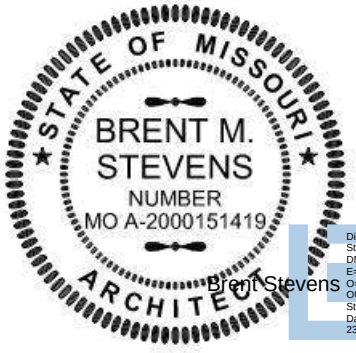
hdesigngroup

Addendum

Addendum Number: ADD-01
Addendum Date: 04.21.26

Project Number: 25-060
Project Name: Town & Country Maintenance Annex
Owner: City of Town & Country, MO



Documents:

1. TCMA Pre-Bid Agenda & Meeting Notes
    a. Refer to attached pre-bid agenda and meeting notes from pre-bid conference held 04.14.26.

2. TCMA Bidding RFI Responses 04.21.26
    a. Refer to attached requests for information received from bidding contractors through 04.20.26 with corresponding responses.

Specifications:

1. 000101 – Table of Contents
    a. Revised to accommodate added & missing sections.

2. 071326 – Self-Adhering Sheet Waterproofing
    a. Added specification section

3. 074213 – Metal Wall Panels
    a. Revised section 2.1-A to add Red Dot Buildings as an approved supplier per substitution request.

4. 087100 – Door Hardware
    a. Removed Elec Exit Device Trim from Hardware Set 9 as this hardware will be OFOI.
    b. Removed Elec Storeroom Lock from Hardware Set 11 as this hardware will be OFOI.

5. 133419 – Metal Building Systems
    a. Revised section 2.1-B to add DMI R-Panel WPRP as an approved supplier per substitution request.

Drawings:

1. A-101 – Overall Floor Plans
    a. Revised keynote A7 to remove reference to plumbing drawings.
    b. Revised keynote A10 to reference correct detail location.

THIS ADDENDUM AMENDS THE DRAWINGS AND SPECIFICATIONS OF THE ABOVE-REFERENCED PROJECT AND IS HEREBY INCORPORATED INTO THE CONTRACT DOCUMENTS AS A PART THEREOF.

hdesigngroup

Addendum

Attachments:

Documents
TCMA Pre-Bid Agenda & Meeting Notes, TCMA Bidding RFI Responses 04.21.26

Specifications
000101, 071326, 074213, 087100, 133419

Drawings
A101

THIS ADDENDUM AMENDS THE DRAWINGS AND SPECIFICATIONS OF THE ABOVE-REFERENCED PROJECT AND IS HEREBY INCORPORATED INTO THE CONTRACT DOCUMENTS AS A PART THEREOF.

The City of Town and Country, Missouri
Maintenance Annex GC RFP
Pre-Bid Conference
April 14, 2026 @ 2:00 PM

1. Introductions
    a. The City of Town and Country
        i. Bob Shelton, City Administrator
        ii. Todd Rehg, Public Works Director
        iii. Tim Randick, Project Manager
        iv. Tom Thousand, Maintenance Foreman
    b. NAVIGATE Building Solutions, LLC will be the Owner's Representative
        i. David Bradley – Sr. Construction Manager
    c. Design Team
        i. H Design Group – Bryon Oster
        ii. Civil – Stock & Associates
        iii. Structural – Mettemeyer Engineering
        iv. MEPFP – True Engineering Group
        v. Interiors – Gray Design Group
    d. Other Contracts: none

2. Project Overview:
    a. Sitework and Site Improvements
    b. Renovation within existing Salt Storage Building.
    c. New 4,300 sf PEMB maintenance building with office space and wash bay.
    d. New Storage Canopy
    e. Project budget is undisclosed.

3. **Proposals will be received by delivery no later than 2:00 PM CST on Thursday, April** 30**, 2026.** Bids received after 2:00 PM Thursday April 30, 2026 CST will not be considered. There will be a public bid opening. Emailed or faxed bids will not be accepted.

4. Bidders shall request clarification or interpretation of the Bidding Documents by making a written request to the Architect and Owner's Representative. Such requests must be received by 5:00 pm on April 21, 2026, to best ensure that the request can be addressed and disseminated to potential Bidders prior to the receipt of Bids. Requests to be directed to:

    a. Bryon Oster at H Design Group, bryon@hdesigngroup.com
    b. David Bradley at NAVIGATE Building Solutions, davidb@navigatebuildingsolutions.com
    c. The reply will be in the form of an Addendum, a copy of which will be forwarded to known plan holders.

5. Each bid must be accompanied by a cashier's check, certified check, or a Bid Bond executed by the Bidder and an approved surety company payable to the City, in an amount not less than ten percent (10%) of the total of the base bid.

6. A payment bond and performance bond in the amount of one hundred (100%) percent of the bid amount will be required of the selected bidder. **Cost of the bond must be included in the Lump Sum Base Bid amount.**

7. All copies of the Bid and any other documents required to be submitted with the Bid shall be delivered to:
   Town and Country – Maintenance Annex – General Contractor RFP
   Attn: Ashley McNamara, City Clerk / Asst. City Administrator
   1011 Municipal Center Drive
   Town and Country, MO 63131

8. Bids will be held good and may not be withdrawn for a period of sixty (60) calendar days from receipt of bids.

9. Bid documents are available upon request at: https://www.xrhodesplanroom.com/projects/public

10. Project is tax exempt.

11. Builders Risk Insurance will be provided by the Contractor with deductibles also by the Contractor.

12. All bidders **MUST** submit bids using the Bid Form provided in the Project Documents. The Bid Form includes a stipulated sum, separate durations of two buildings, references, qualifications, etc. Award for the project will be based on this submitted information.

13. Within 24hrs, Bidders shall submit the Supplemental Bid Form, which includes cost breakout and list of proposed subcontractors. The Supplemental Bid Form information will be used in preparation for Contractor interviews and in understanding information submitted on the Bid Form.

14. Refer to the specifications for prevailing wage and certified payroll requirements.

15. The Owner anticipates that Notice to Proceed will be issued on or about April 27, 2026, pending approval by The City of Town and Country Board of Aldermen.

16. Bid Alternates: Currently, there are no bid alternates.

17. Unit Prices: Currently, there are no bid unit prices.

18. Liquidated Damages do apply to this contract. Liquidated damages will be assigned based on the durations submitted with the Bid Form.

19. Bidders shall review the Scope of Work and the draft Contract with the Owner issued in the bid documents. Submission of your bid constitutes agreement with these documents.

20. The project abuts a residential neighborhood. Construction activities shall only be allowed during hours permitted by the City of Town and Country. If Contractor opts to work outside of those hours, they must contact the CM/City/Owner to obtain permission.

21. The Bidders will be responsible for submitting a project schedule to the Owner seven calendar days after issuance of Notice to Proceed.

22. The Owner shall provide geotechnical and materials testing as described in the Special Inspections matrices. Additional testing and/or monitoring specifically listed in the specifications or is a requirement to obtain a manufacturer's warranty shall be the responsibility of the bidding Contractor.

23. Site Logistics & Phasing {refer to Section 003100 Available Project Information}
    a. Existing Salt Storage Building w/ early completion and turnover.
    b. Site construction before building.
    c. No access from the south.
    d. Entry drive is the property of MoDOT. Parking, staging, facilities on MoDOT property is at Contractor's risk.
    e. Winter Operations
    f. Coordination of utility construction within easements on neighboring properties are the responsibility of the bidding Contractor including restoration of lawns, etc.
    g. Use of the existing restroom facilities by contractors is not permitted after turnover.

24. The Contractor will be required to have a full-time site foreman/superintendent onsite when their employees or subcontractors are present. Superintendent can be a working foreman, but their first responsibility will be to supervise and coordinate the site/subcontractors.

25. Contractors shall be licensed to perform work in the State of Missouri, St. Louis County, and the City of Town and Country.

26. For purposes of this Bid, Bidders shall include all permit costs for fire, electrical, plumbing, etc. It can be assumed that Town and Country will provide and pay for the Building and Mechanical permits. Any permits required for construction not listed above are the responsibility of the Contractor and associated costs and fees shall be included in the bid.

27. CLARIFICATION: The City of Town and Country the typical property owner/development or service agreement fees from Ameren Electric, Spire, and AT&T/Charter are the responsibility of the Owner. The Contractor shall coordinate with and provide all indicated infrastructure and installations indicated on the plans to support the public utility provided services and equipment.

28. Project Schedule

a. Request for Bids	Tuesday, April 7, 2026
b. Pre-Bid Meeting	Tuesday, April 14, 2026 at 2:00 PM
c. Bid RFIs Due	Tuesday, April 21, 2026 at 5:00 PM
d. Last Bid Addenda Issued (if necessary)	Friday, April 24, 2026 at 5:00 PM
e. Receipt of Bids	Thursday, April 30, 2026 at 2:00 PM
f. Supplemental Bid Information Due	Friday, May 1, 2026 at 2:00 PM
g. Pre-Award Conferences / Interviews	Monday, May 4, 2026 at TBD
h. Final Board Approval {2nd Reading}	Tuesday. May 26, 2026
i. Anticipated Notice to Proceed / Mobilization	Wednesday, May 27, 2026
j. Groundbreaking	TBD (June 2026)
k. Submittals Deadline	60 Calendar Days after NTP
l. Substantial Completion Dates	Based on Bid Proposal
m. Project Final Completion	30 Calendar Days after S.C.

35. A copy of these minutes and the Pre-Bid Sign-in sheet will be issued with Addendum Number 1.

36. Questions: It is the responsibility of the bidding Contractor to follow up with a formal RFI. Only formal, written responses shall be binding.

37. Attendees – See attached sign-in sheet.

END OF PRE-BID MINUTES

The City of Town and Country, MO

Maintenance Annex GC RFP
Pre-Bid Sign In Sheet
** PRINT LEGIBLY **

April 14, 2026
2:00 pm

NAME	COMPANY	PHONE	EMAIL
David Bradley	NAVIGATE Building Solutions	314-220-8918	davidb@navigatebuildingsolutions.com
Danny Lamb	LCS	636-294-6245	bids@lcsconstruct.com
Jacob Hill	T Hill Construction	314-581-2884	Jacob@THillConstruction.com
Chris Ardelott	T-Hill Construction	(314)956-7667	ChristotalCR@gmail.com
MIKE MCNAMEE	Demien Const	636 332 5500	bids@demienconstruction.com
Justin Ramsey	The Harlan Company	636-232-7804	jramsey@harlanco.net
Bob HARDY	Koala Insulation	618-779-0110	bob.hardy@koalainsulation.ca
MIKE BENOIST	UNITED CONSTUCTION	314-341-7934	MIKEB@UNITEDCONST.COM
Tom Roby	Town and Country	314-587-2824	robyt@town-and-country.org
Brad Clark	Integra Inc	636-946-3000	bids@Iccstlmo.com
MATT EPSTEIN	AZTECH PAINTING CO. INC	(573)213-9819	contractor@aztechpainting company inc.com
Brian McNamee	Hawkins Const.	314-580-9535	brianm@outlook.com
Drew Patterson	Wright Construction	636 220 6850	Bids@wrightconstruct.com
BRIAN SMITH	ALBERTARO	314-330 5405	BRIANSmith@albertaro.com
Bryan Meehan	A.F. Ilers Construction	720 252-5256	bids@acilerscarstruction.com
Jeremy Tarpea	Bex STL	314-486-1912	Jeremy@bexstl.com

The City of Town and Country, MO

Maintenance Annex GC RFP
Pre-Bid Sign In Sheet
** ***PRINT LEGIBLY*** **

April 14, 2026
2:00 pm

NAME	COMPANY	PHONE	EMAIL
David Bradley	NAVIGATE Building Solutions	314-220-8918	davidb@navigatebuildingsolutions.com
Tim Goetges	Cissell Mueller	636-970-0320	tim.goetges@builtbycm.com
Sam Schmidt	Lawlor	314-504-4953	sam@lawlorcorp.com
Andy Pauk	Bombshell Const.	314-809-2629	adauk@bombshellcs.com
JAKE DAVIS	KADEAN CONSTRUCTION	314-208-9455	jdavis@kadean.com
George Scheidemantel	KAMS Mechanical	217-240-8673	george@kamsstl.com
MATT NIEDERHAUSER	ASPIRE CONSTRUCTION	(636) 369-4460	ddds@ASPIRE-STL.com
CARL D. ESSEN	CJC ROOFING & WALL COMPANY	(314) 426.0047	CARL@THEBAND.WORK
TIM RANDICK	CITY OF TOWN & COUNTRY	314-587-2822	RANDICKT@TOWN-AND-COUNTRY.ORG
Tom Thousand	Town + Country	(314) 267-2388	tthousand@town-and-country.org
BOB SHELTON	" "	314-587-2802	Shelton@town-and-country.org

TCMA Bidding RFI Responses 04.21.26

1. I have a question about the crane. I will need the size, weight, and the lift capacity of the crane. If possible can you send me the spec section on the crane?

    - Basis of design for hoist to be Coffing Hoists EC 1/2 Ton 32 FPM 15' Lift Universal Motorized Trolley with a lift capacity of 1,000 lbs an approximate weight of 201 lbs and dimensions of 24" L x 12" W x 19" H. Hoist to be Owner Furnished & Owner Installed Equipment.

2. On page S301 keyed note 4 states "steel beam to canopy spreader hoist. Hoist may travel along beam. Design loads to be determined upon receipt of spreader drawings. Reference equipment drawing for hoist lift info. Design of beam is deferred to canopy designer." What equipment drawings? How can canopy designer be responsible for the design of this beam with no loads or equipment given. Please clarify.

    - Please see response to question 1 above.

3. Dead load on the trolley hoist beam states TBD. Please clarify.

    - Per response to question 1 above, the hoist trolley to have a lift capacity of 1,000 lbs with an approximate weight of 201 lbs for the equipment itself.

4. Keyed note A18 on A101 states "Infill shaded area to level height and feather into existing floor level." What? Not sure what you are proposing here but concrete can't be feathered. Please clarify.

    - Walk-off carpet flooring is specified in this room. The existing concrete slab slopes toward the existing loading/unloading area. The unshaded portion of this slab has a relatively gradual slope and may remain as is. The shaded portion exhibits a significantly greater slope and Ownership has requested that this area be built up to match the slope of the adjacent unshaded area.

      A similar project utilized an unbonded topping slab consisting of two layers of 6-mil polyethylene slip sheet and a pea gravel concrete mix reinforced with macro synthetic fibers (3 lbs/cy) to build up and regrade the slab.

      The proposed topping slab shall be placed to achieve a uniform transition in slope. At the transition between existing slab and new topping, feathering can be achieved using a suitable self-leveling underlayment or bonded repair material compatible with the final floor finish.

5. Keyed note A10 on A101 states "wand scabbard, hose reel and wash control per specs-reference detail 6G/A101. No such detail. Please clarify.

    - The wrong detail number was noted, please reference detail 8K/A301 as also noted in keynote A11.

6. On page A101 keyed note A7 states "Compressor-Reference plumbing drawings and specs." No compressor shown on the plumbing drawings or in the specs. Please clarify.

    - Please disregard reference to plumbing drawings and specs. Reference specification 111113 Compressed Air Vehicle Service Equipment for information regarding compressor equipment requirements.

7. On page A501 keyed note 33.46 refers to a self-adhering sheet waterproofing below grade foundation drainage system and states to see specs. What specs? Please clarify.

    - Specification section 071326 Self-Adhering Sheet Waterproofing is provided via Addendum 01 package and uploaded to the E-bidding system.

8. There is a spec 221006-Plumbing Piping Specialties that is in the book but not in the table of contents. Are there any other specs missing from the TOC?

    - Specification TOC revised via Addendum 01 package and uploaded to the E-bidding system to include previously missing sections 221006 & 238126.13.

9. The drawings call for Trolley Hoist brackets and beams supplied by PEMB, as per Roof Framing Plan S301 and detail F/S402. Does the owner have any more information on the trolley system, such as manufacturer, overall physical size, load capacity, etc.?

    - Please see response to question 1 above.

10. The drawings show R-25 (8") insulation in the roof and walls, while the specifications call for 6" in the roof and 4" in the walls. Which is the basis of design for bidding purposes for this project?

    - Please provide insulation as defined in specifications 072100 Thermal Insulation which notes 8” thick R-25 for both the roof and walls

END OF TABLE OF CONTENTS

SECTION 071326 - SELF-ADHERING SHEET WATERPROOFING

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. Modified bituminous sheet waterproofing.
2. Insulation drainage panels.
3. Accessory materials required for a complete, waterproof installation.

B. Related Requirements:

1. Section 03 30 00 "Cast-in-Place Concrete."
2. Section 07 21 00 “Thermal Insulation” for foundation wall insulation.
3. Section 07 62 00 "Sheet Metal Flashing and Trim."
4. Section 07 92 00 Joint Sealants."

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. Review waterproofing requirements including surface preparation, substrate condition and pretreatment, minimum curing period, forecasted weather conditions, special details and sheet flashings, installation procedures, testing and inspection procedures, and protection and repairs.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, and tested physical and performance properties of waterproofing.
2. Include manufacturer's written instructions for evaluating, preparing, and treating substrate.

B. Shop Drawings: Show locations and extent of waterproofing and details of substrate joints and cracks, expansion joints, sheet flashings, penetrations, inside and outside corners, tie-ins with adjoining waterproofing, and other termination conditions.

C. Samples: For each exposed product and for each color and texture specified, including the following products:

1. 8-by-8-inch (200-by-200-mm) square of waterproofing and flashing sheet.

2. 4-by-4-inch (100-by-100-mm) square of insulation drainage panel.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

B. Field quality-control reports.

C. Sample Warranties: For special warranties.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: Waterproofing systems shall be manufactured by a company with a minimum of 10 years' experience in the production of self-adhering sheet membrane waterproofing.

B. Installer Qualifications: An entity that has at least 5 years' experience in work of the type required by this section and that employs installers and supervisors who are trained and approved by waterproofing manufacturer.

1.7 DELIVERY, STORAGE AND HANDLING

A. Delivery: Deliver materials and products in labeled packages.

B. Storage:

1. Store and handle in strict compliance with manufacturer's instructions, recommendations, and material safety data sheets.
2. Protect from damage from sunlight, weather, excessive temperatures and construction operations.
3. Do not double-stack pallets of membrane on the job site. Provide cover on top and all sides, allowing for adequate ventilation.
4. Protect primer, mastic and adhesive from moisture and potential sources of ignition.

C. Remove damaged material from the site and dispose of in accordance with applicable regulations.

D. Sequence deliveries to avoid delays but minimize on-site storage.

1.8 PROJECT CONDITIONS

A. Environmental Limitations: Apply waterproofing within the range of ambient and substrate temperatures recommended in writing by waterproofing manufacturer. Do not apply waterproofing to a damp or wet substrate.

B. Proceed with installation only when substrate construction and preparation work is complete and in condition to receive sheet membrane waterproofing.

C. Verify that concrete and masonry have cured a minimum of 7 days, or period recommended by the waterproofing membrane manufacturer.

D. Perform moisture tests as necessary to ensure that the concrete moisture content is at an acceptable level per the manufacturer's written instructions to allow installation of the product of this section.

1. The start of installation shall be an indication that the concrete moisture content is at the level required by the manufacturer.

1.9 WARRANTY

A. Manufacturer's Warranty: Manufacturer agrees to furnish replacement waterproofing material for waterproofing that does not comply with requirements or that fails to remain watertight within specified warranty period.

1. Warranty Period: Five years from date of Substantial Completion.

PART 2 – PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Provide a complete waterproofing system designed to prevent the penetration and/or lateral migration of water into concrete walls and through concrete slabs on grade.

2.2 MANUFACTURERS

A. Source Limitations for Waterproofing System: Obtain waterproofing materials from single source from single manufacturer.

2.3 MODIFIED BITUMINOUS SHEET WATERPROOFING

A. Modified Bituminous Sheet: Minimum 60-mil (1.5-mm) nominal thickness, self-adhering sheet consisting of 56 mils (1.4 mm) of rubberized asphalt laminated on one side to a 4-mil- (0.10-mm-) thick, polyethylene-film reinforcement, and with release liner on adhesive side; formulated for application with primer or surface conditioner that complies with VOC limits of authorities having jurisdiction.

1. Provide membrane suitable for application at 25 degrees F.
2. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Carlisle Coatings & Waterproofing Inc.; CCW MiraDRI 861.
b. CETCO, a Minerals Technologies company; Envirosheet LT.
c. GCP Applied Technologies Inc. (formerly Grace Construction Products); Bituthene 3000/Low Temperature Membrane.
d. Henry Company; Blueskin WP200.
e. Pecora Corporation; Duramem 700-SM.
f. W. R. Meadows, Inc.; Mel-Rol.

3. Physical Properties:

a. Tensile Strength, Membrane: 250 psi (1.7 MPa) minimum; ASTM D 412, Die C, modified.

b. Ultimate Elongation: 300 percent minimum; ASTM D 412, Die C, modified.
c. Low-Temperature Flexibility: Pass at minus 20 deg F (minus 29 deg C); ASTM D 1970/D 1970M.
d. Crack Cycling: Unaffected after 100 cycles of 1/8-inch (3-mm) movement; ASTM C 836/C 836M.
e. Puncture Resistance: 40 lbf (180 N) minimum; ASTM E 154/E 154M.
f. Water Absorption: 0.2 percent weight-gain maximum after 48-hour immersion at 70 deg F (21 deg C); ASTM D 570.
g. Water Vapor Permeance: 0.05 perm (2.9 ng/Pa x s x sq. m) maximum; ASTM E 96/E 96M, Water Method.

4. Sheet Strips: Self-adhering, rubberized-asphalt strips of same material and thickness as sheet waterproofing.

B. Mastic, Adhesives, and Detail Tape: Liquid mastic and adhesives, and adhesive tapes recommended by waterproofing manufacturer.

2.4 INSULATION DRAINAGE PANELS

A. Provide one of the following drainage panel systems.

B. Geotextile-Faced Wall Insulation Drainage Panels: Extruded-polystyrene board insulation according to ASTM C578, Type VI, 40-psi (276-kPa) minimum compressive strength; fabricated with tongue-and-groove edges and with one side having grooved drainage channels faced with nonwoven-geotextile filter fabric.

1. Products: Subject to compliance with requirements, provide one of the following:

a. T. Clear Corporation, a subsidiary of Fin Pan Inc; Thermadry 1250.
b. Owens Corning, Foamular Insul-Drain.

2. Widths: 24” minimum.
3. Thickness: 1 ½” minimum, or as indicated on the Drawings.
4. Physical Properties:

a. R-Value: 4.4/inch, 40° F – sf/Btu (ASTM C518).

5. Locations: Install over waterproofing membrane against foundation walls.

C. Geotextile-Faced Wall Drainage Panels: Heavy duty high density polyethylene geonet drainage core with ridges fused to a layer of non-woven filter fabric.

1. Products: Subject to compliance with requirements, provide the following or approved equal:

a. J-Drain 300: JDR Enterprises, Inc.

2. Widths: 48” minimum.
3. Thickness: 1/4” minimum, or as indicated on the Drawings.
4. Physical Properties:

a. Compressive strength; 40,000 psf

5. Locations: Install over waterproofing membrane against foundation walls.

2.5 AUXILIARY MATERIALS

A. Furnish auxiliary materials recommended by waterproofing manufacturer for intended use and compatible with sheet waterproofing.

1. Furnish liquid-type auxiliary materials that comply with VOC limits of authorities having jurisdiction.

B. Primer: Liquid primer recommended for substrate by sheet-waterproofing material manufacturer.

C. Surface Conditioner: Liquid, waterborne surface conditioner recommended for substrate by sheet-waterproofing material manufacturer.

D. Liquid Membrane: Elastomeric, two-component liquid, cold fluid applied, of trowel grade or low viscosity.

E. Substrate Patching Membrane: Low-viscosity, two-component, modified asphalt coating.

F. Metal Termination Bars: Aluminum bars, approximately 1 by 1/8 inch (25 by 3 mm), predrilled at 9-inch (229-mm) centers.

G. Counter Flashing: As specified under Section 07 62 00 “Sheet Metal Flashing and Trim”.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of waterproofing.

1. Verify that concrete has cured and aged for minimum time period recommended in writing by waterproofing manufacturer.
2. Verify that substrate is visibly dry and within the moisture limits recommended in writing by manufacturer. Test for capillary moisture by plastic sheet method according to ASTM D 4263.

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

3.2 PREPARATION OF SUBSTRATES

A. Protect adjacent surfaces not designated to receive waterproofing.

B. Refer to manufacturer's literature for requirements for preparation of substrates. Surfaces shall be structurally sound and free of voids, spalled areas, loose aggregate and sharp protrusions. Remove contaminants such as grease, oil, and wax from exposed surfaces. Remove dust, dirt, loose stone and debris. Use repair materials and methods, which are acceptable to manufacturer of sheet membrane waterproofing.

C. Cast-In-Place Substrates:

1. Do not proceed with installation until concrete has properly cured and dried, minimum 7 days for normal structural concrete and minimum 14 days for lightweight structural concrete.
2. Fill form tie rod holes with concrete and finish flush with surrounding surface.
3. Repair bugholes over 1/2" in length and 1/4" deep and finish flush with surrounding surface.
4. Remove scaling to sound, unaffected concrete and repair exposed area.
5. Remove grease, oil, bitumen, form-release agents, paints, curing compounds, and other penetrating contaminants or film-forming coatings from concrete.
6. Remove fins, ridges, mortar, and other projections and fill honeycomb, aggregate pockets, holes, and other voids.

    a. Grind irregular construction joints to suitable flush surface.

7. Prepare, fill, prime, and treat joints and cracks in substrates. Remove dust and dirt from joints and cracks according to ASTM D 4258.

    a. Install sheet strips of width according to manufacturer's written instructions and center over treated construction and contraction joints and cracks exceeding a width of 1/16 inch (1.6 mm).

8. Corners: Prepare, prime, and treat inside and outside corners according to ASTM D 6135.

    a. Install membrane strips centered over vertical inside corners. Install 3/4-inch (19-mm) fillets of liquid membrane on horizontal inside corners and as follows:

        1) At footing-to-wall intersections, extend liquid membrane in each direction from corner or install membrane strip centered over corner.

9. Prepare, treat, and seal vertical and horizontal surfaces at terminations and penetrations through waterproofing and at drains and protrusions according to ASTM D 6135.

D. Related Materials: Treat joints and install flashings as recommended by waterproofing manufacturer.

3.3 MODIFIED BITUMINOUS SHEET-WATERPROOFING APPLICATION

A. Refer to manufacturer's literature for recommendations on installation, including but not limited to, the following:

1. Apply primer at the rate recommended by manufacturer.
2. Recoat areas not waterproofed if contaminated by dust or water. Recoat areas not waterproofed the same day primer is applied.
3. Mask and protect adjoining exposed finish surfaces to protect those surfaces from excessive application of primer.
4. Delay application of membrane until primer is completely dry. Dry time will vary with weather conditions.
5. Seal daily terminations with troweled bead of mastic.
6. Apply insulation drainage board and related materials in accordance with manufacturer's recommendations.

B. Remove release paper layer. Roll out on substrate with a mechanical roller to encourage full contact bond.

C. At footings; install a 3/4" cove of liquid mastic at intersection of wall and footing and extend mastic 6" in each direction from corner. Extend waterproofing membrane over cove and footing and lap a minimum of 3" down toe of footing. Seal permanently waterproof.

D. At inside and outside corners: Install a 12" wide strip of membrane centered on the corner. Press membrane tightly into the corner to assure full contact. Extend full coverage of waterproofing membrane over the treated corner.

E. Overlap edges and ends a minimum of 2-1/2" and seal water tight with a roller.

F. Terminate membrane as shown on the drawings, and per the manufacturers' instruction to suit the project conditions.

G. Install counterflashing in reglet or joint and apply continuous sealant bead.

H. Inspect membrane thoroughly before covering with insulation drainage board and patch any tears or slits with membrane and mastic.

3.4 INSULATION PANEL INSTALLATION

A. Insulation: Refer to Section 07 21 00 “Thermal Insulation” for insulation without drainage channel installation.

3.5 INSULATION DRAINAGE-PANEL INSTALLATION

A. Install insulation drainage panels over waterproofed surfaces. Cut and fit to within 3/4 inch (19 mm) of projections and penetrations.

B. Ensure that drainage channels are aligned and free of obstructions.

C. On vertical surfaces, set insulation drainage panels in adhesive or tape applied according to manufacturer's written instructions.

D. On horizontal surfaces, loosely lay insulation drainage panels according to manufacturer's written instructions. Stagger end joints and tightly abut insulation units.

3.6 FIELD QUALITY CONTROL

A. Manufacturer Inspection: Provide field inspection services by manufacturer’s trained and authorized representative during installation.

1. Notify manufacturer's representative at least two weeks before start of work.
2. Schedule minimum of 3 field inspections by manufacturer's representative, with first scheduled before application of product.
3. Manufacturer’s representative shall provide a written report of each inspection, including:

    a. Date of inspection.
    b. Description of weather and surface conditions.
    c. Description of work location and extent of work being performed.

d. Description of tie-in conditions with previous work or abutting materials.
e. Observations on work in progress and instructions made to contractor.
f. Notification of work not meeting specification requirements or conformance with manufacturer's installation requirements.
g. Description of corrective actions made by contractor.

3.7 PROTECTION, REPAIR, AND CLEANING

A. Do not permit foot or vehicular traffic on unprotected membrane.

B. Protect membrane from damage by adhering board insulation over membrane surface. Install board insulation the same day the membrane is applied. Scribe and cut boards around projections and interruptions.

C. Protect waterproofing from damage and wear during remainder of construction period.

D. Use care during backfill operation to avoid damage to waterproofing.

A. Protect installed insulation drainage panels from damage due to UV light, harmful weather exposures, physical abuse, and other causes. Provide temporary coverings where insulation is subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.

E. Correct deficiencies in or remove waterproofing that does not comply with requirements; repair substrates, reapply waterproofing, and repair sheet flashings.

F. Clean spillage and soiling from adjacent construction using cleaning agents and procedures recommended in writing by manufacturer of affected construction.

END OF SECTION 07 13 26

SECTION 074213 – METAL WALL PANELS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Metal wall panels

B. Accessories including fasteners, perimeter trim and penetration treatments.

1.2 REFERENCES

A. ASTM International.
1. ASTM A792 – Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.
2. ASTM B209; Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate..
3. ASTM C920 – Standard Specification for Elastomeric Joint Sealants.

1.3 SUBMITTALS

A. Product Data: Submit manufacturer current technical literature for each type of product.

B. Delegated Design: Design metal wall panel assembly, submit comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.

C. Shop Drawings - Submit detailed drawings showing:
1. Profile
2. Gauge of panel
3. Location, layout and dimensions of panels
4. Location and type of fasteners
5. Shape and method of attachment of all trim
6. Locations and type of sealants
7. Installation sequence.
8. Other details as may be required for a weathertight installation

D. Samples: Architect may request contractor to provide nominal 3 x 5 inch metal samples of available colors for final color selection/approval.

1.4 QUALITY ASSURANCE

A. Manufacturer Qualifications: Manufacturer shall have a minimum of ten (10) years experience in the production of metal wall panels. Manufacturer shall demonstrate past experience with examples of projects of similar type and exposure.

B. Installer Qualifications: Installer shall be authorized by the manufacturer and the work shall be supervised by a person having successfully completed a manufacturer training seminar regarding proper installation of the specified product.

1.5 DELIVERY, STORAGE AND HANDLING

A. Deliver panel materials and components in manufacturer’s original, unopened, undamaged packaging with identification labels intact.

B. Store wall panel materials on dry, level, firm, and clean surface. Elevate one end of bundle to allow moisture run-off, cover and ventilate to allow air to circulate and moisture to escape.

1.6 WARRANTY

A. Material Warranty: Standard form in which manufacturer agrees to repair or replace items that fail in materials or workmanship within specified warranty period. The items covered by the warranty include structural performance and finish performance.
1. Warranty Period: Two (2) years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Exterior walls shall be equal to Butlerib II panels as furnished by Butler Manufacturing Company and installed in accordance with the manufacturer's instructions.

B. Approved Manufacturer's
1. MBCI
2. Morin –Kingspan Group
3. Firestone Building Products
4. Alliance Steel Building Systems
5. ATAS
6. DMI (Dimensional Metals, Inc)- R-PANEL WPRP

2.2 PERFORMANCE REQUIREMENTS

A. Structural Performance: Provide metal wall panel systems designed to resist the following. Testing shall be done based on ASTM E330:
1. Wind Loads: Determine loads based on the following minimum design wind pressures:
a. Uniform pressure as indicated on drawings.
2. Deflection Limits: Metal wall panel assemblies shall withstand horizontal deflections no greater than L/180 of the span.

B. Water Penetration under Static Pressure: Provide metal wall panel systems designed to resist penetration of water under static pressure. Testing shall be based on ASTM E331.

C. Air Infiltration: Provide metal wall panel assemblies designed to resist air infiltration. Testing shall be done based on ASTM E283.

2.3 WALL PANEL MATERIALS

A. Steel:
1. Panels shall be 26 gage, 3' wide with four major corrugations, 1-1/2 " high 12" on center with two minor corrugations between each of the major corrugations the entire length of the panel.
2. Panels shall be one piece from base to building eave.
3. The upper end of panels shall be fabricated with a square cut for all other roof panels and slopes
4. Wall panels shall be factory punched or field drilled at panel ends and shall match factory punched or field drilled holes in structurals for proper alignment
5. Panel material as specified shall be 26-gauge or 24-gauge painted Galvalume aluminum-zinc alloy (approximately 55 percent aluminum, 45 percent zinc), ASTM A 792. Paint with

exterior colors of “Butler-CoteTM” finish system, full-strength, 70 percent “Kynar 500” or “Hylar 5000” fluoropolymer (PVDF) coating. PVDF Coating Warranty: Metal building system manufacturer shall warrant coating for 25 years.

2.4 ACCESSORIES

A. Wall panel accessories: Provide accessories as required for a complete installation. Accessories shall be as indicated on approved shop drawings and per manufacturer’s approved standard details. All accessory material shall be 26 gage and finish of metal wall panels.
   1. Wedged ends: Factory crimped end laps.
   2. Closure Strips: Provide closed cell closure strips, minimum 1 inch thick matching metal wall panel profile.

B. Trim:
   1. Fabricate trim from same material as wall panels. Finish to match metal wall panels.
   2. Locations include, but are not limited to the following: Drips, sills, jambs, corners, framed openings, parapet caps, reveals and fillers.

C. Panel Sealant:
   1. Joint Sealant: ASTM C920 as recommended in writing by metal wall panel manufacturer.
   2. Butyl-Rubber-Based, Solvent-Release Sealant: ASTM C1311.

D. Fasteners

1. Wall panel-to-structural connections shall be made with Torx head Scrubolt fasteners.

2. Wall panel-to-panel connections shall be made with Torx head self-drilling screws.

3. Fastener locations shall be as shown on erection drawings as furnished by the Butler Manufacturing Company.

4. All exposed fasteners shall be factory painted to match wall color.

2.5 FABRICATION

A. Metal wall panels shall be formed to interconnect with edges of adjacent panels which are then mechanically attached through panel to supports using concealed fasteners.

B. Fabricate metal wall panels to eliminate condensation on interior side of panel and with joints between panels designed to form weathertight seals.

C. Metal wall panels shall have factory-installed sealant at panel joints to provide a tight seal and minimize noise from movements within panel assembly.

D. Panels shall be factory formed. Field formed or breakformed panels are not acceptable.

E. Trim Accessories: Fabricate steel trim accessories to comply with recommendations outlined in SMACNA's "Architectural Sheet Metal Manual".

F. Trim Accessories: Provide manufacturer’s standard extruded trim.

G. Mitered Corners: Structurally bonded horizontal outside or inside trimless corners matching metal wall panel material, profile and factory applied finish shall be fabricated by metal wall panel manufacturer.
   1. Welded, riveted or field fabricated corners do not meet the requirements of this specification.

2.6 FINISHES

A. Paint Finish:
   1. The panel material as specified shall be coated both sides with a layer of (galvalume®)aluminum-zinc alloy (approximately 55% aluminum, 45% zinc) applied by the continuous hot dip method. Triple-spot minimum 0.55 ounce per square foot as determined by the triple-spot test per ASTM Specification A-792.26 with exterior colors of a full strength, 70% Kynar 500®.
   2. Manufacturer shall warrant that coating shall not peel, crack or chip for 25 years. For a period of 25 years chalking shall not exceed ASTM D4214 #8 rating and will not fade more than 5 color difference units per ASTM D2244.
   3. Color to be selected by architect.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Provide field measurements to manufacturer as required to achieve proper fit of the metal wall panels to building envelope. Measurements shall be provided in a timely manner so that there is no impact to construction or manufacturing schedule.

B. Supporting Steel: All structural supports required for installation of panels shall be by others. Support members shall be installed within the following tolerances:
   1. Plus or minus 1/8 inch in 5 feet in any direction along plane of framing.
   2. Plus or minus ¼ inch cumulative in 20 feet in any direction along plane of framing.
   3. Plus or minus ½ inch from framing plane on any elevation.
   4. Plumb or level within 1/8 inch at all changes of transverse for performed corner panel applications.
   5. Verify that bearing support has been provided behind vertical joints of horizontal panel systems and vertical joints of horizontal panel systems. Width of support shall be as recommended by manufacturer.

C. Examine individual panels upon removing from the bundle; notify manufacturer of panel defects. Do not install defective panels.

3.2 PANEL INSTALLATION

A. Apply sealant to vertical joints at concealed fasteners, per manufacturer’s recommendations and approved shop drawings.

B. Installation shall be in accordance with manufacturer’s installation guidelines and recommendations.

C. Install panels plumb, level, and true-to-line to dimensions and layout indicated on approved shop drawings.

D. Cutting and fitting of panels shall be neat, square and true. Torch cutting is prohibited.

3.3 TRIM INSTALLATION

A. Place trim and trim fasteners only as indicated per details on the approved shop drawings.

B. Apply sealant tape at trim, per manufacturer's details and approved shop drawings, for weather tight installation.

3.4 SEALANT INSTALLATION FOR EXPOSED JOINTS

A. Clean and prime surfaces to review exterior exposed sealants in accordance with sealant manufacturer's recommendations.

B. Follow sealant manufacturer's recommendations for joint width-to-depth ratio, application temperature range, size and type of backer rod, and compatibility of materials for adhesion.

3.5 CLEANING AND PROTECTION

A. Remove protective film immediately after installation.

B. Touch-up, repair or replace metal panels and trim that have been damaged.

C. After metal wall panel installation, clear weep holes and drainage channels of obstructions, dirt, and sealant.

END OF SECTION 074213

SECTION 087100 - DOOR HARDWARE

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes:

1. Mechanical and electrified door hardware
2. Electronic access control system components

B. Section excludes:

1. Windows
2. Cabinets (casework), including locks in cabinets
3. Signage
4. Toilet accessories
5. Overhead doors

C. Related Sections:

1. Division 01 "General Requirements" sections for Allowances, Alternates, Owner Furnished Contractor Installed, Project Management and Coordination.
2. Division 06 Section "Rough Carpentry"
3. Division 06 Section "Finish Carpentry"
4. Division 07 Section "Joint Sealants" for sealant requirements applicable to threshold installation specified in this section.
5. Division 08 Sections:
   a. "Metal Doors and Frames"
   b. "Flush Wood Doors"
   c. "Stile and Rail Wood Doors"
   d. "Interior Aluminum Doors and Frames"
   e. "Aluminum-Framed Entrances and Storefronts"
   f. "Stainless Steel Doors and Frames"
   g. "Special Function Doors"
   h. "Entrances"
6. Division 26 "Electrical" sections for connections to electrical power system and for low-voltage wiring.
7. Division 28 "Electronic Safety and Security" sections for coordination with other components of electronic access control system and fire alarm system.

1.02 REFERENCES

A. UL LLC

1. UL 10B - Fire Test of Door Assemblies
2. UL 10C - Positive Pressure Test of Fire Door Assemblies
3. UL 1784 - Air Leakage Tests of Door Assemblies
4. UL 305 - Panic Hardware

B. DHI - Door and Hardware Institute

1. Sequence and Format for the Hardware Schedule
2. Recommended Locations for Builders Hardware
3. Keying Systems and Nomenclature
4. Installation Guide for Doors and Hardware

C. NFPA – National Fire Protection Association

1. NFPA 70 – National Electric Code
2. NFPA 80 – Standard for Fire Doors and Other Opening Protectives
3. NFPA 101 – Life Safety Code
4. NFPA 105 – Smoke and Draft Control Door Assemblies
5. NFPA 252 – Fire Tests of Door Assemblies

D. ANSI - American National Standards Institute

1. ANSI A117.1 – 2017 Edition – Accessible and Usable Buildings and Facilities
2. ANSI/BHMA A156.1 - A156.29, and ANSI/BHMA A156.31 - Standards for Hardware and Specialties
3. ANSI/BHMA A156.28 - Recommended Practices for Keying Systems
4. ANSI/WDMA I.S. 1A - Interior Architectural Wood Flush Doors
5. ANSI/SDI A250.8 - Standard Steel Doors and Frames

1.03 SUBMITTALS

A. General:

1. Submit in accordance with Conditions of Contract and Division 01 Submittal Procedures.
2. Prior to forwarding submittal:
   a. Review drawings and Sections from related trades to verify compatibility with specified hardware.
   b. Highlight, encircle, or otherwise specifically identify on submittals: deviations from Contract Documents, issues of incompatibility or other issues which may detrimentally affect the Work.

B. Action Submittals:

1. Product Data: Submit technical product data for each item of door hardware, installation instructions, maintenance of operating parts and finish, and other information necessary to show compliance with requirements.
2. Riser and Wiring Diagrams: After final approval of hardware schedule, submit details of electrified door hardware, indicating:
   a. Wiring Diagrams: For power, signal, and control wiring and including:
      1) Details of interface of electrified door hardware and building safety and security systems.
      2) Schematic diagram of systems that interface with electrified door hardware.
      3) Point-to-point wiring.
      4) Risers.

3. Door Hardware Schedule:
   a. Submit concurrent with submissions of Product Data, Samples, and Shop Drawings. Coordinate submission of door hardware schedule with scheduling requirements of other work to facilitate fabrication of other work critical in Project construction schedule.

b. Submit under direct supervision of a Door Hardware Institute (DHI) certified Architectural Hardware Consultant (AHC) or Door Hardware Consultant (DHC) with hardware sets in vertical format as illustrated by Sequence of Format for the Hardware Schedule published by DHI.
c. Indicate complete designations of each item required for each opening, include:
   1) Door Index: door number, heading number, and Architect's hardware set number.
   2) Quantity, type, style, function, size, and finish of each hardware item.
   3) Name and manufacturer of each item.
   4) Fastenings and other pertinent information.
   5) Location of each hardware set cross-referenced to indications on Drawings.
   6) Explanation of all abbreviations, symbols, and codes contained in schedule.
   7) Mounting locations for hardware.
   8) Door and frame sizes and materials.
   9) Degree of door swing and handing.
   10) Operational Description of openings with electrified hardware covering egress, ingress (access), and fire/smoke alarm connections.

4. Key Schedule:
   a. After Keying Conference, provide keying schedule that includes levels of keying, explanations of key system's function, key symbols used, and door numbers controlled.
   b. Use ANSI/BHMA A156.28 "Recommended Practices for Keying Systems" as guideline for nomenclature, definitions, and approach for selecting optimal keying system.
   c. Provide 3 copies of keying schedule for review prepared and detailed in accordance with referenced DHI publication. Include schematic keying diagram and index each key to unique door designations.
   d. Index keying schedule by door number, keyset, hardware heading number, cross keying instructions, and special key stamping instructions.
   e. Provide one complete bitting list of key cuts and one key system schematic illustrating system usage and expansion. Forward bitting list, key cuts and key system schematic directly to Owner, by means as directed by Owner.
   f. Prepare key schedule by or under supervision of supplier, detailing Owner's final keying instructions for locks.

C. Informational Submittals:

1. Provide Qualification Data for Supplier, Installer and Architectural Hardware Consultant.
2. Provide Product Data:
   a. Certify that door hardware approved for use on types and sizes of labeled fire-rated doors complies with listed fire-rated door assemblies.
   b. Include warranties for specified door hardware.

D. Closeout Submittals:

1. Operations and Maintenance Data: Provide in accordance with Division 01 and include:
   a. Complete information on care, maintenance, and adjustment; data on repair and replacement parts, and information on preservation of finishes.
   b. Catalog pages for each product.
   c. Final approved hardware schedule edited to reflect conditions as installed.
   d. Final keying schedule
   e. Copy of warranties including appropriate reference numbers for manufacturers to identify project.
   f. As-installed wiring diagrams for each opening connected to power, both low voltage and 110 volts.

E. Inspection and Testing:

1. Submit written reports to the Owner and Authority Having Jurisdiction (AHJ) of the results of functional testing and inspection for:
   a. Fire door assemblies, in compliance with NFPA 80.
   b. Required egress door assemblies, in compliance with NFPA 101.

1.04 QUALITY ASSURANCE

A. Qualifications and Responsibilities:

1. Supplier: Recognized architectural hardware supplier with a minimum of 5 years documented experience supplying both mechanical and electromechanical door hardware similar in quantity, type, and quality to that indicated for this Project. Supplier to be recognized as a factory direct distributor by the manufacturer of the primary materials with a warehousing facility in the Project's vicinity. Supplier to have on staff, a certified Architectural Hardware Consultant (AHC) or Door Hardware Consultant (DHC) available to Owner, Architect, and Contractor, at reasonable times during the Work for consultation.
2. Installer: Qualified tradesperson skilled in the application of commercial grade hardware with experience installing door hardware similar in quantity, type, and quality as indicated for this Project.
3. Architectural Hardware Consultant: Person who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project and meets these requirements:
   a. For door hardware: DHI certified AHC or DHC.
   b. Can provide installation and technical data to Architect and other related subcontractors.
   c. Can inspect and verify components are in working order upon completion of installation.
   d. Capable of producing wiring diagram and coordinating installation of electrified hardware with Architect and electrical engineers.

4. Single Source Responsibility: Obtain each type of door hardware from single manufacturer.

B. Certifications:

1. Fire-Rated Door Openings:
   a. Provide door hardware for fire-rated openings that complies with NFPA 80 and requirements of authorities having jurisdiction.
   b. Provide only items of door hardware that are listed products tested by UL LLC, Intertek Testing Services, or other testing and inspecting organizations acceptable to authorities having jurisdiction for use on types and sizes of doors indicated, based on testing at positive pressure and according to NFPA 252 or UL 10C and in compliance with requirements of fire-rated door and door frame labels.

2. Smoke and Draft Control Door Assemblies:
   a. Provide door hardware that meets requirements of assemblies tested according to UL 1784 and installed in compliance with NFPA 105
   b. Comply with the maximum air leakage of 0.3 cfm/sq. ft. (3 cu. m per minute/sq. m) at tested pressure differential of 0.3-inch wg (75 Pa) of water.

3. Electrified Door Hardware

a. Listed and labeled as defined in NFPA 70, Article 100, by testing agency acceptable to authorities having jurisdiction.

4. Accessibility Requirements:
   a. Comply with governing accessibility regulations cited in "REFERENCES" article 087100, 1.02.D3 herein for door hardware on doors in an accessible route. This project must comply with all Federal Americans with Disability Act regulations and all Local Accessibility Regulations.

C. Pre-Installation Meetings

1. Keying Conference
   a. Incorporate keying conference decisions into final keying schedule after reviewing door hardware keying system including:
      1) Function of building, flow of traffic, purpose of each area, degree of security required, and plans for future expansion.
      2) Preliminary key system schematic diagram.
      3) Requirements for key control system.
      4) Requirements for access control.
      5) Address for delivery of keys.

2. Pre-installation Conference
   a. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
   b. Inspect and discuss preparatory work performed by other trades.
   c. Inspect and discuss electrical roughing-in for electrified door hardware.
   d. Review sequence of operation for each type of electrified door hardware.
   e. Review required testing, inspecting, and certifying procedures.
   f. Review questions or concerns related to proper installation and adjustment of door hardware.

3. Electrified Hardware Coordination Conference:
   a. Prior to ordering electrified hardware, schedule and hold meeting to coordinate door hardware with security, electrical, doors and frames, and other related suppliers.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Inventory door hardware on receipt and provide secure lock-up for hardware delivered to Project site. Promptly replace products damaged during shipping

B. Tag each item or package separately with identification coordinated with final door hardware schedule, and include installation instructions, templates, and necessary fasteners with each item or package. Deliver each article of hardware in manufacturer's original packaging.

C. Maintain manufacturer-recommended environmental conditions throughout storage and installation periods.

D. Provide secure lock-up for door hardware delivered to Project. Control handling and installation of hardware items so that completion of Work will not be delayed by hardware losses both before and after installation.

E. Handle hardware in manner to avoid damage, marring, or scratching. Correct, replace or repair products damaged during Work. Protect products against malfunction due to paint, solvent, cleanser, or any chemical agent.

F. Deliver keys to manufacturer of key control system for subsequent delivery to Owner.

1.06 COORDINATION

A. Coordinate layout and installation of floor-recessed door hardware with floor construction. Cast anchoring inserts into concrete.

B. Installation Templates: Distribute for doors, frames, and other work specified to be factory or shop prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.

C. Security: Coordinate installation of door hardware, keying, and access control with Owner's security consultant.

D. Electrical System Roughing-In: Coordinate layout and installation of electrified door hardware with connections to power supplies and building safety and security systems.

1.07 WARRANTY

A. Manufacturer's standard form in which manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within published warranty period.

1. Warranty does not cover damage or faulty operation due to improper installation, improper use or abuse.
2. Warranty Period: Beginning from date of Substantial Completion, for durations indicated in manufacturer's published listings.
    a. Mechanical Warranty
        1) Locks
            a) Falcon: 10 years
        2) Exit Devices
            a) Von Duprin: 10 years
        3) Closers
            a) Falcon SC Series: 10 years
    b. Electrical Warranty
        1) Locks
            a) Schlage: 3 years
        2) Exit Devices
            a) Von Duprin: 3 years

1.08 MAINTENANCE

A. Furnish complete set of special tools required for maintenance and adjustment of hardware, including changing of cylinders.

B. Turn over unused materials to Owner for maintenance purposes.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. The Owner requires use of certain products for their unique characteristics and project suitability to ensure continuity of existing and future performance and maintenance standards. After investigating available product offerings, the Awarding Authority has elected to prepare proprietary specifications. These products are specified with the notation: "No Substitute."

1. Where "No Substitute" is noted, submittals and substitution requests for other products will not be considered.

B. Approval of alternate manufacturers and/or products other than those listed as "Scheduled Manufacturer" or "Acceptable Manufacturers" in the individual article for the product category are only to be considered by official substitution request in accordance with section 01 25 00.

C. Approval of products from manufacturers indicated in "Acceptable Manufacturers" is contingent upon those products providing all functions and features and meeting all requirements of scheduled manufacturer's product.

D. Where specified hardware is not adaptable to finished shape or size of members requiring hardware, furnish suitable types having same operation and quality as type specified, subject to Architect's approval.

2.02 MATERIALS

A. Fabrication

1. Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. provide screws according to manufacturer’s recognized installation standards for application intended.
2. Finish exposed screws to match hardware finish, or, if exposed in surfaces of other work, to match finish of this other work including prepared for paint surfaces to receive painted finish.
3. Provide concealed fasteners wherever possible for hardware units exposed when door is closed. Coordinate with “Metal Doors and Frames”, “Flush Wood Doors”, “Stile and Rail Wood Doors” to ensure proper reinforcements. Advise the Architect where visible fasteners, such as thru bolts, are required.

B. Provide screws, bolts, expansion shields, drop plates and other devices necessary for hardware installation.

1. Where fasteners are exposed to view: Finish to match adjacent door hardware material.

C. Cable and Connectors:

1. Where scheduled in the hardware sets, provide each item of electrified hardware and wire harnesses with number and gage of wires enough to accommodate electric function of specified hardware.
2. Provide Molex connectors that plug directly into connectors from harnesses, electric locking and power transfer devices.

3. Provide through-door wire harness for each electrified locking device installed in a door and wire harness for each electrified hinge, electrified continuous hinge, electrified pivot, and electric power transfer for connection to power supplies.

2.03 HINGES

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
   a. Ives 5BB series

B. Requirements:

1. Provide hinges conforming to ANSI/BHMA A156.1.
2. Provide five knuckle, ball bearing hinges.
3. 1-3/4 inch (44 mm) thick doors, up to and including 36 inches (914 mm) wide:
   a. Exterior: Standard weight, bronze or stainless steel, 4-1/2 inches (114 mm) high
   b. Interior: Standard weight, steel, 4-1/2 inches (114 mm) high
4. 1-3/4 inch (44 mm) thick doors over 36 inches (914 mm) wide:
   a. Exterior: Heavy weight, bronze/stainless steel, 5 inches (127 mm) high
   b. Interior: Heavy weight, steel, 5 inches (127 mm) high
5. Adjust hinge width for door, frame, and wall conditions to allow proper degree of opening.
6. Provide three hinges per door leaf for doors 90 inches (2286 mm) or less in height, and one additional hinge for each 30 inches (762 mm) of additional door height.
7. Hinge Pins: Except as otherwise indicated, provide hinge pins as follows:
   a. Out-Swinging Exterior Doors: Non-removable pins
   b. Out-Swinging Interior Lockable Doors: Non-removable pins

2.04 ELECTRIC POWER TRANSFER

A. Manufacturers:

1. Scheduled Manufacturer and Product:
   a. Von Duprin EPT-10

B. Requirements:

1. Provide power transfer with electrified options as scheduled in the hardware sets. Provide with number and gage of wires enough to accommodate electric function of specified hardware.
2. Locate electric power transfer per manufacturer's template and UL requirements, unless interference with operation of door or other hardware items.

2.05 FLUSH BOLTS

A. Manufacturers:

1. Scheduled Manufacturer:
   a. Ives

B. Requirements:

1. Provide automatic, constant latching, and manual flush bolts with forged bronze or stainless-steel face plates, extruded brass levers, and with wrought brass guides and strikes. Provide 12 inch (305 mm) steel or brass rods at doors up to 90 inches (2286 mm) in height. For doors over 90 inches (2286 mm) in height increase top rods by 6 inches (152 mm) for each additional 6 inches (152 mm) of door height. Provide dust-proof strikes at each bottom flush bolt.

2.06 COORDINATORS

A. Manufacturers:

1. Scheduled Manufacturer:
   a. Ives

B. Requirements:

1. Where pairs of doors are equipped with automatic flush bolts, an astragal, or other hardware that requires synchronized closing of the doors, provide bar-type coordinating device, surface applied to underside of stop at frame head.
2. Provide filler bar of correct length for unit to span entire width of opening, and appropriate brackets for parallel arm door closers, surface vertical rod exit device strikes, or other stop mounted hardware. Factory-prepared coordinators for vertical rod devices as specified.

2.07 CYLINDRICAL LOCKS – GRADE 1

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
   a. Falcon T series

B. Requirements:

1. Provide cylindrical locks conforming to ANSI/BHMA A156.2 Series 4000, Grade 1, and UL Listed for 3-hour fire doors.
2. Cylinders: Refer to "KEYING" article, herein.
3. Provide locks with standard 2-3/4 inches (70 mm) backset, unless noted otherwise, with 1/2-inch latch throw. Provide proper latch throw for UL listing at pairs.
4. Provide locksets with separate anti-rotation thru-bolts, and no exposed screws.
5. Provide independently operating levers with two external return spring cassettes mounted under roses to prevent lever sag.
6. Provide standard ASA strikes unless extended lip strikes are necessary to protect trim.
7. Provide electrified options as scheduled in the hardware sets.
8. Lever Trim: Solid cast levers without plastic inserts and wrought roses on both sides.
   a. Lever Design: DANE

2.08 EXIT DEVICES

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
   a. Von Duprin 98/35A series

B. Requirements:

1. Provide exit devices tested to ANSI/BHMA A156.3 Grade 1 and UL listed for Panic Exit or Fire Exit Hardware.
2. Cylinders: Refer to "KEYING" article, herein.
3. Provide smooth touchpad type exit devices, fabricated of brass, bronze, stainless steel, or aluminum, plated to standard architectural finishes to match balance of door hardware.
4. Touchpad must extend a minimum of one half of door width. No plastic inserts are allowed in touchpads.
5. Provide exit devices with deadlatching feature for security and for future addition of alarm kits and/or other electrified requirements.
6. Provide exit devices at pool gates with weather resistant components that can withstand harsh conditions of various climates and corrosive cleaners used in outdoor pool environments.
7. Provide flush end caps for exit devices.
8. Provide exit devices with manufacturers' approved strikes.
9. Provide exit devices cut to door width and height. Install exit devices at height recommended by exit device manufacturer, allowable by governing building codes, and approved by Architect.
10. Mount mechanism case flush on face of doors or provide spacers to fill gaps behind devices. Where glass trim or molding projects off face of door, provide glass bead kits.
11. Provide cylinder or hex-key dogging as specified at non fire-rated openings.
12. Provide electrified options as scheduled.
13. Top latch mounting: double- or single-tab mount for steel doors, face mount for aluminum doors eliminating requirement of tabs, and double tab mount for wood doors.
14. Provide exit devices with optional trim designs to match other lever and pull designs used on the project.

2.09 ELECTRONIC ACCESS CONTROL LOCKSETS AND EXIT DEVICE TRIM

A. Manufacturers:

1. Scheduled Manufacturer and Product:
   a. Schlage AD Series

B. Requirements:

1. Provide adaptable electronic access control products that comply with the following requirements:
   a. Listed, UL 294 - The Standard of Safety for Access Control System Units.
   b. Compliant with ANSI/BHMA A156.25 Grade 1 Operation and Security.
   c. Certified to UL10C, FCC Part15, Florida Building Code Standards TAS 201 large missile impact, TAS 202 and TAS 203.
   d. Compliant with ASTM E330 for door assemblies.
   e. Compliant with ICC / ANSI A117.1, NFPA 101, NFPA 80, and Industry Canada IC.

2. Functions: Provide functions as scheduled that are field configurable without taking the adaptable electronic product off the door.
3. Emergency Override: Provide mechanical key override; cylinders: Refer to "KEYING" article, herein.
4. Levers:

a. Vandal Resistance: Exterior (secure side) lever rotates freely while door remains locked, preventing damage to internal lock components from vandalism by excessive force.
b. Provide non-handed lever trim that operates independently of non-locking levers.
c. Style: RHODES
d. Tactile Warning (Knurling): Where required by authority having jurisdiction. Provide on levers on exterior (secure side) of doors serving rooms considered to be hazardous.

5. Features:
   a. Audible feedback that can be enabled or disabled.
   b. Tamper-Resistant Screws: Tamper torx screws on inside escutcheon for increased security.
   c. Visual tri-colored LED indicators that indicate activation, additional PIN code credential required, operational systems status, system error conditions and low power conditions.
   d. Door Position Switch
   e. Interior Cover Tamper Guard
   f. Mechanical Key Override
   g. Request to Exit
   h. Request to Enter
   i. Lock/Unlock Status

6. Credential Reader
   a. Credential Reader Configuration: Provide credential reader modules in the following configurations as indicated in door hardware sets.
   b. Credential Reader Capabilities: Provide credential readers capable of operating with the following integrated software partners.
      1) 13.56 MHz Smart card credentials:
         a) Secure section (Multi-Technology and Smartcard): Schlage MIFARE Classic, Schlage MIFARE DESFire EV1/EV3, PIV and PIV-I Compatible
         b) 13.56 MHz Serial number only (Multi-Technology and Smartcard): MIFARE, DESFire, HID iClass, MIFARE DESFire EV1/EV3
         c) 125 kHz Proximity card credentials: Schlage, XceedID, HID, GE/CASI ProxLite and AWID.
      2) Multi-Technology readers that read both 13.56 MHz Smart Cards and 125 kHz Prox cards.
      3) Dual credential reading capabilities credential card or fob and PIN.
      4) 12 button keypad with backlit buttons.
      5) Magnetic Card Reader:
         a) Full insertion or swipe reader capable of reading information along full length of magnetic stripe.
         b) Magnetic card triple track reader capable of reading tracks 1, 2 or 3 per configuration in field.

7. Operation:
   a. Offline – access control rights stored on device
      1) Provide adaptable electronic access control products with the ability to be configured at door by handheld programming device the length of time device is unlocked upon access grant.
      2) Provide adaptable electronic access control products with the ability to communicate identifying information such as firmware versions, hardware versions, serial numbers, and manufacturing dates by handheld programming device.
   b. Networked – hardwired

1) Adaptable electronic access control product system interface:
2) Adaptable electronic access control products to have real-time bidirectional communication between access control system and lock.
3) Credential Verification Time: less than 1 second.
4) When Utilized with Partner Integrated Access Control Network Software with Remote Commanding Capability: Provide adaptable electronic access control product with the ability to be remotely locked down or unlocked within 10 seconds or less, without user interface at the device.
5) Upon Loss of Power to Device: Provide adaptable electronic access control product with the ability to manage access control offline in one of three methods below that can be configured in the field at lockset by handheld programming device and remotely by Partner integrated software:
    a) Fail locked (secured)
    b) Fail unlocked (unsecured)
    c) Fail As-Is
6) Upon Loss of Communication Between Device and Network: Provide adaptable electronic access control product with the ability to manage access control offline in one of four methods below that can be configured in the field at device by handheld programming device and remotely by Partner integrated software:
    a) Fail locked (secured)
    b) Fail unlocked (unsecured)
    c) Fail As-Is
    d) Fail to Degraded/cache mode utilizing cache memory with following selectable options:
        i. Grant access up to the last 1,000 unique previously accepted User IDs.
        ii. Grant access up to the last 1,000 unique previously accepted facility/site codes.
        iii. Remove from cache previously stored User IDs or facility/site codes that have not been presented to lock within the last 5 days.
7) Provide adaptable electronic access control product with the ability to be configured at door by handheld programming device and remotely by Partner integrated software the length of time device is unlocked upon access grant.
8) Provide adaptable electronic access control product with the ability to communicate identifying information such as firmware versions, hardware versions, serial numbers, and manufacturing dates by handheld programming device and remotely by Partner integrated software.

c. Networked – wireless
    1) Adaptable electronic access control product system interface:
    2) Adaptable electronic access control products to have real-time bidirectional communication between access control system and lock.
    3) Remote Commanding By Partner Integrated Access Control Network Software: Battery-powered lockset shall have "Wake on Radio" feature causing activation of remote, wireless access control devices, enabling activated devices to be configured, locked or unlocked from a centralized location within 10 seconds or less without user interface at the device.
    4) Local Commanding: Provide adaptable electronic access control product with the ability to be configured, locked or unlocked locally by handheld programming device, in real-time.
    5) When Utilized with Access Control Network Software with Remote Commanding Capability: Provide adaptable electronic access control product with the ability to be remotely locked down or unlocked within 10 seconds or less while battery powered without user interface at the device.
    6) Real-time response of battery powered device capable of being configured at door by handheld programming device and remotely by Partner integrated software.

7) Upon Loss of Power to Device: Provide adaptable electronic access control product with the ability to manage access control offline in one of three methods below that can be configured in the field at device by handheld programming device and remotely by Partner integrated software:
   a) Fail locked (secured)
   b) Fail unlocked (unsecured)
   c) Fail As-Is
8) Upon Loss of Communication Between Device and Network: Provide adaptable electronic access control product with the ability to manage access control offline in one of four methods below that can be configured in the field at lockset by handheld programming device and remotely by Partner integrated software:
   a) Fail locked (secured)
   b) Fail unlocked (unsecured)
   c) Fail As-Is
   d) Fail to Degraded/cache mode utilizing cache memory with following selectable options:
      i. Grant access up to the last 1,000 unique previously accepted User IDs.
      ii. Grant access up to the last 1,000 unique previously accepted facility/site codes
      iii. Remove from cache previously stored User IDs or facility/site codes that have not been presented to lock within the last 5 days.
9) Provide adaptable electronic access control product with the ability to be configured at door by handheld programming device and remotely by Partner integrated software the length of time device is unlocked upon access grant.
10) Provide adaptable electronic access control product with the ability to communicate identifying information such as firmware versions, hardware versions, serial numbers, and manufacturing dates by handheld programming device and remotely by Partner integrated software.
11) Wireless Transmission:
   a) Modulation: 900 MHz spread spectrum, direct sequence, 10 channels.
   b) Encryption: AES-128-bit Key minimum.

C. Components

1. Product: Schlage HHD series with Utility Software. (OFFLINE)
   a. Provide Handheld Programming Device for adaptable electronic access control products capable of the following minimum requirements.
      1) Capable of initializing lock and accessories using preloaded software.
      2) Utilized to field configure electronic access control devices, to download firmware updates and door files to device, and to download audit files from device.

2. Provide Panel Interface for adaptable electronic access control products.
   a. Product: Schlage PIB300-2D Panel Interface Board. (AD-300)
   b. Product: Schlage PIM400-485 or PIM400-TD2 Panel Interface Module as required. (AD-400)
   c. Product: Schlage PIM400-1501 Panel Interface Module. (AD-400)

2.10 POWER SUPPLIES

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
   a. Schlage/Von Duprin PS900 Series

B. Requirements:

1. Provide power supplies approved by manufacturer of supplied electrified hardware.
2. Provide appropriate quantity of power supplies necessary for proper operation of electrified locking components as recommended by manufacturer of electrified locking components with consideration for each electrified component using power supply, location of power supply, and approved wiring diagrams. Locate power supplies as directed by Architect.
3. Provide regulated and filtered 24 VDC power supply, and UL class 2 listed.
4. Provide power supplies with the following features:
   a. 12/24 VDC Output, field selectable.
   b. Class 2 Rated power limited output.
   c. Universal 120-240 VAC input.
   d. Low voltage DC, regulated and filtered.
   e. Polarized connector for distribution boards.
   f. Fused primary input.
   g. AC input and DC output monitoring circuit w/LED indicators.
   h. Cover mounted AC Input indication.
   i. Tested and certified to meet UL294.
   j. NEMA 1 enclosure.
   k. Hinged cover w/lock down screws.
   l. High voltage protective cover.

2.11 CYLINDERS

A. Manufacturers and Products:

1. Scheduled Manufacturer:
   a. Falcon

B. Requirements:

1. Provide cylinders/cores compliant with ANSI/BHMA A156.5; latest revision; cylinder face finished to match lockset; manufacturer’s series as indicated. Refer to “KEYING” article, herein.
2. Provide cylinders in the below-listed configuration(s), distributed throughout the Project as indicated.
   a. Open: cylinder with small format interchangeable core (SFIC) core with open keyway

2.12 CYLINDERS

A. Manufacturers:

1. Scheduled Manufacturer and Product:
   a. <INSERT EXISTING KEY SYSTEM>

B. Requirements:

1. Provide cylinders/cores to match Owner’s existing key system, compliant with ANSI/BHMA A156.5; latest revision; cylinder face finished to match lockset, manufacturer’s series as indicated. Refer to “KEYING” article, herein.

2.13 KEYING

A. Scheduled System:

1. New factory registered system:
   a. Provide a factory registered keying system, complying with guidelines in ANSI/BHMA A156.28, incorporating decisions made at keying conference.

2. Existing factory registered system:
   a. Provide cylinders/cores keyed into Owner's existing factory registered keying system. Comply with guidelines in ANSI/BHMA A156.28, incorporating decisions made at keying conference.

3. Existing non-factory registered system:
   a. Provide cylinders/cores keyed into Owner's existing keying system managed by Owner's locksmith, complying with guidelines in ANSI/BHMA A156.28, incorporating decisions made at keying conference. Contact:
      1) Firm Name:
      2) Contact Person:
      3) Telephone:

B. Requirements:

1. Construction Keying:
   a. Temporary Construction Cylinder Keying.
      1) Provide construction cores that permit voiding construction keys without cylinder removal, furnished in accordance with the following requirements.
         a) Split Key or Lost Ball Construction Keying System.
         b) 3 construction control keys, and extractor tools or keys as required to void construction keying.
         c) 12 construction change (day) keys.
      2) Owner or Owner's Representative will void operation of temporary construction keys.
   b. Replaceable Construction Cores.
      1) Provide temporary construction cores replaceable by permanent cores, furnished in accordance with the following requirements.
         a) 3 construction control keys
         b) 12 construction change (day) keys.
      2) Owner or Owner's Representative will replace temporary construction cores with permanent cores.

2. Permanent Keying:
   a. Provide permanent cylinders/cores keyed by the manufacturer according to the following key system.
      1) Master Keying system as directed by the Owner.
   b. Forward bitting list and keys separately from cylinders, by means as directed by Owner. Failure to comply with forwarding requirements will be cause for replacement of cylinders/cores involved at no additional cost to Owner.
   c. Provide keys with the following features:
      1) Material: Nickel silver; minimum thickness of .107-inch (2.3mm)
      2) Patent Protection: Keys and blanks protected by one or more utility patent(s).
   d. Identification:
      1) Mark permanent cylinders/cores and keys with applicable blind code for identification. Do not provide blind code marks with actual key cuts.
      2) Identification stamping provisions must be approved by the Architect and Owner.

3) Stamp cylinders/cores and keys with Owner's unique key system facility code as established by the manufacturer; key symbol and embossed or stamped with "DO NOT DUPLICATE" along with the "PATENTED" or patent number to enforce the patent protection.
4) Failure to comply with stamping requirements will be cause for replacement of keys involved at no additional cost to Owner.
5) Forward permanent cylinders/cores to Owner, separately from keys, by means as directed by Owner.

e. Quantity: Furnish in the following quantities.
1) Permanent Control Keys: 3.
2) Master Keys: 6.
3) Change (Day) Keys: 3 per cylinder/core that is keyed differently
4) Key Blanks: Quantity as determined in the keying meeting.

2.14 KEY CONTROL SYSTEM

A. Manufacturers:

1. Scheduled Manufacturer:
a. Telkee

B. Requirements:

1. Provide key control system, including envelopes, labels, tags with self-locking key clips, receipt forms, 3-way visible card index, temporary markers, permanent markers, and standard metal cabinet, all as recommended by system manufacturer, with capacity for 150% of number of locks required for Project.
a. Provide complete cross index system set up by hardware supplier, and place keys on markers and hooks in cabinet as determined by final key schedule.
b. Provide hinged-panel type cabinet for wall mounting.

2.15 DOOR CLOSERS

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
a. Falcon SC70A series

B. Requirements:

1. Provide door closers conforming to ANSI/BHMA A156.4 Grade 1 requirements by BHMA certified independent testing laboratory. ISO 9000 certify closers. Stamp units with date of manufacture code.
2. Provide door closers with fully hydraulic, full rack and pinion action with aluminum cylinder.
3. Closer Body: 1-1/2-inch (38 mm) diameter with 5/8-inch (16 mm) diameter heat-treated pinion journal.
4. Hydraulic Fluid: Fireproof, passing requirements of UL10C, and requiring no seasonal closer adjustment for temperatures ranging from 120 degrees F to -30 degrees F.
5. Spring Power: Continuously adjustable over full range of closer sizes, and providing reduced opening force as required by accessibility codes and standards.
6. Hydraulic Regulation: By tamper-proof, non-critical valves, with separate adjustment for latch speed, general speed, and backcheck.

7. Pressure Relief Valve (PRV) Technology: Not permitted.
8. Provide special templates, drop plates, mounting brackets, or adapters for arms as required for details, overhead stops, and other door hardware items interfering with closer mounting.

2.16 DOOR CLOSERS

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
   a. Falcon SC80A series

B. Requirements:

1. Provide door closers conforming to ANSI/BHMA A156.4 Grade 1 requirements by BHMA certified independent testing laboratory.
2. Provide door closers with fully hydraulic, full rack and pinion action with aluminum cylinder.
3. Closer Body: 1-1/4-inch (32 mm) diameter, with 5/8-inch (16 mm) diameter heat-treated pinion journal.
4. Hydraulic Fluid: Fireproof, passing requirements of UL10C, and requiring no seasonal closer adjustment for temperatures ranging from 120 degrees F to -30 degrees F.
5. Spring Power: Continuously adjustable over full range of closer sizes, and providing reduced opening force as required by accessibility codes and standards.
6. Hydraulic Regulation: By tamper-proof, non-critical valves, with separate adjustment for latch speed, general speed, and backcheck.
7. Pressure Relief Valve (PRV) Technology: Not permitted.
8. Provide special templates, drop plates, mounting brackets, or adapters for arms as required for details, overhead stops, and other door hardware items interfering with closer mounting.

2.17 PROTECTION PLATES

A. Manufacturers:

1. Scheduled Manufacturer:
   a. Ives

B. Requirements:

1. Provide protection plates with a minimum of 0.050 inch (1 mm) thick, beveled four edges as scheduled. Furnish with sheet metal or wood screws, finished to match plates.
2. Sizes plates 2 inches (51 mm) less width of door on single doors, pairs of doors with a mullion, and doors with edge guards. Size plates 1 inch (25 mm) less width of door on pairs without a mullion or edge guards.
3. At fire rated doors, provide protection plates over 16 inches high with UL label.

2.18 OVERHEAD STOPS AND OVERHEAD STOP/HOLDERS

A. Manufacturers:

1. Scheduled Manufacturers:

a. Glynn-Johnson

B. Requirements:

1. Provide overhead stop at any door where conditions do not allow for a wall stop or floor stop presents tripping hazard.

2.19 DOOR STOPS AND HOLDERS

A. Manufacturers:

1. Scheduled Manufacturer:
   a. Ives

B. Provide door stops at each door leaf:

1. Provide wall stops wherever possible. Provide concave type where lockset has a push button of thumbturn.
2. Where a wall stop cannot be used, provide universal floor stops.
3. Where wall or floor stop cannot be used, provide overhead stop.
4. Provide roller bumper where doors open into each other and overhead stop cannot be used.

2.20 SILENCERS

A. Manufacturers:

1. Scheduled Manufacturer:
   a. Ives

B. Requirements:

1. Provide "push-in" type silencers for hollow metal or wood frames.
2. Provide one silencer per 30 inches (762 mm) of height on each single frame, and two for each pair frame.
3. Omit where gasketing is specified.

2.21 THRESHOLDS, SEALS, DOOR SWEEPS, AUTOMATIC DOOR BOTTOMS, AND GASKETING

A. Manufacturers:

B. Scheduled Manufacturer:

1. Zero International

C. Seals and Gasketing: Provide continuous gasketing on exterior openings, to the head and jambs, forming a continuous seal between the door and the frame. Provide smoke, light, or sound gasketing on interior doors where indicated.

1. Provide self-tapping fasteners for aluminum extruded gasketing being applied to hollow metal frames.

a. Provide non-corrosive fasteners for all exterior applications.
b. Provide security fasteners where indicated.

2. Provide neoprene, EPDM, silicone, or nylon brush inserts as specified in hardware sets. Provide non brush inserts of solid or sponge cell, as specified in hardware sets. Vinyl inserts are not allowed except where specified in hardware sets.

D. Smoke Labeled Gasketing: At all smoke labeled openings, provide smoke listed perimeter gasketing assemblies complying with NFPA 105 listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction for smoke control ratings indicated based on testing according to UL 1784.

E. Fire Listed Gasketing: Assemblies complying with NFPA 80 that are listed by a testing and inspecting agency acceptable to authorities having jurisdiction for fire ratings indicated based on testing according to UL-10C.

1. Where frame-applied intumescent seals are required by the manufacturer, provide gaskets that comply with UL10C Standard for Positive Pressure Fire Tests of Door Assemblies and UBC 7-2, Fire Tests of Door Assemblies.

F. Sound-Rated Gasketing: Provide acoustic gasketing to meet Sound Transmission Class (STC) rating required.

G. Meeting-Stile Gasketing: Provide meeting-stile gasketing that fastens to the meeting stiles forming a continuous seal when doors are closed.

H. Door Sweeps or Shoes: Apply to the bottom of the door to close the gap between the door bottom and finished floor or saddle threshold.

1. Provide solid neoprene, EPDM, silicone, or nylon brush type of seal as specified in hardware sets. Vinyl inserts are not allowed except where specified in hardware sets.

I. Automatic Door Bottoms:

1. Provide closed cell sponge, bulb neoprene. or EPDM type of seal as specified in hardware sets.
2. Door bottom to be mortised, semi mortised, or surface mount as with a minimum thickness as specified in hardware sets.

J. Rain Drips:

1. Provide overhead rain drips for out-swinging hollow metal doors that are not covered against 45 degree blowing rain. Aluminum extrusion to be a minimum of .088 inches thick and extend 2.50 inches from the face of the frame, in anodized finish to match door.
2. Door sweeps or shoes with integral rain drip must meet ADA requirements

K. Thresholds: Provide threshold units not less than 4 inches wide, formed to accommodate change in floor elevation where indicated, and fabricated to accommodate door hardware and fit door frames.

1. Threshold extrusion to be a minimum thickness as specified in hardware sets.

2.22 DOOR POSITION SWITCHES

A. Manufacturers:

1. Scheduled Manufacturer:
   a. Schlage

B. Requirements:

1. Provide recessed or surface mounted type door position switches as specified.
2. Coordinate door and frame preparations with door and frame suppliers. If switches are being used with magnetic locking device, provide minimum of 4 inches (102 mm) between switch and magnetic locking device.

2.23 COAT HOOKS

A. Manufacturers:

1. Scheduled Manufacturer:
   a. Ives

B. Provide coat hooks as specified.

2.24 FINISHES

A. FINISH: BHMA 626/652 (US26D); EXCEPT:

1. Hinges at Exterior Doors: BHMA 630 (US32D)
2. Aluminum Geared Continuous Hinges: BHMA 628 (US28)
3. Push Plates, Pulls, and Push Bars: BHMA 630 (US32D)
4. Protection Plates: BHMA 630 (US32D)
5. Overhead Stops and Holders: BHMA 630 (US32D)
6. Door Closers: Powder Coat to Match
7. Wall Stops: BHMA 630 (US32D)
8. Latch Protectors: BHMA 630 (US32D)
9. Weatherstripping: Clear Anodized Aluminum
10. Thresholds: Mill Finish Aluminum

PART 3 - EXECUTION

3.01 EXAMINATION

A. Prior to installation of hardware, examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction, and other conditions affecting performance. Verify doors, frames, and walls have been properly reinforced for hardware installation.

B. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.

C. Submit a list of deficiencies in writing and proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

A. Mount door hardware units at heights to comply with the following, unless otherwise indicated or required to comply with governing regulations.

1. Standard Steel Doors and Frames: ANSI/SDI A250.8.
2. Custom Steel Doors and Frames: HMMA 831.
3. Interior Architectural Wood Flush Doors: ANSI/WDMA I.S. 1A
4. Installation Guide for Doors and Hardware: DHI TDH-007-20

B. Install door hardware in accordance with NFPA 80, NFPA 101 and provide post-install inspection, testing as specified in section 1.03.E unless otherwise required to comply with governing regulations.

C. Install each hardware item in compliance with manufacturer's instructions and recommendations, using only fasteners provided by manufacturer.

D. Do not install surface mounted items until finishes have been completed on substrate. Protect all installed hardware during painting.

E. Set units level, plumb and true to line and location. Adjust and reinforce attachment substrate as necessary for proper installation and operation.

F. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.

G. Install operating parts so they move freely and smoothly without binding, sticking, or excessive clearance.

H. Hinges: Install types and in quantities indicated in door hardware schedule but not fewer than quantity recommended by manufacturer for application indicated.

I. Lock Cylinders:

1. Install construction cores to secure building and areas during construction period.
2. Replace construction cores with permanent cores as indicated in keying section.
3. Furnish permanent cores to Owner for installation.

J. Wiring: Coordinate with Division 26, ELECTRICAL and Division 28 ELECTRONIC SAFETY AND SECURITY sections for:

1. Conduit, junction boxes and wire pulls.
2. Connections to and from power supplies to electrified hardware.
3. Connections to fire/smoke alarm system and smoke evacuation system.
4. Connection of wire to door position switches and wire runs to central room or area, as directed by Architect.
5. Connections to panel interface modules, controllers, and gateways.
6. Testing and labeling wires with Architect's opening number.

K. Key Control System: Tag keys and place them on markers and hooks in key control system cabinet, as determined by final keying schedule.

L. Continuous Hinges: Re-locate the door and frame fire rating labels where they will remain visible so that the hinge does not cover the label once installed.

M. Door Closers & Auto Operators: Mount closers/operators on room side of corridor doors, inside of exterior doors, and stair side of stairway doors from corridors. Mount closers/operators so they are not visible in corridors, lobbies and other public spaces unless approved by Architect.

N. Overhead Stops/Holders: Mount overhead stops/holders on room side of corridor doors, inside of exterior doors, and stair side of stairway doors.

O. Power Supplies: Locate power supplies as indicated or, if not indicated, above accessible ceilings or in equipment room, or alternate location as directed by Architect.

P. Thresholds:

1. Set thresholds in full bed of sealant complying with requirements specified in Division 07 Section "Joint Sealants."
2. Aluminum thresholds to be cut-in, and scribed around mullions, frame members, and stops. Do not butt to thresholds. Provide a continuous surface across full width of opening from jamb to jamb.
3. Where aluminum panic-type (rabbeted) thresholds with neoprene inserts are specified, undercut doors as required to properly mate with seal in threshold.

Q. Stops: Provide floor stops for doors unless wall or other type stops are indicated in door hardware schedule. Do not mount floor stops where they may impede traffic or present tripping hazard.

R. Perimeter Gasketing:

1. Apply to head and jamb, forming seal between door and frame.
2. Install gasketing in a manner eliminating need to cut any seal to install surface mounted hardware. Install compatible mounting bracket for surface mounted hardware unless minimum 1/4 inch thick solid aluminum seals are provided for mounting of surface applied hardware.

S. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.

T. Door Bottoms and Sweeps: Apply to bottom of door, forming seal with threshold when door is closed.

3.03 ADJUSTING

A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

1. Electric Strikes: Adjust horizontal and vertical alignment of keeper to properly engage lock bolt.
2. Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.

B. Occupancy Adjustment: Approximately three to six months after date of Substantial Completion, examine and readjust each item of door hardware, including adjusting operating forces, as necessary to ensure function of doors and door hardware.

3.04 CLEANING AND PROTECTION

A. Clean adjacent surfaces soiled by door hardware installation.

B. Clean operating items per manufacturer's instructions to restore proper function and finish.

C. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of Substantial Completion.

3.05 DOOR HARDWARE SCHEDULE

A. The intent of the hardware specification is to specify the hardware for interior and exterior doors, and to establish a type, continuity, and standard of quality. However, it is the door hardware supplier's responsibility to thoroughly review existing conditions, schedules, specifications, drawings, and other Contract Documents to verify the suitability of the hardware specified.

B. Discrepancies, conflicting hardware, and missing items are to be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application.

C. Hardware items are referenced in the following hardware schedule. Refer to the above specifications for special features, options, cylinders/keying, and other requirements.

D. Hardware Sets:

Legend:
Link to catalog cut sheet

Hardware Group No. 01

For use on Door #(s):
A107A A107B A107C A109C B105

Provide each RU door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	ROLL UP DOOR	ALL HARDWARE BY ROLL UP DOOR MANAFACTURER		

Hardware Group No. 02

For use on Door #(s):
A101 A102

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5		652	IVE
1	EA	ENTRY / OFFICE LOCK	T511BDC DAN		626	FAL
1	EA	SFIC CORE	C607		626	FAL
1	EA	WALL STOP	WS406/407CCV		630	IVE
3	EA	SILENCER	SR64/SR65 AS REQ'D		GRY	IVE

Hardware Group No. 03

For use on Door #(s):
A104

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5		652	IVE
1	EA	STOREROOM LOCK	T581BDC DAN		626	FAL
1	EA	SFIC CORE	C607		626	FAL
1	EA	WALL STOP	WS406/407CCV		630	IVE
3	EA	SILENCER	SR64/SR65 AS REQ'D		GRY	IVE

Hardware Group No. 04

For use on Door #(s):
A105

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5		652	IVE
1	EA	PRIVACY LOCK	T301S DAN		626	FAL
1	EA	SURFACE CLOSER	SC81A RW/PA		689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		630	IVE
1	EA	WALL STOP	WS406/407CCV		630	IVE
1	EA	SOUND SEAL	188SBK		BK	ZER

Hardware Group No. 05

For use on Door #(s):
A110

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5		652	IVE
1	EA	PASSAGE SET	T101 DAN		626	FAL
1	EA	SFIC CORE	C607		626	FAL
1	EA	WALL STOP	WS406/407CCV		630	IVE
3	EA	SILENCER	SR64/SR65 AS REQ'D		GRY	IVE

Hardware Group No. 06

For use on Door #(s):
A106B A108B A109B B104

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5		652	IVE
1	EA	PASSAGE SET	T101 DAN		626	FAL
1	EA	SURFACE CLOSER	SC81A SS		689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		630	IVE
3	EA	SILENCER	SR64/SR65 AS REQ'D		GRY	IVE

Hardware Group No. 07

For use on Door #(s):
B101B B102

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	NOTE	ALL EXISTING HARDWARE TO REMAIN		

Hardware Group No. 08

For use on Door #(s):
B103

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5		652	IVE
1	EA	PRIVACY LOCK	T301S DAN		626	FAL
1	EA	OH STOP	450S		630	GLY
1	EA	SOUND SEAL	188SBK		BK	ZER

Hardware Group No. 09

For use on Door #(s):
A106A A109A

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5 NRP		630	IVE
1	EA	POWER TRANSFER	EPT10 CON		689	VON
1	EA	ELEC PANIC HARDWARE	RX-98-EO-CON		626	VON
1	EA	SFIC CORE	C607		626	FAL
1	EA	SURFACE CLOSER	SC71A SS		689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		630	IVE
1	EA	RAIN DRIP	142AA		AA	ZER
1	SET	GASKETING	328AA H & J		AA	ZER
1	EA	DOOR SWEEP	8198AA		AA	ZER
1	EA	THRESHOLD	65A		A	ZER
1	EA	WIRE HARNESS (IN DOOR)	ALLEGION CONNECT TYPE & LENGTH AS REQ			SCH
1	EA	WIRE HARNESS (TO POWER SUPPLY)	CON-6W - CONNECTION LEADS			SCH
1	EA	DOOR CONTACT	679-05 TYPE AS REQ		BLK	SCE
1	EA	POWER SUPPLY	PS902 900-2RS 120/240 VAC (OMIT 2RS BOARD WHERE NOT REQ)		LGR	SCE

-INGRESS BY THE CREDENTIAL READER OR KEY OVERRIDE.
-FREE EGRESS BY THE PUSH PAD.
-COORDINATE POWER SUPPLY WITH SECURITY CONTRACTOR PRIOR TO SUBMITTALS.
-OMIT POWER SUPPLY WHERE PROVIDED BY SECURITY.

Hardware Group No. 10

For use on Door #(s):
A108A

Provide each PR door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
6	EA	HINGE	5BB1 4.5 X 4.5 NRP		630	IVE
1	EA	AUTO FLUSH BOLT	FB31P/FB41P AS REQ		630	IVE
1	EA	DUST PROOF STRIKE	DP2		626	IVE
1	EA	ENTRY / OFFICE LOCK	T511BDC DAN		626	FAL
1	EA	SFIC CORE	C607		626	FAL
1	EA	COORDINATOR	COR X FL (MB1 & MB2 AS REQ)		628	IVE
2	EA	SURFACE CLOSER	SC71A SS		689	FAL
2	EA	KICK PLATE	8400 10" X 1" LDW B-CS		630	IVE
1	EA	RAIN DRIP	142AA		AA	ZER
1	SET	GASKETING	328AA H & J		AA	ZER
2	EA	DOOR SWEEP	8198AA		AA	ZER
1	EA	THRESHOLD	65A		A	ZER

Hardware Group No. 11

For use on Door #(s):
B101A

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
1	EA	SFIC CORE	C607		626	FAL
1	EA	NOTE	ALL EXISTING HARDWARE TO REMAIN			

-INGRESS BY THE CREDENTIAL READER OR KEY OVERRIDE.
-FREE EGRESS BY THE LEVER

END OF SECTION

SECTION 133419 - METAL BUILDING SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Structural steel framing.
   2. Thermal roof insulation.
   3. Accessories.

1.2 SUBMITTALS

A. Product Data: For each type of metal building system component.

B. Shop Drawings: For metal building system components. Include plans, elevations, sections, details, and attachments to other work.

C. Samples: For each type of exposed finish required.

D. Delegated-Design Submittal: For metal building systems indicated to comply with performance requirements and design criteria, including analysis data and calculations signed and sealed by the qualified professional engineer responsible for their preparation. Details and plans outline basic connection types between metal building components and structural steel components. Beam to Beam and Beam to Column connections shall be sized by metal building professional engineer as standard AISC, Type 2, Bearing connections capable of supporting reactions developed by maximum uniform load capacity on a simple span for beam and beam span given.

E. Welding certificates.

F. Metal Building System Certificates: For each type of metal building system, from manufacturer.
   1. Letter of Design Certification: Signed and sealed by a qualified professional engineer. Include the following:
      a. Name and location of Project.
      b. Order number.
      c. Name of manufacturer.
      d. Name of Contractor.
      e. Building dimensions including width, length, height, and roof slope.
      f. Indicate compliance with AISC standards for hot-rolled steel and AISI standards for cold-rolled steel, including edition dates of each standard.
      g. Governing building code and year of edition.
      h. Design Loads: Include dead load, roof live load, collateral loads, roof snow load, deflection, wind loads/speeds and exposure, seismic design category or effective peak velocity-related acceleration/peak acceleration, and auxiliary loads (cranes).
      i. Load Combinations: Indicate that loads were applied acting simultaneously with concentrated loads, according to governing building code.
      j. Building-Use Category: Indicate category of building use and its effect on load importance factors.

G. Material test reports.

H. Source quality-control reports.

I. Field quality-control reports.

J. Maintenance data.

K. Warranties: Sample of special warranties.

1.3 QUALITY ASSURANCE

A. Manufacturer Qualifications: A qualified manufacturer.
1. Engineering Responsibility: Preparation of Shop Drawings and comprehensive engineering analysis by a qualified professional engineer.

B. Erector Qualifications: An experienced erector who specializes in erecting and installing work similar in material, design, and extent to that indicated for this Project and who is acceptable to manufacturer.

C. Welding Qualifications: Qualify procedures and personnel according to the following:
1. AWS D1.1/D1.1M, "Structural Welding Code - Steel."
2. AWS D1.3, "Structural Welding Code - Sheet Steel."

D. Structural Steel: Comply with AISC 360, "Specification for Structural Steel Buildings," for design requirements and allowable stresses.

E. Cold-Formed Steel: Comply with AISI's "North American Specification for the Design of Cold-Formed Steel Structural Members" for design requirements and allowable stresses.

F. Preinstallation Conference: Conduct conference at Project site.

1.4 WARRANTY
1. Manufacturer’s standard one year warranty on materials and workmanship.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
1. A&S Building Systems, Inc.; Division of NCI Building Systems, L.P.
2. Alliance Steel
3. American Buildings Company; A Nucor Company
4. Butler Manufacturing Company; a BlueScope Steel company.
5. CBC Steel Buildings; A Nucor Company
6. Ceco Building Systems; Division of NCI Building Systems, L.P.
7. Garco Building Systems; Division of NCI Building Systems, L.P..
8. Mesco Building Solutions; Division of NCI Building Systems, L.P.
9. Metallic Building Company; Division of NCI Building Systems, L.P.
10. Metco Metal Supply.
11. Mid-West Steel Building Company; Division of NCI Building Systems, L.P.
12. Nucor Building Systems A Nucor Company.
13. Olympia Steel Building Systems.
14. Pinnacle Structures, Inc.
15. Star Building Systems; an NCI company.
16. United Structures of America
17. VP Buildings; a BlueScope Steel Company
18. Vulcan Steel Structures, Inc.
19. Red Dot Buildings

2.2 METAL BUILDING SYSTEM PERFORMANCE

A. Delegated Design: Design metal building system, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.

B. Structural Performance: Metal building systems shall be designed according to procedures in MBMA's "Metal Building Systems Manual."
   1. Design Loads: As indicated on Drawings.
   1. Deflection Limits: Design metal building system assemblies to withstand design loads with deflections no greater than the following:
      a. Purlins and Rafters: Vertical deflection of 1/120 of the span.
      b. Girts: Horizontal deflection of 1/150 of the span.
      c. Metal Roof Panels: Vertical deflection of 1/150 of the span.
      d. Metal Wall Panels: Horizontal deflection of 1/120 of the span.
      e. Design secondary-framing system to accommodate deflection of primary framing and construction tolerances, and to maintain clearances at openings.
   2. Drift Limits: Engineer building structure to withstand design loads with drift limits no greater than the following:
      a. Lateral Drift: Maximum of 1/400 of the building height for systems directly supporting masonry or other brittle wall systems.
   3. Metal panel assemblies shall withstand the effects of gravity loads and loads and stresses within limits and under conditions indicated according to ASTM E 1592.

C. Seismic Performance: Metal building systems shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.

D. Thermal Movements: Allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base engineering calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
   1. Temperature Change (Range): 120 deg F, material surfaces.

2.3 STRUCTURAL-STEEL FRAMING

A. Primary Framing: Manufacturer’s Rigid Frame (RF Series) solid web framing consisting of tapered or uniform depth rafters rigidly connected to tapered or uniform depth columns. System to be designed to withstand required loads and specified requirements. Primary framing includes transverse and lean-to frames; rafter, rake, and canopy beams; sidewall, intermediate, end-wall, and corner columns; connections; and wind bracing.
   1. General: Provide frames with attachment plates, bearing plates, and splice members. Factory drill for field-bolted assembly.

B. End-Wall Framing: Manufacturer's standard primary end-wall framing fabricated for field-bolted assembly.

C. Secondary Framing: Manufacturer's standard secondary framing, including purlins, girts, eave struts, flange bracing, base members, gable angles, clips, headers, jambs, and other miscellaneous structural members. Unless otherwise indicated, fabricate framing from either cold-formed, structural-steel sheet or roll-formed, metallic-coated steel sheet, prepainted with coil coating.

D. Bolts: Provide plain-finish bolts for structural-framing components that are primed or finish painted. Provide zinc-plated or hot-dip galvanized bolts for structural-framing components that are galvanized.

E. Wind Bracing: Portal, torsional, diagonal bracing or diaphragm in accordance with manufacturer's standard design practices; utilizing rods, angles, and other members, with minimum yield strengths as required for design but in most cases, 50 ksi.

F. Primary Frame Flange Bracing: Attached from purlins or girts to the primary framing, minimum yield strength as required for design but in most cases 60 ksi.

G. Finish: Factory primed. Apply specified primer immediately after cleaning and pretreating.

2.4 MISCELLANEOUS FRAMING

A. Base Angles: 2 inch by 3 inch by 0.059 inch (50 mm by 75 mm by 1.5 mm) galvanized steel angles, with minimum yield strength of 55 ksi (380 MPa), anchored to the floor slab or grade beam with power driven fasteners or equivalent at a maximum spacing of 4 feet (1220 mm) on center and not more than 6 inches (150 mm) from the end of any angle member. Anchors are not provided by the metal building manufacturer.

B. Door Headers and Jambs: Zee- or Cee-shaped; depth as required; with minimum yield strength of 60 ksi (410 MPa).

2.5 INSULATION

A. Roof insulation: provide 6” thick R-19 vinyl faced insulation WMP-VR (PSK-LD as manufactured by Lamtec Corporation. Facing: White polypropylene film fiberglass and polyester scrim; reinforced 11# natural kraft, 0.0015 inch (thick plus or minus 10 percent; permeance in compliance with ASTM E 96 1.00 perm (5.17 ng/Ns). Tri-directional fiberglass and facing meeting Flame Spread of 25 or less, Smoke Developed of 50 or less, when tested in accordance with UL 723. #11 natural kraft. as manufactured

B. Wall insulation: 4” thick vinyl faced insulation, WMP-10 (PSK-SD) as manufactured by Lamtec Corporation. Facing: White polypropylene film metallization fiberglass & polyester scrim 14# white craft. 0.0015 inch (thick plus or minus 10 percent; permeance in compliance with ASTM E 96 0.02 perm (1.15 ng/Ns). Tri-directional fiberglass/polyester. Facing meeting Flame spread of 25 or less, Smoke Developed of 50 or less, when tested in accordance with UL 723.

C. Thermal Blocks: High density, 3/4 inch (19 mm) thick expanded polystyrene, for installation over the purlin.

2.6 METAL ROOF PANELS

A. See section 074113 for metal roof panels.

2.7 METAL WALL PANELS

A. See section 074213 for metal wall panels.

2.8 METAL LINER PANELS

A. See section 074215 for metal liner panels.

2.9 ACCESSORIES

A. General: Provide accessories as standard with metal building system manufacturer and as specified. Fabricate and finish accessories at the factory to greatest extent possible, by manufacturer's standard procedures and processes. Comply with indicated profiles and with dimensional and structural requirements.
   1. Form exposed sheet metal accessories that are without excessive oil-canning, buckling, and tool marks and that are true to line and levels indicated, with exposed edges folded back to form hems.

B. Flashing and Trim: Formed from 0.022-inch nominal-thickness, metallic-coated steel sheet or aluminum-zinc alloy-coated steel sheet prepainted with coil coating; finished to match adjacent metal panels.

C. Gutters: 24 gage metallic-coated steel sheet or aluminum-zinc alloy-coated steel sheet prepainted with coil coating; finished to match roof fascia and rake trim. Match profile of gable trim, complete with end pieces, outlet tubes, and other special pieces as required. Fabricate in minimum 96-inch- long sections, sized according to SMACNA's "Architectural Sheet Metal Manual."
   1. Gutter Supports: Fabricated from same material and finish as gutters.
   2. Strainers: Bronze, copper, or aluminum wire ball type at outlets.

D. Downspouts: 24 gage zinc-coated (galvanized) steel sheet or aluminum-zinc alloy-coated steel sheet prepainted with coil coating; finished to match metal wall panels. Fabricate in minimum 10-foot- long sections, complete with formed elbows and offsets.
   1. Mounting Straps: Fabricated from same material and finish as gutters.
      .
   2. Continuous or Sectional-Ridge Type: Factory-engineered and -fabricated, continuous unit; 24 gage, metallic-coated steel sheet or aluminum-zinc alloy-coated steel sheet prepainted with coil coating; finished to match metal roof panels. Fabricated in minimum 10-foot- long sections. Provide throat size and total length indicated, complete with side baffles, ventilator assembly, end caps, splice plates, and reinforcing diaphragms.
      a. Bird Screening: Galvanized steel or aluminum

E. Interior metal liner panels: 26 ga Butlerib® II panels exposed fasteners as furnished by Butler Manufacturing Company and installed in accordance with the manufacturer's instructions. Panel height to be 8’-0” and attached to metal building system girts. Finish to be Kynar 500 and selected from standard colors.

F. Pipe Flashing: Premolded, EPDM pipe collar with flexible aluminum ring bonded to base.

2.10 SOURCE QUALITY CONTROL

A. Testing Agency: Contractor will engage a qualified testing agency to evaluate field welds and bolt connections as required per International Building Code.

B. Special Inspector: Contractor will engage a qualified special inspector to perform the following tests and inspections and to submit reports. Special inspector will verify that manufacturer maintains detailed fabrication and quality-control procedures and will review the completeness and adequacy of those procedures to perform the Work.
   1. Special inspections will not be required if fabrication is performed by manufacturer registered and approved by authorities having jurisdiction to perform such Work without special inspection.

a. After fabrication, submit copy of certificate of compliance to authorities having jurisdiction, certifying that Work was performed according to Contract requirements.

C. Testing: Test and inspect field connections for metal buildings according to the following:
1. Bolted Connections: Shop-bolted connections shall be tested and inspected according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."
2. Field Welded Connections: In addition to visual inspection, connections shall be tested and inspected according to AWS D1.1/D1.1M and the following inspection procedures, at inspector's option:
a. Liquid Penetrant Inspection: ASTM E 165.
b. Magnetic Particle Inspection: ASTM E 709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration will not be accepted.
c. Ultrasonic Inspection: ASTM E 164.
d. Radiographic Inspection: ASTM E 94.

D. Product will be considered defective if it does not pass tests and inspections.

E. Prepare test and inspection reports.

2.11 FABRICATION

A. General: Design components and field connections required for erection to permit easy assembly.
1. Mark each piece and part of the assembly to correspond with previously prepared erection drawings, diagrams, and instruction manuals.
2. Fabricate structural framing to produce clean, smooth cuts and bends. Punch holes of proper size, shape, and location. Members shall be free of cracks, tears, and ruptures.

B. Tolerances: Comply with MBMA's "Metal Building Systems Manual" for fabrication and erection tolerances.

C. Primary Framing: Shop fabricate framing components to size and section, with baseplates, bearing plates, stiffeners, and other items required for erection welded into place. Cut, form, punch, drill, and weld framing for bolted field assembly.

D. Secondary Framing: Shop fabricate framing components to size and section by roll-forming or break-forming. Cut, form, punch, drill, and weld secondary framing for bolted field connections to primary framing.

PART 3 - EXECUTION

3.1 ERECTION OF STRUCTURAL FRAMING

A. Erect metal building system according to manufacturer's written erection instructions and erection drawings.

B. Do not field cut, drill, or alter structural members without written approval from metal building system manufacturer's professional engineer.

C. Set structural framing accurately in locations and to elevations indicated, according to AISC specifications referenced in this Section. Maintain structural stability of frame during erection.

D. Base and Bearing Plates: Clean concrete- and masonry-bearing surfaces of bond-reducing materials and roughen surfaces prior to setting plates. Clean bottom surface of plates.
   1. Set plates for structural members on wedges, shims, or setting nuts as required.
   2. Tighten anchor rods after supported members have been positioned and plumbed. Do not remove wedges or shims but, if protruding, cut off flush with edge of plate before packing with grout.
   3. Promptly pack grout solidly between bearing surfaces and plates so no voids remain. Neatly finish exposed surfaces; protect grout and allow to cure. Comply with manufacturer's written installation instructions for shrinkage-resistant grouts.

E. Align and adjust structural framing before permanently fastening. Before assembly, clean bearing surfaces and other surfaces that will be in permanent contact with framing. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.
   1. Level and plumb individual members of structure.
   2. Make allowances for difference between temperature at time of erection and mean temperature when structure will be completed and in service.

F. Primary Framing and End Walls: Erect framing level, plumb, rigid, secure, and true to line. Level baseplates to a true even plane with full bearing to supporting structures, set with double-nutted anchor bolts. Use grout to obtain uniform bearing and to maintain a level base-line elevation. Moist-cure grout for not less than seven days after placement.
   1. Make field connections using high-strength bolts installed according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts" for bolt type and joint type specified.
      a. Joint Type: Snug tightened or pretensioned.

G. Secondary Framing: Erect framing level, plumb, rigid, secure, and true to line. Field bolt secondary framing to clips attached to primary framing.
   1. Provide rake or gable purlins with tight-fitting closure channels and fasciae.
   2. Locate and space wall girts to suit openings such as doors and windows.
   3. Locate canopy framing as indicated.
   4. Provide supplemental framing at entire perimeter of openings, including doors, windows, louvers, ventilators, and other penetrations of roof and walls.

H. Steel Joists: Install joists and accessories plumb, square, and true to line; securely fasten to supporting construction according to SJI's "Standard Specifications and Load Tables for Steel Joists and Joist Girders," joist manufacturer's written instructions, and requirements in this Section.
   1. Before installation, splice joists delivered to Project site in more than one piece.
   2. Space, adjust, and align joists accurately in location before permanently fastening.
   3. Install temporary bracing and erection bridging, connections, and anchors to ensure that joists are stabilized during construction.
   4. Bolt joists to supporting steel framework using carbon-steel bolts unless high-strength structural bolts are required by the manufacturer.
   5. Comply with RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts" for high-strength structural bolt installation and tightening requirements.
   6. Install and connect bridging concurrently with joist erection, before construction loads are applied. Anchor ends of bridging lines at top and bottom chords if terminating at walls or beams.

I. Bracing: Install bracing in roof and sidewalls where indicated on erection drawings.
   1. Tighten rod and cable bracing to avoid sag.
   2. Locate interior end-bay bracing only where indicated.

J. Framing for Openings: Provide shapes of proper design and size to reinforce openings and to carry loads and vibrations imposed, including equipment furnished under mechanical and electrical work. Securely attach to structural framing.

K. Erection Tolerances: Maintain erection tolerances of structural framing within AISC 303.

3.2 ACCESSORY INSTALLATION

A. General: Install accessories with positive anchorage to building and weathertight mounting and provide for thermal expansion. Coordinate installation with flashings and other components.
   1. Install components required for a complete metal roof panel assembly, including trim, copings, ridge closures, seam covers, flashings, sealants, gaskets, fillers, closure strips, and similar items.
   2. Install components for a complete metal wall panel assembly, including trim, copings, corners, seam covers, flashings, sealants, gaskets, fillers, closure strips, and similar items.
   3. Where dissimilar metals contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with corrosion-resistant coating, by applying rubberized-asphalt underlayment to each contact surface, or by other permanent separation as recommended by manufacturer.

B. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible and set units true to line and level as indicated. Install work with laps, joints, and seams that will be permanently watertight and weather resistant.
   1. Install exposed flashing and trim that is without excessive oil-canning, buckling, and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and to result in waterproof and weather-resistant performance.
   2. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet with no joints allowed within 24 inches of corner or intersection. Where lapped or bayonet-type expansion provisions cannot be used or would not be sufficiently weather resistant and waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with mastic sealant (concealed within joints).

C. Gutters: Join sections with riveted-and-soldered or lapped-and-sealed joints. Attach gutters to eave with gutter hangers spaced as required for gutter size, but not more than 36 inches o.c. using manufacturer's standard fasteners. Provide end closures and seal watertight with sealant. Provide for thermal expansion.

D. Downspouts: Join sections with 1-1/2-inch telescoping joints. Provide fasteners designed to hold downspouts securely 1 inch away from walls; locate fasteners at top and bottom and at approximately 60 inches o.c. in between.
   1. Provide elbows at base of downspouts to direct water away from building.
   2. Tie downspouts to underground drainage system indicated.

E. Pipe Flashing: Form flashing around pipe penetration and metal roof panels. Fasten and seal to panel as recommended by manufacturer.

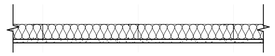
END OF SECTION 133419

KEYNOTE LEGEND

A1	TRENCH DRAIN WITH 19W4 GALVANIZED GRATING- REFERENCE STRUCTURAL & PLUMBING DRAWINGS.
A2	BOLLARD PER STRUCTURAL DETAIL- TYPICAL ADJACENT TO EXTERIOR OPENING OF ALL OVERHEAD DOORS.
A3	MOP SINK- REFERENCE PLUMBING DRAWINGS & SPECS.
A4	DRINKING FOUNTAIN- REFERENCE PLUMBING DRAWINGS & SPECS.
A5	WORK SINK- REFERENCE PLUMBING DRAWINGS & SPECS.
A6	EYE WASH STATION- REFERENCE PLUMBING DRAWINGS & SPECS.
A7	COMPRESSOR PER SPECS.
A8	HIGH PRESSURE WASHER- REFERENCE PLUMBING DRAWINGS & SPECS.
A9	HIGH VOLUME HOSE REEL (ABOVE PLATFORM) PER SPECS.
A10	WAND SCABBARD, HOSE REEL & WASH CONTROL PER SPECS- REFERENCE DETAIL 8K/A301.
A11	WAND SCABBARD, HOSE REEL & WASH CONTROL (BELOW PLATFORM) PER SPECS- REFERENCE DETAIL 8K/A301 & SECTION 4A/501.
A12	PREFABRICATED FIBERGLASS PLATFORM & STAIRS WITH RAILING PER SPECS.
A13	NEW 6"X6" CONCRETE CURB PAINTED SAFETY YELLOW.
A14	EXISTING BRINE TANK.
A15	PROVIDE 3/4" TREATED PLYWOOD FULL HEIGHT TO DECK ON EXISTING LOADING/UNLOADING SIDE OF WALL.
A16	REMOVE EXISTING DOOR & FRAME & PREP OPENING FOR NEW FRAMING INFILL.
A17	REMOVE PORTION OF EXISTING WALL & PREP FOR NEW DOOR & FRAME.
A18	INFILL SHADED AREA TO LEVEL HEIGHT & FEATHER INTO EXISTING FLOOR LEVEL.
A19	4'TALL X 16'WIDE SWING GATE FABRICATED WITH 4" SQUARE 11 GA GALVANIZED STEEL. GATE CONTROLLED BY AUTOMATIC OPERATOR PER SPECS.
A20	GATE ACCESS CONTROL POST PER DETAIL ON SHEET A301.
A21	GATE KNOX SWITCH PER CITY OF TOWN & COUNTRY FIRE DEPARTMENT REQUIREMENTS.
A22	GATE OPERATOR- SIZE, LOCATION & CONCRETE PAD SIZE PER MANUFACTURER.

S2B

STC RATING: **NR**
FIRE RATING: NR



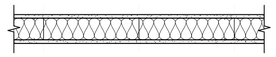
ASSEMBLY:

FRAMING (METAL): 2-1/2" METAL STUDS, WITH THERMAL INSULATION (FULL HEIGHT TO ROOF DECK)
GYPSUM BOARD: (1) LAYER 5/8" THICK GYPSUM BOARD (FULL HEIGHT TO ROOF DECK)

NOTES:
1. UNLESS NOTED OTHERWISE, STUD AND INSULATION SIZES ARE MINIMUM FOR INDICATED ASSEMBLY
2. REFER TO STRUCTURAL DWG'S FOR GRADE AND SPACING OF STUDS

S4A

STC RATING: **NR**
FIRE RATING: NR



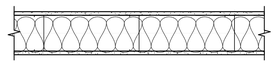
ASSEMBLY:

GYPSUM BOARD: (1) LAYER 5/8" THICK GYPSUM BOARD (FULL HEIGHT TO ROOF DECK)
FRAMING (METAL): 3-5/8" METAL STUDS, WITH SOUND BATT INSULATION (FULL HEIGHT TO ROOF DECK)
GYPSUM BOARD: (1) LAYER 5/8" THICK GYPSUM BOARD (FULL HEIGHT TO ROOF DECK)

NOTES:
1. UNLESS NOTED OTHERWISE, STUD AND INSULATION SIZES ARE MINIMUM FOR INDICATED ASSEMBLY
2. REFER TO STRUCTURAL DWG'S FOR GRADE AND SPACING OF STUDS

S6A

STC RATING: **NR**
FIRE RATING: NR

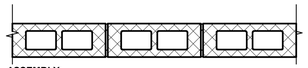


ASSEMBLY:

GYPSUM BOARD: (1) LAYER 5/8" THICK GYPSUM BOARD (FULL HEIGHT TO ROOF DECK)
FRAMING (METAL): 6" METAL STUDS, WITH SOUND BATT INSULATION (FULL HEIGHT TO ROOF DECK)
GYPSUM BOARD: (1) LAYER 5/8" THICK GYPSUM BOARD (FULL HEIGHT TO ROOF DECK)

NOTES:
1. UNLESS NOTED OTHERWISE, STUD AND INSULATION SIZES ARE MINIMUM FOR INDICATED ASSEMBLY.
2. REFER TO STRUCTURAL DWG'S FOR GRADE AND SPACING OF STUDS

CMU6

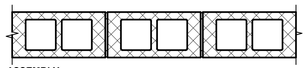


ASSEMBLY:

CMU: (6"W BY 8"H BY 16"L) CONCRETE MASONRY UNITS

NOTES:
1. REFER TO STRUCTURAL DWG' FOR MORE INFOMRATION

CMU8



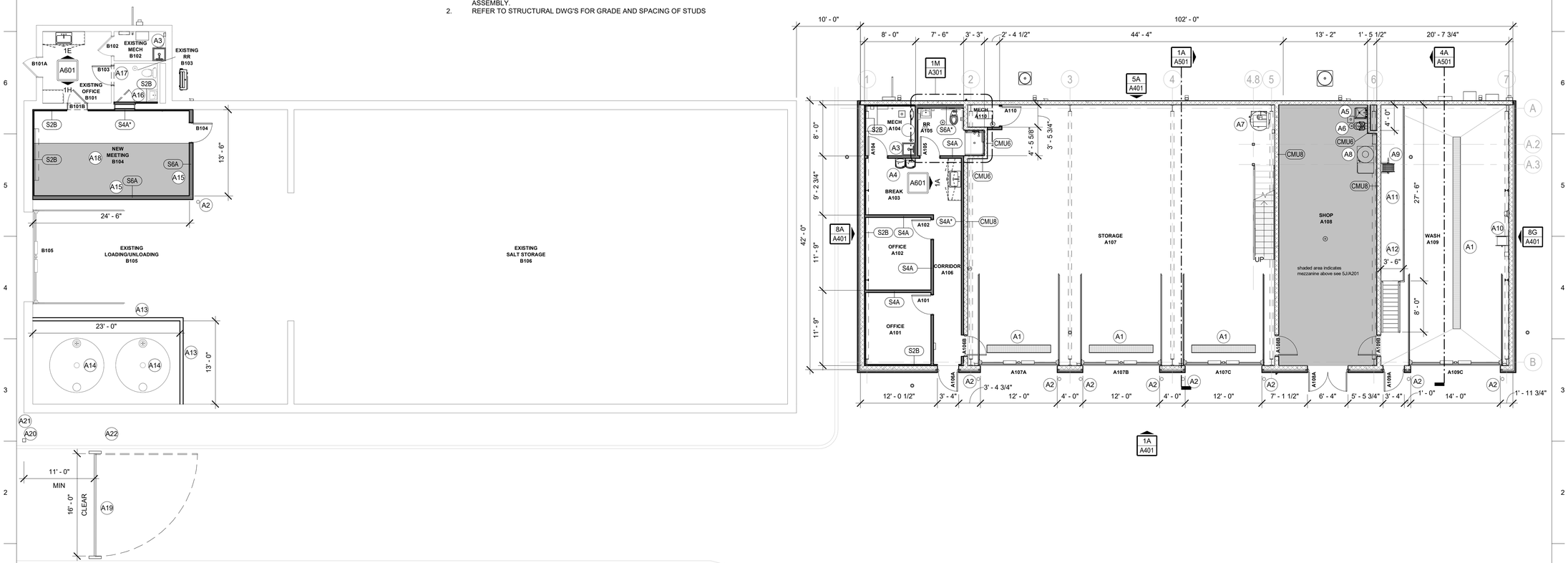
ASSEMBLY:

CMU: (8"W BY 8"H BY 16"L) CONCRETE MASONRY UNITS

NOTES:
1. REFER TO STRUCTURAL DWG' FOR MORE INFOMRATION

GENERAL NOTES - FLOOR PLAN

1. ALL DIMENSIONS INDICATED IN CONTRACT DOCUMENTS ARE FROM FACE OF STUD TO FACE OF STUD FOR INTERIOR PARTITIONS, FACE OF EXISTING STRUCTURE OR FINISH, FACE OF CONCRETE OR BLOCK, OR TO STRUCTURAL LINE, EXCEPT AS NOTED OTHERWISE. DIMENSIONS OF EXISTING STRUCTURE, ETC. ARE +/- AND SHOULD BE FIELD VERIFIED PRIOR TO COMMENCEMENT OF WORK AND ARCHITECT NOTIFIED OF ANY DISCREPANCIES
2. EQUIPMENT SHOWN ON THIS PLAN IS FOR REFERENCE ONLY. SEE EQUIPMENT, MECHANICAL, PLUMBING, AND/OR ELECTRICAL PLANS FOR ADDITIONAL INFORMATION.
3. COORDINATE WITH OWNER ON OWNER SUPPLIED APPLIANCES AND EQUIPMENT PRIOR TO FABRICATION/INSTALLATION.
4. GENERAL CONTRACTOR SHALL PROVIDE SLIP-DEFLECTION TRACKS AT TOP OF ALL METAL STUD WALLS NOTED TIGHT TO STRUCTURE TYP. SEE SPECIFICATIONS FOR MORE INFORMATION. IF NO SPECIFICATIONS ARE PROVIDED, FOLLOW MANUFACTURER WRITTEN RECOMMENDATIONS AND STANDARD PRACTICE.
5. WALL TYPES INDICATE TYPICAL CONDITIONS, SOME CONDITIONS MAY VARY, REFER TO SECTIONS, INTERIOR ELEVATIONS AND STRUCTURAL DRAWINGS FOR ADDITIONAL DETAILS WALL SECTIONS INDICATE PRIMARY WALL TYPE. OVERLAID VENEERS, WAINSCOT, PILASTERS, PAINT, WALL COVERINGS ETC. ARE INDICATED ON FLOOR PLANS, FINISH PLANS INTERIOR ELEVATIONS, SCHEDULES, SPECIFICATIONS OR OTHER DETAILS.
6. GENERAL CONTRACTOR TO PROVIDE ALL BACKING AS REQUIRED IN WALL FOR CABINETS, FIRE EXTINGUISHER CABINETS, GRAB BARS, BATHROOM ACCESSORIES, WALL STOP LOCATIONS, ETC. AS REQUIRED.
7. PENETRATIONS OF PIPES, CONDUIT, DUCTS AND VENTS THROUGH RATED ASSEMBLIES SHALL BE PROTECTED AS REQUIRED TO MAINTAIN ASSEMBLY RATING.
8. BRACE ALL METAL STUD WALLS NOT NOTED TIGHT TO DECK AT 48" O.C. WITH STAGGERED DIAGONAL BRACING PER ASTM AND METAL STUD INDUSTRY STANDARDS.
9. CONTRACTOR SHALL ADJUST METAL STUD SIZE AS REQUIRED TO ACCOMMODATE ANY STRUCTURAL, MECHANICAL, PLUMBING, ETC. ITEMS THAT REQUIRES MORE DEPTH. - COORDINATE WITH ARCHITECT.
10. PROVIDE V93 DRYWALL CONTROL JOINTS ON WALL SECTIONS LONGER THAN 30'-0" O.C. MAX. AND NO AREA ABOVE 900 SF WITHOUT CONTROL JOINT. VERIFY LOCATIONS WITH ARCHITECT.
11. ALL WALL INSULATION SHALL EXTEND THE FULL HEIGHT OF THE GYP. BD. UNLESS NOTED OTHERWISE.
12. INTERIOR NON-LOAD BEARING WALLS SHALL BE INSTALLED PER METAL STUD MANUFACTURER'S LIMITING HEIGHT / GAGE INFORMATION. INTERIOR WALL FRAMING TO ACCOMMODATE A LATERAL LOAD OF 5 POUNDS PER SQUARE FOOT (PSF) WITH A DEFLECTION LIMIT OF L/360.
13. RECESSED FIXTURE SUCH AS OUTLETS SHOULD NOT BE PLACED BACK TO BACK IN THE SAME STUD CAVITY.
14. ALL WALLS WITH PLUMBING FIXTURES SHALL RECEIVE MOISTURE AND MOLD RESISTANT GYPSUM BOARD - BASIS OF DESIGN 5/8" FIRE RESISTANT GYPSUM BOARD (GOLDBOND BRAND XP GYP. BD WITH SPORGUARD OR EQUAL), BOTH SIDES OF WALL TYP. UNLESS ABUTTING SURFACE. ALL WALLS IN RESTROOMS, KITCHENS, JANITOR, LOCKER AND SHOWER ROOMS SHALL RECEIVE MOLD, MILDEW AND MOISTURE RESISTANT GYPSUM BOARD, BASIS OF DESIGN 5/8" FIRE RESISTANT GYPSUM BOARD (GOLDBOND BRAND XXP GYP. BD WITH SPORGUARD OR EQUAL).
15. ARCHITECTS RECOMMENDATION ON RESTROOM PARTITIONS: ALL PARTITION TYPES TO RECEIVE ACOUSTIC SEALANT ON BOTH SIDES OF THE WALL AT TOP AND BOTTOM.



1A
A401

1A
A101
scale: 1/8" = 1'-0"

OVERALL FLOOR PLANS

hdesigngroup
5039 S National Avenue | Springfield, MO 65810 | 417.887.6595

OWNER
THE CITY OF TOWN & COUNTRY
1011 MUNICIPAL CENTER DRIVE
TOWN & COUNTRY, MO 63131

PROJECT TEAM
CIVIL ENGINEER
STOCK & ASSOCIATES
257 CHESTERFIELD BUSINESS PKWY
CHESTERFIELD, MO 63005
636.530.9100

STRUCTURAL ENGINEER
METTEMEYER ENGINEERING
2225 CHESTERFIELD BLVD SUITE 300
SPRINGFIELD, MO 65807
417.890.8002

MEP ENGINEER
TRUE ENGINEERING GROUP
1200 E WOODHURST DR SUITE P
SPRINGFIELD, MO 65804
417.708.7025

INTERIOR DESIGN
GRAY DESIGN GROUP
349 MARSHALL AVENUE, SUITE 100
SAINT LOUIS, MO 63119
314.646.0400

REVISIONS

NO.	DESCRIPTION	DATE
1	ADD 01	04.21.26

PROJECT NO.: 25-060 DRAWN BY: HDG
DATE: 04.02.26 REVIEWED BY: HDG

PROFESSIONAL SEAL
BRENT STEVENS, AIA
PROFESSIONAL TITLE: ARCHITECT
LICENSE: A-2000151419

STATE OF MISSOURI
BRENT M. STEVENS
NUMBER
MO A-2000151419
ARCHITECT
Brent Stevens
Digitally signed by Brent Stevens
DN: C=US, E=brent@hdesigngroup.com, OU=H Design Group, OU=Architect, CN=Brent Stevens
Date: 2026.04.20 22:59:47-05'00'

PROJECT TITLE
TOWN & COUNTRY MAINTENANCE ANNEX
PROJECT ADDRESS:
849 SALT MILL ROAD
TOWN & COUNTRY, MO 63017

OVERALL FLOOR PLANS

SHEET
A101