

Addendum No. 1
November 22, 2024

Project: **SIOUX FALLS CAREER & TECHNICAL EDUCATION ACADEMY'S AGRICULTURE
& CARPENTRY ADDITION PROJECT PD #3471**

Sioux Falls, South Dakota
Arch Project No. 3057

Architect: Architecture Incorporated

Letting: **Thursday, December 5, 2023**
2:00 PM
Sioux Falls School District Central Services Center

Scope of this Addendum:

To all bidders and all others to whom drawings and specifications have been issued by Architecture Incorporated, this Addendum forms a part of the Contract Documents. Acknowledge receipt of this addendum by listing its number and date in the bidder's Form of Proposal. Failure to do so may subject bidder to disqualification. This addendum modifies the drawings and specifications as follows:

GENERAL ITEMS:

1) SECTION 011000 – SUMMARY

a) Replace Article 1.3.C. with the following:

*C. Builders Risk Insurance will be carried by the Owner. However, the General Contractor shall be responsible for the first **\$20,000** of any/all claims.*

2) SECTION 033000 – CAST-IN-PLACE CONCRETE

a) Article 2.5.A.3.a. incorrectly identifies a room named *Hallway D151*; this should be changed to **Hallway E151**.

b) Replace Article 2.7.B. with the following:

*B. Semirigid Joint Filler: Two-component, semirigid, 100 percent solids, aromatic polyurea with a Type A shore durometer hardness range of **70 to 75** in accordance with ASTM D2240.*

c) CLARIFICATION: All sawed joints in concrete slabs in Horticulture Classroom E111 shall be filled full depth with polyurea sealant. All expansion joints in concrete slabs in this space shall be filled with Pecora Dyna Flex Urethane (or equal).

d) CLARIFICATION: Unless specifically noted otherwise, all sawed joints in exposed interior and exterior concrete floor slabs shall be filled with polyurethane sealant.

e) CLARIFICATION: The floor sealer product to be used at floor slabs specified to receive a light broom finish shall be *W.R. Meadows – DecraSeal*, or equal.

- f) The exposed cast-in-place concrete walls of the waste enclosure that is located east of Pens E108G / Pens E108H shall comply with the finish requirements specified per Article 3.7 – *Finishing Formed Surfaces*.

3) SECTION 034500 – PRECAST ARCHITECTURAL CONCRETE

- a) Upon receipt of Addendum No. 1 all bidders shall acknowledge receipt of technical Section 034500 – *Precast Architectural Concrete*.
 - i) Reference Section 034500 attached to the end of this addendum; 17 pages.

4) SHEET 4.10A – FLOOR PLAN

- a) Reference revised drawing Sheet 4.10A, revision dated 11-22-2024, attached to the end of this addendum for the following:
 - i) Floor drain elevations at Equipment E106, Barn E108, Animal Science E110, E112 Head House, and Green House E112A have been added.
 - ii) Catch basin elevations at Pens E108D, E108E, E108F, E108G, E108H, as well as at the exterior pen areas located to the east and south of Barn E108 have been added.
 - iii) T.O. Concrete elevations at Pens E108D, E108E, E108F, E108G, E108H, as well as at the exterior pen areas located to the east and south of Barn E108 have been added.
 - iv) Floor slope and wall construction notes have been added to the boot wash area located north of Pens E108C.
- b) CLARIFICATION: Concrete floor slabs shall be recessed at all locations indicated to receive tile flooring. Floor slabs shall be recessed to ensure a flush transition between tiled floors and adjacent floors. Exact depth of recess to be determined by the Contractor and his subcontractors.

5) SHEET 4.20 – 1st FLOOR FINISH PLAN

- a) Room Finish Schedule:
 - i) Omit all reference to the room named Pens E108P. This room does not exist.
 - ii) CLARIFICATION: The floor slab in Janitor E103 shall be treated with a liquid floor densifier and also receive a coat of sealer as specified in Section 033000.
 - iii) CLARIFICATION: Horticulture Classroom E111 shall be provided with a **polished** concrete floor as noted on *1st Floor Finish Plan-Area A*.
 - iv) CLARIFICATION: The (light broomed finish) floor slabs in Barn E108, Pens E108C, Pens E108D, E108E, Pens E108F, Pens E108G & Pens E108H shall be treated with a liquid floor densifier and also receive a coat of sealer as specified in Section 033000.
 - (1) This shall apply to both the interior and the exterior slabs at each location noted above.

- v) CLARIFICATION: The (light broomed finish) floor slab in Greenhouse E112A shall be treated with a liquid floor densifier and also receive a coat of sealer as specified in Section 033000.
- vi) CLARIFICATION: The floor slabs in Mezzanine E200 & Mechanical E201 shall be treated with a liquid floor densifier and also receive a coat of sealer; reference Section 033000.

6) SHEET 4.30 – DOOR SCHEDULES & DETAILS

- a) Detail 16/4.30: All concrete aprons at sectional overhead door openings shall be 5'-0" wide. Disregard reference to 6'-0" wide aprons.

MECHANICAL ITEMS:

1) SHEET 8.31 – MEZZANINE FLOOR PLANS – VENTILATION & A/C

- a) Reference HRV-1 SECTION (2/8.31):
 - i) CLARIFICATION to Keynote 10: The chilled water cooling coil section is to be provided as indicated; the cooling coil itself will be installed in the future.

GENERAL APPROVALS:

The following material or equipment furnished by the manufacturers listed, may be substituted as equivalent providing that each item, material, and piece of equipment conforms to the design and requirement of the specifications.

<u>SECTION</u>	<u>ITEM</u>	<u>MANUFACTURER</u>
034100	Precast Structural Concrete	Molin Concrete
034500	Precast Architectural Concrete	Molin Concrete
072100	Spray-Applied Closed-Cell Spray Foam	Enverge One Pass HFO Closed Cell Spray Foam
099113	Exterior Painting	Diamond Vogel
099123	Interior Painting	Diamond Vogel
230600	Strainers	Pro Hydronics
230800	Air Handling Units	Pace Mfg.
230800	Energy Recovery Unit	Pace Mfg.
230800	Gas Vent System	Metal Fab
264610	Dry-Type Transformers	MGM

END OF ADDENDUM No. 1

SECTION 034500 - PRECAST ARCHITECTURAL CONCRETE

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:

1. Architectural precast concrete cladding [**and load-bearing**] units.
2. Insulated, architectural precast concrete units.

- B. Related Sections include the following:

1. Division 03 Section "Cast-in-Place Concrete" for installing connection anchors in concrete.
2. Division 03 Section "Structural Precast Concrete" for structural precast hollow core planks and precast double-tees.
3. Division 04 Section "Cast Stone Masonry" decorative cast stone elements, including precast window sills, copings, and miscellaneous trim units.
4. Division 05 Section "Structural Steel Framing" for furnishing and installing connections attached to structural-steel framing.
5. Division 05 Section "Metal Fabrications" for kickers and other miscellaneous steel shapes.
6. Division 09 painting Sections for surface preparation and painting requirements for architectural precast concrete wall panel substrates.

- C. Bidding Requirements for Precast Concrete: Fabricators wishing to submit bids for precast architectural concrete [**must**] also include all precast structural concrete [**specified per Section 034100**] [**and**] [**shown on the drawings**] in their (single) bid proposals.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Design Mixtures: For each precast concrete mixture. Include compressive strength and water-absorption tests.
- C. Shop Drawings: Detail fabrication and installation of architectural precast concrete units. Indicate locations, plans, elevations, dimensions, shapes, and cross sections of each unit. Indicate joints, reveals, and extent and location of each surface finish. Indicate details at building corners.
 1. Indicate separate face and backup mixture locations and thicknesses.
 2. Indicate welded connections by AWS standard symbols. Detail loose and cast-in hardware and connections.
 3. Indicate locations, tolerances, and details of anchorage devices to be embedded in or attached to structure or other construction.
 4. Indicate locations, extent, and treatment of dry joints if two-stage casting is proposed.

5. Include plans and elevations showing unit location and sequence of erection for special conditions.
 6. Indicate location of each architectural precast concrete unit by same identification mark placed on panel.
 7. Indicate relationship of architectural precast concrete units to adjacent materials.
 8. Design Modifications: If design modifications are proposed to meet performance requirements and field conditions, submit design calculations and Shop Drawings. Do not adversely affect the appearance, durability, or strength of units when modifying details or materials and maintain the general design concept.
- D. Delegated-Design Submittal: For architectural precast concrete indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
1. Show governing panel types, connections, types of reinforcement, including special reinforcement, and concrete cover on reinforcement. Indicate location, type, magnitude, and direction of loads imposed on the building structural frame from architectural precast concrete.
 2. Comprehensive engineering analysis [**signed and sealed**] by the qualified professional engineer, licensed in the State of South Dakota, responsible for its preparation. Show governing panel types, connections, and types of reinforcement, including special reinforcement. Indicate location, type, magnitude, and direction of loads imposed on the building structural frame from architectural precast concrete.
 - a. Precast fabricator shall design insulated precast wall systems to utilize [**recessed-type**] connections which will remain hidden from view at finished surfaces. Fully grout recesses and finish to match adjacent surfaces after connections have been made and inspected.
- E. Samples: For each type of finish indicated on exposed surfaces of architectural precast concrete units, in sets of 3, illustrating full range of finish, color, and texture variations expected; approximately **12 by 12 by 2 inches** (300 by 300 by 50 mm).
1. When other faces of precast concrete unit are exposed, include Samples illustrating workmanship, color, and texture of backup concrete as well as facing concrete.
- F. Welding certificates.
- G. Material Test Reports: For aggregates.
- H. Material Certificates: For the following items, signed by manufacturers:
1. Cementitious materials.
 2. Reinforcing materials and prestressing tendons.
 3. Admixtures.
 4. Bearing pads.
 5. Structural-steel shapes and hollow structural sections.
- I. Source quality-control test reports.
- J. Field quality-control test [**and special inspection**] reports.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: A precast concrete erector who has retained a "PCI-Certified Field Auditor" to conduct a field audit of a project in same category as this Project and who can produce an Erectors' Post-Audit Declaration.
- B. Fabricator Qualifications: A firm that assumes responsibility for engineering architectural precast concrete units to comply with performance requirements. This responsibility includes preparation of Shop Drawings and comprehensive engineering analysis by a qualified professional engineer.
 - 1. Designated as a PCI-certified plant for Category AC (as well as Categories AT, and AD) - Architectural Precast Concrete Products at time of bidding.
 - a. Fabricator and Fabricator Engineer's experience must include at least two projects with Storm Shelters as defined by IBC and ICC-500-2014, constructed with precast concrete members similar to that shown for this project.
 - 2. Precast architectural concrete wall panel fabricators [**not**] designated as a PCI-certified plant for Category [AC] - *Architectural Cladding and Load Bearing Units* at time of bidding may be deemed acceptable to bid the *Sioux Falls Career & Technical Academy Urban Agriculture Addition* project provided that they comply with the following provisions:
 - a. The fabricator must provide a minimum of five project references that are similar in size and scope that have been completed within the last two years. Project references must include the project name, location, general contractor, job superintendent, and contractor's phone number.
 - b. The fabricator shall also meet or exceed all of the requirements set forth per PCI's Architectural Certification Program to be considered fully qualified as a PCI-certified plant for Certification Category [AC].
 - c. The fabricator must submit a copy of their quality control procedure manual to both the Engineer of Record and the Architect of Record.
 - d. The fabricator must submit the five references and a copy of their quality control manual to both the Engineer of Record and the Architect of Record for review and approval not less than five (5) days prior to the bid opening date.
 - e. Upon acceptable review of the information submitted, the fabricator may be pre-approved for bidding; pre-approved fabricators will be notified by the Architect of Record.
 - 3. Pre-Approved [**Category - AC**] Precast Architectural Concrete Wall Panel Fabricators:
 - a. Collins Precast; 19606 Collins Avenue, Iroquois, South Dakota is approved as an architectural concrete wall panel fabricator for this Project.
 - b. SteinBauer, LLC; 35691 156th Street, Faulkton, South Dakota is approved as an architectural concrete wall panel fabricator for this Project.
 - c. Taracon Precast; 6189 170th St. N, Hawley, Minnesota is approved as an architectural concrete wall panel fabricator for this Project.
- C. Testing and Special Inspection Agency Qualifications: An independent testing and inspection agency [, **acceptable to authorities having jurisdiction,**] qualified according to ASTM C 1077 and ASTM E 329 for testing indicated.

- D. Quality-Control Standard: For manufacturing procedures and testing requirements, quality-control recommendations, and dimensional tolerances for types of units required, comply with PCI MNL 117, "Manual for Quality Control for Plants and Production of Architectural Precast Concrete Products."
- E. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D.1.1M, "Structural Welding Code - Steel"; and AWS D1.4/D1.4M, "Structural Welding Code - Reinforcing Steel."
- F. Sample Panels: After sample approval and before fabricating architectural precast concrete units, produce a minimum of [2] sample panels approximately [16 sq. ft. (1.5 sq. m)] in area for review by Architect. Incorporate full-scale details of architectural features, finishes, textures, and transitions in sample panels.
 - 1. Locate panels where indicated or, if not indicated, as directed by Architect.
 - 2. Damage part of an exposed-face surface for each finish, color, and texture, and demonstrate adequacy of repair techniques proposed for repair of surface blemishes.
 - 3. After acceptance of repair technique, maintain one sample panel at manufacturer's plant and one at Project site in an undisturbed condition as a standard for judging the completed Work.
 - 4. Demolish and remove sample panels when directed.

1.5 MOCKUPS

- A. Mockups: After sample approval, but before production of precast concrete wall panels, build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
 - 1. Provide freestanding job site mock-up of size shown on drawings showing relationship to adjacent construction, joint treatment, related flashing, form liner finish and all other accessories required to show how exposed precast will go together on the structure.
 - a. Refer to drawings for size of mock-up.
 - b. Locate mockup where indicated or, if not indicated, as directed by Architect.
 - c. Include typical components and methods of installation.
 - d. Remove mock-up when directed by the Architect.
 - 2. Damage part of an exposed-face surface for each finish, color, and texture, and demonstrate adequacy of repair techniques proposed for repair of surface blemishes. Each section of damaged concrete at the final installation shall be reviewed with the architect prior to repair. Upon inspection and direction by the architect, each damaged section shall be patched and repaired according to approved method demonstrated on the mockup, and re-inspected and approved by the architect. Exposed interior surfaces shall receive special attention and precedence for repairs.
 - 3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.

1.6 COORDINATION

- A. Furnish loose connection hardware and anchorage items to be embedded in or attached to other construction without delaying the Work. Provide locations, setting diagrams, templates, instructions, and directions, as required, for installation.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver architectural precast concrete units in such quantities and at such times to limit unloading units temporarily on the ground.
- B. Support units during shipment on nonstaining shock-absorbing material.
- C. Store units with adequate dunnage and bracing and protect units to prevent contact with soil, to prevent staining, and to prevent cracking, distortion, warping or other physical damage.
- D. Place stored units so identification marks are clearly visible, and units can be inspected.
- E. Handle and transport units in a position consistent with their shape and design in order to avoid excessive stresses which would cause cracking or damage.
- F. Lift and support units only at designated points shown on Shop Drawings.

1.8 SEQUENCING

- A. Furnish loose connection hardware and anchorage items to be embedded in or attached to other construction without delaying the Work. Provide locations, setting diagrams, templates, instructions, and directions, as required, for installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Fabricators: Subject to compliance with requirements, [**including the requirements specified above for PCI Certification - Category AB**], provide products by one of the following:
 - 1. Collins Precast; Iroquois, SD.
 - 2. Gage Brothers; Sioux Falls, SD.
 - 3. SteinBauer, LLC; Faulkton, SD.
 - 4. Taracon Precast; Hawley, MN.
 - 5. Wells Concrete; Wells, MN.
- 1. Others – Only as approved in writing by Architect prior to bid letting.

2.2 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design architectural precast concrete units.
- B. Design Standards: Comply with **ACI 318 (ACI 318M)** and design recommendations of PCI MNL 120, "PCI Design Handbook - Precast and Prestressed Concrete," applicable to types of architectural precast concrete units indicated.
- C. Calculated Fire-Test-Response Characteristics: Provide architectural precast concrete units with fire-resistance rating indicated as calculated according to **ACI 216.1 (ACI 216.1M)** and acceptable to authorities having jurisdiction.

- D. Structural Performance: Provide architectural precast concrete units and connections capable of withstanding the following design loads within limits and under conditions indicated:
1. Loads: As indicated.
 2. Dead Loads: As indicated.
 3. Live Loads: As indicated
 4. Wind Loads: As indicated
 5. Design precast concrete units and connections to maintain clearances at openings, to allow for fabrication and construction tolerances, to accommodate live-load deflection, shrinkage and creep of primary building structure, and other building movements as follows:
 - a. Upward and downward movement of **1/2 inch (13 mm)**.
 6. Thermal Movements: Provide for in-plane thermal movements resulting from annual ambient temperature changes of **120 deg F (67 deg C)**.
 7. Fire-Resistance Rating: Select material and minimum thicknesses to provide 2-hour fire rating.

2.3 MOLD MATERIALS

- A. Molds: Rigid, dimensionally stable, non-absorptive material, warp and buckle free, that will provide continuous and true precast concrete surfaces within fabrication tolerances indicated; nonreactive with concrete and suitable for producing required finishes.
1. Mold-Release Agent: Commercially produced liquid-release agent that will not bond with, stain or adversely affect precast concrete surfaces and will not impair subsequent surface or joint treatments of precast concrete.
- B. Form Liners: Units of face design, texture, arrangement, and configuration [**to match those used for precast concrete design reference sample**]. Furnish with manufacturer's recommended liquid-release agent that will not bond with, stain, or adversely affect precast concrete surfaces and will not impair subsequent surface or joint treatments of precast concrete.
- C. Surface Retarder: Chemical set retarder, capable of temporarily delaying final hardening of newly placed concrete mixture to depth of reveal specified.

2.4 REINFORCING MATERIALS

- A. Reinforcing Bars: ASTM A 615/A 615M, **Grade 60 (Grade 420)**, deformed.
- B. Steel Bar Mats: ASTM A 184/A 184M, fabricated from [**ASTM A 615/A 615M, Grade 60 (Grade 420)**] [**ASTM A 706/A 706M**], deformed bars, assembled with clips.
- C. Plain-Steel Welded Wire Reinforcement: ASTM A 185, fabricated from [**as-drawn**] [**galvanized**] steel wire into flat sheets.
- D. Deformed-Steel Welded Wire Reinforcement: ASTM A 497/A 497M, flat sheet.
- E. Supports: Suspend reinforcement from back of mold or use bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place according to PCI MNL 117.

2.5 CONCRETE MATERIALS

- A. Portland Cement: ASTM C 150, Type I or Type III, gray, unless otherwise indicated.
 - 1. For surfaces exposed to view in finished structure, mix gray with white cement, of same type, brand, and mill source.
- B. Supplementary Cementitious Materials:
 - 1. Fly Ash: ASTM C 618, Class C or F, with maximum loss on ignition of 3 percent.
 - 2. Metakaolin Admixture: ASTM C 618, Class N.
 - 3. Silica Fume Admixture: ASTM C 1240, with optional chemical and physical requirement.
 - 4. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.
- C. Normal-Weight Aggregates: Except as modified by PCI MNL 117, ASTM C 33, with coarse aggregates complying with Class 5S. Stockpile fine and coarse aggregates for each type of exposed finish from a single source (pit or quarry) for Project.
 - 1. Face-Mixture-Coarse Aggregates: Selected, hard, and durable; free of material that reacts with cement or causes staining; to match selected finish sample.
 - a. Gradation: **[Uniformly graded] [To match design reference sample].**
 - 2. Face-Mixture-Fine Aggregates: Selected, natural or manufactured sand of same material as coarse aggregate, unless otherwise approved by Architect.
- D. Lightweight Aggregates: Except as modified by PCI MNL 117, ASTM C 330, with absorption less than 11 percent.
- E. Coloring Admixture: ASTM C 979, synthetic or natural mineral-oxide pigments or colored water-reducing admixtures, temperature stable, and nonfading.
- F. Water: Potable; free from deleterious material that may affect color stability, setting, or strength of concrete and complying with chemical limits of PCI MNL 117.
- G. Air-Entraining Admixture: ASTM C 260, certified by manufacturer to be compatible with other required admixtures.
- H. Chemical Admixtures: Certified by manufacturer to be compatible with other admixtures and to not contain calcium chloride, or more than 0.15 percent chloride ions or other salts by weight of admixture.
 - 1. Water-Reducing Admixtures: ASTM C 494/C 494M, Type A.
 - 2. Retarding Admixture: ASTM C 494/C 494M, Type B.
 - 3. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
 - 4. Water-Reducing and Accelerating Admixture: ASTM C 494/C 494M, Type E.
 - 5. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
 - 6. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
 - 7. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017 M.

2.6 STEEL CONNECTION MATERIALS

- A. Carbon-Steel Shapes and Plates: ASTM A 36/A 36M.
- B. Carbon-Steel-Headed Studs: ASTM A 108, AISI 1018 through AISI 1020, cold finished, AWS D1.1/D1.1M, Type A or B, with arc shields and with minimum mechanical properties of PCI MNL 117, Table 3.2.3.

- C. Carbon-Steel Plate: ASTM A 283/A 283M.
- D. Carbon-Steel Castings: ASTM A 27/A 27M, **Grade 60-30** (Grade 415-205).
- E. Carbon-Steel Structural Tubing: ASTM A 500, Grade B.
- F. Deformed-Steel Wire or Bar Anchors: ASTM A 496 or ASTM A 706/A 706M.
- G. Carbon-Steel Bolts and Studs: **ASTM A 307, Grade A** (ASTM F 568M, Property Class 4.6); carbon-steel, hex-head bolts and studs; carbon-steel nuts, **ASTM A 563** (ASTM A 563M); and flat, unhardened steel washers, ASTM F 844.
- H. Zinc-Coated Finish: For exterior steel items, **[including steel in exterior walls,]** and items indicated for galvanizing, apply zinc coating by **[hot-dip process according to ASTM A 123/A or ASTM A 153/A 153M]**.
 - 1. See structural drawings for locations requiring hot-dip galvanized connections.
- I. Shop-Primed Finish: Prepare surfaces of nongalvanized steel items, except those surfaces to be embedded in concrete, according to requirements in SSPC-SP 3 and shop-apply **[lead- and chromate-free, rust-inhibitive primer, complying with performance requirements in MPI 79]** [SSPC-Paint 25] according to SSPC-PA 1.
- J. Welding Electrodes: Comply with AWS standards.

2.7 BEARING PADS

- A. Provide one of the following bearing pads for architectural precast concrete units **[as recommended by precast fabricator for application]**:
 - 1. High-Density Plastic: Multimonomer, nonleaching, plastic strip.

2.8 ACCESSORIES

- A. Reglets: Specified in Division 07 Section "Sheet Metal Flashing and Trim."
- B. Precast Accessories: Provide clips, hangers, plastic or steel shims, and other accessories required to install architectural precast concrete units.

2.9 GROUT MATERIALS

- A. Nonmetallic, Nonshrink Grout: Premixed, nonmetallic, noncorrosive, nonstaining grout containing selected silica sands, portland cement, shrinkage-compensating agents, plasticizing and water-reducing agents, complying with ASTM C 1107, Grade A for drypack and Grades B and C for flowable grout and of consistency suitable for application within a 30-minute working time.

2.10 INSULATED PANEL ACCESSORIES

- A. Extruded-Polystyrene (XPS) Board Insulation: ASTM C 578, of type and minimum compressive strength indicated below, with maximum flame-spread and smoke-developed indexes of 75 and 450, respectively, per ASTM E 84; **[square]** **[ship-lap]** edges; **[4 inch]** minimum thickness.

1. Type IV, **25 psi (173 kPa)**.
2. Minimum R-Value: [**R-5 per inch**].
 - a. Insulation within insulated architectural precast wall panels shall provide thermal resistance of not less than R-20.
- B. Extruded-Polystyrene (XPS) Board Insulation: ASTM C 578, Type IV, 1.55 lb/cu. ft. (25 kg/cu. m); [**square**] [**ship-lap**] edges; with minimum thickness of [**4 inches**].
 1. Reference drawings for exact thickness(es) required.
- C. Wythe Connectors: Provide one of the following:
 1. Precast manufacturers standard [**glass-fiber-reinforced vinylester**] type connectors manufactured to connect wythes of precast concrete panels.
 2. Precast manufacturers standard [**carbon fiber C-grid**] type connectors manufactured to connect wythes of precast concrete panels.

2.11 CONCRETE MIXTURES

- A. Prepare design mixtures for each type of precast concrete required.
 1. Limit use of fly ash and silica fume to 20 percent of portland cement by weight; limit metakaolin and silica fume to 10 percent of portland cement by weight.
- B. Design mixtures may be prepared by a qualified independent testing agency or by qualified precast plant personnel at architectural precast concrete fabricator's option.
- C. Limit water-soluble chloride ions to maximum percentage by weight of cement permitted by **ACI 318 (ACI 318M)** or PCI MNL 117 when tested according to ASTM C 1218/C 1218M.
- D. Normal-Weight Concrete Mixtures: Proportion [**face and backup mixtures or full-depth mixtures, at fabricator's option**] by either laboratory trial batch or field test data methods according to ACI 211.1, with materials to be used on Project, to provide normal-weight concrete with the following properties:
 1. Compressive Strength (28 Days): **5000 psi (34.5 MPa)** minimum.
 2. Maximum Water-Cementitious Materials Ratio: 0.45.
- E. Water Absorption: 6 percent by weight or 14 percent by volume, tested according to PCI MNL 117.
- F. Lightweight Concrete Backup Mixtures: Proportion mixtures by either laboratory trial batch or field test data methods according to ACI 211.2, with materials to be used on Project, to provide lightweight concrete with the following properties:
 1. Compressive Strength (28 Days): **5000 psi (34.5 MPa)**.
 2. Unit Weight: Calculated equilibrium unit weight of **115 lb/cu. ft. (1842 kg/cu. m)**, plus or minus **3 lb/cu. ft. (48 kg/cu. m)**, according to ASTM C 567.
- G. Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having an air content complying with PCI MNL 117.

- H. When included in design mixtures, add other admixtures to concrete mixtures according to manufacturer's written instructions.

2.12 MOLD FABRICATION

- A. Molds: Accurately construct molds, mortar tight, of sufficient strength to withstand pressures due to concrete-placement operations and temperature changes and for prestressing and detensioning operations. Coat contact surfaces of molds with release agent before reinforcement is placed. Avoid contamination of reinforcement and prestressing tendons by release agent.
 - 1. Place form liners accurately to provide finished surface texture indicated. Provide solid backing and supports to maintain stability of liners during concrete placement. Coat form liner with form-release agent.
- B. Maintain molds to provide completed architectural precast concrete units of shapes, lines, and dimensions indicated, within fabrication tolerances specified.
 - 1. Form joints are not permitted on faces exposed to view in the finished work.
 - 2. Edge and Corner Treatment: Uniformly [**chamfered**].

2.13 FABRICATION

- A. General: Precast fabricator shall design insulated precast wall systems to utilize [**recessed-type**] connections which will remain hidden from view at finished surfaces. Fully grout recesses and finish to match adjacent surfaces after connections have been made and inspected.
 - 1. Panel connection joints shall be recessed as specified and filled with grout by the precast supplier. Finish grout surface shall be flush with adjacent concrete surface. Depth of recess to be determined by the precast supplier to allow adhesion of grout fill.
- B. Cast-in Anchors, Inserts, Plates, Angles, and Other Anchorage Hardware: Fabricate anchorage hardware with sufficient anchorage and embedment to comply with design requirements. Accurately position for attachment of loose hardware, and secure in place during precasting operations. Locate anchorage hardware where it does not affect position of main reinforcement or concrete placement.
 - 1. Weld-headed studs and deformed bar anchors used for anchorage according to AWS D1.1/D1.1M and AWS C5.4, "Recommended Practices for Stud Welding."
- C. Furnish loose hardware items including steel plates, clip angles, seat angles, anchors, dowels, cramps, hangers, and other hardware shapes for securing architectural precast concrete units to supporting and adjacent construction.
- D. Cast-in reglets, slots, holes, and other accessories in architectural precast concrete units as indicated on the Contract Drawings.
- E. Cast-in openings larger than **10 inches (250 mm)** in any dimension. Do not drill or cut openings or prestressing strand without Architect's approval.
 - 1. Precast fabricator shall fill all honeycombs and voids in [**window**] [**door**] opening jamb returns that will remain exposed to view; finish to match adjacent surfaces.
- F. Reinforcement: Comply with recommendations in PCI MNL 117 for fabricating, placing, and supporting reinforcement.

1. Clean reinforcement of loose rust and mill scale, earth, and other materials that reduce or destroy the bond with concrete. When damage to epoxy-coated reinforcing exceeds limits specified in ASTM A 775/A 775M, repair with patching material compatible with coating material and epoxy coat bar ends after cutting.
 2. Accurately position, support, and secure reinforcement against displacement during concrete-placement and consolidation operations. Completely conceal support devices to prevent exposure on finished surfaces.
 3. Place reinforcement to maintain at least **3/4-inch (19-mm)** minimum coverage. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position while placing concrete. Direct wire tie ends away from finished, exposed concrete surfaces.
 4. Place reinforcing steel and prestressing strand to maintain at least **3/4-inch (19-mm)** minimum concrete cover. Increase cover requirements for reinforcing steel to **1-1/2 inches (38 mm)** when units are exposed to corrosive environment or severe exposure conditions. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position while placing concrete. Direct wire tie ends away from finished, exposed concrete surfaces.
 5. Install welded wire fabric in lengths as long as practicable. Lap adjoining pieces at least one full mesh spacing and wire tie laps, where required by design. Offset laps of adjoining widths to prevent continuous laps in either direction.
- G. Reinforce architectural precast concrete units to resist handling, transportation, and erection stresses.
- H. Comply with requirements in PCI MNL 117 and requirements in this Section for measuring, mixing, transporting, and placing concrete. After concrete batching, no additional water may be added.
- I. Place face mixture to a minimum thickness after consolidation of the greater of **1 inch (25 mm)** or 1.5 times the maximum aggregate size, but not less than the minimum reinforcing cover specified.
- J. Place concrete in a continuous operation to prevent seams or planes of weakness from forming in precast concrete units.
1. Place backup concrete mixture to ensure bond with face-mixture concrete.
- K. Thoroughly consolidate placed concrete by internal and external vibration without dislocating or damaging reinforcement and built-in items, and minimize pour lines, honeycombing, or entrapped air on surfaces. Use equipment and procedures complying with PCI MNL 117.
1. Place self-consolidating concrete without vibration according to PCI TR-6, "Interim Guidelines for the Use of Self-Consolidating Concrete in Precast/Prestressed Concrete Institute Member Plants."
- L. Comply with PCI MNL 117 for hot- and cold-weather concrete placement.
- M. Identify pickup points of architectural precast concrete units and orientation in structure with permanent markings, complying with markings indicated on Shop Drawings. Imprint or permanently mark casting date on each architectural precast concrete unit on a surface that will not show in finished structure.
- N. Cure concrete, according to requirements in PCI MNL 117, by moisture retention without heat or by accelerated heat curing using low-pressure live steam or radiant heat and moisture. Cure units until compressive strength is high enough to ensure that stripping does not have an effect on performance or appearance of final product.
- O. Discard and replace architectural precast concrete units that do not comply with requirements, including structural, manufacturing tolerance, and appearance, unless repairs meet requirements in PCI MNL 117 and Architect's approval.

2.14 INSULATED PANEL CASTING

- A. Cast and screed supported wythe over mold.
- B. Place insulation boards abutting edges and ends of adjacent boards. Insert wythe connectors through insulation and consolidate concrete around connectors according to connector manufacturer's written instructions.
- C. Cast and screed top wythe to meet required finish.
- D. Provide insulated precast concrete units 12-inches thick, unless indicated otherwise.
 1. Face Mixture: [4-inch thickness], unless indicated otherwise.
 2. Insulation: [4-inch thickness], unless indicated otherwise.
 3. Back-up Mixture: [4-inch thickness], unless indicated otherwise.

2.15 FABRICATION TOLERANCES

- A. Fabricate architectural precast concrete units straight and true to size and shape with exposed edges and corners precise and true so each finished panel complies with PCI MNL 117 product tolerances as well as position tolerances for cast-in items.
- B. Fabricate architectural precast concrete units straight and true to size and shape with exposed edges and corners precise and true so each finished panel complies with the following product tolerances:
 1. Overall Height and Width of Units, Measured at the Face Exposed to View: As follows:
 - a. 10 feet (3 m) or under, plus or minus 1/8 inch (3 mm).
 - b. 10 to 20 feet (3 to 6 m), plus 1/8 inch (3 mm), minus 3/16 inch (5 mm).
 - c. 20 to 40 feet (6 to 12 m), plus or minus 1/4 inch (6 mm).
 - d. Each additional 10 feet (3 m), plus or minus 1/16 inch (1.5 mm).
 2. Overall Height and Width of Units, Measured at the Face Not Exposed to View: As follows:
 - a. 10 feet (3 m) or under, plus or minus 1/4 inch (6 mm).
 - b. 10 to 20 feet (3 to 6 m), plus 1/4 inch (6 mm), minus 3/8 inch (10 mm).
 - c. 20 to 40 feet (6 to 12 m), plus or minus 3/8 inch (10 mm).
 - d. Each additional 10 feet (3 m), plus or minus 1/8 inch (3 mm).
 3. Total Thickness or Flange Thickness: Plus 1/4 inch (6 mm), minus 1/8 inch (3 mm).
 4. Rib Thickness: Plus or minus 1/8 inch (3 mm).
 5. Rib to Edge of Flange: Plus or minus 1/8 inch (3 mm).
 6. Distance between Ribs: Plus or minus 1/8 inch (3 mm).
 7. Variation from Square or Designated Skew (Difference in Length of the Two Diagonal Measurements): Plus or minus 1/8 inch per 72 inches (3 mm per 1830 mm) or 1/2 inch (13 mm) total, whichever is greater.
 8. Length and Width of Block-outs and Openings within One Unit: Plus or minus 1/4 inch (6 mm).
 9. Location and Dimension of Block-outs Hidden from View and Used for HVAC and Utility Penetrations: Plus or minus 3/4 inch (19 mm).
 10. Dimensions of Haunches: Plus or minus 1/4 inch (6 mm).
 11. Haunch Bearing Surface Deviation from Specified Plane: Plus or minus 1/8 inch (3 mm).
 12. Difference in Relative Position of Adjacent Haunch Bearing Surfaces from Specified Relative Position: Plus or minus 1/4 inch (6 mm).

13. Bowing: Plus or minus L/360, maximum 1 inch (25 mm).
14. Local Smoothness: 1/4 inch per 10 feet (6 mm per 3 m).
15. Warping: 1/16 inch per 12 inches (1.5 mm per 300 mm) of distance from nearest adjacent corner.
16. Tipping and Flushness of Plates: Plus or minus 1/4 inch (6 mm).
17. Dimensions of Architectural Features and Rustications: Plus or minus 1/8 inch (3 mm).

C. Position Tolerances: For cast-in items measured from datum line location, as indicated on Shop Drawings.

1. Weld Plates: Plus or minus 1 inch (25 mm).
2. Inserts: Plus or minus 1/2 inch (13 mm).
3. Handling Devices: Plus or minus 3 inches (75 mm).
4. Reinforcing Steel and Welded Wire Fabric: Plus or minus 1/4 inch (6 mm) where position has structural implications or affects concrete cover; otherwise, plus or minus 1/2 inch (13 mm).
5. Reinforcing Steel Extending out of Member: Plus or minus 1/2 inch (13 mm) of plan dimensions.
6. Location of Rustication Joints: Plus or minus 1/8 inch (3 mm).
7. Location of Opening within Panel: Plus or minus 1/4 inch (6 mm).
8. Electrical Outlets, Hose Bibs: Plus or minus 1/2 inch (13 mm).
9. Location of Bearing Surface from End of Member: Plus or minus 1/4 inch (6 mm).
10. Allowable Rotation of Plate, Channel Inserts, and Electrical Boxes: 2-degree rotation or 1/4 inch (6 mm) maximum over the full dimension of unit.
11. Position of Sleeve: Plus or minus 1/2 inch (13 mm).

2.16 FINISHES

A. Design Reference Sample: [**Gage Brothers #15 (sandblast)**].

1. Provide architectural precast wall panels with color and texture to match the existing (darker) colored architectural precast on the existing Sioux Falls School District's *Career & Technical Education Academy* building.
 - a. Samples and mockups shall be required, as specified, to verify color & finish match with specified design reference sample.

B. Panel faces shall be free of joint marks, grain, and other obvious defects. Corners, including false joints shall be uniform, straight, and sharp. Finish exposed-face surfaces of architectural precast concrete units to match approved samples and as follows:

1. Where insulated precast panel faces are scheduled to remain exposed to view at [**interior corridor (ref: Corridor E107)**] locations, provide precast panel faces made of [**colored**] concrete with medium sandblast (MSB) finish; see plans for locations and finish.
2. Where insulated precast panel faces are scheduled to remain exposed to view at [**interior**] locations in Equipment E106, Barn E108, Feed A108A, Vet Supply E108B, Pens E108C, Pens E108D, Pens E108E, Pens E108F, Pens E108G, Pens E108H, and Animal Science E110 provide precast panel faces made of [**gray**] concrete with [**smooth**] steel trowel finish. Provide precast panel surfaces ready to accept field-applied paint finishes.
3. Where insulated precast panel faces are scheduled to remain exposed to view at [**interior mechanical room (ref: Mechanical E201)**] [**mezzanine (ref: Mezzanine E200)**] locations, provide precast panel faces made of [**gray**] concrete with [**smooth**] steel trowel finish. Provide precast panel surfaces ready to accept field-applied paint finishes.
4. The exterior faces of all precast panels shall receive [**medium sandblast (MSB) finish**]; see plans.

- C. Applied Panel Finishes:
 - 1. Abrasive-Blast Finish (MSB): Use abrasive grit, equipment, application techniques, and cleaning procedures to expose aggregate and surrounding matrix surfaces
- D. Precast fabricator shall fill all honeycombs and voids in **[window]** **[door]** opening jamb/sill returns that will remain exposed to view; finish to match adjacent surfaces unless indicated otherwise.
- E. Finish exposed **[top]** **[bottom]** surfaces of architectural precast concrete units to match face-surface finish.
- F. Finish **[back]** surfaces of all insulated architectural precast concrete units by steel trowel finish, unless noted otherwise.

2.17 SOURCE QUALITY CONTROL

- A. Quality-Control Testing: Test and inspect precast concrete according to PCI MNL 117 requirements. If using self-consolidating concrete, also test and inspect according to PCI TR-6, "Interim Guidelines for the Use of Self-Consolidating Concrete in Precast/Prestressed Concrete Institute Member Plants."
- B. Strength of precast concrete units will be considered deficient if units fail to comply with **ACI 318 (ACI 318M)** requirements for concrete strength.
- C. Testing: If there is evidence that strength of precast concrete units may be deficient or may not comply with **ACI 318 (ACI 318M)** requirements, precaster will employ an independent testing agency to obtain, prepare, and test cores drilled from hardened concrete to determine compressive strength according to ASTM C 42/C 42M.
 - 1. A minimum of three representative cores will be taken from units of suspect strength, from locations directed by Architect.
 - 2. Cores will be tested in an air-dry condition.
 - 3. Strength of concrete for each series of 3 cores will be considered satisfactory if average compressive strength is equal to at least 85 percent of 28-day design compressive strength and no single core is less than 75 percent of 28-day design compressive strength.
 - 4. Test results will be made in writing on same day that tests are performed, with copies to Architect, Engineer, Contractor, and precast concrete fabricator. Test reports will include the following:
 - a. Project identification name and number.
 - b. Date when tests were performed.
 - c. Name of precast concrete fabricator.
 - d. Name of concrete testing agency.
 - e. Identification letter, name, and type of precast concrete unit(s) represented by core tests; design compressive strength; type of break; compressive strength at breaks, corrected for length-diameter ratio; and direction of applied load to core in relation to horizontal plane of concrete as placed.
- D. Patching: If core test results are satisfactory and precast concrete units comply with requirements, clean and dampen core holes and solidly fill with precast concrete mixture that has no coarse aggregate, and finish to match adjacent precast concrete surfaces.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine supporting structural frame or foundation and conditions for compliance with requirements for installation tolerances, true and level bearing surfaces, and other conditions affecting performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.
- C. Do not install precast concrete units until supporting cast-in-place building structural framing has attained minimum allowable design compressive strength or supporting steel or other structure is complete.

3.2 INSTALLATION

- A. Install clips, hangers, bearing pads, and other accessories required for connecting architectural precast concrete units to supporting members and backup materials.
- B. Erect architectural precast concrete level, plumb, and square within specified allowable tolerances. Provide temporary supports and bracing as required to maintain position, stability, and alignment as units are being permanently connected.
 - 1. Install temporary steel or plastic spacing shims or bearing pads as precast concrete units are being erected. Tack weld steel shims to each other to prevent shims from separating.
 - 2. Maintain horizontal and vertical joint alignment and uniform joint width as erection progresses.
 - 3. Remove projecting lifting devices and grout fill voids within recessed lifting devices flush with surface of adjacent precast surfaces when recess is exposed.
 - 4. Unless otherwise indicated, maintain uniform joint widths of **3/4 inch (19 mm)**.
- C. Connect architectural precast concrete units in position by bolting, welding, grouting, or as otherwise indicated on Shop Drawings. Remove temporary shims, wedges, and spacers as soon as practical after connecting and grouting are completed.
 - 1. Do not permit connections to disrupt continuity of roof flashing.
- D. Welding: Comply with applicable AWS D1.1/D1.1M and AWS D1.4 for welding, welding electrodes, appearance, quality of welds, and methods used in correcting welding work.
 - 1. Protect architectural precast concrete units and bearing pads from damage by field welding or cutting operations, and provide noncombustible shields as required.
 - 2. Welds not specified shall be continuous fillet welds, using no less than the minimum fillet as specified by AWS.
 - 3. Clean weld-affected metal surfaces with chipping hammer followed by brushing, and apply a minimum **4.0-mil- (0.1-mm-)** thick coat of galvanized repair paint to galvanized surfaces according to ASTM A 780.
 - 4. Clean weld-affected metal surfaces with chipping hammer followed by brushing, and reprime damaged painted surfaces.
 - 5. Remove, reweld, or repair incomplete and defective welds.
- E. At bolted connections, use lock washers, tack welding, or other approved means to prevent loosening of nuts after final adjustment.
 - 1. Where slotted connections are used, verify bolt position and tightness. For sliding connections, properly secure bolt but allow bolt to move within connection slot. For friction connections, apply specified bolt torque and check 25 percent of bolts at random by calibrated torque wrench.

- F. Grouting Connections: Grout connections where required or indicated. Retain grout in place until hard enough to support itself. Pack spaces with stiff grout material, tamping until voids are completely filled. Place grout to finish smooth, level, and plumb with adjacent concrete surfaces. Keep grouted joints damp for not less than 24 hours after initial set. Promptly remove grout material from exposed surfaces before it affects finishes or hardens. At the base of precast concrete wall panels the joint between the bottom of the precast concrete wall panel and the foundation walls shall be fully grouted for the entire width and length of the joint with non shrink non metallic grout.

3.3 ERECTION TOLERANCES

- A. Erect architectural precast concrete units level, plumb, square, true, and in alignment without exceeding the noncumulative erection tolerances of PCI MNL 117, Appendix I.
- B. Erect architectural precast concrete units level, plumb, square, and true, without exceeding the following noncumulative erection tolerances:
 - 1. Plan Location from Building Grid Datum: Plus or minus **1/2 inch (13 mm)**.
 - 2. Plan Location from Centerline of Steel: Plus or minus **1/2 inch (13 mm)**.
 - 3. Top Elevation from Nominal Top Elevation: As follows:
 - a. Exposed Individual Panel: Plus or minus **1/4 inch (6 mm)**.
 - b. Non-Exposed Individual Panel: Plus or minus **1/2 inch (13 mm)**.
 - c. Exposed Panel Relative to Adjacent Panel: **1/4 inch (6 mm)**.
 - d. Non-Exposed Panel Relative to Adjacent Panel: **1/2 inch (13 mm)**.
 - 4. Support Elevation from Nominal Support Elevation: As follows:
 - a. Maximum Low: **1/2 inch (13 mm)**.
 - b. Maximum High: **1/4 inch (6 mm)**.
 - 5. Maximum Plumb Variation over the Lesser of Height of Structure or **100 Feet (30 m)**: **1 inch (25 mm)**.
 - 6. Plumb in Any **10 Feet (3 m)** of Element Height: **1/4 inch (6 mm)**.
 - 7. Maximum Jog in Alignment of Matching Edges: **1/4 inch (6 mm)**.
 - 8. Joint Width (Governs over Joint Taper): Plus or minus **1/4 inch (6 mm)**.
 - 9. Maximum Joint Taper: **3/8 inch (10 mm)**.
 - 10. Joint Taper in **10 Feet (3 m)**: **1/4 inch (6 mm)**.
 - 11. Maximum Jog in Alignment of Matching Faces: **1/4 inch (6 mm)**.
 - 12. Differential Bowing or Camber, as Erected, between Adjacent Members of Same Design: **1/4 inch (6 mm)**.
 - 13. Opening Height between Spandrels: Plus or minus **1/4 inch (6 mm)**.

3.4 FIELD QUALITY CONTROL

- A. Special Inspections: Contractor shall engage a qualified special inspector to perform the following special inspections and prepare reports:
 - 1. Erection of precast concrete members.
- B. Testing Agency: Contractor shall engage a qualified testing agency to perform tests and inspections and prepare test reports.

1. Testing agency will report test results promptly and in writing to Contractor, Engineer, and Architect.
- C. Field welds will be subject to visual inspections and nondestructive testing according to ASTM E 165 or ASTM E 709. High-strength bolted connections will be subject to inspections.
- D. Repair or remove and replace work where tests and inspections indicate that it does not comply with specified requirements.
- E. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.5 REPAIRS

- A. Repair architectural precast concrete units if permitted by Architect. The Architect reserves the right to reject repaired units that do not comply with requirements.
- B. Mix patching materials and repair units so cured patches blend with color, texture, and uniformity of adjacent exposed surfaces and show no apparent line of demarcation between original and repaired work, when viewed in typical daylight illumination from a distance of 20 feet (6 m).
- C. Wire brush, clean, and paint damaged prime-painted components with same type of shop primer.
- D. Remove and replace damaged architectural precast concrete units when repairs do not comply with requirements.

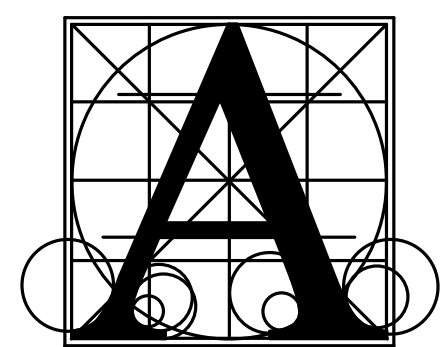
3.6 CLEANING

- A. Clean surfaces of precast concrete units exposed to view.
- B. Clean mortar, plaster, fireproofing, weld slag, and other deleterious material from concrete surfaces and adjacent materials immediately.
- C. Clean exposed surfaces of precast concrete units after erection and completion of joint treatment to remove weld marks, other markings, dirt, and stains.
 1. Perform cleaning procedures, if necessary, according to precast concrete fabricator's recommendations. Clean soiled precast concrete surfaces with detergent and water, using stiff fiber brushes and sponges, and rinse with clean water. Protect other work from staining or damage due to cleaning operations.
 2. Do not use cleaning materials or processes that could change the appearance of exposed concrete finishes or damage adjacent materials.

END OF SECTION 034500

GENERAL NOTES - FLOOR PLAN

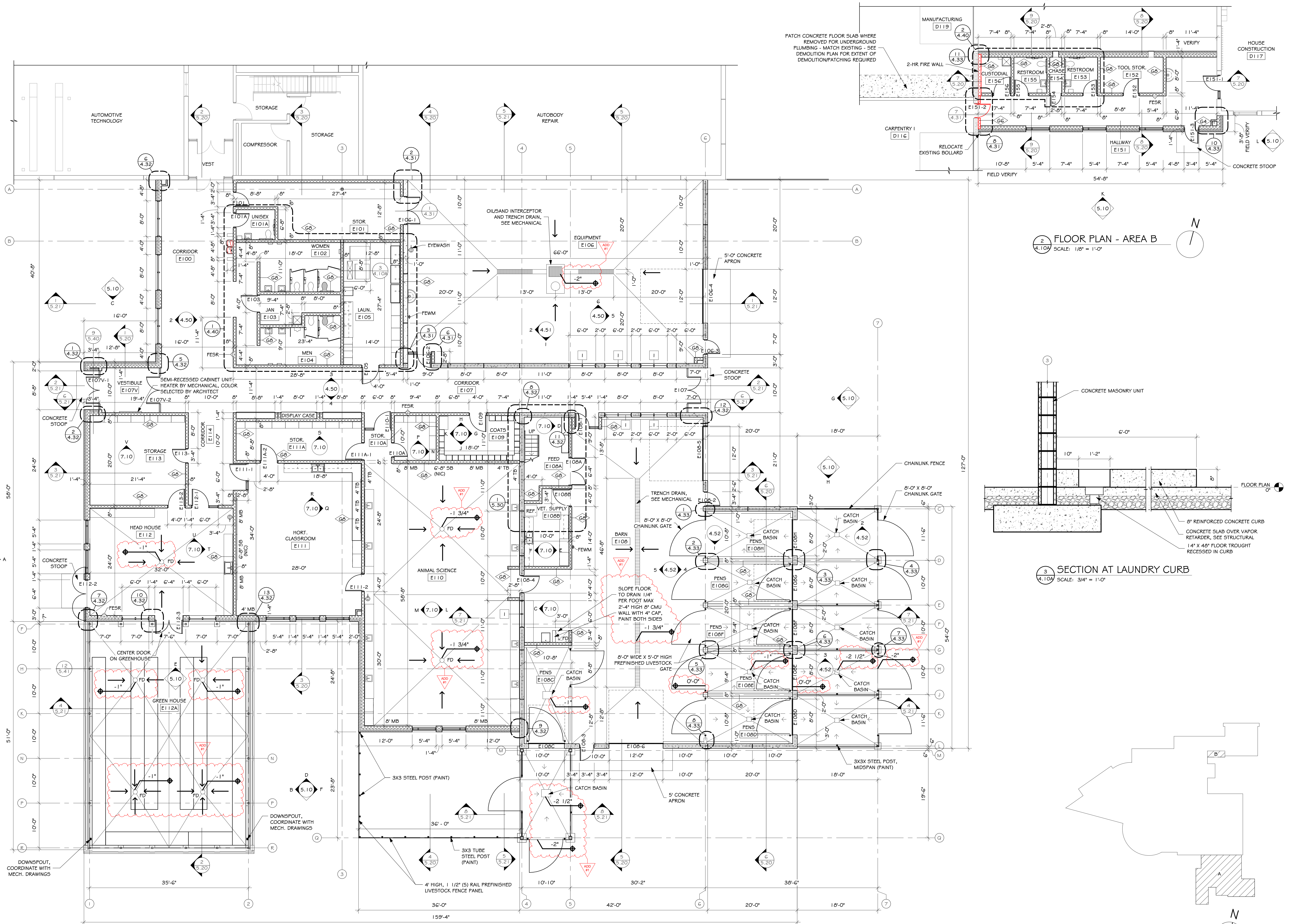
- A. GENERAL CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS AT THE JOB SITE. REPORT DISCREPANCIES TO THE ARCHITECT.
- B. REFER TO SHEET 4.10 FOR WALL TYPES.
- C. WHERE WALLS WERE REMOVED, PATCH EXISTING WALL TO MATCH ADJACENT SURFACE AND FINISH. (TYPICAL).



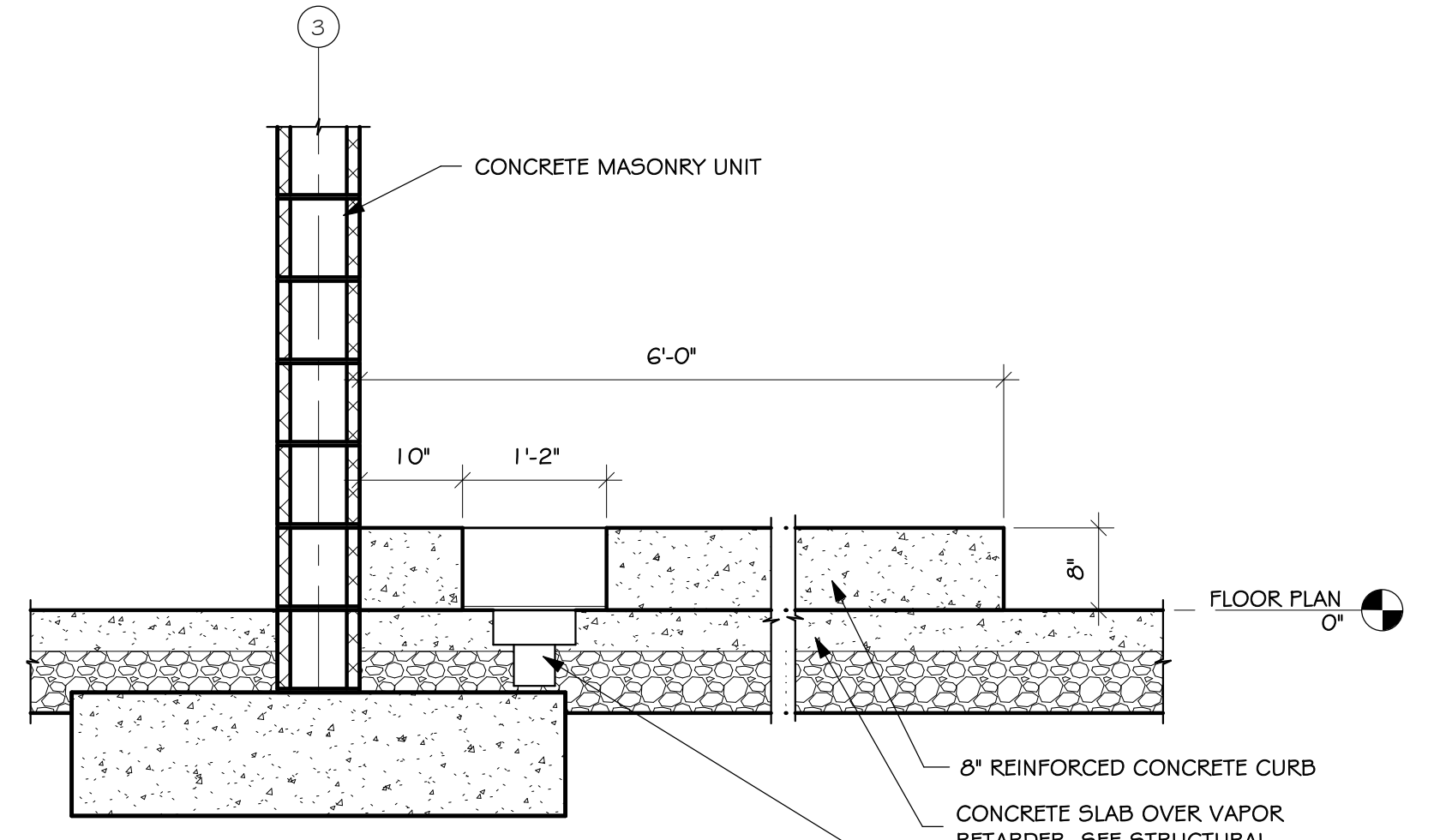
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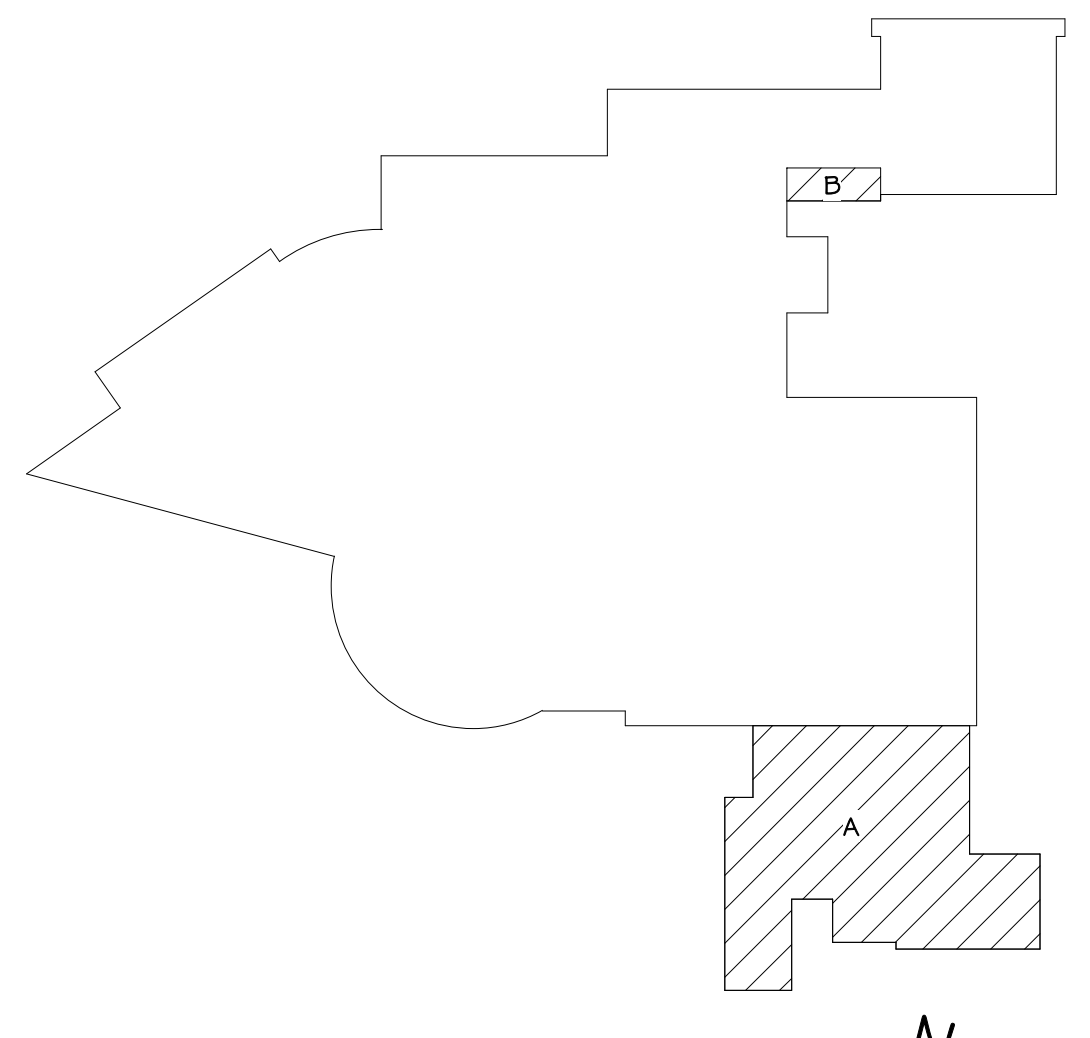
815 St Joseph Street, Suite 203
Rapid City, South Dakota 57701
Phone: (605) 721-1158



2 FLOOR PLAN - AREA B
SCALE: 1/8" = 1'-0"



3 SECTION AT LAUNDRY CURB
SCALE: 3/4" = 1'-0"



KEYPLAN

1 FLOOR PLAN - AREA A
SCALE: 1/8" = 1'-0"

SIOUX FALLS CAREER & TECHNICAL EDUCATION ACADEMY'S
 AGRICULTURE & CARPENTRY ADDITION PROJECT PD #3471
 FLOOR PLAN

number	1121.3057.23
date	OCTOBER 30, 2024
revision	
drawn	MS/CJM checked SRJ

DATE	DESCRIPTION
11-22-2024	ADD #1

4.10A

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