

**Bid # 15-34**  
**CHAMBERS HALL AND L'HOMMEDIEU HALL WINDOW REPLACEMENT**  
**2015**

**SECTION "C" TECHNICAL SPECIFICATIONS**

**OWNER**

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**SECTION C - TECHNICAL SPECIFICATIONS**

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## 1. SCOPE OF WORK

The purpose of these specifications is to replace the existing exterior window systems in Chambers Hall and L'Hommedieu Hall. This work will be performed at the main Middlesex County College campus in Edison, New Jersey.

Chambers Hall - Replace the existing aluminum storefront systems around the entire perimeter of the building on the first and second floor. The new storefront system shall be installed to match the existing vertical mullions, which line up with existing interior walls and columns. A portion of each unit shall contain an operable project-out awning window. Replace existing exterior doors on the first floor with new aluminum swing doors and hardware. Refer to drawings for additional information.

L'Hommedieu Hall - Replace the existing windows around the entire perimeter of the building on the first and second floor with new aluminum operable project-out awning windows. Refer to drawings for additional information.

The contractor shall provide all of the necessary labor, materials, tools and equipment required to complete the work described on the drawings and in these specifications as follows:

1. Remove and dispose existing windows, glazing, doors and hardware in their entirety, as noted Installation of footings, frames, posts, finishes, LED display signs, and illuminated cabinets in their entirety
2. Installation of new aluminum windows, storefront system, glazing, and insulated panels in their entirety.
3. Installation of new aluminum swing doors and hardware in their entirety.

The College Campus in Edison, New Jersey is located on a section of the Former Raritan Arsenal (FRA) which operated from 1918 through 1963. The Army Corps of Engineers (ACE) has completed investigations and remediation activities related to unexploded ordnance (UXO) materials on the campus. While there are no known UXO's at this time, there remains a possibility that they can be discovered when excavating on campus. The ACE has provided an information safety sheet which advises anyone excavating on the FRA to practice the "3R's". They are **Recognize, Retreat and Report**. If any material is discovered that appears to be ordnance, the contractor shall immediately stop work, leave the area, call 911 and notify the College. A procedure has been established for emergency responders and military personnel to safely address such a situation

The dimensions shown on the drawings are approximate and not all dimensions are shown. The contractor is responsible for verifying the actual dimensions in the field.

**Prior to construction, the contractor shall submit shop drawings and product data for approval by Facilities Engineering, prior to release for manufacture. The submittals shall depict the manufacturer's information for the windows, storefront, doors, panels, hardware, and finishes.**

The contractor shall be required to attend a pre-construction meeting on campus at a time to be scheduled after the contract is awarded and other job progress meetings as required by the College.

The following is a list of drawings that are attached and are a part of these specifications and contract:

CAMPUS SITE PLAN

- A-1
- A-2
- A-3
- A-4
- A-5
- A-6
- A-7
- A-8

**2. MATERIALS and INSTALLATION**

The materials used under this contract shall be as specified on the drawings and in the specifications, be of a quality acceptable to the College and meet applicable codes.

SUBMITTALS

Submit manufacturer's product data including description of materials, components, fabrication, finishes, and installation.

Submit manufacturer's shop drawings, including elevations, sections, and details, indicating dimensions, tolerances, materials, fabrication, doors, panels, framing, glazing, hardware schedule, finish, options, and accessories.

Submit manufacturer's samples of anodized aluminum finishes.

Submit manufacturer's standard colors of panel finishes.

Submit manufacturer's maintenance and cleaning instructions for windows, including maintenance and operating instructions for hardware.

REFERENCES

1. AAMA 502-90 "Voluntary Specification for Field Testing of Windows and Sliding Glass Doors"
2. AAMA 2603.-98 "Voluntary Performance Requirements and Test Procedures for Pigmented Organic Coatings on Extruded Aluminum"
3. AAMA 2604-98 "Voluntary Specification for High Performance Organic Coatings on Architectural Aluminum Extrusions and Panels"

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4. AAMA 2605-98 "Voluntary Specification for Superior Performing Organic Coatings on Architectural Aluminum Extrusions and Panels"
5. AAMA 611-98 "Voluntary Guide Specification and Inspection Methods for All Anodic Finishes for Architectural Aluminum"
6. AAMA 800-92 "Voluntary Specifications and Test Methods for Sealants"
7. AAMA 901-98 "Voluntary Specification for Rotary Operators in Window Applications"
8. AAMA 904-96 "Voluntary Specifications for Friction Hinges in Window Applications"
9. AAMA 910-93 "Voluntary 'Life Cycle' Specifications and Test Methods for Architectural Grade Windows and Sliding Glass Doors"
10. AAMA 1503-98 "Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors, and Glazed Wall Sections"
11. AAMA/NWWDA 101/I.S.2-97 "Voluntary Specifications for Aluminum and Poly Vinyl Chloride PVC Prime Windows and Glass Doors"

#### ALUMINUM STOREFRONT

1. **Window 'A': 2" x 4-1/2" Aluminum Thermal Storefront System;** extruded aluminum with thermal break; finish factory applied.
2. Acceptable Manufacturers:
  - a. EFCO Series 403 (T).
  - b. Kawneer Series Trifab VG 451F.
  - c. Oldcastle BuildingEnvelope Series 3000 XT

#### STOREFRONT CONSTRUCTION

1. Extrusions: Shall be 6063-T6 Aluminum Alloy. All aluminum frame extrusions shall have a minimal .080" thickness throughout.
2. Frames: The depth of the frame shall not be less than 4-1/2", the face of the frame shall not be less than 2". Frame components shall be of screw spline, or shear block construction.
3. Fasteners: Aluminum, stainless steel, or other materials warranted by manufacturer to be non-corrosive and compatible with aluminum window members, trim, hardware, anchors and other components of window units.
4. All fasteners must be concealed except where unavoidable for application of hardware.
5. All fasteners to be located so as to not disturb the thermal break construction of the windows.
6. Operating Window: Shall be installed into storefront framing system, per manufacturer's instructions. Use compatible operating window vent per manufacturer's directions.
7. Operating Window Type: Awning Project-Out.
8. Operating Hardware: Gear-Type Rotary Operators that function without requiring the removal of interior screens or using screen wickets.

9. Weather-stripping: Secured in extruded ports; double rolls of rows of EPDM gasket on vent perimeters.
10. Screens: Provide screens on all operable units, located on the interior of the window. Screen frames to be extruded aluminum sections with corners mitered and mechanically attached. Screen frames to be secured by aluminum clips fastened with stainless steel screws into window frames. Frames shall be finished to match windows.
11. Screen Wire Fabric: .011 inch diameter, coated aluminum wire, charcoal gray finish.
12. Aluminum Finish: Anodized finished, Class I finish, 0.7 mils thick.
  - a. **Chambers Hall** - Dark Bronze or Medium Bronze Anodized. (to be selected by MCC during the submittal process)
  - b. **L'Hommedieu Hall** - Clear Anodized.

### GLAZING

1. Standard Glazing - Passive Solar Low-E:
  - a. Exterior Glazing: 1/4" tempered, with **Bronze Tint**.
  - b. Inter-space: 1/2" with argon gas fill.
  - c. Interior Glazing: 1/4" tempered, Clear, with Pyrolitic Low-E coating at number 3 surface.
    1. Low E coating: Super Neutral 54, manufactured by Guardian Sunguard. (Basis of Design)
    2. Pilkington
    3. PPG Industries
2. Spandrel Glazing - Passive Solar Low-E:
  - a. Exterior Glazing: 1/4" tempered, with Pyrolitic Low-E coating at number 2 surface.
    1. Low E coating: Super Neutral 54, manufactured by Guardian Sunguard. (Basis of Design)
    2. Pilkington
    3. PPG Industries
  - b. Interior Glazing: 1/4" tempered, with Ceramic Frit Spandrel Surface.
    1. **Chambers Hall** - Spandrel Coating shall be "Bronze".
    2. **L'Hommedieu Hall** - Spandrel Coating shall be "Gray".
3. **Chambers Hall Interior Finish:** All the bottom spandrel panels shall be finished off on the interior side (occupied/office side) with a full .032" bronze anodized aluminum brake metal panel adhered to the glazing, prior to installation in the framing system.

### WARRANTY

Storefront: Warrant for 18 months against defects in material or workmanship under normal use from date of installation.

Dual sealed double insulating units: Warrant seal for ten (10) years against visual obstruction resulting from film formation or moisture collection between the internal glass surfaces, excluding that caused by glass breakage or abuse.

Aluminum Finish: Extended Warranty for ten (10) years against chipping, peeling, cracking or blistering from date of installation.

### INSTALLATION

Use only skilled tradesmen with work done in accordance with approved shop drawings and specifications. Storefront system shall be erected plumb and true, in proper alignment and relation to established lines and grades. Provide alignment attachments and shims to permanently fasten system to building structure.

Entrance doors shall be securely anchored in place to a straight, plumb and level condition, without distortion. Weather stripping contact and hardware movement shall be checked and final adjustments made for proper operation and performance of units.

Furnish and apply sealing materials to provide a weather tight installation at all joints and intersections and at opening perimeters. Sealing materials specified shall be used in strict accordance with the manufacturer's printed instructions, and shall be applied only by mechanics specially trained or experienced in their use. All surfaces must be clean and free of foreign matter before applying sealing materials. Sealing compounds shall be tooled to fill the joint and provide a smooth finished surface.

Remove protective material from pre-finished aluminum surfaces. Clean aluminum after installation with a mild detergent and warm water.

Protect installed framing system from damage until substantial completion of project.

### ALUMINUM WINDOWS

1. **Window 'B': 4-1/2" Awning Project-Out Aluminum Windows;** extruded aluminum with integral structural polyurethane thermal break; vent flush with frame; 0.125" wall thickness throughout; finish factory applied; factory assembled.
2. Acceptable Manufacturers:
  - a. Winco Windows Series 1550H Thermal Project-Out.
  - b. EFCO Series 2900 Thermal Project-Out.
  - c. Kawneer Series 5500 Thermal Project-Out.
3. **Window 'C': 2" Awning Project-Out Aluminum Windows;** extruded aluminum with integral structural polyurethane thermal break; vent flush with frame; 0.125" wall thickness throughout; finish factory applied; factory assembled.
4. Acceptable Manufacturers:
  - a. Winco Windows Series 1150 Thermal Project-Out.
  - b. EFCO Series 2700 Thermal Project-Out.
  - c. Kawneer Series 526 Thermal Project-Out.

### WINDOW CONSTRUCTION

13. Extrusions: ASTM B 221 (ASTM B 221M), 6063-T5 Aluminum Alloy.

14. Frames and Sashes: Thermal construction, fabricate frames and sashes with an integral, concealed, low-conductance thermal barrier located between exterior materials and window members exposed on interior side in a manner that eliminates direct metal to metal contact.
15. Operating Type: Awning Project-Out.
16. Operating Hardware: Gear-Type Rotary Operators that function without requiring the removal of interior screens or using screen wickets.
17. Hardware: Standard concealed non-friction stainless steel 4 bar hinges located at each jamb of the window frame and vent. locks to be casement lever locks located at the jamb of each frame. Two pairs of black nylon snubber bars located at the head of the vent.
18. Fasteners: Aluminum, stainless steel, or other materials warranted by manufacturer to be non-corrosive and compatible with aluminum window members, trim, hardware, anchors and other components of window units.
19. All fasteners must be concealed except where unavoidable for application of hardware.
20. All fasteners to be located so as to not disturb the thermal break construction of the windows.
21. Weather-stripping: Secured in extruded ports; double rolls of rows of EPDM gasket on vent perimeters.
22. Anchors and clips: Fabricated units of aluminum, non-magnetic stainless steel or hot-dip zinc coated steel.
23. Screens: Provide screens on all operable units, located on the interior of the window. Screen frames to be extruded aluminum sections with corners mitered and mechanically attached. Screen frames to be secured by aluminum clips fastened with stainless steel screws into window frames. Frames shall be finished to match windows.
24. Screen Wire Fabric: .011 inch diameter, coated aluminum wire, charcoal gray finish.
25. Aluminum Finish: Anodized finished, Class I finish, 0.7 mils thick.
  - a. **Chambers Hall** - Dark Bronze or Medium Bronze Anodized. (to be selected by MCC during the submittal process)
  - b. **L'Hommedieu Hall** - Clear Anodized.

#### GLAZING

4. Standard Glazing - Passive Solar Low-E:
  - a. Exterior Glazing: 1/4" tempered, with **Bronze Tint**.
  - b. Inter-space: 1/2" with argon gas fill.
  - c. Interior Glazing: 1/4" tempered, Clear, with Pyrolitic Low-E coating at number 3 surface.
    1. Low E coating: Super Neutral 54, manufactured by Guardian Sunguard. (Basis of Design)
    2. Pilkington
    3. PPG Industries
5. Spandrel Glazing - Passive Solar Low-E:

- a. Exterior Glazing: 1/4" tempered, with Pyrolitic Low-E coating at number 2 surface.
    1. Low E coating: Super Neutral 54, manufactured by Guardian Sunguard. (Basis of Design)
    2. Pilkington
    3. PPG Industries
  - b. Interior Glazing: 1/4" tempered, with Ceramic Frit Spandrel Surface.
    1. **Chambers Hall** - Spandrel Coating shall be "Bronze".
    2. **L'Hommedieu Hall** - Spandrel Coating shall be "Gray".
6. **Chambers Hall Interior Finish:** All the bottom spandrel panels shall be finished off on the interior side (occupied/office side) with a full .032" bronze anodized aluminum brake metal panel adhered to the glazing, prior to installation in the framing system.

#### WARRANTY

Windows: Warrant for 18 months against defects in material or workmanship under normal use from date of installation.

Dual sealed double insulating units: Warrant seal for ten (10) years against failure of the hermetic seal, visual obstruction resulting from film formation or moisture collection between the internal glass surfaces, excluding that caused by glass breakage or abuse. Evidence of failure is the de-sealing of the insulating unit, obstruction of vision by dust, moisture, or film on interior surfaces of glass.

Aluminum Finish: Warrant for ten (10) years against chipping, peeling, cracking or blistering from date of installation.

#### INSTALLATION

Do not remove existing windows until new replacement windows are available for installation. Do not leave any openings uncovered at end of working day.

Remove existing work carefully to avoid damage to existing work which is to remain. Existing windows and other materials removed from the site become the property of the contractor who shall promptly remove and dispose of such materials at no additional cost to the owner. Comply with all applicable laws, rules and regulations in the disposal of materials.

Use only skilled tradesman and complete all work in accordance with approved shop drawings and manufacturer's recommendations. Provide required support and securely fasten frames, and set windows plumb, square and level without warping or racking frames or sash. In no case shall any attachments to existing structure or to components of the window system be through or affect the thermal barriers of the windows. Wedge fiberglass insulation between frames of new windows and construction to remain or between frames and new blocking as applicable.

Upon completion of installation apply sealant around the perimeter of all openings per sealant manufacturer's recommendations.

Adjust frames, sash and hardware after installation, as necessary to insure smooth and weather tight operation.

Remove excess glazing and sealant compounds, labels, dirt, and other substances from windows.

### ALUMINUM DOORS

1. **1-3/4" Aluminum swing entrance doors.**
2. Acceptable Manufacturers:
  - a. EFCO Series D500 Wide Stile.
  - b. Kawneer Series 500 Wide Stile.
  - c. Special-Lite, Inc. Model SL-15

### DOOR CONSTRUCTION

1. Door Thickness: 1-3/4 inches.
2. Stiles and Rails: 0.125-inch minimum wall thickness, 1-piece aluminum extrusions produced from 6063-T6 alloy.
3. Stile Width: 4-1/2 inches.
4. Rail Width: Top rail profile to be 5-1/2 inches, bottom rail profile to be 6-1/2" inches.
5. Mid Rail: 6-1/2 inches one-piece extrusion with integral exterior glass stops.
6. Corners: True mortise and tenon joints. Full-width 3/8-inch diameter minimum galvanized steel tie rods secured with locking hex nuts.
7. Core: Poured-in-place urethane, minimum 5 pounds per cubic foot density.
8. Aluminum Finish: Anodized finished, Class I finish, 0.7 mils thick.
  - a. **Chambers Hall** - Dark Bronze or Medium Bronze Anodized. (to be selected by MCC during the submittal process)
  - b. **L'Hommedieu Hall** - Clear Anodized.
9. Glazing: Factory installed 1-inch tempered glass insulating units, designed for replacement of glass. Install with manufacturer's standard flush glazing system with recessed channels and glazing gaskets, allow for thermal expansion on exterior units.

### INSTALLATION

Install doors in accordance with manufacturer's instructions. Install doors plumb, level, square, true to line, and without warp or rack. Install exterior doors to be weather tight in closed position.

Repair minor damages to finish in accordance with manufacturer's instructions. Remove and replace damaged components that cannot be successfully repaired as determined by Middlesex County College Facilities Management. Adjust doors, hinges, and locksets

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for smooth operation without binding.

Clean doors promptly after installation in accordance with manufacturer's instructions. Do not use harsh cleaning materials or methods that would damage finish.

Protect installed doors to ensure that, except for normal weathering, doors will be without damage or deterioration until substantial completion of project.

### DOOR HARDWARE

Conduct a pre-construction meeting at the project site to review hardware functionality, procedures, material availability, and schedule. MCC Facilities Engineering and Maintenance will review functionality of hardware, paperwork sign off for the restricted cores, and provide final approval.

Where indicated to comply with accessibility requirements, comply with Americans with Disabilities Act (ADA), "Accessibility Guidelines for Buildings and Facilities (ADAAG)," ANSI A117.1, FED-STD-795, "Uniform Federal Accessibility Standards," as follows:

1. Handles, Pulls, Latches, Locks, and other Operating Devices: Shape that is easy to grasp with one hand and does not require tight grasping, tight pinching, or twisting of the wrist.
2. Door Closers: Comply with the following maximum opening-force requirements indicated:
  - a. Interior Hinged Doors: 5 lbf applied perpendicular to door.
  - b. Sliding or Folding Doors: 5 lbf applied parallel to door at latch.
  - c. Fire Doors: Minimum opening force allowable by authorities having jurisdiction.
3. Thresholds: Not more than 1/2 inch high. Bevel raised thresholds with a slope of not more than 1:2.
4. NFPA 001: Comply with the following for means of egress doors:
  - a. Latches, Locks, and Exit Devices: Not more than 15 lbf to release the latch. Locks shall not require the use of a key, tool, or special knowledge for operation.
  - b. Door Closers: Not more than 30 lbf to set door in motion and not more than 15 lbf to open door to minimum required width.
  - c. Thresholds: Not more than 1/2 inch high.

### Approved Manufacturers:

Equals must be approved by the College prior to installation

<u>ITEM</u>	<u>MANUFACTURER</u>	<u>CODE</u>
Continuous Hinges	Hager Inc.	HG
Cylinders	Schlage with 1246 keyway	SC
Exit Devices	Von Duprin	VO
Pulls	Ives	IV
Closers	LCN	LC

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## Geared Continuous Hinges:

1. Tested and approved by BHMA for ANSI A156.26-1996 Grade 1.
2. Anti-spinning through fastener.
3. UL10B listed for 3-hour fire rating.
4. Non-handed.
5. Lifetime warranty.
6. Provide fire pins for 3-hour fire ratings.
7. Sufficient size to allow for door to swing 180 degrees.

## Exit Devices:

1. Tested and approved by BHMA for ANSI A156.3 Grade 1.
2. Provide a deadlocking latchbolt.
3. Exit Devices shall have cylinder dogging.
4. Touchpad shall be "T" style.
5. Exposed components shall be of architectural metals and finishes.
6. Lever design shall match lockset lever design.
7. Provide strikes as required by application.
8. Fire exit devices to be listed for UL10C.
9. Provide vandal resistant or breakaway trim.

## Keys and Keying:

1. Arrange keying meeting with Middlesex County College Facilities Engineering and MCC Facilities Maintenance locksmith to ensure hardware and functionality is correct.
2. Provide Schlage cores, able to accept #1246 keyway to match existing. This keying is restricted to Middlesex County College only, provide supplier paperwork to the Executive Director of Facilities for sign off on the cores. Cores to be purchased by contractor, and delivered to MCC Facilities Maintenance.
3. Cores to be keyed by MCC Facilities Maintenance locksmith, and installed by contractor.

## Door Closers:

1. Tested and approved by BHMA for ANSI A156.4 Grade 1.
2. UL10C certified.
3. Closer shall have extra duty arms and knuckles.
4. Maximum 2-7/16 inch case projection with non-ferrous cover.
5. Separate adjusting valves for closing and latching speed, and back check.
6. Provide adapter plates, shim spacers and blade stop spacers as required by frame and door conditions.
7. Full rack and pinion type closer with 1-1/2 inch minimum bore.
8. Mount closers on non-public side of door, unless otherwise noted in specification.
9. Closers shall be non-handed, non-sized and multi-sized 1 through 6.

Seals: All seals and sweep shall be furnished by the door manufacturer. Material shall be UL listed for labeled openings.

**HARDWARE SCHEDULE**

**Hardware Set #100**

2	CONT. HINGE	780-112HD	710	HG
2	EXIT DEVICE	9949L-OP	710	VO
2	RIM CYLINDER	20-057	710	SC
2	OFFSET DOOR PULL	8190-2-O	710	IV
1	THRESHOLD	S204D	BRZ	RS
1	ADA LOW ENERGY POWER OPERATED DOOR OPENER (Pair)			

Acceptable Manufacturers:

1. Besam
2. Nabco Entrances, Inc. (Gyro Tech)
3. Horton Automatics
4. DORMA Group

6065 T5 Aluminum, Power Open, Spring Close, Bronze Anodized.

**Hardware Set #101**

1	CONT. HINGE	780-112HD	710	HG
1	EXIT DEVICE	99NL-OP	710	VO
1	RIM CYLINDER	20-057	710	SC
1	DOOR CLOSER	P4111 EDA	710	LC
1	OFFSET DOOR PULL	8190-2-O	710	IV
1	THRESHOLD	S204D	BRZ	RS

**Hardware Set #102**

2	CONT. HINGE	780-112HD	US 28	HG
2	EXIT DEVICE	9949L-OP	US 26D	VO
2	RIM CYLINDER	20-057	626	SC
2	DOOR CLOSER	P4111 EDA	628	LC
2	OFFSET DOOR PULL	8190-2-O	US 32D	IV
1	THRESHOLD	S204A	MILL	RS

**INSTALLATION**

Install each door hardware item to comply with manufacturer's written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces, coordinate removal, storage, and reinstallation of surface protective trim units. Do not install surface-mounted items until finishes have been completed on substrates involved. Set units level, plumb, and true to line and location. Adjust and reinforce attachment substrates as necessary for proper installation and operation. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.

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Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended.

Clean adjacent surfaces soiled by door hardware installation. Clean operating items as necessary to restore proper function and finish. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration until substantial completion of project.

#### INSULATED PANELS

Standard panels to be a 1" thick insulated sandwich panel. Insulated core to be a two (2) pound density polystyrene with tempered hardboard base sheet. Interior and exterior face to be a 0.120-inch thick fiberglass reinforced plastic panel with pebble embossed finish.

All panels may be factory, or field installed.

#### JOINT SEALANTS

Caulk between metal and masonry and/or wood at mullions of all frames for window and door openings in exterior walls. Inside and outside to be caulked completely. Do not caulk when joint widths are less than allowed by joint sealer manufacturer for application indicated.

Provide joint sealers that have been produced and installed to establish and maintain watertight and airtight continuous seals on a permanent basis, within recognized limitations of wear and aging as indicated for each application. Failure of installed sealers to comply with these requirements will be recognized as failures of materials and workmanship. Install Elastomeric products which are classified as One-Part Polysulfide Sealant: Type 2; Grade NS; Class 12-1/2; Use T, M, G, A and, as applicable to joint substrates indicated, O. Provide non-sag sealant conforming to requirements of FS TT-S-00230C, or approved equal.

Acceptable Manufacturers:

5. Sika Group
6. "Chem-Calk 100"
7. "Synthacalk GC-9"

**Bronze/Brown – use at Chambers Hall**

**Gray/Silver – use at L'Hommedieu Hall**

Provide Sealant Backer Rod of polyethylene foam, neoprene foam, butyl rubber foam, or other flexible, permanent, durable, non-absorptive material as recommended for compatibility with sealant by the sealant manufacturer.

## INSTALLATION

Clean out joints immediately before installing joints sealers to comply with recommendations of joint sealer manufacturers and the following requirements. Remove all foreign materials from joint substrates which could interfere with adhesion of joint sealer, including dust; paints, except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer; oil; grease; waterproofing; water repellants; water; surface dirt and frost. Remove loose particles remaining by vacuuming or blowing out joints with oil-free compressed air.

Install sealant backings to provide support of sealants during application and at position required to produce the cross-sectional shapes and depths of installed sealants relative to joint widths which allow optimum sealant movement capability. Do not leave gaps between ends of joint-fillers. Do not stretch, twist, puncture or tear joint-fillers. Remove absorbent joint-fillers which have become wet prior to sealant application and replace with dry material.

Use masking tape where required to prevent contact of sealant with adjoining surfaces which otherwise would be permanently stained or damaged by contact. Install material in a uniform, continuous ribbon without gaps or air pockets, with complete wetting of joint bond surfaces. Sealant shall be formed with precise line and expansion and formed with a precise concave surface cove to prevent the trapping of moisture. Immediately after sealant application and prior to time skinning or curing begins, tool sealant to form smooth, uniform beads of configuration indicated, to eliminate air pockets and to ensure contact and adhesion of sealant with sides of joint. Clean off excess sealants or sealants smears adjacent to joints as work progresses by methods and with cleaning materials approved by manufacturers of joint sealers.

## GYPSUM BOARD ASSEMBLIES

Install 3-5/8", 18 gauge, metal studs as indicated on the drawings. Provide top and bottom runners with 2" deep flanges.

Acceptable Manufacturers:

1. Clark Steel Framing Systems.
2. Consolidated Systems, Inc.
3. Dale Industries, Inc. - Dale/Incor.
4. Dietrich Industries, Inc.
5. MarinoWare; Division of Ware Ind.
6. National Gypsum Company.

Install Abuse-Resistant Gypsum Wallboard: ASTM C 36, manufactured to produce greater resistance to surface indentation and through-penetration than standard gypsum panels.

Acceptable Manufacturers:

1. National Gypsum Company; Gold Bond Hi-Abuse Wallboard.
2. United States Gypsum Co.; SHEETROCK Brand Abuse-Resistant Gypsum Board.

3. Georgia-Pacific Gypsum LLC; ToughRock Abuse-Resistant Gypsum Board.

Install all related interior trim, galvanized, aluminum-coated steel sheet, or rolled zinc.

Shapes:

1. Cornerbead: Use at outside corners, unless otherwise indicated.
2. Bullnose Bead: Use at outside corners where indicated.
3. LC-Bead: J-shaped; exposed long flange receives joint compound; use at exposed panel edges.
4. L-Bead: L-shaped; exposed long leg receives joint compound; use where indicated.
5. U-Bead: J-shaped; exposed short flange does not receive joint compound; use at exposed panel edges.

### INSTALLATION

Install tracks (runners) at floors and ceilings where gypsum board assemblies abut other construction. Installation Tolerance: Install each steel framing and furring member so fastening surfaces vary not more than **1/8 inch** from the plane formed by the faces of adjacent framing. Extend partition framing full height to structural supports or substrates above suspended ceilings.

Install steel studs at **16 inches** o.c., unless otherwise indicated. Install steel studs so flanges point in the same direction and leading edge or end of each panel can be attached to open (unsupported) edges of stud flanges first.

Install sound attenuation blankets after panels have been installed on one side. Install ceiling board panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in the central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.

Install gypsum panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1/16 inch of open space between panels. Do not force into place. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Attach gypsum panels to steel studs so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first. Cover both faces of steel stud partition framing with gypsum panels. Seal joints between edges and abutting structural surfaces with acoustical sealant. Space screws a maximum of 12 inches o.c. for vertical applications.

Space fasteners in panels that are tile substrates a maximum of 8 inches o.c.

Finish gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces. Prefill open joints, rounded or beveled edges, and damaged surface areas. Apply joint tape over gypsum board joints, except those with trim having flanges not intended for tape. Embed tape and

apply separate first and fill coats of joint compound to tape, fasteners, and trim flanges where indicated.

#### HORIZONTAL BLINDS

1. **Aluminum horizontal window blinds for exterior windows.**
2. Acceptable Manufacturers:
  - a. Bali Blinds, Springs Window Fashions (Basis of Design)
  - b. Levolor Window Fashions
  - c. Mariak Industries

#### BLIND CONSTRUCTION

1. Slats: Minimum 6 gauge aluminum, 1" wide.
2. Metal Headrail: 1 inch high by 1-1/2 inches deep. Headrail to be fabricated from 0.024 inch thick treated steel and finished with a baked coating.
3. Metal Bottomrail: Fabricated from 0.024 inch thick treated steel with and finished with a baked coating.
4. Ladder Drum: Durable steel with smooth hole edges to position ladder. Ladders shall be securely attached by means of a bend-down top, including braided ladder clips.
5. Hexagonal Tilt Rod: Rod shall be zinc coated solid steel, 0.25 inch at its widest points.
6. Tilt Wand: Clear polycarbonate hexagonal rod, approximately 3/8 inch in diameter.
7. Lift Cords: Lift cords shall be braided with polyester jacket and center core or approved equal. Size of cord shall be 1/8 inch. Cords shall be color coordinated.
8. Installation Brackets: Brackets shall facilitate easy installation and removal of headrail channel. End support box brackets shall be made of steel in color to match blinds. Face of bracket shall be hinged to lock headrail in place or allow installation and removal.
9. Color: Alabaster 112.
10. **Blinds to be installed in L'Hommedieu Hall only.**

#### INSTALLATION

Verify field measurements upon installation of new window system. Install blinds plumb, level, and square in accordance with manufacturer's recommended installation procedures. Install blinds with adequate clearance to permit smooth operation of blinds and any sash operators.

Allow proper clearances for window operation hardware. Install intermediate support brackets and extension brackets as required to prevent deflection in headrail. Set tilt and lift controls. Demonstrate blinds to be in smooth, uniform working order.

Remove and replace damaged components that cannot be successfully repaired as determined by Middlesex County College Facilities Management. Clean promptly after installation in accordance with manufacturer's instructions. Do not use harsh cleaning

materials or methods that would damage finish.

### 3. COMPLIANCE

The Contractor shall comply with all of the College's safety and work rules when performing work at the college. All contractor employees, subcontractors, etc. shall sign-in daily at the Facilities Management Building upon arrival on campus to be issued a contractor's identification badge. It is expected that all contractor employees will conduct themselves in a professional manner.

The buildings will be occupied during this project. All work must comply with PEOSHA Indoor Air Quality (IAQ) requirements for construction in an occupied building. Every effort must be made to prevent dust and fumes from entering the occupied space. Contractor to coordinate with MCC maintenance personnel to achieve optimum results.

Middlesex County College is a smoke-free campus. Smoking is only permitted inside a person's personal vehicle. Smoking is not permitted anywhere else on campus or in any construction equipment. The College Police will issue summonses with fines to anyone found in violation of this policy.

### 4. SITE CLEANUP

The work area shall have a final cleaning at the end of each day. Each window opening shall be weather tight at the end of each day. Any items remaining shall be secured and surrounded with safety tape and/or barriers. Any damage caused by the contractor shall be repaired at no cost to the college.

The contractor is to remove all trash and other waste off site and disposed of it in accordance with current regulations. **Provide the college with legible weight tickets for all materials that will be recycled. The college requires weight tickets for recycled materials for record only.**

### 5. TIME CONSTRAINTS

If the Board of Trustees of Middlesex County College has approved an award on approximately April 22, 2015, the contractor shall start the submittal process immediately. The contractor shall complete the on-site construction work between June 1, 2015 and October 23, 2015; refer to section-6 Work Hours for additional information. If the Board has not approved the award on approximately April 22, 2015, then the College will advise the contractor of an alternate start date.

## 6. WORK HOURS

All work is to be performed during normal work hours 8:00 am to 4:30 pm, Monday through Friday. If additional work hours are required, they shall be included in the contractor's bid price and approval of the College shall be requested by the contractor in writing 48 hours prior to the desired work date.

The buildings will be occupied during this project. Every effort must be made to prevent disturbance and dust from entering the occupied space. The Contractor shall coordinate the construction schedule with MCC Facilities maintenance personnel to relocate employees if necessary and achieve optimum results. Below is a preliminary schedule for construction activities:

L'Hommedieu Hall – Windows shall be installed during normal working hours, including Saturday, Sunday, and evenings in the Dental Clinic, Office Suites, Prep Rooms and Corridor/Common space during the summer schedule (June 1<sup>st</sup> – August 19<sup>th</sup>). Windows shall be installed in the Classrooms and Labs during normal working hours from August 20, 2015 through August 28, 2015, including Saturday, Sunday, and evenings. Windows may also be installed in the Classrooms and Labs during normal working hours on Fridays during the summer schedule. The building will be unoccupied on Fridays during the summer schedule.

Chambers Hall – Will be occupied during normal working hours from Monday through Friday, including Saturday, Sunday, and evenings from September 21, 2015 through October 23, 2015. Contractor must provide notice prior to installing the new window system in the Presidents Suite.

Refer to Alternate #2 for second shift work, 4:00pm – 12:00am.

Columbus Day – On Monday October 12, 2015 the campus will be closed due to the annual electrical shutdown. Power will not be available, but work on campus is allowed provided the awarded contractor supplies a generator.

The work hours in this section take precedent over, and will supersede any conflicting references to hours of work elsewhere in these plans and specifications.

## 7. ALTERNATE #1

L'Hommedieu Hall – Remove and dispose of existing aluminum swing entrance doors and storefront in its entirety. Provide and install new aluminum swing entrance doors, door hardware, and aluminum storefront (Window System 'A' or 'B') as noted in the specifications. Location and dimensions of Alternate No. 1 are noted on sheets A-3 and A-4 of the associated drawings. The Alternate No. 1 amount shall include **all** costs, including Overhead and Profit, for removal, disposal, and installation of new.

8. **ALTERNATE #2**

Second shift installation at Chambers Hall – Provide pricing for the **difference in cost** (additional, subtracted, or \$0.00) to remove the existing windows, and provide the new specified windows and doors from the hours of **4:00pm till 12:00am** (midnight).

9. **ADDITIONAL INFORMATION**

Additional information may be obtained from the following individuals:

Facility/specifications:

Dennis Vliet  
Manager,  
Facilities Projects  
732-906-2611  
732-906-4199 Fax  
[DVliet@MiddlesexCC.edu](mailto:DVliet@MiddlesexCC.edu)

Proposal:

David Fricke  
Director, Purchasing & Inventory  
732-906-2519  
732-906-4236 Fax  
[DFricke@MiddlesexCC.edu](mailto:DFricke@MiddlesexCC.edu)

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