

ADDENDUM 1

Vestavia Hill Fire Station No. 4 Expansion

Owner:

City of Vestavia Hills

Executive Conference Room

1032 Montgomery Hwy

Vestavia Hills, AL 35216

Architect:

Williams Blackstock Architects

2204 1st Avenue South, Suite 200

Birmingham, AL 35233

ph. 205-252-9811

DATE: **August 7, 2026**

TO: All Bidders

Acknowledge receipt of this Addendum by inserting its number in the Proposal Form. Failure to do so may subject Bidder to disqualification. This serves as an addendum to the construction documents and modifies and/or supplements them as follows:

1. CLARIFICATIONS

1. The deadline to submit substitution requests is Thursday, August 13, 2026 at 5:00pm.
2. The deadline to submit bidder RFIs is Thursday, August 20, 2026 at 5:00pm.
3. Bidder Questions: See attached Pre-Bid RFI Log for questions and responses issued to date.
4. Construction duration is to be 12 months. Specifications to be revised.
5. Pre-Bid Meeting:
 - a. See attached Pre-Bid Meeting Sign-In Sheet
 - b. See attached Pre-Bid Meeting Agenda Meeting Notes

1. SPECIFICATIONS

1. 08 1113 – Hollow Metal Doors and Frames:
 - a. Replace this section in its entirety.
2. 08 3490 – Tornado-Resistant Assemblies:
 - a. Add this section in its entirety.

Total Addendum No.1 Pages including this document:

26 pages

END OF ADDENDUM #1



Preconstruction RFI Log

Project Name: Vestavia Hills Fire Station No. 4 Expansion

Owner: City of Vestavia Hills

Project Location: Vestavia Hills, AL

Architecture Firm: Williams Blackstock Architects

Estimate #: 25636

Project Architect: Matt Foley

RFI #	Scope	Location			Question / Clarification	Date Submitted	Response	Date Responded
		Detail	Sheet	Spec				
1	Continuous Footing		S2.01, S3.02		Per Sheet S2.01, the far East wall on the plan view has a continuous footer that is scaled to be 4' wide. On the contrary, sections 1, 3, and 4 located on sheet S3.02, have this continuous footer to be 2' 6" wide. Please clarify the width of this continuous footer. See photo attached for clarification.	07/13/26	The continuous footing for the easternmost wall (along grid B4) should be 4'-0" wide as indicated in sections 5/S3.02 and 6/S3.02. Sections 1, 3, and 4 along this wall will be noted in an upcoming revision on sheet S2.01 as "similar" for clarification.	08/07/26
2	Geogrid / Guardrail Interference		C-400		After reviewing the details for the segmented block retaining wall geogrids, along with the vehicle guardrail detail located on C-400, it appears the two could interfere with each other. Will these wooden quardrail posts require a certain type of sleeving? It appears the geogrids are running towards the direction of those guardrail posts/sleeves. Will we need to modify those geogrids in any way so the wooden post can pass through them? Any clarification would be helpful. Thank you!	07/15/26		
3	Hollow Metal Doors and Frames Guage			08 1113	The hollow metal doors and frames specification has contradictions regarding the guage of the doors. It lists 20, 16 and 14 guages withing the same section. Please clarify which is correct.	07/22/26	Specification 08 1113 has been revised for clarification as part of Addendum #1.	08/07/26
4	Interior Door Frame Material	7	A-803		The door schedule list the interior door frames as being WD material, but the only details and elevations provided list them as being hollow metal, and a note that says "ALL FRAMES TO BE FACE WELDED". Please clarify the material.	07/22/26	Door frames are intended to be HM. Door schedule to be revised as part of a future Addendum.	08/07/26
5	FEMA rated door no. 130A material	7	A-803		Door 130A has a note on the door schedule that the door is a "Storm Shelter, FEMA Rated". Wood doors cannot be FEMA rated, nor is the hardware listed for this door acceptable for a FEMA rated assembly. Please clarify.	07/22/26	Door 130A is intended to be a hollow metal, FEMA rated door. Door schedule and hardware to be updated.	08/07/26
6	Door no. 123B and 122B material	7	A-803		Door no. 123B is listed as Hollow Metal material, but no. 122B is listed as Wood material. Since these are located adjacent to each other and are both located off of the truck bay, please clarify if this was the intent or if they both are to be hollow metal.	07/22/26	Door 123B is to be hollow metal and painted to match existing App Bay doors. Door 122B is to be wood to match other interior doors at the new addition.	08/07/26
7	Door Frame Type no. 116, 117 and 123A	7	A-803		Frames 116, 117 and 123A are listed to be type F13 masonry frame with a 4" head face, but they don't seem to be located at a location/wall where that is necessary. Please clarify.	07/22/26	Doors 116, 117, and 123A are intended to be F1 frame types as those doors are in gyp bd partitions. The door schedule will be updated accordingly as part of a future Addendum.	08/07/26
8	Doors & Frames				Please clarify what gauge the hollow metal doors are to be? The specificat ion section A of 2.03 'Hollow Metal Doors' references 20, 16, and 14 ga? (Shelby)	07/23/26	Specification 08 1113 has been revised for clarification as part of Addendum #1.	08/07/26
9	Doors & Frames				The door schedule list the interior door frames as being WD material, but the only details and elevations provided list them as being hollow metal, and a note that says "ALL FRAMES TO BE FAC E WELDED". Please clarify which material is intended? (Shelby)	07/23/26	Door frames are intended to be HM. Door schedule to be revised as part of a future Addendum.	08/07/26
10	Doors & Frames				Door 130A has a note on the door schedule that the door is a "Storm Shel ter, FEMA Rated", however it is listed as a wood door; I'm being told by our door vendor that a wood door cannot be FEMA rated. Please clarify. (Shelby)	07/23/26	Door 130A is intended to be a hollow metal, FEMA rated door. Door schedule and hardware to be updated as part of a future Addendum.	08/07/26
11	Doors & Frames				Door frames 116, 117 and 123A are listed to be type F13 masonry frame with a 4" head face, but they don't seem to be located in a masonry wall, please confirm. (Shelby)	07/23/26	Doors 116, 117, and 123A are intended to be F1 frame types as those doors are in gyp bd partitions. The door schedule will be updated accordingly as part of a future Addendum.	08/07/26
12	ADEM Permit				Will an ADEM Construction Permit be required for this project? It is under stood that this site footprint will be close to an acre. (Shelby)	08/03/26		
13	Sanitary Tap Sizing				What is the size of the sanitary sewer tap we are connecting the 6" sanita ry sewer line to? Referencing the sanitary sewer line that runs North of the fire station towards the stub out. (Shelby)	08/03/26		
14	Steel Fabricators AISC Certification		S1.02		Do all steel fabricators and erectors need to be AISC certified? Referenci ng note "Steel Construction (IBC 1705.2)" located on page S1.02. (Shelby)	08/03/26		
15	OFCI or CFCI Appliances				Are appliances owner furnished, contractor installed or contractor furnish ed, contractor installed? (Shelby)	08/03/26	Appliances shown on APPLIANCE LEGEND on Sheet A-701 are to be Conctractor Furnished, Contractor Installed (CFCI)	08/07/26
16	Exposed Ceiling Finishes				What is the design intent for the exposed ceiling finishes within the bay, e xercise room, and dayroom? Are any of these exposed ceilings to be painted or primed? See page A-111. (Shelby)	08/03/26		
17	Electrical		E-001 General Notes/ Legend		General Note 26 calls for EC to provide empty raceway for Access Controls and CCTV - Camera Systems and Access Controls Symbols instructs EC to provide cabling for CCTV to camera locations. Please clarify if the intent is to provide empty raceways for Access Controls and CCTV, with cabling provided by others. (CT)	08/04/26		
18	Electrical		E-001 , E-602		EC is instructed to review "A/V contract documents", and "Alert System shop drawings" for information prior to bid. Are thes documents available? (CT)	08/04/26		
19	Electrical		E-301		Multiple floor receptacles are shown on the drawings, that are not addressed in Graphical Electrical Symbols Legend, please advise as to what kind of floor outlets are required. (CT)	08/04/26		
20	Electrical		E-001		Multiple references to sheet E-004 , I am not seeing this sheet in the E drawings. Also, I am not seeing any electrical site drawings. (CT)	08/04/26		
21	Electrical		E drawings		I am not seeing any drawings that include sizes or locations of disconnecting means for any mechanical or plumbing equipment. (CT)	08/04/26		

PRE-BID CONFERENCE SIGN-IN SHEET

Project Name: VESTAVIA HILLS FIRE STATION No.4 ADDITION

WBA Project Job # 25-080.00

Date: August 4, 2026

NAME	ORGANIZATION	EMAIL
1. John Rutherford	Blackstone	john@blackstone.build
2. Ben Brannan	Dewberry	bbrannan@dewberry.com
3. Tommy Duncan	D&TS	tommy@deltabell.com
4. Nathan Brack	Wyatt	estimating@Wyattbv.us.com
5. Jake Hopper	Shelby GC	bids@shelbyg.com
6. Cole Taylor	Taylor & Miree	cole@taylor-miree.com
7. Jay Cross	Murray	jcross@murray.construction
8. Caton Oswalt	Blackstone	caton@blackstone.build
9. Jonathan Corra	Hancock	jcorra@hancockbuilt.com
10. Jason Smith	Stone	j.smith@stonebuilding.com
11. Brett Vinson	pm	b.vinson@pmmechanical.com
12. Ethan Foster	CVH	
13. Jack Wakefield	CVH	
14. Jordan Bryant	Maxus	jordanbryant@maxusinc.com
15. Gideon Mlamale	GW Engineering	gwmale@gw-eng.com

NAME	ORGANIZATION	EMAIL
16. Whit Macknally	Macknally Land Design	wmacknally@macknally.net
17. Curt Thompson	CT General Contractors	bids@ctgcllc.com
18. Umang Patel	COUH	
19. Hayden Dumorte	Doster	hdumorte@dosterconstruction.com
20. Ali Omar	AG GASTON CONST.	ADOMAR@AGGASTON.COM
21. Carter Brown	WBA	carter@wba-architects.com
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PRE-BID CONFERENCE AGENDA

Vestavia Hills Fire Station No.4 Addition and Renovation

Tuesday, August 4, 2026 – 2pm

REVISIONS/CLARIFICATIONS ARE NOTED IN RED – 2026.08.07

GENERAL

1. Bid Date / Time / Location:

Tuesday, August 25, 2026, until 2 p.m. local time.

All bids shall be submitted in a sealed envelope by the proposal deadline listed in the Advertisement for Bids. A copy of the contractor's license and bid bond shall be included with all other documents required by the Instruction to Bidders and Supplemental Instructions to Bidders.

(If bids are brought early, they are to be delivered to the City Clerk's office in the City Hall building)

Vestavia Hills City Hall
Executive Conference Room
1032 Montgomery Hwy
Vestavia Hills, AL 35216

2. Introduction of Design Team and Attendees:

- Owner: City of Vestavia Hills
- Construction Manager: Doster Construction – Hayden Dumestre, Bennet Culver, Wayne McGinnis
- Architect: Williams Blackstock Architects – Matt Foley
- Civil Engineer: Caprine Engineering – Chris Eckroate
- Landscape: Macknally Land Design – Whit Macknally
- M/P/FP: Dewberry – Adam Cone & Carol Johnson
- Electrical: GW Engineering – Gideon Wamae
- Structural: Tucker-Jones Engineers Associated – Barry Jones

3. Introduction to the Project Scope:

The Vestavia Hills Fire Station No. 4 Addition and Renovation will expand and renovate the existing station to support the Fire Department's operational needs, including 11 sleeping units, expanded day room and kitchen areas, improved officer suites, additional bathrooms, increased gear locker capacity, a dedicated DECON room, a relocated gym, and a hardened central utility room to serve as a storm shelter. The project also includes site and utility improvements such as a new access drive loop and curb cut along Liberty Parkway, heavy-duty concrete paving at the apparatus bays, retaining walls, and a new sanitary sewer connection replacing the existing septic system, along with exterior upgrades using stacked field stone, prefinished metal panels, and painted brick to align with City and Bray design standards. Phasing and logistics will be critical to keep the apparatus bay and entry drive operational throughout construction while temporary off-site housing, kitchen, and day room facilities are used, and add alternates include new bi-folding bay doors, a fifth apparatus bay, and a Disaster Recovery Unit space for redundant emergency IT infrastructure.

4. Eligibility:

WILLIAMS BLACKSTOCK ARCHITECTS

- General Contractor's have been pre-qualified to bid on the project.
 - The list of pre-qualified General Contractor's is as follows:
 1. AG Gaston
 2. Blackstone
 3. CT General Contractors
 4. Duncan & Dearmon
 5. Murray
 6. P&M
 7. Hancock
 8. Shelby
 9. Taylor + Miree
 10. Maxus
 11. Wyatt Builds
 12. Stone
 - As per Contract Documents. Licensed Contractor in the State of Alabama.
 - Contractor's License (include license number as part of bid submission).
 - Subcontractors (if any) will not be required to pre-qualify.
 - i. All subcontractors should be listed as part of your Bid Proposal.
 - ii. *All Major subcontractor's list shall be submitted within 24 hours of bid opening.*
5. Bid Preparation / Bid Guaranty / Delivery of Bids:
- As per Contract Documents.
 - Use enclosed forms, including Bid Proposal Base Bid Form (Attachment A, B and C: Unit Prices, Estimated Sales Tax* & Alternates)
 - No alterations shall be made to bid proposal unless modified by Addendum.
 - Bid Guaranty in the form of Bid Bond or Cashier's Check; 5% of bid amount, not to exceed \$10,000.
 - Bid Bond must be executed by a Surety Company duly authorized and qualified to make such bonds in the State of Alabama, payable to the City of Vestavia Hills.
 - Cashier's check must be drawn on an Alabama bank.
 - Bids to be delivered to Vestavia City Hall – Attn: **UMANG PATEL**, City Clerk.
 - Hand delivered bids are to be submitted at the Vestavia City Hall, which is the same location that the Pre-Bid Meeting was held.
 - Contractor's responsibility to make sure Bid is received.
 - Return Bid Form and Bid Bond with bid submittal.
6. Performance and Payment Bonds:
- As per General Conditions.
 - Performance Bonds, 100% of contract amount.
 - Payment Bonds, 100% of contract amount.
7. Sales, Use, and Severance Tax Savings:
- Bidder is NOT to add Sales or Use Taxes in their bids.
 - Contractor to apply with AL Department of Revenue Sales and Use Tax Division for a Sales Tax Certificate of Exemption.
8. Addenda:
- Minutes of Pre-Bid, sign-in sheet and any pertinent, discussed items shall be issued following pre-bid conference in future Addenda.

9. Project NTP/Mobilization:

- Anticipated NTP is Sept 17, 2026, or Sept 30, 2026.

10. Project Observation / Material Testing:

- TTL will be providing Construction Materials Testing.

11. Project Coordination / Communication:

- All correspondence between the Owner and the Contractor shall come through the Construction Manager – Doster Construction. Subcontractor correspondence shall come through the General Contractor to the Architect and Design Consultant correspondence shall come through the Architect to the Contractor. The Construction Manager (Doster) shall be copied on all communications.

12. Safety:

- The Contractor shall be responsible for all project safety and shall adhere to the Contractor's safety plans and protocols. Neither the Architect nor the Owner will be responsible for the Contractor's safety precautions, means, methods, techniques, sequences, or procedures. Contractor's personnel responsible for safety shall be OSHA certified.

13. Storm Water and Erosion Control:

- Refer to the drawings.

14. Existing Conditions / Constraints:

- Safety is priority.
- Noise Ordinance included in the Project Manual.
- Liberty Park Guidelines.
- Operation during construction.

15. Parking for Contractors and their Subs and workers:

- Parking is limited to extents of work. ***(There is no allowed parking outside the project extents unless approved by the Construction Manager)***

16. Traffic Control:

- As per Project Specifications.
- Attention should be paid to traffic at site entrances / exits.
- Notification to Emergency Vehicles (Police, Fire, Rescue, Ambulance, etc.) shall be contractor's responsibility.

17. Child Labor Law:

- All Contractors shall adhere to the Child Labor Law. (No workers on the project under the age of 18).

18. Meetings:

- Owner / Architect / Contractor (OAC) progress meeting to be held per project requirements. Contractor is responsible for attending the OAC, preparing agenda items, and issuing meeting notes per the OAC discussion. This will be set up during the Preconstruction meeting and will typically be bi-weekly meetings.
- Other – per project as required.
 - Pre-Construction Conference
 - Pre-Installation Meetings

PROJECT SPECIFIC REQUIREMENTS

19. Existing Utilities and Site conditions:

- Refer to the drawings.
- Refer to Site Logistics Phasing Plan.
- General Contractor will need to coordinate with Construction Manager and Vestavia Hills Fire Department to avoid disruption to operations.

20. Allowances:

- None

21. Alternates:

- Four-Fold Bay Doors
- Existing Apparatus Bay Finish Upgrades

22. Unit Price Allowances:

- Refer to Section 01 2200.
 - A. Undercutting and replacement of unsuitable soils (Includes import of structural fill compacted in place).
 - B. Materials and placement of modified roadbed (ALDOT 230).
 - C. Materials and placement of aggregate (57 stone).
 - D. Provide and spread 3" of topsoil.
 - E. Mass Rock Removal of 15 CY.
 - F. Trench Rock Removal of 25 CY.
 - G. Installation of Underdrain – 100 linear feet.

23. Completion Time for Project:

- Building Substantially Complete: Sept 21, 2027, or Oct 4, 2027
- Time for Completion: **12 MONTHS - 370 Days**
 - Scheduled Notice to Proceed: Sept 17, 2026, or Sept 30, 2026

NO WORK SHALL BEGIN ON PROJECT UNTIL INSURANCE CERTIFICATES APPROVED BY OWNER.

24. Builder's Risk Coverage:

- Contractors are required to carry Builder's Risk policy for the value of the contract until occupancy. Refer to the General Conditions of the Contract, Modified General Conditions and Additional Special Conditions.

25. Liquidated Damages:

- Liquidated Damages are \$500 per calendar day.

26. Other:

- Sign-In Sheet – Make sure you signed in.
- Notes from this meeting will be issued for record in a forthcoming addendum.

QUESTIONS / COMMENTS:

- 1. Deadline for Proposed Production Substitutions: No later than Thursday, August 13th at 5:00pm**
- 2. Deadline for RFI: No later than Thursday, August 20th at 5:00pm**

SECTION 08 1113**HOLLOW METAL DOORS AND FRAMES****PART 1 GENERAL****1.01 SECTION INCLUDES**

- A. Fire-rated hollow metal doors and frames.
- B. Non-fire-rated hollow metal doors and frames.
- C. Hollow metal frames for wood doors.
- D. Thermally insulated hollow metal doors with frames.

1.02 RELATED REQUIREMENTS

- A. Section 08 1416 - Flush Wood Doors
- B. Section 08 7100 - Door Hardware.
- C. Section 08 8000 - Glazing: Glass for doors and borrowed lites.
- D. Section 09 9113 - Exterior Painting: Field painting.
- E. Section 09 9123 - Interior Painting: Field painting.

1.03 ABBREVIATIONS AND ACRONYMS

- A. ANSI: American National Standards Institute.
- B. ASCE: American Society of Civil Engineers.
- C. HMMA: Hollow Metal Manufacturers Association.
- D. NAAMM: National Association of Architectural Metal Manufacturers.
- E. NFPA: National Fire Protection Association.
- F. SDI: Steel Door Institute.
- G. UL: Underwriters Laboratories.

1.04 REFERENCE STANDARDS

- A. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design; 2010.
- B. ANSI/ICC A117.1 - American National Standard for Accessible and Usable Buildings and Facilities; International Code Council; 2009.
- C. ANSI/SDI A250.3 - Test Procedure and Acceptance Criteria for Factory Applied Finish Coatings for Steel Doors and Frames; 2007 (R2011).
- D. ANSI/SDI A250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames and Frame Anchors; 2011.
- E. ANSI/SDI A250.8 - Specifications for Standard Steel Doors and Frames (SDI-100); 2014.
- F. ANSI/SDI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames; 2011.
- G. ASCE 7 - Minimum Design Loads for Buildings and Other Structures; 2010, with 2013 Supplements and Errata.
- H. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2015.
- I. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2015.
- J. ASTM A1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable; 2015.

- K. ASTM A1011/A1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength; 2014.
- L. ASTM C143/C143M - Standard Test Method for Slump of Hydraulic-Cement Concrete; 2012.
- M. ASTM C476 - Standard Specification for Grout for Masonry; 2010.
- N. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2015a.
- O. ASTM C236 - Standard Test Method for Steady-State Thermal Performance of Building Assemblies by Means of a Guarded Hot Box; 1989 (Reapproved 1993).
- P. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2009.
- Q. ASTM E330/E330M - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference; 2014.
- R. ASTM E413 - Classification for Rating Sound Insulation; 2010.
- S. ASTM E1332 - Standard Classification for Rating Outdoor-Indoor Sound Attenuation; 2010a.
- T. ASTM F1450 - Standard Test Methods for Hollow Metal Swinging Door Assemblies for Detention and Correctional Facilities; 2012a.
- U. ASTM E1408 - Standard Test Method for Laboratory Measurement of the Sound Transmission Loss of Door Panels and Door Systems; 1991 (Reapproved 2000).
- V. BHMA A156.115 - American National Standard for Hardware Preparation in Steel Doors and Steel Frames; 2014.
- W. FBC TAS 201 - Impact Test Procedures; Testing Application Standard; 1994.
- X. FBC TAS 202 - Criteria for Testing Impact and Non-Impact Resistant Building Envelope Components Using Uniform Static Air Pressure; Testing Application Standard; 1994.
- Y. FBC TAS 203 - Criteria for Testing Products Subject To Cyclic Wind Pressure Loading; Testing Application Standard; 1994.
- Z. FEMA P-320 - Taking Shelter from the Storm: Building a Safe Room for Your Home or Small Business; 2014.
- AA. FEMA P-361 - Safe Rooms for Tornadoes and Hurricanes: Guidance for Community and Residential Safe Rooms; 2015.
- AB. FLA (PAD) - Florida Building Code Online - Product Approval Directory; database at www.floridabuilding.org.
- AC. ICC 500 - ICC/NSSA Standard for the Design and Construction of Storm Shelters; National Storm Shelter Association; 2014.
- AD. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2009.
- AE. ICC / NSSA Standard for the Design and Construction of Storm Shelters
- AF. ITS (DIR) - Directory of Listed Products; current edition.
- AG. Miami (APD) - Approved Products Directory; Miami-Dade County; database at www.miamidade.gov/development/product-control.asp.
- AH. NAAMM HMMA 805 - Recommended Selection and Usage Guide for Hollow Metal Doors and Frames; 2012.
- AI. NAAMM HMMA 830 - Hardware Selection for Hollow Metal Doors and Frames; 2002.
- AJ. NAAMM HMMA 831 - Hardware Locations for Hollow Metal Doors and Frames; 2011.
- AK. NAAMM HMMA 840 - Guide Specifications for Installation and Storage of Hollow Metal Doors and Frames; 2007.
- AL. NAAMM HMMA 850 - Fire-Protection and Smoke Control Rated Hollow Metal Door and Frame Products; 2014.

- AM. NAAMM HMMA 860 - Guide Specifications for Hollow Metal Doors and Frames; 2013.
- AN. NAAMM HMMA 861 - Guide Specifications for Commercial Hollow Metal Doors and Frames; 2006.
- AO. NAAMM HMMA 862 - Guide Specifications for Commercial Security Hollow Metal Doors and Frames; 2013.
- AP. NAAMM HMMA 863 - Guide Specifications for Detention Security Hollow Metal Doors and Frames; 2014.
- AQ. NAAMM HMMA 865 - Guide Specifications for Sound Control Hollow Metal Doors and Frames; 2013.
- AR. NFPA 80 - Standard for Fire Doors and Other Opening Protectives; 2016.
- AS. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies; 2012.
- AT. SDI 117 - Manufacturing Tolerances for Standard Steel Doors and Frames; 2013.
- AU. UBC Std 7-2, Part II - Test Standard for Smoke- and Draft-control Assemblies; International Conference of Building Officials; 1997.
- AV. UL (DIR) - Online Certifications Directory; current listings at database.ul.com.
- AW. UL 10B - Standard for Fire Tests of Door Assemblies; Current Edition, Including All Revisions.
- AX. UL 10C - Standard for Positive Pressure Fire Tests of Door Assemblies; Current Edition, Including All Revisions.
- AY. UL 752 - Standard for Bullet-Resisting Equipment; Current Edition, Including All Revisions.
- AZ. UL 1784 - Standard for Air Leakage Tests of Door Assemblies; Current Edition, Including All Revisions.
- BA. AWS D1.6/D1.6M - Stainless Steel Welding Code; American Welding Society; 2007.
- BB.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, and finishes; and one copy of referenced standards/guidelines.
- C. Shop Drawings: Details of each opening, showing elevations, glazing, louvers, frame profiles, and identifying location of different finishes, if any.
- D. Samples: Submit two samples of metal, 2 by 2 inches in size, showing factory finishes, colors, and surface texture.
- E. Installation Instructions: Manufacturer's published instructions, including any special installation instructions relating to this project.
- F. Manufacturer's Certificate: Certification that products meet or exceed specified requirements.

1.06 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum 10 years documented experience.
- B. Maintain at project site copies of reference standards relating to installation of products specified.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Comply with NAAMM HMMA 840 or ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.
- B. Protect with resilient packaging; avoid humidity build-up under coverings; prevent corrosion and adverse effects on factory applied painted finish.
- C. Place units on wood skids and store in manner that will prevent corrosion and damage. Adequately brace frames during construction to ensure no deflection.
- D. Store assemblies upright, do not stack flat.
- E. Adequately brace frames during construction to ensure no deflection.

PART 2 PRODUCTS**2.01 MANUFACTURERS**

- A. Hollow Metal Doors and Frames:
 - 1. Ceco Door, an Assa Abloy Group company: www.assaabloydss.com.
 - 2. Republic Doors: www.republicdoor.com.
 - 3. Steelcraft, an Allegion brand: www.allegion.com/#sle.
 - 5. Substitutions: See Section 01 6000 - Product Requirements.

2.02 PERFORMANCE REQUIREMENTS

- A. Requirements for Hollow Metal Doors and Frames:
 - 1. Steel Sheet: Comply with one or more of the following requirements; galvanized steel complying with ASTM A653/A653M, cold-rolled steel complying with ASTM A1008/A1008M, or hot-rolled pickled and oiled (HRPO) steel complying with ASTM A1011/A1011M, commercial steel (CS) Type B, for each.
 - 2. Accessibility: Comply with ICC A117.1 and ADA Standards.
 - 3. Exterior Door Top Closures: Flush end closure channel, with top and door faces aligned.
 - 4. Door Edge Profile: Manufacturer's standard for application indicated.
 - 5. Typical Door Face Sheets: Flush.
 - 6. Glazed Lights: Non-removable stops on non-secure side; sizes and configurations as indicated on drawings. Style: Manufacturer's standard.
 - 7. Hardware Preparations, Selections and Locations: Comply with NAAMM HMMA 830 and NAAMM HMMA 831 or BHMA A156.115 and ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.
 - 8. Zinc Coating for Typical Interior and/or Exterior Locations: Provide metal components zinc-coated (galvanized) and/or zinc-iron alloy-coated (galvanized) by the hot-dip process in accordance with ASTM A653/A653M, with manufacturer's standard coating thickness, unless noted otherwise for specific hollow metal doors and frames.
 - a. Based on SDI Standards: Provide at least A40/ZF120 (galvanized) when necessary, coating not required for typical interior door applications, and at least A60/ZF180 (galvanized) for corrosive locations.
- B. Hollow Metal Panels: Same construction, performance, and finish as doors.
- C. Combined Requirements: If a particular door and frame unit is indicated to comply with more than one type of requirement, comply with the specified requirements for each type; for instance, an exterior door that is also indicated as being sound-rated must comply with the requirements specified for exterior doors and for sound-rated doors; where two requirements conflict, comply with the most stringent.

2.03 HOLLOW METAL DOORS

- A. Exterior Doors: Thermally insulated.
 - 1. Grade: ANSI/SDI A250.8 (SDI-100); Level 3 - Extra Heavy-Duty, Physical Performance Level A, Model 2 - Seamless.
 - a. Level 3 - Extra Heavy-duty.
 - b. Physical Performance Level A, 1,000,000 cycles; in accordance with ANSI/SDI A250.4.
 - c. Model 3 - Stile and Rail.
 - d. Door Face Metal Thickness: **16 gauge, 0.053 inch, minimum.**
 - e. Zinc Coating: A60/ZF180 galvanized coating; ASTM A653/A653M.
- B. Core: Polyurethane.
 - 1. Foam Plastic Insulation: Manufacturer's standard board insulation with maximum flame spread index (FSI) of 75, and maximum smoke developed index (SDI) of 450 in accordance with ASTM E84, and completely enclosed within interior of door.
- C. Door Thermal Resistance: R-Value of 6.0 minimum, for installed thickness of polystyrene.
 - 1. Door Thickness: 1-3/4 inches, nominal.

- D. Face Galvanizing: Components hot-dipped zinc-iron alloy-coated (galvannealed) in accordance with ASTM A653/A653M, with manufacturer's standard coating thickness.
 - 1. Door Face Sheets: Embossed with wood grain.
 - 2. Insulating Value: R-value of 4.1, when tested in accordance with ASTM C1363.
 - 3. Insulating Value: Minimum U-value of 0.50, when tested in accordance with ASTM C 1363 or ASTM C 236.
 - 4. Door Finish: Factory primed and field finished.

2.04 HOLLOW METAL FRAMES

- A. Comply with standards and/or custom guidelines as indicated for corresponding door in accordance with applicable door frame requirements.
- B. Frame Finish: Factory primed and field finished.
- C. General:
 - 1. Comply with the requirements of grade specified for corresponding door.
 - a. Frames for exterior locations, oversized openings, and rated assemblies: Comply with frame requirements specified in ANSI A250.8 Level 3 Doors: 14 gauge frames.
 - 2. Back prime (inside surface) frames in exterior locations, wet locations, and grouted frames with bituminous coating.
 - 3. A minimum 3/8" joint should be maintained between adjacent veneer masonry.
- D. Exterior Door Frames: Full profile/continuously welded type.
 - 1. Galvanizing: Components hot-dipped zinc-iron alloy-coated (galvannealed) in accordance with ASTM A653/A653M, with A40/ZF120 coating.
 - 2. Frame Metal Thickness: **14 gauge, 0.067 inch, minimum.**
 - 3. Frame Finish: Factory primed and field finished.
 - 4. Weatherstripping: Integral, recessed into frame edge.
- E. Provide mortar guard boxes for hardware cut-outs in frames to be installed in masonry or to be grouted.
- F. Frames in Masonry Walls: Size to suit masonry coursing with head member 4 inches high to fill opening without cutting masonry units.
- G. Frames Wider than 48 inches: Reinforce with steel channel fitted tightly into frame head, flush with top.

2.05 FINISHES

- A. Primer: Rust-inhibiting, complying with ANSI/SDI A250.10, door manufacturer's standard.
- B. Bituminous Coating: Cold-applied asphalt mastic, compounded for 15 mil, 0.015 inch dry film thickness (DFT) per coat; provide inert-type noncorrosive compound free of asbestos fibers, sulfur components, and other deleterious impurities.

2.06 ACCESSORIES

- A. Louvers: Roll formed steel with overlapping frame; finish same as door components; factory-installed.
- B. Removable Stops: Rolled steel bar, shape as indicated on drawings, mitered or butted corners; prepared for countersink style tamper proof screws. Place glazing stops on secure side of opening.
- C. Grout for Frames: Mortar grout complying with ASTM C476 with maximum slump of 4 inches as measured in accordance with ASTM C143/C143M for hand troweling in place; plaster grout and thinner pumpable grout are prohibited.
- D. Silencers: Resilient rubber, continuous, neoprene weatherstrip gasketing;
- E. Temporary Frame Spreaders: Provide for factory- or shop-assembled frames.

2.07 FINISHES

- A. See Section 09 9000 - Paints and Coatings

PART 3 EXECUTION**3.01 EXAMINATION**

- A. Verify existing conditions before starting work.
- B. Verify that opening sizes and tolerances are acceptable.
- C. Verify that finished walls are in plane to ensure proper door alignment.

3.02 PREPARATION

- A. Coat inside of frames to be installed in masonry or to be grouted, with bituminous coating, prior to installation.

3.03 INSTALLATION

- A. Fit hollow metal doors accurately in frames, with clearances specified in SDI-100.
- B. Install doors and frames in accordance with manufacturer's instructions and related requirements of specified door and frame standards or custom guidelines indicated.
- C. Install fire rated units in accordance with NFPA 80.
- D. Coordinate frame anchor placement with wall construction.
- E. Grout frames in masonry construction as indicated in drawings, using hand trowel methods; brace frames so that pressure of grout before setting will not deform frames.
- F. Coordinate installation of hardware. Provide reinforcement at all hardware attachment locations.
- G. Comply with glazing installation requirements of Section 08 8000.
- H. Coordinate installation of electrical connections to security and electrical hardware items.
- I. Touch up damaged factory finishes.

3.04 TOLERANCES

- A. Clearances Between Door and Frame: Comply with related requirements of specified frame standards or custom guidelines indicated in accordance with SDI 117 or NAAMM HMMA 861.
- B. Maximum Diagonal Distortion: 1/16 inch measured with straight edge, corner to corner.
- C. Adjust Standard Steel door frames for squareness, alignment, twist and plumb to the following tolerances:
 - 1. Squareness: Plus or minus 1/16 inch, measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
 - 2. Alignment: Plus or minus 1/16 inch, measure at jambs on a horizontal line parallel to the plane of wall.
 - 3. Twist: Plus or minus 1/16 inch, measured at opposite face corner of jambs on parallel lines, and perpendicular to plane of wall.
 - 4. Plumbness: Plus or minus 1/16 inch

3.05 ADJUSTING

- A. Adjust for smooth and balanced door movement.

3.06 SCHEDULE

- A. Refer to Door and Frame Schedule on the drawings.

END OF SECTION 08 1113

SECTION 08 3490**TORNADO-RESISTANT ASSEMBLIES****PART 1 – GENERAL****1.1 RELATED DOCUMENTS:**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY:

- A. Section includes:
 - 1. Hollow metal Tornado Doors
 - 2. Hollow metal Doors with Glass Lights
 - 3. Hollow metal Tornado Frames
 - 4. Hollow metal Tornado Shutters
- B. Exclusions: Metal for the following is not provided under the scope of this section:
 - 1. Structural steel
 - 2. Headers and lintels
 - 3. Framing
 - 4. Steel channel frames
 - 5. Access panels
 - 6. Door hardware
- C. Related Sections:
 - 1. Division 01 Section "Alternates" for alternates affecting the work of this section.
 - 2. Division 03 Section "Precast Structural Concrete"
 - 3. Division 04 Section "Unit Masonry"
 - 4. Division 07 Section "Joint Sealants"
 - 5. Division 08 Section "Steel Doors and Frames"
 - 6. Division 08 Section "Door Hardware"
 - 7. Division 08 Section "Glass and Glazing"
 - 8. Division 09 Sections for touchup finishing or refinishing of existing openings modified by the work of this section.
 - 9. Division 26 Sections for connections to electrical power system and for low voltage wiring work.
 - 10. Division 28 Sections for coordination with other components of other components of electronic access control system.

1.3 REFERENCES:

- A. Tornado Resistant Assemblies
 - 1. IBC – International Building Code
 - a. 2021 Edition, Section 423 – Building types or functions and geographic locations to be built with a storm shelter
 - 2. ICC/NSSA - International Code Council / National Storm Shelter Association
 - a. ICC 500-2020 Standard for the Design and Construction of Storm Shelters
 - b. Highlights of ICC 500-2020
 - 3. FEMA – Federal Emergency Management Agency
 - a. FEMA P-361, Third Edition / March 2015 – Safe Rooms for Tornadoes and Hurricanes: Guidance for Community and Residential Safe Rooms
 - b. FEMA P-320, December 2014 – Taking Shelter from the Storm: Building a Safe Room for Your Home or Small Business
- B. Fire/Life Safety
 - 1. NFPA - National Fire Protection Association
 - a. NFPA 70 – National Electric Code

- b. NFPA 80 - Standard for Fire Doors and Fire Windows
 - c. NFPA 101 - Life Safety Code
 - d. NFPA 105 - Smoke and Draft Control Door Assemblies
 - 2. State Fire Safety Code.
- C. UL - Underwriters Laboratories
 - 1. UL 10C - Positive Pressure Test of Fire Door Assemblies
 - 2. UL 1784 - Air Leakage Tests of Door Assemblies
- D. Accessibility
 - 1. ADA - Americans with Disabilities Act.
 - 2. ANSI A117.1 - Accessible and Usable Buildings and Facilities.
- E. SDI – Steel Door Institute
 - 1. SDI 100/ANSI A250.8 - Recommended Specifications - Standard Steel Doors and Frames.
 - 2. SDI Certified <https://www.steeldoor.org/sdicertified.php>
 - 3. SDI 105 - Recommended Erection Instructions for Steel frames.
 - 4. SDI 111 - Recommended Details and Guidelines for Standard Steel Doors and Frames and Accessories.
 - 5. SDI 112 - Zinc-Coated (Galvanized/Galvannealed) Standard Steel Doors and Frames.
 - 6. SDI 117 - Manufacturing Tolerances for Standard Steel Doors and Frames.
 - 7. SDI 118 - Basic Fire Door Requirements.
 - 8. SDI 122 - Installation and Troubleshooting Guide for Standard Steel Doors and Frames.
 - 9. SDI 124 - Maintenance of Standard Steel Doors and Frames.
- F. ANSI - American National Standards Institute (refers to most current versions of standards)
 - 1. ANSI/DHI A115.IG - Installation Guide for Doors and Hardware.
 - 2. ANSI/BHMA A156.1 - A156.29, and ANSI A156.31 - Standards for Hardware and Specialties
 - 3. ANSI A250.3 - Test Procedure and Acceptance Criteria for - Factory Applied Finish Painted Steel Surfaces for Steel Doors and Frames.
 - 4. ANSI A250.4 - Test Procedure and Acceptance Criteria for - Physical Endurance for Steel Doors, Frames, Frame Anchors, and Hardware Reinforcing. Product is tested and provided as Level “A”, 1,000,000 cycle test criteria and other requirements as listed in these specifications.
 - 5. ANSI A250.6 - Recommended Practice for Hardware Reinforcing on Standard Steel Doors and Frames.
 - 6. ANSI/SDI A250.8/SDI-100 Recommended Specifications for Standard Steel Doors and Frames.
 - 7. ANSI A250.10 - Test Procedures and Acceptance Criteria for – Prime Painted Steel Surfaces for Steel Doors and Frames.
 - 8. ANSI A250.11 - Recommended Erection Instructions for Steel Frames.
- G. NAAMM - National Association of Architectural Metal Manufacturers
 - 1. NAAMM/HMMA-840 - Guide Specification for Installation and Storage of Hollow Metal Doors and Frames.

1.4 SUBMITTALS:

- A. General:
 - 1. Submit the following in accordance with conditions of contract and Division 01 requirements.
 - 2. Advise Architect within the submittal package of incompatibility or issues which may detrimentally affect the work of this section.
 - 3. Prior to forwarding submittal: Comply with procedures for verifying existing door and frame compatibility for new hardware, as specified in PART 3, “EXAMINATION” article, herein.

B. Action Submittals:

1. **Product Data:** Provide illustrations from manufacturer's catalogs and data in brochure form for all products, including model, function, reinforcements, anchoring, design, finish, and options.
2. **Door and Hardware Schedule:** Organize schedule into spreadsheet format indicating complete designations of every item required for each door and frame. Door and hardware schedule shall clearly indicate architect's door number, elevations, and notes.
3. **Shop Drawings:** Drawings of openings aligning with the Door, frame, and hardware schedule in accordance with SDI 111D. Show types, quantities, dimensions, specified performance, design criteria, materials and similar data for each opening required.
 - a. Indicate frame configuration, anchor types and spacing, location of cutouts for hardware, reinforcement, to ensure doors and frames are properly prepared and coordinated to receive specified hardware.
 - b. Indicate all door elevations, internal reinforcements, and closure methods.
 - c. Indicate all hardware and accessories.
4. **Templates:** After final approval of the door and hardware schedule, provide listing of manufacturer's hardware locations for each item of hardware.

C. Informational Submittals:

1. **Qualification Data:** For manufacturer, supplier, installer, and Certified Door Consultant.
 - a. **Supplier:** A direct account of the manufacturer who has on permanent staff, an Architectural Hardware Consultant (AHC), a Certified Door Consultant (CDC) or an Architectural Openings Consultant (AOC), who will be available to consult with the Architect and Contractor regarding matters affecting the door and frame openings.
2. **Product Certificates and Test Reports:** For compliance with accessibility requirements, based on evaluation of comprehensive tests performed by the manufacturer and witnessed by a qualified, accredited testing agency for doors and frames located in accessible routes.
 - a. Evidence of manufacturer as "SDI Certified" from the Steel Door Institute.
 - b. Manufacturer evidence of compliance with standards shown in 1.03 "References" section of this document.
 - c. Listing Report number from an accredited testing and labeling facility (Intertek / UL) for the AHJ's reference to the tornado approval. Listing Report shall communicate design wind pressure and missile impact tests in accordance with FEMA 361 / ICC 500-2020 requirements.
 - d. Report with calculations of anchoring requirements including locations and minimum required capacity from a third-party PE based on accepted engineering practice shall be made available upon request.
 - e. Certificate or signed letter stating 5 years minimum experience installing labeled tornado products
 - f. Certificates of compliance and installation instructions shall be made available upon request of Architect or authority having jurisdiction.
3. **Warranty:** As specified in this section pertaining to manufacturer, supplier, and installer.

D. Closeout Submittals:

1. **Operations and Maintenance Data:** Provide in accordance with Division 01 and include the following:
 - a. Complete information on care, maintenance, and adjustment; data on repair and replacement.
 - b. Catalog pages for each product.
 - c. Name, address, and phone number of local representative for each manufacturer.
 - d. Copy of final approved door and frame schedule, edited to reflect conditions as installed.

- e. Copy of warranties including appropriate reference numbers for manufacturers to identify the project.

1.5 QUALITY ASSURANCE:

- A. Product Substitutions: For purpose of performing the work of this section, comply with product requirements stated in Division 01 and as specified herein.
 - 1. Where a specific manufacturer's product is named and accompanied by the words "No Substitute," including make or model number or other designation, provide the product exactly as specified. (Note: Certain products have been selected for their unique characteristics and particular project suitability.)
 - a. Where no additional products or manufacturers are listed in a product category, requirements for "No Substitute" govern product selection.
 - 2. Where products indicate "acceptable substitute" or "acceptable manufacturer", provide product from specified manufacturers, subject to compliance with specified requirements and "Single Source Responsibility" requirements stated herein.
 - 3. Substitutions: Refer to Division 01 for additional information regarding substitutions and submittals.
- B. Supplier Qualifications and Responsibilities: A direct account of the manufacturer. A recognized hollow metal door and frame supplier of tornado-resistant approved systems, with warehousing facilities in the project's vicinity, that has a record of successful in-service performance for supplying hollow metal doors and frames similar in quantity, type, and quality to that indicated for this project.
 - 1. Engineering Responsibility: Preparation of data for field spliced or field modified units, including shop drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies like those indicated for this project.
 - 2. Coordination Responsibility: Coordinate preparation of the door hardware and provide installation and technical data to the Architect and other related subcontractors.
 - a. Upon completion of hollow metal door and frame installation, inspect and verify that all components are working properly.
- C. Manufacturer: Member of Steel Door Institute and is SDI Certified, with specialized capabilities manufacturing tornado-resistant opening systems complying with ICC 500-2020 and FEMA 361, and provides labeled doors and frames from a qualified, accredited testing agency, including hardware and accessories as specified in this section with minimum five years documented experience manufacturing tornado labeled systems.
 - 1. Manufacturer Installation Instructions: Contractor shall maintain a current copy of tornado shelter storm door, frame and hardware manufacturer published installation instructions and FEMA 361/ICC 500-2020 requirements in Project Field Office and always refer to installation instructions during installation.
 - 2. Tornado-Resistant Openings Systems: Provide complete door systems for tornado-resistant storm shelters and other areas of refuge complying and tested according to FEMA 361, Second Edition (2008), Design and Construction Guidance for Community Safe Rooms; and ICC 500 (2020), ICC/NSSA Standard for the Design and Construction of Storm Shelters.
 - 3. Label tornado-resistant doors and frames with permanently affixed metal labels (non-Mylar) to clearly denote compliance with FEMA 361 and ICC 500-2020.
 - a. Each door and frame will have its own permanent label showing what criteria the door and frame was tested in accordance with. The label will show what independent laboratory tested this assembly. The label will show test pressures both positive and negative in pounds per square foot and the design pressure both positive and negative.
 - b. Doors with glass shall be etched or similarly labeled.
- D. Installer Qualifications: Qualified tradesmen, skilled in the application of tornado hollow metal doors and frames that has a record of successful in-service performance for installing hollow

metal doors and frames similar in quantity, type, and quality to that indicated for this project.

- E. Single Source Responsibility: Obtain each type of hollow metal door and frame from a single manufacturer.
- F. Fire-Rated Openings: Provide doors and frames for fire-rated openings that complies with NFPA Standard No. 80, UL10C, Category "A", Positive Pressure Test of Fire Door Assemblies, and requirements of authorities having jurisdiction. Provide only doors and frames that are labeled and listed for ratings indicated by Underwriters Laboratories, Intertek Testing Services, or other testing and inspecting organizations acceptable to the authority having jurisdiction.
 - 1. Affix a physical label or approved marking to each fire door or fire door frame, at an authorized facility as evidence of compliance with procedures of the labeling agency. Label embossment is not permitted.
 - 2. Conform to applicable codes for fire ratings. It is the intent of this specification that hardware and its application comply or exceed the standards for labeled openings. In case of conflict between types required for fire protection, furnish type required by NFPA and UL.
 - 3. Fire door assemblies in exit enclosures and exit passageways; maximum transmitted temperature end point rating of not more than 250 degrees F (121 degrees C) above ambient at the end of 30 minutes of the standard fire test exposure.
- G. Refer to Division 01 Section "Special Conditions" for additional information and minimum experience requirements.

1.6 DELIVERY, STORAGE, AND HANDLING:

- A. Tag each item or package separately with identification related to the final door and frame schedule and include installation instructions with each delivery.
- B. Comply with manufacturer's current written instructions and recommendations.
- C. Deliver doors in manufacturer's standard labeled protective packaging.
- D. Accept products on site in manufacturer's packaging. Inspect for damage. Return damaged Products and replace with undamaged products.
- E. Project field superintendent shall inspect products immediately upon delivery to project site, determine Product conformance with specified requirements and reject Products not complying with specifications. Project field superintendent shall direct that non-complying product be removed from project site immediately.
- F. Handle, store and protect products in accordance with the manufacturers printed instructions and ANSI/SDI A250.10 and NAAMM/HMMA 840.
- G. Project Conditions:
 - 1. Maintain manufacturer-recommended environmental conditions throughout storage and installation periods.
- H. Protection and Damage:
 - 1. Promptly replace products damaged during shipping with the exact same products.
 - 2. Handle doors and frames in manner to avoid damage, marring, or scratching. Correct, replace, or repair products damaged during the Work.
 - 3. Protect products against malfunction due to paint, solvent, cleanser, or any chemical agent.
- I. Refer to Division 01 Sections "Summary of Work" and "Special Conditions" for additional information and requirements regarding stored materials.

1.7 COORDINATION:

- A. Coordinate layout and installation of floor-recessed door hardware with floor construction. Cast anchoring inserts into concrete. See Division 03 for concrete, reinforcement, and formwork requirements, and Division 04 2000 "Unit Masonry".

- B. Coordinate work with frame opening construction, door, and hardware installation. Coordinate work with Section 08 11 00 Steel Doors and Frames, Section 08 71 00 Finish Hardware, and other directly affected sections involving manufacture or fabrication of internal cutouts and reinforcement for door hardware, electric devices, and recessed items.
- C. Verify field dimensions for factory assembled frames prior to fabrication.
- D. Installation: Sequence installation to accommodate required door hardware. Check shop drawings of other work to confirm that adequate provisions are made for locating and installing doors and frames to comply with indicated requirements.
- E. Electrical System Roughing-In: Coordinate layout and installation of doors and frames with electrified door hardware connections.

1.8 WARRANTY:

- A. Provide manufacturer's warranties as specified in Division 01 and as follows:
 - 1. Hollow Metal Doors and Frames: 1 year.
 - 2. Warranty does not cover damage or faulty operation due to improper installation, improper use, or abuse.

1.9 MAINTENANCE:

- A. Maintenance Instructions: Furnish a complete set of maintenance instructions as needed for Owner's continued maintenance of doors and frames.

PART 2 – PRODUCTS:

2.1 MANUFACTURERS:

- A. Approval of manufacturers and/or products other than those listed as “Scheduled Manufacturer” or “Acceptable Manufacturers” in the individual article for the product category shall be in accordance with QUALITY ASSURANCE article, herein.
- B. Acceptable Manufacturer: Steelcraft, Paladin Series PW doors and FP frames.

2.2 MATERIALS:

- A. Fasteners
 - 1. Provide fastenings, anchors and clips as required to secure hollow metal work in place. Provide and install manufacturers standard screws. Dimple metal work to receive screw heads. Set stops and other non-structural fastenings with manufacturer’s standard self-tapping screws.

2.3 STEEL FRAMES – PALADIN FP14 SERIES FRAMES:

- A. Manufacturer:
 - 1. Scheduled Manufacturer: Steelcraft.
 - 2. Acceptable Substitute: Ceko, Curries, Republic
- B. Provide 14 Gauge A60 galvanized steel.
- C. Provide tornado-resistant hollow metal frames as scheduled, and drawn and detailed on plans, with the provisions below.
- D. Provided die-mitered corner connections to ensure tight/closed miters at head and jams.
- E. Factory prep: Welded.
- F. Provide patented universal hinge preparations.

- G. Provide beveled hinge and strike edges.
- H. Provide 7-gauge hinge reinforcement. Provide 14-gauge full length reinforcement for continuous hinges.
- I. Provide 12-gauge steel center strike reinforcement with 14-gauge head/sill strike reinforcement.
- J. Provide adjustable base anchors to allow for adjustment in installation when the floor is not level.
- K. Provide factory applied baked-on rust-inhibiting primer.
- L. When supported by the proper signed, third-party PE reports calculating approved anchoring, provide frames anchored with or without grout fill. When using 4" face, provide frames grouted full utilizing proper grout fill protocols per SDI/ANSI 250.8.
- M. Provide 14-gauge steel closer reinforcements when specified.
- N. Opening sizes: Shall not exceed the smallest and largest sizes tested and approved per ICC 500-2020. Available sizes shall be publicly available on Intertek or UL listing websites.
- O. Fire Rating: Where called for by the door and hardware schedules, tornado-resistant doors, frames, shutter, and glass lights shall be identified by an official metal label or etching (for glass) to signify tested approval from ITS – Warnock Hersey or Underwriters' Laboratories, to UL 10C protocols.

2.4 STEEL FRAMES – PALADIN FP14 SHUTTER SYSTEMS:

- A. Provide hollow metal frames as scheduled, and drawn and detailed on plans, with the provisions below.
- B. Glass: Non-impact resistant glass (provided by others) can be installed in exterior (storm side) rabbet of frame.
- C. Instructions for the installation or deployment of shutters shall be made available from the manufacturer.

2.5 STEEL FRAMES – ANCHORING:

- A. Provide hollow metal frames as scheduled, and drawn and detailed on plans, with the provisions below.
- B. Approved frame anchors and any necessary anchor bolts certified by third party PE reports shall be provided from the factory for concrete walls (tilt-up/prefab/poured in place) or concrete-filled CMU block walls.
- C. Provide installation instructions.
- D. Provide anchoring approved by UL or Intertek Testing Services / Warnock Hershey (ITS/WHI), supported by testing and third-party PE reports.
- E. Grout new masonry frames full.
- F. Provide frames to be used in existing masonry with tube and strap anchors welded from the factory.

2.6 STEEL DOORS – PALADIN PW14 SERIES DOORS:

- A. Provide tornado-resistant hollow metal doors as scheduled, and drawn and detailed on plans, with the provisions below.
- B. Provide standard 14-gauge, A-60 galvanized steel face skins for resistance against corrosion.
- C. Steel stiffened core construction: Provide stiffeners welded to one face sheet and bonded to the opposite face sheet
- D. Seamless, full height, mechanical interlock edges: Provide lock and hinge edges intermittently

welded and filled smooth for structural support and stability the full height of the door.

- E. Provide full height lock side continuous 12-gauge steel reinforcement channels at lock rails.
- F. Provide 12-gauge top channel and 14-gauge bottom channel steel reinforcement.
- G. Provide doors with beveled hinge and lock edges.
- H. Provide universal hinge preparations.
- I. Provide 7-gauge hinge reinforcements.
- J. Provide 14-gauge closer reinforcements.
- K. Provide factory applied baked-on rust-inhibiting primer in accordance with ANSI A250-10, with finish paint options available.
- L. Provide 1-3/4-inch-thick doors.
- M. Opening sizes shall not exceed the smallest and largest sizes tested and approved per ICC 500-2020. Available sizes shall be publicly available on Intertek or UL listing websites.
- N. Provide handed doors and frames.
- O. Provide doors beveled both hinge and lock sides.
- P. Custom door undercuts shall be made available, provided they meet with the labelling agencies requirements.
- Q. Follow installation instructions provided by the manufacturer. The hardware manufacturer's strike must be used. Anchor or grout bottom strikes into the foundation slab.

2.7 TORNADO GLASS LIGHTS, LABELED AND NON-LABELED GLAZING:

- A. Provide approved tornado trim and glazing pre-installed from the factory.
- B. Provide installation and care instructions to maintain tornado ratings.
- C. Provide glass with an etching to signify compliance from ITS – Warnock Hersey or Underwriters' Laboratories. Embossed labels are not acceptable.
- D. For fire rated assemblies with glass, a UL classified fire rated sealant must be used.

2.8 FINISHES:

- A. Chemical Treatment: Treat steel surfaces to promote proper paint adhesion per ANSI/SDI A250.3, Test Procedure and Acceptance Criteria for Factory Applied Finished Painted Steel Surfaces for Steel Doors and Frames.
- B. Factory Prime Finish: Meet requirements of ANSI A250.10., Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames.

2.9 TORNADO-RESISTANT DOOR HARDWARE AND ACCESSORIES:

- A. Provide approved hardware and accessories under Section 08 71 00 as part of the complete prescriptive door assembly opening by Intertek or UL public listing for the labeled tornado-resistant assembly, communicating compliance with FEMA 361 guidelines and ICC 500-2020 standards.

2.10 FABRICATION:

- A. Fabricate doors and frames in accordance with requirements of ANSI A250.8-2003/SDI 100.
- B. Fabricate fire rated doors and frames in accordance with requirements of ITS – Warnock Hersey or Underwriters' Laboratories, with metal label on each door and frame signifying UL-10C

compliance.

- C. Typical Frame Reinforcing: Provide steel reinforcement as required for hardware items per manufacturers templates. Provide reinforcing per ANSI-A250.6.
- D. Mortar Guards in Frames: For hinge and strike plate cutouts, provide fully enclosed pressed steel cover boxes spot welded to frames behind mortises. Additionally, for frames in masonry walls and frames being grout filled, provide metal mortar guards for any mortised cutouts.
- E. Hardware Preparation at Frames: Mortise, reinforce, drill and tap as required for all mortised hardware furnished under Division 8 Finish Hardware and/or Division 26 Security in accordance with a final approved hardware schedule and templates provided by the hardware supplier and/or security supplier (including electric hinges and/or power transfers, door position switches, and other electrified hardware). Drilling and tapping for surface door closers, door closer brackets, and adjusters shall be done in field by hardware installer. Obtain templates from hardware and security suppliers. Provide hardware preparation per ANSI-A250.6.
- F. Joining at Frames:
 - 1. At welded frames with equal width jambs and head, neatly miter on face and cope and butt stops. At other welded frames, provide same mitered joint wherever possible (at intersection of jamb-head or jamb-sill) and at other locations butt metal neat. Full profile weld as specified. Fabricate so no grind marks, hollow or other out-of-plane areas are visible. At joints of intermediate members (such as mullions), provide tight joining, neatly accomplished without holes, burned out spots, weld build up or other defacing work. Fill to close cracks and to preserve shapes. Tightly fit loose stops, to hairline joints. Joints shall be finished and primed.
- G. Typical Door Reinforcement: Provide galvanized steel reinforcement as required for hardware items per manufacturers' templates. Provide reinforcing per ANSI-A250.6.
- H. Hardware Preparation at Doors: Mortise, reinforce, drill, and tap as required for all mortised hardware furnished under Division 08 Finish Hardware and/or Division 28 Access Control in accordance with a final approved hardware schedule and templates provided by the hardware supplier and/or security supplier (including a minimum 1/2-inch raceway for electrical hardware, electric hinges and/or power transfers, door position switches, and other electrified hardware). Obtain templates from hardware and security suppliers. Provide hardware preparation per ANSI-A250.6.

PART 3 – EXECUTION

3.1 EXAMINATION:

- A. Prior to installation of any doors and frames, examine supporting structure and conditions under which hollow metal doors and frames are to be installed. Correct all defects prior to proceeding with installation.
- B. Correct unacceptable conditions or defer to the architect or responsible building contractor to fix unacceptable conditions prior to hollow metal installation or at any point where unacceptable conditions are discovered.

3.2 PREPARATION:

- A. Where on-site modification of doors and frames is required, prepare hardware locations in accordance with the following:
 - 1. Tornado assemblies shall not be unduly modified. Consult with the manufacturer or the Authority Having Jurisdiction as needed to maintain the labeled approval of the tornado door system, complying with ICC 500-2020.

2. Steel Doors and Frames: For surface applied door hardware, drill and tap doors and frames according to ANSI/SDI A250.6.
3. Where doors are in rated assemblies, comply with NFPA 80 for restrictions on on-site door hardware preparation.

3.3 INSTALLATION:

- A. Install hollow metal in accordance with reviewed shop drawings and manufacturer's printed instructions. Securely fasten and anchor work in place without twists, warps, bulges or other unsatisfactory or defacing workmanship. Set hollow metal plumb, level, square to proper elevations, true to line and eye. Set clips and other anchors with Ramset "shot" anchors or drill in anchors as approved. Units and trim shall be fastened tightly together, with neat, uniform, and tight joints.
- B. Placing Frames: Remove manufacturer's shipping spreader-bars prior to installation. These shall not be used for setting of proper frame tolerances. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set in accordance with ANSI A250.11. After wall construction is complete, remove temporary braces and/or installation spreaders leaving surfaces smooth and undamaged. In masonry construction, building-in of anchors and grouting of frames with mortar is specified in Division 04 Section - Unit Masonry. At in-place concrete or masonry construction, set frames and secure in place using countersunk bolts and expansion shields, with bolt heads neatly filled with metallic putty, ground smooth and primed.
- C. Place fire-rated frames in accordance with NFPA 80, and/or manufacturer's follow-up procedure requirements.
- D. Consult Hollow Metal technical data and installation instruction. The hardware manufacturer's installation instructions must be followed to maintain tornado-resistant assembly approval.
- E. Where continuous hinges are specified, provide full height 3/8 inch (9.5 mm) to 1-1/2 inch (38 mm) thick strip of polystyrene foam blocking at frames requiring grouting. Apply the strip to the back of the frame, where the hinge is to be installed, to facilitate field drilling or tapping.
- F. Doors with internal concealed rods and associated latches shall be installed at the factory by the door manufacturer prior to shipment to the job site. Base installation upon FEMA lock manufacturer's template and install instructions. Field installation, or supplier shop installation, of FEMA concealed internal rods and rod latches will not be accepted.
- G. Door Installation: Fit hollow metal doors accurately in their respective frames, within following clearances: Jambs and head 1/8-inch, meeting edges pair of doors 1/8-inch, sill where no threshold or carpet 1/4 inch above finished floor, sill at threshold 3/4 inch maximum above finished floor, sill at carpet 1/4 inch above carpet. Place fire-rated doors with clearances as specified in NFPA 80.
- H. Apply hardware in accordance with hardware manufacturers' instructions and Section 08 71 00 of these specifications. Install hardware with only factory-provided fasteners. Install silencers. Adjust door installation to provide uniform clearance at head and jambs, to achieve maximum operational effectiveness and appearance.
- I. Drill and tap for surface door closers, door closer brackets, and other surface applied hardware.

3.4 FIELD QUALITY CONTROL:

- A. After installation of frames has been completed, a qualified person from the hardware installation company is to check the project to confirm the proper installation of frames to allow for the proper installation of doors and finish hardware scheduled.
- B. Installer shall deliver to owner, upon completion, one set of installation and maintenance

instructions for doors and frames.

- C. Regular field inspection and adjustment is accepted and recommended to ensure proper latching throughout the life of the product.

3.5 ADJUSTING:

- A. Final Adjustments: Adjust doors and hardware prior to final inspection and acceptance by the Architect and Owner. Replace defective items including doors or frames that are damaged or unacceptable to the Architect and Owner. Regular field inspection and adjustment is accepted and recommended to ensure proper latching throughout the life of the product.
 - 1. Adjust doors for proper operation, free from binding or other defects.
 - 2. Clean and restore soiled surfaces. Remove scraps and debris and leave site in a clean condition.
 - 3. Prime Coat / Touch up immediately after erection, sand smooth rusted or damaged areas of prime coat, and apply touch-up of compatible, approved air-drying primer
- B. Fire Door Assembly Inspection and Testing: Upon completion of the installation, provide functional testing and inspection of each fire door assembly on the project to confirm proper operation and that it meets all criteria of a fire door assembly as per NFPA 80. Inspections shall be performed by individuals who are certified by Intertek as a Fire Door Assembly Inspector (FDI) or a credentialed Architectural Hardware Consultant (AHC). A written report using reporting forms provided by the Door and Hardware Institute shall be maintained and transmitted to the Owner and made available to the authority having jurisdiction (AHJ). The report shall list each fire door throughout the project, and include each door number, location, hardware set used and summary of deficiencies.
 - 1. Schedule fire door assembly inspection within 90 days of substantial completion of the project.
 - 2. Correct all deficiencies and schedule a re-inspection of fire door assemblies which were noted as deficient on the inspection report.
 - 3. Inspector shall re-inspect fire door assemblies after repairs are made.
 - 4. Additional re-inspections which are required due to incomplete repairs will be performed by the inspector at the expense of the Contractor.
 - 5. Prime Coat Touch-Up: Immediately after installation, sand smooth rusted or damaged areas of prime coat and apply touch-up of compatible air-drying primer.

3.6 PROTECTION:

- A. Provide for the proper protection of doors and frames until the Owner accepts the project as complete. Damaged or disfigured doors and frames shall be replaced or repaired by the responsible party. Some repairs may not be allowed in the field to maintain the labeled tornado approval. Consult with the manufacturer or the Authority Having Jurisdiction.
- B. Advise General Contractor on measures necessary to protect installed products and finished surfaces from damage during construction.

END OF SECTION