

**ADDENDUM NO. 1**

**PROJECT NAME:** Quilt House Addition  
**UNL PROJECT NUMBER:** 10193  
**BID INVITATION NUMBER:** 2361-14-7200

**DESIGN FIRM:** Alley Poyner Macchietto Architecture, P.C.  
**ADDRESS:** 1516 Cuming Street, Omaha, NE 68102

**DATE OF ISSUANCE:** April 23, 2014  
**DATE OF BID OPENING:** April 29, 2014

**Please note - if you are receiving this addendum via fax machine and you are NOT a planhouse - this is the only copy of the addendum that you will receive. An electronic copy may be obtained by request from kbarmore2@unl.edu.**

The bid documents dated March 28, 2014 for the above referenced project are amended by this addendum.

**NOTICE:** This Addendum is issued to all interested prospective bidders as an amendment to the project manual or other parts of the bidding (contract) documents for the above named project. Reference to this Addendum must be included in the Bid proposal. The information contained herein shall be fully incorporated into the contract documents as though originally included therein.

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**MODIFICATIONS TO THE PROJECT MANUAL:**

**SECTION 033300 – ARCHITECTURAL CONCRETE**

1. Add the following specification “Section 033300 Architectural Concrete”, attached.

**SECTION 042000 – UNIT MASONRY**

1. Add Article 2.12 as follows:

**“2.12 TIES AND ANCHORS**

- A. Materials: Provide ties and anchors specified in this article that are made from materials that comply with the following unless otherwise indicated:
  1. Mill-Galvanized, Carbon-Steel Wire: ASTM A 82/A 82M; with ASTM A 641/A 641M, Class 1 coating.
  2. Hot-Dip Galvanized, Carbon-Steel Wire: ASTM A 82/A 82M; with ASTM A 153/A 153M, Class B-2 coating.
  3. Stainless-Steel Wire: ASTM A 580/A 580M, Type 304.
  4. Galvanized Steel Sheet: ASTM A 653/A 653M, Commercial Steel, G60 Z180 zinc coating.
  5. Steel Sheet, Galvanized after Fabrication: ASTM A 1008/A 1008M, Commercial Steel, with ASTM A 153/A 153M, Class B coating.
  6. Stainless-Steel Sheet: ASTM A 666, Type 304.
  7. Stainless-Steel Bars: ASTM A 276 or ASTM A 666, Type 304.
- 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 (50 mm) parallel to face of veneer.

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- C. 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 ¼-inch- (6.4-mm-) diameter, hot-dip galvanized steel wire.
  2. Tie Section for Steel Frame: Triangular-shaped wire tie, sized to extend within 1 inch (25 mm) of masonry face, made from 0.25-inch- (6.35-mm-) diameter, hot-dip galvanized steel wire.
  3. Connector Section for Concrete: Dovetail tabs for inserting into dovetail slots in concrete and attached to tie section; formed from 0.097-inch- (2.5-mm-) thick, steel sheet, galvanized after fabrication.
    - a. Tie Section: Triangular-shaped wire tie, sized to extend within 1 inch (25 mm) of masonry face, made from 0.25-inch-diameter hot-dip galvanized steel wire.

SECTION 072726 – FLUID-APPLIED MEMBRANE AIR BARRIERS

1. Subparagraph 2.3.A.1.a. Add the following:

"5) TK Products; TK-Airmax 2103"

SECTION 075323 – ETHYLENE-PROPYLENE-DIENE-MONOMER (EPDM) ROOFING

1. Subparagraph 2.2D. Delete the words "water based".
2. Paragraph 2.5.B. Add the following subparagraph:

"1. Provide a minimum of two base layers of 2.0-inch thick insulation with a total LTTR value of 22.8.

3. Under Article 2.5, add the following paragraph:

"D. Tapered Insulation: Provide factory-tapered insulation boards fabricated to slope as follows:

1. 1/4 inch per 12 inches, minimum of positive slope to roof drain.
2. Roof slopes in some areas are accomplished by sloping the roof structure which may require a greater taper on the insulation to avoid flat spots at or around the roof drain."

SECTION 232116 – HYDRONIC SPECIALTIES

1. Delete Subparagraph 2.4.A.7 and substitute the following:

"7. Manufacturer:

- a. Mason Industries model Safeflex or equivalent.
- b. Metraflex."

2. Add Article 3.0, before Article 3.1, as follows:

**"3.0 MANUFACTURER**

A. Expansion Tanks:

1. Taco."

SECTION 232123 – HYDRONIC PUMPS

1. Under Article 2.2, add the following paragraph:  
"M. Manufacturer:  
1. Taco."
2. Paragraph 2.3.A, add the following subparagraph:  
"9. Manufacturer:  
2. Taco."

SECTION 233113 – DUCTWORK

1. Under Article 2.3, add the following paragraph:  
"G. Manufacturer:  
1. Spiral Seam Duct:  
a. LaPine Metal Products."

SECTION 233300 – DUCTWORK ACCESSORIES

1. Under Article 2.6, add the following paragraph:  
"I. Manufacturer:  
1. Greenheck.  
2. NCA Manufacturing."
2. Under Article 2.10, add the following paragraph:  
"G. Manufacturer:  
1. Commercial Acoustics.  
2. Aerosonics.  
3. IAC."

SECTION 23 34 23 – POWER VENTILATORS

1. Under Article 2.1, add the following paragraph:  
"B. Manufacturer:  
1. Greenheck.  
2. PennBarry."

SECTION 233600 – AIR TERMINAL UNITS

1. Under Article 2.1, add the following paragraph:  
"Manufacturer:  
1. Nailor.  
2. MetalAire.  
3. Tuttle & Bailey."

SECTION 233700 – AIR OUTLETS AND INLETS

1. Under Article 2.1, add the following paragraph:

"E. Manufacturer:  
1. Nailor.  
2. MetalAire.  
3. Tuttle & Bailey."

2. Under Article 2.3, add the following paragraph:

"E. Manufacturer:  
1. Greenheck.  
2. NCA Manufacturing.  
3. Enertech."

3. Under Article 2.4, add the following paragraph:

"E. Manufacturer:  
1. PennBarry."

SECTION 236426 – ROTARY SCREW WATER CHILLERS

1. Under Article 2.1, add the following paragraph:

"E. Dunham Bush."

SECTION 237313 – AIR HANDLING UNITS

1. Paragraph 2.1.E. Add the following subparagraph:

"9. Seasons 4."

SECTION 238239 – TERMINAL HEAT TRANSFER

1. Under Article 2.1, add the following paragraph:

"H. Manufacturer:  
1. First Company, Sterling."

**MODIFICATIONS TO THE DRAWINGS:**

SHEET C300 UTILITY PLAN

1. Utility Notes. Delete all Notes in reference to Electrical Service, Telephone Service and Cable Television. These services are not required with this project.

SHEET A1.1 FLOOR PLAN – FIRST FLOOR

1. Plan P5/A1.1.
  - a. In New Collections Storage 126, delete Note at east wall "8" CONC WALL" and substitute "8" ARCHITECTURAL CONC WALL".
  - b. In Isolation 124, delete Note at north and east wall "8" CONC WALL" and substitute "8" ARCHITECTURAL CONC WALL".

SHEET S3.0 GENERAL STRUCTURAL NOTES

1. Detail 5. At 5A, Lintel Details, add the following:

"Lintel Requirements:

- L1: for openings up to 4'-0"
- L2: for openings between 4'-0" and 8'-0"
- L3: for openings framed with steel beam per plan"

SHEET M2.4 ROOF PENTHOUSE FLOOR PLAN - MECHANICAL

1. Plan P10/M2.4. Modify flag note #1 as shown on Attachment No. MS-1.

SHEET M6.1 MECHANICAL SCHEDULES

1. Modify Boiler Schedule as shown on Attachment No. MS-2.

SHEET E3.2 FLOOR PLAN – SECOND FLOOR FIRE ALARM

1. Plan P5/E3.2. Add Fire Alarm Magnetic Door Holders to North Door in Gallery 221 and Fire Alarm Smoke Detector as shown on Attachment No. ES-1.

SHEET E5.2 ELECTRICAL SCHEDULES

1. Lighting Fixture Schedule. The following lighting fixture manufacturers are considered equivalent for bidding purposes if equal to the specified lighting fixtures and are subject to final shop drawing review. Light fixtures may be rejected during shop drawing review process if the Architect, Owner or Engineer does not find the submitted lighting fixture(s) to be equivalent.

<u>Type:</u>	<u>Manufacturer:</u>
1	-
2	Dual-Lite
3	Prescolite
4	Columbia
5	Prescolite
6	Dual-Lite
7	Prescolite

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<u>Type:</u>	<u>Manufacturer:</u>
8	Dual-Lite
9	Columbia
10	Kenall
11	Dual-Lite
12	-
13	Prescolite
14	Kenall
15	-
16	Columbia
17	Dual-Lite
18	Dual-Lite

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## **SECTION 03 33 00 – 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. Section includes cast-in-place architectural concrete including form facings, reinforcement accessories, concrete materials, concrete mixture design, placement procedures, and finishes.
- B. Related Requirements:
  - 1. Section 03 30 00 "Cast-In-Place Concrete".

#### **1.3 DEFINITIONS**

- A. Cast-in-Place Architectural Concrete: Formed concrete that is exposed to view on surfaces of completed structure or building and that requires special concrete materials, formwork, placement, or finishes to obtain specified architectural appearance.
- B. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash and other pozzolans, ground granulated blast-furnace slag, and silica fume; subject to compliance with requirements.
- C. Design Reference Sample: Sample designated by Architect in the Contract Documents that reflects acceptable surface quality and appearance of cast-in-place architectural concrete.
- D. Reveal: Projection of coarse aggregate from matrix or mortar after completion of exposure operations.

#### **1.4 PREINSTALLATION MEETINGS**

- A. Preinstallation Conference: Conduct conference at Project site.
  - 1. Before submitting design mixtures, review concrete design mixture and examine procedures for ensuring quality of concrete materials. Require representatives of each entity directly concerned with cast-in-place architectural concrete to attend, including the following:
    - a. Contractor's superintendent.
    - b. Independent testing agency responsible for concrete design mixtures.
    - c. Ready-mix concrete manufacturer.
    - d. Cast-in-place architectural concrete subcontractor.
  - 2. Review concrete finishes and finishing, construction joints, forms and form-removal limitations, and protection of cast-in-place architectural concrete.

## **SECTION 03 33 00 – ARCHITECTURAL CONCRETE**

### **1.5 ACTION SUBMITTALS**

- A. Product Data: For each type of product.
- B. LEED Submittals:
  - 1. Product Data for Credit MR 4.1 and Credit MR 4.2: For products having recycled content, documentation indicating percentages by weight of postconsumer and preconsumer recycled content.
  - 2. Design Mixtures for Credit ID 1.1: For each concrete mixture containing fly ash as a replacement for portland cement or other portland cement replacements, and for equivalent concrete mixtures that do not contain portland cement replacements.
- C. Design Mixtures: For each concrete mixture. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.
  - 1. Indicate amounts of mixing water to be withheld for later addition at Project site.
- D. Formwork Shop Drawings: Show formwork construction including form-facing joints, rustications, construction and contraction joints, form joint-sealant details, form tie locations and patterns, inserts and embedments, cutouts, cleanout panels, and other items that visually affect cast-in-place architectural concrete.
- E. Placement Schedule: Submit concrete placement schedule before start of placement operations. Include locations of all joints including construction joints.
- F. Samples for Verification: Architectural concrete Samples, cast vertically, approximately 18 by 18 by 2 inches (450 by 450 by 50 mm), of finishes, colors, and textures to match design reference sample. Include Sample sets showing the full range of variations expected in these characteristics.

### **1.6 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
  - 1. Manufacturer certified according to NRMCA's "NRMCA Quality Control Manual - Section 3, Certification of Ready Mixed Concrete Production Facilities."
- B. Source Limitations for Cast-in-Place Architectural Concrete: Obtain each color, size, type, and variety of concrete material and concrete mixture from single manufacturer with resources to provide cast-in-place architectural concrete of consistent quality in appearance and physical properties.
- C. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:
  - 1. ACI 301, "Specification for Structural Concrete," Sections 1 through 5.
  - 2. ACI 303.1, "Specification for Cast-in-Place Architectural Concrete."

## SECTION 03 33 00 – ARCHITECTURAL CONCRETE

### PART 2 - PRODUCTS

#### 2.1 FORM-FACING MATERIALS

- A. General: Comply with Section 03 30 00 "Cast-in-Place Concrete" for formwork and other form-facing material requirements.
- B. Form-Facing Panels for As-Cast Finishes: Steel, glass-fiber-reinforced plastic, or other approved nonabsorptive panel materials that will provide continuous, true, and smooth architectural concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.
- C. Pan-Type Forms: Glass-fiber-reinforced plastic or formed steel, stiffened to resist plastic concrete loads without detrimental deformation.
- D. Form Liners: Units of face design, texture, arrangement, and configuration to match design reference sample. Furnish with manufacturer's recommended liquid-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent surface treatments of concrete.
- E. Rustication Strips: Metal, rigid plastic, or dressed wood with sides beveled and back kerfed; nonstaining; in longest practicable lengths.
- F. Chamfer Strips: Metal, rigid plastic, elastomeric rubber, or dressed wood, 3/4 by 3/4 inch (19 by 19 mm), minimum; nonstaining; in longest practicable lengths.
- G. Form Joint Tape: Compressible foam tape; pressure sensitive; AAMA 800, "Specification 810.1, Expanded Cellular Glazing Tape"; minimum 1/4 inch (6 mm) thick.
- H. Form Joint Sealant: Elastomeric sealant complying with ASTM C 920, Type M or Type S, Grade NS, that adheres to form joint substrates.
- I. Sealer: Penetrating, clear, polyurethane wood form sealer formulated to reduce absorption of bleed water and prevent migration of set-retarding chemicals from wood.
- J. Form-Release Agent: Commercially formulated, colorless form-release agent that will not bond with, stain, or adversely affect architectural concrete surfaces and will not impair subsequent treatments of those surfaces.
  - 1. Formulate form-release agent with rust inhibitor for steel form-facing materials.
- K. Form Ties: Factory-fabricated, glass-fiber-reinforced plastic, internally disconnecting, or removable ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.
  - 1. Furnish ties with tapered tie cone spreaders that, when removed, will leave holes 1 inch (25 mm) in diameter on concrete surface.

#### 2.2 STEEL REINFORCEMENT AND ACCESSORIES

- A. General: Comply with Section 03 30 00 "Cast-in-Place Concrete" for steel reinforcement and other requirements for reinforcement accessories.

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- B. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded-wire fabric in place; manufacture according to CRSI's "Manual of Standard Practice."
  - 1. Where legs of wire bar supports contact forms, use gray, all-plastic, CRSI Class 1, gray, plastic-protected, or CRSI Class 2, stainless-steel bar supports.

### **2.3 CONCRETE MATERIALS**

- A. Normal-Weight Aggregates: ASTM C 33, Class 5S coarse aggregate or better, graded. Provide aggregates from single source with documented service record data of at least 10 years' satisfactory service in similar applications and service conditions using similar aggregates and cementitious materials.
  - 1. Maximum Coarse-Aggregate Size: 3/4 inch (19 mm).
  - 2. Gradation: Matching precast.
- B. Normal-Weight Fine Aggregate: ASTM C 33 or ASTM C 144, manufactured or natural sand, from same source for entire Project.
- C. Water: Potable, complying with ASTM C 94/C 94M except free of wash water from mixer washout operations.

### **2.4 ADMIXTURES**

- A. Air-Entraining Admixture: ASTM C 260.
- B. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.
  - 1. Water-Reducing Admixture: 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. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.

### **2.5 CURING MATERIALS**

- A. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. (305 g/sq. m) when dry.
- B. Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B.
  - 1. For integrally colored concrete, curing compound shall be pigmented type approved by color pigment manufacturer.
  - 2. For concrete indicated to be sealed, curing compound shall be compatible with sealer.

### **2.6 REPAIR MATERIALS**

- A. Bonding Agent: ASTM C 1059/C 1059M, Type II, nonredispersible, acrylic emulsion or styrene butadiene.

## SECTION 03 33 00 – ARCHITECTURAL CONCRETE

### 2.7 CONCRETE MIXTURES, GENERAL

- A. Prepare design mixtures for each type and strength of cast-in-place architectural concrete proportioned on basis of laboratory trial mixture or field test data, or both, according to ACI 301.
  - 1. Use a qualified independent testing agency for preparing and reporting proposed design mixtures based on laboratory trial mixtures.
- B. Proportion concrete mixtures as follows:
  - 1. Compressive Strength (28 Days): 4000 psi (27.6 MPa).
  - 2. Maximum Water-Cementitious Materials Ratio: 0.46.
  - 3. Slump Limit: 4 inches (100 mm), plus or minus 1 inch (25 mm).
  - 4. Air Content: 6 percent, plus or minus 1.0 percent at point of delivery for 3/4-inch (19-mm) nominal maximum aggregate size.
- C. Cementitious Materials: For cast-in-place architectural concrete exposed to deicers, limit percentage, by weight, of cementitious materials other than portland cement according to ACI 301 requirements.
- D. Limit water-soluble, chloride-ion content in hardened concrete to 0.06 percent by weight of cement.
- E. Admixtures: Use admixtures according to manufacturer's written instructions.

### 2.8 CONCRETE MIXING

- A. Ready-Mixed Architectural Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M and furnish batch ticket information.
  - 1. Clean equipment used to mix and deliver cast-in-place architectural concrete to prevent contamination from other concrete.
  - 2. When air temperature is between 85 and 90 deg F (30 and 32 deg C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F (32 deg C), reduce mixing and delivery time to 60 minutes.

## PART 3 - EXECUTION

### 3.1 FORMWORK

- A. General: Comply with Section 03 30 00 "Cast-in-Place Concrete" for formwork, embedded items, and shoring and reshoring.
- B. Limit deflection of form-facing panels to not exceed ACI 303.1 requirements.
- C. In addition to ACI 303.1 limits on form-facing panel deflection, limit cast-in-place architectural concrete surface irregularities, designated by ACI 347 as abrupt or gradual, as follows:
  - 1. Class A, 1/8 inch (3.2 mm).
- D. Fabricate forms to result in cast-in-place architectural concrete that complies with ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."

## **SECTION 03 33 00 – ARCHITECTURAL CONCRETE**

- E. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast-in-place surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical. Kerf wood rustications, keyways, reglets, recesses, and the like, for easy removal.
  - 1. Seal form joints and penetrations at form ties with form joint tape or form joint sealant to prevent cement paste leakage.
  - 2. Do not use rust-stained steel form-facing material.
- F. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.
- G. Exterior corners and edges of cast-in-place architectural concrete as detailed.
- H. Coat contact surfaces of wood rustications and chamfer strips with sealer before placing reinforcement, anchoring devices, and embedded items.
- I. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.
- J. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.
- K. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.
- L. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.
- M. Place form liners accurately to provide finished surface texture indicated. Provide solid backing and attach securely to prevent deflection and maintain stability of liners during concreting. Prevent form liners from sagging and stretching in hot weather. Seal joints of form liners and form liner accessories to prevent mortar leaks. Coat form liner with form-release agent.

### **3.2 REINFORCEMENT AND INSERTS**

- A. General: Comply with Section 03 30 00 "Cast-in-Place Concrete" for fabricating and installing steel reinforcement. Securely fasten steel reinforcement and wire ties against shifting during concrete placement.
- B. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

### **3.3 REMOVING AND REUSING FORMS**

- A. Formwork for sides of beams, walls, columns, and similar parts of the Work that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F (10 deg C) for 24 hours after placing concrete if concrete is hard enough to not be damaged by form-removal operations and curing and protection operations are maintained.
  - 1. Schedule form removal to maintain surface appearance that matches approved sample.
  - 2. Cut off and grind glass-fiber-reinforced plastic form ties flush with surface of concrete.

## **SECTION 03 33 00 – ARCHITECTURAL CONCRETE**

- B. Leave formwork for beam soffits, joists, slabs, and other structural elements that support weight of concrete in place until concrete has achieved at least 70 percent of 28-day design compressive strength. Remove forms only if shores have been arranged to permit removal of forms without loosening or disturbing shores.
- C. Clean and repair surfaces of forms to be reused in the Work. Do not use split, frayed, delaminated, or otherwise damaged form-facing material. Apply new form-release agent.
- D. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for cast-in-place architectural concrete surfaces.

### **3.4 JOINTS**

- A. Construction Joints: Install construction joints true to line with faces perpendicular to surface plane of cast-in-place architectural concrete so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.
  - 1. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints unless otherwise indicated.
  - 2. Form keyed joints as indicated. Embed keys at least 1-1/2 inches (38 mm) into concrete. Align construction joint within rustications attached to form-facing material.
  - 3. Locate joints for beams, slabs, joists, and girders in the middle third of spans. Offset joints in girders a minimum distance of twice the beam width from a beam-girder intersection.
  - 4. Locate horizontal joints in walls and columns at underside of floors, slabs, beams, and girders and at the top of footings or floor slabs.
  - 5. Space vertical joints in walls as indicated. Locate joints beside piers integral with walls, near corners, and in concealed locations where possible.
  - 6. Use bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
- B. Contraction Joints: Form weakened-plane contraction joints true to line with faces perpendicular to surface plane of cast-in-place architectural concrete so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.

### **3.5 CONCRETE PLACEMENT**

- A. Before placing concrete, verify that installation of formwork, form-release agent, reinforcement, and embedded items is complete and that required inspections have been performed.
- B. Do not add water to concrete during delivery, at Project site, or during placement unless approved by Architect.
- C. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301.
- D. Deposit concrete continuously between construction joints. Deposit concrete to avoid segregation.
  - 1. Deposit concrete in horizontal layers of depth to not exceed formwork design pressures and in a manner to avoid inclined construction joints.

## **SECTION 03 33 00 – ARCHITECTURAL CONCRETE**

2. Consolidate placed concrete with mechanical vibrating equipment according to ACI 303.1.
  3. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches (150 mm) into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. Do not permit vibrators to contact forms.
- E. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
1. When average high and low temperature is expected to fall below 40 deg F (4.4 deg C) for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.
  2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
  3. Do not use calcium chloride, salt, or other materials containing antifreeze agents.
  4. Do not use chemical accelerators unless otherwise specified and approved in design mixtures.
- F. Hot-Weather Placement: Comply with ACI 301 and as follows:
1. Maintain concrete temperature below 90 deg F (32 deg C) at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
  2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

### **3.6 FINISHES, GENERAL**

- A. Architectural Concrete Finish: Match Architect's design reference sample, identified and described as indicated, to satisfaction of Architect.
- B. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces.
1. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces unless otherwise indicated.
- C. Maintain uniformity of special finishes over construction joints unless otherwise indicated.

### **3.7 AS-CAST FORMED FINISHES**

- A. Rubbed Finish: Apply the following to smooth-form-finished as-cast concrete where indicated:
1. Smooth Finish: Not later than one day after form removal, moisten concrete surfaces and rub with carborundum brick or another abrasive until producing a uniform texture.
- B. Form Tie Holes:
1. Fill all form tie holes with matching concrete.

## **SECTION 03 33 00 – ARCHITECTURAL CONCRETE**

### **3.8 CONCRETE PROTECTING AND CURING**

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and with ACI 301 for hot-weather protection during curing.
- B. Begin curing cast-in-place architectural concrete immediately after removing forms from concrete. Cure according to ACI 308.1, by one or a combination of the following methods that will not mottle, discolor, or stain concrete:
  - 1. Moisture Curing: Keep exposed surfaces of cast-in-place architectural concrete continuously moist for no fewer than seven days with the following materials:
    - a. Water.
    - b. Continuous water-fog spray.
    - c. Absorptive cover, water saturated and kept continuously wet. Cover concrete surfaces and edges with 12-inch (300-mm) lap over adjacent absorptive covers.
  - 2. Curing Compound: Mist concrete surfaces with water. Apply curing compound uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.

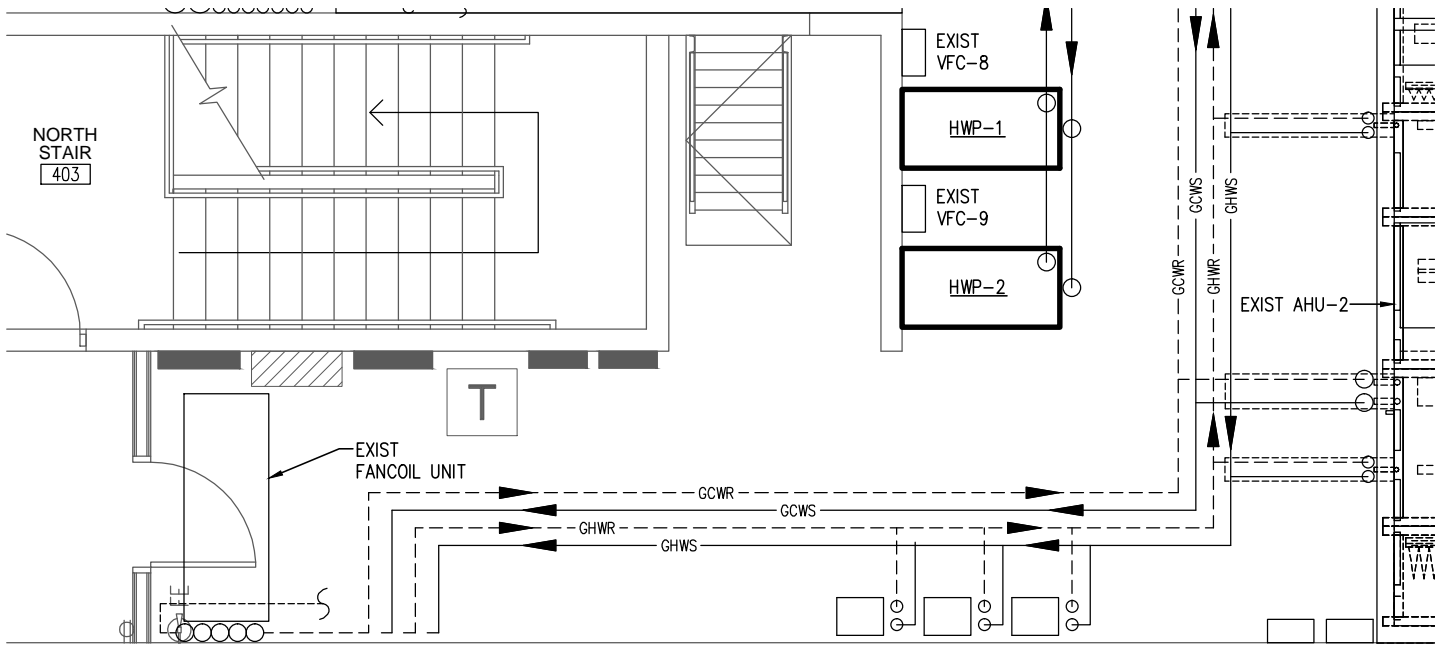
### **3.9 FIELD QUALITY CONTROL**

- A. General: Comply with field quality-control requirements in Section 033000 "Cast-in-Place Concrete."

### **3.10 REPAIRS, PROTECTION, AND CLEANING**

- A. Repair and cure damaged finished surfaces of cast-in-place architectural concrete when approved by Architect. Match repairs to color, texture, and uniformity of surrounding surfaces and to repairs on approved mockups.
  - 1. Remove and replace cast-in-place architectural concrete that cannot be repaired and cured to Architect's approval.
- B. Protect corners, edges, and surfaces of cast-in-place architectural concrete from damage; use guards and barricades.
- C. Protect cast-in-place architectural concrete from staining, laitance, and contamination during remainder of construction period.
- D. Clean cast-in-place architectural concrete surfaces after finish treatment to remove stains, markings, dust, and debris.
- E. Wash and rinse surfaces according to concrete finish applicator's written instructions. Protect other Work from staining or damage due to cleaning operations.
  - 1. Do not use cleaning materials or processes that could change the appearance of cast-in-place architectural concrete finishes.

**END OF SECTION 03 33 00**



### NEW WORK FLAG NOTES

- 1 ORIGINAL BOILER CONTROL PANEL TO BE USED BY UNL CONTROLS DIVISION FOR BOILER CONTROL, DEVICES, PANEL, ETC. UNL CONTROLS SHALL ENABLE/DISABLE ALL FOUR (4) BOILERS, MONITOR STATUS, MONITOR/CHANGE HWS SETPOINT, CONTROL FIRING RATE OF BOILER BURNERS. BOILER B-4 SHALL BE THE LEAD BOILER WITH THE REMAINING EXISTING BOILERS STAGED ON AS NEEDED. BOILER ECM CIRCULATING PUMPS SHALL BE CONTROLLED BY BOILER SELF-CONTAINED CONTROLS BY PROVIDING A 4-20 MILLI-AMP OR A 0-10 MILLI-VOLT SIGNAL ACCEPTANCE FOR UNL CONTROLS.
- 2 NEW BOILER WIRING CABINET MOUNTED AT FRONT OF EXISTING BOILER FOR WIRING OF NEW BOILER BURNER AND NEW BOILER CIRCULATING PUMP. CABINET TO BE PROVIDED WITH NEW CIRCULATION PUMPS AS PART OF BOILER UPGRADE. WIRING TO BOILER BURNERS AND BOILER CIRCULATING PUMPS TO BE PERFORMED BY MANUFACTURER AUTHORIZED BOILER REPRESENTATIVE.
- 3 NEW MODULATING BOILER GAS BURNER WITH CAPACITY OF 750 MBH. BURNER TO BE "REILLO" BURNER MODEL RS28/E COMPATIBLE WITH EXISTING L.E.S. BOILERS CURRENTLY IN PLACE. BURNERS SHALL BE FACTORY TESTED. RECONNECT GAS PIPING TO NEW BURNERS AND WIRE BOILER BURNERS TO NEW BOILER WIRING CABINET. BOILER BURNER INSTALLATION SHALL BE PERFORMED BY MANUFACTURER AUTHORIZED BOILER REPRESENTATIVE .
- 4 NEW 208 VOLT, 1-PHASE BOILER CIRCULATION PUMPS AT EXISTING BOILERS. PUMPS TO BE "WILO - STRATOS" MODEL 2.0 x 3-40, 1/2 Hp BOILER PUMPS WITH 35 GPM FLOW, WITH ECM MOTORS, AND 208 VOLT, 1-PHASE POWER. PUMPS MATCHED FOR BOILER REQUIRED FLOW TO ALLOW BLENDING OF HEATED WATER INTO THE HEATING HOT WATER LOOP WITH CONTROL OF THE BOILER PUMP SPEED BASED ON BOILER WATER TEMPERATURE DIFFERENTIAL. BOILER CIRCULATION PUMP INSTALLATION SHALL BE PREFORMED BY MANUFACTURER AUTHORIZED BOILER REPRESENTATIVE.
- 5 PROVIDE COMBUSTION AIR VENT FROM BACKSIDE OF NEW BOILER. TERMINATE ABOVE ROOF WITH REQUIRED INLET AS RECOMMENDED BY BOILER MANUFACTURER.
- 6 PROVIDE FLUE EXHAUST VENTING FROM BACKSIDE OF NEW BOILER. FLUE VENTING SHALL BE PROVIDED WITH TEE FITTING WHERE HORIZONTAL VENT EXITS BOILER AND CONNECTS TO VERTICAL RISE WITH CONDENSATE DRAIN LOCATED AT BOTTOM OF TEE FITTING.
- 7 DEDICATED BOILER CIRCULATION PUMP. BOILER PUMP TO BE "WILO - STRATOS" MODEL 2.0 X 3-35, 3/4 Hp BOILER PUMP WITH 70 GPM FLOW, WITH ECM MOTOR AND 208 VOLT, 1-PHASE POWER. PUMP PROVIDED WITH BOILER SHIPPED LOOSE AND FIELD INSTALLED BY MECHANICAL CONTRACTOR.
- 8 NEW BOILER SHALL BE COMPATIBLE WITH EXISTING BOILERS AND THEIR NEW CONTROL.

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SHEET REFERENCE: M 2.4

PROJECT NAME: Quilt House Addition

PROJECT NUMBER: 10083

DATE: APRIL 23, 2014

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Attachment No.

**MS-1**

Addendum No. 1

**ALLEY•POYNER  
MACCHIETTO**

1516 Cuming Street  
Omaha, NE 68102  
Ph: 402.341.1544  
Fx: 402.341.4735  
alleypoyner.com

55 TONS

1

ModularBoiler 12-8-06

## BOILER SCHEDULE

MARK		B-4
SERVES		HEATING WATER
LOCATION		EXIST. PENTHOUSE
CONFIGURATION		VERTICAL FIRETUBE
FUEL		NAT. GAS
INPUT (MBH)		1500
OUTPUT (MBH)		1425
VENT CONNECTION (IN.)		(1)
ELECTRICAL DATA	VOLTS	120
	PHASE	1
	WIRE SIZING AMPS	(2)
	FUSE/BREAKER AMPS	-
DIMENSIONS (LxWxH) (IN)		42"x28"x78"
OPERATING WEIGHT (LBS)		3920
MANUFACTURER		AERCO
MODEL NUMBER		BMK1500
REMARKS		(3) (4)

**REMARKS:**

- (1) COMBUSTION AIR CONNECTION = 6" DIA.  
FLUE EXHAUST CONNECTION = 6" DIA.
- (2) BOILER AND PUMP POWER:  
BOILER = 16 AMPS
- (3) PROVIDE BOILER WITH TRIM AND CONTROLS, ASME RELIEF VALVE, AND FACTORY MOUNTED "WILO" BOILER PUMP WITH ECM MOTOR FOR VARIABLE FLOW OF BOILER PUMP (SEE SHEET M2.4 FOR ADDITIONAL BOILER PUMP INFORMATION).
- (4) FLUID = 40% PROPYLENE GLYCOL / 60% WATER SOLUTION.

	HUM-5
C	ULTRASONIC
S	SEE PLANS
.	DUCT MTD.
	32 x 28
	3000
	29.1
	30.8
	495
	120
	1
	-
	-
T	HUMIDIFIRST
	DT-30
	(1)

50% R.H.

G

**ROBERT A**

460 WEST  
TEL (2

H

H

**ALLEY  
MACC  
ARCHI**

J

CONSUL

CIVIL EN

Olsson Assoc  
1111 Lincoln  
Lincoln, NE 68  
(402)474-631

STRUCTU

Performance  
4940 N. 118th  
Omaha, NE 68  
(402)255-3854

K

MECHAN

Alvine Engine  
1800 O Street  
Lincoln, NE 68  
(402)477-616

ELECTRIC

Alvine Engine  
1800 O Street  
Lincoln, NE 68  
(402)477-616

SHEET REFERENCE: M 6.1

PROJECT NAME: Quilt House Addition

PROJECT NUMBER: 10083

DATE: APRIL 23, 2014

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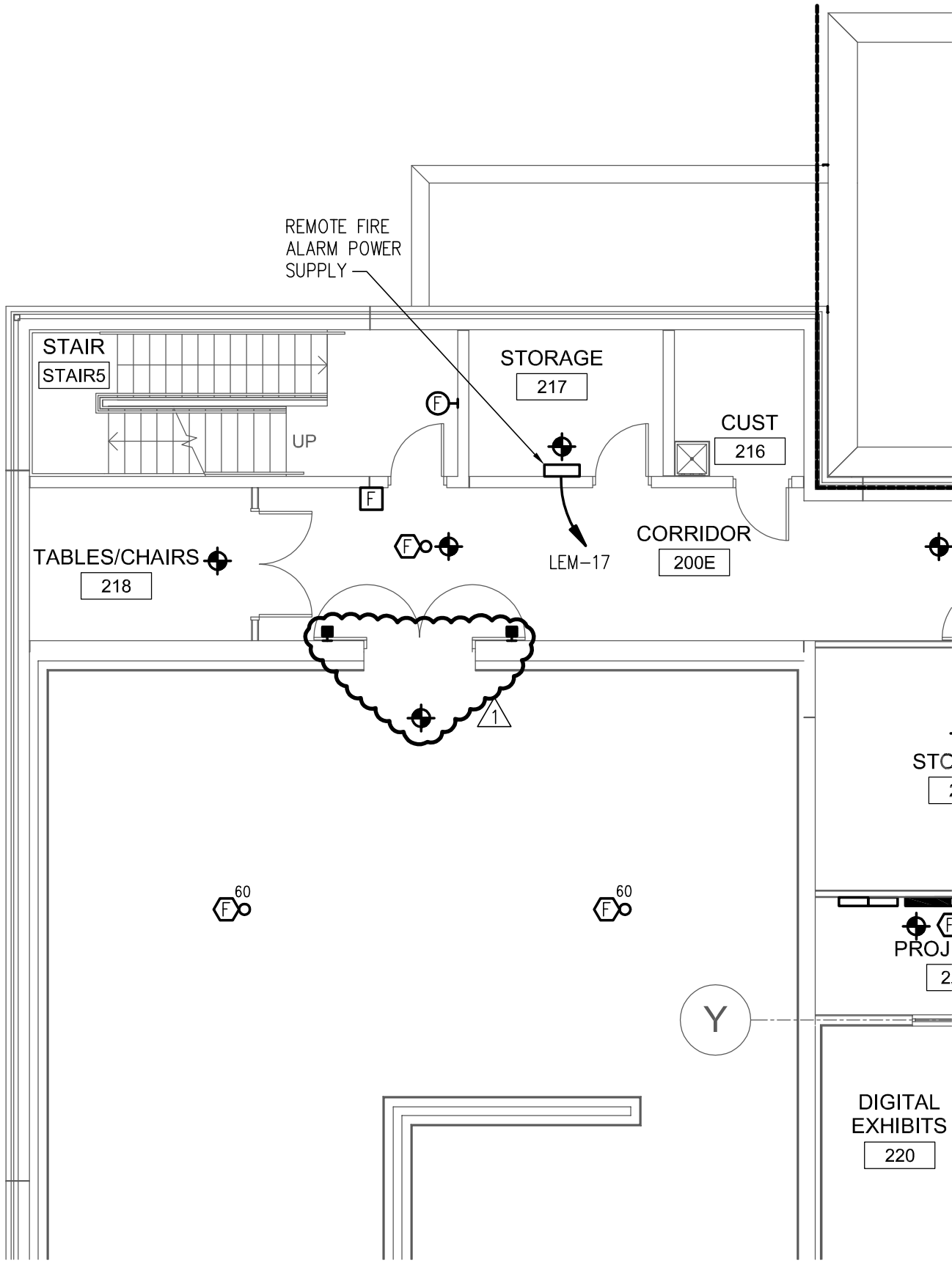
Attachment No.

**MS-2**

Addendum No. 1

**ALLEY•POYNER  
MACCHIETTO**

1516 Cuming Street  
Omaha, NE 68102  
Ph: 402.341.1544  
Fx: 402.341.4735  
alleypoyner.com



SHEET REFERENCE: E3.2		Attachment No. <b>ES-1</b>	<b>ALLEY•POYNER MACCHIETTO</b> 1516 Cuming Street Omaha, NE 68102 Ph: 402.341.1544 Fx: 402.341.4735 alleypoyner.com
PROJECT NAME: Quilt House Addition			
PROJECT NUMBER: 10083			
DATE: 04/23/14			
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