

DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK



CITY OF PORTLAND

BUILDING PERMIT

This is to certify that CITY OF » PORTLAND

Located At 69 PRESUMPCOT

Job ID: 2011-07-1718-ALTCOMM

CBL: 425 - - A - 007 - 001 - - - - -

has permission to Window replacement

provided that the person or persons, firm or corporation accepting this permit shall comply with all of the provisions of the Statues of Maine and of the Ordinances of the City of Portland regulating the construction, maintenance and use of the buildings and structures, and of the application on file in the department.

Notification of inspection and written permission procured before this building or part thereof is lathed or otherwise closed-in. 48 HOUR NOTICE IS REQUIRED.

A final inspection must be completed by owner before this building or part thereof is occupied. If a certificate of occupancy is required, it must be

[Handwritten signature and date: 1/26/11]

Fire Prevention Officer

Code Enforcement Officer / Plan Reviewer

**THIS CARD MUST BE POSTED ON THE STREET SIDE OF THE PROPERTY
PENALTY FOR REMOVING THIS CARD**

BUILDING PERMIT INSPECTION PROCEDURES

Please call 874-8703 or 874-8693 (ONLY)

or email: buildinginspections@portlandmaine.gov

With the issuance of this permit, the owner, builder or their designee is required to provide adequate notice to the city of Portland Inspections Services for the following inspections. Appointments must be requested 48 to 72 hours in advance of the required inspection. The inspection date will need to be confirmed by this office.

- **Please read the conditions of approval that is attached to this permit!! Contact this office if you have any questions.**
- **Permits expire in 6 months. If the project is not started or ceases for 6 months.**
- **If the inspection requirements are not followed as stated below additional fees may be incurred due to the issuance of a "Stop Work Order" and subsequent release to continue.**

1. Final inspection required upon completion of work.

The project cannot move to the next phase prior to the required inspection and approval to continue, REGARDLESS OF THE NOTICE OF CIRCUMSTANCES.

IF THE PERMIT REQUIRES A CERTIFICATE OF OCCUPANCY, IT MUST BE PAID FOR AND ISSUED TO THE OWNER OR DESIGNEE BEFORE THE SPACE MAY BE OCCUPIED.



PORTLAND MAINE

Strengthening a Remarkable City, Building a Community for Life • www.portlandmaine.gov

Director of Planning and Urban Development
Penny St. Louis

Job ID: 2011-07-1718-ALTCOMM

Located At: 69 PRESUMPCOT

CBL: 425 - - A - 007 - 001 - - - -

Conditions of Approval:

Fire

Installation shall comply with City Code Chapter 10.

All construction shall comply with City Code Chapter 10.

This permit is being approved on the basis of the plans submitted. Any deviation from the plans would require amendments and approval.

Any cutting and welding done will require a Hot Work Permit from Fire Department.

Building

Separate permits are required for any electrical, plumbing, sprinkler, fire alarm HVAC systems, heating appliances, commercial hood exhaust systems and fuel tanks. Separate plans may need to be submitted for approval as a part of this process.

This permit authorizes window replacement only. It does not authorize any structural openings.

City of Portland, Maine - Building or Use Permit Application

389 Congress Street, 04101 Tel: (207) 874-8703, FAX: (207) 8716

Job No: 2011-07-1718-ALTCOMM	Date Applied: 7/15/2011	CBL: 425 - - A - 007 - 001 - - - - -	
Location of Construction: 69 PRESUMPCOT ST	Owner Name: CITY OF PORTLAND	Owner Address: 389 Congress ST PORTLAND, ME - MAINE 04101	Phone:
Business Name:	Contractor Name: Aaron Shields @ Public Bldgs	Contractor Address:	Phone: 756-8292
Lessee/Buyer's Name:	Phone:	Permit Type: alterations	Zone: R-5
Past Use: City Elementary School	Proposed Use: Same: Elementary School - replacement window project	Cost of Work: \$195,000.00	CEO District:
		Fire Dept: <input checked="" type="checkbox"/> Approved w/conditions <input type="checkbox"/> Denied <input type="checkbox"/> N/A Signature: Capt Pulone	Inspection: Use Group: E Type: IBC 09 7/25/11 Signature: [Signature]
Proposed Project Description: Window Replacement Project Presumpscot School		Pedestrian Activities District (P.A.D.)	
Permit Taken By: Lannie		Zoning Approval	

<p>1. This permit application does not preclude the Applicant(s) from meeting applicable State and Federal Rules.</p> <p>2. Building Permits do not include plumbing, septic or electrical work.</p> <p>3. Building permits are void if work is not started within six (6) months of the date of issuance. False informatin may invalidate a building permit and stop all work.</p>	<p>Special Zone or Reviews</p> <p><input type="checkbox"/> Shoreland</p> <p><input type="checkbox"/> Wetlands</p> <p><input type="checkbox"/> Flood Zone</p> <p><input type="checkbox"/> Subdivision</p> <p><input type="checkbox"/> Site Plan</p> <p><input type="checkbox"/> Maj <input type="checkbox"/> Min <input type="checkbox"/> MM</p> <p>Date: OK [Signature] 7/19/11</p>	<p>Zoning Appeal</p> <p><input type="checkbox"/> Variance</p> <p><input type="checkbox"/> Miscellaneous</p> <p><input type="checkbox"/> Conditional Use</p> <p><input type="checkbox"/> Interpretation</p> <p><input type="checkbox"/> Approved</p> <p><input type="checkbox"/> Denied</p> <p>Date:</p>	<p>Historic Preservation</p> <p><input checked="" type="checkbox"/> Not in Dist or Landmark</p> <p><input type="checkbox"/> Does not Require Review</p> <p><input type="checkbox"/> Requires Review</p> <p><input type="checkbox"/> Approved</p> <p><input type="checkbox"/> Approved w/Conditions</p> <p><input type="checkbox"/> Denied</p> <p>Date: [Signature]</p>
	CERTIFICATION		

I hereby certify that I am the owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his authorized agent and I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in the appication is issued, I certify that the code official's authorized representative shall have the authority to enter all areas covered by such permit at any reasonable hour to enforce the provision of the code(s) applicable to such permit.

SIGNATURE OF APPLICANT	ADDRESS	DATE	PHONE
RESPONSIBLE PERSON IN CHARGE OF WORK, TITLE		DATE	PHON



General Building Permit Application

If you or the property owner owes real estate or personal property taxes or user charges on any property within the City, payment arrangements must be made before permits of any kind are accepted.

Location/Address of Construction: <u>Presumpscot Elementary School - 69 Presumpscot St.</u>			
Total Square Footage of Proposed Structure/Area <u>NO EXISTING</u>		Square Footage of Lot	Number of Stories <u>1</u>
Tax Assessor's Chart, Block & Lot Chart# Block# Lot# <u>425 A 7</u>	Applicant * must be owner, Lessee or Buyer * Name <u>City of Portland</u> Address <u>389 Congress St.</u> City, State & Zip <u>Portland, Me 04101</u>		Telephone: <u>207-756-8292</u> <u>Attn: Aaron Shively</u> <u>Project Manager</u>
Lessee/DBA (If Applicable)	Owner (if different from Applicant) Name Address City, State & Zip <u>R-5</u>	Cost Of Work: \$ <u>195,000.00</u> C of O Fee: \$ <u>(Waived)</u> Total Fee: \$ _____	<u>11812</u> <u>7-18-11</u>
Current legal use (i.e. single family) <u>School</u> Number of Residential Units <u>0</u> If vacant, what was the previous use? <u>NO EXISTING</u> Proposed Specific use: _____ Is property part of a subdivision? <u>NO</u> If yes, please name _____ Project description: <u>Existing School - Replacement Window Project</u>	Contractor's name: <u>City of Portland - Public Buildings Division</u> Address: <u>65 Haveron Street</u> City, State & Zip <u>Portland, Me 04101</u> Telephone: <u>756-8292</u> Who should we contact when the permit is ready: _____ Telephone: _____ Mailing address: _____		

Please submit all of the information outlined on the applicable Checklist. Failure to do so will result in the automatic denial of your permit.

In order to be sure the City fully understands the full scope of the project, the Planning and Development Department may request additional information prior to the issuance of a permit. For further information or to download copies of this form and other applications visit the Inspections Division on-line at www.portlandmaine.gov, or stop by the Inspections Division office, room 315 City Hall or call 874-8703.

I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the Code Official's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.

Signature: <u>Aaron Shively</u>	Date: <u>7-14-2011</u>
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This is not a permit; you may not commence ANY work until the permit is issued

RECEIVED

July 18 2011
Dept. of Building Inspections
City of Portland, Maine

City of Portland

Public Buildings Division

Presumpscot Elementary School

Window Replacement

May 5, 2011

Bid #8811

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CITY OF PORTLAND, MAINE

Notice to Contractors

PRESUMPCOT ELEMENTARY SCHOOL
WINDOW REPLACEMENT

Sealed bids will be received at the Purchasing Office, Room 103, City Hall, 389 Congress Street, Portland, Maine 04101, until 3:30 P.M., Thursday, May 26, 2011, at which time they will be publicly opened, for:

Project Name: Presumpscot Elementary School – Window Replacement
Bid #8811

Location: Presumpscot Elementary School
69 Presumpscot Street
Portland, Maine

Outline of Work: The work under this Contract consists of the removal and disposal of the existing window systems. The supply of and installation of new heavy commercial grade, high performance aluminum windows and storefront window frame units installed within existing openings. In addition to supplying windows and window accessories these installations may require carpentry work, sealants, custom brake metal work and wood blocking.

MANDATORY PRE-BID CONFERENCE

It is mandatory that all prospective bidders attend a pre-bid meeting that will be held at the site on Thursday, May 19, 2011, at 10:00 A.M. Only those firms represented at this meeting may bid on the project.

Copies of the above documents will be available at the Purchasing Office, Room 103, City Hall, 389 Congress Street, Portland, ME 04101. Each prospective bidder will be required to obtain from the City each copy of the proposal form and each set of plans; e-mail jrl@portlandmaine.gov, or phone (207) 874-8654, fax (207) 874-8652.

CITY OF PORTLAND, MAINE

CITY OF PORTLAND, MAINE

PRESUMPSCOT ELEMENTARY SCHOOL
WINDOW REPLACEMENT

Notice to Bidders

Sealed bids for the above project, addressed to Purchasing office, City Hall, Room 103, 389 Congress Street, Portland, Maine 04101, and clearly marked on the outside of the envelope with the name of the bidder, project title and bid number, will be received **until 3:30 PM on Thursday, May 26, 2011**, at which time they will be publicly opened.

MANDATORY PRE-BID MEETING

There will be a **mandatory pre-bid meeting on Thursday, May 19, 2011 at 10:00am**. This meeting will commence at the site Presumpscot Elementary School, 69 Presumpscot Street, Portland, Maine. Interested bidders shall meet a City Representative at the school. Only those firms represented at this meeting will be allowed to submit a bid on this project.

All questions shall be directed in writing ONLY to the Purchasing Office at the above address and be received at least four business days prior to the bid opening date (FAX 207-874-8652, or email krc@portlandmaine.gov). Responses from the City that substantially alter this bid will be issued in the form of a written addendum to all bid holders registered in the Purchasing Office. Oral explanations or interpretations given before the award of the contract will not be binding.

Bids from vendors not registered with the Purchasing Office may be rejected; receipt of this document directly from the City of Portland indicates registration. Should a vendor receive this Invitation from a source other than the City, please contact 207-874-8654 to ensure that your firm is listed as a vendor for this project. All bids shall be submitted on the attached form and are to remain open for sixty (60) days after their opening. Late, faxed or bids submitted electronically will be rejected.

This bid will be awarded to the bidder that submits the lowest base bid amount.

The successful bidder shall agree to defend, indemnify and save the City harmless from all losses, costs or damages caused by its acts or those of its agents, and, before signing the contract, will produce evidence satisfactory to the City's Corporation Counsel of coverage for General Public and Automobile Liability insurance in amounts not less than \$400,000 per person, for bodily injury, death and property damage, protecting the contractor and the

City, and naming the City as an additional insured from such claims, and shall also procure Workers' Compensation insurance. The City disclaims any and all responsibility for injury to contractors, their agents or others while examining the job or at any other time.

The successful bidder shall supply the City with a Performance Bond and Labor and Material Payment Bond, each in the amount of the contract price, guaranteeing one hundred percent (100%) performance of the contract, including the guarantee period and free and clear of any and all liens, attachments and encumbrances. All bonds shall comply with the requirements of Maine state law.

Materials and equipment purchased for permanent installation in this project are exempt from the State of Maine Sales and Use tax and from all Federal Excise taxes. Each bidder shall take this exception into account in calculating his bid price for the work.

The contractor shall furnish all labor, materials, fixtures, supplies, equipment and transportation necessary to do the work as specified. The contractor affirms that the equipment, or work, shall be in full compliance with any and all applicable O.S.H.A., D.O.T., ANSI, Federal, State and/or municipal regulations. **Contractors will be responsible for acquiring all necessary permits, licenses and pay all associated fees (including dump disposal fees and disposal taxes, if applicable), unless otherwise specified herein.**

The contractor shall erect and maintain, at all times, any and all safeguards necessary for the protection of life and property of all pedestrian and vehicular traffic. Note that this project will require care by the contractor to limit the disruption with students arriving and departing to school by vehicle or on foot. The contractor is responsible to submit a traffic control plan with this in mind. No additional payment or costs will be made to the contractor for this work.

It is the custom of the City of Portland, Maine to pay its bills 30 days following delivery of items, their acceptance, and receipt of invoices for, all items covered by the Purchase Order(s). In submitting bids under these specifications bidders should take into account all discounts, both trade and time allowed in accordance with this payment policy and quote a net price. The City is exempt from the State's Sales and Use Tax and from all Federal Excise tax.

Equal Employment Opportunities. Vendor shall comply fully with the Nondiscrimination and Equal Opportunity Provisions of the Workforce Investment Act of 1998, as amended (WIA, 29 CFR part 37); the Nontraditional Employment for Women Act of 1991; title VI of the Civil Rights Act of 1964, as amended; section 504 of the Rehabilitation Act of 1973, as

amended; the Age Discrimination Act of 1975, as amended; title IX of the Education Amendments of 1972, as amended; and with all applicable requirements imposed by or pursuant to regulations implementing those laws, including but not limited to 29 CFR part 37.

The City reserves the right to waive any informalities in bids, to accept any bid or portions thereof (bidders are advised to note this and quote accordingly) and to reject any or all bids should it be deemed for the best interest of the City to do so. The City reserves the right to substantiate the bidder's qualifications, capability to perform, availability, past performance record and to verify that the bidder is current in its obligations to the City, as follows:

Pursuant to City procurement policy and ordinance, the City is unable to contract with businesses or individuals who are delinquent in their financial obligations to the City. These obligations may include but are not limited to real estate and personal property taxes and sewer user fees. Bidders who are delinquent in their financial obligations to the City must do one of the following: bring the obligation current, negotiate a payment plan with the City's Treasury office, or agree to an offset which shall be established by the contract which shall be issued to the successful bidder.

May 5, 2011

Karen C. Marston
Assistant Purchasing Manager

PROPOSAL

Proposal of _____
Name

Address

The name and address shown on the above lines shall be the official name and address of the person, partnership or corporation submitting this bid and shall agree with the "Signature of Bidder" in the case of an individual; the "Name of Firm or Partnership" in the case of a firm or partnership; the "Name of Bidder" in case of a corporation.

TO: Karen C. Marston, Assistant Purchasing Manager
City Hall, Room 103
389 Congress Street
Portland, ME 04101

The undersigned having carefully examined the site of the work; the Plans; Standard Specifications, including all current amendments or revisions there of; the Supplemental Specification, Special Provisions; Contract Agreement and Contract Bonds, where applicable, contained herein for the **Presumpscot Elementary School – Window Replacement** on which proposals will be received until the time specified in this bid document; and in case of award, do(es) hereby propose and offer to enter into a contract to supply all the materials, tools, equipment and labor required to perform and construct the whole of the work in strict accordance with the terms and conditions of this contract at lump sum price stated in the following Price Proposal Page submitted by the undersigned.

This Proposal may be accepted by the City of Portland at any time within sixty (60) calendar days after opening of the bids.

**PRICE
PROPOSAL**

The undersigned having examined the attached document do(es) hereby propose and offer to enter into a contract to supply all the materials, tools, equipment and labor required to perform and construct the whole of the work in strict accordance with the terms and conditions of this contract at the price stated in the following Proposal:

BASE BID

LUMP SUM PRICE: \$ _____
(Award Basis)

TIME FOR COMPLETION FROM START OF WORK: _____

WARRANTY OF LABOR: _____

WARRANTY OF MATERIALS: _____

The undersigned also agrees as follows:

FIRST: To do any extra work which may be ordered, and to accept as full compensation therefore such prices as may be agreed upon in writing by the Engineer and the Contractor; or in case no agreement is made, to accept as full compensation the amount determined upon a "force account" basis as provided in the M.D.O.T. Standard Specifications, Revision of December, 2002.

SECOND: To begin work on the date specified in the Engineer's "Notice to Commence Work" as mutually agreed and to prosecute said work in such a manner as to complete it in the time stated on this proposal.

THIRD: That this offer is to continue open to acceptance until the formal contract is executed by the successful bidder of this work, and the City may at any time without notice accept this proposal whether any other proposal has previously been accepted or not. Provided, however, that the City will accept, in writing, one of the proposals made, or reject all proposals made, within sixty (60) calendar days after the date of opening of the proposals.

The undersigned as Bidder, declares that the only persons or parties interested in this Proposal are those named herein; that the bidder is not financially interested in, or otherwise affiliated in a business way with any other bidder on this contract; and that this Proposal is made without collusion with any other person, firm or corporation.

The undersigned declares that any person(s) employed by the City of Portland, Maine, who has direct or indirect personal or financial interest in this proposal or in any portion of the profits which may be derived therefrom, has been identified and the interest disclosed by separate attachment. (Please include in your disclosure any interest which you know of. An example of a direct interest would be a City employee who would be paid to perform services under this proposal. An example of an indirect interest would be a City employee who is related to any officers, employees, principal or shareholders of your firm or you.) If in doubt as to status or interest, please disclose to the extent known.

Respectfully submitted this _____ day of _____, 20 _____

IF AN INDIVIDUAL, SIGN HERE

Signature of Bidder _____

Address _____

Telephone Number _____ Fax Number _____

Social Security Number : _____

(Signatures for a Firm, Partnership or Corporation on next page.)

PROPOSAL (continued)

IF A FIRM OR PARTNERSHIP, SIGN HERE

Signature of Bidder _____

Name of Firm or Partnership _____

Business Address _____

Telephone Number _____ Fax Number _____

Social Security or Tax ID Number: _____

Names and Addresses of Members of Firm or Partnership:

IF A CORPORATION, SIGN HERE

Name of Bidder _____

Authorized Signature _____
(name) (title)

Business Address _____

Telephone Number _____ Fax Number _____

Tax ID Number : _____

Incorporated under the Laws of the State of _____

Names and Addresses of Officers of the Corporation:

President _____

Secretary _____

Treasurer _____

_____ ss

Before me, personally appeared _____ and acknowledged that the signature to the preceding bid is his/her signature in his/her official capacity.

Date: _____

Notary Public - Signature and Seal

**ALL CORPORATIONS MUST SIGN THIS FORM
AND SUBMIT WITH THE BID PROPOSAL**

(Insert copy of that part of the records of the corporation wherein authority is given to the officer of that corporation to sign this bid on behalf of the corporation.)

(date)

The above is a true copy of the records of the _____
Corporation, which records are in my legal custody.

Officer having custody of the records
_____ ss

Before me appeared, _____,

_____ of the _____ Corporation, and
made

oath that the above statement is true.

Notary Public - Signature and Seal

NOTICE

(This Must Be Filled Out)

The full names and residences of all persons interested in this bid as principals are as follows: (In case of Corporation, include and identify President, Treasurer, Manager)

_____	_____
_____	_____
_____	_____

ALL CONTRACTORS SHALL FILL IN THE FOLLOWING INFORMATION
BEFORE SUBMITTING BID

	Name and Address of Supplier	Products to be Supplied
1	_____	_____
2	_____	_____
3	_____	_____
4	_____	_____
5	_____	_____
6	_____	_____

	Name and Address of Contractor	Service or Trades to be Supplied	Anticipated \$ Amount
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
5	_____	_____	_____
6	_____	_____	_____

AGREEMENT BETWEEN THE
CITY OF PORTLAND
AND

(CONTRACTOR)

AGREEMENT entered into this _____ day of _____, 2011 by and between the CITY OF PORTLAND, a body politic and corporate, (hereinafter the "CITY"), and _____, located at _____ (hereinafter the "CONTRACTOR").

WITNESSETH

WHEREAS, the CITY did advertise by Bid #8811, entitled Presumpscot Elementary School – Window Replacement, and

WHEREAS, the CONTRACTOR did, under date of May 26, 2011, submit a Bid for such work; and

WHEREAS, after due consideration of all the Proposals, the CITY did award the Bid to the CONTRACTOR;

NOW THEREFORE, in consideration of the mutual promises made by each party to the other, the parties covenant and agree as follows:

1. The CONTRACTOR shall furnish all labor, materials, fixtures, supplies, equipment and transportation and shall perform all work required for the construction and completion of the Presumpscot Elementary School – Window Replacement project in accordance with the specifications contained in the contract documents entitled Presumpscot Elementary School – Window Replacement, Bid #8811, dated May 5, 2011 (hereinafter referred to as "Contract Documents") of which this Agreement is a part. All work shall be performed in strict conformance with the provisions of this Agreement, the Invitation for Bids, the CONTRACTOR's Proposal, and any and all General and Detailed Provisions and Plans.
2. It is agreed that the amount(s) given on the Proposal Page in the CONTRACTOR's Proposal Section of the Contract Documents will be used as the basis for determining the amount due under this Contract Agreement and for establishing the amount of the required Contract Performance Surety Bond and Contract Payment Surety Bond, and that the amount due under this Agreement so determined is _____ (\$ _____) (hereinafter referred to as the "Contract Price"). The CITY will have the right to

increase or decrease the amount and extent of the work by giving reasonable notice in writing to the **CONTRACTOR**.

3. **CONTRACTOR** covenants and agrees that all work performed and materials used shall be free from all defects, and that all work be performed as specified.
4. The **CITY** reserves the right to require Waivers of Lien from subcontractors and/or suppliers prior to each progress payment made to **CONTRACTOR** pursuant to the terms of this Agreement.
5. Prior to the execution of this Agreement, **CONTRACTOR** shall procure and maintain Public Liability Insurance coverage and Automobile Insurance coverage in amounts of not less than Four Hundred Thousand Dollars (\$400,000.00) combined single limit and aggregate for bodily injury, death, and property damage, naming the **CITY** as an additional insured thereon, and shall also procure Workers' Compensation Insurance coverage. **CONTRACTOR** shall furnish and thereafter maintain certificates evidencing such coverage, which certificates shall guarantee thirty (30) days' notice of termination of insurance from insurance company or agent.
6. Prior to the execution of this agreement, **CONTRACTOR** shall supply the City with a Performance Bond and Labor and Material Payment Bond, each in the amount of the contract price, guaranteeing one hundred percent (100%) performance of the contract, including the guarantee period and free and clear of any and all liens, attachments and encumbrances. All bonds shall comply with the requirements of Maine state law.
7. To the fullest extent permitted by law, the **CONTRACTOR** shall defend, indemnify and hold harmless the **CITY**, its officers and employees, from and against all claims, damages, losses, and expenses, just or unjust, including but not limited to the costs of defense and attorneys' fees arising out of or resulting from the performance of the Agreement, provided that any such claims, damage, loss or expense (1) is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property, including the loss of use therefrom, and (2) is caused in whole or in part by any negligent act or omission of the **CONTRACTOR**, anyone directly or indirectly employed by it, or anyone for whose act it may be liable.
8. Upon receipt of executed contracts and insurance as required, the **CITY** will promptly send an executed **CITY** contract and a "Notice to Commence Work" to the **CONTRACTOR**. The **CONTRACTOR** agrees to perform no work under this Agreement until it receives said Notice and to complete the work in the time specified by the contractor on the Proposal Page; that date/time is: _____. The time set for such completion may be extended only by written consent of the Director of Public Buildings for City of Portland (hereinafter referred to as the "**DIRECTOR**").
9. The **CONTRACTOR** shall perform the work to the satisfaction of the responsible **CITY** official who will have the right of inspection at all times, and whose approval and acceptance of the work will be a condition precedent to payments by the **CITY** under this Contract. **CITY** inspectors will have the authority to stop work in progress if such work is being done contrary to the plans, specifications, or engineering practice.

10. In the event that any dispute as to the amount, nature or scope of the work required under this Contract, the decision and judgment of the responsible **CITY** official will be final and binding.
11. The **CONTRACTOR** shall guarantee the work for a period of one (1) year for the faithful remedy of any defects due to faulty materials or workmanship and payment for any damage resulting therefrom.
12. **CONTRACTOR** shall keep accurate records of all services performed under this Agreement and shall submit such information to the **CITY** on a monthly basis. Payment for such services shall be made to **CONTRACTOR** not more than thirty (30) days after receipt of said forms and acceptance of the work by the **DIRECTOR**.
13. The **CITY** may terminate this Agreement for cause by written Notice to the **CONTRACTOR**. In the event of such termination, **CONTRACTOR** shall not be entitled to any further payment under this Agreement from the date of receipt of said Notice.
14. The **CITY** will have the right to terminate this Agreement at any time for its convenience on prior written Notice to **CONTRACTOR**. If Agreement is terminated by the **CITY** for convenience, the **CITY** will pay the **CONTRACTOR** for all work performed and all materials purchased pursuant to this Agreement prior to receipt of said Notice.

IN WITNESS WHEREOF, the said CITY OF PORTLAND has caused this Agreement to be signed and sealed by Patricia A. Finnigan, its Acting City Manager, thereunto duly authorized, and _____ has caused this Agreement to be signed and sealed by _____, its _____, thereunto duly authorized, the day and year first above written.

WITNESS

CITY OF PORTLAND

BY: _____
Patricia A. Finnigan
Its Acting City Manager

CONTRACTOR

By: _____

(Print or type name)

Its _____

Approved as to Form:

Approved as to funds:

Corporation Counsel's Office

Budget Office

**Presumpscot Elementary School - Portland, ME
Window Replacement
May 5, 2011**

Project Dates

1. Contract time for the Work scheduled at the Presumpscot Elementary School is restricted and may commence on June 15, 2011 and must be substantially complete by September 6, 2011.
2. Contract time for the Work scheduled at City of Portland owned facilities will be subject to Owner's review and approval of Contractor's submitted schedule.
3. Bid due date for the Work will be 3:00 EST, Thursday, May 26, 2011.
4. Technical questions concerning the bid must be submitted in writing no later than 12:00 noon, Friday, May 20, 2011.

Additional Requirements

1. Contractor is responsible for complying with all OSHA regulations.
2. Contractor shall provide a Site Specific Safety and Health Plan (SSHP) prior to project construction.
3. All installation work shall comply with the current state and local codes and regulations.
4. After construction is complete, a total of three (3) copies of all documentation, and warranties shall be provided.
5. Three (3) complete copies of maintenance manuals shall be provided

Submittals

The submittal must include the following:

1. Contractor is to secure all construction drawings required by the window manufacturer.
2. Contractor is to secure all permits for the project; fees for the City of Portland permits will be the responsibility of the contractor.

PART 1 - GENERAL

1.1 DESCRIPTION

The work under this Contract consists of the removal and disposal of the existing window systems. The supply of and installation of new heavy commercial grade, high performance aluminum windows, storefront windows, and aluminum wall panels within existing openings. In addition to supplying windows and window accessories these installations will require carpentry work, sealants, custom brake metal work and wood blocking.

All work would be completed at the Presumpscot Elementary School in Portland, Maine.

1.2 SCOPE OF WORK

The scope of work includes providing all labor, material, tools, equipment, and supervision necessary to complete the following:

- A. Removal and disposal of existing window systems.
- B. Furnish and install new commercial grade casement, hopper & fixed aluminum storefront window systems to best match existing configurations or configurations as shown on plan specs.
- C. Furnish, construct and install all insulated corrugated metal wall panels in accordance with the shop drawings and specifications.
- D. Furnish, construct and install custom break metal over existing wood fascia's and integrate into window finish / frame.

1.3 CONSTRUCTION DOCUMENTS AND MATERIAL SUBMITTALS

Prior to starting the work, the window Contractor must submit the following:

- A. Product Data: Include construction details, material descriptions, fabrication methods, dimensions of individual components and profiles, hardware, finishes, and operating instructions for each type of aluminum window indicated.
- B. Shop Drawings: Submit three (3) sets of shop drawings including plans, elevations, sections, details, hardware, attachments to other Work, operational clearances, and the following:
 - 1. Mullion details, including reinforcement and stiffeners.

2. Joinery details.
 3. Expansion provisions.
 4. Flashing and drainage details.
 5. Weather-stripping details.
 6. Thermal-break details.
 7. Glazing details.
- C. Samples for Selection: Material samples where applicable or requested.
- D. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for each type, grade, and size of aluminum window. Test results based on use of down-sized test units will not be accepted.
- E. Maintenance Data: For operable window sashes, operating hardware weather stripping and finishes being included in maintenance manuals.

1.4 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Limited storage area will be provided by Owner, where available. Supply temporary storage required for storage of equipment and materials for duration of Project. Utilize only areas designated by Owner's Representative for storage.
- B. Deliver windows to the site in an undamaged condition in manufacturer's original, unopened, undamaged containers with identification labels intact. Use care in handling and hoisting windows during transportation and at the jobsite.
- C. Comply with the manufacturer's written instructions for proper materials storage.
 1. Store materials within temperature ranges complying with manufacturer's recommendations, in dry areas protected from water and direct sunlight. If exposed to temperatures lower or higher than this the installer must restore to this range before using.
- D. Storage: Store windows and components out of contact with the ground, under a watertight covering, so as to prevent bending, warping, or otherwise damaging the windows. Damaged windows shall be replaced or repaired to an "as new" condition as approved.
- E. Protection: Protect finished surfaces during shipping and handling using manufacturer's standard method, except no coatings or lacquers shall be applied

to surface to which caulking and glazing compounds must adhere to.

1.5 BUILDING OCCUPANCY AND USE OF PREMISE

- A. Owner will occupy premises during periods of construction for the conduct of his normal operations. Cooperate with Owner to minimize conflict and to facilitate Owner's operations. Playgrounds and recreational areas within the school yard may not be utilized during school hours of operation unless Owner's permission is requested and granted.
- B. Predetermine and obtain approval, in advance from Owner, for vertical and horizontal transportation of labor and construction materials onto and out of the building.
- C. Before beginning work, the Contractor must secure approval from the Owner for the following.
 - 1. Areas permitted for personnel parking.
 - 2. Access to the site.
 - 3. Areas permitted for storage of materials and debris.
 - 4. Areas permitted for the location of cranes, hoists and chutes for loading and unloading materials.
- D. Interior stairs or elevators may not be used for removing debris or delivering materials, except as authorized by the Owner.

1.6 CONTRACTOR USE OF PREMISES

- A. Contractor will limit use of premises to allow for continuous, uninterrupted Owner occupancy and use. Dumpsters, scaffolds, ladders, staging or any other equipment will be only as permitted by the Owner's Representative.
- B. Coordinate use of premises under direction of Owner's Representative.
- C. Assume full responsibility for protection and safekeeping of products stored on-site under this Contract.
- D. Obtain and pay for use of secured additional storage or work areas needed for operations under this Contract.
- E. Obtain and pay for use of portable toilet facilities for use by Contractor's work force. Contractor's work force will not be allowed regular access to interior toilet facilities. Special situations, in which access to interior toilet facilities is

requested, will be at Owner's discretion.

- F. Maintain all exits from the building as fire exits. Should it be necessary, the Contractor will stop work during facility functions and allow use of all egresses from the building.
- G. Keep all drive lanes open at all times.

1.7 TEMPORARY UTILITIES, FACILITIES AND CONTROLS

A. Temporary Utilities:

1. Water and power for construction purposes will be made available at the site and will be made available to the Contractor. No lighting for construction purposes will be made available to the Contractor.
2. Contractor must provide all hoses, valves and connections for water from the source designated by the Owner when made available.
3. When available electrical power should be extended as required from the source designated by the Owner. Contractor must provide all trailers, connections and fused disconnects.

B. Temporary Sanitary Facilities:

1. Sanitary facilities will not be made available at the job site. The Contractor shall be responsible for the provision and maintenance of portable toilets or their equal.

C. Building Site:

1. The Contractor shall use reasonable care and responsibility to protect the building and site against damages. The Contractor shall be responsible for the correction of any damage incurred as a result of the performance of the contract.
2. The Contractor shall remove all debris from the job site in a timely and legally acceptable manner so as to not detract from the aesthetics or functions of the building.

D. Security:

1. Obey the Owner's requirements for personnel identification, inspection and other security measures.

1.8 JOB SITE PROTECTION

- A. The Contractor shall adequately protect building, paved areas, service drives, lawns, shrubs, trees, etc. from damage while performing the required work. Provide canvas, boards and sheet metals (properly secured) as necessary for protection and remove protection materials as work is completed. The Contractor shall repair or be responsible for costs to repair all property damaged during the project.
- B. During the Contractor's performance of the work, the building Owner will continue to occupy the existing building. The Contractor shall take all precautions to prevent the spread of dust and debris, particularly where such material may sift into the building. The Contractor shall provide labor and materials to construct, maintain and remove necessary, temporary enclosures to prevent dust or debris in the construction areas from entering the remainder of the building.
- C. Do not overload any portion of the building, by either use of or placement of equipment, storage of debris, or storage of materials.
- D. Protect against fire and flame spread. Maintain proper and adequate fire extinguishers.
- E. Store moisture susceptible materials above ground and protect with waterproof coverings.
- F. Remove all traces of piled bulk material and return the job site to its original condition upon completion of the work.

1.9 WORKING HOURS AND SCHEDULE

- A. Construct work in stages to accommodate Owner's use of premises during construction. Coordinate progress schedule and coordinate with Owner's Representative occupancy during construction. Contractor's daily work areas must be coordinated with and approved by the Owner's Representative, prior to any work commencing in that area. Submit work schedule to Owner's Representative. Normal working hours shall be between the hours of 7:00 a.m. and 7:00 p.m., seven days a week, except holidays.
- B. Construct work in stages to provide for continuous public usage. Do not close off public access to facility.
- E. Obtain approval from Owner prior to altering Work schedule.

1.10 CONSTRUCTION SCHEDULE

- A. It is the intent of the Owner to have existing exterior window assemblies removed and replaced in a completed, watertight condition on a daily basis. The intent is to allow the Contractor as much access as possible to the sites.
- B. The Contractor's Construction Schedule shall clearly identify the on-site crew foreman and the size of the crew to be utilized for each site. The crew size shall remain consistent and work shall be continuous throughout the project, from start-up to completion.
- C. The Owner's Representative shall review the Contractor's Construction Schedule prior to the start of any work. After defining the location(s) of the work progress, the Owner's Representative shall arrange to control occupancy in the facilities to the greatest extent possible. It shall be the responsibility of the Contractor to supply the Owner's Representative with written notice, 24 hours in advance, if his work location(s) for a workday is different from the schedule. The Contractor shall update his Construction Schedule weekly and submit a copy to the Owner's Representative for review.

1.11 PRE-JOB DAMAGE SURVEY OF FACILITY

- A. Perform a thorough survey of property and all affected areas of the building with Owner's Representative prior to starting the work in each area to document existing damage and operational status of existing equipment. Items identified on this list will not be the responsibility of Contractor unless further damaged by Contractor during execution of Work.

1.12 CORRECTION OF DAMAGE TO PROPERTY

- A. Consider any damage to building or property not identified in the pre-job damage survey as having resulted from execution of this Contract and correct at no additional expense to Owner.

1.13 SAFETY

- A. The Contractor shall be responsible for all means and methods as they relate to safety and shall comply with all applicable local, state and federal requirements (OSHA) that are safety related. Safety shall be the responsibility of the Contractor. All related personnel shall be instructed daily to be mindful of the full time requirement to maintain a safe environment for the facility's occupants including staff, visitors, students, customers and the occurrence of the general public on or near the site.

1.14 QUALITY ASSURANCE

- A. Installer Qualifications: An installer acceptable to the aluminum window manufacturer for installation of units required for this Project.
- B. Source Limitations: Obtain aluminum windows through one source from a single manufacturer.
- C. Product Options: Information on Drawings and in Specifications establishes requirements for aluminum windows' aesthetic effects and performance characteristics. Aesthetic effects are indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sightlines, to one another, and to adjoining construction. Performance characteristics are indicated by criteria subject to verification by one or more methods including preconstruction testing, field testing, and in-service performance.
- D. Fenestration Standard: Comply with AAMA/WDMA 101/I.S.2, "Voluntary Specifications for Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors," for minimum standards of performance, materials, components, accessories, and fabrication unless more stringent requirements are indicated.
 - 1. Provide WDMA-certified aluminum windows with an attached label.
- E. Glazing Publications: Comply with published recommendations of glass manufacturers and GANA's "Glazing Manual" unless more stringent requirements are indicated.
- F. Provide adequate number of experienced workmen regularly engaged in this type of work who are skilled in the application techniques of the materials specified. Provide at least one thoroughly trained and an experienced superintendent on the job at all times work is in progress.
- G. There shall be no deviations made from this specification or the approved shop drawings without the prior written approval of the Owner. Any deviation from the manufacturer's installation procedures must be supported by written certification on manufacturer's letterhead and presented for the Owner's consideration.

1.15 PROJECT CONDITIONS

- A. The facilities may be occupied and in use during construction. Take any necessary precaution to create as little disturbance or disruption to the facilities and their occupants as possible during the work.
- B. Supply, install and maintain barriers, protection, warning lines, lighting and personnel required to segregate the work area(s) from pedestrian or vehicular traffic, as well as to prevent damage to the facilities, their occupants, and the

surrounding landscaped and paved areas. All applicable O.S.H.A. and State of Maine requirements shall be observed by the Contractor. In all instances the more stringent requirements will apply.

- C. Schedule and execute work without exposing the facilities interiors to the effects of inclement weather. Protect the facilities and their occupants against such risks, and repair/replace work-related damage to the Owner's satisfaction.
- D. Do not install wall system components or sealants during precipitation, including fog, or when air temperature is below 40 degrees or is expected to go below 40 degrees during the application, or when there is ice, frost, moisture or visible dampness present.
- E. Phased or temporary construction will not be permitted. Schedule, execute and coordinate work on a daily basis so that components are installed completely and permanently as specified.
- F. Wall systems that are removed shall be made 100% weather-tight in the same day's operations.
- G. Supply shoring, supports and other items or materials necessary to brace existing work to remain. If brick removal is required; remove no more than 5 lineal feet of contiguous brick at one time. Support the structure, fixtures and facilities affected by the work.
- H. All work shall be performed in accordance with applicable Federal, State and local code requirements. In all instances the more stringent requirements will apply.
- I. All workmanship and materials shall be of the best construction practice. Specification requirements, which exceed the minimum requirements of the manufacturer, shall be complied with by the Contractor. In all instances the more stringent requirements will apply.
- J. Coordinate the work in this Section, including preparatory work, building protection, daily clean up and protection of building occupants.
- K. Supply labor, vacuums, tools and appliances necessary to keep the interior and exterior facilities and site areas below and around the area of Work clean, with as little accumulation of dust and debris as possible on a daily basis.

1.16 EMERGENCY RESPONSE

- A. The Contractor shall provide the Owner with after-hours (24 hour), emergency telephone numbers of the Contractor's Superintendent and Foreman.
- B. The Contractor must respond to emergency situations or calls within two (2) hours.

1.17 SCHEDULE OF VALUES

- A. Provide a line item breakdown of construction labor and materials costs.

1.18 PROGRESS MEETINGS

- A. Progress meetings may be scheduled as determined by the Owner and/or Owner's Representative.

1.19 COORDINATION

- A. This project may require the coordination of construction operations necessary to accomplish any hazardous waste abatement and the timely installation of the windows specified within this contract. This coordinated scheduling and timing will be managed by the Owner's representative and the Contractor's will be required to fully cooperate with other on-site Contractors in order to achieve completion in a timely and safe manner.

1.20 DIMENSIONS AND QUANTITIES

- A. Verify dimensions and quantities in the field prior to bid submission. The scope has been compiled from various sources and may not reflect the actual field conditions, sizes and/or quantities at the time of construction.
- B. The Contractor is solely responsible for means and methods of construction. Make necessary investigations (including sampling) and take necessary precautions to properly supply, fabricate, and install work.
- C. Unfamiliarity with existing project conditions will not be considered as a basis for Additional compensation.
- D. In case of inconsistency between this document and product Manufacturers Specifications or within either document, the better quality and/or greater quantity of work shall be provided, as determined by the Owner's Representative.

1.21 MATERIAL SAFETY DATA SHEETS

- A. Material safety data sheets (MSDS) shall be submitted in complete sets for all products to be used prior to any work being performed.

1.22 HAZARDOUS MATERIAL ABATEMENT

- A. The Work requirements of the Contract can be summarized by reference to this Scope document, Addenda and Modifications to the Contract Documents including, but not limited to, the printed matter referenced in these requirements. It is recognized that the Work is affected or influenced by governing regulations, natural phenomenon (including weather conditions), unforeseen conditions uncovered by the Work, and other forces outside of the Contract Documents.
- B. Hazardous materials testing of Work for content of Asbestos-Containing Building Materials & Lead-Based Paint has been conducted within the area of Work prescribed within this document and a copy of the report is included. The window Contractor will not be responsible for removal of suspect materials in areas of Work indicated by the report. Any removal of hazardous materials is to be conducted by the Abatement Contractor in accordance with a project design prepared by a certified Abatement Project Designer, at the Abatement Contractor's expense.

1.23 WARRANTY

- A. General Warranty: The warranties specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents.
- B. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace aluminum windows that fails in materials or workmanship within specified warranty period. Failures include, but are not limited to, the following:
 - 1. Failure to meet performance requirements.
 - 2. Structural failures including excessive deflection.
 - 3. Water leakage, air infiltration, or condensation.
 - 4. Faulty operation of movable sash and hardware.
 - 5. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
 - 6. Insulating glass failure.
- C. Warranty Period: Three years from date of Substantial
- D. Warranty Period for Metal Finishes: 10 years from date of Substantial Completion.
- E. Warranty Period for Glass: 10 years from date of Substantial Completion.

PART 2 - ALUMINUM WINDOWS

2.1 GENERAL

- A. Provide all labor, materials, and equipment required to perform all operations necessary to complete the installation and finish of the aluminum fixed, hopper, casement and store front style windows.

2.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Aluminum Framed Storefronts – Part 3
- B. Metal Wall Panels – Part 4
- C. Rough Carpentry – Part 5
- D. Joint Sealants – Part 6

2.3 PERFORMANCE REQUIREMENTS

- A. General: Provide aluminum windows capable of complying with performance requirements indicated, based on testing manufacturer's windows that are representative of those specified and that are of test size indicated: Minimum size required by AAMA/WDMA 101/I.S.2.-97
- B. Performance Requirements: Provide aluminum windows of the performance class and grade indicated that comply with AAMA/WDMA 101/I.S.2.-97
- C. Glass: All insulated glass shall be tested, certified and carry the respective IGCC-CBA level certification number on the glass spacer.
- D. Thermal Movements: Provide aluminum windows, including anchorage, that accommodate thermal movements of units resulting from the following maximum change (range) in ambient and surface temperatures without buckling, distortion, opening of joints, failure of joint sealants, damaging loads and stresses on glazing and connections, and other detrimental effects: Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C) material surfaces.

2.4 PRODUCTS

- A. Manufacturers: Universal Window and Door, Series 600, shall be the standard of design and detailing; or approved equals as listed below.
 - 1. EFCO
 - 2. Kawneer
 - 3. Peerless

2.5 MATERIALS, GENERAL

- A. Aluminum Extrusions: Alloy and temper recommended by aluminum window manufacturer for strength, corrosion resistance, and application of required finish, but not less than 22,000-psi (150-MPa) ultimate tensile strength, not less than 16,000-psi (110-MPa) minimum yield strength, and not less than 0.062-inch (1.6-mm) thickness at any location for the main frame and sash members.
- B. Fasteners: Aluminum, nonmagnetic stainless steel, epoxy adhesive, or other materials warranted by manufacturer to be noncorrosive and compatible with aluminum window members, trim, hardware, anchors, and other components.
 - 1. Reinforcement: Where fasteners screw-anchor into aluminum less than 0.125 inch (3.2 mm) thick, reinforce interior with aluminum or nonmagnetic stainless steel to receive screw threads, or provide standard, noncorrosive, pressed-in, splined grommet nuts.
 - 2. Exposed Fasteners: Unless unavoidable for applying hardware, do not use exposed fasteners. For application of hardware, use fasteners that match finish of member or hardware being fastened, as appropriate.
- C. Anchors, Clips, and Accessories: Aluminum, nonmagnetic stainless steel, or zinc-coated steel or iron complying with ASTM B 633 for SC 3 severe service conditions; provide sufficient strength to withstand design pressure indicated.
- D. Reinforcing Members: Aluminum, nonmagnetic stainless steel, nickel/chrome-plated steel complying with ASTM B 456 for Type SC 3 severe service conditions, or zinc-coated steel or iron complying with ASTM B 633 for SC 3 severe service conditions; provide sufficient strength to withstand design pressure indicated.
- E. Compression-Type Weather Stripping: Provide compressible weather stripping designed for permanently resilient sealing under bumper or wiper action, and completely concealed when aluminum window is closed.
 - 1. Weather-Stripping Material: Manufacturer's standard system and materials complying with AAMA/WDMA 101/1.S.2.-97
- F. Sliding-Type Weather Stripping: Provide woven-pile weather stripping of wool, polypropylene, or nylon pile and resin-impregnated backing fabric. Comply with AAMA 701/702.
 - 1. Weather Seals: Provide weather stripping with integral barrier fin or fins of semi-rigid, polypropylene sheet or polypropylene-coated material.
- G. Replaceable Weather Seals: Comply with AAMA 701/702.
- H. Sealant: For sealants required within fabricated windows, provide window manufacturer's standard, permanently elastic, non-shrinking, and non-migrating type recommended by sealant manufacturer for joint size and movement.

2.6 GLAZING

- A. Glazing System: Manufacturer's standard Low-E, insulated, factory-glazing system that produces weather tight seal.

2.7 HARDWARE

- A. General: Provide manufacturer's standard hardware fabricated from aluminum, stainless steel, carbon steel complying with AAMA 907, or other corrosion-resistant material compatible with aluminum; designed to smoothly operate, tightly close, and securely lock aluminum windows and sized to accommodate sash or ventilator weight and dimensions. Do not use aluminum in frictional contact with other metals. Where exposed, provide die-cast zinc with special coating finish or nonmagnetic stainless steel.

2.8 INSECT SCREENS

- A. General: Design windows and hardware to accommodate screens in a tight-fitting, removable arrangement, with a minimum of exposed fasteners and latches.
- B. Aluminum Insect Screen Frames: Manufacturer's standard aluminum alloy complying with SMA 1004. Fabricate frames with mitered or coped joints, concealed fasteners, adjustable rollers, and removable PVC spline/anchor concealing edge of frame.
 1. Aluminum Tubular Framing Sections and Cross Braces: Roll formed from aluminum sheet with minimum wall thickness as required for class indicated.
 2. Extruded-Aluminum or Aluminum Tubular Framing Sections and Cross Braces: Not less than 0.040-inch (1-mm) wall thickness.
 3. Finish: Match aluminum window members.
- C. Glass-Fiber Mesh Fabric: 18-by-14 (1.1-by-1.4-mm) or 18-by-16 (1.0-by-1.1-mm) mesh of PVC-coated, glass-fiber threads; woven and fused to form a fabric mesh resistant to corrosion, shrinkage, stretch, impact damage, and weather deterioration in the following color. Comply with ASTM D 3656.

2.9 FABRICATION

- A. General: Fabricate aluminum windows, in sizes indicated, that comply with requirements and that meet or exceed AAMA/WDMA 101/I.S.2-97 performance requirements for the applicable window type and performance class.
- B. Weather Stripping: Provide full-perimeter weather stripping for each operable sash and ventilator.
- C. Weep Holes: Provide weep holes and internal passages to conduct infiltrating water to exterior.

- D. Mullions: Provide mullions and cover plates as shown, matching window units, complete with anchors for support to structure and installation of window units. Allow for erection tolerances and provide for movement of window units due to thermal expansion and building deflections, as indicated. Provide mullions and cover plates capable of withstanding design loads of window units.
- E. Subframes: Provide subframes with anchors for window units as shown, of profile and dimensions indicated but not less than 0.062-inch- (1.6-mm-) thick extruded aluminum. Miter or cope corners, and weld and dress smooth with concealed mechanical joint fasteners. Finish to match window units. Provide subframes capable of withstanding design loads of window units.
- F. Factory-Glazed Fabrication: Complete fabrication, assembly, mulling of units, finishing, hardware application, and other work in the factory to the greatest extent possible. Disassemble components only as necessary for shipment and installation. Allow for scribing, trimming, and fitting at project site.
- G. Glazing Stops: Provide snap-on glazing stops to match frames.

2.10 FINISHES

- A. General: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.
- C. Clear Anodized Aluminum: Provide fine directional mechanical satin polish with NAAMM-C22A41, Class I, 0.7 mil thickness clear anodized finishes.

2.11 EXECUTION

- A. Examine openings, substrates, structural support, anchorage, and conditions, with Installer present, for compliance with requirements for installation tolerances; rough opening dimensions; levelness of sill plate; coordination with wall flashings, vapor retarders, and other built-in components; operational clearances; and other conditions affecting performance of work.
 - 1. Masonry Surfaces: Visibly dry and free of excess mortar, sand, and other construction debris.
 - 2. Wood Frame Walls: Dry, clean, sound, well nailed, free of voids, and without offsets at joints. Ensure that nail heads are driven flush with surfaces in opening and within 3 inches of opening.
 - 3. Metal Surfaces: Dry; clean; free of grease, oil, dirt, rust, corrosion, and welding slag; without sharp edges or offsets at joints.

4. Masonry and Wood Voids: All voids associated with the installation of the window shall be filled with minimal expanding foam spray.
- B. Report frame defects or unsuitable conditions to the Owner's Representative before proceeding. Proceed with installation only after unsatisfactory conditions have been corrected.
- C. Acceptance of Conditions: Beginning of installation confirms acceptance of existing conditions.

2.12 INSTALLATION

- A. General: Comply with manufacturer's written instructions for installing windows, hardware, accessories, and other components.
- B. Install sealant and related backing materials at perimeter of units or assemblies in accordance with the system manufacture's printed instructions and literature. Set window sill members in bed of sealant or with gaskets, as indicated, for weather tight construction. Fill all voids between masonry and interior walls with minimal expanding foam spray.
- C. Install windows level, plumb, square, true to line, without distortion or impeding thermal movement, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction.
- D. Install windows and components to drain condensation, water penetrating joints, and moisture migrating within windows to the exterior.
- E. Pack fibrous insulation in shim spaces at perimeter to maintain continuity of thermal barrier.
- F. The exterior joints between the sashes, trim and mullions shall be properly sealed watertight with an approved sealant.
- G. Install panels as shown on approved shop drawings.

2.13 ADJUSTING

- A. Adjust operating sashes and ventilators, screens, hardware, [operators,] and accessories for a tight fit at contact points and weather stripping for smooth operation and weather tight closure. Lubricate hardware and moving parts.

2.14 PROTECTION AND CLEANING

- A. Perform daily clean-up to collect all wrappings, empty containers, paper, and other debris from the project site. Upon completion, all debris must be disposed of in a legally acceptable manner.
- B. Protect window surfaces from contact with contaminating substances resulting from construction operations. In addition, monitor window surfaces adjacent to and below exterior concrete and masonry surfaces during construction for presence of dirt, scum,

alkaline deposits, stains, or other contaminants. If contaminating substances do contact window surfaces, remove contaminants immediately according to manufacturer's written recommendations.

- C. Clean aluminum surfaces immediately after installing windows. Avoid damaging protective coatings and finishes. Remove excess sealants, glazing materials, dirt, and other substances.
- D. Clean factory-glazed glass immediately after installing windows. Comply with manufacturer's written recommendations for final cleaning and maintenance. Remove nonpermanent labels and clean surfaces.
- E. Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during construction period.

PART 3 – ALUMINUM FRAMED STOREFRONTS

3.1 GENERAL

- A. Provide all labor, materials, and equipment required to perform all operations necessary to complete the installation and finish of the aluminum fixed storefront style windows. This Section also includes the glazed storefront systems to receive glazing, embedded items and connections for attaching systems to building structure.

3.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Aluminum Windows – Part 2
- B. Metal Wall Panels – Part 4
- C. Rough Carpentry – Part 5
- D. Joint Sealants – Part 6

3.3 PERFORMANCE REQUIREMENTS

- A. General: Provide aluminum-framed systems, including anchorage, capable of withstanding, without failure, the effects of the following:
 - 1. Structural loads.
 - 2. Thermal movements.
 - 3. Movements of supporting structure indicated on Drawings including, but not limited to, story drift and deflection from uniformly distributed and concentrated live loads.
 - 4. Dimensional tolerances of building frame and other adjacent construction

- B. Structural Loads:
1. Wind Loads: Provide aluminum-framed systems conforming to design load criteria as set forth in 2009 IBC.
 2. Seismic Loads: Provide aluminum-framed systems conforming to design load criteria as set forth in 2009 IBC.
- C. Deflection of Framing Members:
1. Deflection Normal to Wall Plane: Limited to 1/180 of clear span for spans up to 13 feet 6 inches (4.1 m) and to 1/240 of clear span plus 1/4 inch (6.35 mm) for spans greater than 13 feet 6 inches (4.1 m) or an amount that restricts edge deflection of individual glazing lites to 3/4 inch (19 mm), whichever is less.
 2. Deflection Parallel to Glazing Plane: Limited to 1/360 of clear span or 1/8 inch (3.2 mm), whichever is smaller.
- D. Structural-Test Performance: Provide aluminum-framed systems tested according to ASTM E 330 as follows:
1. When tested at positive and negative wind-load design pressures, systems do not evidence deflection exceeding specified limits.
 2. When tested at 150 percent of positive and negative wind-load design pressures, systems, including anchorage, do not evidence material failures, structural distress, and permanent deformation of main framing members exceeding 0.2 percent of span.
 3. Test Durations: As required by design wind velocity but not less than 10 seconds.
- E. Thermal Movements: Provide aluminum-framed systems that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
1. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.
- F. Air Infiltration: Provide aluminum-framed systems with maximum air leakage through fixed glazing and framing areas of 0.06 cfm/sq. ft. (0.03 L/s per sq. m) of fixed wall area when tested according to ASTM E 283 at a minimum static-air-pressure difference of 1.57 lbf/sq. ft. (75 Pa).
- G. Water Penetration under Static Pressure: Provide aluminum-framed systems that do not evidence water penetration through fixed glazing and framing areas when tested according to ASTM E 331 at a minimum static-air-pressure difference of 20 percent of positive wind-load design pressure, but not less than 6.24 lbf/sq. ft. (300 Pa).

1. **Maximum Water Leakage:** No uncontrolled water penetrating systems or appearing on systems' normally exposed interior surfaces from sources other than condensation. Water controlled by flashing and gutters that is drained to exterior and cannot damage adjacent materials or finishes is not considered water leakage.
- H. **Condensation Resistance:** Provide aluminum-framed systems with fixed glazing and framing areas having condensation-resistance factor (CRF) of not less than 45 when tested according to AAMA 1503.
- I. **Average Thermal Conductance:** Provide aluminum-framed systems with fixed glazing and framing areas having average U-factor of not more than 0.63 Btu/sq. ft. x h x deg F (3.57 W/sq. m x K) when tested according to AAMA 1503.

3.4 PRODUCTS

- A. **Manufacturers:** Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 1. Vistawall Architectural Products
 2. Tubelite
 3. Kawneer Company, Inc.
 4. Or Equal
- B. **Products:** Exterior Aluminum Framed Storefronts
 1. Kawneer: EnCORE Thermal Framing System
 2. Vistawall: FG 3000
 3. Tubelite: VersaTherm

3.5 MATERIALS

- A. **Aluminum:** Alloy and temper recommended by manufacturer for type of use and finish indicated, complying with the requirements of standards indicated below.
 1. Sheet and Plate: ASTM B 209 (ASTM B 209M).
 2. Extruded Bars, Rods, Shapes, and Tubes: ASTM B 221 (ASTM B 221M).
 3. Extruded Structural Pipe and Tubes: ASTM B 429.
 4. Bars, Rods, and Wire: ASTM B 211 (ASTM B 211M).
 5. Welding Rods and Bare Electrodes: AWS A5.10.

- B. Steel Reinforcement: With manufacturer's standard corrosion-resistant primer complying with SSPC-PS Guide No. 12.00 applied immediately after surface preparation and pretreatment. Select surface preparation methods according to recommendations in SSPC-SP COM and prepare surfaces according to applicable SSPC standard.
1. Structural Shapes, Plates, and Bars: ASTM A 36/A 36M.
 2. Cold-Rolled Sheet and Strip: ASTM A 1008/A 1008M.
 3. Hot-Rolled Sheet and Strip: ASTM A 1011/A 1011M.

3.6 FRAMING SYSTEMS

- A. Framing Members: Manufacturer's standard extruded-aluminum framing members of thickness required and reinforced as required to support imposed loads.
1. Exterior Framing for Glazed Areas: 2 inch by 4-1/2 -inch, front glazed framing members that are composite assemblies of two separate extruded-aluminum components permanently bonded by an elastomeric material of low thermal conductance.
 2. Exterior Framing for Insulated Panels: 1-3/4 inch by 3 inch
- B. Brackets and Reinforcements: Provide manufacturer's standard brackets and reinforcements from stainless steel. Provide non-staining, nonferrous shims for aligning system components.
- C. Fasteners and Accessories: Manufacturer's standard corrosion-resistant, non-staining, non-bleeding fasteners and accessories compatible with adjacent materials.
1. Where fasteners are subject to loosening or turning out from thermal and structural movements, wind loads, or vibration, use self-locking devices.
 2. Reinforce members as required to retain fastener threads.
 3. Do not use exposed fasteners, except for hardware application. For hardware application, use countersunk Phillips flat-head machine screws finished to match framing members or hardware being fastened, unless otherwise indicated.
- D. Concrete and Masonry Inserts: Hot-dip galvanized cast-iron, malleable-iron, or steel inserts complying with ASTM A 123 or ASTM A 153 requirements.
- E. Flashing: Manufacturer's standard corrosion-resistant, non-staining, non-bleeding flashing compatible with adjacent materials. Form exposed flashing from sheet aluminum finished to match framing and of sufficient thickness to maintain a flat appearance without visible deflection.
- F. Framing System Gaskets and Sealants: Manufacturer's standard recommended by manufacturer for joint type.

- G. Subsills for Exterior Storefronts: Manufacturer's standard thermally broken extruded aluminum sill flashing, color to match framing.

3.7 GLAZING SYSTEM

- A. Low -E Insulated Glazing as specified in Aluminum Windows.
- B. Glazing Gaskets: Manufacturer's standard pressure-glazing system of black, resilient glazing gaskets, setting blocks, and shims or spacers, fabricated from an elastomer of type and in hardness recommended by system and gasket manufacturer to comply with system performance requirements. Provide gasket assemblies that have corners sealed with sealant recommended by gasket manufacturer.
- C. Spacers, Setting Blocks, Gaskets, and Bond Breakers: Manufacturer's standard permanent, non-migrating types in hardness recommended by manufacturer, compatible with sealants, and suitable for system performance requirements.
- D. Secondary Sealant: For use as weather seal, compatible with structural silicone sealant and other system components with which it comes in contact, and that accommodates a 50 percent increase or decrease in joint width at the time of application when measured according to ASTM C 719.
- E. Framing system gaskets, sealants, and joint fillers as recommended by manufacturer for joint type.
- F. Sealants and joint fillers for joints at perimeter of entrance and storefront systems as specified in PART 6 - "Joint Sealants."

3.8 FABRICATION

- A. General: Form aluminum shapes before finishing.
- B. Weld in concealed locations to greatest extent possible to minimize distortion or discoloration of finish. Remove weld spatter and welding oxides from exposed surfaces by descaling or grinding.
- C. Framing Members, General: Fabricate components that, when assembled, have the following characteristics:
 - 1. Accurately fitted joints with ends coped or mitered.
 - 2. Means to drain water passing joints, condensation occurring within framing members, and moisture migrating within the system to exterior.
 - 3. Physical and thermal isolation of glazing from framing members.
 - 4. Accommodations for thermal and mechanical movements of glazing and framing to maintain required glazing edge clearances.

5. Provisions for field replacement of glazing from exterior.
 6. Fasteners, anchors, and connection devices that are concealed from view to greatest extent possible.
- D. Glazing Channels: Provide minimum clearances for thickness and type of glass indicated according to FGMA's "Glazing Manual."
- E. Storefront Framing: Fabricate framing in profiles indicated for flush glazing (without projecting stops). Provide subframes and reinforcing of types indicated or, if not indicated, as required for a complete system. Factory assemble components to greatest extent possible. Disassemble components only as necessary for shipment and installation.

3.9 ALUMINUM FINISHES

- A. General: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations relative to applying and designating finishes.
- B. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples as determined by the architect. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast as determined by the architect.
- C. Finish designations prefixed by AA conform to the system established by the Aluminum Association for designating aluminum finishes.
- D. Clear Anodized Aluminum: Provide fine directional mechanical satin polish with NAAMM-C22A41, Class I, 0.7 mil thickness clear anodized finishes.

3.10 STEEL PRIMING

- A. General: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations relative to applying primer.
- B. Surface Preparation: Perform manufacturer's standard cleaning operations to remove dirt, oil, grease, or other contaminants that could impair paint bond. Remove mill scale and rust, if present, from uncoated steel.
- C. Priming: Apply manufacturer's standard corrosion-resistant primer immediately after surface preparation and pretreatment.

3.11 EXECUTION

- A. Examine areas, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of entrance and storefront systems. Do not proceed with installation until unsatisfactory conditions have been corrected.

1. Masonry Surfaces: Visibly dry and free of excess mortar, sand, and other construction debris.
 2. Wood Frame Walls: Dry, clean, sound, well nailed, free of voids, and without offsets at joints. Ensure that nail heads are driven flush with surfaces in opening and within 3 inches of opening.
 3. Metal Surfaces: Dry; clean; free of grease, oil, dirt, rust, corrosion, and welding slag; without sharp edges or offsets at joints.
- B. Report frame defects or unsuitable conditions to the Owner's Representative before proceeding. Proceed with installation only after unsatisfactory conditions have been corrected.
- C. Acceptance of Conditions: Beginning of installation confirms acceptance of existing conditions.

3.12 INSTALLATION

- A. General: Comply with manufacturer's written instructions for protecting, handling, and installing entrance and storefront systems. Do not install damaged components. Fit frame joints to produce hairline joints free of burrs and distortion. Rigidly secure non-movement joints. Seal joints watertight.
- B. Metal Protection: Where aluminum will contact dissimilar metals, protect against galvanic action by painting contact surfaces with primer or by applying sealant or tape recommended by manufacturer for this purpose. Where aluminum will contact concrete or masonry, protect against corrosion by painting contact surfaces with bituminous paint.
- C. Install components to drain water passing joints and condensation and moisture occurring or migrating within the system to the exterior.
- D. Set continuous sill members and flashing in a full sealant bed to provide weather tight construction, unless otherwise indicated. Comply with requirements of PART 6 "Joint Sealants."
- E. Install framing components plumb and true in alignment with established lines and grades without warp or rack of framing members.
- F. Install entrances plumb and true in alignment with established lines and grades without warp or rack. Lubricate operating hardware and other moving parts according to hardware manufacturers' written instructions.
1. Install surface-mounted hardware according to manufacturer's written instructions using concealed fasteners to greatest extent possible. Provide Rivnuts for fastening hardware.
- G. Install glazing to comply with manufacturer's requirements of glazing installation; unless otherwise indicated.
- H. Remove excess sealant from component surfaces before sealant has cured.

- I. Install secondary-sealant weather seal according to sealant manufacturer's written instructions to provide weatherproof joints. Install joint fillers behind sealant as recommended by sealant manufacturer.
- J. Install perimeter sealant to comply with requirements of PART 6 "Joint Sealants," unless otherwise indicated.
- K. Erection Tolerances: Install entrance and storefront systems to comply with the following maximum tolerances:
 - 1. Variation from Plane: Limit variation from plane or location shown to 1/8 inch in 12 feet (3 mm in 3.7 m); 1/4 inch (6 mm) over total length.
 - 2. Alignment: Where surfaces abut in line, limit offset from true alignment to 1/16 inch (1.5 mm). Where surfaces meet at corners, limit offset from true alignment to 1/32 inch (0.8 mm).
 - 3. Diagonal Measurements: Limit difference between diagonal measurements to 1/8 inch (3 mm).

3.13 PROTECTIONS

- A. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and Installer that ensure entrance and storefront systems are without damage or deterioration at the time of Substantial Completion.

PART 4 – METAL WALL PANELS

4.1 GENERAL

- A. Provide all labor, materials, and equipment required to perform all operations necessary to complete the installation and finish of the concealed-fastener corrugated aluminum wall panels.

4.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Aluminum Windows – Part 2
- B. Aluminum Framed Storefronts – Part 3
- C. Rough Carpentry – Part 5
- D. Joint Sealants – Part 6

4.3 PERFORMANCE REQUIREMENTS

- A. General: Provide metal wall panel assemblies that comply with performance requirements specified as determined by testing manufacturers' standard assemblies similar to those indicated for this Project, by a qualified testing and inspecting agency.
- B. System shall meet performance criteria as installed. Either test data or signed and sealed engineering calculations shall document the performance of the panel system to meet design loads required.
- C. Water Penetration: Provide manufactured wall panel assemblies with no water penetration as defined in the test method when tested according to ASTM E 331 at a minimum differential pressure of 20 percent of inward acting, wind-load design pressure of not less than 6.24 psf and not more than 12.00 psf.

4.4 PRODUCTS

- A. Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. Atas International, Inc.
 - 2. CENTRIA
 - 3. Or Equal
- B. Products: Concealed-fastener, Metal Wall Panels - 0.040 inch thick: Provide factory-formed, standard color, 7/8" corrugated metal wall panels designed to be field assembled by lapping and interconnecting side edges of adjacent panels and mechanically attaching through panel to supports using concealed fasteners in side laps. Include accessories required for weather tight installation.
 - 1. Atas International, Inc.: Corra-Lok
 - 2. CENTRIA: IW-60A
 - 3. Or Equal

4.5 FABRICATION

- A. Panels:
 - 1. Panels to be Factory fabricated in a controlled environment.
 - 2. Panels to be tension leveled during roll forming process.
 - 3. Panels to be produced in longest lengths possible, except when modular units are utilized.

- B. Form all components true to shape, accurate in size, square and free from distortion or defects. Cut panels to precise lengths indicated on approved shop drawings or as required by field conditions.
- C. Accessories: Factory fabricates trim and flashing components in standard 12-foot lengths.
 - 1. Form panel lines, breaks, and angles to be sharp and true, with surfaces free from warp and buckle.
 - 2. Fabricate wall panels as required to maintain fabrication tolerances and to withstand design loads.
- D. Fabricate metal wall panels in a manner that eliminates condensation on interior side of panel and with joints between panels designed to form weather tight seals.
- E. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- F. Panels, fabrication and installation shall meet the requirements of the Metal Construction Association Preformed Metal Wall Guidelines.

4.6 EXECUTION

- A. Field Measurements
 - 1. Field measurements should be taken by the installer for verification of dimensional correctness in relationship to original plans, prior to providing manufacturer with a bill of material.
- B. Delivery, Storage and Handling
 - 1. Do not deliver materials of this section to project site until suitable facilities for storage and protection are available.
 - 2. Protect materials from damage during transit and at project site. Store under cover, but sloped to provide positive drainage. Do not expose materials with strippable protective film to direct sunlight or extreme heat.
 - 3. Do not allow storage of other materials or allow staging of other work on installed metal panel system.
 - 4. Upon receipt of delivery of metal panel system, and prior to signing the delivery ticket, the installer is to examine each shipment or damage and for completion of the consignment.
- C. Sequencing and Scheduling
 - 1. Installer shall coordinate with general contractor as to scheduled delivery time after receipt of field verified bill of material by manufacturer as it relates to actual project scheduling.

4.7 INSTALLATION

- A. General: Install metal wall panels in orientation, sizes, and locations indicated on Drawings. Install panel's perpendicular to required framing over 2" rigid insulation board unless otherwise indicated. Anchor metal wall panels and other components of the Work securely in place, with provisions for thermal and structural movement.
 - 1. Field cutting of metal wall panels by torch is not permitted.
 - 2. Rigidly fasten metal wall panels and allow for thermal expansion and contraction as required by the panel manufacturer. Pre-drill panels as required.
 - 3. Install screw fasteners.
 - 4. Locate panel splices over, but not attached to, structural supports. Stagger panel splices and end laps to avoid a four-panel lap splice condition.
 - 5. Apply elastomeric sealant continuously between metal base channel (sill angle) and concrete, and elsewhere as indicated or, if not indicated, as necessary for waterproofing and material compatibility.
 - 6. Provide weatherproof seals for pipe and conduit penetrating exterior walls.
- B. Fasteners: Use fasteners of size and length as required for compatibility with substrate.
 - 1. Steel Wall Panels: Use stainless-steel fasteners or metallic coated fasteners for surfaces exposed to the exterior and galvanized steel fasteners for surfaces exposed to the interior.
 - 2. Concealed fasteners shall have a high performance coating
 - 3. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with bituminous coating, by applying rubberized-asphalt underlayment to each contact surface, or by other permanent separation as recommended by metal wall panel manufacturer.
- C. Joint Sealers: Install gaskets, joint fillers, and sealants where indicated and where required for weatherproof performance of metal wall panel assemblies.
- D. Flashings: Install components required for a complete sheet metal wall assembly including trim, copings, seam covers, flashings, sealants, gaskets, fillers, closure strips, and similar items.
- E. Comply with performance requirements, manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual" and NRCA Waterproofing Manual. Provide concealed fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints, and seams that will be permanently watertight and weather resistant.

4.8 PROTECTIONS

- A. Remove temporary protective coverings and strippable films, if any, as metal wall panels are installed. Maintain in a clean condition during construction.
- B. Protection:
 - 1. Provide as required completed work of this section will be without damage or deterioration at date of substantial completion.
- C. Touch up minor abrasions with matching paint provided by panel manufacturer. Remove and replace panels that cannot be satisfactorily touched up.
- D. After metal wall panel installation, clear weep holes and drainage channels of obstructions, dirt and sealant.

PART 5 – ROUGH CARPENTRY

5.1 GENERAL

- A. This section includes all labor, materials, equipment and related services necessary for the fabrication, delivery and installation of the work shown on the drawings and or specified herein, including but not limited to the following:
 - 1. Wood blocking, framing and nailers.

5.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Aluminum Windows – Part 2
- B. Aluminum Framed Storefronts – Part 3
- C. Metal Wall Panels – Part 4

5.3 STANDARDS

- A. All lumber and plywood shall bear grade and trademarks under those rules it is produced, a mark of mill identification and shall conform to the current standards set up by the following Associations:
 - 1. White Pine, Eastern Spruce and Balsam Fir
Northeastern Lumber Manufacturers Association, Inc.
 - 2. Eastern Hemlock
Northeastern Lumber Manufacturers Association, Inc.
 - 3. Southern Pine
Southern Pine Inspection Bureau

- 4. Douglas Fir, Western Hemlock, Englemann and Western White Spruce
Western Wood Products Association
- 5. Plywood
American Plywood Association

5.4 LUMBER PRODUCTS

- A. Provide lumber for miscellaneous wood framing, blocking, cant strips, nailers, etc. for all work of the Project, including, but not limited to, windows, storefronts, flashing, sheet metal work, and the like.
- B. Provide new lumber of consistent size, free of stains and mildew, kiln dried to a moisture content of not more than 19% by weight. Where exposed or semi-exposed, provide wood members selected for best possible appearance from the grade of stock specified.
- C. Provide lumber in longest practical lengths. Use single length pieces wherever possible.
- D. General Carpentry Material Schedule shall be as follows:

<u>Item</u>	<u>Grade</u>	<u>Species</u>
Lumber 2 in. nominal thickness or greater	Construction Grade	Spruce-Pine-Fir
Lumber less than 2 in. nominal thickness	Construction Grade	Spruce-Pine-Fir

- E. Pressure Preservative Treated Lumber: Pressure preservative treated lumber above ground and in contact with roofing, flashing, sheet metal, masonry, concrete, damp proofing, and waterproofing in conformance with AWPB LP-2 and AWPA C2. Provide pressure preservative treated lumber with a minimum net retention of 0.25 pcf. Dry Lumber to maximum moisture content of 19% after treatment. Use only waterborne preservatives which conform to AWPA P5. Creosote preservatives are not acceptable.
- F. All framing lumber shall be dressed four sides to American Lumber Standards Committee Standards dressed dimensions.

5.5 FASTENERS

- A. Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacture.
 - 1. Where rough carpentry is exposed to weather, in ground contact, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.
- B. Nails, Brads, and Staples: ASTM F 1667.

- C. Power-Driven Fasteners: CABO NER-272
- D. Wood Screws: ASME B18.6.1
- E. Lag Bolts: ASME B18.2.1 (ASME B18.2.3.8M)
- F. Bolts: Steel bolts complying with ASTM A 307, Grade A (ASTM F 568M, Property Class 4.6); with ASTM A 563 (ASTM 563M) hex nuts and, where indicated, flat washers.

5.6 QUALITY ASSURANCE

- A. Provide lumber and plywood bearing the grade-trademark of the association under the rules or standards or which it was produced. Grade-trademarks shall conform to the rule or standard under which the material is produced, including requirements for qualifications and authority of the inspection organization, usage of authorized identification, and information included in the identification.
 - 1. Grades specified are the minimum acceptable. Lumber grades shall be determined in accordance with ASTM D 245.
 - 2. Lumber shall bear the grade mark of an American Lumber Standards Committee, Board of Review-approved agency. Lumber shall conform to USDC PS 20.
 - 3. Lumber shall bear a mark of mill identification.
 - 4. Plywood shall comply with APA Ref. 1 grading requirements, USDC PS 1, and ANSI A199.1.

5.7 PRODUCT DELIVERY AND STORAGE

- A. All materials delivered to the site shall be so stacked and stored to ensure proper drainage, ventilation and protection from weather. No kiln-dried materials shall be placed in any building until the building is sufficiently dry and authorization has been received from the Architect.

5.8 COORDINATION

- A. Coordinate the work of this Section with the work of other Sections to assure the steady progress of all the work of the Contract.

5.9 EXECUTION

- A. All framing and structural lumber shall be closely fitted, accurately set to required lines and levels. No splicing unless shown on drawings. Cut framing members and properly reinforce with headers, full depth and with steel anchors where shown on drawings. Brace or place bridging as shown. Block all edges of sheathing joints. Cants, nailers, curbs and plates shall be rigidly bolted down.

- B. Structural members whose strength is impaired by improper cutting, drilling or excessive defects shall be replaced or reinforced in a manner acceptable to the Architect.

PART 6 – JOINT SEALANTS

6.1 GENERAL

- A. This Section includes sealants for the following applications, including those specified by reference to this Section:
 - 1. Exterior joints in the following vertical surfaces and non-traffic horizontal surfaces:
 - a. Control and expansion joints in cast-in-place concrete.
 - b. Control and expansion joints in unit masonry.
 - c. Joints between different materials listed above.
 - d. Perimeter joints between materials listed above and frames of doors and windows.
 - e. Other joints as indicated.
 - 2. Exterior joints in the following horizontal traffic surfaces:
 - a. Control, expansion, and isolation joints in cast-in-place concrete slabs.
 - b. Joints between different materials listed above.
 - c. Other joints as indicated.
 - 3. Interior joints in the following vertical surfaces and horizontal non-traffic surfaces:
 - a. Control and expansion joints on exposed interior surfaces of exterior walls.
 - b. Perimeter joints of exterior openings where indicated.
 - c. Vertical control joints on exposed surfaces of interior unit masonry walls and partitions.
 - d. Perimeter joints between interior wall surfaces and frames of interior doors, and windows.
 - e. Joints between plumbing fixtures and adjoining walls, floors, and counters.
 - f. Other joints as indicated.
 - 4. Interior joints in the following horizontal traffic surfaces:
 - a. Control and expansion joints in cast-in-place concrete slabs.
 - b. Other joints as indicated.

6.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Aluminum Windows – Part 2
- B. Aluminum Framed Storefronts – Part 3
- C. Metal Wall Panels - Part 4

6.3 PERFORMANCE REQUIREMENTS

- A. Provide elastomeric joint sealants that establish and maintain watertight and airtight continuous joint seals without staining or deteriorating joint substrates.
- B. Provide joint sealants for interior applications that establish and maintain airtight and water-resistant continuous joint seals without staining or deteriorating joint substrates.

6.4 SUBMITTALS

- A. Product Data: For each joint-sealant product indicated.
- B. Samples for Selection: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.
- C. Warranties: Special warranties specified in this Section.

6.5 WARRANTY

- A. Special Installer's Warranty: Installer's standard form in which Installer agrees to repair or replace elastomeric joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
- B. Verify available warranties and insert number below.
 - 1. Warranty Period: Two years from date of Substantial Completion.
- C. Special Manufacturer's Warranty: Manufacturer's standard form in which elastomeric sealant manufacturer agrees to furnish elastomeric joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.
- D. Verify available warranties and insert number below.
 - 1. Warranty Period: 20 years from date of Substantial Completion.
- E. Special warranties specified in this Article exclude deterioration or failure of elastomeric joint sealants from the following:
 - 1. Movement of the structure resulting in stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression caused by structural settlement or errors attributable to design or construction.
 - 2. Disintegration of joint substrates from natural causes exceeding design specifications.
 - 3. Mechanical damage caused by individuals, tools, or other outside agents.
 - 4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

6.6 PRODUCTS AND MANUFACTURERS

- A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products listed in other Part 2 articles.

6.7 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.
- B. VOC Content of Interior Sealants: Provide interior sealants and sealant primers that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
 - 1. Sealants: 250 g/L.
 - 2. Sealant Primers for Nonporous Substrates: 250 g/L.
 - 3. Sealant Primers for Porous Substrates: 775 g/L.
- C. Retain one paragraph below. If retaining second, indicate colors in a separate schedule. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range for this characteristic.

6.8 ELASTOMERIC JOINT SEALANTS

- A. Elastomeric Sealant Standard: Comply with ASTM C 920 and other requirements indicated for each liquid-applied chemically curing sealant, including those referencing ASTM C 920 classifications for type, grade, class, and uses.
- B. Stain-Test-Response Characteristics: Where elastomeric sealants are specified in the Elastomeric Joint-Sealant Schedule to be non-staining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.
- C. Low-Modulus Nonacid-Curing Silicone Sealant: Applications: Exterior above grade control and expansion joints in vertical surfaces, joint sizes from a minimum of 1/4" wide to 3" wide, joint depth per manufacturers requirements:
 - 1. Control joints in concrete, concrete masonry units, and expansion joints in brick masonry and general use building sealant. Provide products complying with the following:
 - a. Products: Provide one of the following:
 - 1) 790; Dow Corning.
 - 2) Spectrem 1; Tremco.
 - b. Type and Grade: S (single component) and NS (nonsag).
 - c. Class: 25.

- d. Movement Capability: 100 percent movement in extension and 50 percent movement in compression for a total of 150 percent movement.
 - e. Stain-Test-Response Characteristics: Non-staining to porous substrates per ASTM C 1248. Manufacturer to provide 20 year non-staining warranty based on substrate testing.
 - f. Warranty: Manufacturer to provide 20 year weather-seal warranty.
- D. Medium-Modulus Neutral-Curing Silicone Sealant: Applications: Exterior above grade perimeter joints in vertical surfaces; Joint sizes from a minimum of 1/4" wide to 3" wide, joint depth per manufacturers requirements:
- 1. Perimeter joints around aluminum curtain walls and storefronts, aluminum clad windows, and painted steel door frames, metal louvers, and between brick and concrete masonry, and siding. Provide products complying with the following:
 - a. Products: Provide one of the following:
 - 1)795; Dow Corning.
 - 2)791; Dow Corning.
 - 3) Silglaze II, GE Silicones.
 - 4) 864; Pecora Corporation.
 - b. Type and Grade: S (single component) and NS (nonsag).
 - c. Class: 25.
 - d. Stain-Test-Response Characteristics: Non-staining to porous substrates per ASTM C 1248.
 - e. Warranty: Manufacturer to provide 20 year weather-seal warranty.
- E. Mildew Resistant Silicone Sealant: Where joint sealants of this type are indicated provide products complying with the following:
- 1. Products: Provide one of the following:
 - a. 786; Dow Corning
 - b. Sanitary 1700; GE Silicones.
 - c. 898 Silicone Sanitary Sealant; Pecora Corporation.
 - d. PSI-611; Polymeric Systems, Inc.
 - e. Tremsil 600 White; Tremco.
 - 2. Type and Grade: S (single component), and NS (nonsag).
 - 3. Class 25
 - 4. Additional Movement Capability: 50 percent movement in extension and 50 percent movement in compression for a total of 100 percent movement.
 - 5. Applications:
 - a. Use for sealing interior joints with non-porous substrates in wet areas with ceramic tile or epoxy paint around sinks, and between equipment or counters and non-porous walls.
- F. Multicomponent Pourable Urethane Sealant: Where joint sealants of this type are indicated, provide products complying with the following:
- 1. Products: Provide one of the following:
 - a. Chem-Calk 550; Bostik Inc.
 - b. Vulkem 245; Mameco International.

- c. NR-200 Urexpam; Pecora Corporation.
- d. Sikaflex - 2c SL; Sika Corporation.
- e. SL 2; Sonneborn Building Products Div., ChemRex Inc.
- f. THC-900; Tremco.
2. Type and Grade: M (multicomponent) and P (pourable).
3. Class: 25.
4. Applications:
 - a. Joints in exterior and interior concrete slabs on grade.
 - b. Joints in existing concrete slabs on grade.
 - c. At penetrations to new and existing slabs on grade.

6.9 LATEX JOINT SEALANTS

- A. Latex Sealant Standard: Comply with ASTM C 834 for each product of this description indicated.
- B. Latex Sealant: Where joint sealants of this type are indicated, provide products complying with the following:
 1. Products: Provide one of the following.
 - a. Chem-Calk 600; Bostik Inc.
 - b. NuFlex 330; NUCO Industries, Inc.
 - c. LC 160 All Purpose Acrylic Caulk; Ohio Sealants, Inc.
 - d. AC-20; Pecora Corporation.
 - e. PSI-701; Polymeric Systems, Inc.
 - f. Sonolac; Sonneborn Building Products Div., ChemRex, Inc.
 - g. Tremflex 834; Tremco.
 2. Applications: Interior joints in field painted vertical and overhead joints not indicated otherwise below.

6.10 JOINT-SEALANT BACKING

- A. General: Provide sealant backings of material and type that are non-staining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
- B. Backer Rod: ASTM C 1330, of type indicated below and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance:
 - 1. Type C: Closed-cell material with a surface skin.
- C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.

6.11 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants with joint substrates.
- C. Masking Tape: Non-staining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

6.12 EXAMINATION

- A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

6.13 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint sealant manufacturer's written instructions and the following requirements:

1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
 2. Clean porous joint substrate surfaces by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining from above cleaning operations by vacuuming or blowing out joints with oil-free compressed air. Porous joint surfaces include the following:
 - a. Concrete.
 - b. Masonry.
 - c. Unglazed surfaces of ceramic tile.
 3. Remove laitance and form-release agents from concrete.
 4. Clean nonporous surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants.
 - a. Metal.
 - b. Glass.
 - c. Glazed surfaces of ceramic tile.
- B. Joint Priming: Prime joint substrates where indicated and recommended in writing by joint sealant manufacturer, based on preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
1. Apply primer on all porous surfaces such as exterior masonry, granite or precast concrete.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

6.14 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- B. Sealant Installation Standard: Comply with recommendations of ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Install sealant backings of type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

1. Do not leave gaps between ends of sealant backings.
 2. Do not stretch, twist, puncture, or tear sealant backings.
 3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.
- D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and back of joints. Install sealants by proven techniques to comply with the following and at the same time backings are installed:
1. Place sealants so they directly contact and fully wet joint substrates.
 2. Completely fill recesses provided for each joint configuration.
 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- E. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
1. Remove excess sealants from surfaces adjacent to joint.
 2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
 3. Provide concave joint configuration per Figure 5A in ASTM C 1193, unless otherwise indicated.
 - a. Use masking tape to protect adjacent surfaces of recessed tooled joints.

6.15 CLEANING

- A. Clean off excess sealants or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

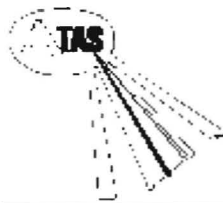
6.16 PROTECTION

- A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from the original work.

6.17 WASTE MANAGEMENT

- A. Separate waste in accordance with the Waste Management Plan.
- B. Close and seal tightly all partly used sealant containers and store protected in well-ventilated, fire-safe area at moderate temperatures.
- C. Place used sealant tubes and containers in areas designated area for hazardous materials.

SECTION	DIM (WxH)	MASONRY OPENING	QTY	STYLE	ID	NOTES
WEST	48" x 94" (2) - 3	24' x 8'	12 pair	HSF	A	48" x 94" (2) mulled - 3 Pairs (5) - 32" w/ 62" storefront over
	48" x 94" (2) - 2	16' x 8'	2 pair	HSF	A2	48" x 94" (2) mulled - 2 Pairs - 32" w/ 62" storefront over
	48" x 108"	4' x 9'	1	PHSF	D	48" x 108" - 66" lower panel - 42" upper storefront
	48" x 108" (2)	8' x 9'	1 pair	PHSF	D1	48" x 108" (2) mulled - 66" lower panel - 42" upper storefront
	48" x 108" (3)	12' x 9'	3	PHSF	D2	48" x 108" (3) mulled - 66" lower panel - 42" upper storefront
	48" x 60" (2)	8' x 60"	7 pair	SFP	E	48" x 60" (2) mulled - 42" storefront w/ 18" upper panel
SOUTH	48" x 94" (3) - 2	12' x 8'	6	HSF	C	48" x 94" (3) mulled - 2 Pairs - 32" w/ 62" storefront over
	48" x 94" (3)	12' x 8'	3	HSF	C	48" x 94" (3) mulled - 32" w/ 62" storefront over
	48" x 94" (2) - 4	32' x 8'	4 pair	HSF	A1	48" x 94" (2) mulled - 4 Pairs - 32" w/ 62" storefront over
	48" x 94" (2) - 4	32' x 8'	4 pair	HSF	A1	48" x 94" (2) mulled - 4 Pairs - 32" w/ 62" storefront over
EAST	48" x 94" (2) - 3	24' x 8'	12 pair	HSF	A	48" x 94" (2) mulled - 3 Pairs - 48" x 32" w/ 48" x 62" storefront over
	48" x 94" (3)	12' x 8'	6	HSF	C	48" x 94" (3) mulled - 32" w/ 62" storefront over
	48" x 60" (2)	8' x 60"	7 pair	SFP	E	48" x 60" (2) mulled - 42" storefront w/ 18" upper panel
	48" x 94" (2) - 3	24' x 8'	6 pair	HSF	A	48" x 94" (2) mulled - 3 Pairs - 48" x 32" w/ 48" x 62" storefront over
NORTH	48" x 94" (2) - 4	16' x 8'	4 pair	HSF	A1	48" x 94" (2) mulled - 4 Pairs - 32" w/ 62" storefront over
	36" x 94" (2)	6' x 8'	2 pair	HSF	B	36" x 94" mulled - 32" w/ 62" storefront over



ATAS INTERNATIONAL, INC.

SPECIFICATION DATA SHEET

1. PRODUCT NAME

**CORRA-LOK™ PANEL
MFC160**

2. MANUFACTURER

ATAS INTERNATIONAL, INC.
website: www.atas.com
email: info@atas.com
Corporate Headquarters:
Allentown, PA 18106
Phone: (610) 395-8445
Fax: (610) 395-9342
Western Facility:
Mesa, AZ 85204
Phone: (480) 558-7210
Fax: (480) 558-7217
Southern Facility:
Maryville, TN 37801
Phone: (800) 468-1441

3. PRODUCT DESCRIPTION

Basic Uses:

Corra-Lok is a 16 3/8" wide by 3/4" deep structural panel that provides dramatic shadow lines with its 2 3/4" wide corrugations. Typical applications include walls, equipment screens, mansards and roofing. The system utilizes concealed fasteners to offer uninterrupted vertical or horizontal sight lines.

Composition & Materials:

Standard Offerings: Corra-Lok panels are roll-formed from .032 and .050 Aluminum, 24 gauge Metallic Coated Steel and 24 gauge AZ55 55% Al-Zn Coated Steel with acrylic coating.

Special Offerings: 22 gauge Metallic Coated Steel; 22 gauge 55% Al-Zn Coated Steel with acrylic coating; .040 Aluminum; 16 oz. Copper.

Sizes:

Corra-Lok panels have a 16 3/8" wide nominal coverage. Panel lengths are cut to customer specifications, with a minimum of 6' and a maximum to transportation limits.

Colors & Finishes:

A choice of 30 colors is available in a KYNAR 500® PVDF or HYLAR 5000® PVDF finish. (Request color chart or chips). An anodized finish is available in clear or dark bronze. Texture is smooth.

4. TECHNICAL DATA

KYNAR 500® PVDF or HYLAR 5000® PVDF based finishes tested by paint supplier for:
Dry Film Thickness: ASTM D 1005, ASTM D 1400, ASTM D 4138 or ASTM D 5796

Specular Gloss: ASTM D 523
Pencil Hardness: ASTM D 3363
T-Bend Flexibility: ASTM D 4145
Mandrel Bend Flexibility: ASTM D 522
Impact Resistance: ASTM D 2794
Adhesion: ASTM D 3359
Water Immersion Resistance: ASTM D 870
Abrasion Resistance: ASTM D 968
Acid Resistance: ASTM D 1308
Acid Rain Resistance (Kesternich):
ASTM G 87 or DIN 50018
Salt Spray: ASTM B 117
Cyclic Salt Spray: ASTM D 5894 and ASTM D 5487
Humidity Resistance: ASTM D 2247
Accelerated Weathering: ASTM D 822 and ASTM G 155, ASTM G 151 or ASTM G 153
Color Retention, Florida Exposure: ASTM D 2244
Chalking Resistance: ASTM D 4214
Cleveland Condensing Cabinet: ASTM D 4585
Cure Test, MEK Resistance: ASTM D 5402
Alkali Resistance, Sodium Hydroxide: ASTM D 1308, Procedure 7.2
Flame Spread Rating: ASTM E 84
Organic coatings meet requirements of AAMA 2605 when applied to aluminum.
Panel testing/ratings:
Galvanized Steel: ASTM A 653
55% Al-Zn Coated Steel: ASTM A 792
Aluminum: ASTM B 209
Copper: ASTM B 370
Coil Coating: ASTM A 755
Field Tested and Approved.
Load Tables available upon request.

5. INSTALLATION

Corra-Lok panels have a positive panel-to-panel interlock. Installation manuals or hands-on training via seminars are available through ATAS. Visit www.atas.com for more information.

6. AVAILABILITY & COST

Availability:

Corra-Lok panels are available through ATAS product distributors. A complete line of related components and trim accessories is available to complete the wall system. In addition, a complete line of rainware and perimeter roof edge trims can be supplied by ATAS to complement the wall system. Flat sheet and/or coil stock is available in matching color for fabrication of related components by the installing contractor.

Cost:

Contact ATAS product distributors for current pricing.

7. WARRANTY

Products coated with a fluoropolymer, KYNAR 500® PVDF or HYLAR 5000® PVDF finish carry a thirty (30) year limited warranty against cracking, peeling, chalking and fading.

8. MAINTENANCE

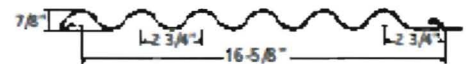
Corra-Lok panels are virtually maintenance free. Surface residue may be easily removed by conventional cleaning methods. For painted products, minor scratches may be touched up with a matching paint, available from the manufacturer.

9. TECHNICAL SERVICES

Complete technical information and literature are available at www.atas.com. ATAS will assist with design ideas and shop drawings.

10. FILING SYSTEM

- www.construction.com
- www.atas.com
- Additional product information is available from the manufacturer upon request.



Corra-Lok™ is a trademark of ATAS International, Inc.
KYNAR 500® is a registered trademark of Arkema.
HYLAR 5000® is a registered trademark of Solvay Solakis, Inc.
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• **Product Information**

- **Product Types:**

Thermal Doors & Frames:

- [Standard](#)
- [Narrow Stile](#)
- [Medium Stile](#)
- [Wide Stile](#)
- [Monumental](#)
- [Thermal Door](#)
- [Custom](#)
- [Glass Stops](#)

Door Hardware

3700 Series Windows:

- [Conventional](#)
- [Concealed](#)
- [Casement](#)

Storefront Framing:

- [4500 Series](#)
- [14000 YO Multipane](#)
- [14000 Series](#)
- [14650 Series](#)
- [VersaTherm](#)
- [Misc. Extrusions](#)

Curtainwall / Ribbon Window:

- [1900 Series](#)
- [200 Series](#)
- [300ES Series](#)
- [400 Series](#)
- [400 Screw Spline](#)
- [Misc. Extrusions](#)

Daylighting Controls:

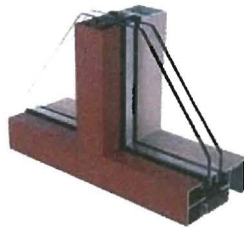
- [Airfoil Sunshade](#)
- [Z Blade Sunshade](#)
- [Tubular Sunshade](#)
- [Luminate Light Shelves](#)

Finishes

- **Technical Data Index**

- **Product News**

VersaTherm™ Storefront Framing



VersaTherm™ is our most versatile and economical framing system. The flexible design allows for on-site fabrication in applications ranging from punched openings to mall fronts. VersaTherm is available in a large selection of profiles. Snap-on covers and backmembers, available in a variety of colors, allow for contrasting interior and exterior finishes. Silicone glazed verticals can be selected to

provide a sleek uninterrupted glass surface at the exterior. Finish options and glass positioning from frame exterior to center meet a wide range of aesthetic requirements.

Snap-on covers and back members are “locked” together by a unique thermal barrier clip. This dip ensures that interior and exterior metal members remain separate while firmly connected, virtually eliminating the transference of frost and condensation. High performance verticals, and compatibility with Tubelite Stock Doors create a complete and truly versatile system.



VersaTherm Storefront, 0A Clear Anodized; Owner: Karmann Manufacturing, Plymouth, MI; Architect: DeMattia Group; Tubelite Dealer: Calvin & Company

VersaTherm Product Specifications

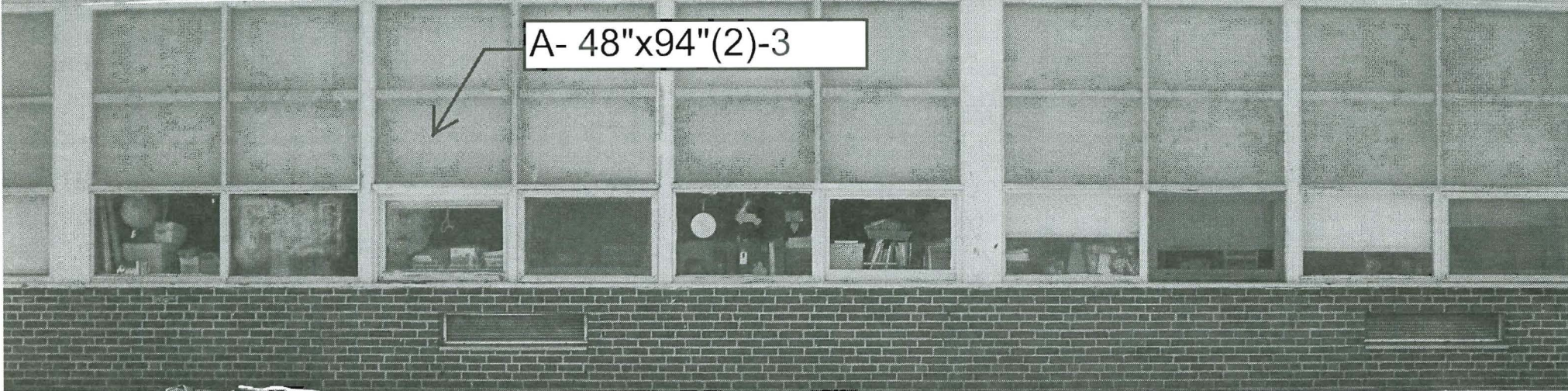
Application:	Face Width:	Overall Depth:	Glass Thickness:	Air Infiltration:	Static Water:	Uniform Load Deflection:	CRF ² :	U Value ² :	Sound Transmission:
Low-Rise storefront, front or center set glass, outside glazed	1-3/4"	2-1/16" to 8-1/2"	1/4", 1"	0.01 CFM/Ft.2 @ 6.24 PSF	12 PSF	30 PSF	64 (Frame) 55 (Glass)	0.56	NA

* See Tubelite's Test Reports for mock-up sizes and test conditions.

[VersaTherm Series Technical Data](#) | [Technical Data Index](#)

[Material Safety Data Sheets \(PDF\)](#)

A- 48"x94"(2)-3



A- 48"x94"(2)-3





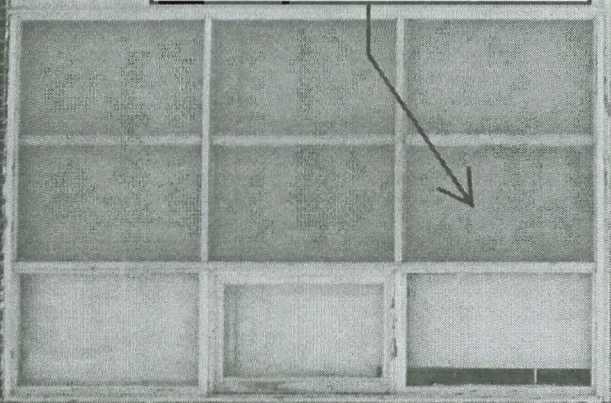
A- 48"x94"(2)-3

A-48"x94" (2)-3

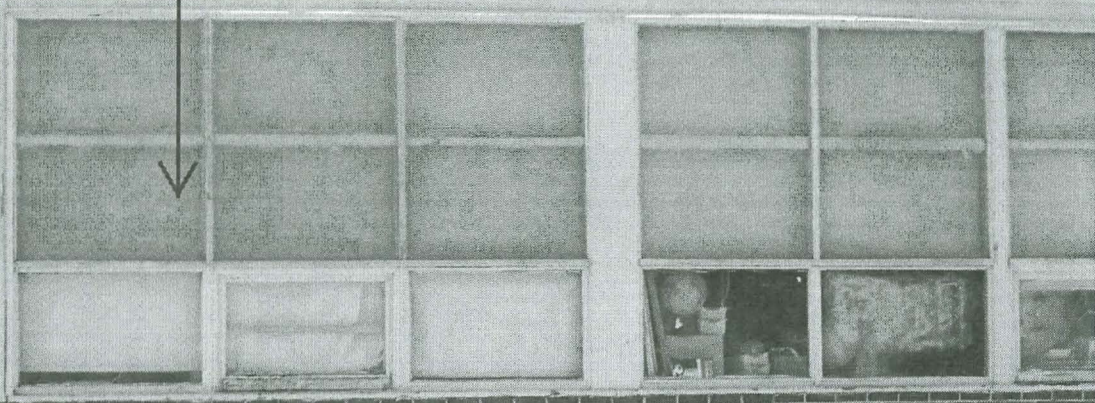


C - 48"x94" (3)

C - 48"x94" (3)



This is a tobacco-free
Behavior Zone.

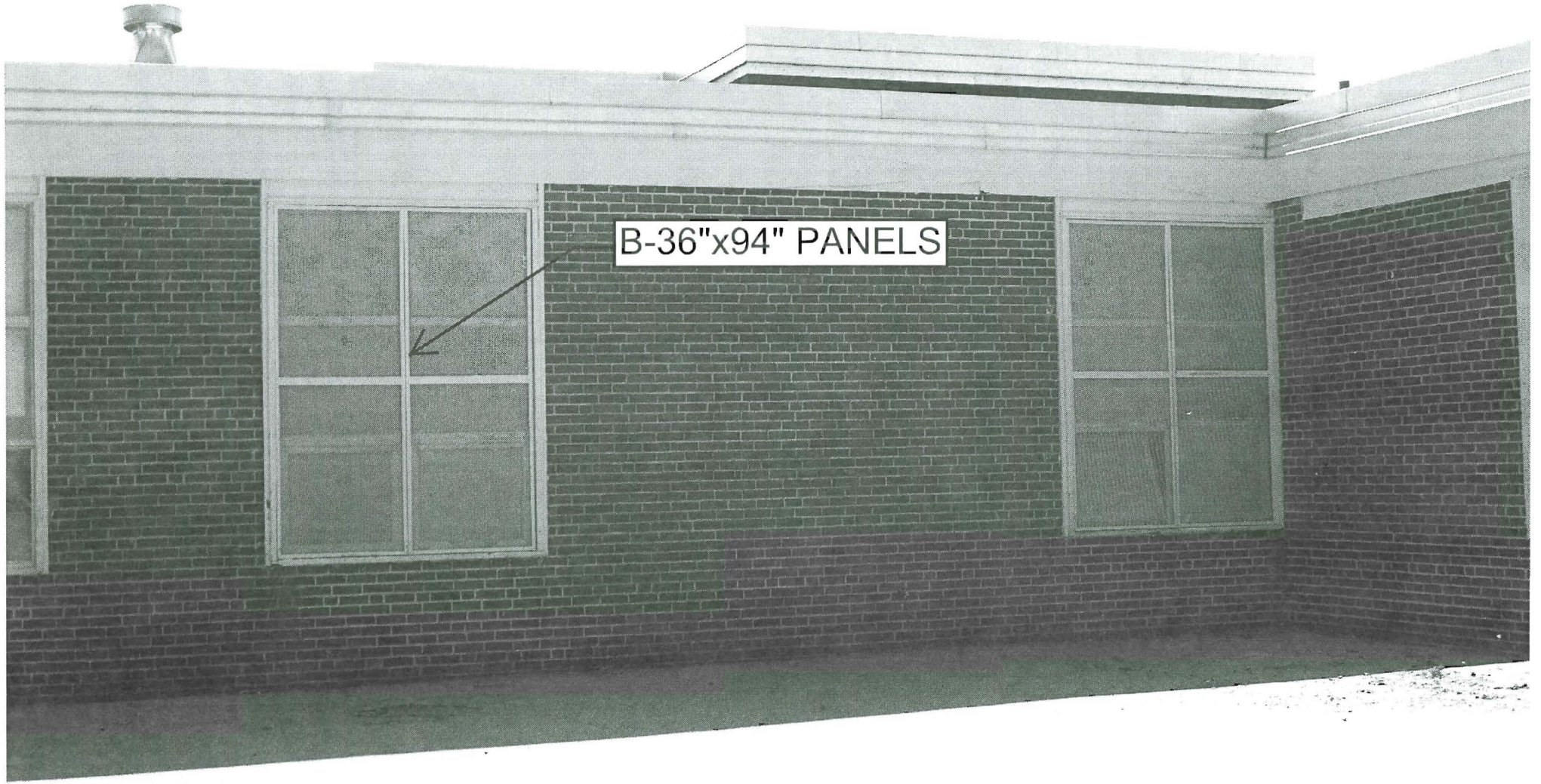


RIGHT
GLASS



A1 - 48"x94" (2)-4





B-36"x94" PANELS





A1 - 48"x94"(3) -4

A1 - 48"x94"(3) -4





C- 48"X94" (3)-2



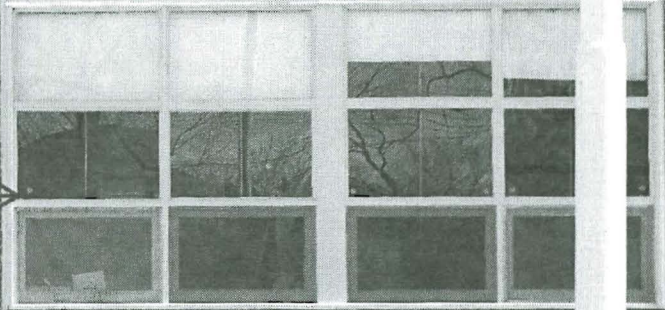
PRESU

C- 48"X94" (3)



PRESUMPCOT SCHOOL


A2a - 48"x94"(2)-2



A- 48"x94"(2)-3

NOISY ONLY



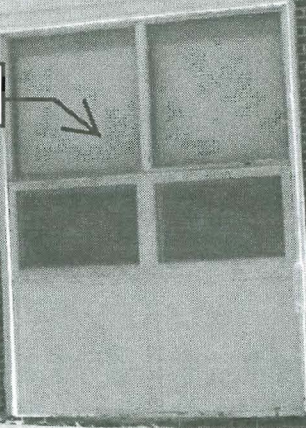


A- 48"x94"(2)-3

D - 48"X108"



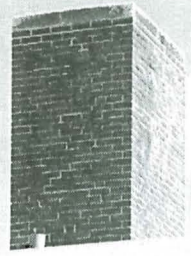
D1- 48"X108" (2)



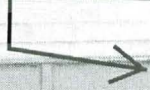
D2 - 48"x108"(3)

NO PARKING
ANY TIME
LOADING
ZONE

NO PARKING
ANY TIME
LOADING
ZONE



E - 48"x60"(2)-7

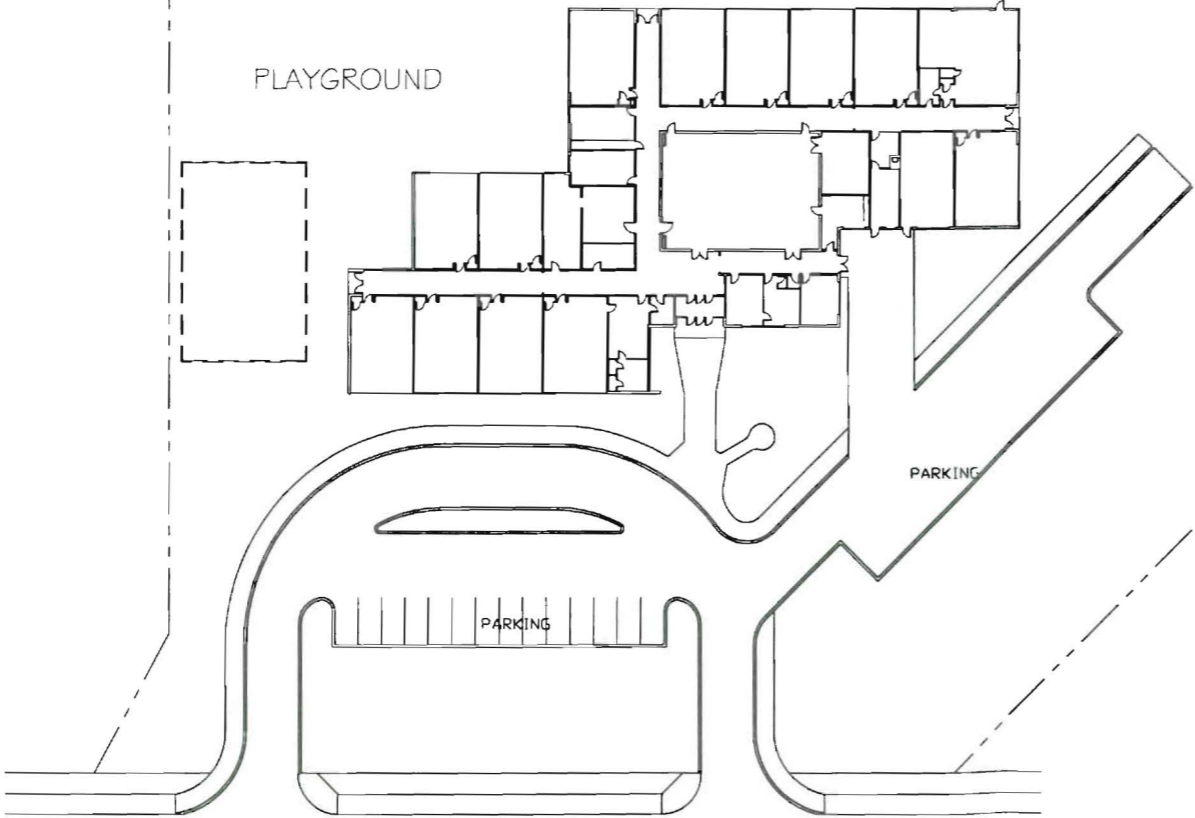


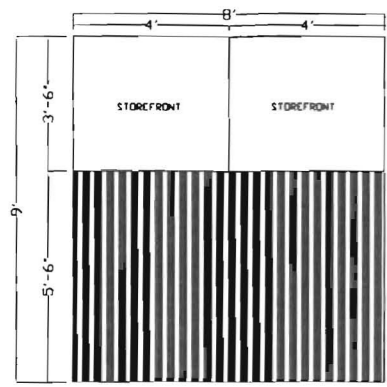
PRESUMPCOT SCHOOL

A2 - 48"x94"(2)-2

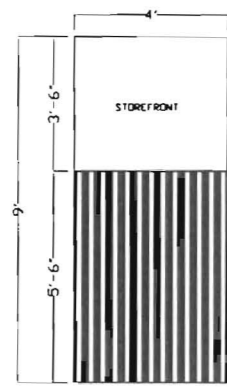


PRESUMPSCOT
SITE PLAN

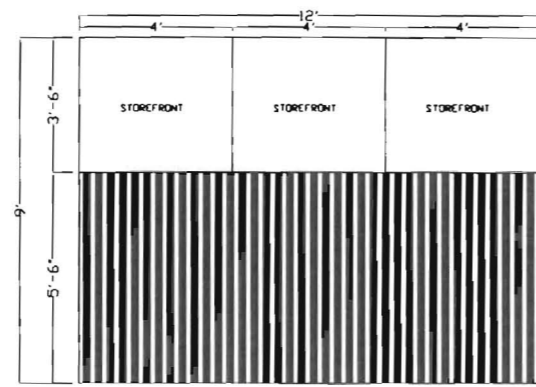




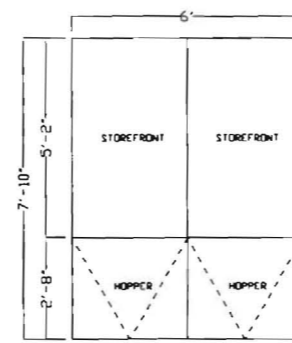
D1



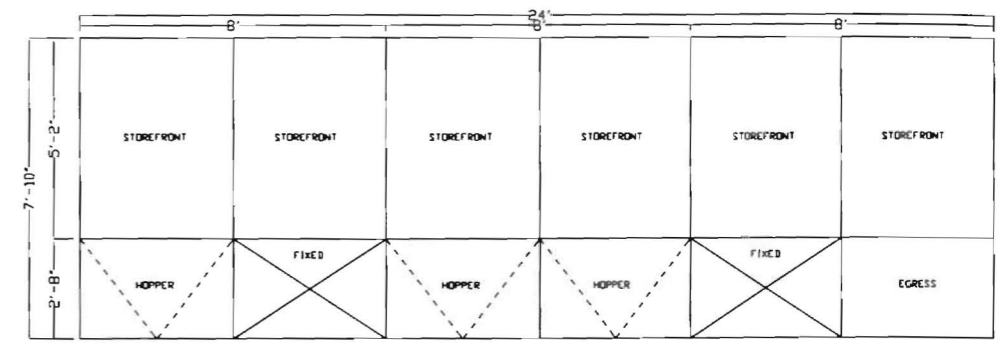
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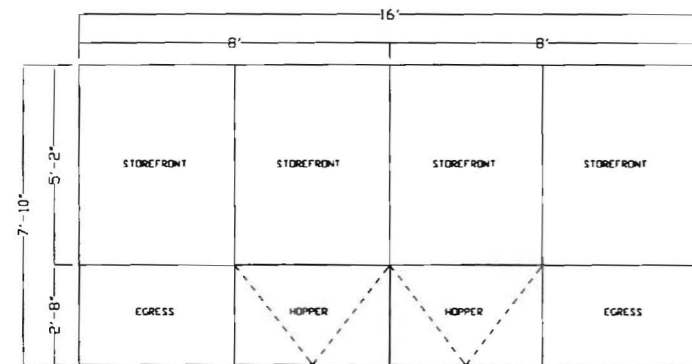
D2



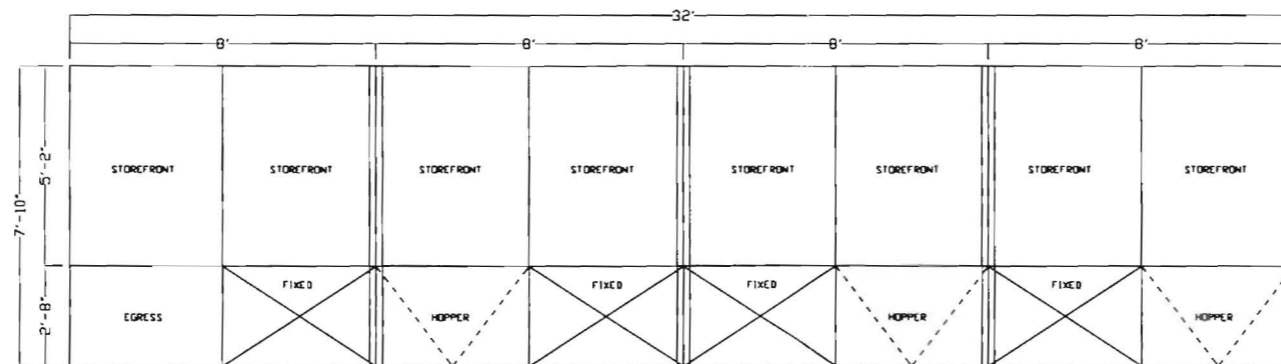
B



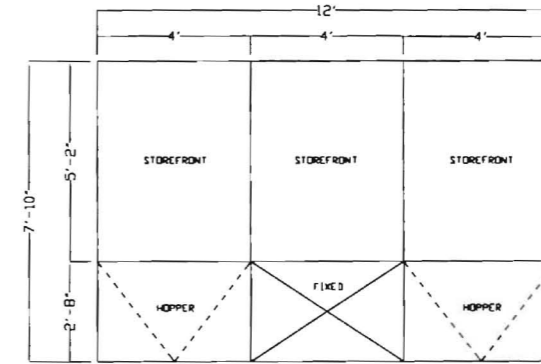
A



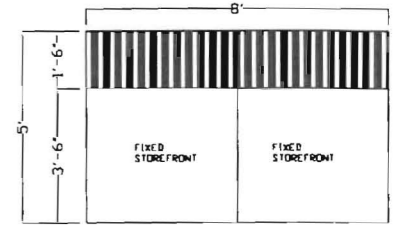
A2



A1



C



E

TYPICAL WINDOW CONFIGURATIONS