Construction Manager

RUSH COUNTY SCHOOL CORPORATION

Rushville Elementary School Renovations

ADDENDUM NO. 3

To: ALL BIDDERS OF RECORD

Date of Issue: **May 28TH, 2024**

This Addendum is issued before Award of Contract to inform the Bidders of revisions to the Bidding Documents, of which includes Multiple Prime Contract Bids.

All requirements contained in the Bidding Documents shall apply to this Addendum. The general character of the work called for in this Addendum shall be the same as originally set forth in the applicable portions of the Bidding Documents for similar work, unless otherwise specified under this Addendum. All incidental work necessitated by this Addendum, as required to complete the work, shall be included in the bid even though not particularly mentioned in this Addendum.

This Addendum modifies the Bidding and Contract Requirements of the specifications and drawings dated May 2024 for bidding. This Addendum is hereby made a part of the Bidding Documents and shall be included in the Contract.

Acknowledge receipt of this Addendum in the appropriate space on the Bid Form. Failure to do so may subject the Bidder to disqualification.

PROJECT MANUAL SPECIFICATION REVISIONS

- DIVISION 00 SECTION "00 00 10: Table of Contents" – **REVISED/ UPDATED**
  - 23.01.30.52: Existing HVAC Air Distribution System Cleaning – **REMOVED**
  - 23.82.16.11: Hydronic Air Coils - **REMOVED**
- DIVISION 00 SECTION "00 42 00: Supplementary Bid Form" – **REVISED/ UPDATED**
- DIVISION 00 SECTION "00 70 00: Conditions of the Contract"
  - General Sales Tax Exemption Certificate (Form ST-105) - **UPDATED**
- DIVISION 04 SECTION "04 20 00: Unit Masonry" – **NEW**
- DIVISION 09 SECTION "09 30 00: Tiling" – **REVISED/ UPDATED**
- DIVISION 09 SECTION "09 65 66: Synthetic Athletic Flooring and Track Surface" – **NEW**
- DIVISION 10 SECTION "10 22 23: Cubicles" – **NEW**
- DIVISION 11 SECTION "11 66 23: Gymnasium Equipment (Safety Wall Padding)" – **NEW**
- DIVISION 23 SECTION "23 74 16.13: Packaged, Large Capacity, Rooftop Air-Handling Units" – **REVISED**

CONTRACTOR Q&A

- ATTACHED

DRAWING(S) REVISIONS

- A100- OVERALL FLOOR PLAN
- A103-ARCHITECTURAL FLOOR PLAN – UNIT C
- A503-TOILET & MEDIA CENTER ENLARGED PLAN & DETAILS
- A703-ROOM FINISH SCHEDULE

VPS ARCHITECTURE

528 Main Street – Suite 400 Evansville Indiana 47708
P (812) 423-7729 F (812) 425-4561
www.vpsarch.com

Distribution: To all Plan holders

ADDENDUM NO. 3 (THREE)

DATE: **May 28th, 2024**
PROJECT: **Renovations to Rushville Elementary School**
OWNER: **Rush County Schools**
PROJECT NO.: **23-101-001-02, 2023021.00**

The original Specifications and Drawings dated May 3rd, 2024, for the project referenced above, are amended as noted in this Addendum No. 3 (Three). Receipt of this Addendum and any subsequent Addenda must be acknowledged on the Proposal Form.

This section of the Addendum consists of 5 items and 5 attachments.

ITEM DESCRIPTION

Drawing Items:

2-1 A100:

A. Alternate #8: Extent of alternate indicated on plan in attached revision.

B. Alternate #10 no longer used in project. Interior elevation 2/A100 details Alternate #8

2-2 A103:

A. Existing window in Conference Room C103 to remain.

B. Cabinets removed from storage rooms C129B and C135B in attached revision. No casework to be included in these rooms.

C. Media Center C120 casework elevations added.

2-3 A503:

A. Individual restroom enlarged details added (A106, D106, C106, C107). See 1/A504 for typical detail for individual restrooms C129A, C131A, C135A, and C137A.

2-4 A703:

A. Corridor E100 shall receive new finishes, see updated finish schedule in attached revision. Corridor E100 shall not be included in extent of alternate #8.

VPS ARCHITECTURE

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www.vpsarch.com

B. Cafeteria B101 shall receive new LVT flooring and walls shall receive Epoxy System (Water Base), Semi-Gloss Finish (Section 09 91 23)

C. Gymnasium B102 shall receive new synthetic flooring and walls shall receive Epoxy System (Water Base), Semi-Gloss Finish (Section 09 91 23)

D. Corridors shall receive new LVT flooring and acoustic ceiling tiles.

E. Rooms B101A, B101B, B102A, B102B, and C128A are no longer in the project and have been removed from the room finish schedule in attached revision.

F. Tech Office C114 existing finishes shall remain.

PREPARED BY: Shelby Hamilton

Attachments:

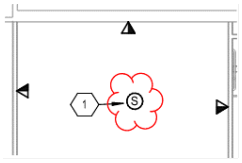
A100
A103
A503
A703

ADDENDA # 3

MAY 28th, 2024

CONTRACTOR BID QUESTIONS & ANSWERS

1. There are no speakers shown on the drawings for alternates 2 & 3, but they are addressed in the notes. Can you verify if there are any to be dealt with, please?
   a. **Units A, D and E (B has no speaker work scope included) show speaker put back with Note #1 pointing to the speaker symbol: >>>>>>>>>>>>>>>>>>>>>>>>>>**



2. The phasing and alternate drawing in vol. 1 of the spec's show the kitchen as being alternate #7. However, drawing FS1.1 states equipment to be demoed in alternate #1. Need clarification.
   a. **The Kitchen drawings are alternate #7. Alternate #1 shown on the kitchen drawings will become Alternate #7a. Issued in Addenda 2.**

3. Nurses station shows cubicle tracks and curtains. Are these Owner provided?
   a. **Refer to Specification *Section 10 22 23: Cubicles,* provided in this Addenda.**

4. Specification Section 230713; 3.8 (Duct Insulation) specifies 3#d (Rigid) Fiberglass Insulation for the Concealed Supply and Outdoor Air. Rigid Board and is typically for use in EXPOSED areas. Can we get a clarification issued to get either ¾#d or 1#d approved in concealed areas?

3.8 INDOOR DUCT AND PLENUM INSULATION SCHEDULE

A. Concealed, round and flat-oval, supply-air duct insulation is the following:
1. Glass-Fiber Blanket: 1-1/2 inches thick and 3 lb/cu. ft. nominal density.

B. Concealed, rectangular, supply-air duct insulation is the following:
1. Glass-Fiber Blanket: 1-1/2 inches thick and 3 lb/cu. ft. nominal density.

C. Concealed, rectangular, outdoor-air duct insulation is the following:
1. Glass-Fiber Blanket: 1-1/2 thick and 3 lb/cu. ft. nominal density.

END OF SECTION 23 07 13

   a. **The specified insulation type for concealed duct is glass-fiber blanket insulation. 1lb density is acceptable for blanket insulation.**

5. Can you confirm if there will be an onsite storge area for the existing/relocated kitchen equipment that we may use?
   a. **If the kitchen is not in operation due to the equipment being in the installation phase, then the cafeteria could be used for storage.**

6. If alternate #8 is accepted, will electrical contractor be responsible for removing device plates so that the wall coverings can be applied?
   a. **Yes.**

7. Could you please issue a masonry specification? There is quite a bit of masonry.
   a. **Refer to Specification *Section 04 20 00: Unit Masonry*, provided in this Addenda.**

8. I need more clarification on the alternates, I need to know what alternate the restrooms belong in, the restrooms room numbers are not listed in the alternates. Example: Alternate number one you have the room numbers listed but not the restrooms room numbers (E103B & E104B) are you doing the restrooms under alternate one or under base bid.
    a. **Refer to drawing page A105 for Room numbers. Regarding Unit E- PD105, PD104, PP105 – all areas shown are part of Alt.**

9. How is power to be taken to the Server area? I see neither a directive for floor saw cuts nor a raceway from overhead to feed the equipment. Can I get clarification?
    a. **Power will be supplied to the serving equipment by extension cords from the existing electrical outlets.**

10. Note #5 on drawings EL101 and EL102 says to provide flat panel that is similar. Is there any further information coming regarding this or do we provide what we think is sufficient?
    a. **Provide flat panel light fixture as manufactured by "Energy Harness" or equal.**

11. Room finish schedule 'A703' has finishes tagged in B101A, B101B, B102A, B102B & C138A but these rooms aren't shown on the floor plans. Please advise if these finishes are needed and please provide a plan for these areas (will exclude until further clarification).
    a. **Rooms B101A, B101B, B102A, B102B, and C128A are no longer in the project and have been removed from the room finish schedule. Refer to the revised drawing, A703: Room Finish Schedule, included in this Addenda.**

12. This project is noted as a sealed bid in the invitation to bid, but I don't see any bid packages. Will these be released?
    a. **Bid Packages are listed in "Section 01 10 00: Summary" & "01 12 00: Multiple Contract Summary."**

13. Alternate 2 & Alternate 7 notes to provide finished work in cafeteria B101 & kitchen prep area but doesn't note what finishes are needed. Please advise if flooring is needed and if so what type of flooring (will exclude until further clarification).
    a. **Cafeteria B101 shall receive new LVT flooring and walls shall receive Epoxy System (Water Base), Semi-Gloss Finish (Section 09 91 23).**
    b. **Kitchen Prep B101A shall receive new Quarry Tile floor finishes and walls shall receive Epoxy System (Water Base), Semi-Gloss Finish (Section 09 91 23).**

14. During the Pre-Bid we discussed who does what on demo. Can you please define this further including who removes items specifically on the MEP and technology drawings.
    a. **Refer to Addendum #2.**

15. Regarding scope, we assume the MEP trades provide their own housekeeping pads and roof cut and patch.
    a. **Correct.**

16. Alternate #2 - Finish schedule has no flooring listed for Cafeteria B101 If new flooring is to be installed as part of new finishes for this Alternate #2, can information of the desired selections and details be provided?
    a. **Cafeteria B101 shall receive new LVT flooring and walls shall receive Epoxy System (Water Base), Semi-Gloss Finish (Section 09 91 23).**
    b. **Kitchen Prep B101A shall receive new Quarry Tile floor finishes and walls shall receive Epoxy System (Water Base), Semi-Gloss Finish (Section 09 91 23).**

17. Alternate #3 - Finish schedule has no flooring listed for Gymnasium B102. If new flooring is to be installed as part of new finishes for this Alternate #3, can information of the desired selection and details be provided, included Specification Section for the Synthetic Floor & Installation
    a. **Gymnasium B102 shall receive new synthetic flooring and walls shall receive Epoxy System (Water Base), Semi-Gloss Finish (Section 09 91 23).**

18. Alternate #1 - Corridor E100 has both ETR and LVT listed on the Finish Schedule on A703. Is ETR to be the base bid and LVT to be included as part of Alternate #1 or is new LVT and Resilient Base to be part of the Base Bid?
    a. **Corridor E100 shall receive new finishes, see revised finish schedule, A703: Room Finish Schedule. Corridor E100 shall not be included in extent of Alt. # 8.**

19. Alternate #7 - Finish schedule room or number indicated for Kitchen Floor Prep. If new flooring is to be installed as part of new finishes for this Alternate #7, can information of the desired selections and details be provided?
    a. **Cafeteria B101 shall receive new LVT flooring and walls shall receive Epoxy System (Water Base), Semi-Gloss Finish (Section 09 91 23).**
    b. **Kitchen Prep B101A shall receive new Quarry Tile floor finishes and walls shall receive Epoxy System (Water Base), Semi-Gloss Finish (Section 09 91 23).**

20. Wall Tile Installation - There are no elevations or notations for any of the wall tile installations. Should full height on all walls be assumed for bidding purposes? If not, could details be provided for indication of walls and height AFF, as typical for all or each area where new wall tile is to be installed? Are there wall heights available for the type A and D wall?
    a. **Refer to detail 2/A100.**

21. A100 note alternate #10 for some tack strip and LVT wall covering. Is this still part of the project? I do not see where alternate 10 is called out.
    a. **Alternate #8: Extent of alternate indicated on the revised drawing, A100: Overall Floor Plan. Alternate #10 no longer used in project. Interior elevation 2/A100 details Alternate #8.**

22. Do you have details for the individual restrooms in the alternative and base bid. Nothing is shown for these in the blow ups. A106, c135c, c137c, c131c, c129c, c135b, c107, c106, d106.
    a. **A503: Individual restroom enlarged details added (A106, D106, C106, C107). See 1/A504 for typical detail for individual restrooms C129A, C131A, C135A, and C137A.**

23. Is new casework required in c135B and c129b?
    a. **Cabinets removed from storage rooms C129B and C135B in attached revision. No casework to be included in these rooms.**

24. Is the media center casework part of the contract?
    a. **Media Center C120 and classroom bookshelf casework elevations added to sheet A503.**

25. Is the media center desk new or ETR?
    a. **Media Center C120 and classroom bookshelf casework elevations added to sheet A503.**

26. Is the reception area casework new or ETR?
    a. **New.**

27. Are the bookcases noted in some of the classroom's part of the contract or FFE – example: note 17 room c132 2/a504.
    a. **Media Center C120 and classroom bookshelf casework elevations added to sheet A503.**

28. Do you have a spec for the calm room wall padding?
    a. **Refer to Spec Section "11 66 23: Gymnasium Equipment (Safety Wall Padding)"**

29. Do you have a proposed completion date for phase 3 alternate 1?
    a. **10/15/2025**

30. Alternate #1 - Corridor E100 has both ETR and LVT listed on the Finish Schedule on A703. Is ETR to be the base bid and LVT to be included as part of Alternate #1 or is new LVT and Resilient Base to be part of the Base Bid?
    a. **Corridor E100 shall receive new finishes, see revised finish schedule, A703: Room Finish Schedule. Corridor E100 shall not be included in extent of Alt. # 8.**

31. Alternate 2 – Cafeteria B101 – There is no finish schedule for this alternate. If new flooring is to be installed as part of new finishes for this Alternate #2, can information of the desired selections and details be provided?
    a. **Cafeteria B101 shall receive new LVT flooring and walls shall receive Epoxy System (Water Base), Semi-Gloss Finish (Section 09 91 23).**

b. **Kitchen Prep B101A shall receive new Quarry Tile floor finishes and walls shall receive Epoxy System (Water Base), Semi-Gloss Finish (Section 09 91 23).**

32. Alternate 3 – Gymnasium B102 – Gymnasium - There is no finish schedule for this alternate. If new flooring is to be installed as part of new finishes for this Alternate #3, can information of the desired selection and details be provided, included Specification Section for the Synthetic Floor & Installation.
    a. **Gymnasium B102 shall receive new synthetic flooring and walls shall receive Epoxy System (Water Base), Semi-Gloss Finish (Section 09 91 23).**

33. Alternate 7 – Please confirm this is Alternate #1 indicated on the FS drawings. Finish schedule room or number indicated for Kitchen Floor Prep. If new flooring is to be installed as part of new finishes for this Alternate #7, can information of the desired selections and details be provided?
    a. **Refer to A703: Room Finish Schedule.**

34. Alternate 8 – LVT wall coverings in main corridors. I need to know what the main corridors are. Room numbers would be helpful. Detail 2/A100. There is no specification for a "LVT wall covering". The extent of this alternate is not indicated on plans – please identify the corridors to receive this alternate work. Also, there is a 2" tack strip and corner guard indicated – are these existing or new? If new, please provide a specification for each. Should Corridor E100 also be included in "main corridors" for the LVT wall finish per Alternate #8.
    a. **Alternate #8: Extent of alternate indicated on the revised drawing, A100: Overall Floor Plan. Alternate #10 no longer used in project. Interior elevation 2/A100 details Alternate #8.**

35. Should Corridor E100 also be included in "main corridors" for the LVT wall finish per Alternate #8?
    a. **Alternate #8: Extent of alternate indicated on the revised drawing, A100: Overall Floor Plan. Alternate #10 no longer used in project. Interior elevation 2/A100 details Alternate #8. Corridor E100 shall receive new finishes, see revised finish schedule, A703: Room Finish Schedule. Corridor E100 shall not be included in extent of Alt. # 8.**

36. On drawing A703 Finish Schedule: The following rooms are not found our noted on the drawings; B101A, B101B, B102A, B102B, C128A
    a. **Rooms B101A, B101B, B102A, B102B, and C128A are no longer in the project and have been removed from the room finish schedule. Refer to the revised drawing, A703: Room Finish Schedule, included in this Addenda.**

37. On Drawing A103, Room #114 is shown as Tech Office, but no flooring finishes for that room are listed or shown on Finish Drawing A703 - Confirm no Flooring or base?
    a. **Tech Office C114 existing finishes shall remain.**

38. Sheet A103 issued by addendum would seem to indicate new flooring in the corridors (letter size drawings), full size drawings can't be read. The corridors are not indicated on the finish schedule. However, it appears the corridors get new ceiling tile. Can you provide clarification?
    a. **Corridors shall receive new LVT flooring and acoustic ceiling tiles.**

39. What alternate does the restrooms belong in; the restrooms room numbers are not listed in the alternates? An example: "Alternate number one you have the room numbers listed but not the restrooms room numbers (E103B & E104B)." & Is the restrooms under alternate number one or under base bid?
    a. **All renovations to Unit E are to be included in Alternate #1.**

END OF DOCUMENT 00 00 10

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SECTION 00 42 00 - SUPPLEMENTARY BID FORM

FOR (PROJECT): **Rushville Elementary School Renovation**

TO (OWNER): Rushville Community School Corporation
330 west 8th Street
Rushville, Indiana 46173

Attn: Jim Jameson, Superintendent, Rushville School Corporation

BY (CONTRACTOR): Company Name: _____

Address Line 1: _____

Address Line 2: _____

Person Submitting and Title: _____

Phone Number: _____

Pursuant to notices given, the undersigned proposes to complete the Work of the Project according to Bidding Documents prepared by: **SCS Construction Services, Inc.,** *173 East Broadway Street Suite 100, Greenwood, Indiana 46143* for the sum of:

Rushville Community School Corporation

PROJECT: _____

BASE BID:

_____ $ _____
(Amount in words) *prevails in case of irregularity (numbers)

ALLOWANCES:

The undersigned acknowledges that the base bid amount includes the following allowances applicable to its Contract in accordance with Division 01 Section “Allowances”:

Bid Package Allowance – Initial:_____

NAMES AND EXPERIENCE:

List names of the following and the years of experience in work comparable to the size and scope of Work of this Project. It is expected that those listed below will be the daily onsite representation and emergency contact for successful bidder.

Bidding Contractor’s Job Superintendent:_____
Years Experience:_____

ALTERNATE BIDS:

The undersigned also proposes to furnish or omit all labor and material necessary to complete work as required by the “Alternate Bids”, as provide for in the drawings and specifications as follows:

Alternate #1 – Provide price to renovate the Life Skills rooms (E102 & E103) & Pre-K Rooms (E104 & E105) –[Unit E]

_____ Add $_____
(Amount in Words) *prevails in case of irregularity (numbers)

Alternate #2 – Provide price to complete the finished work in Cafeteria B101.

_____ Add $_____
(Amount in Words) *prevails in case of irregularity (numbers)

Alternate #3 – Provide price to furnish and install a new synthetic floor and finishes in Gymnasium B102.

_____ Add $_____
(Amount in Words) *prevails in case of irregularity (numbers)

Alternate #4 – Provide price to construct the Staff Restrooms (A106 &D106) & Workrooms (A107 &D107) – **[Units A & D]**

_____ Add $_____
(Amount in Words) *prevails in case of irregularity (numbers)

Alternate #5 – Provide price to construct Workrooms A113 and D113 – **[Unit(s) A & D]**

_____ Add $_____
(Amount in Words) *prevails in case of irregularity (numbers)

Alternate #6 – Provide price to renovate Restrooms C115 and C116 – **[Unit C]**

_____ Add $_____
(Amount in Words) *prevails in case of irregularity (numbers)

Alternate #7 – Provide pricing for the renovation and reorganization of the Kitchen / Cafeteria.

_____ Add $_____
(Amount in Words) *prevails in case of irregularity (numbers)

Alternate #7a – Provide price for kitchen prep area/ counters and equipment relocation.

_____ Add $_____
(Amount in Words) *prevails in case of irregularity (numbers)

Alternate #8 – Provide price to install LVT wallcoverings in Main Corridors as indicated in the drawings.

_____ Add $_____
(Amount in Words) *prevails in case of irregularity (numbers)

Alternate #9 – Provide price to replace RTU #5 with new unit.

_____ Add $_____
(Amount in Words) *prevails in case of irregularity (numbers)

ADDENDA:

The undersigned acknowledges receipt of the following Addenda and agrees that this proposal includes all items mentioned in such Addenda:

No. _____ Date _____ No. _____ Date _____

No. _____ Date _____ No. _____ Date_____

COMPLETION OF WORK:

The undersigned guarantees, if awarded the contract, to complete their scope of Work by the milestone dates set forth in the published project schedule.

Attended Pre-bid Conference: YES NO

Has visited the Jobsite: YES NO

BIDDER'S SIGNATURE:

IN TESTIMONY WHEREOF, the Bidder (an individual) has hereunto set his hand this

_____day of _____, 202__.

_____
(Individual)

IN TESTIMONY WHEREOF, the Bidder (a firm) have hereunto set their hands this

_____day of _____, 202__.

Firm Name:_____

By _____

By _____

IN TESTIMONY WHEREOF, the Bidder (a Corporation) has caused this proposal to be signed by its President and Secretary and affixed its corporate seal this

_____day of _____, 202__.

Name of Corporation:_____

President _____

Secretary _____

OATH AND AFFIRMATION:

I affirm under the penalties of perjury that the foregoing facts and information are true and correct to the best of my knowledge and belief.

Subscribed and sworn to before me by _____

this _____day of _____, 202__.

My Commission expires _____.

_____
Notary Public

ADDENDA # 3

Form ST-105
State Form 49065
(R7 / 6-23)

Indiana Department of Revenue
General Sales Tax Exemption Certificate

Indiana registered retail merchants and businesses located outside Indiana may use this certificate. The claimed exemption must be allowed by Indiana code. Exemption statutes of other states are not valid for purchases from Indiana vendors. **This exemption certificate can not be issued for the purchase of *Utilities*, *Vehicles*, *Watercraft*, *Aircraft*, or *Gasoline*. *In addition, this exemption certificate may not be issued by a nonprofit organization.*** Purchaser must be registered with the Department of Revenue or the appropriate taxing authority of the purchaser's state of residence.

Sales tax must be charged unless all information in each section is fully completed by the purchaser. Purchasers not able to provide all required information must pay the tax and may file a claim for refund (Form GA-110L) directly with the Department of Revenue. A valid certificate also serves as an exemption certificate for (1) county innkeeper's tax and (2) local food and beverage tax.

Section 1 (print only)

Name of Purchaser: Rush County Schools

Business Address: 330 W 8th St City: Rushville State: IN ZIP Code: 46173

Purchaser must provide minimum of one ID number below.*

Provide your Indiana Registered Retail Merchant's Certificate TID and LOC Number as shown on your Certificate.

TID Number (10 digits): 0019182490 - LOC Number (3 digits): 013

If not registered with the Indiana DOR, provide your State Tax ID Number from another State
***See instructions on the reverse side if you do not have either number.**

State ID Number: _____ State of Issue: _____

Section 2

Name of Seller: _____

Address of Seller: _____ City: _____ State: _____ ZIP Code: _____

Section 3

Is this a ☑ blanket purchase exemption request or a ☐ single purchase exemption request? (check one)

Description of items to be purchased: Services, supplies, and equipment

Section 4

Purchaser must indicate the type of exemption being claimed for this purchase. (check one or explain)

☐ Sales to a retailer, wholesaler, or manufacturer for **resale** only.

☐ Sale of manufacturing machinery, tools, and equipment to be used directly in direct **production**.

☐ Sales of tangible personal property predominately used (greater then 50 percent) in providing **public transportation** - provide USDOT Number. A person or corporation who is hauling under someone else's motor carrier authority, or has a contract as a **school bus operator**, must provide their SSN or FID Number in lieu of a State ID Number in Section 1.

USDOT Number: _____

☐ Sales to persons, occupationally engaged as farmers, to be used directly in production of **agricultural** products for sale. **Note:** A farmer not possessing a State Business License Number may enter a FID Number or a SSN in lieu of a State ID Number in Section 1.

☐ Sales to a **contractor** for exempt projects (such as public schools, government, or nonprofits).

☑ Sales to **Indiana Governmental Units** (agencies, cities, towns, municipalities, public schools, and state universities).

☐ Sales to the **United States Federal Government** - show agency name. _____
Note: A U.S. Government agency should enter its Federal Identification Number (FID) in Section 1 in lieu of a State ID Number.

☐ Other - explain. _____

Section 5

I hereby certify under the penalties of perjury that the property purchased by the use of this exemption certificate is to be used for an exempt purpose pursuant to the State Gross Retail Sales Tax Act, Indiana Code 6-2.5, and the item purchased is not a utility, vehicle, watercraft, aircraft, or gasoline. I further attest that the property purchased is not being purchased by a nonprofit organization.

I confirm my understanding that misuse, (*either negligent or intentional*), and/or fraudulent use of this certificate may subject both me personally and/or the business entity I represent to the imposition of tax, interest, and civil and/or criminal penalties.

Signature of Purchaser: Julie Cramer Date: January 8, 2024

Printed Name: Julie Cramer Title: Treasurer

The Indiana Department of Revenue may request verification of registration in another state if you are an out-of-state purchaser.
Seller must keep this certificate on file to support exempt sales.

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. This Section includes unit masonry assemblies consisting of the following:

1. Concrete masonry units (CMUs).
2. Flexible flashing.
3. Face brick.
4. Mortar and grout.
5. Reinforcing steel.
6. Masonry joint reinforcement.
7. Ties and anchors.
8. Embedded flashing.
9. Miscellaneous masonry accessories.
10. Cavity-wall insulation.

B. Related Sections include the following:

1. Division 07 Section "Joint Sealants" for sealing control and expansion joints in unit masonry.

C. Products furnished, but not installed, under this Section include the following:

1. Dovetail slots for masonry anchors, installed under Division 03 Section "Cast-in-Place Concrete."
2. Anchor sections of adjustable masonry anchors for connecting to structural frame, installed under Division 05 Section "Structural Steel Framing."

D. Products installed, but not furnished, under this Section include the following:

1. Steel lintels and shelf angles for unit masonry, furnished under Division 05 Section "Metal Fabrications."
2. Manufactured reglets in masonry joints for metal flashing, furnished under Division 07 Section "Sheet Metal Flashing and Trim."

1.3 DEFINITIONS

A. Reinforced Masonry: Masonry containing reinforcing steel in grouted cells.

1.4 PERFORMANCE REQUIREMENTS

A. Provide unit masonry that develops indicated net-area compressive strengths (f'_m) at 28 days.

B. Determine net-area compressive strength (f'_m) of masonry from average net-area compressive strengths of masonry units and mortar types (unit-strength method) according to Tables 1 and 2 in ACI 530.1/ASCE 6/TMS 602.

1.5 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: For the following:

1. Masonry Units: Show sizes, profiles, coursing, and locations of special shapes.
2. Reinforcing Steel: Detail bending and placement of unit masonry reinforcing bars. Comply with ACI 315, "Details and Detailing of Concrete Reinforcement." Show elevations of reinforced walls.
3. Fabricated Flashing: Detail corner units, end-dam units, and other special applications.

C. Samples for Initial Selection: For the following:

1. Decorative concrete masonry units, in the form of small-scale units.
2. Face brick, in the form of straps of five or more bricks.
3. Weep holes/vents.

D. List of Materials Used in Constructing Mockups: List generic product names together with manufacturers, manufacturers' product names, model numbers, lot numbers, batch numbers, source of supply, and other information as required to identify materials used. Include mix proportions for mortar and grout and source of aggregates.

1. Submittal is for information only. Neither receipt of list nor approval of mockup constitutes approval of deviations from the Contract Documents unless such deviations are specifically brought to the attention of Architect and approved in writing.

E. Qualification Data: For testing agency.

F. Material Certificates: Include statements of material properties indicating compliance with requirements including compliance with standards and type designations within standards. Provide for each type and size of the following:

1. Masonry units.

a. Include material test reports substantiating compliance with requirements.
b. For bricks, include size-variation data verifying that actual range of sizes falls within specified tolerances.
c. For exposed brick, include material test report for efflorescence according to ASTM C 67.
d. For surface-coated brick, include material test report for durability of surface appearance after 50-cycles of freezing and thawing per ASTM C 67 or a list of addresses of buildings in

Project's area where proposed brick has been used successfully and with a history of durability.

e. For masonry units used in structural masonry, include data and calculations establishing average net-area compressive strength of units.

2. Cementitious materials. Include brand, type, and name of manufacturer.
3. Preblended, dry mortar mixes. Include description of type and proportions of ingredients.
4. Grout mixes. Include description of type and proportions of ingredients.
5. Reinforcing bars.
6. Joint reinforcement.
7. Anchors, ties, and metal accessories.

G. Mix Designs: For each type of mortar and grout. Include description of type and proportions of ingredients.

1. Include test reports, per ASTM C 78 for mortar mixes required to comply with property specification.
2. Include test reports, per ASTM C 1019, for grout mixes required to comply with compressive strength requirement.

H. Statement of Compressive Strength of Masonry: For each combination of masonry unit type and mortar type, provide statement of average net-area compressive strength of masonry units, mortar type, and resulting net-area compressive strength of masonry determined according to Tables 1 and 2 in ACI 530.1/ASCE 6/TMS 602.

I. Cold-Weather Procedures: Detailed description of methods, materials, and equipment to be used to comply with cold-weather requirements.

1.6 QUALITY ASSURANCE

A. Testing Agency Qualifications: The Contractor shall be responsible for all costs associated with mortar and grout testing and associated reporting. Contractor shall utilize Patriot Engineering of Evansville, Indiana for all testing. An independent agency qualified according to ASTM C 1093 for testing indicated, as documented according to ASTM E 548.

B. Source Limitations for Masonry Units: Obtain exposed masonry units of a uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, through one source from a single manufacturer for each product required.

C. Source Limitations for Mortar Materials: Obtain mortar ingredients of a uniform quality, including color for exposed masonry, from a single manufacturer for each cementitious component and from one source or producer for each aggregate.

D. Sample Panels: Build sample panels to verify selections made under sample submittals and to demonstrate aesthetic effects. Comply with requirements in Division 01 Section "Quality Requirements" for mockups.

1. Build sample panels for typical exterior and interior walls in sizes approximately 60 inches (1500 mm) long by 48 inches (1200 mm) high by full thickness.

2. Where masonry is to match existing, erect panels adjacent and parallel to existing surface.
3. Clean one-half of exposed faces of panels with masonry cleaner indicated.
4. Protect approved sample panels from the elements with weather-resistant membrane.
5. Approval of sample panels is for color, texture, and blending of masonry units; relationship of mortar and sealant colors to masonry unit colors; tooling of joints; aesthetic qualities of workmanship; and other material and construction qualities specifically approved by Architect in writing.

    a. Approval of sample panels does not constitute approval of deviations from the Contract Documents contained in sample panels unless such deviations are specifically approved by Architect in writing.

E. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Build mockup of typical wall area as shown on Drawings.
2. Build mockups for typical exterior and interior walls in sizes approximately 96 inches (2400 mm) long by 72 inches (1800 mm) high by full thickness, including face and backup wythes and accessories.

    a. Include a sealant-filled joint at least 16 inches (400 mm) long in each mockup.
    b. Include lower corner of window opening framed with stone trim at upper corner of exterior wall mockup. Make opening approximately 12 inches (300 mm) wide by 16 inches (400 mm) high.
    c. Include through-wall flashing installed for a 24-inch (600-mm) length in corner of exterior wall mockup approximately 16 inches (400 mm) down from top of mockup, with a 12-inch (300-mm) length of flashing left exposed to view (omit masonry above half of flashing).
    d. Include metal studs, sheathing, veneer anchors, flashing, and weep holes in exterior masonry-veneer wall mockup.
    e. Include pre-faced concrete masonry units on one face of interior unit masonry wall mockup.

3. Where masonry is to match existing, erect mockups adjacent and parallel to existing surface.
4. Clean one-half of exposed faces of mockups with masonry cleaner as indicated.
5. Protect accepted mockups from the elements with weather-resistant membrane.
6. Approval of mockups is for color, texture, and blending of masonry units; relationship of mortar and sealant colors to masonry unit colors; tooling of joints; and aesthetic qualities of workmanship.

    a. Approval of mockups is also for other material and construction qualities specifically approved by Architect in writing.
    b. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless such deviations are specifically approved by Architect in writing.

7. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

F. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination."

1.7 DELIVERY, STORAGE, AND HANDLING

A. Store masonry units on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied. If units become wet, do not install until they are dry.

B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.

C. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.

D. Deliver preblended, dry mortar mix in moisture-resistant containers designed for lifting and emptying into dispensing silo. Store preblended, dry mortar mix in delivery containers on elevated platforms, under cover, and in a dry location or in a metal dispensing silo with weatherproof cover.

E. Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

1.8 PROJECT CONDITIONS

A. Protection of Masonry: During construction, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.

1. Extend cover a minimum of 24 inches (600 mm) down both sides and hold cover securely in place.
2. Where 1 wythe of multiwythe masonry walls is completed in advance of other wythes, secure cover a minimum of 24 inches (600 mm) down face next to unconstructed wythe and hold cover in place.

B. Do not apply uniform floor or roof loads for at least 12 hours and concentrated loads for at least 3 days after building masonry walls or columns.

C. Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Immediately remove grout, mortar, and soil that come in contact with such masonry.

1. Protect base of walls from rain-splashed mud and from mortar splatter by spreading coverings on ground and over wall surface.
2. Protect sills, ledges, and projections from mortar droppings.
3. Protect surfaces of window and door frames, as well as similar products with painted and integral finishes, from mortar droppings.
4. Turn scaffold boards near the wall on edge at the end of each day to prevent rain from splashing mortar and dirt onto completed masonry.

D. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.

1. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F (4 deg C) and above and will remain so until masonry has dried, but not less than 7 days after completing cleaning.

E. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:

1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products specified.
2. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.

2.2 MASONRY UNITS, GENERAL

A. Defective Units: Referenced masonry unit standards may allow a certain percentage of units to exceed tolerances and to contain chips, cracks, or other defects exceeding limits stated in the standard. Do not uses units where such defects, including dimensions that vary from specified dimensions by more than stated tolerances, will be exposed in the completed Work or will impair the quality of completed masonry.

2.3 CONCRETE MASONRY UNITS (CMUs)

A. Shapes: Provide shapes indicated and as follows:

1. Provide special shapes for lintels, corners, jambs, sashes, movement joints, headers, bonding, and other special conditions.
2. Provide bullnose units for outside corners, unless otherwise indicated.

B. Concrete Masonry Units: ASTM C 90.

1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 2150 psi (14.8 MPa).
2. Weight Classification: Lightweight (above grade) Normal weight (below grade).
3. Size (Width): Manufactured to dimensions 3/8 inch less than nominal dimensions.

2.4 CONCRETE AND MASONRY LINTELS

A. General: Provide either concrete or masonry lintels, at Contractor's option, complying with requirements below.

B. Concrete Lintels: Precast units made from concrete matching concrete masonry units in color, texture, and compressive strength and with reinforcing bars indicated or required to support loads indicated. Cure precast lintels by same method used for concrete masonry units.

C. Concrete Lintels: Precast or formed-in-place concrete lintels complying with requirements in Division 03 Section "Cast-in-Place Concrete."

D. Masonry Lintels: Prefabricated or built-in-place masonry lintels made from bond beam concrete masonry units with reinforcing bars placed as indicated and filled with coarse grout. Cure precast lintels before handling and installing. Temporarily support built-in-place lintels until cured.

2.5 BRICK

A. General: Provide shapes indicated and as follows:

1. For ends of sills and caps and for similar applications that would otherwise expose unfinished brick surfaces, provide units without cores or frogs and with exposed surfaces finished.
2. Provide special shapes for applications where stretcher units cannot accommodate special conditions, including those at corners, movement joints, bond beams, sashes, and lintels.
3. Provide special shapes for applications requiring brick of size, form, color, and texture on exposed surfaces that cannot be produced by sawing.
4. Provide special shapes for applications where shapes produced by sawing would result in sawed surfaces being exposed to view.

B. Face Brick: ASTM C 216-07 Grade SW, Type FBX.

1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 4400 psi (30.3 MPa).
2. Initial Rate of Absorption: Less than 30 g/30 sq. in. (30 g/194 sq. cm) per minute when tested per ASTM C 67.
3. Efflorescence: Provide brick that has been tested according to ASTM C 67 and is rated "not effloresced."
4. Surface Coating: Brick with colors or textures produced by application of coatings shall withstand 50 cycles of freezing and thawing per ASTM C 67 with no observable difference in the applied finish when viewed from 10 feet (3 m) or shall have a history of successful use in Project's area.
5. Application: Use where brick is exposed, unless otherwise indicated.

6. Brick shall be modular size equal to Meridian “Waterford Blend”.

2.6 STONE TRIM

A. Indiana Limestone, smooth cut to profiles indicated.

2.7 MORTAR AND GROUT MATERIALS

A. Portland Cement: ASTM C 150, Type I or II, except Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce mortar color indicated.

B. Hydrated Lime: ASTM C 207 Type S.

C. Portland Cement-Lime Mix: Packaged blend of portland cement complying with ASTM C 150, Type I or Type III, and hydrated lime complying with ASTM C 207, Type S.

D. Masonry Cement: ASTM C 91.

1. Available Products:

a. Capital Materials Corporation; Flamingo Color Masonry Cement.
b. Essroc, Italcementi Group; Brixment or Velvet.
c. Holcim (US) Inc.; Mortamix Masonry Cement.
d. Lafarge North America Inc.; Magnolia Masonry Cement.
e. Lehigh Cement Company; Lehigh Masonry Cement.
f. National Cement Company, Inc.; Coosa Masonry Cement.

E. Aggregate for Mortar: ASTM C 144.

1. For mortar that is exposed to view, use washed aggregate consisting of natural sand or crushed stone.
2. For joints less than 1/4 inch (6.5 mm) thick, use aggregate graded with 100 percent passing the No. 16 (1.18-mm) sieve.

F. Aggregate for Grout: ASTM C 404.

G. Epoxy Pointing Mortar: ASTM C 395, epoxy-resin-based material formulated for use as pointing mortar for structural-clay tile facing units (and approved for such use by manufacturer of units); in color indicated or, if not otherwise indicated, as selected by Architect from manufacturer's colors.

H. Cold-Weather Admixture: Nonchloride, noncorrosive, accelerating admixture complying with ASTM C 494/C 494M, Type C, and recommended by manufacturer for use in masonry mortar of composition indicated.

1. Available Products:

a. Addiment Incorporated; Mortar Kick.
b. Euclid Chemical Company (The); Accelguard 80.
c. Grace Construction Products, a unit of W. R. Grace & Co. - Conn.; Morset.
d. Sonneborn, Div. of ChemRex; Trimix-NCA.

I. Water-Repellent Admixture: Liquid water-repellent mortar admixture intended for use with concrete masonry units, containing integral water repellent by same manufacturer.

1. Available Products:

a. Addiment Incorporated; Mortar Tite.
b. Grace Construction Products, a unit of W. R. Grace & Co. - Conn.; Dry-Block Mortar Admixture.
c. Master Builders, Inc.; Color Cure Mortar Admix or Rheomix Rheopel.

J. Water: Potable.

2.8 REINFORCEMENT

A. Uncoated Steel Reinforcing Bars: ASTM A 615/A 615M or ASTM A 996/A 996M, Grade 60 (Grade 420).

B. Masonry Joint Reinforcement, General: ASTM A 951.

1. Interior Walls: Mill galvanized, carbon steel.
2. Exterior Walls: Hot-dip galvanized, carbon steel.
3. Wire Size for Side Rods: W1.7 or 0.148-inch (3.8-mm) diameter.
4. Wire Size for Cross Rods: W1.7 or 0.148-inch (3.8-mm) diameter.
5. Wire Size for Veneer Ties: W1.7 or 0.148-inch (3.8-mm) diameter.
6. Spacing of Cross Rods, Tabs, and Cross Ties: Not more than 16 inches (407 mm) o.c.
7. Provide in lengths of not less than 10 feet (3 m), with prefabricated corner and tee units.

C. Masonry Joint Reinforcement for Single-Wythe Masonry: Either ladder or truss type with single pair of side rods.

D. Masonry Joint Reinforcement for Multiwythe Masonry:

1. Ladder type with 1 side rod at each face shell of hollow masonry units more than 4 inches (100 mm) in width, plus 1 side rod at each wythe of masonry 4 inches (100 mm) or less in width.
2. Tab type, either ladder or truss design, with 1 side rod at each face shell of backing wythe and with rectangular tabs sized to extend at least halfway through facing wythe but with at least 5/8-inch (16-mm) cover on outside face.
3. Adjustable (two-piece) type, either ladder or truss design, with one side rod at each face shell of backing wythe and with separate ties that extend into facing wythe. Ties have two hooks that engage eyes or slots in reinforcement and resist movement perpendicular to wall. Ties extend at least halfway through facing wythe but with at least 5/8-inch (16-mm) cover on outside face. Ties have hooks or clips to engage a continuous horizontal wire in the facing wythe.

E. Masonry Joint Reinforcement for Veneers Anchored with Seismic Masonry-Veneer Anchors: Single 0.188-inch- (4.8-mm-) diameter, hot-dip galvanized, carbon-steel continuous wire.

2.9 TIES AND ANCHORS

A. Materials: Provide ties and anchors specified in subsequent paragraphs that are made from materials that comply with eight subparagraphs below, unless otherwise indicated.

1. Hot-Dip Galvanized, Carbon-Steel Wire: ASTM A 82; with ASTM A 153/A 153M, Class B-2 coating.

B. Wire Ties, General: Unless otherwise indicated, size wire ties to extend at least halfway through veneer but with at least 5/8-inch (16-mm) cover on outside face. Outer ends of wires are bent 90 degrees and extend 2 inches (50 mm) parallel to face of veneer.

C. Individual Wire Ties: Rectangular units with closed ends and not less than 4 inches (100 mm) wide.

1. Z-shaped ties with ends bent 90 degrees to provide hooks not less than 2 inches (50 mm) long may be used for masonry constructed from solid units or hollow units laid with cells horizontal.
2. Where wythes do not align are of different materials, use adjustable ties with pintle-and-eye connections having a maximum adjustment of 1-1/4 inches (32 mm).
3. Wire: Fabricate from 3/16-inch- (4.8-mm-) diameter, hot-dip galvanized steel wire. Mill-galvanized wire ties may be used in interior walls, unless otherwise indicated.

D. Adjustable Anchors for Connecting to Structure: Provide anchors that allow vertical or horizontal adjustment but resist tension and compression forces perpendicular to plane of wall.

1. Anchor Section for Welding to Steel Frame: Crimped 1/4-inch- (6.4-mm-) diameter, hot-dip galvanized steel wire. Mill-galvanized wire may be used at interior walls, unless otherwise indicated.
2. Tie Section for Steel Frame: Triangular-shaped wire tie, sized to extend within 1 inch (25 mm) of masonry face, made from 0.188-inch- (4.8-mm-) diameter, hot-dip galvanized steel wire. Mill-galvanized wire may be used at interior walls, unless otherwise indicated.

E. Partition Top anchors: 0.097-inch- (2.5-mm-) thick metal plate with 3/8-inch- (10-mm-) diameter metal rod 6 inches (150 mm) long welded to plate and with closed-end plastic tube fitted over rod that allows rod to move in and out of tube. Fabricate from steel, hot-dip galvanized after fabrication.

F. Stone Anchors: Fabricate dowels, cramps, and other stone anchors from stainless steel.

G. Adjustable Masonry-Veneer Anchors

1. General: Provide anchors that allow vertical adjustment but resist tension and compression forces perpendicular to plane of wall, for attachment over sheathing to wood or metal studs, and as follows:

a. Structural Performance Characteristics: Capable of withstanding a 100-lbf (445-N) load in both tension and compression without deforming or developing play in excess of 0.05 inch (1.3 mm).

2. Contractor's Option: Unless otherwise indicated, provide any of the following types of anchors:
3. Screw-Attached, Masonry-Veneer Anchors: Units consisting of a wire tie and a metal anchor section.

a. Anchor Section: Sheet metal plate, 1-1/4 inches (32 mm) wide by 6 inches (150 mm) long, with screw holes top and bottom and with raised rib-stiffened strap, 5/8 inch (16 mm) wide

by 3-5/8 inches (92 mm) long, stamped into center to provide a slot between strap and plate for inserting wire tie.

b. Fabricate sheet metal anchor sections and other sheet metal parts from 0.097-inch- (2.5-mm-) thick, steel sheet, galvanized after fabrication.

c. Wire Ties: Triangular-, rectangular-, or T-shaped wire ties fabricated from 0.188-inch- (4.8-mm-) diameter, hot-dip galvanized steel stainless-steel wire.

d. Available Products:

1) Dayton Superior Corporation, Dur-O-Wal Division; D/A 213 or D/A 210 with D/A 700-708.
2) Heckmann Building Products Inc.; 315-D with 316 or Pos-I-Tie.
3) Hohmann & Barnard, Inc.; DW-10 DW-10HS or DW-10-X.
4) Wire-Bond; 1004, Type III or RJ-711.

4. Slip-in, Masonry-Veneer Anchors: Units consisting of a wire tie section and an anchor section designed to interlock with metal studs and be slipped into place as sheathing is installed.

a. Wire-Type Anchor: Bent wire anchor section with an eye to receive the wire tie. Wire tie has a vertical leg that slips into the eye of anchor section and allows vertical adjustment. Both sections are made from 3/16-inch (4.8-mm), hot-dip galvanized wire.

b. Strap-and-Wire Type Anchor: Flat metal strap with notch to interlock with flange of metal stud and two holes for inserting vertical legs of wire tie specially formed to fit anchor section. Strap is made from 0.067-inch- (1.7-mm-) thick, steel sheet, galvanized after fabrication; anchor wire tie is made from 3/16-inch (4.8-mm), hot-dip galvanized wire.

c. Available Products:

1) BLOK-LOK Limited; STUD-LOK.
2) Hohmann & Barnard, Inc.; AA308.

5. Provide horizontal seismic reinforcing at 16” O.C. vertical in brick veneer. Utilize .188” dia. galvanized rod tied to veneer anchors.

a. Equal to “wire bond” 700 series.

2.10 EMBEDDED FLASHING MATERIALS

A. Flexible Flashing: For flashing not exposed to the exterior, use one of the following, unless otherwise indicated:

1. Copper-Laminated Flashing: 7-oz./sq. ft. (2-kg/sq. m) copper sheet bonded with asphalt between 2 layers of glass-fiber cloth. Use only where flashing is fully concealed in masonry.

a. Available Products:

1) Advanced Building Products Inc.; Copper Fabric Flashing.
2) AFCO Products Inc.; Copper Fabric.
3) Hohmann & Barnard, Inc.; H & B C-Fab Flashing.
4) Phoenix Building Products; Type FCC-Fabric Covered Copper.
5) Polytite Manufacturing Corp.; Copper Fabric Flashing.

6) Sandell Manufacturing Co., Inc.; Copper Fabric Flashing.
7) York Manufacturing, Inc.; York Copper Fabric Flashing.

B. Single-Wythe CMU Flashing System: System of CMU cell flashing pans and interlocking CMU web covers made from high-density polyethylene incorporating chemical stabilizers that prevent UV degradation. Cell flashing pans have integral weep spouts that are designed to be built into mortar bed joints and weep collected moisture to the exterior of CMU walls and that extend into the cell to prevent clogging with mortar.

1. Product: Subject to compliance with requirements, provide "Blok-Flash" by Advanced Building Products Inc.

2.11 MISCELLANEOUS MASONRY ACCESSORIES

A. Compressible Filler: Premolded filler strips complying with ASTM D 1056, Grade 2A1; compressible up to 35 percent; of width and thickness indicated; formulated from neoprene.

B. Preformed Control-Joint Gaskets: Made from styrene-butadiene-rubber compound, complying with ASTM D 2000, Designation M2AA-805 or PVC, complying with ASTM D 2287, Type PVC-65406 and designed to fit standard sash block and to maintain lateral stability in masonry wall; size and configuration as indicated.

C. Weep/Vent Products: Use one of the following, unless otherwise indicated:

1. Round Plastic Weep/Vent Tubing: Medium-density polyethylene, 3/8-inch (9-mm) OD by 4 inches (100 mm) long.

2.12 CAVITY-WALL INSULATION

A. Extruded-Polystyrene Board Insulation: ASTM C 578, Type IV, closed-cell product extruded with an integral skin.

B. Adhesive: Type recommended by insulation board manufacturer for application indicated.

C. Drainage panel: “Thermocav” DP 25, 16” high, 2” thick, installed at bottom of all cavity walls.

2.13 MASONRY CLEANERS

A. Proprietary Acidic Cleaner: Manufacturer's standard-strength cleaner designed for removing mortar/grout stains, efflorescence, and other new construction stains from new masonry without discoloring or damaging masonry surfaces. Use product expressly approved for intended use by cleaner manufacturer and manufacturer of masonry units being cleaned.

1. Available Manufacturers:

a. Diedrich Technologies, Inc.

b. EaCo Chem, Inc.
c. ProSoCo, Inc.

2.14 MORTAR AND GROUT MIXES

A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures, unless otherwise indicated.

1. Do not use calcium chloride in mortar or grout.
2. Limit cementitious materials in mortar to portland cement and lime.
3. Limit cementitious materials in mortar for exterior and reinforced masonry to portland cement, mortar cement, and lime.
4. Add cold-weather admixture (if used) at same rate for all mortar that will be exposed to view, regardless of weather conditions, to ensure that mortar color is consistent.

B. Preblended, Dry Mortar Mix: Furnish dry mortar ingredients in form of a preblended mix. Measure quantities by weight to ensure accurate proportions, and thoroughly blend ingredients before delivering to Project site.

C. Mortar for Unit Masonry: Comply with ASTM C 270, Property Specification. Provide the following types of mortar for applications stated unless another type is indicated or needed to provide required compressive strength of masonry.

1. For masonry below grade or in contact with earth, use Type M.
2. For reinforced masonry, use Type S.
3. For exterior, above-grade, load-bearing and non-load-bearing walls and parapet walls; for interior load-bearing walls; for interior non-load-bearing partitions; and for other applications where another type is not indicated, use Type N.
4. For interior non-load-bearing partitions, Type O may be used instead of Type N.

D. Grout for Unit Masonry: Comply with ASTM C 476.

1. Use grout of type indicated or, if not otherwise indicated, of type (fine or coarse) that will comply with Table 1.15.1 in ACI 530.1/ASCE 6/TMS 602 for dimensions of grout spaces and pour height.
2. Provide grout with a slump of 8 to 11 inches (200 to 280 mm) as measured according to ASTM C 143/C 143M.

E. Epoxy Pointing Mortar: Mix epoxy pointing mortar to comply with mortar manufacturer's written instructions.

F. Admixture for exterior CMU units: Dry block as manufactured by W.R. Grace or equal.

G. Water repellent for exterior exposed CMU: Infiniseal DB as manufactured by W.R. Grace or equal.

2.15 WATER REPELLENT FOR BRICK

A. Proprietary Water Repellent is ready to use, water-based silane/siloxane water repellent for concrete and most masonry and stucco surfaces. Water repellent is low-VOC treatment that penetrates more deeply and helps masonry resist cracking, spalling, staining and other damage related to water

intrusion. Low odor and alkaline stable. Use product expressly approved for intended use by manufacturer and manufacturer of units for water repellent.

1. Available Manufacturers:
   a. ProSoCo, Inc. – Weather Seal Siloxane PD, basis of design.
   b. Diedrich Technologies, Inc.

B. Quality Assurance: Test a minimum 4 ft. by 4 ft. area on each type of masonry. Use the manufacturer's application instructions. Let test area protective treatment cure before inspection. Keep test panels available for comparison throughout the protective treatment project.

C. Application: Before applying, read "Preparation" and "Safety Information" sections in the Manufacturer's Product Data Sheet for product. Refer to the Product Data Sheet for additional information about application. Do not dilute or alter. Apply strictly as per manufacturer's specifications.

2.16 ELASTOMERIC THERMOPLASTIC FLASHING

A. Elastomeric Thermoplastic Flashing: Composite flashing product consisting of a polyester-reinforced ethylene interpolymer alloy.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
   a. DuPont; Thru-Wall Flashing.
   b. Hohmann & Barnard, Inc.; Flex-Flash.
   c. Hyload, Inc.; Hyload Cloaked Flashing System.
   d. Mortar Net USA, Ltd.; Total Flash.

B. Monolithic Sheet: Elastomeric thermoplastic flashing, 0.040 inch (1.0 mm) thick.

C. Self-Adhesive Sheet: Elastomeric thermoplastic flashing, 0.025 inch (0.64 mm) thick, with a 0.015-inch-(0.38-mm-) thick coating of adhesive.

D. Self-Adhesive Sheet with Drip Edge: Elastomeric thermoplastic flashing, 0.025 inch (0.64 mm) thick, with a 0.015-inch- (0.38 mm-) thick coating of rubberized-asphalt adhesive. When flashing extends to face of masonry, rubberized-asphalt coating is held back approximately 1-1/2 inches (38 mm) from edge.

E. Accessories: Provide performed corners, end dams, other special shapes, and seaming materials produced by flashing manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work.

1. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of work.
2. Verify that foundations are within tolerances specified.
3. Verify that reinforcing dowels are properly placed.

B. Before installation, examine rough-in and built-in construction for piping systems to verify actual locations of piping connections.

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

3.2 INSTALLATION, GENERAL

A. Thickness: Build cavity and composite walls and other masonry construction to full thickness shown. Build single-wythe walls to actual widths of masonry units, using units of widths indicated.

B. Build chases and recesses to accommodate items specified in this and other Sections. All chases and components in chases shall be protected and kept clean during installation of CMU. After installation of CMU, all components in chases shall be cleaned and free of mortar, sand, debris, splatter to the acceptance of the Owner's Representative.

C. Leave openings for equipment to be installed before completing masonry. After installing equipment, complete masonry to match the construction immediately adjacent to opening. Neatly cut CMU and smooth mortar around pipe penetrations.

D. Use full-size units without cutting if possible. If cutting is required to provide a continuous pattern or to fit adjoining construction, cut units with motor-driven saws; provide clean, sharp, unchipped edges. Allow units to dry before laying unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.

E. Select and arrange units for exposed unit masonry to produce a uniform blend of colors and textures.

1. Mix units from several pallets or cubes as they are placed.

F. Matching Existing Masonry: Match coursing, bonding, color, and texture of existing masonry.

G. Wetting of Brick: Wet brick before laying if initial rate of absorption exceeds 30 g/30 sq. in. (30 g/194 sq. cm) per minute when tested per ASTM C 67. Allow units to absorb water so they are damp but not wet at time of laying.

H. Comply with construction tolerances in ACI 530.1/ASCE 6/TMS 602 and with the following:

1. For conspicuous vertical lines, such as external corners, door jambs, reveals, and expansion and control joints, do not vary from plumb by more than 1/8 inch in 10 feet (3 mm in 3 m), 1/4 inch in 20 feet (6 mm in 6 m), or 1/2 inch (12 mm) maximum.
2. For vertical alignment of exposed head joints, do not vary from plumb by more than 1/4 inch in 10 feet (6 mm in 3 m), or 1/2 inch (12 mm) maximum.
3. For conspicuous horizontal lines, such as lintels, sills, parapets, and reveals, do not vary from level by more than 1/8 inch in 10 feet (3 mm in 3 m), 1/8 inch in 20 feet (6 mm in 6 m), or 1/4 inch (12 mm) maximum.

4. For exposed bed joints, do not vary from thickness indicated by more than plus or minus 1/8 inch (3 mm), with a maximum minimum thickness limited to 1/2 inch (12 mm). Do not vary from bed-joint thickness of adjacent courses by more than 1/8 inch (3 mm).
5. For exposed head joints, do not vary from thickness indicated by more than plus or minus 1/8 inch (3 mm). Do not vary from adjacent bed-joint and head-joint thicknesses by more than 1/8 inch (3 mm).
6. For faces of adjacent exposed masonry units, do not vary from flush alignment by more than 1/16 inch (1.5 mm) except due to warpage of masonry units within tolerances specified for warpage of units.
7. For exposed bed joints and head joints of stacked bond, do not vary from a straight line by more than 1/16 inch (1.5 mm) from one masonry unit to the next.

3.3 LAYING MASONRY WALLS

A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement-type joints, returns, and offsets. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.

B. Bond Pattern for Exposed Masonry: Unless otherwise indicated, lay exposed masonry in running bond; do not use units with less than nominal 4-inch (100-mm) horizontal face dimensions at corners or jambs.

C. Lay concealed masonry with all units in a wythe in running bond or bonded by lapping not less than 4-inches (100-mm). Bond and interlock each course of each wythe at corners. Do not use units with less than nominal 4-inch (100-mm) horizontal face dimensions at corners or jambs.

D. Stopping and Resuming Work: Stop work by racking back units in each course from those in course below; do not tooth. When resuming work, clean masonry surfaces that are to receive mortar, remove loose masonry units and mortar, and wet brick if required before laying fresh masonry.

E. Built-in Work: As construction progresses, build in items specified in this and other Sections. Fill in solidly with masonry around built-in items.

F. Where built-in items are to be embedded in cores of hollow masonry units, place a layer of metal lath, wire mesh, or plastic mesh in the joint below and rod mortar or grout into core.

G. Fill cores in hollow concrete masonry units with grout 24 inches (600 mm) under bearing plates, beams, lintels, posts, and similar items, unless otherwise indicated.

H. Build non-load-bearing interior partitions full height of story to underside of solid floor or roof structure above, unless otherwise indicated.

1. Install compressible filler in joint between top of partition and underside of structure above.
2. Fasten partition top anchors to structure above and build into top of partition. Grout cells of CMUs solidly around plastic tubes of anchors and push tubes down into grout to provide 1/2-inch (13-mm) clearance between end of anchor rod and end of tube. Space anchors 48 inches (1200 mm) o.c., unless otherwise indicated.

3.4 MORTAR BEDDING AND JOINTING

A. Lay hollow brick and concrete masonry units as follows:

1. With face shells fully bedded in mortar and with head joints of depth equal to bed joints.
2. With webs fully bedded in mortar in all courses of piers, columns, and pilasters.
3. With webs fully bedded in mortar in grouted masonry, including starting course on footings.
4. With entire units, including areas under cells, fully bedded in mortar at starting course on footings where cells are not grouted.

B. Lay solid masonry units with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not deeply furrow bed joints or slush head joints.

C. Set stone trim units in full bed of mortar with full vertical joints. Fill dowel, anchor, and similar holes.

1. Clean soiled surfaces with fiber brush and soap powder and rinse thoroughly with clear water.
2. Allow cleaned surfaces to dry before setting.
3. Wet joint surfaces thoroughly before applying mortar.

D. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness, unless otherwise indicated. All head and bed joints shall be tooled to a uniform, smooth, neat appearance and brushed free of extrusions acceptable to Owner's Representative. All head and bed joints shall be free of all "eyelids", rough edges of CMU be neatly filled, holes and chips in CMU neatly filled, all to a neat uniform appearance."

1. For glazed masonry units, use a nonmetallic jointer 3/4 inch (19 mm) or more in width.

E. Cut joints flush for masonry walls to receive plaster or other direct-applied finishes (other than paint), unless otherwise indicated.

F. Testing of Mortar: Testing Agency shall take (10) ten samples of mortar while being installed onto CMU. Each sampling shall consist of three cylinders each, similar to cast-in-place concrete test. Samples shall be taken at locations and frequencies as determined by Owner's Representative. Testing Agency shall report compressive strengths in writing to Contractor and Owner's Representative.

3.5 CAVITY WALLS

A. Bond wythes of cavity walls together using one of the following methods:

1. Individual Metal Ties: Provide ties as shown installed in horizontal joints, but not less than one metal tie for 1.77 sq. ft. (0.16 sq. m) of wall area spaced not to exceed 16 inches (406 mm) o.c. horizontally and 16 inches (406 mm) o.c. vertically. Stagger ties in alternate courses. Provide additional ties within 12 inches (305 mm) of openings and space not more than 36 inches (915 mm) apart around perimeter of openings. At intersecting and abutting walls, provide ties at no more than 24 inches (610 mm) o.c. vertically.

a. Where bed joints of wythes do not align, use adjustable (two-piece) type ties.

b. Where one wythe is of clay masonry and the other of concrete masonry, use adjustable (two-piece) type ties to allow for differential movement regardless of whether bed joints align.

2. Masonry Joint Reinforcement: Installed in horizontal mortar joints.

a. Where bed joints of both wythes align, use ladder-type reinforcement extending across both wythes.
b. Where bed joints of wythes do not align, use adjustable (two-piece) type reinforcement with continuous horizontal wire in facing wythe attached to ties.
c. Where one wythe is of clay masonry and the other of concrete masonry, use adjustable (two-piece) type reinforcement with continuous horizontal wire in facing wythe attached to ties to allow for differential movement regardless of whether bed joints align.

3. Masonry Veneer Anchors: Comply with requirements for anchoring masonry veneers.

B. Bond wythes of cavity walls together using bonding system indicated on Drawings.

C. Keep cavities clean of mortar droppings and other materials during construction. Bevel beds away from cavity, to minimize mortar protrusions into cavity. Do not attempt to trowel or remove mortar fins protruding into cavity.

D. Parge cavity face of backup wythe in a single coat approximately 3/8 inch (10 mm) thick. Trowel face of parge coat smooth.

E. Installing Cavity-Wall Insulation: Place small dabs of adhesive, spaced approximately 12 inches (300 mm) o.c. both ways, on inside face of insulation boards, or attach with plastic fasteners designed for this purpose. Fit courses of insulation between wall ties and other confining obstructions in cavity, with edges butted tightly both ways. Press units firmly against inside wythe of masonry or other construction as shown.

1. Fill cracks and open gaps in insulation with crack sealer compatible with insulation and masonry.

3.6 MASONRY-CELL INSULATION

A. Install molded-polystyrene insulation units into masonry unit cells before laying units.

3.7 MASONRY JOINT REINFORCEMENT

A. General: Install entire length of longitudinal side rods in mortar with a minimum cover of 5/8 inch (16 mm) on exterior side of walls, 1/2 inch (13 mm) elsewhere. Lap reinforcement a minimum of 6 inches (150 mm).

1. Space reinforcement not more than 16 inches (406 mm) o.c.
2. Space reinforcement not more than 8 inches (203 mm) o.c. in foundation walls and parapet walls.
3. Provide reinforcement not more than 8 inches (203 mm) above and below wall openings and extending 12 inches (305 mm) beyond openings.

a. Reinforcement above is in addition to continuous reinforcement.

B. Interrupt joint reinforcement at control and expansion joints, unless otherwise indicated.

C. Provide continuity at wall intersections by using prefabricated T-shaped units.

D. Provide continuity at corners by using prefabricated L-shaped units.

E. Cut and bend reinforcing units as directed by manufacturer for continuity at corners, returns, offsets, column fireproofing, pipe enclosures, and other special conditions.

3.8 ANCHORING MASONRY TO STRUCTURAL MEMBERS

A. Anchor masonry to structural members where masonry abuts or faces structural members to comply with the following:

1. Provide an open space not less than 1 inch (25 mm) in width between masonry and structural member, unless otherwise indicated. Keep open space free of mortar and other rigid materials.
2. Anchor masonry to structural members with anchors embedded in masonry joints and attached to structure.
3. Space anchors as indicated, but not more than 24 inches (610 mm) o.c. vertically and 36 inches (915 mm) o.c. horizontally.

3.9 ANCHORING MASONRY VENEERS

A. Anchor masonry veneers to wall framing concrete and masonry backup with masonry-veneer anchors to comply with the following requirements:

1. Fasten screw-attached anchors through sheathing to wall framing and to concrete and masonry backup with metal fasteners of type indicated. Use two fasteners unless anchor design only uses one fastener.
2. Insert slip-in anchors in metal studs as sheathing is installed. Provide one anchor at each stud in each horizontal joint between sheathing boards.
3. Embed tie sections in masonry joints. Provide not less than 2 inches (50 mm) of air space between back of masonry veneer and face of sheathing.
4. Locate anchor sections to allow maximum vertical differential movement of ties up and down.
5. Space anchors as indicated, but not more than 16 inches (406 mm) o.c. vertically and 24 inches (610 mm) o.c. horizontally with not less than 1 anchor for each 3.5 sq. ft. (0.33 sq. m) of wall area. Install additional anchors within 12 inches (305 mm) of openings and at intervals, not exceeding 36 inches (914 mm), around perimeter.

3.10 CONTROL AND EXPANSION JOINTS

A. General: Install control and expansion joint materials in unit masonry as masonry progresses. Do not allow materials to span control and expansion joints without provision to allow for in-plane wall or partition movement.

B. Form control joints in concrete masonry as follows:

1. Install temporary foam-plastic filler in head joints and remove filler when unit masonry is complete for application of sealant.

C. Form expansion joints in brick made from clay or shale as follows:

1. Form open joint full depth of brick wythe and of width indicated, but not less than 1/2 inch (13 mm) for installation of sealant and backer rod specified in Division 07 Section "Joint Sealants."

D. Provide horizontal, pressure-relieving joints by either leaving an air space or inserting a compressible filler of width required for installing sealant and backer rod specified in Division 07 Section "Joint Sealants," but not less than 3/8 inch (10 mm).

1. Locate horizontal, pressure-relieving joints beneath shelf angles supporting masonry.

3.11 LINTELS

A. Install steel lintels where indicated.

B. Provide minimum bearing of 8 inches (200 mm) at each jamb, unless otherwise indicated.

3.12 FLASHING, WEEP HOLES, CAVITY DRAINAGE, AND VENTS

A. General: Install embedded flashing and weep holes in masonry at shelf angles, lintels, ledges, other obstructions to downward flow of water in wall, and where indicated. Install vents at shelf angles, ledges, and other obstructions to upward flow of air in cavities, and where indicated.

B. Install flashing as follows, unless otherwise indicated:

1. Prepare masonry surfaces so they are smooth and free from projections that could puncture flashing. Where flashing is within mortar joint, place through-wall flashing on sloping bed of mortar and cover with mortar. Before covering with mortar, seal penetrations in flashing with adhesive, sealant, or tape as recommended by flashing manufacturer.
2. At multiwythe masonry walls, including cavity walls, extend flashing through outer wythe, turned up a minimum of 8 inches (200 mm), and 1-1/2 inches (38 mm) into the inner wythe.
3. At masonry-veneer walls, extend flashing through veneer, across air space behind veneer, and up face of sheathing at least 8 inches (200 mm); with upper edge tucked under building paper or building wrap, lapping at least 4 inches (100 mm).
4. At lintels and shelf angles, extend flashing a minimum of 6 inches (150 mm) into masonry at each end. At heads and sills, extend flashing 6 inches (150 mm) at ends and turn up not less than 2 inches (50 mm) to form end dams.

C. Install single-wythe CMU flashing system in bed joints of CMU walls where indicated to comply with manufacturer's written instructions. Install CMU cell pans with upturned edges located below face shells and webs of CMUs above and with weep spouts aligned with face of wall. Install CMU web covers so that they cover upturned edges of CMU cell pans at CMU webs and extend from face shell to face shell.

D. Install weep holes in head joints in exterior wythes of first course of masonry immediately above embedded flashing and as follows:

1. Use specified weep/vent products to form weep holes.
2. Space weep holes formed from plastic tubing 16 inches (400 mm) o.c.

E. Place cavity drainage material in cavities to comply with configuration requirements for cavity drainage material in Part 2 "Miscellaneous Masonry Accessories" Article.

F. Upon installation of all embedded flashing and weep holes in masonry at shelf angles, lintels, ledges, etc…and prior to installation of additional masonry units, Contractor shall schedule and notify Owner's Representative so Owner's Representative can observe installation.

3.13 REINFORCED UNIT MASONRY INSTALLATION

A. Temporary Formwork and Shores: Construct formwork and shores as needed to support reinforced masonry elements during construction.

1. Construct formwork to provide shape, line, and dimensions of completed masonry as indicated. Make forms sufficiently tight to prevent leakage of mortar and grout. Brace, tie, and support forms to maintain position and shape during construction and curing of reinforced masonry.
2. Do not remove forms and shores until reinforced masonry members have hardened sufficiently to carry their own weight and other temporary loads that may be placed on them during construction.

B. Placing Reinforcement: Comply with requirements in ACI 530.1/ASCE 6/TMS 602.

C. Grouting: Do not place grout until entire height of masonry to be grouted has attained enough strength to resist grout pressure.

1. Comply with requirements in ACI 530.1/ASCE 6/TMS 602 for cleanouts and for grout placement, including minimum grout space and maximum pour height.
2. Limit height of vertical grout pours to not more than 60 inches (1520 mm).

D. Testing of Grout: Testing Agency shall take (10) ten samples of grout while being installed into CMU. Each sampling shall consist of three cylinders each, similar to cast-in-place concrete test. Samples shall be taken at locations and frequencies as determined by Owner's Representative. Testing Agency shall report compressive strengths in writing to Contractor and Owner's Representative.

3.14 REPAIRING, POINTING, AND CLEANING

A. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Install new units to match adjoining units; install in fresh mortar, pointed to eliminate evidence of replacement.

B. Pointing: During the tooling of joints, enlarge voids and holes, except weep holes, and completely fill with mortar. Point up joints, including corners, openings, and adjacent construction, to provide a neat, uniform appearance. Prepare joints for sealant application, where indicated.

C. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.

D. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:

1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
2. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of masonry.
3. Protect adjacent stone and nonmasonry surfaces from contact with cleaner by covering them with liquid strippable masking agent or polyethylene film and waterproof masking tape.
4. Wet wall surfaces with water before applying cleaners; remove cleaners promptly by rinsing surfaces thoroughly with clear water.
5. Clean brick by bucket-and-brush hand-cleaning method described in BIA Technical Notes 20.
6. Clean masonry with a proprietary acidic cleaner applied according to manufacturer's written instructions.
7. Clean concrete masonry by cleaning method indicated in NCMA TEK 8-2A applicable to type of stain on exposed surfaces.
8. Clean stone trim to comply with stone supplier's written instructions.
9. Clean limestone units to comply with recommendations in ILI's "Indiana Limestone Handbook."

3.15 MASONRY WASTE DISPOSAL

A. Excess Masonry Waste: Remove excess clean masonry waste that cannot be used as fill, as described above, and other masonry waste, and legally dispose of off Owner's property.

3.16 WATER REPELLENT APPLICATION FOR BRICK

A. Install water repellant as per manufacturer’s recommendations.

END OF SECTION 04 20 00

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes the following:

1. Ceramic porcelain tile.
2. Quarry tile.
2. Crack-suppression membrane for thin-set tile installations.

B. Related Sections:

1. Division 07 “Joint Sealants” for sealing of expansion, contraction, control, and isolation joins in tile surfaces.
2. Division 09 Section “Gypsum Board” for glass-mat, water resistant backer board.

1.3 DEFINITIONS

A. Facial Dimension shall be defined as the nominal tile size as defined in ANSI A137.1.

1.4 PERFORMANCE REQUIREMENTS

A. Static Coefficient of Friction: For tile installed on walkway surfaces, provide products with the following values as determined by testing identical products per ASTM C 1028:

1. Level Surfaces: Minimum 0.6.

1.1 1.5 SUBMITTALS

A. Product Data: For each type of tile, mortar, grout, and other products specified.

B. Shop Drawings: For the following:

1. Tile patterns and locations will be issued as an ASI during construction.
2. Widths, details, and locations of expansion, contraction, control, and isolation joints in tile substrates and finished tile surfaces.

C. Tile Samples for Initial Selection: Manufacturer's color charts consisting of actual tiles or sections of tiles showing the full range of colors, textures, and patterns available for each type and composition of tile indicated. Include Samples of accessories involving color selection.

D. Grout Samples for Initial Selection: Manufacturer's color charts consisting of actual sections of grout showing the full range of colors available for each type of grout indicated.

E. Master Grade Certificates: For each shipment, type, and composition of tile, signed by tile manufacturer and Installer.

F. Product Certificates: Signed by manufacturers certifying that the products furnished comply with requirements.

G. Qualification Data: For firms and persons specified in the "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names of architects and owners, and other information specified.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: Engage an experienced installer who has completed tile installations similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance.

B. Source Limitations for Tile: Obtain all tile from one source or producer.

1. Obtain tile from same production run and of consistent quality in appearance and physical properties for each contiguous area.

C. Source Limitations for Setting and Grouting Materials: Obtain ingredients of a uniform quality for each mortar, adhesive, and grout component from a single manufacturer and each aggregate from one source or producer.

D. Source Limitations for Other Products: Obtain each of the following products specified in this Section through one source from a single manufacturer for each product:

1. Joint sealants.

E. Preinstallation Conference: Conduct conference at project site to comply with requirements of Division I, Sections on "Project Management and Coordination" and “Project Meetings.”

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use. Comply with requirement in ANSI A137.1 for labeling sealed tile packages.

B. Store tile and cementitious materials on elevated platforms, under cover, and in a dry location.

C. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.

1. Store liquid latexes and emulsion adhesives in unopened containers and protected from freezing.

2. Prevent damage or contamination to materials, freezing, foreign matter, and other causes.

3. Handle file with temporary protective coating on exposed surfaces to prevent coated surfaces from contacting backs or edges of other units. If coating does contact bonding surfaces of tile, remove coating from bonding surfaces before setting tile.

1.8 PROJECT CONDITIONS

A. Environmental Limitations: Do not install tile until construction in spaces is complete and ambient temperature and humidity conditions are maintained at the levels indicated in referenced standards and manufacturer's written instructions.

B. Pre-installation Conference: Conduct conference at Project site.

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.

1.9 EXTRA MATERIALS -- ATTIC STOCK

A. Deliver extra materials to Owner. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents. Provide transmittal sheet per Division 01 with the Owner’s signature of receipt and storage location.

1. Tile and Trim Units: Furnish quantity of full-size units equal to 3 percent of amount installed, for each type, composition, color, pattern, and size specified.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Subject to compliance with requirements, provide products only by one of the manufacturers specified.

2.2 PRODUCTS, GENERAL

A. ANSI Ceramic Tile Standard: Provide tile that complies with ANSI A137.1, "Specifications for Ceramic Tile," for types, compositions, and other characteristics indicated.

1. Provide tile complying with Standard grade requirements, unless otherwise indicated.

B. ANSI Standards for Tile Installation Materials: Provide materials complying with ANSI standards referenced in "Setting and Grouting Materials" Article.

C. Colors, Textures, and Patterns: Where manufacturer's standard products are indicated for tile, grout, and other products requiring selection of colors, surface textures, patterns, and other appearance characteristics, provide specific products or materials complying with the following requirements:

1. Match Designer's samples.
2. Provide tile trim and accessories that match color and finish of adjoining tile.

D. Mounting: Where factory-mounted tile is required, provide back- or edge-mounted tile assemblies as standard with manufacturer, unless another mounting method is indicated.

E. Factory-Applied Temporary Protective Coating: Where indicated under tile type, protect exposed surfaces of tile against adherence of mortar and grout by precoating them with a continuous film of petroleum paraffin wax, applied hot. Do not coat unexposed tile surfaces.

2.3 TILE PRODUCTS

A. Manufacturers:

1. American Olean (Basis-of-Design)
2. Daltile; Div. of Dal-Tile International Inc.

B. Unglazed Ceramic Porcelain Tile, Flat tile as follows:

1. Composition: Porcelain
2. Nominal Dimensions: 2” x 2”.
3. Thickness: 1/4 inch
4. Face: Plain with cushion edges
5. Basis-of-Design Product: American Olean Unglazed ColorBody Mosaics series in two colors, 80% from price groups 1 and 2; 20% from price groups 3 and 4.
6. Location: Floor Applications.
7. Color and Pattern: 2” x 2” field tile from manufacturer’s full range of colors; 80% from price groups 1 and 2 and 20% from price groups 3 and 4. Pattern shall be issued via ASI.

C. Clear Glazed Ceramic Porcelain Tile, Flat tile as follows:

1. Composition: Porcelain
2. Nominal Dimensions: 2” x 8” field tile.
3. Thickness: 1/4 inch.
4. Face: Plain with cushion edges.
5. Basis of Design Product: American Olean Color Story Wall series in two colors; 80% from price groups 1 and 2 (Neutral); 20% from price groups 3 and 4 (Vibrant).
6. Location: Wall Applications.
7. Color and Pattern: 2” x 8” field tile from manufacturer’s full range of colors; 80% from price groups 1 and 2 (Neutral) and 20% from price groups 3 and 4 (Vibrant). Pattern shall be issued via ASI.

D. Unglazed Square-Edged Quarry Tile:

1. Face Size: 6” x 6”.
2. Thickness: ¼”.
3. Dynamic Coefficient of Friction: Not less than 0.42.
4. Finish: Matte.

5. Tile Color and Pattern: As selected by Architect from manufacturer's full range of colors. Pattern shall be issued via ASI.
6. Grout Color: As indicated in Material Legend.
7. Trim Units: Coordinated with sizes and coursing of adjoining flat tile where applicable and matching characteristics of adjoining flat tile. Provide shapes as follows, selected from manufacturer's standard shapes:

    a. Base: Coved.

E. Trim Units: Provide tile trim units to match characteristics of adjoining flat tile and to comply with the following requirements:

1. Size: As indicated, coordinated with sizes and coursing of adjoining flat tile where applicable.
2. Shapes: As follows, selected from manufacturer's standard shapes:

    a. Base for Thin-Set Mortar Installations: Straight.
    b. Wainscot Cap for Thin-Set Mortar Installations: Surface bullnose.
    c. External Corners for Thin-Set Mortar Installations: Surface bullnose.
    d. Internal Corners: Field-butted square corners, except with coved base and cap angle pieces designed to member with stretcher shapes.
    e. Tapered Transition Tile: Shape designed to effect transition between thickness of tile floor and adjoining floor finishes of different thickness, tapered to provide a reduction in thickness from ½ to ¼ inch (12.7 to 6.35 mm) across nominal 4-inch (100-mm) dimension.

E. Accessories for Glazed Wall Tile: Provide vitreous china accessories of type and size indicated and in color and finish to match adjoining glazed wall tile.

F. Pattern will be issued via ASI pending Owner selection and approval. Pattern will be based upon a tile module. Minimum of three colors shall be selected.

2.4 CRACK-SUPPRESSION MEMBRANES FOR THIN-SET TILE INSTALLATIONS

A. PVC-Sheet Product: Two layers of PVC sheet heat-fused together and to facings of bondable nonwoven polyester, for adhering to latex-portland cement mortar; 60 inches (1524 mm) wide by 0.040-inch (1.01-mm) nominal thickness.

B. Fabric-Reinforced, Modified-Bituminous-Sheet Product: Self-adhering SBS-modified-bituminous sheet with woven reinforcement facing for adhering to latex-portland cement mortar; 36 inches (914 mm) wide by 0.040-inch (1.01-mm) nominal thickness.

1. Product: National Applied Construction Products, Inc.; Strataflex.

C. Fabric-Reinforced, Fluid-Applied Product: System consisting of liquid-latex rubber and fabric reinforcement.

1. Products:

    a. MAPEI Corporation; PRP M19.
    b. Summitville Tiles, Inc.; S-9000.
    c. TEC Specialty Products, Inc.; TA324 Triple Flex

2.5 SETTING AND GROUTING MATERIALS

A. Manufacturers:

1. Bonsal, W. R., Company.
2. MAPEI Corporation.
3. TEC Specialty Products Inc.

B. Latex-Portland Cement Mortar (Thin Set): ANSI A118.4, consisting of the following:

1. Prepackaged dry-mortar mix: Factory-prepared mixture of Portland cement; dry redispersible, ethylene vinyl acetate additive, and other ingredients to which only water must be added at Project site.

a. For wall applications, provide nonsagging, latex-portland cement mortar complying with ANSI A118.4 for mortar of this type defined in Section F-2.1.2.

C. Latex-Portland Cement Grout: ANSI A118.6, color to be selected by Owner and Designer from standard product line.

1. Factory-prepared, dry-grout mixture: Factory-prepared mixture of Portland cement, dry, redispersible, ethylene vinyl acetate additive, and other ingredients to produce the following:

a. Unsanded grout mixture for joints 1/8” and narrower.
b. Sanded grout mixture for joints 1/8” and wider.

2.6 ELASTOMERIC SEALANTS

A. General: Provide manufacturer's standard chemically curing, elastomeric sealants of base polymer and characteristics indicated that comply with applicable requirements in Division 7 Section "Joint Sealants."

B. Colors: Provide colors of exposed sealants to match colors of grout in tile adjoining sealed joints, unless otherwise indicated.

C. One-Part, Mildew-Resistant Silicone Sealant: ASTM C 920; Type S; Grade NS; Class 25; Uses NT, G, A, and, as applicable to nonporous joint substrates indicated, O; formulated with fungicide, intended for sealing interior ceramic tile joints and other nonporous substrates that are subject to in-service exposures of high humidity and extreme temperatures.

1. Available Products:
a. Dow Corning Corporation; Dow Corning 786.
b. GE Silicones; Sanitary 1700.
c. Pecora Corporation; Pecora 898 Sanitary Silicone Sealant.
d. Tremco, Inc.; Tremsil 600 White.

D. Multipart, Pourable Urethane Sealant for Use T: ASTM C 920; Type M; Grade P; Class 25; Uses T, M, A, and, as applicable to joint substrates indicated, O.

1. Available Products:

    a. Bostik; Chem-Calk 550.
    b. Mameco International, Inc.; Vulkem 245.
    c. Pecora Corporation; NR-200 Urexpan.
    d. Tremco, Inc.; THC-900.

E. Chemical-Resistant Sealants: For chemical-resistant floors, provide chemical-resistant elastomeric sealant of type recommended and produced by chemical-resistant mortar and grout manufacturer for type of application indicated, with proven service record and compatibility with tile and other setting materials, and with chemical resistance equivalent to mortar/grout. Include primer and backer rod recommended by manufacturer.

2.8 MISCELLANEOUS MATERIALS

A. Trowelable Underlayments and Patching Compounds: Latex-modified, portland cement-based formulation provided or approved by manufacturer of tile-setting materials for installations indicated.

B. Metal Edge Strip: Zinc-alloy terrazzo strips, 1/8” wide at tip; edge with integral provision for anchorage to mortar bed or substrate, unless otherwise indicated.

C. Temporary Protective Coating: Provide product indicated below that is formulated to protect exposed surfaces of tile against adherence of mortar and grout; is compatible with tile, mortar, and grout and grout products, and is easily removable after grouting is completed without damaging grout or tile.

1. Petroleum paraffin wax, fully refined and odorless, containing at least 0-5 parent or with a melting point of 120 to 140 deg F per ASTM D 87.

D. Tile Cleaner: A neutral cleaner capable of removing soil and residue without harming tile and grout surfaces, specifically approved for materials and installations indicated by tile and grout manufacturers.

E. Grout Sealer: Manufacturer's standard silicone product for sealing grout joints that does not change color or appearance of grout.

1. Available Products:

    a. Bonsal, W. R., Company; Grout Sealer.
    b. MAPEI Corporation; KER 004, Keraseal Penetrating Sealer for Unglazed Grout and Tile.
    c. TEC Specialty Products Inc.; TA-256 Penetrating Silicone.

2.9 MIXING MORTARS AND GROUT

A. Mix mortars and grouts to comply with referenced standards and mortar and grout manufacturers' written instructions.

B. Add materials, water, and additives in accurate proportions.

C. Obtain and use type of mixing equipment, mixer speeds, mixing containers, mixing time, and other procedures to produce mortars and grouts of uniform quality with optimum performance characteristics for installations indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions where tile will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of installed tile.

1. Verify that substrates for setting tile are firm; dry; clean; free of oil, waxy films, and curing compounds; and within flatness tolerances required by referenced ANSI A108 Series of tile installation standards for installations indicated.
2. Verify that installation of grounds, anchors, recessed frames, electrical and mechanical units of work, and similar items located in or behind tile has been completed before installing tile.
3. Verify that joints and cracks in tile substrates are coordinated with tile joint locations; if not coordinated, adjust joint locations in consultation with Architect.

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

C. Where floors that are sloped to drain are specified to receive floor tile, coordinate with General Contractor prior to floor slab installation, to provide flat uniform slope to drain so full floor tile will not require cutting so tile lays flat.

3.2 PREPARATION

A. Remove coatings, including curing compounds and other substances that contain soap, wax, oil, or silicone, that are incompatible with tile-setting materials.
B. Provide and install required moisture mitigation on concrete floor surfaces to allow for scheduled timely installation of tiling. Moisture mitigation products must be approved by tiling product manufacturer.
B. Provide concrete substrates for tile floors installed with thin-set mortar that comply with flatness tolerances specified in referenced ANSI A108 Series of tile installation standards.

1. Fill cracks, holes, and depressions with trowelable leveling and patching compound according to tile-setting material manufacturer's written instructions. Use product specifically recommended by tile-setting material manufacturer.

2. Remove protrusions, bumps, and ridges by sanding or grinding.3.3 TILE INSTALLATION

A. Comply with TCA's "Handbook for Ceramic Tile Installation" for TCA installation methods specified in tile installation schedules. Comply with parts of the ANSI A108 Series "Specifications for Installation of Ceramic Tile" that are referenced in TCA installation methods, specified in tile installation schedules, and apply to types of setting and grouting materials used.

1. For the following installations, follow procedures in the ANSI A108 Series of tile installation standards for providing 95 percent mortar coverage:

a. Tile floors in wet areas.

b. Tile floors in laundries.
c. Tile floors composed of tiles 8 by 8 inches (200 by 200 mm) or larger.
d. Tile floors composed of rib-backed tiles.

B. Extend tile work into recesses and under or behind equipment and fixtures to form complete covering without interruptions unless otherwise indicated. Terminate work neatly at obstructions, edges, and corners without disrupting pattern or joint alignments.

C. Accurately form intersections and returns. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish, or built-in items for straight aligned joints. Fit tile closely to electrical outlets, piping, fixtures, and other penetrations so plates, collars, or covers overlap tile.

D. Jointing Pattern: Lay tile in grid pattern unless otherwise indicated. Lay out tile work and center tile fields in both directions in each space or on each wall area. Lay out tile work to minimize the use of pieces that are less than half of a tile. Provide uniform joint widths unless otherwise indicated.

1. For tile mounted in sheets, make joints between tile sheets same width as joints within tile sheets so joints between sheets are not apparent in finished work.
2. Where adjoining tiles on floor, base, walls, or trim are specified or indicated to be same size, align joints.
3. Where tiles are specified or indicated to be whole integer multiples of adjoining tiles on floor, base, walls, or trim, align joints unless otherwise indicated.
4. Whole tiles are not to be cut in half, diagonal or in any shape to allow tile to conform to sloped areas. Coordinate with General Contractor to provide flat uniform slope to drain so full floor tiles will not require cutting so tile lays flat.

E. Joint Widths: Unless otherwise indicated, install tile with the following joint widths:

1. Paver Tile: 1/4 inch (6.35 mm).

F. Expansion Joints: Provide expansion joints and other sealant-filled joints, including control, contraction, and isolation joints, where indicated. Form joints during installation of setting materials, mortar beds, and tile. Do not saw-cut joints after installing tiles.

1. Where joints occur in concrete substrates, locate joints in tile surfaces directly above them.
2. Prepare joints and apply sealants to comply with requirements in Division 07 Section "Joint Sealants."

G. Stone Thresholds: Install stone thresholds in same type of setting bed as adjacent floor unless otherwise indicated.

1. At locations where mortar bed (thickset) would otherwise be exposed above adjacent floor finishes, set thresholds in latex-portland cement mortar (thin set).

H. Grout Sealer: Apply grout sealer to grout joints in tile floors according to grout-sealer manufacturer's written instructions. As soon as grout sealer has penetrated grout joints, remove excess sealer and sealer from tile faces by wiping with soft cloth. Inform Owner’s Representative just prior to the application of the grout sealer. At that time present to the Owner’s Representative the information regarding the type of grout sealer that is being applied.

3.4 CRACK-SUPPRESSION MEMBRANE INSTALLATION

A. Install crack-suppression membrane to comply with manufacturer's written instructions to produce membrane of uniform thickness bonded securely to substrate.

3.5 CLEANING AND PROTECTING

A. Cleaning: On completion of placement and grouting, clean all ceramic tile surfaces so they are free of foreign matter.

1. Remove grout residue from tile as soon as possible.
2. Clean grout smears and haze from tile according to tile and grout manufacturer's written instructions, but no sooner than 10 days after installation. Use only cleaners recommended by tile and grout manufacturers and only after determining that cleaners are safe to use by testing on samples of tile and other surfaces to be cleaned. Protect metal surfaces and plumbing fixtures from effects of cleaning. Flush surfaces with clean water before and after cleaning.

B. Finished Tile Work: Leave finished installation clean and free of cracked, chipped, broken, unbonded, and otherwise defective tile work.

C. When recommended by tile manufacturer, apply coat of neutral protective cleaner to completed tile walls and floors. Protect installed tile work with kraft paper or other heavy covering during construction period to prevent staining, damage, and wear.

D. Prohibit foot and wheel traffic from tiled floors for at least seven days after grouting is completed.

E. Before final inspection, remove protective coverings and rinse neutral cleaner from tile surfaces.

END OF SECTION 09 30 00

PART 1 - GENERAL

1.1 DESCRIPTION

A. Scope

1. The complete installation of synthetic sports surfacing system including striping.

B. Related work specified under other sections.

1. CONCRETE MOISTURE VAPOR EMISSION AND pH TESTING - SECTION 01450

a. Moisture vapor emission and pH of concrete shall be tested. Concrete substrates must comply with limitations of moisture and alkalinity, with in-situ Relative Humidity (RH) per ASTM F2170 not to exceed 80%, and substrate pH readings between 7.0–9.0.

2. CONCRETE SUBFLOORS - SECTION 033000.

a. The general contractor shall furnish and install the concrete subfloors, depressing the slab sufficiently to accommodate the floor system.
b. The slab shall be steel troweled and finished smooth, not polished or burnished, to a tolerance of 1/8" in any 10' radius. Floor flatness and floor levelness (FF and FL) numbers are not recognized. High spots shall be ground level and low spots filled with approved leveling compound.
c. No concrete curing, hardening or sealing agents shall be applied or mixed with the concrete subfloor.

3. GAME STANDARD INSERTS - SECTION 116623 Gymnasium Equipment.

4. Alternate No. 3.

1.2 REFERENCES

A. Physical Properties compiled using the following test standards:

1. ASTM 2772
2. ASTM C501
3. ASTM D1894
4. ASTM D3960
5. ASTM F 2170
6. ASTM 1745-97
7. ASTM F 3191
8. EN 12235
9. EN 14904
10. EN 14808
11. DIN 53505
12. DIN 18032-2

1.3 SUBMITTALS

A. Connor® ElastiPlus™ specifications.
B. One sample of the specified system, if requested by Architect.
C. Connor Synthetic Care & Maintenance Guide.
D. Current installation instructions as published by Connor.

1.4 QUALITY ASSURANCE

A. MATERIAL SUPPLIER: Connor or approved equal.

B. INSTALLER:

1. The complete installation of the flooring system, as described in these specifications, shall be carried out by an experienced installer (Flooring Contractor), and the work shall be performed in accordance with current Connor installation instructions.
2. Installer (Flooring Contractor) shall be liable for all matters related to the installation for a period of one year after the floor has been installed and completed.

1.5 DELIVERY, STORAGE AND HANDLING

A. Materials must be delivered in Connor's original, unopened, and undamaged packaging with identification labels intact.

B. Store the material inside protected from exposure to harmful weather conditions on a clean, dry, flat surface protected from possible damage. Do not stack rolls of material.

C. Storage conditions shall be 60°F to 85°F. Ambient RH shall not exceed 70%.

1.6 SITE CONDITIONS

A. Installation of synthetic materials shall not commence until all other finishes and overhead mechanical trades have completed their work in the synthetic floor areas.

B. Permanent heat, light and ventilation shall be installed and operating during and after installation. Subfloors shall be clean, dry, and free from dirt, dust, oil, grease, paint, old adhesive residue, or other foreign materials.

C. Moderate room temperature of 65° F to 80° F, ambient RH shall be 70% or less which must be maintained for one week prior to, during and 72 hours after installation.

D. Flooring installation shall not begin until moisture vapor emissions, pH level, concrete porosity, and levelness of concrete subfloors have been met. The installation area shall be closed to all traffic and activity for a period to be set by the flooring contractor.

E. Environmental Limitations

1. Comply with requirements of Connor.
2. Adhere to all SDS requirements for materials employed in the work. Protect all persons from exposure to hazardous materials at all times.

F. After the synthetic floors are installed and the game lines are painted, the area is to be closed to allow curing time for the system. No other trades or personnel are allowed on the floor until the owner has accepted it.

1.7 WARRANTY

A. Connor provides a limited warranty of one (1) year on the materials it has supplied. (A copy of the full warranty, with its Terms and Exclusions, is available from the authorized Connor Dealer.) This warranty is expressly limited to the flooring materials (goods) supplied by Connor. This warranty does not cover floor damage caused (wholly or in part) by fire, winds, floods, moisture, other unfavorable atmospheric conditions, or chemical action, nor does it apply to damage caused by ordinary wear, misuse, abuse, negligent or intentional misconduct, aging, faulty building construction, concrete slab separation, faulty or unsuitable subsurface or site preparation, settlement of the building walls or faulty or unprofessional installation of Connor flooring systems.

B. Connor shall not be liable for incidental or consequential losses, damages or expenses directly or indirectly arising from the sale, handling or use of the materials (goods) or from any other cause relating thereto, and their liability hereunder in any case is expressly limited to the replacement of materials (goods) not complying with this agreement or, at their election, to the repayment of, or crediting buyer with, an amount equal to the purchase price of such materials (goods), whether such claims are for breach of warranty or negligence. Any claim shall be deemed waived by buyer unless submitted to Connor in writing within 30 days from the date buyer discovered, or should have discovered, any claimed breach.

PART 2 - PRODUCTS

2.1 MATERIALS (Connor ElastiPlus™) or approved equal.

A. All polyurethane components shall be non-hazardous, and shall not contain ANY lead, mercury, heavy metals, PCB, or formaldehyde, and shall be supplied by Connor or approved equal.

1. Physical Properties

i.	Standard for Indoor Sports System	P-1	ASTM 2772
ii.	Adhesive	Solvent Free	ASTM D3960
iii.	Indoor Air Quality (IAQ)	Floorscore	California 01350
iv.	Total Volatile Organic Compounds	Compliant	CDPH/EHLB v1.2-2017
v.	Shock Absorption 7mm basemat	24%	EN 14808
vi.	Shock Absorption 9mm basemat	27%	EN 14808
vii.	Coefficient of Friction	1.45 +	ASTM D1894

viii.	Ball rebound	>90	EN 12235
ix.	Classification	P-1	EN 14904
x.	Gloss	5-15%	
xi.	System Type	Point Elastic	EN 14904
xii.	Tabor Abrasion	.06+ .01	ASTM C501
xiii.	Resistance to rolling loads	1500 N	EN 1569
xiv.	Tensile strength	1000-1400 psi	ASTM D412
xv.	Elongation at break	100-140%	ASTM D412
xvi.	Tear strength	65-85 pli	ASTM D624
xvii.	Surface Hardness	70-80 Shore A	DIN 53505
xviii.	Light (color) fastness	Excellent	DIN 54004

B. ElastiPlus™ Basemat Adhesive – Two-component polyurethane.

C. ElastiPlus™ Basemat – Specially formulated prefabricated resilient basemat made of recycled rubber and foam granules bound with MDI polyurethane. Basemat is a constant thickness.

1. Basemat density – 47.5 +5 lbs/ft^3
2. Basemat thickness

    a. 9mm

D. ElastiPlus™ Scratch Coat (mat sealer) – Two-component, thixotropic polyurethane compound.

E. ElastiPlus™ Wear Coat – Two-component, pigmented, seamless self-leveling polyurethane. Average wear layer thickness – 2mm

F. ElastiPlus™ Top Coat (matte finish) – Three-component water-based urethane Top Coat. Select from standard colors.

G. ElastiPlus™ Game Line Paint – Three-component water-based urethane. Select from standard colors.

PART 3 – EXECUTION

3.1 INSPECTION

A. Inspect the concrete slab for proper flatness and levelness. Report any discrepancies to the general contractor.

B. Concrete slab shall be broom cleaned by the general contractor.

C. Installer (Flooring Contractor) shall document all working conditions as specified in PART 1 – GENERAL prior to starting the installation. Report any discrepancies to the general contractor.

3.2 EXAMINATION AND PREPARATION

A. Review moisture vapor emission and pH test results as supplied by SECTION 01450.

1. Moisture vapor emissions must not exceed 80% RH as per ASTM F2170.
2. pH level should be in the range of 7 to 8.5 per ASTM F710.
3. Slab porosity must be tested per ASTM F 3191

B. Installation shall not be carried out unless the concrete flatness, moisture vapor emissions, Concrete Porosity and pH requirements as specified are satisfied.

1. Concrete shall be smooth and level, NOT BURNISHED

3.3 INSTALLATION

A. Prepare the concrete to receive the flooring material in accordance with installation instructions.

B. Basemat

1. Unroll basemat, fold, and adhere to substrate or unroll directly into spread adhesive. Do not cut the base mat to final dimensions until it is laid into the adhesive.
2. Thoroughly mix the two-component polyurethane adhesive per Connor's instructions and apply it directly to the concrete subfloor with a V-notched 3/32" X 3/32" X 3/32" trowel.
3. Install the base mat into the freshly applied adhesive. Do not allow a compression fit at any seam. Roll the base mat with a 100 lb segmented roller and repeat the rolling process on the entire mat 45 minutes after installation. Allow the adhesive to cure before proceeding to the next step.

C. Scratch Coat

1. Thoroughly mix the two-component Scratch Coat per Connor's instructions.
2. Apply two layers of Scratch Coat to the base mat with a flat trowel. Allow each layer to cure a minimum of 8 hours before proceeding to the next application. Inspect for and fill all gaps by applying additional material as needed. Sand down any ridges in the cured Scratch Coat with 100 grit sand paper.

D. Wear Coat

1. Thoroughly mix the two-component Wear Coat per Connor's instructions.
2. Apply the mixed wear coat material using a notched squeegee in one layer. The Wear Coat must be applied wet-into-wet to create a seamless surface. Allow the Wear Coat to cure 12 hours before proceeding to the next application. Sand any imperfections in the finished surface with 100 grit sandpaper.

E. Top Coat

1. Thoroughly mix the three-component water-based urethane Top Coat per Connor's instructions.

    a. Apply the mixed material with a paint roller at 250 to 300 square feet per gallon. Allow the Top Coat to cure a minimum of 18 hours before applying the game lines.
    b. Optional application (Contractor's option) - Apply the mixed material with an airless sprayer at 225 to 250 square feet per gallon. Allow the Top Coat to cure a minimum of 18 hours before applying the game lines.

F. Game Lines

1. Use only high-quality masking tape approved by Connor.
2. Thoroughly mix the three-component game line paint per Connor's instructions.
3. Provide game lines as indicated on drawings.

G. Remove all excess and waste materials from the work area. Dispose of empty containers in accordance with federal and local statutes.

END OF SECTION 096566

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.

B. This section includes, but is not limited to, the following:

1. Cubicle curtains and tracks.
2. Refer to Drawings for configurations.

1.2 SUMMARY

A. This Section includes the following:

1. Curtain tracks and curtain carriers.
2. Cubicle curtains.

B. Related Sections include the following:

1. Division 06 Section "Rough Carpentry Miscellaneous Rough Carpentry" for wood blocking for mounting items requiring anchorage.

1.3 DEFINITION

A. IV: Intravenous.

1.4 PERFORMANCE REQUIREMENTS

A. Curtains: Provide curtain fabrics with the following characteristics:

1. Fabrics are launderable to a temperature of not less than 160 deg F (71 deg C) 90 deg F (32 deg C).
2. Fabrics are flame resistant and are identical to those that have passed NFPA 701 when tested by a testing and inspecting agency acceptable to authorities having jurisdiction.

a. Identify fabrics with appropriate markings of applicable testing and inspecting agency.

1.5 SUBMITTALS

A. Product Data: Include durability, laundry temperature limits, fade resistance, and fire-test-response characteristics for each type of curtain fabric indicated.

1. Include data on each type of applied curtain treatment.

B. Shop Drawings: Show layout and types of cubicles, sizes of curtains, number of carriers, anchorage details, and conditions requiring accessories. Indicate dimensions taken from field measurements.

1. Include details on blocking above ceiling and in walls.

C. Coordination Drawings: Reflected ceiling plans, drawn to scale, on which the following items are shown and coordinated with each other, based on input from installers of the items involved:

1. Suspended ceiling components.
2. Structural members to which suspension systems will be attached.
3. Items penetrating finished ceiling, including the following:

a. Lighting fixtures.
b. Air outlets and inlets.
c. Speakers.
d. Sprinklers.
e. Access panels.

D. Samples for Initial Selection: For each type of curtain material indicated.

E. Curtain and Track Schedule: Use same designations indicated on Drawings.

F. Manufacturer Certificates: Signed by manufacturers certifying that products comply with requirements.

G. Operation and Maintenance Data: For curtains, track, and hardware to include in operation and maintenance manuals.

1.6 PROJECT CONDITIONS

A. Environmental Limitations: Do not install cubicles until spaces are enclosed and weatherproof, wet work in spaces is complete and dry, work above ceilings is complete, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.

1.7 EXTRA MATERIALS

A. Furnish extra materials described below**,** before installation begins, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Curtain Carriers and Track End Caps: Full-size units equal to 3 percent of amount installed, but no fewer than 1 units.

2. Curtains: Full-size units equal to 10 percent of amount installed for each size indicated, but no fewer than 2 units.

PART 2 - PRODUCTS

2.1 CURTAIN TRACKS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. ADC Hospital Equipment; Division of Automatic Devices Company.
2. Alderman Acres Mfg, Inc.
3. Barjan Manufacturing Ltd.
4. Coldraco, Inc.
5. Covoc Corporation.
6. Crowder, K. N. Manufacturing, Inc.
7. Cubicle Curtain Factory, Inc.
8. Diamond Drapery Co.
9. Erwin and Associates, Inc.
10. General Cubicle Company, Inc.
11. Imperial Fastener Company, Inc.
12. InPro Corporation.
13. Nelson, A. R. Co.
14. Pryor Products.
15. Salsbury Industries.
16. Silent Gliss USA Inc.
17. Tubular Specialties Manufacturing, Inc.
18. Inpro.

B. Extruded-Aluminum Track: Not less than 5/8 inch wide by 1/2 inch high (16 mm wide by 13 mm high); with minimum wall thickness of 0.058 inch (1.47 mm).

1. Curved Track: Factory-fabricated, 14-inch- (356-mm-) radius bends.
2. Finish: Clear anodized.

C. Track Accessories: Fabricate splices, end caps, connectors, end stops, coupling and joining sleeves, wall flanges, brackets, ceiling clips, and other accessories from same material and with same finish as track.
1. End Stop: Removable with carrier hook.

D. Curtain Carriers: Two nylon rollers and nylon axle with aluminum hook.

E. Exposed Fasteners: Stainless steel.

F. Concealed Fasteners: Hot-dip galvanized.

2.2 CURTAINS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. ADC Hospital Equipment; Division of Automatic Devices Company.
2. Alderman Acres Mfg, Inc.
3. Barjan Manufacturing Ltd.
4. Catalina Curtain Company.
5. Coldraco, Inc.
6. Covoc Corporation.
7. Cubicle Curtain Factory, Inc.
8. Diamond Drapery Co.
9. Erwin and Associates, Inc.
10. General Cubicle Company, Inc.
11. Imperial Fastener Company, Inc.
12. InPro Corporation.
13. Nelson, A. R. Co.
14. Pryor Products.
15. Salsbury Industries.
16. Tubular Specialties Manufacturing, Inc.

B. Cubicle Curtain Fabric: Curtain manufacturer's standard, 100 percent polyester, inherently and permanently flame resistant, stain resistant, and antimicrobial.

1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:

a. KoSa; Avora FR.
b. Trevira, R-M Schulz Consulting, Inc.; Trevira CS.

C. Curtain Grommets: Two-piece, rolled-edge, rustproof, nickel-plated brass; spaced not more than 6 inches (152 mm) o.c.; machined into top hem.

D. Mesh Top: No. 40nylon mesh.

E. Beaded-Chain Curtain Drop: 9 inches (229 mm) long; nickel-plated steel, with aluminum hook.

F. Curtain Tieback: Nickel-plated brass chain; one at each curtain termination.

2.3 CURTAIN FABRICATION

A. Fabricate curtains to comply with the following requirements:

1. Width: Equal to track length from which curtain is hung plus 10 percent added fullness, but not less than 12 inches (305 mm) added fullness.
2. Length: Equal to floor-to-ceiling height, with 20-inch (508-mm) mesh top, and minus distance above the finished floor at bottom as follows:

a. Cubicle Curtains: 12 inches (305 mm).

3. Top Hem: Not less than 1 inch (25.4 mm) and not more than 1-1/2 inches (38 mm) wide, triple thickness, reinforced with integral web, and double lock stitched.
4. Mesh Top: Top hem not less than 1 inch (25.4 mm) and not more than 1-1/2 inches (38 mm) wide, triple thickness, reinforced with integral web, and double lock stitched. Double lock stitch bottom of mesh directly to 1/2-inch (13-mm) triple thickness, top hem of curtain fabric.
5. Bottom Hem: Not less than 1 inch (25.4 mm) and not more than 1-1/2 inches (38 mm) wide, double thickness and single] [double thickness and double lock stitched.
6. Side Hems: Not less than 1/2 inch (13 mm) and not more than 1-1/4 inches (32 mm) wide, with triple turned edges, and single lock stitched.

B. Vertical Seams: Not less than 1/2 inch (13 mm) wide, double turned and double stitched.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Installer present, for compliance with requirements for installation tolerances, and other conditions affecting performance of work.

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

3.2 INSTALLATION

A. General: Install tracks level and plumb, according to manufacturer's written instructions.

B. Up to 16 feet (4.9 m) in length, provide track fabricated from 1 continuous length.

1. Curtain Track Mounting: Surface.

C. Surface Track Mounting: Fasten surface-mounted tracks at intervals of not less than 24 inches (610 mm). Fasten support at each splice and tangent point of each corner. Center fasteners in track to ensure unencumbered carrier operation. Attach track to ceiling as follows:
1. Attach track to suspended ceiling grid with manufacturer's proprietary clip.

D. Track Accessories: Install splices, end caps, connectors, end stops, coupling and joining sleeves, and other accessories as required for a secure and operational installation.

1. Provide one locking switch unit for each pair of beds.

E. Curtain Carriers: Provide curtain carriers adequate for 6-inch (152-mm) spacing along full length of curtain plus an additional carrier.

F. Curtains: Hang curtains on each curtain track. Secure with curtain tieback.

3.3 PROTECTION

A. Protect installed recessed track openings with nonresidue adhesive tape to prevent construction debris from impeding carrier operation. Remove tape prior to Substantial Completion.

END OF SECTION 10 21 23

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. This Section includes the following gymnasium equipment:

1. Safety Pads (for Calming Rooms).

1.3 DEFINITIONS

A. FIBA: International Basketball Federation (Federation Internationale de Basketball Amateur).

B. FIVB: International Volleyball Federation (Federation Internationale de Volleyball).

C. IBF: International Badminton Federation.

D. NAGWS: The National Association for Girls and Women in Sport.

E. NCAA: The National Collegiate Athletic Association.

F. NFHS: The National Federation of State High School Associations.

G. USAV: USA Volleyball.

1.4 SUBMITTALS

A. Product Data: For each type of product indicated.

1. If applicable, include assembly, disassembly, and storage instructions for removable equipment.
2. Motors: Show nameplate data, ratings, characteristics, and mounting arrangements.

B. Shop Drawings: For gymnasium equipment. Include plans, elevations, sections, details, attachments to other work, and the following:

1. Method of field assembly for removable equipment, connections, installation details, mountings, floor inserts, attachments to other work, and operational clearances.
2. Transport and storage accessories for removable equipment.

C. Structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation including loads, point reactions, and locations for attachment of gymnasium equipment to structure.

D. Coordination Drawings: Court layout plans, drawn to scale, and coordinating floor inserts, game lines, and markers applied to finished flooring.

E. Samples for Initial Selection: For each type of gymnasium equipment indicated.

F. Product Certificates: For each type of gymnasium equipment, signed by product manufacturer.

G. Qualification Data: For Installer.

H. Operation and Maintenance Data: For gymnasium equipment to include in emergency, operation, and maintenance manuals.

I. Warranty: Special warranty specified in this Section.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: An employer of workers trained and approved by manufacturer.

B. Source Limitations: Obtain each type of gymnasium equipment through one source from a single manufacturer.

C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

D. Composite Wood Products: Made without urea formaldehyde.

1.6 PROJECT CONDITIONS

A. Environmental Limitations: Do not install gymnasium equipment until spaces are enclosed and weatherproof, wet work in spaces is complete and dry, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.

B. Field Measurements: Verify position and elevation of floor inserts and layout for gymnasium equipment.

1.7 COORDINATION

A. Coordinate installation of floor inserts with structural floors and finish flooring installation and with court layout and game lines and markers on finish flooring.

B. Coordinate layout and installation of overhead-supported gymnasium equipment and suspension system components with other construction including light fixtures, HVAC equipment, fire-suppression-system components, and partition assemblies.

PART 2 - PRODUCTS

2.1 SAFETY PADS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

C. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated in the schedule at the end of the section or a comparable product by one of the following:

1. AALCO Manufacturing.
2. Jaypro Sports, LLC.
3. Performance Sports Systems. Basis-of-Design.
4. Porter Athletic Equipment Company.

D. Safety Pad Surface-Burning Characteristics: ASTM E 84 by UL or another testing and inspecting agency acceptable to authorities having jurisdiction:

1. Flame-Spread Index: 25 or less.
2. Smoke-Developed Index: 450 or less.

E. Pad Coverings: Provide safety pad fabric covering fabricated from puncture- and tear-resistant, not less than 14-oz./sq. yd (475-g/sq. m) PVC-coated polyester or nylon-reinforced PVC fabric treated with fungicide for mildew resistance; with surface-burning characteristics indicated.

F. Wall Safety Pads: Padded wall wainscot panels designed to be attached in a continuous row; each panel section consisting of fill laminated to backer board with visible surfaces fully covered by seamless fabric covering, free of sag and wrinkles and firmly attached to back of backer board.

1. Backer Board: Not less than 3/8-inch- (9.5-mm-) thick plywood, mat formed, or composite panel.
2. Fill: Multiple-impact-resistant foam not less than 2-inch- (50-mm-) thick polyurethane, 3.5-lb/cu. ft. (56-kg/cu. m) density.
3. Size: Each panel section, 24 inches (600 mm) wide by not less than 72 inches (1800 mm) long.
4. Number of Panel Sections: As indicated modular panel sections.
5. Installation Method: Manufacturer's standard.
6. Fabric Covering Color(s): As selected by Architect from manufacturer's full range for two (2) color(s).

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for play court layout, alignment of mounting substrates, installation tolerances, operational

clearances, accurate locations of connections to building electrical system, and other conditions affecting performance.

1. Verify critical dimensions.
2. Examine supporting structure and subgrades, subfloors and footings below finished floor.
3. Examine wall assemblies, where reinforced to receive anchors and fasteners, to verify that locations of concealed reinforcements have been clearly marked. Locate reinforcements and mark locations.
4. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

A. General: Comply with manufacturer's written installation instructions and competition rules indicated for each type of gymnasium equipment. Complete equipment field assembly, where required.

B. Wall Safety Pads: Mount with bottom edge at 8 inches above finished floor.

C. Anchoring to In-Place Construction: Use anchors and fasteners where necessary for securing built-in and permanently placed gymnasium equipment to structural support and for properly transferring load to in-place construction.

3.3 ADJUSTING

A. Adjust movable components of gymnasium equipment to operate safely, smoothly, easily, and quietly, free from binding, warp, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Lubricate hardware and moving parts.

3.4 CLEANING

A. After completing gymnasium equipment installation, inspect components. Remove spots, dirt, and debris and touch up damaged shop-applied finishes according to manufacturer's written instructions.

B. Replace gymnasium equipment and finishes that cannot be cleaned and repaired, in a manner approved by Architect, before time of Substantial Completion.

END OF SECTION 11 66 23

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Packaged, large-capacity, rooftop air conditioning units.

1.2 DEFINITIONS

A. RTU: Rooftop unit. As used in this Section, this abbreviation means packaged, large-capacity, rooftop air-conditioning units. This abbreviation is used regardless of whether the unit is mounted on the roof or on a concrete base on ground.

1.3 ACTION SUBMITTALS

A. Product Data: For each RTU.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
2. Include rated capacities, dimensions, required clearances, characteristics, furnished specialties, and accessories.
3. Include unit dimensions and weight.
4. Include cabinet material, metal thickness, finishes, insulation, and accessories.
5. Fans:

    a. Include certified fan-performance curves with system operating conditions indicated.
    b. Include certified fan-sound power ratings.
    c. Include fan construction and accessories.
    d. Include motor ratings, electrical characteristics, and motor accessories.

6. Include certified coil-performance ratings with system operating conditions indicated.
7. Include filters with performance characteristics.
8. Include gas furnaces with performance characteristics.
9. Include dampers, including housings, linkages, and operators.

B. Shop Drawings: For each packaged, large-capacity, rooftop air-conditioning units.

1. Include plans, elevations, sections, and mounting details.
2. Include details of equipment assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
3. Include diagrams for power, signal, and control wiring.

1.4 INFORMATIONAL SUBMITTALS

A. System startup reports.

B. Field quality-control reports.

1.5 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For RTUs to include in emergency, operation, and maintenance manuals.

1.6 WARRANTY

A. Warranty: Manufacturer agrees to repair or replace components of outdoor, semi-custom, air-handling unit that fail in materials or workmanship within specified warranty period.

1. Warranty Period: 1 year(s) from date of Substantial Completion.
2. Warranty Period for Heat Exchangers: Manufacturer's standard, but not less than five years from date of Substantial Completion

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by an NRTL, and marked for intended location and application.

B. NFPA Compliance: Comply with NFPA 90A for design, fabrication, and installation of RTUs and components.

C. ASHRAE 62.1 Compliance: Applicable requirements in ASHRAE 62.1, Section 5 - "Systems and Equipment" and Section 7 - "Construction and Startup."

D. ASHRAE 15 Compliance: For refrigeration system safety.

E. ASHRAE/IES 90.1 Compliance: Applicable requirements in ASHRAE/IES 90.1, Section 6 - "Heating, Ventilating, and Air-Conditioning."

F. UL Compliance: Comply with UL 1995.

2.2 CAPACITIES AND CHARACTERISTICS

A. Refer to schedule on Drawings.

2.3 PACKAGED, LARGE-CAPACITY, ROOFTOP AIR-CONDITIONING UNITS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Carrier Global Corporation.
2. Trane.
3. Valent.
4. YORK; brand of Johnson Controls International plc, Building Solutions North America.

B. Unit Casings:

1. General Fabrication Requirements for Casings: Single-wall insulated panels, fabricated to allow removal for access to internal parts and components, with joints between sections sealed.
2. Single-Wall Construction:

a. Outside Casing Wall: Galvanized steel, minimum 18 gauge thick with manufacturer's standard finish, with pitched roof panels and knockouts with grommet seals for electrical and piping connections and lifting lugs.
b. Inside Casing Wall: none.
c. Floor Plate: G90 galvanized steel,minimum 18 gauge thick.
d. Casing Insulation:

1) Materials: Matte insulation.
2) Casing Panel R-Value: Minimum R-7.
3) Insulation Thickness: 1 inch.

3. Airstream Surfaces: Surfaces in contact with airstream shall comply with requirements in ASHRAE 62.1.
4. Static-Pressure Classifications:

a. For Unit Sections Upstream of Fans: Minus 2-inch wg.
b. For Unit Sections Downstream and Including Fans: 2-inch wg.

5. Panels and Doors:

a. Panels:

1) Fabrication: Formed and reinforced with same materials and insulation thickness as casing.
2) Fasteners: Two or more camlock type for panel lift-out operation. Arrangement shall allow panels to be opened against air-pressure differential.
3) Gasket: Neoprene, applied around entire perimeters of panel frames.

4) Size: Large enough to allow inspection and maintenance of air-handling unit's internal components. Dimensions to be at least 18 inches wide by full height of unit casing up to a maximum height of 60 inches.

b. Access Doors:

1) Hinges: A minimum of two ball-bearing hinges or stainless steel piano hinge and two wedge-lever-type latches, operable from inside and outside. Arrange doors to be opened against air-pressure differential.
2) Gasket: Neoprene, applied around entire perimeters of panel frames.
3) Size: Large enough to allow inspection and maintenance of air-handling unit's internal components. Dimensions to be at least 18 inches wide by full height of unit casing up to a maximum height of 60 inches.

c. Locations and Applications:

1) Fan Section: Doors.
2) Access Section: Panels or Doors.
3) Coil Section: Inspection and access panels.
4) Damper Section: Inspection and access panels.
5) Filter Section: Doors large enough to allow periodic removal and installation of filters.
6) Mixing Section: Panels or Doors.

6. Condensate Drain Pans:

a. Location: Each type of cooling coil.
b. Construction:
1) Double-wall, stainless steel sheet with space between walls filled with foam insulation and moisture-tight seal.

c. Drain Connection:

1) Located at lowest point of pan and sized to prevent overflow. Terminate with threaded nipple on one end of pan.
2) Minimum Connection Size: NPS 1.

d. Slope: Minimum 0.125-in./ft. slope, to comply with ASHRAE 62.1, in at least two planes to collect condensate from cooling coils (including coil piping connections, coil headers, and return bends) and from humidifiers and to direct water toward drain connection.
e. Length: Extend drain pan downstream from leaving face for distance to comply with ASHRAE 62.1.
f. Width: Entire width of water producing device.
g. Depth: A minimum of 2 inches deep.

C. Fans, Drives, and Motors:

1. Fan and Drive Assemblies: Statically and dynamically balanced and designed for continuous operation at maximum-rated fan speed and motor horsepower.

2. Supply-Air Fans: Centrifugal, rated according to AMCA 210; galvanized or painted steel; mounted on solid-steel shaft.

    a. Shafts: With field-adjustable alignment.

        1) Turned, ground, and polished hot-rolled steel with keyway.

    b. Shaft Bearings:

        1) Heavy-duty, self-aligning, pillow-block type with an L-50 rated life of minimum 100,000 hours according to ABMA 9.

    c. Housings: Formed- and reinforced-steel panels to form curved scroll housings with shaped cutoff and spun-metal inlet bell.

        1) Bracing: Steel angle or channel supports for mounting and supporting fan scroll, wheel, motor, and accessories.

    d. Centrifugal Fan Wheels: Inlet flange, backplate, and shallow blades with inlet and tip curved forward in direction of airflow and mechanically fastened to flange and backplate; steel or aluminum hub swaged to backplate and fastened to shaft with setscrews.
    e. Mounting: For internal vibration isolation. Factory-mount fans with manufacturer's standard vibration isolation mounting devices having a minimum static deflection of 1 inch.
    f. Flexible Connector: Factory fabricated with a fabric strip minimum 3-1/2 inches wide, attached to two strips of minimum 2-3/4-inch-wide by 0.028-inch- thick, galvanized-steel sheet.

        1) Flexible Connector Fabric: Glass fabric, double coated with neoprene. Fabrics, coatings, and adhesives shall comply with UL 181, Class 1.

3. Drives, Direct: Factory-mounted, direct drive.
4. Drives, Belt: Factory-mounted, V-belt drive, with adjustable alignment and belt tensioning, and with 1.5 service factor based on fan motor.

    a. Pulleys: Cast iron or cast steel with split, tapered bushing, dynamically balanced at the factory.
    b. Belts: Oil resistant, non-sparking and nonstatic; in matched sets for multiple-belt drives.
    c. Belt Guards: Comply with requirements specified by OSHA and fabricate according to SMACNA's "HVAC Duct Construction Standards"; 0.146-inch- thick, 3/4-inch diamond-mesh wire screen, welded to steel angle frame; prime coated.

5. Condenser-Coil Fan: propeller, mounted on shaft of permanently lubricated motors.
6. Relief-Air Fan: Forward curved or Backward inclined, shaft mounted on permanently lubricated motor.
7. Motors:

    a. Comply with NEMA designation, temperature rating, service factor, and efficiency requirements for motors specified in Section 230500 "Common Work Results for HVAC."

D. Coils:

1. General Requirements for Coils:

    a. Comply with AHRI 410.
    b. Fabricate coils section to allow removal and replacement of coil for maintenance and to allow in-place access for service and maintenance of coil(s).
    c. Coils shall not act as structural component of unit.

2. Supply-Air Refrigerant Coil:

    a. Tubes: Copper.
    b. Fins:

        1) Material: Aluminum.
        2) Fin Spacing: Maximum 10 fins per inch.

    c. Fin and Tube Joints: Mechanical bond.
    d. Headers: Seamless-copper headers with brazed connections.
    e. Frames: Galvanized steel.
    f. Coatings: None.
    g. Ratings: Designed, tested, and rated according to ASHRAE 33 and AHRI 410.

        1) Working Pressure: Minimum 300 psig.

E. Refrigerant Circuit Components:

1. Number of Refrigerant Circuits: Two.
2. *Compressor: Hermetic, scroll, mounted on vibration isolators; with internal overcurrent and high-temperature protection, internal pressure relief, and crankcase heater.*
3. Refrigeration Specialties:

    a. Refrigerant: R-410A.
    b. Expansion valve with replaceable thermostatic element.
    c. Refrigerant filter/dryer.
    d. Manual-reset high-pressure safety switch.
    e. Automatic-reset low-pressure safety switch.
    f. Minimum off-time relay.
    g. Automatic-reset compressor motor thermal overload.
    h. Brass service valves installed in compressor suction and liquid lines.

F. Air Filtration:

1. Panel Filters:

    a. Description: Pleated factory-fabricated, self-supported, disposable air filters with holding frames.
    b. Filter Unit Class: UL 900.
    c. Minimum MERV 13.
    d. Media: Interlaced glass, synthetic or cotton fibers coated with nonflammable adhesive and antimicrobial coating.
    e. Filter-Media Frame: Beverage board with perforated metal retainer, or metal grid, on outlet side.

G. Gas Furnaces:

1. Description: Factory assembled, piped, and wired; complying with ANSI Z21.47/CSA 2.3 and NFPA 54.
2. CSA Approval: Designed and certified by and bearing label of CSA.
3. Burners: Stainless steel.

    a. Rated Minimum Turndown Ratio: 30 to 1.
    b. Fuel: Natural gas.
    c. Ignition: Electronically controlled electric spark or hot-surface igniter with flame sensor.
    d. Gas Control Valve: Two stage.
    e. Gas Train: Single-body, regulated, redundant, 24-V ac gas valve assembly containing pilot solenoid valve, pilot filter, pressure regulator, pilot shutoff, and manual shutoff.

4. Heat-Exchanger and Drain Pan: Stainless steel.
5. Venting, Gravity: Gravity vented.
6. Safety Controls:

    a. Gas Manifold: Safety switches and controls complying with ANSI standards.

H. Dampers:

1. Outdoor- and Return-Air Dampers: Low-leakage, double-skin, airfoil-blade, galvanized-steel dampers with compressible jamb seals and extruded-vinyl blade edge seals in parallel-blade arrangement with zinc-plated steel operating rods rotating in sintered bronze or nylon bearings mounted in a single galvanized-steel frame, and with operating rods connected with a common linkage. Leakage rate shall not exceed 4 cfm/sq. ft. at 1-inch wg and 8 cfm/sq. ft. at 4-inch wg rated in accordance with AMCA 500D.)
2. Electronic Damper Operators:

    a. Direct-coupled type designed for minimum 60,000 full-stroke cycles at rated torque.
    b. Electronic damper position indicator shall have visual scale indicating percent of travel and 2- to 10-V dc, feedback signal.
    c. Operator Motors:

        1) Comply with NEMA designation, temperature rating, service factor, enclosure type, and efficiency requirements for motors specified in Section 230500 "Common Work Results for HVAC."
        2) Size to operate with sufficient reserve power to provide smooth modulating action or two-position action.
        3) Permanent Split-Capacitor or Shaded-Pole Type: Gear trains completely oil immersed and sealed. Equip spring-return motors with integral spiral-spring mechanism in housings designed for easy removal for service or adjustment of limit switches, auxiliary switches, or feedback potentiometer.

    d. Nonspring-Return Motors for Dampers Larger Than 25 Sq. Ft. (2.3 sq. m): Size for running torque of 150 in. x lbf and breakaway torque of 300 in. x lbf.
    e. Spring-Return Motors for Dampers Larger Than 25 Sq. Ft. (2.3 sq. m): Size for running and breakaway torque of 150 in. x lbf.
    f. Size dampers for running torque calculated as follows:

1) Parallel-Blade Damper with Edge Seals: 7 inch-lb/sq. ft. of damper.
2) Opposed-Blade Damper with Edge Seals: 5 inch-lb/sq. ft. of damper.
3) Parallel-Blade Damper without Edge Seals: 4 inch-lb/sq. ft of damper.
4) Opposed-Blade Damper without Edge Seals: 3 inch-lb/sq. ft. of damper.
5) Dampers with 2- to 3-Inch wg (500 to 750 Pa) of Pressure Drop or Face Velocities of 1000 to 2500 fpm (5 to 13 m/s): Increase running torque by 1.5.
6) Dampers with 3- to 4-Inch wg (750 to 1000 Pa) of Pressure Drop or Face Velocities of 2500 to 3000 fpm (13 to 15 m/s): Increase running torque by 2.0.

g. Coupling: V-bolt and V-shaped, toothed cradle.
h. Overload Protection: Electronic overload or digital rotation-sensing circuitry.
i. Fail-Safe Operation: Mechanical, spring-return mechanism with external, manual gear release on nonspring-return actuators.
j. Proportional Signal: 2 to 10 V dc or 4 to 20 mA, and 2- to 10-V dc position feedback signal.
k. Temperature Rating: Minus 22 to plus 122 deg F.
l. Run Time: 12 seconds open, 5 seconds closed.

I. Electrical Power Connections:

1. RTU is to have a single connection of power to unit with unit-mounted disconnect switch accessible from outside unit and control-circuit transformer with built-in overcurrent protection.

J. Controls:

1. Basic Unit Controls:

a. Control-voltage transformer.

b. Annunciator Panel for Each Unit: Unit mounted.

1) Lights to indicate power on, cooling, heating, fan running, filter dirty, and unit alarm or failure.
2) DDC controller or programmable timer and interface with HVAC instrumentation and control system.
3) Digital display of outdoor-air temperature, supply-air temperature, return-air temperature, economizer damper position, indoor-air quality, and control parameters.

2. Controller: DDC.

a. Controller shall have volatile-memory backup.

b. Terminal-Unit Relays:

1) Provide heating- and cooling-mode changeover relays compatible with terminal control system required in Section 233600 "Air Terminal Units" and Section 230923 "Direct Digital Control (DDC) System for HVAC."

3. Interface Requirements for HVAC Instrumentation and Control System:

a. Interface relay for scheduled operation.
b. Interface relay to provide indication of fault at the central workstation and diagnostic code storage.
c. Provide BACnet compatible interface for central HVAC control workstation for the following:

1) Adjusting set points.
2) Monitoring supply fan start, stop, and operation.
3) Inquiring data to include outdoor-air damper position, supply- and room-air temperature and humidity.
4) Monitoring occupied and unoccupied operations.
5) Monitoring constant and variable motor loads.
6) Monitoring variable-frequency drive operation.
7) Monitoring cooling load.
8) Monitoring economizer cycles.
9) Monitoring air-distribution static pressure and ventilation air volume.

K. Roof Curbs:

1. Materials: Galvanized steel with corrosion-protection coating, watertight gaskets, and factory-installed wood nailer; complying with NRCA standards.

a. Curb Insulation and Adhesive: Comply with NFPA 90A or NFPA 90B.

1) Materials: ASTM C1071, Type I or II.
2) Thickness: 2 inches.

b. Application: Factory applied with adhesive and mechanical fasteners to the internal surface of curb.

1) Liner Adhesive: Comply with ASTM C916, Type I.
2) Mechanical Fasteners: Galvanized steel, suitable for adhesive attachment, mechanical attachment, or welding attachment to duct without damaging liner when applied as recommended by manufacturer and without causing leakage in cabinet.
3) Liner materials applied in this location shall have air-stream surface coated with a temperature-resistant coating or faced with a plain or coated fibrous mat or fabric depending on service air velocity.

2. Curb Dimensions: Minimum height of 14 inches. Adaptable horizontal dimensions as required for unit support and existing roof openings.

L. Accessories:

1. Electric heater with integral thermostat maintains minimum 50 deg F temperature in gas burner compartment.
2. Duplex, 115-V, ground-fault-interrupter outlet with 15-A overcurrent protection. Include transformer if required. Outlet shall be energized even if the unit main disconnect is open.
3. Filter differential pressure switch with sensor tubing on either side of filter. Set for final filter pressure loss.
4. Remote potentiometer to adjust minimum economizer damper position.

5. Coil guards of painted, galvanized-steel wire.
6. Outdoor air intake weather hood.

2.4 MATERIALS

A. Steel:

1. ASTM A36/A36M for carbon structural steel.
2. ASTM A568/A568M for steel sheet.

B. Stainless Steel:

1. Manufacturer's standard grade for casing.
2. Manufacturer's standard type, ASTM A240/A240M for bare steel exposed to airstream or moisture.

C. Galvanized Steel: ASTM A653/A653M.

D. Aluminum: ASTM B209.

2.5 SOURCE QUALITY CONTROL

A. AHRI Compliance:

1. Comply with AHRI 340/360 for testing and rating energy efficiencies for RTUs.
2. Comply with AHRI 210/240 for testing and rating energy efficiencies for RTUs
3. Comply with AHRI 270 for testing and rating sound performance for RTUs.

B. AMCA Compliance:

1. Comply with AMCA 11 and bear the AMCA-Certified Ratings Seal for air and sound performance according to AMCA 211 and AMCA 311.
2. Damper leakage tested in accordance with AMCA 500-D.
3. Operating Limits: Classify according to AMCA 99.

PART 3 - EXECUTION

3.1 EXAMINATION

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

B. Examine roughing-in for RTUs to verify actual locations of piping and duct connections before equipment installation.

C. Examine roofs for suitable conditions where RTUs will be installed.

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

3.2 INSTALLATION OF PACKAGED, LARGE-CAPACITY, ROOFTOP AIR-CONDITIONING UNITS

A. Install RTUs on curbs and coordinate roof penetrations and flashing with roof construction specified in Section 077200 "Roof Accessories." Secure RTUs to upper curb rail, and secure curb base to roof framing or concrete base with anchor bolts. Coordinate sizes and locations of roof curbs with actual equipment provided.

3.3 PIPING CONNECTIONS

A. Piping installation requirements are specified in other Sections. Drawings indicate general arrangement of piping, fittings, and specialties.

B. Where installing piping adjacent to RTU, allow space for service and maintenance.

C. Connect condensate drain pans using NPS 1-1/4, ASTM B88, Type M copper tubing. Extend to nearest equipment or roof drain. Construct deep trap at connection to drain pan and install cleanouts at changes in direction.

D. Gas Piping: Comply with applicable requirements in Section 231123 "Facility Natural-Gas Piping." Connect gas piping to burner, full size of gas train inlet, and connect with union and shutoff valve with sufficient clearance for burner removal and service.

3.4 DUCT CONNECTIONS

A. Comply with duct installation requirements specified in other HVAC Sections. Drawings indicate the general arrangement of ducts. The following are specific connection requirements:

1. Install ducts to termination at top of roof curb.
2. Remove roof decking only as required for passage of ducts. Do not cut out decking under entire roof curb.
3. Connect supply ducts to RTUs with flexible duct connectors specified in Section 233300 "Air Duct Accessories."
4. Install return-air duct continuously through roof structure.

3.5 ELECTRICAL CONNECTIONS

A. Connect electrical wiring according to Section 260519 "Low-Voltage Electrical Power Conductors and Cables."

B. Ground equipment according to Section 260526 "Grounding and Bonding for Electrical Systems."

C. Install electrical devices furnished by manufacturer, but not factory mounted, according to NFPA 70 and NECA 1.

D. Install nameplate for each electrical connection, indicating electrical equipment designation and circuit number feeding connection.

1. Nameplate shall be laminated acrylic or melamine plastic signs as specified in Section 260553 "Identification for Electrical Systems."
2. Locate nameplate where easily visible.

3.6 CONTROL CONNECTIONS

A. Install control and electrical power wiring to field-mounted control devices.

B. Connect control wiring according to Section 260523 "Control-Voltage Electrical Power Cables."

3.7 STARTUP SERVICE

A. Engage a factory-authorized service representative to perform startup service.

B. Complete installation and startup checks according to manufacturer's written instructions.

1. Inspect for visible damage to unit casing.
2. Inspect for visible damage to furnace combustion chamber.
3. Inspect for visible damage to compressor, coils, and fans.
4. Inspect internal insulation.
5. Verify that labels are clearly visible.
6. Verify that clearances have been provided for servicing.
7. Verify that controls are connected and operable.
8. Verify that filters are installed.
9. Clean condenser coil and inspect for construction debris.
10. Clean furnace flue and inspect for construction debris.
11. Connect and purge gas line.
12. Remove packing from vibration isolators.
13. Verify lubrication on fan and motor bearings.
14. Inspect fan-wheel rotation for movement in correct direction without vibration and binding.
15. Adjust fan belts to proper alignment and tension.
16. Start unit according to manufacturer's written instructions.

    a. Start refrigeration system.
    b. Do not operate below recommended low-ambient temperature.
    c. Complete startup sheets and attach copy with Contractor's startup report.

17. Inspect and record performance of interlocks and protective devices; verify sequences.
18. Operate unit for an initial period as recommended or required by manufacturer.
19. Perform the following operations for both minimum and maximum firing. Adjust burner for peak efficiency.

a. Measure gas pressure on manifold.
b. Inspect operation of power vents.
c. Measure combustion-air temperature at inlet to combustion chamber.
d. Measure flue-gas temperature at furnace discharge.
e. Perform flue-gas analysis. Measure and record flue-gas carbon dioxide and oxygen concentration.
f. Measure supply-air temperature and volume when burner is at maximum firing rate and when burner is off. Calculate useful heat to supply air.

20. Calibrate thermostats.
21. Adjust and inspect high-temperature limits.
22. Inspect outdoor-air dampers for proper stroke and interlock with return-air dampers.
23. Start refrigeration system and measure and record the following when ambient is a minimum of 15 deg F above return-air temperature:

    a. Coil leaving-air, dry- and wet-bulb temperatures.
    b. Coil entering-air, dry- and wet-bulb temperatures.
    c. Outdoor-air, dry-bulb temperature.
    d. Outdoor-air-coil, discharge-air, dry-bulb temperature.

24. Inspect controls for correct sequencing of heating, mixing dampers, refrigeration, and normal and emergency shutdown.
25. Measure and record the following minimum and maximum airflows. Plot fan volumes on fan curve.

    a. Supply-air volume.
    b. Return-air volume.
    c. Relief-air volume.
    d. Outdoor-air intake volume.

26. Simulate maximum cooling demand and inspect the following:

    a. Compressor refrigerant suction and hot-gas pressures.
    b. Short circuiting of air through condenser coil or from condenser fans to outdoor-air intake.

27. Verify operation of remote panel including pilot-light operation and failure modes. Inspect the following:

    a. High-temperature limit on gas-fired heat exchanger.
    b. Low-temperature safety operation.
    c. Filter high-pressure differential alarm.
    d. Economizer to minimum outdoor-air changeover.
    e. Relief-air fan operation.
    f. Smoke and firestat alarms.

28. After startup and performance testing and prior to Substantial Completion, replace existing filters with new filters.

3.8 ADJUSTING

A. Adjust damper linkages for proper damper operation.

B. Comply with requirements in Section 230593 "Testing, Adjusting, and Balancing for HVAC" for air-handling system testing, adjusting, and balancing.

3.9 FIELD QUALITY CONTROL

A. Perform the following tests and inspections with the assistance of a factory-authorized service representative:

1. After installing RTUs and after electrical circuitry has been energized, test units for compliance with requirements.
2. Inspect for and remove shipping bolts, blocks, and tie-down straps.
3. Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation.
4. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

B. RTU will be considered defective if it does not pass tests and inspections.

C. Prepare test and inspection reports.

END OF SECTION 23 74 16.13

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END OF ADDENDUM 3

ARCHITECTURE PLAN NOTES	
#	KEYNOTE INFORMATION
1	ALT. 1. RENOVATE THE LIFE SKILLS ROOMS E102, E103, E104, AND E105
2	ALT. 2. COMPLETE THE FINISH WORK IN CAFETERIA B101
3	ALT. 3. FURNISH AND INSTALL A NEW SYNTHETIC FLOOR AND FINISHES IN GYMNASIUM B102
4	ALT. 4. CONSTRUCT THE STAFF RESTROOMS A106, A107, D106, AND D107
5	ALT. 5. CONSTRUCT WORKROOMS A113 AND D113
6	ALT. 6. RENOVATE RESTROOMS C115 AND C116
7	ALT. 7. RENOVATION AND REORGANIZATION OF THE KITCHEN PREP AREA. INCLUDED IN THIS WORK IS THE REUSE OF EXISTING EQUIPMENT, AS WELL AS FURNISHING NEW EQUIPMENT.
8	ALT. 8. INSTALL LVT WALL COVERING TO MAIN CORRIDORS AS INDICATED IN DRAWINGS

GENERAL FLOOR PLAN NOTES

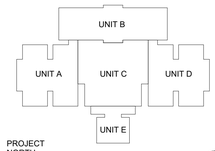
NOTE: GENERAL NOTES LISTED BELOW REFER TO ALL SHEETS CONTAINED IN THIS SET.

1. FIELD VERIFY ALL EXISTING CONDITIONS, NOTIFY THE ARCHITECT/ENGINEER IMMEDIATELY OF ANY DISCREPANCIES THAT EXIST.
2. CONSTRUCTION AND INSTALLATIONS SHALL CONFORM, TO ALL FEDERAL, STATE, AND LOCAL ORDINANCES, CODES, ETC.
3. ALL DIMENSIONS ON FLOOR PLANS ARE FROM THE FACE OF FINISH GYPSUM BOARD, FACE OF MASONRY, FACE OF CONCRETE, FACE OF EXISTING WALL OR CENTERLINE OF COLUMNS, UNLESS NOTED OTHERWISE.
4. GYPSUM BOARD WALLS NOT REQUIRED TO EXTEND TO THE BOTTOM OF THE STRUCTURE ABOVE SHALL TERMINATE 6" ABOVE THE HIGHEST ADJOINING CEILING AND SHALL BE BRACED EITHER BY ATTACHING ALTERNATING DIAGONAL STUDS 48" O.C. FROM TOP OF WALL TO STRUCTURE OR BY EXISTING WALL STUDS TO STRUCTURE ABOVE.
5. PROVIDE WOOD BLOCKING IN WALLS AND CEILINGS AS REQUIRED FOR INSTALLATION OF CASEWORK OR OTHER SURFACE-MOUNTED ACCESSORIES.
6. ALL CHASE WALLS SHALL BE 3 5/8" METAL STUDS @ 16" O.C WITH 5/8" GYPSUM BOARD ON ONE SIDE UNLESS NOTED OTHERWISE.

1 A100 **FIRST FLOOR OVERALL PLAN**
1/16" = 1'-0"

2 A100 **ALT #8 LVT WALL COVERING ELEVATION**
1/4" = 1'-0"

#	Date	Description
1	MAY 17, 2024	ADDENDUM NO. 1
2	MAY 22, 2024	ADDENDUM NO. 2
3	MAY 23, 2024	ADDENDUM NO. 3



VPS ARCHITECTURE
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PH: (317) 353-3281, www.VPSARCH.com
STRUCTURAL: ENGINEERS:

Project Name:
RENOVATIONS TO RUSHVILLE ELEMENTARY SCHOOL

Drawing Title:
OVERALL FLOOR PLAN

GEORGE SNYDER LINK REGISTERED No. 19600157 STATE OF INDIANA PROFESSIONAL ENGINEER

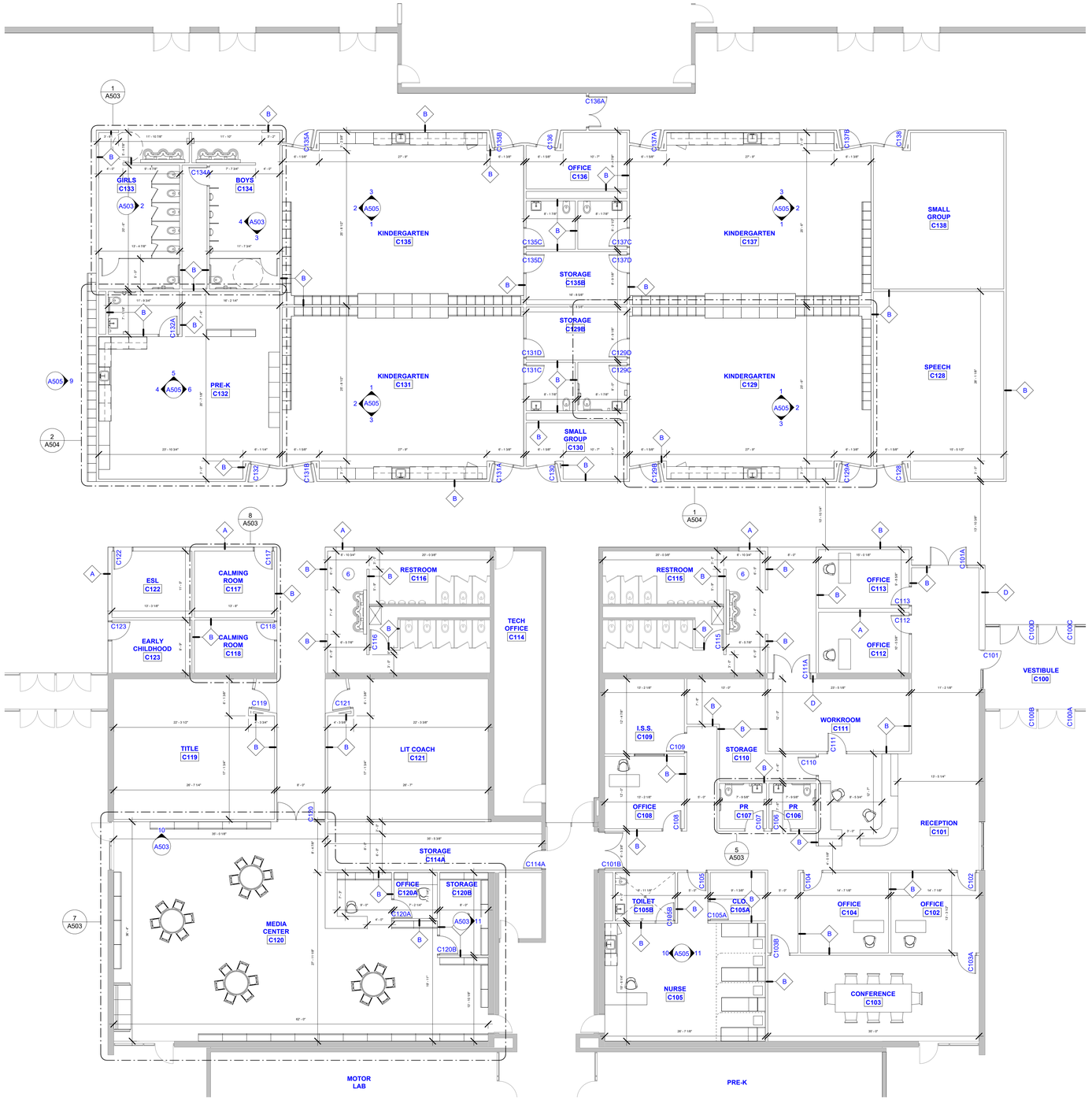
Client Project No:
VPS Project No: **2023021.00**
Project Issue Date: **05/23/24**
Drawing No: **A100**

ARCHITECTURE PLAN NOTES	
#	KEYNOTE INFORMATION
1	ALT. 1. RENOVATE THE LIFE SKILLS ROOMS E102, E103, E104, AND E105
2	ALT. 2. COMPLETE THE FINISH WORK IN CAFETERIA B101
3	ALT. 3. FURNISH AND INSTALL A NEW SYNTHETIC FLOOR AND FINISHES IN GYMNASIUM B102
4	ALT. 4. CONSTRUCT THE STAFF RESTROOMS A106, A107, D106, AND D107
5	ALT. 5. CONSTRUCT WORKROOMS A113 AND D113
6	ALT. 6. RENOVATE RESTROOMS C115 AND C116
7	ALT. 7. RENOVATION AND REORGANIZATION OF THE KITCHEN PREP AREA. INCLUDED IN THIS WORK IS THE REUSE OF EXISTING EQUIPMENT, AS WELL AS FURNISHING NEW EQUIPMENT.
8	ALT. 8. INSTALL LVT WALL COVERING TO MAIN CORRIDORS AS INDICATED IN DRAWINGS

GENERAL FLOOR PLAN NOTES

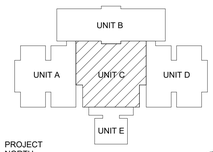
NOTE: GENERAL NOTES LISTED BELOW REFER TO ALL SHEETS CONTAINED IN THIS SET.

1. FIELD VERIFY ALL EXISTING CONDITIONS, NOTIFY THE ARCHITECT/ENGINEER IMMEDIATELY OF ANY DISCREPANCIES THAT EXIST.
2. CONSTRUCTION AND INSTALLATIONS SHALL CONFORM, TO ALL FEDERAL, STATE, AND LOCAL ORDINANCES, CODES, ETC.
3. ALL DIMENSIONS ON FLOOR PLANS ARE FROM THE FACE OF FINISH GYPSUM BOARD, FACE OF MASONRY, FACE OF CONCRETE, FACE OF EXISTING WALL OR CENTERLINE OF COLUMNS, UNLESS NOTED OTHERWISE.
4. GYPSUM BOARD WALLS NOT REQUIRED TO EXTEND TO THE BOTTOM OF THE STRUCTURE ABOVE SHALL TERMINATE 6" ABOVE THE HIGHEST ADJOINING CEILING AND SHALL BE BRACED EITHER BY ATTACHING ALTERNATING DIAGONAL STUDS 48" O.C. FROM TOP OF WALL TO STRUCTURE OR BY EXISTING WALL STUDS TO STRUCTURE ABOVE.
5. PROVIDE WOOD BLOCKING IN WALLS AND CEILINGS AS REQUIRED FOR INSTALLATION OF CASEWORK OR OTHER SURFACE-MOUNTED ACCESSORIES.
6. ALL CHASE WALLS SHALL BE 3 5/8" METAL STUDS @ 16" O.C WITH 5/8" GYPSUM BOARD ON ONE SIDE UNLESS NOTED OTHERWISE.



1 A103 **FIRST FLOOR NEW CONSTRUCTION PLAN UNIT C**
1/8" = 1'-0"

#	Date	Description
1	MAY 17, 2024	ADDENDUM NO. 1
2	MAY 22, 2024	ADDENDUM NO. 2
3	MAY 23, 2024	ADDENDUM NO. 3



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STRUCTURAL: ENGINEERS:

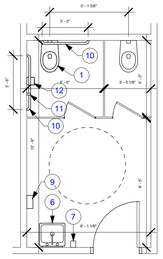
Project Name:
RENOVATIONS TO RUSHVILLE ELEMENTARY SCHOOL

Drawing Title:
ARCHITECTURAL FLOOR PLAN - UNIT C

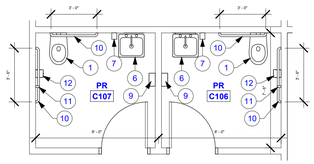
GEORGE SNYDER LINN REGISTERED No. 19600157 STATE OF INDIANA ARCHITECT

Client Project No:
VPS Project No: **2023021.00**
Project Issue Date: **05/23/24**
Drawing No: **A103**

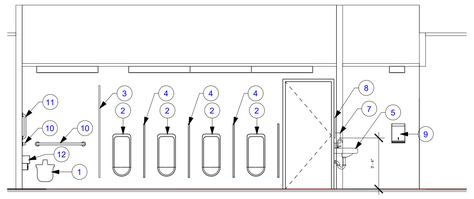
ENLARGED PLAN NOTES	
#	KEYNOTE INFORMATION
1	WALL HUNG WATER CLOSET
2	ACCESSABLE URINAL
3	TOILET PARTITION SYSTEM (SOLID PLASTIC)
4	SOLID PLASTIC URINAL SCREEN (18" DP.)
5	THREE STATION HANDWASHING LAVATORY
6	SINGLE HANDWASHING LAVATORY
7	SOAP DISPENSER (BY OWNER)
8	16"W. x 30"HT. MIRROR
9	PAPER TOWEL DISPENSER (BY OWNER)
10	GRAB BAR (LENGTH INDICATED)
11	VERTICAL GRAB BAR (18"HT.)
12	TOILET PAPER DISPENSER (BY OWNER)
13	CHANGING TABLE
14	SHOWER
15	BOOK SHELF 60"HT. (LENGTH INDICATED)
16	BOOK SHELF 48"HT. (LENGTH INDICATED)
17	BOOK SHELF 36"HT. (LENGTH INDICATED)
18	NEW WALL PADDING, SEE SPECIFICATIONS. PROVIDE ADDITIONAL ACOUSTICAL BATT INSULATION IN ADJACENT WALLS AND ABOVE CEILING.



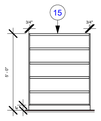
6 A503 **ENLARGED FLOOR PLAN - ALT #4 TYP**
1/4" = 1'-0"



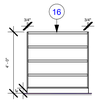
5 A503 **ENLARGED FLOOR PLAN - ADMIN TOILETS**
1/4" = 1'-0"



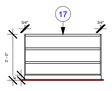
4 A503 **ENLARGED TOILET ELEVATION**
1/4" = 1'-0"



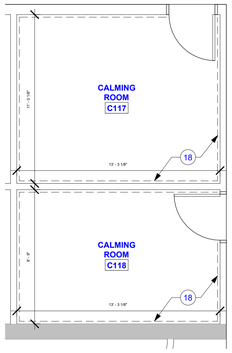
11 A503 **BOOK SHELF ELEVATION**
1/4" = 1'-0"



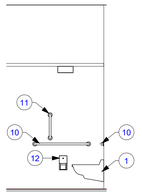
10 A503 **BOOK SHELF ELEVATION**
1/4" = 1'-0"



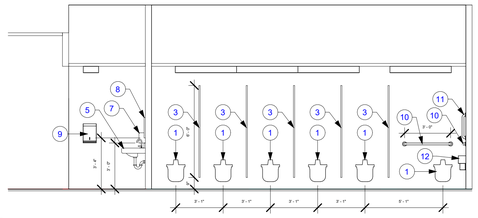
9 A503 **BOOK SHELF ELEVATION**
1/4" = 1'-0"



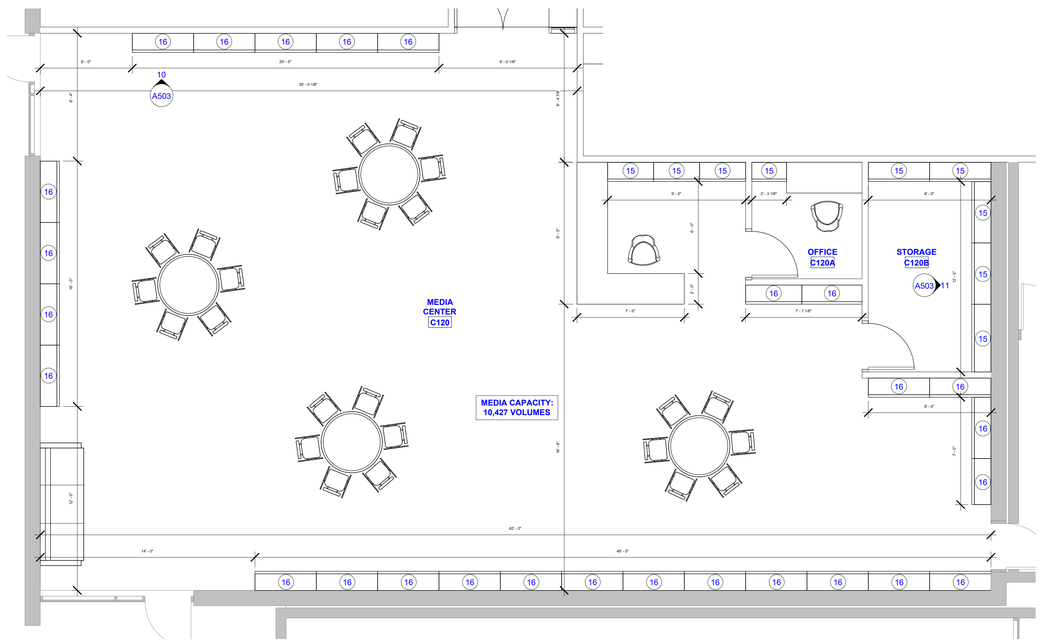
8 A503 **ENLARGED PLAN - CALMING ROOMS**
1/4" = 1'-0"



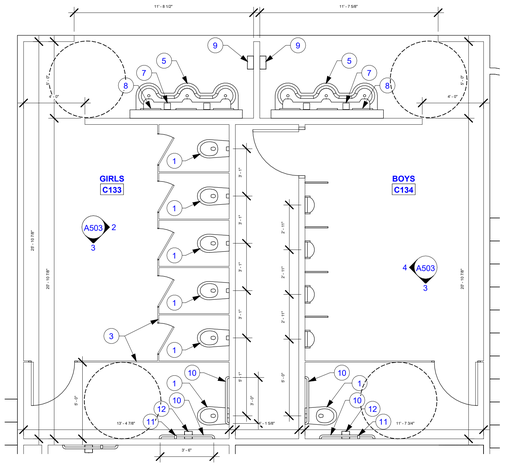
3 A503 **ENLARGED TOILET ELEVATION**
1/4" = 1'-0"



2 A503 **ENLARGED TOILET ELEVATION**
1/4" = 1'-0"



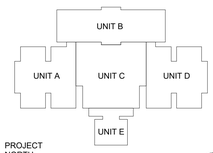
7 A503 **ENLARGED PLAN - MEDIA CENTER**
1/4" = 1'-0"



1 A503 **ENLARGED PLAN - GIRLS TOILET UNIT C**
1/4" = 1'-0"

SCS CONSTRUCTION SERVICES

#	Date	Description
1	MAY 17, 2024	ADDENDUM NO. 1
2	MAY 22, 2024	ADDENDUM NO. 2
3	MAY 23, 2024	ADDENDUM NO. 3



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PH: (317) 353-3281, www.VPSARCH.com
STRUCTURAL: ENGINEERS:

Project Name:
RENOVATIONS TO RUSHVILLE ELEMENTARY SCHOOL

Drawing Title:
TOILET & MEDIA CENTER ENLARGED PLAN & DETAILS

GEORGE SNYDER LINK REGISTERED No. 19600157 STATE OF INDIANA ARCHITECT

Client Project No:
VPS Project No: 2023021.00
Project Issue Date: 05/23/24
Drawing No: A503

ROOM FINISH SCHEDULE

ROOM INFORMATION		FLOOR FINISHES					BASE FINISH			WALLS				WALL FINISHES				CEILING FINISHES				
ROOM NUMBER	ROOM NAME	EXISTING TO REMAIN (ETR)	CARPET TILE (CPT#)	LUXURY VINYL TILE (LVT#)	PORCELAIN TILE (T#)	WALK OFF CARPET TILE (WOCPT#)	EXISTING TO REMAIN (ETR)	PORCELAIN TILE (T#)	RESILIENT (R#)	EXISTING TO REMAIN (ETR)	ALUMINUM FRAME (ALF)	CONCRETE MASONRY UNIT (CMU#)	GYPSUM WALLBOARD (GYP BD#)	PAINT (PT#)	PORCELAIN TILE (T#)	WALL COVERING (WC#)	WALL PROTECTION (WP#)	EXISTING TO REMAIN (ETR)	ACOUSTOCAL CEILING PANEL SYSTEM (ACP#)	GYPSUM BOARD (GYP BD#)	ROOM NUMBER	COMMENTS
A106	TOILET				PFT01			PFT01					GYP BD		PWT				ACP01		A106	
A107	WORKROOM		CPT01						R01	ETR			GYP BD	PT01					ACP01		A107	
A113	WORKROOM		CPT01						R01				GYP BD	PT01					ACP01		A113	
B101	CAFETERIA			LVT01					R01	ETR				PT01				ETR			B101	
B102	GYM	ETR					ETR			ETR				PT01				ETR			B102	
C100	VESTIBULE					WOCP T01			R01	ETR	AL01									GYP	C100	
C100A	CORRIDOR			LVT01					R01					PT01					ACP01			
C101	RECEPTION		CPT01						R01	ETR			GYP BD	PT01					ACP01		C101	
C102	OFFICE		CPT01						R01	ETR			GYP BD	PT01					ACP01		C102	
C103	CONFERENCE		CPT01						R01	ETR			GYP BD	PT01					ACP01		C103	
C104	OFFICE		CPT01						R01				GYP BD	PT01					ACP01		C104	
C105	NURSE			LVT01					R01	ETR			GYP BD	PT01					ACP01		C105	
C105A	CLO.			LVT01					R01				GYP BD	PT01					ACP01		C105A	
C105B	TOILET				PFT01			PFT01					GYP BD		PWT				ACP01		C105B	
C106	PR				PFT01			PFT01					GYP BD		PWT				ACP01		C106	
C107	PR				PFT01			PFT01					GYP BD		PWT				ACP01		C107	
C108	OFFICE		CPT01						R01	ETR			GYP BD	PT01					ACP01		C108	
C109	I.S.S.		CPT01						R01	ETR			GYP BD	PT01					ACP01		C109	
C110	STORAGE		CPT01						R01	ETR			GYP BD	PT01					ACP01		C110	
C111	WORKROOM		CPT01						R01	ETR			GYP BD	PT01					ACP01		C111	
C112	OFFICE		CPT01						R01	ETR			GYP BD	PT01					ACP01		C112	
C113	OFFICE		CPT01						R01				GYP BD	PT01					ACP01		C113	
C114	TECH OFFICE	ETR					ETR			ETR								ETR				
C114A	STORAGE		CPT01						R01	ETR			GYP BD	PT01					ACP01		C114A	
C115	RESTROOM	ETR			PFT01			PFT01		ETR			GYP BD		PWT			ETR			C115	
C116	RESTROOM	ETR			PFT01			PFT01		ETR			GYP BD		PWT			ETR			C116	
C117	CALMING ROOM		CPT01																		C117	
C118	CALMING ROOM		CPT01						R01	ETR			GYP BD	PT01					ACP01		C118	
C119	TITLE		CPT01						R01	ETR			GYP BD	PT01					ACP01		C119	
C120	MEDIA CENTER		CPT01						R01	ETR	AL01		GYP BD	PT01					ACP01		C120	
C120A	OFFICE		CPT01						R01				GYP BD	PT01					ACP01		C120A	
C120B	STORAGE		CPT01						R01	ETR			GYP BD	PT01					ACP01		C120B	
C121	LIT COACH		CPT01						R01	ETR			GYP BD	PT01					ACP01		C121	
C122	ESL		CPT01						R01				GYP BD	PT01					ACP01		C122	
C123	EARLY CHILDHOOD		CPT01						R01	ETR			GYP BD	PT01					ACP01		C123	
C128	SPEECH		CPT01						R01				GYP BD	PT01					ACP01		C128	
C129	KINDERGARTEN			LVT01					R01				GYP BD	PT01					ACP01		C129	
C129A	TOILET				PFT01			PFT01					GYP BD		PWT				ACP01		C129A	
C129B	STORAGE		CPT01						R01				GYP BD	PT01					ACP01		C129B	
C130	SMALL GROUP		CPT01						R01				GYP BD	PT01					ACP01		C130	
C131	KINDERGARTEN			LVT01					R01				GYP BD	PT01					ACP01		C131	
C131A	TOILET				PFT01			PFT01					GYP BD		PWT				ACP01		C131A	
C132	PRE-K			LVT01					R01				GYP BD	PT01					ACP01		C132	
C132A	TOILET				PFT01			PFT01					GYP BD		PWT				ACP01		C132A	
C133	GIRLS				PFT01			PFT01					GYP BD		PWT				ACP01		C133	
C134	BOYS				PFT01			PFT01					GYP BD		PWT				ACP01		C134	
C135	KINDERGARTEN			LVT01					R01				GYP BD	PT01					ACP01		C135	
C135A	TOILET				PFT01			PFT01					GYP BD		PWT				ACP01		C135A	
C135B	STORAGE		CPT01						R01				GYP BD	PT01					ACP01		C135B	
C136	OFFICE		CPT01						R01				GYP BD	PT01					ACP01		C136	
C137	KINDERGARTEN			LVT01					R01				GYP BD	PT01					ACP01		C137	
C137A	TOILET				PFT01			PFT01					GYP BD		PWT				ACP01		C137A	
C138	SMALL GROUP		CPT01						R01				GYP BD	PT01					ACP01		C138	
D106	TOILET				PFT01			PFT01					GYP BD		PWT				ACP01		D106	
D107	WORKROOM		CPT01						R01	ETR			GYP BD	PT01					ACP01		D107	
D113	WORKROOM		CPT01						R01				GYP BD	PT01					ACP01		D113	
E100	CORRIDOR			LVT01					R01				GYP BD	PT01					ACP01		E100	
E100A	VESTIBULE					WOCP T01			R01	ETR	AL01		GYP BD	PT01						GYP	E100A	
E102	LIFE SKILLS		CPT01	LVT01					R01	ETR			GYP BD	PT01					ACP01		E102	
E102A	STORAGE			LVT01					R01				GYP BD	PT01					ACP01		E102A	
E103	LIFE SKILLS		CPT01	LVT01					R01	ETR			GYP BD	PT01					ACP01		E103	
E103A	STORAGE			LVT01					R01				GYP BD	PT01					ACP01		E103A	
E103B	TOILET				PFT01			PFT01					GYP BD		PWT				ACP01		E103B	
E104	PRE		CPT01	LVT01					R01	ETR			GYP BD	PT01					ACP01		E104	
E104A	STORAGE			LVT01					R01				GYP BD	PT01					ACP01		E104A	
E104B	TOILET				PFT01			PFT01					GYP BD		PWT				ACP01		E104B	
E105	PRE		CPT01	LVT01					R01	ETR			GYP BD	PT01					ACP01		E105	
E105A	STORAGE			LVT01					R01				GYP BD	PT01					ACP01		E105A	

#	Date	Description
1	MAY 17, 2024	ADDENDUM NO. 1
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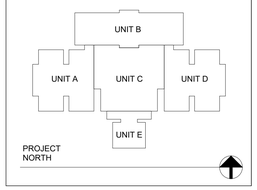

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PH: (317) 353-3281, www.VPSARCH.com
STRUCTURAL: ENGINEERS:

Project Name:
RENOVATIONS TO RUSHVILLE ELEMENTARY SCHOOL

Drawing Title:
ROOM FINISH SCHEDULE

GEORGE SNYDER LINK REGISTERED No. 19600157 STATE OF INDIANA ARCHITECT

Client Project No:

VPS Project No: **2023021.00**

Project Issue Date: **05/23/24**

Drawing No: **A703**