ADDENDUM NO. 01

February 28, 2020

PRIDE ACADEMY AT PROSPECT AVE SCHOOL – LEARNING RESOURCE CENTER (LRC) – 04-118742

SANTEE SCHOOL DISTRICT

Item No. 1	Specifications
AD1	Division 6

A. Revise Specification Section 06 41 00 Architectural Wood Casework, part 2.02A.11 to clarify display cases, per the attached AD1-06 41 00.

Item No. 2	Specifications
AD1	Division 7

A. Replace Specification Section 07 54 23 in its entirety, per the attached AD1-07 54 23.

Item No. 3	Specifications
AD1	Division 8

A. Revise Specification Section 08 43 33 Folding Glass Walls, part 2.01A to show Nanawall SL84 as the basis of design model, per the attached AD1-08 43 33.

B. Revise Specification Section 08 71 00 Door Hardware, per the attached AD1-08 71 00 and as follows:

   a. Show Hardware Group No. HM-ED-OS applicable to door #(s) 2, 2B and 10
   b. Show Hardware Group No. HM-ED-OS-1 as in contract, applicable to door # 2C, and remove delayed exit logic controller.

Item No. 4	Specifications
AD1	Division 9

A. Revise Specification Section 09 68 13 Tile Carpeting, part 2.01A.1 to add item d. Walk-off mats, per the attached AD1-09 68 13.

Item No. 5	Drawings
AD1	Sheet A1.1

A. Revise Sheet A1.1 Enlarged Site Plan- Demo as follows:
   1. Revise keynote 101 to read: “Existing portable building shall be removed by District. Ramp shall be salvaged by District. Contractor shall remove and dispose of any remaining foundations, equipment and utilities.”
   2. Revise keynote 157 to read: “Existing electrical equipment shall be removed by District. Gear shall be salvaged by District.”

Item No. 6	Drawings
AD1	Sheet A20.0

A. Revise Sheet A8.1 Door Schedule, door no. 6B and 10C to show door glass type 4.
B. Revise Sheet A8.1, Glazing Notes to add note 4 to read: “Interior opaque glazing: dual insulated glazing- clear laminate with white matte interlayer.”.

Item No. 7	Drawings
AD1	Sheet A40.1

A. Clarify details 5, 6, 10, 13 and 21 will have no cants.

END OF ADDENDUM NUMBER 01

StudioWC

Robert D. Webb, AIA, Architect, Senior Vice President

ATTACHMENTS:

Specifications 8.5” x 11”

AD1-06 41 00

AD1-07 54 23

AD1-08 43 33

AD1-08 71 00

AD1-09 68 13

SECTION AD1-06 41 00

ARCHITECTURAL WOOD CASEWORK

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes: Furnish and install complete, plastic laminate countertops, laminated plastic casework, shelves, open shelving, fixture work and miscellaneous millwork and hardware required for this work as indicated on the Drawings and that is required, and as specified herein. Includes delivery to rooms, unpacking, setting in place, leveling and fastening to walls and floors as required.

B. Related Sections:

1. Rough Carpentry; refer to Section 06 10 00.

1.02 REFERENCE STANDARDS

A. NEMA LD3 - High Pressure Decorative Laminates.

B. Woodwork Institute, 1ST Edition, 2009 Architectural Woodwork Standards:

C. Title 24, California Code of Regulations, 2016.

1.03 QUALITY ASSURANCE

A. Millwork shall be manufactured in accordance with the standards in the latest edition of the Architectural Woodwork Standards of the Woodwork Institute in the grade or grades hereinafter specified or shown on the Drawings.

B. Before delivery to the job site, the millwork supplier shall issue a Woodwork Institute Certified Compliance Certificate indicating the millwork products he will furnish for this project and certifying that they will fully meet the requirements of the grade or grades specified.

C. Each elevation of casework shall bear the Certified Compliance label.

D. Each countertop shall bear the Certified Compliance label.

E. Operable parts for all accessible casework shall comply with CBC Section 11B-309.

1.04 SUBMITTALS

A. Before delivery to the jobsite, the millwork supplier shall issue a W.I. Certified Compliance Certificate indicating the millwork products he will furnish for this job, and certifying that they will fully meet the requirements of the grade or grades specified.

B. Upon completion of the job, submit a Woodwork Institute Certified Compliance Certificate for Installation.

C. Submit shop drawings and product data under provisions of Section 01 33 00 – Submittal

Procedures, and in accordance with Woodwork Institute, Architectural Woodwork Standards “Section 1 – Submittals”.

D. Shop drawings shall bear the Woodwork Institute Certified Compliance label on the first page of the Drawings.

E. Submit minimum 18" wide sample portion of casework unit showing typical construction including representation of all finished hardware proposed for use. Sample unit shall be typical base unit including drawer, door, top, splash and sidesplash, and interior shelf.

F. Submit literature and data sheets as necessary to establish "formaldehyde free" nature of the proposed materials.

G. Where required or necessary, submit samples of standard color choices for Architect's selection.

H. Installed cabinets shall meet the requirements of CBC, 2016, Title 24, Part 2, Chapter 16A**.**

I. Submit VOC content of all glues and adhesives.

1.05 DELIVERY, STORAGE AND HANDLING

A. Materials shall be delivered to the site in undamaged condition, stored in fully covered, well ventilated areas, and protected from extreme changes in temperature and humidity, as recommended by Woodwork Institute, Architectural Woodwork Standards “Section 2 – Care and Storage”.

B. In the event of damage, immediately make necessary repairs or replacements.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Grades:

1. Wood (Section 10 Casework, WI)

   a. Exposed Materials: Premium Grade

   b. Semi-Exposed Materials: Custom Grade

   c. Door and Drawer Front Style: Flush Overlay, Style “A”

   d. Current doors to be W.I. Type 1, with black colored resilient plastic “Tee” on door meeting style only; other sides to have solid banding to match door.

2. Provide plastic covered casework in accordance with Woodwork Institute "Architectural Woodwork Standards", (Section 10 Casework), for Premium Grade. Premium Grade for library shelving, and display cases, except at custodian storage, storage, and food service rooms, where Custom Grade is acceptable.

   a. Provide scribe mold at junctions with walls and ceilings.

b. Provide plywood core construction laminate finish. Medium density fiberboard cores will not be acceptable.
c. Provide stainless steel corner guards at all exposed casework corners.

3. Construction Style Required: Style A Frameless.

4. Construction Type: Type I Multiple self-supporting units, rigidly joined together.

B. Casework construction shall be entirely of formaldehyde free products. Manufacturer to submit published data sheets for casework materials for Architect's approval. So called "Low-emitting" formaldehyde containing products will not be allowed. Burden of proof rests with the casework manufacturer.

C. Exposed Materials: Vertical and Horizontal Surfaces (cabinet bodies and wall paneling): Surface material shall be high pressure laminate: 0.028-inch minimum thickness at vertical surfaces conforming to ANSI/NEMA LD-3. Flame spread: 40. Smoke developed: 155. Provide matte finish standard colors by Wilson Art, Formica or Nevamar; color to be selected by Architect.

D. Semi-Exposed Materials: High pressure laminate as specified for exposed materials. Color at top, bottom and front edge of shelves to match casework laminate, typical for all casework, except as follows: Custodial, and storage rooms with semi-exposed casework surfaces shall receive low pressure decorative Melamine overlay. Masonite Class I made with formaldehyde free substrate, or approved equivalent; white in color at Custodial and storage rooms only. Top and bottom of shelves shall match exposed materials in material and color. Front edge of all shelves to match casework laminate.

E. Door and Drawer Front Style: Flush overlay with high pressure laminate, per exposed materials, with 3mm thick PVC edge banding on edges, 1mm thick PVC edge banding on case bodies. All edge banding shall be machine applied. Edge banding at outside edges shall be "eased" so as to eliminate sharp edges. Submit manufacturer's standard edge banding colors for Architect's selection.

F. Exposed Wood: Species –, veneer cut-rotary

G. Laminated Plastic Countertops and Splashes:

1. Surface material shall be high pressure, low luster, laminated plastic conforming to NEMA LD-3, 0.042-inch thickness post forming grade for tops and 0.028-inch thickness for wall paneling.

2. Laminated plastic countertops and splashes shall be Woodwork Institute Premium Grade. Scribe tops and splashes to walls. There shall be no joints between walls and countertops or splashes larger than 1/16". Caulk all gaps with caulk to match color of countertop, or as approved by Architect.

3. Provide splashes at all countertops. Provide end splashes with square butt joints. Back splash shall have a rolled edge at the top with an integral cove at the junction of the countertop and splash. Front edge of all countertops shall be a rolled "waterfall" edge, self edge countertops are unacceptable. Provide a non-drip bullnose edge at all countertops with sinks.

H. Fasteners:

1. Screws: Straight shank double thread particle board screws.

I. Glues: Type 3 adhesives throughout with less than 20 g/L VOC content.

2.02 ACCESSORIES

A. Finish Hardware: Provide all required finish hardware for casework in accordance with the Architectural Woodwork Standards, 1st Edition, except as modified below:

1. Hinges: Screwed in, fully concealed self-closing with 120-degree opening angle. Blum European Style Hinge, or equal. Heavy Duty.

2. Pulls: U-shaped metal. Amerock Solid Brass – 4" AME 19549 dull chrome wire pulls. Pulls to be glued and screwed in place.

3. Catches: Magnetic, Amerock 3473PT, and IVES #2 Elbow Catch, or equal for all doors; for inactive leaf of pairs of doors with locks. Omit where self-closing hinge provides latch function. Elbow catches to be installed maximum 1-1/2 inch from front edge of door.

4. Drawer Slides: Provide 100 pound capacity, full extension slides, Accuride model number C3017 or equivalent.

5. Keyboard Drawer Slide: Accuride variable height keyboard slide with 3/4-inch plastic laminate tray, model number 2109, 20 inches long. Provide one (1) keyboard slide and tray at each knee space, typical.

6. File Drawer Slides: Heavy duty, full extension, three section slide, .63-inch slide space, 200-pound load capacity, Accuride model number C3640 or equivalent.

7. Shelf Clip: 32mm system, earthquake proof shelf clip in accordance with ANSI/BHMA A156.9.

8. Guides for Sliding Glass Cabinet Doors: KV P1092 or equal. Locks for sliding glass doors: KV #965 CHR.

9. Door and Drawer Locks: Olympus Lock series 500 DR and 600 DW. Provide with lip or escutcheon to completely cover hole in casework. Color: chrome finish. All doors and drawers shall be provided with locks. Provide two (2) keys for each room with casework. Key cabinets in each room alike, each room different.

   a. Provide locks at all casework doors and drawers. Provide two (2) keys in each room alike; each room different and Master keyed.

   b. Metal Strike Plates: Provide Cabinet door and drawer locks with metal strike plates to protect against particle board rip-out.

10. Countertop Grommets: Doug Mockett MM4, 2-1/2-inches clear diameter black plastic with snap-on cover, provide one grommet per knee space compartment. Grommet to be 3/4-inch deep to completely conceal raw inside edges of countertop hole. Submit sample for approval. Provide trim grommet for computer paper access-slot where shown on Drawings. Grommets to be located in field by Architect.

11. Display Cases: Complete assembly for double rail and stile 1/4-inch clear tempered glass doors:

a. Standards and Brackets: Knape & Vogt #80, and 12" deep bracket #180.

b. Locks: KV #986 CHR,

c. Pulls: EPC-GP17 – stainless steel

d. Glass Shelves: 5/16-inch tinted light bronze float plate, tempered.

e. Anodized Aluminum Extrusions.

f. Hinged Doors

g. Tackable Back Panel

h. *Fluorescent Down Lighting*

B. Cabinet hardware shall be installed by casework fabricator.

C. Products:

1. Polyvision
2. Claridge
3. ABC School Equipment

2.03 FABRICATION

A. General: Fabricate the casework to the shape indicated on the Drawings and in strict accordance with the Woodwork Institute grade specified.

B. Field Verification: Contractor shall field verify finish dimensions prior to fabrication of casework.

C. Compliance: The Architect reserves the right to require an inspection by a representative of the Woodwork Institute, to determine whether fabrication and installation was in accordance with the specified standard.

PART 3 - EXECUTION

3.01 PREPARATION

A. Conform to requirements of Woodwork Institute "Architectural Woodwork Standards," for casework construction details.

3.02 INSTALLATION

A. Woodwork Institute Certified Installation is required. Install work in this section as specified in Woodwork Institute "Architectural Woodwork Standards" 1ST Edition.

B. All components of casework which are notched, chipped, dinged, scratched, scuffed, or otherwise damaged or marred during course of construction shall be replaced with a matching "like new" component, to the satisfaction of the Architect. Components which are incorrectly cut or drilled shall not be used.

C. All cabinet backs shall be fully trapped (dadoed & glued).

D. Joints between countertop sections shall not be installed over knee spaces or other open span.

3.03 CLEANING

A. Upon completion of installation *in each room*, remove debris, sawdust, excess materials, packages, equipment and trash which may have accumulated from this work. DO NOT ALLOW SAWDUST OR DEBRIS TO FALL ON CARPET SURFACES. Casework installer shall clean any sawdust on carpets to the satisfaction of the Architect.

B. Cabinets and adjacent surfaces shall be left clean and acceptable for final approval.

C. Contractor to provide a copy of cleaning and maintenance recommendations for countertops and casework to the underneath side of furniture, in addition to requirements listed above and outlined in Section 01 78 23 – Operating and Maintenance Data.

3.04 WARRANTY

A. Provide ten (10) year warranty for material defects from date of substantial completion. Provide two (2) year warrant against installation defects.

END OF SECTION

SECTION AD1-07 54 23

THERMOPLASTIC POLYOLEFIN (TPO) MEMBRANE ROOFING

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Adhered TPO membrane roofing system.

B. Cover board.

1.02 RELATED SECTIONS

A. Division 06 Section "Miscellaneous Rough Carpentry" for wood nailers, cants, curbs, and blocking and for wood-based, structural-use roof deck panels.

B. Division 07 Section "Sheet Metal Flashing and Trim" for metal roof penetration flashings, flashings, and counter flashings.

C. Division 22 Section "Storm Drainage Piping Specialties" for roof drains.

1.03 REFERENCES

A. Roofing Terminology: Refer to the following publications for definitions of roofing work related terms in this Section:

1. ASTM D 1079 “Standard Terminology Relating to Roofing and Waterproofing.”
2. Glossary of NRCA’s “The NRCA Roofing and Waterproofing Manual.”
3. Roof Consultants Institute “Glossary of Building Envelope Terms.”

B. Sheet Metal Terminology and Techniques: SMACNA “Architectural Sheet Metal Manual.”

1.04 DESIGN CRITERIA

A. General: Installed roofing membrane system shall remain watertight; and resist specified wind uplift pressures, thermally induced movement, and exposure to weather without failure.

B. Material Compatibility: Roofing materials shall be compatible with one another under conditions of service and application required, as demonstrated by roofing system manufacturer based on testing and field experience.

C. Installer must comply with current code requirements based on authority having jurisdiction.

D. Wind Uplift Performance: Roofing system shall be identical to systems that have been successfully tested by a qualified testing and inspecting agency to resist wind uplift pressure calculated in accordance with ASCE 7.

E. Fire-Test-Response Characteristics: Provide roofing materials with the fire-test-response characteristics indicated as determined by testing identical products per test method below by UL, FMG, or another testing and inspecting agency acceptable to authorities having jurisdiction. Materials shall be identified with appropriate markings of applicable testing and inspecting agency.

1. Exterior Fire-Test Exposure: Class A; ASTM E 108, for application and roof slopes indicated.

1.05 SUBMITTALS

A. Product Data: Manufacturer's data sheets for each product to be provided.

B. Detail Drawings: Provide roofing system plans, elevations, sections, details, and details of attachment to other Work, including:

1. Base flashings and membrane terminations.
2. Crickets, saddles, and tapered edge strips, including slopes.
3. Insulation fastening and adhesive patterns.

C. Installer Certificates: Signed by Roofing Systems Manufacturer certifying that Installer is approved, authorized, or licensed by manufacturer to install roofing system.

D. Maintenance Data: Refer to Manufacturer's latest published documents.

E. Guarantees: Provide manufacturer's current guarantee specimen.

F. Prior to roofing system installation, roofing sub-contractor shall provide a copy of the Guarantee Application Confirmation document issued by Johns Manville Roofing Systems indicating that the project has been reviewed for eligibility to receive the specified guarantee and registered.

1. StudioWC must be listed as the Specifier/Consultant of record in the appropriate fields on the Guarantee Application Confirmation.

1.06 QUALITY ASSURANCE

A. Installer Qualifications: Qualified firm that is approved, authorized, or licensed by roofing system manufacturer to install manufacturer's product and that is eligible to receive the specified manufacturer's guarantee.

B. Manufacturer Qualifications: Qualified manufacturer that has UL listing for roofing system identical to that used for this Project.

C. Testing Agency Qualifications: An independent testing agency with the experience and capability to conduct the testing indicated, as documented according to ASTM E 329.

D. Test Reports:

1. Roof drain and leader test or submit plumber's verification.

E. Source Limitations: Obtain all components from the single source roofing manufacturer guaranteeing the roofing system. All products used in the system must be labeled by the single source roofing manufacturer issuing the guarantee.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver roofing materials in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, and directions for storage.

B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer.

C. Protect roof insulation-coverboard materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Comply with manufacturer's written instructions for handling, storing, and protecting during installation.

D. Handle and store roofing materials and place equipment in a manner to avoid permanent deflection of deck.

1.08 PROJECT CONDITIONS

A. Weather Limitations: Proceed with installation only when current and forecasted weather conditions permit roofing system to be installed in accordance with manufacturer's written instructions and guarantee requirements.

1.09 GUARANTEE

A. Provide manufacturer's system guarantee equal to Johns Manville's Peak Advantage No Dollar Limit Roofing System Guarantee.

1. Single-Source special guarantee includes roofing membrane, base flashings, roofing membrane accessories, roof insulation, fasteners, cover board, walkway products, and other single-source components of roofing system marketed by the manufacturer.

2. Guarantee Period: 20 years from date of Substantial Completion.

B. Installer's Guarantee: Submit roofing Installer's guarantee, including all components of roofing system for the following guarantee period:

1. *Guarantee Period: Two years from date of Substantial Completion.*

C. *Existing Guarantees: Guarantees on existing building elements should not be affected by scope of work.*

1. *Installer is responsible for coordinating with building owner's representative to verify compliance.*

PART 2 PRODUCTS

2.01 THERMOPLASTIC POLYOLEFIN ROOFING MEMBRANE - TPO

A. *Fabric-Reinforced Thermoplastic Polyolefin Sheet: ASTM D 6878, uniform, flexible sheet formed from a thermoplastic polyolefin, internally fabric or scrim reinforced. Basis of Design: JM TPO or equal.*

1. *Membrane Thickness: 60 mils, nominal*
2. *Exposed Face Color:* ***White or Tan at Owners Direction***

2.02 AUXILIARY Roofing Materials – Single Ply

A. *General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with membrane roofing.*

1. *Liquid-type auxiliary materials shall meet VOC limits of authorities having jurisdiction.*

B. *Sheet Flashing: Manufacturer's internally reinforced or scrim reinforced, smooth backed membrane with same thickness and color as sheet membrane.*

C. *Bonding Adhesive: Manufacturer's standard water-based bonding adhesive for membrane, and Spray Applied solvent-based bonding adhesive for base flashings. Basis of Design: JM TPO Water Based Membrane Adhesive, JM All Seasons Adhesive, or equal.*

D. *Metal Termination Bars: Manufacturer's standard predrilled stainless-steel or aluminum bars, with anchors.*

E. *Fasteners: Factory-coated steel fasteners and metal or plastic plates meeting corrosion-resistance provisions in FMG 4470, designed for fastening membrane to substrate, and acceptable to membrane roofing system manufacturer.*

F. *Miscellaneous Accessories: Provide pourable sealers, primers, preformed cone and vent sheet flashings, preformed inside and*

outside corner sheet flashings, T-joint covers, cover strips, and other accessories required for full installation.

2.03 AUXILIARY ROOFING SYSTEM COMPONENTS

A. Coping System: Manufacturer's factory fabricated coping consisting of a base piece and a snap-on cap as specified in 07 62 00.

B. Metal Flashing Sheet: Metal flashing sheet is specified in Division 07 Section "Sheet Metal Flashing and Trim."

2.04 WALKWAYS AND SAFETY STRIPS

A. Flexible Walkways: Factory-formed, nonporous, heavy-duty, slip-resisting, surface-textured walkway pads sourced from membrane roofing system manufacturer.

2.05 COVER BOARD

A. High-Density Polyisocyanurate: ASTM C 1289, Type II, Class 4, Grade 1, High-density Polyisocyanurate technology bonded in-line to inorganic coated glass facers with greater than 100 lbs. of compressive strength. Basis of Design: ProtectoR HD, or equal

1. Thickness: 1/2 inch (13 mm)
2. R-value: 2.5

B. Gypsum Board: ASTM C 1177, Heavy duty coated glass-mat facer, water-resistant gypsum substrate for fully adhered roof applications, 1/4 inch thick. Basis of Design: JM DEXcell FA Glass Mat Roof Board, or equal

C. Gypsum Board: ASTM C 1278, non-faced, gypsum and cellulose fiber substrate, 1/4 inch thick. Basis of Design: JM Securock Gypsum-Fiber Roof Board, or equal

2.06 TAPERED INSULATION

A. Tapered Insulation as needed, for crickets: ASTM C 1289, Type II, Class 1, Grade 2 (20 psi), provide factory-tapered insulation boards fabricated as needed for crickets.

2.07 INSULATION ACCESSORIES

A. General: Roof insulation accessories recommended by insulation manufacturer for intended use and compatible with membrane roofing.

B. Fasteners: Factory-coated steel fasteners and metal or plastic plates meeting corrosion-resistance provisions in FMG 4470, designed for fastening roof insulation to substrate, and furnished by roofing system manufacturer.

C. Urethane Adhesive: Manufacturer's two component polyurethane adhesive formulated to adhere insulation to substrate.

D. Wood Nailer Strips: Comply with requirements in Division 06 Section "Miscellaneous Rough Carpentry."

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine substrates, areas, and conditions for compliance with the requirements affecting performance of roofing system.

1. General:

a. Verify that roof openings and penetrations are in place and set and braced and that roof drains are securely clamped in place.

b. Verify that wood cants, blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation.

2. Wood Decks:

a. Verify that wood decking is visibly dry and free of moisture according to manufacturer's approved method.

b. Verify that wood has ability to provide minimum fastener pull-out resistance.

1) Provide documentation of pull out resistance values using manufacturer's approved procedures.

3. Ensure general rigidity and proper slope for drainage.

4. Verify that deck is securely fastened with no projecting fasteners and with no adjacent units more than 1/16 inch out of plane relative to adjoining deck.

B. Unacceptable panels should be brought to the attention of the General Contractor and Project Owner's Representative and must be corrected prior to installation of roofing system.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Clean and remove from substrate sharp projections, dust, debris, moisture, and other substances detrimental to roofing installation in accordance with roofing system manufacturer's written instructions.

B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction.

C. If applicable, prime surfaces as required by roofing manufacturer and allow primer to dry.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.03 CRICKET INSULATION INSTALLATION

A. Coordinate installation of roof system components so insulation and cover board are not exposed to precipitation or left exposed at the end of the workday.

B. Comply with roofing system manufacturer's written instructions for installation of roof insulation and cover board.

C. Install tapered insulation as necessary to direct water around curbs that are 2 foot or wider.

D. Trim surface of insulation boards where necessary so completed surface is flush and does not restrict flow of water.

E. Loose Laid Insulation with Mechanically Fastened Coverboard: Loose lay insulation with staggered joints

F. Proceed with installation only after unsatisfactory conditions have been corrected.

3.04 COVER BOARD INSTALLATION

A. Coordinate installing membrane roofing system components so cover board is not exposed to precipitation or left exposed at the end of the workday.

B. Comply with membrane roofing system manufacturer's written instructions for installing roof cover board.

C. Install cover board with long joints in a continuous straight line. Joints should be staggered between rows, abutting edges and ends per manufacturer's written instructions. Fill gaps exceeding 1/4 inch (6 mm) with cover board.

1. Cut and fit cover board within 1/4 inch (6 mm) of nailers, projections, and penetrations.

D. Trim surface of cover board where necessary at roof drains so completed surface is flush and does not restrict flow of water.

1. Install tapered edge strips at perimeter edges of roof that do not terminate at vertical surfaces.

E. Mechanically Fastened Cover Board: Install cover board and secure to deck using mechanical fasteners designed and sized for fastening specified cover board to deck type.

1. Fasten to resist uplift pressure at corners, perimeter, and field of roof.

F. Proceed with installation only after unsatisfactory conditions have been corrected.

3.05 ROOFING MEMBRANE INSTALLATION, GENERAL

A. Install roofing membrane in accordance with roofing system manufacturer's written instructions, applicable recommendations of the roofing manufacturer and requirements in this Section.

B. Cooperate with testing and inspecting agencies engaged or required to perform services for installing roofing system.

C. Coordinate installing roofing system so insulation and other components of the roofing membrane system not permanently exposed are not subjected to precipitation or left uncovered at the end of the workday or when rain is imminent.

1. Provide tie-offs at end of each day's work to cover exposed roofing membrane sheets and insulation.
2. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system.
3. Remove and discard temporary seals before beginning work on adjoining roofing.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.06 ADHERED ROOFING MEMBRANE INSTALLATION

A. Install roofing membrane over area to receive roofing in accordance with membrane roofing system manufacturer's written instructions.

1. Unroll roofing membrane and allow to relax before installing.
2. Install sheet in accordance with roofing system manufacturer's written instructions.

B. Accurately align roofing membrane and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.

C. Bonding Adhesive: Apply water-based bonding adhesive to substrate at rate required by manufacturer and install roofing membrane. Do not apply bonding adhesive to splice area of roofing membrane.

D. Mechanically fasten roofing membrane securely at terminations, penetrations, and perimeter of roofing.

E. Apply roofing membrane with side laps shingled with roof slope, where possible.

F. Seams: Clean seam areas, overlap roofing membrane, and hot-air weld side and end laps of roofing membrane according to manufacturer's written instructions to ensure a watertight seam installation.

1. Test lap edges with probe to verify seam weld continuity. Apply lap sealant to seal cut edges of roofing membrane.
2. Verify field strength of seams a minimum of twice daily and repair seam sample areas.

a. Remove and repair any unsatisfactory sections before proceeding with installation.

3. Repair tears, voids, and incorrectly lapped seams in roofing membrane that do not meet requirements.

G. Spread sealant or mastic bed over deck drain flange at deck drains and securely seal roofing membrane in place with clamping ring.

H. Proceed with installation only after unsatisfactory conditions have been corrected.

3.07 BASE FLASHING INSTALLATION

A. Install sheet flashings and preformed flashing accessories and adhere to substrates per membrane roofing system manufacturer's written instructions.

B. Apply spray-applied solvent-based bonding adhesive following manufacturer's installation requirements. Do not apply bonding adhesive to seam area of flashing.

C. Flash penetrations and field-formed inside and outside corners per manufacturer's installation instructions.

D. Clean seam areas and overlap and firmly roll sheet flashings into the adhesive. Weld side and end laps to ensure a watertight seam installation.

E. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.

F. Proceed with installation only after unsatisfactory conditions have been corrected.

3.08 WALKWAY INSTALLATION

A. Flexible Walkways: Install walkway products in locations indicated. Heat weld and adhere walkway products to substrate according to roofing system manufacturer's written instructions.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.09 FIELD QUALITY CONTROL

A. Testing Agency: Owner may engage a qualified independent testing and inspecting agency to perform roof tests and inspections and to prepare test reports.

B. Final Roof Inspection: Arrange for roofing system manufacturer's Field Technical Representative to inspect roofing installation on completion and submit report to Architect.

1. Notify Architect and Owner 48 hours in advance of date and time of inspection.

C. Repair or remove and replace components of roofing system where test results or inspections indicate that they do not comply with specified requirements.

D. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.10 PROTECTION AND CLEANING

A. Protect roofing system from damage and wear during remainder of construction period.

B. Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.

C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION 07 54 23

SECTION AD1-08 43 33

FOLDING GLASS WALLS

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes furnishing and installing a top-hung sliding-folding aluminum-framed glass door storefront system that includes:

1. Aluminum frame
2. Threshold
3. Panels
4. Sliding-folding and locking hardware
5. Weather-stripping
6. Glass and glazing
7. Insect screen
8. Accessories as required for a complete working installation.
9. Glass swinging door in each assembly with hardware per hardware schedule.
10. Sawcut and demolition of existing concrete for installation of flush threshold. See attached detail.

B. Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. A list of those Documents and Sections include, but is not limited to, the following:

1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, Specification Sections, apply to this Section.
2. Section 06 10 00, Rough Carpentry: Wood framing R.O. and blocking.
3. Section 07 62 00, Sheet Metal Flashing and Trim: Flashing and other sheet metal work.
4. Section 07 92 00, Joint Sealants

1.02 REFERENCES

A. Reference Standards in accordance with Division 01 and current editions from the following:

1. AAMA. American Architectural Manufacturers Association; www.aamanet.org
    a. AAMA 503, Voluntary Specification for Field Testing of Newly Installed Storefronts, Curtain Walls, and Sloped Glazing Systems
    b. AAMA 611, Voluntary Specification for Anodized Architectural Aluminum
    c. AAMA 920, Operation / Cycling Performance

d. AAMA 1303.5, Voluntary Specification for Forced Entry Resistant Aluminum Sliding Glass Doors

e. AAMA 2604, Voluntary Specifications, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels

f. AAMA 2605, Voluntary Specifications, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels

2. ANSI. American National Standards Institute; www.ansi.org

a. ANSI Z97.1, Safety Performance Specifications and Methods of Test for Safety Glazing Material Used In Buildings

3. ASTM. ASTM International; www.astm.org

a. ASTM C1036, Standard Specification for Flat Glass

b. ASTM C1048, Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass

c. ASTM E283, Test Method for Rate of Air Leakage through Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.

d. ASTM E330, Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.

e. ASTM E331 Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference

f. ASTM E413, Classification for Rating Sound Insulation

g. ASTM E547, Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors by Cyclic Static Air Pressure Differential.

h. ASTM E1332, Standard Classification for Rating Outdoor-Indoor Sound Attenuation

4. CPSC. Consumer Product Safety Commission; www.cpsc.gov

a. CPSC 16CFR-1201, Safety Standard for Architectural Glazing Materials

5. NFRC. National Fenestration Rating Council; www.nfrc.org

a. NFRC 100, Procedure for Determining Fenestration Product U-factors

1.03 ADMINISTRATIVE REQUIREMENTS

A. Coordination: Coordinate Folding Glass Storefront system and framing R.O.

B. Preinstallation Meetings: See Section 01 33 00.

1.04 SUBMITTALS

A. For Contractor submittal procedures see Section 01 33 00.

B. Product Data: Submit manufacturer's printed product literature for each Folding Glass Storefront system to be incorporated into the Work. Show performance test results and details of construction relative to materials, dimensions of individual components, profiles and colors.

C. Shop Drawings: Indicate Folding Glass Storefront system component sizes, dimensions and framing R.O., configuration, swing panels, direction of swing, stacking layout, typical head jamb, side jambs and sill details, type of glazing material, handle height and field measurements.

D. Manufacturers' Instructions: Submit manufacturer's installation instructions.

E. Operation and Maintenance Data: Submit Owner's Manual from manufacturer. Identify with project name, location and completion date, and type and size of unit installed.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Manufacturer capable of providing complete, precision built, engineered, pre-fitted units with a minimum twenty-five (25) years' experience in the sale of folding-sliding door systems for large openings in the North American market.

B. Installer Qualifications: Installer experienced in the installation of manufacturer's products or other similar products for large openings. Installer to provide reference list of at least three (3) projects of similar scale and complexity successfully completed in the last three (3) years.

1. Installer to be trained and certified by manufacturer.

C. Single Source Responsibility: Furnish Folding Glass Storefront system materials from one manufacturer for entire Project.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Comply with manufacturer's instructions and recommendations, Section 01 60 00 requirements, and as follows:

1. Deliver materials to job site in sealed, unopened cartons or crates.

a. Upon receipt, inspect the shipment to ensure it is complete, in good condition and meets project requirements.

2. Store material under cover in a clean and dry location, protecting units against weather and defacement or damage from construction activities, especially to the edges of panels.

1.07 FIELD CONDITIONS

A. Field Measurements: Contractor to field verify dimensions of rough openings (R.O.) and threshold depressions to receive sill. Mark field measurements on shop drawing submittal.

1.08 WARRANTY

A. Manufacturer Warranty: Provide Folding Glass Storefront system manufacturer's standard limited warranty as per manufacturer's published warranty document in

force at time of purchase, subject to change, against defects in materials and workmanship.

1. Warranty Period beginning with the earliest of 120 days from Date of Delivery or Date of Substantial Completion:

    a. Rollers and Glass Seal Failure: Ten (10) years

    b. All Other Components Except Screens: Ten (10) years

        1). Exception: Five (5) years if NOT installed by manufacturer's certified trained installer.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Basis-of-Design Product by Manufacturer: *NanaWall SL84* by NANA WALL SYSTEMS, INC. (www.nanawall.com), (800) 873-5673. Email: info@nanawall.com, or equal.

    a. Document 00 43 25, Substitution Request Form (During Procurement), or

    b. Document 00 63 25, Substitution Request Form (During Construction)

2.02 PERFORMANCE / DESIGN CRITERIA

A. Performance Criteria (Lab Tested):

1. Air Infiltration (ASTM E283) - Flush Sill:

    a. 0.25 cfm/ft2 (1.28 L/s/m2) at a static air pressure difference: of 1.57 psf (75 Pa)

    b. 0.78 cfm/ft2 (6.66 L/s/m2) at 6.24 psf (300 Pa

2. Forced Entry (AAMA 1303.5 and AAMA CAWM 300): Meets requirements.

3. Swing Panel - Operation / Cycling Performance (AAMA 920): 500,000 cycles with 100 U-factor rated.

    a. For gasketed NanaWall glass wall assemblies with glass units testing at STC 35 or higher.

5. LEED v4 for Building Design and Construction (BD&C)

    a. EAc2: NanaWall systems using low U-Value designed double or triple IGU and thermally broken frames can provide significant energy performance.

    b. MRc1: NanaWall can be easily disassembled for salvage and reuse.

    c. EQc7: NanaWall glass wall assembly borrowed light brings daylight deeper into the floor plate.

d. EQc8: NanaWall glass wall assemblies provide direct outdoor lines of sight.

e. EQc9: NanaWall glass wall assemblies can contribute with system acoustic ratings of 31 dB up to 38 dB reductions.

B. Design Criteria:

1. Sizes and Configurations: As indicated by the Drawings for selected number and size of panels, location of swing panels, and location of tracks and stacking bays.

2. Unit Operation: Adjustable sliding and folding hardware with top and bottom tracks;

a. Inswing type with 90 degree fold, except where stacked locations are shown greater than 90 degrees.

3. Panel Configuration:

a. Straight

b. 90º angle turn

c. 135º angle turn

4. Stack Storage Configuration:

a. Inside

b. Foldflat® against Wall – where shown.

5. Mounting Type: Top hung

6. Panel Type: Hinged

a. Primary swing panel of paired swing panels, looking from inside, to be on the left or right based on location of the wall shown on plans.

b. Entry/Egress panel hinged to side jamb as shown on plans.

7. Panel Pairing Configuration: Drawings show number of panels. Submit recommended pairing combinations, including integral swing egress door.

2.03 MATERIALS

A. Sliding-Folding Glass Storefront Description: Monumental top-hung system designed for straight runs, segmented angle changes, center pivot, and capable of folding flat against adjacent walls. Manufacturer's standard frame and panel profiles, with head and floor tracks, side jambs and panels with dimensions as shown on Drawings.

1. Panels:

a. Single lite.

2. Panel Size (W x H): As indicated on plans

3. Rail Depth: 1-3/4 inch (45 mm)

4. Head Width: 4-7/8 inch (124 mm)

5. Head and Jamb Rail Width: 2-1/8 inch (53 mm)

6. Bottom Rail Width:
    a. 2-1/16 inch (53 mm) for Flush Sill
    b. Manufacturer's standard kickplate with 12" height at egress door only where indicated on plans.
7. Aluminum Extrusion: AlMgSi0.5 alloy, 6063-T5
    a. Thickness: 0.078 inch (2.0 mm) nominal
8. Aluminum Finish (including head track covers):
    a. Anodized (AAMA 611):
        1). Clear

B. Glass and Glazing:

1. Safety Glazing: In compliance with ANSI Z97.1 and CPSC 16CFR 1201.
    a. Glass Acoustical Performance (DIN 52210-3,4): Rw (STC) 31; 3/4 inch (20 mm) double IGU, air-filled, tempered glass
    b. Manufacturer's tempered glass lites in double insulated glazing units, dry glazed with glass stops on the inside.
        1). Double IGU: 3/4 inch (20 mm) thick - Air filled with Glass Spacers: Manufacturer's standard gray finish; with capillary tubes.
    c. Glass Treatment: tempered
        1). Standard

C. Locking Hardware and Handles:

1. Main Entry Panel for Models WITH Swing Panels: Provide field installed panic device on the inside and manufacturer's standard lever handles on the outside. Provide a lockset with a lockable latch and multi-point locking with a dead bolt and rods at the top and bottom on primary panel only.
    a. Rods to be concealed and not edge mounted.
    b. After turn of key or thumbturn, depression of handles withdraws latch.
    c. Lifting of handles engages rods and turn of key or thumb turn engages deadbolt and operates lock.
    d. Lever Handle - Finish:
        1). Brushed satin stainless steel
    e. Locking:
        1). Standard profile cylinder – refer to 08 71 00
2. Main Entry Panel for Models WITHOUT Swing Panels: Provide manufacturer's standard L-shaped handle on the inside, flat handle on

the outside and lock set with profile cylinder Operation of lock set is by turn of key from the outside and with a thumbturn from the inside with a two point locking hardware operated by 180º turn of the handle.

a. L-shaped handles – Finish:

1.) Brushed stainless steel

3. Handle Height: 41-3/8 inch (105 cm) centered from bottom of panel or as otherwise indicated.

4. Aluminum locking rods with standard fiberglass reinforced polyamide end caps at the top and bottom. Rods to have a stroke of 15/16 inch (24 mm).

5. Additional profile cylinders to be keyed differently.

D. Sliding- Folding Hardware: Provide manufacturer's standard combination sliding and folding hardware with top and bottom tracks.

1. For each pair of folding panels, provide independent cardanic suspension for four (4) wheeled rollers coated with fiberglass reinforced polyamide upper running carriage and lower guide carriage.

2. Swing Panel Hinges:

a. Zinc die cast with finish closest match to finish of frame and panels and stainless steel security hinge pins with set-screws.

3. Adjustment: Provide 1/16 inch (1.5 mm) in width per hinge adjustments without removing panels from tracks and without needing to remove panels from tracks.

a. Standard flush fill

b. Finish:

1). Clear anodized finish.

c. Cover plate over sill NOT acceptable.

E. Weatherstripping: Manufacturer's double layer EPDM between panels, EPDM gasket and Q-lon gasket, or brush seal between panel and frame, or brush seals with a two-layer fiberglass reinforced polyamide fin attached at both inner and outer edge of bottom of door panels with a recessed sill or on frame for sealing between panels and between panel and frame.

F. Fasteners: Stainless steel screws for connecting frame components.

2.04 FABRICATION

A. Extruded aluminum frame and panel profiles, corner connectors and hinges, sliding and folding hardware, locking hardware and handles, glass and glazing and weatherstripping components needed to construct a folding glass wall.

1. Each unit factory pre-assembled and shipped with all components and installation instructions.

2. Exposed work to be carefully matched to produce continuity of line and design with all joints.

3. No raw edges visible at joints.

2.05 ACCESSORIES

A. Provide sidelights, transoms, corner posts, or single or double doors as indicated.

1. equivalent subject to project requirements.

2. Finish - Aluminum Top Track, Side Jambs and Vertical Struts:

a. Clear anodized

3. equivalent subject to project requirements.

4. Finish - Aluminum Top Track, Side Jambs and Vertical Struts:

a. Clear anodized

2.06 EXAMINATION

A. Examination and Acceptance of Conditions as follows:

1. Carefully examine rough openings with Installer present, for compliance with requirements affecting Work performance.

a. Examine surfaces of openings and verify dimensions; verify rough openings are level, plumb, and square with no unevenness, bowing, or bumps on the floor; and other conditions as required by the manufacturer to receive Work.

b. Verify the structural integrity of the header for deflection with live and dead loads limited to the lesser of L/720 of the span or 1/4 inch (6 mm). Provide structural support for lateral loads, and both wind load and eccentric load when the panels are stacked open.

2. Proceed with installation only after unsatisfactory conditions have been corrected.

2.07 INSTALLATION

A. General: Install Folding Glass Storefront system in accordance with the Drawings, approved submittals, manufacturer’s recommendations and installation instructions, and as follows:

1. Properly flash, waterproof and seal around opening perimeter.

2. Securely attach anchorage devices to rigidly fit frame in place, level, straight, plumb and square. Install frame in proper elevation, plane and location, and in proper alignment with other work

3. When lower track is designed to drain, provide connections to allow for drainage.

4. Install panels, handles, lockset, screens and other accessories in accordance with manufacturer’s recommendations and instructions.

2.08 FIELD QUALITY CONTROL

A. Field Tests and Inspections per Section 01 40 00 of the following:

1. Verify the Folding Glass Storefront system operates and functions properly. Adjust hardware for proper operation.

B. Non-Conforming Work: Repair or replace non-conforming work as directed by the Architect; see General and Supplementary Conditions, and Division 01, General Requirements.

2.09 CLEANING AND PROTECTION

A. Keep units closed and protect Folding Glass Storefront installation against damage from construction activities.

B. Remove protective coatings and use manufacturer recommended methods to clean exposed surfaces.

END OF SECTION

SECTION AD1-08 71 00

DOOR HARDWARE

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

1. Door Hardware.
2. Gate Hardware.
3. Power supplies for electric hardware.
4. Low energy door operators plus sensors and actuators.

B. Related Sections:

1. Section 06 20 00 – Finish Carpentry: Finish Hardware Installation
2. Section 07 92 00 – Joint Sealants: Exterior thresholds
3. Section 08 11 13 – Hollow Metal Doors and Frames.
4. Section 08 14 00 – Wood Doors.
5. Section 08 80 00 – Glazing.
6. Division 26 – Electrical.
7. Section 28 31 11 – Fire Detection and Alarm System.

C. Specific Omissions: Hardware for the following is specified or indicated elsewhere.

1. Windows.
2. Cabinets, including open wall shelving and locks.
3. Signs, except where scheduled.
4. Toilet accessories, including grab bars.
5. Installation.
6. Rough hardware.
7. Conduit, junction boxes & wiring.

1.02 REFERENCES:

Use date of standard in effect as of Bid date.

A. American National Standards Institute – ANSI/BHMA 156.18 – Materials and Finishes.

B. ADA – Americans with Disabilities Act of 1990 as amended by the ADA Amendments Act of 2010.

C. BHMA – Builders Hardware Manufacturers Association

D. DHI – Door and Hardware Institute

E. NFPA – National Fire Protection Association

1. NFPA 80 – Fire Doors and Other Opening Protectives
2. NFPA 105 – Smoke Door Assemblies and Other Opening Protectives
3. NFPA 252 – Fire Tests of Door Assemblies

F. UL – Underwriters Laboratories

1. UL10C – Positive Pressure Fire Tests of Door Assemblies.
2. UL 305 – Panic Hardware

G. WH – Warnock Hersey

H. 2016 California Building Code

I. SDI – Steel Door Institute

J. WI – Woodwork Institute

K. AWI – Architectural Woodwork Institute

L. NAAMM – National Association of Architectural Metal Manufacturers

1.03 SUBMITTALS & SUBSTITUTIONS

A. SUBMITTALS: Submit six copies of schedule per Section 01 33 00. Only submittals printed one sided will be accepted and reviewed. Organize vertically formatted schedule into “Hardware Sets” with index of doors and headings, indicating complete designations of every item required for each door or opening. Include following information:

1. Type, style, function, size, quantity and finish of hardware items.

2. Use BHMA Finish codes per ANSI/BHMA A156.18.

3. Name, part number and manufacturer of each item.

4. Fastenings and other pertinent information.

5. Location of hardware set coordinated with floor plans and door schedule.

6. Explanation of abbreviations, symbols, and codes contained in schedule.

7. Mounting locations for hardware.

8. Door and frame sizes, materials and degrees of swing.

9. List of manufacturers used and their nearest representative with address and phone number.

10. Catalog cuts.

11. Wiring and Riser Diagrams.

12. Manufacturer’s technical data and installation instructions for electric hardware.

13. Date of jobsite visit for renovation projects.

B. Bid and submit manufacturer’s updated/improved item if scheduled item is discontinued.

C. Deviations: Highlight, encircle or otherwise identify deviations from “Schedule of Finish Hardware” on submittal with notations clearly designating those portions as deviating from this section.

D. If discrepancy between drawings and scheduled material in this section, bid the more expensive of the two choices, note the discrepancy in the submittal and request direction from Architect for resolution.

E. Substitutions per Division 1 – General Requirements, Specification Sections. Include product data and indicate benefit to the Project. Furnish operating samples on request.

F. Items listed with no substitute manufacturers have been requested by Owner to meet existing standard.

G. Furnish as-built/as-installed schedule with closeout documents, including keying schedule, wiring diagrams, manufacturers' installation, adjustment and maintenance information, and supplier's final inspection report.

1.04 QUALITY ASSURANCE:

A. Qualifications:

1. Hardware supplier: direct factory contract supplier who employs a certified architectural hardware consultant (AHC), available at reasonable times during course of work for project hardware consultation to Owner, Architect and Contractor.

a) Responsible for detailing, scheduling and ordering of finish hardware. Detailing implies that the submitted schedule of hardware is correct and complete for the intended function and performance of the openings.

B. Hardware: Free of defects, blemishes and excessive play. Obtain each kind of hardware (latch and locksets, exit devices, hinges and closers) from one manufacturer.

C. Exit Doors: Operable from inside with single motion without the use of a key or special knowledge or effort.

D. Exterior Classroom Exit Doors: Use classroom security function locksets with holdback feature.

E. Note: scheduled resilient seals may exceed selected door manufacturer's requirements.

F. See 2.6.G for added information regarding resilient and intumescent seals.

G. Furnish hardware items required to complete the work in accordance with specified performance level and design intent, complying with manufacturers' instructions.

H. Pre-Installation Meetings: Initiate and conduct with supplier, installer and related trades, coordinate materials and techniques, and sequence complex hardware items and systems installation. Include manufacturers' representatives of locks, panic hardware and door closers in the meetings. Convene prior to commencement of related work.

1.05 DELIVERY, STORAGE AND HANDLING:

A. Delivery: coordinate delivery to appropriate locations (shop or field).

1. Permanent keys and cores: secured delivery direct to District locksmith.

B. Acceptance at Site: Items individually packaged in manufacturers' original containers, complete with proper fasteners and related pieces. Clearly mark packages to indicate contents, locations in hardware schedule and door numbers.

C. Storage: Provide securely locked storage area for hardware, protect from moisture, sunlight, paint, chemicals, dust, excessive heat and cold, etc.

1.06 PROJECT CONDITIONS AND COORDINATION:

A. Where exact types of hardware specified are not adaptable to finished shape or size of members requiring hardware, provide suitable types having as nearly as practical the same operation and quality as type specified, subject to Architect's approval.

B. Coordination: Coordinate hardware with other work. Furnish hardware items of proper design for use on doors and frames of the thickness, profile, swing, security and similar requirements indicated, as necessary for proper installation and function, regardless of omissions or conflicts in the information on the Contract Documents. Furnish related trades with the following information:

1. Location of embedded and attached items to concrete.

2. Location of wall-mounted hardware, including wall stops.

3. Location of finish floor materials and floor-mounted hardware.

4. Locations for conduit and raceways as needed for electrical hardware items. Fire/life-safety system interfacing. Point-to-point wiring diagrams plus riser diagrams to related trades.

5. Manufacturer templates to door and frame fabricators.

C. Check Shop Drawings for doors and entrances to confirm that adequate provisions will be made for proper hardware installation.

D. Prior to submittal, carefully inspect existing conditions to verify finish hardware required to complete Work, including sizes, quantities, existing hardware scheduled for re-use, and sill condition material. If conflict between the specified/scheduled hardware and existing conditions, submit request for direction from Architect. Include date of jobsite visit in the submittal.

1. For renovation projects, submittals prepared without thorough jobsite visit by qualified hardware expert will be rejected as non-compliant.

1.07 WARRANTY:

A. Part of respective manufacturers' regular terms of sale. Provide manufacturers' written warranties:

1.	Locksets:	Five years
2.	Exit Devices:	Three years mechanical Two years electrical
3.	Closers:	Ten years mechanical Two years electrical
4.	Hinges:	Life of the Installation
5.	Continuous Hinges	Life of the Installation
6.	Other Hardware	Two years

1.08 COMMISSIONING:

A. Conduct these tests prior to request for certificate of substantial completion:

1. With installer present, test door hardware operation with climate control system and stairwell pressurization system both at rest and while in full operation.

2. With installer, access control contractor and electrical contractor present, test electrical hardware systems for satisfactory operation.

3. With installer and electrical contractor present, test hardware interfaced with fire/life-safety system for proper operation and release.

1.09 REGULATORY REQUIREMENTS:

A. All hardware for accessible doors shall meet the requirements of CBC Sections 1008.1.7, 1008.1.9, 11B-404, 11B-309.4 and 1008.1.8.

B. Hand-activated door opening hardware, handles, pulls, latches, locks, and other operating devices on accessible doors shall have a shape that is easy to grasp with one hand and does not require tight grasping, tight pinching, or twisting of the wrist to operate. CBC Section 11B-309.4. Hardware shall be within 34" and 44" above the floor. CBC Section 11B-404.2.7.

C. Adjust doors to open with not more than 5.0 lbs pressure to open at exterior doors and 5.0 lbs at interior doors. As allowed per California Building Code, Section 11B-404.2.9 and 1008.1.3, DSA may increase the allowable pressure for fire doors to achieve positive latching, but not to exceed 15 lbs.

D. Adjust door closer sweep periods so that from an open position of 70 degrees, the door will take at least 3 seconds to move to a point 3 inches from the latch, measured to the landing side of the door, per California Building Code Section 11B-404.2.9, Item 3.

E. Smooth surfaces at bottom 10" of push sides of doors, facilitating push-open with wheelchair footrests, per California Building Code Section 11B-404.2.10.

F. Door opening clear width no less than 32", measured from face of frame stop, or edge of inactive leaf of pair of doors, to door face with door opened to 90 degrees. Hardware projection not a factor in clear width if located above 30" and the hardware projects no more than 4". California Building Code Section 11B-404.2.3 and 1008.1.1.

1. Exception: doors not requiring full passage through the opening, that is, to spaces less than 24" in depth, may have the clear opening width reduced to 20". Example: shallow closets.

G. Door opening clear height no less than 80" measured from top of sill to bottom of frame header stop. Projections into clear opening height not to exceed 4". California Building Code Sections 11B-404.2.3 and 1008.1.1.

H. Thresholds: floor or landing no more than 1/2" below the top of the threshold of the doorway. Change in level between 1/4" and 1/2": beveled to slope no greater than 1:2 (50 percent slope). California Building Code Sections 11B-404.2.5 and 1008.1.7.

I. Floor stops: Do not locate in path of travel. Locate no more than 4" from walls, per CBC 2019 Section 11B-204 and 11B-307.

J. Pairs of doors: limit swing of one leaf to 90 degrees to protect persons reading wall-mounted tactile signage.

K. Meet California Building Code Sections 11B-404.2.7, 11B-404.2.9, 1008.1.8 and 1008.1.9.

L. Exit Devices:

1. Panic hardware shall comply with CBC Section 1008.1.9.2. Panic hardware shall be so mounted (within 36" and 44" above finished floor as recommended) that the clear width of the exitway is not less than 32" measured between the face of the door and the opposite stop. CBC Section 11B-404.2.3 and Figure 11B-404.2.3.

2. The unlatching force of panic hardware shall not exceed 5 lbs (22.2N), applied in the direction of travel. CBC Section 11B-309.4.

3. Panic hardware shall not be provided with "Night Latch" (NL) function for any accessible doors or gates unless the following conditions are met:

a. Such hardware has a dogging feature

b. It is dogged during the time the facility is open

c. Such dogging operation is performed only by employees as their job function (non-public use)

M. All classroom doors shall be lockable from the inside.

PART 2 – PRODUCTS

NOTE: ABSOLUTELY NO CONCEALED HARDWARE TO BE USED AT ANYTIME OR UNDER ANY CIRCUMSTANCES

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2.01 MANUFACTURERS:

A. Listed acceptable alternate manufacturers: submit for review products with equivalent function and features of scheduled products.

ITEM:	MANUFACTURER:	ACCEPTABLE SUB:
Hinges	(IVE) Ives 3CB1	Bommer
Continuous Hinges	(IVE) Ives Aluminum Geared Series	Pemko
Pivots	DO NOT USE	
Floor Closers	DO NOT USE	
Key System	7 Pin Small Format (FAL)	Best
Locks	(SCH) Schlage L9000, LV9000	Best
Exit Devices	(VON) Von Duprin 99	District Standard
Key-Removable Mullion	(VON) Von Duprin KR4954,KR9954	District Standard
Closers	(LCN) LCN 4041,4041XP	District Standard
Auto Flush Bolts	(IVE) Ives FB30,FB40,FB50,FB60	DCI
Coordinators	(IVE) Ives COR Series	DCI
Silencers	(IVE) Ives	Rockwood
Push & Pull Plates	(IVE) Ives	Rockwood
Kickplates	(IVE) Ives	Rockwood
Stops & Holders	(IVE) Ives	Rockwood
Thresholds	(NGP) NGP	Zero
Seals & Bottoms	(NGP) NGP	Zero

2.02 HINGING METHODS:

A. Drawings typically depict doors at 90 degrees, doors will actually swing to maximum allowable. Use wide-throw conventional or continuous hinges as needed up to 8 inches in width to allow door to stand parallel to wall for true 180-degree opening. Advise architect if 8-inch width is insufficient.

B. Conform to manufacturer's published hinge selection standard for door dimensions, weight and frequency, and to hinge selection as scheduled. Where manufacturer's standard exceeds the scheduled product, furnish the heavier of the two choices, notify Architect of deviation from scheduled hardware.

C. Conventional Hinges: Steel or stainless-steel pins and concealed bearings. Hinge open widths minimum, but of sufficient throw to permit maximum door swing. Use heavy-weight hinges at doors with panic hardware and high-use door openings.

D. Continuous Hinges: Use at outswing exterior doors

1. Geared-type aluminum.

a) Use wide-throw units where needed for maximum degree of swing, advise architect if commonly available hinges are insufficient.

2. At masonry construction, coordinate with the anchoring and hollow metal supplier prior to frame installation, by placing a strip of insulation on the back of the hollow metal frame behind the rabbet section. When the frame is grouted in place, the backing will allow drilling and tapping without dulling or breaking the installer's bits.

2.03 LOCKSETS, LATCHSETS:

A. Mortise Locksets and Latchsets: Shall be Schlage L9000 Series as scheduled.

1. Chassis: cold-rolled steel, handing field-changeable without disassembly.

2. Latchbolts: 3/4 inch throw stainless steel anti-friction type.

3. Lever Trim: through-bolted, accessible design, cast lever or solid extruded bar type levers as scheduled. Filled hollow tube design unacceptable.

a) Spindles: security design independent breakaway. Breakage of outside lever does not allow access to inside lever's hubworks to gain wrongful entry.

b) Inside lever applied by screwless shank mounting – no exposed trim mount screws

c) Outside and inside trim thru bolted together and through the door

4. Spring-loaded fusible link provides fail secure mode in case of fire.

5. Universal lock case – 10 functions in one case.

6. Floating mounting tabs automatically adjusts to fit a beveled door edge.

7. Field reversible handing without opening lock case.

8. External spring cages allow for simple trim retrofit.

9. Lever rotation in both directions (up & down) for ease of use.
10. At Vandlgard locks, locked lever freely rotates down while remaining securely locked. This feature prevents damage to internal lock components when subjected to excessive force. Use at exterior doors when fixed Vandal-Resistant trim (Ives VR900 Series) is not used.

11. Furnish inside indicator at exterior classroom doors with “locked” display.

12. Independent lever rotation.

13. Furnish solid cylinder collars with wave springs. Wall of collar to cover rim of mortise cylinder.

14. Thumbturns: accessible design not requiring pinching or twisting motions to operate.

15. Strikes: 16 gage curved steel, bronze or brass with 1 inch deep box construction, lips of sufficient length to clear trim and protect clothing.

16. Scheduled Lock Series and Design: Schlage L and LV series, OMEGA design.

17. Certifications:

    a) ANSI/BHMA A156.18, Grade 1 Operational, Grade 1 Security.
    b) ASTM F1450.

18. Accepted substitutions: none

2.04 EXIT DEVICES / PANIC HARDWARE

A. General features: Shall be Von Duprin 99-2 Series as scheduled.

1. Independent lab-tested 1,000,000 cycles.

2. Use 98 Series with stainless-steel finish at gates. All other openings use 99-2 Series.

3. Push-through push-pad design. No exposed push-pad fasteners, no exposed cavities when operated. Return stroke fluid dampeners and rubber bottoming dampeners, plus anti-rattle devices.

4. 0.75-inch throw deadlocking latchbolts.

5. End caps: impact-resistant, flush-mounted. No raised edges or lips to catch carts or other equipment.

6. Mount all panic devices with through-bolt fasteners. Absolutely no concealed hardware to be used, under any circumstances.

7. No exposed screws to show through glass doors.

8. Non-handed basic device design with center case interchangeable with all functions, no extra parts required to effect change of function.

9. Releasable in normal operation with 15-lb. maximum operating force, and with 32 lb. maximum pressure under 250-lb. load to the door.
10. Flush end cap design as opposed to typical “bottle-cap” design end cap.

11. Exterior doors use XP-series devices: Static load force resistance of at least 2000 pounds.

12. Where devices span over door lite frame and the face of the selected lite manufacturer's frame is raised from the face of the door, furnish panic hardware manufacturer's fitted shims or glass-bead kits at no additional cost to the project.

13. Comply with CBC Section 1008.1.8.

B. Specific features:

1. Non-Fire Rated Devices: cylinder dogging.

2. Lever Trim: breakaway type, forged brass or bronze escutcheon min .130" thickness, compression spring drive, match lockset lever design.

3. Vandal-Resistant Trim: Use Ives VR900 Series at exterior doors whenever possible.

4. Fire-Labeled Devices: UL label indicating "Fire Exit Hardware".

5. At Paired Openings: Use key-removable mullion with 2 rim panic devices, DO NOT use concealed vertical rod devices or surface vertical rod devices.

6. DO NOT use mortise panic (9975) devices.

7. Electrically Operated Devices: Single manufacturer source for electric latch retraction devices, electrically controlled trim, power transfers, power supplies, monitoring switches and controls.

8. Removable Mullions: Removable with single turn of building key. Securely reinstalled without need for key. Furnish storage brackets for securely stowing the mullion away from the door when removed.

9. Accepted substitutions: none

2.05 CLOSERS

A. Surface Closers: Shall be LCN 4041 and 4040XP Series.

1. Full rack-and-pinion type cylinder with removable non-ferrous cover and cast iron body. Double heat-treated pinion shaft, single piece forged piston, chrome-silicon steel spring.

2. Use 4041XP closers at all exterior and high-use door openings.

3. ISO 2000 certified. Units stamped with date-of-manufacture code.

4. Independent lab-tested 10,000,000 cycles.

5. Non-sized, non-handed, and adjustable. Place closer inside building, stairs, and rooms.

6. Plates, brackets and special templating when needed for interface with particular header, door and wall conditions and neighboring hardware.

7. At 6/8 high door openings, modify closer mounting so that closer body does not interfere with 80" opening height.

8. Adjustable to open with not more than 5.0lbs pressure to open at exterior doors and 5.0lbs at interior doors. As allowed per California Building Code, Section 11B-309.4 and 11B-404.2.9, local authority may increase the allowable pressure for fire doors to achieve positive latching, but not to exceed 15lbs.

9. When provided, the sweep period of the closer shall be adjusted so that from an open position of 70 degrees, the door will take at least 3 seconds to move to a point 3 inches from the latch, measured to the landing side of the door.

10. Separate adjusting valves for closing speed, latching speed and backcheck, fourth valve for delayed action where scheduled.

11. Extra-duty arms (EDA and CUSH) at exterior and interior doors scheduled with parallel arm units.

12. Generally, closers need to swing to maximum allowable degree of opening (180 degrees if possible).

13. Generally, do not use closers with hold-open feature unless specifically approved by Facilities Engineering and Maintenance.

14. Use through-bolt fasteners at all closers.

15. Exterior door closers: tested to 100 hours of ASTM B117 salt spray test, furnish data on request.

16. Exterior doors: seasonal adjustments not required for temperatures from 120 degrees F to -30 degrees F, furnish checking fluid data on request.

17. Non-flaming fluid will not fuel door or floor covering fires.

18. Pressure Relief Valves (PRV) not permitted.

19. Supply Special Rust Inhibitor (SRI) at corrosive environments. This special corrosion resistant pretreatment, when added to the powder coat finish, gives the closer a tremendous advantage over a potentially corrosive environment.

20. Accepted substitutions: none

B. Low-Energy Door Operators: Shall be LCN 4600 Series. Comply with ANSI/BHMA A156.19 Electric power-open, hydraulically checked spring power closing. Modular construction. Finished metal cover. Field-adjustable opening force, opening speed, time-open, closing and latching speeds. Door reopens and timing cycle restores if system reactuated during closing cycle. Breakaway clutch protection from forced closing. Door, frame, motor and drive train protected by attenuated initiation of opening cycle.

1. Self-contained low-voltage power supply, terminal strip and sequencing for incorporation of hardwired electric hardware with system operation.

2. Provide concealed on/off system switch at closer body mechanism.

2.06 OTHER HARDWARE

A. Automatic Flush Bolts: Low operating force design.

B. Overhead Stops: Glynn-Johnson 80 and 100 Series. Non-plastic mechanisms and finished metal end caps. Field-changeable stop-only functions. Use only where floor or wall stops are inadvisable. When used, use heavy-weight hinges or continuous hinges.

C. Kick Plates: Rounded and relieved edges, .050 inches minimum thickness, height and width as scheduled. Sheet-metal screws of bronze or stainless steel to match other hardware.

D. Vandal-Resistant Trim: Use IVES VR900 Series at all exterior doors whenever possible.

E. Viewers: Provide 190-degree viewer at all exterior doors without visionlites. Install at wheelchair use eye level.

F. Door Stops: Provide stops to protect walls, casework or other hardware.

1. Unless otherwise noted in Hardware Sets, provide wall type with appropriate fasteners. Where wall type cannot be used, provide floor type. If neither can be used, provide overhead type.

2. Locate overhead stops for maximum possible opening. Consult with Owner for furniture locations. Minimum: 90 deg stop / 95 deg deadstop. Note degree of opening in submittal.

G. Seals: Finished to match adjacent frame color. Resilient seal material: polyurethane, polypropylene, nylon brush, silicone rubber or solid high-grade neoprene as scheduled. Do not furnish vinyl seal material. UL label applied to seals on rated doors. Substitute products: certify that the products equal or exceed specified material’s thickness and durability.

1. Proposed substitutions: submit for approval.

2. Solid neoprene: MIL Spec. R6855-CL III, Grade 40.

3. Non-corroding fasteners at in-swinging exterior doors.

4. Fire-rated Doors, Resilient Seals: UL 263 / CBC Section 703 compliant. Coordinate with selected door manufacturers' and selected frame manufacturers' requirements. Where rigid housed resilient seals are scheduled in this section and the selected door manufacturer only requires an adhesive-mounted resilient seal, furnish rigid housed seal. Adhesive applied seals are not allowed.

5. Fire-rated Doors, Intumescent Seals: Furnished by selected door manufacturer. Furnish fire-labeled opening assembly complete and in full compliance with UL 263 / CBC Section 703. Where required, intumescent seals vary in requirement by door type and door manufacture -- careful coordination required

H. Thresholds: As scheduled and per details. Comply with CBC Section 11B-404.2.5. Substitute products: certify that the products equal or exceed specified material’s thickness. Proposed substitutions: submit for approval.

1. Exteriors: Seal perimeter to exclude water and vermin. Use sealant complying with requirements in Division 07 "Thermal and Moisture Protection". Non-ferrous 1/4inch fasteners and lead expansion shield anchors, or Red-Head #SFS-1420 (or approved equivalent) Flat Head Sleeve Anchors (SS/FHSL).

2. Fire-rated openings, 90min or less duration: use thresholds to interrupt floor covering material under the door where that material has a critical radiant flux value less than 0.22 watts per square centimeter, per NFPA 253. Use threshold unit as scheduled. If none scheduled, request direction from Architect.

3. Plastic plugs with wood or sheet metal screws are not an acceptable substitute for specified fastening methods.

4. Fasteners: Generally, exposed screws to be Phillips or Robertson drive. Pinned TORX drive at high security areas. Flat head sleeve anchors (FHSL) may be slotted drive. Sheet metal and wood screws: full thread. Sleeve nuts: full length to prevent door compression.

I. Exposed Through-Bolts: Use for fastening all closers and panic hardware. Coordinate with wood doors; ensure provision of proper blocking to ensure through-bolts will not crush or deform door for mounting panic hardware and door closers. Coordinate with metal doors and frames; ensure provision of proper reinforcement to ensure through-bolts will not crush or deform door for mounting panic hardware and door closers.

J. Silencers: Interior hollow metal frames, 3 for single doors, 2 for pairs of doors. Omit where adhesive mounted seal occurs. Leave no unfilled/uncovered pre-punched silencer holes.

K. Wall- & Floor-mounted electromagnetic door holders: LCN's SEM series or approved equivalent. Incorporate into U.L. listed fire & life-safety system, doors release to allow closure and latching when door's zone is in alarm state. Use minimum projection required to allow door to open as widely as allowed by wall conditions and projection of door hardware.

2.07 FINISH:

A. Generally, BHMA 626 Satin Chromium OR BHMA 630 Satin Stainless Steel. Generally, use stainless steel finish only at gate openings.

1. Areas using BHMA 626 to have push-plates, pulls and protection plates of BHMA 630, Satin Stainless Steel, unless otherwise noted.

B. Door closers: factory powder coated to match other hardware, unless otherwise noted.

C. Aluminum items: match predominant adjacent material. Seals to coordinate with frame color.

2.08 KEYING REQUIREMENTS:

A. Key System: Seven Pin Small Format interchangeable core

1. Falcon or Best cores to be pinned by owner

2. Temporary cylinders/cores remain supplier’s property.

3. Furnish 10 construction keys.

4. Furnish 2 construction control keys.

5. Furnish 200 keyblanks and 10 control keyblanks.

6. Key Cylinders: furnish 7-pin solid brass construction.

7. Furnish 20 extra “0” bitted cores.

B. Cylinders/cores: keyed at by Owner, O bitted from factory of lock manufacturer where permanent records are maintained. Locksets and cylinders same manufacturer.

1. 4 keys per cylinder, 10 control keyblanks, 200 additional keyblanks.

C. Bitting List: use secured shipment direct from point of origination to District locksmith at completion.

D. Approved Finish Hardware Submittal: furnish 2 copies to District locksmith at completion.

PART 3 - EXECUTION

3.01 ACCEPTABLE INSTALLERS:

A. Can read and understand manufacturers’ templates, suppliers’ hardware schedules and printed installation instructions. Can readily distinguish drywall screws from manufacturers’ furnished fasteners. Available to meet with manufacturers’ representatives and related trades to discuss installation of hardware.

3.02 PREPARATION:

A. Ensure that walls and frames are square and plumb before hardware installation. Make corrections before commencing hardware installation.

B. Locate hardware per SDI-100 and applicable building, fire, life-safety, accessibility, and security codes.

1. Notify Architect of code conflicts before ordering material.

2. Locate levers, key cylinders, t-turn pieces, touchbars and other operable portions of latching hardware between 34 inches to 44 inches above the finished floor, per CBC Sections 11B-404.27 and 11B-309.4.

3. Where new hardware is to be installed near existing doors/hardware scheduled to remain, match locations of existing hardware.

C. Overhead stops: before installing, determine proposed locations of furniture items, fixtures, and other items to be protected by the overhead stop's action.

D. Existing frames and doors to be retrofitted with new hardware:

1. Field-verify conditions and dimensions prior to ordering hardware. Fill existing hardware cut outs not being reused by the new hardware. Remove existing hardware not being reused, return to Owner unless directed otherwise.

2. Remove existing floor closers not scheduled for reuse, fill cavities with concrete and finish smooth

3. Cut and weld existing steel frames currently prepared with 2-3/4” height strikes. Cut an approx. 8" section from the strike jamb and weld in a reinforced section to accommodate specified hardware’s strike.

4. Patch and weld flush filler pieces into existing door hardware preparations in steel doors and frames, leave surfaces smooth.

5. Glue in solid wood block fillers to fill cut outs in existing wood doors, sand surfaces smooth. Alternatively, use an approved epoxy-based wood filler product, submit product data for approval.

3.03 INSTALLATION

A. Install hardware per manufacturer's instructions and recommendations. Do not install surface-mounted items until finishes have been completed on substrate. Set units level, plumb and true to line and location. Adjust and reinforce attachment substrate for proper installation and operation. Remove and reinstall or replace work deemed defective by Architect.

1. Gaskets: install jamb-applied gaskets before closers, overhead stops, rim strikes, etc; fasten hardware over and through these seals. Install sweeps across bottoms of doors before astragals, cope sweeps around bottom pivots, trim astragals to tops of sweeps.

2. When hardware is to be attached to existing metal surface and insufficient reinforcement exists, use RivNuts, NutSerts or similar anchoring device for screws.

3. Use manufacturers' fasteners furnished with hardware items or submit Request for Substitution with Architect.

4. Replace fasteners damaged by power-driven tools.

B. Locate floor stops no more that 4 inches from walls and not within paths of travel. See paragraph 2.2 regarding hinge widths, door should be well clear of point of wall reveal. Point of door contact no closer to the hinge edge than half the door width. Where situation is questionable or difficult, contact Architect for direction.

C. Core concrete for exterior door stop anchors. Set anchors in approved non-shrink grout.

D. Locate overhead stops for minimum 90 degrees and maximum allowable degree of swing.

E. Drill pilot holes for fasteners in wood doors and/or frames.

F. Lubricate and adjust existing hardware scheduled to remain. Carefully remove and give to Owner items not scheduled for reuse.

3.04 REMODEL OR REPAIR TO EXISTING FACILITY

A. Field verify existing conditions and measurements prior to ordering hardware. Fill existing hardware cut outs not being used by the new hardware. Remove existing hardware not being reused.

B. Disable or remove existing floor closers where they exist. If disabled cut or remove spindle.

C. Where existing wall conditions will not allow door to swing using the scheduled hinges, provide wide-throw hinges and if needed extended arms on closers.

D. Provide proper brackets to accommodate the mounting of closers on doors with flush transoms.

3.05 ADJUSTING

A. Adjust and check for proper operation and function. Replace units, which cannot be adjusted to operate freely and smoothly.

1. Hardware damaged by improper installation or adjustment methods: repair or replace to Owner's satisfaction.

2. Adjust doors to fully latch with no more than 1 pound of pressure.

3. Adjust delayed-action closers on fire-rated doors to fully close from fully-opened position in no more than 10 seconds.

4. Adjust door closers per 1.9 this section.

B. Inspection: Use hardware supplier's consultant or consultant's agent. Include supplier's report with closeout documents.

C. Final inspection: Installer to provide letter to Owner that upon completion installer has visited the Project and has accomplished the following:

1. Re-adjust hardware.

2. Evaluate maintenance procedures and recommend changes or additions, and instruct Owner's personnel.

3. Identify items that have deteriorated or failed.

4. Submit written report identifying problems

3.06 DEMONSTRATION:

A. Demonstrate mechanical hardware and electrical hardware systems, including adjustment and maintenance procedures.

3.07 PROTECTION/CLEANING:

A. Cover installed hardware, protect from paint, cleaning agents, weathering, carts/barrows, etc. Remove covering materials and clean hardware just prior to substantial completion.

B. Clean adjacent wall, frame and door surfaces soiled from installation/reinstallation process.

3.08 SCHEDULE OF FINISH HARDWARE

A. See door schedule in drawings for hardware set assignments.

B. Manufacturers and their abbreviations used in this schedule

GLY	Glynn-Johnson
IVE	H.B. Ives
LCN	LCN Closers
NGP	National Guard Products
SCH	Schlage Lock Company

VON Von Duprin

Hardware Group No. CLS-IS
For use on Door #(s):
3B 4B 7
Provide each SGL door(s) with the following:

3	EA	HINGE	3CB1 4.5 X 4.5		652	IVE
1	EA	CLASSROOM SECURITY	LV9071BDC OMEA L283-711		626	SCH
1	EA	SFIC CORE	CB807 SFIC		626	FAL
1	EA	SURFACE CLOSER	4040XP EDA		689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		630	IVE
1	EA	WALL STOP	WS406/407CCV		630	IVE
1	EA	GASKETING	488SBK PSA		BK	ZER
1	EA	THRESHOLD	525A-223		A	ZER

Hardware Group No. CLS-OS2
For use on Door #(s):
3 4 6
Provide each SGL door(s) with the following:

1	EA	CONTINUOUS HINGE	112HD		628	IVE
1	EA	CLASSROOM HOLDBK	LV9076BDC LLL OMEA L283-150		626	SCH
1	EA	SFIC CORE	CB807 SFIC		626	FAL
1	EA	DOOR PULL	VR900 LLP		630	IVE
1	EA	SURFACE CLOSER	4040XP SCUSH		689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		630	IVE
1	EA	WALL STOP	WS406/407CCV		630	IVE
1	EA	PERIMETER SEALS	328AA HEAD AND JAMBS		AA	ZER
1	EA	DOOR SWEEP	39A		A	ZER
1	EA	THRESHOLD	525A-223		A	ZER

Hardware Group No. ED2
For use on Door #(s):
5
Provide each SGL door(s) with the following:

1	EA	CONTINUOUS HINGE	112HD		628	IVE
1	EA	PANIC HARDWARE	CD-PA-AX-98-NL-OP-110MD		626	VON
1	EA	MORTISE CYL TURN	PROVIDE FROM SCHOOLS STOCK		626	SCH
1	EA	SFIC CYLINDER	C953-7CCA		626	FAL
1	EA	SFIC CORE	CB807 SFIC		626	FAL
1	EA	DOOR PULL	VR910 NL		630	IVE
1	EA	SURFACE CLOSER	4040XP SCUSH		689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		630	IVE
1	EA	PERIMETER SEALS	328AA HEAD AND JAMBS		AA	ZER
1	EA	DOOR SWEEP	39A		A	ZER
1	EA	THRESHOLD	526A-223		A	ZER

Hardware Group No. FLD1
For use on Door #(s):
6B 6C 6D 10C
Provide each FLD door(s) with the following:

1	EA	MORTISE CYL TURN	PROVIDE FROM SCHOOLS STOCK		626	SCH
1	EA	MORTISE CYLINDER	20-061 ICX X K510-730 36-083 36-082-037		626	SCH
1	EA	PERM CORE	PER OWNERS KEY SYSTEM		626	SCH
1	EA	BY DOOR MANUFACTURER	BALANCE OF HARDWARE			

Hardware Group No. FLD2
For use on Door #(s):
10B
Provide each FLD door(s) with the following:

1	EA	PANIC HARDWARE	CDSI-PA-AX-35A-NL-OP-388		626	VON
1	EA	SFIC MORTISE CYL.	80-135 X B520-378 36-083 36-082-025		626	SCH
1	EA	SFIC RIM CYLINDER	80-159		626	SCH
2	EA	SFIC CORE	CB807 SFIC		626	FAL
1	EA	BY DOOR MANUFACTURER	BALANCE OF HARDWARE			
1	EA	DOOR PULL	VR810 NL		630	IVE
1	EA	SURFACE CLOSER	1450 CUSH STD		689	LCN

Hardware Group No. HM-ED-OS
For use on Door #(s):
2 2B 10
Provide each PR door(s) with the following:

2	*EA*	*CONTINUOUS HINGE*	*112HD*		*628*	*IVE*
1	*EA*	*REMOVABLE MULLION*	*KR4954 STAB*		*689*	*VON*
2	*EA*	*PANIC HARDWARE*	*CD-PA-AX-98-NL-OP-110MD*		*626*	*VON*
1	*EA*	*MULLION STORAGE KIT*	*MT54*		*689*	*VON*
2	*EA*	*MORTISE CYL TURN*	*PROVIDE FROM SCHOOLS STOCK*		*626*	*SCH*
1	*EA*	*SFIC CYLINDER*	*C953-7CCA*		*626*	*FAL*
1	*EA*	*MORTISE CYLINDER*	*C987-7CCA 5622-IC*		*626*	*FAL*
3	*EA*	*SFIC CORE*	*CB807 SFIC*		*626*	*FAL*
1	*EA*	*DOOR PULL*	*VR910 NL*		*630*	*IVE*
2	*EA*	*SURFACE CLOSER*	*4040XP EDA*		*689*	*LCN*
2	*EA*	*PA MOUNTING PLATE*	*4040XP-18PA SRI*		*689*	*LCN*
1	*EA*	*PERIMETER SEALS*	*328AA HEAD AND JAMBS*		*AA*	*ZER*
2	*EA*	*MULLION SEAL*	*8780NBK PSA*		*BK*	*ZER*
2	*EA*	*DOOR SWEEP*	*39A*		*A*	*ZER*
1	*EA*	*THRESHOLD*	*525A-223*		*A*	*ZER*

Hardware Group No. HM-ED-OS-1
For use on Door #(s):
2C
Provide each PR door(s) with the following:

2	*EA*	*CONT. HINGE*	*112HD EPT*		*628*	*IVE*
2	*EA*	*POWER TRANSFER*	*EPT10 CON*	✓	*689*	*VON*
1	*EA*	*REMOVABLE MULLION*	*KR4954 STAB*		*689*	*VON*
1	*EA*	*ELEC PANIC HARDWARE*	*LD-RX-LC-PA-AX-98-EO-CON*	✓	*626*	*VON*
1	*EA*	*ELEC PANIC HARDWARE*	*LD-RX-LC-PA-AX-98-NL-OP-110MD-CON*	✓	*626*	*VON*
1	*EA*	*MULLION STORAGE KIT*	*MT54*		*689*	*VON*
2	*EA*	*SFIC CYLINDER*	*C953-7CCA*		*626*	*FAL*
2	*EA*	*MORTISE CYLINDER*	*C987-7CCA 5622-IC*		*626*	*FAL*
2	*EA*	*SFIC CORE*	*CB807 SFIC*		*626*	*FAL*
2	*EA*	*MAGNETIC LOCK*	*M490 HDB490 12/24 VDC*	✓	*628*	*SCE*
1	*EA*	*DOOR PULL*	*VR910 DT*		*630*	*IVE*
1	*EA*	*DOOR PULL*	*VR910 NL*		*US32D*	*IVE*
2	*EA*	*SURFACE CLOSER*	*4040XP SCUSH*		*689*	*LCN*
2	*EA*	*PA MOUNTING PLATE*	*4040XP-18PA SRI*		*689*	*LCN*
2	*EA*	*DOOR SWEEP*	*8193AA*		*AA*	*ZER*
2	*EA*	*MULLION SEAL*	*8780NBK PSA*		*BK*	*ZER*
1	*EA*	*WEATHER STRIPPING*	*PERIMETER SEAL BY ALUMINUM DOOR MANUFACTURER*			
1	*EA*	*THRESHOLD*	*525A-223*		*A*	*ZER*
1	*EA*	*HORN*	*1910-1 12/24 VDC*	✓	*WHT*	*SCE*
1	*EA*	*POWER SUPPLY*	*PS906 BBK 900-4RL-FA 900-4RL-FA KL900 120/240 VAC*	✓	*LGR*	*SCE*

Hardware Group No. LV-EXT1
For use on Door #(s):
8
Provide each SGL door(s) with the following:

1	EA	CONTINUOUS HINGE	112HD		628	IVE
1	EA	STOREROOM LOCK	LV9080BDC LLL OMEA L283-150		626	SCH
1	EA	SFIC CORE	CB807 SFIC		626	FAL
1	EA	DOOR PULL	VR900 LLP		630	IVE
1	EA	SURFACE CLOSER	4040XP EDA		689	LCN
1	EA	WALL STOP	WS406/407CCV		630	IVE
1	EA	PERIMETER SEALS	328AA HEAD AND JAMBS		AA	ZER
1	EA	DOOR SWEEP	39A		A	ZER
1	EA	THRESHOLD	526A-223		A	ZER

Hardware Group No. RR-OS
For use on Door #(s):
1
Provide each SGL door(s) with the following:

1	EA	CONTINUOUS HINGE	112HD		628	IVE
1	EA	CLASSROOM SECURITY	LV9071BDC LLL OMEA L283-150		626	SCH
1	EA	MORTISE CYL TURN	PROVIDE FROM SCHOOLS STOCK		626	SCH
1	EA	SFIC CORE	CB807 SFIC		626	FAL
1	EA	DOOR PULL	VR900 LLP		630	IVE
1	EA	SURFACE CLOSER	4040XP SCUSH		689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		630	IVE
1	EA	PERIMETER SEALS	328AA HEAD AND JAMBS		AA	ZER
1	EA	DOOR SWEEP	39A		A	ZER
1	EA	THRESHOLD	526A-223		A	ZER

Hardware Group No. SR1
For use on Door #(s):
9
Provide each SGL door(s) with the following:

3	EA	HINGE	5BB1 4.5 X 4.5 NRP		630	IVE
1	EA	STOREROOM LOCK	LV9080BDC OMEA		626	SCH
1	EA	PERM CORE	PER OWNERS KEY SYSTEM		626	SCH
1	EA	SURFACE CLOSER	4040XP SCUSH		689	LCN
1	EA	PERIMETER SEALS	328AA HEAD AND JAMBS		AA	ZER
1	EA	DOOR SWEEP	39A		A	ZER
1	EA	THRESHOLD	526A-223		A	ZER

END OF SECTION

SECTION AD1-09 68 13

TILE CARPETING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. This section includes the following:

1. Tufted carpet tile.

B. Related sections:

1. 02 41 19 Selective Demolition

1.03 SUBMITTALS

A. Manufacturer's Data - Submit two (2) copies of manufacturer's specifications and installation instructions for carpet tile and related items specified. Manufacturer shall also submit a plan for recycling the specified carpet tile and related items at the end of useful life of the carpet.

B. Fiber and backing verification - Certification from the producer verifying use of the branded fiber and backing in the submitted carpet product. Certification should include the % recycled content by weight for fiber and backing, describing the source of this recycled content. If virgin nylon or backing is used, the manufacturer shall include as part of the fiber and backing certification, the precise method that will be used to recapture the nylon and backing at the end of the useful life of the carpet tile. State how it will be returned to carpet production, fiber into fiber and backing into backing. Fiber types shall not be mixed to facilitate future recycling.

C. Shop Drawings - Submit shop drawings for areas to be carpeted showing installation of carpeting, seam diagram, pattern direction, necessary installation accessories, and provisions for work of other trades. Show location of different patterns or styles of carpet. Also, show locations of any threshold conditions.

1. The construction manager will supply reproducible prints on request, to facilitate shop drawing preparation.

D. Samples - Submit standard size carpet samples of each type of carpet, in each specified pattern, color and construction.

1. Any alternates to specified products) must be submitted for approval by a representative of the end user at least ten (10) working days prior to bid or proposal.

2. Final Sample Submittal - Submit two (2) sets of samples for each carpet type.

3. No carpet shipments are permitted until acceptance of final samples by representative of the end user or architect/design firm, certifying that samples are the approved color, pattern, and texture. No carpet shipments are permitted until the fiber and backing certifications and recycling plans are approved by the end user or architect/design firm.

4. Custom Color Only - Quality color samples shall be signed by a representative of the end user or architect/design firm, certifying that samples are the approved color, pattern, and texture.

5. Samples submitted will be assumed to be the manufacturer's best obtainable match to the carpet described under Materials section.

E. Maintenance Instructions - Submit to the District two (2) copies of the manufacturer's carpet maintenance instructions, including information needed for the removal of common stains from each type of carpet required.

F. Recycling Instructions - Submit to the District two (2) copies of the manufacturer's instructions on post-consumer recycling of the specified carpet tile and related items.

1. A representative from the carpet manufacturer shall meet with the Construction Manager in the presence of a representative of the end user and architect/design firm to review the recommended procedures, prior to occupancy of the finished spaces.

1.04 QUALITY ASSURANCE

A. Manufacturer - Carpet manufacturer shall have no less than three years of production experience with recyclable carpet tile (fiber to fiber and backing to backing) similar to type specified in this document; and whose published product literature clearly indicates compliance of products with requirements of this section.

1. Single source responsibility - provide product material by a single manufacturer for each recyclable carpet type specified.

2. Commitment to sustainability - carpet manufacturer must practice environmental responsibility through programs of source reduction, recycling, reuse, and conservation.

B. Trade Contractor - firm with not less than five years of successful carpet tile experience similar to work of this Section and recommended and approved by the carpet manufacturer. Upon request, submit letter from carpet manufacturer stating certification qualifications and acceptance of all environmental requirements.

1. Participant in environmental program including responsible carpet removal, recycling and installation

C. Substitutes - Where a selected manufacturer or product has been specified, an equal or superior product may be accepted only upon review and written acceptance by the architect. It is mandatory that such review and approval be obtained prior to bidding, or the substitution will not be considered. All such proposed substitutions shall be submitted to the architect with appropriate manufacturer's specifications, literature, environmental compliance assurance, and independent laboratory testing data. The architect's

decision as to whether a product is equal or superior to the one specified shall be final. This section applies to any "or equal" noted in the specification.

1.05 PRODUCT DELIVERY AND STORAGE

A. Deliver carpeting materials in sealed protective packaging for carpet tile and sealed containers for related materials. Carpet materials shall be bound with secure protective wrapping. Consideration should be given to bulk packaging of carpet tile when delivery is made to the jobsite for immediate installation to reduce packaging waste.

B. Storage and staging area at the site must be coordinated with the Construction Manager.

C. Provide 3% overage of calculated yardage for each type of carpet (calculated yardage shall include carpet needed for complete installation plus waste and usable scraps).

1. Deliver specified overrun and usable scraps of packages to owner's designated storage space, properly packaged (boxed) and identified. (Redirect small pieces of waste carpet to be appropriately recycled.)

D. Materials shall be stored in an enclosed and dry area protected from damage and soiling.

1.06 PRE-INSTALLATION MEETING

A. The manufacturer shall meet at the project site with representatives of end user, Construction Manager and the Trade Contractor to review the carpet installation procedure and coordination with other trades. The Trade Contractor must have available at this meeting the carpet manufacturer's installation procedures, instructions for the carpet types specified in the various applications required, and recycling procedures outlined in the manufacturer's environmental program.

B. Store carpet in working areas which have been enclosed and have maintained environmental conditions as those planned for occupancy. Carpet shall be allowed to reach room temperature or minimum temperature recommended by manufacturer before installation.

1.07 WARRANTY

A. Provide warranties by Carpet Manufacturer and Trade Contractor agreeing to replace defective materials and workmanship of carpet work during one (1) year warranty period following Notice of Completion. Also, submit carpet manufacturer's warranties as follows:

1. Wear - Surface wear shall not be more than 10% by weight throughout the life of the product.

2. Static - Carpet will maintain static generation at less than 3.5 KV at 70 degrees F, and 20% R.H. throughout the life of the product.

3. No delamination throughout the life of the product.
4. No edge ravel throughout the life of the product.

5. No dimensional instability, i.e. shrinkage, curling, and doming which adversely affect the ability of the tile to lay flat throughout the life of the product (per installation instructions). See Aachen test.

6. Colorfastness Warranties: Lifetime Colorfastness to Light, Lifetime Colorfastness to Atmospheric Contaminants for 100% solution dyed nylon products.

7. Stain Removal: Lifetime Stain Removal Limited Guarantee

8. Manufacturer must take back carpet free of charge for quantities above 500 yds.

B. Submit manufacturer's certified independent test results to show that carpet meets or exceeds product performance specification criteria for carpet testing requirements (i.e. see section 2.3 flame, smoke, Aachen test, etc.).

C. Lifetime Commercial Limited Warranty (Owner's Option) - Owner will be completely satisfied with the performance of the carpet product when installed in accordance with the manufacturer's current installation specifications and is maintained in accordance with the current carpet care recommendations and such maintenance continues throughout the duration of the original installation when owned and maintained by the original end user. Further, owner will be satisfied with the recycling of the product at the end of its useful life as outlined in the manufacturer's environmental program.

PART 2 - PRODUCTS

2.01 MANUFACTURER

A. Preferred Manufacturer: Tarkett (Tandus)
1. Pattern (Architect shall select up to (3) types:
   a. Main: Haphazard II 03366; Seahorse 13513
   b. Accent 1: Plexus Colour IV 02875; Glacier Bay 18571
   c. Accent 2: Plexus Colour IV 02875; Wind Wave 18566
   d. Walk-off Mat: Geo Tile 00979; Charcoal 00154

B. Acceptable Manufacturers: Equal products only.

2.02 CARPET TILE

A. Package Marking - Mark each carpet package according to style, color, pattern, dye lot, run number and quantity. Within each continuous carpet area, install carpet from same dye lot and run.

B. Carpet Construction Specification - All yarn and carpet shall be manufacturer's first quality and 100% recyclable.

2.03 CARPET SHALL MEET THE FOLLOWING PERFORMANCE STANDARDS:

A.	Flooring Radiant Panel (ASTM E648):	Class I
B.	Smoke Generation (ASTM E662):	< 450

2.04 PRODUCT SPECIFICATIONS

A.	Product recyclability	100%
B.	Format Type	Modular 24” Tile
C.	Fiber System	TDX Nylon

D.	Dye Method	Solution Dyed
E.	Face Weight	14 oz/yd²
F.	Total Thickness (ASTM F386)	0.280” (7.06 mm)
G.	Recycled Content	29% Pre-Consumer 36% Post-Consumer
H.	Cradle to Cradle Certified	Must be MBDC Cradle to Cradle Certified - Silver
I.	Size	24 in. x 24 in.
J.	NSF140	Platinum Certified

2.05 MINIMUM CONSTRUCTION STANDARDS IN ADDITION TO PRODUCT SPECIFICATIONS

A. Conform to 2016 CBC for accessibility as follows: CBC Section 11B-302.2

1. Carpet shall be securely attached and shall have a firm cushion, pad, or backing or no cushion or pad. It shall have a level loop, textured loop, level cut pile, or level cut/uncut pile texture, with a maximum pile height of ½”, per 11B-302.2.

2. Exposed edges shall be fastened to floor surfaces and shall have trim on the entire length. Carpet edges shall comply with CBC Section 11B-303.

B. Nylon Specification - All nylon fiber shall be branded nylon containing pre-consumer recycled content.

C. Average pile thickness as determined by ASTM D418.

D. Appearance Retention Rating (see performance standards)

E. Carpet tile backing shall contain pre consumer and post consumer recycled content.

2.06 RELATED CARPET MATERIALS

A. Leveling Compound - Latex type as recommended by carpet manufacturer and is compatible with carpet adhesive and curing/sealing compound on concrete.

B. Releasable pressure sensitive type adhesive - Use the following as recommended by the carpet manufacturer which will allow removal of carpet at any time without damage or adherence to carpet: N5000 low VOC (no solvents) carpet tile adhesive.

C. Multi-purpose Adhesive - Provide the following adhesive as recommended by carpet manufacturer for direct glue-down of carpet on steps.

D. Carpet Edge Guard, Nonmetallic - Extruded or molded heavy duty vinyl or rubber carpet edge guard of size and profile indicated and with minimum 2 inch wide anchorage flange; colors selected by architect/designer from among standard colors available within the industry.

E. Miscellaneous Materials - As recommended by manufacturer of carpet, cushion and other carpeting products and selected by Trade Contractor to meet project circumstance and requirements.

PART 3 - EXECUTION

3.01 PRE-INSTALLATION REQUIREMENTS AND PREPARATORY WORK

A. The Trade Contractor shall measure carefully and check all dimensions and other conditions in the field to insure proper fit in the areas designated. Trade Contractor shall be totally responsible for the accuracy of his measurements on total yardage requirements, individual floor yardage requirements and dye lot yardage requirements. No request for carpet or installation extras from the owner will be considered due to measurement or takeoff errors by the Trade Contractor. The Trade Contractor shall confirm total yardage required, including 3% attic stock along with bid.

B. The Trade Contractor shall coordinate all installation activities with the Construction Manager.

C. Removal of carpet to be replaced (if applicable) should be handled according to preapproved plan for reuse and/or recycling. See carpet reclamation specification.

D. Sequence carpeting with other work so as to minimize possibility of damage and soiling of carpet during remainder of construction period. Carpet installation must not commence until painting and finishing work is complete and ceiling and other overhead work has been tested, approved and completed, unless specifically approved by owner's Project Manager, in writing.

E. Trade Contractor and manufacturer's representative must examine substrates for conditions over which carpeting is to be installed.

1. New concrete shall be allowed to cure for ninety (90) days before carpet installation.

2. Trade Contractor shall perform moisture content testing as required in manufacturer's instructions to ensure pH readings of no more than 9. Moisture transmission of 5.5 pounds per sqm per 24 hours is acceptable. If values exceed this level manufacturer's recommendations must be followed for moisture transmission mitigation. Do not proceed until unsatisfactory conditions are corrected.

3. Cracks 1/16 inch or more, holes, unevenness and roughness must be filled, leveled and made smooth with a compatible latex floor patching compound. Prior to filling, the floor must be swept clean of all loose granular debris. After filling, allow filler to dry. Then damp mop the floor with warm water and allow to dry. Vacuum after mopping, to ensure all loose granular debris is removed and provide a proper substrate to install carpet.

F. All surfaces to receive carpet shall be clean and dry, and in a condition satisfactory to the Trade Contractor. Trade Contractor shall notify Construction Manager in writing of any conditions which will prevent him from producing satisfactory finish work after above specified preparatory work is completed.

G. Trade Contractor shall vacuum floors again immediately before installation of carpeting.

H. Confirm compatibility of adhesive with curing compounds on concrete floors. All adhesives and curing compounds shall comply with the CRI Green Label Certification program for low VOC.

I. Environmental Conditions - Areas to be carpeted must be pre-heated at a minimum of 68° F. for 72 hours prior to installation with the relative humidity not more than 65%. A minimum temperature of 50° F. shall be maintained thereafter. Carpet and adhesive must be stored at a minimum temperature of 68° F. for 72 hours prior to installation.

J. Once the Trade Contractor commences installation work under this contract, it shall be assumed that the condition of the floor has been accepted and any repairs or further corrections in the floor surface shall become the responsibility of the Trade Contractor.

3.02 INSTALLATION

A. General

1. Comply with manufacturer's instructions and recommendations for uniformity of direction of carpet installation.

2. Install carpet under open-bottom obstructions and under removable flanges and furnishings, and into alcoves and closets of each space.

3. Provide cut outs where required. Conceal cut edges with protective edge guards or overlapping flanges.

4. Run carpet under open-bottom items such as heating convectors and install tight against walls, columns and cabinets so that the entire floor area is covered with carpet. Cover over all floor type door closures.

5. Install edging guard at all openings and doors wherever carpet terminates, unless indicated otherwise. Prior to installation, report to the Construction Manager all other obstructions which may occur.

6. Cutting shall be done in accordance with the manufacturer's recommendation, using the tools designed for the carpet being installed. Scraps shall be retained or disposed of per the manufacturer’s environmental program.

7. Edges shall be butted together with the proper pressure to produce the tightest joint possible without distortion.

8. All carpet shall be installed with pile-lay in the same direction except when directed to use a quarter turned method as specified in the drawings.

9. Use leveling compound where necessary. Any floor filling or leveling shall have a minimum of 4'0" of feather.

10. Expansion joints - Do not bridge building expansion joints with continuous carpeting. Provide for movements.

B. Installation

1. Install carpet according to carpet manufacturer's printed instructions.

2. Measuring - Divide the room into four quadrants and snap a chalk line. Make sure quadrants meet at right angles (offset the center line, if necessary, to ensure that perimeter tiles will be cut no less than half size (9 inches).

3. Apply environmentally approved adhesive as per instructions in the area to be carpeted first.

4. Note carefully if the product is designed to be installed "quarter turned" only. Arrows should point in the same direction every other tile and diagonally. Arrows on alternating tiles should be turned 90^{o} in either direction, consistently.

5. Begin installing by laying an anchor row of tiles on one side of the center chalk line. Ensure straight lines and square corners. Repeat anchor rows in each quadrant, extending out from center. Fill in each quadrant with tiles using a stair step technique.

6. Tip individual tiles into place to avoid catching pile in the joint. Frequently check tile joints for proper alignment and firm abutment.

7. Although tiles are nominally 24 inches by 24 inches square, there will be slight gain due to joints. To check, measure 10 installed tiles from edge to edge, spanning 10 joints. This measurement should be no greater than 240 and 1/8 inches for tufted product. If more gain is measured, tiles are not butted tightly enough. Reposition and check again. Use this method to continually check for excessive gain. See manufacturer's instructions for 24" x 24" modular tiles.

8. Fixtures, architectural elements, and perimeters will require tile cutting. Cut tiles from the back. Secure cut or partial tiles with adhesive.

9. Electrical floor outlets are usually wired after tile installation. Install tile over electrical boxes and mark locations with a piece of tape. Tiles can be lifted for cut-outs later.

10. Center trench headers directly under a full tile row.

11. In open perimeter designs, use a fixed reducer strip to secure the tile area.

12. Use an environmentally acceptable permanent adhesive for tiles installed on stairs. Compatible edge trim and nosing products may also be required.

3.03 CLEANING AND PROTECTION

A. On completion of the installation in each area, all dirt, carpet scraps, etc., must be removed from the surface of the carpet. Any soiling sports or excessive adhesive on the carpet shall be removed with the proper spot remover. (See Section 1.3.7)

B. Construction traffic other than as may be required to fit up specific carpeted area will not be allowed to traverse the completed work.

C. Remove debris, and sort pieces to be saved from scraps to be redirected and recycled.

D. Protect carpeting against damage during construction. Cover with 6-mil thick polyethylene covering with taped joints during the construction period, wherever protection is required, so that carpet will be without any indication of deterioration, wear,

or damage at the time of acceptance. Damaged carpeting will be rejected and recycled. As the carpet is laid, remove all trimmings, excess pieces of carpet and laying materials.

E. At the completion of the work and when directed by the Construction Manager, vacuum carpet using commercial dual motor vacuum of type recommended by carpet manufacturer. Remove spots and replace carpet where spots cannot be removed. Remove rejected carpeting and replace with new carpeting. Remove any protruding yarns with shears or sharp scissors.

F. Protection of carpeting shall be maintained on each floor or area until accepted.

3.04 INSPECTION

A. Preliminary Acceptance - Upon completion of the carpet installation of each floor, it shall be inspected by Owner, the Construction Manager and Trade Contractor.

B. Upon completion of the installation, verify that work is complete, properly installed and acceptable. Remove and replace all work not found acceptable to the owner at the installer's expense.

C. Upon completion of the installation the manufacturer shall deliver a certificate of recycling describing the method by which the uplifted carpet was recycled, and shall provide a promise of recycling specifying the method of recycling of the newly installed carpet tile at the end of its useful life.

END OF SECTION