



STATE OF NEW YORK  
OFFICE OF GENERAL SERVICES  
DESIGN AND CONSTRUCTION GROUP  
THE GOVERNOR NELSON A. ROCKEFELLER  
EMPIRE STATE PLAZA  
ALBANY, NY 12242



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**ADDENDUM NO. 1 TO PROJECT NO. 44515**

**CONSTRUCTION WORK, HVAC WORK, ELECTRIC WORK  
REPAIR LOADING DOCK, BLDG 20,  
UPGRADE STATE SHOP AND  
ELEVATOR REMOVAL  
ALBION CORRECTIONAL FACILITY  
3595 STATE SCHOOL ROAD, ALBION, NY**

March 14, 2013

**NOTE:** This Addendum forms a part of the Contract Documents. Insert it in the Project Manual. Acknowledge receipt of this Addendum in the space provided on the Bid Form.

**SPECIFICATIONS GROUP**

1. SECTION 062000 FINISH CARPENTRY: Add the accompanying Section (pages 062000-1 thru 062000-4) to the Project Manual.
2. SECTION 078400 FIRESTOPPING: Add the accompanying Section (pages 078400-1 thru 078400-7) to the Project Manual.
3. SECTION 083323 ROLLING DOORS: Add the accompanying Section (pages 083323-1 thru 083323-4) to the Project Manual.
4. SECTION 111903 STEEL DETENTION SCREENS: Add the accompanying Section (pages 111903-1 thru 111903-3) to the Project Manual.
5. SECTION 055000 METAL FABRICATIONS: Discard the Section bound in the Project Manual and substitute the accompanying Section (pages 055000-1 thru 055000-8) noted "Revised 03/13/2013".
6. SECTION 055100 METAL STAIRS: Discard the Section bound in the Project Manual and substitute the accompanying Section (pages 055100-1 thru 055100-6) noted "Revised 03/13/2013".
7. SECTION 079200 JOINT SEALERS: Discard the Section bound in the Project Manual and substitute the accompanying Section (pages 079200-1 thru 079200-4) noted "Revised 03/13/2013".

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8. SECTION 081102 STEEL DOORS AND FRAMES: Discard the Section bound in the Project Manual and substitute the accompanying Section (pages 081102-1 thru 081102-6) noted "Revised 03/13/2013".
9. SECTION 085123 STEEL WINDOWS: Discard the Section bound in the Project Manual and substitute the accompanying Section (pages 085123-1 thru 085123-8) noted "Revised 03/13/2013".
10. SECTION 087100 FINISH HARDWARE: Discard the Section bound in the Project Manual and substitute the accompanying Section (pages 087100-1 thru 087100-12) noted "Revised 03/13/2013".
11. SECTION 088100 GLASS AND GLAZING: Discard the Section bound in the Project Manual and substitute the accompanying Section (pages 088100-1 thru 088100-4) noted "Revised 03/13/2013".
12. SECTION 089100 STATIONARY METAL WALL LOUVERS: Discard the Section bound in the Project Manual and substitute the accompanying Section (pages 089100-1 thru 089100-2) noted "Revised 03/13/2013".
13. SECTION 092116 GYPSUM BOARD SYSTEMS: Discard the Section bound in the Project Manual and substitute the accompanying Section (pages 092116-1 thru 092116-4) noted "Revised 03/13/2013".
14. SECTION 099101 CONSTRUCTION PAINTING: Discard the Section bound in the Project Manual and substitute the accompanying Section (pages 099101-1 thru 099101-10) noted "Revised 03/13/2013".
15. SECTION 111319 LOADING DOCK EQUIPMENT: Discard the Section bound in the Project Manual and substitute the accompanying Section (pages 111319-1 thru 111319-3) noted "Revised 03/13/2013".
16. Page 030131-2, Paragraph 2.02B., Add the following Subparagraph:  
"2. Type C-2 Patching Mortar: "SikaTop 121 Plus", "SikaTop 122 Plus" or "SikaTop 111 Plus" by Sika Corp.; "Patchwell Kit", "Patchwell Deep", "SureFlow 040", or "SureFlow 042" by Kaufman Products, Inc.; "Thincoat" or "Concrete Coat" by The Euclid Chemical Company"

## **CONSTRUCTION WORK DRAWINGS**

17. DRAWING C-101, Detail 2/C-101:
  - a. Replace "Joint Sealant" with "Type 1A Sealant".
  - b. Replace "Joint Filler" with "Cork Joint Filler".
18. Drawing S-101, Basement Removal Note 2:
  - a. Add "Paint has tested positive for lead. Refer to notes on Drawing H-101." to the end of the note.
19. Drawing S-101, Basement Removal Note 4:

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- a. Add “Paint has tested positive for lead. Refer to notes on Drawing H-101.” to the end of the note.
20. Drawing S-101, Basement Removal Note 6:
  - a. Replace “frame” with “door track”.
  - b. Add “Door insulation has tested positive for asbestos. Refer to notes on Drawing H-101.” to the end of the note.
21. Drawing S-101, Basement Removal Note 7:
  - a. Add “Brake pads and Arc shields have tested positive for asbestos. Refer to notes on Drawing H-101.” to the end of the note.
22. Drawing S-101, Basement Removal Note 10:
  - a. Add “Paint has tested positive for lead.” to the end of the note.
23. Drawing S-101, Basement Removal Note 11:
  - a. Add “Paint has tested positive for lead.” to the end of the note.
24. DRAWING S-103, Roof Removal Note 1:
  - a. Add “in their entirety down to the basement” to the end of the sentence.
25. DRAWING S-111, Basement Repair Note 6:
  - a. Add “Provide ‘J’ bead at ceiling juncture. Finish GWB with Type IAL-3 system, color as per Director’s Representative.” to the end of the note.
26. DRAWING S-112, Plan, First Floor Repairs:
  - a. Add “Brick to match existing in size color and texture (TYP.)” to the end of the note which begins “Replace 10 damaged face brick ...”.
27. DRAWING S-301, Detail 3:
  - a. Add “12” Wide by 12” High and 4-1/2” Deep.” to the end of note for “Dock Bumper”.
28. Revised Drawing:
  - a. Drawing No. S-501, titled “STEEL FRAMING – SECTIONS & DETAILS” and noted “REVISED DRAWING 03/13/2013” accompanies this Addendum and supersedes the same numbered originally issued Drawing.
29. Addendum Drawing:
  - a. Drawing No. H-101, titled “BASEMENT FLOOR PLAN – HAZMAT ABATEMENT & REMOVALS” and noted “ADDENDUM DRAWING 03/13/2013” accompanies this Addendum and forms part of the Contract Documents.
30. Addendum Drawing:
  - a. Drawing No. H-102, titled “FIRST FLOOR PLAN – HAZMAT ABATEMENT & REMOVALS” and noted “ADDENDUM DRAWING 03/13/2013” accompanies this Addendum and forms part of the Contract Documents.
31. Addendum Drawing:

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- a. Drawing No. H-103, titled “ROOF/PENTHOUSE FLOOR PLAN – HAZMAT ABATEMENT & REMOVALS” and noted “ADDENDUM DRAWING 03/13/2013” accompanies this Addendum and forms part of the Contract Documents.
  
- 32. Addendum Drawing:
  - a. Drawing No. A-001, titled “CODE COMPLIANCE DATA & LEGEND” and noted “ADDENDUM DRAWING 03/13/2013” accompanies this Addendum and forms part of the Contract Documents.
  
- 33. Addendum Drawing:
  - a. Drawing No. A-101, titled “BASEMENT FLOOR PLAN” and noted “ADDENDUM DRAWING 03/13/2013” accompanies this Addendum and forms part of the Contract Documents.
  
- 34. Addendum Drawing:
  - a. Drawing No. A-102, titled “FIRST FLOOR PLAN” and noted “ADDENDUM DRAWING 03/13/2013” accompanies this Addendum and forms part of the Contract Documents.
  
- 35. Addendum Drawing:
  - a. Drawing No. A-103, titled “ROOF/ PENTHOUSE FLOOR PLAN” and noted “ADDENDUM DRAWING 03/13/2013” accompanies this Addendum and forms part of the Contract Documents.
  
- 36. Addendum Drawing:
  - a. Drawing No. A-501, titled “WALL TYPES & DETAILS” and noted “ADDENDUM DRAWING 03/13/2013” accompanies this Addendum and forms part of the Contract Documents.
  
- 37. Addendum Drawing:
  - a. Drawing No. A-601, titled “DOOR DETAILS” and noted “ADDENDUM DRAWING 03/13/2013” accompanies this Addendum and forms part of the Contract Documents.
  
- 38. Addendum Drawing:
  - a. Drawing No. A-602, titled “WINDOW DETAILS” and noted “ADDENDUM DRAWING 03/13/2013” accompanies this Addendum and forms part of the Contract Documents.

**END OF ADDENDUM**

James Dirolf, P.E.  
Director of Design

## SECTION 055000

### METAL FABRICATIONS

#### PART 1 GENERAL

##### 1.01 RELATED WORK SPECIFIED ELSEWHERE

- A. Metal Stairs: Section 055100.
- B. Field Painting: Section 099101.

##### 1.02 REFERENCES

- A. Except as shown or specified otherwise, the Work of this Section shall meet the requirements of the following:
  - 1. Design, Fabrication, and Erection: "Specification for Structural Steel Buildings, Allowable Stress Design and Plastic Design" adopted by the American Institute of Steel Construction, June 1, 1989 (AISC Specification).
    - a. Design and Fabrication of Cold-Formed Shapes: "Specification for the Design of Cold-Formed Steel Structural Members", by the American Iron and Steel Institute (AISI Specification).
  - 2. Welding: "Structural Welding Code - Steel, AWS D1.1", or "Structural Welding Code - Sheet Steel, AWS D1.3", by the American Welding Society (AWS Codes).
- B. Organizations:
  - 1. AISC: American Institute of Steel Construction, One East Wacker Dr., Suite 700, Chicago, IL 60601-1802, 866-275-2472, [www.aisc.org](http://www.aisc.org).
  - 2. AISI: American Iron and Steel Institute, 1140 Connecticut Ave., NW, Suite 705, Washington, D.C. 20036, (202) 452-7100, [www.steel.org](http://www.steel.org).
  - 3. AWS: American Welding Society, 550 N.W. LeJeune Rd., Miami, FL 33126, (800) 443-9353, [www.aws.org](http://www.aws.org).
  - 4. ANSI: American National Standards Institute, 1819 L Street, NW, 6th Floor, Washington, DC 20036, (202) 293-8020, [www.ansi.org](http://www.ansi.org).
  - 5. ASME: ASME International, 3 Park Ave., New York, NY 10016-5990, (800) 843-2763, [www.asme.org](http://www.asme.org).
  - 6. ASTM: ASTM International, 100 Barr Harbor Dr., PO Box C700, West Conshohocken, PA, 19428-2959, (610) 832-9500, [www.astm.org](http://www.astm.org).
  - 7. MPI: The Master Painters Institute Inc., 2808 Ingleton Ave., Burnaby, BC, V5C 6G7, (888) 674-8937, [www.specifypaint.com](http://www.specifypaint.com).
  - 8. SSPC: The Society for Protective Coatings, 40 24th Street, 6th Floor, Pittsburgh PA 15222-4656, (877) 281-7772, [www.sspc.org](http://www.sspc.org).

##### 1.03 SUBMITTALS

- A. Shop Drawings: Show application to project. Machine duplicated copies of Contract Drawings will not be accepted.

1. Indicate shop and field welds by standard AWS welding symbols in accordance with AWS A2.4.
- B. Product Data: Catalog sheets, specifications, and installation instructions for each fabricated item specified, except submit data for fasteners only when indicated.

#### **1.04 QUALITY ASSURANCE**

- A. Galvanizing: Stamp galvanized items with galvanizer's name, weight of coating, and applicable ASTM number.

#### **1.05 DELIVERY AND STORAGE**

- A. Coordinate delivery of anchor bolts and other anchorage devices to be built into other construction to avoid delay.
- B. Promptly cover and protect steel items delivered to the site.

### **PART 2 PRODUCTS**

#### **2.01 MATERIALS**

- A. Steel Shapes, Plates, and Bars: ASTM A 992 for W shapes and ASTM A 36 for all others.
- B. Steel Plates to be Bent or Cold-Formed: ASTM A 283, Grade C.
- C. Steel Bars and Bar-Size Shapes: ASTM A 675, Grade 70; or ASTM A 36.
- D. Cast Iron Castings: ASTM A 48, gray iron castings, Class 30.
- E. Steel Castings: ASTM A 27, grade and class as required by use of item.
- F. Steel Pipe: ASTM A 53, type as selected, Grade A; black finish unless galvanizing is required; standard weight (Schedule 40), unless otherwise shown or specified.
- G. Anchors: Except where shown or specified, select anchors of type, size, style, grade, and class required for secure installation of metal fabrications. For exterior use and where built into exterior walls, anchors shall be galvanized or of corrosive-resistant materials.
  1. Threaded-Type Concrete Inserts: Galvanized ferrous casting, internally threaded to receive 3/4 inch diameter machine bolt; either malleable iron or cast steel.
  2. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to six times the load imposed when installed in unit masonry and equal to four times the load imposed when installed in concrete, as determined by

testing per ASTM E 488, conducted by a qualified independent test agency.

- a. Carbon Steel: Zinc-Plated; ASTM B 633, Class Fe/Zn 5.
  - b. Stainless Steel: Bolts, Alloy Group 1 or 2; ASTM F593, Nuts; ASTM F 594.
3. Epoxy Anchor system for threaded rods: Hilti Hit HY20, by Hilti North America; Power-Fast +, by Powers Fasteners, Powers Industries Ltd.; Chemset Injection 800 Series, by Ramset Fasteners PTY Limited; or ET Epoxy-Tie Adhesive by Simpson Strong-Tie Co., Inc.
- H. Fasteners: Except where shown or specified, select fasteners of type, size, style, grade, and class required for secure installation of metal fabrications. For exterior use and where built into exterior walls, fasteners shall be galvanized.
1. Standard Bolts and Nuts: ASTM A 307, Grade A, regular hexagon head.
  2. Stainless Steel Fasteners: ASTM A 666; Type 302/304 for interior Work; Type 316 for exterior Work; Phillips flathead (countersunk) screws and bolts for exposed Work unless otherwise specified.
  3. Eyebolts: ASTM A 489.
  4. Machine Bolts: ASME B18.5 or ASME B18.9, Type, Class, and Form as required.
  5. Machine Screws: ASME B18.6.3.
  6. Lag Screws: ASME B18.2.1.
  7. Wood Screws: Flat head, ASME B18.6.1.
  8. Plain Washers: Round, ASME B18.22.1.
  9. Lock Washers: Helical, spring type, ASME B18.21.1.
  10. Toggle Bolts: Spring Wing Type; Wing AISI 1010, Trunion Nut AISI1010 or Zamac Alloy, Bolt Carbon Steel ANSI B18.6.3.
- I. Shop Paint (General): Universal shop primer; fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with MPI#79 and compatible with topcoat.
1. Use primer containing pigments that make it easily distinguishable from zinc-rich primer.
- J. Galvanizing Repair Paint: High-zinc-dust-content paint, brush applied only, complying with SSPC-Paint 20 and compatible with paints specified to be used over it.
- K. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187.
- L. Bedding Mortar:
1. Shrink-Resistant Grout (Non-Staining): Factory-packaged, non-ferrous mortar grouting compound selected from the following:
    - a. Masterflow 713 by Master Builders, 23700 Chagrin Blvd., Cleveland, OH 44122 (800) 227-3350.
    - b. SonogROUT by Sonneborn, Chemrex, Inc., 57-46 Flushing Ave., Maspeth, NY 11378, (800) 433-9517.
    - c. Five Star Grout by Five Star Products, Inc., 425 Stillson Rd., Fairfield, CT 06430, (800) 243-2206.

- d. Crystex by L&M Construction Chemicals, 14851 Calhoun Rd., Omaha, NB 68152, (800) 362-3331.
- e. Non-Corrosive, Non-Shrink Grout by A.C. Horn, Inc., Tamm Industries, 7405 Production Dr., Mentor, OH 44060, (800) 862-2667.

## **2.02 MISCELLANEOUS FRAMING AND SUPPORTS**

- A. Fabricate metal framing and supports, which are not a part of the structural steel framework, to support related items required by the Work.
- B. Fabricate units to the sizes, shapes, and profiles indicated or, if not indicated, of required dimensions to receive adjacent Work to be retained by the framing. Except as otherwise indicated, fabricate from structural steel shapes, plates, and bars, of all welded construction, with mitered corners, necessary brackets and splice plates, and a minimum number of joints for field connection. Punch, drill, and tap units to receive hardware and similar items to be anchored to the Work.
- C. When required to be built into masonry or cast-in-place concrete, equip units with integrally welded anchor straps. Unless otherwise indicated, anchors shall be minimum 1-1/4 x 1/4 x 8 inch steel straps, spaced 2 feet oc.
- D. Galvanize exterior steel framing and supports.

## **2.03 LOOSE BEARING PLATES**

- A. Steel plates fabricated flat, free from warp or twist, and of required thickness and bearing area. Drill plates as required for anchor bolts and for grouting access. Furnish bearing plates where shown and where required for steel items bearing on masonry or concrete construction.

## **2.04 LOOSE LINTELS**

- A. Structural steel shape lintels, fabricated for openings and recesses in masonry walls and partitions as indicated. Loose lintels bearing on masonry or concrete shall have a minimum end bearing length of 6 inches at each end, unless otherwise shown.
- B. Galvanize lintels to be installed in exterior walls.

## **2.05 STEEL PIPE RAILINGS AND HANDRAILS**

- A. Fabricate railings and handrails of 1-1/2 inch (nominal) diameter galvanized steel pipe, unless otherwise shown.
  - 1. Baluster: 3/8" (nominal) diameter galvanized steel rods.
- B. Railings: Unless otherwise shown, railings shall consist of top rail and intermediate rails, balusters spaced at 4" on center, with posts spaced not more than 4 feet oc. Close ends of rails which do not terminate with a flange or continuous return.

1. Space balusters so that a sphere 4 inches in diameter cannot pass through the openings between the balusters.
  2. Join posts, rails, and corners by one of the following methods:
    - a. Flush-type steel railing fittings, welded and ground smooth, with railing splice locks secured with 3/8 inch hexagonal-recessed-head setscrews.
    - b. Coped and welded joints made by fitting post to top rail and intermediate rail to post, mitering corners, groove welding joints, and grinding joints smooth. Butt railing splices and reinforce by a tight-fitting interior pipe sleeve not less than 6 inches long secured in place.
  3. Railings may be bent at corners instead of joining, provided the bends are uniformly formed in jigs, with cylindrical cross-section of pipe maintained throughout the entire bend.
  4. Unless otherwise shown, fabricate railings and accessories as necessary to secure posts and rail ends to construction as follows:
    - b. Anchor posts to steel with steel flanges, angle type or floor type as required by conditions, welded to posts and bolted to the steel supporting members.
    - c. Anchor rail ends into building with round steel flanges welded to rail ends and anchored into the wall construction with lag bolts or wood screws.
    - d. Anchor rail ends to steel with oval or round steel flanges welded to rail ends and bolted or welded to the steel supporting members.
- C. Handrails: Pipe handrails shall be secured to walls by means of wall brackets, and shall have a wall return fitting at each end of handrails unless otherwise shown.
1. Wall Brackets: Malleable iron castings, with 3 inches projection from the finish wall surface to the center of the handrail, and with the wall plate portion of the bracket drilled to receive one 3/8 inch diameter bolt. Brackets shall be located approximately 6 inches from each end of handrails and intermediate brackets equally spaced at intervals not exceeding 5 feet oc. Fabricate wall brackets to secure to wall construction as follows:
    - a. Anchor into concrete and solid masonry with expansion anchors.
    - b. Anchor into hollow masonry and stud partitions with toggle bolts having square heads.
  2. Wall Return Fittings: Cast iron castings, flush-type, with the same projection as specified for wall brackets.
- D. Galvanize all railings and handrails including pipe, balusters, flanges, fittings, brackets, fasteners, and other ferrous metal components.

## **2.06 SAFETY NOSINGS**

- A. Nosings: Cast, abrasive non-slip type, of profiles indicated, extending full length of concrete treads or other concrete edges to be protected unless otherwise indicated. Equip each nosing with integrally cast, welded, or riveted anchors

located not more than 4 inches from each end of nosing and intermediate anchors spaced not over 15 inches oc. Abrasive grain shall be integrally cast into the wearing surface.

1. Metal: Cast Iron
2. Curb Bar Nosing Units: 2-1/2 x 2-1/2 x 1/2 inch thick.
3. Surface Design: Cross-hatched abrasive.

## **2.07 FABRICATION**

- A. Use materials of the sizes and thicknesses indicated on the Drawings. If not indicated, use material of required size and thickness to produce adequate strength and durability for the intended use of the finished product.
- B. Fabricate items to be exposed to view of material entirely free of surface blemish, including pitting, roller and seam marks, rolled trade names, and roughness. Remove surface blemishes by grinding or by welding and grinding prior to cleaning, treating, and finishing.
- C. Form metal true to line, with accurate angles, surfaces, and straight edges. Ease exposed edges to a radius of approximately 1/32 inch unless otherwise shown. Form bent-metal corners to the smallest radius possible without causing grain separation or otherwise impairing the metal.
- D. Weld corners and seams continuously. Grind exposed welds smooth and flush, to match and blend with adjoining surfaces.
- E. Form exposed connections with flush, smooth, hairline joints. Use concealed fasteners wherever possible. Use Phillips flathead (countersunk) screws or bolts for exposed fasteners, unless otherwise shown or specified.
- F. Prepare fabricated items for anchorage of the type indicated, coordinated with the supporting structure. Fabricate and space anchoring devices as indicated or, if not indicated, as required to produce adequate support for the intended use of the item.
- G. Punch, reinforce, drill, and tap fabricated items as required to receive hardware and other appurtenant items.
- H. Galvanizing:
  1. In addition to specific items specified or noted to be galvanized, galvanize items attached to, embedded in, or supporting exterior masonry (including interior wythe of exterior masonry walls) and concrete Work.
  2. Unless otherwise specified or noted, items indicated to be galvanized shall receive a zinc coating by the hot-dip process, after fabrication, complying with the following:
    - a. ASTM A 123 for plain and fabricated material, and assembled products.
    - b. ASTM A 153 for iron and steel hardware.
- I. Shop Painting:

1. Cleaning Steel: Thoroughly clean all steel surfaces. Remove oil, grease, and similar contaminants in accordance with SSPC SP-1 "Solvent Cleaning". Remove loose mill scale, loose rust, weld slag and spatter, and other detrimental material in accordance with SSPC SP-2 "Hand Tool Cleaning", SSPC SP-3 "Power Tool Cleaning", or SSPC SP-7 "Brush-Off Blast Cleaning".
2. Galvanized Items:
  - a. Galvanized items which are to be finish painted under Section 099101 shall be rinsed in hot alkali or in an acid solution and then in clear water.
  - b. Welded and abraded areas of galvanized surfaces shall be wire brushed and repaired with a coating of cold galvanizing compound.
3. Apply one coat of shop paint to all steel surfaces except as follows:
  - a. Do not shop paint steel surfaces to be field welded and steel to be encased in cast-in-place concrete.
  - b. Apply 2 coats of shop paint, before assembly, to steel surfaces inaccessible after assembly or erection, except surfaces in contact.
  - c. Do not paint galvanized items which are not to be finish painted under Section 099101.
4. Apply paint and compound on dry surfaces in accordance with the manufacturer's printed instructions, and to the following minimum thickness per coat:
  - a. Shop Paint (General): 4.0 mils wet film.
  - b. Shop Paint for Galvanized Steel: 3.0 mils wet film.
  - c. Galvanizing Repair Paint: 2.0 mils dry film.

## **PART 3 EXECUTION**

### **3.01 PREPARATION**

- A. Temporarily brace and secure items which are to be built into concrete, masonry, or similar construction.
- B. Isolate non-ferrous metal surfaces to be permanently fastened in contact with ferrous metal surfaces, concrete, or masonry by coating non-ferrous metal surface with bituminous mastic, prior to installation.

### **3.02 INSTALLATION**

- A. Fit and set fabricated metal items accurately in designed locations, at proper elevation and alignment.
- B. Use anchorage devices and fasteners of required type, size, and number as required to provide a secure, rigid installation.
- C. Fit exposed connections accurately to form tight hairline joints. Weld connections which are not intended to be left as exposed joints, but cannot be

shop welded because of size limitations. Grind welded joints smooth. Cut off exposed threaded portion of bolts flush with nut.

- D. Attached Work: Drill holes for fasteners with power tools to exact size required. Unless otherwise shown on the Drawings, fasten metal Work to concrete and solid masonry anchorage with expansion anchors. Fasten metal Work to hollow masonry and stud partitions with square head toggle bolts.
- E. Field Welding: Comply with AWS Codes for the procedures for shielded metal arc welding, for the appearance and quality of welds, and for the methods used in correcting welding Work.
- F. Railings: Adjust railings prior to securing in place to insure alignment and proper matching at joints. Plumb posts in each direction. Secure posts and rail ends to construction as follows:
  - 1. Anchor posts in concrete with post sleeves preset into the concrete. After the posts have been inserted into the sleeves, fill the annular space between post and sleeve solid with molten lead or an exterior quick-setting hydraulic cement. Cover anchorage joint with a cover flange.
  - 2. Anchor posts to steel with steel flanges, angle type or floor type as required. Weld flanges to posts, and bolt to the steel supporting members.
  - 3. Anchor rail ends to concrete and masonry with round steel flanges. Weld flanges to rail ends, and anchor into the wall construction with expansion anchors.
  - 4. Anchor rail ends to steel with steel oval or round flanges. Weld flanges to rail ends, and weld or bolt to the steel supporting members.

**END OF SECTION**

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## SECTION 055100

### METAL STAIRS

#### PART 1 GENERAL

##### 1.01 RELATED WORK SPECIFIED ELSEWHERE

- A. Metal Fabrications: Section 055000.

##### 1.02 REFERENCES

- A. Except as shown or specified otherwise, the Work of this Section shall meet the requirements of the following:
1. Design, Fabrication, and Erection: "Specification for Structural Steel Buildings, Allowable Stress Design and Plastic Design" adopted by the American Institute of Steel Construction, June 1, 1989 (AISC Specification).
    - a. Design and Fabrication of Cold-Formed Shapes: "Specification for the Design of Cold-Formed Steel Structural Members", by the American Iron and Steel Institute (AISI Specification).
  2. Welding: "Structural Welding Code - Steel, AWS D1.1", or "Structural Welding Code - Sheet Steel, AWS D1.3", by the American Welding Society (AWS Codes).
  3. High Strength Bolting: "Specification for Structural Joints Using ASTM A325 or A490 Bolts, August 14, 1980", by the Engineering Foundation's Research Council on Riveted and Bolted Structural Joints (Specification for Structural Joints).
- B. Organizations:
1. AISC: American Institute of Steel Construction, One East Wacker Dr., Suite 700, Chicago, IL 60601-1802, 866-275-2472, [www.aisc.org](http://www.aisc.org).
  2. AISI: American Iron and Steel Institute, 1140 Connecticut Ave., NW, Suite 705, Washington, D.C. 20036, (202) 452-7100, [www.steel.org](http://www.steel.org).
  3. AWS: American Welding Society, 550 N.W. LeJeune Rd., Miami, FL 33126, (800) 443-9353, [www.aws.org](http://www.aws.org).
  4. ANSI: American National Standards Institute, 1819 L Street, NW, 6th Floor, Washington, DC 20036, (202) 293-8020, [www.ansi.org](http://www.ansi.org).
  5. ASME: ASME International, 3 Park Ave., New York, NY 10016-5990, (800) 843-2763, [www.asme.org](http://www.asme.org).
  6. ASTM: ASTM International, 100 Barr Harbor Dr., PO Box C700, West Conshohocken, PA, 19428-2959, (610) 832-9500, [www.astm.org](http://www.astm.org).
  7. MPI: The Master Painters Institute Inc., 2808 Ingleton Ave., Burnaby, BC, V5C 6G7, (888) 674-8937, [www.specifypaint.com](http://www.specifypaint.com).
  8. SSPC: The Society for Protective Coatings, 40 24th Street, 6th Floor, Pittsburgh PA 15222-4656, (877) 281-7772, [www.sspc.org](http://www.sspc.org).

### **1.03 SUBMITTALS**

- A. Shop Drawings: Show application to project. Machine duplicated copies of Contract Drawings will not be accepted. Shop drawings shall be standard 24 inch by 36 inch size sheets. The fabricator's name and address shall be indicated in the title block on each drawing.
  - 1. Include anchor bolt location plan (if any), erection drawings, and detail drawings of all components.
  - 2. Indicate shop and field welds by standard AWS welding symbols in accordance with AWS A2.4.
  - 3. When shop drawings are marked "Approved as Noted", promptly resubmit copies of corrected shop drawings for formal approval and record.
- B. Product Data:
  - 1. Grating Treads and Platforms: Manufacturer's specifications.
- C. Quality Control Submittals:
  - 1. Fabricator's Qualifications Data: Name and experience of fabricator.

### **1.04 QUALITY ASSURANCE**

- A. Fabricator's Qualifications: The fabricator shall be experienced in metal stair work and shall be subject to the approval of the Director.
- B. Inspection: Shop and field quality assurance inspection may be made by the State. If quality assurance inspection is made by the State, it shall not relieve the fabricator and erector of responsibility for their own quality control programs.
- C. Galvanizing: Stamp galvanized items with galvanizer's name, weight of coating, and applicable ASTM number.

### **1.05 WELDING PROCESS**

- A. Use only shielded metal arc welding.
- B. Shielded metal arc welding procedures that comply with the provisions of the AWS Code shall be considered to be pre-qualified.

## **PART 2 PRODUCTS**

### **2.01 MATERIALS**

- A. Steel Shapes, Plates, and Bars: ASTM A36.
- B. Steel Plates to be Bent or Cold-Formed: ASTM A283, Grade C.
- C. Steel Castings: ASTM A27, grade and class as required by use of item.

- D. Steel Pipe: ASTM A53, type as selected, Grade A; standard weight (Schedule 40), unless otherwise shown or specified.
- E. Weld Filler Metal: Weld filler metal for shielded metal arc welding which complies with AWS Specifications A5.1 or A5.5 shall be considered to be pre-qualified.
- F. Anchors: Except where shown or specified, select anchors of type, size, style, grade, and class required for secure installation of metal fabrications. For exterior use and where built into exterior walls, anchors shall be galvanized or of corrosive-resistant materials.
  - 1. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to six times the load imposed when installed in unit masonry and equal to four times the load imposed when installed in concrete, as determined by testing per ASTM E 488, conducted by a qualified independent test agency.
    - a. Carbon Steel: Zinc-Plated; ASTM B 633, Class Fe/Zn 5.
    - b. Stainless Steel: Bolts, Alloy Group 1 or 2; ASTM F593, Nuts; ASTM F 594.
- G. Fasteners: Except where shown or specified, select fasteners of type, size, style, grade, and class required for secure installation of metal fabrications. For exterior use and where built into exterior walls, fasteners shall be galvanized.
  - 1. Standard Bolts and Nuts: ASTM A 307, Grade A, regular hexagon head.
- H. Galvanizing Repair Paint: High-zinc-dust-content paint, brush applied only, complying with SSPC-Paint 20 and compatible with paints specified to be used over it.
- I. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187.

## **2.02 STAIR FRAMING**

- A. Fabricate stringers, headers, and platform framing as shown on the Drawings.
  - 1. Furnish hangers, posts, and miscellaneous items as shown or required.
- B. Connections: Welded or bolted as shown.
  - 1. Use one-sided angle connections only where shown.
  - 2. When framed connections are used, the minimum length of the connection angles shall be as follows:
    - a. Beams 12 to 14 inches deep: 8-1/2 inches.
    - b. Beams 8 to 10 inches deep: 5-1/2 inches.
  - 3. High-Strength Bolted Connections: Amend the Specification for Structural Joints as follows:
    - a. Refer to Item 5 (b): High-strength bolts shall have a hardened washer under the element (nut or bolt head) turned in tightening, regardless of the method of tightening.

- b. Refer to Item 6: The inspection of bolt tightening shall be as specified under Item 6(d).
- C. Close exposed ends of stringers with continuously welded steel plates.

### **2.03 STAIR DETAILS**

- A. Construct stair units to conform to sizes and arrangement indicated on the Drawings. Construct stair units to support a minimum live load of 100 lb/sq ft, unless otherwise indicated.
- B. Grating Treads and Platforms: Rectangular, welded steel bar grating designed to support a minimum live load of 100 lb/sq ft with deflection not exceeding 1/180. Fabricate with bearing bars on edge, and with all intersecting and abutting members joined by the electro-pressure welding method for the full depth of cross bar. Steel Bars: ASTM A569.
  - 1. Fabricate grating treads with slip-resistant texture steel plate nosing on front edge and with steel angle or steel plate carrier at each end for stringer connections. Secure treads to stringers with bolts.
  - 2. Top Surface of Bearing Bars: Plain, unless otherwise indicated.
  - 3. Banding: Continuous steel bar, of same material and size as bearing bars, welded to grating panel.
  - 4. Finish: Galvanized.

### **2.04 STEEL PIPE RAILINGS AND HANDRAILS**

- A. Fabricate railings and handrails of 1-1/2 inch (nominal) diameter galvanized steel pipe, unless otherwise shown.
  - 1. Baluster: 3/8" (nominal) diameter galvanized steel rods.
- B. Railings: Unless otherwise shown, railings shall consist of top rail and intermediate rails, balusters spaced at 4" on center, with posts spaced not more than 4 feet oc. Close ends of rails which do not terminate with a flange or continuous return.
  - 1. Space balusters so that a sphere 4 inches in diameter cannot pass through the openings between the balusters.
  - 2. Join posts, rails, and corners by one of the following methods:
    - a. Flush-type steel railing fittings, welded and ground smooth, with railing splice locks secured with 3/8 inch hexagonal-recessed-head setscrews.
    - b. Coped and welded joints made by fitting post to top rail and intermediate rail to post, mitering corners, groove welding joints, and grinding joints smooth. Butt railing splices and reinforce by a tight-fitting interior pipe sleeve not less than 6 inches long secured in place.
  - 3. Railings may be bent at corners instead of joining, provided the bends are uniformly formed in jigs, with cylindrical cross-section of pipe maintained throughout the entire bend.
  - 4. Unless otherwise shown, fabricate railings and accessories as necessary to secure posts and rail ends to construction as follows:

- b. Anchor posts to steel with steel flanges, angle type or floor type as required by conditions, welded to posts and bolted to the steel supporting members.
  - c. Anchor rail ends into building with round steel flanges welded to rail ends and anchored into the wall construction with lag bolts or wood screws.
  - d. Anchor rail ends to steel with oval or round steel flanges welded to rail ends and bolted or welded to the steel supporting members.
- C. Handrails: Pipe handrails shall be secured to walls by means of wall brackets, and shall have a wall return fitting at each end of handrails unless otherwise shown.
  - 1. Wall Brackets: Malleable iron castings, with 3 inches projection from the finish wall surface to the center of the handrail, and with the wall plate portion of the bracket drilled to receive one 3/8 inch diameter bolt. Brackets shall be located approximately 6 inches from each end of handrails and intermediate brackets equally spaced at intervals not exceeding 5 feet oc. Fabricate wall brackets to secure to wall construction as follows:
    - a. Anchor into concrete and solid masonry with expansion anchors.
    - b. Anchor into hollow masonry and stud partitions with toggle bolts having square heads.
  - 2. Wall Return Fittings: Cast iron castings, flush-type, with the same projection as specified for wall brackets.
- D. Galvanize all railings and handrails including pipe, balusters, flanges, fittings, brackets, fasteners, and other ferrous metal components.

## **2.05 FABRICATION**

- A. Progress shop fabrication from “APPROVED” or “APPROVED AS NOTED” detail drawings only.
  - 1. When detail drawings are “APPROVED AS NOTED”, progress fabrication in strict accordance with notes thereon.
  - 2. Fabrication progressed from “DISAPPROVED” or “RETURNED FOR CORRECTION” detail drawings will be rejected. The contractor shall have no claim against the State for any costs or delays due to rejection of items fabricated from “DISAPPROVED” or “RETURNED FOR CORRECTION” detail drawings.
- B. Use materials of the sizes and thicknesses indicated on the Drawings. If not indicated, furnish items of size and thickness required to produce adequate strength and durability in the finished product for the intended use.
- C. Ease exposed edges to a radius of approximately 1/32 inch unless otherwise shown. Form bent-metal corners to the smallest radius possible without causing grain separation or otherwise impairing the Work.

- D. Use hot-rolled steel bars for Work fabricated from bar stock, unless Work is indicated to be fabricated from cold-finished stock.
- E. Use flush countersunk screws or bolts for exposed fasteners, unless otherwise indicated.

## **2.06 GALVANIZING**

- A. In addition to specific items specified or noted to be galvanized, galvanize items attached to or embedded in exterior masonry (including interior wythe of exterior masonry walls) and concrete Work.
- B. Unless otherwise specified or noted, items to be galvanized shall receive a zinc coating by the hot-dip process, after fabrication, complying with the following:
  - 1. ASTM A123 for plain and fabricated material, and assembled products.
  - 2. ASTM A153 for iron and steel hardware.

## **PART 3 EXECUTION**

### **3.01 INSTALLATION**

- A. Erect metal stairs in accordance with the AISC Specification, the AWS Codes, and the Specification for Structural Joints, except as otherwise specified.
- B. Install anchorage devices and fasteners where necessary for securing metal stair items to in-place construction.
- C. Set the Work accurately in location, alignment and elevation, plumb, level, true and free of rack, measured from established lines and levels. Provide temporary bracing and built-in anchors for items which are to be built into concrete, masonry or similar construction.
- D. Check railings prior to securing in place to insure proper matching at butting joints and correct alignment throughout their length.
- E. Do not make corrections or alterations to fabricated steel without prior written approval by the Director's Representative.
- F. Do not use gas or air carbon-arc cutting for cutting or enlarging bolt holes.

**END OF SECTION**

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**SECTION 062000**  
**FINISH CARPENTRY**

**PART 1 GENERAL**

**1.01 REFERENCES**

- A. Comply with the applicable provisions of the "Architectural Woodwork Standards" (First Edition-2009) (AWS) except as otherwise specified herein. References to "Premium", "Custom" and "Economy" Grades herein, shall be as defined in that Standard.
- B. Lumber Standard; American Softwood Lumber Standard: U.S. Dept. of Commerce Product Standard PS-20.
- C. Panel Products: AWS Section 4.
- D. Preservative Treatment Standard: American Wood Protection Association Standard (AWPA) U1-02

**1.02 SUBMITTALS**

- A. Shop Drawings: Show fabrication details and connections to adjacent Work.
- B. Quality Control Submittals:
  - 1. Dip Treatment Certificates: Certification by treating plant stating chemical solutions used, submersion period, and conformance with specified standards.

**1.03 QUALITY ASSURANCE**

- A. Mill and Producer's Label: Each lumber and panel item shall bear label indicating type, grade, mill, and grading agency on unfinished surface, or on end of material with finished surfaces.
  - 1. Panels shall bear APA or equivalent grade-mark; each panel.

**1.04 DELIVERY, STORAGE, AND HANDLING**

- A. Store materials and completed fabricated wood items in a dry, well ventilated area completely protected from the weather. Comply with temperature and humidity requirements for storage and installation as specified in the applicable quality standards.
- B. Protect sanded and prefinished surfaces during handling and installation. Keep such surfaces covered with polyethylene film or other suitable protective covering.

## **1.05 PROJECT CONDITIONS**

- A. Environmental Requirements: Maintain constant minimum temperature of 60 degrees F and maximum relative humidity of 55 percent in spaces to receive the Work of this Section.

## **PART 2 PRODUCTS**

### **2.01 MATERIALS**

- A. Lumber: Kiln-dried to 12 percent average moisture content for exterior Work; 8 percent for interior Work.
- B. Fasteners:
  - 1. Nails, Spikes, and Staples: Size and type to suit application; non-ferrous metal or galvanized steel for exterior locations, high humidity locations, treated wood, and wood to receive transparent finishes; plain finish for other interior locations.
  - 2. Bolts, Nuts, Washers, Lags, and Screws: Medium carbon steel; size and type to suit application; galvanized for exterior locations, high humidity locations, and treated wood; plain finish for other interior locations.
  - 3. Anchors: Toggle bolt type for anchorage to hollow masonry; expansion shield and lag bolt type for anchorage to solid masonry or concrete; galvanized steel or stainless steel.

### **2.02 STANDING AND RUNNING TRIM**

- A. Comply with AWS Sections 6 and/or 12 as applicable, and as otherwise specified herein.
- B. Exterior Woodwork (to receive paint finish): AWS Custom Grade.
  - 1. Species; Solid Wood: Any closed-grain hardwood complying with AWS Section 100 for the quality grade specified.
  - 2. Cut; Solid Wood: Plain sawn.
- C. Interior Woodwork (to receive paint finish): AWS Custom Grade.
  - 1. Species; Solid Wood: Any softwood species complying with AWS Section 3 for the quality grade specified.
  - 2. Cut; Solid Wood: Plain sawn.

### **2.03 PRESERVATIVE TREATMENT**

- A. Dip Treatment: Comply with AWS Section 3 and as otherwise specified.
  - 1. Inspect wood items after treatment. Discard warped or twisted items.
  - 2. Treat interior wood items where indicated.

## **2.04 FABRICATION**

- A. Machine and sand wood surfaces to comply with the requirements of the AWS Quality Grade specified.
- B. Mill assemble items to largest sizes practicable, to minimize field cutting and jointing. Allow for cutting and fitting where necessary to fit at the Site.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verification of Conditions: Examine substrate conditions and surfaces upon which finish Work is to be installed. Do not proceed with finish Work until unsatisfactory substrate conditions are corrected.

### **3.02 PREPARATION**

- A. Condition the Work of this Section to average prevailing humidity conditions in installation areas prior to installing.

### **3.03 INSTALLATION**

- A. Comply with workmanship and finishing standard requirements of the AWS Quality Grade specified herein.
- B. Install the Work plumb, level, and free of distortion. Shim where required, with concealed shims.
- C. Cut wood items to fit unless specified to be shop-fabricated, or shop-cut to exact size. Scribe and cut for accurate fit where Work abuts other finish Work. Drill pilot holes at corners before making cutouts.
- D. Distribute defects to the greatest appearance advantage possible.
- E. Trim and Moulding: Install in single, unjointed lengths at openings and for runs less than the maximum lumber length available. For long runs, use only 1 piece less than the maximum length available in any straight run. Stagger joints in adjacent members. Cope moulding at returns. Miter at corners.
- F. Attach the Work securely in place.
  - 1. Nailing: Blind nail where possible. Use finishing nails where exposed. Set nail heads for filling, except for exterior wood scheduled to receive natural finish (if any).
  - 2. Anchoring: Secure the Work to anchors or to blocking which is built-into or directly attached to substrates.
- G. Treated Wood: Coat exposed surfaces of treated field-cut wood items with a heavy brush coating of the same preservative.

**3.04 CLEANING**

- A. Clean exposed surfaces of prefinished Work.

**3.05 PROTECTION**

- A. Protect installed Work from damage by Work of other trades. Maintain temperature and humidity requirements during the construction period in interior installation areas.

**END OF SECTION**

## **SECTION 078400**

### **FIRESTOPPING**

#### **PART 1 GENERAL**

##### **1.01 REFERENCES**

- A. UL 263 Fire Tests of Building Construction and Materials.
- B. UL 1479 Fire Tests of Through-Penetration Firestops.
- C. UL 2079 Standard for Safety Tests for Fire Resistance of Building Joint Systems.
- D. ASTM E 119 Methods of Fire Tests of Building Construction and Materials.
- E. ASTM E 814 Method of Fire Tests of Through-Penetration Fire Stops.

##### **1.02 DEFINITIONS**

- A. UL Fire Resistance Directory: Product directory published yearly, with supplements, by Underwriters Laboratories Inc., containing listings and classifications in effect as of the published date for product categories covered by UL.
- B. Inchcape Directory of Listed Products: Product directory published yearly by Inchcape Testing Services containing listings which reflect certifications granted for materials, products, systems and equipment which have been tested by Inchcape Testing Services to recognized governing standards.
- C. Omega Point Laboratories Listings Directory: Product Directory published yearly by Omega Point Laboratories, Inc. containing listed building products, materials, and assemblies which have been tested by Omega Point Laboratories to recognized governing standards.
- D. Factory Mutual Approval Guide: Product directory published yearly, with supplements, by Factory Mutual Research Corp., containing listed building products, materials, and assemblies which have been tested by Factory Mutual Research Corp., to recognized governing standards.
- E. F Rating: Prohibits flame passage through the system and requires acceptable hose stream test performance.
- F. T Rating: Prohibits flame passage through the system and requires the maximum temperature rise on the unexposed surface of the wall or floor assembly, on the penetrating item and on the fill material not to exceed 325 degrees F above ambient, and requires acceptable hose stream test performance.

##### **1.03 DESIGN REQUIREMENTS**

- A. Devices and materials shall meet the hourly fire resistance ratings required by the Project as determined by UL 263, UL 1479, UL 2079, ASTM E 119 or ASTM E 814 and be listed and detailed in the UL Fire Resistance Directory, Inchcape Directory of Listed Products, Factory Mutual Approval Guide, or the Omega Point Laboratories Listings Directory.
  - 1. Exception: Where no listed designs exist that meet the requirements of a specific project condition, submit details and manufacturer's written recommendations for a design meeting the requirements. Include evidence of engineering judgment and extrapolation from listed designs.

#### **1.04 SUBMITTALS**

- A. Submittals Package: Submit the following items specified below the same time as a package:
  - 1. Product Data.
  - 2. Quality Control Submittals.
- B. Product Data: Catalog sheets, specifications and installation instructions for each firestop device and material.
  - 1. Indicate design number for each firestop proposed to be used which is detailed in the UL Fire Resistance Directory, Inchcape Directory of Listed Products, Factory Mutual Approval Guide, or the Omega Point Laboratories Listings Directory.
  - 2. State the specific locations where each firestop system is proposed to be installed.
- C. Quality Control Submittals:
  - 1. Design Data: Show details and include engineering information and manufacturer's written recommendations required under Design Requirements Article for each proposed firestop if other than a design detailed in the UL Fire Resistance Directory, Inchcape Directory of Listed Products, Factory Mutual Approval Guide, or the Omega Point Laboratories Listings Directory.
    - a. State the specific locations where each firestop is proposed to be installed.
- D. Firestop Schedule: Submit schedule itemizing the following:
  - 1. Manufacturer's product reference numbers and/or drawing numbers.
  - 2. UL, Inchcape Testing Services, Factory Mutual Research Corp., or Omega Point Lab design number.
  - 3. Location of firestop material.
  - 4. Penetrating Item Description/Limits: Material, size, insulated or uninsulated, and combustibility.
  - 5. Maximum allowable annular space or maximum size opening.
  - 6. Wall type construction.
  - 7. Floor type construction.
  - 8. Hourly Fire resistance rating of wall or floor.
  - 9. F rating.
  - 10. T rating, if available.

**NOTE:** Firestop Schedule is for information only, and will not be acted on for approval.  
Refer to Sample Firestop Schedule bound in Appendix.

### **1.05 QUALITY ASSURANCE**

- A. Pre-Installation Conference: Before the firestop work is scheduled to commence, a conference will be called by the Director's Representative at the Site for the purpose of reviewing the Contract Documents and discussing requirements for the Work. The conference shall be attended by related trade Contractors (if any), their qualified firestopping installers, and associated firestopping manufacturer's Company Field Advisors.
- B. Container/Package Labels: Include manufacturer's name and identifying product number, date of manufacturer, lot number, shelf life (if applicable), qualified testing and inspecting agency classification marking, curing time, and mixing instructions for multi-component materials.

### **1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver firestopping materials to the Site in original, new unopened containers or packages bearing manufacturer's printed labels.
- B. Store and handle firestopping materials to prevent deterioration or damage due to moisture, temperature changes, contaminants, etc.

### **1.07 PROJECT CONDITIONS**

- A. Environmental Requirements:
  - 1. Temperature: Do not install firestopping materials when ambient or substrate temperatures are outside limits permitted by manufacturer of firestopping materials.
  - 2. Humidity and Moisture: Do not install the Work of this Section under conditions that are detrimental to the application, curing, and performance of the materials.
  - 3. Ventilation: Provide sufficient ventilation wherever firestopping materials are installed in enclosed spaces. Follow manufacturer's recommendations.

### **1.08 SEQUENCING AND SCHEDULING**

- A. Leave exposed those firestopping installations that are to be concealed behind other construction until the Director's Representative has examined each installation.

## **PART 2 PRODUCTS**

## **2.01 FIRESTOPPING-GENERAL**

- A. Through-Penetration Firestop Devices, Forming Materials, And Fill, Void or Cavity Materials: As listed in the UL Fire Resistance Directory, Inchcape Directory of Listed Products, Factory Mutual Approval Guide, or the Omega Point Laboratories Listings Directory.
  - 1. For firestopping exposed to moisture, furnish products that do not deteriorate when exposed to this condition.
  - 2. For firestopping systems exposed to view, furnish products with flame-spread values of less than 25 and smoke developed values less than 50, as determined per ASTM E 84.
- B. Accessories: Components required to install fill materials as recommended by the firestopping manufacturer for particular approved fire rated system.
- C. Identification Labels:
  - 1. Furnished by fire stopping manufacturer of suitable material for permanent field identification of through-penetration firestops.
  - 2. Identify the following:
    - a. "WARNING - FIRESTOP MATERIAL".
    - b. Company Name.
    - c. Product Catalog number.
    - d. F rating.
    - e. T rating, if available.
  - 3. Field fabricated labels are not acceptable.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Examine existing through-penetrations of floors, walls, partitions, ceilings and roofs in the Work areas.
- B. Examine existing junctures, control joints, and expansion joints in the Work areas.
- C. Where firestopping is missing or not intact, submit a written report to the Director's Representative describing the existing conditions.

### **3.02 PREPARATION**

- A. Clean out openings immediately before installation of through-penetration firestopping. Comply with recommendations of firestopping manufacturer and the following requirements:
  - 1. Remove foreign materials from surfaces of openings, and from penetrating items that could interfere with adhesion of firestopping.
  - 2. Clean opening and penetrating items to produce clean, sound surfaces capable of developing optimum bond with firestopping. Remove loose particles remaining from cleaning operation.

3. Remove laitance and form release agents from concrete.
- B. Clean out openings, and juncture, control, and expansion joints immediately before installation of firestopping. Comply with recommendations of firestopping manufacturer and the following requirements:
1. Remove foreign materials from surfaces of openings and joint substrates, and from penetrating items that could interfere with adhesion of firestopping.
  2. Clean opening joint substrates to produce clean, sound surfaces capable of developing optimum bond with firestopping. Remove loose particles remaining from cleaning operation.
  3. Remove laitance and form release agents from concrete.
- C. Protection:
1. Protect surfaces adjacent to through-penetration firestops with non-staining removable masking tape or other suitable covering to prevent firestopping from contacting adjoining surfaces that will remain exposed upon completion of Work and that would otherwise be permanently stained or damaged by such contact or that would be caused by cleaning methods used to remove smears from firestopping materials.
- D. Substrate Priming:
1. Prime substrates in accordance with the firestopping manufacturer's printed installation instructions using recommended products and methods.
  2. Do not allow primer to spill or migrate onto adjoining exposed surfaces.

### **3.03 INSTALLATION OF THROUGH PENETRATION FIRESTOPS**

- A. Use through-penetration firestop devices, forming materials, and fill, void or cavity materials to form through-penetration firestops to prevent the passage of flame, and limit temperature rise of the unexposed surface as detailed in the UL Fire Resistance Directory, Inchcape Directory of Listed Products, Factory Mutual Approval Guide, or the Omega Point Laboratories Listings Directory.
1. Where applicable design is not detailed in the Directories, use forming materials and fill, void or cavity material to form through-penetration firestop in accordance with approved printed details and installation instructions from the company producing the forming materials and fill, void or cavity material.
  2. If the construction type(s) of the building cannot be determined, provide firestopping with fire resistance ratings as specified in the Building Code of New York State, Tables 720.1(1), 720.1(2), 720.1(3), and 302.3.2.
- B. Provide through-penetration firestop systems with F ratings that shall equal or exceed the fire resistance rating of the penetrated building construction.
- C. Provide through-penetration firestop systems with T ratings, in addition to F ratings, at floors where the following conditions exist:
1. Where firestop systems protect penetrations located outside the wall cavities.

2. Where firestop systems protect penetrations located outside fire resistive shaft enclosures.
  3. Through-penetration firestop systems protecting floor penetrations require a T-rating of at least 1 hour, but not less than the required floor fire-resistance rating.
- D. Firestop through-penetrations associated with the new Work.
- E. In areas where through-penetration items have been installed before the construction work, firestop the through-penetration items after the construction work has been completed. Furnish drawings or written information to the Construction Work Contractor covering the provisions to be made in the construction work to enable firestopping of the through-penetration items.
- F. Permanently affix label at each firestop. Use adhesive compatible with surface construction at firestop location.

#### **3.04 INSTALLATION OF JUNCTION, CONTROL, AND EXPANSION JOINT FIRESTOPS**

- A. Use joint treatment materials to form firestop to prevent the passage of flame and limit temperature rise of the unexposed surface, as detailed in the UL Fire Resistance Directory, Inchcape Directory of Listed Products, Factory Mutual Approval Guide or the Omega Point Laboratories Listings Directory.
1. Where applicable design is not detailed in the Directories, use forming materials and fill, void or cavity material to form firestop in accordance with approved printed details and installation instructions from the company producing the forming materials and fill, void or cavity material.
  2. If the construction type(s) of the building cannot be determined, provide firestopping with fire resistance ratings as specified in the Building Code of New York State, Tables 720.1(1), 720.1(2), 720.1(3), and 302.3.2.
- B. Firestop junctures, control joints, and expansion joints associated with the new Work.
- C. Permanently affix labels every 10 feet along each firestop. Use adhesive compatible with surface construction at firestop location.

#### **3.05 CLEANING**

- A. Clean off excess fill materials and sealants adjacent to penetrations by methods and cleaning materials recommended by manufacturers of firestopping products and of products in which penetrations occur.
- B. Remove masking tape as soon as practical so as not to disturb the firestopping's bond with substrate.
- C. Protect firestopping during and after curing period from contact with contaminating substances, or damage resulting from adjacent Work.

- D. Cut out and remove damaged or deteriorated firestopping immediately, and install new materials as specified in firestop schedule.

**END OF SECTION**

## **SECTION 079200**

### **JOINT SEALERS**

#### **PART 1 GENERAL**

##### **1.01 RELATED WORK SPECIFIED ELSEWHERE**

- A. Glazing Sealants: Section 088100.

##### **1.02 SUBMITTALS**

- A. Product Data: Catalog sheets, specifications, and installation instructions for each product specified except miscellaneous materials.

##### **1.03 QUALITY ASSURANCE**

- A. Container Labels: Include manufacturer's name, trade name of product, kind of material, federal specification number (if applicable), expiration date (if applicable), and packaging date or batch number.
- B. Test and validate sealants used for exterior weathersealing per the Sealant Waterproofing Restoration Institute (SWRI).
- C. Warranties:
  - 1. Silicone sealants: 20 years Weatherseal Warranty.
  - 2. Polyurethane or Silicone: 5 year Weatherseal Warranty.

##### **1.04 PROJECT CONDITIONS**

- A. Environmental Requirements:
  - 1. Temperature: Unless otherwise approved or recommended in writing by the sealant manufacturer, do not install sealants at temperatures below 40 degrees F or above 85 degrees F for non silicone sealants and below minus 20 degrees F or above 125 degrees F for silicone sealants.
  - 2. Humidity and Moisture: Do not install the Work of this section under conditions that are detrimental to the application, curing, and performance of the materials.
  - 3. Ventilation: Provide sufficient ventilation wherever sealants, primers, and other similar materials are installed in enclosed spaces. Follow manufacturer's recommendations.
- B. Protection:
  - 1. Protect all surfaces adjacent to sealants with non-staining removable tape or other approved covering to prevent soiling or staining.
  - 2. Protect all other surfaces in the Work area with tarps, plastic sheets, or other approved coverings to prevent defacement from droppings.

## **PART 2 PRODUCTS**

### **2.01 SEALANTS**

- A. Type 1 Sealant, any of the following generic types:
  - 1. One-part, low-modulus silicone sealant: Dow Corning 790, Dow Corning 791, Dow Corning 795, General Electric Silpruf, Pecora 864, Pecora 890, Pecora 890FTS.
  - 2. One-part, non-sag silicone or polyurethane sealant: Bostik Chem-Calk 900, Bostik Chem-Calk 915, Bostik Chem-Calk 916 Textured, Bostik Chem-Calk 2020, Pecora Dynatrol I, Sika Sikaflex 1a, Sonneborn Sonolastic NP I, or Tremco DyMonic (not SWRI), Dow Corning Contractors Weatherproofing Sealant (CWS), Dow Corning Concrete Sealant (CCS), Pecora 895.
  - 3. Two-part, non-sag silicone or polyurethane sealant: Bostik Chem-Calk 500 (not SRWI), Pecora Dynatrol II, Dow Corning CWS or CCS.
  
- B. Type 1A Sealant:
  - 1. For Horizontal Joints: Two-part, self-leveling silicone or polyurethane sealant for traffic bearing construction; Bostik Chem-Calk 550 (not SWRI), Tremco Vulkem 255, Pecora Urexpand NR-200, Pecora Silicone 310SL, Bostik Chem-Calk 550, Dow Corning Parking Structure Sealant FC or SL, Dow Corning Contractors Concrete Sealant, Sikaflex 2c SL
  - 2. For Vertical Joints: Two-part, non-sag silicone or polyurethane sealant; Bostik Chem-Calk 500 (not SWRI), Tremco Vulkem 227, Pecora Dynatrol II, Pecora Silicone 311NS, Dow Corning Parking Structure Sealant NS, Dow Corning CCS, Sikaflex 2c NS EZ.
  
- C. Type 3 Sealant: One-part butyl rubber sealant; Pecora BC-158, PTI 707, or Bostik Chem-Calk 300 (not SWRI).
  
- D. Type 6 Sealant (flexible security sealant):
  - 1. Two part, non-sag, 25% total joint movement, elastomeric polyurethane; Pecora Dynaflex.
  - 2. One-component 25% total joint movement, elastomeric, aliphatic, polyurethane; Pecora Dynaflex SC, Sonneborn Sonolastic Ultra.
  
- E. Sealant Colors: For exposed materials provide color as indicated or, if not indicated, as selected by the Director from manufacturer's standard colors. For concealed materials, provide the natural color which has the best overall performance characteristics.

### **2.02 JOINT FILLERS**

- A. Cork Joint Filler: Resilient, non-extruding type pre-molded cork units; ASTM D 1752, Type II.

## **2.03 MISCELLANEOUS MATERIALS**

- A. Joint Primer/Sealer/Conditioner: As recommended by the sealant manufacturer for the particular joint surface materials and conditions.
  - 1. For Type 6 Sealant (two part):
    - a. Pecora No. P-100 for non-porous substrates.
    - b. Pecora No. P-75 or P-200 for porous substrates.
  - 2. For Type 6 Sealant (one component):
    - a. Pecora No. P-100 for non-porous substrates.
    - b. Pecora No. P-75 for porous substrates.
    - c. Sonneborn No. 733 or 766 for porous or non- porous substrates.
- B. Backer Rod: Compressible rod stock of expanded, extruded polyethylene.
- C. Bond Breaker Tape: Polyethylene or other plastic tape as recommended by the sealant manufacturer; non-bonding to sealant; self adhesive where applicable.
- D. Cleaning Solvents: Oil free solvents as recommended by the sealant manufacturer. Do not use re-claimed solvents.
- E. Masking Tape: Removable paper or fiber tape, self-adhesive, non-staining.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Examine all joint surfaces for conditions that may be detrimental to the performance of the completed Work. Do not proceed until satisfactory corrections have been made.

### **3.02 PREPARATION**

- A. Clean joint surfaces immediately before installation of sealant and other materials specified in this Section.
  - 1. Remove all loose materials, dirt, dust, rust, oils and other foreign matter that will impair the performance of materials installed under this Section.
  - 2. Remove lacquers, protective coatings and similar materials from joint faces with manufacturer's recommended solvents.
  - 3. Do not limit cleaning of joint surfaces to solvent wiping. Use methods such as grinding, acid etching or other approved and manufacturer's recommended means, if required, to clean the joint surfaces, assuring that the sealant materials will obtain positive and permanent adhesion.
- B. Set joint fillers at proper depth and position as required for installation of bond breakers, backer rods, and sealants. Do not leave voids or gaps between the ends of joint filler units.
  - 1. Smooth Edged Joints: For joints between two concrete slabs or where new concrete abuts smooth edged materials use either cork joint filler or closed cell polyurethane joint filler.

2. Irregular Edged Joints: For joints where new concrete abuts granite curbs or other irregular edges use closed cell polyurethane joint filler.
- C. Priming Joint Surfaces:
1. Prime joints which are to receive Type 1B and Type 6 sealants.
  2. Prime joints of friable (crumbly, chalky) masonry surfaces which are to receive Type 1 Sealant.
  3. Prime joints other than those above if so recommended by the manufacturer's printed instructions.
  4. Do not allow the primer/sealer to spill or migrate onto adjoining surfaces.

### **3.03 JOINT BACKING INSTALLATION**

- A. Install bond breaker tape in relaxed condition as it comes off the roll. Do not stretch the tape. Lap individual lengths.
- B. Install backer rod of sufficient size to fill the joint width at all points in a compressed state. Compress backer rod at the widest part of the joint by a minimum of 25 percent. Do not cut or puncture the surface skin of the rod.

### **3.04 SEALANT INSTALLATION**

- A. Except as shown or specified otherwise, install sealants in accordance with the manufacturer's printed instructions.
- B. Install sealants with ratchet hand gun or other approved mechanical gun. Where gun application is impractical, install sealant by knife or by pouring as applicable.
- C. Finishing: Tool all vertical, non-sag sealants so as to compress the sealant, eliminating all air voids and providing a neat smoothly finished joint. Provide slightly concave joint surface, unless otherwise indicated or recommended by the manufacturer.
  1. Use tool wetting agents as recommended by the sealant manufacturer.

### **3.05 CLEANING**

- A. Immediately remove misapplied sealant and droppings from metal surfaces with solvents and wiping cloths. On other materials, remove misapplied sealant and droppings by methods and materials recommended in writing by the manufacturer of the sealant material.
- B. After sealants are applied and before skin begins to form on sealant, remove all masking and other protection and clean up remaining defacement caused by the Work.

**END OF SECTION**

## **SECTION 081102**

### **STEEL DOORS AND FRAMES**

#### **PART 1 GENERAL**

##### **1.01 RELATED WORK SPECIFIED ELSEWHERE**

- A. Finish Hardware: Section 087100.
- B. Glass and Glazing: Section 088100.

##### **1.02 REFERENCES**

- A. ANSI- American National Standard Institute
  1. A240: Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet and Strip for Pressure Vessels and for General Applications.
  2. A250.4-2001 Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors and Hardware Reinforcings.
- B. NAAMM National Association of Architectural Metal Manufacturers
  1. HMMA 830-1997 Hardware Preparations and Locations for Hollow Metal Doors and Frames.
  2. HMMA 831-1997 Recommended Hardware Locations for Hollow Metal Doors and Frames.
  3. HMMA 840-1999 Guide Specification for Installation and Storage of Hollow Metal Doors and Frames.
  4. HMMA 861-2000 Guide Specification for Commercial Hollow Metal Doors and Frames.
- C. NFPA National Fire Protection Association
  1. NFPA 80- 2010 Standard for Fire Doors and other Opening Protectives.

##### **1.03 DEFINITIONS**

- A. Steel Door and Frame Manufacturer: Manufacturer of steel doors and frames regularly engaged in the manufacturing of such products for use in commercial, institutional, educational and other similar applications.
- B. Company Field Advisor(s): An employee of the steel door and frame manufacturer who is certified in writing by the manufacturer to be technically qualified in design, installation, and servicing of products.
- C. Steel Door and Frame Distributor: Distribution Company who regularly engages in the distribution of steel doors and frames of the manufacturer whose doors and frames are submitted for this project.
- D. Certified Installation Supervisor: Designated supervisor/installer, who has a minimum three years experience in steel frame and door installation, and is certified in writing by the steel door and frame manufacturer as qualified and responsible to ensure approved steel frames and doors are installed, adjusted, and operate properly.

##### **1.04 SUBMITTALS**

- A. Waiver of Submittals: "Waiver of Certain Submittal Requirements" in Section 01330 does not apply to this Section.
- B. Submittals Packages
  - 1. Door and Frame Schedule and Shop Drawings Package: Submit as a complete package. Incomplete packages will be returned unreviewed.
    - a. Quality Assurance Submittal
      - 1) Certification of Compliance as described in the Quality Assurance Article.
      - 2) Company Field Advisor's Qualification Data
        - a) Name of Company Field Advisor and Employer's name, business address and telephone number and e-mail address.
        - b) Names and addresses of 3 similar projects Company Field Advisor has worked on during the past three years.
        - c) Written certification on steel door and frame manufacturer's letterhead that Company Field advisor is technically qualified in design, installation, and servicing of the products furnished for this Project.
      - 3) Certified Supervisor's and Installer's Qualification Data
        - a) Name of Supervisor and each Installer performing Work, and Employer's name, business address and telephone number.
        - b) Names and addresses of 3 similar projects Supervisor and each Installer has worked on during the past three years.
        - c) Written certification on steel door and frame manufacturer's letterhead that Supervisor/Installer is technically qualified to ensure approved steel frames and doors are installed, adjusted, and operate properly.
    - b. Door and Frame Schedule:
      - 1) Include a Cover Sheet that lists:
        - a) OGS project name, project number, and project address.
        - b) Manufacturer's name, address, and telephone number.
        - c) Distributor's name, address, and telephone number.
        - d) Shop drawing preparer's name, and telephone number and e-mail address.
        - e) Submission date.
      - 2) List by opening
        - a) Door and Frame number and location by building and room name. Use same reference numbers for openings and as those shown on Contract Drawings.
        - b) Door width, height, thickness, type, gage, and options
        - c) Frame type, width, height, jamb depth, gage, anchor type and options.
        - d) Door and frame elevations; head and jamb profiles and details; welding requirements; and reinforcements.

- e) Fire Rating.
  - f) Glass type.
  - g) Undercut.
  - h) Electric preparations, if any.
  - i) Hardware Set.
  - j) Show dimensioned elevations; construction details of each door including vertical and horizontal edge details; and frame details for each type, including dimensions profiles; locations for finish hardware, including cutouts and reinforcements; gage of reinforcements; details of connections; anchors and accessories; and details of conduit and preparations for electrified door hardware and controls.
- 3) Product Data: Manufacturer's catalog sheets, specifications, and detailed installation instructions. Highlight products and options pertaining to this Project. Cross out information irrelevant to this Project.
  - 4) Manufacturer's Written Certification of Compliance that their products conform to the requirements of the references named in the References Article of this specification section, and as modified by this specification.
  - 5) Samples:
    - a) Doors: Representative sample of high definition embossed door construction, 18 x 18 inches, with mortises and reinforcements, factory primed or factory finished, as required.
2. Closeout Submittals: Submit as a complete package.
- a. Operation and Maintenance Manuals: Furnish 2 (two) hard cover three ring binders with project name and number prominently displayed on the front cover and the spine.
  - b. Listing of Manufacturer, address and contact information
  - c. Approved Door and Frame Submittal including shop drawings and product data sheets
  - d. Manufacturer's dated warranty for this specific project identified by Facility, OGS project number, and manufacturer's order number.

## 1.05 QUALITY ASSURANCE

- A. Fire Rated Assemblies: Wherever a fire resistance classification is shown or scheduled for steel doors and frames; provide fire rated units that have been tested as fire door assemblies, and comply with National Fire Protection Association (NFPA) Standard No. 80 and these specifications. Identify each door and frame with a metal UL, FM, or WHI label. Indicate the applicable fire class on the door label. Rivet or weld labels on the hinge edge of door and jamb rabbet of frame.
- B. Uniformity and Single Source Responsibility:
  - 1. Provide steel doors and frames from a single source manufacturer who specializes in this type of work.

- C. Field Measurements: Verify openings by field measurements before fabrication and indicate measurements on shop drawings.
- D. On-site Pre-installation Meeting: The contractor, frame installers, certified Company Field Advisor, and OGS inspector shall attend the conference. Other participants may be invited at the discretion of the Director.
  - 1. The Director's Representative will call a pre-installation conference at the site, immediately prior to Field Example and Mock-Up installation, to review installation procedures and tolerances required for a proper installation.
  - 2. These practices and procedures shall be employed in the installation of the field example and mock up.
  - 3. On completion and approval, the mock up installation shall be considered part of the completed project.
- E. Field Example and Mock-up Frame, Door and Hardware Installation:
  - 1. Provide door, frame and hardware for (1) one exterior door opening location with the coordination of the Director's Representative.
  - 2. Remove existing frame and prepare door opening for final door and frame installation.
  - 3. Field install frame, door and hardware immediately following the pre-installation meeting.

## **1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver doors and frames in heavy paper cartons or other protective packaging. Remove any plastic protective wrap from the package.
- B. Store doors and frames under cover, in a dry area, on raised platforms in vertical position with minimum 4 inch blocking between units to allow air circulation.
- C. Clearly label packaging, and doors and frames, for identification and installation location.

## **PART 2 PRODUCTS**

### **2.01 MATERIALS**

- A. Hot-Rolled Steel Sheets and Strip: Commercial quality carbon steel, pickled and oiled, complying with ASTM A 569 and ASTM A 568.
- B. Cold-Rolled Steel Sheets: Commercial quality carbon steel complying with ASTM A 366 and ASTM A 568.
- C. Galvanized Steel Sheets: Zinc-coated carbon steel sheets of commercial quality complying with ASTM A 526, with A 60 zinc coating, mill phosphatized, complying with ASTM A 525.
- D. Anchors and Supports: Fabricate of not less than 16 gage sheet steel unless otherwise indicated.
  - 1. Galvanized Units: Galvanize anchors and supports to be used with galvanized frames, complying with ASTM A 153, Class B.

- E. Anchorage Devices, Bolts, and Other Fasteners: Manufacturer's standard units unless otherwise indicated.
  - 1. Galvanized Units: Galvanize items to be used with galvanized frames complying with ASTM A 153, Class C or D as applicable.

## 2.02 DOORS

- A. General:
  - 1. Design and Thickness: Flush or high definition embossed design doors, seamless, hollow construction, 1-3/4 inches thick.
  - 2. Construct doors with smooth flush surfaces without visible joints or seams on exposed faces or stile edges. Continuously MIG, ARC or laser weld vertical edges, grind smooth, and dress to achieve seamless edge.
  - 3. Reinforce top and bottom of doors with horizontal steel channel welded to inside of outer sheets.
  - 4. Reinforce inside of doors with high-density polystyrene permanently bonded to skins.
  - 5. Close top and bottom edges with flush steel caps. Flush caps may be integral part of door construction, or formed by addition of another steel channel or filler plate welded to door. Weld, fill, grind smooth and dress top caps to achieve a full weather seal. Provide 1/8-inch weep holes in bottom caps, 12" on center to drain condensed moisture.
  - 6. Door Edges: Bevel lock stile edge of single acting hinged doors 1/8-inch in 2 inches. "V" bevel meeting stiles of pairs of doors, except at double egress locations where meeting stiles are parallel.
  - 7. Glazing Stops and Beads: Fixed steel stops, formed integral with door unless otherwise acceptable to the Director, on the outside of exterior doors and on the secure side of interior doors. Removable steel beads, of not less than 14-gauge formed steel sheet or solid bar stock, on other side of doors secured with torx head machine screws. Form corners with butted hairline joints. Coordinate width of rabbet between fixed stop and removable bead, and depth of rabbet, with type of glass and glazing required.
  - 8. Astragals: Steel, attached with machine screws unless shown otherwise.
  - 9. Factory apply primer paint coat containing vinyl binder for maximum rust protection, adhesion and impact resistance.
- B. Exterior Doors:
  - 1. Fabricate exterior doors with 2 galvanized A60 high definition embossed stamped steel face not less than 16 gage. Face sheets shall be embossed for the design indicated.
  - 2. Reinforce inside of doors with high-density polystyrene permanently bonded to skins.
  - 3. Insulate doors to achieve a maximum coefficient of thermal transmittance (apparent "U" Factor) of 0.40.
- C. Interior Doors:
  - 1. Fabricate interior doors with 2 outer stretcher-leveled, cold-rolled steel sheets not less than 14 gage. Construct doors with smooth, flush surfaces without visible joints or seams on exposed faces or stile edges, except around glass and louver panels. Continuously MIG, ARC or laser weld and ground smooth vertical edges to achieve a seamless edge.

- a. Fabricate interior doors with 2 outer galvanized steel sheets.
- 2. Reinforce inside of doors with one of the following:
  - a. Vertical, full door height, channel-shaped or hat-shaped or interlocking z-shaped sheet steel sections of not less than 20 gage thickness. Space the reinforcing sections on not more than 6 inch centers and spot weld on 4 inch centers to both face sheets.
- 3. Reinforce top and bottom of doors with not less than 14 gage horizontal steel channel welded to the outer sheets.
- 4. Sound Deadening (ASTM E 90): Minimum Sound Transmission Class (STC) of 25.

## 2.03 FRAMES

- A. General:
  - 1. Furnish steel frames for doors, transoms, sidelites, borrowed lites, and other openings, as shown, of size and profile as indicated.
  - 2. Construction: Full welded unit construction, with corners mitered and continuously welded full depth and width of frame, unless otherwise specified or shown. Knock-down type frames will not be accepted.
    - a. Fixed Stops: Integral 5/8 inch stop unless otherwise shown.
    - b. Removable Beads: Removable steel beads secured with machine screws. Form corners with butted hairline joints.
  - 3. Do not drill frames for silencers.
  - 4. Weld steel shipping spreaders to the underside of the jamb legs, requiring removal of the spreaders prior to frame installation.
- B. Interior and Exterior Frames: Form of hot-rolled steel sheets, not less than 12 gage, zinc alloy iron coated A60 galvanized.
- C. Mullions and Transom Bars:
  - 1. Furnish closed or tubular mullions and transom bars where shown. Fasten mullions and transom bars at crossings and to jambs by butt welding. Reinforce joints between frame members with concealed clip angles or sleeves of same metal and thickness as frame.
  - 2. Where installed in masonry, leave vertical mullions in frames open at the top so they can be filled with grout.
- D. Wall Anchors: Unless otherwise specified or shown, formed of not less than 16 gage galvanized steel.
  - 1. Masonry Construction: Adjustable strap anchors to suit frame size with leg not less than 2 inches wide by 10 inches long. Furnish at least 3 anchors per jamb up to 7'6" jamb height.
  - 2. Anchors for Completed Openings: Anchorage devices designed to secure frame to in-place concrete or in-place masonry construction, as applicable. Furnish at least 5 anchors per jamb up to 7'-6" jamb height.
- E. Floor Anchors: Furnish floor anchor for each jamb and mullion which extends to floor, formed of not less than 16 gage steel, with 2 holes to receive fasteners, welded to bottom of jamb or mullion, and galvanized if used with galvanized frames

## **2.04 PANELS**

- A. Furnish panel units as indicated.
  - 1. Fabricate exterior panels same as specified for exterior doors, high definition embossed stamped steel face not less than 16 gage. Face sheets shall be embossed for the design indicated.

## **2.05 DIVIDED LIGHTS**

- a. Furnish removable divided light inserts for the design indicated in transoms and sidelights. Form from galvanized steel shapes custom fabricated units. Securely fasten with Torx head security screws not more than 6" oc to the interior of panels.

## **2.06 FABRICATION**

- A. Fabricate steel door and frame units to be rigid, neat in appearance, and free from warp, buckle and other defects. Accurately form metal to required sizes and profiles. Weld exposed joints, and make smooth, flush and invisible by filling or grinding and dressing. Wherever practicable, fit and assemble units in the manufacturer's plant. Clearly identify items that cannot be permanently factory-assembled before shipment, to assure proper assembly at the project site.
- B. Exposed Fasteners: Countersunk flat tamper-resistant head for exposed screws and bolts. Unless otherwise specified or shown, locate fasteners 2 inches from each end of members and not more than 12 inches apart.
- C. Finish Hardware Preparation:
  - 1. Prepare doors and frames to receive mortised and concealed finish hardware, including cutouts, reinforcing, drilling and tapping, in accordance with Finish Hardware Schedule and templates furnished by hardware manufacturer.
  - 2. Reinforce doors and frames to receive surface applied hardware. Drilling and tapping for this hardware shall be done at the project site.
  - 3. Locate finish hardware as specified elsewhere or as shown on the hardware manufacturer's templates.
  - 4. Weld 14 gage steel tongues, 1-1/2 inches high, inside lock mortise to keep lock body centered in door.
  - 5. Install 7 gage reinforcement for hinges and pivots, except hinge reinforcement in door edge may be a one-piece 12 gage channel full door height with extruded hinge screw holes having an average minimum thread pull-out strength of 1600 pounds per hole. Install 12 gage reinforcement for all other hardware.
  - 6. Reinforce doors not mortised for concealed door closers for surface door closer application, and all frames for closer arm application, whether or not closers are specified.
- D. Clearances: Fabricate doors for their respective frames within the following clearances:
  - 1. Jams and Head: 3/32 to 1/8 inch.
  - 2. Meeting Edges of Pairs: 1/8 to 1/4 inch.
  - 3. Bottom (no threshold or carpet): 3/4 inch, maximum to finished surface.
  - 4. Bottom (at threshold or carpet): 3/8 inch, maximum to top of threshold or carpet.

5. Fire Rated Doors: Comply with clearances specified in NFPA Standard No. 80.
- E. Shop Painting:
1. Chemically wash, rinse, and dry exposed and concealed surfaces of fabricated units.
  2. Apply one coat of primer to all surfaces and oven-bake units.
  3. Units shall be capable of passing the following tests:
    - a. Salt Spray Test complying with ASTM B 117 for 120 continuous hours.
    - b. Water Fog Test complying with ASTM D 1735 for 240 continuous hours.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verification of Conditions: Examine the substrate and conditions under which the frames are to be installed for defects that will adversely affect the execution and quality of the Work. Do not proceed until unsatisfactory conditions are corrected.

### **3.02 INSTALLATION**

- A. Install steel doors, frames, and accessories in accordance with the manufacturer's printed instructions, except as otherwise specified or shown.
- B. Frame Installation: Place frames accurately in position; plumb, align, and brace securely until permanent anchors are set. After wall construction is complete, remove temporary braces and spreader bars, leaving surfaces smooth and undamaged.
1. Make necessary field splices in frames as detailed on final shop drawings, welded and finished to match factory fabrication.
  2. Placing Frames For Completed Openings: Secure to in-place concrete and in-place masonry construction with anchorage devices. Set anchorage device opposite each anchor location in accordance with details on final shop drawings and anchorage device manufacturer's instructions. Leave drilled holes rough, not reamed, and free from dust and debris. Sink fastener heads flush or slightly below the surface of the frame. Fill and sand smooth to conceal fastener heads where directed.
  3. Installation Tolerances: Adjust door frames for squareness, alignment, twist, and plumb to the following tolerances:
    - a) Squareness: Plus or minus 1/16 inch, measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
    - b) Alignment: Plus or minus 1/16 inch, measured at jambs on a horizontal line parallel to plane of wall.
    - c) Twist: Plus or minus 1/16 inch, measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
    - d) Plumbness: Plus or minus 1/16 inch, measured at jambs at floor.
- C. Door Installation:
1. Install doors accurately in their respective frames within the clearances specified in Part 2.
  2. Place fire rated doors with clearances as specified in NFPA Standard No. 80.

- D. Drill and tap doors and frames to receive surface applied hardware.

### **3.03 ADJUSTING**

- A. Prime Coat Touch-up: Immediately after installation, sand smooth and clean rusted and damaged areas of shop prime coat and apply touch-up of compatible air-drying primer.
- B. Final Adjustments: Check and readjust operating finish hardware items just prior to final inspection. Leave Work in complete and proper operating condition.

### **3.04 CLEANING**

- A. Clean doors, frames, and accessories free of dirt and other foreign materials after completion of installation.

### **3.05 FINAL INSPECTION**

- A. Upon completion of the project, the Director's representative will schedule a final inspection to verify doors and frames are properly installed and adjusted. The contractor, door and frame installer, and design representative will attend.

**END OF SECTION**

SP/rwt

## **SECTION 083323**

### **ROLLING DOORS**

#### **PART 1 GENERAL**

##### **1.01 REFERENCES**

- A. Sheet Steel Gages: US Standard gage.

##### **1.02 PERFORMANCE REQUIREMENTS**

- A. Wind Loading: Rolling doors shall withstand a wind loading pressure of 20 psf without damage to door assembly.
- B. Counterbalance Assembly Shaft Deflection: Shall not exceed 0.03 inch per foot of span.

##### **1.03 SUBMITTALS**

- A. Shop Drawings: Show application to project.
- B. Product Data: Catalog sheets, specifications, and installation instructions for rolling service door assemblies and finish.
- C. Contract Closeout Submittals:
  - 1. Operation and maintenance data.
  - 2. Replacement parts list.

#### **PART 2 PRODUCTS**

##### **2.01 ROLLING DOOR**

- A. Complete overhead coiling door assemblies sized and arranged to suit opening sizes, conditions, and clearance limitations indicated on the Drawings.

##### **2.02 GUIDES**

- A. Stainless steel angles or sections, not less than 3/16 inch thick; upper ends flared or fitted with cast iron bellmouth for smooth curtain entry; depth sufficient for specified slat engagement; with windlock stop for curtains with windlocks.

##### **2.03 END BRACKETS**

- A. Stainless steel, formed to close ends of hood, with self-aligning ball-bearing counterbalance supports.

## **2.04 COUNTERBALANCE ASSEMBLY**

- A. Springs: Helical wound oil-tempered steel torsion springs, designed with 25 percent overload factor, mounted on a cold rolled steel inner shaft.
- B. Roller Shaft/Spring Enclosure: Steel pipe designed to support curtain and counterbalance mechanism within specified deflection tolerance.
- C. Adjusting Device: Spring tension setting wheel, readily accessible.
- D. Mechanism within pipe shaft shall be grease-packed.

## **2.05 HOOD**

- A. Not less than 24 gage stainless steel, reinforced top and bottom with stiffening returns.

## **2.06 LOCKING DEVICE**

- A. Suitable device for type of operation, designed to receive padlock. Device shall be located three feet above the floor, unless otherwise indicated.

## **2.07 FINISHES**

- A. Stainless Steel: #4 finish.

## **2.08 INSULATED OVERHEAD ROLL-UP DOOR**

- A. Basis of Design: Thermiser Model ESD20 as manufactured by Cornell Iron Works, Inc. or approved equal.
- B. Curtain: Interlocking flat slats of cold roll formed AISI Type 304 stainless steel with enclosed insulation.
  - 1. Slat Construction: Sandwich type meeting the requirements of one of the following:
    - a. 2-5/8 inches high by 7/8 inch deep, 22 gage stainless steel face and interlocking 22 gage stainless steel back, completely enclosing foamed-in-place rigid polyurethane insulation permanently bonded to the metal. Slat shall be completely filled with insulation.
    - b. Minimum R-value of 8.0 (U-factor of 0.125) as calculated using the ASHRAE Handbook of Fundamentals.
  - 2. Slat Engagement Into Guides: Not less than 2 inches.
  - 3. Endlocks: Malleable iron; riveted to each end of each slat.
  - 4. Windlocks: Malleable iron; riveted to each end of alternate slats for doors 10 feet or more in width.
  - 5. Bottom Bar: Galvanized steel angles not less than 1/8 inch thick, one each side, fastened with Type 316 stainless steel bolts and nuts.

- C. Weatherstripping:
  - 1. Sill: Compressible and removable, neoprene tubular seal or looped astragal, attached to bottom bar.
  - 2. Jambs: Continuous neoprene or vinyl baffle, attached to guide assemblies.
  - 3. Head: Continuous neoprene or vinyl weather baffle, attached to door head or lintel.

## **2.09 MANUAL OPERATION**

- A. Chain Hoist Operator:
  - 1. Gear reduction drive, endless cadmium-plated alloy steel hand chain, mounted on counterbalance shaft, operating with not more than 35 pounds pull.
  - 2. Gears cast from machine-cut patterns.
  - 3. Chain locking bracket.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verification of Conditions: Examine door openings for defects that will adversely affect the execution and quality of the Work. Do not proceed until unsatisfactory conditions are corrected.

### **3.02 INSTALLATION**

- A. Install the Work of this Section in accordance with the manufacturer's printed instructions, except as shown or specified otherwise.
  - 1. Field connections and fastening shall be as recommended by the door manufacturer for the conditions, unless otherwise indicated.
  - 2. Install bracing and supports as necessary to rigidly secure door operating equipment and appurtenances.

### **3.03 FIELD QUALITY CONTROL**

- A. Tests:
  - 1. Test all functions and features of each rolling door.

### **3.04 ADJUSTING**

- A. Adjust and lubricate doors and operating equipment to operate smoothly. Adjust door fit and weatherstripping to make a weathertight fit for the door perimeter.
- B. Repair cut, welded, and abraded galvanized surfaces with a minimum 2 mil thick coating of cold galvanizing compound (containing 93 percent zinc) applied in accordance with manufacturer's instructions.

**3.05 CLEANING**

- A. Clean doors, and clean work area surfaces that have been soiled performing the Work.

**END OF SECTION**

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## SECTION 085123

### STEEL WINDOWS

#### PART 1 GENERAL

##### 1.01 RELATED WORK SPECIFIED ELSEWHERE

- A. Joint Sealers: Section 079200.
- B. Security Glass and Glazing: Section 088100.

##### 1.02 REFERENCES

- A. Window Type 1: Steel Single-hung.
- B. Except as shown or specified otherwise, the Work of this Section shall meet the requirements of the following:
  - 1. Steel Window Specifications by the Steel Window Institute (SWI).
  - 2. Structural Welding Code - Steel, AWS D1.1 and Structural Welding Code - Sheet Steel, AWS D1.3, as applicable, by the American Welding Society (AWS Codes).
- C. Window Classification:
  - 1. Heavy Intermediate.

##### 1.03 MANUFACTURERS

- A. Acceptable Manufacturers:
  - 1. Hope's Windows, Inc., 84 Hopkins Avenue, P.O. Box 580, Jamestown, New York 14702. Phone (716) 665-5124; [www.hopeswindows.com](http://www.hopeswindows.com).
    - a. Jamestown Series 175 Steel Single Hung Window.
  - 2. Optimum Window Mfg. Corp., 28 Canal Street, Ellenville, New York 12428, Phone (845) 647-1900; [www.optimumwindow.com](http://www.optimumwindow.com).
    - a. Series HR4700 Steel Single Hung Window.

##### 1.04 WINDOW TYPES AND DESCRIPTIONS

- A. Furnish all labor and materials to complete the fabrication of windows as shown on architect's drawings and as specified herein. All windows covered by this specification shall be hot-rolled steel single hung as fabricated by Hope's® Windows, Inc., Jamestown, New York, whose name and products are used to establish the standard of workmanship and quality construction required for this project. Other bidders must be approved by the architect at least ten days prior to the bid date, through submission of samples and evidence showing that the bidder has been fabricating window products of this type and quality for at least five years. All windows must be domestically manufactured in the U.S.A

## 1.05 PERFORMANCE REQUIREMENTS

- A. Heavy Intermediate Windows:
  - 1. Air Infiltration for Weatherstripped Ventilators (ASTM E 283): Maximum air leakage .37 cfm per lin ft of crack length when subjected to an exterior to interior static test pressure difference of 1.57 psf across window unit.
  - 2. Water Penetration for Weatherstripped Windows (ASTM E 331): No water leakage for 15 minutes when window is subjected to a rate of flow of 5 gal/sq ft/hr with test pressure difference across window unit of 2.86 psf.
  - 3. Structural Performance (ASTM E 330): No failure of locks, operating hardware, or other parts when subjected to an exterior to interior, and interior to exterior, static test pressure difference of 60 psf across window unit.
  - 4. Evaluating degree of rusting on painted steel surfaces test
    - a. Meets or exceeds ASTM D610
  - 5. Evaluating degree of blistering of paint test
    - a. Meets or exceeds ASTM D714
  - 6. Evaluation of painted or coated specimens subjected to corrosive environments test
    - a. Meets or exceeds ASTM D1654
  - 7. Upon request, the window manufacturer shall provide a test report from a qualified independent U.S. testing laboratory regularly engaged in testing windows to verify that his products conform to these test requirements.

## 1.06 SUBMITTALS

- A. Shop Drawings: Show fabrication details and connections to adjacent construction.
- B. Product Data: Catalog sheets, specifications, and installation instructions.
- C. Samples:
  - 1. One complete window unit of each type, with specified accessories. This sample will be returned and if approved may be used in the Work.
  - 2. Corner sample of frame, ventilator, detention members, and screen showing materials and construction, each type.
  - 3. Color Samples for Factory Prefinished Windows: Manufacturer's standard colors for specified finish.
- D. Quality Control Submittals:
  - 1. Manufacturer's Qualifications Data:
    - a. Names and addresses of 5 similar projects that have been in operation for not less than 3 years.
  - 2. Installers Qualifications Data:
    - a. Name of each person who will be performing the Work and their employer's name, business address and telephone number.
    - b. Names and addresses of 3 similar projects that each person has worked on during the past 3 years.

3. Test Reports:
    - a. Certified air leakage & water penetration.
  4. FINISHES: Quality of e-coat/ top-coat combination shall meet or exceed the following ASTM designations: ASTM D714- Paint Blistering Test, ASTM D4585 – Humidity Test, ASTM B117 – Salt Spray (Fog) Test, ASTM D1654 – Painted Products in Corrosive Environments, ASTM G85 – Cyclic Fog/Dry Test (Prohesion), ASTM D5894 – Salt Fog/UV Painted Metal, ASTM D4541 – Pull Off Strength of Coating Test.
  5. Upon request, the window manufacturer shall provide a test report from a qualified independent U.S. testing laboratory regularly engaged in testing windows to verify that his products conform to these test requirements.
- E. Contract Closeout Submittals:
1. Operation and Maintenance Data: Two copies of owner's manual, including instructions for cleaning windows and touching-up finish.

#### **1.07 QUALITY ASSURANCE**

- A. Window Manufacturer's Qualifications: The manufacturer of specified windows shall be regularly engaged in the production of detention windows, shall have furnished detention windows for 5 similar projects that have been in operation for not less than 3 years, and shall be subject to the approval of the Director.
- B. Installers Qualifications: The persons installing the detention windows and their Supervisor shall be personally experienced in detention window work and shall have been regularly employed by a Company installing detention windows for a minimum of 3 years.
- C. Testing Agency:
  1. Air infiltration and water penetration tests shall be performed by a qualified independent testing laboratory.

#### **1.08 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver windows in sturdy, protective crates or containers.
- B. Store and handle windows in a manner that will not cause damage to the finish.

#### **1.09 MAINTENANCE**

- A. Extra Materials: For every 20 windows installed (and fraction thereof), furnish detention window manufacturer's factory finish touch-up kit for the factory finish on windows. Store touch-up kits at the site where directed.
  1. Label kits to identify locations used.

#### **1.10 WARRANTY**

- A. General Warranty: The warranty specified in this Article shall be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents.
- B. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace steel windows which fail in materials or workmanship within specified warranty period.
  - 1. Failures include, but are not limited to, the following:
    - a. Failure to meet performance requirements.
    - b. Structural failures including excessive deflection, water leakage, air infiltration, or condensation.
    - c. Faulty operation of movable sash and hardware.
    - d. Deterioration of metals, other materials, and metal finishes beyond normal weathering.
    - e. Failure of insulating glass.
  - 2. Warranty Period: Ten(10)-year limited warranty from the date of Substantial Completion.

## **PART 2 PRODUCTS**

### **2.01 MATERIALS**

- A. Ventilator Jambs, and Sill Rails: Hot rolled steel sections; ASTM A 575.
- B. Steel Sheets: ASTM A 569 and ASTM A 568.
- C. Galvanized Steel Sheet: Iron alloy-coated (galvannealed) with A60 hot-dip process zinc coating as defined in ASTM A653/A653M-11.
- D. Hot Rolled Steel Sections: Galvanized with G90 hot-dip process zinc coating.
- E. Single-hung windows:
  - 1. Perimeter head and jamb frame members shall be formed from G90 galvanized steel not less than #12 gauge. Frames shall be channel shaped and carry through the vented and fixed portions continuously from bottom of sill to top of frame at each jamb. Frame members shall have profiles and dimensions as indicated on drawings.
  - 2. Glazing beads shall be extruded aluminum Alloy 6063-T5 with a minimum thickness of .062 inches.
  - 3. Weatherstripping shall be locked into dovetail groove milled into the hot-rolled steel section.
  - 4. Operable Hardware
  - 5. Fastener:
    - a. Bronze sweep lock.
    - b. Pulls: Bronze lift handle.
    - c. Balance Arm: Spiral and extension spring sash balance.

6. All screws that are furnished for hardware, trim, covers, anchoring, weatherbars, water dams, screens, etc. shall be non-ferrous brass or stainless steel torx tamper-resistant screws.
  
- F. Ventilator jamb, sill and head rails shall be one-piece sections and shall provide internal and external metal-to-metal weathering contacts around the entire perimeter. Jamb and sill rails shall be hot-rolled steel sections, not less than 1/8 inch thick and 1-3/4 inches deep and weighing not less than 2 pounds per lineal foot and shall have electrodeposited coating of zinc in accordance with ASTM B 633, Fe/Zn 25. Head rail shall be cold rolled formed from #12 gauge steel and 1-3/4 inches deep.
  
- G. Plates and Covers:
  1. Removable access plates of not less than #12 gauge G90 galvanized steel having 3/4 inch caulking returns, shall be provided at interior head and jambs.
  2. Sill access cover, shall be of not less than #12 gauge G90 galvanized steel.
  3. Plates and covers shall be attached with #10 Torx Taptite truss head plated steel tamper resistant screws, spaced 9 inches on centers, 1 inch from ends.
  
- H. Glazing:
  1. Ventilators shall be prepared for outside glazing against 15/16 inch high rabbet at sill and jambs and inserting glass in channel groove at head. Glazing beads shall be #12 gauge G90 galvanized steel sheet applied with #8 Torx Taptite truss head plated steel tamper resistant screws, spaced 9 inches on centers. Windows shall be factory glazed by window manufacturer.
  
- I. Weatherstripping shall be Q-Lon Weather Seal (tm).
  
- J. Anchors: Perimeter anchors shall be as outlined on details.
  
- K. Insect Safety Screen:
  1. Screen frame: Shall be angle shape formed from not less than #12 gauge G90 galvanized steel.
  2. Screen Cloth Clamping Plate: #12 gauge G90 galvanized steel.
  3. Screen Cloth:
    - a. Unless Otherwise Indicated: 0.028 inch diameter #304 stainless steel wire 12 x 12 double fold and hem the mesh at frame engagement.
  
- L. Factory Finishing (windows and screens)
  1. Pre-treatment:
    - a. Shot Blasting
    - b. Before any machining or welding is performed, all hot-rolled steel sections shall be cleaned by shot blasting to remove any loose scale.
    - c. Bonderizing

- d. After fabrication, windows, covers, and trim shall be subjected to a 10 stage Bonderizing pre-treatment process that produces a non-metallic phosphate coating on the surface of the steel in preparation for e-coat priming system.
  - e. E-Coat Prime Painting
  - f. Following the pretreatment, windows and accessories are e-coated with a cathodic epoxy primer of PPG Powercron® 8000 or equivalent to insure all surfaces are evenly covered. Spray or dip primers shall not be acceptable.
  - g. Immersed in a rinse of ultra-filtered RO water for 3 min to remove all the excess paint and removing any runs.
  - h. A spray of ultra-filtered RO water repeats the above process to further improve surface conditions.
  - i. The primer is oven baked to 335 degrees F for 15 minutes to a dry film thickness of 0.7 - 1.0 mil.
  - j. The material is then cooled in preparation for the finish coat.
2. Ultrathane Finish Painting:
- a. Following the prime coat, all windows and accessories are given a spray coat of acrylic polyurethane and oven baked at 225 degrees F for 15 minutes to dry film thickness of 1.5 to 2.0 mils.
  - b. The combined overall dry film thickness of the prime coat and finish coat shall be 2.2 - 3.0 mils.
  - c. Color of all windows shall match color of existing steel single-hung windows in Building No. 23.
3. E-Coat/top coat combination shall provide full documented compliance with all ASTM designations as outlined in Quality Assurance portion of the specifications.
- M. Fasteners: Plated steel, unless otherwise specified.
- 1. Exposed Fasteners: Plated Torx tamper-resistant truss head for exposed screws and bolts, finished to match windows.
- N. Fiberglass Batt Insulation: Glass or other inorganic fibers and resinous binders formed into flexible blankets, batts or rolls; ASTM C 665.

## 2.02 FABRICATION

- A. Fabricate windows in accordance with approved shop drawings.
- B. Frame members shall be coped and welded at corners the full depth of the frame for maximum strength and weathertightness, and exposed face welds dressed smooth.
- C. All removable plates and covers on the interior shall be field attached with #10 screws, spaced not more than 9 inches on centers and 1 inch from ends.
- D. Ventilator jamb and sill bars shall be machine welded and exposed face welds and contact surfaces dressed smooth. The ventilator head rail and jamb bars shall be coped and welded together.

- E. Weatherstripping shall be factory applied in an integral dovetail self-locking groove located in the same plane around the interior contact surface of each ventilator. Weatherstrip that relies on adhesive for application, or screw applied weatherstripping will not be acceptable.
- F. Angular Safety Screen:
  - 1. Screens shall be fixed.
  - 2. Angle frame sections shall be solidly welded at corners and all face and contact surfaces dressed smooth.
  - 3. Double fold and hem the screen cloth at the frame edge and securely attach with #10 Torx Taptite truss head plated steel tamper resistant screws, spaced 4 inches on centers, 1 inch from ends, which penetrate the angle frame, wire cloth and clamp plate.
  - 4. Screen shall be field attached with #10 screws, spaced 9 inches on centers and 1 inch from ends.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verification of Conditions: Examine surfaces and conditions to receive detention windows for defects that will adversely affect the execution and quality of the Work.
  - 1. Check locations and conditions of required built-in anchors.
  - 2. Openings shall conform with details and dimensions shown on the approved shop drawings.
  - 3. Do not proceed until unsatisfactory conditions are corrected.

### **3.02 INSTALLATION**

- A. Install the Work of this Section in accordance with the manufacturer's printed instructions and approved shop drawings, except as shown or specified otherwise.
  - 1. Install safety screens at all ventilators unless specifically indicated otherwise.
- B. Anchor window units securely in place, plumb, level, aligned, without warp or rack of frames or ventilators.
  - 1. Secure the window sill box to the 5/16 inch by 6-3/4 inch steel plate at sill and to the 4 inch by 3/8 inch steel imbed with 1/4 inch diameter screws, spaced 9 inches on center and 2 inches from ends. Tack weld screw heads to window sill box.
  - 2. Field weld windows to plate embeds at head and jambs using 1-1/4 inch x 1-1/4 inch x 3/16 inch x 1-1/2 inch long angle clips furnished. Welds to be a minimum of 3/16 inch by 1 inch long and 18 inches on centers.
- C. Seal metal to metal joints, screw heads, and unneeded fastener holes with an approved sealant and neatly pointed.

- D. Fill all voids and cavities with fiberglass batt insulation as shown on Drawings, taking care not to interfere with operable hardware.

### **3.03 ADJUSTING**

- A. Adjust ventilators and hardware for smooth operation and weathertight closure. Lubricate hardware and other moving parts.
- B. Touch-up welded and abraded surfaces with an air dry paint, as approved and furnished by the window manufacturer, in a color to match factory applied finish.

### **3.04 CLEANING**

- A. Clean window units promptly after completion of installation

### **3.05 PROTECTION**

- A. Protect installed windows and finish as necessary from adjacent work and cleaning operations.

**END OF SECTION**

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## **SECTION 087100**

### **FINISH HARDWARE**

#### **PART 1 GENERAL**

##### **1.01 REFERENCES**

- A. NFPA 80 Fire Doors and Windows (2007).
- B. NFPA 101 Life Safety Code (2006).
- C. Building Code of New York State (2010).
- D. ICC/ANSI A117.1-2003 Accessible and Usable Buildings and Facilities.
- E. ANSI/BHMA Standard A156.1 Butts and Hinges (2006).
- F. ANSI/BHMA Standard A156.4 Door Controls – Closers (2008).
- G. ANSI/BHMA Standard A156.6 Architectural Door Trim (2005).
- H. ANSI/BHMA Standard A156.7 Template Hinge Dimensions (2009).
- I. ANSI/BHMA Standard A156.8 Door Controls – Overhead Stops and Holders (2005).
- J. ANSI/BHMA Standard A156.13 Mortise Locks and Latches Series 1000 (2005).
- K. ANSI/BHMA Standard A156.16 Auxiliary Hardware (2008).
- L. ANSI/BHMA Standard A156.18 Materials and Finishes (2006).
- M. ANSI/BHMA Standard A156.22 Door Gasketing Systems (2005).
- N. ANSI/BHMA Standard A156.26 Continuous Hinges (2006).
- O. DHI - Door and Hardware Institute.
- P. NAAM Standard HMMA 800-96- Hollow Metal Manufacturers Association.
- Q. NAAM Standard HMMA 831-97 Recommended Hardware Locations for Custom Hollow Metal Doors and Frames.
- R. 2010 Standards for State and Local Government Facilities: Title II.

## 1.02 DEFINITIONS

- A. Architectural Hardware Consultant (AHC): A Door and Hardware Institute certified expert in complex architectural openings requiring advanced knowledge of model building codes and safety standards, ADA requirements, access control knowledge and installation expertise.
- B. Architectural Hardware Distributor: A company that regularly purchases architectural hardware from manufacturers and specializes in the sale, service and support of that hardware to contractors and/or end users.
- C. Company Field Advisor(s): Hardware manufacturers' representatives who are certified in writing by manufacturer to be technically qualified in design, installation, and servicing of products.
- D. Installation Supervisor: Designated supervisor/installer, who has a minimum three years experience in finish hardware installation, and is qualified and responsible to ensure approved finish hardware is installed, adjusted, and operates properly.

## 1.03 SUBMITTALS

- A. Waiver of Submittals: The Waiver of Certain Submittal Requirements in Section 013300 does not apply to this Section.
- B. Submittal Package Cover Sheets: The Hardware Distributor shall provide a cover sheet, which identifies each package by:
  - 1. OGS project number.
  - 2. Project name.
  - 3. Facility name and location.
  - 4. Submittal Package name.
  - 5. Specification section name and number.
  - 6. Construction Contractor's company name, address, e-mail address, and telephone number.
  - 7. Finish Hardware Distributor's company name, address, e-mail address, and telephone number.
  - 8. Certified Architectural Hardware Consultant's name, company name, address, e-mail address, and telephone number.
  - 9. Submittal Date.
- C. Submittal Packages
  - 1. Quality Control Package: Do not submit balance of packages until this package is approved.
    - a. Architectural Hardware Consultant Data:
      - 1) Provide name, business address, and telephone number of DHI certified Architectural Hardware Consultant.
      - 2) Submit photocopy of Door and Hardware Institute's certificate demonstrating individual is an Architectural Hardware Consultant.

- b. Company Field Advisor Data:
    - 1) Provide name, business address, and telephone number of Company Field Advisor(s) for continuous hinges, door bolts, locksets, overhead stops, door closers, and gaskets.
    - 2) List services and products for which company field advisor(s) is/are certified by manufacturer. Provide written certifications.
  - c. Hardware Distributor's Qualification Data:
    - 1) Provide the Finish Hardware Distributor's company name, address, e-mail address, and telephone number.
    - 2) Provide the hardware distributor's company history, including number of years in the hardware distribution business, the number of AHC's employed, and the number of employees. Describe the distributor's major market.
    - 3) Include the names and contact information of physical plant managers for 3 facilities, similar to this project, for which the distributor has furnished architectural hardware within the past 2 years.
  - d. Supervisor's/Installer's Qualification Data:
    - 1) Name of Supervisor and each installer performing Work, and employer's name, business address and telephone number.
    - 2) Names and addresses, and contact information of physical plant managers for 3 facilities, similar to this project, on which each installer has worked on during past 2 years.
2. Finish Hardware Package:
- a. Finish Hardware Schedule: Use vertical format and indicate finish hardware items, both mechanical and electrical in one document, required to complete Work of this section. Submit Hardware Schedule that includes complete hardware sets for each door and frame shown on Door Schedule.
    - 1) Preface schedule with following:
      - a) Certified Architectural Hardware Consultant's statement of preparation of/or certification of, Finish Hardware Schedule.
      - b) Index.
      - c) List of manufacturers.
      - d) List of finishes.
      - e) Explanation of abbreviations.
      - f) Keying instructions and key schedule.
    - 2) Create hardware groups, each group consisting of similar doors and hardware. Do not combine labeled and non-labeled openings. Do not combine doors and frames with dissimilar door sizes and/or materials.
    - 3) For each opening include the following:
      - a) Door and frame materials and dimensions.
      - b) Fire rating.
      - c) Door number, location and handing.

- d) Degree of opening required for closer and/or overhead stop.
- e) Installation and detailing notes.
- 4) Under each group heading, list hardware items in detail, required for ordering. For each hardware item include:
  - a) Type (Hinges).
  - b) Quantity (Hinges 3ea).
  - c) Manufacturers' name (Hinges 3ea Stanley).
  - d) Catalog number (Hinges 3ea Stanley FBB199).
  - e) Size (Hinges 3ea Stanley FBB199 4 ½ x 4 ½ ).
  - f) Options or accessories (Hinges HTFBB199 4 ½ x 4 ½ ).
  - g) Finish (Hinges HTFBB199 4 ½ x 4 ½ x 630).
  - h) Fasteners (Hinges HTFBB199 4 ½ x 4 ½ x 630 x torx with center security pin).
  - i) Indicate location of protection plates: Push side or pull side.
  - j) Installation Notes, as written in this section, for each hardware group.
- 5) Use a separate hardware group in Hardware Schedule that lists attic stock hardware items, key cabinets, key control system, special tools required to install hardware, lubricants, and Operations and Maintenance Manuals.
- b. Product Data: Furnish six copies of manufacturers' catalog sheets, specifications, sizing charts, and installation instructions, for each item specified. Highlight information pertaining specifically to product (s) submitted.
- c. Submit samples as requested.
- 3. Closeout Submittals: Submit as a complete package.
  - a. Operation and Maintenance Manuals: Furnish 2 hardcover three ring binders with the project name and number displayed on the front cover and spine. Include:
    - 1) List of Manufacturers.
    - 2) Approved Finish Hardware Schedule.
    - 3) Approved Manufacturers' Product Data Sheets.
    - 4) Manufacturer's operation, installation, maintenance, and repair instructions for each type of hardware furnished.
    - 5) Templates for kind of hardware furnished.
    - 6) Parts List for each type of finish hardware furnished.
    - 7) Manufacturers' dated written warranty for each type of finish hardware furnished.
    - 8) Certifications: Written certification from Company Field Advisors that their products are installed according to manufacturers' printed installation instructions, are operating properly, and manufacturers' written warranty will be in effect upon physical completion of the Work.
    - 9) Special Tools: List of special tools required to install hardware, and their purpose.
  - b. Special Tools:
    - 1) At conclusion of finish hardware installation, turn over to Director's Representative 2 of each special tool required to install hardware together with a list of these tools and their purpose.

### **1.03 TEMPLATES**

- A. After receipt of approved submittals, furnish templates to affected trades, to enable fabricators to make provision for finish hardware without delaying the Work of the Project.

### **1.04 DELIVERY AND STORAGE**

- A. Coordinate delivery to avoid delay.
- B. Clearly label each item for identification and installation location as it corresponds to the approved Finish Hardware Schedule and subsequent information bulletins.
- C. Deliver hardware to the jobsite in the manufacturers' original packages complete with fasteners, parts, installation instructions, and templates required for proper installation.
- D. Inventory hardware at jobsite to identify shortages or backorders. Resolve delivery shortages and damaged items prior to installing hardware.
- E. Store finish hardware where directed by Director's Representative. Provide locked, dry storage for finish hardware.

### **1.05 QUALITY ASSURANCE**

- A. Hardware Distributor's Qualification:
  - 1. Hardware Distributor who has been in the business of furnishing, and/ or installing finish hardware for a minimum of three years.
  - 2. Hardware Distributor shall have the DHI certified Architectural Hardware Consultant prepare or certify the Finish Hardware Submittal meets specification requirements, and the schedule is written accurately and in accordance with DHI recommendations, and requirements of this specification.
- B. Company Field Advisors: Employ advisor(s) for continuous hinges, door bolts, mortise locksets, surface overhead stops, door closers, and gaskets.
- C. Installation Supervisor: Employ a qualified Installation Supervisor who will be responsible to ensure approved finished hardware is installed, adjusted and operates properly.
- D. Installers: Employ experienced finish hardware installers who have been regularly employed by a Company installing finish hardware for a minimum of 5 years.
- E. Uniformity of Hardware and Single Source Responsibility: For each kind of hardware provide product(s) of a single manufacturer.

- F. Size Variations: Manufacturers' products may vary slightly from sizes specified except where minimum size or thickness is specified.
- G. Pre-Installation Conference: Before the hardware is scheduled to be installed, the Director's Representative will call a conference at the site, for the purpose of reviewing the Contract Documents, shop drawings, approved submissions, and the requirements of the Work. The Contractor, Installers, and the Technical Advisor shall attend. Other participants may be invited at the discretion of the Director.

## **1.06 WARRANTY**

- A. Manufacturer's Warranty: Ten year minimum warranty for door closers.
- B. Manufacturer's Warranty: Three year minimum for locksets.

## **1.07 MAINTENANCE**

- A. Special Tools: At the conclusion of finish hardware installation, turn over to Owner's Representative 2 sets of each special tools required for proper installation and adjustment of hardware, together with a list of these tools and their purpose.
- B. Lubricants: Provide manufacturer's recommended lubricants for locksets and closers sufficient for 1 year of maintenance. Turn over to Director's Representative.

## **PART 2 PRODUCTS**

### **2.01 ACCESSORIES**

- A. Provide brackets, plates, arms, spacers, and special templates to mount door closers in combination with overhead stops and coordinators, on narrow top rails and for special ceiling and jamb conditions.
- B. Provide curved lip strikes, with wrought boxes, specific to individual lock functions. Universal strikes that fit a variety of lock functions are not acceptable.

### **2.02 FASTENINGS**

- A. Provide fasteners that harmonize with finish hardware material and finish.
- B. Provide torx center pin security fasteners for exposed hardware, including full mortise hinges.
- C. Provide machine screws for hardware secured to metal; and machine screws and metal expansion shields for attachment to masonry substrates. Self-tapping or self-drilling screws are not acceptable.

- D. Provide undercut shallow head torx center pin security fasteners where necessary for proper seating.
- E. Attach door closers and overhead stops with sex bolts.

### **2.03 MATERIALS AND FINISHES**

- A. General: Requirements for design, grade, function, finish, size, and other distinctive qualities of each type of finish hardware are indicated in this section and in the Hardware Groups.
- B. Locks, Latches and Bolts
  - 1. Comply with UL requirements for throw of bolts and latch bolts on rated fire openings.
  - 2. Provide 3/4" minimum throw on other latch bolts.
  - 3. Provide 1" minimum throw deadbolts.
- C. Closers and Door Control Devices
  - 1. Closer bodies: Provide closer bodies with the same hole template pattern regardless of type or application.
  - 2. Closer arms: Non-handed forged steel.
  - 3. Closer size: Provide sized closers.
  - 4. Provide all-weather fluid to eliminate seasonal adjustment of closer speed.
  - 5. Powder coat closer body, arm, and adapter plate or pre-treat closer body, arm, and adapter plate with rust-inhibiting coating before painted finish is applied.

### **2.04 FINISH HARDWARE**

- A. General Notes:
  - 1. Maintain a throw of 3/4 inch for all head and foot bolts. If required, customize projection of bolt to field conditions.
    - a. Maximum of 1/4 inch undercut on doors having foot bolts without thresholds.
  - 2. Provide factory-sized closers and overhead stops according to manufacturer's table of sizes.
  - 3. Use proper installation sequence e.g., install overhead stops and coordinators before surface mounted door closers. Template door closers for maximum door swing allowed by wall placement and jamb conditions. Where overhead stop prevents door from swinging to wall, template closer to exceed degree of opening allowed by overhead stop. Verify with closer/overhead stop manufacturers, the special templates provided are compatible with the indicated door thickness, hinge, hinge installation, and stop height.
- B. Hardware Groups:  
  
Group 1: (D1, D2)

1. Hinges: 3 ea – Bommer BB5006 x 545HN x Torx x 630.
2. Mortise Lockset: 1ea – Best 45H -7 – D – 4N x curved lip strike x wrought box x Torx x 630.
3. Mortise Lock Cylinder: 1ea – Best compatible with specified lock above x uncombined for pinning by Facility x 626.
4. Overhead Stop: 1ea - Glynn Johnson 813H x thru-bolt x torx with center security pin x 630.
5. Closer: 1ea – LCN 4210 x ST3456 arm x SRI x thru-bolt x torx with center security pin x AL.
6. Kick Plate: 2ea – Rockwood K1062 10” x 1 ½” LDW x B4E x torx with center security pin x 630 x stop side.
7. Mop Plate: 2ea – Rockwood K1062 4” x ½” LDW x B4E x torx with center security pin x 630 x hinge side.
8. Smoke Seals: 1set – DHSI CNS105 x anti-ligature x dark brown.

Group 2: (D3, D7)

1. Hinges: 6 ea – Bommer BB5006 x 545HN x Torx x 630.
2. Top and Bottom Manual Flush Bolt Set: 2 - Ives FB458 x Torx x 626.
3. Mortise Lockset: 1ea – Best 45H -7 – D – 4N x curved lip strike x wrought box x Torx x 630.
4. Mortise Lock Cylinder: 1ea – Best compatible with specified lock above x uncombined for pinning by Facility x 626.
5. Overhead Stop: 2ea - Glynn Johnson 813H x thru-bolt x torx with center security pin x 630.
6. Closer: 2ea – LCN 4210 x ST3456 arm x SRI x thru-bolt x torx with center security pin x AL.
7. Astragal: By door manufacturer. Flat astragal applied to stop side of inactive leaf.
7. Kick Plate: 2ea – Rockwood K1062 10” x 1 ½” LDW x B4E x torx with center security pin x 630 x stop side.
8. Mop Plate: 2ea – Rockwood K1062 4” x ½” LDW x B4E x torx with center security pin x 630 x hinge side.
9. Meeting Stile Smoke Gaskets: 1ea – DHSI CNS105 x anti-ligature x dark brown, applied to astragal.
10. Smoke Seals: 1set – DHSI CNS105 x anti-ligature x dark brown.

Group 3: (D5, D6)

1. Hinges: 3 ea – Bommer BB5006 x 545HN x Torx x 630.
2. Mortise Lockset: 1ea – Best 45H -7 – S – 4N x curved lip strike x wrought box x Torx x 630.
3. Mortise Lock Cylinder: 2ea – Best compatible with specified lock above x uncombined for pinning by Facility x 626.
4. Overhead Stop: 1ea - Glynn Johnson 813H x thru-bolt x torx with center security pin x 630.
5. Closer: 1ea – LCN 4210 x ST3456 arm x SRI x thru-bolt x torx with center security pin x AL.
6. Head/Jamb Gasketing: 1 set – Zero 429A.
7. Threshold: 1 ea Zero 545A x torx.
8. Sill Protection Sweep: 1 ea Zero 39A.

## **2.05 KEYING**

- A. Continue existing Best key system established for Facility.
  - 1. Furnish uncombined mortise lock cylinders for pinning by Facility.
  - 2. Furnish 7 blank keys for each keyed lockset.
  - 3. Provide compression rings and spacers to achieve proper spacing relationship between cylinder and face of door.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Examine doors and frames and related items for conditions such as, but not limited to, incorrect handing, hardware preparation, misaligned lock and strike preparations, that would prevent proper application of finish hardware. Do not proceed until defects are corrected.
- B. Report conditions or hardware applications that are incorrect to the Director's Representative.

### **3.02 INSTALLATION**

- A. Do not proceed with installation of finish hardware prior to attending referenced pre-installation conference.
- B. Installation Sequence: Use proper installation sequence, i.e., install overhead stops and holders before surface mounted door closers.
- C. Install hardware in accordance with manufacturer's printed installation instructions, and adjust for smooth operation, free of sticking, binding or rattling.
  - 1. Template surface overhead stops and holders for proper operation
  - 2. Template and adjust closers for proper operation.
- D. Use proper tools and methods to prevent scratches, burrs or other defacement.
- E. Threshold Installation:
  - 1. Drill holes 3 inches from each end of threshold and intermediate holes 12 inches maximum o.c. for required fasteners. Prepare holes for countersunk fasteners.
  - 2. Level and align thresholds with frames and doors. Where required, use non-corrosive shims.
  - 3. Exterior Doors: Set thresholds in a solid bed of Type 3 sealant.
  - 4. Secure thresholds to substrate with countersunk fasteners.
- F. Door Bottom Installation:
  - 1. Mount sweep type door bottom protection on exterior side of doors.
  - 2. Before mounting apply Type 2 sealant on the back side of bearing surface. Secure to door with required fasteners.

- G. Gasket Installation:
  - 1. Install continuous stripping at each opening without unnecessary interruptions.
  - 2. Where fasteners are required, secure fasteners for stripping and seals so they will not work loose during door operation. Exposed heads of fasteners shall be free of sharp edges.
  - 3. Coordinate meeting stile gasket with hardware before installation.
  - 4. Install units plumb and level at the optimum location to maintain a permanent effective seal.
  
- H. After installation, cover and protect hardware to prevent damage during remaining construction. Remove protection upon completion of construction.

### **3.03 LOCATIONS**

- A. Locate hardware as follows:
  - 1. Door Closers: Template for maximum door swing allowed by wall placement and jamb conditions. Where overhead stop prevents door from swinging to wall, template the closer to exceed degree of opening allowed by overhead stop.
  - 2. Protection Plates: 1/8 inch from door bottom.

### **3.04 FIELD QUALITY CONTROL**

- A. Post Installation Review: After hardware is adjusted for proper operation, Director's Representative will hold a Post-Installation Review with the Contractor, Company Field Advisors, Hardware Distributor and Hardware Installers.
  - 1. Physically inspect to verify proper application, installation, adjustment and operation of finish hardware, and in particular that:
    - a) Latches engage freely without binding. Filing of strike plates to relieve latch bind is not acceptable.
    - b) Closers are adjusted for proper spring power; sweep speed, latching speed; and hydraulic back check.
    - c) Locations and proper attachment of installed protective hardware are as specified.
    - d) There is no field modification of fasteners.
    - e) Damaged fasteners are replaced.
  - 2. Defective hardware is repaired or replaced.
  - 3. Hardware is to be left clean and free from disfigurement.
  
- B. Turn referenced Operations and Maintenance Manuals over to Facility through Director's Representative.

**END OF SECTION**

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## **SECTION 088100**

### **GLASS AND GLAZING**

#### **PART 1 GENERAL**

##### **1.01 RELATED WORK SPECIFIED ELSEWHERE**

- A. Steel Windows: Section 085123.

##### **1.02 REFERENCES**

- A. Comply with recommendations in the "Glazing Manual" of the Glass Association of North America and the "Sealant Manual" of the Flat Glass Marketing Association except as shown or specified otherwise, and except as specifically recommended otherwise by the manufacturers of the glass and glazing materials.

##### **1.03 SUBMITTALS**

- A. Product Data: Manufacturer's specifications and installation instructions for each type of glass and glazing material specified, and spacers and compressible filler rod.
- B. Samples:
  - 1. Glass: 12 x 12 inch pieces for each type of glass specified.
    - a. Insulating glass samples need not be hermetically sealed, but include edge construction materials.
- C. Quality Control Submittals:
  - 1. Certificates: Affidavit required under Quality Assurance Article.

##### **1.04 QUALITY ASSURANCE**

- A. Compatibility of Materials: All components of the glazing system shall be manufactured or recommended by one manufacturer to assure the compatibility of materials.
- B. Safety Glazing Material: Type indicated, meeting requirements of ANSI Z97.1 with label on each piece.
- C. Certification:
  - 1. Affidavit by the material supplier, certifying type and quality of glass furnished.

##### **1.05 DELIVERY, STORAGE, AND HANDLING**

- A. Protect glass from edge damage during handling, storage, and installation.

## 1.06 PROJECT CONDITIONS

- A. Environmental Requirements: Comply with glazing materials manufacturer's written recommendations regarding environmental conditions under which glazing materials can be installed.
- B. Glazing channel dimensions shown are intended to provide for necessary minimum bite on the glass, minimum edge clearance and adequate glazing material thicknesses, with reasonable tolerances. Provide correct glass size for each opening, within the tolerances and necessary dimensions required.

## PART 2 PRODUCTS

### 2.01 GLASS

- A. Type M Glass: Organically Sealed Insulating Glass Units; ASTM C 1036, applicable Type and Class for glass indicated below, quality q3 for Type 1 glass; manufacturer's standard edge construction of spacers and sealants permanently bonded to glass surfaces and hermetically sealed to provide a dehydrated air space 1/2-inch thick with -60 degrees F. dew point; fabricated of the following:
  - 1. Exterior Glass: Laminated glass.
  - 2. Interior Glass: Laminated glass.
  - 3. Glass Thickness:
    - a. Exterior Glass: 1/4-inch thick.
    - b. Interior Glass: 1/4-inch thick.
- D. Type M-4 Glass: Organically Sealed Insulating Glass Units; ASTM C 1036, applicable Type and Class for glass indicated below, quality q3 for Type 1 glass; manufacturer's standard edge construction of spacers and sealants permanently bonded to glass surfaces and hermetically sealed to provide a dehydrated air space 1/2-inch thick with -60 degrees F. dew point; fabricated of the following:
  - 1. Exterior Glass: Laminated glass.
  - 2. Interior Glass: Obscure laminated glass.
  - 3. Glass Thickness:
    - a. Exterior Glass: 1/4-inch thick.
    - b. Interior Glass: 1/4-inch thick.

### 2.02 GLAZING MATERIALS

- A. Glazing Material: Molded Neoprene Glazing Gaskets; molded or extruded neoprene gaskets of the profile and hardness required for watertight construction; ASTM D 2000 designation 2BC 415 to 3BC 620.
- B. Colors: For exposed materials provide color as indicated or, if not indicated, as selected by the Director from the manufacturer's standard colors. For concealed materials, provide any of the manufacturer's standard colors.
- C. Setting Blocks: Neoprene, 70-90 durometer hardness, with proven compatibility with sealants used.

- D. Spacers: neoprene, 40-50 durometer hardness, with proven compatibility with glazing materials used.
- E. Compressible Filler Rod: Closed-cell or waterproof-jacketed rod stock of synthetic rubber or plastic foam, proven to be compatible with glazing materials used, flexible and resilient, with 5-10 psi compression strength for 25 percent deflection.
- F. Cleaners, Primers and Sealers: Type recommended by glazing material manufacturer.

## **PART 3 EXECUTION**

### **3.01 PREPARATION**

- A. Clean the glazing channel, or other framing members to receive glass, immediately before glazing. Remove coatings which are not firmly bonded to the substrate. Remove lacquer from metal surfaces wherever elastomeric sealants are used.
- B. Inspect each piece of glass immediately before installation, and eliminate pieces which have observable damage or face imperfections.
- C. Apply primer or sealer to joint surfaces wherever recommended by sealant manufacturer.

### **3.02 INSTALLATION**

- A. Each installation shall withstand normal temperature changes, wind loading, and impact loading (for operating sash and doors) without failure of any kind including loss or breakage of glass, failure of sealants or gaskets to remain watertight and airtight, deterioration of glazing materials and other defects in the Work.
- B. Install glass in accordance with the standards detailed in the "Glazing Manual" of the Glass Association of North America and the "Sealant Manual" of the Flat Glass Marketing Association except as shown and specified otherwise, and except as specifically recommended otherwise by the manufacturers of the glass and glazing materials.
- C. Install glazing materials in accordance with the manufacturer's printed instructions.

### **3.03 GLAZING**

- A. Install setting blocks of proper size at quarter points of sill rabbet. If required to keep in place set blocks in thin course of the heel-bead compound.

- B. Provide spacers inside and out, and of proper size and spacing, for all glass sizes larger than 50 unites inches, except where gaskets are used for glazing. Provide 1/8 inch minimum bite of spacers on glass and use thickness equal to sealant width, except with sealant tape use thickness slightly less than final compressed thickness of tape.
- C. Do not cut, seam, nip, or abrade glass which is tempered, heat strengthened, or coated.
- D. Where wedge-shaped gaskets are driven into one side of the channel to pressurize the sealant or gasket on the opposite side, provide adequate anchorage to ensure that gasket will not "walk" out when subjected to dynamic movement. Anchor gasket to stop with matching ribs, or by proven adhesives, including embedment of gasket tail in cured heel bead.
- E. Gasket Glazing: Miter cut and bond ends together at corners where gaskets are used for channel glazing, so that gaskets will not pull away from corners and result in voids or leaks in the glazing system.

#### **3.04 PROTECTION AND CLEANING**

- A. Replace glass included in the work which is broken, or otherwise damaged, from the time Work is started at the site until the date of physical completion.
- B. Maintain glass in a reasonably clean condition until date of physical completion.
  - 1. Clean and trim excess glazing material from the glass and stops or frames promptly after installation.
- C. When directed, or just before the project is turned over to the State, remove dirt and other foreign material and wash and polish glass included in the work on both sides.

**END OF SECTION**

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## **SECTION 089100**

### **STATIONARY METAL WALL LOUVERS**

#### **PART 1 GENERAL**

##### **1.01 RELATED WORK SPECIFIED ELSEWHERE**

- A. Concrete Rehabilitation: Section 030131.
- B. Sealants: Section 079200.

##### **1.02 SUBMITTALS**

- A. Shop Drawings: Show fabrication details and connections to adjacent Work.
- B. Product Data: Catalog cuts, specifications, and installation instructions for louver type specified.

##### **1.03 QUALITY ASSURANCE**

- A. Louvers shall be rated by AMCA (Air Movement and Control Assoc.).

#### **PART 2 PRODUCTS**

##### **2.01 ALUMINUM LOUVERS**

- A. Type: Stationary drainable blade extruded louvers, 4 inches deep, with extrusions not less than 0.125 inch thick, of aluminum alloy required for the indicated finish.
  - 1. Drainable blades formed with a drain gutter in each blade, positioned at approximately 37 degree angle and spaced approximately 4-1/2 inch centers.
  - 2. Frames formed with downspouts in each jamb and mullion.
  - 3. Maximum air velocity below point of zero water penetration velocity.
  - 4. Maximum pressure drops:
    - a. 0.09 inch w.c. intake louvers.
- B. Fabrication: Form frames with mitered or coped members, welded or riveted and soldered joints. Form ends of blades flat against frame jamb and weld, or rivet and solder blades to frame at each end to ensure watertight joints. Reinforce units with concealed plates, angles, tees or other shapes to form a rigid unit. Fabricate louvers with horizontal and vertical mullions where louver openings exceed 60 inches in any direction. Allow for expansion and contraction.
- C. Finishes: Comply with the Metal Finishes Manual of the National Assoc. of Architectural Metal Manufacturers except as otherwise indicated.
  - 1. Clear anodized (AA-C22A41).

2. Protect exposed factory finished surfaces prior to shipping.
- D. Sills: Same material and finish as the louvers.

## **2.02 LOUVER SCREENS**

- A. Fabricate removable screen frames of the same metal and finish as the louvers. Locate screens on the inside face of the louvers, unless otherwise indicated. Secure screens to louver frames with machine screws at each corner and spaced 12 inches oc.
- B. Bird Screens:
1. Anodized aluminum wire, 18 x 14 mesh.

## **2.03 FASTENERS AND ANCHORS**

- A. Bolts, Nuts, Lags, Washers, Screws and Anchors: Same material as items being installed unless otherwise indicated; types, gages and lengths to suit unit installation conditions; galvanized steel, aluminum or stainless steel for exterior locations or for items anchored to exterior walls.

## **2.04 MISCELLANEOUS**

- A. Bituminous Paint: SSPC-PAINT 12 (Cold applied asphalt mastic).

# **PART 3 EXECUTION**

## **3.01 INSTALLATION**

- A. Install the Work of this Section in accordance with the manufacturer's printed instructions, except as shown otherwise on the Drawings.
- B. Install units plumb, level and in proper alignment with adjacent construction.
- C. Form tight joints with exposed connections accurately fit together.
- D. Use concealed anchorages wherever possible. Provide brass or lead washers fitted to screws where required to protect metal surfaces and to form a weathertight connection.
- E. Where louvers are in contact with concrete, masonry or a dissimilar metal, coat the contacting surface with a heavy coat of bituminous paint.
- F. Clean louvers after installation. Remove dirt, dust, and grime.

**END OF SECTION**

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## SECTION 092116

### GYPSUM BOARD SYSTEMS

#### PART 1 GENERAL

##### 1.01 DEFINITIONS

- A. Sheet Steel Gages: US Standard.
- B. Gypsum Board Terminology: ASTM C 11 - Standard Terminology Relating to Gypsum and Related Building Materials and Systems.

##### 1.02 SUBMITTALS

- A. Product Data: Catalog sheets, specifications, and installation instructions for each item specified.

##### 1.03 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials in original packages, containers, or bundles bearing brand name and identification of manufacturer.
- B. Store materials inside under cover and keep them dry and protected against damage from weather, direct sunlight, surface contamination, corrosion, construction traffic, and other causes. Stack gypsum panels flat to prevent sagging.

##### 1.04 PROJECT CONDITIONS

- A. Environmental Requirements: Comply with gypsum board manufacturer's printed temperature and ventilation requirements during application and finishing. Ventilate installation areas to relieve excess moisture.

#### PART 2 PRODUCTS

##### 2.01 FRAMING

- A. Furring: ASTM C 645; 25 gage (minimum base metal thickness 0.0179 inch) galvanized steel, with additional framing members, reinforcing, accessories, and anchors necessary for the complete framing system.
  - 1. Hat-Shaped, Rigid Furring Channels: ASTM C 645; 25 gage (minimum base metal thickness 0.0179 inch) galvanized steel.

## **2.02 GYPSUM BOARD**

- A. Polycarbonate Laminated Gypsum Board: 5/8 inch Gypsum Board laminated to .080 inch thick polycarbonate. Laminated product shall meet “Class A” interior wall and finish classification. Long edges of gypsum board tapered with beveled or rounded edges.
  - 1. Acceptable Products:
    - a. CoreGuard by Pinnacle Armor, 5425 E. Home Ave. #104, Fresno, CA 93727, (800) 200-0915, [www.pinnaclearmor.com](http://www.pinnaclearmor.com).
    - b. NuGuard Security Wall Panels, Nudo Products, Inc., 1500 Taylor Ave., Springfield, IL 62703, (800) 826-4132, [www.nudo.com](http://www.nudo.com).

## **2.03 FASTENERS**

- A. Steel Drill Screws: ASTM C 1002; gypsum board manufacturer’s recommended types and sizes for substrates involved.
- B. Laminating Adhesive: Gypsum board manufacturer’s recommended type for substrates involved.
- C. Self Threading Masonry Screws: Zinc plated; Tapcon Fasteners by ITW Buildex 1349 West Bryn Mawr Ave. Itasca, IL 60143, (800) 284-5339.

## **2.04 TRIM**

- A. Interior Trim: ASTM C 1047.
  - 1. Material: Extruded vinyl.
  - 2. Shapes:
    - a. LC-Bead: J-Shaped, exposed long flange receives joint compound. Use at exposed panel edges.
    - b. L-Bead: L-shaped, exposed long leg receives joint compound with tear away bead. Use where gypsum board abuts or intersects dissimilar material.

## **2.05 JOINT TREATMENT MATERIALS**

- A. Joint Tapes: ASTM C 475; plain or perforated.
- B. Joint Compound: ASTM C 475; gypsum board manufacturer’s recommended dry powder or ready-mixed, either of the following:
  - 1. One Compound Treatment: One compound for both bedding and finishing joints.
  - 2. Two Compound Treatment: Compatible joint compounds; one compound for bedding and the other compound for finishing joints.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Examine substrates to which gypsum board system attaches or abuts, preset steel door frames, cast in anchors, and structural framing, with installer present for compliance with requirements for installation tolerances and other conditions affecting performance of gypsum board system construction. Do not proceed with installation until unsatisfactory conditions have been corrected.

### **3.02 CONSTRUCTION TOLERANCES**

- A. Do not exceed 1/8 inch in 8 feet variation from plumb or level in any exposed line or surface, except at joints between boards do not exceed 1/16 inch variation between planes or abutting edges or ends. Shim as required to comply with specified tolerances.

### **3.03 STEEL FRAMING INSTALLATION**

- A. Installation Standards: ASTM C 754, and ASTM C 840 requirements that apply to framing installation.
- B. Install supplementary framing, blocking, and bracing at terminations in gypsum board system to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction. Comply with details indicated and with gypsum board manufacturer's written recommendations.
- C. Surface Mounted Rigid Steel Furring Installation:
  - 1. Install rigid steel furring where gypsum board is to be installed over masonry or concrete wall substrates, unless otherwise shown.
  - 2. Install steel furring at 16 inches oc maximum spacing and provide additional furring at openings, cutouts, and corners. Securely anchor with fasteners spaced 16 inches oc maximum and stagger on opposite flanges of hat-shaped channels.

### **3.04 GYPSUM BOARD INSTALLATION**

- A. Install gypsum board in the most economical direction, of maximum lengths to minimize end butt joints. Where unavoidable, locate end butt joints as far from center of walls or ceilings as possible.
- B. Install gypsum board with face side out. Butt boards together at edges and ends over firm bearing with not more than 1/16 inch of open space between boards. Do not force into place.
- C. Fasteners: Fasten gypsum board to supports and furring with steel drill screws of required size and spacing as recommended by the gypsum board manufacturer.

- D. Provide additional framing and blocking required to support gypsum board at openings and cutouts.
- E. Wood Supports: Provide “floating” interior angle construction between gypsum board at interior corners.
- F. Reinforce joints formed by tapered edges, butt edges, and interior corners or angles with joint tape.

### **3.05 TRIM INSTALLATION**

- A. Coordinate installation of trim progressively with gypsum board installation where trim is of type required to be installed prior to, or progressively with installation of gypsum board.
- B. Securely fasten trim pieces in accordance with manufacturer’s printed instructions.
- C. Install cornerbeads at external corners. Install LC-Bead (J-Bead) beads at unprotected (exposed) edges and where gypsum board abuts dissimilar materials. Use single unjointed lengths unless otherwise approved by the Director.
  - 1. Miter corners of semi-finishing type casing and trim beads.
- D. Comply with joint compound manufacturer’s recommended drying time for the relative humidity and temperature at time of application. Allow minimum of 24 hours drying time between applications of joint compound.

### **3.06 LEVELS OF GYPSUM BOARD FINISH**

- A. General: Finish panels to levels indicated below, in accordance with ASTM C 840, for locations indicated.
  - 1. Level 1 Finish: Joints and angles, provide tape embedded in joint compound. Surface shall be free of excess joint compound. Tool marks and ridges will be acceptable.
  - 2. Level 4 Finish: Joints and angles, provide tape embedded in joint compound and provide three separate coats of joint compound over all joints, angles, and fastener heads. Accessories to be covered with three separate coats of joint compound. Joint compounds to be smooth and free of tool marks and ridges. Cover the prepared surface with a drywall primer prior to the application of the final decoration.

**END OF SECTION**

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## SECTION 099101

### CONSTRUCTION PAINTING

#### PART 1 GENERAL

##### 1.01 DEFINITIONS

- A. The word “paint” in this Section refers to substrate cleaners, fillers, sealers, primers, undercoats, enamels, stains, varnishes and other first, intermediate, last or finish coatings.
- B. The word “primer” in this Section refers to substrate cleaners, fillers, sealers, undercoats, and other first or intermediate coats beneath the last or finish coating.
- C. The words “finish paint” in this Section refers to the last or final coat and previous coats of the same material or product directly beneath the last or final coat.
- D. Finish Paint Systems: Finish paint and primers applied over the same substrate shall be considered a paint system of products manufactured or recommended by the finish coat manufacturer.
  - 1. Finish paint products shall meet or exceed specified minimum physical properties.

##### 1.02 SUBMITTALS

- A. Product Data Sheets: Manufacturer’s published product data sheets describing the following for each finish paint product to be applied:
  - 1. Percent solids by weight and volume, solvent, vehicle, weight per gallon, ASTM D 523 gloss/reflectance angle, recommended wet and dry film thickness, volatile organic compound (VOC) content in lbs/gallon, product use limitations and environmental restrictions, substrate surface preparation methods, directions and precautions for mixing and thinning, recommended application methods, square foot area coverage per gallon, storage instructions, and shelf-life expiration date.
  - 2. Manufacturer’s recommended primer for each finish paint product and substrate to be painted.
  - 3. Manufacturer’s complete range of available colors for each finish paint product to be applied.

##### 1.03 QUALITY ASSURANCE

- A. Volatile Organic Compounds (VOCs) Regulatory Requirements: Chapter III of Title 6 of the official compilation of Codes, Rules and Regulations of the State of New York (Title 6 NYCRR), Part 205 Architectural Surface Coatings.
  - 1. Certificate of Compliance: List of each paint product to be delivered and installed. List shall include written certification stating that each paint

product listed complies with the VOC regulatory requirements in effect at the time of job site delivery and installation.

- B. Container Labels: Label each product container with paint manufacturer's name, product name and number, color name and number, thinning and application instructions, date of manufacture and shelf-life expiration, required surface preparation, recommended coverage per gallon, wet and dry film thickness, drying time, and clean up procedures.
- C. Compatibility of Paint Materials: Primers and intermediate paints shall be products manufactured or recommended by the finish paint manufacturer.
- D. Performance Criteria:
  - 1. The following criteria are REQUIRED for products included in this section:
    - a. Paints and coatings manufactured within 500 miles (by air) of the project site shall be documented in accordance with Submittal Requirements of Item 1.03.F.
    - b. Architectural paints and coatings applied to interior walls and ceilings must not exceed the volatile organic compound (VOC) content limits established in Green Seal Standard GS-11, Paints.
    - c. Anti-corrosive and anti-rust paints applied to interior ferrous metal substrates must not exceed the VOC content limit established in Green Seal Standard GC-03, AntiCorrosive Paints.
    - d. Clear wood finishes, floor coatings, stains, primers, and shellacs applied to interior elements must not exceed the VOC content limits established in South Coast Air Quality Management District (SCAQMD) Rule 1113, Architectural Coatings.
  - 2. Volatile Organic Compounds: The VOC concentrations (in grams per liter) of the product shall not exceed those listed below as determined by U. S. Environmental Protection Agency (EPA) Reference Test Method 24 and the standards referenced in 1.04.E.1.
    - a. Interior Paints and Coatings:
      - 1. Non-flat: 150
      - 2. Flat: 50
    - b. Anti-Corrosive Paints (if used in interior applications):
      - 1. Gloss: 250
      - 2. Semi-gloss: 250
      - 3. Flat: 250
    - c. Exclude water and tinting color added at the point of sale in the calculation of VOC concentrations.
  - 3. Chemical Component Limitations: Aromatic Compounds: the product must contain no more than 1.0% by weight of the sum total of aromatic compounds. Testing for the concentration of these compounds will be performed if they are determined to be present in the product during a materials audit.
  - 4. Chemical Component Limitations, Other Chemicals: The manufacturer shall demonstrate that the following chemical compounds are not used as ingredients in the manufacture of the product:

- a. Halomethanes: Methylene chloride.
- b. Chlorinated ethanes: 1,1,1-trichloroethane.
- c. Aromatic solvents: benzene, toluene (methylbenzene), ethylbenzene.
- d. Chlorinated ethylenes: Vinyl chloride.
- e. Polynuclear aromatics: Naphthalene.
- f. Chlorobenzenes: 1,2-dichlorobenzene.
- g. Phthalate esters: Di (2-ethylhexyl) phthalate, butyl benzyl phthalate, di-n-butyl phthalate, di-n-octyl phthalate, diethyl phthalate, dimethyl phthalate.
- h. Miscellaneous semi-volatile organics: Isophorone.
- i. Metals and their compounds: antimony, cadmium, hexavalent chromium, lead, mercury
- j. Preservatives (antifouling agents): formaldehyde
- k. Ketones: methyl ethyl ketone, methyl isobutyl ketone
- l. Miscellaneous volatile organics: acrolein, acrylonitrile

#### **1.04 DELIVERY, STORAGE, AND HANDLING**

- A. Delivery: Deliver materials to the Site in original, unopened containers and cartons bearing manufacturer's printed labels. Do not deliver products which have exceeded their shelf life, are in open or damaged containers or cartons, or are not properly labeled as specified.
- B. Storage and Handling: Store products in a dry, well ventilated area in accordance with manufacturer's published product data sheets. Storage location shall have an ambient air temperature between 45 degrees F and 90 degrees F.

#### **1.05 PROJECT CONDITIONS**

- A. Environmental Requirements:
  1. Ambient Air Temperature, Relative Humidity, Ventilation, and Surface Temperature: Comply with paint manufacturer's published product data sheet or other printed product instructions.
  2. If paint manufacturer does not provide environmental requirements, use the following:
    - a. Ambient Air Temperature: Between 45 degrees F and 75 degrees F.
    - b. Relative Humidity: Below 75 percent.
    - c. Ventilation: Maintain the painting environment free from fumes and odors throughout the Work of this Section.
    - d. Surface Temperature: At least 5 degrees F above the surface dewpoint temperature.
  3. Maintain environmental requirements throughout the drying period.
- B. The following items are not to be painted unless otherwise specified, noted or directed:
  1. Exposed stainless steel, chrome, copper, bronze, brass, and aluminum.
  2. Steel to be encased in cast-in-place concrete.

3. Top flanges of structural beams and girders in composite concrete-steel construction.
4. Factory prefinished items.
5. Exposed structural wood floor joists, subflooring, rafters, roof sheathing and other framing lumber.
6. Galvanized items not exposed in finished spaces.

## **1.06 EXTRA MATERIALS**

- A. Provide extra finish paint materials, from the same production run as paints to be applied, in the following quantities for each color installed:
  1. Paint Types: One gallon, each type.

## **PART 2 PRODUCTS**

### **2.01 PAINT MANUFACTURERS**

- A. Where noted, the following finish paint manufacturers produce the paint types specified.
  1. Ameron Protective Coatings, 201 Berry St., Brea, CA 92621, (800) 926-3766.
  2. Benjamin Moore and Co., 51 Chestnut Ridge Rd., Montvale, NJ 07645, (201) 573-9600.
  3. ICI Dulux Paints, 4000 Dupont Cr., Louisville, KY 40207, (800) 984-5444.
  4. Inorganic Coatings, Inc., 500 Lapp Rd., Malvern, PA 19355, (800) 345-0531.
  5. Sherwin-Williams Co., Cleveland, OH 44101, (800) 321-8194.
  6. Valspar Corp., 1401 Severn St., Baltimore, MD 21230, (800) 638-7756.

### **2.02 PAINT PRODUCTS**

- A. Cleaning Solvents: Low toxicity with flash point in excess of 100 degrees F.
- B. Galvanizing Compound, Cold: Single component compound with 93 percent pure zinc in the dried film and meeting the requirements of DOD-P-21035A (NAVY).
- C. Glazing Compound: ASTM C 669.
- D. Masking Tape: Removable paper or fiber tape, self-adhesive and nonstaining.
- E. Spackling Compound: Water based pre-mixed plaster and gypsum wallboard finishing compound.

### **2.03 FINISH PAINT TYPES**

- A. Physical Properties:

1. Specified percent solids by weight and volume, pigment by weight, wet and dry film thickness per coat, and weight per gallon are minimum physical properties of acceptable materials.
    - a. Opaque Pigmented Paints: Physical properties specified are for white titanium dioxide base before color pigments are added.
    - b. Specified minimum wet and dry film thickness per coat are for determining acceptable finish paint products. Minimum wet and dry film thickness per coat to be applied shall comply with approved finish paint manufacturer's product data sheets.
  2. Gloss or Reflectance: The following ASTM D 523 specified light levels and angles of reflectance:
    - a. Flat: Below 15 at 85 degrees.
    - b. Gloss: Over 65 at 60 degrees.
- B. Exterior Finish Paint Types:
1. Paint Type EAL-3: Exterior Acrylic Latex, Gloss Enamel.
    - a. Solids by Weight: 40.0 percent.
    - b. Solids by Volume: 32.0 percent.
    - c. Solvent: Water.
    - d. Vehicle: 100 percent acrylic resin.
    - e. Weight Per Gallon: 10.0 lbs.
    - f. Wet Film Thickness: 3.4 mils.
    - g. Dry Film Thickness: 1.2 mils.
    - h. Manufacturers: Benjamin Moore, PPG, Sherwin-Williams.
  2. Paint Type ESP: Exterior Steel Zinc-Rich Primer, Flat.
    - a. Solids by Weight: 79.0 percent.
    - b. Solids by Volume: 68.0 percent.
    - c. Pigment by Weight: 90.0 percent zinc.
    - d. Solvent: Water.
    - e. Weight per Gallon: 24.6 lbs.
    - f. Dry Film Thickness: 3.0 mils if finish coated, 4.0 mils if not finish coated.
    - g. Manufacturers: Ameron Protective Coatings, Inorganic Coatings, Valspar.
- C. Interior Finish Paint Types:
1. Paint Type IAL-3: Interior Acrylic Latex, Semigloss Enamel.
    - a. Solids by Weight: 49.0 percent.
    - b. Solids by Volume: 35.0 percent.
    - c. Solvent: Water.
    - d. Vehicle: Vinyl acrylic resin.
    - e. Weight Per Gallon: 10.0 lbs.
    - f. Wet Film Thickness: 3.8 mils.
    - g. Dry Film Thickness: 1.2 mils.
    - h. Manufacturers: Benjamin Moore, ICI Dulux, Sherwin-Williams.
- D. Colors: Provide paint colors either shown on contract drawings or to be selected by the Director from finish paint manufacturers available color selections.
1. Approved finish paint manufacturers to match designated colors of other manufacturers where colors have been shown on the contract documents.

2. Safety Colors: Industry Standard ANSI Safety Colors.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Examine surfaces to be prepared, primed, or painted for compliance with contract documents, required environmental conditions, manufacturer's product data sheets, product label instructions and other written requirements.
  1. Do not begin any phase of the work without first checking and verifying that surfaces and environmental conditions are acceptable for such work and that any earlier phase deficiencies and discrepancies have been properly corrected.
    - a. The commencement of new work shall be interpreted to mean acceptance of surfaces to be affected.

### **3.02 PREPARATION**

- A. Protection: Cover and protect both surfaces to be painted and adjacent surfaces not to be painted from existing paint removals, airborne sanding particles, cleaning fluids and paint spills using suitable drop cloths, barriers and other protective devices.
  1. Adjacent exterior surface protections include roofs, walls, landscaping, driveways and walkways. Interior protections include floors, walls, furniture, furnishings and electronic equipment.
  2. Remove and replace removable hardware, lighting fixtures, telephone equipment, other devices and cover plates over concealed openings in substrates to be painted.
    - a. Cover and neatly mask permanently installed hardware, lighting fixtures, cover plates and other devices which cannot be removed and are not scheduled for painting.
  3. Schedule and coordinate surface preparations so as not to interfere with work of other trades or allow airborne sanding dust particle to fall on freshly painted surfaces.
  4. Provide adequate natural or mechanical ventilation to allow surfaces to be prepared and painted in accordance with product manufacturer's instructions and applicable regulations.
  5. Provide and maintain "Wet Paint" signs, temporary barriers and other protective devices necessary to protect prepared and freshly painted surfaces from damages until Work has been accepted.
- B. Clean and prepare surfaces to be painted in accordance with specifications, paint manufacturer's approved product data sheets and printed label instructions. In the event of conflicting instructions or directions, the more stringent requirements shall apply.
  1. Cleaners: Use only approved products manufactured or recommended by finish paint manufacturer. Unless otherwise recommended by cleaner manufacturer, thoroughly rinse with clean water to remove surface contaminants and cleaner residue

C. Surfaces:

1. Existing Exterior Painted Surfaces: Thoroughly clean to remove dirt, soot, grease, mildew, chalkiness and stains using finish paint manufacturer's recommended spray-on liquid cleaner.
  - a. Apply cleaner using hand-held wand applicator in accordance with product manufacturer's instructions. Thoroughly rinse and remove all residue with clean water.
  - b. Remove loose, peeling, cracked and blistered paint by chipping, scraping, and sanding smooth with medium and fine sandpaper.
  - c. Fill surface holes and depressions with finish paint manufacturer's recommended filler and sand smooth to adjacent undisturbed edges.
  - d. Touch-up bare spots on previously painted surfaces with finish paint manufacturer's recommended primer.
  - e. Sand existing semigloss and gloss paint surfaces to a uniform smooth dull finish before painting.
  - f. Fill and sand smooth existing paint surface damages, depressions, ridges and other imperfections that will remain visible after new paints have been applied.
2. Concrete:
  - a. Allow three months for poured concrete to dry before painting.
  - b. Remove form release agents, laitance, efflorescence, dirt, grease, oils, slurry, chalk deposits, and other surface contaminants using a high-pressure power wash. Use mildewcide solution if mildew is present.
  - c. Remove any remaining efflorescence by dampening surface with water and scrubbing with a 5 percent solution of muriatic acid. Rinse with clean water, neutralize with ammonia, rinse and allow to dry.
  - d. Vacuum surface clean before painting.
  - e. Sandblast to remove any existing deteriorated paint films, curing compounds, concrete sealers, and other substances that may prevent primer adhesion.
  - f. Chip and grind surface projections smooth to adjacent surfaces.
  - g. Open concealed voids and cracks, remove cement slurry by wire-brushing to expose clean aggregate substrate, and chip out surface honeycomb pockets to allow a neat cementitious patch with square corners and a uniform thickness.
  - h. Inspect surfaces to be painted for exposed or rusted steel reinforcement and contact Director's Representative for a survey of damages to be repaired before substrate can be painted. Do not paint over exposed steel reinforcement without first repairing both deteriorated reinforcement and protective coating.
  - i. Use an electronic meter to determine moisture content compliance with finish paint manufacturer's recommendations.
3. Concrete Masonry Units:
  - a. Allow two months for mortar joints to dry before painting.

- b. Remove severe laitance, efflorescence, dirt, grease, slurry, chalk deposits and other surface contaminants using a low-pressure power wash. Use mildewcide solution if mildew is present.
  - c. Remove less severe surface contaminants and contaminant residues by dampening surface with water and scrubbing with a 10 percent solution of muriatic acid.
4. Existing Structural Steel, Metal Decks and Stairs:
- a. Prepare existing steel to be painted by cleaning in accordance with Structural Steel Painting Council (SSPC) standards:
    - 2) SSPC-SP2: Remove loose rust, mill scale, and paint to the degree specified by hand chipping, scraping, sanding, and wire-brushing.
  - b. Inspect for exposed or rusted steel reinforcement and contact Director's representative for an on-site survey of repairs to make before painting. Do not paint over exposed steel reinforcement without first repairing both deteriorated reinforcement and protective concrete covering.
5. Galvanized Metal:
- a. Allow new galvanized surfaces to weather as long as possible before cleaning. Remove surface contaminants using clean rags and petroleum spirits.
  - b. Remove "white rust" using appropriate solvent and, if necessary, wire brushing or sanding.
  - c. Use appropriate Structural Steel Painting Council Standard SSPC-SP1 to SSPC-SP6 to clean steel substrates where galvanized protection has been removed.
6. Steel Doors and Frames: Fill indentations and cracks with metal filler; sand smooth to match adjacent undamaged surfaces.
7. Aluminum:
- a. Non-corroded Surfaces: Rub with fine steel wool and wipe clean with mineral spirits.
  - b. Corroded Surfaces: Sand smooth, rub with fine steel wool and wipe clean with mineral spirits.
8. Plaster, Cement Plaster, and Gypsum Wallboard:
- a. Fill cracks, holes, and other indentations smooth to adjacent surfaces using specified bedding, spackling, and finishing compounds.
  - b. Plaster: Scrape and sand smooth ridges, spills, nibs, and other surface projections.
  - c. Cement Plaster: Coat surfaces to be patched with a bonding agent. Patch cement plaster with an approved mortar patching mix and finish to match adjacent surface and texture.
  - d. Gypsum Wallboard: Fill and sand smooth minor bedding and finishing compound defects.
  - e. Vacuum and wipe surfaces free of all sanding residue and dust.
9. Other Substrates: See finish paint manufacturer's recommendations.

D. Painting Material Preparations:

1. Prepare painting materials in accordance with manufacturer's approved product data sheets and printed label instructions.
  - a. Stir materials before and during application for a consistent mixture of density. Remove container surface paint films before stirring and mixing.
  - b. Slightly tint first opaque finish coat where primer and finish coats are the same color.
  - c. Do not thin paints unless allowed and directed to do so in writing within limits stated on approved product data sheets.

### **3.03 APPLICATION**

- A. Environmental Conditions:
  1. Water-based Paints: Apply when surface temperatures will be 50 degrees Fahrenheit to 90 degrees Fahrenheit throughout the drying period.
  2. Other Paints: Apply when surface temperatures will be 45 degrees Fahrenheit to 95 degrees Fahrenheit throughout the drying period.
  3. Apply exterior paints during daylight hours free from rain, snow, fog and mist when ambient air conditions are more than 5 degrees above the surface dewpoint temperature and relative humidity less than 85 percent.
    - a. When exterior painting is allowed or required during nondaylight hours, provide portable outdoor weather recording station with constant printout showing hourly to diurnal air temperature, humidity, and dewpoint temperature.
  4. Exterior Cold Weather Protection: Provide heated enclosures necessary to maintain specified temperature and relative humidity conditions during paint application and drying periods.
- B. Install approved paints where specified, or shown on the drawings, and to match approved field examples.
  1. Paint Applicators: Brushes, rollers or spray equipment recommended by the paint manufacturer and appropriate for the location and surface area to be painted.
    - a. Approved minimum wet and dry film thicknesses shall be the same for different application methods and substrates.
- C. Paint Type Coats To Be Applied: Unless specified otherwise by finish paint manufacturer's product data sheet, the number of coats to be applied for each paint type are as follows:
  1. Paint Types EAL and IAL:
    - a. New Unpainted Surfaces: Apply 1 coat of primer and 2 coats of finish paint.
    - b. Existing Painted Surfaces:
      - 1) Apply 2 coats of finish paint when existing paint has a lower gloss.
      - 2) Apply one coat of primer and 2 finish coats when existing paint has a higher gloss.

- c. Paint Types IAL: Provide mildewcide additive for bathrooms, kitchens, janitor closets, laundry rooms, restrooms and other wet or damp areas.
  - d. Pitted Concrete & Concrete Masonry Surfaces: Use block filler as primer /sealer where allowed by finish paint manufacturer.
  - e. Existing Structural Steel:
    - 1) Primed Steel: Apply 2 coats of finish paint.
    - 2) Unprimed Steel: Apply 1 coat of Paint Type ESP or ISP, depending upon exterior or interior location.
      - a) If topcoated, apply additional coat of finish paint manufacturer's galvanized primer and 2 coats of finish paint.
2. Paint Types ESP: Apply 1 coat.
- a. Do not prime or finish paint steel to be encased in concrete, masonry, or to receive sprayed on fireproofing.
  - b. Allow primer to dry one week and test adhesion. Remove and replace defective primer where adhesion failures occur.

### **3.04 ADJUSTING AND CLEANING**

- A. Reinstall removed items after painting has been completed.
  - 1. Restore damaged items to a condition equal to or better than when removed. Replace damaged items that cannot be restored.
- B. Touch up and restore damaged finish paints. Touch up and restoration paint coats are in addition to the number of specified finish paint coats.
- C. Remove spilled, splashed, or spattered paint without marring, staining or damaging the surface. Restore damaged surfaces to the satisfaction of the Director's representative.
- D. Remove temporary barriers, masking tape, and other protective coverings upon completion of painting, cleaning and restoration work.

**END OF SECTION**

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**SECTION 111319**  
**LOADING DOCK EQUIPMENT**

**PART 1 GENERAL**

**1.01 PRODUCTS FURNISHED BUT NOT INSTALLED UNDER THIS SECTION**

- A. Install anchor bolts under the Work of Section 033001.

**1.02 RELATED WORK SPECIFIED ELSEWHERE**

- A. Cast-In-Place Concrete: Section 033001.
- B. Metal Fabrications: Section 055000.

**1.03 REFERENCES**

- A. Welding: Comply with “Structural Welding Code - Steel, AWS D1.1” by the American Welding Society.

**1.04 SUBMITTALS**

- A. Shop Drawings: Show installation details.
- B. Product Data: Catalog sheets, specifications, and installation instructions.

**1.05 SEQUENCING**

- A. Coordinate location and installation of required anchor bolts with cast-in-place concrete Work.
  - 1. Dock Bumpers: Locate top of bumpers 2 inches below dock level.

**PART 2 PRODUCTS**

**2.01 DOCK BUMPERS**

- A. Laminated Tread Type: Bumper units fabricated of multiple plies cut from fabric reinforced rubber truck tires, pressure laminated and securely mounted to hot-dipped galvanized or aluminum enameled 3/4 inch diameter steel tie rods and 1/4 inch thick structural steel angle supports, complete with 3/4 inch galvanized anchor bolts, nuts and washers to suit installation conditions. Tread plies shall extend 1-1/2 inches beyond edge of closure angles.
  - 1. Tread Plies: 4-1/2 inches thick (projection from dock).

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verification of Conditions: Examine surfaces to receive loading dock equipment for defects that will adversely affect the execution and quality of the Work. Do not proceed until unsatisfactory conditions are corrected.
  - 1. Verify location and size of required anchors bolts.

### **3.02 INSTALLATION**

- A. Install loading dock equipment in accordance with manufacturer's instructions, unless otherwise indicated.
- B. Securely anchor equipment assemblies to substrate.

### **3.03 CLEANING**

- A. Clean dirt, grease, and other foreign material from equipment.

**END OF SECTION**

## SECTION 111903

### STEEL DETENTION SCREENS

#### PART 1 GENERAL

##### 1.01 SUBMITTALS

- A. Shop Drawings: Show application to project and connection to adjoining construction.
- B. Product Data: Screen manufacturer's specifications and installation instructions.
- C. Samples:
  - 1. Wire Cloth: 12 inch by 12 inch pieces.
- D. Quality Control Submittals:
  - 1. Manufacturer's Qualifications Data: If requested, submit to the Director the names and addresses of 5 similar projects where the manufacturer's detention screens have been in use for 3 years.

##### 1.02 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: The detention screen manufacturer shall be regularly engaged in the production of detention screens and shall have furnished such products for 5 similar projects that have been in use for not less than 3 years.

#### PART 2 PRODUCTS

##### 2.01 STEEL DETENTION SCREENS

- A. Provide detention screens with either Type A frames to match facility's existing. Verify existing type with Director's Representative in the field prior to submitting submittals.
- B. Type A (Channel Type) Frames: As indicated, screens shall be either a full hinged unit, or an assembly consisting of a fixed unit and a hinged unit.
  - 1. Stiles and rails for each unit shall be minimum 12 gage steel, formed basically channel shape in cross section, and welded at corners with welds ground smooth on exposed surfaces.
  - 2. Locking mechanism, hinges, and wire cloth assembly shall be concealed and inaccessible when screen is closed.
  - 3. Joints between fixed and hinged units shall be equal on all four sides, and shall not exceed 1/8 inch in width.
  - 4. Rubber bumpers shall be securely fastened to a frame on the lock bolt housing side.

- C. Wire Cloth: 0.054 inch diameter wire, 8 mesh to the inch, with 32.8 percent open area, woven from Type 304 stainless steel wires. The wires shall have double crimped crossings, and woven wire tensile strength of not less than 1,600 pounds per linear inch after weaving.
- D. Wire Cloth Support Assembly:
1. Springs: Oil tempered and cadmium plated, flat leaf or coil type, attached to the hinged unit of the frame and connected to wire cloth retainers. Flat leaf type springs shall be provided with clevis and adjusting screw, and shall be spaced as required to receive wire cloth retainers on not exceeding 8 inches on center on 4 sides of the frame. Coil type springs shall be provided with yoke and pins, and shall be spaced not more than 8 inches on center on 4 sides of the frame.
  2. Retainers: Cadmium plated retainer bars, spaced not more than 8 inches on center or continuous retainer bar, on 4 sides of hinged unit, attached to springs. Retainers shall securely hold wire cloth in place.
  3. Support assembly shall have a minimum capacity of 175 lb per 1/2 inch of movement of each retainer.
  4. Support assembly shall provide a minimum overall wire cloth movement of 5/8 inch in both width and height.
- E. Hinges: Concealed, electro-galvanized, 0.125 inch steel, with 1/4 inch diameter loose stainless steel or hard brass pins.
- F. Locking System:
1. Each detention screen shall be equipped with reinforced lock bolts that operate simultaneously from bit key lock through 1/8 inch x 3/8 inch rectangular, or 1/4 inch diameter, minimum, steel, full hard temper bars. Case shall be three pieces of 0.090 inch steel with 0.050 inch steel cover to accept 1/2 inch diameter x 1-3/8 inches long, case hardened steel bolt. Bolt shall have a minimum travel of 1/2 inch. Bolt slide cover shall be attached to main body of case by two steel shoulder type rivets. Bolt reinforcement shall be welded to main body.
  2. Lock shall have a minimum of 4 tumblers.
  3. Two or three point locking, as required, shall be actuated simultaneously by bit key in control assembly (lock case) accessible from both sides of screen through contoured key holes in stile.
  4. Materials: Lock tumblers shall be brass or Type 302 stainless steel; tumbler springs phosphor bronze or beryllium copper alloy, securely staked; slide bolts of case-hardened steel; lock case and cover, and all other parts, brass, electro-plated steel, or Type 302 stainless steel.
  5. Keying: Match existing detention screen keying. Verify in the field.
- G. Scribe Members: Minimum 16 gage steel, and as required to form a close fitting joint between jambs and head of the opening and the screen frame.
- H. Fastening Devices: Screen manufacturer's standard screws and anchors unless otherwise shown on the Drawings.

- I. Shop Finishing: Except for galvanized or cadmium plated ferrous metal, ferrous metal Work included in this Section, including scribe members, shall be completely finished in the shop using one of the following methods:
  1. Method 1: The ferrous metal shall be thoroughly cleaned, bonderized, given a coat of screen manufacturer's standard primer, and then given one coat of screen manufacturer's standard baked-on enamel of standard color as selected to match existing detention screen color. Verify color in the field with the Director's representative.
  2. Method 2: The ferrous metal shall be thoroughly cleaned, given a baked-on coat of rust inhibitive primer, and then given 2 coats of screen manufacturer's standard baked-on enamel of standard color as selected to match existing detention screen color. Verify color in the field with the Director's representative.

### **PART 3 EXECUTION**

#### **3.01 INSTALLATION**

- A. Install the Work of this Section in accordance with the screen manufacturer's instructions, except as otherwise shown or specified.
- B. Locate fastenings at openings not more than 3 inches from ends of each member. Space fastenings not more than 12 inches on center between end fastenings unless otherwise shown.

#### **3.02 ADJUSTING**

- A. Adjust and lubricate hardware to Work freely and easily, ready for use.

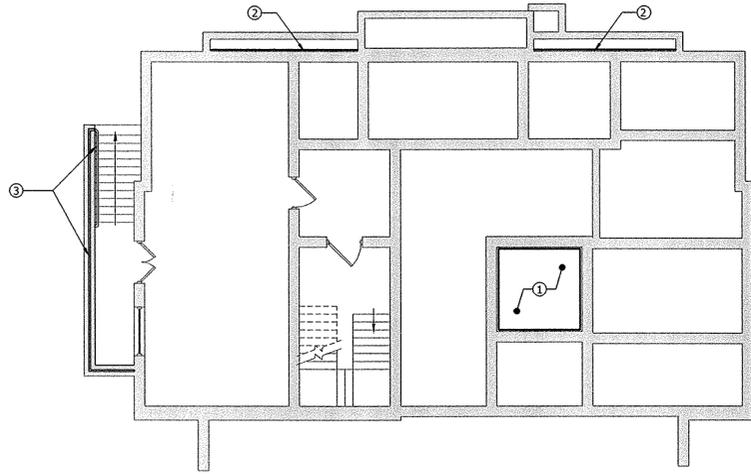
#### **3.03 CLEANING**

- A. Clean exposed surfaces of wire cloth and frames of dirt and other foreign material. Comply with screen manufacturer's recommendations for cleaning.
- B. Touch-up damaged painted surfaces to match shop finish.

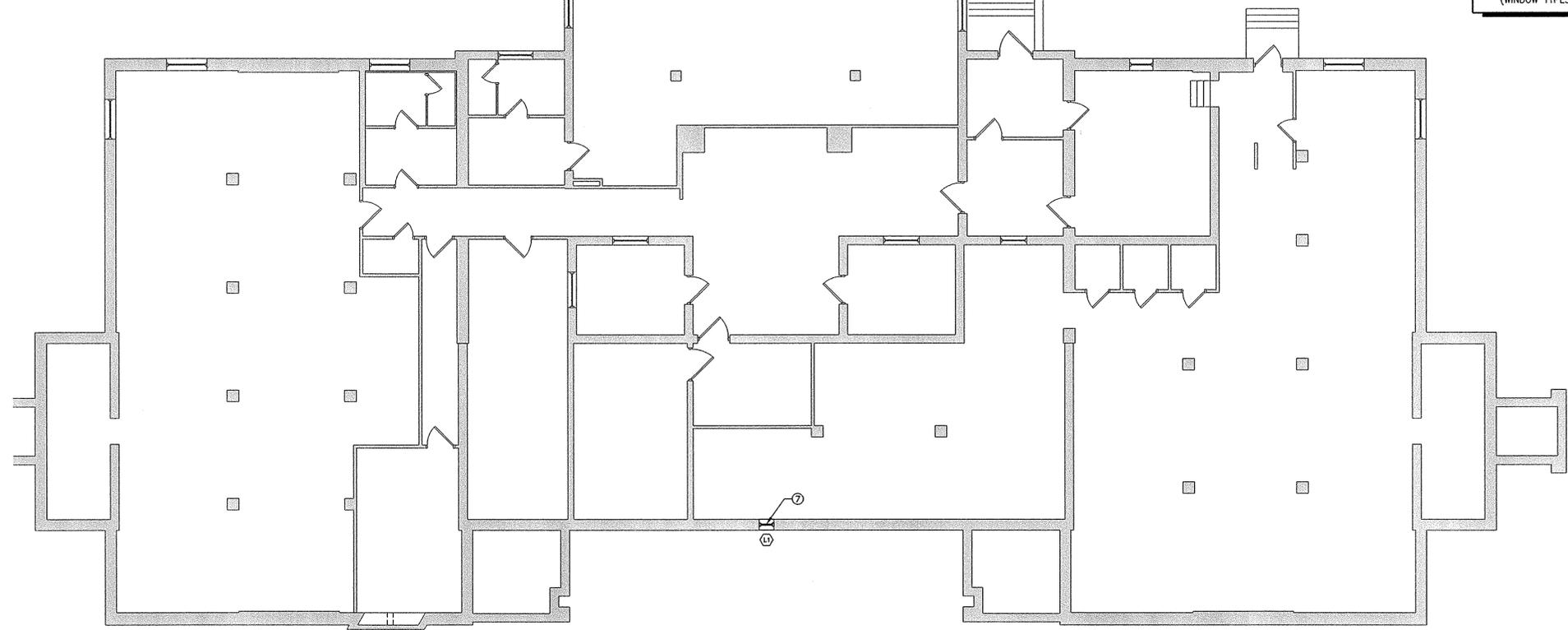
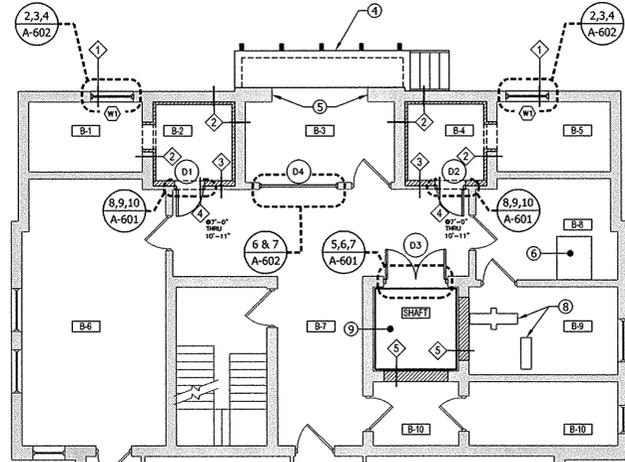
**END OF SECTION**

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**2 SUB-BASEMENT FLOOR PLAN**  
A-101 SCALE: 1/8" = 1'-0"



**1 BASEMENT FLOOR PLAN**  
A-101 SCALE: 1/8" = 1'-0"

**GENERAL NOTES**

- WHERE SQUARE FOOTAGE IS SHOWN ADJACENT TO KEYED NOTE, THIS VALUE IS APPROXIMATE. WHERE QUANTITY IS NOT PROVIDED THE CONTRACTOR IS RESPONSIBLE FOR QUANTITY.
- ASBESTOS IS TO BE REMOVED IN ACCORDANCE w/ SPECIFICATION SECTION 028213.
- LEAD-BASED PAINT THAT IS LOOSE SHALL BE HANDLED AS PER SPECIFICATION SECTION 028304.
- WORKING ON OR AROUND SURFACES COATED w/ LEAD-BASED PAINT SHALL BE IN ACCORDANCE w/ SPECIFICATION SECTION 028304.

**DETAIL NOTES**

- FILL EXISTING ELEVATOR PIT w/ FLOWABLE FILL; SEE SUB-BASEMENT REPAIR NOTES ON STRUCTURAL DRAWING S-111
- PATCH EXPOSED SURFACES & PAINT PER SUB-BASEMENT REPAIR NOTES ON STRUCTURAL DRAWING S-111
- REINSTALL SALVAGED HANDRAIL PER SUB-BASEMENT REPAIR NOTES ON S-111
- PROVIDE/REPAIR LOADING DOCK SEE STRUCTURAL DRAWINGS
- APPLY (2) COATS OF PAINT TYPE 'EAL-3' OVER ESP PAINT. COLOR TO BE 'SAFETY YELLOW'; COORD w/ DIRECTOR'S REPRESENTATIVE
- PATCH FLOOR SLAB; SEE BASEMENT REPAIR NOTES ON STRUCTURAL DRAWING S-111
- PROVIDE & INSTALL LOUVER (SEE DETAILS ON S-501), PATCH WALL; SEE BASEMENT REPAIR NOTES ON STRUCTURAL DRAWING S-111
- PATCH ANCHOR HOLES PER BASEMENT REPAIR NOTES ON STRUCTURAL DRAWING S-111
- INFILL SHAFT w/ CONCRETE SLAB FLOOR; SEE STRUCTURAL DRAWINGS

**DOOR NOTES** (D1) (D2) (D3) (D4)

- SEE SHEET A-601 FOR DOOR SCHEDULE & DETAILS (DOORS D1, D2, D3, & D4)

**WALL NOTES** (1) (2) (3) (4) (5)

- SEE SHEET A-501 FOR WALL TYPES & DETAILS (WALL TYPES 1, 2, 3, 4, & 5)

**WINDOW NOTES** (W1) (L1)

- SEE SHEET A-602 FOR WINDOW TYPES & DETAILS; SEE STRUCTURAL DRAWINGS FOR LOUVER TYPE & DETAILS (WINDOW TYPES 1 & LOUVER TYPE 1)



CONSULTANT

**WARNING:**  
THE ALTERATION OF THIS MATERIAL IN ANY WAY, UNLESS DONE UNDER THE DIRECTION OF A COMPARABLE PROFESSIONAL, I.E. ARCHITECT FOR AN ARCHITECT, ENGINEER FOR AN ENGINEER OR LANDSCAPE ARCHITECT FOR A LANDSCAPE ARCHITECT, IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND/OR REGULATIONS AND IS A CLASS 'A' MISDEMEANOR.



**CONSTRUCTION**

TITLE:  
REPAIR LOADING DOCK, UPGRADE  
STATE SHOP & ELEVATOR REMOVAL  
BUILDING NO. 20

LOCATION:  
ALBION CORRECTIONAL FACILITY  
3595 STATE SCHOOL ROAD  
ALBION, NY 14411

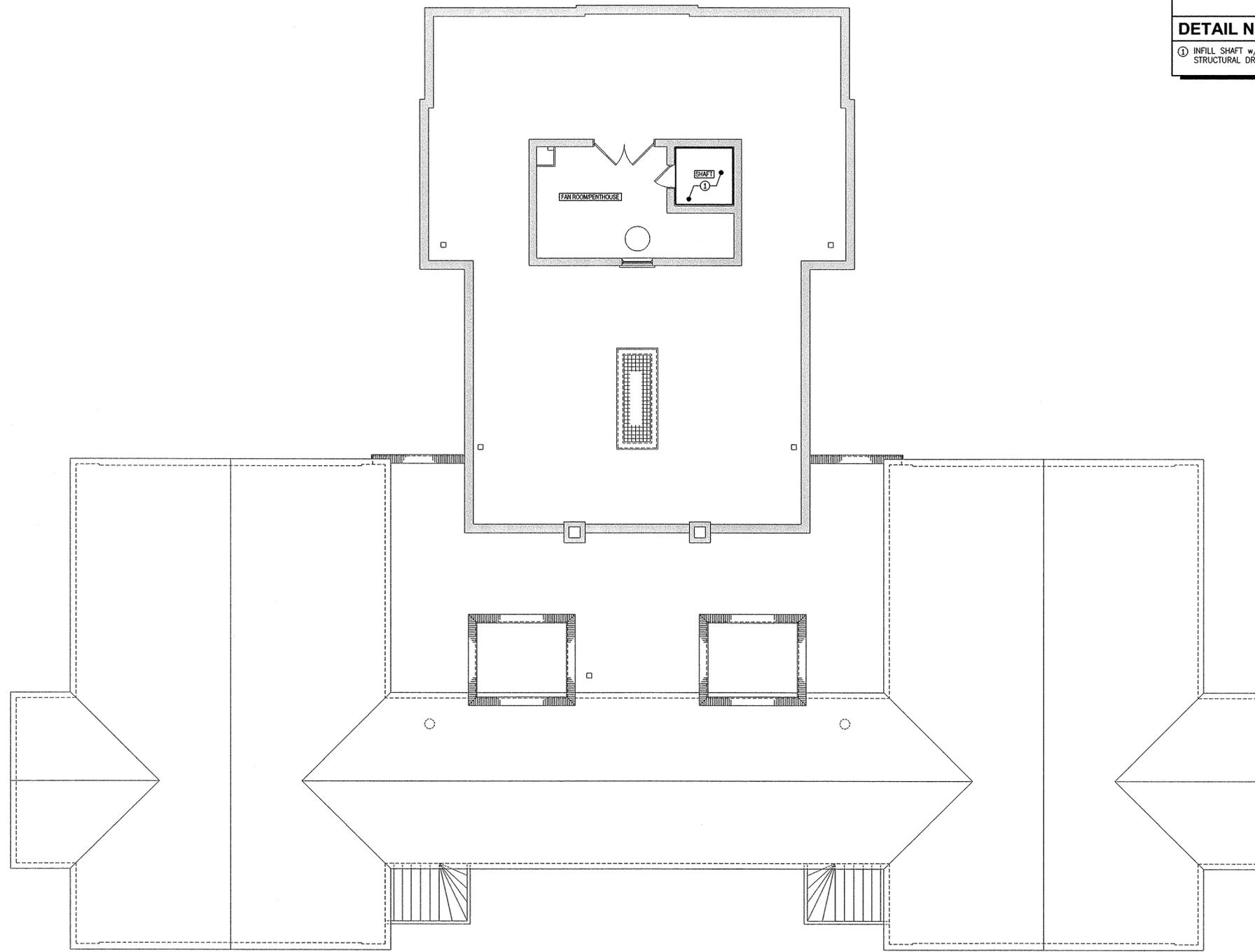
CLIENT:  
NYS DEPARTMENT OF CORRECTIONS  
AND COMMUNITY SUPERVISION

| MARK                                | DATE       | DESCRIPTION    |
|-------------------------------------|------------|----------------|
|                                     | 03/13/2013 | ADDENDUM NO. 1 |
|                                     | 12/26/2012 | BID DOCUMENT   |
| PROJECT NUMBER:                     | 44515      | - C            |
| DESIGNED BY:                        | OMM        |                |
| DRAWN BY:                           | OMM        |                |
| FIELD CHECK:                        |            |                |
| APPROVED:                           |            |                |
| SHEET TITLE:<br>BASEMENT FLOOR PLAN |            |                |
| DRAWING NUMBER:<br>A-101            |            |                |
| SHEET OF                            |            |                |





Mar 14, 2013 - 3:08pm  
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 36x24 PLOT SHEET



**GENERAL NOTES**

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- LEAD-BASED PAINT THAT IS LOOSE SHALL BE HANDLED AS PER SPECIFICATION SECTION 028304.
- WORKING ON OR AROUND SURFACES COATED w/ LEAD-BASED PAINT SHALL BE IN ACCORDANCE w/ SPECIFICATION SECTION 028304.

**DETAIL NOTES**

① INFILL SHAFT w/ CONCRETE SLAB FLOOR; SEE STRUCTURAL DRAWINGS



CONSULTANT

**WARNING:**  
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CONTRACT:  
**CONSTRUCTION**

TITLE:  
 REPAIR LOADING DOCK, UPGRADE  
 STATE SHOP & ELEVATOR REMOVAL  
 BUILDING NO. 20

LOCATION:  
 ALBION CORRECTIONAL FACILITY  
 3595 STATE SCHOOL ROAD  
 ALBION, NY 14411

CLIENT:  
 NYS DEPARTMENT OF CORRECTIONS  
 AND COMMUNITY SUPERVISION

| MARK            | DATE       | DESCRIPTION    |
|-----------------|------------|----------------|
|                 | 03/13/2013 | ADDENDUM NO. 1 |
|                 | 12/26/2012 | BID DOCUMENT   |
| PROJECT NUMBER: | 44515 - C  |                |
| DESIGNED BY:    | OMM        |                |
| DRAWN BY:       | OMM        |                |
| FIELD CHECK:    |            |                |
| APPROVED:       |            |                |

SHEET TITLE:  
**ROOF/PENTHOUSE  
 FLOOR PLAN**

DRAWING NUMBER:  
**A-103**

SHEET OF

**1 ROOF/PENTHOUSE FLOOR PLAN**  
 A-103 SCALE: 1/8" = 1'-0"



**GENERAL NOTES**

- CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS PRIOR TO SUBMITTING SHOP DRAWINGS, ORDERING, AND/OR MANUFACTURING ALL DOORS, FRAMES AND WINDOWS, AND PRIOR TO THE START OF ANY WORK.
- ALL BRICK & BLOCK INFILL SHALL MATCH ADJACENT EXISTING COURSING, TEXTURE & COLOR (TO INCLUDE GROUT)
- WINDOWS, DOORS, AND WALLS SHALL BE PAINTED; COLORS & TEXTURE TO BE COORDINATED W/ DIRECTOR'S REPRESENTATIVE. INTERIOR PAINT TO BE PAINT TYPE '1AL-3', EXTERIOR PAINT TO BE PAINT TYPE 'EAL-3'.



**Serving New York**  
 ANDREW M. CUOMO  
 Governor  
 ROANN M. DESTITTO  
 Commissioner

CONSULTANT

**WARNING:**  
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**CONSTRUCTION**

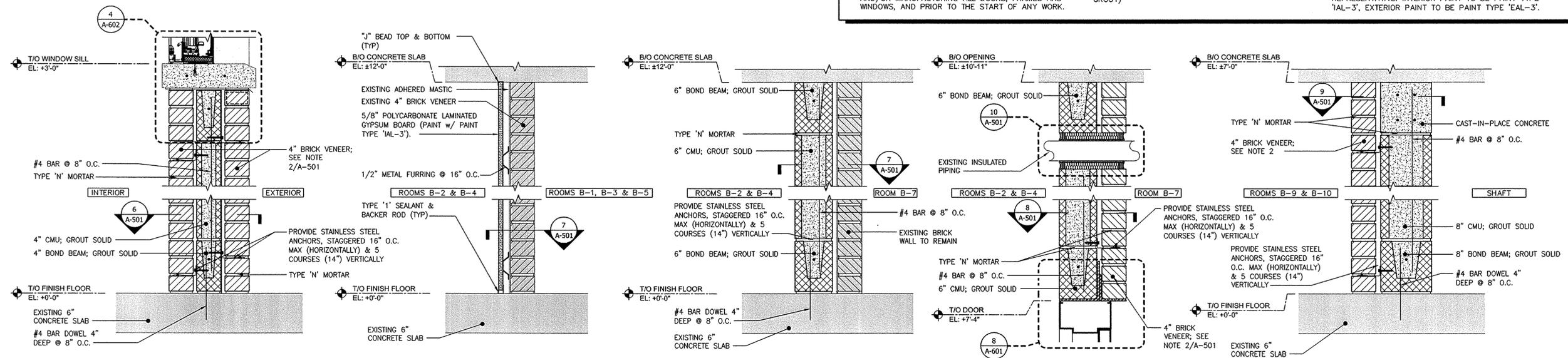
TITLE: REPAIR LOADING DOCK, UPGRADE STATE SHOP & ELEVATOR REMOVAL BUILDING NO. 20

LOCATION: ALBION CORRECTIONAL FACILITY  
 3595 STATE SCHOOL ROAD  
 ALBION, NY 14411

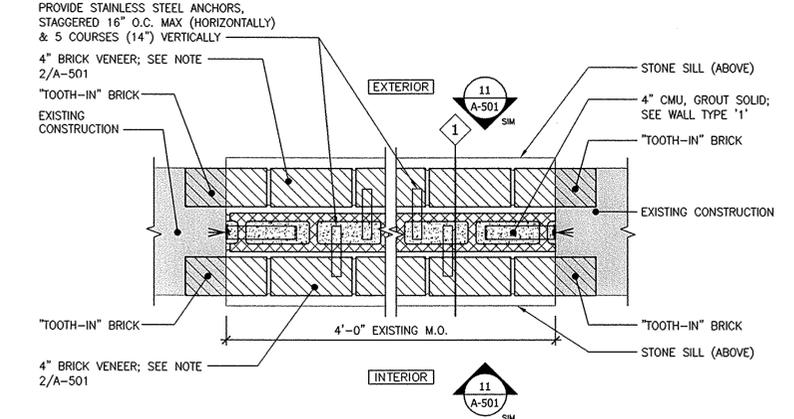
CLIENT: NYS DEPARTMENT OF CORRECTIONS AND COMMUNITY SUPERVISION

|                 |                      |             |
|-----------------|----------------------|-------------|
| 03/13/2013      | ADDENDUM NO. 1       |             |
| 12/26/2012      | BID DOCUMENT         |             |
| MARK            | DATE                 | DESCRIPTION |
| PROJECT NUMBER: | 44515 - C            |             |
| DESIGNED BY:    | OMM                  |             |
| DRAWN BY:       | OMM                  |             |
| FIELD CHECK:    |                      |             |
| APPROVED:       |                      |             |
| SHEET TITLE:    | WALL TYPES & DETAILS |             |
| DRAWING NUMBER: | A-501                |             |

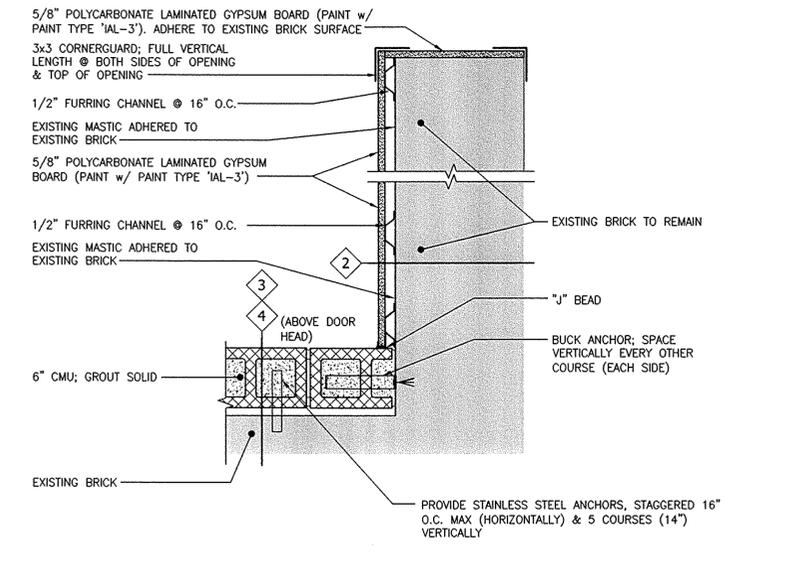
SHEET OF



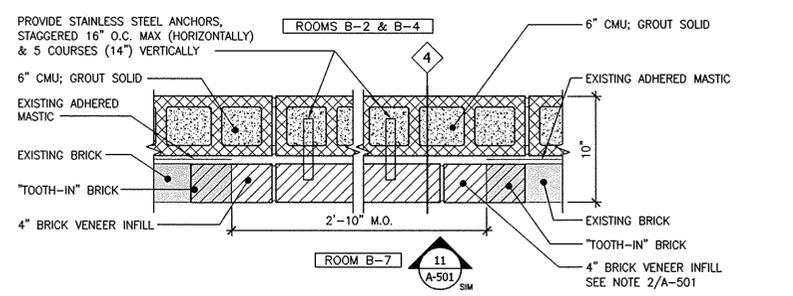
**1 4" BLOCK & BRICK INFILL** @ ROOMS B-1 & B-5  
**2 GYPBD & FURRING** @ ROOMS B-2 & B-4  
**3 6" BLOCK** @ ROOMS B-2 & B-4  
**4 6" BLOCK & 4" BRICK INFILL** @ ROOMS B-2 & B-4  
**5 6" BLOCK & 4" BRICK INFILL** @ SHAFT



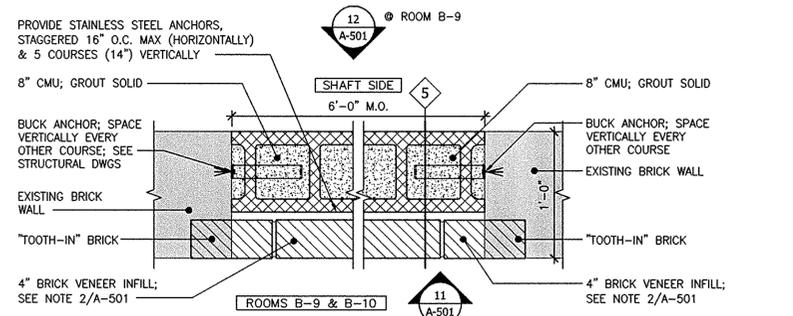
**6 ENLARGED PLAN @ WALL TYPE 1**



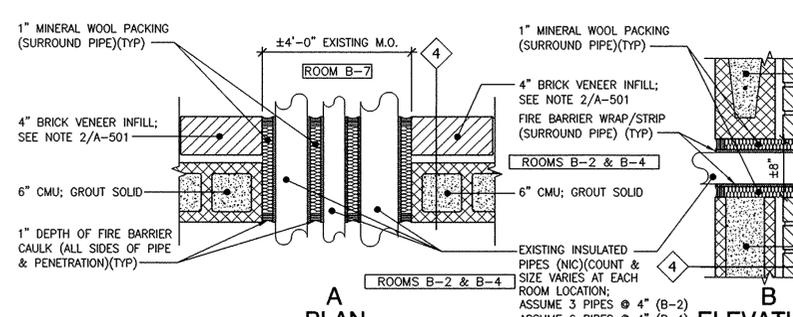
**7 ENLARGED PLAN @ WALL TYPES 2 & 3**



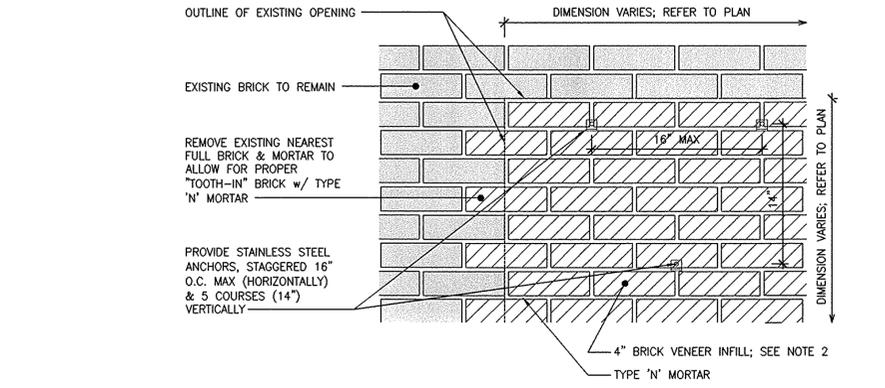
**8 ENLARGED PLAN @ WALL TYPE 4**



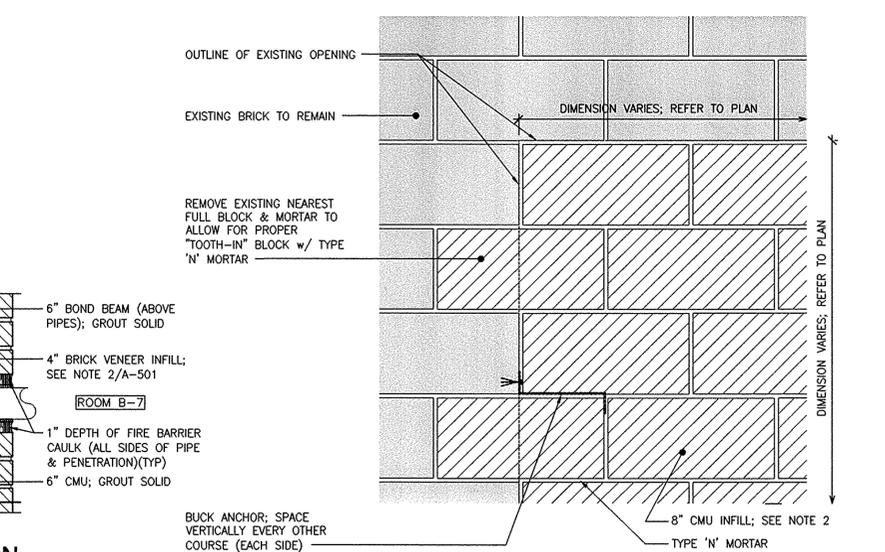
**9 ENLARGED PLAN @ WALL TYPE 5**



**10 1 HOUR FIRE RATED THRU-WALL PENETRATION @ WALL TYPE 4**



**11 ELEVATION @ BRICK WALL INFILL (TYP)**



**12 ELEVATION @ BLOCK WALL INFILL (TYP)**

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 36x24 PLOT SHEET

| DOOR NO. | ROOM NO. | DOOR  |        |        | FRAME    |      |    | FIRE RATING LABEL | HDWE GRP | NOTES    |         |         |          |      |      |      |     |  |
|----------|----------|-------|--------|--------|----------|------|----|-------------------|----------|----------|---------|---------|----------|------|------|------|-----|--|
|          |          | WD    | HGT    | THK    | MATL     | TYPE | GA |                   |          |          | GLAZING | MATL    | HEAD     | JAMB | SILL | TYPE | GA  |  |
| D1       | B-2      | 3'-0" | 7'-0"  | 1-3/4" | STL      | F    | 14 | ---               | ---      | STL      | 9/A-601 | 9/A-601 | 10/A-601 | 2    | 12   | 1HR  | 1   | PAINT DOOR & FRAME: PAINT TYPE 'DAL-3'                 |
| D2       | B-4      | 3'-0" | 7'-0"  | 1-3/4" | STL      | F    | 14 | ---               | ---      | STL      | 9/A-601 | 9/A-601 | 10/A-601 | 2    | 12   | 1HR  | 1   | PAINT DOOR & FRAME: PAINT TYPE 'DAL-3'                 |
| D3       | B-7      | 6'-0" | 7'-0"  | 1-3/4" | STL      | FD   | 14 | ---               | ---      | STL      | 5/A-601 | 6/A-601 | 7/A-601  | 3    | 12   | 1HR  | 2   | PAINT DOOR & FRAME: PAINT TYPE 'DAL-3'                 |
| D4       | B-7      | 7'-0" | 10'-0" | 1"     | STL      | RD   | 22 | ---               | ---      | ---      | ---     | ---     | ---      | ---  | ---  | ---  | --- | MANUAL CHAIN LINK OPERATION; INSULATED DOOR            |
| D5       | 1-8      | 3'-4" | 7'-0"  | 1-3/4" | GALV STL | E    | 16 | M                 | ---      | GALV STL | 2/A-601 | 3/A-601 | 4/A-601  | 1    | 12   | ---  | 3   | PAINT DOOR & FRAME: PAINT TYPE 'EAL-3'; INSULATED DOOR |
| D6       | 1-10     | 3'-4" | 7'-0"  | 1-3/4" | GALV STL | E    | 16 | M                 | ---      | GALV STL | 2/A-601 | 3/A-601 | 4/A-601  | 1    | 12   | ---  | 3   | PAINT DOOR & FRAME: PAINT TYPE 'EAL-3'; INSULATED DOOR |
| D7       | 1-30     | 8'-0" | 7'-0"  | 1-3/4" | STL      | FD   | 14 | ---               | ---      | STL      | 5/A-601 | 6/A-601 | 7/A-601  | 3    | 12   | 1HR  | 2   | PAINT DOOR & FRAME: PAINT TYPE 'DAL-3'                 |

**GENERAL NOTES**

- CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS PRIOR TO SUBMITTING SHOP DRAWINGS, ORDERING, AND/OR MANUFACTURING ALL DOORS, FRAMES AND WINDOWS, AND PRIOR TO THE START OF ANY WORK.
- ALL BRICK & BLOCK INFILL SHALL MATCH ADJACENT EXISTING COURSING, TEXTURE & COLOR (TO INCLUDE GROUT)
- WINDOWS, DOORS, AND WALLS SHALL BE PAINTED; COLORS & TEXTURE TO BE COORDINATED w/ DIRECTOR'S REPRESENTATIVE. INTERIOR PAINT TO BE PAINT TYPE 'DAL-3', EXTERIOR PAINT TO BE PAINT TYPE 'EAL-3'.

**DOOR NOTES** (D1) (D2) (D3) (D4) (D5) (D6) (D7)

- SEE SHEET A-601 FOR DOOR SCHEDULE & DETAILS (DOORS D1, D2, D3, D4, D5, D6, D7); SEE H-100 SERIES FOR DOOR REMOVAL LOCATIONS, SEE A-100 SERIES FOR DOOR INSTALLATION LOCATIONS

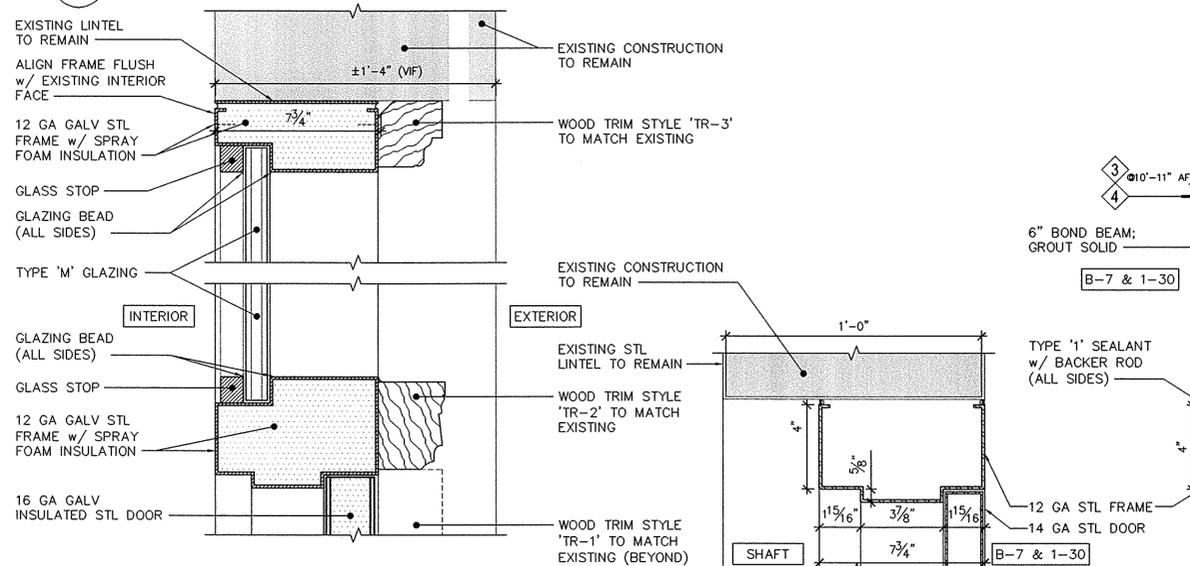
**WALL NOTES** (1) (2) (3) (4) (5)

- SEE SHEET A-501 FOR WALL TYPES & DETAILS (WALL TYPES 1, 2, 3, 4, & 5)

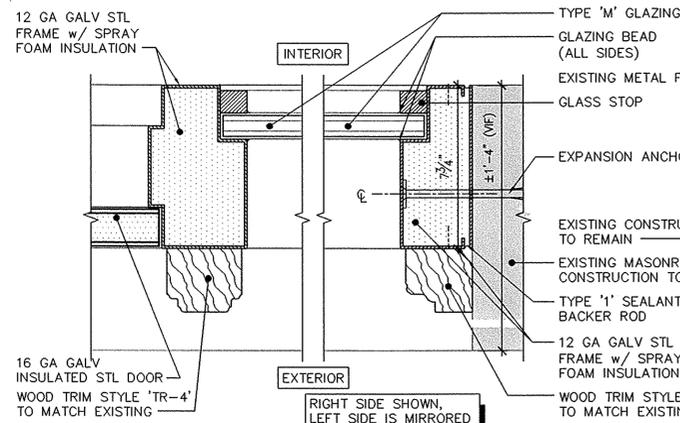
**WINDOW NOTES** (W1) (L1)

- SEE SHEET A-602 FOR WINDOW TYPES & DETAILS; SEE STRUCTURAL DRAWINGS FOR LOUVER TYPE & DETAILS (WINDOW TYPES 1 & LOUVER TYPE 1)

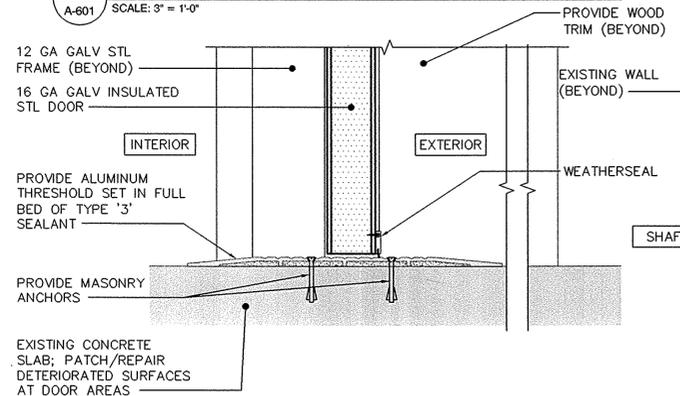
**1 DOOR SCHEDULE**



**2 DETAIL @ DOOR HEAD**

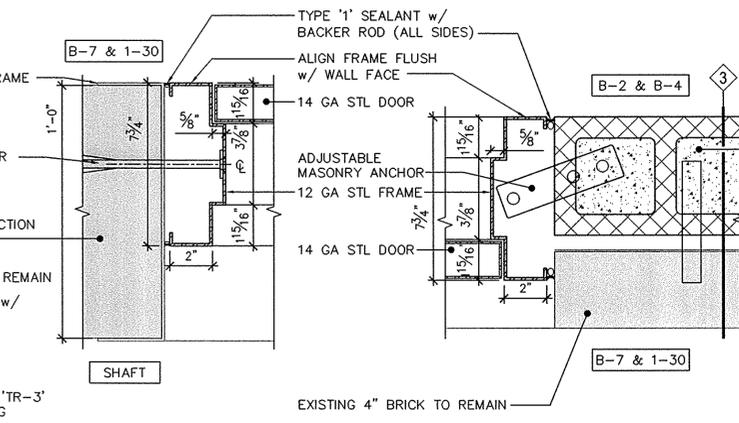


**3 DETAIL @ DOOR JAMB**

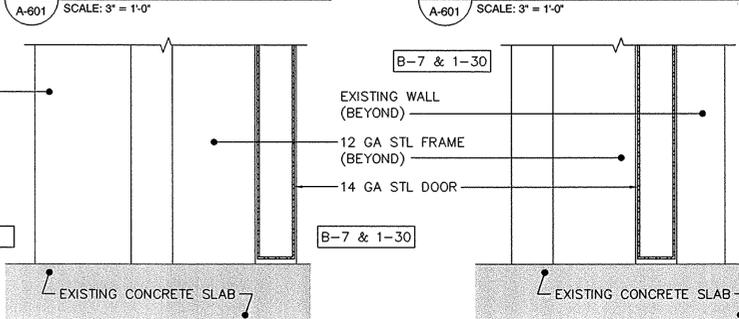


**4 DETAIL @ DOOR SILL**

**5 DETAIL @ DOOR HEAD**

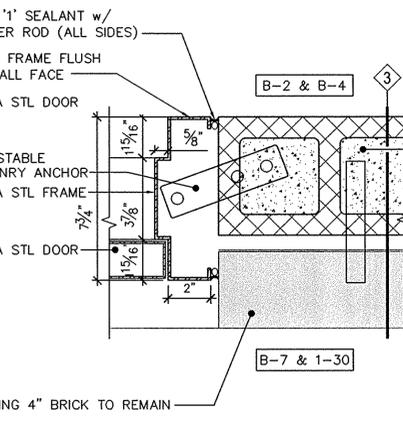


**6 DETAIL @ DOOR JAMB**

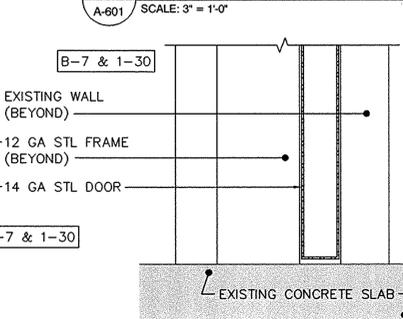


**7 DETAIL @ DOOR SILL**

**8 DETAIL @ DOOR HEAD**



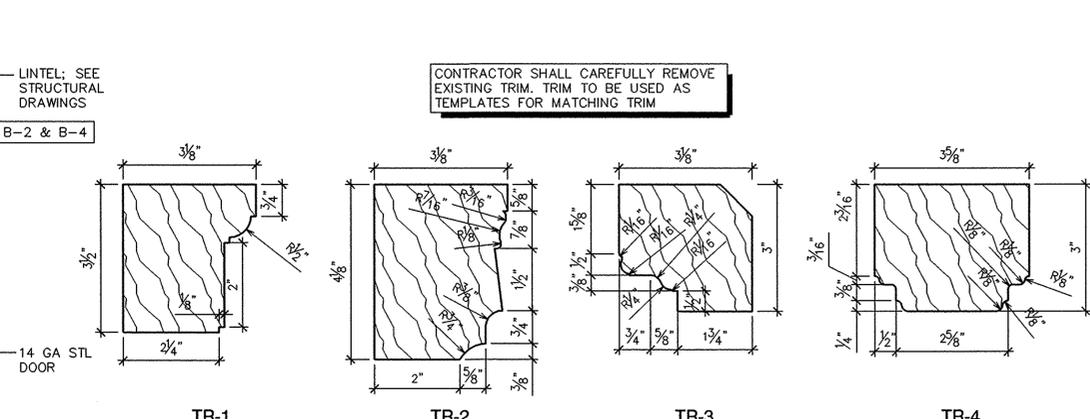
**9 DETAIL @ DOOR JAMB**



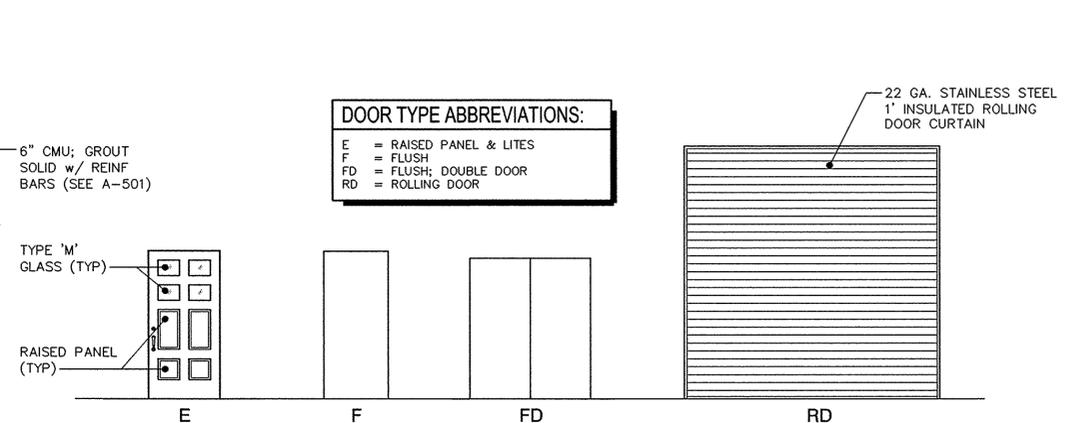
**10 DETAIL @ DOOR SILL**



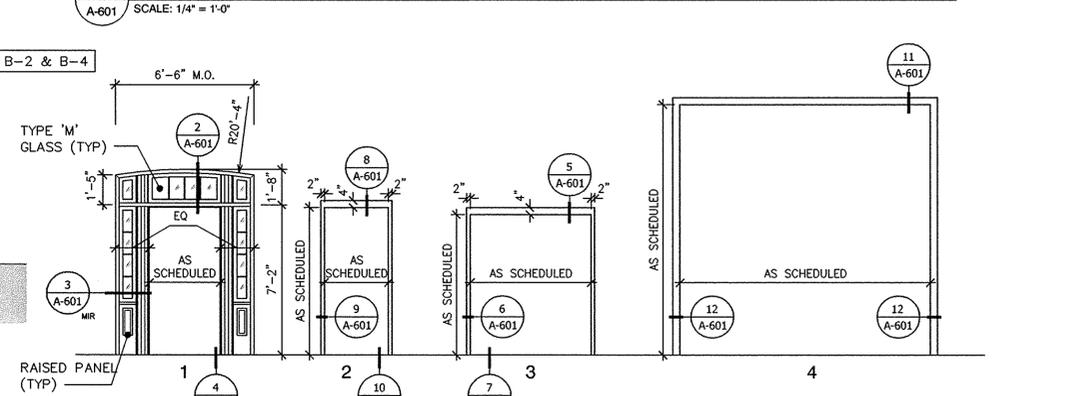
**11 TRIM TYPES**



**12 DOOR TYPES**



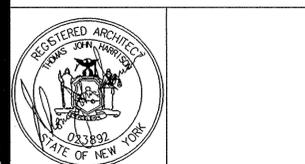
**13 FRAME TYPES**



ANDREW M. CUOMO  
Governor  
ROANN M. DESTITTO  
Commissioner

CONSULTANT

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**CONSTRUCTION**

**TITLE:** REPAIR LOADING DOCK, UPGRADE STATE SHOP & ELEVATOR REMOVAL BUILDING NO. 20  
**LOCATION:** ALBION CORRECTIONAL FACILITY 3595 STATE SCHOOL ROAD ALBION, NY 14411  
**CLIENT:** NYS DEPARTMENT OF CORRECTIONS AND COMMUNITY SUPERVISION

| MARK            | DATE         | DESCRIPTION    |
|-----------------|--------------|----------------|
|                 | 03/13/2013   | ADDENDUM NO. 1 |
|                 | 12/26/2012   | BID DOCUMENT   |
| PROJECT NUMBER: | 44515 - C    |                |
| DESIGNED BY:    | OMM          |                |
| DRAWN BY:       | OMM          |                |
| FIELD CHECK:    |              |                |
| APPROVED:       |              |                |
| SHEET TITLE:    | DOOR DETAILS |                |
| DRAWING NUMBER: | A-601        |                |
| SHEET           | OF           |                |

Mar 14, 2013 3:31:00pm  
 V:\Design\Drawings\44515\Cadtech\44515-A601.dwg  
 36x24 PLOT SHEET

CONSULTANT

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**CONSTRUCTION**

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REPAIR LOADING DOCK, UPGRADE  
STATE SHOP & ELEVATOR REMOVAL  
BUILDING NO. 20

LOCATION:  
ALBION CORRECTIONAL FACILITY  
3595 STATE SCHOOL ROAD  
ALBION, NY 14411

CLIENT:  
NYS DEPARTMENT OF CORRECTIONS  
AND COMMUNITY SUPERVISION

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| DESIGNED BY:    | OMM        |                |
| DRAWN BY:       | OMM        |                |
| FIELD CHECK:    |            |                |
| APPROVED:       |            |                |

SHEET TITLE:  
**WINDOW DETAILS**

DRAWING NUMBER:  
**A-602**

SHEET OF

| ROOM NO. | WINDOW |       |         |      | FRAME   |         |         | DETENTION SCREEN | NOTES |
|----------|--------|-------|---------|------|---------|---------|---------|------------------|-------|
|          | SIZE   | TYPE  | GLAZING | HEAD | JAMB    | SILL    |         |                  |       |
| B-1      | 4'-0"  | 4'-5" | WT      | M    | 2/A-602 | 3/A-602 | 4/A-602 | 5B/A-602         |       |
| B-5      | 4'-0"  | 4'-5" | WT      | M    | 2/A-602 | 3/A-602 | 4/A-602 | 5B/A-602         |       |

**1 WINDOW SCHEDULE**  
A-602 SCALE: 1/8" = 1'-0"

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**DOOR NOTES** (D1) (D2) (D3) (D4) (D5) (D6) (D7)

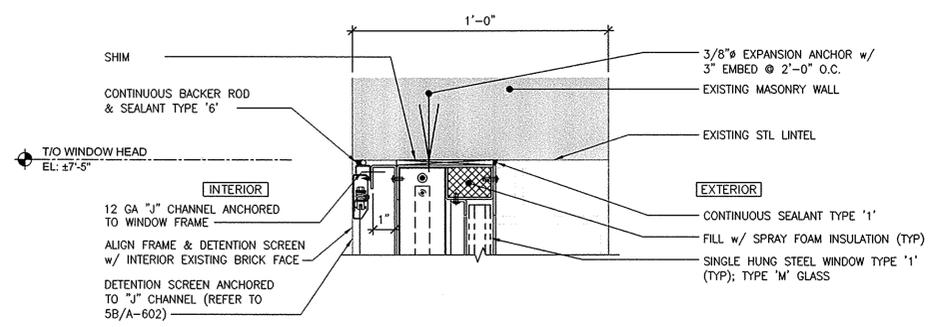
- SEE SHEET A-601 FOR DOOR SCHEDULE & DETAILS (DOORS D1, D2, D3, D4, D5, D6, D7); SEE H-100 SERIES FOR DOOR REMOVAL LOCATIONS; SEE A-100 SERIES FOR DOOR INSTALLATION LOCATIONS

**WALL NOTES** (1) (2) (3) (4) (5)

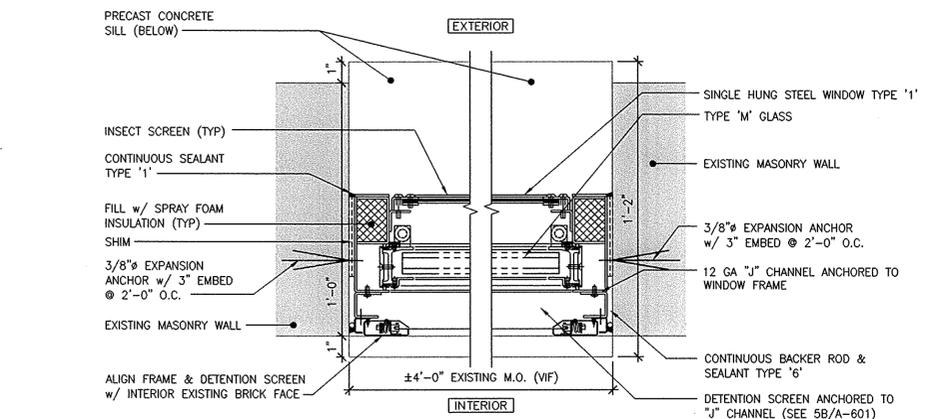
- SEE SHEET A-501 FOR WALL TYPES & DETAILS (WALL TYPES 1, 2, 3, 4, & 5)

**WINDOW NOTES** (W1) (L1)

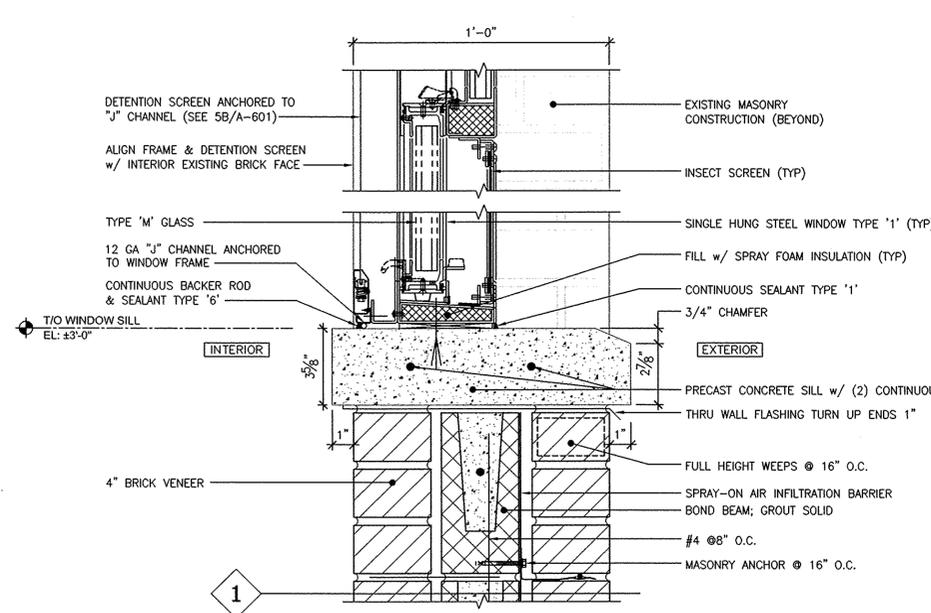
- SEE SHEET A-602 FOR WINDOW TYPES & DETAILS; SEE STRUCTURAL DRAWINGS FOR LOUVER TYPE & DETAILS (WINDOW TYPES 1 & LOUVER TYPE 1)



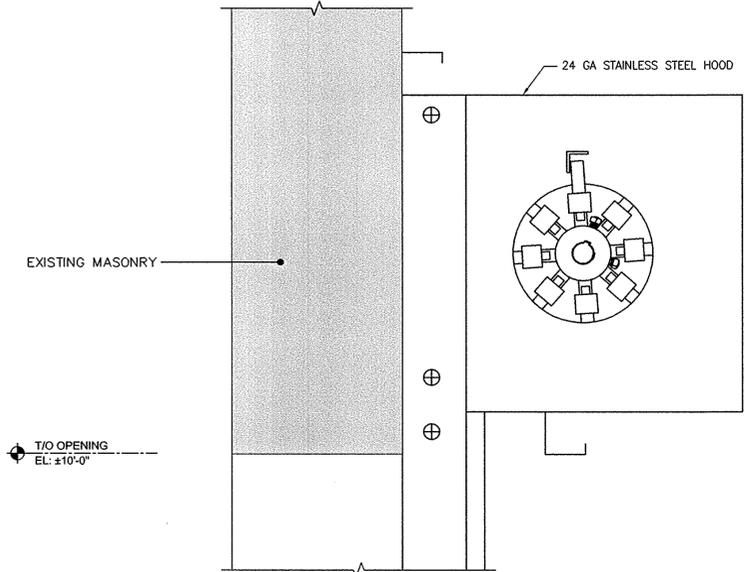
**2 DETAIL @ WINDOW HEAD**  
A-602 SCALE: 3" = 1'-0"



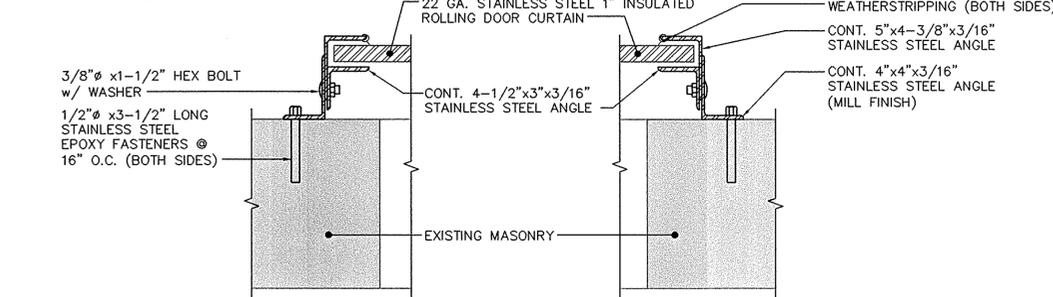
**3 DETAIL @ WINDOW JAMB**  
A-602 SCALE: 3" = 1'-0"



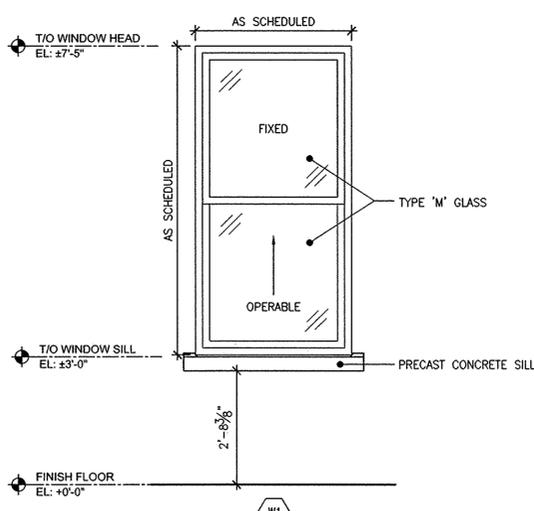
**4 DETAIL @ WINDOW SILL**  
A-602 SCALE: 3" = 1'-0"



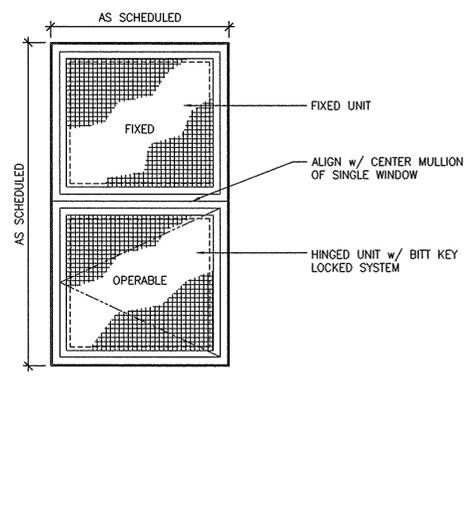
**6 DETAIL @ HEAD (ROLLING DOOR)**  
A-602 SCALE: 3" = 1'-0"



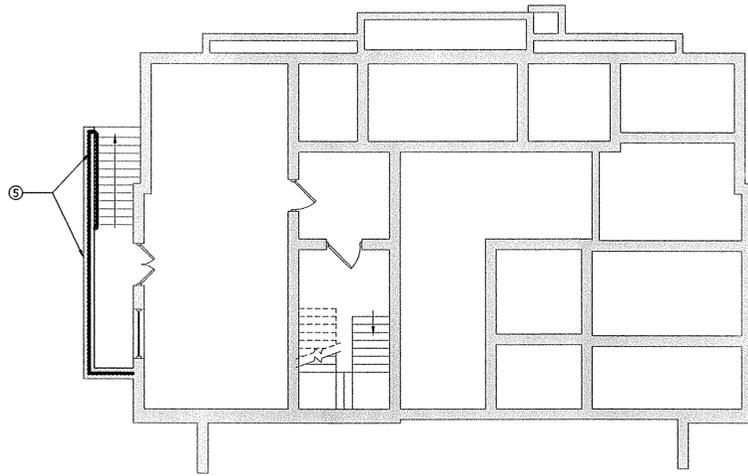
**7 DETAIL @ JAMB (ROLLING DOOR)**  
A-602 SCALE: 3" = 1'-0"



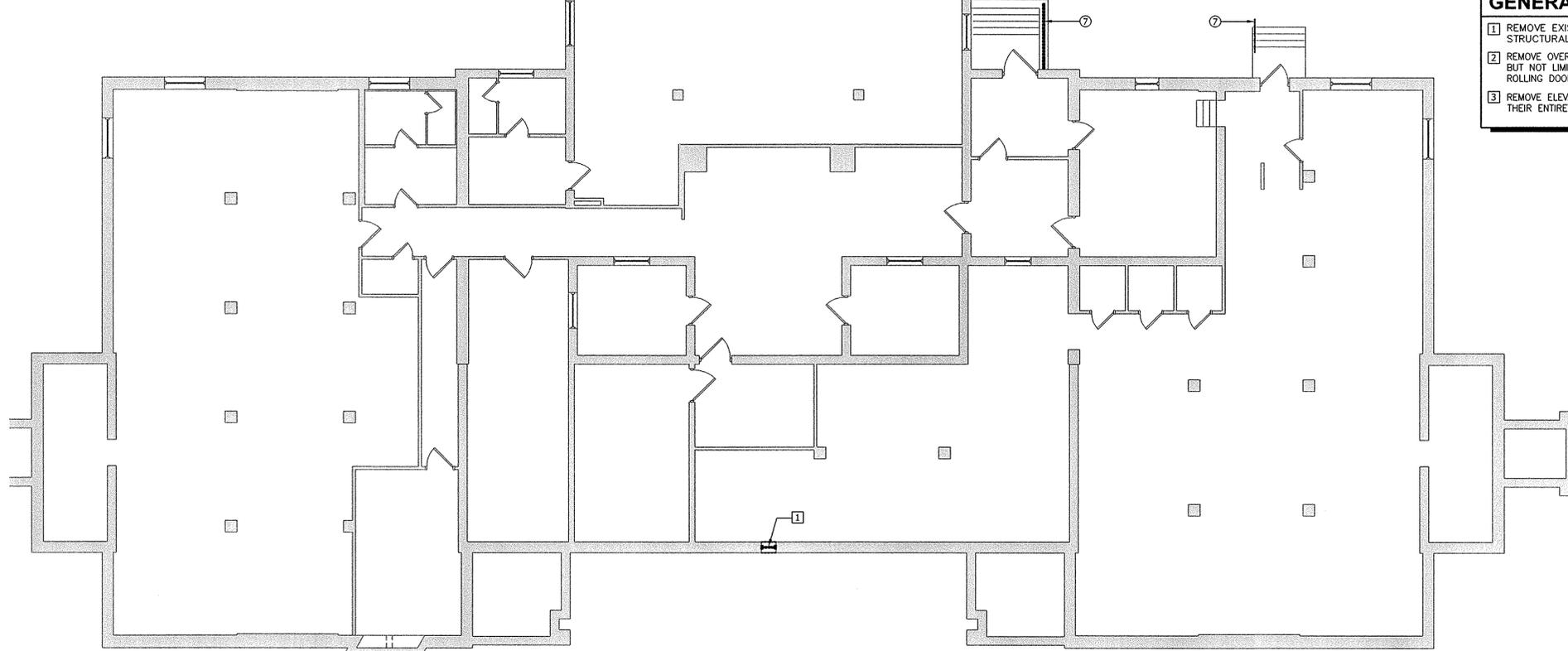
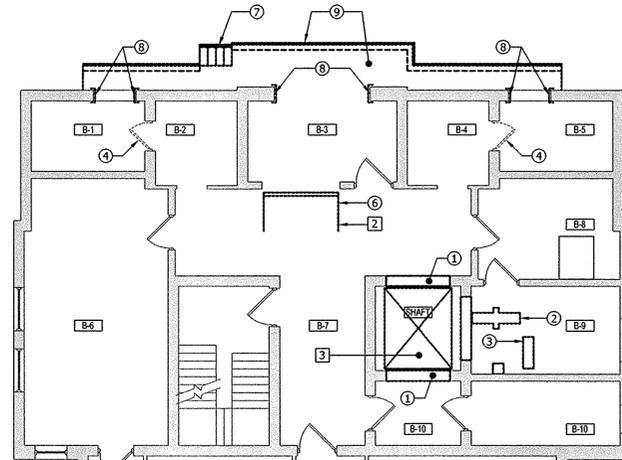
**5A WINDOW TYPE '1'**  
A-602 SCALE: 1/2" = 1'-0"



**5B DETENTION SCREEN**  
A-602 SCALE: 1/2" = 1'-0"



**2 SUB-BASEMENT FLOOR PLAN**  
H-101 SCALE: 1/8" = 1'-0"



**1 BASEMENT FLOOR PLAN**  
H-101 SCALE: 1/8" = 1'-0"

**GENERAL NOTES**

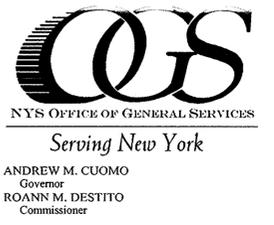
1. WHERE SQUARE FOOTAGE IS SHOWN ADJACENT TO KEYED NOTE, THIS VALUE IS APPROXIMATE. WHERE QUANTITY IS NOT PROVIDED THE CONTRACTOR IS RESPONSIBLE FOR QUANTITY.
2. ASBESTOS IS TO BE REMOVED IN ACCORDANCE w/ SPECIFICATION SECTION 028213.
3. LEAD-BASED PAINT THAT IS LOOSE SHALL BE HANDLED AS PER SPECIFICATION SECTION 028304.
4. WORKING ON OR AROUND SURFACES COATED w/ LEAD-BASED PAINT SHALL BE IN ACCORDANCE w/ SPECIFICATION SECTION 028304.

**HAZMAT REMOVAL NOTES**

- ① REMOVE ELEVATOR DOOR AS ASBESTOS MATERIAL. INSULATION INSIDE DOOR HAS TESTED POSITIVE FOR ASBESTOS. SEE REPORT IN THE SPECIFICATION APPENDIX FOR QUANTITY.
- ② REMOVE ELEVATOR BRAKE PADS AS ASBESTOS MATERIAL. BOTH MATERIALS HAVE TESTED POSITIVE FOR ASBESTOS.
- ③ REMOVE GRAY ARC SHIELD AS ASBESTOS.
- ④ PROVIDE POLY SURROUNDING HORIZONTAL SURFACES IN ACCORDANCE w/ SPECIFICATION SECTION 028304. SCRAPE AND COLLECT LOOSE LEAD-BASED PAINT. REMOVE AND DISPOSE OF DOORS, FRAMES AND DEBRIS IN ACCORDANCE w/ SPECIFICATION SECTION 028304.
- ⑤ PROVIDE POLY PROTECTION ON HORIZONTAL SURFACES AND SCRAPE LOOSE LEAD-BASED PAINT IN ACCORDANCE w/ SPECIFICATION SECTION 028304. POLY AND STORE RAILING UNTIL REINSTALLATION.
- ⑥ GRAY PAINTED SURFACES CONTAIN LEAD-BASED PAINT. CONDUCT OVERHEAD DOOR REPLACEMENT IN ACCORDANCE w/ SPECIFICATION SECTION 028304.
- ⑦ REMOVE AND DISPOSE OF HAND RAILING BY RECYCLING IN ACCORDANCE w/ SPECIFICATION SECTION 028304.
- ⑧ PAINT ON CORNER PLATES AND ANGLES HAS TESTED POSITIVE FOR LEAD. ANGLES THAT ARE TO BE REMOVED SHALL BE DISPOSED OF BY RECYCLING IN ACCORDANCE w/ SPECIFICATION SECTION 028304. ANGLES AND PLATES THAT ARE TO REMAIN SHALL HAVE LOOSE PAINT AND RUST SCRAPED OFF (NO GRINDERS OR POWER TOOLS) IN ACCORDANCE w/ SPECIFICATION SECTION 028304.
- ⑨ REMOVE LOADING DOCK PER STRUCTURAL DRAWINGS

**GENERAL REMOVAL NOTES**

- ① REMOVE EXISTING LOUVER IN ITS ENTIRETY, SEE STRUCTURAL DRAWINGS.
- ② REMOVE OVERHEAD DOOR IN ITS ENTIRETY, TO INCLUDE, BUT NOT LIMITED TO, FRAME, SUPPORTS, TRACKS, & ROLLING DOOR. SEE HAZMAT REMOVAL NOTE 6, H-101
- ③ REMOVE ELEVATOR CAR (TOTAL) & ACCESSORIES IN THEIR ENTIRETY; REFER TO STRUCTURAL DRAWINGS



CONSULTANT

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**CONSTRUCTION**

TITLE:  
REPAIR LOADING DOCK, UPGRADE STATE SHOP & ELEVATOR REMOVAL BUILDING NO. 20

LOCATION:  
ALBION CORRECTIONAL FACILITY  
3595 STATE SCHOOL ROAD  
ALBION, NY 14411

CLIENT:  
NYS DEPARTMENT OF CORRECTIONS AND COMMUNITY SUPERVISION

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| DRAWN BY:       | OMM        |                |
| FIELD CHECK:    |            |                |
| APPROVED:       |            |                |

SHEET TITLE:  
BASEMENT FLOOR PLAN:  
HAZMAT ABATEMENT  
& REMOVALS

DRAWING NUMBER:  
H-101

SHEET OF







NYS OFFICE OF GENERAL SERVICES

Serving New York

ANDREW M. CUOMO  
Governor  
ROANN M. DESTITTO  
Commissioner

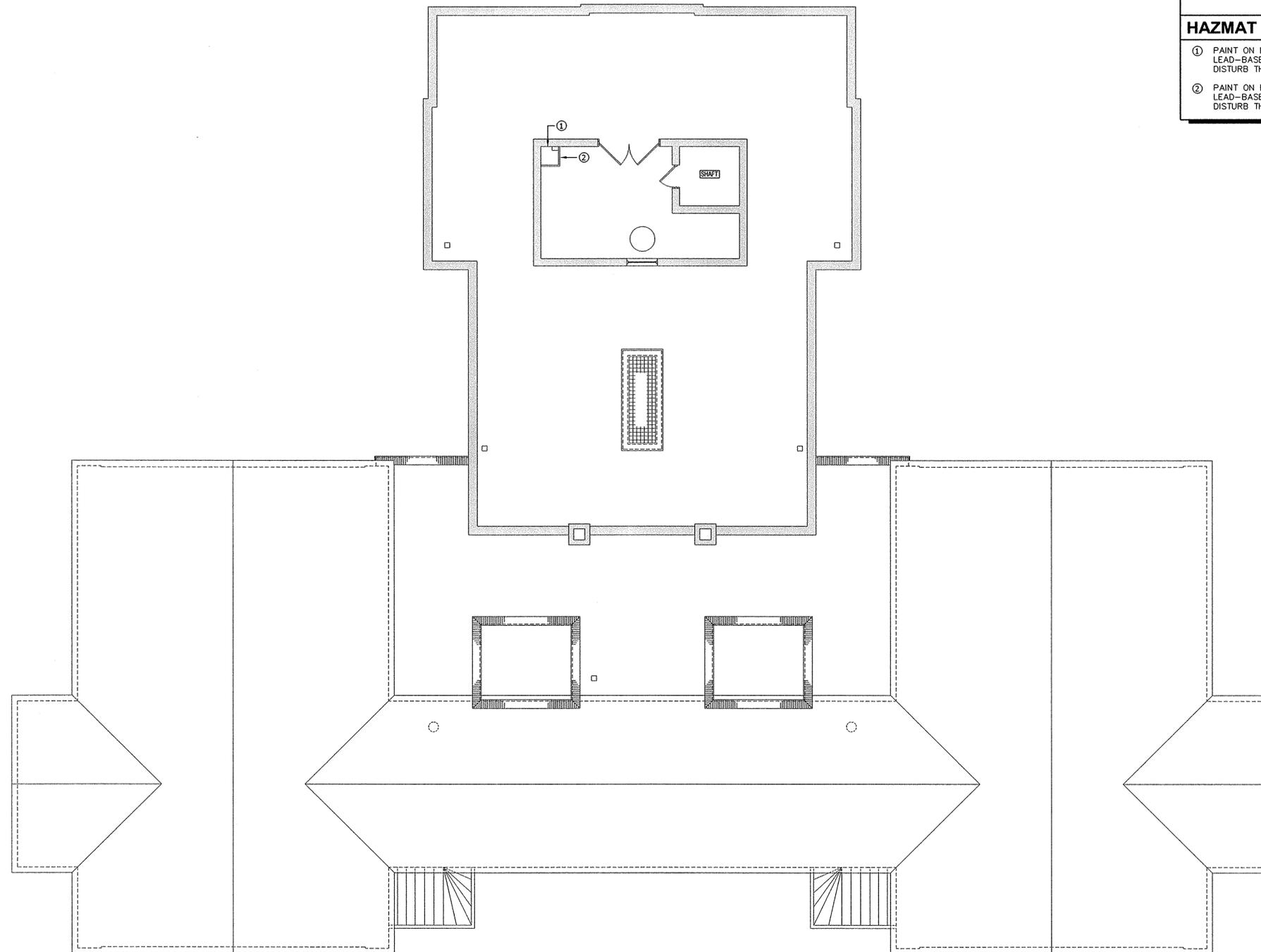
CONSULTANT

**GENERAL NOTES**

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2. ASBESTOS IS TO BE REMOVED IN ACCORDANCE w/ SPECIFICATION SECTION 028213.
3. LEAD-BASED PAINT THAT IS LOOSE SHALL BE HANDLED AS PER SPECIFICATION SECTION 028304.
4. WORKING ON OR AROUND SURFACES COATED w/ LEAD-BASED PAINT SHALL BE IN ACCORDANCE w/ SPECIFICATION SECTION 028304.

**HAZMAT REMOVAL NOTES**

- ① PAINT ON LADDER HAS TESTED POSITIVE FOR LEAD-BASED PAINT. USE CAUTION TO NOT DISTURB THE PAINTED SURFACES.
- ② PAINT ON HANDRAIL HAS TESTED POSITIVE FOR LEAD-BASED PAINT. USE CAUTION TO NOT DISTURB THE PAINTED SURFACES.



**WARNING:**  
THE ALTERATION OF THIS MATERIAL IN ANY WAY, UNLESS DONE UNDER THE DIRECTION OF A COMPARABLE PROFESSIONAL, I.E. ARCHITECT FOR AN ARCHITECT, ENGINEER FOR AN ENGINEER OR LANDSCAPE ARCHITECT FOR A LANDSCAPE ARCHITECT, IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND/OR REGULATIONS AND IS A CLASS 'A' MISDEMEANOR.



**CONSTRUCTION**

TITLE:  
REPAIR LOADING DOCK, UPGRADE  
STATE SHOP & ELEVATOR REMOVAL  
BUILDING NO. 20

LOCATION:  
ALBION CORRECTIONAL FACILITY  
3595 STATE SCHOOL ROAD  
ALBION, NY 14411

CLIENT:  
NYS DEPARTMENT OF CORRECTIONS  
AND COMMUNITY SUPERVISION

| MARK            | DATE       | DESCRIPTION    |
|-----------------|------------|----------------|
|                 | 03/13/2013 | ADDENDUM NO. 1 |
|                 | 12/26/2012 | BID DOCUMENT   |
| PROJECT NUMBER: | 44515 - C  |                |
| DESIGNED BY:    | OMM        |                |
| DRAWN BY:       | OMM        |                |
| FIELD CHECK:    |            |                |
| APPROVED:       |            |                |

SHEET TITLE:  
ROOF/PENTHOUSE  
FLOOR PLAN: HAZMAT  
ABATEMENT & REMOVALS

DRAWING NUMBER:  
H-103

SHEET OF

**1** ROOF/PENTHOUSE FLOOR PLAN  
H-103 SCALE: 1/8" = 1'-0"



Mar 14, 2013 3:12pm  
V:\Design\Drawings\44515\44515-H103.dwg  
36x24 PLOT SHEET

