

The NEW Memorial Elementary School  
Board of Education of the Township of East Brunswick,  
Middlesex County, NJ  
Bid No. 2011-01

Addendum Date: 9-09-10

Project Dated: 7-29-10

The original specifications and drawings, for the project noted above have been amended as noted in this Addendum. Receipt of this Addendum shall be acknowledged by inserting its number and date in the space provided on the Form of Proposal.

**ADDITIONAL CLARIFICATIONS TO:**  
**DRAWING & SPECIFICATION REVISIONS & ADDITIONS LIST**

**I. THIS ATTACHMENT TO ADDENDUM #2 CONSISTS OF THE FOLLOWING:**

- a. Number of Pages: 2 page w/o attachments
- b. Attachments: Refer to Attachments issued directly to all plan holders.
  - i. Revisions & clarifications to certain specification sections as noted below. Refer also to all attachments to Addendum #2 for full extent of all revisions, clarifications, and additions to the bidding documents.
- c. The attention of the bidder is directed to the following changes, additions, substitutions and/or clarifications affecting the above referenced content.
- d. This Addendum contains changes to the requirements of the Contract Drawings and Specifications. Such changes are deemed to be incorporated into the Contract Documents and shall apply to the work with the same meaning and force as if they had been included in the original Documents. Whenever this Addendum modifies a portion of a paragraph of the Specifications, or any portion of any drawing, the remainder of the paragraph or drawings affected shall remain in force.
- e. The conditions and terms of the Specifications shall govern work described in this Addendum. Whenever the conditions of work and the quality or quantity of materials or workmanship are not fully described in this Addendum, the conditions of work, etc., included in the Specifications for similar terms of work shall apply to the work described in this Addendum.

**II. PERTAINING TO THE DRAWINGS:**

- a. *Note: All drawing revisions & clarifications are not listed herein; see also the new drawings, revised drawings & clarification sketches (previously issued directly to all plan holders) for additional revisions & clarifications to the drawings.*
  - i. Refer to the Drawing & Specification Revisions & Additions List attachment to Addendum 2. Refer also to all attachments to Addendum #2 for full extent of all revisions, clarifications, and additions to the bidding documents.

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**III. PERTAINING TO THE SPECIFICATIONS:**

- a. Various specifications sections have been revised and added, and will be forwarded as a separate attachment, directly to all current and future plan holders. *Note: All specifications revisions, clarifications & additions are not listed herein; see also other revised specification sections & new specifications sections (issued directly to all plan holders) for additional revisions, clarifications & additions to the specifications.*
  - 1. Revised specification sections to be reissued and new specifications sections to be issued, as attachments to Addendum #2 are as follows:
    - A) 07 52 00 MODIFIED BITUMEN ROOFING  
(SEE ATTACHMENT TO ADDENDUM #2)
    - B) 08 71 00 DOOR HARDWARE  
(SEE ATTACHMENT TO ADDENDUM #2)

**End of Additional Clarifications To: Drawing & Specification Revisions & Additions List**

Attachments:

Signed by: Paul Graebener, LEED AP BD&C

Date: 9-13-2010

Copies:  Owner  Consultants  Plan Holders  Const. Manager  \_\_\_\_\_  File

**SECTION 07 52 00 – MODIFIED BITUMEN ROOFING**

**PART 1 - GENERAL**

1.1 SUMMARY

- A. Flat Roofs: 1-ply torch applied vapor retarder adhered to 5/8" Glass Mat Gypsum Board (GMGB), mechanically fastened to metal decking with tapered isocyanurate insulation adhered in low-rise polyurethane foam insulation adhesive, 1/2" Glass Mat Gypsum Board (GMGB) adhered in low-rise polyurethane foam insulation adhesive, and a two-ply, torch applied, reflective, surfaced SBS-modified bitumen roofing membrane with reflective, metal-faced, torch-applied SBS modified flashings.
- B. Modified bitumen flashing at eaves, parapets, rising walls, curbs and penetrations.
- C. Tapered edge strips and cant strips.
- D. Wood blocking, nailers and curbs.
- E. Coordinate installation with garden roof assembly Section 07 56 00.
- F. Coordinate installation with precast concrete Section 03 45 00
- G. Coordinate and refer to structural drawings for location / description of 3" deep inverted acoustic deck in Building 'A'.
- H. Walkway pads

1.2 RELATED SECTIONS

- A. Section 7: Sheet Metal.
- B. Section 15: Drains.

1.3 QUALITY ASSURANCE

- A. All work under this Section shall be performed by a single firm with a minimum of three (3) years experience in the installation of the specified type of roofing. Such firm shall submit with their bid, satisfactory evidence that the companies issuing the warranties required in par. 1.11 have licensed or approved them as an applicator on this Project together with a list of similar completed projects listing system, name, date, location and phone numbers.
- B. All materials shall be in manufacturer's unopened packages, wrappings or containers, clearly labeled with all pertinent information.
- C. Materials improperly stored or which become wet, warped or damaged shall be identified, conspicuously marked as rejected and removed from the job site.

1.4 SUBMITTALS

- A. Prior to purchasing materials or beginning work, submit for approval.
  - 1. Printed specifications and installation instructions prepared by the roofing membrane manufacturer. Deviations from the Contract specifications shall be specifically noted in a separate letter if the manufacturer takes exception to them.
  - 2. Shop drawings of flashing and tapered insulation systems. In addition to the shop drawing requirements in Division 1, shop drawings shall be prepared by the applicator or manufacturer on sheets containing his name and project job number. Details of terminations, penetrations, etc. shall be specifically prepared for this Project. Submission of cuts of manufacturer's standard details will not be acceptable substitutes for shop drawings. The Contract drawing details may be reproduced on the manufacturer's drawings; circle or note any changes.
    - a. Submit shop drawings of tapered insulation system. Indicate the slopes to the drains, cross section drawings illustrating the location and thickness of tapered insulation pieces and filler pieces and the thickness of the insulation system at high and low points.
  - 3. Letter from companies issuing Warranties that they will do so for the work as indicated and specified in the Contract Documents, or noting exceptions thereto
  - 4. Affidavit that Contractor has applied for the manufacturer's warranty.
  - 5. Facsimile of the manufacturer's warranty.
- B. During installation submit bitumen records specified in 1.08 C.

#### 1.5 PRODUCT DELIVERY, STORAGE & HANDLING

- A. Deliver materials in sufficient quantity to permit work to continue without interruption.
- B. Store moisture-susceptible materials in dry areas protected from sun and weather. Store in trailers or on raised platforms covered with weatherproof tarpaulins. Plastic sheeting is not permitted. Remove shrink-wrapping as soon as material is delivered to site. Observe manufacturer's recommendations for temperature limits of stored materials.
- C. Store materials containing solvents in dry, well ventilated spaces. Keep lids on tight. Provide proper fire protection for flammable materials.
- D. Do not stockpile materials on roof for more than 1-1/2 day's work unless otherwise approved. See Division 1 for load limits.
- E. Store rolls of bituminous materials on end. Avoid damage or embedment of foreign materials.

#### 1.6 ENVIRONMENTAL CONDITIONS

- A. Do not install insulation, roofing or flashing during inclement weather, on wet or frost-covered surfaces, during rainfall, blowing dust or high winds.

- B. Do not install modified bitumen when temperature of rolls is below 40°F. In lower temperatures condition rolls in warmed enclosure prior to bringing to roof and use before they cool below 40°F.

#### 1.7 FIRE PROTECTION

- A. Use torches approved by the roofing membrane manufacturer for use in application of the modified bitumen base flashings. Do not leave open flame equipment unattended while ignited.
- B. Maintain a fire watch continuously during and for at least one hour following heat-welded application.
- C. Provide one 15-pound carbon dioxide extinguishers for each torch on the roof. Provide at least two 3-1/3 gallon containers of water and two 15-pound carbon dioxide extinguishers during the one-hour fire watch. When work is interrupted, or at the end of a section of roofing, and at end of each day's work, survey heat welded flashings with an infrared sensing device. Hot spots shall be cooled and extinguished before the inspector may leave the site.

#### 1.8 FIRE RESISTANCE CLASSIFICATION

- A. The complete roofing assembly shall have an Underwriters Laboratory (UL) Class A rating or a Factory Mutual (FM) Class 1A rating and be listed in the current UL Directory.

#### 1.9 WIND UPLIFT REQUIREMENTS

- A. The completed roofing system shall have an Underwriters Laboratory (UL) Class A rating and a Factory Mutual (FM) Class 1-60 rating and be listed in the current Approval Guide.

#### 1.10 LEED & ENERGY STAR REQUIREMENTS

- A. The roof membrane system shall be eligible to achieve 1 credit point according to SS Credit 7.2 Heat Island Effect-Roof as recorded in LEED 2009 for New Construction and Major Renovations.
- B. The roof membrane system shall meet the approval requirements of the U.S. EPA Energy Star program.

#### 1.11 GUARANTEES, WARRANTIES

- A. Furnish to the Owner, duplicate executed copies of the membrane manufacturer's 20 year Warranty providing that the membrane and associated flashing will remain watertight under ordinary wear and tear by the elements.
- B. Furnish to the Owner, duplicate executed copies of a Guarantee in the form attached at the end of this section.

### **PART 2 - PRODUCTS**

#### 2.1 ROOFING SYSTEM ASSEMBLY/PRODUCTS

- A. Rigid Roof Insulation: Roof insulation shall be UL and FM approved. Insulation shall be approved in writing by the insulation manufacturer for intended use and for use with the specified roof assembly.

1. Polyisocyanurate: A closed cell, rigid polyisocyanurate foam core material, integrally laminated between glass fiber facers, in full compliance with ASTM C 1289, Type II, Class 1, Grade 2. Panels shall have a nominal thickness of 3 inches. Acceptable types are as follows:
    - a. Paratherm by Siplast; Irving, TX
    - b. ACFoam II by Atlas Roofing Corporation; Atlanta, GA
    - c. H-Shield by Hunter Panels, LLC, Portland, ME
  2. Polyisocyanurate Tapered Roof Insulation: Tapered panels and standard fill panels composed of a closed cell, rigid polyisocyanurate foam core material, integrally laminated between glass fiber facers, in full compliance with ASTM C 1289, Type II, Class 1, Grade 2. The tapered system shall provide for a roof slope of 1/4 inch per foot. Acceptable types are as follows.
    - a. Tapered Paratherm by Siplast; Irving, TX
    - b. ACFoam II Tapered Insulation Systems by Atlas Roofing Corporation; Atlanta, GA
    - c. Tapered H-Shield by Hunter Panels, LLC, Portland, ME
- B. Gypsum Sheathing Panel: A panel composed of a gypsum based, non-structural water resistant core material integrally bonded with fiberglass mats on both sides having a nominal thickness of 1/4 inch. The panel surface shall be factory coated with a low permeability, heat-cured coating. Acceptable types are as follows:
1. DensDeck Prime Gypsum Roof Board, by Georgia Pacific Corporation; Atlanta, GA

## 2.2 DESCRIPTION OF SYSTEMS

- A. Roofing Membrane Assembly: A roof membrane assembly consisting of two plies of a prefabricated, reinforced, homogeneous Styrene-Butadiene-Styrene (SBS) block copolymer modified asphalt membrane, applied over a prepared substrate. Reinforcement mats shall be impregnated/saturated and coated each side with SBS modified bitumen blend. The modified bitumen finish ply shall be coated one side with a torch grade SBS bitumen blend adhesive layer. The cross sectional area of the sheet material shall contain no oxidized or non-SBS modified bitumen. The adhesive layer shall be manufactured using a process that embosses the surface with a grooved pattern to provide optimum burn off of the plastic film and to maximize application rates. The roof system shall pass 500 cycles of ASTM D 5849 Resistance to Cyclic Joint Displacement (fatigue) at 14°F (-10°C). Passing results shall show no signs of membrane cracking or interply delamination after 500 cycles. The roof system shall pass 200 cycles of ASTM D 5849 after heat conditioning performed in accordance with ASTM D 5147. The assembly shall possess waterproofing capability, such that a phased roof application, with only the modified bitumen base ply in place, can be achieved for prolonged periods of time without detriment to the watertight integrity of the entire roof system.
1. Siplast Paradiene 20/30 CR FR TG roof system (Basis of Design)
  2. Tremco
  3. Garland
- B. Modified Bitumen Base and Stripping Ply
1. Thickness (avg): 91 mils (2.3 mm) (ASTM D 5147)
  2. Thickness (min): 87 mils (2.2 mm) (ASTM D 5147)
  3. Weight (min per 100 ft<sup>2</sup> of coverage): 62 lb (3.0 kg/m<sup>2</sup>)

4. Maximum filler content in elastomeric blend - 35% by weight
  5. Low temperature flexibility @ -15°F (-26°C): PASS (ASTM D 5147)
  6. Peak Load (avg) @ 73°F (23°C): 30 lbf/inch (5.3 kN/m) (ASTM D 5147)
  7. Peak Load (avg) @ 0°F (-18°C): 70 lbf/inch (12.3 kN/m) (ASTM D 5147)
  8. Ultimate Elongation (avg.) @ 73°F (23°C): 50% (ASTM D 5147)
  9. Dimensional Stability (max): 0.1% (ASTM D 5147)
  10. Compound Stability (min): 250°F (121°C) (ASTM D 5147)
  11. Approvals: UL Class listed, FM Approved (products shall bear seals of approval)
  12. Reinforcement: fiberglass mat or other meeting the performance and dimensional stability criteria
- C. Modified Bitumen Finish Ply
1. Thickness (avg): 138 mils (3.5 mm) (ASTM D 5147)
  2. Thickness at selvage (coating thickness) (avg): 118 mils (3.0 mm) (ASTM D 5147)
  3. Thickness at selvage (coating thickness) (min): 114 mils (2.9 mm) (ASTM D 5147)
  4. Weight (min per 100 ft<sup>2</sup> of coverage): 112 lb (5.4 kg/m<sup>2</sup>)
  5. Maximum filler content in elastomeric blend: 35% by weight
  6. Low temperature flexibility @ -15°F (-26°C): PASS (ASTM D 5147)
  7. Peak Load (avg) @ 73°F (23°C): 30 lbf/inch (5.3 kN/m) (ASTM D 5147)
  8. Peak Load (avg) @ 0°F (-18°C): 75 lbf/inch (13.2 kN/m) (ASTM D 5147)
  9. Ultimate Elongation (avg.) @ 73°F (23°C): 55% (ASTM D 5147)
  10. Dimensional Stability (max): 0.1% (ASTM D 5147)
  11. Compound Stability (min): 250°F (121° C) (ASTM D 5147)
  12. Granule Embedment (max loss): 2.0 grams per sample (ASTM D 5147)
  13. Approvals: UL Class listed, FM Approved (products shall bear seals of approval)
  14. Reinforcement: fiberglass mat or other meeting the performance and dimensional stability criteria
  15. Surfacing: white synthetic chips
- D. Flashing Membrane Assembly: A flashing membrane assembly consisting of a prefabricated, reinforced, Styrene-Butadiene-Styrene (SBS) block copolymer modified asphalt membrane with a continuous, channel-embossed metal-foil surfacing. The finish ply shall conform to ASTM D 6298 and the following physical and mechanical property requirements.
- E. Cant Backing Sheet and Flashing Reinforcing Ply
1. Thickness (avg): 102 mils (2.6 mm) (ASTM D 5147)
  2. Thickness (min): 98 mils (2.5 mm) (ASTM D 5147)
  3. Weight (min per 100 ft<sup>2</sup> of coverage): 72 lb (3.5 kg/m<sup>2</sup>)
  4. Maximum filler content in elastomeric blend: 35% by weight
  5. Low temperature flexibility @ -15° F (-26° C) - PASS (ASTM D 5147)
  6. Peak Load (avg) @ 73°F (23°C): 30 lbf/inch (5.3 kN/m) (ASTM D 5147)
  7. Peak Load (avg) @ 0°F (-18°C): 75 lbf/inch (13.2 kN/m) (ASTM D 5147)
  8. Ultimate Elongation (avg.) @ 73°F (23°C): 50% (ASTM D 5147)
  9. Dimensional Stability (max): 0.1% (ASTM D 5147)
  10. Compound Stability (min - sheet): 250°F (121°C) (ASTM D 5147)
  11. Compound Stability (min – adhesive coating): 212°F (100°C) (ASTM D 5147)
  12. Approvals: UL Class listed, FM Approved (products shall bear seals of approval)
  13. Reinforcement: fiberglass mat or other meeting the performance and dimensional stability criteria
  14. Back Surfacing: polyolefin film

- F. Metal-Clad Modified Bitumen Flashing Sheet
1. Thickness (avg): 142 mils (3.6 mm) (ASTM D 5147)
  2. Thickness (min): 138 mils (3.5 mm) (ASTM D 5147)
  3. Weight (min per 100 ft<sup>2</sup> of coverage): 92 lb (4.5 kg/m<sup>2</sup>)
  4. Coating Thickness – back surface (min): 40 mils (1 mm) (ASTM D 5147)
  5. Low temperature flexibility @ 0° F (-18° C): PASS (ASTM D 5147)
  6. Peak Load (avg) @ 73°F (23°C): 85 lbf/inch (15 kN/m) (ASTM D 5147)
  7. Peak Load (avg) @ 0°F (-18°C): 180 lbf/inch (31.7 kN/m) (ASTM D 5147)
  8. Ultimate Elongation (avg) @ 73°F (23°C): 45% (ASTM D 5147)
  9. Tear-Strength (avg): 120 lbf (0.54 kN) (ASTM D 5147)
  10. Dimensional Stability (max): 0.2% (ASTM D 5147)
  11. Compound Stability (min): 225°F (107°C) (ASTM D 5147)
  12. Cyclic Thermal Shock Stability (maximum): 0.2% (ASTM D 7051)
  13. Approvals: UL Approved, FM Approved (products shall bear seals of approval)
  14. Reinforcement: fiberglass scrim mat or other meeting the performance and dimensional stability criteria
  15. Surfacing: aluminum metal foil
- G. Catalyzed Acrylic Resin Flashing System: A specialty flashing system consisting of a liquid-applied, fully reinforced, multi-component acrylic membrane installed over a prepared or primed substrate. The flashing system consists of a catalyzed acrylic resin primer, basecoat and topcoat, combined with a non-woven polyester fleece. The resin and catalyst are pre-mixed immediately prior to installation. The use of the specialty flashing system shall be specifically approved in advance by the membrane manufacturer for each application.

## 2.3 ROOFING ACCESSORIES

- A. Roofing Adhesives
1. Insulation Adhesive: A single component, moisture cured, polyurethane foam adhesive, dispensed from a portable, pre-pressurized container used to adhere insulation panels to the substrate as well to other insulation panels. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    - a. Para-Stik by Siplast
    - b. Insta-Stik by Dow
- B. Bituminous Cutback Materials
1. Primer: An asphalt/solvent blend meeting ASTM D 41, South Coast Air Quality District and Ozone Transport Commission requirements.
  2. Mastics: An asphalt cutback mastic, reinforced with non-asbestos fibers, used as a base for setting metal flanges conforming to ASTM D 4586 Type II requirements.
- C. Sealant: A moisture-curing, non-slump elastomeric sealant designed for roofing applications. The sealant shall be approved by the roof membrane manufacturer for use in conjunction with the roof membrane materials. Acceptable types are as follows:
- D. Ceramic Granules: No. 11 grade specification ceramic granules of color scheme matching the granule surfacing of the finish ply.

- E. Perlite Cant Strips: A cant strip composed of expanded volcanic minerals combined with waterproofing binders. The top surface shall be pre-treated with an asphalt based coating. The face of the cant shall have a nominal 4 inch dimension.
- F. Fasteners
1. Insulation Fasteners: Insulation fasteners and plates shall be FM Approved, and/or approved by the manufacturer of the primary roofing products. The insulation fasteners shall provide attachment required to meet the specified uplift performance and to restrain the insulation panels against the potential for ridging. The fastening pattern for each insulation panel to be used shall be as recommended by the insulation manufacturer and approved by the manufacturer of the primary roofing products. Acceptable insulation fastener manufacturers for specific deck types are listed below.
    - a. Metal Decks: Insulation mechanical fasteners for metal decks shall be factory coated for corrosion resistance. The fastener shall conform meet or exceed Factory Mutual Standard 4470 and when subjected to 30 Kesternich cycles, show less than 15% red rust. Acceptable insulation fastener types for metal decks are listed below.
      - 1) A fluorocarbon coated screw type roofing fastener having a minimum 0.220 inch thread diameter. Plates used in conjunction with the fastener shall be a metal type having a minimum 3 inch diameter, as supplied by the fastener manufacturer.
        - a) Parafast Fastener by Siplast; Irving, TX
        - b) Roofgrip with Buildex Metal Plates by ITW Buildex; Itasca, IL
        - c) Dekfast #12 with Dekfast Steel Hexagonal Plates by Construction Fasteners, Inc.; Wyomissing, PA
        - d) Standard Roofing Fastener by OMG; Agawam, MA
    2. Flashing Reinforcing Sheet Fasteners for Wood/Plywood Substrates to Receive Flashing Coverage: Fasteners shall be approved by the manufacturer of the primary roofing products. Acceptable fasteners for specific substrate types are listed below.
      - a. Wood/Plywood Substrates
        - 1) A 12 gauge, spiral or annular threaded shank, zinc coated steel roofing fastener having a minimum 1 inch head.
          - a) Square Cap by W.H. Maze Co.; Peru, IL
          - b) Gauge Simplex Nail by the Simplex Nail and Manufacturing Co., Americus, GA
- G. Walktread: A prefabricated, puncture resistant polyester core reinforced, polymer modified bitumen sheet material topped with a ceramic-coated granule wearing surface.
1. Thickness: 0.217 in (5.5 mm)
  2. Weight: 1.8 lb/ft<sup>2</sup> (8.8 kg/m<sup>2</sup>)
  3. Width: 30 in (76.2 cm)

### **PART 3 - EXECUTION**

#### **3.1 PREPARATION FOR INSTALLATION**

- A. Metal decks shall be frost-free, dry, and clean.

- B. Wood blocking, nailers, curbs and drains shall be in place and secured. Secure wood members with fasteners spaced 24" o.c. maximum.

### 3.2 UNDERLAYMENT BOARD INSTALLATION

- A. Install GMGB boards over the steel deck with long edges aligned and over flanges and short edges staggered. Keep joints tight.
- B. Secure to the steel deck with Type S screws spaced one per two sq. ft.
- C. Coordinate and refer to structural drawings for location / description of 3" deep inverted acoustic deck in Building 'A'.

### 3.3 VAPOR-RETARDER INSTALLATION

- A. Install the vapor retarder parallel to the eaves. Shingle up from the drains or gutters, lapping the previous sheet and ends 6". Remove the release paper as the sheet is unrolled and press in place. Roll the laps to obtain uniform adhesion. Secure to the steel deck with Type S screws spaced one per two sq. ft.
- B. Turn the sheet 4" up penetrations and vertical surfaces and seal to them to prevent air movement into membrane roofing system.
- C. Do not install more vapor retarder than can be covered by insulation and membrane within 2 weeks.
- D. If insulation is not installed over the vapor retarder on the same day it is installed, repair all damages, reseal open seams and replace portions that are not fully adhered.

### 3.4 INSULATION INSTALLATION

- A. Do not install more insulation that can be covered by membrane in the same day.
- B. Install insulation and crickets per approved shop drawings with positive slope to drain. Install dry with fasteners with moderately tight joints parallel to walls and eaves. Align joints in both directions. Where more than one layer is used, stagger joints with the joints below by ½. Repair damaged edges and broken corners with small pieces or replace with new boards.
- C. On two layer installations, install the top layer with all edges offset not less than 6" with the layer below. Where tapered insulation is used, align joints in both directions. Follow the manufacturer's shop drawings and instructions for laying out the tapered insulation and cricket system. Install crickets on insulation, not over the bottom ply of membrane
- D. Install each layer of insulation in hot asphalt uniformly applied at the rate of 30 lbs./square. Walk-in boards to assure adhesion. Prior to applying asphalt, prime concrete decks and temporary roof membranes with ¾ gal. Of uncut primer per 100 sq. ft. If insulation is not installed the same day, reprime.
- E. Provide cant strips and tapered edge strips at vertical surfaces and where indicated to provide a smooth transition. Set tapered edge strips in roofing cement. Butt ends, miter corners.

- F. Trim insulation neatly around drain, curbs, stacks and similar projections. At drain create sump by trimming insulation or with tapered edge strips 30" x 30" from toe to toe or as indicated.
- G. At drains, install tapered edge strips to provide a sump.

### 3.5 ROOFING

- A. Surfaces to receive roofing shall be dry and clean of dust, dirt, grease, insulation wrappings and other foreign material that would inhibit asphalt adhesion. Take precautions to prevent products of demolition from lodging under membrane or being tracked or blown on surfaces.
- B. Install roofing and built-up flashings per manufacturer's current printed catalogue or instructions and as specified herein. Where they differ, the more stringent requirements shall apply.
- C. Lay felts in shingle fashion from drains or gutters up so that laps do not buck water. Install one ply of unsurfaced modified bitumen in shingle fashion. Install granular surfaced ply in one-on-one configuration
- D. Mop the unsurfaced ply with 25 lbs. ( $\pm$  5 lbs.) per square of Type IV asphalt applied uniformly without voids or skips so that in no place will ply touch ply. Apply asphalt so that when plies are rolled in a bead  $\frac{1}{4}$ " to  $\frac{3}{8}$ " wide bead will be extruded at the side lap. Lap sides and ends 3" min. and stagger end laps 24" min. Do not align ends and cover with a cap sheet. Stagger the laps between plies by  $\frac{1}{3}$ . Unroll sheets, straighten wrinkles, remove wrappings, label and release film if it exists. Reroll.
- E. Install the top ply by heating with a torch. Direct the flame at the lower quadrant of the roll to heat the substrate and liquefy the bitumen on sheet without overheating. Check laps with a pointed trowel and re-fuse where open. Seal laps while roll is still warm but not later than end of each day's work by pressing with a heated blunt-nose trowel to feather edges. Feathering is not required for bottom ply seams unless top plies are phased by more than one day.
- F. Roll in felts to obtain full embedment. Broom or walk-in to eliminate air and gas bubbles, kinks and fishmouths. Do not build scraps into the membrane. Cut out and repair defects before end of each day's work.
- G. At completion of each day's work, install temporary night seals between new and existing roofs to maintain watertight integrity. Seal new membrane to existing and new to deck to prevent migration of moisture from existing assembly into new. Remove seals before continuing.

### 3.6 BASE FLASHING

- A. Install base flashing where roofing terminates at eaves, walls, curbs, vent stacks and other projections.
- B. Install flashings as indicated on drawings. Manufacturers details are acceptable when they exceed those indicated, but only when submitted on shop drawings and approved. Heat weld flashing in place, except set the first ply of base flashing in hot or cold asphalt as required by the manufacturer. Lap ends 4". Carry around internal and external corners and lap 4" beyond them.
- C. Scatter nail 2 plies of glass base sheet over all wood surfaces prior to installing flashing.

**NEW MEMORIAL ELEMENTARY SCHOOL  
FOR EAST BRUNSWICK SCHOOL DISTRICT**

**Design Ideas Group Architecture + Planning, LLC**

**2008-321.00**

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- D. Cut flashing strips across the sheet on plywood to avoid damaging the membrane. Torch back of sheet to remove film and liquefy bitumen. Press into place and roll to obtain solid, uniform adhesion. Use sufficient force to extrude a bead of bitumen at edges. Lap ends 3". Carry 4" around corners. Tool edges with a hot trowel.
- E. Prime all metal surfaces, including foil-faced sheets to receive flashing.
- F. Extend membrane over drain body flange. Install lead flashing in a solid trowel coat of roofing cement and turn down 1" into sump. Install clamping ring and tighten. Prime lead and strip in with two plies of modified bitumen heat welded. Install strainer and retighten clamping ring just prior to completion of the Contract.

**END OF SECTION 07 55 00**

**FORM OF GUARANTEE**

The undersigned Roofing Contractor hereby agrees for a period of 2 years after the executed date hereof, to inspect and make immediate temporary repairs required to stop leaks or correct other defects in the roofing and associated work of the project named herein, within 24 hours of notice received from the Owner by telephone, telegram or letter; and further agrees to make permanent repairs to restore or replace the work to the quality standard originally specified, within reasonable time and as weather conditions permit; and further agrees to make such temporary and permanent repairs without reference to or consideration of the cause or nature of the leaks or defect in the roofing and associated work.

Repair work required because of failure of materials or workmanship within the guarantee period will be completed by the Roofing Contractor without cost to the Owner. Repair work required because of acts of God, abuse of the work, alterations, or failure of the supporting structure of substrate (other than that resulting from defects in the roofing and associated work) and all repair work required for defects occurring beyond the expiration of the guarantee period, will be paid for by the Owner promptly after completion of the required work in each instance.

Repair work completed at the Owner's cost will be paid for by the Owner at prevailing rates, upon receipt by Owner of Roofing Contractor's itemized invoice of quantities and unit costs for labor and material, including not more than 15% mark-up for office and ship overhead and profit.

The undersigned Roofing Contractor also hereby agrees, for a period of 2 years after the date hereof, to make an annual maintenance inspection of the roofing and associated work; and to submit a written report of such inspection to the Owner, stating the nature and circumstances (if know) of damage, deterioration, unusual wear or weatherizing effects observed, and recommending maintenance work required to restore the work and prevent further deterioration. Inspection shall be made in the Spring after the likelihood of freezing weather has passed. The cost of the 2 annual inspections and reports is included in the original contract price for the roofing and associated work, and will not be paid for separately by the Owner.

Signed by \_\_\_\_\_ Date: \_\_\_\_\_

For: \_\_\_\_\_ As its \_\_\_\_\_  
(Roofing Contractor)

Signed by \_\_\_\_\_ Date: \_\_\_\_\_

For \_\_\_\_\_ As its \_\_\_\_\_  
(Owner)

Approx. Area of Roofing \_\_\_\_\_

Project Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_

**SECTION 08 71 00**

**DOOR HARDWARE**

**PART 1 - GENERAL**

**1.1 SUMMARY:**

- A. Section Includes: Finish Hardware for door openings, except as otherwise specified herein.
  - 1. Door hardware for steel (hollow metal) doors.
  - 2. Door hardware for aluminum doors.
  - 3. Door hardware for wood doors.
  - 4. Door hardware for other doors indicated.
  - 5. Keyed cylinders as indicated.
  
- B. Intent of Hardware Groups
  - 1. Should items of hardware not definitely specified be required for completion of the Work, furnish such items of type and quality comparable to adjacent hardware and appropriate for service required.
  - 2. Where items of hardware aren't definitely or correctly specified, are required for completion of the Work, a written statement of such omission, error, or other discrepancy to Architect, prior to date specified for receipt of bids for clarification by addendum; or, furnish such items in the type and quality established by this specification, and appropriate to the service intended.
  
- C. Allowances
  - 1. Refer to Division 1 for allowance amount and procedures.
  
- D. Alternates
  - 1. Refer to Division 1 for Alternates and procedures.

**1.2 SUBSTITUTIONS:**

- A. Comply with Division 1.

**1.3 SUBMITTALS:**

- A. Comply with Division 1.
  
- B. Special Submittal Requirements: Combine submittals of this Section with Sections listed below to ensure the "design intent" of the system/assembly is understood and can be reviewed together.
  
- C. Product Data: Manufacturer's specifications and technical data including the following:
  - 1. Detailed specification of construction and fabrication.
  - 2. Manufacturer's installation instructions.
  - 3. Wiring diagrams for each electric product specified. Coordinate voltage with electrical before submitting.

4. Submit 6 copies of catalog cuts with hardware schedule.
- D. Shop Drawings - Hardware Schedule: Submit 6 complete reproducible copy of detailed hardware schedule in a vertical format.
1. List groups and suffixes in proper sequence.
  2. Completely describe door and list architectural door number.
  3. Manufacturer, product name, and catalog number.
  4. Function, type, and style.
  5. Size and finish of each item.
  6. Mounting heights.
  7. Explanation of abbreviations and symbols used within schedule.
  8. Detailed wiring diagrams, specially developed for each opening, indicating all electric hardware, security equipment and access control equipment, and door and frame rough-ins required for specific opening.
- E. Templates: Submit templates and "reviewed Hardware Schedule" to door and frame supplier and others as applicable to enable proper and accurate sizing and locations of cutouts and reinforcing.
1. Templates, wiring diagrams and "reviewed Hardware Schedule" of electrical terms to electrical for coordination and verification of voltages and locations.
- F. Samples: (If requested by the Architect)
1. 1 sample of Lever and Rose/Escutcheon design, (pair).
  2. 3 samples of metal finishes
- G. Contract Closeout Submittals: Comply with Division 1 including specific requirements indicated.
1. Operating and maintenance manuals: Submit 3 sets containing the following.
    - a. Complete information in care, maintenance, and adjustment, and data on repair and replacement parts, and information on preservation of finishes.
    - b. Catalog pages for each product.
    - c. Name, address, and phone number of local representative for each manufacturer.
    - d. Parts list for each product.
  2. Copy of final hardware schedule, edited to reflect, "As installed".
  3. Copy of final keying schedule
  4. As installed "Wiring Diagrams" for each piece of hardware connected to power, both low voltage and 110 volts.
  5. One set of special tools required for maintenance and adjustment of hardware, including changing of cylinders.
- 1.4 QUALITY ASSURANCE
- A. Comply with Division 1.
1. Statement of qualification for distributor and installers.
  2. Statement of compliance with regulatory requirements and single source responsibility.
  3. Distributor's Qualifications: Firm with 3 years experience in the distribution of commercial hardware.

- a. Distributor to employ full time Architectural Hardware Consultants (AHC) for the purpose of scheduling and coordinating hardware and establishing keying schedule.
  - b. Hardware Schedule shall be prepared and signed by an AHC.
4. Installer's Qualifications: Firm with 3 years experienced in installation of similar hardware to that required for this Project, including specific requirements indicated.
  5. Regulatory Label Requirements: Provide testing agency label or stamp on hardware for labeled openings.
    - a. Provide UL listed hardware for labeled and 20 minute openings in conformance with requirements for class of opening scheduled.
    - b. Underwriters Laboratories requirements have precedence over this specification where conflict exists.
  6. Single Source Responsibility: Except where specified in hardware schedule, furnish products of only one manufacturer for each type of hardware.
- B. Review Project for extent of finish hardware required to complete the Work. Where there is a conflict between these Specifications and the existing hardware, notify the Architect in writing and furnish hardware in compliance with the Specification unless otherwise directed in writing by the Architect.
- 1.5 DELIVERY, STORAGE, AND HANDLING
- A. Packing and Shipping: Comply with Division 1.
1. Deliver products in original unopened packaging with legible manufacturer's identification.
  2. Package hardware to prevent damage during transit and storage.
  3. Mark hardware to correspond with "reviewed hardware schedule".
  4. Deliver hardware to door and frame manufacturer upon request.
- B. Storage and Protection: Comply with manufacturer's recommendations.
- 1.6 PROJECT CONDITIONS:
- A. 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 the proper installation and function, regardless of omissions or conflicts in the information on the Contract Documents.
- B. Review Shop Drawings for doors and entrances to confirm that adequate provisions will be made for the proper installation of hardware.
- 1.7 WARRANTY:
- A. Refer to Conditions of the Contract
- B. Manufacturer's Warranty:
1. Closers: Ten years
  2. Exit Devices: Three Years
  3. Locksets & Cylinders: Three years
  4. All other Hardware: Two years.

1.8 OWNER'S INSTRUCTION:

- A. Instruct Owner's personnel in operation and maintenance of hardware units.

1.9 MAINTENANCE:

- A. Extra Service Materials: Deliver to Owner extra materials from same production run as products installed. Package products with protective covering and identify with descriptive labels. Comply with Division 1 Closeout Submittals Section.
1. Special Tools: Provide special wrenches and tools applicable to each different or special hardware component.
  2. Maintenance Tools: Provide maintenance tools and accessories supplied by hardware component manufacturer.
  3. Delivery, Storage and Protection: Comply with Owner's requirements for delivery, storage and protection of extra service materials.
- B. Maintenance Service: Submit for Owner's consideration maintenance service agreement for electronic products installed.

PART 2 - PRODUCTS

2.1 MANUFACTURERS:

- A. The following manufacturers are approved subject to compliance with requirements of the Contract Documents. Approval of manufacturers other than those listed shall be in accordance with Division 1.

<u>Item:</u>	<u>Manufacturer:</u>	<u>Approved:</u>
Hinges	Stanley	Hager, McKinney
Continuous Hinges	ABH A500	Zero, Markar
Power Transfer	ABH	
Locksets, Cylinders	Best	No Substitution
Card Reader	By Security	
Door Position Switch	Security Door Controls	Sentrol
Electric Strike	HES	Trine
Push Pull Latch	ABH	
Exit Devices	Precision	Von Duprin, Corbin
Power Supply	SDC	Precision, Von Duprin
Closers	Stanley D-4551	LCN 4041, Norton 7500
Automatic Operators	Stanley D-4990	LCN 4640, Norton
Push/Pull Plates	Burns	Trimco, Rockwood
Push/Pull Bars	Burns	Trimco, Rockwood
Protection Plates	Burns	Trimco, Rockwood
Overhead Stops	ABH	Rockwood, Glynn Johnson
Door Stops	Burns	Trimco, Rockwood
Flush Bolts	ABH	Burns, Rockwood
Coordinator & Brackets	ABH	Trimco, Rockwood
Threshold & Gasketing	Reese	Zero, National Guard Products

2.2 MATERIALS:

- A. Hinges:

1. Template screw hole locations
2. Minimum of 2 permanently lubricated non-detachable bearings
3. Equip with easily seated, non-rising pins
4. Sufficient size to allow 180-degree swing of door
5. Furnish hinges with three knuckles and concealed bearings
6. Provide hinge type as listed in schedule.
7. Furnish 3 hinges per leaf to 7 foot 6 inch height. Add one for each additional 30 inches in height or fraction thereof.
8. Tested and approved by BHMA for all applicable ANSI Standards for type, size, function and finish
9. UL10C listed for Fire

**B. Pin and Barrel Continuous Hinges:**

1. Tested and approved by BHMA for ANSI A156.26-1996 Grade 1
2. Fabricated from 14 gauge material
3. UL and ULC listed for fire-rated 4' x 8' single doors and 8' x 8' pairs up to 3 hour.
4. Slim barrel design
5. Twin nylon self lubricating bearings located between all knuckles except top and bottom.
6. Two stainless steel bearings top and bottom, to prevent sagging if nylon bearings degrade during a fire.
7. Limited Lifetime warranty

**C. Cylindrical Type Locks and Latchsets:**

1. Tested and approved by BHMA for ANSI A156.2, Series 4000, Operational Grade 1, Extra-Heavy Duty, and be UL10C listed
2. Fit modified ANSI A115.2 door preparation
3. Locksets and cores to be of the same manufacturer to maintain complete lockset warranty
4. Locksets to have anti-rotational studs that are thru-bolted
5. Keyed lever shall not have exposed "keeper" hole
6. Each lever to have independent spring mechanism controlling it
7. 2-3/4 inch (70 mm) backset
8. 9/16 inch (14 mm) throw latchbolt
9. Provide sufficient curved strike lip to protect door trim
10. Outside lever sleeve to be seamless, of one-piece construction made of a hardened steel alloy
11. Keyed lever to be removable only after core is removed, by authorized control key
12. Provide locksets with 7-pin removable and interchangeable core cylinders
13. Hub, side plate, shrouded rose locking pin to be a one-piece casting with a shrouded locking lug.
14. Locksets outside locked lever must withstand a minimum 1400 inch pounds of torque. In excess of that, a replaceable part will shear. Key from outside and inside lever will still operate lockset
15. Core face must be the same finish as the lockset
16. Functions and design as indicated in the hardware groups

**D. Exit Devices shall:**

1. Tested and approved by BHMA for ANSI 156.3, Grade 1
2. Provide a deadlocking latchbolt
3. Non-fire rated exit devices shall have cylinder dogging.
4. Touchpad shall be "T" style

5. Exposed components shall be of architectural metals and finishes.
  6. Lever design shall match lockset lever design
  7. Provide strikes as required by application.
  8. Fire exit devices to be listed for UL10C
  9. UL listed for Accident Hazard
  10. Provide vandal resistant or breakaway trim
  11. Do not use thru bolts or sex bolts, coordinate blocking requirements with wood and hollow metal door Mfg.
- E. Cylinders:
1. Provide the necessary cylinder housings, collars, rings & springs as recommended by the manufacturer for proper installation.
  2. Provide the proper cylinder cams or tail piece as required to operate all locksets and other keyed hardware items listed in the hardware sets.
  3. Coordinate and provide as required for related sections.
- F. Door Closers shall:
1. Tested and approved by BHMA for ANSI 156.4, Grade 1
  2. UL10C certified
  3. Closer shall have extra-duty arms and knuckles
  4. Conform to ANSI 117.1
  5. Maximum 2 7/16 inch case projection with non-ferrous cover
  6. Separate adjusting valves for closing and latching speed, and backcheck
  7. Provide adapter plates, shim spacers and blade stop spacers as required by frame and door conditions
  8. Full rack and pinion type closer with 1½" minimum bore
  9. Mount closers on non-public side of door, unless otherwise noted in specification
  10. Closers shall be non-handed, non-sized and multi-sized.
  11. All Closers are to meet ADA 5lb opening force requirements on all applications.
  12. Do not use thru bolts or sex bolts, coordinate blocking requirements with wood and hollow metal door Mfg.
- G. Door Stops: Provide a dome floor or wall stop for every opening as listed in the hardware sets.
1. Wall stop and floor stop shall be wrought bronze, brass or stainless steel.
  2. Provide fastener suitable for wall construction.
  3. Coordinate reinforcement of walls where wall stop is specified.
  4. Provide dome stops where wall stops are not practical.
- H. Over Head Stops: Provide a Surface mounted or concealed overhead when a floor or wall stop cannot be used or when listed in the hardware set.
1. Concealed overhead stops shall be heavy duty bronze or stainless steel.
  2. Surface overhead stops shall be heavy duty bronze or stainless steel.
- I. Kickplates: Provide with four beveled edges ANSI J102, 10" inches high by width less 2 inches on single doors and 1 inch on pairs of doors. If bottom rail of door will not allow the use of a 10" kickplate adjust height of kickplate to fit. Furnish oval-head countersunk screws to match finish.
- J. Mop plates: Provide with four beveled edges ANSI J103, 4 inches high by width less 1 inch on single doors and 1 inch on pairs of doors. Furnish oval-head countersunk screws to match finish.
- K. Door Bolts: Flush bolts for wood or metal doors.

1. Provide a set of Automatic bolts ANSI/BHMA 156.3 Type 25 for hollow metal label doors.
  2. Provide a set of Automatic bolts ANSI/BHMA 156.3 Type 27 at wood label doors.
  3. Manual flush bolts ANSI/BHMA 156.16 at openings where allowed local authority.
  4. Provide Dust Proof Strike ANSI/BHMA 156.16 at doors with flush bolts without thresholds.
- L. Coordinator and Brackets: Provide a surface mounted coordinator when automatic bolts are used in the hardware set.
1. Coordinator shall comply with ANSI/BHMA A1156.3 Type 21A full width of the opening.
  2. Provide mounting brackets for soffit applied hardware.
  3. Provide hardware preparation (cutouts) for latches as necessary.
- M. Power Supply: Provide power supply for Electric Strikes
1. UL Listed for class II output
  2. Include circuit breakers for protection of motherboard
  3. 115 or 230 Volt user selectable switch, with AC input= 115 Volt at 1 Amp
  4. Control module shall include Fire alarm terminal and Auxiliary contacts for remote signaling.
  5. SDC 602RF Series.
- N. Electric Door Strike: ANSI/BHMA 156.31, Grade 1. And listed for Burglary Protections ANSI/UL1034 Grade 1.
1. For General use provide fail=secure electric strike and with fire rated device.
  2. Listed UL10C-1997 Fire Door Assemblies.
  3. Latchbolt monitor switch option when specified in hardware sets.
  4. Provide the electric strike in the appropriate model that will accept a 5/8" or 3/4" latchbolt.
- O. Door Position Switch: Provide door position switch for door status monitoring as indicated in hardware sets.
1. At all fired rated doors the door and frame hardware preparation will be provided by the door and frame manufacturer or by an authorized label service agent. Retain one of two options in both subparagraphs below. First value is from BHMA standard. Second value is available from domestic manufacturers as standard.
- P. Magnetic Door Holders: Provide magnetic door holders with Tri-Voltage that can be wired 12VDC, 24V AC/DC or 120V AC
1. Wall magnetic door holders shall be Recessed, Surface or Flush mounted.
  2. Armature shall be thru-bolted and can be provided with any projection required.
  3. Models will be available in US28.
  4. Floor mounted shall be provided for a single door or double door hold open application.
- Q. Seals: All seals shall be finished to match adjacent frame color. Seals shall be furnished as listed in schedule. Material shall be UL listed for labeled openings.
- R. Weatherstripping: Provide at head and jambs only those units where resilient or flexible seal strip is easily replaceable. Where bar-type weatherstrip is used with parallel arm mounted closers install weatherstrip first.
1. Weatherstrip shall be resilient seal of (Neoprene, Polyurethane, Vinyl, Pile, Nylon Brush, Silicone)
  2. UL10C Positive Pressure rated seal set when required.
- S. Door Bottoms/Sweeps: Surface mounted or concealed door bottom where listed in the hardware sets.
1. Door seal shall be resilient seal of (Neoprene, Polyurethane, Nylon Brush, Silicone)

2. UL10C Positive Pressure rated seal set when required.

- T. Thresholds: Thresholds shall be aluminum beveled type with maximum height of ½” for conformance with ADA requirements. Furnish as specified and per details. Provide fasteners and screws suitable for floor conditions.
- U. Key Control: MMF Key cabinet with enough hooks for 150% of all keyed cylinders provide one wall mounted key cabinet complete with hooks, index and tags.
- V. Silencers: Furnish silencers on all interior frames, 3 for single doors, 2 for pairs. Omit where any type of seals occur.

2.3 FINISH:

- A. Designations used in Schedule of Finish Hardware - 3.5, and elsewhere to indicate hardware finishes are those listed in ANSI/BHMA A156.18 including coordination with traditional U.S. finishes shown by certain manufacturers for their products
- B. Powder coat door closers to match other hardware, unless otherwise noted.
- C. Aluminum items shall be finished to match predominant adjacent material. Seals to coordinate with frame color.

2.4 KEYS AND KEYING:

- A. Provide keyed brass construction cores and keys during the construction period. Construction control and operating keys and core shall not be part of the Owner's permanent keying system or furnished in the same keyway (or key section) as the Owner's permanent keying system. Permanent cores and keys (prepared according to the accepted keying schedule) will be furnished to the Owner.
- B. Cylinders, removable and interchangeable core system: Best “Standard” 7-pin “H” Keyway.
- C. Permanent keys and cores: Stamped with the applicable key mark for identification. These visual key control marks or codes will not include the actual key cuts. Permanent keys will also be stamped "Do Not Duplicate."
- D. Transmit Grand Masterkeys, Masterkeys and other Security keys to Owner by Registered Mail, return receipt requested.
- E. Furnish keys in the following quantities:
  - 1. 1 each Grand Masterkeys
  - 2. 4 each Masterkeys
  - 3. 2 each Change keys each keyed core
  - 4. 15 each Construction masterkeys
  - 5. 1 each Control keys
- F. The Owner, or the Owner's agent, will install permanent cores and return the construction cores to the Hardware Supplier. Construction cores and keys remain the property of the Hardware Supplier.
- G. Keying Schedule: Arrange for a keying meeting, and programming meeting with Architect Owner and hardware supplier, and other involved parties to ensure locksets and locking

hardware, are functionally correct and keying and programming complies with project requirements. Furnish 3 typed copies of keying and programming schedule to Architect.

**PART 3 - EXECUTION**

**3.1 EXAMINATION**

- A. Verification of conditions: Examine doors, frames, related items and conditions under which Work is to be performed and identify conditions detrimental to proper and or timely completion.
  - 1. Do not proceed until unsatisfactory conditions have been corrected.

**3.2 HARDWARE LOCATIONS:**

- A. Mount hardware units at heights indicated in the following publications except as specifically indicated or required to comply with the governing regulations.
  - 1. Recommended Locations for Builder's Hardware for Standard Steel Doors and Frames, by the Door and Hardware Institute (DHI).
  - 2. Recommended locations for Architectural Hardware for flush wood doors (DHI).
  - 3. WDMA Industry Standard I.S.-1A-04, Industry Standard for Architectural wood flush doors.

**3.3 INSTALLATION:**

- A. Install each hardware item per manufacturer's instructions and recommendations. Do not install surface mounted items until finishes have been completed on the substrate. Set units level, plumb and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.
- B. Conform to local governing agency security ordinance.
- C. Install Conforming to ICC/ANSI A117.1 Accessible and Usable Building and Facilities.
- D. Installed hardware using the manufacturers fasteners provided. Drill and tap all screw holes located in metallic materials. Do not use "Riv-Nuts" or similar products.

**3.4 FIELD QUALITY CONTROL AND FINAL ADJUSTMENT**

- A. Contractor/Installers, Field Services: After installation is complete, contractor shall inspect the completed door openings on site to verify installation of hardware is complete and properly adjusted, in accordance with both the Contract Documents and final shop drawings.
  - 1. Check and adjust closers to ensure proper operation.
  - 2. Check latchset, lockset, and exit devices are properly installed and adjusted to ensure proper operation.
    - a. Verify levers are free from binding.
    - b. Ensure latchbolts and dead bolts are engaged into strike and hardware is functioning.

3. Report findings, in writing, to architect indicating that all hardware is installed and functioning properly. Include recommendations outlining corrective actions for improperly functioning hardware if required.

3.5 SCHEDULE OF FINISH HARDWARE:

**Manufacturer List**

<u>Code</u>	<u>Name</u>
AB	ABH Manufacturing Inc.
BE	Best Access Systems
BU	Burns Manufacturing Inc
BY	By Others
<b>HE</b>	<b>HES (Hanchett Entry Systems)</b>
PR	Precision
RS	Reese Enterprises Inc.
SD	Security Door Controls
SE	Sentrol
ST	Stanley
TR	Trimco

**Finish List**

<u>Code</u>	<u>Description</u>
26D	Satin Chrome
626	Satin Chromium Plated
628	Satin Aluminum, Clear Anodized
630	Satin Stainless Steel
689	Aluminum Painted
USP	Spray Primed
US28	Aluminum - Clear Anodized
US26D	Chromium Plated, Dull
US32D	Stainless Steel, Dull

**Option List**

<u>Code</u>	<u>Description</u>
CD	CYLINDER DOGGING
FL	Fire Exit Hardware
PT	Power Transfer Prep
ELR	ELECTRIC LATCH RETRACTION
NRP	NON REMOVEABLE PIN STD/HEAVY WT HINGE

**Hardware Sets**

**SET #1**

2	Continuous Hinge	A500	US32D	AB
<del>1</del>	<del>Continuous Hinge</del>	<del>A500 x PT</del>	<del>US32D</del>	<del>AB</del>
1	Removable Mullion	KR822	689	PR
1	Exit Device	101	630	PR
1	Exit Device	103 X 1703A	630	PR
2	Rim Cylinder	1E-72 STD	626	BE

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<del>2</del> Mortise Cylinder	<del>1E-74 STD</del>	<del>626</del>	<del>BE</del>
1 Electric Strike	9600 x 2007	630	HE
2 Door Closer	D-4551 EDA	689	ST
2 Kickplate	J102 .050 10 x 1"LDW	630	BU
NOTE: Provide 10" high kickplate or less required to fit bottom rail			
2 Overhead Stop	1020 Series	US32D	AB
1 Card Reader	BY OTHERS		BY
<del>1 Power Transfer</del>	<del>PT180</del>	<del>US32D</del>	<del>AB</del>
2 Door Contact Switch	MC-4M	628	SD
1 Power Supply	602RF		SD
1 Keypad	By Security Provider		BY
1 Weatherstrip	796A @Head and Jambs		RS
2 Door Sweep	354A		RS
2 Astragal	M35A on each leaf		RS
1 Threshold	S483AU 72"		RS

NOTE: Operational Description: Card reader releases electric strike. Intrusion detection Keypad operation specified under security system.

**SET #2**

1 Continuous Hinge	A500	US32D	AB
1 Lockset	93K-7D14DS3 STD	626	BE
1 Door Closer	D-4551 STD W/PA BRKT	689	ST
1 Overhead Stop	1020 Series	US32D	AB
1 Drop Plate	P45-180	689	ST
1 Door Contact Switch	MC-4M	628	SD
1 Weatherstrip	796A @Head and Jambs		RS
1 Door Sweep	354A		RS
1 Threshold	S205A		RS

NOTE: Door Contact switch is to be tied into security system.

**SET #3**

1 Continuous Hinge	A500	US32D	AB
1 Lockset	93K-7D14DS3 STD	626	BE
1 Door Closer	D-4551 EDA	689	ST
1 Overhead Stop	1020 Series	US32D	AB
1 Door Contact Switch	MC-4M	628	SD
1 Weatherstrip	796A @Head and Jambs		RS
1 Door Sweep	354A		RS
1 Threshold	S205A		RS

NOTE: Door Contact switch is to be tied into security system.

**SET #4**

1 Continuous Hinge	A500	US32D	AB
1 Exit Device	103 X 1703A	630	PR
1 Rim Cylinder	1E-72 STD	626	BE
<del>1 Mortise Cylinder</del>	<del>1E-74 STD</del>	<del>626</del>	<del>BE</del>
1 Door Closer	D-4551 EDA	689	ST
1 Overhead Stop	1020 Series	US32D	AB
1 Spacer Block	P45HD-110	689	ST
1 Drop Plate	P45-180	689	ST
1 Weatherstrip-Gasket	By Alum Door Mfg.		BY

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**2008-32**

1 Door Sweep	354A		RS
1 Threshold	S205A		RS

**SET #5**

2 Continuous Hinge	A500	US32D	AB
<del>1 Removable Mullion</del>	<del>FLKR822</del>	<del>689</del>	<del>PR</del>
<b>1 Removable Mullion</b>	<b>KR822</b>	<b>689</b>	<b>PR</b>
<del>1 Exit Device</del>	<del>FL101</del>	<del>630</del>	<del>PR</del>
<del>1 Exit Device</del>	<del>FL103 X 1703A</del>	<del>630</del>	<del>PR</del>
<b>1 Exit Device</b>	<b>101</b>	<b>630</b>	<b>PR</b>
<b>1 Exit Device</b>	<b>103 X 1703A</b>	<b>630</b>	<b>PR</b>
2 Rim Cylinder	1E-72 STD	626	BE
2 Door Closer	D-4551 CS	689	ST
2 Kickplate	J102 .050 10 x 1"LDW	630	BU
	NOTE: Provide 10" high kickplate or less required to fit bottom rail		
2 Door Contact Switch	MC-4M	628	SD
1 Weatherstrip	796A @Head and Jambs		RS
2 Door Sweep	354A		RS
2 Astragal	M35A on each leaf		RS
1 Threshold	S483AU 72"		RS

NOTE: Door Contact switch is to be tied into security system.

**SET #6**

2 Continuous Hinge	A500	US32D	AB
1 Removable Mullion	KR822	689	PR
1 Exit Device	101	630	PR
1 Exit Device	103 X 1703A	630	PR
2 Rim Cylinder	1E-72 STD	626	BE
<del>2 Mortise Cylinder</del>	<del>1E-74 STD</del>	<del>626</del>	<del>BE</del>
2 Door Closer	D-4551 EDA	689	ST
2 Kickplate	J102 .050 10 x 1"LDW	630	BU
	NOTE: Provide 10" high kickplate or less required to fit bottom rail		
2 Overhead Stop	1020 Series	US32D	AB
2 Door Contact Switch	MC-4M	628	SD
1 Weatherstrip	796A @Head and Jambs		RS
2 Door Sweep	354A		RS
2 Astragal	M35A on each leaf		RS
1 Threshold	S483AU 72"		RS

NOTE: Door Contact switch is to be tied into security system.

**SET #7**

2 Continuous Hinge	A500	US32D	AB
1 Removable Mullion	KR822	689	PR
1 Exit Device	101	630	PR
1 Exit Device	108 X Y4908D	630	PR
2 Rim Cylinder	1E-72 STD	626	BE
<del>2 Mortise Cylinder</del>	<del>1E-74 STD</del>	<del>626</del>	<del>BE</del>
2 Door Closer	D-4551 T	689	ST
2 Kickplate	J102 .050 10 x 1"LDW	630	BU
	NOTE: Provide 10" high kickplate or less required to fit bottom rail		
2 Overhead Stop	1020 Series	US32D	AB
2 Door Contact Switch	MC-4M	628	SD

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1 Weatherstrip	796A @Head and Jambs	RS
2 Astragal	M35A on each leaf	RS
1 Threshold	S483AU 72"	RS

NOTE: Door Contact switch is to be tied into security system.

**SET #8**

1 Continuous Hinge	A500	US32D	AB
1 Exit Device	103 X 1703A	630	PR
1 Rim Cylinder	1E-72 STD	626	BE
<del>1 Mortise Cylinder</del>	<del>1E-74 STD</del>	<del>626</del>	<del>BE</del>
1 Door Closer	D-4551 EDA	689	ST
1 Kick Plate	J102 .050 10 x 2" LDW	630	BU
NOTE: Provide 10" Kickplate or less as required to fit bottom rail			
1 Wall Stop	575	630	BU
1 Door Contact Switch	MC-4M	628	SD
1 Weatherstrip	796A @Head and Jambs	RS	
1 Door Sweep	354A	RS	
1 Threshold	S483AU 72"	RS	

NOTE: Door Contact switch is to be tied into security system.

**SET #9**

2 Continuous Hinge	A500	US32D	AB
1 Removable Mullion	KR822	689	PR
1 Exit Device	101	630	PR
1 Exit Device	103 X 1703A	630	PR
2 Rim Cylinder	1E-72 STD	626	BE
<del>2 Mortise Cylinder</del>	<del>1E-74 STD</del>	<del>626</del>	<del>BE</del>
2 Door Closer	D-4551 EDA	689	ST
2 Kickplate	J102 .050 10 x 1"LDW	630	BU
NOTE: Provide 10" high kickplate or less required to fit bottom rail			
2 Overhead Stop	1020 Series	US32D	AB
2 Door Contact Switch	MC-4M	628	SD
1 Weatherstrip	796A @Head and Jambs	RS	
2 Astragal	M35A on each leaf	RS	
1 Threshold	S483AU 72"	RS	

NOTE: Door Contact switch is to be tied into security system.

**SET #10**

2 Continuous Hinge	A500	US32D	AB
<del>1 Continuous Hinge</del>	<del>A500 x PT</del>	<del>US32D</del>	<del>AB</del>
1 Removable Mullion	KR822	689	PR
1 Exit Device	101	630	PR
1 Exit Device	103 X 1703A	630	PR
2 Rim Cylinder	1E-72 STD	626	BE
<del>2 Mortise Cylinder</del>	<del>1E-74 STD</del>	<del>626</del>	<del>BE</del>
1 Electric Strike	9600 x 2700	630	HE
2 Door Closer	D-4551 EDA	689	ST
2 Kickplate	J102 .050 10 x 1"LDW	630	BU
NOTE: Provide 10" high kickplate or less required to fit bottom rail			
2 Overhead Stop	1020 Series	US32D	AB
1 Card Reader	BY OTHERS		BY

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<del>1</del> Power Transfer	<del>PT180</del>	<del>US32D</del>	<del>AB</del>
2 Door Contact Switch	MC-4M	628	SD
1 Power Supply	602RF		PR
1 Weatherstrip	796A @Head and Jambs		RS
2 Astragal	M35A on each leaf		RS
1 Threshold	S483AU 72"		RS

NOTE: Operational Description: Card reader releases electric strike.

**SET #11**

NOTE: Exterior Gates all hardware by gate Mfg.

**SET #12**

1 Magnetic Contact	2204	628	SE
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NOTE: Door Contact switch is to be tied into security system. Roll-up door. Provide magnetic contact balance of hardware by Roll-up door Mfg.

**SET #13**

1 Continuous Hinge	A500	US32D	AB
1 Lockset	93K-7D14DS3 STD	626	BE
1 Door Closer	D-4551 T	689	ST
1 Wall Stop	575	630	BU
1 Door Contact Switch	MC-4M	628	SD
1 Weatherstrip	796A @Head and Jambs		RS
1 Door Sweep	354A		RS
1 Threshold	S205A		RS

NOTE: Door Contact switch is to be tied into security system.

**SET #14**

1 Continuous Hinge	A500	US32D	AB
<del>1 Exit Device</del>	<del>FL103 X 1703A</del>	<del>630</del>	<del>PR</del>
<b>1 Exit Device</b>	<b>103 X 1703A</b>	<b>630</b>	<b>PR</b>
1 Rim Cylinder	1E-72 STD	626	BE
1 Door Closer	D-4551 CS	689	ST
1 Door Contact Switch	MC-4M	628	SD
1 Weatherstrip	796A @Head and Jambs		RS
1 Door Sweep	354A		RS
1 Threshold	S205A		RS

**SET #15**

1 Continuous Hinge	A500	US32D	AB
1 Lockset	93K-7D14DS3 STD	626	BE
1 Door Closer	D-4551 AVB CS	689	ST
1 Door Contact Switch	MC-4M	628	SD
1 Weatherstrip	796A @Head and Jambs		RS
1 Door Sweep	354A		RS
1 Threshold	S205A		RS

NOTE: Door Contact switch is to be tied into security system.

**SET #16**

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1 Continuous Hinge	A500	US32D	AB
1 Exit Device	101 X 1701	630	PR
1 Door Closer	D-4550 AVB CS	689	ST
1 Door Contact Switch	MC-4M	628	SD
1 Weatherstrip	796A @Head and Jambs		RS
1 Door Sweep	354A		RS
1 Threshold	S205A		RS

**NOTE: Door Contact switch is to be tied into security system.**

**SET #100**

4 Hinges	CB1901R 4 1/2 x 4 1/2 NRP	26D	ST
1 Lockset	93K-7AB14DS3 STD	626	BE
1 Wall Stop	575	630	BU
1 Sound Gasketing	770A @Head and Jambs		RS
1 Auto Door Bottom	430A		RS

**SET #101**

4 Hinges	CB1900R 4 1/2 x 4 1/2	26D	ST
1 Privacy Set	93K-0L14DS3	626	BE
1 Wall Stop	575	630	BU
3 Silencer	500		BU

**SET #102**

4 Hinges	CB1900R 4 1/2 x 4 1/2	26D	ST
1 Lockset	93K-7D14DS3 STD	626	BE
1 Door Closer	D-4551 T	689	ST
1 Kick Plate	J102 .050 10 x 2" LDW	630	BU
	NOTE: Provide 10" Kickplate or less as required to fit bottom rail		
1 Wall Stop	575	630	BU
1 Smoke Seal	797B @Head & Jambs		RS

**SET #103**

4 Hinges	CB1900R 4 1/2 x 4 1/2	26D	ST
1 Lockset	93K-7D14DS3 STD	626	BE
1 Door Closer	D-4551 T	689	ST
1 Kick Plate	J102 .050 10 x 2" LDW	630	BU
	NOTE: Provide 10" Kickplate or less as required to fit bottom rail		
1 Wall Stop	575	630	BU
1 Smoke Seal	797B @Head & Jambs		RS
	NOTE: Omit Gasketing and provide Silences if rooms are less than 100 Sq.Ft.		

**SET #104**

4 Hinges	CB1900R 4 1/2 x 4 1/2 NRP	26D	ST
1 Lockset	93K-7D14DS3 STD	626	BE
1 Door Closer	D-4551 EDA	689	ST
1 Kick Plate	J102 .050 10 x 2" LDW	630	BU
	NOTE: Provide 10" Kickplate or less as required to fit bottom rail		
1 Wall Stop	575	630	BU
1 Smoke Seal	797B @Head & Jambs		RS
	NOTE: Omit Gasketing at doors 102DR-A, CB222-A and provide Silencers		

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**SET #105**

1 Door Contact By Security Provider BY

NOTE: Roof Hatch all hardware by Hatch Door Mfg. Refer to Security plans Security devices by others as indicated.

**SET #106**

4 Hinges	CB1900R 4 1/2 x 4 1/2	26D	ST
1 Privacy Set	93K-0L14DS3	626	BE
1 Door Closer	D-4551 T	689	ST
1 Kick Plate	J102 .050 10 x 2" LDW	630	BU
NOTE: Provide 10" Kickplate or less as required to fit bottom rail			
1 Mop Plate	J103 .050 4 x 1"LDW	630	BU
1 Wall Stop	575	630	BU
3 Silencer	500		BU

**SET #107**

4 Hinges	CB1901R 4 1/2 x 4 1/2 NRP	26D	ST
1 Push/Pull Lockset	6656	US26D	AB
1 Mortise Cylinder	1E-74 STD	626	BE
1 Door Closer	D-4551 T	689	ST
1 Kick Plate	J102 .050 10 x 2" LDW	630	BU
NOTE: Provide 10" Kickplate or less as required to fit bottom rail			
1 Mop Plate	J103 .050 4 x 1"LDW	630	BU
1 Stop	520 or 575 as Req.	626	BU
3 Silencer	500		BU

**SET #108**

4 Hinges	CB1900R 4 1/2 x 4 1/2 NRP	26D	ST
1 Lockset	93K-7D14DS3 STD	626	BE
1 Door Closer	D-4551 CS	689	ST
1 Kick Plate	J102 .050 10 x 2" LDW	630	BU
NOTE: Provide 10" Kickplate or less as required to fit bottom rail			
1 Door Contact Switch	MC-4M	628	SD
3 Silencer	500		BU

NOTE: Door Contact switch is to be tied into security system.

**SET #109**

1 Continuous Hinge	A500	US32D	AB
1 Exit Device	FL 114 X Y4914D	630	PR
1 Door Closer	D-4551 T	689	ST
1 Kick Plate	J102 .050 10 x 2" LDW	630	BU
NOTE: Provide 10" Kickplate or less as required to fit bottom rail			
1 Wall Stop	575	630	BU
1 Door Contact Switch	MC-4M	628	SD
1 Smoke Seal	797B @Head & Jambs		RS

NOTE: Door Contact switch is to be tied into security system.

**SET #110**

8 Hinges	CB1901R 4 1/2 x 4 1/2	26D	ST
1 Removable Mullion	FLKR822	689	PR

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2	Exit Device	FL 114 X Y4914D	630	PR
1	Rim Cylinder	1E-72 STD	626	BE
2	Door Closer	D-4551 EDA	689	ST
		NOTE: Mount for 180 Deg swing		
2	Kickplate	J102 .050 10 x 1"LDW	630	BU
		NOTE: Provide 10" high kickplate or less required to fit bottom rail		
2	Stop	520 or 575 as Req.	626	BU
1	Smoke Seal	797B @Head & Jambs		RS
2	Astragal	M35A on each leaf		RS

**SET #111**

2	Continuous Hinge	A500	US32D	AB
1	Removable Mullion	FLKR822	689	PR
2	Exit Device	FL 114 X Y4914D	630	PR
1	Rim Cylinder	1E-72 STD	626	BE
2	Magnetic Holder	2100	US28	AB
2	Door Closer	D-4551 T	689	ST
2	Kickplate	J102 .050 10 x 1"LDW	630	BU
		NOTE: Provide 10" high kickplate or less required to fit bottom rail		
1	Smoke Seal	797B @Head & Jambs		RS
2	Astragal	M35A on each leaf		RS

NOTE: Magnetic holder are to be tied into the fire alarm system.

**SET #112**

4	Hinges	CB1900R 4 1/2 x 4 1/2 NRP	26D	ST
1	Lockset	93K-7R14DS3 STD	626	BE
1	Door Closer	D-4551 EDA	689	ST
1	Kick Plate	J102 .050 10 x 2" LDW	630	BU
		NOTE: Provide 10" Kickplate or less as required to fit bottom rail		
1	Wall Stop	575	630	BU
1	Sound Gasketing	770A @Head and Jambs		RS
1	Auto Door Bottom	430A		RS

**SET #113**

4	Hinges	CB1900R 4 1/2 x 4 1/2 NRP	26D	ST
1	Lockset	93K-7D14DS3 STD	626	BE
1	Door Closer	D-4551 EDA	689	ST
1	Kick Plate	J102 .050 10 x 2" LDW	630	BU
		NOTE: Provide 10" Kickplate or less as required to fit bottom rail		
1	Wall Stop	575	630	BU
1	Smoke Seal	797B @Head & Jambs		RS

**SET #114**

4	Hinges	CB1901R 4 1/2 x 4 1/2	26D	ST
1	Lockset	93K-7D14DS3 STD	626	BE
1	Door Closer	D-4551 T	689	ST
1	Kick Plate	J102 .050 10 x 2" LDW	630	BU
		NOTE: Provide 10" Kickplate or less as required to fit bottom rail		
1	Wall Stop	575	630	BU
1	Smoke Seal	797B @Head & Jambs		RS

**SET #115**

4	Hinges	CB1901R 4 1/2 x 4 1/2	26D	ST
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1 Lockset	93K-7D14DS3 STD	626	BE
1 Door Closer	D-4551 T	689	ST
1 Kick Plate	J102 .050 10 x 2" LDW	630	BU
NOTE: Provide 10" Kickplate or less as required to fit bottom rail			
1 Wall Stop	575	630	BU
1 Door Contact Switch	MC-4M	628	SD
1 Smoke Seal	797B @Head & Jambs		RS

NOTE: Door Contact switch is to be tied into security system.

**SET #116**

4 Hinges	CB1900R 4 1/2 x 4 1/2	26D	ST
1 Lockset	93K-7AB14DS3 STD	626	BE
1 Wall Stop	575	630	BU
1 Sound Gasketing	770A @Head and Jambs		RS
1 Auto Door Bottom	430A		RS

**SET #117**

4 Hinges	CB1900R 4 1/2 x 4 1/2	26D	ST
1 Lockset	93K-7R14DS3 STD	626	BE
1 Door Closer	D-4551 T	689	ST
1 Wall Stop	575	630	BU
1 Sound Gasketing	770A @Head and Jambs		RS
1 Auto Door Bottom	430A		RS

**SET #118**

4 Hinges	CB1900R 4 1/2 x 4 1/2	26D	ST
1 Passage Set	93K-0N14DS3	626	BE
1 Wall Stop	575	630	BU
1 Sound Gasketing	770A @Head and Jambs		RS
1 Auto Door Bottom	430A		RS

**SET #119**

4 Hinges	CB1900R 4 1/2 x 4 1/2 NRP	26D	ST
1 Lockset	93K-7R14DS3 STD	626	BE
1 Door Closer	D-4551 EDA	689	ST
1 Kick Plate	J102 .050 10 x 2" LDW	630	BU
NOTE: Provide 10" Kickplate or less as required to fit bottom rail			
1 Wall Stop	575	630	BU
3 Silencer	500		BU

**SET #120**

4 Hinges	CB1900R 4 1/2 x 4 1/2	26D	ST
1 Lockset	93K-7D14DS3 STD	626	BE
1 Wall Stop	575	630	BU
3 Silencer	500		BU

**SET #121**

4 Hinges	CB1900R 4 1/2 x 4 1/2	26D	ST
1 Privacy Set	93K-0L14DS3	626	BE
1 Wall Stop	575	630	BU
1 Sound Gasketing	770A @Head and Jambs		RS
1 Auto Door Bottom	430A		RS

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**SET #122**

4 Hinges	CB1900R 4 1/2 x 4 1/2	26D	ST
1 Privacy Set	93K-0L14DS3	626	BE
1 Kick Plate	J102 .050 10 x 2" LDW	630	BU
NOTE: Provide 10" Kickplate or less as required to fit bottom rail			
1 Mop Plate	J103 .050 4 x 1"LDW	630	BU
1 Wall Stop	575	630	BU
3 Silencer	500		BU

**SET #123 - STC 30**

4 Hinges	CB1901R 4 1/2 x 4 1/2 NRP	26D	ST
1 Lockset	93K-7AB14DS3 STD	626	BE
1 Door Closer	D-4551 EDA	689	ST
1 Kick Plate	J102 .050 10 x 2" LDW	630	BU
NOTE: Provide 10" Kickplate or less as required to fit bottom rail			
1 Wall Stop	575	630	BU
1 Sound Gasketing	770A @Head and Jambs		RS
1 Auto Door Bottom	430A		RS

**SET #124 - STC 30**

4 Hinges	CB1901R 4 1/2 x 4 1/2	26D	ST
1 Lockset	93K-7AB14DS3 STD	626	BE
1 Door Closer	D-4551 T	689	ST
1 Kick Plate	J102 .050 10 x 2" LDW	630	BU
NOTE: Provide 10" Kickplate or less as required to fit bottom rail			
1 Stop	520 or 575 as Req.	626	BU
1 Sound Gasketing	770A @Head and Jambs		RS
1 Auto Door Bottom	430A		RS

**SET #125**

4 Hinges	CB1900R 4 1/2 x 4 1/2	26D	ST
1 Lockset	93K-7R14DS3 STD	626	BE
1 Wall Stop	575	630	BU
3 Silencer	500		BU

**SET #126 - STC 30**

8 Hinges	CB1901R 4 1/2 x 4 1/2 NRP	26D	ST
1 Removable Mullion	KR822	689	PR
1 Exit Device	101	630	PR
1 Exit Device	108 X Y4908D	630	PR
2 Rim Cylinder	1E-72 STD	626	BE
<del>2 Mortise Cylinder</del>	<del>1E-74 STD</del>	<del>626</del>	<del>BE</del>
2 Door Closer	D-4551 EDA	689	ST
2 Kickplate	J102 .050 10 x 1"LDW	630	BU
NOTE: Provide 10" high kickplate or less required to fit bottom rail			
1 Wall Stop	575	630	BU
1 Overhead Stop	1020 Series	US32D	AB
1 Sound Gasketing Set	770A @Head Jambs and Mullion		RS
NOTE: Mount gasketing on both sides of mullion			
2 Auto Door Bottom	430A		RS

**SET #127**

4 Hinges	CB1900R 4 1/2 x 4 1/2	26D	ST
1 Lockset	93K-7D14DS3 STD	626	BE

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1 Door Closer	D-4551 T	689	ST
1 Kick Plate	J102 .050 10 x 2" LDW	630	BU
NOTE: Provide 10" Kickplate or less as required to fit bottom rail			
1 Wall Stop	575	630	BU
1 Sound Gasketing	770A @Head and Jambs		RS
1 Auto Door Bottom	430A		RS

**SET #128**

8 Hinges	CB1901R 4 1/2 x 4 1/2	26D	ST
1 Auto Flush Bolt Set	1862P	US32D	AB
1 Lockset	93K-7R14DS3 STD	626	BE
1 Coordinator	3720 Series	USP	AB
2 Door Closer	D-4551 T	689	ST
2 Kickplate	J102 .050 10 x 1"LDW	630	BU
NOTE: Provide 10" high kickplate or less required to fit bottom rail			
2 Wall Stop	575	630	BU
1 Astragal	183SP		RS
2 Silencer	500		BU

**SET #129**

4 Hinges	CB1901R 4 1/2 x 4 1/2	26D	ST
1 Lockset	93K-7AB14DS3 STD	626	BE
1 Wall Stop	575	630	BU
1 Sound Gasketing	770A @Head and Jambs		RS
1 Auto Door Bottom	430A		RS

**SET #130 - STC 40**

4 Hinges	CB1901R 4 1/2 x 4 1/2 NRP	26D	ST
1 Lockset	93K-7AB14DS3 STD	626	BE
1 Door Closer	D-4551 x Soffit Bracket	689	ST
1 Soffit Bracket	P45-113	689	ST
1 Kick Plate	J102 .050 10 x 2" LDW	630	BU
NOTE: Provide 10" Kickplate or less as required to fit bottom rail			
1 Wall Stop	575	630	BU
1 Adj. Sound Seal	499C @Head and Jambs		RS
1 Auto Door Bottom	521C		RS

**SET #131 - STC 30 Gasketing**

4 Hinges	CB1901R 4 1/2 x 4 1/2 NRP	26D	ST
1 Lockset	93K-7D14DS3 STD	626	BE
1 Door Closer	D-4551 x Soffit Bracket	689	ST
1 Soffit Bracket	P45-113	689	ST
1 Kick Plate	J102 .050 10 x 2" LDW	630	BU
NOTE: Provide 10" Kickplate or less as required to fit bottom rail			
1 Wall Stop	575	630	BU
1 Sound Gasketing	770A @Head and Jambs		RS
1 Auto Door Bottom	430A		RS

**SET #132**

4 Hinges	CB1900R 4 1/2 x 4 1/2 NRP	26D	ST
1 Lockset	93K-7R14DS3 STD	626	BE
1 Kick Plate	J102 .050 10 x 2" LDW	630	BU
NOTE: Provide 10" Kickplate or less as required to fit bottom rail			
1 Overhead Stop	1020 Series	US32D	AB

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3 Silencer 500 BU

**SET #133 - STC 35**

4 Hinges CB1900R 4 1/2 x 4 1/2 NRP 26D ST  
 1 Lockset 93K-7D14DS3 STD 626 BE  
 1 Door Closer D-4551 EDA 689 ST  
 1 Kick Plate J102 .050 10 x 2" LDW 630 BU  
 NOTE: Provide 10" Kickplate or less as required to fit bottom rail  
 1 Stop 520 or 575 as Req. 626 BU  
 1 Sound Gasketing 770A @Head and Jambs RS  
 1 Auto Door Bottom 430A RS

**SET #134**

4 Hinges CB1900R 4 1/2 x 4 1/2 26D ST  
 1 Lockset 93K-7R14DS3 STD 626 BE  
 1 Door Closer D-4551 T 689 ST  
 1 Kick Plate J102 .050 10 x 2" LDW 630 BU  
 NOTE: Provide 10" Kickplate or less as required to fit bottom rail  
 1 Wall Stop 575 630 BU  
 3 Silencer 500 BU

**SET #135**

8 Hinges CB1901R 4 1/2 x 4 1/2 NRP 26D ST  
 1 Removable Mullion KR822 689 PR  
 1 Exit Device 101 630 PR  
 1 Exit Device 108 X Y4908D 630 PR  
 2 Rim Cylinder 1E-72 STD 626 BE  
~~2 Mortise Cylinder 1E-74 STD 626 BE~~  
 2 Door Closer D-4551 EDA 689 ST  
 2 Kickplate J102 .050 10 x 1"LDW 630 BU  
 NOTE: Provide 10" high kickplate or less required to fit bottom rail  
 2 Overhead Stop 1020 Series US32D AB  
 2 Silencer 500 BU

**SET #136**

4 Hinges CB1900R 4 1/2 x 4 1/2 26D ST  
 1 Passage Set 93K-0N14DS3 626 BE  
 1 Door Closer D-4551 T 689 ST  
 1 Kick Plate J102 .050 10 x 2" LDW 630 BU  
 NOTE: Provide 10" Kickplate or less as required to fit bottom rail  
 1 Wall Stop 575 630 BU  
 3 Silencer 500 BU

**SET #137**

8 Hinges CB1901R 4 1/2 x 4 1/2 NRP 26D ST  
 1 Auto Flush Bolt Set 1862P US32D AB  
 1 Lockset 93K-7D14DS3 STD 626 BE  
 1 Coordinator 3720 Series USP AB  
 2 Door Closer D-4551 EDA 689 ST  
 2 Kickplate J102 .050 10 x 1"LDW 630 BU  
 NOTE: Provide 10" high kickplate or less required to fit bottom rail  
 2 Wall Stop 575 630 BU  
 2 Mounting Bracket 3751 or 3752 as Req. AB  
 1 Smoke Seal 797B @Head & Jambs RS

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1 Astragal 183SP RS

**SET #138**

4 Hinges CB1900R 4 1/2 x 4 1/2 NRP 26D ST  
 1 Lockset 93K-7R14DS3 STD 626 BE  
 1 Door Closer D-4551 EDA 689 ST  
 1 Kickplate J102 .050 10 x 1"LDW 630 BU  
 NOTE: Provide 10" high kickplate or less required to fit bottom rail  
 1 Overhead Stop 1020 Series US32D AB  
 3 Silencer 500 BU

**SET #139**

4 Hinges CB1900R 4 1/2 x 4 1/2 NRP 26D ST  
 1 Exit Device FL 103 X 4903D 630 PR  
 1 Rim Cylinder 1E-72 STD 626 BE  
 1 Door Closer D-4551 EDA 689 ST  
 1 Kick Plate J102 .050 10 x 2" LDW 630 BU  
 NOTE: Provide 10" Kickplate or less as required to fit bottom rail  
 1 Wall Stop 575 630 BU  
 1 Smoke Seal 797B @Head & Jambs RS

**SET #140**

4 Hinges CB1900R 4 1/2 x 4 1/2 26D ST  
 1 Lockset 93K-7R14DS3 STD 626 BE  
 1 Kick Plate J102 .050 10 x 2" LDW 630 BU  
 NOTE: Provide 10" Kickplate or less as required to fit bottom rail  
 1 Wall Stop 575 630 BU  
 3 Silencer 500 BU

**SET #141**

NOTE: Roll-up door all hardware by the Roll up door Mfg.

**SET #142**

4 Hinges CB1901R 4 1/2 x 4 1/2 26D ST  
 1 Lockset 93K-7R14DS3 STD 626 BE  
 1 Closer with Holder D-4551 HT 689 ST  
 1 Kick Plate J102 .050 10 x 2" LDW 630 BU  
 NOTE: Provide 10" Kickplate or less as required to fit bottom rail  
 1 Wall Stop 575 630 BU  
 3 Silencer 500 BU

**SET #143**

4 Hinges CB1900R 4 1/2 x 4 1/2 26D ST  
 1 Passage Set 93K-0N14DS3 626 BE  
 1 Door Closer D-4551 EDA 689 ST  
 1 Kick Plate J102 .050 10 x 2" LDW 630 BU  
 NOTE: Provide 10" Kickplate or less as required to fit bottom rail  
 1 Wall Stop 575 630 BU  
 3 Silencer 500 BU

**SET #144**

4 Hinges CB1900R 4 1/2 x 4 1/2 NRP 26D ST  
 1 Lockset 93K-7R14DS3 STD 626 BE

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1 Door Closer	D-4551 EDA	689	ST
1 Kick Plate	J102 .050 10 x 2" LDW	630	BU

NOTE: Provide 10" Kickplate or less as required to fit bottom rail

<del>1 Overhead Stop</del>	<del>1020 Series</del>	<del>US32D</del>	<del>AB</del>
<b>1 Wall Stop</b>	<b>575</b>	<b>630</b>	<b>BU</b>
3 Silencer	500		BU

**SET #145**

<del>8 Hinges</del>	<del>CB1901R 4 1/2 x 4 1/2</del>	<del>26D</del>	<del>ST</del>
10 Wide Throw Hinges	WT FBB168 5 x 8 NRP	26D	ST
2 Flush Bolt	1855S 18" Top Rod x 12" Bottom	US32D	AB
<del>1 Lockset</del>	<del>45H-7XR14H STD</del>	<del>630</del>	<del>BE</del>
1 Deadlock	48H-7L STD	626	BE

NOTE: Mount Flush pull ring on Gymnasium side

<del>1 Flush Pull</del>	<del>1066S-516</del>	<del>626</del>	<del>TR</del>
1 Flush Pull	1115	630	TR
<del>2 Door Closer</del>	<del>D-4551 EDA</del>	<del>689</del>	<del>ST</del>
<del>2 Wall Stop</del>	<del>575</del>	<del>630</del>	<del>BU</del>
2 Silencer	500		BU

**SET #146**

8 Hinges	CB1901R 4 1/2 x 4 1/2	26D	ST
1 Auto Flush Bolt Set	1862P	US32D	AB
1 Lockset	45H-7XR14H STD	630	BE
2 Flush Pull	1066S-516	626	TR
1 Coordinator	3720 Series	USP	AB
2 Door Closer	D-4551 STD W/PA BRKT	689	ST

NOTE: Mount closers for 180 Deg. swing

2 Wall Stop	575	630	BU
1 Smoke Seal	797B @Head & Jambs		RS
1 Astragal	183SP x 797B		RS

NOTE: Mount on active door inside storage room.

**SET #147**

4 Hinges	CB1900R 4 1/2 x 4 1/2	26D	ST
1 Lockset	93K-7AB14DS3 STD	626	BE
1 Door Closer	D-4551 T	689	ST
1 Wall Stop	575	630	BU
1 Sound Gasketing	770A @Head and Jambs		RS
1 Auto Door Bottom	430A		RS

**SET #148**

4 Hinges	CB1900R 4 1/2 x 4 1/2 NRP	26D	ST
1 Lockset	93K-7R14DS3 STD	626	BE
1 Door Closer	D-4551 EDA	689	ST
1 Kick Plate	J102 .050 10 x 2" LDW	630	BU

NOTE: Provide 10" Kickplate or less as required to fit bottom rail

1 Overhead Stop	1020 Series	US32D	AB
1 Smoke Seal	797B @Head & Jambs		RS

**SET #149**

4 Hinges	CB1900R 4 1/2 x 4 1/2	26D	ST
1 Lockset	93K-7R14DS3 STD	626	BE
1 Door Closer	D-4551 T	689	ST

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1 Kick Plate	J102 .050 10 x 2" LDW	630	BU
	NOTE: Provide 10" Kickplate or less as required to fit bottom rail		
1 Wall Stop	575	630	BU
1 Smoke Seal	797B @Head & Jambs		RS

**SET #150**

4 Hinges	CB1900R 4 1/2 x 4 1/2	26D	ST
1 Lockset	93K-7D14DS3 STD	626	BE
1 Door Closer	D-4551 T	689	ST
1 Wall Stop	575	630	BU
1 Smoke Seal	797B @Head & Jambs		RS

**SET #151**

4 Hinges	CB1901R 4 1/2 x 4 1/2	26D	ST
1 Lockset	93K-7R14DS3 STD	626	BE
1 Door Closer	D-4551 T	689	ST
1 Kick Plate	J102 .050 10 x 2" LDW	630	BU
	NOTE: Provide 10" Kickplate or less as required to fit bottom rail		
1 Wall Stop	575	630	BU
3 Silencer	500		BU

**SET #152**

4 Hinges	CB1900R 4 1/2 x 4 1/2	26D	ST
1 Lockset	93K-7D14DS3 STD	626	BE
1 Door Closer	D-4551 T	689	ST
1 Kick Plate	J102 .050 10 x 2" LDW	630	BU
1 Wall Stop	575	630	BU
3 Silencer	500		BU

**Opening List**

<u>Opening</u>	<u>Hdw Set</u>	<u>Opening Label</u>
100OS-A	116	
<b>100SS-A</b>	<b>141</b>	
101OS-A	112	
101OS-B	112	
101OS-C	112	
102DR-A	104	
102MC-A	126	
102ME-A	104	60
103HS-A	117	
104TL-A	123	
104TL-B	124	
105GY-A	126	
105GY-B	135	
105GY-C	135	
105GY-D	146	
105GY-S	145	
106CJ-A	103	
106SR-A	112	
107BT-A	107	
107DR-A	106	
107GT-A	107	
107TR-A	106	
108SG-A	130	
109CL-A	130	
110CA-A	128	
110CA-B	142	
110CA-C	126	
110CA-D	135	
110CA-E	135	
111CL-A	129	
112BR-A	102	60
112ES-A	139	60
112ES-B	139	60
112SS-A	127	60
112TR-A	106	
113DR-A	103	
113ES-A	102	60
113SG-A	100	
114CL-A	100	
115CL-A	100	
115CS-A	103	
116CL-A	100	
117CL-A	100	
118CL-A	100	
119SG-A	100	
120SG-A	100	
121CL-A	100	
122CL-A	100	

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123CL-A	100	
124CL-A	100	
124TR-A	106	
125CL-A	100	
126BT-A	107	
126GT-A	107	
127CL-A	100	
128CL-A	100	
128TR-A	106	
129CL-A	100	
129DR-A	103	
129ES-A	104	60
130CL-A	100	
131CJ-A	113	
131CS-A	103	
131SG-A	100	
132WR-A	112	
133SG-A	100	
134CL-A	100	
201ME-A	2	60
202ME-A	3	60
203CL-A	100	
204CL-A	100	
205CL-A	100	
205CS-A	152	
205DR-A	103	
206CL-A	100	
207CL-A	100	
208CL-A	100	
209SG-A	100	
210SG-A	100	
211CL-A	100	
212CL-A	100	
213CL-A	100	
214CL-A	100	
214TR-A	106	
215CL-A	100	
216BT-A	107	
216GT-A	107	
217CL-A	100	
218CL-A	100	
218TR-A	106	
219CL-A	100	
219CS-A	152	
219DR-A	103	
219ES-A	104	60
220CL-A	100	
221SG-A	100	
222RA-A	105	– Changed from swinging to Roof Hatch.
223CL-A	100	
224CL-A	100	
BT105-A	107	
C10-A	9	
C10-B	10	

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C11-A	111	120
C11-B	110	60
<b>C11-C</b>	<b>141</b>	
C12-A	110	60
C13-A	111	120
<b>C13-B</b>	<b>141</b>	
C14-A	119	
C15-A	151	
C20-A	110	60
C21-A	110	60
CB222-A	104	
CJ110-A	140	
CR100-A	118	
CS103-A	120	
CS109-A	131	
CS109-B	133	
CS109-C	133	
CS110-A	149	
CS110-B	137	
CS111-A	148	
CS2110-A	138	
E1103-A	118	
E2103-A	112	
ER103-A	121	
ES105-A	102	60
EX10	1	
<b>EX11</b>	<b>5</b>	<b>60 – Hardware set changed to be non-rated</b>
<b>EX12</b>	<b>5</b>	<b>60 – Hardware set changed to be non-rated</b>
<b>EX14</b>	<b>14</b>	<b>60 – Hardware set changed to be non-rated</b>
EX15	6	
EX16	1	
<b>EX17</b>	<b>5</b>	<b>60 – Hardware set changed to be non-rated</b>
<b>EX18</b>	<b>5</b>	<b>60 – Hardware set changed to be non-rated</b>
EX19	6	
EX1-A	6	
EX1-B	6	
EX2	1	
EX20	6	
EX21	8	
EX22	6	
EX23	7	
EX24	4	
EX25	4	
EX26	4	
EX27	4	
EX28	4	
EX29	4	
EX3	12	
EX30	7	
EX31	15	120
EX32	15	120
<b>EX33</b>	<b>16</b>	
<b>EX34</b>	<b>11</b>	

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EX4	12	
EX5	13	
EX6	6	
EX7	6	
EX8	11	
EX9	11	
EXS01-A	115	60
EXS12-A	114	
FP105-A	102	60
GS105-A	102	60
GT105-A	107	
KT110-A	128	
ME001-A	103	
ME105-A	102	60
O1101-A	116	
O2101-A	116	
O3101-A	150	
OA100-A	116	
OA105-A	147	
OB100-A	116	
OC100-A	116	
OC101-A	117	
OC101-B	117	
OCU-A	11	
OCU-B	11	
RC110-A	136	
SO110-A	149	
SO110-B	105	
SV110-A	136	
SV110-B	136	
SV110-C	141	
TR101-A	106	
TR103-A	122	
TR110-A	122	
TR114-A	101	
TR115-A	101	
TR116-A	101	
TR117-A	101	
TR118-A	101	
TR121-A	101	
TR122-A	101	
TR123-A	101	
TR125-A	101	
TR127-A	101	
TR129-A	101	
TR215-A	101	
V110-A	143	
V110-B	144	
WR102-A	125	
WR110-A	134	
WR110-B	141	
WR110-C	141	
WR111-A	132	