable laws and safety requirements.

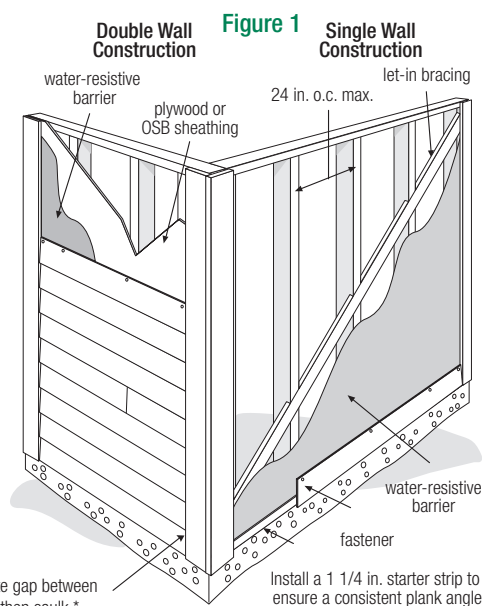
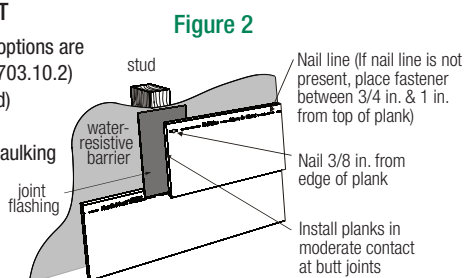
GENERAL REQUIREMENTS:

- HardiePlank® lap siding can be installed over braced wood or steel studs, 20 gauge (33 mils) minimum to 16 gauge (54 mils) maximum, spaced a maximum of 24 in. o.c. or directly to minimum 7/16 in thick OSB sheathing. See General Fastening Requirements. Irregularities in framing and sheathing can mirror through the finished application. Correct irregularities before installing siding.
- Information on installing James Hardie products over non-nailable substrates (ex: gypsum, foam, etc.) can be located in JH Tech Bulletin 19 at www.jameshardie.com
- A water-resistive barrier is required in accordance with local building code requirements. The water-resistive barrier must be appropriately installed with penetration and junction flashing in accordance with local building code requirements. James Hardie will assume no responsibility for water infiltration. James Hardie does manufacture HardieWrap® Weather Barrier, a non-woven non-perforated housewrap¹, which complies with building code requirements.
- When installing James Hardie products all clearance details in figs. 3-14 must be followed.
- Adjacent finished grade must slope away from the building in accordance with local building codes - typically a minimum of 6 in. in the first 10 ft..
- Do not use HardiePlank lap siding in Fascia or Trim applications.
- Do not install James Hardie products, such that they may remain in contact with standing water.
- HardiePlank lap siding may be installed on flat vertical wall applications only.
- For larger projects, including commercial and multi-family projects, where the span of the wall is significant in length, the designer and/or architect should take into consideration the coefficient of thermal expansion and moisture movement of the product in their design. These values can be found in the Technical Bulletin "Expansion Characteristics of James Hardie® Siding Products" at www.jameshardie.com.
- James Hardie Building Products provides installation/wind load information for buildings with a maximum mean roof height of 85 feet. For information on installations above 60 feet, please contact JH technical support.

INSTALLATION: JOINT TREATMENT

One or more of the following joint treatment options are required by code (as referenced 2009 IRC R703.10.2)

- Joint Flashing (James Hardie recommended)
- Caulking* (Caulking is not recommended for ColorPlus for aesthetic reasons as the Caulking and ColorPlus will weather differently. For the same reason, do not caulk nail heads on ColorPlus products.)
- "H" jointer cover



Note: Field painting over caulking may produce a sheen difference when compared to the field painted PrimePlus. *Refer to Caulking section in these instructions.

¹For additional painting information on HardieWrap® Weather Barrier, consult James Hardie at 1-866-4Hardie or www.hardiewrap.com



SELECT CEDARMILL® | SMOOTH | BEADED CEDARMILL® | BEADED SMOOTH | CUSTOM COLONIAL SMOOTH® | CUSTOM COLONIAL™ ROUGHSAW



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HS11119 P1/4 12/19



CLEARANCE AND FLASHING REQUIREMENTS

Figure 3
Roof to Wall

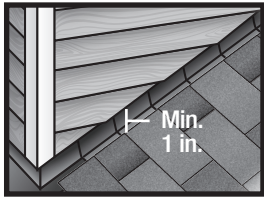


Figure 4
Horizontal Flashing

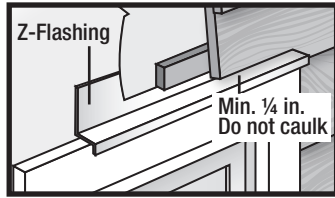


Figure 5
Kickout Flashing

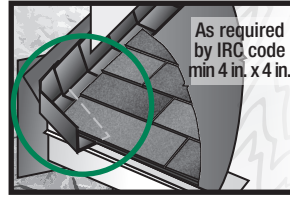


Figure 6
Slabs, Path, Steps to Siding



Figure 7
Deck to Wall

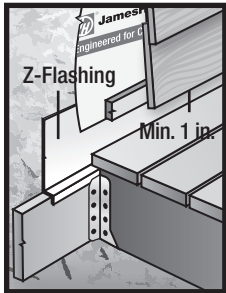


Figure 8
Ground to Siding

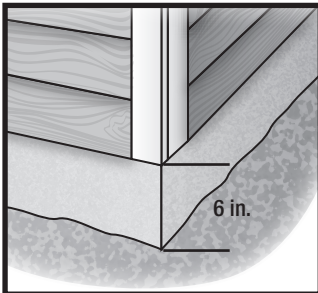


Figure 9
Gutter to Siding

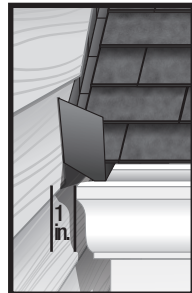


Figure 10
Sheltered Areas

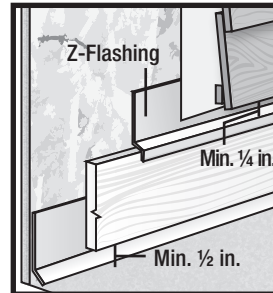


Figure 11
Mortar/Masonry

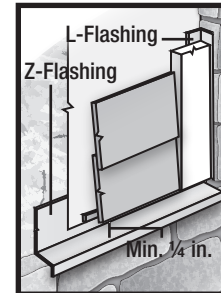


Figure 12
Drip Edge

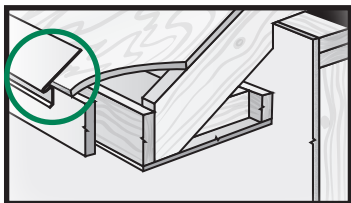


Figure 13
Block Penetration
(Recommended in HZ10)

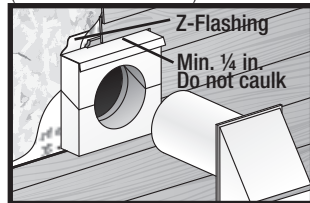
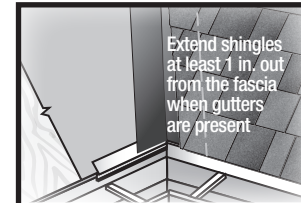


Figure 14
Valley/Shingle Extension



FASTENER REQUIREMENTS*

Refer to the applicable ESR report online to determine which fastener meets your wind load design criteria.

Blind Nailing is the preferred method of installation for HardiePlank® lap siding products. Face nailing should only be used where required by code for high wind areas and must not be used in conjunction with Blind nailing (Please see JH Tech bulletin 17 for exemption when doing a repair).

BLIND NAILING

Nails - Wood Framing

- Siding nail (0.09 in. shank x 0.221 in. HD x 2 in. long)
- 11ga. roofing nail (0.121 in. shank x 0.371 in. HD x 1.25 in. long)

Screws - Steel Framing

- Ribbed Wafer-head or equivalent (No. 8 x 1 1/4 in. long x 0.375 in. HD) Screws must penetrate 3 threads into metal framing.

Nails - Steel Framing

- ET & F Panelfast® nails or equivalent (0.10 in. shank x 0.313 in. HD x 1-1/2 in. long) Nails must penetrate minimum 1/4 in. into metal framing.

OSB minimum 7/16 in.

- Siding nail (0.09 in. shank x 0.215 in. HD x 1-1/2 in. long)
- Ribbed Wafer-head or equivalent (No. 8 x 1 5/8 in. long x 0.375 in. HD).

FACE NAILING

Nails - Wood Framing

- 6d (0.113 in. shank x 0.267 in. HD x 2 in. long)
- Siding nail (0.09" shank x 0.221" HD x 2" long)

Screws - Steel Framing

- Ribbed Bugle-head or equivalent (No. 8-18 x 1-5/8 in. long x 0.323 in. HD) Screws must penetrate 3 threads into metal framing.

Nails - Steel Framing

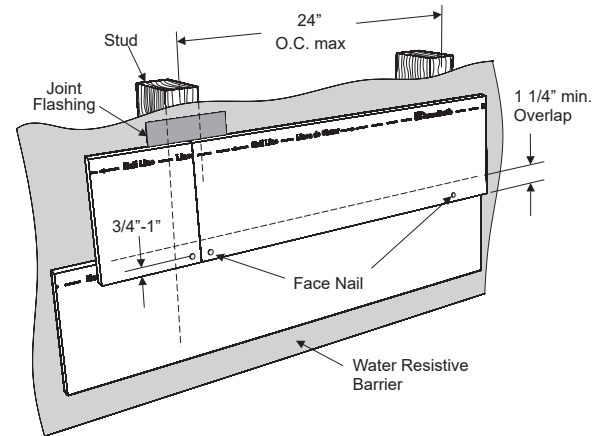
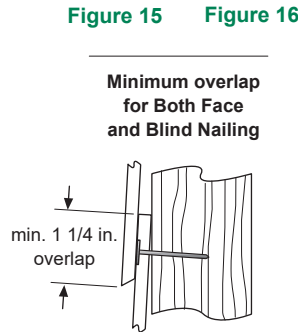
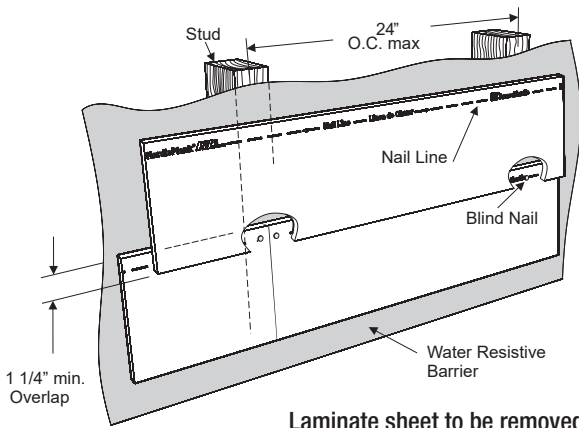
- ET & F pin or equivalent (0.10 in. shank x 0.25 in. HD x 1-1/2 in. long) Nails must penetrate minimum 1/4 in. into metal framing.

OSB minimum 7/16 in.

- Siding nail (0.09 in. shank x 0.221 in. HD x 1-1/2 in. long)

*Also see General Fastening Requirements; and when considering alternative fastening options refer to James Hardie's Technical Bulletin USTB 5 - Fastening Tips for HardiePlank Lap Siding.

FASTENER REQUIREMENTS continued



Laminate sheet to be removed immediately after installation of each course for ColorPlus® products.

Pin-backed corners may be done for aesthetic purposes only. Finish nails are recommended for pin-backs. Headed siding nails are allowed. Place pin-backs no closer than 1 in. from plank ends and 3/4 in. from plank edge into min. 3/8 in. wood structural panel. Pin-backs are not a substitute for blind or face nailing.

GENERAL FASTENING REQUIREMENTS

Fasteners must be corrosion resistant, galvanized, or stainless steel. Electro-galvanized are acceptable but may exhibit premature corrosion. James Hardie recommends the use of quality, hot-dipped galvanized nails. James Hardie is not responsible for the corrosion resistance of fasteners. Stainless steel fasteners are recommended when installing James Hardie® products near the ocean, large bodies of water, or in very humid climates.

Manufacturers of ACQ and CA preservative-treated wood recommend spacer materials or other physical barriers to prevent direct contact of ACQ or CA preservative-treated wood and aluminum products. Fasteners used to attach HardieTrim Tabs to preservative-treated wood shall be of hot dipped zinc-coated galvanized steel or stainless steel and in accordance to 2009 IRC R317.3 or 2009 IBC 2304.9.5

- Consult applicable product evaluation or listing for correct fasteners type and placement to achieve specified design wind loads.
- NOTE: Published wind loads may not be applicable to all areas where Local Building Codes have specific jurisdiction. Consult James Hardie Technical Services if you are unsure of applicable compliance documentation.
- Drive fasteners perpendicular to siding and framing.
- Fastener heads should fit snug against siding (no air space).
- NOTE: Whenever a structural member is present, HardiePlank should be fastened with even spacing to the structural member. The tables allowing direct to OSB or plywood should only be used when traditional framing is not available.

CUT EDGE TREATMENT

Caulk, paint or prime all field cut edges. James Hardie touch-up kits are required to touch-up ColorPlus products.

CAULKING

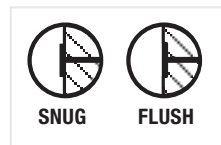
For best results use an Elastomeric Joint Sealant complying with ASTM C920 Grade NS, Class 25 or higher or a Latex Joint Sealant complying with ASTM C834. Caulking/Sealant must be applied in accordance with the caulking/sealant manufacturer's written instructions. **Note: some caulking manufacturers do not allow "tooling".**

PAINTING

DO NOT use stain, oil/alkyd base paint, or powder coating on James Hardie® Products. Factory-primed James Hardie products must be painted within 180 days of installation. 100% acrylic topcoats are recommended. Do not paint when wet. For application rates refer to paint manufacturers specifications. Back-rolling is recommended if the siding is sprayed.

PNEUMATIC FASTENING

James Hardie products can be hand nailed or fastened with a pneumatic tool. Pneumatic fastening is highly recommended. Set air pressure so that the fastener is driven snug with the surface of the siding. A flush mount attachment on the pneumatic tool is recommended. This will help control the depth the nail is driven. If setting the nail depth proves difficult, choose a setting that under drives the nail. (Drive under driven nails snug with a smooth faced hammer - Does not apply for installation to steel framing).



DO NOT	DO NOT	DO NOT USE
UNDER DRIVE	OVER DRIVE SLANT	ALUMINUM FASTENERS
IF, THEN	IF, THEN ADDITIONAL NAIL	
WOOD FRAME	FACE NAIL	CLIPPED HEAD NAILS
HAMMER FLUSH	COUNTERSINK & FILL	STAPLES
STEEL FRAME		
REMOVE & REPLACE		



COLORPLUS® TECHNOLOGY CAULKING, TOUCH-UP & LAMINATE

- Care should be taken when handling and cutting James Hardie® ColorPlus® products. During installation use a wet soft cloth or soft brush to gently wipe off any residue or construction dust left on the product, then rinse with a garden hose.
 - Touch up nicks, scrapes and nail heads using the ColorPlus® Technology touch-up applicator. Touch-up should be used sparingly. If large areas require touch-up, replace the damaged area with new HardiePlank® lap siding with ColorPlus® Technology.
 - Laminate sheet must be removed immediately after installation of each course.
 - Terminate non-factory cut edges into trim where possible, and caulk. Color matched caulks are available from your ColorPlus® product dealer.
 - Treat all other non-factory cut edges using the ColorPlus Technology edge coaters, available from your ColorPlus product dealer.
- Note:** James Hardie does not warrant the usage of third party touch-up or paints used as touch-up on James Hardie ColorPlus products.

Problems with appearance or performance arising from use of third party touch-up paints or paints used as touch-up that are not James Hardie touch-up will not be covered under the James Hardie ColorPlus Limited Finish Warranty.

PAINTING JAMES HARDIE® SIDING AND TRIM PRODUCTS WITH COLORPLUS® TECHNOLOGY

When repainting ColorPlus products, James Hardie recommends the following regarding surface preparation and topcoat application:

- Ensure the surface is clean, dry, and free of any dust, dirt, or mildew
- Repriming is normally not necessary
- 100% acrylic topcoats are recommended
- DO NOT use stain, oil/alkyd base paint, or powder coating on James Hardie® Products.
- Apply finish coat in accordance with paint manufacturers written instructions regarding coverage, application methods, and application temperature
- DO NOT caulk nail heads when using ColorPlus products, refer to the ColorPlus touch-up section

COVERAGE CHART/ESTIMATING GUIDE

Number of 12 ft. planks, does not include waste

COVERAGE AREA LESS OPENINGS (1 SQ = 100 sq.ft.)	HARDIEPLANK® LAP SIDING WIDTH									
	(exposure)	5 1/4 4	6 1/4 5	7 1/4 6	7 1/2 6 1/4	8 6 3/4	8 1/4 7	9 1/4 8	9 1/2 8 1/4	12 10 3/4
1		25	20	17	16	15	14	13	13	9
2		50	40	33	32	30	29	25	25	19
3		75	60	50	48	44	43	38	38	28
4		100	80	67	64	59	57	50	50	37
5		125	100	83	80	74	71	63	63	47
6		150	120	100	96	89	86	75	75	56
7		175	140	117	112	104	100	88	88	65
8		200	160	133	128	119	114	100	100	74
9		225	180	150	144	133	129	113	113	84
10		250	200	167	160	148	143	125	125	93
11		275	220	183	176	163	157	138	138	102
12		300	240	200	192	178	171	150	150	112
13		325	260	217	208	193	186	163	163	121
14		350	280	233	224	207	200	175	175	130
15		375	300	250	240	222	214	188	188	140
16		400	320	267	256	237	229	200	200	149
17		425	340	283	272	252	243	213	213	158
18		450	360	300	288	267	257	225	225	167
19		475	380	317	304	281	271	238	238	177
20		500	400	333	320	296	286	250	250	186

This coverage chart is meant as a guide. Actual usage is subject to variables such as building design. James Hardie does not assume responsibility for over or under ordering of product.

HS11119 P4/4 12/19

SILICA WARNING
DANGER: May cause cancer if dust from product is inhaled. Causes damage to lungs and respiratory system through prolonged or repeated inhalation of dust from product. Refer to the current product Safety Data Sheet before use. The hazard associated with fiber cement arises from crystalline silica present in the dust generated by activities such as cutting, machining, drilling, routing, sawing, crushing, or otherwise abrading fiber cement, and when cleaning up, disposing of or moving the dust. When doing any of these activities in a manner that generates dust you must (1) comply with the OSHA standard for silica dust and/or other applicable law, (2) follow James Hardie cutting instructions to reduce or limit the release of dust; (3) warn others in the area to avoid breathing the dust; (4) when using mechanical saw or high speed cutting tools, work outdoors and use dust collection equipment; and (5) if no other dust controls are available, wear a dust mask or respirator that meets NIOSH requirements (e.g. N-95 dust mask). During clean-up, use a well maintained vacuum and filter appropriate for capturing fine (respirable) dust or use wet clean-up methods - never dry sweep.

WARNING: This product can expose you to chemicals including respirable crystalline silica, which is known to the State of California to cause cancer. For more information go to P65Warnings.ca.gov.

RECOGNITION: In accordance with ICC-ES Evaluation Report ESR-2290, HardiePlank® lap siding is recognized as a suitable alternate to that specified in the 2006, 2009, 2012 & 2015 International Residential Code for One and Two-Family Dwellings, and the 2006, 2009, 2012 & 2015 International Building Code. HardiePlank lap siding is also recognized for application in the following: City of Los Angeles Research Report No. 24862, State of Florida Product Approval FL#13192, Miami-Dade County Florida NOA No. 17-0406.06, U.S. Dept. of HUD Materials Release 1263f, Texas Department of Insurance Product Evaluation EC-23, City of New York MEA 223-93-M, and California DSA PA-019. These documents should also be consulted for additional information concerning the suitability of this product for specific applications.



HardieTrim® Boards

EFFECTIVE SEPTEMBER 2019

These instructions are to be used for HardieTrim® HZ10® Boards **ONLY** and are **NOT VALID** in the following states: AK, UT, ID, CO, WY, MT. These instructions are also **NOT** valid in portions of WA, OR, CA, NV, AZ, NM. Enter your zip code at www.hardiezone.com to find out what zone applies to your location.

IMPORTANT: FAILURE TO FOLLOW JAMES HARDIE WRITTEN INSTALLATION INSTRUCTIONS AND COMPLY WITH APPLICABLE BUILDING CODES MAY VIOLATE LOCAL LAWS, AFFECT BUILDING ENVELOPE PERFORMANCE AND MAY AFFECT WARRANTY COVERAGE. FAILURE TO COMPLY WITH ALL HEALTH AND SAFETY REGULATIONS WHEN CUTTING AND INSTALLING THIS PRODUCT MAY RESULT IN PERSONAL INJURY. BEFORE INSTALLATION, CONFIRM YOU ARE USING THE CORRECT HARDIEZONE® PRODUCT INSTRUCTIONS BY VISITING HARDIEZONE.COM OR CALL 1-866-942-7343 (866-9-HARDIE)

STORAGE & HANDLING:

Store flat and keep dry and covered prior to installation. Installing siding wet or saturated may result in shrinkage at butt joints. Carry planks on edge. Protect edges and corners from breakage. James Hardie is not responsible for damage caused by improper storage and handling of the product.



CUTTING INSTRUCTIONS

OUTDOORS

- Position cutting station so that airflow blows dust away from the user and others near the cutting area.
- Cut using one of the following methods:
 - Best:** Circular saw equipped with a HardieBlade® saw blade and attached vacuum dust collection system. Shears (manual, pneumatic or electric) may also be used, not recommended for products thicker than 7/16 in.
 - Better:** Circular saw equipped with a dust collection feature (e.g. Roan® saw) and a HardieBlade saw blade.
 - Good:** Circular saw equipped with a HardieBlade saw blade.

INDOORS

DO NOT grind or cut with a power saw indoors. Cut using shears (manual, pneumatic or electric) or the score and snap method, not recommended for products thicker than 7/16 in.

- DO NOT dry sweep dust; use wet dust suppression or vacuum to collect dust.
- For maximum dust reduction, James Hardie recommends using the "Best" cutting practices. Always follow the equipment manufacturer's instructions for proper operation.
- For best performance when cutting with a circular saw, James Hardie recommends using HardieBlade® saw blades.
- Go to jameshardiepros.com for additional cutting and dust control recommendations.

IMPORTANT: The Occupational Safety and Health Administration (OSHA) regulates workplace exposure to silica dust. For construction sites, OSHA has deemed that cutting fiber cement with a circular saw having a blade diameter less than 8 inches and connected to a commercially available dust collection system per manufacturer's instructions results in exposures below the OSHA Permissible Exposure Limit (PEL) for respirable crystalline silica, without the need for additional respiratory protection.

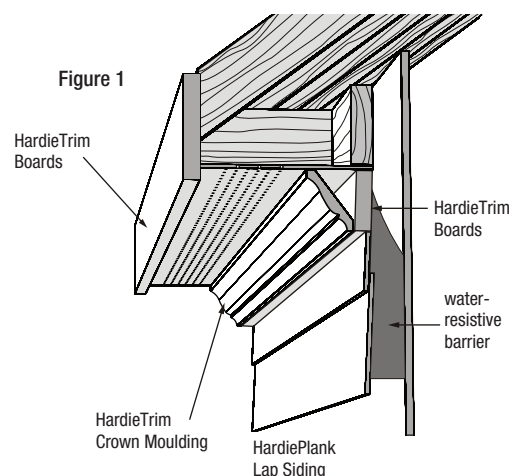
If you are unsure about how to comply with OSHA silica dust regulations, consult a qualified industrial hygienist or safety professional, or contact your James Hardie technical sales representative for assistance. James Hardie makes no representation or warranty that adopting a particular cutting practice will assure your compliance with OSHA rules or other applicable laws and safety requirements.

HardieTrim® boards are decorative non-load bearing trim products.

Do not use HardieTrim boards to replace any structural component.

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GENERAL REQUIREMENTS

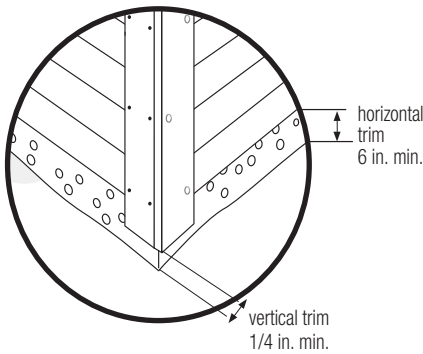
- Wood or steel must be provided for attaching HardieTrim boards.
- Follow all applicable codes when installing HardieTrim boards.
- DO NOT install HardieTrim boards, such that they may remain in contact with standing water.



FLASHING/CLEARANCE REQUIREMENTS NO-COVER

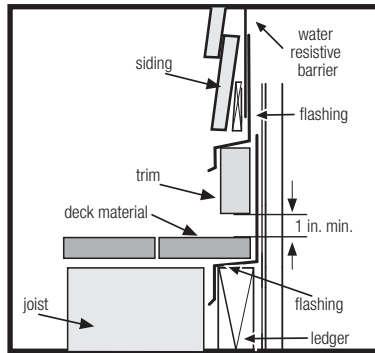
HardieTrim may be installed with a minimum 1/4 in. clearance when installed vertically to grade, decks, paths, steps, and driveways

Figure 2



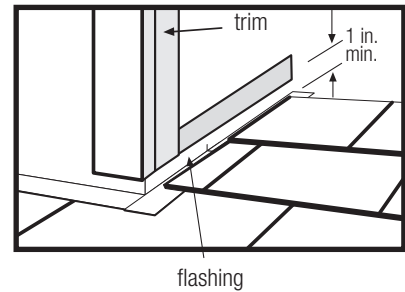
Maintain a minimum 1 in. horizontal clearance between James Hardie trim products and decks, paths, steps and driveways.

Figure 3



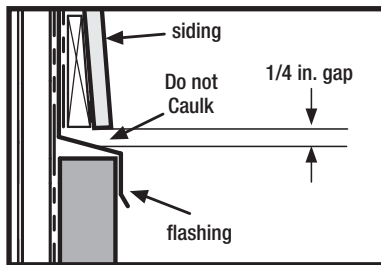
At the juncture of the roof and vertical surfaces, flashing and counter flashing shall be installed per the roofing manufacturer's instructions. Provide a 1 in. clearance between the roofing and the bottom edge of the trim.

Figure 4



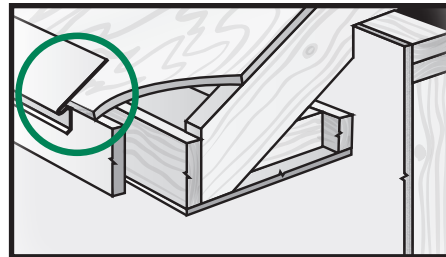
Maintain a 1/4 in. clearance between the bottom of James Hardie products and horizontal flashing. Do not caulk gap.

Figure 5



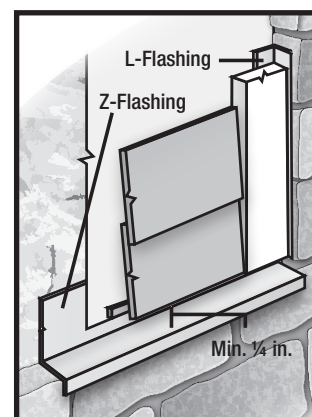
Drip Edge

Figure 6 for fascia installation see page 6



Mortar/Masonry

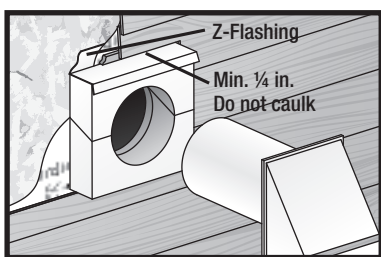
Figure 7



Block Penetration

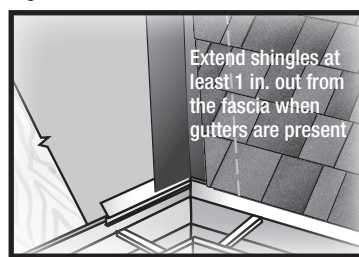
(recommended in HZ10)

Figure 8



Valley/Shingle Extension

Figure 9

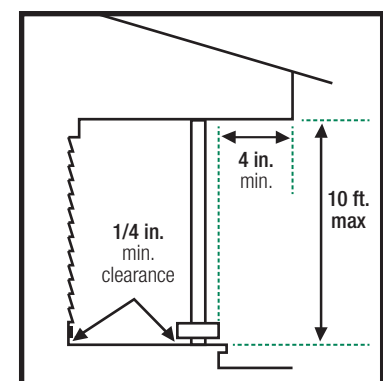


CLEARANCE REQUIREMENTS UNDER-COVER

Maintain a 1/4 in. clearance for HardieTrim boards installed under cover. Under cover is defined as:

- Not more than 10 feet below a roof overhang, and
- Not less than 4 inches horizontally from the edge of the roof overhang

Figure 10





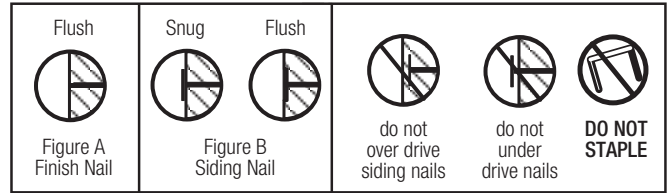
GENERAL FASTENING REQUIREMENTS

Fasteners must be corrosion resistant, galvanized, or stainless steel. Electro-galvanized are acceptable but may exhibit premature corrosion. James Hardie recommends the use of quality, hot-dipped galvanized nails. James Hardie is not responsible for the corrosion resistance of fasteners. Stainless steel fasteners are recommended when installing James Hardie products near the ocean, large bodies of water, or in very humid climates.

Manufacturers of ACQ and CA preservative-treated wood recommend spacer materials or other physical barriers to prevent direct contact of ACQ or CA preservative-treated wood and aluminum products. Fasteners used to attach HardieTrim Tabs to preservative-treated wood shall be of hot dipped zinc-coated galvanized steel or stainless steel and in accordance to 2009 IRC R317.3 or 2009 IBC 2304.9.5.”

PNEUMATIC FASTENING

James Hardie products can be hand nailed or fastened with a pneumatic tool. Pneumatic fastening is highly recommended. Set air pressure so that the fastener is driven snug with the surface of the siding. A flush mount attachment on the pneumatic tool is recommended. This will help control the depth the nail is driven. If setting the nail depth proves difficult, choose a setting that under drives the nail. (Drive under driven nails snug with a smooth faced hammer - Does not apply for installation to steel framing).



FACE NAILING REQUIREMENTS

Use 2 in. minimum 16 ga. finish nails to attach HardieTrim boards to wood frame construction. ET&F or equivalent fasteners or screws may be used to attach HardieTrim boards to steel frame construction.

Fastening instructions are similar for all applications. When using finish nails, position nails no closer than 1/2 in. from the edges of the trim and for all other fasteners no closer than 3/4 in. Fasteners must be no closer than 1 in. from ends of trim and spaced a maximum of 16 in. O.C. Ensure trim is adequately fastened.

James Hardie recommends using stainless steel finish nails when installing HardieTrim products.

Minimum fastener guide for finish nailing:

	Pre-built corner	Site Built Corners	Other areas (e.g. window trim, and band boards)
4 in.	1 nail every 16 in. to attach boards together + 1 nail every 16 in. each board	2 nails every 16 in.	2 nails every 16 in.
6 in.	1 nail every 16 in. to attach boards together + 2 nails every 16 in. each board		
8 in.	-	3 nails every 16 in.	3 nails every 16 in.
12 in.	-	4 nails every 16 in.	3 nails every 16 in.

Use a 2 in. finish nail to fasten trim together. Longer finish nails may bend.

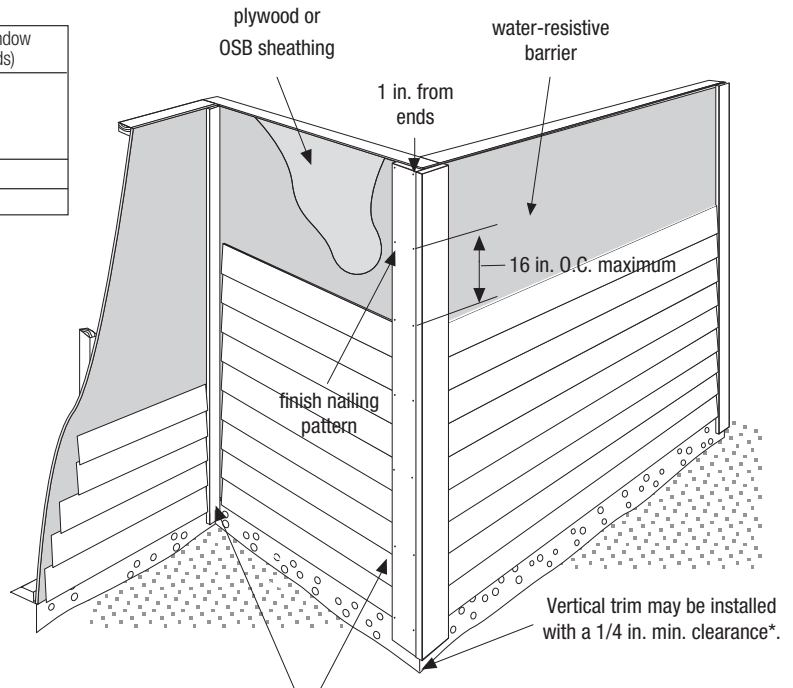


Figure 11

*Follow all applicable codes when installing HardieTrim boards



INSTALLATION

TRIMMING CORNERS

When installing corners or other vertical trim, position boards on the wall and attach (figure 12).

Pre-Built Corners

Alternatively, corners can be pre-built off the wall using 2 in. finishing nails. Each side of the pre-built corner must be secured to the wall (figure 13).

Figure 12

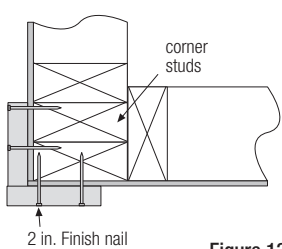
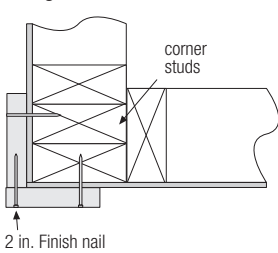
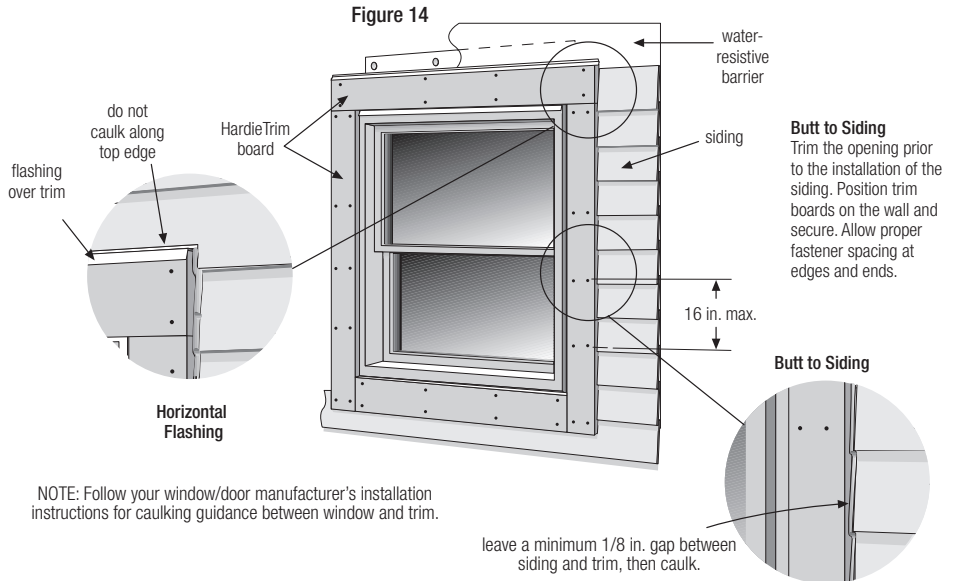


Figure 13



TRIM APPLICATION FOR WINDOWS, DOORS & OTHER OPENINGS

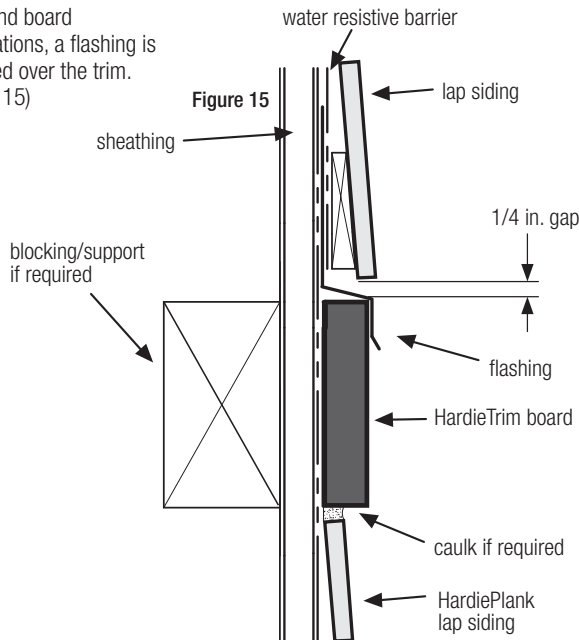
Flashing over trim is required per code for all installation methods. (figure 14)



NOTE: Follow your window/door manufacturer's installation instructions for caulking guidance between window and trim.

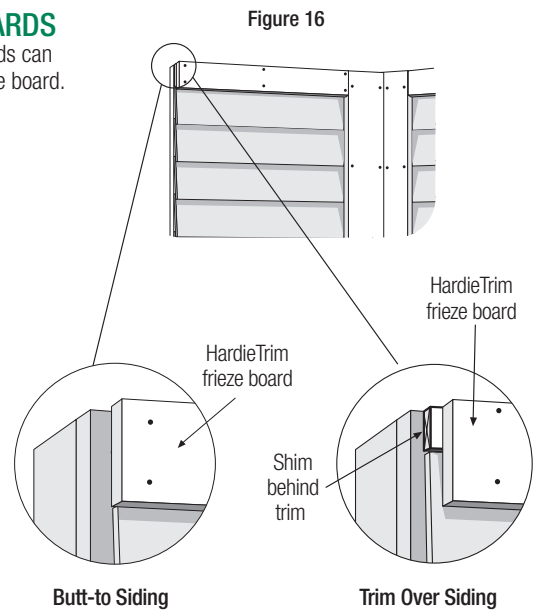
BAND BOARD

For band board applications, a flashing is required over the trim. (figure 15)



FRIEZE BOARDS

HardieTrim boards can be used as frieze board. (figure 16)





BATTEN BOARDS

HORIZONTAL PANEL JOINTS

At horizontal panel joints HardieTrim battens must be installed according to option 1 or 2 below. When installing HardieTrim Battens horizontally, they must be installed as a panel joint according to option 2.

Option 1

Figure 17 - No horizontal band board - Make a 22.5 - 45 degree weather cut, in the HardieTrim batten, just above the 1/4 in. clearance between panels.

Option 2

Figure 18 - Horizontal Band Board - Install a horizontal band board at the top of the bottom panel. Butt the lower batten to the band board and start the top batten at the bottom edge of the top panel. Maintain a 1/4 in. clearance above horizontal flashing.

Figure 17

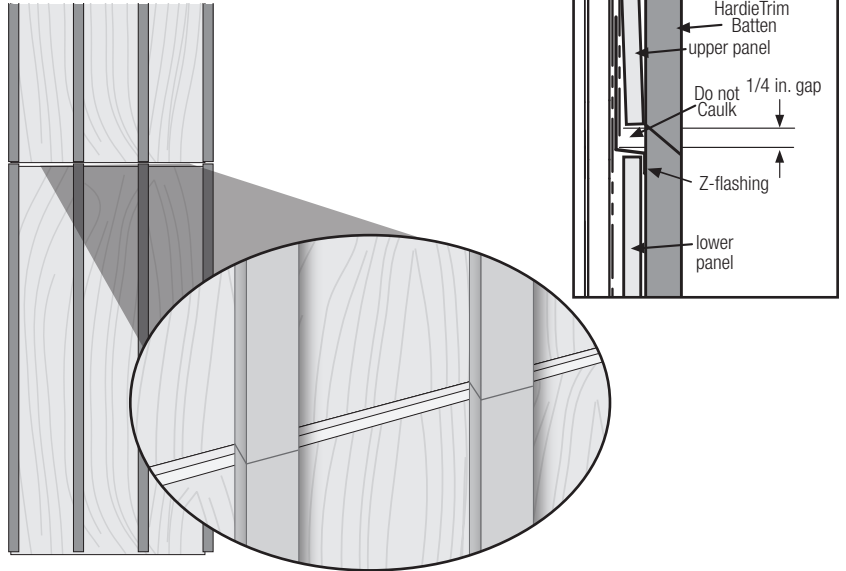
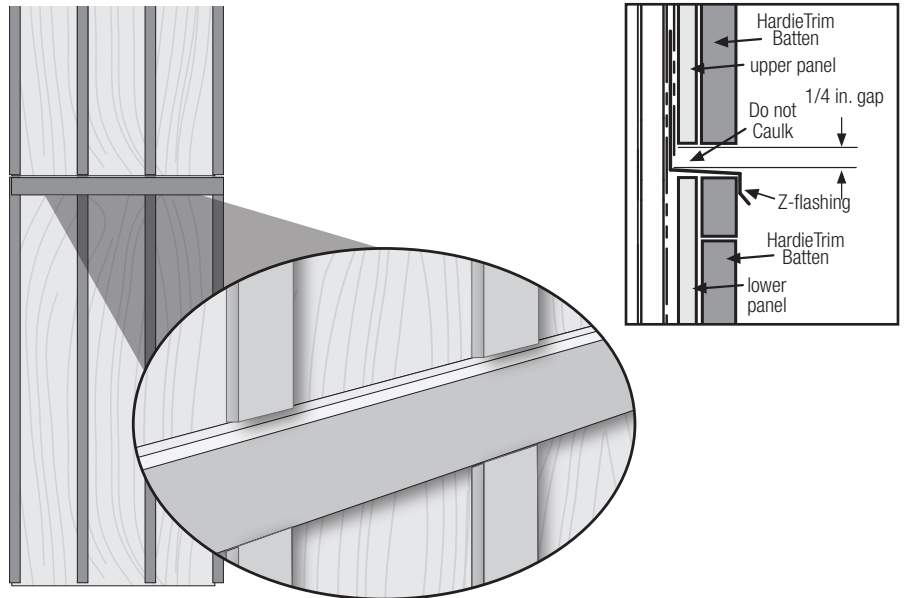


Figure 18





FASCIA

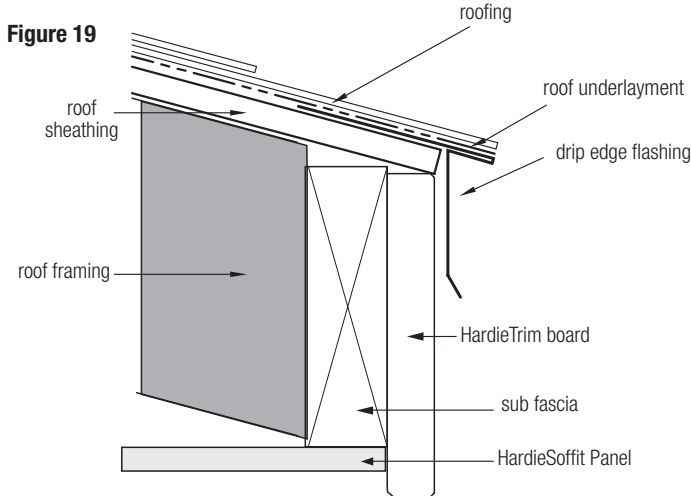
Do not use HardieTrim to replace any structural component

HardieTrim boards can be fastened directly over a 2x sub-fascia or directly to rafter tails. Check local building code for relevant codes.

Option 1

Over sub-fascia: (figure 19)

When installing HardieTrim boards over solid 2x sub-fascia use minimum 2 in., 16 gauge corrosion resistant finish nails. (see fastener guide below)



Gutters:

James Hardie recommends the use of rain gutters whenever possible.

Do not attach gutters directly to HardieTrim

Use gutter hangers that attach through the roof sheathing into a rafter tail or other structural member.

Soffit

When installing HardieSoffit additional framing/blocking may be needed depending on application. Refer to HardieSoffit installation instructions for guidance.

Option 2

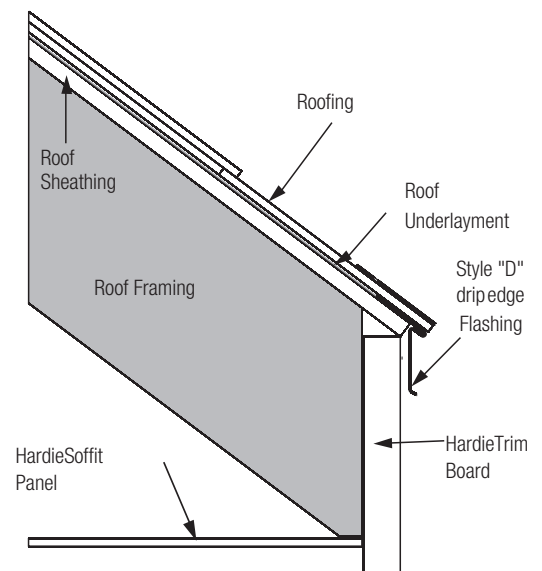
Direct to rafter tails: (figure 20)

When installing HardieTrim boards without the presence of a 2x sub-fascia, a minimum 8d siding corrosion resistant nails must be used to attach HardieTrim boards DO NOT use finish nails. (refer to fastener guide below).

Fascia Fastener Guide

HardieTrim Board	FASTENER SPACING	
	Direct to Rafter (min 8d siding)	Over 2x Sub-fascia (Minimum 2 in. 16 ga. Finish nails)
6 in.	2 nails every rafter spaced max 24 in. O.C.	2 nails spaced maximum 16 in. O.C.
8 in.	3 nails every rafter spaced max 24 in. O.C.	3 nails spaced maximum 16 in. O.C.
10 in.		4 nails spaced maximum 16 in. O.C.

Figure 20





HARDIETRIM® TABS

FASTENER REQUIREMENTS

For Corners, Band Boards, Windows, and Door Applications:

HardieTrim boards may be installed with HardieTrim™ Flat Tabs and HardieTrim™ Corner Tabs which provide concealed fastening. Only HardieTrim Flat and Corner Tabs can be used with HardieTrim boards to create a concealed fastening.

Step 1: Attach HardieTrim Flat Tabs to the back side of the trim using four, 18 ga. 1/2 in. L x 1/4 in. W narrow crown corrosion resistant staples, equally spaced in one row, positioned no closer than 1/2 in. from trim edges using a pneumatic staple gun. (figures 21, 22)

Step 2: For wood frame construction, attach the trim to the building with minimum 2, 6d siding nails fastened through the HardieTrim Flat Tabs (figure 23). ET&F or equivalent fasteners may be used to attach the HardieTrim Flat Tabs to steel frame construction.

Fastener spacing will vary based on application. Refer to fastener table on page 9. Refer to specific sections in these instructions for required fastener spacing by application (window, band board, etc.)

For Fascia, Rake, and Frieze board Applications:

HardieTrim tabs cannot be used in fascia, rake, or frieze board applications. Follow Face nailing fastening specifications.

Installation of HardieTrim tabs in Coastal Regions:

James Hardie requires that stainless steel staples & fasteners be used when installing HardieTrim Tabs in coastal regions.

Installation of HardieTrim Tabs over Pressure Treated Lumber: HardieTrim tabs shall not come in direct contact with ACQ or CA preservative-treated wood. Refer to the General Fastening section of this document for further information.

HardieTrim boards with ColorPlus Technology: Remove the laminate sheet as soon as possible after attaching the trim to the building.

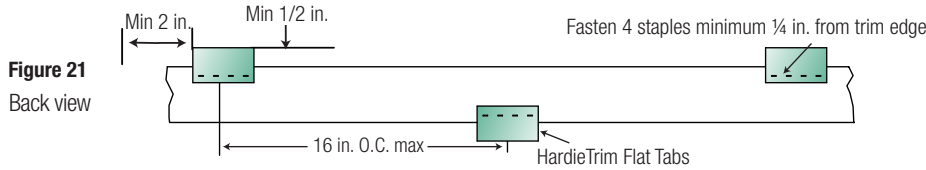


Figure 23

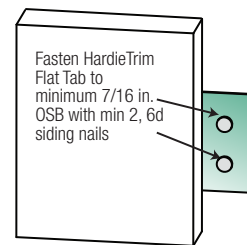
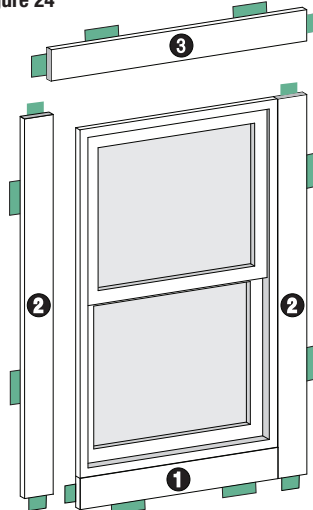


Figure 24



Trim Application for Windows, Doors & Other Openings

Trim the opening prior to the installation of the siding. Place a Flat Tab at the end of each trim board and one tab every 16 in. OC. Attach the trim boards and Flat Tabs around the opening as shown in figure 24. Use 16 ga. galvanized 2 in. long finish nails to ensure proper fastening if needed.

<p>Flush</p> <p>HardieTrim Flat and Corner Tabs</p> <p>Siding nail attaches tab to the wall.</p>	<p>HardieTrim Flat and Corner Tabs</p> <p>Do not under drive nails.</p>	<p>Only use staples to fasten HardieTrim Flat and Corner Tabs to the trim boards.</p>
--	---	---





TRIMMING CORNERS

When using HardieTrim tabs prebuild outside corners off the wall.

- Attach HardieTrim Corner Tabs to the back side of the trim using eight(8) - 18 ga. 1/2 in. L x 1/4 in. W narrow crown corrosion resistant staples using a pneumatic stapler. Ensure the HardieTrim Corner Tabs are fastened tight and straight to the trim boards. (figure 25)
- For wood frame construction, attach trim to building using min. 6d siding nails fastened through the HardieTrim Corner Tabs attached to minimum 7/16 in. OSB *. (figure 26)
- Attach a HardieTrim Corner Tab 1 in. from each ends and every 20 in. O.C.
- TIP: Creating a jig for the work station is recommended to ensure corners are fastened securely and straight. (figure 27)

Figure 25

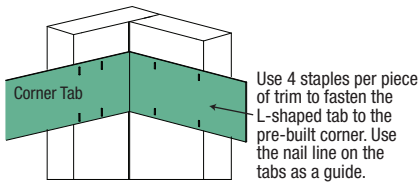


Figure 26

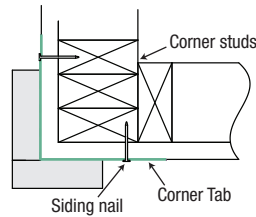
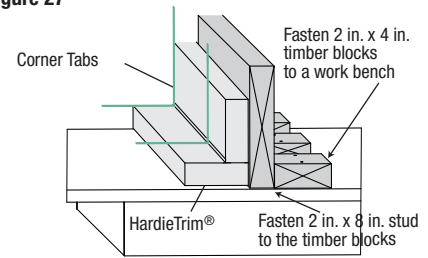


Figure 27



BAND BOARD

Terminate ends of the Band Board into Trim or Siding or miter cut the edges of the trim at the corners of the building. Place a HardieTrim Flat Tab at the end of each trim board and one tab every stud at a maximum of 16 in. O.C. The HardieTrim Flat Tabs should be attached to the trim in an alternating pattern to the top and bottom of the band board (figures 21, 22). Use 16 ga. galvanized 2 in. long finish nails to ensure proper fastening if needed.

Trim Tab Fastener Table

Application	Framing Material Tab is nailed into	Fastener (tab to framing)	Fastener (tab to trim)	Max Tab Spacing (inches on center)
Flat Tab	Wood Stud (minimum G=0.42)	One 6d corrosion resistant siding nail installed through center of tab into framing	Four 18 ga. X 1/2 in. long X 1/4 in. wide corrosion resistant crown staples, equally spaced in one row	16
	Minimum APA rated 7/16 in. OSB	Two 4d ring shank corrosion resistant siding nails equally spaced installed through tab into framing		
	Minimum 20 gauge steel	One No. 8 X 1 in. long X 0.323 in. head diameter screw (corrosion resistant) installed through flange into framing		
Corner Tab	Wood Stud (minimum G=0.42)	On each flange, Install one 6d corrosion resistant siding nail through tab into framing	For each piece of trim, install Four 18 ga. X 1/2 in. long X 1/4 in. wide corrosion resistant crown staples, equally space in two rows	20
	Minimum APA rated 7/16 in. OSB	On each flange, Install two 4d ring shank corrosion resistant siding nails through tab into framing		
	Minimum 20 gauge steel	On each flange, Install one No. 8 X 1 in. long X 0.323 in. head diameter screw (corrosion resistant) through tab into framing		





FINISHING

CUT EDGE TREATMENT

Caulk, paint or prime all field cut edges. James Hardie touch-up kits are required to touch-up ColorPlus products.

CAULKING

For best results use an Elastomeric Joint Sealant complying with ASTM C920 Grade NS, Class 25 or higher or a Latex Joint Sealant complying with ASTM C834. Caulking/Sealant must be applied in accordance with the caulking/sealant manufacturer's written instructions. **Note: some caulking manufacturers do not allow "tooling".**

PAINTING

DO NOT use stain, oil/alkyd base paint, or powder coating on James Hardie® Products. Factory-primed James Hardie products must be painted within 180 days of installation. 100% acrylic topcoats are recommended. Do not paint when wet. For application rates refer to paint manufacturers specifications. Back-rolling is recommended if the siding is sprayed.

COLORPLUS TECHNOLOGY CAULKING, TOUCH-UP & LAMINATE

- Care should be taken when handling and cutting James Hardie® ColorPlus® products. During installation use a wet soft cloth or soft brush to gently wipe off any residue or construction dust left on the product, then rinse with a garden hose.
 - Touch up nicks, scrapes and nail heads using the ColorPlus® Technology touch-up applicator. Touch-up should be used sparingly. If large areas require touch-up, replace the damaged area with new HardiePlank® lap siding with ColorPlus® Technology.
 - Laminate sheet must be removed immediately after installation of each course.
 - Terminate non-factory cut edges into trim where possible, and caulk. Color matched caulks are available from your ColorPlus® product dealer.
 - Treat all other non-factory cut edges using the ColorPlus Technology edge coat, available from your ColorPlus product dealer.
- Note:** James Hardie does not warrant the usage of third party touch-up or paints used as touch-up on James Hardie ColorPlus products.

Problems with appearance or performance arising from use of third party touch-up paints or paints used as touch-up that are not James Hardie touch-up will not be covered under the James Hardie ColorPlus Limited Finish Warranty.

PAINTING JAMES HARDIE® SIDING AND TRIM PRODUCTS WITH COLORPLUS® TECHNOLOGY

When repainting ColorPlus products, James Hardie recommends the following regarding surface preparation and topcoat application:

- Ensure the surface is clean, dry, and free of any dust, dirt, or mildew
- Repriming is normally not necessary
- 100% acrylic topcoats are recommended
- DO NOT use stain, oil/alkyd base paint, or powder coating on James Hardie® Products.
- Apply finish coat in accordance with paint manufacturers written instructions regarding coverage, application methods, and application temperature
- DO NOT caulk nail heads when using ColorPlus products, refer to the ColorPlus touch-up section

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SILICA WARNING

DANGER: May cause cancer if dust from product is inhaled. Causes damage to lungs and respiratory system through prolonged or repeated inhalation of dust from product. Refer to the current product Safety Data Sheet before use. The hazard associated with fiber cement arises from crystalline silica present in the dust generated by activities such as cutting, machining, drilling, routing, sawing, crushing, or otherwise abrading fiber cement, and when cleaning up, disposing of or moving the dust. When doing any of these activities in a manner that generates dust you must (1) comply with the OSHA standard for silica dust and/or other applicable law, (2) follow James Hardie cutting instructions to reduce or limit the release of dust; (3) warn others in the area to avoid breathing the dust; (4) when using mechanical saw or high speed cutting tools, work outdoors and use dust collection equipment; and (5) if no other dust controls are available, wear a dust mask or respirator that meets NIOSH requirements (e.g. N-95 dust mask). During clean-up, use a well maintained vacuum and filter appropriate for capturing fine (respirable) dust or use wet clean-up methods - never dry sweep.

WARNING: This product can expose you to chemicals including respirable crystalline silica, which is known to the State of California to cause cancer. For more information go to P65Warnings.ca.gov.

RECOGNITION: HardieTrim boards may be installed as an equal alternative to conventional trim permitted for use in; 2006, 2009, 2012 & 2015 International Building Code, Section 1403, and the 2006, 2009, 2012 & 2015 International Residential Code for One and Two-Family Dwellings, Section R703.

07 46 21
Siding

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Engineered wood siding.
 - a. Panel and lap siding.
2. Accessories.

1.2 DEFINITIONS

- A. Treated Engineered Wood: Engineered wood products manufactured for exterior use treated with manufacturer's proprietary process to resist fungal decay and termite damage.

1.3 COORDINATION

- A. Coordinate engineered wood siding installation with flashings, trim, and construction of other adjoining work to ensure proper sequencing, construction progress, and to provide a leakproof, secure, and noncorrosive installation.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product and component included in engineered wood siding system. Include the following:
 1. Construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of product and accessory included in siding system.
 2. Installation methods, including nailing patterns.
 3. Siding manufacturer's requirements for products to be installed by others.
 4. Maintenance and periodic inspection recommendations.

1.5 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For each type of product, including related accessories, to include in maintenance manuals.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver components and other manufactured items so as not to be damaged or deformed. Package components for protection during transportation and handling with manufacturer's name and identification of products.
- B. Unload, store, and erect components in a manner to prevent bending, warping, twisting, and surface damage. Maintain slip sheet until piece is being prepared for installation.
- C. Store components on flat surfaces clear of the ground. Store under roof or covered with suitable weathertight and ventilated covering, and in accordance with manufacturers' written instructions.

1.7 WARRANTY

- A. **Manufacturer's Trim and Siding Limited Warranty:** Manufacturer agrees to repair or replace components of engineered wood siding against substrate damage within specified warranty period.
 - 1. Substrate damage is defined as deterioration, buckling, and overlay issues caused by manufacturing defects or termite damage.
 - 2. Hail damage is defined as a crack or chip in the surface overlay, or product substrate dents exceeding 3/8 inch (10 mm) in length or diameter and is caused by hail.
 - 3. Limited Warranty Period: 50 years from date of installation and written to Owner on date of Substantial Completion.
- B. **Manufacturer's Accessories and Non-Standard Applications Limited Warranty:** Manufacturer agrees to repair or replace components of manufacturer's accessories and when used in approved non-standard applications against substrate and finish damage within specified warranty period.
 - 1. Substrate damage is defined as deterioration, buckling, or overlay issues caused by manufacturing defects or termite damage.
 - 2. Hail damage is defined as cracks or chips in the surface overlay or dent in the substrate of the product that exceeds 3/8 inch (10 mm) in length or diameter, and is caused by hail.
 - 3. Finish damage is defined as, under normal conditions and use, discoloring due to chalking, peeling, blisters, cracks; erosion to the extent of exposing the substrate; or yellowing or color fade change from light exposure not to exceed 5 Delta E CMC (2:1).
 - 4. Limited Warranty Period for Substrate and Finish: 10 years from date of installation and communicated to Owner on date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Fire-Resistance Performance: Comply with ASTM E119 for testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency acceptable to AHJ.
1. Surface-Burning Characteristics: Provide engineered wood siding system with a Class C flame-spread index of 76 to 200 or less and a smoke-developed index of 0 to 450 or less when tested in accordance with ASTM E84 and UL 723.
- B. Thermal Movement Performance: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects.
- C. Composite Wood Products: Products to be made using ultra-low-emitting formaldehyde resins as defined in the California Air Resources Board's "Airborne Toxic Control Measure to Reduce Formaldehyde Emissions from Composite Wood Products" or made with no added formaldehyde.
- D. Composite Wood Products: Products to be made without added urea formaldehyde.

2.2 ENGINEERED WOOD SIDING

- A. Treated Engineered Wood Lap Siding: Exterior-grade, resin-saturated, paper overlay laminated to EPA-registered zinc-borate-treated engineered wood siding. Exposed edges sealed for moisture resistance. Manufacturer's acrylic finish.
1. Basis-of-Design Product: Subject to compliance with requirements, provide Louisiana-Pacific Corporation; LP SmartSide Lap Siding and ExpertFinish Lap & Siding, [38] [76] Series or comparable product.
 2. Thickness: [0.354 inch (8.9 mm)]
 3. Width: [7.84 inches (199 mm)]
 4. Length: [12 ft. (3.7 m)]
 5. Color: Primer
 6. Texture: Cedar Texture
- B. Treated Engineered Wood Trim Provide manufacturer's standard trim, angles, and similar components at corners, transitions, and rough openings meeting the performance requirements.
1. Basis-of-Design Product: Subject to compliance with requirements, provide Louisiana-Pacific Corporation; LP SmartSide [Trim] [190] [440] [540] Series or comparable product.
 2. Thickness: [0.675 inch (17.1 mm)] total thickness.
 3. Width: [3.5 inches (89 mm)]
 4. Length: 16 ft. (4.9 m).

5. Edges: Square.
6. Color: Primer
7. Texture: Cedar Texture

2.3 ACCESSORIES

- A. Fasteners: Hot-dipped galvanized nails, with **0.092-inch (2.3-mm)** diameter shank, in length required to penetrate **wood structural panels and** structural framing a minimum of **1-1/2 inches (38 mm)**, as recommended in writing by composite siding system manufacturer suitable for and compatible with system materials. Larger diameter fasteners may be required depending on wind pressure, wind speed, and wind exposure category limitations for structures in product approvals PR-N124 or ESR-1301.
- B. Sealant: ASTM C920, minimum Class 25 sealant.
- C. Water-Resistive Barrier: ASTM D226 or other approved water-resistive barrier.
- D. Air Barrier: ASTM E1677.
 1. Seam Tape: Air barrier manufacturer's standard product.
- E. Flashing:
 1. Provide flashing at window and door heads and where indicated on Drawings..
 2. Material: Aluminum.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, engineered wood siding system supports, and other conditions affecting performance of the Work.
 1. Examine wall framing to verify that support members and anchorage have been installed within alignment tolerances required by engineered wood siding manufacturer.
 2. Examine wall sheathing to verify that sheathing joints are supported by framing or blocking and that installation is within flatness tolerances required by engineered wood siding manufacturer.
 - a. Verify that air and moisture barrier has been installed over sheathing substrate to prevent air infiltration and water penetration.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. General: Install engineered wood siding in accordance with manufacturer's written instructions in orientation, sizes, and locations indicated. Anchor engineered wood siding and other components of the Work securely in place.
1. Shim or otherwise plumb substrates receiving engineered wood siding system.
 2. Flash engineered wood siding at perimeter of all openings.
 3. Locate and space fastenings in uniform vertical and horizontal alignment.
 4. Seal engineered wood substrates exposed to weather to prevent moisture intrusion and water buildup.
 - a. Seal around penetrations.
 - b. Seal each exposed cut of siding and trim. It is not recommended to field spray-applied coatings on cuts.
 - c. Seal each butt joint from weather by covering with joint moldings, sealant, or factory prefinished ends.
 5. Install flashing and trim as engineered wood siding work proceeds.
 6. Align bottoms of engineered wood siding.
 7. Provide weathertight escutcheons for pipe- and conduit-penetrating engineered wood siding system.
- B. Metal Protection: Where dissimilar metal flashings contact each other or corrosive substrates, protect against galvanic action as recommended in writing by siding manufacturer.
- C. Accessory Installation: Install accessories with positive anchorage to building and weathertight mounting, and provide for thermal expansion. Coordinate installation with flashings and other components.
- D. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, and set units true to line and level. Install work with laps, joints, and seams that are permanently watertight.
1. Install exposed flashing and trim that is without buckling and tool marks, and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and to achieve waterproof performance.
- E. Replace engineered wood siding components that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 074643



SMARTSIDE®
TRIM & SIDING

GENERAL

- At the time of manufacture, siding meets or exceeds the performance standards set forth in ICC-ES-AC321 and has achieved-code recognition under ES Report ESR-1301 and HUD recognition under HUD-MR-1318. For copies of ESR-1301, call LP Customer Support at 1-800-648-6893 or go online at http://www.ice-es.org/reports/pdf_files?ICC-ES/ESR-1301.pdf.
- Minimum 6 in. clearance must be maintained between siding and finish grade.
- Siding applied adjacent to porches, patios, walks, etc. must have a clearance of at least 1 in. above any surface.
- Minimum 1 in. clearance at intersection with roof line
- Apply siding in a manner that prevents moisture intrusion and water buildup.
- All exposed wood substrate must be sealed in a manner that prevents moisture intrusion and water buildup.
- In non-traditional ICF and SIP assemblies, the ICF or SIP manufacturer must prescribe the fastening specifications. See attached addendum for fastening 8-inch lap siding to SIP assemblies. Note: LP does not recommend LP SmartSide for use in these non-traditional assemblies. If used, LP will not warrant for Buckling and Shrinkage. However, balance of warranty does remain intact.
- When using wet blown cellulose insulation, the insulation must not be in direct contact with the siding and it must be allowed to dry a minimum of 24 hours or longer if specified by the insulation manufacturer.
- DO NOT USE STAPLES
- SIDING MUST NOT BE IN DIRECT CONTACT WITH MASONRY

STORAGE

- Store off the ground well supported, on a flat surface, under a roof or separate waterproof covering
- Keep siding clean and dry. Inspect prior to application.
- Allow siding to adjust to atmospheric conditions before application.

STUD SPACING

- Space studs no farther apart than the span rating indicated on the product trademark.
- Precision 38 Series lap may be installed up to 16 in. OC framingspans. Precision 76 Series lap may be installed up to 24 in. OC framing spans.

MOISTURE

- Moisture control and moisture vapor control are critical elements of proper housing design. Check your local building codes for application procedures for handling moisture and moisture vapor in your area.
- As with all wood products, do not apply engineered wood siding to a structure having excessive moisture conditions such as drying concrete or plaster. If such conditions exist, the building should be well ventilated to allow it to dry prior to the application of the siding.
- Siding must not be applied to green or crooked structural framing members. Do not apply siding over rain-soaked or buckled sheathing materials.
- Gutters are recommended for control of roof water run off.

SECONDARY WEATHER RESISTANT BARRIER

- A properly installed breathable water-resistive barrier is required behind the siding.
- Consult your local building code for details.
- LP will assume no responsibility for water penetration.

GAPS & SEALANTS

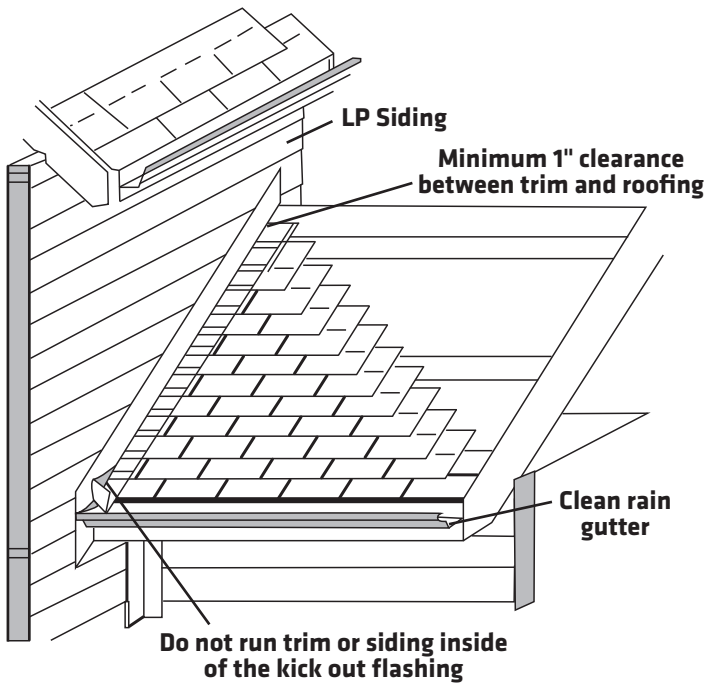
- Seal all gaps with a high-quality, non-hardening, paintable sealant with a minimum stated service life of 30 years. Follow the sealant manufacturer's instructions for application.

FLASHING, WINDOWS, DOORS & OPENINGS

- All openings must be properly sealed or flashed in a manner that prevents moisture intrusion or buildup. Several examples that accomplish this are shown on the following pages.

KICK-OUT FLASHING

- Install kick-out flashing to direct the water into the gutter
- Install step flashing with minimum 4-inch upper leg
- Properly integrate flashing with the secondary water-resistive barrier. Use housewrap, flashing tape, z-flashing, or other items as needed to maintain the counterflashing principle.
- DO NOT extend the siding or trim into the kick-out flashing or gutter
- Maintain a clearance between the end of the gutter and the adjoining wall to allow for proper maintenance of the siding
- Paint ALL exposed cut edges



TRIM

Trim should be thick enough so the siding does not extend beyond the face of the trim.

- Trim and fascia must be applied in a manner that will not allow moisture intrusion or water buildup.
- LP® SmartSide® siding is not designed and/or manufactured to be used as trim or fascia. LP SmartSide trim and fascia are available in a variety of dimensions.

FINISHING INSTRUCTIONS

DO

- Prime and paint all exposed surfaces including all drip edges or where water will hang.
- Apply finish coat as soon as possible or within 180 days of application.
- High-quality acrylic latex paint, specially formulated for use on wood and engineered wood substrates, is highly recommended. Semi-gloss or satin finish oil or alkyd paints are acceptable. For flat alkyd paint, please check with the coating manufacturer for their recommendations for use on composite wood siding.
- Follow the coating manufacturer's application and maintenance instructions.

DO NOT USE

- Semi-transparent and transparent stains.
- Shake and shingle paints.
- Vinyl-based resin formulas such as vinyl acetate, PVA, vinyl acetate/acrylic copolymer paints.

NAILING INSTRUCTIONS

- LP SmartSide 76 Series lap siding may be attached directly to framing members spaced up to a maximum of 24 in. on center. 76 Series LP SmartSide Lap may also be applied over code-approved nailable sheathing.
- LP SmartSide 38 Series lap siding may be attached over nailable sheathing or directly to framing members that are spaced up to a maximum of 16 in. on center.
- Check your local building code before starting to install the Product to confirm if sheathing is needed.
- Siding joints should be staggered over successive courses. For installation with or without nailable sheathing, joints must occur over stud locations.
- Siding shall be installed with top (blind) nailing, with the nails placed a minimum of 3/8 in. from either end and a minimum of 3/4 in. from the top edge of the board. Siding may only be face nailed as required immediately below window sills, frieze boards, and horizontal trim bands.
- Overlap successive courses of siding a minimum of 1 in.
- Use minimum 8d (0.113 in. shank diameter), corrosion resistant, box style nails.
- All exposed face nails must be caulked and sealed in a manner that prevents moisture intrusion and water buildup.
- Fasteners at each stud location must penetrate solid wood framing or the sheathing and wood framing a minimum of 1.5 in.

CONDITION

CORRECTION

Snug		OK	
Flush		OK	
Visible fiber		Paint	
Countersunk 1/16 in.-1/8 in.		Seal with caulking	
Countersunk more than 1/8 in.		Seal with caulk and re nail	

- For information on fastening LP SmartSide Lap products in high wind speed areas, refer to ICC-ES Report ESR-1301.
- Alternative Fastening Options for 8-inch only 38 Series Precision Lap Over Structural Sheathing and 24 in. OC Wall Framing
 - The sheathing must be a minimum 7/16 in. thickness with an APA-The Engineered Wood Association trademark that contains the consensus standard DOC PS2.
 - The transverse windload design values in table 4 of the APA Product Report PR-N124 may be used when the following fasteners specifications are met.
 - 38 series precision lap must be fastened with:
 - a minimum no. 8 corrosion resistant tapered head wood screw with a maximum spacing of 12 in. on center with 1.5 in. screw penetration into each stud or . . .
 - a minimum 6d (0.99 in. shank diameter) corrosion resistant ring shank nail with a maximum spacing of 8 in. on center with 1.5 in. nail penetration into each stud.
- Alternative Fastening Options Over SIP Assemblies:
 - The sheathing must be a minimum 7/16 in. thickness with an APA-The Engineered Wood Association trademark that contains the consensus standard DOC PS2
 - The transverse windload design values in table 4 of the APA Product Report PR-N124 may be used when the following fasteners specifications are met.
 - 38 series precision lap must be fastened with:
 - a minimum no. 8 corrosion resistant tapered head wood screws with a maximum spacing of 12 in. on center or...
 - a minimum 6d (0.99 in. shank diameter) corrosion resistant ring shank nail with a maximum spacing of 8 in. on center
 - 76 series precision lap must be fastened with:
 - a minimum no. 8 corrosion resistant tapered head wood screw with a maximum spacing of 16 in. on center or . . .
 - a minimum 6d (0.99 in. shank diameter) corrosion resistant ring shank nail with a maximum spacing of 12 in. on center.

CAUTION

- Do not force siding into place.
- DO NOT USE STAPLES.

Insulated Sheathings

LP SmartSide Siding may be installed over low-compression rigid foam or fiberglass sheathings. The following precautions must be followed:

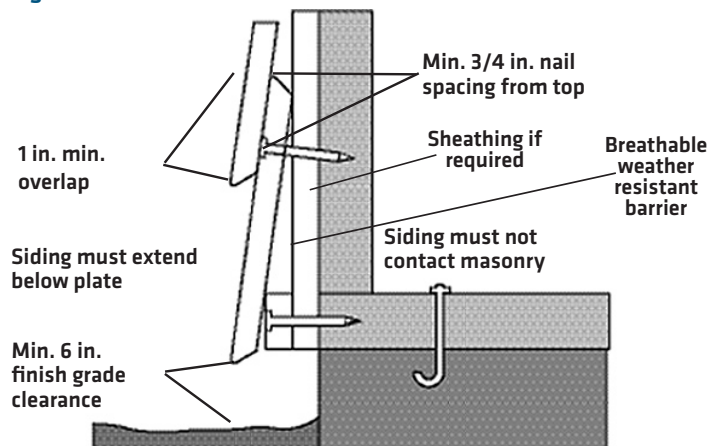
- Adequate bracing of the wall in accordance with the International Codes or other ruling building code is required.
- For rigid foam sheathing up to 1" (25.4 mm) thick, siding may be nailed directly to the foam sheathing unless a drainage plane is required by the local building code. Nail length must be increased to ensure a minimum 1-1/2" (38.1 mm) fastener penetration into the structural framing.

- For rigid foam sheathing greater than 1" (25.4 mm), a minimum 1-1/2" (38.1 mm) thick by 4" (101.6 mm) wide vertical strapping or furring strip must be installed over the sheathing to provide a solid, level nailing base for the siding. The strapping must be securely fastened to structural framing spaced no greater than 16" OC (406 mm) with a minimum nail penetration of 1-1/2 inches (38.1 mm) and a maximum nail spacing no greater than the width of the siding.

Louisiana-Pacific will assume no responsibility for any damage or condition arising from the use of foam sheathing.

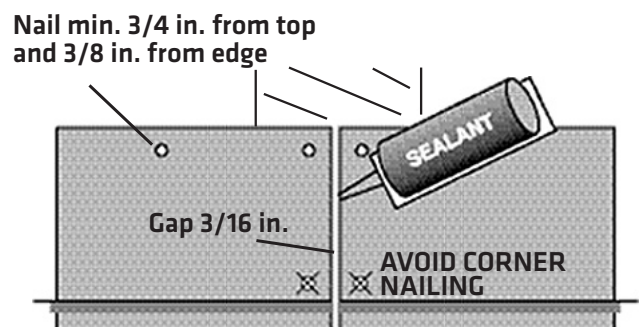
OVERLAP, CLEARANCE & NAILING SPACE

Figure 1



BUTT JOINTS

Figure 2



- A minimum 3/16 in. gap is required at butt joints.
- Seal all gaps at butt joints.
- Unsheathed walls require adequate bracing.
- Joints must occur over the studs.

Figure 3

over openings

alternate joint treatment

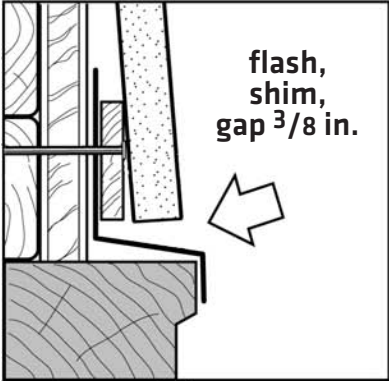


Figure 3A

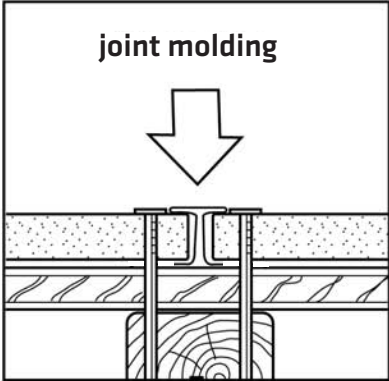


Figure 3B

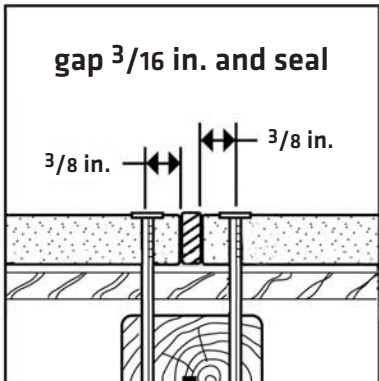


Figure 3C

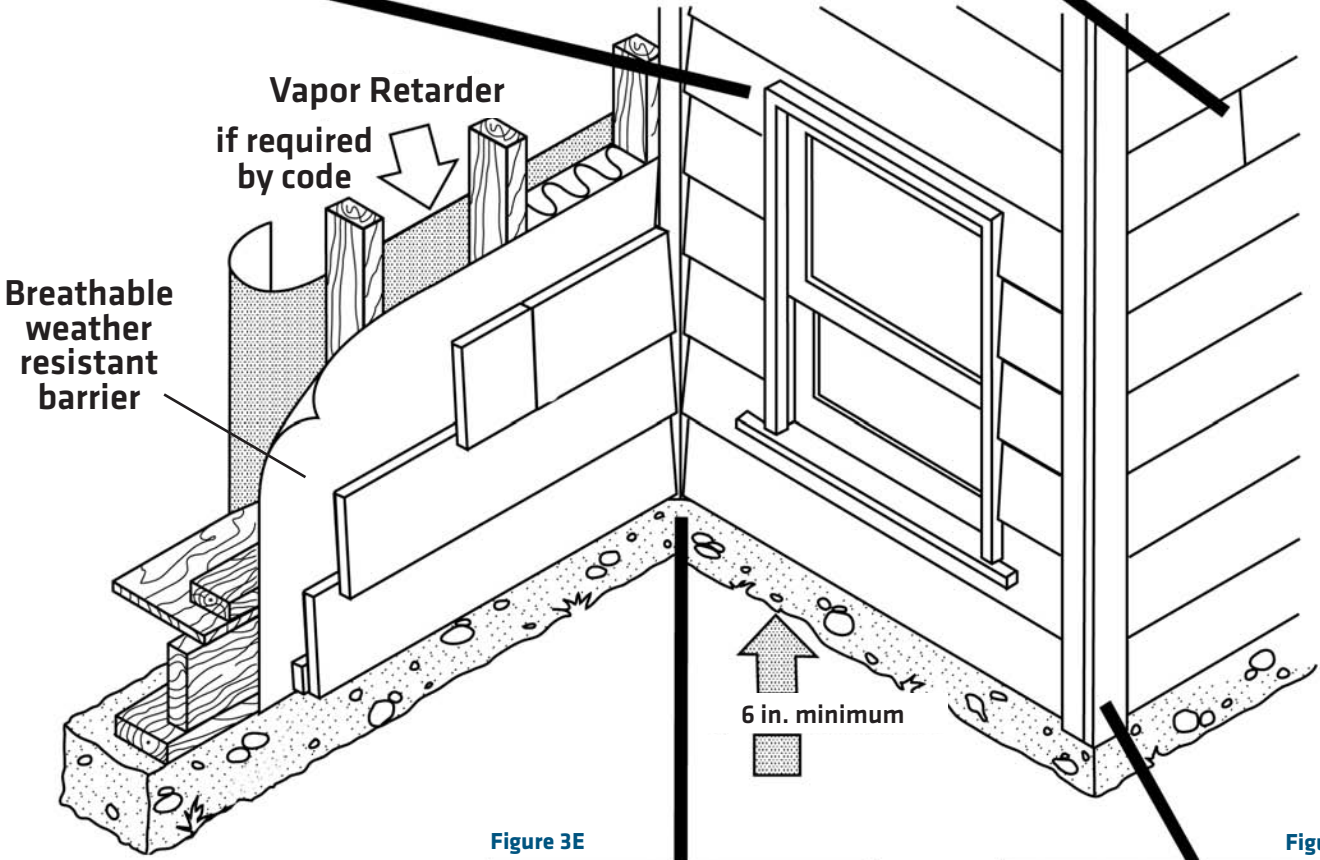
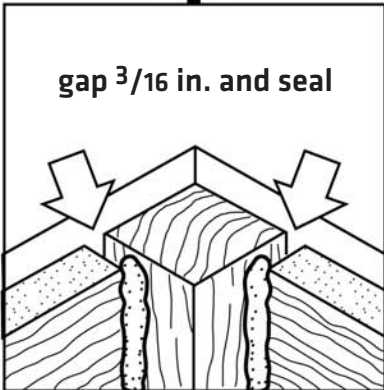
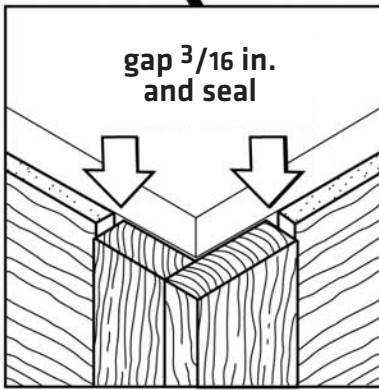


Figure 3E

Figure 3D



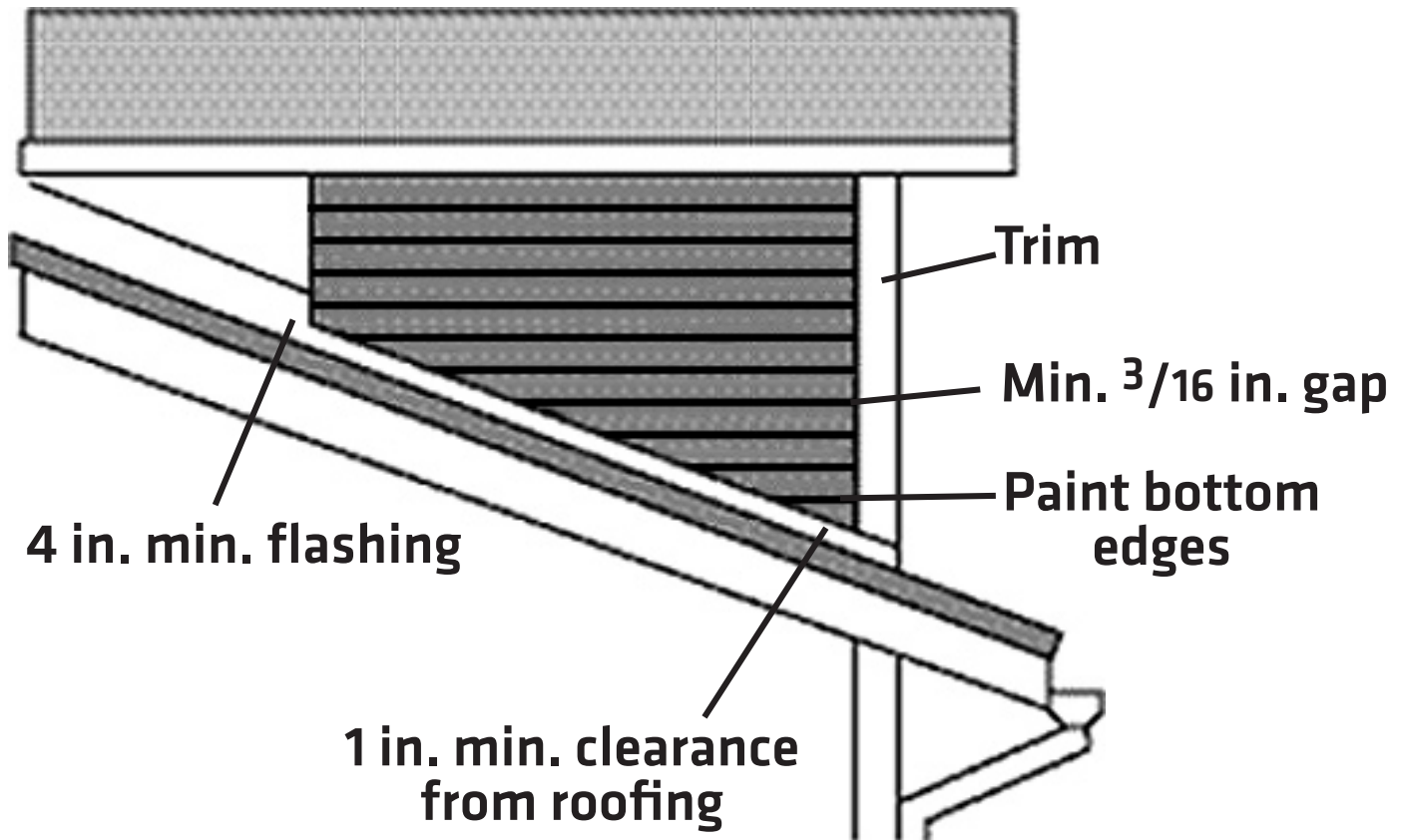
inside corner detail



outside corner detail

1 IN. ROOF & CHIMNEY CLEARANCE

Figure 4



The Louisiana-Pacific Corporation (“LP”) LP SmartSide Siding (the “Products”) limited warranty (the “Warranty”) applies only to structures on which the Products have been applied, finished and maintained in accordance with the published application, finishing and maintenance instructions in effect at the time of application. The failure to follow such application, finishing or maintenance instructions will void the Warranty as to the portion of the Products affected by the variance (the “Affected Products”).

LP assumes no liability for any loss or damage sustained by the Affected Products and is expressly released by the purchaser or owner from any such loss or liability.

Any modification of the Warranty’s application, finishing or maintenance requirements is void and unenforceable unless approved in writing prior to application by the siding general manager or his designee and a member of the LP Legal Department.

For a copy of the warranty or for installation and technical support, visit the LP SmartSide product support Web site at:

www.lpcorp/smartside.com

or for additional support call 800.450.6106.

WARRANTY REMEDIES ARE NOT AVAILABLE IF REQUIREMENTS ARE NOT FOLLOWED.

Cal. Prop 65 Warning: Use of this product may result in exposure to wood dust, known to the State of California to cause cancer.



SMARTSIDE®
TRIM & SIDING

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NOTE: Louisiana-Pacific Corporation periodically updates and revises its product information. To verify that this version is current, call 800-450-6106.

LPZB0515 1/11

102.26SA

09 91 13 Exterior Painting

Emerald®

Exterior Acrylic Satin

K48-Series



SHERWIN WILLIAMS®

CHARACTERISTICS

Emerald Exterior Acrylic Latex is our "Best-In-Class" exterior architectural house paint.

•Excellent durability, resistant to blistering, peeling and dirt pick-up

•Excellent application, flow and leveling

•Self-priming (2 coats new construction, 1 coat repaint)

•Low temp application – down to 35°F

•Uses a patented cross-linking 100% acrylic technology

VinylSafe™ paint colors allow you the freedom to choose from 100 color options, including a limited selection of darker colors formulated to resist warping or buckling when applied to a sound, stable vinyl substrate.

Color: Most Colors

Coverage: 250-300 sq. ft. per gallon
5.3-6.4 mils wet 2.1-2.5 mils dry,

Drying Time, @ 50% RH:

	@ 35-45°F	@ 45°F +
Touch:	2 hours	1 hour
Recoat:	24-48 hours	4 hours

Drying and recoat times are temperature, humidity, and film thickness dependent

Finish: 10-20 units @ 60°

Tinting with CCE only:

Base:	oz per gallon	Strength:
Hi Refl White	0-7	SherColor
Extra White	0-7	SherColor
Deep Base	4-14	SherColor
Ultradeep Base	10-14	SherColor
Light Yellow	0-14	SherColor

Extra White K48W00051

(may vary by color)

V.O.C. (less exempt solvents):

less than 50 grams per litre; 0.42 lbs. per gallon

As per 40 CFR 59.406

Volume Solids: 39 ± 2%

Weight Solids: 53 ± 2%

Weight per Gallon: 10.67 lbs

Flash Point: N/A

Vehicle Type: 100% Acrylic

Shelf Life: 36 months unopened

WVP Perms (US) 19.50 grains/(hr ft² in Hg)

Mildew Resistant

This coating contains agents which inhibit the growth of mildew on the surface of this coating film.

COMPLIANCE

As of 08/28/2020, Complies with:

OTC	Yes
OTC Phase II	Yes
SCAQMD	Yes
CARB	Yes
CARB SCM 2007	Yes
Canada	Yes
LEED® v4 & v4.1 Emissions	N.A.
LEED® v4 & v4.1 V.O.C.	Yes
EPD-NSF® Certified	N.A.
MIR-Manufacturer Inventory	N.A.
MPI®	Yes

APPLICATION

When the air temperature is at 35°F, substrates may be colder; prior to painting, check to be sure the air, surface, and material temperature are above 35°F and at least 5°F above the dew point. Avoid using if rain or snow is expected within 2-3 hours. Do not apply at air or surface temperatures below 35°F or when air or surface temperatures may drop below 35°F within 48 hours.

No reduction necessary.

Brush: Use a nylon-polyester brush

Roller: Use a high quality polyester roller cover

For specific brushes and rollers, please refer to our Brush and Roller Guide on sherwin-williams.com

Spray—Airless
Pressure 2000 p.s.i.
Tip .015-.019 inch

APPLICATION TIPS

Make sure product is completely agitated (mechanically or manually) before use.

Thoroughly follow the recommended surface preparations. Most coating failures are due to inadequate surface preparation or application. Thorough surface preparation will help provide long term protection with **Emerald coating**. On repaint work, apply one coat of **Emerald coating**; on bare surfaces, apply two coats of **Emerald**, allowing 4 hours drying between coats.

Do not paint in direct sun. Apply at temperatures above 35°F. During application at temperatures above 80°F, **Emerald** sets up quickly. Some adjustment in your painting approach may be required. Paint from a dry area into the adjoining wet coating area. Dries to touch in 1 hour and is ready for service overnight.

On large expanses of metal siding, the air, surface, and material temperatures must be 50°F or higher.

SPECIFICATIONS

Emerald Exterior Acrylic Latex is self-priming on most surfaces. Apply 2 coats on new, bare substrates or 1 coat for repaint.

Use on these properly prepared surfaces:

Aluminum & Aluminum Siding¹

Galvanized Steel¹

Concrete Block

Split face Block

Cement Composition Siding-Panels

Stucco

Concrete

Plywood

Wood

***Vinyl Siding**

Surfaces with a pH greater than 9 must be primed with a high pH-resistant coating such as Loxon Concrete & Masonry Primer.

Standard latex primers cannot be used below 50°F. See specific primer label for that product's application limitations.

Concrete Masonry Units (CMU) - Surface should be thoroughly clean and dry. Air, material and surface temperatures must be at least 50°F (10°C) before filling. Use Loxon Acrylic Block Surfacer. The filler must be thoroughly dry before topcoating.

Knots and some woods, such as redwood and cedar, contain a high amount of tannin, a colored wood extract. If applied to these bare woods, the first coat of **Emerald Coating** may show some staining, but it will be trapped in the first coat. A second coat will uniform the appearance. If staining persists, spot prime severe areas with 1 coat of Exterior Oil-Based Wood Primer prior to using **Emerald Coating**.

¹ On large expanses of metal siding, the air, surface, and material temperatures must be 50°F or higher.

Emerald®

Exterior Acrylic Satin

SURFACE PREPARATION

WARNING! Removal of old paint by sanding, scraping or other means may generate dust or fumes that contain lead. Exposure to lead dust or fumes may cause brain damage or other adverse health effects, especially in children or pregnant women. Controlling exposure to lead or other hazardous substances requires the use of proper protective equipment, such as a properly fitted respirator (NIOSH approved) and proper containment and cleanup. For more information, call the National Lead Information Center at **1-800-424-LEAD** (in US) or contact your local health authority.

Remove all surface contamination by washing with an appropriate cleaner, rinse thoroughly and allow to dry. Existing peeled or checked paint should be scraped and sanded to a sound surface. Glossy surfaces should be sanded dull. Stains from water, smoke, ink, pencil, grease, etc. should be sealed with the appropriate primer-sealer. Recognize that any surface preparation short of total removal of the old coating may compromise the service length of the system.

Aluminum and Galvanized Steel:

Wash to remove any oil, grease, or other surface contamination. All corrosion must be removed with sandpaper, wire brush, or other abrading method.

Cement Composition Siding-Panels:

Remove all dirt, dust, grease, oil, loose particles, laitance, foreign material, and peeling or defective coatings. Allow the surface to dry thoroughly. If the surface is new, test it for pH, if the pH is higher than 9, prime with Loxon Concrete & Masonry Primer. After power washing, previously painted masonry may still have a powdery surface that should be sealed with Loxon Conditioner and then apply 1 coat of **Emerald**.

Caulking:

Gaps between windows, doors, trim, and other through-wall openings can be filled with the appropriate caulk after priming the surface. Allow proper drying time before application of the finish.

Concrete, Masonry, Cement, Block:

All new surfaces must be cured according to the supplier's recommendations—usually about 30 days. Remove all form release and curing agents. Rough surfaces should be filled to provide a smooth surface. If painting cannot wait 30 days, allow the surface to cure 7 days and prime the surface with Loxon Concrete & Masonry Primer. Cracks, voids, and other holes should be repaired with an elastomeric patch or sealant. **Concrete masonry units (CMU)** - Surface should be thoroughly clean and dry. Air, material and surface temperatures must be at least 50°F (10°C) before filling. Use Loxon Acrylic Block Surfacer. The filler must be thoroughly dry before topcoating.

Composition Board/Hardboard:

Because of the potential for wax bleeding out of the substrate, apply 1 coat of Exterior Oil-Based Wood Primer and then topcoat.

Stucco:

Remove any loose stucco, efflorescence, or laitance. Allow new stucco to cure at least 30 days before painting. If painting cannot wait 30 days, allow the surface to dry 7 days and prime with Loxon Concrete & Masonry Primer. Repair cracks, voids, and other holes with an elastomeric patch or sealant.

SURFACE PREPARATION

Mildew:

Prior to attempting to remove mildew, it is always recommended to test any cleaner on a small, inconspicuous area prior to use. Bleach and bleaching type cleaners may damage or discolor existing paint films. Bleach alternative cleaning solutions may be advised.

Mildew may be removed before painting by washing with a solution of 1 part liquid bleach and 3 parts water. Apply the solution and scrub the mildewed area. Allow the solution to remain on the surface for 10 minutes. Rinse thoroughly with water and allow the surface to dry before painting. Wear protective eyewear, waterproof gloves, and protective clothing. Quickly wash off any of the mixture that comes in contact with your skin. Do not add detergents or ammonia to the bleach-water solution.

Previously Painted Surfaces:

Spot prime bare areas with **Emerald**, wait 4 hours, and paint the entire surface. Some specific surfaces require specialized treatment.

Steel:

Rust and mill scale must be removed using sandpaper, wire brush, or other abrading method. Bare steel must be primed the same day as cleaned.

Unpainted Surfaces:

Emerald can be used as a self-priming coating on many bare surfaces. When used this way, the first coat of **Emerald** acts like a coat of primer and the second coat provides the final appearance and performance.

***Vinyl or other PVC Building Products:**

Clean the surface thoroughly by scrubbing with warm, soapy water. Rinse thoroughly, if needed prime with appropriate white primer. Do not paint vinyl with any color darker than the original color or having a Light Reflective Value (LRV) of less than 56 unless VinylSafe® Colors are used. If VinylSafe colors are not used the vinyl may warp. Follow all painting guidelines of the vinyl manufacturer when painting. Only paint properly installed vinyl siding. Deviating from the manufacturer's painting guidelines may cause the warranty to be voided.

Wood, Plywood, Composition Board:

Sand any exposed wood to a fresh surface. Patch all holes and imperfections with a wood filler or putty and sand smooth. All patched areas must be primed.

Knots and some woods, such as redwood and cedar, contain a high amount of tannin, a colored wood extract. If applied to these bare woods, the first coat of **Emerald** may show some staining, but it will be trapped in the first coat. A second coat will uniform the appearance. If staining persists, spot prime severe areas with 1 coat of Exterior Oil-Based Wood Primer prior to using **Emerald**.

CAUTIONS

For Exterior use only

Protect from freezing

Non-photochemically reactive

Not for use on floors.

Before using, carefully read **CAUTIONS on label**

ZINC: Use only with adequate ventilation. To avoid overexposure, open windows and doors or use other means to ensure fresh air entry during application and drying. If you experience eye watering, headaches, or dizziness, increase fresh air, or wear respiratory protection (NIOSH approved) or leave the area. Avoid contact with eyes and skin. Wash hands after using. Keep container closed when not in use. Do not transfer contents to other containers for storage. **FIRST AID:** In case of eye contact, flush thoroughly with large amounts of water. Get medical attention if irritation persists. If swallowed, call Poison Control Center, hospital emergency room, or physician immediately. **WARNING:** This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. **DO NOT TAKE INTERNALLY. KEEP OUT OF THE REACH OF CHILDREN.**

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FRC, SP

CLEANUP INFORMATION

Clean spills, spatters, hands and tools immediately after use with soap and warm water. After cleaning, flush spray equipment with compliant cleanup solvent to prevent rusting of the equipment. Follow manufacturer's safety recommendations when using solvents.

STAGING AREA

240 N Villa Ave