BOARD OF SELECTMEN MEETING DRAFT MINUTES Monday, April 18, 2022 4:00 pm Via Webex

A recording of this meeting can be found here: <u>Board of Selectmen 4/18/2022 Regular Meeting -</u> <u>YouTube</u>.

MEMBERS PRESENT: First Selectwoman Brenda L. Kupchick, Selectman Thomas Flynn, Selectwoman Nancy Lefkowitz

OTHERS PRESENT: Director of Communications, Aquarian Water Co, George Logan, Purchasing Director Gerald Foley, Parks & Recreation Director Anthony Calabrese, Deputy Fire Chief Kyran Dunn, FairTV Manager Gerry Speno, CFO Jared Schmitt, CAO Tom Bremer, Community & Economic Development Director Mark Barnhart, Jeremy Lynch of Bird Rides, Town Attorney James Baldwin, Planning Director Jim Wendt, Robert Haydu, members of the public

1) CALL TO ORDER

First Selectwoman Kupchick called the meeting to order at 4:00 pm.

2) PLEDGE OF ALLEGIANCE

First Selectwoman Kupchick led the Pledge of Allegiance.

3) MINUTES

To consider and act upon the minutes of January 31, 2022, February 7, 2022, February 23, 2022, February 24, 2022, February 28, 2022, March 15, 2022, March 21, 2022, April 7, 2022

Selectman Flynn made a motion to approve all minutes in Item 3. Selectwoman Lefkowitz seconded the motion.

The motion carried unanimously.

4) AQUARION WATER COMPANY

To hear the Aquarion Water Company's 2022 Water Conservation Plan Update Aquarian's Director of Communications, George Logan shared his presentation which can also be found in the online backup documents for the meeting. Mr. Logan said due to the current conditions of the local water supply, Aquarian is requiring the following:

Twice weekly sprinkler irrigation only

- Sprinklers only; handheld hoses and drip irrigation are exempt.
- High efficiency systems with a weather-based controller for properties greater than two acres. There will be enforcement by Aquarian patrols and violators will be sent correspondence. The Town will be notified when people are using more water. For other programs and activities pertaining to water conservation in Fairfield, please go to the presentation online.

First Selectwoman Kupchick said she knows this will be a shock to residents, but Fairfield cares deeply about water conservation. She asked if golf courses and playing fields are exempt.

Mr. Logan said Aquarian will need to be notified of the fields and golf courses using their variance forms. Mr. Logan said most playing fields have weather-based irrigation systems. Selectwoman Lefkowitz asked about variances for people growing foods and using sprinklers. Mr. Logan said they can apply for a variance as well. Selectman Flynn asked why Aquarian has decided to cut back when the area is not in a drought situation. Mr. Logan said flash droughts are occurring and in order to take precautions, we need to conserve and save more resources.

5) PURCHASING AUTHORITY

To hear, consider and authorize the Purchasing Authority to enter into the proposed contract with Fireworks by Grucci, Inc. to provide all labor, materials, equipment and all else necessary for provide an independence day fireworks celebration event, as detailed in bid #2020-48, for the pricing detailed in Fireworks by Grucci, Inc bid submission. For a total cost not to exceed \$54,862.00. Expense Account No #01007050-53200 [Operating Budget, Fees and Professional Services].

Selectman Flynn made a motion to approve Item 5. Selectwoman Lefkowitz seconded the motion.

Parks and Recreation Director Anthony Calabrese told the Board that Grucci has been doing the Town Independence Day Fireworks for the last few years. Town Attorney James Baldwin said he has vetted and approved the contract.

The motion carried unanimously.

6) FAIRTV COMMISSION

To hear, consider and act upon the following resolution as recommended by the FairTV Commission:

RESOLVED, that Brenda L. Kupchick, First Selectwoman of the Town of Fairfield, is empowered to execute, authorize and approve on behalf of the Town of Fairfield a Professional Services Contractor Agreement between the TOWN OF FAIRFIELD, Sullivan Independence Hall, 725 Old Post Road, Fairfield, CT ("Town") and GERARD J. SPENO, with an office at 23 Plum Street, Fairfield, CT 06824 ("Contractor") for professional technical services supporting the Town's Government and Education television stations known as FairTV Broadcast System ("FairTV") for a period of one (1) year commencing June 30, 2022 and terminating July 1, 2023.

Selectwoman Lefkowitz made a motion to waive reading of Item 6. Selectman Flynn seconded the motion. The motion carried unanimously.

Selectwoman Lefkowitz made a motion to approve Item 6. Selectman Flynn seconded the motion.

First Selectwoman Kupchick stated that this is a standard contract with FairTV and it is already approved in the budget for the same amount.

The motion carried unanimously.

7) COMMUNITY AND ECONOMIC DEVELOPMENT DIRECTOR To hear, consider and authorize the First Selectwoman to enter into a pilot operating agreement between the Town of Fairfield and Bird Rides, Inc. to operate a stand-up electric

scooter sharing system within the Town of Fairfield.

Selectwoman Lefkowitz made a motion to approve Item 7. Selectman Flynn seconded the motion.

Community and Economic Development Director Mark Barnhart explained that this is a pilot program. He said it came together six months ago. Mr. Barnhart was joined by Jeremy Lynch from Bird Rides who said the pilot program operating agreement for 12 months provides a local Fleet Manager and 75 scooters to start in Fairfield. Mr. Lynch said Bird Rides will provide insurance and has had favorable reviews. Mr. Barnhart said he has spoken to the Police Department as well as the Bike and Pedestrian Committee. He said the Fleet Manager will make sure the fleet is maintained and kept neat. Selectwoman Lefkowitz said she has a healthy optimism and skepticism regarding this and feels that until we try this we won't know if it will work. Selectman Flynn asked if there could be legal issues. He said he understands that the Town is indemnified with the scooter company, but he asked what could happen if someone were to claim there was a faulty sidewalk. Town Attorney Baldwin said he took a hard look at the indemnification terms and the pilot program terms. He said he is comfortable with the terms and said the Town's exposure is the same as any other business. There was no public comment.

The motion carried unanimously.

8) PLANNING DIRECTOR

To hear, consider and approve a recommendation from the Town Plan and Zoning Commission to opt out of the State-mandated parking regulations and default language for accessory apartments, Pursuant to Public Act 21-29.

Selectman Flynn made a motion to approve item 8. Selectwoman Lefkowitz seconded the motion.

Planning Director Jim Wendt said CT Public Act 21 - 29 was approved last year which was a Zoning Enablement Act. He said there is certain language to be adopted. He said the TPZ held hearings in January and passed by 2/3 vote to opt out on February 8th of 2022. There was no public comment.

The motion carried unanimously

9) FIRE CHIEF (requires BOF and RTM approval)

To hear, consider and adopt a bond resolution entitled, "A resolution appropriating \$125,000 for the costs to replace the portable radio equipment for the Fairfield Fire Department and authorizing the issuance of bonds to finance such appropriation".

Selectman Flynn made a motion to approve Item 9. Selectwoman Lefkowitz seconded the motion.

Fire Chief Denis McCarthy said this item was originally in the budget, but the Board of Finance took it out. He said this item was presented at the last Board of Selectman meeting. He said there was a grant approved for \$3.5 million. Chief McCarthy said the overall project had been anticipated and therefore the fire department has not requested a change in payments.

He said the portable radios will allow the Fire Department to communicate with other towns as needed, but it cannot do that now. There was no public comment.

The motion carried unanimously

10) TOWN ATTORNEY (requires RTM approval)

To hear, consider, and authorize the Town of Fairfield to enter into the proposed amended agreement with the Fairfield Historical Society (Fairfield Museum) for the management of Fairfield's Historic Structures effective May 1, 2022 through April 30, 2023.

Selectman Flynn made a motion to approve Item 10. Selectwoman Lefkowitz seconded the motion.

Town Attorney Baldwin said the Museum was managing Burr Mansion. He said there were several meetings between the Town and Museum whose Director, Mike Jehle, said it might be in the best interest for the Town to take over maintaining Burr Mansion. Parks and Recreation Director Anthony Calabrese said management will now be under his department which will oversee the property. Town Attorney Baldwin said it's the same agreement that the Town had with the Historical Society years ago, but just for the Burr Mansion management. He said the Town paid a \$36,000 management fee to the Historical Society. Selectwoman Lefkowitz asked if the Parks and Recreation department would be overburdened by this addition. Mr. Calabrese said he would not have added it to his department if it was going to be an additional burden. He said he would like to see how things move forward since Penfield will be closing and his department will be able to schedule events at the Burr Mansion. Selectman Flynn said there is some historical upkeep and that Buildings Manager James Ryan knows what can and cannot be done historically. The Burr Gardens Committee and Mr. Jehle will be on hand if needed and everyone will work together. Selectman Flynn would like to review this in a year. There was no public comment.

The motion carried unanimously

11) TOWN ATTORNEY

To hear, consider and authorize the First Selectwoman to enter into the proposed three (3) year lease with Robert A. Haydu (Greenfield Farms) to lease ten (10) acres of the Owned Premises at 3701 Congress Street, Fairfield, for \$1 per year plus the assessed property taxes.

Selectwoman Lefkowitz made a motion to approve Item 11. Selectman Flynn seconded the motion.

Town Attorney Baldwin said an agreement has been in place with the Town and Mr. Haydu for 20 years. He said the total purchase for the Town was over 20 acres and it is the only working farm in Fairfield. He said there is great appeal to continue to use the property as a farm. Town Attorney Baldwin said Mr. Haydu lives adjacent to the property and maintains the farm, but the agreement never went before the Board of Selectmen so he is bringing it before the Board and the Town today. Selectwoman Lefkowitz said she would like to explore how to use the farm as community land. She asked to delay the vote until the community has a chance to talk about this and learn more. First Selectwoman Kupchick said some residents want to turn this into a community farm and the Parks and Recreation Director Anthony Calabrese would like to put a community farm at the Senior Center. First Selectwoman Kupchick said she is not inclined to change the use of the property at this time. She said Mr. Haydu has done great things for Fairfield. She suggested having this discussion again in another three years to see if the Town would like to change the use.

Selectman Flynn said the farm currently provides services to the community and there are irrigation issues dictating what can be grown there now. He said he doesn't see it beneficial to be a community farm. First Selectwoman Kupchick opened the item up for public comment.

(Full statements can be heard by accessing the meeting recording at the top of the first page of the minutes.)

- <u>April Clyne</u> 104 Hillside Road She said she is a 23-year resident and a member of the Greenfield Hill Improvement Society. She said she supports Mr. Haydu staying with the property for three more years.
- <u>Sharon Pistilli</u> RTM, D3 107 Lota Drive See written statement attached at the end of the minutes.
- <u>Erin Belles</u> 3781 Congress Street She said she agrees with April Cline. She said Mr. Haydu maintains the farm and the history of the farm is part of the reason why her family moved to the area. She said crops cannot be grown with the irrigation and deer issues. She asked to keep the farm the way it is.
- <u>David Allon</u> 126 Lalley Boulevard He said community gardens are non-partisan. He said people can stagger use of a community farm during the week and thinks there are more questions than answers on this.
- <u>Melissa Longo</u> RTM, D1 3791 Congress Street
 She said she has lived on Congress Street for four years and is a lifelong Fairfield resident.
 She said Mr. Haydu is always out working and having charitable events at the farm which is a huge part of what makes Greenfield Hill special. She suggested revisiting this in three years to see what is happening.
- <u>Misty Byer</u> 4720 Congress Street She said the farm is a jewel in Greenfield Hill and Mr. Haydu is doing an incredible job. She said this is an important conversation to have. She said the property should be preserved when Mr. Haydu can no longer maintain it.
- <u>Amy Sperrazza</u> 322 Brambly Hedge Circle She said she moved to Greenfield Hill two years ago because of the historical aspect and special nature that is unique. She said Mr. Haydu does such a great job and his lease should continued another for another three years.

Selectwoman Lefkowitz said the farm has been such an important part of the community and as a resident of Greenfield Hill, she said she appreciates everything Mr. Haydu has done. Selectwoman Lefkowitz said no one is questioning Mr. Haydu's work, but that the administration needs to focus on modernizing. She said just because something has been done for a long time doesn't mean it can't change. Selectman Flynn said he supports working with Mr. Haydu over the next three years and learning more about the property. Mr. Haydu was also on the call and said he appreciates everything that everyone has said. He said he just turned 81 years old and is very happy working on the farm. He said there's a seven-acre field on Congress Street which is where he grows the street corn for the corn maze and the two other acres next to that are under production for sweet corn. First Selectwoman Kupchick said other sites can be considered for community gardening. She said a broader discussion is good for the Town in general. She said she is not inclined to change the agreement with Mr. Haydu at this time. She said she is engaged in having the discussion with residents, but said some things don't need to be modernized.

The motion carried 2-0-1 (Selectwoman Lefkowitz abstained)

12) To consider and act upon tax refunds as recommended by the Tax Collector in the amount of \$40,370.33

Selectwoman Lefkowitz made a motion to approve Item 12. Selectman Flynn seconded the motion. The motion carried unanimously.

13) To hear, consider and act upon any other business which shall properly come before this meeting

First Selectwoman Kupchick said she was pleased to share that Fairfield received a \$3.5 million federal grant to replace the Town's emergency radio network. She sincerely thanked Senator Blumenthal for his help in securing these federal dollars. She recognized Police Captain Pete Koval for taking the lead in writing the grant application.

First Selectwoman Kupchick said the RTM will vote on the budget on Monday, May 2nd and the Board of Finance will set the Mill Rate on Thursday, May 5th. She said that per the Town Charter, the RTM has the authority to decrease the budget, but not increase it unless an appeal to a cut is submitted. She said department heads are appealing three BOF cuts at a special RTM meeting on May 2nd, prior to the RTM's budget vote. She said the RTM can vote with a 2/3 majority to restore the funding. She said she included an overview of the changes the BOF made to the budget in her last newsletter.

First Selectwoman Kupchick invited all residents and their families to attend the 37th Annual Holocaust Commemoration hosted by the Town of Fairfield's Holocaust Committee on Wednesday, April 27, 2022, at 7:30 pm at First Church Congregational, 148 Old Post Road. She said April 27, 2022 will be proclaimed as a special Day of Remembrance in memory of the victims of the Holocaust and in tribute to those who help us never to forget. She said this Day of Remembrance includes a keynote speaker who will share his experience during World War II as a hidden child, and of the righteous gentiles who saved his life and that of his brother. She said Fairfield Warde High School Senior Samantha Renzulli will also speak. First Selectwoman Kupchick noted that as victims who survived the Holocaust continue to age, it is more important than ever to hear their stories and share them with the next generations. She asked residents, young and old, of all faiths and backgrounds, to join us for this evening of commemoration and learning.

First Selectwoman Kupchick said all residents are encouraged to participate in the annual Shop & Stroll Into Spring event on Thursday, April 28th. She said participating shops in downtown Fairfield will open at their regular times with extended hours through 9 pm. She said she hopes residents will participate and support our local stores.

Selectwoman Lefkowitz who unfortunately had COVID, reminded everyone that if they felt sick to please stay home and get tested.

14) Adjourn

Selectwoman Lefkowitz made a motion to adjourn the meeting at 6:28 pm. First Selectwoman Kupchick seconded the motion which carried unanimously.

Respectfully submitted,

Pru O'Brien Recording Secretary

Item 4 Public Comment Via Email: -----Original Message-----From: suzannemiska (null) <suzannemiska@aol.com> Sent: Friday, April 15, 2022 10:00 AM To: Board of Selectmen <BOS@fairfieldct.org> Subject: Aquarion agenda item

Dear Members of the Board of Selectman,

I want to start by saying while I greatly appreciate the agenda backup, 169 pages all at once is a lot to review.

I have reviewed the Aquarion presentation and I'm disappointed that the water company has chosen such an aggressive approach with the involvement of our Town government to be the police in this process. They will shut your water off to your home? His do they know if it's irrigation or household use? College kids come home snd love multiple showers? Where are the request to meter the irrigation water from rhe house water? What is missing from the presentation is why all of a sudden there is a need to limit the water to such a level? What has Aquarion missed in creating a process that allows for a more normal not threatening response to watering? Do they have systems offline? Additionally if this is our future then my question to the Town is why are we allowing the overbuild of our Town if Aquarion can't handle the watering of our lawns for three times a week? This seems excessive and threatening and another department that our Town will need to create to control water shut off's. There had to be a better way to proceed.

Suzanne Miska

Item 7 Public Comment Via Email:

-----Original Message-----

From: suzannemiska (null) <suzannemiska@aol.com> Sent: Friday, April 15, 2022 9:50 AM To: Board of Selectmen <BOS@fairfieldct.org> Subject: Bird scooters Agenda Item

Dear Members of the Board of Selectman:

I respectfully ask that decline the proposal to enter into an agreement with bird scooters. This company has placed there scooters in major cities and the scooters are left anywhere and everywhere. Additionally they become a danger to those walking as they typically fail to stop as a vehicle/bicycle should. My son is a college student in Boston and this company dropped off the scooters and after use they are dropped all over campus, the city sidewalks, etc.

Unless the Board can tighten the parking section that mandates that scooters are picked up and delivered back to a designated space specifically created for these electronic scooters then please pass on this proposal. People can't place their garbage in trash cans of pick up after their dogs, I can't begin to tell you what a disaster this program will be with scooters left anywhere and

everywhere unless there is a dedicated return and pickup spot like this type of program with bicycles has. Fairfield does not need the mess that this program guarantees. Thank you for your time, Suzanne Miska

Item 11 Public Comment Via Email: From: Sharon Pistilli <<u>sbpistilli@gmail.com</u>> Sent: Monday, April 18, 2022 2:33 PM To: Board of Selectmen <<u>BOS@fairfieldct.org</u>> Cc: Vergara, Jill <<u>jillvergara@gmail.com</u>> Subject: Greenfield Farms - Lease Agreement

Dear Fairfield Board of Selectmen,

Below please find our comments regarding today's agenda item related to the Greenfield Farms lease.

Thank you,

Jill Vergara-RTM D7 and Sharon Pistilli-RTM D3

The Lease Agreement under review today by the Board of Selectmen ("BOS") concerns one of Fairfield's greatest, and perhaps least known, assets – the 1998 purchase of 20.73 acres of land located in Greenfield Hill located at 3701 Congress Street – and the appurtenant streams (including Great Brook), wetlands, woodlands, stone walls, shrub borders, one (1) large barn and tractor shed. This is Greenfield Farm. Included are 3 parcels of land amounting to 7.0 acres of flat tillable fields ideally suited for the cultivation of crops... in keeping with the historic rural farming character of Fairfield.

The Fairfield Farm lease has been approved on a pro forma basis for the past 10 or more years without a meaningful performance review by the Board of Selectmen. In that decade, thriving town farms have been launched by Wilton (Ambler Farm), Westport (Wakeman Farm) and Weston (Lachat Farm). All of these town farms have thrived during the past two and half years in which we've endured the pandemic providing worthwhile resources (both food produce and activities) to their communities.

Today we ask the Board of Selectmen to undertake a meaningful review of the tenant's performance as well as its own management of the land to ensure that the obligations required under this agreement are being met by both parties so that this invaluable resource is cared for properly so that it can thrive for many generations to come.

The Tenant's Primary Obligation: The lease expresses a desire that use of this open space property be" protected" and "wise". The tenant's primary obligation is to use the land exclusively for market gardening of field crops..." specifically corn, tomatoes, pumpkins, flowers. The tenant is required to sell the produce grown on the Premises "to the general public" at the farm's location on Congress Street.

Tenant's additional obligations include:

- Assisting the community in clearing/building trails and other community projects as requested;

- In its bi-annual report the tenant will describe all activities on the leased premises and make recommendations for improvement;

- Maintaining various insurance policies including comprehensive general liability, worker's compensation, automobile, etc. naming the Town of Fairfield as the named insured and provide certificates to the town;

- Planting a cover crop of winter rye (to be lightly tilled into the soil between September 15 and November 1st each year);

Similarly, the town has conservation obligations required in the management and preservation of the natural resources located at Fairfield Farm including:

- Ensuring the tenant maintains the soil maintains a PH of 6.0 to 7.0 on the cultivated fields and plants a winter rye cover crop each Fall to stop soil erosion;

- Clearing the Great Brook and other streams on the property from over growth;

- Inspecting the premises are being used safely for all wildlife by avoiding certain pesticide formulations;

- Ensuring the Barn/tractor shed is structurally sound and properly maintained by Tenant;

- Ensuring the road entrance to the Farm and the parking area near cultivated field no. 1 are properly maintained for access to the lease premises;

- Ensuring any walking trails marked by the town are outside the lease premises in buffer areas.

- Ensuring the tenant complies with all federal, state and local laws, rules, ordinances, etc in the operation and use of the premises, and annually, provides complete and accurate certificates of insurance coverage.

We ask the Board of Selectmen to delay any vote to approve this lease until it can determine that the Tenant has previously fulfilled its obligations, or, if it determines that the Tenant has NOT met its obligations that the BOS will appoint a person to work with the Tenant (and the town) to ensure that both parties fully meet their obligations for the duration of the proposed lease term, AND, that any future renewals will be carefully scrutinized prior to approval.

Thank you,

Jill Vergara RTM District 7

Sharon Pistilli RTM District 3



Sullivan Independence Hall 725 Old Post Road Fairfield, Connecticut 06824 Purchasing Department (203) 256·3060 FAX (203) 256·3080

Award Recommendation Resolution:

On Monday, 14 March 2022, the Purchasing Authority recommended an award of bid number 2022-63 Jennings Beach Pavilion Siding Project to J. Antonelli Roofing, Stamford, CT, for the lump sum amount of \$73,400.00, to provide labor, materials, equipment, and all else necessary to perform new siding project at Jennings Beach Pavilion, 880 South Benson Road, based on the bid specifications.

The award of this contract to J. Antonelli Roofing may be subject to the review and approval of the Board of Selectman.

hour A Brenda L. Kupchick, First Selectwoman

Gerald J. Foley, Director of Purchasing

Purchasing Authority 2022-63 Jennings Beach Pavilion Siding Project Opened 11:00 a.m. on 9 March 2022

Bid Results

		J. Antonelli Roofing	Bismark Construction	NAC Industries
Item	Description	Stamford, CT	Milford, CT	Oxford, CT
1	Lump sum for all work involved	\$73,400.00	\$147,000.00	\$157,000.00
2	Brand Materials Specified	James Hardie Siding	Hardie Siding	Hardie Cedermill as specified



Town of Fairfield

Sullivan Independence Hall 725 Old Post Road

Fairfield, Connecticut 06824 Purchasing Department

(203) 256·3060 FAX (203) 256·3080

BID #2022-63 Jennings Beach Pavilion Siding Project

TOWN OF FAIRFIELD PURCHASING AUTHORITY 725 OLD POST ROAD INDEPENDENCE HALL FAIRFIELD, CT 06824.	Date Submitted	2022
SEALED BIDS are subject to the standard instructions set forth on the attached sheets.	Bidder:	
accepted by the Town of Fairfield, Purchasing Authority.	Doing Business As (Trade Name))
Thous And First Selectwoman	Address	
Director of Purchasing	(Mr/Ms) Name and Title, Printed	
Date	Signature	
	Telephone Fax	
	E-mail	

Sealed bids will be received by the Purchasing Authority at the office of the Director of Purchasing, First Floor, Independence Hall, 725 Old Post Road, Fairfield, Connecticut 06824, up to:

11:00am, Wednesday, 9th March, 2022

To provide labor, materials, equipment and all else necessary to supply and install new siding at the Jennings Beach Pavilion as detailed in the attached specifications.

NOTE:

- 1. Bidders are to complete all requested data in the upper right corner of this page and must return this page and the Proposal page with their bid.
- 2. No bid shall be accepted from, or contracts awarded to, any person/company/affiliate or entity under common control who is in arrears to the Town of Fairfield upon debt, or contract or who has been within the prior five (5) years, a defaulter as surety or otherwise upon obligations to the Town of Fairfield, and shall be determined by the Town.
- 3. Bid proposals are to be submitted in a sealed envelope and clearly marked "BID 2022-63" on the outside of the envelope, including all outer packaging, such as, DHL, FedEx, UPS, etc.
- 4. It is the sole responsibility of the bidder to see that the bid is received by the Fairfield Purchasing Department prior to the time and date noted above. Bid proposals are not to be submitted via email or fax.
- 5. Bid proposals are not to be submitted with plastic binders or covers, nor may the bid proposal contain any plastic inserts or pages.

2022-63 Jennings Beach Pavilion Siding Project Page 1 of 11

INVITATION TO BID

The Town of Fairfield (Town) on behalf of its Department of Public Works (DPW) is seeking competitive bids from qualified contractors to provide all materials, labor and equipment necessary to provide and install new siding for the Jennings Beach Pavilion, 880 South Benson Road, Fairfield, Connecticut as specified.

PRE-BID MEETING

A site meeting will commence at **10:00 am**, 880 South Benson Road, Fairfield, Connecticut on **Friday**, **25**th **February**, **2022**, for prospective bidders to scope the conditions.

- While the meeting is non-mandatory, prospective bidders will be required to sign-in at commencement of the meeting. The sign-in sheet will be posted on the Purchasing Department website as below. Copies will not be made available at the meeting, nor will they be faxed out.
- All requests for information will be answered in writing as specified below under Addenda.

ADDENDA / REQUESTS FOR INFORMATION (RFI)

Addenda concerning important information and/or modifications to specifications will be posted on the Fairfield Purchasing Department website at https://fairfieldct.org/bids

- It is each Bidder's sole responsibility to monitor the above website for all updated information.
- Addenda will not be mailed, e-mailed or faxed out.
- Written requests for information will not be accepted after 12:00pm on Wednesday, 2nd March, 2022.
- Verbal requests for information via phone or other means will not be accepted.
- Failure to comply with these conditions will result in the bidder waiving the right to dispute bid specifications and conditions, no exceptions.

Questions concerning this bid must be submitted in writing and directed only to:

Corinne Dyer, Senior Buyer

cdyer@fairfieldct.org

Response will be in the form of an addendum that will be posted approximately 3rd March, 2022 to the Town of Fairfield website, which is www.fairfieldct.org. It is the responsibility of each bidder to retrieve addenda from the website. Any contact about this bid between a Bidder and any other Town official and/or department manager and/or Town of Fairfield employee, other than as set forth above, may be grounds for disqualification of that Bidder. No questions or clarifications shall be answered by phone, in person or in any other manner than specified above.

REQUIREMENTS

- A. Any sizes or estimate of quantities as shown on drawings are approximate and are not guaranteed in any respect. Prospective bidders are to visit the site to verify scope of the work, measurements, quantities, etc., prior to bidding. The Town reserves the right at all times to increase or decrease the amount of work if deemed in its best interest.
- B. Price is to include all labor, materials, tools, equipment, plant, mobilization, permits, insurances, etc., required to properly complete the project.
- C. The Town of Fairfield reserves the right to award the bid with multiple items:
 - to more than one bidder, based on meeting the item(s) specification, cost, availability, or any combination of these criteria;
 - to a single bidder who meets the specifications for all items, and offers the best combination of lowest cost, best availability, and broadest product range;
 - and may add, subtract or delete any item and/or quantity as deemed in the best interest of the Town.
- D. The Bidder must not discriminate, nor permit discrimination, against any person on the grounds of race, color, national origin, religion, sex, handicap, or veteran status, in their employment practices, in any of their contractual arrangements, in all service and accommodations they offer to the public, and in any of their other business operations.
- E. The successful bidder MUST secure all required permits (local, state, federal) prior to commencing work on the site.
- F. The awarded Contractor will have access to the site immediately upon award of contract and all work must be completed in a timely manner. Time is of the essence. All work time must be coordinated with the Project Engineer.
- G. Award of the project, either partial or in its entirety, is contingent upon funding approval by the applicable boards of the Town of Fairfield, including state and federal agencies.

- H. Upon Award, all bidding documents shall constitute a legal contract including but not limited to the following; Bid Invitation, Addendum, Award Resolution, Town Purchase Order, and AIA Contract or equivalent when applicable.
- I. In the instance the Contactor discovers unanticipated hazardous material, whether it be in nature or capacity, the Town reserves the right to terminate the Contract and regain possession of the project site.

ENCLOSURES

Drawing A100 prepared by Town of Fairfield Department of Public Works

SCOPE OF WORK

- The awarded Contractor shall be responsible for supplying all materials and labor to complete the project in accordance with the plans and specifications detailed in Drawing A100.
- The Town of Fairfield has recently replaced all exterior doors and windows on this facility.
- This Town Facility will be closed to the public. The awarded Contractor shall obtain access to the site immediately once award resolution and contract is executed, as well as required insurance documentation is obtained by the Purchasing Department.
- Product Specification
 - Fiber Cement Lap Siding with compatible fiber cement trim boards, skirt boards, weather resistant barriers, and metal flashing.
 - Preferred Siding Brand: James Hardie Fiber Cement Lap Siding, or Owner Approved Equal.
 - Texture: SELECT CEDARMILL[®]
 - Color: LIGHT MIST
 - Product shall be non-combustible, 30-Year Manufacturer's Warranty, Superior Rot Resistance, Impervious to Termite damage, resistant to warping/expansion.
- Alternative siding proposed products shall be listed on the Bid Proposal Form. Bidders shall include Manufacture's specifications and literature.

BID PROPOSAL FORM

PROPOSAL TO: Town of Fairfield, Purchasing Department First Floor, Sullivan Independence Hall 725 Old Post Road, Fairfield, Connecticut 06824

I, ______ have received the following contract documents,

- 1. BID Document #2022-63,
- 2. Posted addenda (if any) numbered ______, posted at www.fairfieldct.org/purchasing.htm

and have included their provisions in my Proposal. I shall provide all labor, materials, equipment, technical service, insurances, warranties, applicable taxes and licenses, etc, to supply and deliver materials as specified:

Lump sum for all work involved : \$_____

Brand of Materials Specified : _____

The Town has the right to add or remove items and/or quantities from this bid. Unbalanced bids will not be accepted. The Town of Fairfield reserves the right to award the bid with multiple items:

- a) To more than one bidder, based on meeting the item(s) specification, cost, availability, or any combination of these criteria;
- b) To a single bidder who meets the specifications for all items, and offers the best combination of lowest cost, best availability, and broadest product range;
- c) May add, subtract or delete any item and/or quantity as deemed in the best interest of the Town.
- d) All pricing shall include the cost of labor, materials, equipment, tools, mobilization, incidentals, delivery, (where not waived by the Town), licenses, overhead and profit, taxes (except from which the Town is exempt) and insurances.

CHECKLIST

The following must be submitted with proposal:

- \Box Cover page, completed and signed.
- Addenda acknowledged per Item 2 on Bid Proposal Form, or
- □ Signed and submitted with modified pricing if requested.
- □ List of references where projects performed of comparable size and scope within the past three years.
- \Box Schedule of values.
- List of all sub-contractors identifying each trade, hourly rates, and Tax ID number.

The Bidder hereby certifies that any and all defects, errors, inconsistencies or omissions of which he/she is aware, either directly or by notification from any sub-bidder or material supplier found in the Contract Documents are listed herewith in this Bid Form.

Name and Title of Authorized Representative (Printed)

Signature

Date

PURCHASING AUTHORITY TOWN OF FAIRFIELD INSTRUCTIONS FOR BIDDERS TERMS AND CONDITIONS OF BID

BID PROPOSALS

Bid proposals are to be submitted in a <u>sealed envelope</u> and clearly marked on the outside "<u>BID #2022-63</u>" including all outer packaging such as DHL, FedEx, UPS, etc. All prices and notations must be printed in ink or typewritten. No erasures are permitted. Bid proposals are to be in the office of the Purchasing Authority, First Floor, Independence Hall, 725 Old Post Road, Fairfield, Connecticut, prior to date and time specified, at which time they will be publicly opened.

RIGHT TO ACCEPT / REJECT

AFTER REVIEW OF ALL FACTORS, TERMS AND CONDITIONS, INCLUDING PRICE, THE PURCHASING AUTHORITY OF THE TOWN OF FAIRFIELD RESERVES THE RIGHT TO REJECT ANY AND ALL BIDS, OR ANY PART THEREOF, OR WAIVE DEFECTS IN SAME, OR ACCEPT ANY PROPOSAL DEEMED TO BE IN THE BEST INTEREST OF THE TOWN OF FAIRFIELD.

QUESTIONS

Questions concerning conditions, bidding guidelines and specifications should only be directed in writing to:

Ms. Corinne M. Dyer, Senior Buyer: <u>CDyer@fairfieldct.org</u>

Inquiries must reference date of bid opening, requisition or contract number, and must be received <u>no later than as indicated in the bid documents</u> prior to date of bid opening. Failure to comply with these conditions will result in the bidder waiving the right to dispute the bid specifications and conditions.

PRICES

Prices quoted must be firm, for acceptance by the Town of Fairfield, for a period of ninety (90) days. Prices shall include all applicable duties. Bidders shall be required to deliver awarded items at prices quoted in their original bid.

F.O.B. DESTINATION

Prices quoted shall be Net – Delivered to destination. Bids quoting other than F.O.B. Destination may be rejected.

BID BOND

The BID BOND furnished, as bid security, must be duly executed by the bidder as principal. It must be in the amount equal to five percent (5%) of the total estimated bid, as guarantee that, in case the contract is awarded to the bidder, the bidder will, within ten days thereafter, execute such contract and furnish a Performance Bond and Payment Bond.

Small businesses may elect to obtain an irrevocable letter of credit or cashier's check in lieu of the Bid Bond. Such surety must also be in an amount equal to at least five percent (5%) of the total estimated bid.

All bid bonds shall be written by a surety company or companies licensed in the State of Connecticut, and shall have at least an A-VII policy holders rating, as reported by A.M. Best Rating Services, or otherwise deemed acceptable by the Town. The Town always reserves the right to reject surety companies, if an approved surety bond cannot be provided, the bidder shall be deemed non-responsive.

A complete list of certified surety companies can be accessed on the U.S. Government Department of Treasury website: https://www.fiscal.treasury.gov/fsreports/ref/suretyBnd/c570 a-z.htm

NOTE: Failure to provide a Bid Bond or equivalent security is not cause for a waiver defect. Any bid not accompanied by such security will be excluded from consideration.

PERMITS

The contractor will be responsible for securing all necessary permits, state and local, as required by the Town of Fairfield. The Town will waive its application and permit fees for Town of Fairfield projects.

PAYMENT PROCEDURES

No voucher, claim or charge against the Town shall be paid without the approval of the Fiscal Officer for correctness and legality. Appropriate checks shall be drawn by the Fiscal Officer for approved claims or charges and they shall be valid without countersignature unless the Board of Selectmen otherwise prescribed.

PAYMENT PERIOD

The Town of Fairfield shall put forth its best effort to make payment within thirty days (30) after delivery of the item acceptance of the work, or receipt of a properly completed invoice, whichever is later. Payment period shall be net thirty days (30) unless otherwise specified. For projects that do not require a performance or bid bond, The Town of Fairfield reserves the right to retain five percent (5%) of total bid amount, which is payable ninety (90) days after final payment or acceptance of the work.

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THE CONTRACTOR

The Contractor for the work described shall be thoroughly familiar with the requirements of all specifications, and the actual physical conditions of various job sites. The submission of a proposal shall be construed as evidence that the Contractor has examined the actual job conditions, requirements, and specifications. Any claim for labor, equipment, or materials required, or difficulties encountered which could have been foreseen had such an examination been carefully made will not be recognized.

ASSIGNMENT OF CONTRACT

No contract may be assigned or transferred without the consent of the Purchasing Authority.

AWARD OF BIDS

Contracts and purchases will be made or entered into with the lowest responsible bidder meeting specifications, except as otherwise specified in the invitation. If more than one item is specified in the invitation, the Town of Fairfield reserves the right to determine the low bidder on an individual basis or on the basis of all items included in the Invitation for Bids, unless otherwise expressed by the Town. Additionally, the Town reserves the right to consider other factors in an award, such as the Town's prior experience with a vendor for services previously provided.

PERFORMANCE AND LABOR AND MATERIAL BOND

The successful bidder, within seven (7) business days after notification of award, will be required to furnish Performance and Labor and Material Bond provided by a company authorized to issue such bonds in the State of Connecticut, or Certified Check or properly executed Irrevocable Letter of Credit equal to a hundred per cent (100%) of the award.

In the event that the Contractor where required to provide evidence of insurance and a performance bond does not do so before beginning work, the Town of Fairfield reserves the right to withhold payment from such supplier until the evidence of insurance and performance bond has been received by the Town.

All payment and performance bonds shall be written by a surety company or companies licensed to issue bonds in the State of Connecticut, and shall have at least an A-VIII policy holders rating, as reported by A.M. Best Rating Services, or otherwise deemed acceptable by the Town. The Town always reserves the right to reject surety companies, if approved surety bonds cannot be provided the contract shall be terminated.

A complete list of certified surety companies can be accessed on the U.S. Government Department of Treasury website: https://www.fiscal.treasury.gov/fsreports/ref/suretyBnd/c570 a-z.htm

BOND REQUIREMENT – NON-RESIDENT CONTRACTORS

- 1. Non-resident contractors are required to deposit with the Department of Revenue Services a sum equivalent to 5% of the total contract value, as assurance that personal property taxes and/or any other State taxes assessed and due the State during the contract will be paid.
- 2. If this surety is not deposited with the State, the Town is required to deduct and submit to the State 5% of the total contract value.

GUARANTEE

Equipment, materials and/or work executed shall be guaranteed for a minimum period of one (1) year against defective material and workmanship. The cost of all labor, materials, shipping charges and other expenses in conjunction with the replacement of defective equipment, and/or unsatisfactory work, shall be borne by the Contractor.

CATALOGUE REFERENCE

Unless expressly stated otherwise, any and all reference to commercial types, sales, trade names and catalogues are intended to be descriptive only and not restrictive; the intent is to indicate the kind and quality of the articles that will be acceptable. Bids on other equivalent makes, or with reference to other catalogue items will be considered. The bidder is to clearly state exactly what will be furnished. Where possible and feasible, submit an illustration, descriptive material, and/or product sample.

INSURANCE

A. The Town of Fairfield is requiring insurance coverage as listed below for this work.

Note: The term "General Contractor" (hereinafter called the "Contractor") shall also include their respective agents, representatives, employees and subcontractors; and the term " Town of Fairfield" (hereinafter called the "Town") shall include their respective officers, agents, servants, officials, employees, volunteers, boards and commissions.

Note: The term "Town of Fairfield" or "Town" is to be taken to mean Town of Fairfield and the Fairfield Board of Education when the project includes the Board of Education.

At least five days before the Contract is executed and prior to commencement of work there under the Contractor will be required to submit to the Town of Fairfield, Risk Manager, 725 Old Post Road, Fairfield, CT 06824 a certificate of insurance, executed by an authorized representative of the insurance company, satisfactory to the Town's Risk Manager and in an acceptable form. The Town always reserves the right to reject insurance companies, if approved insurance policies cannot be provided the contract shall be terminated.

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INSURANCE RIDER

Without limiting the Contractor's liability, the Contractor shall provide and maintain in full force and effect at all times until all work required by the contract has been fully completed, except that Products/Completed Operations coverage shall be maintained for five (5) years, insurance coverage related to its services in connection with the project in compliance with the following requirements.

The insurance required shall be written for not less than the scope and limits of insurance specified hereunder, or required by applicable federal, state and/or municipal law, regulation or requirement, whichever coverage requirement is greater. It is agreed and understood that the scope and limits of insurance specified hereunder are minimum requirements and shall in no way limit or preclude the Town from requiring additional limits and coverage to be provided under the Contractor's policies.

B. Minimum Scope and Limits of Insurance:

Worker's Compensation Insurance:

- In accordance with the requirements of the laws of the State of Connecticut.
- Five hundred thousand dollars (\$500,000) Employer Liability each accident.
- Five hundred thousand dollars (\$500,000) Employer Liability each employee by disease.
- Five hundred thousand dollars (\$500,000) Employer Liability policy limit coverage for disease.

Commercial General Liability Insurance:

- Bodily Injury, Personal Injury and Property Damage one million dollars (\$1,000,000) each occurrence, two million dollars (\$2,000,000) aggregate.
- Products/Completed Operations one million dollars (\$1,000,000) each occurrence, two million dollars (\$2,000,000) aggregate.

Automobile Liability Insurance:

A combined single limit of one million dollars (\$1,000,000). This policy shall include all liability of the Contractor arising from the operation
of all self-owned motor vehicles used in the performance of the Contract; and shall also include a "non-Ownership" provision covering the
operation of motor vehicles not owned by the Contractor, but used in the performance of the work, and, rider CA9948 or equivalent

Umbrella/Excess Liability Insurance:

Five million dollars (\$5,000,000) each occurrence, five million dollars (\$5,000,000) aggregate. Such coverage must be follow form over Worker's Compensation, Commercial General Liability, and Automobile Liability.

Indemnification: The Contractor shall defend, indemnify and save harmless the Town and its officers, agents, servants, officials, employees, volunteers, boards and commissions from and against any and all claims, demands, suits, proceedings, liabilities, judgments, awards, losses, damages, costs and expenses of any nature, including attorneys' fees, on account of bodily injury, sickness, disease, death or any other damages or loss sustained by any person or persons or injury or damage to or destruction of any property, directly or indirectly arising out of, relating to, or in connection with the work called for in the Contract, whether or not due or claimed to be due in whole or in part to the active, passive or concurrent negligence, fault or contractual default of the Contractor, its officers, agents, servants or employees, any of its sub-contractors, the Town, any of its respective officers, agents, servants, officials, employees, to pay for the defense of all such claims, demands, suits and proceedings, provided, however, that the Contractor shall not be required to indemnify the Town, its officers, agents, servants, officials, employees, volunteers, boards and commissions, against any such damages occasioned solely by acts or omissions of the Town, its officers, agents, servants, officials, employees, volunteers, boards and commissions, and commissions, other than supervisory acts or omissions of the Town, its officers, agents, servants, officials, employees, volunteers, boards and commissions, in connection with the work called for in the Contract.

"Tail" Coverage: If any of the required liability insurance is on a claims-made basis, "tail" coverage will be required at the completion of this contract for a duration of 36 months, or the maximum time period reasonably available in the marketplace. The Contractor shall furnish certification of "tail" coverages described or continuous "claims made" liability coverage for 36 months following Contract completion. Continuous "claims made" coverage will be acceptable in lieu of "tail" coverage provided its retroactive date is on or before the effective date of this Contract. If continuous "claims made" coverage is used, the Contractor shall be required to keep the coverage in effect for duration of not less than 36 months from the end of the Contract.

Acceptability of Insurers: The Contractor's policies shall be written by insurance companies licensed to do business in the State of Connecticut, with an A.M. Best rating of A- XV or otherwise acceptable by the Town's Risk Manager.

2022-63 Jennings Beach Pavilion Siding Project Page 7 of 11 **Subcontractors:** The Contractor shall require subcontractors to provide the same "minimum scope and limits of insurance" as required herein, with the exception of Errors and Omissions/Professional Liability insurance/Fiduciary Liability, unless Errors and Omissions/Professional Liability/Fiduciary Liability insurance is applicable to the work performed by the subcontractor. All Certificates of Insurance shall be provided to and approved by the Town's Risk Manager prior to the commencement of work, as required herein.

Aggregate Limits: It is agreed that the Contractor shall notify the Town when fifty percent (50%) of the aggregate limits are eroded during the contract term. If the aggregate limit is eroded for the full limit, the Contractor agrees to reinstate or purchase additional limits to meet the minimum limit requirements stated herein. The premium shall be paid by the Contractor.

Deductibles and Self-Insured Retentions: Any deductible or self-insured retention must be declared to, and approved by, the Town. All deductibles or self-insured retentions are the sole responsibility of the Contractor to pay and/or to indemnify. Under no circumstances will the Town be responsible for paying any deductible or self-insured retentions related to this Contract

Notice of Cancellation or Non-renewal: Each insurance policy required shall be endorsed to state that coverage shall not be suspended, voided, cancelled, or reduced in coverage or in limits except after 30 days prior written notice by certified mail, return receipt requested, has been given to the Town, (provided ten (10) days' prior written notice shall be sufficient in the case of termination for nonpayment).

Waiver of Governmental Immunity: Unless requested otherwise by the Town, the Contractor and its insurer shall waive governmental immunity as defense and shall not use the defense of governmental immunity in the adjustment of claims or in the defense of any suit brought against the Town.

Additional Insured: The liability insurance coverage, except Errors and Omissions, Professional Liability or Workers Compensation, if included, required for the performance of the Contract shall include the Town as Additional Insured but only with respect to the Contractor's activities to be performed under this Contract. Coverage shall be primary and non-contributory with any other insurance and self-insurance and contain no special limitations on the scope of protection afforded to the Town of Fairfield. The Town and/or its representative retain the right to make inquiries to the Contractor, its agents or broker and insurer directly.

Waiver of Subrogation: A waiver of subrogation in favor of the Town is required on all policies.

Waiver/Estoppel: Neither approval by the Town nor failure to disapprove the insurance furnished by the Contractor shall relieve the Contractor of the Contractor's full responsibility to provide insurance as required under this Contract.

Contractor's Insurance Additional Remedy: Compliance with the insurance requirements of this Contract shall not limit the liability of the Contractor or its Sub-Contractors/Firms, employees or agents to the Town or others. Any remedy provided to the Town shall be in addition to, and not in lieu of, any other remedy available under this Contract or otherwise.

Certificate of Insurance: As evidence of the insurance coverage required by this Contract, the Contractor shall furnish Certificate(s) of Insurance to the Town's Risk Manager prior to the award of the Contract if required by the Bid document, but in all events prior to Contractor's commencement of work under this Contract. The Certificate(s) will specify all parties who are endorsed on the policy as Additional Insured (or Loss Payees). The certificates and endorsements for each insurance policy are to be signed by a person authorized by the insurer to bind coverage on its behalf. Renewals of expiring certificates shall be filed thirty (30) days prior to expiration. The Town reserves the right to require complete, certified copies of all required policies at any time. All insurance documents required should be mailed to Town of Fairfield, Chief Financial Officer, 725 Old Post Road, Fairfield, CT 06824 and Town of Fairfield, Risk Manager, 725 Old Post Road, Fairfield, CT 06824.

OSHA

The bidder will certify all equipment complies with all regulations and conditions stipulated under the Williams-Steiger Occupational Safety and Health Act of 1971, as amended. The successful bidder will further certify that all items furnished under this project will conform and comply with Federal and State of Connecticut OSHA standards. The successful bidder will agree to indemnify and hold harmless the Town of Fairfield for any and all damages that may be assessed against the Town.

LIFE CYCLE COSTING

Where applicable, Life Cycle Costing will be used as a criterion for awarding bids. This is a method of calculating total cost of ownership of an item over the life of the product, which may include operation and maintenance expenses, transportation, salvage value, and/or disposal costs.

FEDERAL, STATE, AND LOCAL LAWS

All applicable Federal, State and local laws, rules and regulations of all authorities having jurisdiction over the locality of the project shall apply to the contract and are deemed to be included herein. If the total amount of the project, including any current or future change orders, exceeds \$100,000.00 all work is to be done in accordance with Connecticut Department of Labor (CT-DOL) rules and regulations. More information may be obtained from: www.ctdol.state.ct.us

The Davis-Bacon and Related Acts, shall apply to contractors and subcontractors performing on federally funded or assisted contracts in excess of \$2,000 for the construction, alteration, or repair (including painting and decorating) of public buildings or public works. More information may be obtained from: <u>https://www.dol.gov/whd/govcontracts/dbra.htm</u>

NOTE: The Town shall apply the most current wage decision applicable at the time of contract award.

2022-63 Jennings Beach Pavilion Siding Project Page 8 of 11

CONFLICT OF INTEREST

No officer or employee or member of any elective or appointive board, commission or committee of the Town, whether temporary or permanent, shall have or acquire any financial interest gained from a successful bid, direct or indirect, aggregating more than one hundred dollars (\$100.00), in any project, matter, contract or business within his/her jurisdiction or the jurisdiction of the board, commission, or committee of which he/she is a member. Nor shall the officer / employee / member have any financial interest, direct or indirect, aggregating more than one hundred dollars (\$100.00) in any contract or proposed contract for materials or services to be furnished or used in connection with any project, matter or thing which comes under his/her jurisdiction or the jurisdiction of the board, commission, committee of which he/she is a member.

NON-WAIVER CLAUSE

The failure by the Town to require performance of any provision of this bid shall not affect the Town's right to require performance at any time thereafter, nor shall a waiver of any breach or default of a contract award constitute a waiver of any subsequent breach or default or a waiver of the provision itself.

ATTORNEY FEES

In the event of litigation relating to the subject matter of this bid document or any resulting contract award, the non-prevailing party shall reimburse the prevailing party for all reasonable attorney fees and costs resulting therefrom.

SCOPE OF WORK/SITE INSPECTIONS

The bidder declares that the scope of the work has been thoroughly reviewed and any questions resolved (see above for name and number of individual to contact for questions). If applicable, the bidder further declares that the site has been inspected as called for in the specifications (q.v.).

EXCEPTION TO SPECIFICATIONS

No protest regarding the validity or appropriateness of the specifications or of the Invitation for Bids will be considered, unless the protest is filed in writing with the Purchasing Authority prior to the closing date for the bids. All bid proposals rendered shall be considered meeting the attached specifications unless exceptions are noted on a separate page dated and signed by the bidder.

UNLESS OTHERWISE NOTED

It will be assumed that all terms and conditions and specifications will be complied with and will be considered as part of the Bid Proposal.

TAX EXEMPT

Federal Tax Exemption 06-6001998. Exempt from State Sales Tax under State General Statues Chapter 219-Section 12-412 Subsection A. No exemption certificates are required and none will be issued.

REFERENCES

Provide reference details of most recent similar scope projects performed.

REFERENCE #1:

Name of Company	Phone	
Contact Person	Cell	
Company Address	Email	
Project, Location, & Date Completed		

REFERENCE #2:

Name of Company	Phone
Contact Person	Cell
Company Address	Email
Project, Location, & Date Completed	

REFERENCE #3:

Name of Company	Phone
Contact Person	Cell
Company Address	Email
Project, Location, & Date Completed	

REFERENCE #4:

Name of Company	Phone
Contact Person	Cell
Company Address	Email
Project, Location, & Date Completed	

REFERENCE #5:

Name of Company	Phone
Contact Person	Cell
Company Address	Email
Project, Location, & Date Completed	

SUBCONTRACTORS

Provide subcontractor details if any are to be employed as part of this contract, including labor rates:

SUBCONTRACTOR #1:	
Name of Company	Fed ID #
Contact Person	Title
Company Address	Phone
Trade	Email
Rates: Supervisor \$/hr Foreman \$/hr Journeyman \$	/hr Apprentice \$/hr
SUBCONTRACTOR #2:	
Name of Company	Fed ID #
Contact Person	Title
Company Address	Phone
Trade	Email
Rates: Supervisor \$/hr Foreman \$/hr Journeyman \$	/hr Apprentice \$/hr
SUBCONTRACTOR #3:	
Name of Company	Fed ID #
Contact Person	Title
Company Address	Phone
Trade	Email
Rates: Supervisor \$/hr Foreman \$/hr Journeyman \$	/hr Apprentice \$/hr
SUBCONTRACTOR #4:	
Name of Company	Fed ID #
Contact Person	Title
Company Address	Phone
Trade	Email
Rates: Supervisor \$/hr Foreman \$/hr Journeyman \$	5/hr Apprentice \$/hr
NOTE: All sub-Contractors are subject to approval by the Town of Fair	rfield and are required to provide Fed II

Purchasing Authority 2022-63 Jennings Beach Pavilion Siding Project Opened 11:00 a.m. on 9 March 2022

Bid Results

		J. Antonelli Roofing	Bismark Construction	NAC Industries
Item	Description	Stamford, CT	Milford, CT	Oxford, CT
1	Lump sum for all work involved	\$73,400.00	\$147,000.00	\$157,000.00
2	Brand Materials Specified	James Hardie Siding	Hardie Siding	Hardie Cedermill as specified

ADDENDUM #1

2022-63

24 February 2022– It is intended that this Addendum incorporating the following corrections, revisions, additions, deletions and clarifications become part of the Contract Documents including pricing as submitted

Due to expected inclement weather, the Pre-Bid Meeting will be Postponed to 10am Monday, February 28th 2022.

SERVICE AGREEMENT

This AGREEMENT, made this day of _____ May 2022, by and between the **TOWN OF FAIRFIELD**, in the County of Fairfield, a municipal Corporation of the State of Connecticut (hereinafter "**TOWN**"), and **J. ANTONELLI ROOFING A DIV. OF THE PROPERTY GROUP OF CT, INC** a Connecticut Corporation with its principal place of business at 25 Crescent Street, Stamford, Connecticut, (hereinafter "**CONTRACTOR**").

WITNESSETH, That for and in consideration of the premises and the agreement herein contained, and the payments herein provided to be made, the parties hereto agree as follows:

FIRST: Statutes.

The Contractor agrees to accept and abide by the provisions of Title 31, Section 53 of the 1965 Supplement to the General Statutes, State of Connecticut, which require "The wages paid on an hourly basis to any person performing the work of any mechanic, laborer or worker on the work herein contracted to be done and the amount of payment or contribution paid or payable on behalf of each such person to any employee welfare fund, as defined in subsection (h) of this section, shall be at a rate equal to the rate customary or prevailing for the same work in the same trade or occupation in the town in which such public works project is being constructed. Any Contractor who is not obligated by agreement to make payment or contribution on behalf of such persons to any such employee welfare fund shall pay to each mechanic, laborer or worker as part of such person's wages the amount of payment or contribution for such person's classification on each pay day."

The Contractor agrees and warrants that in the performance of the Contract such Contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of race, color, religious creed, age, marital status, national origin, ancestry, sex, gender identity or expression, intellectual disability, mental disability or physical disability, including, but not limited to, blindness, unless it is shown by such Contractor that such disability prevents performance of the work involved, in any manner prohibited by the laws of the United States or of the State of Connecticut; and the Contractor further agrees to take affirmative action to insure that applicants with job-related qualifications are employed and that employees are treated when employed without regard to their race, color, religious creed, age, marital status, national origin, ancestry, sex, gender identity or expression, intellectual disability, mental disability or physical disability, including, but not limited to, blindness, unless it is shown by the Contractor that such disability prevents performance of the work involved; (b) the Contractor agrees, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, to state that it is an "affirmative action equal opportunity employer" in accordance with regulations adopted by the Commission; (c) the Contractor agrees to provide each labor union or representative of workers with which the Contractor has a collective bargaining agreement or other contract or understanding and each vendor with which the Contractor has a contract or understanding, a notice to be provided by the Commission, advising the labor union or workers' representative of the Contractor's commitments under this section and to post copies of the notice in conspicuous places available to employees and applicants for employment; (d) the Contractor agrees to comply with each

provision of this Section and Connecticut General Statutes §§ 46a-68e and 46a-68f and with each regulation or relevant order issued by said Commission pursuant to Connecticut General Statutes §§ 46a-56, 46a-68e and 46a-68f; and (e) the Contractor agrees to provide the Commission on Human Rights and Opportunities with such information requested by the Commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the Contractor as relate to the provisions of this Section and Connecticut General Statutes § 46a-56. If the contract is a public works contract, the Contractor agrees and warrants that he will make good faith efforts to employ minority business enterprises as subcontractors and suppliers of materials on such public works projects.

The Contractor agrees and warrants that in the performance of the Contract such Contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of sexual orientation, in any manner prohibited by the laws of the United States or the State of Connecticut, and that employees are treated when employed without regard to their sexual orientation; (b) the Contractor agrees to provide each labor union or representative of workers with which such Contractor has a collective bargaining Agreement or other contract or understanding and each vendor with which such Contractor has a contract or understanding, a notice to be provided by the Commission advising the labor union or workers' representative of the Contractor's commitments under this section, and to post copies of the notice in conspicuous places available to employees and applicants for employment; (c) the Contractor agrees to comply with each provision of this section and with each regulation or relevant order issued by said Commission pursuant to Connecticut General Statutes § 46a-56; and (d) the Contractor agrees to provide the Commission with such information requested by the Commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the Contractor which relate to the provisions of this Section and Connecticut General Statutes § 46a-56.

SECOND: Engagement and Authorization.

Subject to the terms and conditions set forth in this Agreement, Town does hereby engage and authorize Contractor — and Contractor does hereby accept such engagement and authorization, as an independent contractor for Town — to construct the Construction Project, as here in defined, and to manage such construction for Town. The Contractor further covenants and agrees at its own proper cost, charge, and expense to furnish all machinery, appliances, tools, labor and materials necessary or proper to do all the work necessary to construct all the works equipment and fixtures, appurtenant thereto, as set forth in the Contractor's proposal, annexed hereto, as Exhibit A and known as PURCHASE ORDER NO.22XXXXXX, and as described in the Invitation to Bid #2022-41 Plans and Specifications, attached hereto as Exhibit B, made and prepared by the Town of Fairfield Purchasing Department, in the County of Fairfield; and in the Contract Documents, as defined below in this Contract, which are incorporated by reference and wholly made a part of this Contract to the same extent as though the same were herein expressly written, in a first-class workmanlike manner, and in strict accordance with the plans, drawings and specifications therefore, invitation for bid, and the Contractor's proposal all of which plans, drawings, specifications, invitation to bid, proposal, award resolution and other Contract Documents. Such work will be performed under the supervision of the Responsible Town Official

(herein "RTO"), who for the purposes of this Contract, shall be the Director of Public Works of the Town of Fairfield and/or his appointed agent.

THIRD. In consideration of the Contractor faithfully complying with all the terms and stipulations of this Contract as set forth herein, or in the plans and specifications therefore, advertisement, proposal and other Contract Documents, the Town of Fairfield covenants and agrees to pay the said Contractor at the time and times, and in the manner more particularly set forth in the General Conditions as accepted in the bid submission attached hereto as Exhibit C.

FOURTH. The Contractor agrees to indemnify, defend and hold harmless the Town of Fairfield, its employees, agents and servants from any and all claims or demands for damages or injuries to either person or property which arise or may arise out of the performance of this contract, and shall indemnify and insure the Town of Fairfield in the manner more particularly set forth in the Insurance Requirements attached herein as Exhibit D, which are made part of this Contract.

FIFTH. The term "Contract Documents" shall mean and include the following:

Advertisement for Bid

- 1. Instructions to Bidders
- 2. Bid Proposal
- 3. All Contract Forms:
 - a. Bid Bond
 - b. Certificate of Surety
 - c. Statement of Compliance with Bidding Requirements
 - d. Contract
 - e. Acknowledgement of Officer of Town Executing Contract
 - f. Acknowledgement of Corporate Contractor
 - g. Acknowledgement of Contractor, if an Individual
 - h. Performance and Labor and Material Bond
 - i. Certificate of Insurance
 - j. Non-Collusion Affidavit of Prime Bidder
 - k. Non-Collusion Affidavit of Subcontractor
 - l. Notice of Award
 - m. Notice to Proceed
 - n. Change Orders
 - o. Town of Fairfield, Standard Insurance Requirements
- 4. General Conditions
- 5. Supplemental General Conditions
- 6. Special Conditions
- 7. All Federal and State Required Contract Provisions Including:
 - a. CHRO-Contract Compliance Regulations-Notification to Bidders
- 8. Contract Drawings

IN WITNESS WHEREOF, the Board of Selectmen of the Town of Fairfield, in the County of Fairfield has authorized the Corporate Seal of the Town of Fairfield to be hereto affixed and this Contract to be signed by the Purchasing Authority and that same attested to by the Town Clerk and the Contractor has caused this Contract to be signed by its duly authorized officer, and its corporate seal to be hereunto affixed all the day and year first above written.

TOWN OF FAIRFIELD

By		_
Its: Date:	, 2022	

By_____

Its: _	
Date:	, 2022

J. ANTONELLI ROOFING

By_____ Its:

Date: _____, 2022

EXHIBIT A CONTRACTOR'S PROPOSAL PURCHASE ORDER NO.22XXXXXX

EXHIBIT B INVITATION TO BID #2022-63

EXHIBIT C BID SUBMISSION

EXHIBIT D CERTIFICATE OF INSURANCE





Best Practices – Installation Guide

Siding and Trim Products

Version 9.1 - December 2019

HardiePlank[®] HardieShingle[®] HardiePanel[®] HardieTrim[®] HardieSoffit[®]



ColorPlus[®] Technology



Made For What Matters

HardieZone® - Engineered for Climate®

James Hardie, the undisputed leader in fiber cement has always made the world's most resilient siding, and now we have made it even better. For the first time, siding has been engineered for climate. So you get the right board for the right climate. We call it the HardieZone[®] System.

We took the 8 climatic variables – that affect long term performance of the exterior into account and by combining them determined climate zones throughout North America. We found common variables between certain zones which led us to engineer James Hardie siding products for specific climates.

The development of these two products is a result of a heavy investment in R&D and our proprietary technology and manufacturing processes and culminates in the evolution of 7th generation fiber cement – Engineered for Climate.





For climate zones 1-5

The HZ5[®] products are specifically engineered to perform in climates with seasonal temperature variations, freezing temperatures and snow and ice. The HZ10[®] products are specifically engineered to perform in climates with, high humidity, hot dry conditions and high levels of rainfall.

For climate zones 6-10

This guide provides the best practice guidelines for installing the HardieZone product for your zone. Specific details and helpful hints that pertain to your zones are included in order to facilitate your installation process. If you are unsure about which zone your job is located in and which HardieZone product and installation instructions to use, then please visit our website at **jameshardie.com** for the zip code tool.



Installation Guide

FOREWORD

James Hardie, the world leader in the manufacturing and development of fiber-cement building products, has produced this Installation Guide to help builders and contractors with the installation of James Hardie® siding and trim products, including James Hardie products with ColorPlus® Technology.

The first sections of this manual provide a general product description and information about safe practices, and proper tools for working with James Hardie siding and trim products. Sections that follow describe design and general installation information for specific James Hardie products. The appendix addresses the installation of James Hardie siding products in less common construction practices (e.g. concrete construction).

This manual must be read in conjunction with project drawings and specifications, applicable building codes, and relevant compliance documents. The details in this manual provide guidance on how to comply with James Hardie's installation requirements and need to be reviewed by all parties who are responsible for installing James Hardie products on a project.

This manual is subject to periodic re-examination and revision. For information on the current status of these documents please check the James Hardie website, www.jameshardie.com. The reader is responsible for ensuring that they are using the most up-to-date information.

TELEPHONE DIRECTORY

Technical Services 800-942-7343

Warranty 866-375-8603



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HardiePanel[®] Vertical Siding

General Product Information

JOBSITE STORAGE OF JAMES HARDIE® PRODUCTS

The James Hardie family of siding and trim products, including James Hardie[®] products with ColorPlus[®] Technology, should be stored in their original packaging in a garage, shed, or in some other covered area protected from weather whenever possible. These products must be kept covered on a pallet off of the ground; they must never be stored in direct contact with the ground.



If James Hardie products are stored outside they should be protected with an additional waterproof covering. All scrap siding and trim pieces, cutoffs or material left on scaffolding must be covered and protected from the elements. If James Hardie products become saturated, they must be laid on a flat surface and allowed to dry completely prior to installation.

James Hardie products stored in their original packaging.



If stored outside protect with an additional waterproof covering.

WARNING

James Hardie products should not be rolled-off or dumped-off of the truck during delivery to the jobsite. James Hardie recommends using a fork lift to off load material or unloading by hand.

IMPORTANCE OF KEEPING JAMES HARDIE PRODUCTS DRY

James Hardie siding and trim products must be kept dry at all times prior to installation. If products become saturated before they are installed, the following problems may occur:

OPEN JOINTS DUE TO SHRINKAGE

If installed wet, joints between planks may open up requiring repair or replacement. Under normal environmental conditions fiber cement has significantly greater dimensional stability than wood or vinyl-based exterior products.

DIFFICULTY IN HANDLING

Saturation increases the weight and flexibility of fiber-cement products, making them difficult to handle.

STAINING

Staining is a deposit of soluble salts, usually white in color, which sometimes appears on the surface of masonry or concrete construction.



James Hardie is not responsible for damage due to improper storage and handling of its products.

PROPER HANDLING OF JAMES HARDIE® PRODUCTS

To help avoid injury and product damage, lap siding, trim and soffit material should always be carried on edge. James Hardie recommends that these products be carried by two people whenever possible with each person positioned near the end of the load. To carry a plank solo, a person should hold it on edge in the middle with arms spread apart for maximum support of the product. Lifting or carrying lap siding or trim flat may break or bend the product.

James Hardie recommends that two people always carry panel products. Workers should hold the panel near each end and on edge. Because of reduced visibility when handling panel products, take extra care to avoid damaging the corners and edges of the panel.

TIP: When handling panel products, manufactured panel carriers or caddies can give workers better control.



One person should hold planks on edge in the middle with arms spread apart for maximum support of the product



Two people should always carry panel products.



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HardiePanel® Vertical Siding

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HardieWrap[®] Weather Barrier

HardieTrim[®] Boards/Battens

HardieSoffit[®] Panels

HardiePlank[®] Lap Siding

MINIMIZE AND MANAGE SILICA DUST

Silica is the most common mineral found on earth. It is the main component of beach sand and is used to make glass and household products such as cleansers and polishes. Silica is also found in many everyday building materials: tile, concrete, granite countertops, drywall compound, masonry bricks, pavers, etc. It is a very durable material and contributes to the stability of fiber cement.Cutting or grinding silica containing materials with high speed saws or grinders can generate very fine (respirable) dust. Over time, long-term occupational over-exposure to respirable silica dust can cause lung diseases including silicosis, lung cancer and other health issues.

OSHA sets exposure limits for dust, chemicals and other materials that employees may be exposed to at work or on a jobsite. These exposure limits cover dust from all types of materials, including: stone, brick, concrete, drywall, wood, and wood composites.OSHA requires employers to take specific actions to protect workers on construction sites based on the amount of silica dust they are exposed to. The updated OSHA standard reduces the permissible exposure limit (PEL) for silica dust by about 80% – from 250 µg/m³ to 50 µg/m³ – over an 8-hour period.

If you have concerns about dust exposure or compliance with OSHA regulations, please contact James Hardie at 1-800-942-7343, or consult with a qualified industrial hygienist (IH). A directory of independent IH consultants can be found at www.aiha.org.

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WORK SAFE: FOLLOW JAMES HARDIE PRODUCT CUTTING INSTRUCTIONS

OUTDOORS

- 1. Position cutting station so that airflow blows dust away from the user and others near the cutting area.
- 2. Cut using one of the following methods:

a. 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.)

b. Better: Circular saw equipped with a dust collection feature and a HardieBlade saw blade.

c. 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.)

*May require proof of compliance (industry reports or exposure testing)



ESR-1844 & 2290 Report

HardiePanel[®] Vertical Siding

James Hardie ranks options for cutting our fiber cement products in a convenient "Good, Better, Best" chart. The chart on the previous page is provided for informational purposes only to help you in selecting the appropriate cutting options for your particular circumstances. If you are unsure which cutting tools are best for your job site, consult a qualified industrial hygienist or safety professional, or contact your James Hardie representative for assistance.

The Occupational Safety and Health Administration (OSHA) regulates workplace exposure to silica dust. For construction sites, OSHA has deemed that cutting fiber cement outdoors 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.

Note: James Hardie makes no representation or warranty that use of a particular cutting option will assure your compliance with OSHA rules or applicable laws and safety requirements.

2.1

CUTTING STATION SET UP

Set up cutting tables or workstations in well ventilated outdoor areas, downwind from other workers. Do not cut indoors or in enclosed areas with high speed saws unless special precautions are taken to prevent overexposure to dust.

Clean Up and Disposal of Debris

When cleaning up dust and debris from cutting James Hardie® products, never use a broom or brush if the debris material is dry. Use wet dust suppressions methods, sweeping compoundd, or use a vacuum to collect dust. Waste pieces of James Hardie siding and trim products can be disposed of in landfills according to local ordinances. No special handling is required.



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.

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General Product Informatior

Finishing and Maintenance

ESR-1844 & 2290 Report

Tools for Cutting and Fastening Fiber-Cement Products

James Hardie promotes certain tools and products for the safest and best way to cut their fiber-cement products, consistent with its best practice recommendations (please refer to page 6-7). However, please consult tool manufacturer instructions and guidelines for the safe operation of specific tools. The tools listed here are not made for, or by, James Hardie Building Products, Inc. and James Hardie accepts no liability for their use or misuse.

SHEARS

Because shears produce less dust than high-speed tools, they are the preferred method of cutting lap and panel siding products. Both electric and pneumatic shears are available, and they may be used for cutting indoors as well as outdoors. Shears are available that can make straight or radius cuts in fiber cement products with relative ease. Shears cannot be used to cut HardieTrim[®] boards.



TIP: For the smoothest cuts, when cutting James Hardie[®] siding products with a shear or circular saw, cut the board face down. When using a miter saw, cut the board face up. If installing James Hardie siding products with ColorPlus[®] Technology, leave the protective laminate film in place while cutting.

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CIRCULAR SAWS

When cutting any James Hardie siding, soffit, or trim product with a circular saw, use only tools that are designed specifically for dust reduction. A dust-reducing circular saw has either a deflector to direct any dust away from the user's breathing area or a collection box to capture the dust. James Hardie recommends that a HEPA-equipped vacuum system be used in conjunction with any circular saw. (Circular saws should only be used in outdoor, well-ventilated areas.)



WARNING

Always make sure the saw manufacturer's safety equipment is in place and in good working order. Never use high-speed power tools when cutting James Hardie® products indoors.

General Product

HardieSoffit® Panels

HardieShingle[®] HardiePlank[®] Siding Lap Siding

HardiePanel[®] Vertical Siding

HEPA VACUUMS

Always use a vacuum equipped with a HEPA filter to help minimize the amount of respirable dust during power saw cutting and clean-up. Many vacuums are designed to connect directly to power tools and run only when the power tool is being operated. In addition to a HEPA filter, using a disposable drywall or collection bag is recommended to extend the life of the HEPA filter and make disposal easier and safer.



POWER MITER SAWS

Like circular saws, a power miter saw should only be operated outdoors in well-ventilated areas. Power miter saws should be equipped with a HardieBlade[®] saw blade and should be used in conjunction with a vacuum equipped with a HEPA filter for maximum dust protection.

SAW BLADES

Traditional blades that are not designed for cutting James Hardie products may generate excessive dust, cut slowly, or exhibit premature wear. The HardieBlade[®] saw blade is a unique circular saw blade designed to generate less respirable dust than a traditional saw blade or continuous rim diamond blade. The HardieBlade can also be used to cut the full line of James Hardie products and are available in 7 ¼ in., 10 in., and 12 in. diameters. To extend the life of a HardieBlade saw blade, do not use it to cut any materials other than fiber cement.





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HardieTrim® Boards/Battens

> HardieSoffit[®] Panels

HardiePlank® Lap Siding

HardieShingle[®] Siding

HardiePanel[®] Vertical Siding

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HardieTrim[®] HardieWrap[®] Boards/Battens Weather Barrier

HardieSoffit® Panels

HardiePanel[®] HardieShingle[®] HardiePlank[®] Vertical Siding Lap Siding

Tools for Cutting and Fastening Fiber-Cement Products (cont.)

JIG SAWS

Jig saws equipped with a fiber-cement cutting blade may be used to cut service openings, curves, radii, scrollwork, and other irregular shapes in James Hardie[®] products. Because most jig saws are not equipped with dust collection capabilities, these tools also should only be used outdoors in well-ventilated areas and for limited amounts of cutting.



DRILLING FIBER CEMENT

When required to drill a hole in fiber cement products, a masonry bit should be used. For larger holes, a carbide tipped hole saw can be used. Due to the lack of dust collection, drills and hole saws should only be used outdoors in well-ventilated areas and for limited amounts of cutting. For best results, use a hole saw specifically designed for fiber cement.



www.malcoproducts.com

LAP GAUGES

Several different methods exist to ensure proper spacing and overlap of fiber cement products. The slowest method is to snap a chalk line with the proper spacing above each row of fiber cement as it is being installed. The siding gauge leads all other alignment devices in ease of use, speed, and effectiveness. James Hardie recommends the use of siding gauge when installing lap siding. When installing HZ5[®], special care must be taken when using lap gauges so the drip edge is not damaged. For best results, use a Siding Gauge that is specifically designed for HZ5[®].



JOINT FLASHING

Flashing behind butt joints provides an extra level of protection against the entry of water at the joint. James Hardie recommends 6 in. wide flashing that overlaps the course below by 1 in. Some local building codes may require different size flashing. Joint-flashing material must be durable, waterproof materials that do not react with cement products. Examples of suitable material include finished coil stock and code compliant water-resistive barriers. Other products may also be suitable.



POWER NAILERS AND DIRECT-TO-STEEL FASTENING TOOLS

Pneumatic nailers and cordless nailers can be used to attach James Hardie products to wood, steel, or masonry substrates. Pneumatic tools require the use of an air compressor with a hose. Finish nailers should be used for HardieTrim[®] boards only. Additionally, direct-to-steel tools such as those made by ET&F are designed specifically for fastening to steel framing. Refer to the product-specific installation instructions in each section for fastener choices.

Power nailers recommended for attaching James Hardie products are siding nailers, roofing nailers and finish nailers. Below is a chart showing the appropriate nailer for each of the James Hardie siding and trim products. Be sure that the nailer chosen fires the fastener recommended for each product for the specific installment situation.

PNEUMATIC NAILER USAGE WITH JAMES HARDIE® PRODUCTS





HardiePlank® Lap Siding HardiePanel® Vertical Siding HardieShingle® Panels HardieSoffit® Panels



HardiePlank[®] Lap Siding HardiePanel[®] Vertical Siding HardieShingle[®] Panels

Finish Guns





HardieTrim[®] 5/4, 4/4 Boards HardieTrim[®] Batten Boards

TIP: If framing nailers are used to install James Hardie products, be sure they

are fitted with a flush mount attachment to control nail seating depth.

General I Fastener

Requirements

Requirements

General

Finishing and HardieWrap® Maintenance Weather Barrier

HardieTrim® Boards/Battens

HardieSoffit® Panels

> HardiePlank® Lap Siding

HardieShingle[®] Siding

HardiePanel[®] Vertical Siding

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HardieTrim[®] Boards/Battens

HardieSoffit® Panels

HardiePlank[®] Lap Siding

HardieShingle® Siding

HardiePanel[®] Vertical Siding

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Tools for Cutting and Fastening Fiber-Cement Products (cont.)

NAIL & PIN GUNS

Pneumatic nail guns can be used to attach James Hardie products to wood, steel or masonry substrates. Finish nail guns can be used for HardieTrim[®] board only. Refer to the product specific installation instructions for fastener choices. Below are examples of commonly used nail guns.

Dewalt (www.dewalt.com)* ET&F Fastening Systems (www.etf-fastening.com)* Hitachi (www.hitachipowertools.com)* (D51257K) 11/4 in - 21/2 in. 16 Gauge Straight (500) Nailer to Steel Studs (NT65A2) 21/2 in. 16 guage Finish Nailer Finish Nailer Kit (510) Nailer to Steel Studs (NV65AH) 21/2 in. Siding Nailer (610) Nailer to Steel Studs (NV45AB2(S)) 1¾ in Coil Roofing Nailer (NV75AG) 3 in Coil Nailer (110) Finish Nailer to Steel Studs Duo-Fast (www.duo-fast.com)* Porter Cable (www.deltaportercable.com)* Aerosmith (www.AerosmithFastening.com) (P275C) Siding Coil Nailer (COIL250) 21/2 in. Coil Nailer (ST4100/ST4200) Nailer to Steel Studs (HN120) Nailer to Masonry Requires special high pressure air compressor model number AKHL1050E NV65AH NT65A2 NV45AB2(S) NV75AG DC616KA[†] ET&F 510 P275C 610 ET&F 110 ET&F ST4100/ HN120 ST4200

USEFUL HAND TOOLS

In addition to the power tools listed above, certain hand tools are necessary for the installation of James Hardie[®] siding and trim products. These include:

- 25 ft. contractors tape measure
- Torpedo level
- Pencil or pen
- Smooth-faced hammer
- Speed square
- 4 ft. or longer level

TIP: If hand nailing, use a smooth faced hammer to avoid marking the product. Waffle-headed hammers should not be used when hand nailing James Hardie siding and trim products.



Requirements Requirements Pastening Intormation 2290 Report (Jossary) **Buibi**S Pape Siding Panels Boards/Battens Weather Barrier **Maintenance** -astener General Installation Cutting and Safely Product Vertical Siding ESR-1844 & /xibn9qqA [®]lens Hardie Panel[®] MardieShingle® [®]AnsidePlank[®] [®]JiffoZeib16H [®]minTsib16H [®]dsrWeibreH bns gnidsini7 General Tools for Working General

Tools for Cutting and Fastening

General Fastener Requirements

Finishing and Maintenance

HardieWrap[®] Weather Barrier

HardieTrim[®] Boards/Battens

HardieSoffit® Panels

HardiePlank[®] Lap Siding

HardieShingle[®] Siding

HardiePanel[®] Vertical Siding

Appendix/ Glossary

General Installation Requirements

FRAMING AND SHEATHING

Refer to the appendix for more information on rigid foam insulation.

James Hardie[®] siding and trim products can be installed over braced wood or steel studs spaced at a maximum of 24 in. on center or directly to 7/16 in. thick OSB or equivalent sheathing. These products can also be installed over solid-foam insulation board up to 1 inch thick.

Irregularities and unevenness in framing, sheathing, foam and other wall assembly components, including under driven nails, can telegraph through to the finished siding and trim. These irregularities should be corrected before the siding is installed.

When installing James Hardie siding and trim products over steel studs James Hardie requires a minimum 20 gauge and recommends a maximum of 16

gauge. Steel framing that is outside of this range may be too flimsy to provide adequate holding power or too heavy for some fastening systems.





When using pins to attach siding products to steel, it is important to hold the material tight to the steel framing when driving the pin as the pin will not pull the material tight to the framing the same as a nail into wood will. Once the pin has been driven into the steel stud it is also important to not set or hit the nail a second time with a hammer. When driven into steel, the ballistic-shaped point uniformly pierces the steel instead of drilling it out or tearing the steel. The displaced steel rebounds around the pin to create a strong compressive force on the shank of the pin When the pin is hit with a hammer it disrupts the compressive and frictional forces holding the pin and significantly reduces the overall holding capacity of the pin If the pin does is not set properly during the first attempt, the pin should be removed and replaced with a second pin

Sheathing

4.16

When using a screw to attach James Hardie products to steel, a screw with a self tapping point should be used. A self tapping screw

functions by having a cutting edge which drills away the material, making a tiny hole for the screw to go into. Some self tapping screws may be wing tipped which are intended to bore out the fiber cement (creating a pilot hole), and will break off as the screw goes into the steel. Either type of screw is acceptable for use.

Refer to the correct code compliance reports when selecting a fastener for steel applications and choose the corresponding tools from the tool section of this guide.



WATER-RESISTIVE BARRIER

Prior to siding, make sure the water-resistive barrier is properly installed according to the manufacturers' instructions Refer to page #30 for more information on HardieWrap[®] weather barrier including complete installation requirements.

IBC Code Reference: "1403.2 Weather protection. Exterior walls shall provide the building with a weather-resistant exterior wall envelope. The exterior wall envelope shall include flashing, as described in Section 1405.3. The exterior wall envelope shall be designed and constructed in such a manner as to prevent the accumulation of water within the wall assembly by providing a water-resistive barrier behind the exterior veneer, as described in Section 1404.2, and a means for draining water that enters the assembly to the exterior. Protection against condensation in the exterior wall assembly shall be provided in accordance with the International Energy Conservation Code.

Exceptions:

1. A weather-resistant exterior wall envelope shall not be required over concrete or masonry walls designed in accordance with Chapters 19 and 21, respectively.

2. Compliance with the requirements for a means of drainage, and the requirements of Sections 1404.2 and 1405.3, shall not be required for an exterior wall envelope that has been demonstrated through testing to resist wind-driven rain, including joints, penetrations and intersections with dissimilar materials, in accordance with ASTM E 331 under the following conditions..."

STAGING

Heavy building products and components such as roofing, drywall and floor coverings should be stored throughout the structure prior to the installation of the siding. Distributing the weight in this manner will reduce the possibility of floor plate compression on two or more story homes.

FLASHING

When using James Hardie siding, trim, and weather barrier products, make sure that roof flashing, water table flashing, window and door flashing, and flashing for other building envelope penetrations are properly installed and lapped so that moisture drains down and to the exterior. Note: The successful installation of flashing requires thorough planning before installation of roofing or siding. Scheduling and sequencing are important factors as well as having the correct flashings available on site at the correct time. James Hardie does not recommend the use of mill finished, raw aluminum flashing or any other product that may bleed or adversely react with cement products. Painted or coated aluminum flashings are recommended.

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.

IBC Code Reference: "1405.3 Flashing. Flashing shall be installed in such a manner so as to prevent moisture from entering the wall or to redirect it to the exterior. Flashing shall be installed at the perimeters of exterior door and window assemblies, penetrations and terminations of exterior wall assemblies, exterior wall intersections with roofs, chimneys, porches, decks, balconies and similar projections and at built in. gutters and similar locations where moisture could enter the wall. Flashing with projecting flanges shall be installed on both sides and the ends of copings, under sills and continuously above projecting trim."

Tools for Cutting and Fastening

General Fastener Requirements

General Installation Requirements (cont.)

ROOF-TO-WALL FLASHING

Due to the volume of water that can run down a sloped roof, one of the most critical flashing details is where a roof intersects with a sidewall. Install a self-healing adhesive-backed membrane along the roof/wall intersection before flashing. The membrane on the wall should extend behind the eaves framing and should be installed before the sub-fascia or trim goes on.

The roof should then be flashed to the wall with step flashing positioned at every shingle course. Where the roof begins at its lowest point, install a kickout flashing to deflect water away from the siding. Kickout flashing can be made by cutting and bending a piece of step flashing at an angle. The water-resistive barrier on the wall should then lap over the step flashing.

There are several companies that sell pre-made kickout flashings that are designed to divert water away from the wall. Below is an example of a preformed polypropylene kickout. Be sure to follow all manufacturer's installation instructions.





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WARNING

Caution: The kickout flashing shall be min 4 in x 4 in as required by IRC code R905.2.8.3 and be angled between 100° - 110° to deflect water from dumping behind the siding and the end of the roof intersection

GUTTERS

If gutters are installed, they should not terminate against siding or trim. Maintain a 1 in. clearance between the siding and the gutter end-cap. Kickout flashings should be installed on the roof above to divert roof runoff into the gutters and away from the 1 in. gap.

The amount of water that can be generated from a rain shower or storm can be substantial. Managing the collection and distribution of this water is important over the life of a home.

Code Reference: "1503.2.1 Locations. Flashing shall be installed at wall and roof intersections, at gutters, wherever there is a change in roof slope or direction and around roof openings..."

TIP: James Hardie recommends the use of rain gutters whenever possible.



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HardiePanel[®] Vertical Siding

VALLEY FLASHING

For added protection at roof valleys, James Hardie requires one of the following options:

- 1. If rain gutters are present: As the roof is being shingled, have the roofer extend the shingles at least 1 in. out from the fascia to direct water directly into the gutters (figure 4.20-A).
- 2 If rain gutters not present: When rain gutters are not present, have the roofer extend the valley flashing at least 2 in. out from the corner to direct water further away from the building (figure 4.20-B).
- 3. If the roof is already flashed and shingled, add a short piece of flashing to extend the valley in compliance with figure 4.20-B.

The above requirement also applies to roof valley's at any other locations where the fascia runs into a roof line such as dormer valleys and roof-to-roof intersections.



PENETRATIONS Recommended in HZ10

For penetrations in the building envelope such as hose bibs and holes 11/2 in diameter or larger, such as dryer vents, a block of HardieTrim[®] 5/4, 4/4 boards shall be installed around the point of penetration. Blocking **should** be a minimum 3 in radius greater than the radius of the penetration. To install a block around an existing vent pipe, it may be necessary to cut the block into two pieces. In this case, weather-cut the trim to fit it into place. Install flashing over the top of the trim block.

Penetrations through a building envelope are made to accommodate needs such as hose bibs, dryer and furnace vents, electrical conduit, etc. It is important to restore the weather-resistant barrier of the home after cutting a hole for the penetration.

There are several pre-made blocking and flashing products available that can simplify the installation of a penetration. One such example is Sturdimount[®]. Be sure to follow all manufactures installation instructions.



Sturdi//Mount

TIP: As most penetrations will require blocking and flashing, some planning is required. As the trim is ordered for the home, don't forget to order some extra to serve as blocking.

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HardieSoffit[®] Panels

HardiePlank[®] Lap Siding

HardieShingle[®] Siding

HardiePanel[®] Vertical Siding

Appendix/ Glossary

General Installation Requirements (cont.)

HOSE BIBS

Hose bibs are a source of water which increases the likelihood of moisture related problems. The goal is to keep the water outside of the building and the best way to do this is keep the water off the walls. A good preventative measure is to extend the hose bib further from the wall. A downward slope on the water pipe as it leaves the building will also encourage any slow leaks to fall away from the home.

Large piping over 1½ in. diameter is required to have blocking and flashing at the penetration. A block of HardieTrim® 5/4, 4/4 boards should be installed around the point of penetration. To install a block around an existing pipe, it may be necessary to cut the block into two pieces. In this case, weather-cut the trim to fit it into place. Install flashing over the top of the trim block.



HOT AIR VENTS (Dryer, Stove, Furnace, Heater, Etc.)

For hot air vents including dryer vents, stove vents, and furnace and heater exhaust, it is important to move the air away from the building envelope. As the vent is installed, a path for that moisture to leave the area should be identified. Consider what is being vented and where it is going before installing the vent. For instance, a dryer vent directly under an eave is going to force hot, moist air to rise and collect at the soffit. A good preventative measure for many vents is to increase the distance they extend from the wall to help expel moisture from the building.



For dryer vents, avoid placement too low to the ground where debris could easily impede air flow, trapping heat and moisture. Some types of high efficiency furnaces can be vented out through the walls. In these cases, avoid locating the vent too close to the roof or eaves where heat and moisture will be trapped.

TIP: Consider location of the vent prior to installation and consider extending the vent further from the wall.

Any vent piping is required to have blocking and flashing at the penetration. A block of HardieTrim[®] 5/4, 4/4 boards should be installed around the point of penetration. The blocking should extend 3-4 in. along the wall from the edge of the vent. To install a block around an existing vent, it may be necessary to cut several blocks, with weather-cuts on each piece. Flashing must be installed over the top of the trim block.

General Product Information

LIGHTS AND ELECTRICAL OUTLETS

Lights and Electrical boxes should have the same flashing and blocking as other large penetrations such as vents. Many lights utilize square electrical boxes. Blocking a square object should still incorporate the best practices of an angled weather cut.



WIRES, CONDUIT OR OTHER FIXED PIPES

For small penetrations such as wires, electrical conduit, and pipes less than 1½ in. in diameter (excluding hose bibs) no blocking is necessary. The circumference of pipe or wire should be sealed with a barrier foam and/or caulked.



AIR CONDITIONERS, SERVICE PANELS, AND OTHER WALL MOUNTED DEVICES

Wall mounted devices and air conditioners represent large penetrations into the building envelope and structure. Before installing a unit, please consult the architect or structural engineer to determine if additional bracing is necessary. The device should be installed per manufactures instructions and flashed properly. Any condensate drains should extend out 4 in from the wall, and angle down.

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BUTTING TO MORTAR OR MASONRY

James Hardie[®] siding and trim products should not be butted directly against mortar or masonry, including stone, brick, or concrete block. In these situations, a flashing should be installed to isolate the trim or siding from the mortar or masonry.

CLEARANCES

James Hardie specifies clearances to ensure the long-term durability of their products and the buildings on which they are installed. Failure to provide the proper clearances, as specified below, may affect performance of the building system, violate building codes or James Hardie requirements, and may void any warranty on the products.



HardieSoffit®

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SIDING TO GROUND CLEARANCE

James Hardie products must be installed with a minimum of 6 in. clearance to the ground on the exterior of the building. Clearances greater than 6 in. may be required in accordance with local building codes. Foundations are typically required to extend above the adjacent finished grade a minimum of 6 in. or as required by local building codes.

IBC Code Reference: "1803.3 Site grading. The ground immediately adjacent to the foundation shall be sloped away from the building at a slope of not less than one unit vertical in 20 units horizontal (5-percent slope) for a minimum distance of 10 feet (3048 mm) measured perpendicular to the face of the wall..."



SIDING TO FLASHING CLEARANCE

A ¹/₄ in. clearance must be maintained between James Hardie[®] siding and trim products and any horizontal flashing.

All horizontal flashing should be installed with a positive slope in such a way that it promotes proper drainage and does not allow moisture to pool on top of the flashing.





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SIDING AND TRIM TO SOLID SURFACES

A clearance of 2 in. must be maintained between James Hardie siding and trim products where they meet roofs, decks, paths, steps, driveways or any other solid surfaces.



Code Reference: "1503.2.1 Locations. Flashing shall be installed at wall and roof intersections, at gutters, wherever there is a change in roof slope or direction and around roof openings..."

IRC Code Reference: "905.2.8.3 Sidewall flashing. Base flashing shall be continuous or step flashing shall be a minimum of 4 in. in height and 4 in. in width"

CLEARANCES FOR SHELTERED AREAS

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



WARNING

James Hardie siding and trim products must not be installed such that they remain. in contact with standing water.

Steps

Seal cut edges

(of siding)

General Installation Requirements (cont.)

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ESR-1844 & 2290 Report Here are examples of details that can help improve the aesthetics of clearance requirements. Check with a design professional and local building officials to ensure that the chosen details are correct for their intended purpose and location.









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General Installation Requirements (cont.)







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General Product Information

HardiePanel[®] HardieShingle[®] Vertical Siding Siding

General Fastener Requirements

Each product section of the James Hardie Installation Guide contains fastener requirements for that specific product. In general if siding is to be installed over a non-structural sheathing such as foam, gypsum, or builder board, increase the length of the fastener by the thickness of the non-structural sheathing. For example, if a 1¼ in. fastener would normally be required for an application, but the siding is being installed over ½ in foam sheathing, increase the fastener length by ½ - 1¾ in. fastener length. For siding installation over a framed wall with structural sheathing such as plywood or OSB, the fastener length does not need to be increased.



WARNING

When installing siding over foam sheathing, care must be taken not to overdrive the nails and compress the foam. The resulting unevenness in the wall could distort the siding and give the wall an unsightly wavy appearance.

PNEUMATIC FASTENING

James Hardie[®] siding and trim products can be hand-nailed or fastened pneumatically. However, fastening with a pneumatic nailer is recommended for speed and consistency. Nails should be driven snug or flush with the surface of the siding.

For pneumatic nailing, set the air pressure so that the nails are driven to the proper depth. A flush mount attachment on the head of the nailer is recommended. If setting the nail depth proves difficult, choose a setting that slightly under-drives the nails. Then drive any under-driven nails snug to the surface with a smooth-faced hammer.

If nails are driven too deep, countersink them with a nail set, and fill, then drive another nail near by to the proper depth. Never use staples to attach James Hardie products.

TIP: Stainless steel fasteners are recommended when installing James Hardie products.



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FINISHING JAMES HARDIE® SIDING AND TRIM PRODUCTS

For best results when painting factory-primed James Hardie® siding and trim products, use high-quality exteriorgrade acrylic topcoats. For best results with unprimed James Hardie siding and trim products, prime first with exterior-grade acrylic primer, and then finish with high-quality exterior-grade acrylic topcoats. Two finish coats of paint are recommended.

Use primers and topcoats that are designed and recommended for cement-based building materials such as fiber-cement, masonry, brick or stucco.

WARNING

- Finish factory primed James Hardie siding and trim products within 180 days of installation.
- The use of oil-based paints on unprimed fiber cement could result in. increased surface roughness, loss of adhesion, cracking or excessive chalking.
- DO NOT use stain, oil/alkyd base paint, or powder coating on James Hardie® Products. • Never apply paint to saturated product.

COLORPLUS® TOUCH-UP





Edge Coater - edge coating is required for any field cuts to seal the edges and make joints less visible.



Touch-up Pens - conceal nailheads and very small nicks and scratches less than a dime size. Replace the area with a new piece of plank or panel if area is larger than a dime.

Note: Edge Coaters or Touch-up Pens should not be used to touch-up any area that is larger than a dime.

Note: James Hardie [JH] does not approve caulk (including JH Color matched caulk), other caulking or cementitions patching compounds to touch up nail heads, nail holes, dents, cracks or other minor surface blemishes on JH ColorPlus products.

WARNING

Do not allow ColorPlus touch-up to freeze. Apply touch-up when temperature of the air and the siding products is above 40°F (4°C).

COLORPLUS® PRODUCTS WITH PROTECTIVE LAMINATE SHEET

When installing HardieTrim[®] 5/4, 4/4 boards with ColorPlus[®] Technology, leave the protective laminate sheet on the board during cutting and installation. To install HardieTrim 5/4, 4/4 boards with ColorPlus[®] Technology, first fasten the trim using a finish nailer with the nails driven through the laminate sheet. Using a touch-up pen that matches the color of the trim, cover up the nail heads through the laminate sheet at the point of entry. After the nailing and touch-up are complete, remove the protective laminate sheet.



When installing other products such as HardiePlank[®] Lap Siding and HardiePanel[®] Vertical Siding with ColorPlus[®] Technology, leave the protective laminate sheet on the board during cutting and installation. Once the product is installed the laminate sheet should be removed.

TIP: As with any pre-finished building product, care should be taken when handling and cutting James Hardie ColorPlus products. At the job-site use a soft cloth to gently wipe any residue or construction dust left on the product

CAULK

James Hardie recommends the use of caulks and sealants that remain permanently flexible. Look for the words "permanently flexible" written clearly on the label or in the accompanying literature.

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.

James Hardie does not warrant and does not accept liability for the appearance or the performance of field-applied caulks and sealants.

REPAIR PATCHING

Dent, chips, cracks and other minor surface damage in James Hardie primed siding and trim products can be filled with cementitious patching compound except on ColorPlus. When repairing holes of less than 1 in. that has been created by scaffold anchors, pipe, etc. James Hardie recommends a backer rod be placed into hole and sealed to prevent water infiltration. James Hardie will assume no responsibility for water infiltration.

BACK PRIMING/BACK SEALING

James Hardie does not require any of its siding products to be back sealed or back primed prior to installation in the field.

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HardieShingle[®] Siding

HardiePanel[®] Vertical Siding

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MAINTENANCE

This maintenance instruction applies to all James Hardie® products, including PrimePlus® and ColorPlus® Technology.

Always follow the instructions and precautions outlined in the James Hardie® ColorPlus® Technology literature that was supplied with the product and the information that is available on the James Hardie® website (www.jameshardie. com), including James Hardie ColorPlus Technology instructions and precautions

The extent and nature of the maintenance required will depend on the geographical location, the exposure of the building and whether your product is prime or ColorPlus product. Cleaning, as needed, is recommended to remove dirt, dust, chalking, oil, grease, organic contaminants, or mold that may build up on the product surface over time. Dust from cutting and construction dust should be removed IMMEDIATELY upon installation (refer to the cleaning instruction in the table below). During cleaning, always wear appropriate protection (gloves and eyewear) and shield any landscaping or vegetation.

Surface cleaning recommendation is given below for specific product conditions. (Please note that damage to siding arising from improper cleaning or maintenance may not be covered by the James Hardie warranty).

Recommendation	Construction/Cutting/ Existing Dirt and Chalk	Oil, grease or other organic contaminants	Mold and Mildew
Tools	Soft cloth, soft All Paint poly brush or chip brush or horsehair bench brush, garden hose. (Do not use hard brush (for example, scrub brush or an abrasive scrub sponge) that could damage the finish or siding.	Soft cloth and garden hose	Soft cloth or soft sponge and garden hose
Solution	Water	Mild liquid dishwashing soap (Dawn®, lvory®, or Joy®) and water. (Do not use any harsh cleaning chemicals)	Mildew cleaners (Jomax®, Mildew Check®, Mold Armor®) and water
Method	 If using a brush, brush the product surface dust, dirt or chalk, then rinse the area with a garden hose. If using a soft cloth, wet the cloth then wipe the area until clean and rinse the area with clean water. Rinse the cloth frequently. 	 Use soft cloth wetted with soapy water to clean the area. Rinse the cloth frequently. Use a garden hose to rinse the area. 	 Follow the mildew cleaner instruction. Lightly scrub the area with mildew. Use garden hose to rinse the area.

Soft All Paint Brush

Horsehair Brush

Chip Brush







Siding Brush



HardiePanel[®] Vertical Siding

It is always suggested to work a small section at a time, start from the top and work your way down to prevent dripping or streaking onto the cleaned area.

Gently clean the siding with the soft brush or wet soft cloth in a side to side motion in the direction of the plank siding. If cleaning panel, direction of the siding is up and down. Do not push soft brush or wet cloth too hard against product surface. Do not allow the soap and mildew cleaner to dry on the siding (continually rinse the area until all of the cleaner has washed off of the siding). Any areas that have been missed may show up when the siding has dried. Spot clean and rinse any missed areas as needed.

If your surface still looks dirty after washing methods for dust/dirt and oil/grease, the problem may be mildew. Mildew discoloration can resemble dirt. Moisture is the most important single factor in the growth of mildew, which can lie dormant for years. For this reason, mildew discoloration is usually found in damp, dark areas or during prolonged humid conditions. Follow all instructions and precautions that are outlined on the label of the mildew cleaners and wear all protective equipment that is prescribed.

At all times, care must be taken not to use harsh or harmful chemicals that can damage the finish on the siding.

WARNING

High pressure water blast and sand blasting may damage the surface of the fiber cement product. Low pressure water spray, a soft medium bristle (nonmetal) brush is most suitable for cleaning fiber cement products. Acid washing can damage the fiber cement surface and is not recommended. Note: If using a pressure washer, care must be taken to ensure that the water stream does not damage the surface of the siding. Damage to siding arising from improper cleaning or maintenance may not be covered by

surface of the siding. Damage to siding arising from improper cleaning or maintenance may not be covered by the James Hardie warranty. Using wide fan tips that are kept a minimum of 6 feet from the wall and at pressures under 1500 psi will minimize the chance of damaging the siding.

General Product Information

HardiePanel[®] Vertical Siding

HardieWrap[®]

HardieWrap® Products Description

HARDIEWRAP® WEATHER BARRIER

HardieWrap weather barrier is a non-woven, non-perforated polyolefin water-resistive barrier, as per AC38. HardieWrap weather barrier provides a balance of water resistance and breathability to protect homes from the elements of weather that can get behind the exterior cladding. HardieWrap Flashing and HardieWrap Seam Tape are recommended in conjunction with HardieWrap weather barrier to complete the HardieWrap weather barrier solution.

HARDIEWRAP® PRO-FLASHING AND FLEX FLASHING

HardieWrap[®] Pro-Flashing and HardieWrap[®] Flex Flashing are high-performance, self-adhering, self-sealing, butyl material on tear-resistant top sheets that are applied around windows and doors to manage water and air intrusion. HardieWrap[®] Pro-Flashing has a release liner for peel-and-stick installation and has no asphalt, VOCs or solvents.

HardieWrap[®] Flex Flashing is designed to easily stretch and seal around doors and windows, as well as custom shapes to protect against water intrusion, and is supplied in a convenient dispenser box.

Together with HardieWrap[®] weather barrier and HardieWrap[®] Seam Tape, HardieWrap[®] Pro-Flashing and HardieWrap[®] Flex Flashing provide the James Hardie[®] weather barrier solution to manage water drainage, and prevent water damage and energy loss.



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HardieShingle[®] HardiePlank[®] Siding Lap Siding

HardiePanel[®] Vertical Siding

INSTALLATION OF HARDIE WRAPS

HardieWrap weather barrier should be installed before window and door installation. Do not install on saturated sheathing. HardieWrap weather barrier can become slippery and should not be used in any application where it may be walked on.

- Begin by affixing the weather barrier, at least 6 in. around a building corner (fig. 1). Unroll horizontally (with print side facing out) around the building, covering rough window and door openings.
- Fasten to studs or nailable sheathing material with galvanized construction grade staples a maximum of 18 in. in the vertical and horizontal directions. (Tip: HardieWrap is fastened by staples or roofing nails only)
- 3. Attach weather barrier so that it is taut and flat. The vertical overlap must have a minimum of 6 in. and the vertical seam must be taped.
- 4. HardieWrap Seam Tape is strongly recommended, but do not clog or interfere with the use of weep holes or similar drainage details.
- 5. Ensure that the bottom edge of the weather barrier extends over the sill plate and foundation interface by at least 1 in. Overlap upper layers of weather barrier (in shingle lap fashion) by a minimum of 6 in. below the horizontal edge, and tape the horizontal seam line.



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Installation of HardieWrap® Pro-Flashing & Flex Flashing

HARDIEWRAP® FLASHING GUIDE FOR TYPICAL PENETRATION

For rough electrical or plumbing penetrations, seal with flashing. Install the top piece over the bottom piece. HardieWrap[®] Pro-Flashing can be used for this application.

Make sure all penetrations are taped to shed water and prevent air infiltration.





HARDIEWRAP® PRO-FLASHING GUIDE FOR WINDOWS

Use the inverted "Y" cut at rough window and door openings. Do not place fasteners within 9 in of the rough opening, door or window heads. This area should not be fastened to allow for proper flashing installation. At the top corners of the rough opening, cut the weather barrier at 45° to extend 9 in past the joint. Fold the top flap up and out of the way and fasten temporarily and fold the remaining three flaps in through the opening, fastening them inside with staples.



HardieWrap[®] Flex Flashing should be applied over the water-resistive barrier after it has been cut and set into and around the window rough opening. Refer to installation of HardieWrap[®] Pro-Flashing and Flex Flashing for flashing guidelines.

STORAGE

For optimal performance, store in original sealed packaging at temperatures of 5° - 32°C (41° - 90°F) while at moisture-free conditions. James Hardie requires that HardieWrap® Flashing and HardieWrap® Flex Flashing be covered within 180 days of installation.

IMPORTANT TO NOTE

This recommendation refers to the most commonly used types of windows (surface-mounted). For other types of frames, special attention should be paid to the window manufacturer's instructions.

Check your local building code for construction requirements and follow the manufacturer's recommended installation instructions; or utilize standard practices for the installation of exterior windows and doors as referenced in ASTM E2112-01 or AAMA 2400-2 (CAWM 400-95). Consult with the architect or specifier regarding the methods to be utilized.

GENERAL REQUIREMENT

The installation guidelines herein are informational in nature only and may not be appropriate for use in all applications. It is the sole responsibility of the architect or specifier to identify moisture-related risks associated with any particular building design, and to make any appropriate adjustments or modifications to the installation guidelines herein Wall-construction design must effectively manage moisture, considering both the interior and exterior environment of the building, particularly in buildings that have a higher risk of wind-driven rain penetration and conditioned spaces. Wall openings, penetrations, junctions, connections, window sills, headers and jambs must incorporate appropriately installed HardieWrap[®] Pro-Flashing and HardieWrap[®] Flex Flashing, or other flashing or flashing details, as recommended by the manufacturer, architect or specifier.



HardieWrap[®] Pro-Flashing



HardieWrap® Flex Flashing



HardieWrap® Seam Tape

HardiePlank[®] Lap Siding

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Installation of HardieWrap[®] Pro-Flashing & Flex Flashing (cont.)

HARDIEWRAP® FLEX FLASHING STRETCHABLE SILL FLASHING

Prepare sill flashing by cutting HardieWrap® Flex Flashing at least 12 in. longer than the width of the rough opening. Install sill flashing by removing the release paper, centering sill flashing on sill framing stud and adhering into rough opening. The back edge of HardieWrap® Flex Flashing should extend to the inside edge of the sill framing stud and at least 6 in up each jamb framing stud. (Note: Sill flashing should not wrap onto the inside of the wall.) DO NOT STRETCH MATERIAL ALONG THE SILL OF JAMB. HardieWrap® Flex Flashing should be applied over the water-resistive barrier after it has been cut and set into and around the window rough opening.



Note: If a water-resistive barrier is to be applied after the window and flashing have already been installed, be sure not to fasten the lower edge of the flashing so that the water-resistive barrier may be slipped underneath the flashing in weather-board or shingle- lap (top layer overlapping bottom layer) fashion.

WINDOW INSTALLATION

Before installing the window:

- Apply a continuous bead of sealant to the backside (interior) of the window's mounting flange on the outer edge; or
- Apply a continuous seal to the rough opening to ensure contact with the backside (interior) of the window's mounting flange (do not caulk along bottom).

Install window according to the manufacturer's installation procedures.



SIDE JAMB FLASHING

Apply HardieWrap[®] Flashing along the vertical sides of the opening. Flash over the side window mounting flanges. Extend the flashing by a minimum of 3 in. beyond the sill flashing (HardieWrap[®] Flex Flashing) already in place and extend the flashing to a minimum of 3 in. beyond the top of the opening, so that it projects beyond the head flashing that is to be applied later.



HEAD FLASHING

Affix HardieWrap[®] Flashing over the window's mounting flange along the header opening. Be sure to extend the flashing beyond each jamb flashing by 3 in. Secure flashing in place by applying pressure. Detach weather barrier flap (top) and apply over head flashing as shown. Tape all seams and joints.

7.9 The Wrap Hardie Ha

General Product Information

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Tools for Cutting and Fastening

Tools for Cutting and Fastening

General Installation Requirements

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Finishing and Maintenance

HardieWrap[®] Weather Barrier

HardieTrim[®] Boards/Battens

HardieSoffit® Panels

HardiePlank[®] Lap Siding

HardieShingle[®] Siding

HardiePanel[®] Vertical Siding

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Installation of HardieWrap® Pro-Flashing & Flex Flashing (cont.)

CIRCULAR WINDOWS

Install circular top windows according to window manufacturer's installation guidelines, and then follow instructions as illustrated in figures 7.10 - 7.13 to complete the process.

- 1. Measure the circular portion of the window and add 12 in. to this number. Cut HardieWrap[®] Flex Flashing to this length for the head flashing.
- Remove approximately 20 in. of release paper and position HardieWrap[®] Flex Flashing tightly along the first edge of the round window. Press firmly into place (figs. 7.10 and 7.11).
- 3. Continue removing release paper and conform HardieWrap[®] Flex Flashing to entire circular portion of the window (fig. 7.12).
- 4. Use HardieWrap[®] Seam Tape or mechanical fasteners (i.e., nails, staples or screws) to temporarily hold top edge of head flashing to the wall.
- 5. HardieWrap[®] Flex Flashing adhesive bond will strengthen over time. Both ends of the head flashing should overlap the sill flashings by at least 6 in.



IMPORTANT TO NOTE

These recommendations refer to the most commonly used types of windows (surface-mounted). For other types of frames, special attention should be paid to the window manufacturer's instructions.

A spray adhesive, such as Nashua 357, is recommended when HardieWrap® Flex Flashing is applied directly to Oriented Strand Board (OSB) or other surfaces where additional adhesion is needed or required.





HardieWrap® Weather Barrier

EFFECTIVE APRIL 2018

IMPORTANT: FAILURE TO INSTALL THIS PRODUCT IN ACCORDANCE WITH APPLICABLE BUILDING CODES AND WITH JAMES HARDIE WRITTEN APPLICATION INSTRUCTIONS MAY LEAD TO PERSONAL INJURY, AFFECT PERFORMANCE, VIOLATE LOCAL BUILDING CODES, AND VOID THE PRODUCT-ONLY WARRANTY.

HARDIEWRAP® WEATHER BARRIER PRODUCT DESCRIPTION

HardieWrap[®] weather barrier is a non-woven, non-perforated polyolefin water-resistive barrier, as per AC38, manufactured by James Hardie Building Products. HardieWrap weather barrier provides a balance of water resistance and breathability to protect homes from the elements of weather that can get behind the exterior wall cladding. HardieWrap[®] Pro Flashing and HardieWrap[®] Seam Tape are recommended in conjunction with HardieWrap weather barrier to complete the HardieWrap weather barrier solution.*

A water-resistive barrier is required in accordance with local building code requirements. The water-resistive barrier must be installed with penetration and junction flashing, in strict accordance with local building code requirements.

STORAGE

HardieWrap weather barrier should be stored in a covered area. Do not store in direct sunlight and do not expose to building site chemicals.

GENERAL REQUIREMENTS - DESIGN

The installation guidelines herein are informational in nature only and may not be appropriate for use in all applications. It is the sole responsibility of the architect or specifier to identify moisture-related risks associated with any particular building design, and to make any appropriate adjustments or modifications to the installation guidelines herein. Wall- construction design must effectively manage moisture, considering both the interior and exterior environment of the building, particularly in buildings that have higher risks of wind-driven rain penetration and conditioned spaces. HardieWrap weather barrier may be installed on vertical wall applications only. James Hardie requires that HardieWrap weather barrier be covered within 180 days of installation. Wall openings,

penetrations, junctions, connections, window sills, headers and jambs must incorporate appropriately installed HardieWrap Pro Flashing and HardieWrap Flex Flashing, or other flashing or flashing details, as recommended by the architect or specifier.

INSTALLATION OF HARDIEWRAP® WEATHER BARRIER

HardieWrap weather barrier should be installed before window and door installation. It is not recommended to install HardieWrap weather barrier on saturated sheathing. HardieWrap weather barrier can become slippery and should not be used in any application where it may be walked on.

Begin by affixing weather barrier, extending at least 6 in. around a building corner (fig. 1). Unroll horizontally (with print side facing out) around the building, covering rough window and door openings. Fasten to studs or nailable sheathing material with galvanized construction-grade staples a maximum of 18 in. in the vertical and horizontal directions.

Attach weather barrier so that it is taut and flat. The vertical overlap must be a minimum of 6 in. and the vertical seam must be taped. HardieWrap Seam Tape is strongly recommended. Do not clog or interfere with the use of weep holes or similar drainage details.

Ensure that the bottom edge of the weather barrier extends over the sill plate and foundation interface by at least 1 in.

Overlap upper layers of weather barrier (in shingle lap fashion) by a minimum of 6 in. below the horizontal edge, and tape the horizontal seam line (fig. 1A).

*The HardieWrap weather barrier solution is based on methods of installation from the AAMA and ASTM E2112. HardieWrap weather barrier helps to reduce the intrusion of moisture or air, but is not designed nor guaranteed to prevent the intrusion of all moisture or air.





HW0904 04/18 P1/6

Visit jameshardiepros.com for the most recent version.



INSTALLATION OF HARDIEWRAP® WEATHER BARRIER (CONT.)

At roof-to-wall intersection (or wall-to-deck), affix wrap to the wall such that it overlaps any step flashing already on the wall by at least 2 in. (fig. 2).

PRO FLASHING INSTALLATION

Pro Flashing is typically utilized at windows, doors, junctions and penetrations, and must be installed in conjunction with HardieWrap® weather barrier. Consult with the architect or specifier regarding the type and method of flashing to be utilized.

Check your local Building Code for construction requirements and follow the manufacturer's recommended installation instructions; or utilize standard practices for the installation of exterior windows and doors as referenced in ASTM E2112-01 or AAMA 2400-2 (CAWM 400-95). For specific flashing details and options, reference James Hardie's HardieWrap Pro Flashing Guide.





WINDOWS AND OTHER PENETRATIONS

TYPICAL WINDOW INSTALLATION METHODS

HardieWrap weather barrier is not designed nor guaranteed to prevent moisture or air from intruding behind the weather barrier. Ensure that appropriate flashing has previously been installed around all windows and door openings.





figure 3

Step 1: Use the inverted "Y" cut at rough window and door openings. Do not place fasteners within 9 in. of the rough opening, door or window heads. This area should not be fastened to allow for proper flashing installation. At the top corners of the rough opening, cut the weather barrier at 45° to extend 9 in. past the joint (fig. 3).

figure 4

Step 2: Fold the top flap up and out of the way and fasten temporarily (fig. 4).



Step 3: Fold the remaining three flaps in through the opening, fastening them inside with staples (fig. 5).

TYPICAL PENETRATION FLASHING METHODS

For rough electrical or plumbing penetrations, seal with flashing. Install the top piece over the bottom piece (figs. 7 and 8). HardieWrap Pro Flashing can be used for this application.

Sealant





HardieWrap Pro Flashing (Bottom Piece)






FASTENERS

Staples are the preferred and recommended fastening method. Fasten HardieWrap weather barrier in such a way that ensures the wrap is secured to the wall with staples a maximum of 18 in. 0.C. (on center) in the vertical and horizontal direction. Staples should be construction-grade and must be galvanized.

When installing over insulation boards, use galvanized roofing nails long enough to penetrate insulation and framing studs or sheathing.

Consult with the architect or specifier regarding the need to seal any punctures caused by staples, nails or other items.

REPAIRS

Staples are the preferred and recommended fastening method. Fasten HardieWrap weather barrier in such a way that ensures the wrap is secured to the wall with staples a maximum of 18 in. O.C. (on center) in the vertical and horizontal direction. Staples should be construction-grade and must be galvanized.

When installing over insulation boards, use galvanized roofing nails long enough to penetrate insulation and framing studs or sheathing.

Consult with the architect or specifier regarding the need to seal any punctures caused by staples, nails or other items.





GENERAL REQUIREMENT CHECKLIST

- ✓ Do not store HardieWrap weather barrier in direct sunlight.
- \checkmark It is recommended that weather barrier be installed over dry framing and sheathing.
- ✓ Tape all vertical and horizontal seams.
- ✓ Overlap subsequent weather barrier layers in shingle lap fashion with seams overlapping by at least 6 in.
- \checkmark Be sure that all penetrations are addressed.
- ✓ Fasten with construction-grade galvanized staples a maximum of 18 in. in the vertical and horizontal directions.
- Repair punctures or tears, by the recommended practices.
 Do not use HardieWrap weather barrier in applications where it may be walked on.
- ✓ James Hardie requires that HardieWrap weather barrier be covered within 180 days of installation.

For further information consult James Hardie at 866-4HARDIE or hardiewrap.com





HardieWrap® ProFlashing

EFFECTIVE DECEMBER 2015

HARDIEWRAP® PRO FLASHING PRODUCT DESCRIPTION

HardieWrap[®] ProFlashing and HardieWrap[®] Flex Flashing are high-performance, self-adhering, self-sealing, butylmaterial on tear-resistant top sheets that are applied around windows and doors to manage water and air intrusion. HardieWrap ProFlashing has a release liner for peel-and-stick installation and has no asphalt, VOCs or solvents.

HardieWrap[®] Flex Flashing is designed to easily stretch and seal around doors and windows, as well as custom shapes to protect against water intrusion, and is supplied in a convenient dispenser box. Together with HardieWrap[®] weather barrier and HardieWrap[®] Seam Tape, HardieWrap ProFlashing and HardieWrap Flex Flashing provide the James Hardie[®] weather barrier solution to manage water drainage, and prevent water damage and energy loss.

STORAGE

For optimal performance, store in original sealed packaging at temperatures of 5° - 32°C (41° - 90°F) while at moisture-free conditions. James Hardie requires that HardieWrap ProFlashing and HardieWrap Flex Flashing be covered within 180 days of installation.

IMPORTANT NOTICE

This recommendation refers to the most commonly used types of windows (surface-mounted). For other types of frames, special attention should be paid to the window manufacturer's instructions.

Check your local building code for construction requirements and follow the manufacturer's recommended installation instructions; or utilize standard practices for the installation of exterior windows and doors as referenced in ASTM E2112-01 or AAMA 2400-2 (CAWM 400-95). Consult with the architect or specifier regarding the methods to be utilized.

GENERAL REQUIREMENT

The installation guidelines herein are informational in nature only and may not be appropriate for use in all applications. It is the sole responsibility of the architect or specifier to identify moisture-related risks associated with any particularbuilding design, and to make any appropriate adjustments or modifications to the installation guidelines herein. Wall-construction design must effectively manage moisture, considering both the interior and exterior environment of the building, particularly in buildings that have a higher risk of wind-driven rain penetration and conditioned spaces. Wall openings, penetrations, junctions, connections, window sills, headers and jambs must incorporate appropriately installed HardieWrap[™] Pro Flashing and HardieWrap[™] Flex Flashing, or other flashing or flashing details, as recommended by the manufacturer, architect or specifier.



HardieWrap ProFlashing



HardieWrap Flex Flashing



HardieWrap® Seam Tape





HARDIEWRAP® FLEX FLASHING STRETCHABLE SILL FLASHING

Prepare sill flashing by cutting HardieWrap® Flex Flashing at least 12 in. longer than the width of the rough opening. Install sill flashing by removing the release paper, centering sill flashing on sill framing stud and adhering into rough opening. The back edge of HardieWrap Flex Flashing should extend to the inside edge of sill framing stud and at least 6 in. up each jamb framing stud. (Note: Sill flashing should not wrap onto the inside of wall.) D0 NOT STRETCH MATERIAL ALONG THE SILL OF JAMB. HardieWrap Flex Flashing should be applied over the water-resistive barrier after it has been cut and set into and around the window rough opening.





figure 1

figure 2

Note: If a water-resistive barrier is to be applied after the window and flashing have already been installed, be sure not to fasten the lower edge of the flashing so that the water-resistive barrier may be slipped underneath the flashing in weather-board or shingle- lap (top layer overlapping bottom layer) fashion.

WINDOW INSTALLATION

Before installing the window, (a) apply a continuous bead of sealant to the backside (interior) of the window's mounting flange on the outer edge; or (b) apply a continuous seal to the rough opening to ensure contact with the backside (interior) of the window's mounting flange (do not caulk along bottom). Install window according to the manufacturer's installation procedures.





figure 3

figure 4

SIDE JAMB FLASHING

Apply HardieWrap[®] ProFlashing along the vertical sides of the opening. Flash over the side window mounting flanges. Extend the flashing by a minimum of 3 in. beyond the sill flashing (HardieWrap Flex Flashing) already in place and extend the flashing to a minimum of 3 in. beyond the top of the opening, so that it projects beyond the head flashing that is to be applied later.





HEAD FLASHING

Affix HardieWrap[®] Pro Flashing over the window's mounting flange along the header opening. Be sure to extend the flashing beyond each jamb flashing by 3 in. Secure flashing in place by applying pressure. Detach weather barrier flap (top) and apply over head flashing as shown. Tape all seams and joints.





figure 6

IMPORTANT NOTE

If windows/door are pre-existing then go to section: Pre-existing windows/doors.







CIRCULAR WINDOWS

Follow previous instructions for proper installation prior tohead flashing installation. Install circular top windows according to window manufacturer's installation guidelines, and then follow instructions as illustrated in figures 8-11 to complete the process.

Measure the circular portion of the window and add 12 in. to this number. Cut HardieWrap® Flex Flashing to this length for the head flashing. Remove approximately 20 in. of release paper and position HardieWrap® Flex Flashing tightly along the first edge of round window. Press firmly into place (figs. 8 and 9). Continue removing release paper and conform HardieWrap Flex Flashing to entire circular portion of window (fig. 10). Use HardieWrap® Seam Tape or mechanical fasteners (i.e., nails, staples or screws) to temporarily hold top edge of head flashing to wall. HardieWrap Flex Flashing adhesive bond will strengthen over time. Both ends of head flashing should overlap sill flashings by at least 6 in.



IMPORTANT TO NOTE

This recommendation refers to the most commonly used types of windows (surface-mounted). For other types of frames, special attention should be paid to window manufacturer's instructions.

A spray adhesive, such as Nashua 357, is recommended when HardieWrap Flex Flashing is applied directly to Oriented Strand Board (OSB) or other surfaces where additional adhesion is needed or required.

PRE-EXISTING WINDOWS/DOORS

When installing HardieWrap weather barrier after windows and doors have already been installed and flashed, follow these additional 2 steps

Step 1

- Cut HardieWrap weather barrier around the openings to expose the window/door and apron as shown (fig.12).
- Do not cut into the flashing or apron.

Step 2

- Tape vertical seams as shown using HardieWrap seam tape (fig.13).
- · Do not tape at the bottom of the window/door
- Tape the head seam as shown (fig.14).

Note: It is acceptable to skip taping of the head if additional drainage is desired.





figure 12

figure 14

For further information consult James Hardie at 866-4HARDIE or hardiewrap.com

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HardieTrim[®] Boards Products Description

HardieTrim[®] boards come finished with either the PrimePlus[®] factory primer and sealer or with ColorPlus[®] Technology. The ColorPlus[®] coating is a factory-applied, oven-baked finish available on a variety of James Hardie[®] siding and trim products. See your local dealer for details and availability of products, colors, and accessories.

HARDIETRIM® 5/4, 4/4 BOARDS

HardieTrim[®] 5/4, 4/4 board is a decorative non-load bearing trim product. HardieTrim 5/4 board is 1 in. thick, HardieTrim 4/4 board is 3/4 in thick, and both can be purchased in 10 ft. and 12 ft. lengths, based on local availability. In addition to frieze, rake, window, door, and corner details, HardieTrim 5/4, 4/4 boards may be used to construct light blocks, column wraps and decorative scroll work. Available in commonly-used nominal widths from 4 in to 12 in.

HARDIETRIM® BATTEN BOARDS

HardieTrim[®] Batten Boards are a decorative non-load bearing trim product. HardieTrim[®] Batten Boards are ³/₄ in. thick, 2¹/₂ in. wide, and come on 12 ft. lengths. See your local dealer for details and availability of product colors and accessories.



HardieTrim 5/4, 4/4 board - Smooth



HardieTrim Batten board -Rustic and Smooth (not shown)



HardiePanel vertical siding with HardieTrim Batten board for the Board & Batten look.

A Complete James Hardie Exterior – Close-up on trim products.



ColorPlus TIP: HardieTrim 4/4, 5/4 boards with ColorPlus Technology is shipped with a protective laminate slip sheet.

James Hardie recommends keeping the protective sheet in place during cutting and fastening to reduce damage to the boards. Remove the protective sheet only after installing the boards and filling the nail holes with a colored touch-up pen.



HardieShingle[®] Siding

HardiePanel® Vertical Siding

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WARNING

DO NOT caulk nail heads when using ColorPlus products. Refer to the ColorPlus touch-up section Working Safely

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HardieWrap[®] Weather Barrier

HardieTrim[®] Boards/Battens

HardieSoffit® Panels

Installation of HardieTrim[®] 5/4, 4/4 & NT3[®] Back Grooved Boards

CONCEALED FASTENING TABS

For Corners, Band Boards, Windows, and Door Applications: HardieTrim[®] boards can be installed with Flat Tabs (JH sku no. 280154) and Corner Tabs (JH sku no. 280155) which provide concealed fastening. Only Flat and Corner Tabs can be used with HardieTrim[®] boards to create a concealed fastening. Additional framing may be required to ensure the Flat and Corner Tabs are fastened properly to the structure. Special attention should be paid to the framing when using a sheathing that does not have fastener holding equivalent to OSB or Plywood sheathing.

Step 1: Attach Flat Tabs to the back side of the trim with 4 18 ga. $\frac{1}{2}$ in L x $\frac{1}{4}$ in W narrow crown corrosion resistant staples, equally spaced in one row, positioned no closer than $\frac{1}{2}$ in from trim edges, using a pneumatic staple gun. (Figure 8.1)

Step 2: For wood frame construction, attach the trim to the building using 2, 6d siding nails fastened through the Flat Tabs. ET&F or equivalent fasteners may be used to attach the Flat Tabs to steel frame construction. (Figures 8.2)

Fastener spacing will vary based on application. Refer to specific sections in these instructions for required fastener spacing by application (window, band board, etc.). (Figures 8.14)



Fasten HardieTrim Flat Tab to min 7/16 in OSB with min 2, 6d siding nails

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 NT3[®] ColorPlus[®] boards with back grooves: Remove the laminate sheet as soon as possible after attaching the trim to the building.

TRIMMING CORNERS

HardieTrim[®] boards are installed around corners by pre-building the corner off the wall with the Corner Tabs (JH sku no. 280155).

- Attach Corner Tabs to the back side of the trim with 8 18 ga. 1/2 in. L x 1/4 in W narrow crown corrosion resistant staples using a pneumatic staple gun. Ensure the Corner Tabs are fastened tight and straight to the trim boards. (Figures 8.3)
- For wood frame construction, attach the trim to the building with 2, 6d siding nails fastened through the Corner Tabs. ET&F or equivalent fasteners may be used to attach the Corner Tabs to steel frame construction. (Figures 8.4)
- Attach a Corner Tab 1 in. from each edge and every 20 in o.c.
- TIP: Creating a jig for the work station is recommended to ensure the corners are fastened securely and straight. (Figures



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HardiePanel[®] Vertical Siding

TRIM APPLICATION FOR WINDOWS, DOORS & OTHER OPENINGS

Trim the opening prior to the installation of the siding (Figure 8.7). 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 Figures 8.7 and 8.8.



NOTE: Follow your window/door manufacturers installation instructions.



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HardieSoffit[®] Panels

HardiePlank® Lap Siding

HardieShingle[®]

HardiePanel® Vertical Siding

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1/8 in caulked gap is left between siding and the side trim pieces.

BAND BOARD

A flashing is required over the trim and Flat Tabs. (Figure 8.10) 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 Flat Tab at the end of each trim board and one tab every stud at a maximum of 16 in. o.c. The Flat Tabs should be attached to the trim in an alternating pattern to the top and bottom of the band board (Figures 8.11 and 8.12).



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HardieSoffit® HardieTrim® HardieWrap® Panels Boards/Battens Weather Barrier

Installation of HardieTrim[®] 5/4, 4/4 & NT3[®] Back Grooved Boards

FASTENER TABLE

8.14

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

Wind-Borne Debris Region: "Supplemental fasteners may be necessary when installing tabs in a Wind-Borne Debris Region, please call Technical Services 800-942-7343 with any questions."

RECOGNITION: HardieTrim boards may be installed as an equal alternative to conventional trim permitted for use in; the 1997 Uniform Building Code, Section 601.5.5; the 1997 Standard Building Code, Section 1404.1; the 1999 BOCA National Building Code, Section 1407.2.2; 2003 International Building Code, Section 1402.1, the 2003 International Residence Code for One - and Two - Family - Dwellings, Section R703.1. the 2003 International Residence Code for One - and Two - Family - Dwellings, Section R703.1. and the 1998 International One-and -Two - Family Dwelling Code, Section 601.1.

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HardiePanel[®] HardieShingle[®] HardiePlank[®] Vertical Siding Lap Siding

OUTSIDE CORNERS

Corners made from HardieTrim® 5/4, 4/4 boards can be pre-assembled before they're installed. Pre-assembled corners look better and generally make the installation go more quickly. To join two pieces of HardieTrim 5/4, 4/4 boards for a corner, drive 2 in. 16 ga. corrosion-resistant finish nails 1/2 in. from the edge and spaced 16 in. apart along the edge.

To fasten 4 in. corners to the wall, drive a pair of finish nails or siding nails, (one nail into each face of the corner) with the nails spaced 16 in apart. For 6 in. corners, drive a pair of finish nails or siding nails into each face spaced 16 in apart. Nails should be kept 3/4 in. from the edges of the board and 1 in. from the ends.

When walls are more than 10 ft high, splice corner boards together using weather cuts of at least a 22.5° angle. The angle of the weather cut must slope downward and away from the building. Then nail both boards to the building with the same attachment schedule as for pre-assembled corners, except that 4 in. HardieTrim 5/4, 4/4 boards that should get two nails per side every 16 in Only install trim by butting to it with the siding. Do not install any trim product over James Hardie® siding.



HardieTrim boards,

with the trim

position the finish nailer parallel

WARNING

Use only 2 in. 16-ga. finish nails to pre-assemble HardieTrim 5/4 boards corners.

INSIDE CORNERS

Inside corners can be made with either a single HardieTrim 5/4, 4/4 board in the corner, or with one board on each wall depending on the desired look.





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HardiePanel[®] Vertical Siding

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Installation of HardieTrim[®] 5/4, 4/4 & NT3[®] Back Grooved Boards

BAND BOARD

A Band board is a decorative horizontal trim used to break up the field of siding on a building. Any width of HardieTrim® 5/4, 4/4 boards can be used for band board depending on the type of detail desired. If installing a band board, pay special attention to flashing details and allow for potential shrinkage of solid rim joists in the walls that the band board may be attached to.

Caulk between the underside of the band board and the siding below. Do not caulk between the flashing and siding above the band board, and maintain a 1/4 in. gap between the two. Also make sure that the water-resistive barrier laps over the flashing for a continuous



drainage plane. If running lap siding or shingle siding above the band board, a starter strip should be installed first to maintain the correct siding angle. Small Periodic gaps should be left in the starter strip to provide an escape route for excess moisture that may drain down behind the siding.

Use bevel-cut splice joints of at least 22.5° to join long lengths of HardieTrim 5/4, 4/4 boards. To attach band board to the building, drive two recommended fasteners every 16 in. for 4 in. and 6 in. boards. For 8 in. boards, use three fasteners every 16 in., and use four fasteners every 16 in. for 12 in. boards.

HARDIETRIM BOARDS FASTENER SPECIFICATIONS

The Fastener Specifications table shows fastener options for a variety of different nailing substrates. Please refer to the applicable ESR report online (see back page) to determine which fastener meets your wind load design criteria.

Fastening Substrate	Approved Fastener	Fastening Types			Nailing Patterns		
wood studs	0	Barren	screw			1 nail every 16 in to attach boards together	
over minimum 7/16	Ð	Trim Screw, 2 in		corners	4 m.	1 nail every 16 in for each board	
in OSB		10 16 gauge, 2 in	finish nail	Pre-built	a :	1 nail every 16 in to attach boards together	
steel studs	7 12 1	p (1)	ET&F	ET&F	6 IN.	2 nails every 16 in for each board	
Pre-built corners	10		ET&F	ners as etc.)	4 in. & 6 in.	2 nails every 16 in	
			1.0 11	9-built corr other area windows,	8 in.	3 nails every 16 in	
indicates recommend			Sitt & (eg.				
TIP: James Hardie recom	mends using stainles	s steel finish			12 in.	4 nails every 16 in	

nails when installing HardieTrim (Trim, Battens, Fascia, etc.) products.

WINDOW AND DOOR TRIM

Windows and doors must be installed per the manufacturer's instructions. Window flanges or flashings must be properly installed and lapped correctly under the water-resistive barrier prior to the installation of HardieTrim[®] 5/4, 4/4 boards. Once the HardieTrim 5/4, 4/4 boards is put on, proper flashing must be installed above the trim and lapped under the water-resistive barrier correctly.

Install HardieTrim 5/4, 4/4 boards around doors and windows using the "cap over" method, which means that the header or horizontal top piece of the trim extends and caps over the vertical jamb pieces on both sides. For windows, the bottom trim piece or sill trim fits in between the jambs.

For cap-over trim installation:

- Start by measuring the length of the bottom edge of the window, not including the flange.
- 2. Cut a piece of trim to that length and install it.
- Next measure from the bottom of the installed trim to the top of the window.
- 4. Cut two pieces of trim to that length and install them on either side of the window.
- 5. For the cap, measure the distance between the outside edges of the side trim pieces. Cut a piece of trim to length and install it.

For doors the process is the same except that it starts with the side pieces, step three.





TIP: For trimming around windows and doors with attachment flanges, install a shim strip to build out the wall even with the flange. This strip lets the trim sit flat and parallel with the wall.



Working Safely

Tools for Cutting and Fastening

General Installation Requirements

General Fastener Requirements

Finishing and Maintenance

HardieWrap[®] Weather Barrier

HardieTrim[®] Boards/Battens

HardieSoffit® Panels

HardiePlank[®] Lap Siding

HardieShingle[®] Siding

HardiePanel[®] Vertical Siding

Appendix/ Glossary

Installation of HardieTrim[®] 5/4, 4/4 & NT3[®] Back Grooved Boards

INSTALLING RAKE AND FASCIA BOARD

HardieTrim boards can be fastened directly over a 2x sub-fascia or directly to rather tails. Check local building code for relevant codes. James Hardie recommends that the fascia be no more than 2 in. larger than the subfascia, e.g. over a nominal 2 x 6 subfascia, install an 8 in. fascia board (71/4 in. actual) fascia. On longer fascia runs, join HardieTrim boards with weather/bevel cuts.

WARNING

Use only 2 in. 16-ga. finish nails to pre-assemble HardieTrim 5/4, 4/4 board corners.



DRIP EDGE

After the fascia is installed, a vinyl, coated aluminum or galvanized drip-edge flashing must be installed to the roof sheathing overlapping the fascia board. The drip edge helps protect the top edge of the fascia board and it minimizes water ingress into the soffit and/or cornice cavity. Choose a drip edge design that effectively channels water away from the face of the fascia and into gutters if present.



Installation of HardieTrim® Battens

GETTING STARTED

HardieTrim[®] Battens are intended to be used with HardiePanel® vertical siding to achieve a board and batten look. HardieTrim Battens must be attached to wood or steel backing using an approved fastener from the table below. When installing HardieTrim Battens, determine layout and mark where battens will be attached. To ensure that HardieTrim Battens are installed vertically and parallel to each other, either snap chalk lines or use a level. When attaching battens ensure that fasteners are a minimum of 3/4 in. from edges, 1 in, from ends, and a maximum of16 in. o.c.



ColorPlus® TIP:

HardieTrim Battens with ColorPlus® Technology are shipped with a protective laminate slip sheet. James Hardie recommends keeping the protective sheet in place during cutting and fastening to reduce damage to the boards. Remove the protective sheet only after installing the boards and filling the nail holes with a

colored touch-up pen. Finish nails are required for ColorPlus products.



HARDIETRIM BATTENS FASTENER SPECIFICATIONS

The Fastener Specifications table shows fastener options for a variety of different nailing substrates. Please refer to the applicable ESR report online (see back page) to determine which fastener meets your wind load design criteria.

Fastening Substrate	<u>Approved Fastener</u>	<u>r</u> <u>Fastener Types</u>	
wood studs	0	Trim Screw, 2 in	
over minimum 7/16 in OSB	0	16 gauge, 2 in finish nail	
steel studs	7 12 1		

Indicates recommended fasteners. Required for ColorPlus Products.

TIP: James Hardie recommends using stainless steel finish nails when installing HardieTrim (Trim, Battens, Fascia, etc.) products.

General Product Informatior

> Working Safely

Tools for Cutting and Fastening

Requirements

General Fastener Requirements

> Finishing and Maintenance

HardieWrap® Weather Barrier

HardieSoffit[®] Panels

General

Working Safely

Tools for Cutting and Fastening

General Installation Requirements

General Fastener Requirements

Finishing and Maintenance

HardieWrap[®] Weather Barrier

HardieTrim[®] Boards/Battens

HardieSoffit® Panels

HardiePlank[®] Lap Siding

HardieShingle[®] Siding

Installation of HardieTrim® Battens (cont.)

HORIZONTAL JOINT TREATMENT

Horizontal HardieTrim[®] Batten joints must occur at the same location as horizontal joints in HardiePanel[®] siding. Install horizontal HardieTrim Batten joints by using one of the following options:

- If HardieTrim Battens are going to be installed over horizontal panel joints without the use of a horizontal band board, follow the procedure as illustrated in fig. 8.27. Start installing HardieTrim Battens by creating a weather-cut of at least a 22.5° angle, making a joint at the same location as the panel joint. Attach the bottom batten. Make sure the top batten has a matching weather-cut and then install top batten.
- 2. If HardieTrim Battens are to be installed over horizontal panel joints with the use of a horizontal band board, follow the procedure as illustrated in fig. 8.28. If HardieTrim Battens are to be installed horizontally, they must be installed in the same manner as in fig. 8.28. Make sure the horizontal Z-flashing is installed over both the lower panel and the horizontal band board. Attach the bottom batten tight to the bottom edge of the band board. Next, leaving a minimum 1/4 in. gap above the horizontal Z-flashing, install the top batten.





WARNING

Do not bridge floors with HardieTrim Battens and/or HardiePanel Siding. A horizontal joint should always be created between floors.

Appendix/ Glossary



HardieTrim[®] Boards

EFFECTIVE SEPTEMBER 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 saturate result in shrinkage at butt joints. Carry plan edge. Protect edges and corners from brea James Hardie is not responsible for damag

by improper storage and handling of the product.

) d may	OUTDOORS 1. Position c user and c 2. Cut using	utting station so that airflow blows dust away from the others near the cutting area. one of the following methods:	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
ks on akage. e caused	a. Best: b. Better: c. Good:	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. Circular saw equipped with a dust collection feature (e.g. Roan [®] saw) and a HardieBlade saw blade. Circular saw equipped with a HardieBlade saw blade.	 D0 N0T 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 (OSI	HA) regulates workplace exposure to silica dust. For construction sites, OSHA has deemed

▲ CUTTING INSTRUCTIONS

he 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.

4/4 | 5/4 | BATTENS | PRIMED | COLORPLUS® PRODUCTS

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TR1510_P1/9 09/19



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



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

Figure 5



Block Penetration Recommended in HZ10 Figure 8



Maintain a minimum 2 in. horizontal clearance between James Hardie trim products and decks, paths, steps and driveways.



Drip Edge



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

At the juncture of the roof and vertical surfaces, flashing and counter flashing shall be installed per the roofing manufacturer's instructions. Provide a 2 in. clearance between the roofing and the bottom edge of the trim.

Figure 4



flashing

Mortar/Masonry

Figure 7



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 trim. 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:



*Follow all applicable codes when installing HardieTrim boards

water-

resistive

barrier

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).



TRIM APPLICATION FOR WINDOWS, DOORS & OTHER OPENINGS

Figure 14

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

BAND BOARD For band board water resistive barrier applications, a flashing is required over the trim. lap siding (figure 15) Figure 15 sheathing 1/4 in. gap blocking/support if required flashing HardieTrim NT3 board caulk if required HardiePlank lap siding





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.

HardieTrim – Batten Figure 17 upper panel Do not 1/4 in. gap *Caulk | Z-flashing lower panel









FASCIA

Do not use HardieTrim to replace any structural component

HardieTrim boards can be fastened directly over a 2x sub-fascia or directly to rather 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 NT3 boards without the presence of a 2x sub-fascia, a minimum 8d siding corrosion resistant nails must be used to attach HardieTrim NT3 boards D0 NOT use finish nails. (*refer to fastener guide below*).

Fascia Fastener Guide

	FASTENER SPACING				
HardieTrim Board	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. 0.C.	2 nails spaced maximum 16 in. O.C.			
8 in.	3 nails every rafter spaced max 24 in. 0.C.	3 nails spaced maximum 16 in. O.C.			
10 in.		4 nails spaced maximum 16 in. O.C.			



HARDIETRIM® TABS

FASTENER REQUIREMENTS

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

HardieTrim NT3 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 NT3 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 <u>shall not</u> 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.



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



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O





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)



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





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.

PAINTING

DO NOT use stain, oil/alkyd base paint, or powder coating on James Hardie Products. James Hardie products must be painted within 180 days for primed product and 90 days for unprimed. 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 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

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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.

A 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 <u>P65Warnings.ca.gov</u>.

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.





HardieTrim® Boards

EFFECTIVE SEPTEMBER 2019

These instructions are to be used for HardieTrim[®] HZTM Boards ONLY and are **ONLY VALID** in the following states: WA, OR, CA, NV, UT, ID, CO, WY, MT, AZ, NM.

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 1. Position cutting station so that airflow blows dust away from the user and others near the cutting area. 2. Cut using one of the following methods:	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			
 a. 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. b. Better: Circular saw equipped with a dust collection feature (e.g. Roan[®] saw) and a HardieBlade saw blade. c. Good: Circular saw equipped with a HardieBlade saw blade. 	 D0 N0T 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 (OSH	A) regulates workplace exposure to silica dust. For construction sites, OSHA has deem			

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 appicable codes when installing HardieTrim boards.
- DO NOT install HardieTrim boards, such that they may remain in contact with standing water.
- DO NOT use stain, oil/alkyd base paint, or powder coating on James Hardie Products.



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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



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

Figure 5



Block Penetration

(recommended in HZ10) Figure 8



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





Drip Edge



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

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.





flashing

Mortar/Masonry

Figure 7



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 trim. 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:



*Follow all applicable codes when installing HardieTrim boards





water-

resistive

barrier

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).



TRIM APPLICATION FOR WINDOWS, DOORS & OTHER OPENINGS

Figure 14

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

BAND BOARD









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









FASCIA

HardieTrim board is a decorative non-load bearing trim product. Do not use HardieTrim to replace any structural component.

HardieTrim boards can be fastened directly over a 2x sub-fascia or directly to rather 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 D0 NOT use finish nails. (*refer to fastener guide below*).

Fascia Fastener Guide

	FASTENER SPACING				
HardieTrim Board	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. 0.C.	2 nails spaced maximum 16 in. O.C.			
8 in.	3 nails every rafter spaced max 24 in. 0.C.	3 nails spaced maximum 16 in. O.C.			
10 in.		4 nails spaced maximum 16 in. O.C.			





HARDIETRIM® TABS

FASTENER REQUIREMENTS

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

HardieTrim boards may be installed with HardieTrimTM Flat Tabs and HardieTrimTM 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 <u>shall not</u> 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.



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







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)



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.

Application	Framing Material Tab is nailed into	Fastener (tab to framing)	Fastener (tab to trim)	Max Tab Spacing (inches on center)
	Wood Stud (minimum G=0.42)	One 6d corrosion resistant siding nail installed through center of tab into framing		
Flat Tab	Minimum APA rated 7/16 in. OSB	Two 4d ring shank corrosion resistant siding nails equally spaced installed through 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 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,	
	Minimum APA rated 7/16 in. OSB	On each flange, Install two 4d ring shank corrosion resistant siding nails through tab into framing	install Four 18 ga. X 1/2 in. long X 1/4 in. wide corrosion resistant crown staples, equally space in two	20
	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	rows	



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.

PAINTING

DO NOT use stain, oil/alkyd base paint, or powder coating on James Hardie Products. James Hardie products must be painted within 180 days for primed product and 90 days for unprimed. 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 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

TR1509_P9/9 09/19

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.

A 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 <u>P65Warnings.ca.gov</u>.

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 International Residential Code for One- and Two-Family Dwellings, and the 2006,2009, & 2012 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 listing FL#889, Dade County, Florida NOA No. 02-0729.02, U.S. Dept. of HUD Materials Release 1263c, 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.



HardieSoffit[®] Panel Product Description

HARDIESOFFIT® PANELS

HardieSoffit® panels are 8 ft. and 12 ft. long, ¼ in. thick factory-primed fiber-cement panels designed to be used on the underside of eaves as soffit material. HardieSoffit panels are available as vented or non-vented boards. Vented HardieSoffit panels provide 5 sq. in. of net free ventilation per lineal foot of soffit.

James Hardie offers HardieSoffit panels in a range of time-saving pre-cut widths common to rake and eave applications. HardieSoffit panels come in either a smooth finish or Select Cedarmill[®] textured finish. Check with your local dealer for product availability. HardieSoffit panels can be combined with HardieTrim® Fascia boards used for fascia rakes and frieze applications to complete the eaves detailing.

HardieSoffit panels are also available with ColorPlus® Technology. The ColorPlus® coating is a factory-applied, oven-baked finish available on a variety of James Hardie® siding and trim products. See your local dealer for details and availability of products, colors and accessories.

HARDIESOFFIT® BEADED PORCH PANEL

HardieSoffit Beaded Porch Panel is a decorative fiber cement panel to be used as ceiling on the underside of porches or eaves as exterior panel materials. HardieSoffit beaded porch panel is 1/4 in. thick, 4 ft. wide, 8 ft. in length, and has 2 in. o.c. beads, and comes with PrimePlus® factory primer and sealer. Must be finished with 100% acrylic paint. See your local dealer for details and availability of products, colors and accessories.





HardieSoffit Non-Vented Smooth



HardieSoffit Beaded Porch Panel





HardieSoffit Non-Vented Cedarmill®



HardieSoffit Beaded Porch Panel



HardieSoffit Non-Vented Smooth

HardieSoffit Vented Smooth

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Installation of HardieSoffit® Panels

INSTALLATION OF HARDIESOFFIT® PANELS

HardieSoffit® panels must be attached to solid framing such as 2x4 supports spaced no more than 24 in o.c. For eaves install HardieSoffit panels with the long edge of the panel perpendicular to the ends of the rafters or joists. Eaves framing must include a subfascia, blocking, and/or ledger board to provide solid nailing along the long dimension of the soffit. All panel edges must be supported.

For rake overhangs 2x "look outs" spaced a maximum of 24 in o.c. should support a rake subfascia to provide adequate nailing for the rake soffit. Blocking between the lookouts provides support for the rake soffit along the building.



TIP: To aid in soffit panel installation, make a "deadman" or "third hand" post to help hold and position the soffit panel. Factory built tools such as those made for drywall installation are available, or they can be fabricated from lumber on the job-site.

JOINT TREATMENT FOR HARDIESOFFIT PANELS

There are several ways to join the lengths of HardieSoffit panels. Panel ends may be lightly butted in moderate contact, the ends may be gapped 1/8 in. and caulked, joints can be covered with batten strips, or panels may be joined with PVC or metal H molding type connectors.



Appendix/ Glossary

FRAMING PREP FOR SOFFIT PANELS



When installing the soffit:

- 1. Straighten the rafter tails by pulling and snapping a chalk line across the ends of the tails and then trimming them as necessary.
- 2. Install a solid wood sub-fascia on the ends of the rafter tails or install blocking between the rafter tails as needed.
- 3. If the soffit is to be installed level across its width, add nailers at every rafter or truss to provide support.
- 4. If the eaves are longer than 12 ft, measure and trim the first HardieSoffit[®] panel making sure that the end falls in the middle of a nailer.
- 5. Using the subfascia as a guide along the edge, carefully position the panel and secure with 4d common galvanized nails spaced no greater than 8 in. o.c. at all panel edges and on all intermediate framing members.
- 6. Continue with additional pieces until the run is complete.

CUTTING 45° HIP ROOF SOFFITS

Hip roof soffits continue level around the corners of a house. The soffit panels should join at the corner with 45° angle cuts. To create these corners:

- 1. First measure from the corner to the perpendicular framing member closest to, but not over 12 ft.
- 2. Using that measurement and pulling from the factory cut end of the soffit panel, mark the outside edge of the soffit panel for the long point of the 45° cut.
- 3. After cutting the 45° angle, position the panel on the soffit framing and check the fit on both ends before fastening.
- 4. Begin nailing at the 45° cut end and work toward the factory end.



WARNING

When using vented soffit, place the vented section of the panel toward the outside of the eave for optimum airflow.





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HardiePlank[®] Lap Siding

HardiePanel[®] Vertical Siding

Appendix/ Glossary **Norking** Safely

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Installation of HardieSoffit[®] Panels (cont.)

INSTALLING FRIEZE BOARDS

FRIEZE MADE FROM HARDIETRIM® 5/4, 4/4 BOARDS

When using lap and shingle sidings, install HardieTrim 5/4, 4/4 boards as a frieze board before putting in the siding. Then run courses of siding up to the frieze board and caulk the junction of the frieze board and siding. In a building sided with HardiePanel siding, the frieze board is commonly over the panel siding. If joints in the HardieTrim boards frieze are necessary for longer runs, join boards with a bevel cut. Nail the frieze board every 16 in using finish or siding nails.



TREATMENT OPTIONS FOR THE SIDING/SOFFIT JUNCTURE

9.9

Caulk joint

and soffit.

between siding

In addition to the frieze board treatments described above, there are several other options for finishing the juncture where the siding meets the soffit.

CAULK THE SIDING/SOFFIT JOINT

A fast and economical method of finishing the sidina/soffit juncture is simply to run a bead of guality caulk along the top edge of the siding where it meets the soffit. A straight rip cut along

the top edge of the siding ensures an aesthetically pleasing fit where it meets the soffit.

INSTALL CROWN MOLDING

Crown molding is another way of finishing and sealing the soffit/siding juncture. Install and finish the crown molding according to the manufacturer's specifications.

OVER THE TOP OF THE SIDING WITH 'J' CHANNEL

Once the soffit is in place, install a vinyl "J" channel upside down with the base of the "J" against the soffit. Then rip the final course of siding so that it fits inside the channel.

INSECT SCREEN

In areas where additional insect protection is desired, a screen may be applied to the back side of the panel prior to soffit installation. After the screen type and size is selected, cut the screen to fit so that it covers the vent holes and overlaps the non-vented area of the soffit by 1 in. to 2 in. Secure the screen to the backside of the soffit panel using a bead of construction adhesive.

TIP: Stainless steel fasteners are recommended when installing James Hardie® products.

HARDIESOFFIT[®] PANEL FASTENER SPECIFICATIONS





9.10





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General Fastenei

HardieSoffit® Panels

HardiePlank[®] Lap Siding

HardieShingle[®] Siding

HardiePanel[®] Vertical Siding
Installation of HardieSoffit® Beaded Porch Panels



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HardieWrap[®] HardieTrim[®] Weather Barrier Boards/Battens

HardiePlank[®] Lap Siding

HardieShingle® Siding

HardiePanel® Vertical Siding

BEADED PORCH PANEL FRAMING

HardieSoffit Beaded Porch Panel must be attached to either steel or wood normal 2x4 framing members spaced a maximum 24 in on center. All edges must be supported by framing.



TIP: Stainless steel fasteners are recommended when installing James Hardie products near the ocean, large bodies of water, or in very humid climates.

JOINT TREATMENT FOR BEADED PORCH PANEL

There are several ways to treat the joints of HardieSoffit beaded porch panels. The panel edges can be butted in moderate contact, leave a gap and caulk; or joints can be covered with Hardietrim batten strips.

TIP: Do not use finish nails for HardieSoffit beaded porch panel installation.







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HardieTrim[®] HardieWrap[®] Boards/Battens Weather Barrier

HardieSoffit® Panels

HardieShingle[®] HardiePlank[®] Siding Lap Siding

HardiePanel[®] Vertical Siding

Appendix/ Glossary

ESR-1844 & 2290 Report

Installation of HardieSoffit[®] Beaded Porch Panels (cont.)

HANDLING DURING INSTALLATION

Special precautions may be needed for carrying the panel during installation because of its larger size. James Hardie recommends the use of a T shape frame to support the panel during installation.



SIDING/BEADED PORCH PANEL JOINT

A fast and economical method of finishing the siding/porch panel juncture is simply to run a bead of quality caulk along the top edge of the siding where it meets the soffit. A straight rip cut along the top edge of the siding ensures an aesthetically pleasing fit where it meets the beaded porch panel.





HardieSoffit® Panels

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)

Λ

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 cause

by improper storage and handling of the product.

CUING: covered prior to wet or saturated may nts. Carry planks on mers from breakage. ible for damage caused	OUTDOORS1. Position cutting station so that airflow blows dust away from the user and others near the cutting area.2. Cut using one of the following methods:	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 i			
	 a. 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. b. Better: Circular saw equipped with a dust collection feature (e.g. Roan® saw) and a HardieBlade saw blade. c. Good: Circular saw equipped with a HardieBlade saw blade. 	 D0 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.

Figure 1

fascia

H-iointer

venting to outside of

eave

framing

member

framing

membe

HardieSoffit

vented panel

(wood)

sùbfascia

CUTTING INSTRUCTIONS

GENERAL REQUIREMENTS:

- HardieSoffit[®] panels may be installed as a soffit or ceiling over either wood or steel 20 gauge (33 mils) minimum to 16 gauge (54 mils) framing complying with the local building code. See general fastening requirements. Install soffits to nominal 2 x 4 framing members spaced a maximum of 24 inches on center (fig.1), with the long dimension perpendicular to the rafter or joist framing.
- All edges must be supported by framing. (figs. 3 & 4)
- Install water barriers and air barriers as required by local building codes. James Hardie will assume no responsibility for moisture infiltration.
- Ensure gutters have end caps. Maintain a minimum 1 in gap between end caps and siding & trim (fig.5).
- Install kickout flashing at roof-wall junctions. (fig 6.)
- 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:

- HardieSoffit panels must be fastened to a solid, nailable substrate such as a wood 2x subfascia.
- · Additional framing may be needed to ensure proper fastening.
- Soffits can be installed as shown in figure 1. Position the vent holes toward the outside of the eave for optimal airflow.
- 12 in to 24 in wide Vented HardieSoffit panels, provide 5.0 square inches of net free ventilation per lineal foot.
- Alternatively vents can be installed into non-vented soffit.
- If necessary, an insect screen can be installed using construction adhesive. Note: net free ventilation will be reduced.

Fastener Positioning

 Position fasteners 3/8 in from panel edges and no closer than 2 in away from corners when using soffit greater than 12 in wide (fig. 4) and no closer than 1 in away from corners when using soffit that is less than or equal to 12 in wide (fig. 3).

Jointing Methods

 Install panels in moderate contact at ends, provide PVC or metal jointers, battens or leave appropriate gap and caulk (fig 2).

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

VENTED SMOOTH | NON-VENTED SMOOTH | VENTED CEDARMILL® | NON-VENTED CEDARMILL®

Visit jameshardiepros.com for the most recent version.



Figure 2



JamesHardie[®]

shim

sidina



SF1204 P1/3 12/19

HardieSoffit® Panels



Figure 3

less than or equal to

12 in Wide Soffit

Figure 4

Greater than 12 in Wide Soffit



FASTENER REQUIREMENTS

- For wood frame construction a minimum 4d common nails spaced 8 in o.c. at panel edges and intermediate framing members spaced up to 24 in on center are suitable in most locations*.
- For conventional 20ga 16ga steel frame construction a minimum No. 8-18 x 0.323 in HD x 1 in long ribbed bugle screws spaced 6 in o.c. at panel edges and intermediate framing members spaced up to 24 in on center are suitable in most locations*.
- *Minimum Basic Wind Speed differs by locality. Where specified levels of wind resistance are required, refer to applicable Building Code Compliance Reports.

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."

GENERAL FASTENING REQUIREMENTS

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

Figure 5

Maintain a minimum 1 in gap between gutter end caps and siding & trim.







KICKOUT FLASHING

Because of the volume of water that can pour down a sloped roof, one of the most critical flashing details occurs where a roof intersects a sidewall. The roof must be flashed with step flashing. Where the roof terminates, install a kickout to deflect water away from the siding. It is best to install a self-adhering membrane on the wall before the subfascia and trim boards are nailed in place, and then come back to install the kickout.

Figure 6

Figure 6, Kickout Flashing To prevent water from dumping behind the siding and the end of the roof intersection, install a "kickout" as required by IRC code R905.2.8.3 : "...flashing shall be a min. of 4" high and 4" wide." James Hardie recommends the kickout be angled between 100° - 110° to maximize water deflection

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).





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

2

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.

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

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.

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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.

A 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 <u>P65Warnings.ca.gov</u>.

RECOGNITION: In accordance with ICC-ES Evaluation Report ESR-2273, HardieSoffit® panel 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 Residential Code for One and Two-Family Dwellings, and the 2006, 2009, 2012 & 2015 International Building Code. HardieSoffit panel is also recognized for application in the following: State of Florida Product Approval FL13265, 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.





HardieSoffit® Beaded Porch Panels

EFFECTIVE APRIL 2018

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 cause

by improper storage and handling of the product.

OUTDOORS 1. Position cutting station so that airflow blows dust away from the user and others near the cutting area. 2. Cut using one of the following methods:		so that airflow blows dust away from the e cutting area. lowing methods:	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 i
on ge. aused	a. Best: Circular saw and attache (manual, pr recommenc b. Better: Circular saw (e.g. Roan® c. Good: Circular saw	v equipped with a HardieBlade® saw blade dvacuum dust collection system. Shears ueumatic or electric) may also be used, not ied for products thicker than 7/16 in. v equipped with a dust collection feature saw) and a HardieBlade saw blade. v equipped with a HardieBlade saw blade.	 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 (IOSHA) regulates workplace exposure to silica dust. For construction sites, USHA 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:

- HardieSoffit[®] beaded porch panels may be installed as a soffit or ceiling over either wood or steel 20 gauge (33 mils) minimum to 16 gauge (54 mils) framing complying with the local building code. See general fastening requirements. Install soffits to nominal 2 x 4 framing members spaced a maximum of 24" on center (fig.1), with the long dimension perpendicular to the rafter or joist framing.
- All edges must be supported by framing. (fig. 1)
- Install water barriers and air barriers as required by local building codes. James Hardie will assume no responsibility for moisture infiltration.
- Ensure gutters have end caps. Maintain a minimum 1" gap between end caps and siding & trim (fig.5).
- Install kickout flashing at roof-wall junctions. (fig 6.)
- DO NOT use finish nails.
- 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:

- HardieSoffit beaded porch panels must be fastened to a solid, nailable substrate such as wood.
- · Additional framing may be needed to ensure proper fastening.
- Panels can be installed as shown in figure 1.

Fastener Positioning

 Position fasteners 3/8" from panel edges and and no closer than 2" away from corners (Figure 2).

Jointing Methods

- Panel ends are to be butted together as shown in Figure 3.
- Install panels in moderate contact at ends with or without battens (Figure 4).









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gutter and end cap

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FASTENER REQUIREMENTS

- For wood frame construction a minimum 4d common nails spaced 8" o.c. at panel edges and intermediate framing members spaced up to 24" on center are suitable in most locations*.
- For conventional 20-16 ga steel frame construction a minimum No. 8-18 x 0.323" HD x 1" long ribbed bugle screws spaced 6" o.c. at panel edges and intermediate framing members spaced up to 24" on center are suitable in most locations*.

*Minimum Basic Wind Speed differs by locality. Where specified levels of wind resistance are required, refer to applicable Building Code Compliance Reports.

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.
- Do not use aluminum fasteners, staples, or clipped head nails.



Drip edge

Because of the volume of water that can pour down a sloped roof, one of the most critical flashing details occurs where a roof intersects a sidewall. The roof must be flashed with step flashing. Where the roof terminates, install a kickout to deflect

It is best to install a self-adhering membrane on the wall before the subfascia and trim boards are nailed in place, and then come back to install the kickout.

Figure 6, Kickout Flashing** To prevent water from dumping behind the siding and the end of the roof intersection, install a "kickout" as required by IRC code R905.2.8.3 : "...flashing shall be a min. of 4" high and 4" wide." James Hardie recommends the kickout be angled between 100° - 110° to maximize water deflection.

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**The illustration (figure 6) was reprinted with permission of THE JOURNAL OF LIGHT CONSTRUCTION. For subscription information, visit www.jlconline.com.



CUT EDGE TREATMENT

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CAULKING

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COLORPLUS® TECHNOLOGY CAULKING, TOUCH-UP & LAMINATE

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- 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.
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- Treat all other non-factory cut edges using the ColorPlus Technology edge coaters, available from your ColorPlus product dealer.
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SF1205-P3/3 04/18

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HardiePlank[®]

Working Safely

Tools for Cutting and Fastening

General Installation Requirements

General Fastener Requirements

> Finishing and Maintenance

HardieWrap® Weather Barrier

HardieTrim® Boards/Battens

HardieSoffit[®] Panels

HardieShingle® Siding

HardiePanel® Vertical Siding

Appendix/ Glossary

ESR-1844 & 2290 Report

HardiePlank® Lap Siding Product Description

HardiePlank[®] lap siding is factory-primed fiber-cement lap siding available in a variety of styles and textures. Please see your local James Hardie[®] product dealer for product availability. HardiePlank lap siding comes in 12 ft. lengths. Nominal widths from 5 1/4 in to 12 in. create a range of exposures from 4 in to 103/4 in

HardiePlank lap siding is also available with ColorPlus[®] Technology as one of James Hardie's prefinished products. ColorPlus[®] Technology is a factory applied, oven-baked finish available on a variety of James Hardie siding and trim products. See your local dealer for details and availability of products, colors, and accessories.

The HZ5[®] product line is right at home in climates with freezing temperatures, seasonal temperature variations, snow and ice. HZ5[®] boards are the result of our generational evolution of our time-tested products. We've evolved our substrate composition to be specifically designed to perform in conditions found in these climates. To ensure that its beauty matches its durability, we've engineered the surface for higher performance, giving it superior paint adhesion and moisture resistance. In addition, we've added a drip edge to the HardiePlank[®] HZ5[®] lap siding product to provide improved water management in conditions specific to HZ5[®] climates.



Select Cedarmill[©]



Beaded Smooth



Smooth



Custom Colonial Roughsawn®





Custom Colonial Smooth®

Drip Edge



Working Safely

Tools for Cutting and Fastening

General Installation Requirements

Installation of HardiePlank[®] Lap Siding

INSTALL A STARTER STRIP

HardiePlank® lap siding requires a starter strip beneath the first course to set it on the proper angle and to create a proper drip edge at the bottom of the siding. Starter strips are easily made by ripping 11/4 in. pieces of HardiePlank siding from full or partial planks.

The bottom of the starter strip should be installed even with the bottom of the mudsill or the bottom edge of the sheathing. The strip must be installed over the water-resistive barrier, but occasional gaps should be left in the starter strip to allow any accumulated moisture behind the siding to drain away safely.





INSTALLING THE PLANKS

The first course of HardiePlank[®] siding is critical to the proper installation of the plank on the rest of the building. The first course should start at the lowest point of the house and within required clearances. Special attention should be made to ensure that it's straight and level. Attention should also be paid to staggering any butt joints in the planks so that the installation is attractive while making efficient use of material.

 Use a level (4 ft. or longer) or chalked level line to be sure that the first course is level. As installation proceeds up the wall, peri-

odically check the level and straightness of the courses. When correcting for flatness over products such as exterior insulation, use drywall shims. It is good practice to snap a chalk line every 3 to 5 courses to keep the planks straight and level.

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- 2. Position the bottom edge of the first course of siding a minimum ¹/₄ in below the edge of the starter strip (maintain required clearances) and secure.
- 3. Run the siding to the HardieTrim[®] board leaving a 1/8 in. gap between the siding and trim.

10.3

The bottom of the siding should be kept even with the bottom of the trim, or if desired, the trim may extend below the bottom of the siding. But the siding should never hang below the trim. ***When installing the first course make sure ground clearances are in accordance with James Hardie requirements and those of local codes.**

PLANK ALIGNMENT AT CORNERS

For the best looking installation, make sure that the heights of the plank courses match on both sides of a corner. Use a framing square, speed square or a level to match up the plank heights. Check every few courses to make sure proper heights are being maintained.

HANDLING

IMPORTANT: To prevent damage to the drip edge, extra care should be taken when removing planks from the pallet, while handling, and when installing with a lap gauge. Planks are interlocked together on the pallet, therefore they should be removed from the pallet horizontally (side to side) to allow planks to unlock themselves from one another.

Pull from across the stack







TIP: When taking planks from the pallet installation, avoid repeating the texture pattern by working across the pallet. Two to four planks can be removed from a stack at one time. But then material should be taken from adjacent stacks, again working across the pallet. Texture repeat is typically a concern on large walls with few breaks such as windows or doors.



ordie Wrat

Use a level 4 ft. or

the first course.

Snapped chalk line guides the first course.

longer level to check

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6 in min

Keep bottom edge of the first

the bottom of

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course even with

General Product Informatior

> Working Safely

Tools for Cutting and Fastening

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HardieSoffit® Panels

HardieShingle[®] Siding

HardiePanel[®] Vertical Siding

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Working Safely

Tools for Cutting and Fastening

General Installation Requirements

General Fastener Requirements

HardieShingle[®] Siding

HardiePanel[®] Vertical Siding

Installation of HardiePlank® Lap Siding (cont.)

BLIND NAILING (nailing through top of plank)

Blind nailing is recommended for installing any type of HardiePlank® lap siding including ColorPlus® siding. With blind nailing, each course covers the fasteners on the course below, which provides a better looking installation.

For blind nailing HardiePlank lap siding, James Hardie recommends driving fasteners 1 in. from the top edge of the plank. Additionally fasteners should be



placed no closer than 3/8 in from the ends of the plank.

HardiePlank[®] HZ5[®] Lap Siding is manufactured with a nail line that should be used as a guide for proper nail placement when blind nailing. This nail line should not be used as a lap line.

Avoid placing fasteners near the top edge of the plank. This practice, called "high nailing", may lead to loose planks, unwanted gaps or rattling. 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 1in. from plank ends & 3/4in. from plank edge into min. 3/8in. wood structural panel. Pin-backs are not a substitute for blind or face nailing

FACE NAILING (nailing through the overlap at the bottom of the plank)

Although blind nailing is recommended by James Hardie, face nailing may be required for certain. installations including: installations in high wind areas, fastening into OSB or equivalent sheathing without penetrating a stud, or when dictated by specific building codes. Refer to Appendix D for related code matters.



STAGGERING THE BUTT JOINTS

For walls longer than 12 ft, it is necessary to butt joint additional lengths of HardiePlank siding. These butt joints should be staggered to avoid noticeable patterns, which is determined by the placement of the first course. Butt joints between consecutive courses should be spaced apart by at least two stud bays for 16 in, o.c. framing or one bay for 24 in. o.c. framing.

While random placement of the planks is usually the most aesthetically pleasing, a progressive stagger pattern can make the job easier and faster without the pattern becoming too noticeable. With this strategy, the cut off piece for one course becomes the starter piece for a course above, making efficient use of materials and ensuring that all butt joints land on studs. The pattern can be modified for different stud placement.



JOINT FLASHING

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

- A. Joint Flashing (James Hardie recommended)
- B. 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.)
- C. "H" jointer cover

Flashing behind butt joints provides an extra level of protection against the entry of water at the joint. James Hardie recommends 6 in. wide flashing that overlaps the course below by 1 in. Some local building codes may require different size flashing.

Joint-flashing material must be durable, waterproof materials that do not react with cement products. Examples of suitable material include finished coil stock and code compliant water-resistive barriers. Other products may also be suitable.

TIP: Joint flashing can be quickly and easily made by cutting a 6 in. wide section off a roll of housewrap. Tape the roll tightly at the cut mark and cut the section off using a miter saw with a carbide blade. Individual sheets then can be cut to length with a utility knife.

TIP: Use light-colored joint flashing when using light-colored ColorPlus lap siding or other siding with a light-colored finish. Dark-color joint flashings should be used on siding with dark finishes.

10.9 Flashing behind to add an additional layer of protection from water infiltration

Extend flashing 1 in. onto the course below



Caulking at HardiePlank lap siding butt joints is not recommended for ColorPlus for aesthetic reasons as the caulking and ColorPlus will weather differently. For the same reason, do not caulk exposed nail heads. Refer to the ColorPlus touch-up section for details

JOINT PLACEMENT AND TREATMENT

Butt joints in HardiePlank lap siding should always land on a stud. Butt joints between studs are not recommended and should be avoided. Whenever possible, factoryfinished ends should be used at butt joints.

Place cut ends where the siding meets a corner, door, window trim, or other break in the wall where the joint is to be caulked. If cut ends are used in a butt joint between planks, James Hardie requires sealing cut ends for all products. For ColorPlus products, use the color-matched edge coater to seal the cut end.



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Butt planks with moderate edge contact COLORPLUS® TIP: When installing HardiePlank lap siding with ColorPlus Technology, position the plank in the immediate area where the plank is to be fastened. Do not place the plank on the course below and slide into position. Doing so may scuff or scratch the ColorPlus finish on the installed piece. Tools for Cutting and Fastening

HardieWrap[®] HardieTrim[®] Weather Barrier Boards/Battens

HardieSoffit[®] Panels Working Safely

Tools for Cutting and Fastening

General Installation Requirements

General Fastener Requirements

Finishing and Maintenance

HardieWrap[®] Weather Barrier

HardieTrim[®] Boards/Battens

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HardiePlank[®] Lap Siding

HardieShingle[®] Siding

HardiePanel[®] Vertical Siding

Appendix/ Glossary

Installation of HardiePlank® Lap Siding (cont.)

CONTINUING THE INSTALLATION

Once the initial course of HardiePlank[®] siding is fastened to the wall, continue installing successive courses with full 12 ft. pieces (follow the stagger pattern for longer walls), or until a window, door or other opening interrupts the course (fig 10.12). Notch planks as needed to fit around windows and doors. Again, be sure to seal all cut edges. Avoid placing butt joints directly above or below windows or above doors. Separate the joint from the opening by at least one course of siding.

Where butt joints land on a stud, make sure there is enough stud space for plank on both sides of the joint to land properly. Optimally both sides of a butt joint should land in the middle of a stud with 3/4 in landing space for each side. The minimum stud space for a plank to land is 3/8 in

Pay special attention to window, doors, and corners that have been trimmed before the siding goes on. Vertical trim boards may cover the king studs beside windows or doors, or they may cover up corner studs leaving no room for nailing the siding. In these places add extra studs as needed. 10.12 Planking around windows Notch plank around window trim and flashing. Keep butt joints more than one course away from top of window.

COLORPLUS TIP: HardiePlank lap siding with ColorPlus Technology is shipped with a protective laminate slip sheet, which should be left in place during cutting and fastening to reduce marring and scratching. The sheet should be removed immediately after each plank is installed.



If corners are trimmed with HardieTrim[®] 5/4, 4/4 boards, it may be necessary to measure and cut the first pieces of siding to make sure the butt joints land on studs.

INSTALLING HARDIEPLANK® SIDING ON GABLE WALLS

Siding gable walls can be challenging, and some of the keys to siding gable walls efficiently are determining the angle or pitch of the roof, properly staging materials, and ensuring that the plank lengths are measured accurately.

To estimate the amount of siding needed to complete a gable end, use the estimating tools located in Appendix C.

Stage enough material on the pump jacks or scaffolding to complete the gable end, but take care not to overload the staging. When possible, a cut table should be located on the pump jacks or scaffolding, which frees up crew members to work on other walls.

To cut planks for the gable:

- 1. Tack up a small scrap piece of siding where the first gable course is going.
- 2. Hold a second small piece of siding against the eave or rake board.
- 3. Trace the angle onto the scrap.
- 4. Cut that line and label the scrap as the template for the gable angle. The template can then be used to transfer the angle onto the larger pieces for cutting and installation.
- 5. Periodically check the angle as you progress up the wall.

The quickest way to measure and cut consecutive courses of siding for a gable is to work off the previous piece.

- 1. Cut and fit the lowest course of siding.
- 2. Before installing, lay it flat and measure down 1¼ in. from the top edge of the plank for the course overlap. Make a mark on both ends.
- Set a piece of uncut siding on top of the first piece, aligning the bottom edge with the overlap marks. Transfer the length directly to the uncut piece.
- 4. Draw the gable angle with the template, cut the angle and then repeat the process for the next course.

TIP: Stainless steel fasteners are recommended when installing James Hardie[®] products.



10.13

4 Draw the angle, cut and

repeat the process for the

Tip for fast gable installation

3 Place a plank for the next

next course.

HARDIEPLANK® SIDING FASTENER SPECIFICATIONS

The Fastener Specifications table shows fastener options for a variety of different nailing substrates. Please refer to the applicable ESR report online (see back page) to determine which fastener meets your wind load design criteria.



indicates recommended fasteners

^{*}When blind fastening 9.5 in or wider product onto steel studs, use screws.

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Working Safely

General Product Informatior

HardieShingle® Siding

ESR-1844 & 2290 Report



HardiePlank[®] Lap Siding

EFFECTIVE SEPTEMBER 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 result in shrinkage at butt joints. Carry plank edge. Protect edges and corners from brea James Hardie is not responsible for damage

by improper storage and handling of the product.

	▲ CUTTING INSTRUCTIONS					
d may ks on kage. e caused	OUTDOORS 1. Position cutting station so that airflow blows dust away from the user and others near the cutting area. 2. Cut using one of the following methods: a. Best: Circular saw equipped with a HardieBlade® saw blade and attached vacuum dust collection system. Shears (manual, pneumatic or electric) may also be used, no recommended for products thicker than 7/16 in. b. Better: Circular saw equipped with a dust collection feature (e.g. Roan® saw) and a HardieBlade saw blade. c. 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. •				
	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.

IMPORTANT: To prevent damage to the drip edge, extra care should be taken when removing planks from the pallet, while handling, and when installing with a lap gauge. Please see additional handling requirements on page 4.

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.jamehardie.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.
- 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) A. Joint Flashing (James Hardie recommended)

- B. 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.)
- C. "H" jointer cover

Figure 2





moderate contact at butt joints



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

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Visit jameshardiepros.com for the most recent version.

JamesHardie

-**T** 5

CLEARANCE AND FLASHING REQUIREMENTS



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

L

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



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

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

 DO NOT caulk nail heads when using ColorPlus products, refer to the ColorPlus touch-up

dust, dirt, or mildew

temperature

section



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.

COVERAGE CHART/ESTIMATING GUIDE

Number of 12 ft. planks, does not include waste

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

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.

ADDITIONAL HANDLING REQUIREMENTS

IMPORTANT: To prevent damage to the drip edge, extra care should be taken when removing planks from the pallet, while handling, and when installing with a lap gauge. Planks are interlocked together on the pallet, therefore they should be removed from the pallet horizontally (side to side) to allow planks to unlock themselves from one another.

Pull from across the stack



Do not go down the stack



HS11117 P4/4 09/19

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.

A 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 <u>P65Warnings.ca.gov</u>.

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 Residential Code for One and Two-Family Dwellings, and the 2006, 2009, 2012 & 2015 International Residential Code for One and Two-Family Dwellings, and the 2006, 2009, 2012 & 2015 International Residential Code for One and Two-Family Dwellings, and the 2006, 2009, 2012 & 2015 International Residential Code for One and Two-Family Dwellings, and the 2006, 2009, 2012 & 2015 International Residential Code for One and Two-Family Dwellings, and the 2006, 2009, 2012 & 2015 International Residential Code for One and Two-Family Dwellings, and the 2006, 2009, 2012 & 2015 International Residential Code for One and Two-Family Dwellings, and the 2006, 2009, 2012 & 2015 International Residential Code for One and Two-Family Dwellings, and the 2006, 2009, 2012 & 2015 International Residential Code for One and Two-Family Dwellings, and the 2006, 2009, 2012 & 2015 International Residential Code for One and Two-Family Dwellings, and the 2006, 2009, 2012 & 2015 International Residential Code for One and Two-Family Dwellings, and the 2006, 2009, 2012 & 2015 International Residential Release 12637, 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.



HardieShingle®

HardieShingle[®] Siding Product Description

HardieShingle[®] siding is fiber-cement shingle siding for sidewall applications. HardieShingle siding is available as straight-edge panels or staggered-edge panels 48 in. long by 16 in high. HardieShingle panels also come as decorative half-round shingles. For smaller coverage areas, individual shingles are also available in 4.2 in, 5.5 in, 6.75 in, 7.25 in & 10 in widths. Please see your James Hardie dealer for local availability of these products.

HardieShingle siding is available as a prefinished James Hardie product with ColorPlus[®] Technology. The ColorPlus coating is a factory applied, oven-baked finish available on a variety of James Hardie siding and trim products. See your local dealer for details and availability of products, colors and accessories.



Half-Round





Staggered Edge Panel



Individual Shingles



Tools for Cutting and Fastening

Appendix/ Glossary

Installation of HardieShingle[®] Siding

INDIVIDUAL SHINGLES

Like conventional wood-shingle siding, HardieShingle® siding requires the use of a starter strip and a starter course before installing the first full course of shingle panels or individual shingles. The starter strip sets the initial shingles at the proper angle and the starter course provides solid backing and keyway coverage for the first shingle course.

- 1. The starter strip should be installed over the water-resistive barrier. Starter strips can be made by ripping 11/4 in lengths from full or partial planks of HardiePlank® siding.
- 2. Use HardiePlank 81/4 in lap siding for the starter course.
- 3. Snap a level chalk line 81/4 in up from the bottom edge of the starter strip.
- 4. Position the top of the starter course along the chalk line, use a straight edge on bottom of shingles if uniform straight edge is desired
- 5. The first course of shingle siding is then installed even with bottom edge of the starter course.

When installing individual HardieShingles®, be sure to space shingles no more than 1/4 in apart. Spaces between shingles should not be within 11/2 in of the spaces in the courses above and below.



TIP: For the best appearance, apply shingle widths in a random manner to avoid creating a repeat pattern. Pre-planning of each course is recommended to aid appearance and to avoid stacked seams.

TIP: Stainless steel fasteners are recommended when installing James Hardie products.

HARDIESHINGLE SIDING FASTENER SPECIFICATIONS

The Fastener Specifications table shows fastener options for a variety of different nailing substrates. Please refer to the applicable ESR report online (see back page) to determine which fastener meets your wind load design criteria.



Corrosion-resistant siding nails $1^{1/4}$ in. long should be used to apply individual HardieShingles® to minimum 7/16 in. OSB rated sheathing. Position nails 1/2 in. to 1 in. from the side edges of the shingles and $8\frac{1}{2}$ in. to 9 in up from the bottom edge of the shingle.

2 nails per shingle on 4.2 in., 5.5 in., 6.75 in., 7.25 in., and 10 in. shingles



Working Safely Tools for Cutting and Fastening

General Product Informatior

Requirements General Requirements General Fastener

Working Safely

Tools for Cutting and Fastening

General Installation Requirements

General Fastener Requirements

Finishing and Maintenance

HardieWrap[®] Weather Barrier

HardieTrim[®] Boards/Battens

HardieSoffit® Panels

HardiePlank[®] Lap Siding

HardieShingle[®] Siding

HardiePanel[®] Vertical Siding

Appendix/ Glossary

Installation of HardieShingle® Siding (cont.)

HARDIESHINGLE® PANELS

For HardieShingle[®] panels start at one end and work across the wall.

- 1. Measure and trim the first panel to make sure the end of the panel falls over framing.
- 2. Using the chalk line as a guide along the panel top edge. For straight edge panels align bottom panel edges to maintain a uniform straight line carefully position the panels and secure with suitable fasteners and spacing for your particular application as noted in the ESR 1844 & 2290 Report.
- 3. Align the bottom edges of the trim and the siding for the best appearance. Where the panel begins at a corner board or at door or window casings, cut the upper portion of the panel back even with the edge of the keyway.
- 4. Where the siding meets the HardieTrim[®] board, leave a 1/8 in. gap between the siding and trim.
- Install HardieShingle panels with joints in moderate contact.5. Measure and cut the first panel for the second course of HardieShingle panel so that it lands on the stud before the panel on the first course. Use the cut end to abut the trim.
- 6. Start the third course with the end of the panel landing on the stud before the second course. Save the cut pieces to use on the other end of the wall.
- 7. Continue alternating these three lengths up the wall to establish proper positioning of the shingle keyways.

When installing HardieShingle Staggered Edge panel, measure up 6 in. from the top of the installed panel and make a mark. Make another

mark at an equal height on the opposite end of the wall and snap a chalk line between the marks. Align the top of the next course of panel with the chalk line to maintain proper exposures.

Keep the bottom of the siding even with the bottom of the trim. If desired, the trim may extend below the bottom of the siding, but the siding should not hang below the trim. Make sure that clearances above the ground, roof lines and hard surfaces are in accordance with the General Requirements on pages 13-26.



Starter strip starts shingles at the proper angle.



🚹 WARNING

James Hardie recommends installing HardieShingle panel over rated wood sheathing.

INSTALLING HARDIESHINGLE® PANEL DIRECT TO 7/16 IN SHEATHING

Refer to ESR-2290 for allowable wind loads.

Panel and Individuals may be mixed together to reduce waste and save time.

Straight Wall

- 1. Always work from center of wall to outside corner trim
- 2. Make all shingle length cuts at trim, not mid wall
- 3. Start first panel to left of center
- 4. If openings exist on wall, locate offset layout on each side of opening
- 5. Start second row of shingle on centerline of offset layout
- 6. Start third row of shingle on right line of offset layout
- 7. Repeat starting panel on remaining rows using Left, Middle, Right layout lines

Gable

- 1. Layout offset on gable similar to straight wall, except vertical layout lines should be made across the gable face at the offset dimension
- 2. Utilize three center lines for starting row
- 3. Start first piece on the left vertical line, left of center
- 4. Use the additional vertical lines to pre measure finishing pieces
- 5. Start Second row on the vertical centerline of the gable face
- 6. Start third row on vertical line to the right of center
- 7. Repeat starters Left, Middle, Right for remaining courses

HALF-ROUND DECORATIVE SHINGLE PANELS

Half-round shingles are often used for a decorative note above regular shingles, especially in gables.

- 1. Start the first course from the middle of the run so that half round sections at either end are cut equally.
- 2. Then start the second course from the trim at one end and cut it so that it lands on the framing one stud away from the course below.
- 3. Cut the panel to abut the trim at the other end of the course. Make sure keyways are located over the midpoints of the half rounds in the lower course for correct alignment.
- 4. At the top of the wall, install a frieze board and install shingles up to the bottom edge of the frieze.

5. Top rows of shingles may have to be cut to an appropriate height to maintain consistent exposure top to bottom.

All HardieShingle[®] siding products can be applied to the gable end of a building following their specific installation instructions. But special care should be taken when installing half-round panels due to their symmetrical nature.



HardiePanel® Vertical Siding

General Product Informatior

> Working Safely

Tools for Cutting and Fastening

General Installation Requirements

General Fastener Requirements

> Finishing and Maintenance

HardieWrap® Weather Barrier

HardieTrim® Boards/Battens

> HardieSoffit® Panels

HardiePlank[®] Lap Siding

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Working Safely

Tools for Cutting and Fastening

General Installation Requirements

General Fastener Requirements

Finishing and Maintenance

HardieWrap[®] Weather Barrier

HardieTrim[®] Boards/Battens

HardieSoffit® Panels

Installation of HardieShingle® Siding (cont.)

HALF-ROUND DECORATIVE SHINGLE PANELS (CONTINUED)

For best appearance, half-round shingle panel installations on gable ends should end with a single round shingle at the gable peak. To make this happen, calculation of the actual number of courses is necessary. Follow the simple steps below to achieve this effect.

- 1. Measure the horizontal width of the gable being sided and locate the center of the gable. Using a level or chalk line, draw a line from the gable peak to the center mark.
- 2. Measure the entire height of the gable area to be sided above the band board.
- 3. Divide the total height of the gable by 7. (Half round shingles have an exposure of 7 in and this figure is the number of courses to be installed.
- 4. If the answer is an even number (example: 70 in divided by 7 = 10 courses), center the first panel course on a keyway on the vertical center line (fig. 9.7). If the answer is an odd number, (example: 77 in divided by 7 = 11 courses) center the first course on the center of a half-round shingle (fig. 9.8).
- 5.) Using this planning method, the final piece at the peak should be a centered shingle.

To install the first course of half-round panel in a gable:

- 1. position the first piece of panel on the gable centerline marked earlier. The panel may be moved left or right to make the edge lands on a stud as long as the shingle face or keyway is centered (depending on the number of courses needed as discussed above).
- Drive nails approximately ¼ in. above the top of every other keyway. Avoid driving nails between the keyways because the heads may be visible through the keyways of subsequent courses.
- Complete the installation on the left and right sides using the rake-angle template to cut the proper rake angle. Leave a 1/8 in. gap between the siding and trim boards.
- 4. Use the rake angle template to trim back the start panel for the 2nd course. Install the 2nd and following courses the same way. At the peak of the gable, face nail the final piece with a finish nailer.



Starter course covers keyways on first shingle course.



-1844 & Appendix/ Report Glossary

ESR-2290 |



HardieShingle® Siding

SINGLE FAMILY INSTALLATION REQUIREMENTS

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)

	△ CUTTING INSTRUCTIONS				
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.	OUTDOORS 1. Position cutting station so that airflow blows dust away from the user and others near the cutting area. 2. Cut using one of the following methods: a. 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. b. Better: Circular saw equipped with a dust collection feature (e.g. Roan® saw) and a HardieBlade saw blade. c. 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.			
and the second s	IMPORTANT: The Occupational Safety and Health Administration (OS that cutting fiber cement with a circular saw having a blade diameter manufacturer's instructions results in exposures below the OSHA Per respiratory protection.	HA) regulates workplace exposure to silica dust. For construction sites, OSHA has deemed less than 8 inches and connected to a commercially available dust collection system per missible Exposure Limit (PEL) for respirable crystalline silica, without the need for additional			

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:

- HardieShingle panels 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 such as gypsum, foam, etc. can be located in JH Tech Bulletin 19 at www. jamehardie.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. 1 thru 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 10ft.
- Do not install James Hardie products, such that they may remain in contact with standing water.
- HardieShingle panels may be installed on vertical wall applications only.
- DO NOT use stain, oil/alkyd base paint, or powder coating on James Hardie® Products.
- 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.



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

STAGGERED EDGE PANEL | STRAIGHT EDGE PANEL | INDIVIDUAL SHINGLES | HALF-ROUNDS PANELS

Visit jameshardiepros.com for the most recent version.



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CLEARANCE AND FLASHING REQUIREMENTS

Figure 1 Roof to Wall



Figure 2 Horizontal Flashing







Figure 4 Slabs, Paths, 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



Figure 14 Valley/Shingle Extension



as Panels the 7 in d, you can & 15D).

TRIM CONSIDERATION:

Minimum 1 in trim thickness is needed as Panels stack at a depth of roughly 15/16 in for the 7 in reveal. If additional trim depth is desired, you can place a spacer under the trim (Fig. 15C & 15D).



GABLE INSTALLATION:

Installation over sheathing is recommended (Required for Individuals) for gables.*

- 1) Find the center stud of your of your Gable and snap a caulk line down
- 2) Measure out 16 in* to both the left and the right of the center line and snap a caulk line
- 3) Measure up 2 in if you are off a roof line or $\frac{1}{4}$ in if you are starting above a band board
- 4) Set the bottom of your 1 $\frac{1}{4}$ in starter strip at that line
- 6) Set your first row of Shingle starting the first piece at the vertical line left of center
- (If you are using staggered edged shingles Trim down the first row to the shortest shingle length)
- 7) Drive nails approximately 1/4 in above Key ways 5 per full panel Center Nail can be either one of the keyways.
- (Stay by keyway to avoid shiners) (EX1) Blue Dots show nail placement
- 8) Measure up 7 in with straight and 6 in with Staggered edge and snap a caulk line to get your proper exposure
- 9) The second row will start at the center line
- 10) The Third row will start at the line right of center
- 11) As you work your way up the gable make sure you Keep your Cut Pieces you will use the pieces on the edges of the gable (EX2)
- 12) Edges Gable butting into trim leave a 1/8 in Gap (for house movement and Caulking)
- 13) Make sure to sure siding nails on the small pieces on the edges (Do not use a trim nail to install!)



*Panels can also be installed direct to stud up to 24 in OC.

Note: Snapped chalk lines help guide installation, when installing straight edge panels or Individual shingles use a straight edge on bottom edges if uniform straight edge is desired.

HardieShingle® Siding

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1

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HARDIESHINGLE STAGGERED EDGE PANELS INSTALLATION Fig

Fastener Requirements

0.083 in x 0.187 in HD x 1 1/2 in long ringshank nails are used for fastening HardieShingle[®] Staggered Edge Panels to both framing and to 7/16 in thick APA rated sheathing.

HardieShingle® Staggered Edge Panel Installation

Install HardieShingle® panels with joints butted in moderate contact. Due to overlapping of the joints, caulk is not required except where panels abut trim boards. (fig. 22 & 24). Ensure keyways do not line up on subsequent courses. 1) Install a 1-1/4 in starter strip, then install a 8-1/4 in wide

HardiePlank[®] lap siding starter course.

2) Place first panel so that panel end centers over stud. Trim panel as

needed. Butt the cut end into trim as shown (figs 22 & 24). When

installing over a band board or any horizontal surface, leave

1/4 in gap between bottom of siding and flashing.

3) Secure panel, leaving 1/8 in gap for caulk at trim and continue the course along the wall.

4) Start the second course, by removing the equivalent of one full stud

cavity (16 in or 24 in OC), again abutting the cut end into the trim (figs 22 & 24). This is to prevent pattern repetition. Repeat step 3.

5) Start the third course, by removing the equivalent of two full stud cavities (figs 22 & 24) and repeat step 3.

6) Continue up the wall repeating steps 2 through 6 until desired height is reached.

Note: For aesthetic purposes you may trim the bottom of the panel to create a straight edge. If doing so, ensure all cuts ends are properly sealed and painted (fig 23)

۔ - 1/4 in gap. Do not caulk.





Allow 3/8 in from panel edges.

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band board HARDIESHINGLE STAGGERED EDGE PANEL COVERAGE

Panels for sidewall applications are available in 48 in lengths. Pieces needed for one square (100sq.ft.) of product coverage = approximately 50, based on a maximum 6 in exposure from the top edge of HardieShingle panels in subsequent courses (refer to Figure 22).

7 IN EXPOSURE HARDIESHINGLE STRAIGHT EDGE PANELS INSTALLATION (For 5 in exposure product please go to page 7)



position nails on nail line and secure into framing. Only when application is to minimum 7/16 in thick APA rated sheathing, position nails on nail line spaced a maximum of 13 3/4 in o.c. Allow 3/8 in from panel edges.

HARDIESHINGLE STRAIGHT EDGE PANEL COVERAGE

Panels for sidewall applications are available in 48 in lengths. Pieces needed for one square (100sq.ft.) of product coverage = approximately 43, based on maximum 7 in exposure.



HARDIESHINGLE INDIVIDUAL SHINGLE INSTALLATION

HardieShingle Individual Shingles must be installed with the widest part of the shingle placed downwards and directly to minimum 7/16 in thick sheathing.

Fastener Requirements

0.091 in x 0.221 in HD x 1 1/2 in or 0.121 in x 0.371 in HD x 1 1/4 in long corrosion resistant siding nails are used for fixing HardieShingle siding to 7/16 in thick APA rated sheathing.

HardieShingle Individual Shingle Installation

Due to overlapping of the joints, caulk is not required except where panels butt trim boards. Space shingles a maximum 1/4 in apart and leave a minimum lap of 1 1/2 in between successive courses (fig. 26).

- 1) Install 1 1/4 in starter strip and a 8 1/4 in wide HardiePlank siding starter course.
- 2) Install first shingle from the end abutting trim. Install widest part of shingle placed downwards. (fig. 25).
- 3) Secure shingle, leaving a 1/8 in gap for caulk at trim and continue the course along the wall.
- Start the second course, leaving a minimum lap of 1 1/2 in between successive courses, again from the end abutting the trim. Repeat step 3.
- 5) Continue up the wall repeating steps 2 through 5 until desired height is reached.

HARDIESHINGLE INDIVIDUAL SHINGLE COVERAGE

Individual Shingles for sidewall applications are available in assorted widths as listed below. Bundles needed for one square (100 sq. ft.) of product coverage:

Shingle Width	Number of Bundles	Pieces per Bundle		
4-3/16 in	3	15		
5-1/2 in	6	15		
6-3/4 in	3	15		
7-1/4 in	6	15		
10 in	3	15		

HARDIESHINGLE HALF-ROUND PANELS INSTALLATION

Fastener Requirements

0.083 in x 0.187 in HD x 1 1/2 in long ringshank nails are used for fastening HardieShingle Half-Round Panels to both framing and to 7/16 in thick APA rated sheathing.

HardieShingle Half-Round Panel Installation

Install HardieShingle panels with joints butted in moderate contact. Due to overlapping of the joints, caulk is not required except where panels abutt trim boards. (fig. 27). Ensure keyways do not line up on subsequent courses.

- 1) Install a 1-1/4 in starter strip, then install a 8-1/4 in wide HardiePlank lap siding starter course.
- 2) Place first panel so that panel end centers over stud. Trim panel as needed. Butt the cut end into trim as shown (figs 27). When installing over a band board or any horizontal surface, leave 1/4 in gap between bottom of siding and flashing.
- Secure panel, leaving 1/8 in gap for caulk at trim and continue the course along the wall.
- 4) Start the second course, by removing the equivalent of one full stud cavity (16 in or 24 in OC), again abutting the cut end into the trim (fig 27). This is to prevent pattern repetition. Repeat step 3.
- 5) Start the third course, by removing the equivalent of two full stud cavities (figs 28 & 30) and repeat step 3.
- 6) Continue up the wall repeating steps 2 through 6 until desired height is reached.

HARDIESHINGLE HALF-ROUND PANEL COVERAGE

Panels for sidewall applications are available in 48 in lengths. Pieces needed for one square (100 sq. ft.) of product coverage=43 pieces with 7 in exposure.

Figure 25



Figure 27







CORNER DETAILS A. Panels butted against corner boards. B. Panels butted against square wood strip on inside corner, flashing behind. C. Laced outside corner. D. Laced inside corner. minimum (1 in) thick trim

WINDOWS AND DOORS

Building wall components such as windows, doors and other exterior wall penetrations shall be installed in accordance with the component manufacturer's written installation instructions and local building codes. Where windows or doors are installed, continue the application of siding as if the wall is complete. Triming for the opening and using the resulting piece may throw off the spacing above the break.

GENERAL FASTENING REQUIREMENTS

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

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).





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"**.

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

5 IN EXPOSURE HARDIESHINGLE® STRAIGHT EDGE PANELS INSTALLATION (For 7 in exposure product please go to page 4)

Maximum Exposure of 5 in



position nails on nail line and secure into framing. Only when application is to minimum 7/16 in thick APA rated sheathing, position nails on nail line spaced a maximum of 13 3/4 in o.c. Allow 3/8 in from

HARDIESHINGLE® STRAIGHT EDGE PANEL COVERAGE

Panels for sidewall applications are available in 48 in lengths. Pieces needed for one square (100sq.ft.) of product coverage = approximately 60, based on maximum 5 in exposure.

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.



HARDIESHINGLE® INDIVIDUAL SHINGLE INSTALLATION

HardieShingle Individual Shingles must be installed with the widest part of the shingle placed downwards and directly to minimum 7/16 in thick sheathing.

Fastener Requirements

0.091 in x 0.221 in HD x 1 1/2 in or 0.121 in x 0.371 in HD x 1 1/4 in long corrosion resistant siding nails are used for fixing HardieShingle siding to 7/16 in thick APA rated sheathing.

HardieShingle Individual Shingle Installation

Due to overlapping of the joints, caulk is not required except where panels butt trim boards. Space shingles a maximum 1/4 in apart and leave a min. lap of 1 1/2 in between successive courses (fig. 31).

- 1) Install 1 1/4 in starter strip and a 6 1/4 in wide HardiePlank siding starter course.
- 2) Install first shingle from the end abutting trim. Install widest part of shingle placed downwards. (fig. 30).
- 3) Secure shingle, leaving a 1/8 in gap for caulk at trim and continue the course along the wall.
- Start the second course, leaving a minimum lap of 1 1/2 in between successive courses, again from the end abutting the trim. Repeat step 3.
- 5) Continue up the wall repeating steps 2 through 5 until desired height is reached.

Figure 30



5 IN EXPOSURE HARDIESHINGLE® INDIVIDUAL SHINGLE COVERAGE

Individual Shingles for sidewall applications are available in assorted widths as listed below. Bundles needed for one square (100 sq. ft.) of product coverage:

Shingle Width	Number of Bundles	Pieces per Bundle		
3-1/2 in	3	20		
4-1/2 in	6	20		
5-1/2 in	6	20		
7 in	6	20		
8-3/4 in	3	20		

ILICA WARN



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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.

A 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, HardieShingle® 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. HardieShingle 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, U.S. Dept. of HUD Materials Release 1263f, Texas Department of Insurance Product Evaluation EC-23. These documents should also be consulted for additional information concerning the suitability of this product for specific applications.

Product warranties, safety information and additional installation information are available at jameshardiepros.com



HardiePanel[®]

HardiePanel® Vertical Siding Product Description

HardiePanel® vertical siding is factory-primed fiber-cement vertical siding available in a variety of sizes and textures. Examples of these are shown below. Textures include smooth, stucco, Cedarmill® and Sierra 8. HardiePanel vertical siding is 5/16 in. thick and is available in 4x8, 4x9 and 4x10 sizes. Please see your local James Hardie dealer for texture and size availability.

HardiePanel vertical siding is available as a prefinished James Hardie® product with ColorPlus® Technology. The ColorPlus coating is a factory applied, oven baked finish available on a variety of James Hardie siding and trim products. See your local dealer for availability of products, color and accessories.





Stucco





Sierra 8

Smooth



Working Safely

General Product Information

Working Safely

Tools for Cutting and Fastening

GETTING STARTED

installation on that wall.

with a 4 ft. level.

of a stud.

the ESR-1844.

with a 4 ft. level.

First locate the lowest point of the

sheathing or sill plate, and begin.

1. Measure up from the sill plate

That line is for guidance in positioning the top edge of the panels. Check the reference line

2. Starting on one end and working across the wall, measure and

trim the first panel making sure

that the edge falls in the middle

3. Using the chalk line as a guide

along the panel's top edge, carefully position the panel and secure it with suitable fasteners and fastener spacing for the

particular application as noted in

4. As installation continues, check

the vertical edge of each panel

the height of the panels at either end of the wall and snap a straight, level chalk line between the marks as a reference line.

General Fastener Requirements

HardieShingle[®] Siding

Appendix/ Glossary



Installation of HardiePanel® Vertical Siding

Note: James Hardie has a capillary break requirement when installing HardiePanel on a Multi-Family/

Commercial project. Please visit: www.jameshardiepros.com for further information.

TIP: Install flashing over the footing/foundation and extend the panel over the flashing just below the sill plate. Do not extend siding beyond the required grade clearances.

TIP: For Sierra 8 panels, double studs at each panel joint allows fasteners to be placed outside of panel grooves.





General Product Information

Working

Tools for Cutting and Fastening

General Installation Requirements

General Fastener Requirements

> Finishing and Maintenance

HardieWrap® Weather Barrier

HardieTrim® Boards/Battens

> HardieSoffit® Panels

VERTICAL JOINT TREATMENT

Treat vertical joints in HardiePanel[®] vertical siding by using one of the following four methods:

- 1. Install the panels in moderate contact.
- 2. Leave an appropriate gap between panels (1/8 in. is the most common), and caulk using a high-quality paintable caulk, that meets ASTM C-834 or C-920 requirements. (Not recommended for ColorPlus)

Panels may be installed first with caulk applied in the joints after installation; or as an option, after the first panel is installed, apply a bead of caulk along the panel edge. When the next panel is installed against the first, the edge embeds in the applied caulk creating a thorough seal between the edges of the panels.

The caulk joint method is not recommended for the ColorPlus® products

- Vertical joints may be covered with wood or fiber-cement batten strips. If James Hardie[®] siding or trim products are ripped and used as batten strips, paint or prime the cut edges. Batten strips should span the vertical joint by at least ³/₄ in. on each side.
- 4. Metal or PVC "H" moldings can be used to join two sections of HardiePanel siding.

TIP: Stainless steel fasteners are recommended when installing James Hardie products.



Note: The following outlines the recommended applications for ColorPlus and Primed panels. Not all designs will be suitable for every application:

- Exposed fasteners or battens is the recommended application for ColorPlus products
- Do not use touch-up over fastener heads for smooth ColorPlus products primed panel recommended

• For ColorPlus panel applications that require fasteners in the field, it is acceptable to use touch-up over fasteners for Cedarmill and Stucco panel only, but correct touch-up application is important. Some colors may show touch-up when applied over fasteners. Trim is recommended to cover joints when appropriate.



HARDIEPANEL SIDING FASTENER SPECIFICATIONS

The Fastener Specifications table shows fastener options for a variety of different nailing substrates. Please refer to the applicable ESR report online (see back page) to determine which fastener meets your wind load

Fastening Substrate		Approved Fastener	Fastening Types
	16 in o.c.	1259	.113 in x .267 in x 1.5 in common
wood			6d .113 in x .267 in x 2 in
studs	24 in a a		.091 in. x .225 in x 1.5 in ring shank
	24 m o.c.	(1) (2) (9)	No. 11ga 1.25 in long
steel	16 in o.c or	7 13	Ribbed Budle-Head No. 8 (323 in x 1 in)
studs	24 in o.c.		
		111	.100 in x .25 in x 1.5 in

HardiePlank® Lap Siding

nel® Appe ding Glos

Installation of HardiePanel[®] Vertical Siding (cont.)

HORIZONTAL JOINT TREATMENT

In some applications such as multi-story structures or at gable ends, it may be necessary to stack HardiePanel® siding. The horizontal joints created between panels must be flashed properly to minimize water penetration. Treat horizontal panel joints by using one of the following methods:

- After installing the lower course of panel siding, install vinyl or coated aluminum "Z" flashing at the top edge of the panel. Make sure that the flashing is sloped away from the wall and does not rest flat on the top edge of the panel. Install the second level or gable panels leaving a ¼ in. minimum gap between the bottom of the panel and the Z flashing. This gap should never be caulked.
- 2. As an alternative, if a horizontal band board is used at the horizontal joint, flashing must extend over the panel edge and trim attachment. Flashing for both treatments must slip behind the water-resistive barrier.



TIP: For best looking installation of HardiePanel Select Sierra 8 siding, carefully align vertical panel grooves at 1st to 2nd story or gable junctures.

WARNING

Do not bridge floors with panel siding. A horizontal joint shall always be created between floors.

TIP: For the most symmetrical looking wall, plan the installation so that a full panel is centered on the wall or gable with equal-size panels cut for each end. As an alternative, plan the installation so that a full panel is located on either side of the wall center, again leaving equal-size panels on each end. These strategies might entail a centered framing layout. Choose the strategy that looks the best and uses material most efficiently.



General Product Iformation

Norking Safely

Tools for Cutting and Fastening

General Installation Requirements

General Fastener Requirements


General Product Information



Hardie Panel® Vertical Siding

SINGLE FAMILY INSTALLATION REQUIREMENTS

EFFECTIVE SEPTEMBER 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 1. Position cutting station so that airflow blows dust away from the user and others near the cutting area. 2. Cut using one of the following methods:	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.			
 a. 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. b. Better: Circular saw equipped with a dust collection feature (e.g. Roan[®] saw) and a HardieBlade saw blade. c. Good: Circular saw equipped with a HardieBlade saw blade. 	 D0 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 silical 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:

- These instructions to be used for single family installations only. **For Commercial / Multi-Family installation requirements go to www.JamesHardieCommercial.com
- HardiePanel® vertical 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.jamehardie.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.
- 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 HardiePanel lap siding in Fascia or Trim applications.
- Do not install James Hardie products, such that they may remain in contact with standing water.
- HardiePanel vertical 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.
- Minimum standard panel design size is 12" x 16". Note:Panels may be notched and cut to size to fit between windows, doors, corners, etc.



SMOOTH | CEDARMILL[®] | STUCCO | SIERRA 8

Visit jameshardiepros.com for the most recent version.

INSTALLATION: Fastener

Position fasteners 3/8 in from panel edges and no closer than 2 in away from corners. Do not nail into corners.

- · HardiePanel vertical siding must be joined on stud.
- Double stud may be required to maintain minimum edge nailing distances.
- When screws are used to attach panels to steel studs/furring, the screws shall have wing tips. If screws do not have wing tips, then pre-drilling is required. (Not applicable when using pins) Follow chart below for pre-drilling:

SCREW	PRE-DRILL	HEAD DIAMETER
No. 8	7/32 in	Min 0.323 in
No. 10	1/4 in	Min 0.323 in

Joint Treatment

- · Vertical Joints Install panels in moderate contact (fig. 1), alternatively joints may also be covered with battens, PVC or metal jointers or caulked (Not applicable to ColorPlus® Finish) (fig. 2).
- Horizontal Joints Provide Z-flashing at all horizontal joints (fig. 3).



Recommendation: When installing Sierra 8, provide a double stud at panel joints to avoid nailing through grooves.



1/4" gap

decorative

band board

HS1237 P1/3 09/19



CLEARANCE AND FLASHING REQUIREMENTS





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).

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. James Hardie products must be painted within 180 days for primed product and 90 days for unprimed. 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.

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

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 a new piece of 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 matchedcaulks 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.

3

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.

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.

A 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 <u>P65Warnings.ca.gov</u>.

RECOGNITION: In accordance with ICC-ES Evaluation Report ESR-1844, HardiePanel® vertical 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. HardiePanel vertical siding is also recognized for application in the following: City of Los Angeles Research Report No. 24862, State of Florida Product Approval FL#13223, 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.



Additional Information

RAINSCREENS

Note: James Hardie has a capillary break requirement when installing HardiePanel on a Multi-Family/Commercial project. Please visit jameshardiepros.com for further information.

The Optional Use of Rain Screen Systems:

James Hardie will support the use of its exterior siding products with rainscreen systems, but does not take responsibility for the entire wall assembly or system. James Hardie expects the designer or builder using our components as part of the rainscreen system to:

- Adhere to all the installation requirements listed in the relevant product installation instructions.
- Provide adequate details for water management.
- Make the decision about the use of rainscreen.
- James Hardie products does not recommend "drainage mats" or "drainage boards" to provide the necessary capillary break behind our siding. These products can compress during the installation process, impairing the drainage channels and further causing a "wavy" appearance in the plank or panel products.
- Understand the interaction between system components and how each of the components in the system interacts.
- Design of the building envelope accounting for both interior and exterior moisture control.

Installation Over Furring:

When installing James Hardie Siding products over furring the question arises what thickness of furring can be used as an alternate to normal metal or wood studs specified in the ESR 1844 & 2290 Report. General rule of thumb is, the specific ESR 1844 & 2290 fastener must be installed into a material that has the same or better holding power than that specified in the ESR 1844 & 2290 and with the same penetration as the ESR 1844 & 2290 fastener.

Note: The ESR 1844 & 2290 is the primary code compliance document James Hardie utilizes, but for other common applications and/or products, additional code compliance documentation and/or fastener specifications may exist. For special circumstances out side the scope of the ESR 1844 & 2290, please contact James Hardie's Technical Services. When reviewing the following details for attaching to wood furring or framing, an important consideration is that the fastener chosen must be fully encompassed by a wood substrate - the furring may count as all or part of the necessary penetration if it has been proven that the furring and/or wood substrate has the same or better holding power as a timber stud.

Design responsibility

In all cases it is the sole responsibility of the architect, envelope engineer or specifier to identify moisture related risks associated with any particular building design and to make any appropriate adjustments or modifications to the installation guidelines given by manufacturers. Wall construction and design must effectively manage moisture, considering both the interior and exterior environment of the building.

Attaching lap siding to wood furring:

When attaching lap siding products over wood furring, the typical fastener used is the 1¼ in. long No. 11 ga. roofing nail, blind nailed. This fastener is going to be the shortest fastener approved for fastening lap siding products, therefore the furring must be a minimum of 0.75 in thick to achieve the same values as ESR 2290 Table 4 states for the 11 ga. 1¼ in. roofing nail given plank reveal, stud spacing, building height and exposure category.



Safely Cutting and Fastening

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HardieSoffit® Panels

HardiePlank[®] Lap Siding

HardieShingle[®] Siding

RAIN SCREENS

Attaching lap siding to steel furring:

When attaching lap siding products to metal furring, the steel furring must be 20 gauge (33 mils) minimum to 16 gauge (54 mils) maximum. A fastener should be chosen out of the ESR 2290, Table 4, which is approved for attaching to steel framing. Two general rules that should be considered when choosing a fastener is that a nail (pin) must penetrate steel furring 1/4 in, and screws must penetrate steel furring 3 full threads. Therefore, if the rules for steel fastening are followed - given plank reveal, stud spacing, building height, and exposure category the values are the same as ESR 2290, Table 4 states for the chosen fastener.



Attaching panel siding to wood furring:

When attaching panel siding products over wood furring, the typical fastener used is the 6d common 2 in. long nail. This fastener is going to be the shortest fastener approved for fastening panel siding products into wood, therefore the furring must be a minimum of 1-11/16 in thick to achieve the same values as ESR 1844, Table 4, given stud spacing, building height, and exposure category.

It is deemed an acceptable practice to not fasten along the top and bottom plates for the 5/16 in HardiePanel configurations listed in the ESR 1844, Table 4 using the following fastener type:

- 0.091 in. shank X 0.225 in HD X 1.5 in long ring shank nail
- Min No. 8 X 0.311 HD X 1 in. ribbed bugle head screw
- 0.10 X 0.25 in HD X 1.5 in long ET&F pin or equivalent
- 6d common 2 in. long nail

Conditions of use:

- This practice is acceptable for transverse load only. •
- This practice is not acceptable for racking shear values or in-plane forces other than perpendicular/normal wind forces.
- All vertical joints shall occur over framing.
- All other James Hardie Installation Requirements shall be followed.



Attaching panel siding to steel furring:

When attaching panel siding products to metal furring, the steel furring must be 20 gauge (33 mils) minimum to 16 gauge (54 mils) maximum. A fastener should be chosen out of the ESR 1844, Table 4, which is approved for attaching to steel framing. Two general rules that should be considered when choosing a fastener is that a nail (pin) must penetrate steel furring 1/4 in, and screws must penetrate steel furring 3 full threads. Therefore, if the rules for steel fastening are followed - given stud spacing, building height, and exposure category – the values are the same as ESR 1844, Table 4 states for the chosen fastener.



ATTACHING JAMES HARDIE PRODUCTS TO INSULATED CONCRETE FORMS (ICF)

Considering the proprietary nature of Insulated Concrete Forms (ICF) and the number of ICF manufacturers currently selling product in the US and Canada, James Hardie Building Products cannot calculate or determine the proper fastener for each type of plastic or metal cross-tie flange being used in the field. James Hardie offers the following as a guide to determine the correct siding fastening to be used with the respective ICF system chosen for the project in question.

- 1. Determine the projects basic wind design, including basic wind speed, wind exposure category, and mean roof height. Find the fastener and frame type within James Hardie's ICC-ES Product Evaluation Report (e.g. ESR 1844 & 2290) that will meet the project's basic wind design.
 - a. Take note of the head diameter, shank diameter, and fastener length for the fastener.
 - **b.** Take note of the frame type and frame spacing.



- 3. Go to the ICF system manufacturer and find a fastener that is similar in dimension to the fastener from step 2.1 above.
- **a.** Basically, the bearing area under the ICF fastener head shall be the same as or greater than the bearing area under the James Hardie fastener head from step 2.
- **4.** Since the James Hardie siding product has to be attached to a structural member, in this case the ICF cross-tie flange, the steps below shall be followed.
 - **a.** The onus is on the ICF system manufacturer to demonstrate that their ICF cross-tie flange holds fasteners, screws or nails, the same as wood or steel framing hold screws or nails.
 - **b.** ICF fastener allowable withdrawal load capacity (applicable factor of safety applied) may be found in an ICC-ES Product Evaluation for the given ICF manufacturer's products, OR
 - **c.** The ICF manufacturer may have testing that shows their fastener's allowable withdrawal load capacity (applicable factor of safety applied) from their cross-tie flange.
- **5.** For the fastener from step 2, a registered design professional shall calculate the allowable withdrawal load (factor of safety applied) from the frame type noted in step 2.2.
- **6.** A registered design professional shall then make an equivalency statement comparing the ICF fastener withdrawal (step 4.1.1 or step 4.1.2) versus the fastener withdrawal from step 5.
- 7. When the ICF cross-tie flange spacing differs from the James Hardie frame spacing in step 2.2, a registered design professional shall calculate the maximum siding fastener spacing into the cross-tie flange needed to resist the applicable basic wind speeds published in James Hardie's ESR 1844 & 2290 for the fastener and design from step 2.
- 8. When required by the code official and once in possession of the information gathered in the steps above it is the responsibility of the property owner, design professional, contractor, or installer to make his or her case to the Building Official¹.

¹The Building Official reserves the right to approve alternate materials, design and methods of construction, 2006 International Building Code® Section 104.11, 2006 International Residential Code® Section R104.11, and 1997 Uniform Building Code™ Section 104.2.8.



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HardieSoffit® Panels

HardiePlank[®] Lap Siding

HardieShingle® Siding

HardiePanel[®] Vertical Siding

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Appendix A (cont.)

ATTACHING HARDIEPLANK[®] LAP SIDING AND HARDIETRIM[®] PRODUCTS TO CONCRETE MASONRY UNITS (CMU)

The application of HardiePlank[®] Lap Siding and HardieTrim[®] boards to masonry construction complying with local building codes using Concrete Masonry Units (CMU) complying to ASTM C 90 can be achieved by using one of the following two methods of attachment. All other product specific installation requirements which are not outlined below must be followed.

Method 1: Attachment Over Furring

Attach over furring with adequate thickness to allow attachment with approved fastening methods according to local building codes and code compliance documentation. Furring must be attached to ensure it can transfer the wind loads and other necessary forces back to the structure. The mechanical connection of the furring to the structure is the responsibility of the Licensed Design Professional. James Hardie Building Products has no comment on the load carrying capacity of the furring to framing connections.



Method 2: Attachment Directly to CMU

Attach directly to masonry with approved fastening method according to local building codes and code compliance documentation. Refer to and follow local building codes for water resistive barrier requirements.



Fastening to CMU

For information on fastening James Hardie products to CMU refer to ESR 1844 & 2290.

Attachment of HardieTrim[®] boards

HardieTrim boards can be fastened using hardened finish nails designed for masonry construction. For more information refer to the HardieTrim section of this guide.

WEATHER BARRIER & RIGID FOAM

- When using a weather resistive barrier (WRB) in conjunction with rigid foam insulation, the WRB can be installed underneath the foam as shown, or over the top if more convenient
- Regardless of where the WRB is placed all flashings must be • incorporated into the WRB and drainage plane.
- ٠ Some rigid foam insulation products are manufactured with tongue & groove or shiplap joints and can be used as the WRB when properly installed and sealed. When using rigid foam insulation as the WRB refer to manufacturers installation instructions.

Trim

Depending upon the reveal around windows, doors, & penetrations, thickness of foam and the type and thickness of trim used there will be different techniques to install the siding and trim to ensure the foam is completely concealed.



Flashings

The Z flashing above all horizontal trim must be incorporated into the WRB regardless of WRB position. If the foam is being used per manufacturers instructions as the WRB, all flashings must be incorporated into the drainage plane such that it allows moisture to drain down and out.



Note: It is recommended to layout the rigid foam insulation such that vertical joints do not occur at the corners of window and door openings or overs if possible.

Panels

HardieShingle[®]

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HardiePlank[®] Lap Siding

JOINT FLASHING WITH HARDIEPLANK® LAP SIDING

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

- A. Joint Flashing (James Hardie recommended)
- B. 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.}
- C. "H" jointer cover Flashing behind butt joints provides an extra level of protection against the entry of water at the joint.

James Hardie recommends 6 in. wide flashing that overlaps the course below by 1 in. Some local building codes may require different size flashing. Joint-flashing material must be durable, waterproof materials that do not react with cement products. Examples of suitable material include finished coil stock and code compliant water-resistive barriers. Other products may also be suitable.

The reasons for this are:

1. The use of joint flashing behind field butt joints is an approved joint treatment method as described in the 2006 International Building Code and is recognized by James Hardie and experts across the building industry to be a superior method.

"1405.17.2 Horizontal lap siding. Lap siding shall be lapped a minimum of 1 1/4 inches (32 mm) and shall have the ends sealed with caulking, covered with an H section joint cover or located over a strip of flashing."

Experts across the industry recognize flashings as an effective and responsible method for draining a wall system:

"The fundamental principle of water management is to shed water by layering materials in such a way that water is directed downwards and outwards out of the building or away from the building. The key to this fundamental principle is drainage. The most elegant expression of this concept is a flashing. Flashings are the most under-rated building enclosure component and arguably the most important."

EEBA (Energy & Environmental Building Association™) Water Management Guide By Joseph W. Lstriburek, Ph.D., P.eng. June 2004.

2. Reduced maintenance required by the home owner – It is recognized by James Hardie, several caulking manufacturers, experts across the industry, and experienced home owners that when caulking is used at field butt joints, maintenance will be required. Depending on the specific product and the application, caulked field butt joints will need to be maintained to guarantee continued performance over the life of the building. In addition, several sealant/caulking manufacturers recommend against using their products at butt joints in fiber cement siding for many of the reasons discussed here.





Do not use caulk on HardiePlank® lap siding with ColorPlus® technology

3. Improved appearance – When installed properly, flashing at a field butt joint can create a better looking joint. James Hardie recommends butting field joints together in moderate contact which achieves a more continuous looking joint. When utilizing a caulked butt joint, a gap specified by the caulk manufacturer must be left at the joint. Over time as the caulk ages, this joint can become pronounced on the wall and stand out.

HardiePanel[®] Vertical Siding

General Product Information

JAMES HARDIE REQUIREMENTS FOR ALTERNATE FASTENERS AND METHODS OF FASTENING

The fastening requirements for each product are stated in one or more of the following technical documents and in some cases fastener products may be referenced. Below are the steps that can be used to demonstrate an alternate fastener's equivalency to the James Hardie published fastening requirements.

- 1. It is the responsibility of either the property owner, design professional, contractor, or installer to consult:
 - a. The fastener Manufacturer for a Product Listing Specification or Code Compliance report that covers the installation method in question, or;
 - b. A licensed Architect or Professional Engineer to make an equivalency statement linking the alternate fastener (or fastening method) to the fastening requirements published within the relevant James Hardie technical document;
- 2. Once in possession of the information gathered in step one it is the responsibility of the property owner, design professional, contractor, or installer to make his or her case to the Building Official'

¹The Building Official reserves the right to approve alternate materials, design and methods of construction, 2006 International Building Code[®] Section 104.11, 2006 International Residential Code Section R104.11, and 1997 Uniform Building Code Section 104.2.8. All national, state, and local building code requirements must be followed and where they are more stringent than the James Hardie installation requirements, state and local requirements will take precedence.

ESR-1844 & 2290 Report

Appendix B

General Product

General Installation Requirements

Finishing and Maintenance

HardieShingle[®] Siding

HardiePanel[®] Vertical Siding

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Estimating Siding

All houses can be broken down to triangles, rectangles, and squares. Using these simple shapes it is very easy to estimate the amount of siding required.

- 1. Break down the portions of the house to be sided into the simple shapes (squares, rectangles, triangles) Figures 12.1 - 12.4.
- 2. Determine the height and width of each shape.
- 3. Multiply height x width to determine square footage. For triangles divide the total by 2.
- 4. Add all of the square footage numbers together.
- 5. Subtract large items such as garage doors, large doors, large windows, and banks of windows from total. Do not remove small windows, doors, vents, or other small areas not being sided.
- 6. Total all numbers. This gives you the total covered area.
- 7. Use the coverage charts located in this section to determine the number needed.
- 8. Add a minimum of 5% for waste. If there are multiple (3 or more)gables, chases, bump outs, or dormers add 10%,*

* Material for starter strip is included in the calculation for waste

Trim

Number of HardieTrim® Boards:

Trim is applied to corners and around doors and windows. Trim is also used for fascia board, rake board, band board, frieze board and other details.

- 1. Determine which areas are to be trimmed.
- 2. Measure all openings to be trimmed including doors, windows, vent openings, corners (inside and outside), and other areas.
- 3. Measure for fascia, rakes, and frieze boards.
- 4. Add the lengths for corners, fascia, rakes, and frieze and add 5% for waste.
- 5. Add the lengths for window and door trim and add 10% for waste.
- 6. Add the total from lines 4 and 5 to determine the amount of trim needed.

The estimation methods in this section are meant as a guide. James Hardie does not assume responsibility for over or under ordering of product.



B.5

Corner

Door

Trim

HardiePlank[®] Lap Siding Coverage Chart* (number of planks)

Coverage Area	Plank Width (in)					
(onuoro foot)	W. (in) 5.25	6.25	7.25	8.25	9.25	12
(square leet)	Exp. (in) 4	5	6	7	8	10.75
100	25	20	17	14	13	9
200	50	40	33	29	25	19
300	75	60	50	43	38	28
400	100	80	67	57	50	37
500	125	100	83	71	63	47
600	150	120	100	86	75	56
700	175	140	117	100	88	65
800	200	160	133	114	100	74
900	225	180	150	129	113	84
1000	250	200	167	143	125	93
1100	275	220	183	15/	138	102
1200	300	240	200	100	150	101
1300	325	200	217	180	103	121
1400	350	280	233	200	1/5	130
1600	400	220	200	214	200	140
1700	400	340	207	223	200	149
1800	425	360	200	243	215	167
1900	430	380	317	271	238	177
2000	500	400	333	286	250	186
2100	525	420	350	300	263	195
2200	550	440	367	314	275	205
2300	575	460	383	329	288	214
2400	600	480	400	343	300	223
2500	625	500	417	357	313	233
2600	650	520	433	371	325	242
2700	675	540	450	386	338	251
2800	700	560	467	400	350	260
2900	725	580	483	414	363	270
3000	750	600	500	429	375	279

HardiePanel® Vertical Siding Coverage Chart* (number of panels)

Coverage Area	Panel Size (ft)			
(square feet)	4x8 (32SF)	4x9 (36SF)	4x10 (40SF)	
$\begin{array}{c} 100\\ 200\\ 300\\ 400\\ 500\\ 600\\ 700\\ 800\\ 900\\ 1000\\ 1000\\ 1000\\ 1000\\ 1200\\ 1300\\ 1400\\ 1500\\ 1600\\ 1700\\ 1800\\ 1900\\ 2000\\ 2100\\ 2000\\ 2100\\ 2000\\ 2100\\ 2000\\ 2300\\ 2400\\ 2500\\ 2600\\ 2700\\ 2800\\ 2900\\ 3000\\ \end{array}$	$\begin{array}{c} 4\\ 7\\ 10\\ 13\\ 16\\ 19\\ 22\\ 25\\ 29\\ 32\\ 35\\ 38\\ 41\\ 44\\ 47\\ 50\\ 54\\ 57\\ 60\\ 63\\ 66\\ 972\\ 75\\ 79\\ 82\\ 85\\ 88\\ 91\\ 94\end{array}$	3 6 9 12 14 15 20 23 25 28 31 37 39 25 28 31 37 9 25 28 31 37 9 25 28 31 37 9 25 28 31 37 9 25 26 53 56 9 24 67 73 75 81 81 81 81 81 81 81 81 81 81 81 81 81	$\begin{array}{c}3\\5\\8\\10\\13\\15\\18\\22\\28\\30\\33\\58\\40\\43\\45\\48\\50\\55\\58\\60\\35\\58\\60\\35\\58\\60\\73\\75\end{array}$	

Nail Coverage Chart** (number of nails)

Coverage Area	Plank Width (in)						
(square feet)	Width (in) 5.25 Exposure (in) 4	6.25 5	7.25 6	8.25 7	9.25 8	12 10.75	
100	250	200	166	143	125	93	
500	1250	1000	830	715	625	465	
1000	2500	2000	1660	1430	1250	930	

The estimation methods in this section are meant as a guide. James Hardie does not assume responsibility for over or under ordering of product. *Coverage chart does not include waste. ** Number of nails given are for building framed 16 in o.c.

Tools for Cutting and Fastening

Working Safely

General Fastener Requirements Finishing and Maintenance

HardieWrap® HardieTrim® Weather Barrier Boards/Battens

HardieSoffit[®] Panels

HardiePlank[®] Lap Siding

HardieShingle® Siding

HardiePanel[®] Vertical Siding

Appendix/ Glossary

Working Safely

Tools for Cutting and Fastening

General Installation Requirements

Appendix B (cont.)

HardieShingle° Siding

HardieShingle Staggered Edge Notched Panel Coverage

Panels are available in 48 in lengths. Pieces needed for one square (100 sq. ft) of product coverage = approximately 50, (depending on ratio of length to height of wall) based on maximum exposure of 6 in

HardieShingle Straight Edge Notched Panels Coverage

Panels are available in 48 in lengths. Pieces needed for one square (100 sq. ft) of product coverage = approximately 43, (depending on ratio of length to height of wall) based on maximum exposure of 7 in.

HardieShingle Half-round Notched Panel Coverage

Panels are available in 48 in lengths. Pieces needed for one square (100 sq. ft) of product coverage = approximately 43, based on a maximum exposure of 7 in.

HardieShingle Individual Shingle Coverage*

Shingles are available in 4.2 in, 5.5 in, 6.75 in, 7.25 in and 10 in widths, Bundles needed for one square (100 sq. ft) of product coverage:

Shingle Width # of Bundles (5 in Exp.)# of Bundles (7 in Exp.) Pieces per Bundle (5 in Exp.)Pieces per Bundle (7 in Exp.)

4.2 in.	3	3	20	15
5.5 in	6	6	20	15
6.75 in	6	3	20	15
7.25 in	6	6	20	15
10 in	3	3	20	15

* Individual shingles are not available in all areas. Check you local dealer for availability.

HardieSoffit[®] Panels

- For 12 in. and 16 in width soffits: Divide total lineal footage of soffit and/or eaves by 12.
- For 24 in width soffits: Divide total lineal footage of soffit and/or eaves by 8.

HardieSoffit® Panels

HardiePanel[®] HardieShingle[®] HardiePlank[®] Vertical Siding Siding Lap Siding

Glossary of Building Terms

Back Roll - To roll over a freshly spray painted surface with a roller.

Back Sealing/Priming - Back sealing and back priming are used interchangeably in the field and refer to the act of applying a sealer or primer to the back of a cladding material to minimize the potential for water absorption through the backside of the product.

Band Board - A decorative piece of trim placed between two floors along the rim joist.

Bevel Cut - See weather cut

Blind Nailing - The action of placing a fastener through the top edge of lap siding that will be covered by the next course of siding.

Bump Out - A built out protrusion from a building.

Butt Joint - To place materials end-to-end or end-to-edge without overlapping. Also known as a field joint.

Caulk - A compound used to fill cracks, gaps, seams and joints.

Chase - A framed enclosed space around a flue pipe or a channel in a wall, or through a ceiling for something to lie in or pass through.

Course - A row of planks, one plank wide running the length of the house.

Dormer - A gabled extension built out from a sloping roof to accommodate a vertical window.

Drip Cap - A molding or metal flashing placed on the exterior topside of a door or window frame to cause water to drip beyond the outside of the frame.

Drip Edge - A metal or vinyl flashing placed on the top edge of the roof sheathing which directs water away from the structure to prevent seepage under or behind the exterior trim or fascia.

Eave - The lower part of the roof that projects over the exterior wall assembly.

Electro-Galvanized - Covered with zinc using a plating process.

Face - The side of the siding, trim, or soffit showing once the product has been installed.

Face Nailing - The action of placing a fastener through the overlap of a plank. The fastener will be visible.

Fascia Board - A trim board attached to the ends of the rafters.

Finished Grade - The level at which the ground surface meets the foundation of a building.

Flashing - A thin flat metal positioned under/behind roofing, windows, doors, corner posts, etc. to keep draining water from penetrating the house.

Frieze Board - A horizontal member connecting the top of the siding with the soffit

Furring/Furring Strip - Furring strips are long, thin strips of wood, metal or Fiber Cement used to make backing surfaces to support the finished surfaces.

Gable - The end of a wall that is created when a roof line is pitched and slopes in two directions.

Galvanized - Covered with zinc. Either hot-dipped or electro-plated.

Grade - The height of the ground on which something stands.

Horizontal - Parallel to the horizon; on a level.

Joint Flashing - An additional weather resistive barrier placed behind a butt joint.

Lap - To over lap a course of siding with another course of siding.

Level - A position of measurement truly and exactly horizontal, 90° from a plumb surface.

Light Block - Decorative trim item placed under light fixtures and other exterior fixtures.

Miter - To make a diagonal cut, beveled to a specific angle 45° and 22 1/2° are common.



Working Safely

HardiePanel® Vertical Siding

Appendix/ Glossary

Appendix C (cont.)

Mud Sill - A building member resting and normally attached to the foundation of a building running around the perimeter of the building. Also known as sill plate.

OSB - Oriented Strand Board. A common type of structural panel sheathing.

PEL - Permisible Exposure Limit. The maximum daily exposure level to respirable silica. OSHA's Personal Exposure Limit is 0.05 mg/m³.

Plumb - A position of measurement truly and exactly vertical, 90° from a level surface.

Plunge Cut - The act of driving a saw into the body of a material.

Rafter Tail - The end of a rafter extending past the wall assembly.

Rain Screen Wall - Consists of an exterior cladding, a cavity behind the cladding

typically created through the use of furring strips for the purpose of drainage and

venting to the outside; an innerwall plane incorporating a weather resistive barrier.

Rake Board - Decorative trim placed at an angle.

Rigid Sheathing - Plywood or OSB.

Rim Joist - The board that the rest of the joists are nailed to. It runs the entire perimeter of the house.

Rip Cut - Cut along the grain, usually lengthwise on a board.

Scroll Work - Decorative trim work.

Sheathing - Sheets of plywood, gypsum board, or other material nailed to the outside face of studs as a base for exterior siding.

Shim - A building material, usually wood, used to even a surface.

Silica - Mineral that is composed of silicon dioxide, SiO2.

Speed Square - Triangle shaped measuring device used in a variety of framing and siding applications.

Stage - To deliver, stack, or store material in a specific location.

Starter Strip - An accessory used under the first course of siding to provide a consistent plank angle.

Sub-Fascia - Framing member attached to the rafter tails used to support the fascia or used to pad out the fascia.

T-Shed – A shed with a single vertical wall and a roof that hangs off that wall on either side. The cross section of the shed is shaped like a 'T'.

Vertical - Being or situated at right angles to the horizon; upright.

Weather Cut- 15° to 45° cut used to join two boards.

Weather-Resistive Barrier- A building paper that protects building materials from exterior water penetration.

Z-Flashing- A piece of flashing bent into the shape of a "z". Used over window trim, band boards, panel intersections, and other vertical surfaces.



Working Safely

Tools for Cutting and Fastening

HardieSoffit[®] Panels

HardiePlank[®] Lap Siding

HardieShingle[®] Siding

HardiePanel[®] Vertical Siding

Appendix D

Code References

Note: All building work must be in accordance with the applicable local building codes. The following is a list of the key code clauses. It is provided as a reference tool and not intended to be a substitute for proper design of approved construction. ASTM E1825 also provides guidance on the evaluation of materials, products an systems used in exterior wall construction.

Site and Foundations

2003,2006,2009,2012, 2015 International Building Code Chapter 18 Foundations and Retaining Walls 1803.3 (03,06) Site grading; 1804.3 (09,12) Site grading; 1804.4 (15) Site grading

2003 2006, 2009, 2012, 2015 International Residential Code for One- and Two- Family Dwellings Chapter 4 Foundations R401.3 Drainage

Ground Clearances

2003, 2006, 2009, 2012, 2015 International Building Code Chapter 18 Foundations and Retaining Walls 1803.3 (03,06) Site grading; 1804.3 (09,12) Site grading; 1804.4 (15) Site grading Chapter 23 Wood 2304.11.2.2 (03, 06, 09, 12)Wood supported by exterior foundation walls.

2304.12.1.2 (15) Wood supported by exterior foundation walls 2003, 2006, 2009, 2012, 2015 International Residential Code for One- and Two- Family Dwellings Chapter 3 Building Planning Chapter 4 Foundations R404.1.6 Height above finished grade

Moisture Management

2003, 2006, 2009, 2012, 2015 International Building Code Chapter 14 Exterior Walls 1404.1 General 1404.2 Weather-resistive barrier 1405.1 General 1405.2 Weather Protection 1405.3 Flashing (03,06) 1405.4 Flashing (09,12, 15) 1405.17 (03,06) Joints 1405.16 (09,12, 15) Joints 2003, 2006, 2009, 2012, 2015 International Residential Code for One- and Two- Family Dwellings Chapter 7 Wall Covering R703.2 Weather-resistant barrier R703.8 Flashing R703.10 Joints

Wall Construction

2003, 2006, 2009, 2012, 2015 International Building Code Chapter 22 Steel Chapter 23 Wood

2003, 2006, 2009, 2012, 2015 International Residential Code for One- and Two- Family Dwellings Chapter 6 Wall Construction R602.10 Wall bracing

Fastening

2003, 2006, 2009, 2012, 2015 International Building Code Chapter 14 Exterior Walls 1405.15 (03,06) Fiber cement siding 1405.16 (09,12, 15) Fiber cement siding 1406.2.2 (03, 06) Architectural trim 1406.2.2.2(09) Trim 1406.2 (12, 15) Combustible exterior wall coverage

2003, 2006, 2009, 2012, 2015 International Residential Code for One- and Two- Family Dwellings Chapter 7 Wall Covering R703.4 (03, 06, 09, 12) Attachments R703.3 (15) Nominal thickness and attachments General Product Informatio

ESR Reports Online

General Product Information

> Working Safely

Tools for Cutting and Fastening

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To find the most current ESR reports please visit <u>www.icc-es.org</u> and reference below for the corresponding ESR number for that product.



ESR-1844 & 2290 Report







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1.866.442.7343

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November 12, 2021 (Revised January 13, 2022; Revised February 22, 2022)

Mr. William Hurley Town Engineer Town of Fairfield 725 Old Post Road Fairfield, CT 06824

Re: Post Road (US Route 1) and Reef Drive Drainage System Study Fairfield, Connecticut SLR #141.11342.P0035

Dear Bill,

Many businesses in the downtown Fairfield commercial district have reported roadway and first floor flooding during heavy precipitation events from an overwhelmed and surcharging stormwater drainage system. SLR International Corporation (SLR) appreciates the opportunity to submit this proposal for engineering support services to assist the Town of Fairfield (Town) in identifying and analyzing potential mitigation solutions to these flooding issues, which have been reported in the area along Post Road, generally between Thorpe Street and Reef Road, in Fairfield, Connecticut

SLR proposes to perform survey and hydraulic modeling of the existing drainage system serving the identified section of Post Road, originating north in the Metro-North train station parking area, and flowing southwest through Sherman Street, Sherman Court, Catherine Street, and Hurt Street. The goal of the hydraulic modeling will be to identify the possible causes of flooding in the neighborhood and to use this information to develop and evaluate potential mitigative measures and improvements that can reduce the severity and frequency of the flooding events.

The proposed analysis would begin with data collection, including survey and base mapping, field investigations of the drainage system, field investigation of the existing tide gates, and hydrologic and hydraulic analysis of the drainage system. Based on the results of the analysis, up to two conceptual flood mitigation scenarios will be developed for discussion and vetting with project stakeholders. Potential flood mitigation scenarios may include one or a combination of the following measures:

• Reconstruction of the existing storm sewer system with larger pipe capacities to increase conveyance capacity of the system

- Construction of a new secondary storm sewer system to capture and convey excess runoff while maintaining the existing storm sewer system
- Installation or repair of tidal gates at the stormwater outfall at Pine Creek to eliminate tidal influence on the drainage system

The results of the study will be summarized in a report presenting the conceptual alternatives and their predicted performance for Town and stakeholder review.

SCOPE OF WORK

Task 1.0 – Field Survey and Data Collection

- 1.1 <u>Property Owner Outreach</u> SLR will draft an introductory letter to be sent to the property owners on Town letterhead, introducing the project team, describing the anticipated work and goals of the study, and requesting any photographs, measurements, or descriptions of past flooding that may be helpful to the study. The collected information will be used to help calibrate and "truth" the hydraulic modeling described in Task 2.0.
- 1.2 <u>GIS Data</u> Obtain and review available mapping of the area. This shall include Geographic Information System (GIS) mapping of topography, drainage basins, utilities, parcel boundaries, impervious coverage, soil types, zoning districts, storm drainage system structures and pipes, and other mapping as available from the Town or the State of Connecticut. Mapping will be compiled into a comprehensive base map.
- 1.3 <u>Utilities</u> Contact local utility companies to identify the location of existing water, sewer, gas, electric, telephone, and cable facilities within the project area. The horizontal and vertical locations of such facilities will be determined to the extent possible based on utility company information.
- 1.4 <u>Site Assessment</u> Perform a visual observation of the location and condition of catch basins and storm drainage manholes as presented in the Town's mapping. During this site assessment, the horizontal location of key drainage structures associated with the drainage system of the study area will be determined using Global Positioning System survey. At the same time, pipe sizes and types will be measured, condition of the structure assessed, and the depth from the top of frame (or structure, in the case of manholes) to the pipe invert will be measured.
- 1.5 <u>Maintenance Assessment</u> Prepare a list of recommended maintenance requirements if any are observed during field investigations. This will be limited to maintenance work that should be performed immediately, such as catch basin cleaning, and would not include improvements that require engineering analysis or design. Recommendations will be formalized in the final report.

SLR

- 1.6 <u>Field Survey</u> Perform field survey of key drainage system components to determine the elevation of the top of frame or invert elevations, ground or bulkhead elevations, or additional information needed for the drainage analysis. Supplemental survey will be limited to the areas of known flooding. The field survey will be along two existing drainage routes. First area will encompass approximately 2,000 linear feet along the Post Road between Miller Street and Thorpe Street and the overland drainage running through the back yards to the east of and parallel to Thorpe Street. The second area will encompass approximately 2,500 linear feet along Sherman Street West, Sherman Street, Hurd Street and then overland to the outfall at Pine Creek. Two days of field survey time will be budgeted for this task.
- 1.7 <u>Tidal Monitoring</u> Deploy one water pressure (stage) gauge and data collector at the primary outfall for the downtown area drainage system into Pine Creek for a period of 1 month. The data collector will record tidal fluctuations in Pine Creek to establish tailwater conditions for the drainage system and to understand the effects of downstream self-regulating tide gates on the tidal amplitude in Pine Creek. The elevation of the tide gauge will be surveyed and adjusted to match into the NAVD datum.

Task 2.0 – Engineering Analysis

2.1 Existing Conditions Model – Identify potential upland causes of roadway flooding and develop a model of the drainage system affecting flooding in the study area. Modeling of the system will be developed using Bentley *StormCAD* software. Inputs to this model include the top of frame elevation of structures, pipe invert elevations, pipe sizes, pipe materials and geometry, and the area contributing flow to each structure. Watersheds will be delineated to each inlet in the model, and a Rational Method analysis will be used to estimate runoff to each structure. The generated flow rates will be used to analyze the existing pipe capacities. In evaluating existing drainage systems such as will be the case for this study, *StormCAD* will identify undersized drainage piping and roadway inlet capacity issues for the study area. Tidal conditions at the drainage system and reducing its capacity or effectiveness. Data summary tables and model output of the existing system capacities will be generated with profiles of the existing systems. The profiles and summary tables will be generated from the 2-, 5-, 10-, 25-, 50-, and 100-year events.

<u>Note</u>: In preparing the analysis of the existing drainage system it will be assumed that the pipes are in good condition and there are no blockages. The previously proposed video inspection of the pipe system was removed from this revised proposal as a cost savings measure requested by the Town.

- 2.2 <u>Proposed Mitigation Alternatives</u> Identify and analyze flood mitigation alternatives in the hydraulic model iteratively to find potential solutions that are both feasible and effective. For problem areas involving undersized piping, larger pipes or new outlets may be proposed. For problems involving inlet capacity on the roadway, additional inlets, increased size or additional pipes, bypass pipe system, tide gates, or modifications to the existing tide gates may be proposed.
- 2.3 <u>Concept Sketches</u> Develop conceptual-level sketches of up to two flood mitigation alternatives. This will include a plan view of the improvements along with a typical cross section or detail as necessary.

Task 3.0 – Techinical Report of Findings

- 3.1 <u>Cost Opinion</u> Prepare an Engineer's Opinion of Probable Cost based upon the conceptual-level designs presented in the report.
- 3.2 <u>Draft Technical Report</u> Prepare a written report describing the results of Tasks 1.0 and 2.0. The report will present the results of data collection efforts, *StormCAD* modeling, and identified drainage system improvements. A list of recommended maintenance requirements will be presented. Existing deficiencies and problem areas will be identified, and recommended improvements will be presented. Sketches of the recommended improvements will be presented. Anticipated permit requirements and opinions of construction costs will be presented. Provide copies of the draft memorandum to the Town for review and comment.
- 3.3 <u>Final Report</u> Modify the memorandum based on comments from the Town and provide up to five print copies and one electronic copy to the Town for its use.

Task 4.0 – Project Coordination Meetings

4.1 Attend up to six project coordination meetings. These meetings may be in person or virtual.

A direct cost allowance will be set up for out-of-pocket expenses associated with printing, reproductions, mileage, legal advertisement, and mailings. Payments will be made based on actual costs incurred.

<u> Task 5.0 – Design Phase</u>

- 5.1 Once the Town has selected the flood mitigation alternative to be designed, we will prepare design plans for regulatory approval. It is anticipated that the proposed drainage improvements will occur in the area of the existing drainage system surveyed in Task 1.6 above. If this is not the case, additional survey work beyond this scope of work may be necessary.
- 5.2 Upon receiving regulatory approvals, we will update the plans by incorporating the review comments.
- 5.3 Finalize the plans for construction purposes and prepare construction specifications.

TIME FOR COMPLETION

SLR will proceed with the services under this agreement promptly and diligently in accordance with the above scope following acceptance of this proposal. It is understood that this work may be subject to delays due to weather, stakeholder scheduling, strikes, or any other cause beyond the reasonable control of SLR. The estimated time required to complete the above-noted services is as follows:

Task 1.0 – Field Survey and Data Collection	8 weeks
Task 2.0 – Engineering Analysis	8 weeks
Task 3.0 – Technical Report of Findings	4 weeks
Task 4.0 – Project Coordination Meetings	Project Duration
Task 5.0 - Design Phase	10 weeks

PROFESSIONAL FEES

We will perform the services described above based on the fee schedule outlined below:

Task 1.0 – Field Survey and Data Collection	\$43,000
Task 2.0 – Engineering Analysis	\$38,000
Task 3.0 – Technical Report of Findings	\$21,000
Task 4.0 – Project Coordination Meetings	\$6,000
Task 5.0 - Design Phase	<u>\$90,000*</u>
Subtotal	\$198,000
Direct Expenses	<u>\$6,000</u>
Total	\$204,000

*Note: The estimated fee for Design Phase services has been prepared without the benefit of knowing the full extent of the proposed project. This fee may need to be revisited and revised upon the completion of Tasks 1-4.

STANDARD TERMS AND CONDITIONS

This proposal is subject to our Standard Terms and Conditions, which are attached hereto and incorporated herein.

EXCLUSIONS AND LIMITATIONS

In submitting this proposal, we make no representation that the project will receive all necessary regulatory approvals. The following work items are not included in this scope of work at this time:

- 1. Cultural resource assessments
- 2. Channel substrate samples or sieve analysis

- 3. Payment of permit application fees
- 4. Design documents other than those described above
- 5. Utility test pits
- 6. Flagging or police protection
- 7. Camera inspection of pipes or structures
- 8. Public outreach or stakeholder meetings
- 9. Geotechnical borings or subsurface exploration
- 10. Design of special structures such retaining walls or pump stations
- 11. Delineation of inland or tidal wetlands
- 12. Biological assessments or environmental impact studies, including hazardous waste assessments or evaluations for state or federally listed flora and fauna

Should any of the above items or any additional services be required, they can be provided on an hourly basis or for an agreed-upon lump sum fee.

ACCEPTANCE

If the above proposal meets with your approval, work may be initiated by signing a copy in the space provided below and returning it to us for our files.

We appreciate the opportunity to be considered for this project and look forward to your acceptance of our proposal and a continued pleasant and rewarding association.

Sincerely,

SLR International Corporation

Cel Hart

Ted Hart, PE Principal Civil Engineer, Associate Manager of Engineering

Jumes C. Phrong

James Murac, PE, CFM Senior Water Resource Engineer

Enclosure

11342.p0035.f2222.prop.docx

The above proposal and attached Standard Terms and Conditions are understood and accepted:

Ву _____

Date _____

(Print name and title)

SL R



November 12, 2021 (Revised January 13, 2022; Revised February 22, 2022)

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- 3.3 <u>Final Report</u> Modify the memorandum based on comments from the Town and provide up to five print copies and one electronic copy to the Town for its use.

Task 4.0 – Project Coordination Meetings

4.1 Attend up to six project coordination meetings. These meetings may be in person or virtual.

A direct cost allowance will be set up for out-of-pocket expenses associated with printing, reproductions, mileage, legal advertisement, and mailings. Payments will be made based on actual costs incurred.

<u> Task 5.0 – Design Phase</u>

- 5.1 Once the Town has selected the flood mitigation alternative to be designed, we will prepare design plans for regulatory approval. It is anticipated that the proposed drainage improvements will occur in the area of the existing drainage system surveyed in Task 1.6 above. If this is not the case, additional survey work beyond this scope of work may be necessary.
- 5.2 Upon receiving regulatory approvals, we will update the plans by incorporating the review comments.
- 5.3 Finalize the plans for construction purposes and prepare construction specifications.

TIME FOR COMPLETION

SLR will proceed with the services under this agreement promptly and diligently in accordance with the above scope following acceptance of this proposal. It is understood that this work may be subject to delays due to weather, stakeholder scheduling, strikes, or any other cause beyond the reasonable control of SLR. The estimated time required to complete the above-noted services is as follows:

Task 1.0 – Field Survey and Data Collection	8 weeks
Task 2.0 – Engineering Analysis	8 weeks
Task 3.0 – Technical Report of Findings	4 weeks
Task 4.0 – Project Coordination Meetings	Project Duration
Task 5.0 - Design Phase	10 weeks

PROFESSIONAL FEES

We will perform the services described above based on the fee schedule outlined below:

Task 1.0 – Field Survey and Data Collection	\$43,000
Task 2.0 – Engineering Analysis	\$38,000
Task 3.0 – Technical Report of Findings	\$21,000
Task 4.0 – Project Coordination Meetings	\$6,000
Task 5.0 - Design Phase	<u>\$90,000*</u>
Subtotal	\$198,000
Direct Expenses	<u>\$6,000</u>
Total	\$204,000

*Note: The estimated fee for Design Phase services has been prepared without the benefit of knowing the full extent of the proposed project. This fee may need to be revisited and revised upon the completion of Tasks 1-4.

STANDARD TERMS AND CONDITIONS

This proposal is subject to our Standard Terms and Conditions, which are attached hereto and incorporated herein.

EXCLUSIONS AND LIMITATIONS

In submitting this proposal, we make no representation that the project will receive all necessary regulatory approvals. The following work items are not included in this scope of work at this time:

- 1. Cultural resource assessments
- 2. Channel substrate samples or sieve analysis

- 3. Payment of permit application fees
- 4. Design documents other than those described above
- 5. Utility test pits
- 6. Flagging or police protection
- 7. Camera inspection of pipes or structures
- 8. Public outreach or stakeholder meetings
- 9. Geotechnical borings or subsurface exploration
- 10. Design of special structures such retaining walls or pump stations
- 11. Delineation of inland or tidal wetlands
- 12. Biological assessments or environmental impact studies, including hazardous waste assessments or evaluations for state or federally listed flora and fauna

Should any of the above items or any additional services be required, they can be provided on an hourly basis or for an agreed-upon lump sum fee.

ACCEPTANCE

If the above proposal meets with your approval, work may be initiated by signing a copy in the space provided below and returning it to us for our files.

We appreciate the opportunity to be considered for this project and look forward to your acceptance of our proposal and a continued pleasant and rewarding association.

Sincerely,

SLR International Corporation

Cel Hart

Ted Hart, PE Principal Civil Engineer, Associate Manager of Engineering

Jumes C. Phrong

James Murac, PE, CFM Senior Water Resource Engineer

Enclosure

11342.p0035.f2222.prop.docx

The above proposal and attached Standard Terms and Conditions are understood and accepted:

Ву _____

Date _____

(Print name and title)

SL R







MEMORANDUM OF UNDERSTANDING (MOU)

BETWEEN THE CITY OF BRIDGEPORT AND TOWN OF FAIRFIELD

CONCERNING

THE ROOSTER RIVER WATERSHED PROJECT

This is an Agreement between the City of Bridgeport and the Town of Fairfield for the purpose of reducing flooding from the Rooster River Watershed through the design and construction of floodwater detention areas and water containment areas to reduce the frequency and severity of flooding along the Rooster River ("the Project").

WHEREFORE, in or about 2018, Fairfield engaged the firm Milone and McBroom, subsequently known as SLR, (the "Engineering Consultant"), to evaluate the feasibility of creating floodwater storage/detention areas on open sites within the Rooster River Watershed. Seven sites were identified, including property owned by Bridgeport and known as the Fairchild Wheeler Golf Course, located within the town of Fairfield at 2390 Easton Turnpike. The Engineering Consultant proposed three potential areas within the Golf Course for the construction of a detention area.

WHERFORE, Bridgeport and Fairfield agree that it is mutually beneficial and in the best interests of each municipality to continue the engagement of the Engineering Consultant to develop the flood mitigation concepts on Bridgeport's property, perform any additional engineering analysis and advance the flood mitigation plans specifically as it relates to Bridgeport's property.

NOW THEREFORE, the Parties hereby clearly and specifically identify the roles and responsibilities of Bridgeport and Fairfield as they relate to design and construction of detention areas pursuant to a Plan for Flood Mitigation within the Rooster River Watershed on property owned by Bridgeport, specifically the property known as the Fairchild Wheeler Golf Course, as follows:

- 1. Fairfield shall remain solely responsible for payment of the Engineering Consultant's fees and costs.
- 2. Fairfield shall instruct the Engineering Consultant to invoice work solely pertaining to Fairfield Wheeler Golf Course separately and to deliver the invoices to Bridgeport.
- 3. Bridgeport shall pay to Fairfield the amount invoiced by the Engineering Consultant that solely pertains to work completed for Fairchild Wheeler Golf Course.
- 4. Fairfield shall procure through a competitive public bid process, compliant with the requirements of the American Rescue Plan Act ("ARPA"), construction
services for the entire project and enter into contract(s) for the Project including the work on Fairchild Wheeler Golf Course. Fairfield shall be responsible for payment of all services rendered and materials provided thereunder.

- 5. Fairfield shall ensure that Bridgeport is identified in all contracts as a third-party beneficiary and as an additional insured for all construction services and restoration work that impact Fairchild Wheeler Golf Course.
- 6. The construction contract(s) entered into by Fairfield shall require the contractor to separately invoice services and materials provided to Fairchild Wheeler Golf Course, which invoices shall be provided to Bridgeport. To the extent necessary, Fairfield shall seek appropriate change orders or amendments to its contract, to comply with the terms of this Agreement at its sole cost.
- 7. Solely with regard to construction services and materials provided at Fairchild Wheeler Golf Course, Bridgeport shall reimburse Fairfield for those services and materials delivered and invoiced.
- 8. Bridgeport's financial responsibilities and contribution ("Contribution") for the entire project, including but not limited to consulting engineering services, materials, and construction services, shall be limited to the aggregate and total sum of Seven Hundred and Fifty Thousand (\$750,000) Dollars. Bridgeport's Contribution shall be paid pursuant to an allocation approved within Bridgeport's federal ARPA funds. As to all Project expenses relating to Fairchild Wheeler Golf Course over the aggregate \$750,000, Fairfield shall be solely responsible and shall indemnify and hold Bridgeport harmless for any costs or expenses above its \$750,000 contribution.
- 9. Fairfield and Bridgeport shall work cooperatively on the Project, and Bridgeport shall not unreasonably withhold access to contractors related to the Project services.
- 10. This MOU shall be effective upon the date of the last signature of the authorized officials below and shall remain in effect until December 31, 2025, unless otherwise terminated.
- 11. It is understood that Fairfield has a budget of at least \$2 million approved for this project. It is understood that Bridgeport has an absolute budget maximum of \$750,000 approved for the Bridgeport portion of the Project.
- 12. Retention: All records must be retained in accordance with applicable federal, state, local and municipal laws, rules and regulations.
- 13. Compliance with General Statutes §7-339c:

- a. Any amendment to, termination of, or withdrawal from this MOU shall be mutual, in writing and signed by the Parties
- b. This MOU shall have no effect unless and until the legislative bodies of each municipality ratify the same after an opportunity for public comment.
- 14. The Within MOU may be countersigned and each signatory represents to the other authority to execute the same.
- 15. After the Project has been completed, Bridgeport shall be responsible for cleaning and routine maintenance of exterior, easily accessible detention area structures (not pipes) on golf course property. Both municipalities shall equally share the cost of repairs, improvements and more extensive maintenance/cleaning (pipes) of the detention system on the golf course property. Bridgeport shall not be responsible for maintenance, repair or improvement costs related to items and areas of the detention system that are not located on the Fairchild Wheeler Golf Course property.

AGREED and ACCEPTED:

CITY OF BRIDGEPORT

Joseph P. Ganim, Mayor Or his designee Dated:

TOWN OF FAIRFIELD

Brenda L. Kupchick, First Selectman Or her designee Dated: _____

SEWER INSTALLMENT AGREEMENT CARRIAGE DRIVE

We the undersigned Homeowners on Carriage Dr in Southport CT, (Homeowners) and the Fairfield Water Pollution Control Authority (WPCA), agree to the following terms and conditions for the installation of a sewer line on Carriage Drive (the Project):

- The cost of design plans, to be approved by Town Staff, will be paid entirely by Homeowners. The Homeowners will select a design firm from a pre-approved list of firms provided by the WPCA staff. The design will at minimum include monitoring of the line and soil testing. Homeowners have hired Cabezas-DeAngelis to complete the sewer line design (estimate attached) and Down to Earth for the required soil testing as approved by the town of Fairfield, CT (estimate attached).
- The Project is contingent upon Approval by town bodies including but not limited to the Purchasing Department, Board of Selectmen, Board of Finance and Representative Town Meeting.
- Fifty percent of the cost of the installation of the pipe in the street, inclusive of a 20% contingency, will be borne by the WPCA and participating Homeowners will be responsible for the other 50% on a pro-rata basis.
- The cost of paving will be borne by the WPCA and will meet town specifications or otherwise approved by the Director of Public Works.
- The cost to each Homeowner for the installation of the pipe, will be a fee paid over 20 years (bonded at the then existing Town rate) and secured by a lien on each Homeowner property pursuant to C.G.S. Section 7-253.
- > The Homeowner has the option to pay the balance in full at any time.
- Homeowners will pay the WPCA the \$4,250 connection fee upon hookup and once connected, the annual usage fee will be consistent with WPCA rates calculated by the water usage.
- > Homeowners will pay for any installation costs exceeding the 20% contingency.
- > Once connected, the annual usage fee will be consistent with WPCA rates calculated by the water usage.

I/We understand that any additional neighbors who reside on Carriage Dr now or in the future, who wish to connect to the installed sewer line, will be subject to the same 20-year, 20% lien certificate for the total of ½ of the installation cost.

Homeowner Name(s)

Co-owner

Co-owner

Owner Signature

Address: _____

Co-owner Signature

Co-owner Signature

Carriage Drive Sewer Extension Town of Fairfield

ENGINEER'S OPINION OF PROBABLE COST

Prepared by Cabezas-DeAngelis Engineering & Surveying 21-Oct-21

	Est.	Unit	Total
Item	Quantity	Cost	Cost
General Conditions/Traffic Control	1 LS	\$25,000.00	\$25,000.00
Survey Stake-out & As-Built Mapping	1 LS	\$10,000.00	\$10,000.00
Sawcut Existing Pavement	2,200 LF	\$5.00	\$11,000.00
Mill Ex. Pavement - 1 Inch	31,500 SF	\$1.00	\$31,500.00
Full-Depth Pavement Repair Including Base Material	3,050 SF	\$10.00	\$30,500.00
1-1/2 Inch Class 2 Overlay	31,500 SF	\$2.00	\$63,000.00
Install New Sanitary Manhole w/ Frame & Cover	3 Ea.	\$3,500.00	\$10,500.00
Install 4" PVC Lateral Including Trenching & Bedding Material	240 LF	\$40.00	\$9,600.00
Install 8" PVC Sewer Main Including Trenching & Bedding Material	830 LF	\$50.00	\$41,500.00
Connect New Piping to Ex. Stub at Manhole	1 Ea.	\$1,000.00	\$1,000.00
Topsoil, Seed and Restore Disturbed Areas	1,000 SF	\$1.00	\$1,000.00
SUBTOTAL			\$234,600.00
Mobilization at 5%			\$11,730.00
Overhead and Profit @ 15%			\$35,190.00
Contingency @ 5%			\$11,730.00
TOTAL			\$293,250.00
		SAY	\$295,000

Notes:

1. Assume traffic officers are not required (flagmen only).

2. Rock excavation not included. Assume de-watering of trenches is minimal.

3. Construction inspection services not included.

SUPPLEMENTAL RESOLUTION

WHEREAS, the Town of Fairfield (the "Town") has adopted at the request of the Water Pollution Control Authority ("WPCA") a Resolution entitled "A RESOLUTION APPROPRIATING \$2,400,000 FOR THE COSTS OF THE EAST TRUNK WETLANDS CROSSING PROJECT AND AUTHORIZING THE ISSUANCE OF BONDS TO FINANCE SUCH APPROPRIATION" (the "Resolution"); and

WHEREAS, the Resolution appropriated \$2,400,000 for costs associated with the East Trunk Wetlands Crossing Project (the "Project") and authorized the issuance of bonds (the "Bonds"); and

WHEREAS, while the Town is liable for the debt service on the Bonds, for internal accounting purposes, it is appropriate that the costs of the Project including debt service on the Bonds (the "Costs") be allocated to the WPCA; and

WHEREAS, the Town's WPCA has agreed to pay for the costs of the Project and the debt service on the Bonds authorized by the Resolution.

RESOLVED,

That the debt service on the Bonds as it becomes due shall be paid by the WPCA from its own funds and the obligation of the WPCA shall be set forth in a memorandum of understanding with the Town satisfactory to the Board of Selectmen.

East Trunk Wetlands crossing

Project cost estimate - 2,400,000

Town Share – None

- <u>BACKGROUND</u> The wetland crossing refers to the pipe that connects the East Trunk line through the new Metro Center train station to the East Trunk line on Kenwood Avenue. The Wetlands pipe is a 33-inch pipe connecting the 36-inch pipe on each side of the wetlands. The current configuration causes flows to bottleneck during heavy rain events and will not handle additional flows from future developments. .
- 2. <u>PURPOSE</u> To replace the existing 33-inch pipe with a new 36-inch pipe to alleviate restrictions
- 3. <u>DETAILED DESCRIPTION OF PROPOSAL</u> The pipe will be replaced with new 36-inch pipe that will connect the existing East Trunk line together in a smooth and unimpeded manner.
- 4. <u>RELIABILITY OF COST ESTIMATE</u> Cost on a scale of 1- 10, reliability is seven. Material costs have escalated and DB Engineering is investigating alternatives to conventional open trench pipe replacement.
- 5. <u>INCREASED EFFICENCY AND PRODDUCTIVITY</u> Removing the restriction will increase the flow rate at high flow times and allow additional sewer hook-ups
- 6. ADDITIONAL LONG RANGE COST None
- 7. ADDITIONAL USE OR DEMAND ON EXISTING FACILITIES None
- ALTERNATES TO THIS REQUEST Leaving 33-inch pipe will essentially block any expansion at the Metro Center.
- 9. <u>SAFETY AND LOSS CONTROL</u> Replacing the pipe will allow expansion at Metro Center, increasing revenue to the Town.
- 10. <u>ENVIROMENTAL CONSIDERATIONS</u> Soil borings have been taken to ascertain ground make-up and possible contaminants.
- 11. <u>INSURANCE</u> Contractors will carry the necessary insurance per the Town of Fairfield requirements.
- 12. <u>FUNDING</u> WPCA fund balance.
- 13. OTHER CONSIDERATIONS None
- 14. <u>APPROVALS</u> WPCF TBD BOS - TBD BOF - TBD RTM - TBD

SUPPLEMENTAL RESOLUTION

WHEREAS, the Town of Fairfield (the "Town") has adopted at the request of the Water Pollution Control Authority ("WPCA") a Resolution entitled "A RESOLUTION APPROPRIATING \$2,100,000 FOR THE COSTS TO UPGRADE THE FAIRFIELD BEACH ROAD PUMP STATION AND FORCE MAIN AND AUTHORIZING THE ISSUANCE OF BONDS TO FINANCE SUCH APPROPRIATION" (the "Resolution"); and

WHEREAS, the Resolution appropriated \$2,100,000 for costs associated with the upgrades to the Fairfield Beach Road pump station and force main project (the "Project") and authorized the issuance of bonds (the "Bonds"); and

WHEREAS, while the Town is liable for the debt service on the Bonds, for internal accounting purposes, it is appropriate that the costs of the Project including debt service on the Bonds (the "Costs") be allocated to the WPCA; and

WHEREAS, the Town's WPCA has agreed to pay for the costs of the Project and the debt service on the Bonds authorized by the Resolution.

RESOLVED,

That the debt service on the Bonds as it becomes due shall be paid by the WPCA from its own funds and the obligation of the WPCA shall be set forth in a memorandum of understanding with the Town satisfactory to the Board of Selectmen.

Fairfield Beach road Pump Station upgrade

Project cost estimate \$2,100,000

Town Share – None

- <u>BACKGROUND</u> Fairfield Beach road pump station was constructed in 1959 and is the first pumping station built in town. The station has had the pumps replaced in 2016; control panel was done in the late 90's and a force main repair in 2010, due to corrosion and wear. The internal piping, electrical equipment and structural components for stairs and ladders are original. A storm water pumping station was added to the grounds as well, to alleviate road flooding during high tides and storms, powered by station electric service and generator.
- 2. <u>PURPOSE</u> To upgrade and replace aged equipment and structural components of the station and force main to ensure continued and uninterrupted service to a critical part of sewer system near Long Island sound, to include protecting from flooding during major weather events.
- 3. <u>DETAILED DESCRIPTION OF PROPOSAL</u> Upgrade electrical and mechanical equipment below the 3ft + 100-year base flood elevation, as well as checking the existing structure to withstand the 100-year flood event. Replace the mid- level floor structure with steel framing and grating, replace hatches and ladders to present day safety standards. Replace the 2 existing pumps, piping, valves and control system. Add a third pump to the system with an included pump bypass provision that is accessible from ground level. Replace the stand-by generator with a new natural gas/propane fueled generator at an elevation to protect from flooding. Upgrade the wet well and dry well ventilation system. Replace the existing 14-inch force main with new.
- 4. <u>RELIABILITY OF COST ESTIMATE</u> Cost estimate on a scale of 1 to 10 is a 7. Price is adjusted from original cost estimate from 2018, which was 1.584,000. Material cost and supply chain interruptions have made costs of materials very volatile.
- <u>INCREASED EFFICENCY AND PRODUCTIVITY</u> Building will be up to code with the latest energy efficient pumps and controls. New piping and building upgrades will ensure long service life and protection from storms that could cause environmental impacts.
- 6. <u>ADDITIONAL LONG RANGE COST</u> Maintenance of the station will be bore by the WPCA out of the operating budget.
- 7. ADDITIONAL USE OR DEMAND ON EXISTING FACILITIES NONE
- 8. <u>ALTERNATES TO THIS REQUEST</u> No other alternatives other than upgrade to existing structure and equipment.
- 9. <u>SAFETY AND LOSS CONTROL</u> Safety will be improved to the building, equipment, personnel and the environment upon completion.
- 10. <u>ENVIROMENTAL CONSIDERATIONS</u> Will be addressed in construction documents and plans to properly protect Long Island Sound.
- 11. <u>INSURANCE</u> All selected participants will be required to carry the necessary insurance as directed by the Town of Fairfield
- 12. <u>FINANCING</u> Funded by the WPCA fund balance.
- 13. OTHER CONSIDERATIONS None
- 14. <u>APPROVALS</u> WPCA TBD

BOS_TBD BOF_TBD RTM_TBD

20 YEAR A RESOLUTION APPROPRIATING \$2,874,911 FOR THE COSTS OF TOWN-WIDE FACILITY SYSTEM UPGRADES AND AUTHORIZING THE ISSUANCE OF BONDS TO FINANCE SUCH APPROPRIATION

RESOLVED:

- 1. As recommended by the Board of Finance and the Board of Selectmen, the Town of Fairfield (the "Town") hereby appropriates the sum of Two Million Eight Hundred Seventy-Four Thousand Nine Hundred Eleven and 00/100 Dollars (\$2,874,911) for costs related to Town-wide facility system upgrades, including but not limited to, heating, ventilation and air conditioning (HVAC), life safety, electrical, accessibility and structural system upgrades in various municipal buildings located throughout the Town, and all related engineering, administrative, financing, legal, contingency and other soft costs (the "Project").
- 2. To finance such appropriation and in lieu of a tax therefor, and as recommended by the Board of Finance and the Board of Selectmen, the Town may borrow a sum not to exceed Two Million Eight Hundred Seventy-Four Thousand Nine Hundred Eleven and 00/100 Dollars (\$2,874,911) and issue its general obligation bonds/bond anticipation notes for such indebtedness under its corporate name and seal and upon the full faith and credit of the Town in an amount not to exceed said sum for the purpose of financing the appropriation for the Project.
- 3. The Board of Selectmen, the Treasurer and the Chief Fiscal Officer of the Town are hereby appointed a committee (the "Committee") with full power and authority to cause said bonds to be sold, issued and delivered; to determine their form and terms, including provision for redemption prior to maturity; to determine the aggregate principal amount thereof within the amount hereby authorized and the denominations and maturities thereof; to fix the time of issue of each series thereof and the rate or rates of interest thereon as herein provided; to determine whether the interest rate on any series will be fixed or variable and to determine the method by which the variable rate will be determined, the terms of conversion, if any, from one mode to another or from fixed to variable; to set whatever other terms of the bonds they deem necessary, desirable or appropriate; to designate the bank or trust company to certify the issuance thereof and to act as transfer agent, paying agent and as registrar for the bonds, and to designate bond counsel. The Committee shall have all appropriate powers under the Connecticut General Statutes, as amended (the "Statutes") including Chapter 748 (Registered Public Obligations Act) and Chapter 109 (Municipal Bond Issues) to issue, sell and deliver the bonds and, further, shall have full power and authority to do all that is required under the Internal Revenue Code of 1986, as amended, and under rules of the Securities and Exchange Commission, and other applicable laws and regulations of the United States, to provide for issuance of the bonds in tax exempt form and to meet all requirements which are or may become necessary in and subsequent to the issuance and delivery of the bonds in order that the interest on the

bonds be and remain exempt from Federal income taxes, including, without limitation, to covenant and agree to restriction on investment yield of bond proceeds, rebate of arbitrage earnings, expenditure of proceeds within required time limitations, the filing of information reports as and when required, and the execution of Continuing Disclosure Agreements for the benefit of the holders of the bonds and notes.

- 4. The First Selectwoman and Treasurer or Chief Fiscal Officer, on behalf of the Town, shall execute and deliver such bond purchase agreements, reimbursement agreements, line of credit agreement, credit facilities, remarketing, standby marketing agreements, standby bond purchase agreements, and any other commercially necessary or appropriate agreements which the Committee determines are necessary, appropriate or desirable in connection with or incidental to the sale and issuance of bonds, and if the Committee determines that it is necessary, appropriate, or desirable, the obligations under such agreements shall be secured by the Town's full faith and credit.
- 5. The First Selectwoman and Treasurer or Chief Fiscal Officer shall execute on the Town's behalf such interest rate swap agreements or similar agreements related to the bonds for the purpose of managing interest rate risk which the Committee determines are necessary, appropriate or desirable in connection with or incidental to the carrying or selling and issuance of the bonds, and if the Committee determines that it is necessary, appropriate or desirable, the obligations under such interest rate swap agreements shall be secured by the Town's full faith and credit.
- 6. The bonds may be designated "Public Improvement Bonds of the Town of Fairfield", series of the year of their issuance and may be issued in one or more series, and may be consolidated as part of the same issue with other bonds of the Town; shall be in serial form maturing in not more than twenty (20) annual installments of principal, the first installment to mature not later than three years from the date of issue and the last installment to mature not later than twenty (20) years from the date of issuance or as otherwise provided by statute. The bonds may be sold at an aggregate sales price of not less than par and accrued interest at public sale upon invitation for bids to the responsible bidder submitting the bid resulting in the lowest true interest cost to the Town, provided that nothing herein shall prevent the Town from rejecting all bids submitted in response to any one invitation for bids and the right to so reject all bids is hereby reserved, and further provided that the Committee may sell the bonds on a negotiated basis, as provided by statute. Interest on the bonds shall be payable semi-annually or annually. The bonds shall be signed on behalf of the Town by at least a majority of the Board of Selectmen and the Treasurer, and shall bear the seal of the Town. The signing, sealing and certification of the bonds may be by facsimile as provided by statute.
- 7. The Committee is further authorized to make temporary borrowings as authorized by the Statutes and to issue temporary notes of the Town in anticipation of the receipt of proceeds from the sale of the bonds to be issued pursuant to this resolution. Such notes shall be issued and renewed at such time and with such maturities, requirements and limitations as provided by the Statutes. Notes evidencing such borrowings shall be signed by the First Selectwoman and Treasurer or Chief Fiscal Officer, have the seal of the Town affixed,

which signing and sealing may be by facsimile as provided by statute, be certified by and payable at a bank or trust company incorporated under the laws of this or any other state, or of the United States, be approved as to their legality by bond counsel and may be consolidated with the issuance of other Town bond anticipation notes. The Committee shall determine the date, maturity, interest rates, form and manner of sale, including negotiated sale, and other details of said notes consistent with the provisions of this resolution and the Statutes and shall have all powers and authority as set forth above in connection with the issuance of bonds and especially with respect to compliance with the requirements of the Internal Revenue Code of 1986, as amended, and regulations thereunder in order to obtain and maintain issuance of the notes in tax exempt form.

- 8. Pursuant to Section 1.150-2, as amended, of the Federal Income Tax Regulations the Town hereby declares its official intent to reimburse expenditures (if any) paid for the Project from its General or Capital Funds, such reimbursement to be made from the proceeds of the sale of bonds and notes authorized herein and in accordance with the time limitations and other requirements of said regulations.
- 9. The First Selectwoman, Chief Fiscal Officer and Town Treasurer are hereby authorized, on behalf of the Town, to enter into agreements or otherwise covenant for the benefit of bondholders to provide information on an annual or other periodic basis to the Municipal Securities Rulemaking Board (the "MSRB") and to provide notices to the MSRB of material events as enumerated in Securities and Exchange Commission Exchange Act Rule 15c2-12, as amended, as may be necessary, appropriate or desirable to effect the sale of the bonds and notes authorized by this resolution.
- 10. The Committee is hereby authorized to take all action necessary and proper for the sale, issuance and delivery of the bonds and notes in accordance with the provisions of the Statutes and the laws of the United States.
- 11. The First Selectwoman or other proper Town official is authorized to apply for and accept any available State or Federal grant in aid of the financing of the Project, and to take all action necessary and proper in connection therewith. Any such grants or contribution received prior to the issuance of the Bonds authorized herein shall be applied to the costs of the Project or to pay at maturity the principal of any outstanding bond anticipation notes issued pursuant this resolution and shall reduce the amount of the Bonds that can be issued pursuant to this resolution. If such grants and contributions are received after the issuance of the Bonds, they shall be applied to pay the principal on the Bonds or as otherwise authorized by the Board of Selectmen, Board of Finance and Representative Town Meeting provided such application does not adversely affect the tax-exempt status of the Bonds or the Town's receipt of such grant or contribution.

14-Point Summary

Town-wide Facility Upgrades \$2,874,911

- <u>Background</u> There are 17 large Town of Fairfield Municipal Buildings under the care of the Public Works Building Maintenance Department. In these larger buildings, there are approximately 28 departments and/or public services. The Town-Wide Facility Audit/Plan provided a long-range capital expenditure plan that included Mechanical Assets, Life Safety, Energy Efficiency, and ADA Compliance to ensure efficient utilization of physical assets.
- Purpose and Justification The purpose of these upgrades are to address the Priority one (urgent) items based off the Town-Wide Facility Audit/Plan performed last year by Silver Petrucelli and Associates.
- 3. <u>Detailed Description of Proposal</u> The projects will involve engaging an architect/engineering firm through a Request for Proposal to design bid specifications for multiple types of upgrades needed and/or replacement of mechanical assets. Some of the primary systems that will be included in the Priority one upgrades are:
 - Heating, Ventilation & Air Conditioning (HVAC)
 - Life safety
 - Electrical
 - Accessibility
 - Structural
- 4. <u>Reliability of Cost Estimate</u> on a scale of 0 to 10, the reliability of the estimate is 6.0. The estimate was based on research of projects like this from other communities and projects from Silver Petrucelli and Associates have worked on in the past but no <u>specific</u> engineering or architectural work has been performed yet to obtain an opinion of probable cost in today's volatile supply market.
- 5. <u>Increased Efficiency or Productivity</u> There are several facilities that would benefit from energy efficient upgrades, better air quality and safe working environments.
- 6. <u>Additional Long Range Costs</u> This is the first of five priorities marked out in last year's Capital Needs Assessment Report performed by Silver Petrucelli. There is a Ten Year plan created for the future.
- 7. Additional Use or Demand on Existing Facilities TBD
- 8. Alternatives to this Request None
- 9. <u>Safety and Loss Control</u> At this point in time, there are no anticipated safety or loss control aspects of the projects included.

- 10. <u>Environmental Considerations</u> As part of the architectural design services, a full Hazardous Building Materials Investigation will be completed for any of the areas of the buildings that are proposed to be disturbed, as part of any future renovations. Testing will be completed for Asbestos, PCBs, and Lead Based Paints which may be disturbed during renovations.
- 11. <u>Insurance</u> Any architect, engineer or contractors hired will be required to hold liability insurance at the limits requested by the Town's Purchasing Agent.
- 12. <u>Financing</u> The project will be bonded as part of the Non-recurring Capital budget of 2022-23. The upgrades considered have a life expectancy greater than 20 years.

Total Proposed Authorization	\$2,874,911
Balance of Authorized Funding for Town-wide Audit	<u>(\$284,000)</u>
ARPA Funding for Sr. Center	(\$850,000)
30% Soft Costs	\$925,133
Total Priority 1 Item Costs	\$3,083,778

- 13. <u>Other Considerations</u>: The Department will seek cost-effective alternatives to reduce the financial impact of construction that may be recommended as a result of this study and architectural design.
- 14. Other Approvals: Board of Selectmen 5/2/22 Board of Finance – 5/5/22 RTM – 5/23/22

Pullman & Comley, LLC

10 YEAR

A RESOLUTION APPROPRIATING \$7,000,000 FOR THE COSTS ASSOCIATED WITH THE EMERGENCY RADIO PROJECT, AUTHORIZING A GRANT TO REIMBURSE \$3,500,000 OF SUCH APPROPRIATION AND AUTHORIZING THE ISSUANCE OF BONDS TO FINANCE THE REMAINING PORTION OF SUCH APPROPRIATION.

Dosalvad:

- **Resolved:**
- 1. As recommended by the Board of Selectmen and the Board of Finance, the Town of Fairfield appropriates Seven Million and 00/100 (\$7,000,000) Dollars to fund the Emergency Radio Project, including, but not limited to, costs associated with the buildout of necessary infrastructure, mobile and handheld radios, and all administrative, financing, legal, contingency and other soft costs related thereto (the "Project").
- 2. The First Selectwoman is hereby authorized and directed to negotiate and accept the terms of a federal grant entitled 2022 Member Directed Community Project Funding in the amount of Three Million Five Hundred Thousand and 00/100 (\$3,500,000) Dollars to fund a portion of the Project (the "Grant"). The First Selectwoman is also hereby authorized to enter into, on behalf of the Town, a Grant agreement or other document memorializing the terms of the Grant and to take all action necessary or reasonably required to carry out, give effect and consummate such Grant including executing on behalf of the Town such documents, agreements, contracts and certificates as deemed to be necessary or advisable by the First Selectwoman.
- 3. As recommended by the Board of Finance and the Board of Selectmen, the Town shall borrow a sum not to exceed Three Million Five Hundred Thousand and 00/100 (\$3,500,000) Dollars and issue bonds for such indebtedness under its corporate name and seal and upon the full faith and credit of the Town in an amount not to exceed said sum for the purpose of financing the portion of the appropriation for the Project not paid for by the Grant.
- 4. The Board of Selectmen, the Treasurer and the Chief Fiscal Officer of the Town are hereby appointed a committee (the "Committee") with full power and authority to cause said bonds to be sold, issued and delivered; to determine their form and terms, including provisions for redemption prior to maturity; to determine the aggregate principal amount thereof within the amount hereby authorized and the denominations and maturities thereof; to fix the time of issue of each series thereof and the rate or rates of interest thereon as herein provided; to determine whether the interest rate on any series will be fixed or variable and to determine the method by which the variable rate will be determined, the terms of conversion, if any, from one interest rate mode to another or from fixed to variable; to set whatever other terms of the bonds they deem necessary, desirable or appropriate; to designate the bank or trust company to certify the issuance

thereof and to act as transfer agent, paying agent and as registrar for the bonds, and to designate bond counsel. The Committee shall have all appropriate powers under the Connecticut General Statutes, as amended (the "Statutes") including Chapter 748 (Registered Public Obligations Act), and Chapter 109 (Municipal Bond Issues) to issue, sell and deliver the bonds and, further, shall have full power and authority to do all that is required under the Internal Revenue Code of 1986, as amended, and under rules of the Securities and Exchange Commission, and other applicable laws and regulations of the United States, to provide for issuance of the bonds in tax exempt form and to meet all requirements which are or may become necessary in and subsequent to the issuance and delivery of the bonds in order that the interest on the bonds be and remain exempt from Federal income taxes, including, without limitation, to covenant and agree to restriction on investment yield of bond proceeds, rebate of arbitrage earnings, expenditure of proceeds within required time limitations, the filing of information reports as and when required, and the execution of Continuing Disclosure Agreements for the benefit of the holders of the bonds and notes.

- 5. The First Selectwoman and Treasurer or Chief Fiscal Officer, on behalf of the Town, shall execute and deliver such bond purchase agreements, reimbursement agreements, line of credit agreement, credit facilities, remarketing agreement, standby marketing agreements, bond purchase agreement, standby bond purchase agreements, and any other commercially necessary or appropriate agreements which the Committee determines are necessary, appropriate or desirable in connection with or incidental to the sale and issuance of bonds, and if the Committee determines that it is necessary, appropriate, or desirable, the obligations under such agreements shall be secured by the Town's full faith and credit.
- 6. The First Selectwoman and Treasurer or Chief Fiscal Officer shall execute on the Town's behalf such interest rate swap agreements or similar agreements related to the bonds for the purpose of managing interest rate risk which the Committee determines are necessary, appropriate or desirable in connection with or incidental to the carrying or selling and issuance of the bonds, and if the Committee determines that it is necessary, appropriate or desirable, the obligations under such interest rate swap agreements shall be secured by the Town's full faith and credit.
- 7. The bonds may be designated "Public Improvement Bonds of the Town of Fairfield," series of the year of their issuance and may be issued in one or more series, and may be consolidated as part of the same issue with other bonds of the Town; shall be in serial form maturing in not more than ten (10) annual installments of principal, the first installment to mature not later than three (3) years from the date of issuance or as otherwise provided by statute. The bonds may be sold at an aggregate sales price of not less than par and accrued interest at public sale upon invitation for bids to the responsible bidder submitting the bid resulting in the lowest true interest cost to the Town, provided that nothing herein shall prevent the Town from rejecting all bids submitted in response to any one invitation for bids and the right to so reject all bids is

hereby reserved, and further provided that the Committee may sell the bonds on a negotiated basis, as provided by statute. Interest on the bonds shall be payable semiannually or annually. The bonds shall be signed on behalf of the Town by at least a majority of the Board of Selectmen and the Treasurer, and shall bear the seal of the Town. The signing, sealing and certification of the bonds may be by facsimile as provided by statute.

- 8. The Committee is further authorized to make temporary borrowings as authorized by the Statutes and to issue temporary notes of the Town in anticipation of the receipt of proceeds from the sale of the bonds to be issued pursuant to this resolution or in anticipation of the receipt of the Grant. Such notes shall be issued and renewed at such time and with such maturities, requirements and limitations as provided by the Statutes. Notes evidencing such borrowings shall be signed by the First Selectwoman and Treasurer or the Chief Fiscal Officer, have the seal of the Town affixed, which signing and sealing may be by facsimile as provided by statute, be certified by and payable at a bank or trust company incorporated under the laws of this or any other state, or of the United States, be approved as to their legality by bond counsel, and may be consolidated with the issuance of other Town bond anticipation notes. The Committee shall determine the date, maturity, interest rates, form and manner of sale, including negotiated sale, and other details of said notes consistent with the provisions of this resolution and the Statutes and shall have all powers and authority as set forth above in connection with the issuance of bonds and especially with respect to compliance with the requirements of the Internal Revenue Code of 1986, as amended, and regulations thereunder in order to obtain and maintain issuance of the notes in tax exempt form.
- 9. Pursuant to Section 1.150-2, as amended, of the Federal Income Tax Regulations the Town hereby declares its official intent to reimburse expenditures (if any) paid for the Project from its General or Capital Funds, such reimbursement to be made from the proceeds of the sale of bonds and notes authorized herein and in accordance with the time limitations and other requirements of said regulations.
- 10. The First Selectwoman, the Chief Fiscal Officer and Town Treasurer are hereby authorized, on behalf of the Town, to enter into agreements or otherwise covenant for the benefit of bondholders to provide information on an annual or other periodic basis to the Municipal Securities Rulemaking Board (the "MSRB") and to provide notices to the MSRB of material events as enumerated in Securities and Exchange Commission Exchange Act Rule 15c2-12, as amended, as may be necessary, appropriate or desirable to effect the sale of the bonds and notes authorized by this resolution.
- 11. The Committee is hereby authorized to take all action necessary and proper for the sale, issuance and delivery of the bonds and notes in accordance with the provisions of the Statutes and the laws of the United States.
- 12. The First Selectwoman or other proper Town official is authorized to apply for and accept any available State or Federal grant, in addition to the Grant as defined in

paragraph 2 herein, in aid of the financing of the Project, and to take all action necessary and proper in connection therewith. Any such grants or contribution received prior to the issuance of the Bonds authorized herein shall be applied to the costs of the Project or to pay at maturity the principal of any outstanding bond anticipation notes issued pursuant this resolution and shall reduce the amount of the Bonds that can be issued pursuant to this resolution. If such grants and contributions are received after the issuance of the Bonds, they shall be applied to pay the principal on the Bonds or as otherwise authorized by the Board of Selectmen, Board of Finance and Representative Town Meeting provided such application does not adversely affect the tax-exempt status of the Bonds or the Town's receipt of such grant or contribution.



Fairfield Police Department

100 Reef Road Fairfield, CT 06824 (203) 254-4816



Robert Kalamaras Chief of Police Keith Broderick Deputy Chief

Fairfield Emergency Radio Project

1. Background-

The project's primary goal is to replace the antiquated LMR communications system and to enhance interoperability and expanded communications capabilities for Fairfield's First Responders.

2. Purpose and Justification-

Fairfield's existing Radio system was built in the early 1990s and this existing LMR system has reached the end of its life and is beginning to fail. The existing system provides limited interoperability both for incoming mutual aid and for Fairfield's emergency services providing aid to other municipal, state, and federal agencies. When a radio currently being used malfunctions, finding a replacement is a difficult process due to the fact our current radios are no longer supported by the manufacturer. There are several areas in town where there is limited or no coverage, which caused Officer/firefighter safety issues. The impacts of the project will enhance communication amongst first responders at the local, state, and federal levels. This will allow first responders to enhance the services provided to Fairfield residents by way of a more effective and efficient communications system.

3. Detailed Description of Proposal-

This project will encompass the buildout of infrastructure necessary to ensure tower coverage within the Town and mobile and handheld radios for the end users. These radios will replace older radios which are NOT currently compatible with the State's Public Safety Radio System and our mutual-aid partners, and will enable the Police and Fire Department to communicate with our regional assets/teams on all the public safety bands utilizing analog or digital P25 and P25 Phase II standard radio language. Also included are allowances for radio installations, end user training, frequency coordination and licensing.

The State has afforded municipalities an opportunity to join their existing network. Many municipalities in Connecticut have or will be taking advantage of this invitation by the State of Connecticut to become part of their Connecticut Land Mobile Radio Network (CLMRN). The benefits of joining the CLMRN are: no fees charged by the State, interoperability with other users, access to conventional channel gateway network (CCGW) with Motorola consoles, over-the-air-rekeying (OTAR), over-the-air-programming (OTAP), access to the state radio management system, potential improved coverage, 24/7/365 monitoring by a dedicated team of experts at the

Network Control Center, reduced costs as opposed to building your own system, and Mobile phone/LTE integration. Our closest neighbors and our most frequent mutual-aid partners, the City of Bridgeport and the Town of Westport have already joined this Network.

The coverage standard of joining the State of CT system will meet new construction technology and will integrate with our new regional 911 center (Fairfield County Regional Dispatch)

Town of Fairfield Cost Estimate: \$3,500,000. (Total cost of project estimated at 7 million dollars but the town was recently awarded a 3.5 million dollar grant to fund half of the project. This total cost estimate of 7 million dollars includes a 500,00 software and hardware warranty supported by the state).

4. Reliability of Cost Estimate-

On a scale of 1 to 10, the reliability of this estimate is a 9 if we move forward with the project prior to July 1. Motorola has refreshed their cost estimate to give us the high end estimate prior to July 1st. after July 1, there can be expected to be a significant cost increase.

5. Increased Efficiency and Productivity

Communities use Mutual Aid to handle those occasional incidents requiring more resources than they have or to handle instances when there are a large number of simultaneous calls. Dependable mutual aid partners respond promptly and efficiently when called and expect their partners to do the same. This purchase will enable timely replacement of equipment used daily in our core mission and ensure efficient and reliable response.

6. Additional Long Range Costs-

There are no additional long range costs. There will be a reduction in maintenance costs, as these will be new units under warranty.

7. Additional Use or Demand-

None anticipated

8. Alternatives to This Request-

This request represents the best alternative for the Police and Fire Departments. This is a purchase of equipment that is necessary to our essential functions. As noted earlier, our current radios are no longer supported by the manufacturer, and replacing a current radio is difficult due to the fact that they are hard to find replacements for sale.

9. Safety

For the Fire Department, the technology requested will support fire-ground communications and mutual-aid coordination. Lack of fire-ground communication is a commonly-cited reason for increased risk of injury or death on the scene of an emergency incident.

For the Police Department, the current, outdated radio system brings with it many dead spots in town where there is little or no radio reception, which causes significant officer safety issues. Also, if there was a major incident inside a large building or school in town, the current system has very little indoor reception which poses hazards for both Police and Fire.

10. Environmental Considerations- n/a

11. Insurance- n/a

<u>12. Financing-</u> The expected service life of these units is 10 years.

.<u>13. Other Considerations-</u>n/a

<u>14. Approvals-</u> Board of Selectmen, Board of Finance, RTM

Motorola Solutions, Inc. 123 Tice Blvd #202 Woodcliff Lake, NJ 07677 MOTOROLA SOLUTIONS

April 21, 2022

Chief Robert Kalamaras Fairfield Police Department\ 100 Reef Rd Fairfield, CT 06824-5999

Subject: Budgeting System Value

Dear Chief Kalamaras:

Motorola Solutions, Inc. is providing a budgeting system value at the request of the Town of Fairfield in support of its process to secure funding for a communications system upgrade. In review of prior formal proposals and their scope, Motorola Solutions is providing the following not to exceed system values:

- \$6.9M: 3-site 12-channel G Simulcast Subsystem add-on with 610 APX subscribers for Public Safety and Town Government users
- \$6.5M: 3-site 12-channel G Simulcast Subsystem add-on with 385 Public Safety only APX subscribers
- \$500K: Years 2-5 for Advanced Plus Maintenance and SUAII for the 3-site infrastructure solution.
- These not to exceed prices are valid for 90 days from the date of this letter.

Motorola will work with the Town of Fairfield to provide an updated firm proposal with collaboration, input and approval from the State's CTS group. A formal proposal will be consistent with the State's Master Contract A-99-001 for Two-Way Radio Equipment, Contract Award 967-A-23-0338C and will not be contingent upon the negotiation of a communication system and services agreement (CSSA).

We look forward our continued discussions with the Town of Fairfield and supporting your efforts to secure funding for the upgrade of your communications system. Should you have any questions, please contact your Senior Account Manager, Mark Ambrosone at (617) 733-5894 or by email at Mark.Ambrosone@MotorolaSolutions.com.

Sincerely,

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Roy Kirchner MSSSI Vice President

20 YEAR A RESOLUTION APPROPRIATING \$2,250,000 FOR THE TIDE GATE SYSTEM PROJECT AND AUTHORIZING THE ISSUANCE OF BONDS TO FINANCE SUCH APPROPRIATION

RESOLVED:

- 1. As recommended by the Board of Finance and the Board of Selectmen, the Town of Fairfield (the "Town") hereby appropriates the sum of Two Million Two Hundred Fifty Thousand and 00/100 Dollars (\$2,250,000) for costs to replace a tide gate system located on Town open space roughly halfway to the terminus of Pine Creek, adjacent to Kiwanis Field, which project includes, but is not limited to, replacing the existing tide gates, and removing and restoring the historic Railroad Bridge, and all related engineering, administrative, financing, legal, contingency and other soft costs (the "Project").
- 2. To finance such appropriation and in lieu of a tax therefor, and as recommended by the Board of Finance and the Board of Selectmen, the Town may borrow a sum not to exceed Two Million Two Hundred Fifty Thousand and 00/100 Dollars (\$2,250,000) and issue its general obligation bonds/bond anticipation notes for such indebtedness under its corporate name and seal and upon the full faith and credit of the Town in an amount not to exceed said sum for the purpose of financing the appropriation for the Project.
- 3. The Board of Selectmen, the Treasurer and the Chief Fiscal Officer of the Town are hereby appointed a committee (the "Committee") with full power and authority to cause said bonds to be sold, issued and delivered; to determine their form and terms, including provision for redemption prior to maturity; to determine the aggregate principal amount thereof within the amount hereby authorized and the denominations and maturities thereof; to fix the time of issue of each series thereof and the rate or rates of interest thereon as herein provided; to determine whether the interest rate on any series will be fixed or variable and to determine the method by which the variable rate will be determined, the terms of conversion, if any, from one mode to another or from fixed to variable; to set whatever other terms of the bonds they deem necessary, desirable or appropriate; to designate the bank or trust company to certify the issuance thereof and to act as transfer agent, paying agent and as registrar for the bonds, and to designate bond counsel. The Committee shall have all appropriate powers under the Connecticut General Statutes, as amended (the "Statutes") including Chapter 748 (Registered Public Obligations Act) and Chapter 109 (Municipal Bond Issues) to issue, sell and deliver the bonds and, further, shall have full power and authority to do all that is required under the Internal Revenue Code of 1986, as amended, and under rules of the Securities and Exchange Commission, and other applicable laws and regulations of the United States, to provide for issuance of the bonds in tax exempt form and to meet all requirements which are or may become necessary in and subsequent to the issuance and delivery of the bonds in order that the interest on the bonds be and remain exempt from Federal income taxes, including, without limitation, to covenant and agree to restriction on investment yield of bond proceeds, rebate of arbitrage

earnings, expenditure of proceeds within required time limitations, the filing of information reports as and when required, and the execution of Continuing Disclosure Agreements for the benefit of the holders of the bonds and notes.

- 4. The First Selectwoman and Treasurer or Chief Fiscal Officer, on behalf of the Town, shall execute and deliver such bond purchase agreements, reimbursement agreements, line of credit agreement, credit facilities, remarketing, standby marketing agreements, standby bond purchase agreements, and any other commercially necessary or appropriate agreements which the Committee determines are necessary, appropriate or desirable in connection with or incidental to the sale and issuance of bonds, and if the Committee determines that it is necessary, appropriate, or desirable, the obligations under such agreements shall be secured by the Town's full faith and credit.
- 5. The First Selectwoman and Treasurer or Chief Fiscal Officer shall execute on the Town's behalf such interest rate swap agreements or similar agreements related to the bonds for the purpose of managing interest rate risk which the Committee determines are necessary, appropriate or desirable in connection with or incidental to the carrying or selling and issuance of the bonds, and if the Committee determines that it is necessary, appropriate or desirable, the obligations under such interest rate swap agreements shall be secured by the Town's full faith and credit.
- 6. The bonds may be designated "Public Improvement Bonds of the Town of Fairfield", series of the year of their issuance and may be issued in one or more series, and may be consolidated as part of the same issue with other bonds of the Town; shall be in serial form maturing in not more than twenty (20) annual installments of principal, the first installment to mature not later than three years from the date of issue and the last installment to mature not later than twenty (20) years from the date of issuance or as otherwise provided by statute. The bonds may be sold at an aggregate sales price of not less than par and accrued interest at public sale upon invitation for bids to the responsible bidder submitting the bid resulting in the lowest true interest cost to the Town, provided that nothing herein shall prevent the Town from rejecting all bids submitted in response to any one invitation for bids and the right to so reject all bids is hereby reserved, and further provided that the Committee may sell the bonds on a negotiated basis, as provided by statute. Interest on the bonds shall be payable semi-annually or annually. The bonds shall be signed on behalf of the Town by at least a majority of the Board of Selectmen and the Treasurer, and shall bear the seal of the Town. The signing, sealing and certification of the bonds may be by facsimile as provided by statute.
- 7. The Committee is further authorized to make temporary borrowings as authorized by the Statutes and to issue temporary notes of the Town in anticipation of the receipt of proceeds from the sale of the bonds to be issued pursuant to this resolution. Such notes shall be issued and renewed at such time and with such maturities, requirements and limitations as provided by the Statutes. Notes evidencing such borrowings shall be signed by the First Selectwoman and Treasurer or Chief Fiscal Officer, have the seal of the Town affixed, which signing and sealing may be by facsimile as provided by statute, be certified by and payable at a bank or trust company incorporated under the laws of this or any other state,

or of the United States, be approved as to their legality by bond counsel and may be consolidated with the issuance of other Town bond anticipation notes. The Committee shall determine the date, maturity, interest rates, form and manner of sale, including negotiated sale, and other details of said notes consistent with the provisions of this resolution and the Statutes and shall have all powers and authority as set forth above in connection with the issuance of bonds and especially with respect to compliance with the requirements of the Internal Revenue Code of 1986, as amended, and regulations thereunder in order to obtain and maintain issuance of the notes in tax exempt form.

- 8. Pursuant to Section 1.150-2, as amended, of the Federal Income Tax Regulations the Town hereby declares its official intent to reimburse expenditures (if any) paid for the Project from its General or Capital Funds, such reimbursement to be made from the proceeds of the sale of bonds and notes authorized herein and in accordance with the time limitations and other requirements of said regulations.
- 9. The First Selectwoman, Chief Fiscal Officer and Town Treasurer are hereby authorized, on behalf of the Town, to enter into agreements or otherwise covenant for the benefit of bondholders to provide information on an annual or other periodic basis to the Municipal Securities Rulemaking Board (the "MSRB") and to provide notices to the MSRB of material events as enumerated in Securities and Exchange Commission Exchange Act Rule 15c2-12, as amended, as may be necessary, appropriate or desirable to effect the sale of the bonds and notes authorized by this resolution.
- 10. The Committee is hereby authorized to take all action necessary and proper for the sale, issuance and delivery of the bonds and notes in accordance with the provisions of the Statutes and the laws of the United States.
- 11. The First Selectwoman or other proper Town official is authorized to apply for and accept any available State or Federal grant in aid of the financing of the Project, and to take all action necessary and proper in connection therewith. Any such grants or contribution received prior to the issuance of the Bonds authorized herein shall be applied to the costs of the Project or to pay at maturity the principal of any outstanding bond anticipation notes issued pursuant this resolution and shall reduce the amount of the Bonds that can be issued pursuant to this resolution. If such grants and contributions are received after the issuance of the Bonds, they shall be applied to pay the principal on the Bonds or as otherwise authorized by the Board of Selectmen, Board of Finance and Representative Town Meeting provided such application does not adversely affect the tax-exempt status of the Bonds or the Town's receipt of such grant or contribution.



To: Jared Schmitt, Chief Fiscal Officer
From: Timothy J. Bishop, Conservation Director
Date: April 13, 2022
Re: Capital Budget – Railroad Bridge Tide Gate

Background - The Conservation Depart operates and maintains over a dozen tide gates and flood control structures in the southern portions of Town. The gates are multi-purposed with respect to flood control and estuarine habitat enrichment throughout the tidal and riverine systems generally located south of Post Road.

This tide gate system is located on Town open space, roughly halfway to the terminus of Pine Creek, adjacent to Kiwanis Field. Access to the gates can be made via Old Dam Road or by crossing Pine Creek towards the landfill and solar field. Functionally, the tide gates regulate drainage from an expansive yet fragmented tidal marsh located south of the former Fairfield Lumber property (Post Road) to the outlet into the Long Island Sound at Fairfield Beach Road.

According to documents I've located, the existing tide gate system consists of three self-regulating tide gates (SRTs) originally installed in 1980. The original units were replaced in 1999 and additional culvert re-lining, welding and other repairs were made between 2010 and 2012. Based on the current age of the existing equipment, it's exceeded it life expectancy, beyond repair and in need of replacement.

<u>Purpose and Justification</u> – The purpose of the proposal is to replace aging infrastructure to prevent failure and major flooding and maintain existing flood management and hydrology. An additional benefit of the redesign and replacement is the realignment of the channel to its original flow direction.

Detailed Description of Proposal – The existing tide gate system is at the end of or beyond its life expectancy and requires replacement. The proposal is to fully abandon the three existing SRTs and culverts in place and replace them with five SRTs (in accordance with the engineered design and in accordance with all applicable permits) in order to realign the original stream channel. Additionally, the historic railroad bridge currently prevents the replacement project and requires removal.

The railroad bridge was registered on the U.S. Department of Interior-National Park Service's National Register of Historic Places in April 1992. The significance of the bridge is the unique construction using wrought-iron and pin-connected pony trusses which were fabricated between 1870 and 1872. The Department and its consultants have been in contact with the State Historic Preservation Office (SHPO) to discuss the most feasible and prudent removal and/or relocation options for the railroad bridge itself.

<u>**Reliability of Cost Estimate**</u> – The original estimated costs are based on the similarity to other completed projects. Since the design engineering consultant's original cost estimate was dated August 16, 2019, I anticipate the total cost to increase (from the capital budget request of \$2M) roughly 12% to \$2,250,000.00,

due to rising costs of materials, labor and installation related to inflation over the past 3 years since the estimate was generated.

Increased Efficiency or Productivity – There is both increased efficiency and capacity to manage flow, both of which are anticipated gains with this replacement project.

<u>Additional Long Range Costs</u> – Any long-term costs would be incidental to the equipment and operation of the tide gates. Any maintenance costs would be would be covered under the Conservation Department's annual operating budget throughout their functional life expectancy.

Additional Use or Demand on Existing Facilities – None Anticipated.

<u>An alternative to this Request</u> – While not a good one, the only alternative to this request is not to move forward with the replacement at this time.

<u>Safety and Loss Control</u> –If these tide gates are not replaced during the FY23 review, delay could compromise flood control in neighborhoods adjacent to Pine Creek, including: Pine Creek Avenue, Old Dam Road, Field Point Drive, Fairfield Beach Road, Oldfield Road and the area surrounding the Senior Center.

Environmental Considerations – All significant environmental considerations will be related during actual construction/installation activities and conducted under all applicable Federal and State permits, including but not limited to: sediment & erosion controls, wildlife breeding/migration, weather, seasonal cycles, noise ordinance, etc.

<u>Insurance</u> – Will be required by design and installation contractors, as applicable and required by the Purchasing Department as part of regular RFP/contract award process.

Financing – Town Capital Budget

Other Considerations: Primary access to Town open space from Old Dam Road and the trail north of the railroad bridge. Pending consultation and engineering evaluation during the design phase, the integrity of the earthen dyke should also be considered during this project and at a minimum, trees/vegetation should be removed.

<u>Other Potential Approvals</u>: CTDEEP, USACE, SHPO, Conservation Commission, Board of Selectmen, Board of Finance, Representative Town Meeting.

15 YEAR A RESOLUTION APPROPRIATING \$450,000 FOR THE COSTS OF THE TRANSFER STATION REPAIR PROJECT AND AUTHORIZING THE ISSUANCE OF BONDS TO FINANCE SUCH APPROPRIATION

RESOLVED:

- 1. As recommended by the Board of Finance and the Board of Selectmen, the Town of Fairfield (the "Town") hereby appropriates the sum of Four Hundred Fifty Thousand and 00/100 Dollars (\$450,000) for costs of the Town's transfer station repair project, including, but not limited to, various safety, environmental, mechanical and structural repairs, and all related engineering, administrative, financing, legal, contingency and other soft costs (the "Project").
- 2. To finance such appropriation and in lieu of a tax therefor, and as recommended by the Board of Finance and the Board of Selectmen, the Town may borrow a sum not to exceed Four Hundred Fifty Thousand and 00/100 Dollars (\$450,000) and issue its general obligation bonds/bond anticipation notes for such indebtedness under its corporate name and seal and upon the full faith and credit of the Town in an amount not to exceed said sum for the purpose of financing the appropriation for the Project.
- 3. The Board of Selectmen, the Treasurer and the Chief Fiscal Officer of the Town are hereby appointed a committee (the "Committee") with full power and authority to cause said bonds to be sold, issued and delivered; to determine their form and terms, including provision for redemption prior to maturity; to determine the aggregate principal amount thereof within the amount hereby authorized and the denominations and maturities thereof; to fix the time of issue of each series thereof and the rate or rates of interest thereon as herein provided; to determine whether the interest rate on any series will be fixed or variable and to determine the method by which the variable rate will be determined, the terms of conversion, if any, from one mode to another or from fixed to variable; to set whatever other terms of the bonds they deem necessary, desirable or appropriate; to designate the bank or trust company to certify the issuance thereof and to act as transfer agent, paying agent and as registrar for the bonds, and to designate bond counsel. The Committee shall have all appropriate powers under the Connecticut General Statutes, as amended (the "Statutes") including Chapter 748 (Registered Public Obligations Act) and Chapter 109 (Municipal Bond Issues) to issue, sell and deliver the bonds and, further, shall have full power and authority to do all that is required under the Internal Revenue Code of 1986, as amended, and under rules of the Securities and Exchange Commission, and other applicable laws and regulations of the United States, to provide for issuance of the bonds in tax exempt form and to meet all requirements which are or may become necessary in and subsequent to the issuance and delivery of the bonds in order that the interest on the bonds be and remain exempt from Federal income taxes, including, without limitation, to covenant and agree to restriction on investment yield of bond proceeds, rebate of arbitrage earnings, expenditure of proceeds within required time limitations, the filing of information

reports as and when required, and the execution of Continuing Disclosure Agreements for the benefit of the holders of the bonds and notes.

- 4. The First Selectwoman and Treasurer or Chief Fiscal Officer, on behalf of the Town, shall execute and deliver such bond purchase agreements, reimbursement agreements, line of credit agreement, credit facilities, remarketing, standby marketing agreements, standby bond purchase agreements, and any other commercially necessary or appropriate agreements which the Committee determines are necessary, appropriate or desirable in connection with or incidental to the sale and issuance of bonds, and if the Committee determines that it is necessary, appropriate, or desirable, the obligations under such agreements shall be secured by the Town's full faith and credit.
- 5. The First Selectwoman and Treasurer or Chief Fiscal Officer shall execute on the Town's behalf such interest rate swap agreements or similar agreements related to the bonds for the purpose of managing interest rate risk which the Committee determines are necessary, appropriate or desirable in connection with or incidental to the carrying or selling and issuance of the bonds, and if the Committee determines that it is necessary, appropriate or desirable, the obligations under such interest rate swap agreements shall be secured by the Town's full faith and credit.
- 6. The bonds may be designated "Public Improvement Bonds of the Town of Fairfield", series of the year of their issuance and may be issued in one or more series, and may be consolidated as part of the same issue with other bonds of the Town; shall be in serial form maturing in not more than fifteen (15) annual installments of principal, the first installment to mature not later than three years from the date of issue and the last installment to mature not later than fifteen (15) years from the date of issuance or as otherwise provided by statute. The bonds may be sold at an aggregate sales price of not less than par and accrued interest at public sale upon invitation for bids to the responsible bidder submitting the bid resulting in the lowest true interest cost to the Town, provided that nothing herein shall prevent the Town from rejecting all bids submitted in response to any one invitation for bids and the right to so reject all bids is hereby reserved, and further provided that the Committee may sell the bonds on a negotiated basis, as provided by statute. Interest on the bonds shall be payable semi-annually or annually. The bonds shall be signed on behalf of the Town by at least a majority of the Board of Selectmen and the Treasurer, and shall bear the seal of the Town. The signing, sealing and certification of the bonds may be by facsimile as provided by statute.
- 7. The Committee is further authorized to make temporary borrowings as authorized by the Statutes and to issue temporary notes of the Town in anticipation of the receipt of proceeds from the sale of the bonds to be issued pursuant to this resolution. Such notes shall be issued and renewed at such time and with such maturities, requirements and limitations as provided by the Statutes. Notes evidencing such borrowings shall be signed by the First Selectwoman and Treasurer or Chief Fiscal Officer, have the seal of the Town affixed, which signing and sealing may be by facsimile as provided by statute, be certified by and payable at a bank or trust company incorporated under the laws of this or any other state, or of the United States, be approved as to their legality by bond counsel and may be

consolidated with the issuance of other Town bond anticipation notes. The Committee shall determine the date, maturity, interest rates, form and manner of sale, including negotiated sale, and other details of said notes consistent with the provisions of this resolution and the Statutes and shall have all powers and authority as set forth above in connection with the issuance of bonds and especially with respect to compliance with the requirements of the Internal Revenue Code of 1986, as amended, and regulations thereunder in order to obtain and maintain issuance of the notes in tax exempt form.

- 8. Pursuant to Section 1.150-2, as amended, of the Federal Income Tax Regulations the Town hereby declares its official intent to reimburse expenditures (if any) paid for the Project from its General or Capital Funds, such reimbursement to be made from the proceeds of the sale of bonds and notes authorized herein and in accordance with the time limitations and other requirements of said regulations.
- 9. The First Selectwoman, Chief Fiscal Officer and Town Treasurer are hereby authorized, on behalf of the Town, to enter into agreements or otherwise covenant for the benefit of bondholders to provide information on an annual or other periodic basis to the Municipal Securities Rulemaking Board (the "MSRB") and to provide notices to the MSRB of material events as enumerated in Securities and Exchange Commission Exchange Act Rule 15c2-12, as amended, as may be necessary, appropriate or desirable to effect the sale of the bonds and notes authorized by this resolution.
- 10. The Committee is hereby authorized to take all action necessary and proper for the sale, issuance and delivery of the bonds and notes in accordance with the provisions of the Statutes and the laws of the United States.
- 11. The First Selectwoman or other proper Town official is authorized to apply for and accept any available State or Federal grant in aid of the financing of the Project, and to take all action necessary and proper in connection therewith. Any such grants or contribution received prior to the issuance of the Bonds authorized herein shall be applied to the costs of the Project or to pay at maturity the principal of any outstanding bond anticipation notes issued pursuant this resolution and shall reduce the amount of the Bonds that can be issued pursuant to this resolution. If such grants and contributions are received after the issuance of the Bonds, they shall be applied to pay the principal on the Bonds or as otherwise authorized by the Board of Selectmen, Board of Finance and Representative Town Meeting provided such application does not adversely affect the tax-exempt status of the Bonds or the Town's receipt of such grant or contribution.

14-Point Summary

Non-Recurring Information and Justification Form

Transfer Station Repairs

<u>\$450,000</u>

1. <u>Background</u>: The Fairfield transfer station is located on the north side of Richard White Way. The facility has been in operation for over 40+ years during which time only minor repairs to the building have been made to keep the facility operational. For the first 30 years during its operation, the facility was owned by Connecticut Resources Recovery Authority (CRRA) and operated by Wheelabrator Technologies with a subcontract to Enviro Express. Any repair or improvements above \$1,000 dollars were the responsibility of CRRA. Title to the facility was transferred to the Town approximately 12 years ago after CRRA was disbanded by State mandate. Two years ago the Town began the process of much needed upgrades and improvements to the facility in order to keep the transfer station a safe working environment for the staff and residents. This included \$250,000 of long needed critical repairs to the electrical service, lighting, bathrooms and roof replacement. These items have now been completed with the exception of some minor items to finish the roof replacement.

The transfer station consists of two-story brick building used for municipal waste transfer station activities, a scale house, a truck scale and areas of bituminous concrete and concrete pads used for temporary truck and transfer trailer storage and parking as well as storage of recycling trailer, and visitor/employee parking. The transfer station building has been in a state of deterioration in need of repairs in order to continue the safe and secure operation of the facility.

- 2. <u>Purpose & Justification</u>: The purpose of the project is to continue the long-term capital projects that are required to secure the building and address needed safety and environmental concerns.
- 3. <u>Detailed Description of Proposal</u>: The project will address the following issues:

ITEM		COST	CATEGORY
Replace stairwell between upper and lowe	er levels	\$ 35,000	safety
Trough to collect sludge & juices		\$ 10,000	environmental/safety
Floor Drains replace and repair		\$ 70,000	environmental
Masonry repairs		\$ 4,000	structural
7 Overhead Doors		\$ 140,000	security/safety
4 Entry doors		\$ 12,000	security/safety
Remove and patch old boiler Flue		\$ 4,000	safety
Exhaust System with CO and NO2 Detector	ors	\$ 23,000	mechanical
Tipping floor Repairs		\$ 75,000	structural
	Subtotal	\$ 373,000	
contingency 20% & miscellaneous		\$ 77,000	
	TOTAL	\$ 450,000	

4. <u>Reliability of Estimated Cost</u>: on a scale of 0 to 10, the reliability of the estimate at 6.0. Have quotes for some items and similar repair costs to other facilities.

- 5. <u>Increased Efficiency or Productivity</u>: Improvements to the facility will increase the efficiency of the transfer station operations and the time to compact trash, maintain cleanliness, and improve security.
- 6. <u>Additional Long-Range Costs</u>: This project addresses needed repairs to the building only. Future development of the site to improve operations and efficiencies is anticipated to be performed over a 5 to 10 year period.
- 7. <u>Additional Use or Demand on Existing Facilities</u>: The town anticipates that the use of the facility and the tonnage of MSW received on an annual basis will continue to be relatively constant.
- 8. <u>Alternates to this Request</u>: The only alternative to this request is not to do anything, which will not resolve the existing problems with the facility and continue exposer to liability.
- **9.** <u>Safety and Loss Control</u>: The project would enhance safety and environmental conditions in order to reduce liabilities.
- **10.** <u>Environmental Considerations</u>: Testing will be performed for asbestos, PCBs and Lead Based Paint which may be disturbed during improvements where suspected .
- **11.** <u>Insurance</u>: Any contractors hired will be required to hold liability insurance at the limits requested by the Town Purchasing Agent.
- **12.** <u>Financing</u>: The project will be bonded as part of the Non-recurring Capital budget of 2022-2023. Although individual repair life expectancies will vary, the project is anticipated to last 15 years.
- **13.** <u>Other Considerations</u>: The Department will seek cost effective alternatives to reduce the financial impact of construction that may be recommended as a result of the planning, design, and bids.
- 14. <u>Other Approvals</u>: Board of Selectmen Board of Finance – RTM –

10 YEAR A RESOLUTION APPROPRIATING \$4,125,000 FOR THE COSTS OF THE ROGER LUDLOWE MIDDLE SCHOOL TURF FIELD PROJECT AND AUTHORIZING THE ISSUANCE OF BONDS TO FINANCE SUCH APPROPRIATION

RESOLVED:

- 1. As recommended by the Board of Finance and the Board of Selectmen, the Town of Fairfield (the "Town") hereby appropriates the sum of Four Million One Hundred Twenty-Five Thousand and 00/100 Dollars (\$4,125,000) for costs to convert the existing multipurpose fields at the Roger Ludlowe Middle School to artificial turf and to install new lighting at the fields, and all related engineering, administrative, financing, legal, contingency and other soft costs (the "Project").
- 2. To finance such appropriation and in lieu of a tax therefor, and as recommended by the Board of Finance and the Board of Selectmen, the Town may borrow a sum not to exceed Four Million One Hundred Twenty-Five Thousand and 00/100 Dollars (\$4,125,000) and issue its general obligation bonds/bond anticipation notes for such indebtedness under its corporate name and seal and upon the full faith and credit of the Town in an amount not to exceed said sum for the purpose of financing the appropriation for the Project.
- 3. The Board of Selectmen, the Treasurer and the Chief Fiscal Officer of the Town are hereby appointed a committee (the "Committee") with full power and authority to cause said bonds to be sold, issued and delivered; to determine their form and terms, including provision for redemption prior to maturity; to determine the aggregate principal amount thereof within the amount hereby authorized and the denominations and maturities thereof; to fix the time of issue of each series thereof and the rate or rates of interest thereon as herein provided; to determine whether the interest rate on any series will be fixed or variable and to determine the method by which the variable rate will be determined, the terms of conversion, if any, from one mode to another or from fixed to variable; to set whatever other terms of the bonds they deem necessary, desirable or appropriate; to designate the bank or trust company to certify the issuance thereof and to act as transfer agent, paying agent and as registrar for the bonds, and to designate bond counsel. The Committee shall have all appropriate powers under the Connecticut General Statutes, as amended (the "Statutes") including Chapter 748 (Registered Public Obligations Act) and Chapter 109 (Municipal Bond Issues) to issue, sell and deliver the bonds and, further, shall have full power and authority to do all that is required under the Internal Revenue Code of 1986, as amended, and under rules of the Securities and Exchange Commission, and other applicable laws and regulations of the United States, to provide for issuance of the bonds in tax exempt form and to meet all requirements which are or may become necessary in and subsequent to the issuance and delivery of the bonds in order that the interest on the bonds be and remain exempt from Federal income taxes, including, without limitation, to covenant and agree to restriction on investment yield of bond proceeds, rebate of arbitrage earnings, expenditure of proceeds within required time limitations, the filing of information

reports as and when required, and the execution of Continuing Disclosure Agreements for the benefit of the holders of the bonds and notes.

- 4. The First Selectwoman and Treasurer or Chief Fiscal Officer, on behalf of the Town, shall execute and deliver such bond purchase agreements, reimbursement agreements, line of credit agreement, credit facilities, remarketing, standby marketing agreements, standby bond purchase agreements, and any other commercially necessary or appropriate agreements which the Committee determines are necessary, appropriate or desirable in connection with or incidental to the sale and issuance of bonds, and if the Committee determines that it is necessary, appropriate, or desirable, the obligations under such agreements shall be secured by the Town's full faith and credit.
- 5. The First Selectwoman and Treasurer or Chief Fiscal Officer shall execute on the Town's behalf such interest rate swap agreements or similar agreements related to the bonds for the purpose of managing interest rate risk which the Committee determines are necessary, appropriate or desirable in connection with or incidental to the carrying or selling and issuance of the bonds, and if the Committee determines that it is necessary, appropriate or desirable, the obligations under such interest rate swap agreements shall be secured by the Town's full faith and credit.
- 6. The bonds may be designated "Public Improvement Bonds of the Town of Fairfield", series of the year of their issuance and may be issued in one or more series, and may be consolidated as part of the same issue with other bonds of the Town; shall be in serial form maturing in not more than ten (10) annual installments of principal, the first installment to mature not later than three years from the date of issue and the last installment to mature not later than ten (10) years from the date of issuance or as otherwise provided by statute. The bonds may be sold at an aggregate sales price of not less than par and accrued interest at public sale upon invitation for bids to the responsible bidder submitting the bid resulting in the lowest true interest cost to the Town, provided that nothing herein shall prevent the Town from rejecting all bids submitted in response to any one invitation for bids and the right to so reject all bids is hereby reserved, and further provided that the Committee may sell the bonds on a negotiated basis, as provided by statute. Interest on the bonds shall be payable semi-annually or annually. The bonds shall be signed on behalf of the Town by at least a majority of the Board of Selectmen and the Treasurer, and shall bear the seal of the Town. The signing, sealing and certification of the bonds may be by facsimile as provided by statute.
- 7. The Committee is further authorized to make temporary borrowings as authorized by the Statutes and to issue temporary notes of the Town in anticipation of the receipt of proceeds from the sale of the bonds to be issued pursuant to this resolution. Such notes shall be issued and renewed at such time and with such maturities, requirements and limitations as provided by the Statutes. Notes evidencing such borrowings shall be signed by the First Selectwoman and Treasurer or Chief Fiscal Officer, have the seal of the Town affixed, which signing and sealing may be by facsimile as provided by statute, be certified by and payable at a bank or trust company incorporated under the laws of this or any other state, or of the United States, be approved as to their legality by bond counsel and may be

consolidated with the issuance of other Town bond anticipation notes. The Committee shall determine the date, maturity, interest rates, form and manner of sale, including negotiated sale, and other details of said notes consistent with the provisions of this resolution and the Statutes and shall have all powers and authority as set forth above in connection with the issuance of bonds and especially with respect to compliance with the requirements of the Internal Revenue Code of 1986, as amended, and regulations thereunder in order to obtain and maintain issuance of the notes in tax exempt form.

- 8. Pursuant to Section 1.150-2, as amended, of the Federal Income Tax Regulations the Town hereby declares its official intent to reimburse expenditures (if any) paid for the Project from its General or Capital Funds, such reimbursement to be made from the proceeds of the sale of bonds and notes authorized herein and in accordance with the time limitations and other requirements of said regulations.
- 9. The First Selectwoman, Chief Fiscal Officer and Town Treasurer are hereby authorized, on behalf of the Town, to enter into agreements or otherwise covenant for the benefit of bondholders to provide information on an annual or other periodic basis to the Municipal Securities Rulemaking Board (the "MSRB") and to provide notices to the MSRB of material events as enumerated in Securities and Exchange Commission Exchange Act Rule 15c2-12, as amended, as may be necessary, appropriate or desirable to effect the sale of the bonds and notes authorized by this resolution.
- 10. The Committee is hereby authorized to take all action necessary and proper for the sale, issuance and delivery of the bonds and notes in accordance with the provisions of the Statutes and the laws of the United States.
- 11. The First Selectwoman or other proper Town official is authorized to apply for and accept any available State or Federal grant in aid of the financing of the Project, and to take all action necessary and proper in connection therewith. Any such grants or contribution received prior to the issuance of the Bonds authorized herein shall be applied to the costs of the Project or to pay at maturity the principal of any outstanding bond anticipation notes issued pursuant this resolution and shall reduce the amount of the Bonds that can be issued pursuant to this resolution. If such grants and contributions are received after the issuance of the Bonds, they shall be applied to pay the principal on the Bonds or as otherwise authorized by the Board of Selectmen, Board of Finance and Representative Town Meeting provided such application does not adversely affect the tax-exempt status of the Bonds or the Town's receipt of such grant or contribution.

FAIRFIELD PARKS & RECREATION ROGER LUDLOWE MIDDLE SCHOOL TURF FIELD CAPITAL REQUEST

2022


1. BACKGROUND:

There is presently one full-sized multipurpose field and a smaller than regulation field area at our Roger Ludlowe Middle School complex. These two fields are used almost year-round from March to December by both high school athletic programs, Town Parks and Recreation programs, and other local youth organizations. The lack of field space in Fairfield is a challenge our Department deals with on a daily basis. We are requesting \$4.125 million dollars to convert both of these multipurpose fields to artificial turf and to upgrade/install new lighting for both fields.

2. PURPOSE & JUSTIFICATON:

The ability to convert these two fields to artificial turf will give our Town and Department the flexibility to ease the scheduling burden on other fields in Town. By replacing these grass fields with artificial turf, we will be increasing the number of playable hours on these two fields. We will have a reduction in the number of rainouts each season, we will gain approximately 550 hours of playing time by installing/upgrading the lights.

3. DETAILED DESCRIPTION OF PROPOSAL:

The expenditure would cover the total cost of the project which would include converting both multipurpose fields to artificial turf fields with lights. The project would include all new installation and labor, new permanent line/game striping and a new 8-year warranty.

4. RELIABILITY OF ESTIMATED COST:

The cost of this funding request is \$4,125,000.00. This number is based on the Capital Region Education Council (CREC) program. CREC provides predetermined, preferential pricing through approved vendors. Since products have already been bid at the national level, individual owners do not have to duplicate the formal bid process. Estimates are provided by professional licensed contractors.

5. INCREASE EFFICIENCY OR PRODUCTIVITY:

These terms do not directly apply to this type of project, however an artificial turf field typically has more use than a traditional grass field.

6. ADDITIONAL LONG RANGE COSTS:

There will be no additional costs other than maintenance (sweeping the field to redistribute the rubber) during the year. We could also potentially see a savings

in the maintenance cost of some of our other grass fields as they would have less play on them. At the end of the 10-12 year lifespan, the Town should consider replacement.

7. ADDITIONAL USE OR DEMAND ON EXISTING FACILITIES:

No additional use or demand. This replacement project will have an anticipated life of 10-12 years of what is considered "heavy use" for this upgrade.

8. ALTERNATIVES TO THIS REQUEST:

The alternative would be to do nothing. It is most cost-effective to convert both fields at the same time, this helps us cut down on labor costs.

9. SAFETY AND LOSS CONTROL:

Replacing the grass fields to artificial turf fields will result in a safer playing experience for all users.

10. ENVIRONMENTAL CONSIDERATIONS:

This project calls for the use of a crumb rubber fill. The Town could opt to use an organic fill, however, this would add a significant amount to the overall cost of the project.

11. INSURANCE:

Installer would be required to carry insurance coverage.

12. FINANCING:

Bonded

13. OTHER CONSIDERATIONS:

None

14. OTHER APPROVALS:

Board of Selectman Board of Finance RTM









20 YEAR

A RESOLUTION APPROPRIATING \$22,701,443 FOR THE COSTS ASSOCIATED WITH PHASE I OF THE AIR CONDITIONING UPGRADE PROJECT AT VARIOUS SCHOOLS, AUTHORIZING GRANTS TO REIMBURSE \$1,116,320 OF SUCH APPROPRIATION AND AUTHORIZING THE ISSUANCE OF BONDS TO FINANCE THE REMAINING PORTION OF SUCH APPROPRIATION.

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- **Resolved:**
- 1. As recommended by the Board of Selectmen and the Board of Finance, the Town of Fairfield appropriates Twenty Two Million Seven Hundred One Thousand Four Hundred Forty-Three and 00/100 (\$22,701,443) Dollars to fund Phase I of the Air Conditioning Upgrade Project at North Stratfield Elementary School, Osborn Hill Elementary School and Fairfield Woods Middle School, for costs associated with completing the air-conditioning systems, including, but not limited to, planning, equipment, installation, including all alterations, repairs and improvements in connection therewith, as well as, all administrative, financing, legal, contingency and other soft costs related thereto (the "Project").
- 2. The First Selectwoman is hereby authorized and directed to negotiate and accept the terms of federal grants received by the Town and the Town's Board of Education through the American Rescue Plan Act, as previously approved by the Town boards, in the amount of One Million One Hundred Sixteen Thousand Three Hundred Twenty and 00/100 (\$1,116,320) Dollars to fund a portion of the Project (collectively, the "Grants"). The First Selectwoman is also hereby authorized to enter into, on behalf of the Town, agreements for the Grants or other document memorializing the terms of the Grants and to take all action necessary or reasonably required to carry out, give effect and consummate such Grants including executing on behalf of the Town such documents, agreements, contracts and certificates as deemed to be necessary or advisable by the First Selectwoman.
- 3. As recommended by the Board of Finance and the Board of Selectmen, the Town shall borrow a sum not to exceed Twenty One Million Five Hundred Eighty-Five Thousand One Hundred Twenty-Three and 00/100 (\$21,585,123) Dollars and issue bonds for such indebtedness under its corporate name and seal and upon the full faith and credit of the Town in an amount not to exceed said sum for the purpose of financing the portion of the appropriation for the Project not paid for by the Grants.
- 4. The Board of Selectmen, the Treasurer and the Chief Fiscal Officer of the Town are hereby appointed a committee (the "Committee") with full power and authority to cause said bonds to be sold, issued and delivered; to determine their form and terms, including provisions for redemption prior to maturity; to determine the aggregate principal amount thereof within the amount hereby authorized and the denominations and maturities

thereof; to fix the time of issue of each series thereof and the rate or rates of interest thereon as herein provided; to determine whether the interest rate on any series will be fixed or variable and to determine the method by which the variable rate will be determined, the terms of conversion, if any, from one interest rate mode to another or from fixed to variable; to set whatever other terms of the bonds they deem necessary, desirable or appropriate; to designate the bank or trust company to certify the issuance thereof and to act as transfer agent, paying agent and as registrar for the bonds, and to designate bond counsel. The Committee shall have all appropriate powers under the Connecticut General Statutes, as amended (the "Statutes") including Chapter 748 (Registered Public Obligations Act), and Chapter 109 (Municipal Bond Issues) to issue, sell and deliver the bonds and, further, shall have full power and authority to do all that is required under the Internal Revenue Code of 1986, as amended, and under rules of the Securities and Exchange Commission, and other applicable laws and regulations of the United States, to provide for issuance of the bonds in tax exempt form and to meet all requirements which are or may become necessary in and subsequent to the issuance and delivery of the bonds in order that the interest on the bonds be and remain exempt from Federal income taxes, including, without limitation, to covenant and agree to restriction on investment yield of bond proceeds, rebate of arbitrage earnings, expenditure of proceeds within required time limitations, the filing of information reports as and when required, and the execution of Continuing Disclosure Agreements for the benefit of the holders of the bonds and notes.

- 5. The First Selectwoman and Treasurer or Chief Fiscal Officer, on behalf of the Town, shall execute and deliver such bond purchase agreements, reimbursement agreements, line of credit agreement, credit facilities, remarketing agreement, standby marketing agreements, bond purchase agreement, standby bond purchase agreements, and any other commercially necessary or appropriate agreements which the Committee determines are necessary, appropriate or desirable in connection with or incidental to the sale and issuance of bonds, and if the Committee determines that it is necessary, appropriate, or desirable, the obligations under such agreements shall be secured by the Town's full faith and credit.
- 6. The First Selectwoman and Treasurer or Chief Fiscal Officer shall execute on the Town's behalf such interest rate swap agreements or similar agreements related to the bonds for the purpose of managing interest rate risk which the Committee determines are necessary, appropriate or desirable in connection with or incidental to the carrying or selling and issuance of the bonds, and if the Committee determines that it is necessary, appropriate or desirable, the obligations under such interest rate swap agreements shall be secured by the Town's full faith and credit.
- 7. The bonds may be designated "Public Improvement Bonds of the Town of Fairfield," series of the year of their issuance and may be issued in one or more series, and may be consolidated as part of the same issue with other bonds of the Town; shall be in serial form maturing in not more than twenty (20) annual installments of principal, the first installment to mature not later than three (3) years from the date of issue and the last

installment to mature not later than twenty (20) years from the date of issuance or as otherwise provided by statute. The bonds may be sold at an aggregate sales price of not less than par and accrued interest at public sale upon invitation for bids to the responsible bidder submitting the bid resulting in the lowest true interest cost to the Town, provided that nothing herein shall prevent the Town from rejecting all bids submitted in response to any one invitation for bids and the right to so reject all bids is hereby reserved, and further provided that the Committee may sell the bonds on a negotiated basis, as provided by statute. Interest on the bonds shall be payable semiannually or annually. The bonds shall be signed on behalf of the Town by at least a majority of the Board of Selectmen and the Treasurer, and shall bear the seal of the Town. The signing, sealing and certification of the bonds may be by facsimile as provided by statute.

- 8. The Committee is further authorized to make temporary borrowings as authorized by the Statutes and to issue temporary notes of the Town in anticipation of the receipt of proceeds from the sale of the bonds to be issued pursuant to this resolution or in anticipation of the receipt of the Grants. Such notes shall be issued and renewed at such time and with such maturities, requirements and limitations as provided by the Statutes. Notes evidencing such borrowings shall be signed by the First Selectwoman and Treasurer or the Chief Fiscal Officer, have the seal of the Town affixed, which signing and sealing may be by facsimile as provided by statute, be certified by and payable at a bank or trust company incorporated under the laws of this or any other state, or of the United States, be approved as to their legality by bond counsel, and may be consolidated with the issuance of other Town bond anticipation notes. The Committee shall determine the date, maturity, interest rates, form and manner of sale, including negotiated sale, and other details of said notes consistent with the provisions of this resolution and the Statutes and shall have all powers and authority as set forth above in connection with the issuance of bonds and especially with respect to compliance with the requirements of the Internal Revenue Code of 1986, as amended, and regulations thereunder in order to obtain and maintain issuance of the notes in tax exempt form.
- 9. Pursuant to Section 1.150-2, as amended, of the Federal Income Tax Regulations the Town hereby declares its official intent to reimburse expenditures (if any) paid for the Project from its General or Capital Funds, such reimbursement to be made from the proceeds of the sale of bonds and notes authorized herein and in accordance with the time limitations and other requirements of said regulations.
- 10. The First Selectwoman, the Chief Fiscal Officer and Town Treasurer are hereby authorized, on behalf of the Town, to enter into agreements or otherwise covenant for the benefit of bondholders to provide information on an annual or other periodic basis to the Municipal Securities Rulemaking Board (the "MSRB") and to provide notices to the MSRB of material events as enumerated in Securities and Exchange Commission Exchange Act Rule 15c2-12, as amended, as may be necessary, appropriate or desirable to effect the sale of the bonds and notes authorized by this resolution.

- 11. The Committee is hereby authorized to take all action necessary and proper for the sale, issuance and delivery of the bonds and notes in accordance with the provisions of the Statutes and the laws of the United States.
- 12. The First Selectwoman or other proper Town official is authorized to apply for and accept any available State or Federal grant, in addition to the Grants as defined in paragraph 2 herein, in aid of the financing of the Project, and to take all action necessary and proper in connection therewith. Any such grants or contribution received prior to the issuance of the Bonds authorized herein shall be applied to the costs of the Project or to pay at maturity the principal of any outstanding bond anticipation notes issued pursuant this resolution. If such grants and contributions are received after the issuance of the Bonds, they shall be applied to pay the principal on the Bonds or as otherwise authorized by the Board of Selectmen, Board of Finance and Representative Town Meeting provided such application does not adversely affect the tax-exempt status of the Bonds or the Town's receipt of such grant or contribution.

Fairfield Board of Education Proposed Capital Project 2022-2023





Air Conditioning Upgrade Project – Phase I (North Stratfield Elementary School, Osborn Hill Elementary School & Fairfield Woods Middle School)

Approved by the Board of Education on February 3, 2022



501 Kings Hwy East, Suite 210 Fairfield, CT 06825 203-255-8309

February 3, 2022

Dear Board of Education Members:

This booklet provides an overview for the following 2022-2023 Proposed Capital Project Request:

• Districtwide Air Conditioning Upgrade Project- Phase I (North Stratfield Elementary School, Osborn Elementary School & Fairfield Woods Middle School)

We have included the above project in the Fairfield Public Schools' Facilities Plan Waterfall Schedule. Information for this project is provided using the 12-point format devised by the Town of Fairfield and includes:

- > Justification and background information.
- A cost estimate that includes previous project information, verbal quotations, and/or written proposals.

We hope you find this information helpful, and we are confident it will answer many of your questions as we begin the budget discussions. Thank you for your continued support.

Sincerely,

Michael Cummings

Michael Cummings Superintendent of Schools

MC:lt

Fairfield Public Schools 2022-2023 Capital & Non-Recurring Projects

Table of Contents

<u>Location</u>	<u>Project</u>	Estimated Cost	Page
Capital Project			
Districtwide	Air Conditioning Upgrade Project – Phase 1 (North Stratfield Elementary School, Osborn Hill Elementary School &Fairfield Woods Middle School)	\$ 22,701,443	1
Total		\$ 22,701,443	

<u>Background</u>: The Fairfield Board of Education has been working towards adding airconditioning to all seventeen school buildings in the district. Burr, Holland Hill, McKinley, Mill Hill, Riverfield, Roger Sherman, Stratfield Elementary schools, and Roger Ludlowe Middle school have complete air-conditioning systems. Jennings, Dwight, North Stratfield, Osborn Hill, Elementary schools, Fairfield Woods and Tomlinson Middle schools, Fairfield Warde, Fairfield Ludlowe, and Walter Fitzgerald High schools have had portions of the buildings air-conditioned using integrated systems or split units. This phase I project would complete the air-conditioning at North Stratfield Elementary School, Osborn Hill Elementary School, and Fairfield Woods Middle School.

<u>Purpose & Justification</u>: The purpose of this project would be to add air-conditioning to North Stratfield Elementary School, Osborn Hill Elementary School, and Fairfield Woods Middle School. Currently, these buildings do not have a large project on the BOE waterfall chart. This project is justified as it would begin to create equality among all district buildings in airconditioned spaces. In addition, the lack of air-conditioning and the ability to bring fresh air into the building was found to be a significant deficiency during the current pandemic. This project would assist in improving the indoor air quality at non-air-conditioned buildings by reducing areas that can become conducive for mold growth during hot and humid days. Additionally, increasing air-conditioning and air movement in the buildings would increase the air that moves through our air filtration system.

<u>Detailed Description</u>: This expenditure would cover the total cost of this project, and the cash flow distribution would occur over the next three years. (See attached Appendix 2) This funding request would cover all aspects of this project, from planning schematics to equipment installation. Additionally, this funding would cover necessary repairs/replacement/alterations required for the installation of AC - such as acoustic ceilings, LED lights, fire protection system alterations, and the addition of a fire suppression system where deficient. Lastly, this project funding would include commissioning and balancing the new AC system and updating the automated building controls systems where required.

<u>Estimated Cost</u>: The cost of this funding request is \$22,701,443. This number was calculated by determining an operating budget that allows us to perform a complete building evaluation of each of the schools and the best approach to meet the fundamental needs of each building while performing this work. This number also considers a \$1,000,000 grant from the Town and a \$116,320 grant to the BOE.

<u>Long Range Costs</u>: This project would bring additional costs to the district operating budget to provide supplemental equipment needed to perform preventative maintenance. However, new equipment, and filter changes on existing equipment, will allow both to run more efficiently and will positively impact the electrical draw at each building.

<u>Security</u>, <u>Safety</u>, <u>and Loss Control</u>: This project will play a significant role in improving indoor air quality along with improvements in building conditions. This project will enable us to control building moisture and alleviate the safety hazards, unsafe buildings, and material loss created by mold.

Environmental Considerations: All new equipment will meet all regulatory standards.

<u>Funding, Financing & OSCG&R</u>: This project would not proceed without funding approval. There are no State or Federal regulations required for this project at this time. We will continue to look at possible state or federal grants that may help offset the cost of this project. In addition, the project will apply for reimbursement from OSCG&R. Additionally, the Town has committed \$1,000,000 to this project through their ARPA grant application, and the Board of Education has committed \$116,320 to this project through their ESSER II grant.

<u>Other Considerations</u>: The Town Purchasing Department will bid out this work performed by outside professionally licensed contractors. This project will be assigned to a building committee to oversee and meet the state reimbursement requirements.

<u>Alternates to The Request</u>: The alternative to this request would be to divide this project by building and add them to the Board of Education's waterfall over a period of time.

General Information	
Origination Date:	7/1/21
Project No:	DIST-010
Project Name:	AC Upgrade Phase 1 (Woods/Osborn/North Stratfield)
Non-Reoccurring Status	
Project Description:	Woods 6,277,700
	Osborn 4,823,000 + 265,329 = 5,088,329
	North Stratfield 7,774,000 + 265,329 = 8,039,329
12381 P	

Status:

Project Budget	
Design Budget:	\$0
Construction Budget: Construction Escalation:	\$19,405,358 \$776,214
Total Construction Budget:	\$20,181,572
Escalation Date:	7/1/2021
Estimated Construction Start:	7/1/2022
Miscellaneous Fees and Expense - State Permits (.0026%) - Testing & Inspections - Advertising Construction Admin Commissioning Hazardous Materials Other Subtotal Fees & Expenses:	\$52,472 \$0 \$0 \$201,816 \$201,816 \$0 \$0 \$0 \$456,103
Project Subtotal Project Contingency 10% Total Budget	\$20,637,675 \$2,063,768 \$22,701,443
OSCGR Eligible? OSCGR Reimbursement	Yes \$5,332,978
Action Items	
Project Priority Ranking	

- Security

security	
- Severity of Condition	0
- Code/Statutory	0
- Programmatic Need	0
- Constructability/Sequencing	0
	0

ROW	DW Project # Recourring Priority School Priority Priority Fiscal Year																					
						2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030 - 2033	Project Total	OSCGR	Estimated District
									,	. ,		,					, -				Reimbursement	Share
1				1	<u> </u>	[\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$C
2						-		\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0) \$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0) \$0 \$0	\$0 \$0	\$0 \$0	\$C \$C
4								\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
5		District W	ide Total			50	02	\$0 \$0	30 \$0	<u>\$0</u> \$0	<u>پر</u> ۵۵	si Si		30 \$0	\$U \$0	04 S0	<u>پر</u> ۵۵	<u>د</u> ۱		<u>ه</u> ن ۵	<u>پې</u>	ې ¢
		District Wis	la Braiaeta			ţ.	ţ.	* *	ΨŪ	ψu	ţŭ	Ŷ	, ÷	ţ.	ţ.	ψu	ţ.	, v	,		**	
	DIST-001	Vos	IT Switch Replacement - Phase	1	1	\$0	\$0	\$59.174	\$1.145.023	\$0	\$0	\$(\$0	\$0	\$0	\$0	\$0	¢(\$0	\$1 223 100	\$0	\$1 223 100
7	<u>DIST 001</u>		II IT Server Network - HVAC	0		φu	φU φU	\$00,170	\$1,100,020	ф 0	ψU	φc	φ υ	φu	φu	φ0	φυ		φ0 φ0	\$1,223,177	\$0	φ1,223,177
8	DIST-002	<u>Yes</u>	Controls	0		\$0	\$0	\$27,500	\$247,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$275,000	\$0	\$275,000
9	DIST-003	Yes	Underground Oil Tank	0		¢۵ مۇ)	\$35,000	\$313,000 ¢0	\$U \$0	\$∪ ¢0	βL ¢C	\$U \$U	\$0 \$221.551	\$U	\$0 \$0	30 ¢0	φ. ¢c	\$U \$0	\$350,000	\$U \$0	\$350,000
10	<u>DI31-004</u>	Tes	Removal	0		φU	ο ΦΟ	şυ	φU	э 0	э О	βL	\$150,000	\$331,331	¢Ο	φU	э 0	βL	<u>پو</u>	\$461,551	φU	\$461,551
11	DIST-005	<u>Yes</u>	Solar System Replacements &/or Upgrades	0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$25,000	\$387,445	5 \$O	\$412,445	\$0	\$412,445
12	DIST-006		Tunnel Asbestos Abatement and Reinsulation Proiect	0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$115,000	\$1,782,247	\$0	\$1,897,247	\$0	\$1,897,247
13	DIST-007	Yes	Elementary School Playground	0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$125,000	\$1,937,225	5 \$0	\$2,062,225	\$0	\$2,062,225
14	DIST-008	Yes	Aboveground Storage Tank	0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$20,000	\$309,956	\$0	\$329,956	\$0	\$329,956
14	DIST-009	Yes	(ASI) Replacements Retro-Commissioning	0		\$0	\$0	\$0	\$0	\$625,000	\$0	\$C	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$625,000	\$0	\$625,000
16	<u>DIST-010</u>		AC Upgrade Phase 1 (Woods/Osborn/North Straffield)	0		\$0	\$0	\$0	\$0	\$0	\$22,701,443	\$C	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$22,701,443	\$5,332,978	\$17,368,466
17	DIST-011		AC Upgrade Phase 2	0		\$0	\$0	\$0	\$0	\$0	\$0	\$2,322,581	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,322,581	\$545,616	\$1,776,965
18	DIST-012		AC Upgrade Phase 3 (Ludlow)	0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$22,592,783	\$0	\$0	\$0	\$0	\$0	\$0	\$22,592,783	\$5,307,451	\$17,285,332
19	DIST-013		AC Upgrade Phase 4 (Warde)	0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$26,156,303	\$0	\$0	\$0	\$0	\$0	\$26,156,303	\$0	\$26,156,303
20	DIST-014		AC Upgrade Phase 5 (Walter Fitzgerald)	0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,756,350	\$0	\$0	\$0	\$0	\$2,756,350	\$0	\$2,756,350
21	DIST-015		0	0 0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$C
37		District Wid	le Projects			Ş0	\$0	\$120,676	\$1,727,523	\$625,000	\$22,701,443	\$2,322,581	\$22,742,783	\$26,487,854	\$2,756,350	\$0	\$285,000	\$4,416,873	\$0	\$84,186,084	\$11,186,045	\$73,000,039
		Burr Elemen	tary School		1				. 1							. 1						
38 39	BUR-001 BUR-002	Yes	Root Replacement Project Boiler/Burner Replacement	0		\$0 \$0	\$0 \$0	\$0 \$0	\$0 .\$0	\$1,734,703 \$0	\$0 \$996.370	\$C .\$C) \$0) \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0) \$0) \$0	\$1,734,703 \$996,370	\$407,513 \$0	\$1,327,190
40	BUR-003	Yes	Entrance Vestibule Project	0		\$0 \$0) \$0	\$0	\$0	\$0 \$0	\$0	\$C	\$0	\$0	\$0 \$0	\$0	\$0 \$0	\$39,325	\$633,673	\$672,998	\$158,099	\$514,899
41	BUR-004	Yes	Elevator Replacement	0		\$0	\$0	\$0 \$0	\$0	\$0 \$0	\$0 \$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0 \$0	\$0	\$712,932	\$712,932	\$0	\$712,932
42	BUR-005		0	0 0		\$0 \$0) \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0) 3 0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	پو \$0	\$0) \$0 \$0	\$0 \$0	\$0 \$0	\$0
44	BUR-007		0	0 0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$C
45 46	BUR-008 BUR-009		0			\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$U \$() \$0) \$0	\$U \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0	50 \$0 50 \$0	\$0 \$0	\$0 \$0	\$U \$0
47	BUR-010		0	0 0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$C	\$0	\$0	\$0	\$C
68		Burr Elemer	tary School			\$0	\$0	\$0	\$0	\$1,734,703	\$996,370	ŞC	\$0	\$0	\$0	\$0	\$0	\$39,325	\$1,346,605	\$4,117,003	\$565,612	\$3,551,390
		Dwight El	ementary																			
69	<u>DW-001</u>	Yes	HVAC BMS Controls Upgrades	0		\$0	\$0	\$0	\$200,000	\$0	\$0	\$C	\$0	\$0	\$0	\$0	\$0	\$C	\$0	\$200,000	\$0	\$200,000
70	DW-002		Renovation Project or New	0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,500,000	\$50,250,200	\$0	\$0	\$0	\$0	\$51,750,200	\$12,157,053	\$39,593,147
71	DW-003	+	0	0 0		\$0	\$0	\$0	\$0	\$0 \$0	\$0 \$0	\$0) \$0 }	\$0	\$0	\$0 \$0	\$0	\$0	\$0 \$0	\$0	\$0	\$C
73	<u>DW-004</u>		0	0		\$0	\$0 \$0	\$0	\$0 \$0	\$0	\$0	ې \$0) <u>\$0</u>	\$0	\$0	\$0	پو \$0	\$C) <u>\$0</u>	\$0	\$0	\$C
74	DW-006		0	0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$C
/5 76	DW-007 DW-008	+	0	0	<u> </u>	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$C \$C	50) \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0) \$0	\$0 \$0	\$0 \$0	\$C \$C
77	DW-009		0	0		\$0 \$0) \$0	\$0	\$0	\$0 \$0	\$0 \$0	\$C	\$0 \$0	\$0 \$0	\$0 \$0	\$0	\$0 \$0	\$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0
78	<u>DW-010</u>		0	0 0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
99		Dwight El	ementary			\$0	\$0	\$0	\$200,000	\$0	\$0	\$0	\$0	\$1,500,000	\$50,250,200	\$0	\$0	\$0	\$0	\$51,950,200	\$12,157,053	\$39,793,147

Page 1 of 6

ROW Project # Recourring Fiscal Year																						
		¥				2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030 - 2033	Project Total	OSCGR Reimbursement	Estimated District Share
		Holland Hill	Flementary																			
100	HH-001		Partial Roof Replacement	0		\$0	\$0	\$0	\$0	\$0	\$0	\$8.000	\$1.362.014	\$(50	\$0	\$0	\$(\$0	\$1.370.014	\$321.841	\$1.048.173
101	HH-002		(0 0		\$C	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
102	<u>HH-003</u>		(0 0		\$C	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
103	<u>HH-004</u>		(0 0		\$C	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
104	HH-005		(0 0		\$0	\$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 ¢0	\$0	\$0	\$0) <u>\$0</u>	\$0 \$0	\$0 \$0	\$0) \$0 \$0	\$0 \$0	\$0	\$0
105	HH-006 HH-007		(0 0		پر \$0	50 \$0	\$0 \$0	پو ۵۵	\$0 \$0	۵¢ ۵۵	پو \$0	90 \$0	φι \$(5 \$0 5 \$0	\$0 \$0	\$0 \$0	ېر \$() \$0	\$0 \$0	\$0 \$0	ېر \$(
107	HH-008		(0 0		\$C	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
108	<u>HH-009</u>		(0 0		\$C	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
109	<u>HH-010</u>		(0 0		\$C	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
130		Holland Hill	Elementary			\$0	\$0	\$0	\$0	\$ 0	\$0	\$8,000	\$1,362,014	\$0	D \$0	\$0	\$0	Ş(\$0	\$1,370,014	\$321,841	\$1,048,173
		Jennings E	lementary																			
	IEN. 001	1	Additions and alterations	T	1	¢r	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1	\$2 200 000	\$31 534 113	\$0	¢r	\$0	\$33,734,113	\$7 925 220	\$25,810,893
131	<u>JLIN-001</u>		(Scope To Be Determined)	0		ψ	φ0	ф 0	φ0 40	φU	φu	\$0 • •	φυ	φυ	\$2,200,000	\$31,330,113	40	φc	φ υ	\$35,756,115	\$7,723,220	\$20,010,070
132	JEN-002		(0 0	_	\$0	\$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0) \$0 \$0	\$0 \$0	\$0 \$0	\$0) \$0 \$0	\$0 \$0	\$0	\$0
134	JEN-003	1	(0 0		φC \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0	<u>پر</u> ۲	\$0 \$0	\$0 \$0	\$0 \$0	ېد \$() \$0	\$0 \$0	\$0	<u>پر</u> ۵۵
135	JEN-005		(0 0		\$C	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	D \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
136	<u>JEN-006</u>		(0 0		\$C	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$C
137	JEN-007		(0 0		\$C	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
138	JEN-008		(0 0		\$0) \$0 \	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0	\$0	\$L \$C) <u>\$0</u>	\$0 \$0	\$U \$0	\$0) \$0 \$0	\$0	\$0	\$L \$C
140	JEN-010		(0 0		φC \$C) \$0	\$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0	\$0	\$0	5 \$0 5 \$0	\$0 \$0	\$0	\$0) \$0	\$0 \$0	\$0	\$0
161		Jenninas E	ementary			SO	50	S0	50	50	50	SO	50	so	\$2,200,000	\$31,536,113	\$0	s	50	\$33,736,113	\$7,925,220	\$25,810,893
		Makinlay	lomontan/						• • •								•					
142	MCK 001	MCKINEY	Baafing Brojaat	0	1	¢0	\$0	03	0	01	\$9,400	¢1 407 010	02	\$0	0	01	0\$	¢r		¢1 505 910	\$252.744	¢1 152 075
163	MCK-002	Yes	Entrance Vestibule Project	0		φC \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0,000 \$0	φ1,477,217 \$0	\$0	\$C \$(\$35.425	\$507,803	\$0 \$0	ېد \$() \$0	\$543,228	\$127.614	\$415.614
164	MCK-003		Boiler/Burner Replacement	0		\$C	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$89,554	\$1,283,718	\$0	\$0	\$0	\$1,373,272	\$0	\$1,373,272
165	<u>MCK-004</u>		HVAC Controls	0		\$C	\$0	\$0	\$0	\$0	\$0	\$0	\$22,656	\$300,431	\$0	\$0	\$0	\$0	\$0	\$323,087	\$0	\$323,087
166	MCK-005		(0 0		\$C	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
167	MCK-005	+				\$C \$C	50 \$0	\$U \$0	\$0 \$0	\$U \$0	\$0 \$0	\$U \$0	\$0 \$0	\$U \$1) \$0) \$0	\$U \$0	\$U \$0	\$U \$1) \$0 1 \$0	\$0 \$0	\$U \$0	
169	MCK-008	1	(0 0		\$C	\$0	\$0 \$0	\$0	\$0 \$0	\$0 \$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0
170	MCK-009		(0 0		\$C	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$C	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
171	<u>MCK-010</u>		(0 0		\$C	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
192		McKinley E	lementary			\$0	\$0	\$0	\$0	\$ 0	\$8,600	\$1,497,219	\$22,656	\$300,431	\$124,979	\$1,791,521	\$0	Ş(\$0	\$3,745,406	\$481,358	\$3,264,048
		Mill Hill Ele	ementary																			
193	<u>MH-001</u>		Mill Hill Addition Alteration	0		\$0	\$0	\$2,050,060	\$18,450,540	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$20,500,600	\$4,815,960	\$15,684,640
194	<u>MH-002</u>		(0 0		\$C	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
195	MH-003		(0 0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
197	MH-004		(0 0	+	\$U \$C	γ \$0 \$0	\$U \$0	\$U \$0	0≰ ∩≱	\$U \$0	\$U \$0	\$U \$0	<u>ېل</u> ډر	5 \$0 5 \$0	\$U \$0	\$U \$0	ېل په	50 50 50	\$U \$0	\$U \$0	ېر ۲
198	MH-006		(0 0		\$0	\$0	\$0 \$0	\$0	\$0 \$0	\$0 \$0	\$0	\$0	\$0	50 \$0	\$0 \$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0
199	<u>MH-007</u>		(0 0		\$C	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
200	<u>MH-008</u>	-	(0 0		\$C	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
201	<u>MH-009</u>			U U	<u> </u>	L \$C	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	so •	\$0	\$0	\$0	x \$0	\$0	\$0	\$0
223		Mill Hill Ele	ementary			\$0	\$0	\$2,050,060	\$18,450,540	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$20,500,600	\$4,815,960	\$15,684,640

ROW Project # Reocurring Priority School Priority																						
						2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030 - 2033	Project Total	OSCGR Reimbursement	Estimated District Share
		North S	ratfield																			
224	NS-001		AC Upgrade	0	1	\$0	\$0	\$	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
225	NS-002		Roof Replacement Project	0		\$0	\$0) \$(\$0	\$0	\$0	\$0	\$8,000	\$2,105,745	\$0	\$0	\$0	\$0	\$0	\$2,113,745	\$496,557	\$1,617,188
226	<u>NS-003</u>	Yes	Entrance Vestibule Project	0		\$0	\$0	\$	\$0	\$0	\$0	\$32,500	\$414,521	\$0	\$0	\$0	\$0	\$0	\$0	\$447,021	\$105,013	\$342,008
227	<u>NS-004</u>		(0 0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$C
228	NS-005		0	0 0	+ +	\$0	\$0	\$	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0	\$0	\$C
227	NS-007					ېن ۵۵		μ (φ	50 \$0 \$0	پې ۵۵	ېن ۵۵	پو ۵۵	ېن ۵۵	90 \$0	40 ۵۵	90 \$0	ېن ۵۵) 40 N \$0	ېن ۵۵	پو ۵۵	φυ \$0
231	NS-008			0 0		\$0	\$0	\$	\$0	\$0	\$0 \$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0 \$0	\$0	5 \$0 \$0	\$0	\$0	\$C
232	<u>NS-009</u>		(0 C		\$0	\$0) \$(\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$C
233	<u>NS-010</u>		0	0 0		\$0	\$0	\$(\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$C
254		North S	ratfield			\$0	şc) Ş(\$0	\$0	\$0	\$32,500	\$422,521	\$2,105,745	\$0	\$0	\$0	\$0	\$0	\$2,560,766	\$601,570	\$1,959,196
		Osbori	Hill ES																			
255	OH-001		Roof Replacement Project	0	1 1	\$0	\$(\$1.584.980	.\$0	\$0	\$0	.\$0	\$0	\$0	\$0	\$0	\$0	50	\$1.584.980	\$372.340	\$1,212,640
054	0H-002		AC Upgrade			\$0	\$(\$	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$(n \$0	\$0	\$0	\$0
256	011 002		Renovate Student Bathrooms	0	+ +	φ0	ψe	φ.	φ0	ţ.	ų.	φo	40	φü	40	φu	φo	ψu	φο	ψũ	φo	
257	<u>OH-003</u>	Yes	NR	0		\$0	\$0	\$	\$0	\$0	\$0	\$0	\$36,465	\$483,553	\$0	\$0	\$0	\$0	\$0	\$520,018	\$0	\$520,018
258	<u>OH-004</u>		Additions and Renovations	0		\$0	\$0	\$	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$398,854	\$6,181,359	9 \$0	\$6,580,213	\$1,545,811	\$5,034,403
259	<u>OH-005</u>	<u>Yes</u>	Entrance Vestibule Project	0	+ +	\$0	\$0	\$	\$0	\$0	\$0	\$0	\$34,450	\$456,831	\$0	\$0	\$0	\$0	\$0	\$491,281	\$115,411	\$375,870
260	0H-005				+ +	\$U \$0	\$L \$() \$() \$(50 \$0 50 \$0	\$U \$0	\$0 \$0	\$0 \$0	\$U \$0	\$0 \$0	\$U \$0	\$U \$0	\$U \$0	\$U \$C) \$0) \$0	\$0 \$0	\$0 \$0	\$U \$0
262	OH-008			0 0		\$0 \$0	\$0	\$	\$0	\$0 \$0	\$0 \$0	\$0	\$0	\$0 \$0	\$0 \$0	\$0	\$0 \$0	\$0	5 \$0 \$0	\$0	\$0	\$C \$C
263	OH-009		(0 C		\$0	\$0) \$(\$0	\$0	\$0	\$0	\$0	\$O	\$0	\$0	\$0	\$C	\$0	\$0	\$0	\$C
264	<u>OH-010</u>		(0 C		\$0	\$0	\$	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$C
286		Osbori	i Hill ES			\$0	\$0	şi şi	\$1,584,980	\$0	\$0	\$0	\$70,915	\$940,384	\$0	\$0	\$398,854	\$6,181,359	9 \$0	\$9,176,492	\$2,033,562	\$7,142,931
288		Riverf	eld ES																			
289	RIV-001		Partial Roof Replacement	0		\$0	\$0	\$(\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$51,189	\$1,797,368	\$1,848,557	\$434,259	\$1,414,298
290	<u>RIV-002</u>		(0 C		\$0	\$0	\$(\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$C
291	<u>RIV-003</u>		0	0 0	+ +	\$0	\$0	\$	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$C
292	RIV-004 RIV-005		(1 1	\$0 \$0	\$U \$() \$() \$(50 \$0 1 \$0	\$U \$0	\$U \$0	\$0 \$0	\$U \$0	\$U \$0	\$U \$0	\$U \$0	\$U \$0	\$U \$C	50 \$0	\$U \$0	\$U \$0	\$U \$C
294	RIV-006			0 0		\$0	\$0) \$(\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0	5 \$0 \$0	\$0	\$0	\$0
295	<u>RIV-007</u>		(0 C		\$0	\$0) \$(\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$C
296	<u>RIV-008</u>		(0 0		\$0	\$0	\$(\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$C
297	RIV-009		(0 0	+ +	\$0	\$0) \$() \$0 }	\$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0	\$0 \$0	\$0	\$0 \$0	\$0) \$0 }	\$0	\$0 \$0	\$0
270	<u>KIV-010</u>	Disconfi		5 0		¢0	ېر م	ې پ	\$0 \$0	30 30	30	30 60	\$0 60	30 \$0	30 \$0	\$0 \$0	پ مو	ېږ د د د د د	پې ۵۱ ۲۵۲ ۵۷	ş0	<u>پ</u> و	ېر ۵۱ 414 000
320		Riven				ŞU	şı	ې ۱	J \$0	ŞU	ŞU	ŞU	ŞU	ŞU	ŞU	ŞU	ŞU	\$51,189	7 \$1,797,368	\$1,848,557	\$434,259	\$1,414,298
322		Roger Sh	erman ES																			
323	SHERM-001		Roof Replacement	0		\$0	\$0	\$(\$0	\$0	\$15,800	\$1,314,308	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,330,108	\$312,466	\$1,017,642
324	SHERM-002	Yes	Boiler/Burner Replacement	0	+ +	\$0	\$0	\$0	\$0	\$0	\$0	\$76,245	\$972,461	\$0	\$0	\$0	\$0	\$0	\$0	\$1,048,706	\$0	\$1,048,706
325	SHERM-003	Yes	Entrance Vestibule Upgrades	0		\$0	\$C	\$	\$0	\$0	\$0	\$0	\$0	\$0	\$35,425	\$507,803	\$0	\$0	\$0	\$543,228	\$127,614	\$415,614
326	SHERM-004		Controls Upgrade	0	↓Ţ	\$0	\$0	\$(\$0	\$0	\$0	\$265,329	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$265,329	\$0	\$265,329
327	SHERM-005	<u> </u>	(0 0	┥┥	\$0	\$0	\$(\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
320	SHERM-007	<u> </u>	(┼┼	\$U \$0	\$L \$L) ()	> \$0) \$0	\$U \$0	\$U \$0	\$U \$0	\$U \$0	\$U \$0	<u>¢</u> 0	\$U \$0	\$U \$0	\$U \$1	> \$0) \$0	\$U \$0	\$ሀ \$በ	\$U \$r
330	SHERM-008		(0 0		\$0	\$C	\$	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0 \$0	\$0) \$0	\$0	\$0	\$0
331	SHERM-009		(0 C		\$0	\$0) \$(\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$C
332	SHERM-010		(0 0		\$0	\$0	\$	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$C
353		Roger Sh	erman ES			\$0	\$0	\$0	\$0	\$0	\$15,800	\$1,655,882	\$972,461	\$0	\$35,425	\$507,803	\$0	\$0	\$0	\$3,187,370	\$440,080	\$2,747,290

ROW	Project #	Non- Priority School Project # Reocurring School Project # Reocurring																				
		u				2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030 - 2033	Project Total	OSCGR Reimbursement	Estimated District Share
		Stratfi	eld ES																			
354	STRAT-001		Roof Replacement Project	0	1 1	\$C	\$0	\$0	\$0	\$0	\$0	\$C	\$0	\$42,447	\$1,275,219	\$0	\$0	\$C	\$0	\$1,317,666	\$309,543	\$1,008,123
355	STRAT-002	Yes	Front Façade and Cornice	0		\$C	\$0	\$0	\$0	\$0	\$0	\$C	\$0	\$0	\$0	\$0	\$0	\$C	\$648,050	\$648,050	\$0	\$648,050
555	STRAT-003	Vos	Wall Painling INR	0		\$0	\$0	\$0	\$0	¢۵	\$0	\$0	0.2	\$0	\$25,000	\$358 345	\$0	\$0	0.8	\$393 345	\$0	\$383.344
356	STRAT-004	Vos	Elevator Replacement (1)	0		40 \$0	\$0	\$0 \$0	90 \$0	0¢ 02	\$0 \$0	φυ \$0) \$0	0¢ 08	\$23,000	\$537.548	90 \$0	\$0 \$0) () ()	\$575.048	\$0 \$0	\$575.049
358	STRAT-005	Yes	Entrance Vestibule Project	0		\$C	\$0	\$0	\$0	\$0	\$0 \$0	\$C) \$0	\$0	\$0 \$0	\$0	\$0 \$0	\$38,350	\$617,960	\$656,310	\$154,179	\$502,131
359	STRAT-006		C) 0		\$C	\$0	\$0	\$0	\$0	\$0	\$C	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$C
360	STRAT-007		0	0		\$C	\$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$C	0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0	\$0 \$0	\$0 \$0	\$0	\$(
362	STRAT-009		0	0 0		φC \$C	\$0	\$0	\$0 \$0	\$0 \$0	\$0 \$0	\$C) \$0	\$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0) \$0	\$0 \$0	\$0	\$0
363	STRAT-010		C	0 0		\$C	\$0	\$0	\$0	\$0	\$0	\$C	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
384		Stratfi	eld ES			\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$42,447	\$1,337,719	\$895,913	\$0	\$38,350	\$1,266,011	\$3,580,440	\$463,723	\$3,116,717
		Early Childh	ood Center																			
385	ECC-001	Yes	ECC Location 1 (NR)	0		\$C	\$0	\$0	\$0	\$0	\$0	\$25,000	\$318,862	\$0	\$0	\$0	\$0	\$0	\$0	\$343,862	\$0	\$343,862
386	ECC-002	Yes	ECC Location 2 (NR)	0		\$C	\$0	\$0	\$0	\$0	\$0	\$25,000	\$318,862	\$0	\$0	\$0	\$0	\$0	\$0	\$343,862	\$0	\$343,862
387	ECC-003		0	0 0	+ +	\$C	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$C	\$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0	\$0 \$0	\$0 \$0	\$0	\$(
389	ECC-004		0				\$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	ֆ։ \$C) \$0	پو \$0	\$0 \$0	\$0 \$0	پو \$0	\$0 \$0) \$0	\$0 \$0	\$0 \$0	ېر \$(
390	ECC-006		C	0 (\$C	\$0	\$0	\$0	\$0	\$0	\$C	\$0	\$0	\$0	\$0	\$0	\$C	\$0	\$0	\$0	\$(
391	ECC-007		0	0 0		\$C	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
392	ECC-008		0			\$C \$C	\$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$C \$C	0 \$0 0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0	\$0 \$0	\$0 \$0	\$0 \$0	\$(\$(
394	ECC-010		C	0		\$C	\$0	\$0	\$0	\$0	\$0	\$C	\$0 \$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0	\$0
415		Early Childh	ood Center			\$0	\$0	\$0	\$0	\$ 0	\$0	\$50,000	\$637,724	\$0	\$0	\$0	\$0	\$0	\$0	\$687,724	\$0	\$687,724
	Eai	rfield Woods	Middle School																			
416	FWMS-001	Yes	Elevator Replacement (NR)	0	1 1	\$C	\$0	\$196,851	\$0	\$0	\$0	\$C	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$196,851	\$0	\$196,851
417	FWMS-002		Full AC Upgrade	0		\$C	\$0	\$0	\$0	\$0	\$0	\$C	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
418	FWMS-003		Window & Siding Replacement	0		\$C	\$0	\$0	\$0	\$0	\$0	\$C	\$0	\$82,500	\$1,137,437	\$0	\$0	\$0	\$0	\$1,219,937	\$0	\$1,219,937
419	FWMS-004		Renovate Student Bathrooms (2)	0		\$C	\$0	\$0	\$0	\$0	\$0	\$C	\$98,497	\$1,306,137	\$0	\$0	\$0	\$C	\$0	\$1,404,634	\$0	\$1,404,634
420	FWMS-005	Yes	Boiler/Burner Replacement	0		\$C	\$0	\$0	\$0	\$0	\$0	\$78,679	\$1,003,516	\$0	\$0	\$0	\$0	\$0	\$0	\$1,082,195	\$0	\$1,082,195
421	FWMS-006	Yes	Entrance Vestibule Project	0		\$C	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$37,375	\$579,230	\$0	\$616,605	\$144,852	\$471,754
422	FWMS-007					\$C \$C	\$U \$0	\$0 \$0	\$U .\$0	\$0 \$0	\$U \$0	\$U \$0) \$0 \$0	\$U \$0	\$U \$0	\$0 \$0	\$0 \$0	\$U \$0	50 \$0	\$0 \$0	\$U .\$0	\$U .\$(
424	FWMS-009		0) 0		\$C	\$0	\$0	\$0	\$0	\$0	\$C	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
425	<u>FWMS-010</u>		C	0 0		\$C	\$0	\$0	\$0	\$0	\$0	\$C	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
446	Fai	rfield Woods	Middle School			\$0	\$0	\$196,851	\$0	\$0	\$0	\$78,679	\$1,102,013	\$1,388,637	\$1,137,437	\$0	\$37,375	\$579,230	\$0	\$4,520,222	\$144,852	\$4,375,370
		Roger Luc	llowe MS																			
447	<u>RLMS-001</u>	Yes	Cooling Tower Replacement	0		\$C	\$0	\$0	\$40,000	\$453,944	\$0	\$C	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$493,944	\$0	\$493,944
448	RLMS-002		Roof Replacement Project	0		\$C	\$0	\$0	\$0	\$0	\$2,969,972	\$C	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,969,972	\$697,700	\$2,272,272
449	RLMS-003	Yes	Fire Alarm Replacement	0		\$C	\$0	\$0	\$0	\$0	\$0	\$C	\$0	\$0	\$27,375	\$392,409	\$0	\$0	\$0	\$419,784	\$0	\$419,784
450	RLMS-004		0	0 0		\$C	\$0	\$0	\$0	\$0	\$0	\$C	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
451	RLMS-005		U	0 0		\$U .\$C	\$U .\$0	\$U .\$0	\$U .\$O	\$0 .\$0	\$U .\$O	\$U .\$C	\$0 \$0	50 \$0	\$U .\$O	\$U .\$O	\$U .\$O	۵¢ ۱۹۵۰	\$0 \$0	\$0 \$0	\$0 .\$0	۵۵ ۱۶.
453	RLMS-007		0	0 0		\$C	\$0 \$0	\$0 \$0	\$0	\$0	\$0 \$0	\$C	\$0 \$0	\$0 \$0	\$0	\$0	\$0 \$0	\$0 \$0) \$0	\$0	\$0	\$0
454	RLMS-008		0	0 0	╞──┦	\$C	\$0	\$0	\$0	\$0	\$0	\$C	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
455 456	RLMS-009 RLMS-010	+	0 0		┥	\$C \$C	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0) \$0	\$0 \$0	\$0 \$0	\$0 \$1						
477		Roger Luc	llowe MS			¢. SC	\$0 \$0	φ0 \$0	\$40,000	\$453,944	\$2,969,972	¢° S0	<u>پ</u>	φ0 \$0	\$27,375	\$392,409	¢٥ \$0	¢° S0) \$0	\$3,883.700	\$697.700	\$3,186.000

ROW	Project #	<u>Non-</u> Reocurring		Priority P	chool riority							Fiscal Year									
					2017/1	8 2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030 - 2033	Project Total	OSCGR Reimbursement	Estimated District
												L								Reinbolsemen	Share
478	TMS-001	Iomlis	on MS Flooring Replacement (NR)	0		\$0 9	0 \$44.000	\$396.000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$440.000	\$0	\$440.000
470	<u>TMS-001</u>	105	New Windows	0		\$0 \$	i0 \$0	\$378,000	\$0	\$0 \$0	\$82,500	\$1,052,247	\$0 \$0	\$0	\$0 \$0	\$0 \$0	\$0	\$0	\$1,134,747	\$266,573	\$868,175
480	TMS-003	Yes	New Acoustical ceiling and	0		\$0 \$	60 \$0	\$0	\$0	\$0	\$0	\$0	\$66,853	\$921,707	\$0	\$0	\$0	\$0	\$988,560	\$0	\$988,560
481	<u>TMS-004</u>	Yes	Boiler/Burner Replacements	0		\$0 \$	0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$85,731	\$1,381,441	\$1,467,172	\$0	\$1,467,172
482	TMS-005	Mar	Partial Roof Replacement	0		\$0 \$	0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$38,282	\$1,292,799	\$0	\$1,331,081	\$312,695	\$1,018,386
483	TMS-006 TMS-007	res	Full AC Upgrade	0		\$0 3	0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	<u>پ</u> 0 \$0	\$0 \$0	\$749,347	\$749,347	\$0 \$0	\$7.49,347
485	TMS-008		C	0 0		\$0 \$	0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
486 487	TMS-009 TMS-010	-		0 0		\$0 \$ \$0 \$	0 \$0 0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 .\$0
508		Tomlis	on MS			\$0 \$	0 \$44 000	\$396.000	\$0 \$0	ço SO	\$82 500	\$1 052 2 4 7	\$66 853	\$921 707	¢٥ ٥٥	\$38 282	\$1.378.530	¢۵ \$2 130 787	¢° \$6 110 906	\$579 267	\$5 531 639
		Entidial al Lu	ullaura 116			*	\$11,000	4070,000	÷.	ţŭ	<i>402,000</i>	¢1,002,217	<i>400,000</i>	¢/21,/01	ŶŬ	400,202	<i>Q1,070,0000</i>	<i>42,100,101</i>	<i>40,110,700</i>	<i>\\\\\\\\\\\\\</i>	\$0,001,001
-	51115 004	Faimeia Lu	Tennis Court Replacement	T T		<i>to 1</i>	a	£ 105 000	**	¢0	**	t 0	¢0	t 0	to		**	¢0	¢550.000	**	¢550.000
509	FLHS-001	Yes	(NR)	0		\$0 3	.0 \$55,000	\$495,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$550,000	\$0	\$550,000
510	FLHS-002	Yes	Emergency Generator Replacement (NR)	0		\$0 \$	60 \$0	\$0	\$224,972	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$224,972	\$0	\$224,972
511	FLHS-003		Renovate Student Bathrooms	0		\$0 \$	0 \$0	\$0	\$2,374,580	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,374,580	\$0	\$2,374,580
512	FLHS-004		AC Project	0		\$0 \$	i0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
513	FLHS-005		Artificial Turf Replacement	0		\$0 \$	0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$100,000	\$1,549,779	\$0	\$1,649,779	\$0	\$1,649,779
514	FLHS-006 FLHS-007		BMS Control Upgrades Partial Roof Replacement	0		\$0 \$ \$0 \$	0 \$0 60 \$0	\$U \$0	\$1,968,505	\$0 \$0	\$0 \$0	\$0 \$0	\$U \$0	\$0 \$7,194	\$0 \$224.720	\$0 \$0	\$0 \$0	\$0 \$0	\$1,968,505 \$231,913	\$0 \$54.481	\$1,968,505 \$177,432
516	FLHS-008	Yes	Elevator Modernization	0		\$0 \$	60 \$0	\$0	\$0	\$265,329	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$265,329	\$0	\$265,329
517	FLHS-009 FLHS-010		0	0 0		\$0 \$	0 \$0 0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0
539	1115 010	Fairfield Lu	dlowe HS			\$0 4	io \$55.000	\$495.000	\$4 568 057	\$245 329	\$0 \$0	¢0	\$0 \$0	\$7 194	\$224 720	پې \$100 000	\$1 549 779	40 \$0	\$7 265 078	\$54.481	\$7 210 593
		Egirfield W	Vardo HS					1	<i>† <i>11</i>- - 1<i>1</i>- - 1<i>1</i>- - 1<i>1</i>- 1<i>11<i>1</i>1<i>1</i>1<i>11<i>1</i>1<i>1</i>1<i>11<i>1</i>1<i>1</i>1<i>11<i>1</i>1<i>11<i>1</i>1<i>1</i>1<i>11<i>1</i>1<i>11<i>1</i>1<i>11<i>1</i>1<i>11<i>1</i>1<i>11<i>1</i>1<i>11<i>1</i>1<i>11<i>1</i>1<i>11<i>11<i>1</i>1<i>11<i>1</i>1<i>11<i>11<i>1</i>1<i>11<i>11<i>1</i>1<i>11<i>1</i>1<i>11<i>11<i>11<i>11<i>1</i>1<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>111<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>111<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>1<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>1<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>11<i>1</i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i></i>		÷-			4.7	₹ •/• - ₹	<i></i>	<i>41,2</i> ,	+-	Ţ. /	+• ·/·•·	+.,
	514/115 001	ruineiu v	Fitts House HVAC RTU#1	1 1	-	¢0	a \$20.000	¢0	*0	¢0	¢0	¢0	¢0	\$ 0	to	¢0	¢0	¢0	\$20,000	*0	\$20.000
540	FWHS-001	res	Replacement (NR)	0		\$U 3	0 \$30,000	\$U \$0	\$U	\$U	\$U	\$U \$0	\$U \$0	\$U \$0	\$U \$0	<u>م</u> و م	\$0	\$U \$0	\$30,000	\$0	\$30,000
341	FWH5-002		Fitts House HVAC RTU#2&3	0		\$0 4	0 \$0	\$U \$0	\$1,667,290	\$U \$1.004.495	\$U \$0	\$0 \$0	\$U \$0	\$0	\$U \$0	ېں دە	\$0 \$0	\$U \$0	\$1,667,290	\$U \$0	\$1,667,290
542	FWHS-003		Replacement	0		40 4	0 \$0	\$U \$0	\$0 \$0	\$1,074,483 ¢0	پې 144 702	φυ \$4.955.007	¢0	¢۵ د	ېنې ۵۵	\$0 \$0	\$0 \$0	40 60	\$1,074,483	\$0 \$0	\$1,074,485
544	FWHS-005		New Windows Project	0		\$0 \$	i0 \$0	\$0 \$0	\$0	\$0 \$0	\$144,703	\$315,000	پو \$4,177,115	\$0	\$0 \$0	\$0 \$0	\$0	\$0	\$4,492,115	\$1,055,279	\$3,436,836
545	FWHS-006	Yes	Replace Boiler/ Burner NR	0		\$0 \$	0 \$0	\$0	\$0	\$0	\$25,000	\$318,862	\$0	\$0	\$0	\$0	\$0	\$0	\$343,862	\$0	\$343,862
546	FWHS-007		Rnapps Hwy Tennis Courts & Basketball Courts	0		\$0 \$	60 \$0	\$0	\$0	\$0	\$30,416	\$387,946	\$0	\$0	\$0	\$0	\$0	\$0	\$418,362	\$0	\$418,362
547	FWHS-008		HVAC BMS Controls Upgrades	0		\$0 \$	0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
548	FWHS-009		Artificial Turf Replacement	0		\$0 \$	0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$100,000	\$1,549,779	\$0	\$1,649,779	\$0	\$1,649,779
549	FWHS-010	-	Partial Roof Replacement	0		\$0 \$	0 \$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$7,194	\$224,720	\$0	\$0	\$0 \$0	\$231,913	\$54,481	\$177,432
570	10013-011	Eairfield V	Ac Flojeci			40 4 50 50	ەن چە 10 \$30,000	ېن ۵0	پو \$1 487 290	ېن ۱ 094 485	پو \$200 119	,∌0 \$5 877 105	\$0 \$4 177 115	پ0 ۲ 194	\$0 \$224 720	پو \$100.000	پ₀ \$1 549 779	پو دە	پ⊍ 14 947 804	پو \$1 109 759	\$13 838 047
5/0						<i>40</i>	400,000	40	\$1,007,270	\$1,074,400	\$200,117	\$3,077,103	<i>4</i> 4,177,113	<i>41,114</i>	<i>4114,71</i> 0	\$100,000	<i>q</i> 1, <i>3</i> 47,777	φ¢	\$14,747,000	\$1,107,737	\$10,000,047
	v	Valter Fitzgei	ald Campus	<u> </u>																	
	WFC-001		Purchase of Walter Fitzgerald			\$0 \$	60 \$0	\$500,000	\$5,674,300	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$6,174,300	\$0	\$6,174,300
570 571	WFC-002	-	BMS Controls	0		\$0	0 \$0	\$0	\$0	\$0	\$11.328	\$144.481	\$0	\$0	\$0	\$0	\$0	\$0	\$155.809	\$0	\$155.809
572	WFC-003		Divis Connois	0 0		\$0 \$	io \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0	\$0 \$0	\$00,007
573	WFC-004		0	0		\$0 \$	0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
575	WFC-005			0 0		\$0 \$	i0 \$0	\$0 \$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0 \$0	\$0 \$0	\$0	\$0	\$0	\$0	\$0
576	WFC-007		0	0		\$0 \$	0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
578	WFC-008 WFC-009	1	C	0 0		\$U \$ \$0 \$	0 \$0 60 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0
579	WFC-010		C	0		\$0 \$	0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
600	V	Valter Fitzger	ald Campus			\$0 \$	0 \$0	\$500,000	\$5,674,300	\$0	\$11,328	\$144,481	\$0	\$0	\$0	\$0	\$0	\$0	\$6,330,109	\$0	\$6,330,109
601	Waterfall Total	1				\$0 \$	0 \$2,496,587	\$23,394,043	\$14,743,294	\$28,051,999	\$5,938,808	\$34,406,920	\$37,009,466	\$58,805,579	\$35,573,199	\$959,511	\$15,784,415	\$6,540,770	\$263,704,591	\$44,012,343	\$219,692,248

ROW	Project #	<u>Non-</u> <u>Reocurring</u>		Priority	School Priority	1							Fiscal Year									
						2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030 - 2033	Project Total	OSCGR Reimbursement	Estimated District Share
			YEAF	R				2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030 - 2033			
				_																	1	
602	Capital Projects							\$2,050,060	\$20,535,520	\$13,439,378	\$26,790,300	\$5,676,384	\$30,838,921	\$35,670,678	\$57,723,147	\$33,269,270	\$752,136	\$12,407,153	\$1,797,368		1	
603	Non-Reoccuring	g Projects						\$446,527	\$2,858,523	\$1,303,916	\$1,261,699	\$262,424	\$3,567,999	\$1,338,788	\$1,082,432	\$2,303,928	\$207,375	\$3,377,263	\$4,743,402		1	
																					1	
				-																		
	OSCG&R Reimb	oursement -	TOTAL					\$0	\$5,188,300	\$407,513	\$6,030,678	\$1,211,826	\$6,000,878	\$1,667,246	\$12,466,597	\$8,289,409	\$0	\$2,003,357	\$746,538			
	OSCG&R Reimb	oursement -	CAPITAL					\$0	\$5,188,300	\$407,513	\$6,030,678	\$1,211,826	\$5,895,865	\$1,551,835	\$12,466,597	\$8,034,181	\$0	\$1,858,505	\$434,259			
	OSCG&R Reimb	oursement -	NON-RECURRING					\$0	\$0	\$0	\$0	\$0	\$105,013	\$115,411	\$0	\$255,228	\$0	\$144,852	\$312,278		1	

[Districtwide Air	Conditioning L	Jpgrade Project -	Phases 1 throu	gh 5 - Cash Flov	N		Project Total	OSCGR Reimbursement	Estimated District Share
	22/23	23/24	24/25	25/26	26/27	27/28	28/29			
Phase One										
North Stratfield Elementary School	\$940,485	\$4,232,180	\$4,232,180					\$9,404,844	\$2,209,367	\$7,195,477
Osborn Hill Elementary School	\$595,261	\$5,357,344						\$5,952,604	\$1,398,374	\$4,554,230
Fairfield Woods Middle School	\$734,399	\$3,304,798	\$3,304,798					\$7,343,995	\$1,725,237	\$5,618,758
Phase Two										
Tomlinson Middle School		\$232,264	\$1,045,159	\$1,045,159				\$2,322,583	\$545,616	\$1,776,966
Phase Three										
Fairfield Ludlowe High School			\$2,259,278	\$6,777,835	\$6,777,835	\$6,777,835		\$22,592,783	\$5,307,451	\$17,285,332
Phase Four										
Fairfield Warde High School				\$2,615,631	\$7,846,891	\$7,846,891	\$7,846,891	\$26,156,305	\$6,144,587	\$20,011,718
Phase Five										
Walter Fitzgerald Campus						\$275,635	\$2,480,715	\$2,756,350	\$647,516	\$2,108,834
Total Yearly A/C Project Cost	\$2,270,145	\$13,126,585	\$10.841.415	\$10.438.625	\$14.624.727	\$14,900,362	\$10.327.606	\$76.529.465	\$17.978.149	\$58,551,316
ARPA Grant Funding	\$1.000.000	\$0	\$0	\$0	\$0	\$0	\$0	<i>\(\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</i>	<i>\(_\)</i>	<i>+•••)••=</i> /•=•
ESSER2 Grant Funding	\$116,320	\$0	\$0	\$0	\$0	\$0	\$0			
Capital Funding	\$1,153,825	\$13,126,585	\$10,841,415	\$10,438,625	\$14,624,727	\$14,900,362	\$10,327,606			
Phase One Total	\$22,701,443									
Phase IWO IOTAI	\$2,322,583	4								
Phase Inree Iotal	\$22,592,783	4								
Phase Four Total	\$26,156,305	4								
Phase Five Total	\$2,/56,350	J								

REFUNDS SUBMITTED FOR APPROVAL 5/2/2022

Name	<u>List No.</u>	<u>Tax</u>	<u>Interest</u>	DMV	<u>Bill</u>	Reason
2020 REAL ESTATE ADAMSON FAITH BAUM MAC ADAMS CARRIE A GOULD CHRISTINE I MD LLC TOTAL	2020 01 00970 2020 01 01158 2020 01 12507	\$20.00 \$9.45 \$1,709.66 \$1,739.11				OVERPAID IN ERROR OVERPAID IN ERROR PAID IN ERROR-PROP SOLD
2020 MOTOR VEHICLE CCAP AUTO LEASE LTD CCAP AUTO LEASE LTD DAIMLER TRUST HONDA LEASE TRUST HONDA LEASE TRUST HONDA LEASE TRUST JP MORGAN CHASE BANK NA STEVENS MATTHEW P VW CREDIT LEASING LTD HONDA LEASE TRUST TOYOTA LEASE TRUST TOYOTA LEASE TRUST TOTAL	2020 03 56339 2020 03 56383 2020 03 59001 2020 03 68557 2020 03 68758 2020 03 68831 2020 03 70996 2020 03 88822 2020 03 93514 2020 04 84350 2020 04 89080	\$131.12 \$110.70 \$209.24 \$312.40 \$445.58 \$469.84 \$307.36 \$24.44 \$365.72 \$224.58 \$146.58 \$2,747.56				OVERPAID DUE TO ADJUSTMENT OVERPAID DUE TO ADJUSTMENT
2020 SEWER USE DAMICO RICHARD A/EST DIXON KEITH R TOTAL	2020 08 17169 2020 08 18168	\$1,660.59 \$250.05 \$1,910.64	\$ 99.63 \$ 99.63			OVERPAID DUE TO ADJUSTMENT OVERPAID IN ERROR
2019 REAL ESTATE SULLIVAN GREGORY S & REBECCA CURRAN THOMAS H & ANASTASIA METZ ELIZABETH M/EST RECK BRUCE M & MARY LOU BHATIA JAYESH SHAFFER JOHN W R & JILLIAN F TOTAL	2019 01 10791 2019 01 10834 2019 01 12121 2019 01 13706 2019 01 14201 2019 01 18908	\$212.24 \$1,788.57 \$46.88 \$1,467.42 \$2,071.27 \$3,453.84 \$9,040.22				OVERPAID IN ERROR OVERPAID IN ERROR OVERPAID IN ERROR PAID IN ERROR-PROP SOLD OVERPAID IN ERROR OVERPAID IN ERROR
2019 MOTOR VEHICLE BARRY POLLY STONOHA JOSEPH R TOTAL	2019 03 52605 2019 04 86147	\$51.62 \$13.40 \$65.02				OVERPAID DUE TO ADJUSTMENT OVERPAID IN ERROR
2019 PERSONAL PROPERTY VIVINT SOLAR OWNER I LLC VIVINT SOLAR OWNER V LLC VIVINT SOLAR FUND 22 PROJECT VIVINT SOLAR ASSET 1 PROJECT VIVINT SOLAR FUND 24 PROJECT TOTAL	2019 02 36891 2019 02 37375 2019 02 37376 2019 02 37870 2019 02 37871	\$80.10 \$92.43 \$257.05 \$533.12 \$145.34 \$1,108.04				OVERPAID DUE TO ADJUSTMENT OVERPAID DUE TO ADJUSTMENT OVERPAID DUE TO ADJUSTMENT OVERPAID DUE TO ADJUSTMENT OVERPAID DUE TO ADJUSTMENT
<u>2019 SEWER USE</u> DAMICO RICHARD A/EST	2019 08 17169	\$2,883.12	\$ 555.45			OVERPAID DUE TO ADJUSTMENT

DIXON KEITH R TOTAL	2019 08 18168 _	\$250.05 \$3,133.17 \$ 555.45	OVERPAID IN ERROR
2018 MOTOR VEHICLE BYRON KATELYN M TOTAL	2018 03 55192	\$140.92 \$140.92	OVERPAID DUE TO ADJUSTMENT
TOTAL TAX TOTAL INTEREST <u>GRAND TOTAL</u>	\$19,884.68 \$655.08 \$20,539.76		