Central Nebraska Veterans Home
Addendum 2

Kearney, Nebraska
1404

Wilkins Architecture Design Planning
2908 West 39th Street, Suite A
Kearney, Nebraska 68845
308-237-5787

Date Issued: December 4, 2015
Bid Date: December 17, 2015

TO ALL BID DOCUMENT HOLDERS OF RECORD:

Acknowledge receipt of this addendum by inserting its number in the space provided on the BID FORM. Failure to do so may subject Bidder to disqualification. This Addendum forms a part of the BIDDING DOCUMENTS and modifies them as follows.

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Addendum 2 - 1 **Project Manual – Table of Contents**

- Add "07 0800 Enclosure Commissioning"
- At 08 5212 — Andersen Aluminum-Clad Wood Windows, change to "(Alternate No. 9)" in lieu of "(Alternate No. 1)".
- At 08 5213 — Pella Aluminum-Clad Wood Windows, change to "(Alternate No. 8)" in lieu of "(Alternate No. 2)".
- Delete "10 1124 Tackable Wall Systems"
- Delete "12 3530 Residential Casework"
- Add "23 0800 Commissioning of HVAC Systems"
- Add "23 5533 Gas Fired Unit Heaters"
- Add "26 0800 Commissioning of Electrical Systems"

Addendum 2 - 2 **Specification Section - 00 2113 INSTRUCTIONS TO BIDDERS**

Under 2.2 add the following:
"D. Electronic Data Disclosure Agreement:
1. Specific CAD files may be provided for bidding purposes to the Contractor or Subcontractor:
a. Survey Base.
b. Site Base.
c. Grading.
2. Contact Wilkins Architecture Design Planning, L.L.C. to acquire and finalize agreement.
a. Project Manager: Kali Eklund.
b. Project Architect: Wes Seals.
4. Signed agreement will be required prior to delivery of electronic files.

Addendum 2 - 3 **Specification Section - 00 2113 INSTRUCTIONS TO BIDDERS**

At paragraph 2.5.C, change reference to read "The Architects does not intend to issue any addenda to the bidding documents with FIVE (5) working days of the bid opening time and date" in lieu of TEN (10) working day reference.

Addendum 2 - 4 **Specification Section - 00 4100 BID FORM**

Under Alternates, delete Alternate No. 3 Deduct Alternate: Reduce extent of sod areas and replace with seed areas as indicated on Drawings.

Addendum 2 - 5 **Specification Section - 00 5000 CONTRACTING FORMS AND SUPPLEMENTS**

Under 1.2., add the following:
"G. Electronic Data Disclosure Agreement (Copy attached)."

Addendum 2 - 6 **Specification Section - 00 5000 CONTRACTING FORMS AND SUPPLEMENTS**

- Add the attached AIA Document A101 -2007 Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum.
- Add the attached Electronic Data Disclosure Agreement.
- Add the attached AIA Document A201 -2007 General Conditions of the Contract for Construction.

Addendum 2 - 7 **Specification Section - 00 7200 GENERAL CONDITIONS**

Delete page in its entirety. See attached AIA Document A201.

Addendum 2 - 8 **Specification Section - 00 7300 SUPPLEMENTARY CONDITIONS**

Add the attached 00 7300 Supplementary Conditions.

Addendum 2 - 9 **Specification Section - 00 8200 GEOTECHNICAL REPORT**

Delete report and replace with attached Geotechnical Report dated November 18, 2015.

Addendum 2 – 10 **Specification Section - 01 2100 ALLOWANCES**

Under 1.3, add the following:
"C. Interior Building Dedication Plaque allowance:
1. Include an allowance for the sum of **$1,800.00** in base bid for the design, coordination, provision and installation of interior building dedication plaque. To be located by Architect.

Addendum 2 - 11 **Specification Section - 01 2300 ALTERNATES**

Delete paragraph 1.4.C in its entirety. Alternate No. 3 not needed.

Addendum 2 - 12 **Specification Section - 01 6000 PRODUCT REQUIREMENTS**

Delete paragraph 1.2.B. in its entirety.

Addendum 2 - 13 **Specification Section - 01 9113 GENERAL COMMISSIONING REQUIREMENTS**

Delete specification section in its entirety and replace with attached 01 9113 General Commissioning Requirements.

Addendum 2 - 14 **Specification Section - 03 3930 CONCRETE MOISTURE VAPOR & ALKALINITY CONTROL**

Under 3.1.A, add the following acceptable substitute manufacturer/product:
"2. Concrete Waterproofing Products, Inc; Creteseal CS2000: www.creteseal.com."

Addendum 2 - 15 **Specification Section - 04 4301 NATURAL THIN STONE**

Under 2.1.A, add the following acceptable substitute manufacturer:
"5. Higgins Stone Company: www.higginstone.com."

Addendum 2 - 16 **Specification Section - 04 4301 NATURAL THIN STONE**

Under 2.2.A.1, change to "Onaga or Silverdale" in lieu of "Onaga".

Addendum 2 - 17 **Specification Section - 04 2000 UNIT MASONRY**

Delete paragraph 1.2.B. in its entirety.

Addendum 2 - 18 **Specification Section - 05 3200 EPIC ACOUSTICAL STEEL DECKING**

On first section page at top, change number to "05 3200" in lieu of "05 3100".

Addendum 2 - 19 **Specification Section - 06 2000 FINISH CARPENTRY**

Under 1.2.E, change to "Section 08 Windows" in lieu of "08 5200 Wood Windows"

Addendum 2 - 20 **Specification Section - 06 4100 ARCHITECTURAL WOOD CASEWORK**

Delete specification section in its entirety and replace with attached 06 4100 Architectural Wood Casework.

Addendum 2 - 21 **Specification Section - 06 4216 WAINSCOT PANELING SYSTEMS**

Under 2.1., add the following acceptable substitute manufacturer:
"2. Inpro: www.inprocorp.com."

Addendum 2 - 22 **Specification Section - 06 4216 WAINSCOT PANELING SYSTEMS**

Under 2.2.B., add the following:
"8. Color: Inpro; American Teak."

Addendum 2 - 23 **Specification Section - 07 0800 ENCLOSURE COMMISSIONING**

Add attached specification section 07 0800 Enclosure Commissioning.

Addendum 2 - 24 **Specification Section - 07 2400 EXTERIOR INSULATION AND FINISH SYSTEMS (ALTERNATE NO. 10)**

Under 1.1.B, change Alternate number "10" in lieu of "3".

Addendum 2 - 25 **Specification Section - 07 4113 METAL ROOF PANELS**

- Delete paragraph 1.2.B. in its entirety.
- Delete paragraph 1.2.E. in its entirety.

Addendum 2 - 26 **Specification Section - 07 4113 METAL ROOF PANELS**

Under 2.1.B, add the following acceptable substitute manufacturer/product:
"7. Berridge Manufacturing Company; TEE-PANEL OR CEE-LOCK: www.berridge.com."

Addendum 2 - 27 **Specification Section - 07 4113 METAL ROOF PANELS**

Under 2.1.B.6, add the following acceptable product for Firestone UNA-CLAD:
"UC-14".

Addendum 2 - 28 **Specification Section - 07 4113 METAL ROOF PANELS**

Under 2.5.D.5, change to "25psi" in lieu of "40psi".

Addendum 2 - 29 **Specification Section - 07 4113 METAL ROOF PANELS**

Under 2.5.G.2, add the following acceptable substitute manufacturer/product:
"a. Rocky Mountain Snow Guards, Inc.: www.rockymountainsnowguards.com."

Addendum 2 - 30 **Specification Section - 07 4213 METAL SOFFIT PANELS**

Under 2.1.A.7, change to "SERIES UC-500" in lieu of "SERIES 4500 ONLY"

Addendum 2 - 31 **Specification Section - 07 4213 METAL SOFFIT PANELS**

Under 2.1.A, add the following acceptable substitute manufacturer/product:
"9. Berridge Manufacturing Company: www.berridge.com."

Addendum 2 - 32 **Specification Section - 07 5323 ETHYLENE-PROPYLENE-DIENE-MONOMER (EPDM) ROOFING**

Under 2.1.A, add the following acceptable substitute manufacturer:
"7. Mule-Hide Products Co., Inc.: www.mulehide.com."

Addendum 2 - 33 **Specification Section - 07 5323 ETHYLENE-PROPYLENE-DIENE-MONOMER (EPDM) ROOFING**

Delete paragraph 2.2.B.4 in its entirety. Vapor retarder not needed.

Addendum 2 - 34 **Specification Section - 07 5323 ETHYLENE-PROPYLENE-DIENE-MONOMER (EPDM) ROOFING**

Delete paragraph 2.4. VAPOR RETARDER MATERIALS in its entirety.

Addendum 2 - 35 **Specification Section - 07 5323 ETHYLENE-PROPYLENE-DIENE-MONOMER (EPDM) ROOFING**

Delete paragraph 3.4. VAPOR RETARDER in its entirety.

Addendum 2 - 36 **Specification Section - 07 7200 ROOF ACCESSORIES**

Under 2.1.A., add the following acceptable substitute manufacturer:
"8. SafePro, LP: www.safeprosafety.com."

Addendum 2 - 37 **Specification Section - 08 1416 FLUSH WOOD DOORS**

Under Part 2 Products, add the following:
"2.0 MANUFACTURERS
A. High Pressure Decorative Laminate Faced Doors:
1. Algoma Hardwoods, Inc.: www.algomahardwoods.com.
2. Assa Abloy Graham: www.grahamdoors.com.
3. Eggers Industries: www.eggersindustries.com.
4. Marshfield Door Systems: www.marshfielddoors.com.
5. Mohawk Flush Doors, Inc.: www.mohawkdoors.com.
6. VT Industries, Inc.: www.vtindustries.com.
7. Aurora Doors; High Performance Barn Doors: www.auroradoors.com.
B. Vinyl Acrylic Face Veneer Doors:
1. Construction Specialties, Inc.; Acrovyn Door Systems: www.c-sgroup.com."

Addendum 2 - 38 **Specification Section - 08 1433 STILE AND RAIL WOOD DOORS**

Under 2.1.A, add the following acceptable substitute manufacturer/product:
"5. Aurora Doors; High Performance Barn Doors: www.auroradoors.com."

Addendum 2 - 39 **Specification Section - 08 4229 AUTOMATIC ENTRANCES**

- Under 2.1.A., add the following acceptable substitute manufacturer/product: "5. Stanley Access Technologies; Dura-Glide 3000: www.stanleyaccesstechnologies.com."
- Under 2.1.B., add the following acceptable substitute manufacturer/product: "6. Stanley Access Technologies; Magic Force: www.stanleyaccesstechnologies.com."

Addendum 2 - 40 **Specification Section - 08 4523 INSULATED TRANSLUCENT FIBERGLASS SANDWICH PANEL SKYLIGHT PANEL SYSTEM**

Under 2.1., add the following acceptable substitute manufacturer:
"C. Major Industries: www.majorskylights.com."

Addendum 2 - 41 **Specification Section - 08 5212 ANDEREN VINYL-CLAD WOOD WINDOWS (ALTERNATE NO. 9)**

Delete specification section in its entirety and replace with attached 08 5212 Andersen Vinyl-Clad Wood Windows.

Addendum 2 - 42 **Specification Section - 08 5215 MARVIN FIBERGLASS-CLAD WOOD WINDOWS (BASE BID)**

Under 2.2.A, add the following:
13. Glazing:
a. Between-lite space filled with argon.
b. Outboard Lite: 1/8" (Annealed).
1) Tint: Clear.
2). Coating: Low-E on #2 surface.
c. Inboard Lite: 1/8" (Annealed).
1) Coating: Clear.
d. Glazing Method: Glazing seal is a silicone bedding on both interior and exterior surfaces utilized in a sandwich style sash.
e. Total Thickness: 11/16 inch.

Addendum 2 - 43 **Specification Section - 08 7100 DOOR HARDWARE**

Under 1.2.C.1.a, add the following acceptable substitute manufacturer/product:
"4) Aurora Doors; High Performance Barn Doors: www.auroradoors.com."

Addendum 2 - 44 **Specification Section - 08 7100 DOOR HARDWARE**

Under Hardware Schedule, change the following:

- Set 5.0, add doors "J264.1" and "J264.2".
- Set 5.0, under iClass Reader change to "920NTNNEK00000" in lieu of "6120".
- Set 6.0, under iClass Reader change to "920NTNNEK00000" in lieu of "6120".
- Set 18.0, delete doors "J264.1" and "J264.2".
- Set 18.0, under iClass Reader change to "920NTNNEK00000" in lieu of "6120".
- Set 26.0, delete in its entirety.
- Set 32.0, delete in its entirety.
- Set 33.0, delete in its entirety.
- Set 34.0, delete in its entirety.
- Set 35.0, delete in its entirety.
- Set 36.0, add Door "L101.2".
- Set 38.0, delete in its entirety and replace with the following:
  "Door J100.1
  Description Interior Alum Doors w/ Auto Operators & Wanderguard
  2 Continuous Hinge MCK-12HD CL MK
  2 Push Bar & Pull BF15747 US32D RO
  2 Auto Operator Auto Operator w/ 2 Actuators Alum 00
  2 Maglocks SAMB Securitron
  2 IClass Reader 920NTNNEK00000
  Notes: Auto Operator furnished by Auto Operator supplier.
  Auto operator specified in Auto Operator section.
  When resident with a wanderguard braclet gets near door the maglocks will activate securing door from allowing resident to leave.
  Prox reader and power supply to be furnished by hardware supplier.
  Installation and programming of the access control system to be done by access control supplier under section 28.
  When doors are secure the I Class reader from inside will allow authorized personnel to exit.

- Set 39.0, delete door "J100.1".
- Set 40.0, add "1 iClass Reader 920NTNNEK00000
  Note: Card Reader to be located on interior near door for deactivation if activated."

- Set 43.0, under iClass Reader change to "920NTNNEK00000" in lieu of "6120".
- Set 44.0, under iClass Reader change to "920NTNNEK00000" in lieu of "6120".
- Set 45.0, delete in its entirety.
- Set 47.0, delete in its entirety.
- Set 49.0, delete in its entirety.
- Set 53.0, under iClass Reader change to "920NTNNEK00000" in lieu of "6120".
- Set 54.0, under iClass Reader change to "920NTNNEK00000" in lieu of "6120".
- Set 54.0, under Exit Device, add prefix "55".
- Set 58.0, delete in its entirety.
- Set 59.0, delete in its entirety.
- Set 62.0, delete in its entirety.
- Set 63.0, under iClass Reader change to "920NTNNEK00000" in lieu of "6120".
- Set 67.0, under iClass Reader change to "920NTNNEK00000" in lieu of "6120".
- Set 69.0, under iClass Reader change to "920NTNNEK00000" in lieu of "6120".
- Set 70.0, under iClass Reader change to "920NTNNEK00000" in lieu of "6120".
- Set 71.0, under iClass Reader change to "920NTNNEK00000" in lieu of "6120".
- Set 71.0, under Exit Device, add prefix "55".
- Set 72.0, under iClass Reader change to "920NTNNEK00000" in lieu of "6120".

- Set 72.0, under Rim Exit Device, add prefix “55”.
- Set 76.0, under iClass Reader change to “920NTNNEK00000” in lieu of “6120”.
- Set 77.0, under iClass Reader change to “920NTNNEK00000” in lieu of “6120”.
- Set 79.0, add “1 iClass Reader 920NTNNEK00000”.
  Note: Card Reader to be located on interior near door for deactivation if activated.”

- Set 82.0, under iClass Reader change to “920NTNNEK00000” in lieu of “6120”.
- Set 82.0, under Rim Exit Device, add prefix “55”.
- Set 85.0, add the following:
  “2 Maglocks SAMB Securitron
  2 iClass Reader 920NTNNEK00000
  Notes: When resident with a wanderguard bracelet gets near door the maglocks will activate securing door from allowing resident to leave.
  Prox reader and power supply to be furnished by hardware supplier.
  Installion and programming of the access control system to be done by access control supplier under section 28.
  When doors are secure the I Class reader from inside will allow authorized personnel to exit.”

- Set 87.0, under iClass Reader change to “920NTNNEK00000” in lieu of “6120”.
- Set 90.0, under iClass Reader change to “920NTNNEK00000” in lieu of “6120”.
- Set 91.0, under iClass Reader change to “920NTNNEK00000” in lieu of “6120”.
- Set 92.0, delete Door “L101.2”.
- Set 94.0, under iClass Reader change to “920NTNNEK00000” in lieu of “6120”.
- Set 94.0, under Exit Device, delete prefix “55”.
- Set 95.0, under iClass Reader change to “920NTNNEK00000” in lieu of “6120”.

Addendum 2 - 45 **Specification Section - 08 8000 GLAZING**

Delete paragraph 1.2.E. in its entirety.

Addendum 2 - 46 **Specification Section - 08 8000 GLAZING**

- Under 2.1.C.3., change to “annealed” in lieu of “fully tempered”.
- Under 2.1.C.4, change to “annealed or heat-strengthened” in lieu of “fully tempered”.
- Delete paragraph 2.1.C.4.a. in its entirety.
- Delete paragraph 2.1.C.6. in its entirety.

Addendum 2 - 47 **Specification Section - 09 2116 GYPSUM BOARD ASSEMBLIES**

Under 2.3.E.8., add the following acceptable substitute product:
“f. USG Corporation; Securock Glass-Mat.”

Addendum 2 - 48 **Specification Section - 09 6500 RESILIENT FLOORING**

At paragraph 2.3.A.1, change height to be 6” in lieu of 8”.

Addendum 2 - 49 **Specification Section - 09 6500 RESILIENT FLOORING**

Under 2.3.A.3., add the following acceptable substitute manufacturer:
“C. Burke Flooring, a Division of Burke Industries: www.burkeflooring.com.”

Addendum 2 - 50 **Specification Section - 09 7720 WOOD WALL PANEL SYSTEM (Addendum 1 - 17)**

Under 2.1.A., add the following acceptable substitute manufacturer:
“2. Wall Panel Systems: www.wallpanelsystems.net.”

Addendum 2 - 51 **Specification Section – 09 5100 ACOUSTICAL CEILINGS**

Under 2.1.C.6., add the following acceptable substitute product:
“a. Armstrong; CIRRUS.

Addendum 2 - 52 **Specification Section - 09 3000 TILING**

Under 2.1., add the following:
"B. Grout, Setting, Thick-Bed, Accessory Material Manufacturers:
Provide products by the same manufacturer for a complete system.
1.LATICRETE International, Inc: www.laticrete.com.
2.MAPEI Corporation: www.mapei.com.
3.Substitutions: See Section 01 6000 - Product Requirements."

Addendum 2 - 53 **Specification Section - 09 9000 PAINTS AND COATINGS**

Delete paragraph 2.4.B. in its entirety and replace with the following:
"B. Dimension Lumber:
1. Exposed Exterior Wood Roof Decking and Soffit (Buildings A-F Entrance Canopies, Building J Drive-Thru Canopy and Shade and Picnic Structures): INT 6.2J Polyurethane Varnish (over stain): Polyurethane Varnish MPI #57, stain.
a. Seal exposed sides of wood. 3 coats minimum.

Addendum 2 - 54 **Specification Section – 10 1124 TACKABLE WALL SYSTEMS**

Delete specification section in its entirety.

Addendum 2 - 55 **Specification Section – 10 1400 SIGNAGE**

Delete specification section in its entirety and replace with attached 10 1400 Signage.

Addendum 2 - 56 **Specification Section – 10 2601 WALL AND CORNER GUARDS**

Under 2.1., add the following acceptable substitute manufacturer:
"B. Inpro: www.inprocorp.com."

Addendum 2 - 57 **Specification Section – 11 4000 FOOD SERVICE EQUIPMENT**

Under Division II – Equipment Provisions, No. 9 ACCEPTABLE FABRICATORS/MANUFACTURERS (Page 11 4000-10), ADD the following acceptable fabricator to the list:

Stainless Kitchen Innovations, Inc
18651 Jennings St. NE
Columbus, MN 55025
651-755-7522

Addendum 2 - 58 **Specification Section – 11 4000 FOOD SERVICE EQUIPMENT**

Under Division III – Equipment Specifications ADD the following:

In addition to the manufacturers specified for the following Equipment Items, the Food Service Equipment Contractor (FSEC)/Bidder may provide these items as Custom Fabrications from one of the ACCEPTABLE FABRICATORS/MANUFACTURERS listed and noted above.

Custom fabrications shall meet or exceed the manufacturers' design and construction criteria for the following Equipment Items:

(See Attached Pages)

Addendum 2 - 59 **Specification Section - 12 3530 RESIDENTIAL CASEWORK**

Delete specification section in its entirety.

Addendum 2 - 60 **Specification Section - 12 9300 SITE FURNISHINGS**

a. Refer to paragraph 2.4.A.2; Type 1 Shelters shall have a 6/12 roof pitch, and shall have 24" nominal roof overhang on all sides.
b. Refer to paragraph 2.4.A.3; Type 2 Shelters shall have a 3/12 roof pitch, and shall have 24" nominal roof overhang on all sides.
c. Add the following to paragraph 2.4.B;

"3. Proposed custom-fabrication of shelters shall meet the design intent, materials, dimensions, and all other requirements as specified herein, and as indicated on the Drawings."
d. Refer to paragraph 2.4.C.3; Columns shall be constructed of glulam Southern Yellow Pine and shall be anchored to concrete footings in accordance with the Drawings and approved shop drawings. Column sizes shall be in accordance with AITC 113-2001 and approved shop drawings.
e. Refer to paragraph 2.4.C.4; All beams and purlins for both Type 1 and Type 2 Shelters shall be glulam wood members. Final member sizes shall be in accordance with AITC 113-2001 and approved shop drawings.

Addendum 2 - 61 **Specification Section – 13 3419 METAL BUILDING SYSTEMS**

Delete paragraph 2.10.B. in its entirety. Liner panels not needed.

Addendum 2 – 62 **Specification Section - 22 1319 Plumbing Specialties**

Subject to compliance with the specifications, include approved manufacturer:
Electronic Mixing Valves: Powers Intellistation

Addendum 2 – 63 **Specification Section - 22 1429 Sump Pumps**

Subject to compliance with the specifications, include approved manufacturer:
Stancor

Addendum 2 – 64 **Specification Section - 22 3400 Domestic Water Heaters**

Subject to compliance with the specifications, include approved manufacturer:
Water Heaters: PVI

Addendum 2 – 65 **Specification Section - 22 4000 Plumbing Fixtures**

Subject to compliance with the specifications, include approved manufacturer:
Linear Shower Drains: Luxe Wedgewire, Aco Quartz
Flushometer Valves: Moen
Emergency Shower and Eyewash: Stingray Systems

Addendum 2 - 66 **Specification Section – 23 0800 COMMISSIONING OF HVAC SYSTEMS**

Add attached specification section 23 0800 Commissioning of HVAC Systems.

Addendum 2 – 67 **Specification Section - 23 0900 HVAC Instrumentation and Controls**

Delete manufacturer: TAC

Subject to compliance with the specifications, include approved manufacturer:
Siemens, Schneider Electric

Addendum 2 – 68 **Specification Section - 23 0900 HVAC Instrumentation and Controls**

Paragraph 1.1. Add the following: General. Temperature control contractor is responsible for coordinating all data drops required for temperature control system

Paragraph 1.1.B. Revise as follows. Heading for B. should read:

B. Section 235216 Condensing Boilers

Paragraph 1.3 Description. Add the following:

B. General: In addition to the building automation system described in this section, Contractor shall also provide an Energy Management System (EMS) overlay of the direct digital control system with the following features:

- *Real-time monitoring of energy data*
- *Automated energy analytics and visualization*
- *Analytics to detect energy use anamolies and to identify potential energy conservation measures*
- *Sustainability support including Energy Star Ratings, tracking carbon emissions, and building dashboards.*

- *Financial reporting to track budget vs. actual performance in real time.*
- *Enterprise data management.*
- *Data collection, analytics, and analysis for general facility performance.*

EMS shall be equivalent to Trane's Building Energy Management System.
The specification for the Trane BEMS system is included for reference.
Alternate systems shall be submitted to the architect and engineer for approval.

Addendum 2 – 69 **Specification Section - 23 0960 Variable Frequency Drives**
Subject to compliance with the specifications, include approved manufacturer:
Trane, Yaskawa, Eaton

Addendum 2 – 70 **Specification Section - 23 0993 Sequence of Operation for HVAC Controls**
Revise Paragraph 1.7 Building K Garage Ventilation System Control maximum NO2 concentration as follows: Item C.2. Exhaust fan shall operate to maintain a maximum CO concentration of 23 parts per million and NO2 concentration of 1 part per million in the garage.

Add the following to the specification:

1.1 DOMESTIC WATER HEATER SYSTEM CONTROLS

A. Hot Water Heaters (GWH)
1. BAS shall monitor the hot water heater system.
2. BAS shall allow adjustment of the storage tank temperature.
3. BAS display shall include the following:
   a. Water heater status (on/off)
   b. Water heater circulating pump status (on/off)
   c. Storage tank water temperature

B. Domestic Hot Water Mixing Valve
1. BAS shall monitor the domestic hot water mixing valve and the circulating hot water temperature.
2. BAS shall allow adjustment of the mixed water temperature leaving the mixing valve.
3. Control panel display shall include the following
   a. Cold water inlet temperature at each mixing valve
   b. Hot water inlet temperature at each mixing valve
   c. Mixed water temperature leaving mixing valve
   d. 140-degree hot water temperature leaving the mechanical room
   e. Circulating hot water temperature at return to mixing valve.
   f. Circulating hot water temperature at the most distant location in each of the listed buildings: Buildings A, B, C, D, E, F, G.
   g. 140-degree hot water temperature at each laundry location.
   h. 140-degree hot water temperature at each kitchen location.

Addendum 2 – 71 **Specification Section - 23 2113 Hydronic Piping**
Subject to compliance with the specifications, include approved manufacturer:
Glycol Makeup Package: J.L. Wingert, General Treatment Products
Automatic Condensate Pumps: Crane
Expansion Tanks: Patterson
Air-Dirt Separators: Thrush, Bell & Gossett, Wessels, Taco
Balancing Valves: PRO Hydronic Specialties
Automatic Flow Control Valves: PRO Hydronic Specialties, Nexus

Addendum 2 – 72 **Specification Section - 23 2115 Ground Loop Heat Pump Piping**
Subject to compliance with the specifications, include approved manufacturer:
Pre-manufactured Geothermal Valve Vault: Uponor

Addendum 2 – 73 **Specification Section - 23 2115 Ground Loop Heat Pump Piping**
Revise Part 1.2 Warranty, Paragraph A as follows:

A. Special Project Warranty: GLHE installation Contractor shall submit a written warranty with operation and maintenance data. Warranty shall provide for repair and/or replacement of pipe and fittings due to failure in workmanship within the specified warranty period. Warranty period shall be for a minimum of ***ten (10)*** years from date of Substantial Completion and shall cover both materials and labor as required for pipe, fittings, backfilling material, trenching, etc. Note that this warranty shall be provided in addition to the pipe and fitting material warranty provided by the manufacturer. Both the installation warranty and the pipe manufacturer warranty shall be transferable.

Addendum 2 – 74 **Specification Section - 23 2123 Hydronic Pumps**
Subject to compliance with the specifications, include approved manufacturer:
Patterson

Addendum 2 – 75 **Specification Section - 23 3113 Metal Ducts and Accessories**
Subject to compliance with the specifications, include approved manufacturer:
Fire/Smoke Dampers: Leader Ind.

Addendum 2 – 76 **Specification Section - 23 3812 Kitchen Hood For Residential Grade Appliances**
Paragraph 1.31.B. Revise as follows. Heading for B. should read:
B. Section 233423 Power Ventilators

Paragraph 1.5.A. Revise as follows.
A. Submit in accordance with Section 230100 – General Requirements for Mechanical Systems

Addendum 2 – 77 **Specification Section - 23 5216 Condensing Boilers**
Subject to compliance with the specifications, include approved manufacturer:
Fulton, Laars, Patterson Kelley

Addendum 2 – 78 **Specification Section - 23 5533 Gas Fired Unit Heaters**
Specification Section 235533 – Gas Fired Unit Heaters, is added by this addendum.

Addendum 2 – 79 **Specification Section- 23 7200 Energy Recovery Ventilators**
Subject to compliance with the specifications, include approved manufacturer:
Trane, Annexaire, Alliance Air, XeteX

Addendum 2 – 80 **Specification Section - 23 7200 Energy Recovery Ventilators**
The following revisions and clarifications are provided:
Energy Recovery Wheel construction shall be aluminum with silica gel.
Delete gas furnace section in specification. Integral heat pump provides supplemental heating and cooling at the ERV.
Filters: Supply filter shall be 80%. Exhaust filter shall be 30%.
Electric pre-heater shall be provided for frost control
1. ERV-1 shall have minimum 14 kW electric pre-heat
2. ERV-2 shall have minimum 8 kW electric pre-heat

Frost control is provided by electric pre-heater.

Addendum 2 – 81 **Specification Section - 23 7200 Energy Recovery Ventilators**

The following revisions and clarifications are provided:
Energy Recovery Wheel construction shall be aluminum with silica gel.
Delete gas furnace section in specification. Integral heat pump provides supplemental heating and cooling at the ERV.
Filters: Supply filter shall be 80%. Exhaust filter shall be 30%.
Electric pre-heater shall be provided for frost control

1. ERV-1 shall have minimum 14 kW electric pre-heat
2. ERV-2 shall have minimum 8 kW electric pre-heat

Frost control is provided by electric pre-heater.

Addendum 2 – 82 **Specification Section - 22 4000 Plumbing Fixtures**

Provide "Trap Guard" by ProVent Systems Inc. trap seal device at all floor drains and shower drains.

Addendum 2 - 83 **Specification Section - 26 0800 COMMISSIONING OF ELECTRICAL SYSTEMS**

Add attached specification section 26 0800 Commissioning of Electrical Systems.

Addendum 2 - 84 **Section 26 0100 – General Electrical Requirements**

Part 1.9, H. Delete paragraph, See submittal requirements in Division 1 for information regarding electronic files.

Addendum 2 - 85 **Section 26 3213 – Packaged Engine Generators**

a. Part 1.4, A: Revise paragraph to read; "Manufacturer Qualifications: A qualified manufacturer. Maintain within 50 miles of Project site, a factory service center capable of providing training, parts, and emergency maintenance repairs. Service center shall be located not more than 1 hour normal travel time from Project site.
b. Part 2.4, A, 2: Revise altitude to 2130 ft. above sea level.
c. Part 2.8: Add paragraph C as follows; "Fuel Polishing System: Maintains fuel quality by removing sludge and water from storage tank system. System shall provide three-stage water removal and particulate filtration down to 3 micron. System controller shall be provided with digital text readout of alarm and system status and indicator lights for visual status of system power, pump running, and system alarm. Fuel polishing system shall be Algae-X or approved equal. Fuel polishing system will be provided as part of Base Bid. Fuel polishing system would be deleted as part of Alternate #11."
d. Part 2.10, A: Revise sound level listed to 75 dBA or less.
e. Part 2.15, C: Revise insulation to Class A or Class B.
f. Part 2.16, A: Revise to read; "Description: Permanent, outdoor, weatherproof, remote-controlled, forced-air-cooled, resistive unit capable of providing a balanced 3-phase, delta-connected load to generator set at 50 percent rated-system capacity, at unity power factor. Unit shall be capable of selective control of load in 25 percent steps and with minimum step changes of approximately 5 and 10 percent available."
g. Part 2.17, F: Delete reference to 30 kVA transformer. Panel will be fed at 120/208 volt, 3 phase, 4 wire.

Addendum 2 - 86 **Section 26 8100 – Fire Alarm**

Part 2.1, B – Subject to compliance with the specifications, Siemens may be considered an acceptable manufacturer.

Addendum 2 - 87 **Section 27 1500 – Communication Cabling Systems**

Part 2.1, B – Subject to compliance with the specifications, Cooper B-Line may be considered an acceptable manufacturer for telecommunications room cable runways and accessories.

Addendum 2 - 88 **Section 27 4134 – Audio Visual Systems**

Part 2.2, B – Subject to compliance with the specifications, Soundweb London may be considered an equal manufacturer to Biamp for the audio mixer.

Addendum 2 - 89 **Section 28 1300 – Access Control and Video Intercom Systems**

a. Part 1.8, A, 1 – delete badge printer.
b. Part 1.8, A, 2 – change 5 operating licenses to 20.
c. Part 1.8, B, 1 – delete "4 workstations at each school".
d. Part 1.9, B – delete paragraph.
e. Part 1.9 Performance Requirements, add the following:
a. Access control system manufacturer shall provide software rights with full access and full adjustability to the State of Nebraska. Coordinate requirements with DHHS and OCiO.
f. Part 2.1, B, 2, a – delete "each school" and change to "the facility"
g. Part 2.2, A – delete paragraph as written. Access control system shall be as manufactured by Johnson Controls.
h. Part 2.3 – Badge Printer - delete section, badges to be provided by the State.
i. Part 2.4, A, 8 – delete HID – replace with Johnson Controls P2000
j. Part 2.7, A, 1 – Coordinate procurement of initial 400 cards with State of Nebraska. Coordinate requirements with DHHS.
k. Part 2.8, A – Power supplies for power to doors shall be furnished by division 8 contractor, installed by division 281300 access control contractor. Coordinate 120V connections to power supplies with division 26 contractor.
l. Part 3.8 System Software – Install software on additional State workstations in Lincoln where full access and adjustability is required. Coordinate requirements with DHS and OCiO.
m. Part 3.8 System Software – add paragraph B as follows: Contractor shall provide graphical floor plans of the facility. Graphical floor plans shall be specific to each home (wing), showing only devices in that wing, as well as options to view graphical floor plan of entire facility. Graphical floor plans shall indicated access control points as well as interface points with other systems (nurse call, wander guard, etc.) Coordinate requirements with engineer and Owner / DHHS prior to final programming.

Addendum 2 - 90 **Section 28 2300 – Video Surveillance**

Part 1.2, B, 2 – Revise title of referenced specification section to "Communications Cabling Systems".

Part 2.3 Cameras

a. Camera types A, B, C, E, F, and G – change internal memory card to be 64 GB.
b. Camera type B, change to be Axis model #P3224-LVE.
c. Camera type C, change to be Axis model #P3225-LV
d. Camera type G – delete camera type (not used)

Addendum 2 - 91 **Specification Section - 31 2000 EARTHWORK**

a. Delete the first sentence of paragraph 2.1.C and replace with the following;
"C. Clay Liner Material: Only those on-site cohesive soils (Colluvial deposits and Altered Loess) with an Atterberg limit test indicating a Plasticity Index (PI) of 24 or greater shall be used for backfill along the bottom and sides of the pond."
b. Refer to paragraph 2.1.D and add the following;
"The existing well to be decommissioned may be utilized by the Contractor during earthwork activities for moisture conditioning prior to decommissioning the well. The Contractor will be responsible for providing all pumps, motors, electricity, and other appurtenances required to utilize existing well. The existing pump, motor, and other appurtenances are NOT to be used by the Contractor, as these items are required to be removed and salvaged to the Kearney Regional

Airport. All contractor provided equipment and appurtenances shall be properly removed prior to well decommissioning. All costs associated with utilizing the existing well, providing equipment, permitting, and providing electricity or other utilities shall be borne solely by the Contractor. The Contractor shall also be required to provide metering of the existing well so water usage can be reported to the local Natural Resource District if required."
c. Refer to paragraph 3.3.F; Subgrade shall be compacted in accordance with paragraph 3.8 rather than 3.6.
d. Refer to paragraph 3.8.B; The upper 12 inches of the subgrade beneath pavements shall be compacted as indicated rather than the upper 18 inches.
e. Delete paragraph 3.9.D in its entirety. Bentonite clay is not required.

Addendum 2 - 92 **Specification Section - 33 3000 SANITARY SEWERAGE FACILITIES**
Refer to paragraph 2.4.A.2; All manholes which are concrete construction are required to be epoxy coated

Addendum 2 – 93 **Sheet C1.00 – Overall Site Layout Plan**
Refer to Sketch SKC1 as included with this Addendum 2 for benchmarks and control point location and information.

Addendum 2 - 94 **Sheet C2.03 – Site Grading Plan – Zone 'C'**
a. Refer to note about existing well decommissioning. Add the following; "Existing pump, motor, and other appurtenances shall be removed and salvaged to the Kearney Regional Airport. The Contractor shall be responsible for transporting salvaged items to location to be determined as coordinated by the Contractor with the Kearney Regional Airport not to exceed a distance of 5 miles from the well."
b. Refer to note about removing existing 8" irrigation pipe. Add the following; "The portion of the existing pipe below the drainage channel shall be abandoned in-place in lieu of excavating and removing. Concrete pipe plugs shall be constructed on both ends of the abandoned portion of the pipe."

Addendum 2 – 95 **Sheet C2.17 – Paving Details**
Concrete pavement for front entrances to the six (6) neighborhood buildings shall be classified as "6" PAVEMENT (WALKWAY)" (standard concrete, 6" thick).

Addendum 2 – 96 **Sheet C4.07 – Irrigation Meter and Wet Well Details**
a. Refer to Detail 1/C4.07 – Delete "(BY OTHERS)".
b. Refer to Detail 1/C4.07 – Delete "(BY PUMP MANUF.)".

Addendum 2 – 97 **Sheet C5.01 – Overall Sanitary Sewer Plan - East**
a. Three (3) 6 inch diameter services to Maintenance Building 'K' shall be polyvinylchloride (PVC) rather than vitrified clay pipe (VCP) as indicated.
b. Refer to three (3) notes for "10"x6" VCP Tee"; Delete "With Band-Seal Lateral" and replace with "Provide Mission Flex-Seal Adjustable Repair (ARC) connection to transition from 6" VCP to 6" PVC".

Addendum 2 – 98 **Sheet C5.05 – Sanitary Sewer Details**
Refer to Detail 2/C5.05; Delete "GRAVEL/SAND". First 12 inches above pipe shall be native (on-site) material free of debris, stones, and large clods to ensure geofabric is not damaged during initial backfill above pipe.

Addendum 2 - 99 **Sheet L2.00 – Overall Landscape Irrigation Plan**
Polyethylene pipe may be used in lieu of PVC pipe for irrigation lateral lines. Polyethylene pipe, if used, shall be rated at 100-psi minimum and in accordance with ASTM D2239.

Addendum 2 - 100 Sheet L2.14 – Landscape Irrigation Pump Station
Delete Sheet L2.14 in its entirety and replace with new Sheet L2.14 attached (Addendum 2, Dec. 4, 2015).

Addendum 2 - 101 **Sheet L3.01 to L3.29 – Courtyard and Plaza Plans**

a. General Clarification: All colored concrete as indicated within courtyards and plazas shall be 6" thick.

b. General Clarification: All structural stoops within areas indicated as colored concrete shall be colored to match the adjacent colored walk pavement.

Addendum 2 - 102 **Sheet L5.01 – Typical Site & Landscape Details**

Refer to Detail 1/L5.01 – The upper 24 inches of subgrade beneath fire access lane pavers shall be compacted in accordance with Specification Section 31 2000 paragraph 3.8.

Addendum 2 - 103 **Sheet L5.02 – Typical Site & Landscape Details**

All references to "5" CONCRETE WALK PAVEMENT" shall be changed to "6" CONCRETE WALK PAVEMENT".

Addendum 2 - 104 **Sheet S1.J.04 – Foundation Plan – Building J – Area 4**

At Foundation Plan – Building J – Area 4, in Receiving Area J430, change note reference to "21/A7.13" in lieu of "10/A7.12".

Addendum 2 - 105 **Sheet S1.K.02 – Foundation Sections – Building K - Maintenance**

At Detail 1/S1.K.02, at Metal Bldg. Column note, change to "BY METAL BUILDING MFR" in lieu of "BY OTHERS".

At Detail 2/S1.K.02, at Metal Bldg. Column notes, change to "BY METAL BUILDING MFR" in lieu of "BY OTHERS".

Addendum 2 - 106 **Sheet S1.M.01 – Foundation and Roof Framing Plans – Building M – Smoke Shelter**

At Detail 2/S1.M.01, change to "PRE-FABRICATED SMOKE SHELTER STRUCTURE" in lieu of "PRE-FABRICATED STRUCTURE BY OTHERS".

At Detail 3/S1.M.01, change to "PRE-FABRICATED SMOKE SHELTER STRUCTURE" in lieu of "PRE-FABRICATED STRUCTURE BY OTHERS".

Addendum 2 – 107 **Sheet A0.02 – General Notes & Assemblies**

At Exterior Wall Assembly EW-8, change the following:

Change to "8" GIRT" in lieu of "10"GIRT".

Change to "R-25 INSULATION" in lieu of "R-30 INSULATION".

Addendum 2 – 108 **Sheet A0.02 – General Notes & Assemblies**

At Interior Wall Assembly Q, change to "SEE TYP STACKED WALL DETAIL 6/A0.03" in lieu of "SEE TYP STACKED WALL DETAIL".

Addendum 2 – 109 **Sheet A3.01 – Reflected Ceiling Plan – Building A,C,D&E – Neighborhood & Notes**

Under Reflected Ceiling Plan General Notes, add the following note:

"10. ALL STAINED AND SEALED WOOD TRIM REFERENCED ON DETAILS TO BE 1/2" x 3 1/2", UNLESS NOTED OTHERWISE."

Addendum 2 – 110 **Sheet A3.03 – Reflected Ceiling Plan – Building B – Home 1**

At Ceiling Detail 5/A3.03, change note to "STAINED AND SEALED OR PAINTED 3/4" HARDWOOD TRIM ON WOOD BLOCKING (TYP); SEE SIM. WOOD DETAIL AT CEILING DETAIL 8/A3.03" in lieu of "CROWN MOULDING; PROFILE "X".

Addendum 2 – 111 **Sheet A5.11 – Exterior Elevations – Buildings K, L & M**

Add the following:

"EXTERIOR ELEVATION NOTES – BLDG K

1. SEE SPECIFICATION SECTION 13 3419 METAL BUILDING SYSTEMS FOR METAL COLORS SPECIFIED. EXTERIOR ELEVATION COLORS LABELED FOR METAL BUILDING ARE GENERAL PURPOSES ONLY."

Addendum 2 – 112 **Sheet A8.12 – Window Types**
At Window Types A, B, C and C.1, change glass type to "WOOD WINDOW GLASS; SEE SPEC." in lieu of "IC".

Addendum 2 – 113 **Sheet A10.01 – Cabinet Sections and Details**
At detail 6/A10.01 HOME-MB-SINK, and detail 13/A10.01 NB-SINK, add reference to provide 3) 8"x11"x 1 ½" heavy duty stainless steel under-counter support brackets spaced as required to support countertop; provide at finished end and on each side of sink; brackets must be concealed by front and side skirt.

Addendum 2 - 114 **Sheet RF1.01 – MATERIALS LIST & GENERAL NOTES**
At General Note 11, change to:
"Bottom edge of stained and sealed (or painted) wood plate rail to be installed at 6'-4" A.F.F. Plate rail to be ½" x 3 ½" with 1/8" radius edges; see architectural for exact size and details. See room finish schedules for locations."

Addendum 2 - 115 **Sheet RF1.01 – MATERIALS LIST & GENERAL NOTES**
At General Note 22, change to:
"See architectural reflected ceiling plan details to verify wood trim at bulkheads. Wood trim to be ½" x 3 ½" with 1/8" radius edges; see architectural for exact size and details. See room finish schedules for locations."

Addendum 2 – 116 **Sheet RF1.01 – MATERIALS LIST & GENERAL NOTES**
At General Note 23, change to:
"See architectural reflected ceiling plan details to verify wood trim at bulkheads. Wood trim varies in size; see architectural for exact size and details. See room finish schedules for locations."

Addendum 2 – 117 **Sheet RF1.01 – MATERIALS LIST & GENERAL NOTES**
In Materials List, make the following changes:
At WP2, change color to "#380 Shaker Cherry" in lieu of "#704 Brazilian Nut".
At WM1, add the following as an approved equal: "SHAW CONTRACT GROUP / WELCOME II TILE 5T031 / BLACK CHOCOLATE 31751 / 24" X 24" TILE, QUARTER TURN INSTALLATION"

Addendum 2 - 118 **Sheets RF1.A.02, RF1.B.02, RF1.C.02, RF1.D.02, RF1.E.02 & RF1.F.02 – FINISH SCHEDULE NEIGHBORHOOD A, B, C, D, E & F**
Delete 4th bullet point (Bulk=At Bulkhead. See General Note 22 on RF1.01) in its entirety from Notes-Home 1, Notes-Home 2 and Notes-Home 3 sections on each sheet

Addendum 2 - 119 **Sheets RF1.G.02 & RF1.H.02 – FINISH SCHEDULE HUB G & H**
Under Notes-Hub & Walkway section, add second and third bullet points:
- PR = Plate Rail. See General Note 11 on RF1.01.
- BULK = At bulkhead. See General Note 22 on RF1.01.

Addendum 2 - 120 **Sheet RF1.J.02: FINISH SCHEDULE VETERAN'S HOME CENTER J**
Under Notes-VHC section, add second and third bullet points:
- PR = Plate Rail. See General Note 11 on RF1.01.
- BULK = At bulkhead. See General Note 22 on RF1.01.

Addendum 2 - 121 **Sheet RF1.J.02: FINISH SCHEDULE VETERAN'S HOME CENTER J**
In Room Finish Schedule – J Area 3, at rooms J352 and J353 Visitor Suite, add "ST1 (PR)" to trim column.

Addendum 2 – 122 **Sheet K2.A.06 - HOUSEHOLD KITCHENS**
Delete the Item Tag 029 from all Household Kitchens. The faucet this Tag identifies will be furnished under the Mechanical Contract, and it is not a part of the FSEC Work.

Item Tag 029 references a Bumper Guard to be installed in the Neighborhood Kitchens, and these are included in the FSEC Work, as shown on Sheet K1.A.05.

Addendum 2 - 123 **Sheet P0.00 – Fire Sprinkler General Notes - Plumbing**
Revise Note E as follows:
a. Building G: Provide (4) wet pipe and (4) dry pipe system zones for Buildings A, B, C, and G.
b. Building H: Provide (4) wet pipe and (4) dry pipe system zones for Buildings D, E, F, and H

Add the following note: At contractors option, dry pipe valves may be installed in the mechanical mezzanine of each home A1, A2, A3, B1, B2, B3, etc. instead of a central dry pipe valve located in the hub. Adjust number of sprinkler zones accordingly.

Addendum 2 - 124 **Sheets P2.A.01, P2.A.02, P2.A.03, P2.B.01, P2.B.02, P2.B.03 – Home Plans – Plumbing, P3.01- Enlarged Plans – Neighborhoods - Plumbing**
Add 140 Degree Hot Water and 140 Degree Hot Water Recirculation piping to serve clothes washing machines (WMB-1) in all neighborhood laundry rooms.

Addendum 2 - 125 **Sheet M1.J.06 – Partial Roof Plan, Building J – Mechanical**
Add exhaust vent per item #4 below.

Addendum 2 – 126 **Sheet M4.02 – Enlarged Plans – Mechanical**
Add 4" floor sink (4" FS-1) on each mechanical mezzanine for dry pipe valve (contractor's option) and for draining of dry pipe system. Coordinate location of floor sink with location of dry pipe valve.

Addendum 2 - 127 **Sheet M4.06 – Enlarged Plans, Dietary Kitchen – Mechanical**
Add exhaust fan (EF-8) in ceiling space above Chemical Storage (J415) to vent that room directly to exterior. Coordinate location of fan and roof penetration with structure, other trades, and general contractor.

Addendum 2 – 128 **Sheet M5.01 – Mechanical Schematics**
Base mounted pumps are shown with a suction diffuser with strainer as well as a separate strainer. Only the strainer with the suction diffuser is required. Delete the separate strainer shown on the riser diagram.

Addendum 2 - 129 **Sheet M7.01 – Mechanical Schedules.**
Fan Schedule: Added exhaust fan EF-8.

Energy Recovery Unit Schedule: Schedule data changed for both ERU-1 and ERU-2.

Addendum 2 – 130 **Sheet M7.02 – Mechanical Schedules.**
The following manufacturers are approved for the listed items subject to compliance with the plans and specifications.
Dust Collector System: Torit

Addendum 2 - 131 **Sheet E0.00 – Electrical Symbol Legend**
Nurse Call, add a box with 'WG' text to indicate "Wander Guard Door Controller Kit".

Nurse Call, change "Nurse Call Bedside Station" symbol to be "Pull Cord Station With Audio"

Addendum 2 - 132 **Sheet E2.E.02 - Partial Floor Plan – Building E – Home 2 - Power**
Add information to typical room circuit schedules per attached sketch sheet SKE4.

Addendum 2 - 133 **Sheet E2.G.01 - Floor Plan – Building G & Walkways - Power**
Revise power connection to ERU-1 to 3#2, #8G in 1 ¼"C. Connect to 100/3 circuit breaker in panel HG1.

Addendum 2 - 134 **Sheet E2.H.01 - Floor Plan – Building H & Walkways - Power**
Revise power connection to ERU-1 to 3#2, #8G in 1 ¼"C. Connect to 100/3 circuit breaker in panel HH1.

Addendum 2 - 135 **Sheet E2.J.01 - Floor Plan – Building J – Area 1 - Power**
Revise power connection to ERU-1 to 3#2, #8G in 1 ¼"C. Connect to 100/3 circuit breaker in panel HJM1.

Addendum 2 - 136 **Sheet E2.J.03 - Floor Plan – Building J – Area 3 - Power**
Revise power connection to ERU-1 to 3#2, #8G in 1 ¼"C. Connect to 100/3 circuit breaker in panel HJM2.

Addendum 2 - 137 **Sheet E2.J.04 - Partial Floor Plan – Building J – Area 4 - Power**
Add power connection to EF-8 per attached sketch sheet SKE5.

Addendum 2 - 138 **Sheets E3.A.01 through E3.J.04**
Change all nurse call "Pull Cord Station with Audio" stations to be "Pull cord station without audio" at all public restrooms only.

Addendum 2 - 139 **Sheet E3.A.01 – Building A – Home 1 – Special Systems**
Add card reader to the interior of doors A118 and A143.

Addendum 2 - 140 **Sheet E3.A.02 – Building A – Home 2 – Special Systems**
Add card reader to the interior of doors A218 and A243.

Addendum 2 - 141 **Sheet E3.A.03 – Building A – Home 3 – Special Systems**
Add card reader to the interior of doors A318 and A343.

Addendum 2 - 142 **Sheet E3.B.01 – Building B – Home 1 – Special Systems**
Add card reader to the interior of doors B118 and B143.

Addendum 2 - 143 **Sheet E3.B.02 – Building B – Home 2 – Special Systems**
Add card reader to the interior of doors B218 and B243.

Addendum 2 - 144 **Sheet E3.B.03 – Building B – Home 3 – Special Systems**
Add card reader to the interior of doors B318 and B343.

Addendum 2 - 145 **Sheet E3.C.01 – Building C – Home 1 – Special Systems**
Add card reader to the interior of doors C118 and C143.

Addendum 2 - 146 **Sheet E3.C.02 – Building C – Home 2 – Special Systems**
Add card reader to the interior of doors C218 and C243.

Addendum 2 - 147 **Sheet E3.C.03 – Building C – Home 3 – Special Systems**
Add card reader to the interior of doors C318 and C343.

Addendum 2 - 148 **Sheet E3.E.01 – Building E – Home 1 – Special Systems**
Add card reader to the interior of doors E118 and E143.

Addendum 2 - 149 **Sheet E3.F.03 – Building F - Home 3 - Special Systems**
Door F318, delete 'WG' wander guard from this door.

Addendum 2 - 150 **Sheet E3.J.01 – Building J – Area 1 – Special Systems**
Add card reader to the interior of doors J101.2 and J101.3.

Addendum 2 - 151 **Sheet E3.J.02 – Building J – Area 2 – Special Systems**
Add card reader to the interior of doors J264.1 and J264.2.

Addendum 2 - 152 **Sheet E5.02 – Electrical Details**
See attached reissued sheet for revised layout.

Addendum 2 - 153 **Sheet E5.03 – Electrical Details**
See attached reissued sheet for revised layout.

Addendum 2 - 154 **Sheet E6.03 – Electrical Riser Diagrams – Building G**
Dry Type Transformer Schedule – Revise transformer grounding indicated in remarks column to "#6 – ½"C". for all 45 kVA transformers indicated in schedule.

Dry Type Transformer Schedule – Revise detail reference in note 2 to "10/E5.02".

Revise detail reference in flag note 10 to "3/E5.01".

Addendum 2 - 155 **Sheet E6.04 – Electrical Riser Diagrams – Building H**
Dry Type Transformer Schedule – Revise transformer grounding indicated in remarks column to "#6 – ½"C" for all 45 kVA transformers indicated in schedule.

Dry Type Transformer Schedule – Revise detail reference in note 2 to "10/E5.02".

Revise detail reference in flag note 10 to "3/E5.01".

Addendum 2 - 156 **Sheet E6.05 – Electrical Riser Diagrams – Buildings J, K**
Revise detail reference in flag note 10 to "3/E5.01".

Addendum 2 - 157 **Sheet E7.02 – Electrical Schedules**
Add note to the schedules for lighting panels HGLS and HHLS to read; "Cooper Bussman Fusible Coordination Panel".

Addendum 2 - 158 **Sheet E7.03 – Electrical Schedules**
Add note to the schedules for lighting panels HJLS1, HJLS2, and HJLS3 to read; "Cooper Bussman Fusible Coordination Panel".

Revise mounting for lighting panel HJ3 to Flush.

Addendum 2 - 159 **Sheet E7.07 – Electrical Schedules**
Revise mounting for lighting panel LJ3 to Flush.

Addendum 2 - 160 **Sheet E7.10 – Electrical Schedules**
Dry Type Transformer Schedule – Revise detail reference in note 2 to "10/E5.02".

Addendum 2 - 161 **Sheet E7.11 – Luminaire Schedule**
Revise Fixture 18 Catalog Number to "ILB-12L-WD-SD125-LP840-WGX-DWH" and lumen output indicated in Light Source - Specification column to "12,000".

DRAFT

AIA® Document A101™ – 2007

Standard Form of Agreement Between Owner and Contractor

where the basis of payment is a Stipulated Sum

AGREEMENT made as of the « » day of « » in the year « »
(In words, indicate day, month and year.)

BETWEEN the Owner:
(Name, legal status, address and other information)

« »« »
« »
« »
« »

and the Contractor:
(Name, legal status, address and other information)

« »« »
« »
« »
« »

for the following Project:
(Name, location and detailed description)

«CENTRAL NEBRASKA VETERANS HOME»
« »
«CONSTRUCTION OF A NEW VETERANS HOME IN KEARNEY NEBRASKA»

The Architect:
(Name, legal status, address and other information)

« »« »
« »
« »
« »

The Owner and Contractor agree as follows.

ADDITIONS AND DELETIONS: The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

AIA Document A201™–2007, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

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TABLE OF ARTICLES

ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9.

ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be the date of this Agreement unless a different date is stated below or provision is made for the date to be fixed in a notice to proceed issued by the Owner.
(Insert the date of commencement if it differs from the date of this Agreement or, if applicable, state that the date will be fixed in a notice to proceed.)

« »

~~If, prior to the commencement of the Work, the Owner requires time to file mortgages and other security interests, the Owner's time requirement shall be as follows:~~

~~« »~~
~~If, prior to the commencement of the Work, the Owner requires time to file mortgages and other security interests, the Owner's time requirement shall be as follows:~~

~~« »~~

§ 3.2 The Contract Time shall be measured from the date of commencement.

§ 3.3 The Contractor shall achieve Substantial Completion of the entire Work not later than « » (« ») days from the date of commencement, or as follows:

(Insert number of calendar days. Alternatively, a calendar date may be used when coordinated with the date of commencement. If appropriate, insert requirements for earlier Substantial Completion of certain portions of the Work.)

« »

Portion of Work	Substantial Completion Date

, subject to adjustments of this Contract Time as provided in the Contract Documents.
(Insert provisions, if any, for liquidated damages relating to failure to achieve Substantial Completion on time or for bonus payments for early completion of the Work.)

« »

ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be « » ($ « »), subject to additions and deductions as provided in the Contract Documents.

§ 4.2 The Contract Sum is based upon the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner:
(State the numbers or other identification of accepted alternates. If the bidding or proposal documents permit the Owner to accept other alternates subsequent to the execution of this Agreement, attach a schedule of such other alternates showing the amount for each and the date when that amount expires.)

« »

§ 4.3 Unit prices, if any:
(Identify and state the unit price; state quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price Per Unit ($0.00)

§ 4.4 Allowances included in the Contract Sum, if any:
(Identify allowance and state exclusions, if any, from the allowance price.)

Item	Price

ARTICLE 5 PAYMENTS

§ 5.1 PROGRESS PAYMENTS

§ 5.1.1 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect and approved by the Owner's Project Manager, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents. ~~Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents~~.

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows:

« »

§ 5.1.3 Provided that an Application for Payment is received by the Architect not later than the « » day of a month, the Owner shall make payment of the certified amount to the Contractor ~~not later than the « » day of the « » month~~ in accordance with the Prompt Payment Act (Neb. Rev. Stat. §81-2402). If an Application for Payment is received

by the Architect after the application date fixed above, payment shall be made by the Owner ~~not later than « » (« ») days~~ in accordance with the Prompt Payment Act (Neb. Rev. Stat. §81-2402) after the Architect ~~receives the Application for Payment~~ certifies that amount. ~~Provided that an Application for Payment is received by the Architect not later than the « » day of a month, the Owner shall make payment of the certified amount to the Contractor not later than the « » day of the « » month. If an Application for Payment is received by the Architect after the application date fixed above, payment shall be made by the Owner not later than « » (« ») days after the Architect receives the Application for Payment.~~

(Federal, state or local laws may require payment within a certain period of time.)

§ 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form and supported by such data to substantiate its accuracy as the Architect may require. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.5 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

§ 5.1.6 Subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

.1 Take that portion of the Contract Sum properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the Contract Sum allocated to that portion of the Work in the schedule of values, less retainage of « » percent (« » %). Pending final determination of cost to the Owner of changes in the Work, amounts not in dispute shall be included as provided in Section 7.3.9 of AIA Document A201™–2007, General Conditions of the Contract for Construction;

.2 Add that portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction (or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing), less retainage of ten « » percent (10% ~~« » %~~);

.3 Subtract the aggregate of previous payments made by the Owner; and

.4 Subtract amounts, if any, for which the Architect has withheld or nullified a Certificate for Payment as provided in Section 9.5 of AIA Document A201–2007.

§ 5.1.7 The progress payment amount determined in accordance with Section 5.1.6 shall be further modified under the following circumstances:

.1 Add, upon Substantial Completion of the Work, a sum sufficient to increase the total payments to the full amount of the Contract Sum, less such amounts as the Architect shall determine for incomplete Work, retainage applicable to such work and unsettled claims; and
(Section 9.8.5 of AIA Document A201–2007 requires release of applicable retainage upon Substantial Completion of Work with consent of surety, if any.)

.2 Add, if final completion of the Work is thereafter materially delayed through no fault of the Contractor, any additional amounts payable in accordance with Section 9.10.3 of AIA Document A201–2007.

§ 5.1.8 Reduction or limitation of retainage, if any, shall be as follows:
(If it is intended, prior to Substantial Completion of the entire Work, to reduce or limit the retainage resulting from the percentages inserted in Sections 5.1.6.1 and 5.1.6.2 above, and this is not explained elsewhere in the Contract Documents, insert here provisions for such reduction or limitation.)

« »

§ 5.1.9 Except with the Owner's prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

§ 5.2 FINAL PAYMENT

§ 5.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

.1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Section 12.2.2 of AIA Document A201–2007, and to satisfy other requirements, if any, which extend beyond final payment; and

.2 a final Certificate for Payment has been issued by the Architect.

§ 5.2.2 The Owner's final payment to the Contractor shall be made ~~no later than 30 days~~ in accordance with the Prompt Payment Act (Neb. Rev. Stat. §81-2402) after the issuance of the Architect's final Certificate for Payment, or as follows: ~~The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the Architect's final Certificate for Payment, or as follows:~~

« »

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 INITIAL DECISION MAKER

The ~~Architect~~ Administrator of the State Building Division will serve as Initial Decision Maker pursuant to Section 15.2 of AIA Document A201–2007~~, unless the parties appoint below another individual, not a party to this Agreement, to serve as Initial Decision Maker~~.

~~*(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)*~~

~~« »~~
~~« »~~
~~« »~~
~~« »~~

~~The Architect will serve as Initial Decision Maker pursuant to Section 15.2 of AIA Document A201–2007, unless the parties appoint below another individual, not a party to this Agreement, to serve as Initial Decision Maker.~~

~~*(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)*~~

~~« »~~
~~« »~~
~~« »~~
~~« »~~

§ 6.2 BINDING DISPUTE RESOLUTION

For any Claim subject to, but not resolved by, ~~mediation~~ pursuant to Section 15~~.3~~ of AIA Document A201–2007, the method of binding dispute resolution shall be as follows:

(Check the appropriate box. If the Owner and Contractor do not select a method of binding dispute resolution below, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.)

[« »] Arbitration pursuant to Section 15.4 of AIA Document A201–2007

[« »] Litigation in a court of competent jurisdiction

[« X »] Other *(Specify)*

State Torts Claim Act

~~For any Claim subject to, but not resolved by, mediation pursuant to Section 15.3 of AIA Document A201–2007, the method of binding dispute resolution shall be as follows:~~

~~*(Check the appropriate box. If the Owner and Contractor do not select a method of binding dispute resolution below, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.)*~~

[« »] Arbitration pursuant to Section 15.4 of AIA Document A201–2007

[« »] Litigation in a court of competent jurisdiction

[« »] Other *(Specify)*

« »

ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201–2007.

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2007.

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201–2007 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 Payments due and unpaid under the Contract shall bear interest in accordance with the Prompt Payment Act (Neb. Rev. Stat. §81-2402)from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.
(Insert rate of interest agreed upon, if any.)

« » % « »Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.
(Insert rate of interest agreed upon, if any.)

« » % « »

§ 8.3 The Owner's representative:
(Name, address and other information)

« »
« »
« »
« »
« »
« »

§ 8.4 The Contractor's representative:
(Name, address and other information)

« »
« »
« »
« »
« »
« »

§ 8.5 Neither the Owner's nor the Contractor's representative shall be changed without ten days written notice to the other party.

§ 8.6 Other provisions:

« »

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 The Contract Documents, except for Modifications issued after execution of this Agreement, are enumerated in the sections below.

§ 9.1.1 The Agreement is this executed AIA Document A101–2007, Standard Form of Agreement Between Owner and Contractor.

§ 9.1.2 The General Conditions are AIA Document A201–2007, General Conditions of the Contract for Construction.

§ 9.1.3 The Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages

§ 9.1.4 The Specifications:
(Either list the Specifications here or refer to an exhibit attached to this Agreement.)

« »

Section	Title	Date	Pages

§ 9.1.5 The Drawings:
(Either list the Drawings here or refer to an exhibit attached to this Agreement.)

« »

Number	Title	Date

§ 9.1.6 The Addenda, if any:

Number	Date	Pages

Portions of Addenda relating to bidding requirements are not part of the Contract Documents unless the bidding requirements are also enumerated in this Article 9.

§ 9.1.7 Additional documents, if any, forming part of the Contract Documents:

.1 AIA Document E201™–2007, Digital Data Protocol Exhibit, if completed by the parties, or the following:

« »

.2 Other documents, if any, listed below:
(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201–2007 provides that bidding requirements such as advertisement or invitation to bid, Instructions to Bidders, sample forms and the Contractor's bid are not part of the Contract Documents unless enumerated in this Agreement. They should be listed here only if intended to be part of the Contract Documents.)

« »

ARTICLE 10 INSURANCE AND BONDS

The Contractor shall purchase and maintain insurance and provide bonds as set forth in Article 11.4 of AIA Document A201–2007.

~~*(State bonding requirements, if any, and limits of liability for insurance required in Article 11 of AIA Document A201–2007.)*~~

~~The Contractor shall purchase and maintain insurance and provide bonds as set forth in Article 11 of AIA Document A201–2007.~~

~~*(State bonding requirements, if any, and limits of liability for insurance required in Article 11 of AIA Document A201–2007.)*~~

Type of insurance or bond	**Limit of liability or bond amount ($0.00)**

This Agreement entered into as of the day and year first written above.

OWNER *(Signature)*	**CONTRACTOR** *(Signature)*
« »« »	« »« »
(Printed name and title)	*(Printed name and title)*

Central Nebraska Veterans Home Project
Wilkins Architecture Design Planning & Sub-Consultants (TEAM)
ELECTRONIC DATA DISCLOSURE AGREEMENT

Recipient: _____

Project: _____

Contents: Title Date

_____

_____

_____

_____

(The listing of titles and data in this section is for reference only. This agreement applies to all data contained in the media provided.)

Agreement **Wilkins Architecture Design Planning, L.L.C. (**formerly known as Wilkins Hinrichs Stober Architects) **and its Sub-consultants (**Big Muddy Workshop, Inc., Ernest Bland Associates, P.C., Foodlines, Miller & Associates Consulting Engineers, P.C., Morrissey, Engineering Inc., and Performance Structural Engineering, Inc. individually and collectively referred to in this documents as the "TEAM" agrees to provide documents in an electronic data format subject to the following conditions expressly accepted by Recipient:

Ownership As author of the information contained in the media, TEAM retains all ownership, copyright, common law, and other protections. Information contained in the data is the exclusive property of TEAM. The alteration or modification of any of the data or information contained therein is prohibited without the express written consent of TEAM. If any of the data or information contained therein is modified, altered, or otherwise changed, whether intentionally or unintentionally, without the express written consent of TEAM, the ownership, indicia of ownership, and involvement with the data or information may be removed or disclaimed by TEAM.

Risk The use of the electronic data is at the sole risk of Recipient, and TEAM assumes no risk, liability, or exposure for such use. Recipient agrees to indemnify and hold TEAM harmless for any losses that result from the use of the electronic media by Recipient, or by any other person or entity to which the Recipient provides this data. Recipient agrees to make no claim and hereby waive, to the fullest extent permitted by law, any claim or cause of action of any nature against the TEAM or State of Nebraska, their officers, directors, employees, or agents, which may arise out of or in connection with the Recipients use of the data.

Disclaimers The information provided may, or may not contain the complete plan data and details of the signed and sealed hard copy documents. TEAM does not guarantee or assume the responsibility of providing complete electronic plan data and details. Significant differences may exist between this data and corresponding signed and sealed hard copy documents and actual site conditions due to addenda, change orders, or other revisions. TEAM makes no representation regarding the accuracy or completeness of the data provided. By use of this data, Recipient acknowledges this condition and agrees that Recipient is solely responsible for determining any differences between the data and hard copy documents. In the event that a conflict arises between the signed and sealed hard copy documents, and data, the signed and sealed hard copy documents shall govern.

The use of this electronic data is restricted to the original site and project for which it is prepared. The information contained in the data files may not be used for other projects, transferred to any other party for their use, or used for any other purpose without the express written consent of TEAM. The reuse or reproduction of this data, in whole or in part, without the express written consent of TEAM, is strictly prohibited. TEAM does not guarantee or assure that the data provided will contain all changes, addenda items or modifications that have occurred or will occur.

The data has been conveyed in the format in which it was prepared or as required by our project scope and may not be in compatible format usable by Recipient. TEAM shall not be held liable or assume responsibility for any error, variation, or other alteration that occurs as a result of conversion of the information into another format or by use of the original format with hardware or software that is not completely compatible.

The data is subject to infection by virus, undetectable alteration, and deterioration. TEAM shall not be liable or assume responsibility for the presence of virus or the completeness or accuracy of information contained in the data after delivery to Recipient.

TEAM makes no warranties, express or implied, of merchantability and fitness for any particular purpose, as to either the information contained in the electronic data or to the electronic data itself.
Under no circumstances shall the delivery of the data for use by Recipient be deemed a sale by the TEAM. TEAM makes no warranties, either expressed or implied of merchantability and fitness of data for any particular purpose. In no event shall the TEAM or State of Nebraska be liable for any loss of profit or any consequential damages.

Restrictions No amendment, modification, or discharge of this Agreement shall be valid or binding unless set forth in writing and duly executed by both parties.

Any waiver by either party of a breach of any provision of this Agreement shall not operate as, or be construed as, a waiver of any future breach of the provision, any other provision, or any subsequent breach.

Procedure Recipient shall provide a fully executed agreement to the TEAM prior to receiving the data. TEAM reserves the right to reject incomplete, illegible or altered agreements. TEAM will only release data after receiving a properly executed agreement.

Authorization The individual signing the agreement for the Recipient represents that he is a duly authorized agent of the Recipient requesting the data.

Recipient:

_____

Signature Title Date

_____

Company

SECTION 00 7200

GENERAL CONDITIONS

FORM OF GENERAL CONDITIONS

1.1 The General Conditions applicable to this contract is attached following this page.

RELATED REQUIREMENTS

2.1 SECTION 00 7300 - Supplementary Conditions.

END OF SECTION

DRAFT AIA® Document A201™ – 2007

General Conditions of the Contract for Construction

for the following PROJECT:
(Name and location or address)
«CENTRAL NEBRASKA VETERANS HOME»
« »

THE OWNER:
(Name, legal status and address)
« »« »
« »

THE ARCHITECT:
(Name, legal status and address)
« »« »
« »

TABLE OF ARTICLES

ADDITIONS AND DELETIONS: The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

INDEX
(Topics and numbers in bold are section headings.)

ARTICLE 1 GENERAL PROVISIONS

§ 1.1 BASIC DEFINITIONS

§ 1.1.1 THE CONTRACT DOCUMENTS

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding requirements.

§ 1.1.2 THE CONTRACT

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

§ 1.1.3 THE WORK

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

§ 1.1.4 THE PROJECT

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by separate contractors.

§ 1.1.5 THE DRAWINGS

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules and diagrams.

§ 1.1.6 THE SPECIFICATIONS

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

§ 1.1.7 INSTRUMENTS OF SERVICE

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 INITIAL DECISION MAKER

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2 and certify termination of the Agreement under Section 14.2.2.

§ 1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.3 CAPITALIZATION

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 INTERPRETATION

In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.5 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE

§ 1.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and will retain all common law, statutory and other reserved rights, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors and material or equipment suppliers are authorized to use and reproduce the Instruments of Service provided to them solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers may not use the Instruments of Service on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect and the Architect's consultants.

§ 1.6 TRANSMISSION OF DATA IN DIGITAL FORM

If the parties intend to transmit Instruments of Service or any other information or documentation in digital form, they shall endeavor to establish necessary protocols governing such transmissions, unless otherwise already provided in the Agreement or the Contract Documents.

ARTICLE 2 OWNER

§ 2.1 GENERAL

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

§ 2.1.2 The Owner shall furnish to the Contractor within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, ~~give notice of or enforce mechanic's lien rights. Such information shall include a correct statement of~~ the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.

~~The Owner shall furnish to the Contractor within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.~~

§ 2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

§ 2.2.1 Prior to commencement of the Work, the Contractor may request in writing that the Owner provide reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. Thereafter, the Contractor may only request such evidence if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) a change in the Work materially changes the Contract Sum; or (3)

the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due. The Owner shall furnish such evidence as a condition precedent to commencement or continuation of the Work or the portion of the Work affected by a material change. After the Owner furnishes the evidence, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.2 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.2.3 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.2.4 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.2.5 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

§ 2.3 OWNER'S RIGHT TO STOP THE WORK

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

§ 2.4 OWNER'S RIGHT TO CARRY OUT THE WORK

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect or failure. ~~Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect.~~ If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

~~If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect or failure. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.~~

ARTICLE 3 CONTRACTOR

§ 3.1 GENERAL

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.2.3, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall make Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and solely responsible for the jobsite safety of such means, methods, techniques, sequences or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely written notice to the Owner and Architect and shall not proceed with that portion of the Work without further written instructions from the ~~Architect~~ Owner. If the Contractor is then instructed to proceed with the required means, methods, techniques, sequences or procedures without acceptance of changes proposed by the Contractor, the ~~Owner shall be solely responsible for any loss or damage arising solely from those Owner-required means, methods, techniques, sequences or procedures~~ Contractor shall have all statutory remedies.

~~The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters. If the Contract Documents give specific instructions concerning~~

~~construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety~~

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.4 LABOR AND MATERIALS

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 Except in the case of minor changes in the Work authorized by the Architect in accordance with Sections 3.12.8 or 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

§ 3.5 WARRANTY

The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect or Owner, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

~~The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.~~

§ 3.6 TAXES

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.7 PERMITS, FEES, NOTICES AND COMPLIANCE WITH LAWS

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 Concealed or Unknown Conditions. If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature, that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 21 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable adjustment in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor in writing, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may proceed as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 ALLOWANCES

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- **.1** Allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- **.2** Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
- **.3** Whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

§ 3.9 SUPERINTENDENT

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the name and qualifications of a proposed superintendent. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to the proposed superintendent or (2) that the Architect requires additional time to review. Failure of the Architect to reply within the 14 day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall prepare and submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work.

§ 3.10.2 The Contractor shall prepare a submittal schedule, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, and shall submit the schedule(s) for the Architect's approval. The Architect's approval shall not unreasonably be delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

§ 3.11 DOCUMENTS AND SAMPLES AT THE SITE

The Contractor shall maintain at the site for the Owner one copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and one copy of approved Shop Drawings, Product Data, Samples and similar required submittals. These shall be available to the Architect and shall be delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents. Their purpose is to demonstrate the way by which the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve and submit to the Architect Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of separate contractors.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Architect in writing of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples or similar submittals by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such written notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. The Contractor shall not be required to provide professional services in violation of applicable law. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by a properly licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor all performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review, approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Contractor shall not be responsible for the adequacy of the performance and design criteria specified in the Contract Documents.

§ 3.13 USE OF SITE

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.14 CUTTING AND PATCHING

§ 3.14.1 The Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting and patching shall be restored to the condition existing prior to the cutting, fitting and patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or separate contractors by cutting, patching or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter such construction by the Owner or a separate contractor except with written consent of the Owner and of such separate contractor; such consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the Owner or a separate contractor the Contractor's consent to cutting or otherwise altering the Work.

§ 3.15 CLEANING UP

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and Owner shall be entitled to reimbursement from the Contractor.

§ 3.16 ACCESS TO WORK

The Contractor shall provide the Owner and Architect access to the Work in preparation and progress wherever located.

§ 3.17 ROYALTIES, PATENTS AND COPYRIGHTS

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for such defense or loss when a particular design, process or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications or other documents prepared by the Owner or Architect. However, if the Contractor has reason to believe that the required design, process or product is an infringement of a copyright or a patent, the Contractor shall be responsible for such loss unless such information is promptly furnished to the Architect.

§ 3.18 INDEMNIFICATION

§ 3.18.1 To the fullest extent permitted by law the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

ARTICLE 4 ARCHITECT

§ 4.1 GENERAL

§ 4.1.1 The Owner shall retain an architect lawfully licensed to practice architecture or an entity lawfully practicing architecture in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 4.1.2 Duties, responsibilities and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified or extended without written consent of the Owner, Contractor and Architect. Consent shall not be unreasonably withheld.

§ 4.1.3 If the employment of the Architect is terminated, the Owner shall employ a successor architect ~~as to whom the Contractor has no reasonable objection and~~ whose status under the Contract Documents shall be that of the Architect.

~~If the employment of the Architect is terminated, the Owner shall employ a successor architect as to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.~~

§ 4.2 ADMINISTRATION OF THE CONTRACT

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents, except as provided in Section 3.3.1.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and report to the Owner (1) known deviations from the Contract Documents and from the most recent construction schedule submitted by the Contractor, and (2) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of and will not be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 COMMUNICATIONS FACILITATING CONTRACT ADMINISTRATION

Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall endeavor to communicate with each other through the Architect about matters arising out of or relating to the Contract. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.5.2 and 13.5.3, whether or not such Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5 and 3.12. The Architect's review shall not constitute approval of safety precautions or, unless otherwise specifically stated by the Architect, of any construction means, methods, techniques, sequences or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may authorize minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and

assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more project representatives to assist in carrying out the Architect's responsibilities at the site. The duties, responsibilities and limitations of authority of such project representatives shall be as set forth in an exhibit to be incorporated in the Contract Documents.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 DEFINITIONS

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a separate contractor or subcontractors of a separate contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

§ 5.2.1 Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to any such proposed person or entity or (2) that the Architect requires additional time for review. Failure of the Owner or Architect to reply within the 14-day period shall constitute notice of no reasonable objection.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person or entity previously selected if the Owner or Architect makes reasonable objection to such substitution.

§ 5.3 SUBCONTRACTUAL RELATIONS

By appropriate agreement, written where legally required for validity, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, which the Contractor, by these Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ ~~5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS~~

~~§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that~~

~~.1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor in writing; and~~

~~.2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.~~

~~When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.~~

~~§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.~~

~~§ 5.4.3 Upon such assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.~~**5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS**

§ 5.4.1 **Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that**

.1 **assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor in writing; and**

.2 **assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.**

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

§ 5.4.2 **Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.**

§ 5.4.3 **Upon such assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.**

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

§ 6.1.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other construction or operations on the site under Conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such Claim as provided in Article 15.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each separate contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with other separate contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to the construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, separate contractors and the Owner until subsequently revised.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces, the Owner shall be deemed to be subject to the same obligations and to have the same rights that apply to the Contractor under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6 and Articles 10, 11 and 12.

§ 6.2 MUTUAL RESPONSIBILITY

§ 6.2.1 The Contractor shall afford the Owner and separate contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a separate contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Architect apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor so to report shall constitute an acknowledgment that the Owner's or separate contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonably discoverable.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a separate contractor because of the Contractor's delays, improperly timed activities or defective construction. ~~The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a separate contractor's delays, improperly timed activities, damage to the Work or defective construction.~~ The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a separate contractor because of the Contractor's delays, improperly timed activities or defective construction. ~~The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a separate contractor's delays, improperly timed activities, damage to the Work or defective construction.~~

§ 6.2.4 The Contractor shall promptly remedy damage the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or separate contractors as provided in Section 10.2.5.

§ 6.2.5 The Owner and each separate contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.3 OWNER'S RIGHT TO CLEAN UP

If a dispute arises among the Contractor, separate contractors and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 GENERAL

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor and Architect; a Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor; an order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents, and the Contractor shall proceed promptly, unless otherwise provided in the Change Order, Construction Change Directive or order for a minor change in the Work.

§ 7.2 CHANGE ORDERS

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor and Architect stating their agreement upon all of the following:

- **.1** The change in the Work;
- **.2** The amount of the adjustment, if any, in the Contract Sum; and
- **.3** The extent of the adjustment, if any, in the Contract Time.

§ 7.3 CONSTRUCTION CHANGE DIRECTIVES

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- **.1** Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- **.2** Unit prices stated in the Contract Documents or subsequently agreed upon;
- **.3** Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- **.4** As provided in Section 7.3.7.

§ 7.3.4 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed in a proposed Change Order or Construction Change Directive so that application of such unit prices to quantities of Work proposed will cause substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 7.3.5 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.6 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.7 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the method and the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a

reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.7 shall be limited to the following:

.1 Costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance;

.2 Costs of materials, supplies and equipment, including cost of transportation, whether incorporated or consumed;

.3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;

.4 Costs of premiums for all bonds and insurance, permit fees, and sales, use or similar taxes related to the Work; and

.5 Additional costs of supervision and field office personnel directly attributable to the change.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 MINOR CHANGES IN THE WORK

The Architect has authority, subject to Project Manager's approval, to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes will be effected by written order signed by the Architect and shall be binding on the Owner and Contractor.~~The Architect has authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes will be effected by written order signed by the Architect and shall be binding on the Owner and Contractor.~~

ARTICLE 8 TIME

§ 8.1 DEFINITIONS

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 PROGRESS AND COMPLETION

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, prematurely commence operations on the site or elsewhere prior to the effective date of insurance required by Article 11 to be

furnished by the Contractor and Owner. The date of commencement of the Work shall not be changed by the effective date of such insurance.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.3 DELAYS AND EXTENSIONS OF TIME

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by an act or neglect of the Owner or Architect, or of an employee of either, or of a separate contractor employed by the Owner; or by changes ordered in the Work; or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes beyond the Contractor's control; or by delay authorized by the Owner pending mediation and arbitration; or by other causes that the Architect determines may justify delay, then the Contract Time shall be extended by Change Order for such reasonable time as the Architect may determine.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 CONTRACT SUM

The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.2 SCHEDULE OF VALUES

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit to the Architect, before the first Application for Payment, a schedule of values allocating the entire Contract Sum to the various portions of the Work and prepared in such form and supported by such data to substantiate its accuracy as the Architect may require. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 9.3 APPLICATIONS FOR PAYMENT

§ 9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. Such application shall be notarized, if required, and supported by such data substantiating the Contractor's right to payment as the Owner or Architect may require, such as copies of requisitions from Subcontractors and material suppliers, and shall reflect retainage if provided for in the Contract Documents.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or material supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage and transportation to the site for such materials and equipment stored off the site.

§ 9.3.3 ~~The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the~~

~~Owner shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work. The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work.~~

§ 9.4 CERTIFICATES FOR PAYMENT

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Architect determines is properly due, or notify the Contractor and Owner in writing of the Architect's reasons for withholding certification in whole or in part as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data comprising the Application for Payment, that, to the best of the Architect's knowledge, information and belief, the Work has progressed to the point indicated and that the quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion and to specific qualifications expressed by the Architect. The issuance of a Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work, (2) reviewed construction means, methods, techniques, sequences or procedures, (3) reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by the Owner to substantiate the Contractor's right to payment, or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 DECISIONS TO WITHHOLD CERTIFICATION

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- **.1** defective Work not remedied;
- **.2** third party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to the Owner is provided by the Contractor;
- **.3** failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment;
- **.4** reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- **.5** damage to the Owner or a separate contractor;
- **.6** reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- **.7** repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When the above reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.3 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or material or equipment suppliers to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the

Owner makes payments by joint check, the Owner shall notify the Architect and the Architect will reflect such payment on the next Certificate for Payment.

§ 9.6 PROGRESS PAYMENTS

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

§ 9.6.2 The Contractor shall pay each Subcontractor no later than seven days after receipt of payment from the Owner the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and material and equipment suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay or to see to the payment of money to a Subcontractor, except as may otherwise be required by law.

§ 9.6.5 Contractor payments to material and equipment suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 ~~Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum,~~ payments received by the Contractor for Work properly performed by Subcontractors and suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, shall create any fiduciary liability or tort liability on the part of the Contractor for breach of trust or shall entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision. ~~Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors and suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the.~~

§ 9.7 FAILURE OF PAYMENT

~~If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if~~ the Owner does not pay the Contractor ~~within seven days after the date established in the Contract Documents~~ the amount certified by the Architect, ~~or awarded by binding~~ through the dispute resolution process, or a claim, in accordance with the Prompt Payment Act (Neb. Rev. Stat. §81-2402), ~~then the Contractor may, upon seven additional days' written notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shut-down, delay and start-up., plus interest as provided for in the Contract Documents.~~

~~If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' written notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shut-down, delay and start-up, plus interest as provided for in the Contract Documents.~~

§ 9.8 SUBSTANTIAL COMPLETION

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate. Upon such acceptance and consent of surety, if any, the Owner shall make payment of retainage applying to such Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 9.9 PARTIAL OCCUPANCY OR USE

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer as required under Section 11.3.1.5 and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 FINAL COMPLETION AND FINAL PAYMENT

§ 9.10.1 Upon receipt of the Contractor's written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection and, when the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will

constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment and (5), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such ~~lien~~ claim. If such ~~lien~~ claim remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such ~~lien~~ claim, including all costs and reasonable attorneys' fees. ~~Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment and (5), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.~~

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

§ 9.10.4 The making of final payment shall not constitute a waiver of Claims by the Owner ~~except~~ including those arising from

.1 liens, Claims, security interests or encumbrances arising out of the Contract and unsettled;

.2 failure of the Work to comply with the requirements of the Contract Documents; or

.3 terms of special warranties required by the Contract Documents. ~~The making of final payment shall constitute a waiver of Claims by the Owner except those arising from~~

~~**.1** liens, Claims, security interests or encumbrances arising out of the Contract and unsettled;~~

~~**.2** failure of the Work to comply with the requirements of the Contract Documents; or~~

~~**.3** terms of special warranties required by the Contract Documents.~~

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 SAFETY PRECAUTIONS AND PROGRAMS

The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract.

§ 10.2 SAFETY OF PERSONS AND PROPERTY

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to

- **.1** employees on the Work and other persons who may be affected thereby;
- **.2** the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor or the Contractor's Subcontractors or Sub-subcontractors; and
- **.3** other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

§ 10.2.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.

§ 10.2.3 The Contractor shall erect and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent sites and utilities.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3, except damage or loss attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 INJURY OR DAMAGE TO PERSON OR PROPERTY

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 HAZARDOUS MATERIALS

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and report the condition to the Owner and Architect in writing.

§ 10.3.2 Upon receipt of the Contractor's written notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of such material or substance or who are to perform the task of removal or safe containment of such material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased in the amount of the Contractor's reasonable additional costs of shut-down, delay and start-up.

§ 10.3.3 ~~To the fullest extent permitted by law, the Owner shall indemnify and hold harmless, the~~ The Contractor, Subcontractors, Architect, Architect's consultants and agents and employees of any of them ~~from and against claims, damages, losses and expenses, including but not limited to attorneys' fees,~~ shall have the right to file a claim against Owner for damages arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss or expense is due to the fault or negligence of the party seeking indemnity. ~~To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss or expense is due to the fault or negligence of the party seeking indemnity.~~

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§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall indemnify the Owner for the cost and expense the Owner incurs (1) for remediation of a material or substance the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the ~~Owner shall indemnify the~~ Contractor may request a change order and compensation for all cost and expense thereby incurred. ~~If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall indemnify the Contractor for all cost and expense thereby incurred.~~

§ 10.4 EMERGENCIES

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 CONTRACTOR'S LIABILITY INSURANCE

§ 11.1.1 The Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located such insurance as will protect the Contractor from claims

set forth below which may arise out of or result from the Contractor's operations and completed operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

.1 Claims under workers' compensation, disability benefit and other similar employee benefit acts that are applicable to the Work to be performed;

.2 Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;

.3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;

.4 Claims for damages insured by usual personal injury liability coverage;

.5 Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;

.6 Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;

.7 Claims for bodily injury or property damage arising out of completed operations; and

.8 Claims involving contractual liability insurance applicable to the Contractor's obligations under Section 3.18.

.9 Builders Risk Insurance.

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§ 11.1.2 The insurance required by Section 11.1.1 shall be written for not less than limits of liability specified in the Contract Documents or required by law, whichever coverage is greater. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from the date of commencement of the Work until the date of final payment and termination of any coverage required to be maintained after final payment, and, with respect to the Contractor's completed operations coverage, until the expiration of the period for correction of Work or for such other period for maintenance of completed operations coverage as specified in the Contract Documents.

§ 11.1.3 Certificates of insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work and thereafter upon renewal or replacement of each required policy of insurance. These certificates and the insurance policies required by this Section 11.1 shall contain a provision that coverages afforded under the policies will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment as required by Section 9.10.2 and thereafter upon renewal or replacement of such coverage until the expiration of the time required by Section 11.1.2. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness.

§ 11.1.4 The Contractor shall cause the commercial liability coverage required by the Contract Documents to include (1) the Owner, the Architect and the Architect's consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations.

§ 11.2 OWNER'S LIABILITY INSURANCE

~~The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance.~~ The State of Nebraska is self-insured for any loss and purchases excess insurance coverage pursuant to Neb. Rev. Stat. § 81-8,239.01 (Reissue 2008). If there is a presumed loss under the provisions of this agreement, Contractor may file a claim with the Office of Risk Management pursuant to Neb. Rev. Stat. §§ 81-8,829 – 81-8,306 for review by the State Claims Board. The State retains all rights and immunities under the State Miscellaneous (Section 81-8,294), Tort (Section 81-8,209), and Contract Claim Acts (Section 81-8,302), as outlined in Neb. Rev. Stat. § 81-8,209 *et seq.* and under any other provisions of law and accepts liability under this agreement to the extent provided by law.~~The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance.~~

§ 11.3 PROPERTY INSURANCE

§ 11.3.1 ~~Unless otherwise provided, the Owner shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance written on a builder's risk "all-risk" or equivalent policy form in the amount of the initial Contract Sum, plus value of subsequent Contract~~

Modifications and cost of materials supplied or installed by others, comprising total value for the entire Project at the site on a replacement cost basis without optional deductibles. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made as provided in Section 9.10 or until no person or entity other than the Owner has an insurable interest in the property required by this Section 11.3 to be covered, whichever is later. This insurance shall include interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Project. The State of Nebraska is self-insured for any loss and purchases excess insurance coverage pursuant to Neb. Rev. Stat. § 81-8,239.01 (Reissue 2008). If there is a presumed loss under the provisions of this agreement, Contractor may file a claim with the Office of Risk Management pursuant to Neb. Rev. Stat. §§ 81-8,829 – 81-8,306 for review by the State Claims Board. The State retains all rights and immunities under the State Miscellaneous (Section 81-8,294), Tort (Section 81-8,209), and Contract Claim Acts (Section 81-8,302), as outlined in Neb. Rev. Stat. § 81-8,209 *et seq.* and under any other provisions of law and accepts liability under this agreement to the extent provided by law.Unless otherwise provided, the Owner shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance written on a builder's risk "all-risk" or equivalent policy form in the amount of the initial Contract Sum, plus value of subsequent Contract Modifications and cost of materials supplied or installed by others, comprising total value for the entire Project at the site on a replacement cost basis without optional deductibles. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made as provided in Section 9.10 or until no person or entity other than the Owner has an insurable interest in the property required by this Section 11.3 to be covered, whichever is later. This insurance shall include interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Project.

§ 11.3.1.1 11.3.1.1 Property insurance shall be on an "all-risk" or equivalent policy form and shall include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, falsework, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Architect's and Contractor's services and expenses required as a result of such insured loss. Omitted

§ 11.3.1.2 If the Owner does not intend to purchase such property insurance required by the Contract and with all of the coverages in the amount described above, the Owner shall so inform the Contractor in writing prior to commencement of the Work. The Contractor may then effect insurance that will protect the interests of the Contractor, Subcontractors and Sub-subcontractors in the Work, and by appropriate Change Order the cost thereof shall be charged to the Owner. If the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain insurance as described above, without so notifying the Contractor in writing, then the Owner shall bear all reasonable costs properly attributable thereto. Omitted

§ 11.3.1.3 If the property insurance requires deductibles, the Owner shall pay costs not covered because of such deductibles. Omitted

§ 11.3.1.4 This property insurance shall cover portions of the Work stored off the site, and also portions of the Work in transit. Omitted

§ 11.3.1.5 Partial occupancy or use in accordance with Section 9.9 shall not commence until the insurance company or companies providing property insurance have consented to such partial occupancy or use by endorsement or otherwise. The Owner and the Contractor shall take reasonable steps to obtain consent of the insurance company or companies and shall, without mutual written consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse or reduction of insurance.

§ 11.3.2 BOILER AND MACHINERY INSURANCE

The Owner shall purchase and maintain boiler and machinery insurance required by the Contract Documents or by law, which shall specifically cover such insured objects during installation and until final acceptance by the Owner; this insurance shall include interests of the Owner, Contractor, Subcontractors and Sub-subcontractors in the Work, and the Owner and Contractor shall be named insureds. Omitted

§ 11.3.3 LOSS OF USE INSURANCE
The Owner, at the Owner's option, may purchase and maintain such insurance as will insure the Owner against loss of use of the Owner's property due to fire or other hazards, however caused. The Owner waives all rights of action against the Contractor for loss of use of the Owner's property, including consequential losses due to fire or other hazards however caused. Omitted

§ 11.3.4 If the Contractor requests in writing that insurance for risks other than those described herein or other special causes of loss be included in the property insurance policy, the Owner shall, if possible, include such insurance, and the cost thereof shall be charged to the Contractor by appropriate Change Order. Omitted

§ 11.3.5 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, the Owner shall waive all rights in accordance with the terms of Section 11.3.7 for damages caused by fire or other causes of loss covered by this separate property insurance. All separate policies shall provide this waiver of subrogation by endorsement or otherwise. Omitted

§ 11.3.6 Before an exposure to loss may occur, the Owner shall file with the Contractor a copy of each policy that includes insurance coverages required by this Section 11.3. Each policy shall contain all generally applicable conditions, definitions, exclusions and endorsements related to this Project. Each policy shall contain a provision that the policy will not be canceled or allowed to expire, and that its limits will not be reduced, until at least 30 days' prior written notice has been given to the Contractor. Omitted

§ 11.3.7 WAIVERS OF SUBROGATION
The Owner and Contractor waives all rights against (1) each otherOwner and any of their subcontractors, sub-subcontractors, agents and employees, each of the other, and (2) the Architect, Architect's consultants, separate contractors described in Article 6, if any, and any of their subcontractors, sub-subcontractors, agents and employees, for damages caused by fire or other causes of loss to the extent covered by property insurance obtained pursuant to this Section 11.3, or other property insurance applicable to the Work, or self-insurance except such rights as they have to proceeds of such insurance held by the Owner as fiduciary. The Owner or Contractor, as appropriate, shall require of the Architect, Architect's consultants, separate contractors described in Article 6, if any, and the subcontractors, sub-subcontractors, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

§ 11.3.8 A loss insured under the Owner's property insurance shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.3.10. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner. Omitted

§ 11.3.9 If required in writing by a party in interest, the Owner as fiduciary shall, uUpon occurrence of an insured loss, give bond for proper performance of the Owner's duties. The cost of required bonds shall be charged against proceeds received as fiduciary. Tthe Owner shall deposit in a separate account proceeds so received, which the Owner shall distribute in accordance with such agreement as the parties in interest may reach, or as determined in accordance with the method of binding dispute resolution selected in the Agreement between the Owner and Contractor. If after such loss no other special agreement is made and unless the Owner terminates the Contract for convenience, replacement of damaged property shall be performed by the Contractor after notification of a Change in the Work in accordance with Article 7.

§ 11.3.10 The Owner as fiduciary shall have power to adjust and settle a loss with insurers unless one of the parties in interest shall object in writing within five days after occurrence of loss to the Owner's exercise of this power; if such objection is made, the dispute shall be resolved in the manner selected by the Owner and Contractor as the method of binding dispute resolution in the Agreement. If the Owner and Contractor have selected arbitration as the

method of binding dispute resolution, tThe Owner as fiduciary shall make settlement with insurers or, in the case of a dispute over distribution of insurance proceeds, in accordance with the directions of the arbitrators.

§ 11.4 PERFORMANCE BOND AND PAYMENT BOND

§ 11.4.1 The Owner shall have the right to require the Contractor to furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder as stipulated in bidding requirements or specifically required in the Contract Documents on the date of execution of the Contract. As required by Nebraska Revised Statute Section 52-118, the Contractor must submit performance and payment (labor and materials) bonds for any contract with a total cost greater than $15,000. Each bond shall be issued by a corporate surety in an amount not less than the contract price. The State of Nebraska must receive, approve, and secure the bonds prior to entering into the contract. Failure to provide the bonds within 14 days of the notice of award of the contract is grounds to withdraw the award and award the contract to another bidder.Property insurance shall be on an "all-risk" or equivalent policy form and shall include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, falsework, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Architect's and Contractor's services and expenses required as a result of such insured loss.

§ 11.3.1.2 If the Owner does not intend to purchase such property insurance required by the Contract and with all of the coverages in the amount described above, the Owner shall so inform the Contractor in writing prior to commencement of the Work. The Contractor may then effect insurance that will protect the interests of the Contractor, Subcontractors and Sub-subcontractors in the Work, and by appropriate Change Order the cost thereof shall be charged to the Owner. If the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain insurance as described above, without so notifying the Contractor in writing, then the Owner shall bear all reasonable costs properly attributable thereto.

§ 11.3.1.3 If the property insurance requires deductibles, the Owner shall pay costs not covered because of such deductibles.

§ 11.3.1.4 This property insurance shall cover portions of the Work stored off the site, and also portions of the Work in transit.

§ 11.3.1.5 Partial occupancy or use in accordance with Section 9.9 shall not commence until the insurance company or companies providing property insurance have consented to such partial occupancy or use by endorsement or otherwise. The Owner and the Contractor shall take reasonable steps to obtain consent of the insurance company or companies and shall, without mutual written consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse or reduction of insurance.

§ 11.3.2 BOILER AND MACHINERY INSURANCE
The Owner shall purchase and maintain boiler and machinery insurance required by the Contract Documents or by law, which shall specifically cover such insured objects during installation and until final acceptance by the Owner; this insurance shall include interests of the Owner, Contractor, Subcontractors and Sub-subcontractors in the Work, and the Owner and Contractor shall be named insureds.

§ 11.3.3 LOSS OF USE INSURANCE
The Owner, at the Owner's option, may purchase and maintain such insurance as will insure the Owner against loss of use of the Owner's property due to fire or other hazards, however caused. The Owner waives all rights of action against the Contractor for loss of use of the Owner's property, including consequential losses due to fire or other hazards however caused.

§ 11.3.4 If the Contractor requests in writing that insurance for risks other than those described herein or other special causes of loss be included in the property insurance policy, the Owner shall, if possible, include such insurance, and the cost thereof shall be charged to the Contractor by appropriate Change Order.

§ 11.3.5 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, the Owner shall waive all rights in accordance with the terms of Section 11.3.7 for damages caused by fire or other causes of loss covered by this separate property insurance. All separate policies shall provide this waiver of subrogation by endorsement or otherwise.

§ 11.3.6 Before an exposure to loss may occur, the Owner shall file with the Contractor a copy of each policy that includes insurance coverages required by this Section 11.3. Each policy shall contain all generally applicable conditions, definitions, exclusions and endorsements related to this Project. Each policy shall contain a provision that the policy will not be canceled or allowed to expire, and that its limits will not be reduced, until at least 30 days' prior written notice has been given to the Contractor.

§ 11.3.7 WAIVERS OF SUBROGATION

The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents and employees, each of the other, and (2) the Architect, Architect's consultants, separate contractors described in Article 6, if any, and any of their subcontractors, sub-subcontractors, agents and employees, for damages caused by fire or other causes of loss to the extent covered by property insurance obtained pursuant to this Section 11.3 or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by the Owner as fiduciary. The Owner or Contractor, as appropriate, shall require of the Architect, Architect's consultants, separate contractors described in Article 6, if any, and the subcontractors, sub-subcontractors, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

§ 11.3.8 A loss insured under the Owner's property insurance shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.3.10. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner.

§ 11.3.9 If required in writing by a party in interest, the Owner as fiduciary shall, upon occurrence of an insured loss, give bond for proper performance of the Owner's duties. The cost of required bonds shall be charged against proceeds received as fiduciary. The Owner shall deposit in a separate account proceeds so received, which the Owner shall distribute in accordance with such agreement as the parties in interest may reach, or as determined in accordance with the method of binding dispute resolution selected in the Agreement between the Owner and Contractor. If after such loss no other special agreement is made and unless the Owner terminates the Contract for convenience, replacement of damaged property shall be performed by the Contractor after notification of a Change in the Work in accordance with Article 7.

§ 11.3.10 The Owner as fiduciary shall have power to adjust and settle a loss with insurers unless one of the parties in interest shall object in writing within five days after occurrence of loss to the Owner's exercise of this power; if such objection is made, the dispute shall be resolved in the manner selected by the Owner and Contractor as the method of binding dispute resolution in the Agreement. If the Owner and Contractor have selected arbitration as the method of binding dispute resolution, the Owner as fiduciary shall make settlement with insurers or, in the case of a dispute over distribution of insurance proceeds, in accordance with the directions of the arbitrators.

§ 11.4 PERFORMANCE BOND AND PAYMENT BOND

§ 11.4.1 The Owner shall have the right to require the Contractor to furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder as stipulated in bidding requirements or specifically required in the Contract Documents on the date of execution of the Contract.

§ 11.4.2 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 UNCOVERING OF WORK

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, costs of uncovering and replacement shall, by appropriate Change Order, be at the Owner's expense. If such Work is not in accordance with the Contract Documents, such costs and the cost of correction shall be at the Contractor's expense unless the condition was caused by the Owner or a separate contractor in which event the Owner shall be responsible for payment of such costs.

§ 12.2 CORRECTION OF WORK

§ 12.2.1 BEFORE OR AFTER SUBSTANTIAL COMPLETION

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, whether discovered before or after Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

§ 12.2.2 AFTER SUBSTANTIAL COMPLETION

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.4.

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction, whether completed or partially completed, of the Owner or separate contractors caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 ACCEPTANCE OF NONCONFORMING WORK
If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS
§ 13.1 GOVERNING LAW
The Contract shall be governed by the law of the place where the Project is located ~~except that, if the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.~~ ~~The Contract shall be governed by the law of the place where the Project is located except that, if the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.~~

§ 13.2 SUCCESSORS AND ASSIGNS
§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns and legal representatives to covenants, agreements and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 ~~The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate such assignment.~~ Omitted
~~The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate such assignment.~~

§ 13.3 WRITTEN NOTICE
Written notice shall be deemed to have been duly served if delivered in person to the individual, to a member of the firm or entity, or to an officer of the corporation for which it was intended; or if delivered at, or sent by registered or certified mail or by courier service providing proof of delivery to, the last business address known to the party giving notice.

§ 13.4 RIGHTS AND REMEDIES
§ 13.4.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights and remedies otherwise imposed or available by law.

§ 13.4.2 No action or failure to act by the Owner, Architect or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach there under, except as may be specifically agreed in writing.

§ 13.5 TESTS AND INSPECTIONS
§ 13.5.1 Tests, inspections and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of (1) tests, inspections or approvals that do not become requirements until after bids are received or negotiations concluded, and (2) tests, inspections or approvals where building codes or applicable laws or regulations prohibit the Owner from delegating their cost to the Contractor.

§ 13.5.2 If the Architect, Owner or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection or approval not included under Section 13.5.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection or approval by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of

when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.5.3, shall be at the Owner's expense.

§ 13.5.3 If such procedures for testing, inspection or approval under Sections 13.5.1 and 13.5.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure including those of repeated procedures and compensation for the Architect's services and expenses shall be at the Contractor's expense.

§ 13.5.4 Required certificates of testing, inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.5.5 If the Architect is to observe tests, inspections or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.5.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.6 INTEREST

Payments due and unpaid under the Contract Documents shall bear interest ~~from the date payment is due at such rate as the parties may agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.~~as permitted under the Prompt Payment Act Neb. Rev. Stat. §81-2402 et seq.~~Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at such rate as the parties may agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.~~

§ 13.7 TIME LIMITS ON CLAIMS

The Contractor shall commence all claims and causes of action, whether in contract, tort, breach of warranty or otherwise, against the Owner arising out of or related to the Contract ~~in accordance with the requirements of the final dispute resolution method selected in the Agreement~~ within the time period specified by applicable law, ~~but in any case not more than 10 years after the date of Substantial Completion of the Work~~. The ~~Owner and~~ Contractor waives all claims and causes of action not commenced in accordance with this Section 13.7.~~The Owner and Contractor shall commence all claims and causes of action, whether in contract, tort, breach of warranty or otherwise, against the other arising out of or related to the Contract in accordance with the requirements of the final dispute resolution method selected in the Agreement within the time period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all claims and causes of action not commenced in accordance with this Section 13.7.~~

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 TERMINATION BY THE CONTRACTOR

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, for any of the following reasons:

- **.1** Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- **.2** An act of government, such as a declaration of national emergency that requires all Work to be stopped;
- **.3** Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- **.4** The Owner has failed to furnish to the Contractor promptly, upon the Contractor's request, reasonable evidence as required by Section 2.2.1.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, repeated suspensions, delays or interruptions of the entire Work by the Owner as described in Section 14.3 constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' written notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, including reasonable overhead and profit, ~~costs incurred by reason of such termination, and damages.~~ ~~If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' written notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, including reasonable overhead and profit, costs incurred by reason of such termination, and damages.~~

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor or a Subcontractor or their agents or employees or any other persons performing portions of the Work under contract with the Contractor because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' written notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.2 TERMINATION BY THE OWNER FOR CAUSE

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- **.1** repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- **.2** fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;
- **.3** repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- **.4** otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the above reasons exist, the Owner, upon certification by the Initial Decision Maker that sufficient cause exists to justify such action, may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- **.1** Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- ~~**.2** Accept assignment of subcontracts pursuant to Section 5.4;~~ and
- **.32** Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work. ~~**.2** Accept assignment of subcontracts pursuant to Section 5.4; and~~
- ~~**.3** Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.~~

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.3 SUSPENSION BY THE OWNER FOR CONVENIENCE

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay or interruption as described in Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

- **.1** that performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible; or

.2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 TERMINATION BY THE OWNER FOR CONVENIENCE

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of written notice from the Owner of such termination for the Owner's convenience, the Contractor shall

.1 cease operations as directed by the Owner in the notice;

.2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and

.3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination~~, along with reasonable overhead and profit on the Work not executed.~~~~In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination, along with reasonable overhead and profit on the Work not executed.~~

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 CLAIMS

§ 15.1.1 DEFINITION

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim.

§ 15.1.2 NOTICE OF CLAIMS

Claims by either the Owner or Contractor must be initiated by written notice to the other party and to the Initial Decision Maker with a copy sent to the Architect~~, if the Architect is not serving as the Initial Decision Maker~~. Claims by either party must be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.~~Claims by either the Owner or Contractor must be initiated by written notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party must be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21~~

§ 15.1.3 CONTINUING CONTRACT PERFORMANCE

Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents. The Architect will prepare Change Orders and issue Certificates for Payment in accordance with the decisions of the Initial Decision Maker.

§ 15.1.4 CLAIMS FOR ADDITIONAL COST

If the Contractor wishes to make a Claim for an increase in the Contract Sum, written notice as provided herein shall be given before proceeding to execute the Work. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.5 CLAIMS FOR ADDITIONAL TIME

§ 15.1.5.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, written notice as provided herein shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. Owner shall approve additional time in writing and additional time shall not be unreasonably denied. In the case of a continuing delay~~, only one Claim~~ additional written Claim is necessary, and each grant of additional time requires separate written approval by the Owner.~~If the Contractor wishes to make a Claim for an increase in the Contract Time, written notice as provided herein shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.~~

§ 15.1.5.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction.

§ 15.1.6 CLAIMS FOR CONSEQUENTIAL DAMAGES

The Contractor ~~and Owner~~ waives Claims against ~~each other~~ Owner for consequential damages arising out of or relating to this Contract. This ~~mutual~~ waiver includes

~~.1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and~~

.21 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except ~~anticipated~~ profit arising directly from the Work performed.

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This ~~mutual~~ waiver is applicable, without limitation, to all consequential damages due to either ~~party's~~ termination in accordance with Article 14. Nothing contained in this Section 15.1.6 shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents. ~~The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes~~

~~.1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and~~

~~.2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Work.~~

~~This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.6 shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.~~

§ 15.2 INITIAL DECISION

§ 15.2.1 Claims, excluding those arising under Sections 10.3, 10.4, 11.3.9, and 11.3.10, shall be referred to the Initial Decision Maker for initial decision. The ~~Architect~~ Director of the State Building Division will serve as the Initial Decision Maker~~, unless otherwise indicated in the Agreement~~. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to ~~mediation~~ filing of any Claim arising prior to the date final payment is due, unless 30 days have passed after the Claim has been referred to the Initial Decision Maker with no decision having been rendered, or otherwise permitted by law. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner. ~~Claims, excluding those arising under Sections 10.3, 10.4, 11.3.9, and 11.3.10, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim arising prior to the date final payment is due, unless 30 days have passed after the Claim has been referred to the Initial Decision Maker with no decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.~~

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of such request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to all remedies as permitted by law and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution. The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, for relief as permitted by law. , subject to the terms of Section 15.2.6.1. Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of an initial decision, demand in writing that the other party file for mediation within 60 days of the initial decision. If such a demand is made and the party receiving the demand fails to file for mediation within the time required, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision. Omitted **15.2.6.1** Either party may, within 30 days from the date of an initial decision, demand in writing that the other party file for mediation within 60 days of the initial decision. If such a demand is made and the party receiving the demand fails to file for mediation within the time required, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.3 MEDIATION Omitted

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.6 shall be subject to mediation as a condition precedent to binding dispute resolution. Omitted

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings. Omitted

§ 15.3.3 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof. Omitted

§ 15.4 ARBITRATION Omitted

§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded. Omitted

§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim. Omitted

§ 15.4.2 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof. Omitted

§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement shall be specifically enforceable under applicable law in any court having jurisdiction thereof. Omitted

§ 15.4.4 CONSOLIDATION OR JOINDER Omitted

§ 15.4.4.1 Either party, at its sole discretion, may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s). Omitted

§ 15.4.4.2 Either party, at its sole discretion, may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent. Omitted

§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as the Owner and Contractor under this Agreement. Omitted

§ 15.3 MEDIATION

§ 15.3.1 **Claims, disputes, or other matters in controversy arising out of or related to the Contract except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.6 shall be subject to mediation as a condition precedent to binding dispute resolution.**

§ 15.3.2 **The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.**

§ 15.3.3 **The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.**

§ 15.4 ARBITRATION

§ 15.4.1 **If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.**

§ 15.4.1.1 **A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.**

§ 15.4.2 **The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.**

§ 15.4.3 **The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement shall be specifically enforceable under applicable law in any court having jurisdiction thereof.**

§ 15.4.4 CONSOLIDATION OR JOINDER

§ 15.4.4.1 **Either party, at its sole discretion, may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).**

§ 15.4.4.2 **Either party, at its sole discretion, may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.**

§ 15.4.4.3 **The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as the Owner and Contractor under this Agreement.**

SECTION 00 7300

SUPPLEMENTARY CONDITIONS

SUPPLEMENTARY CONDITIONS

1.1 The Supplementary Conditions applicable to this contract is attached following this page.

END OF SECTION

SUPPLEMENTAL CONDITIONS

INDEX

1. OBSOLETE EQUIPMENT

It is important that the AS/State Building Division be protected as much as possible against the discontinuance of the make of equipment to be purchased, and that repair parts, and services of expert factory representatives, be made available if desired. Under these conditions the Contractor shall not furnish equipment not currently in production.

2. CONTRACTOR'S INSURANCE

The Contractor shall not commence work under this Contract until he or she has obtained all the insurance required hereunder and such insurance has been approved by the Owner nor shall the Contractor allow any subcontractor to commence work on his subcontract until all similar insurance required of the subcontractor has been obtained and approved by the Owner (or Contractor). Approval of the insurance by the Owner shall not relieve or decrease the liability of the Contractor hereunder.

If by the terms of any insurance a mandatory deductible is required, or if the Contractor elects to increase the mandatory deductible amount, the contractor shall be responsible for payment of the amount of the deductible in the event of a paid claim.

(a) WORKERS' COMPENSATION INSURANCE

The Contractor shall take out and maintain during the life of this Contract the statutory Workers' Compensation and Employer's Liability Insurance for all of his employees to be engaged in work on the project under this Contract and, in case any such work is sublet, the Contractor shall require the subcontractor similarly to provide Worker's Compensation and Employer's Liability Insurance for all of the latter's employees to be engaged in such work. This policy shall be written to meet the statutory requirements for the state in which the work is to be performed, including Occupational Disease. Where applicable, this policy shall provide USL&H coverage. This policy shall include a waiver of subrogation in favor of the Owner. The amounts of such insurance shall not be less than the limits stated hereinafter.

(b) COMMERCIAL GENERAL LIABILITY INSURANCE AND COMMERCIAL AUTOMOBILE LIABILITY INSURANCE

The Contractor shall take out and maintain during the life of this Contract such Commercial General Liability Insurance and Commercial Automobile Liability Insurance as shall protect him and any subcontractor performing work covered by this Contract from claims for damages for bodily injury, including death, as well as from claims for property damage, which may arise from operations under this Contract, whether such operation be by himself or by any subcontractor or by anyone directly or indirectly employed by either of them, and the amounts of such insurance shall not be less than limits stated hereinafter.

The Commercial General Liability Insurance shall be written on an occurrence basis, and provide Premises/Operations, Products/Completed Operations, Independent Contractors, Personal Injury and Contractual Liability coverages. The policy shall include the Owner, and others as required by the Contract Documents, as an Additional Insured. This policy shall be primary, and any insurance

or self-insurance carried by the Owner shall be considered excess and non-contributory.
The Commercial Automobile Liability Insurance shall be written to cover all Owned, Non-owned and Hired vehicles.

(c) INSURANCE-BUILDER'S RISK

Unless otherwise provided, the Contractor shall purchase and maintain Builder's Risk Insurance for the entire value of the project and work site, from a company or companies lawfully authorized and licensed to do business in the jurisdiction in which the Project is located. This insurance shall be written to cover all risks of direct physical loss, and shall include interests of the Owner, the Contractor, and Sub-contractors in the Work. A loss insured under this insurance shall be adjusted with the Owner and made payable to the Owner as fiduciary for the insured, as their interests may appear.

(d) INSURANCE COVERAGE AMOUNTS REQUIRED

.1 Workers' Compensation and Employer's Liability

Coverage A	Statutory
Coverage B	
Bodily Injury by Accident	$1,000,000 each accident
Bodily Injury by Disease	$1,000,000 policy limit
Bodily Injury by Disease	$100,000 each employee

.2 Commercial General Liability

General Aggregate	$2,000,000
Products/Completed Operations Aggregate	$2,000,000
Personal/Advertising Injury	$1,000,000 any one person
Bodily Injury/Property Damage	$1,000,000 per occurrence
Fire Damage	$50,000 any one fire
Medical Payments	$5,000 any one person

.3 Commercial Automobile Liability

Bodily Injury/Property Damage	$1,000,000 combined single limit

.4 Umbrella/Excess Liability

Over primary insurance	$8,000,000 per occurrence

.5	Builder's Risk	100% of work completed values.

(e) All insurance policies shall bear an appropriate endorsement whereby the insurance carrier:

1. Waives any right of subrogation acquired against Owner by reason of any payment under such policy;
2. The Owner is identified as additional insured on all policies associated with this Subcontract except for Workers' Compensation and professional liability; and,

3. Each policy shall further provide that the Owner receives 30 days prior notice before cancellation of such policy or reduction of coverage there under can be effective.

4. For all insurance policies, the Contractor shall, prior to the performance of this contract and the performance of an option period or 30 days prior to the expiration of insurance coverage, submit to the Owner either (a) a certified copy of the insurance policy actually procured and maintained, or (b) an insurance certificate issued by the insurance company verifying coverage in conformity with this contract.

(f) INSURANCE DEDUCTIBLE

The Contractor shall be responsible for all deductibles or self-insured retentions associated with any accident, incident or damage. The Owner will not assume any liability including, but not limited to the insurance deductible.

(g) NO LIMITATION

The Owner's establishment of minimum insurance requirements is not a representation by the Owner that such limits are sufficient and does not limit the Contractor's liability under this Contract in any manner.

(h) RATING

All insurance policies shall be underwritten by insurance companies with an A.M. Best Rating of at least "A-VIII".

(i) LOWER TIER INSURANCE

The Contractor shall require its subcontractors of every tier to maintain the same insurance coverages and requirements as described herein, unless otherwise agreed in writing between the parties.

(j) CERTIFICATE(S) OF INSURANCE

The Contractor shall furnish the Owner with a current certificate of insurance as evidence of the insurance required, within five (5) business days after execution of this contract. In addition, the Contractor shall furnish evidence of a commitment by the insurance carrier, in the form of an endorsement attached to the certificate, to notify the Owner in writing of any material change, expiration or cancellation of any of the insurance policies required by this contract at least thirty (30) calendar days before such change, expiration or cancellation becomes effective.

3. USE OF JOB SITE

The Contractor shall confine his or her equipment, apparatus, the storage of materials, and operations of his or her workers to limits indicated by law, ordinance, permits, or directions of the AS/State Building Division and shall not unnecessarily encumber the premises with his materials.

The Contractor shall not load or permit any part of a structure to be loaded with a weight that will endanger its safety. The Contractor shall enforce the Consultant's or Architect/Engineer's instructions regarding signs, advertisement, fires, and smoke.

4. LABOR

All labor shall be performed in best and most workmanlike manner by mechanics skilled in their respective trades. The standards of the work required throughout shall be of such quality as will produce only first class results.

Mechanics whose work is unsatisfactory to the Consultant or Architect/Engineer, or are considered to be unskilled or otherwise objectionable, shall be instantly dismissed from the work upon notice to the Contractor from the Consultant or Architect/Engineer.

Contractors and subcontractors employed upon the work shall be required to conform to the labor laws of the State of Nebraska, and the various acts amendatory and supplementary thereto; and to all other laws, ordinances, and legal requirements applicable thereto.

5. UNEMPLOYMENT COMPENSATION FUND

The Contractor shall make payments to the Unemployment Compensation Fund of the State of Nebraska all contributions and interest due under the provisions of Section 48-601 to 48-669, Revised Reissue Statute of Nebraska, on wages paid to individuals employed in the performance of this Contract as required by Section 48-657, Revise Reissued Statute of Nebraska.

Under the requirements of Section 48-657, Revised Reissue Statute of Nebraska, the AS/State Building Division cannot make payment to the Contractor on the final three percent (3%) of the Contract without first receiving from the Contractor a written clearance from the Commissioner of Labor certifying that all payments then due for contributions or interest which may have arisen under such Contract have been made by the Contractor, or his subcontractors, to the Unemployment Compensation Fund.

6. PRECONSTRUCTION CONFERENCE

A preconstruction conference shall be scheduled before starting construction, no later than 15 days after the date of the Agreement. It shall be held at the project site, or other convenient location. The meeting shall review responsibilities and personnel assignments of the Owner, Contractor, and the Consultant.

Authorized representatives of the Owner, Contractor, and the Consultant shall attend the preconstruction conference, as will the Contractor's superintendent, major subcontractors, manufacturers, suppliers, and other parties integral to the completion of the Work. All participants shall be familiar with the project and authorized to make decisions for the entities they represent.

The preconstruction conference will include discussion of items necessary for project progress and successful completion, such as: construction scheduling; critical work sequencing; designation of responsible personnel; procedures for processing field decisions and change orders; procedures for processing Applications for Payment; distribution of Contract Documents; submission of Shop Drawings and product data a samples; preparation of record documents; use of the premises; parking availability; office, work, and storage areas; equipment deliveries and priorities; safety and first aid procedures; security; housekeeping; working hours; and other matters deemed important by the Owner.

7. WORK ELIGIBILITY STATUS OF EMPLOYEES

The Contractor is required and hereby agrees to use a federal immigration verification system to determine the work eligibility status of new employees physically performing services within the State of Nebraska. A federal immigration verification system means the electronic verification of the work authorization program authorized by the Illegal Immigration Reform and Immigrant Responsibility Act of 1996, 8 U.S.C. 1324a, known as the E-Verify Program, or an equivalent federal program designated by the United States Department of Homeland Security or other federal agency authorized to verify the work eligibility status of a newly hired employee.

If the Contractor is an individual or sole proprietorship, the following applies:

1. The Contractor must complete the United States Citizenship Attestation Form, available on the Department of Administrative Services website at www.das.state.ne.us.

2. If the Contractor indicates on such attestation form that he or she is a qualified alien, the Contractor agrees to provide the US Citizenship and Immigration Services documentation required to verify the Contractor's lawful presence in the United States using the Systematic Alien Verification for Entitlements (SAVE) Program.

3. The Contractor understands and agrees that lawful presence in the United States is required and the Contractor may be disqualified or the contract terminated if such lawful presence cannot be verified as required by Neb. Rev. Stat. §4-108.

8. REPRINT OR REPUBLISH

If awarded this contract, bidder hereby grants permission to the State of Nebraska and/or its agencies to reprint or republish any and all copyrighted documents related to this response to Request for Proposal and any and all figures, illustrations, photographs, charts, and other supplementary material online pursuant to Neb. Rev. Stat. §84-602. This waiver does not apply any and all proprietary information properly submitted in a separate sealed package that is clearly marked "Proprietary."

Proprietary Information: Proprietary information is defined as trade secrets, academic and scientific research work which is in progress and unpublished, and other information which if released would give advantage to business competitors and serve no public purpose (see Neb. Rev. Stat. §84-712.05(3)). In accordance with Attorney General Opinions 92068 and 97033, proof that information is proprietary requires identification of specific named competitor(s) advantaged by release of the information and the demonstrated advantage the named competitor(s) would gain by the release of information.

IMPORTANT NOTICE: Pursuant to Neb. Rev. Stat. §84-602.02, all State contracts in effect as of January 1, 2014, and all contracts entered into thereafter, will be posted to a public website. Beginning July 1, 2014, all contracts will be posted to a public website managed by the Department of Administrative Services.

In addition, all responses to Requests for Proposals will be posted to the Department of Administrative

Services public website. The public posting will include figures, illustrations, photographs, charts, or other supplementary material. Proprietary information identified and marked according to state law is exempt from posting. To exempt proprietary information you must submit a written showing that the release of the information would give an advantage to named business competitor(s) and show that the named business competitor(s) will gain a demonstrated advantage by disclosure of information. The mere assertion that information is proprietary is not sufficient. (Attorney General Opinion No. 92068, April 27, 1992) The agency will then determine if the interests served by nondisclosure outweigh any public purpose served by disclosure. Cost proposals will not be considered propriety.

To facilitate such public postings, the State of Nebraska reserves a royalty-free, nonexclusive, and irrevocable right to copy, reproduce, publish, post to a website, or otherwise use any contract or response to this RFP for any purpose, and to authorize others to use the documents. Any individual or entity awarded a contract, or who submits a response to this RFP, specifically waives any copyright or other protection the contract or response to the RFP may have; and, acknowledge that they have the ability and authority to enter into such waiver. This reservation and waiver is a prerequisite for submitting a response to this RFP and award of the contract. Failure to agree to the reservation and waiver of protection will result in the response to the RFP being non-conforming and rejected.

Any entity awarded a contract or submitting a RFP agrees not to sue, file a claim, or make a demand of any kind, and will indemnify, hold, and save harmless the State and its employees, volunteers, agents, and its elected and appointed officials from and against any and all claims, liens, demands, damages, liability, actions, causes of action, losses, judgments, costs, and expenses of every nature, including investigation costs and expenses, settlement costs, and attorney fees and expenses ("the claims"), sustained or asserted against the State, arising out of, resulting from, or attributable to the posting of contracts, RFPs and related documents.

9. WARRANT OF CONTENT

Bidder represents and warrants that the content of this response to Request for Proposal and all figures, illustrations, photographs, charts, and other supplementary material herein are original and do not libel anyone or infringe upon any patent, copyright, proprietary right, or any other right whatsoever of any other party. Bidder represents and warrants that he/she has full power and authority to execute this Copyright Release and to grant the State of Nebraska and/or its agencies the right granted herein.

10. INDEMNIFY, DEFEND AND HOLD HARMLESS

Bidder agrees to indemnify, defend, and hold harmless the State of Nebraska and/or its agencies against any and all claims, suits, and/or judgments, including costs, expenses, damages, and reasonable legal fees based upon and arising from Bidder's violation of the rights of others and/or by reason of a breach of any of the foregoing warranties.

END OF SUPPLEMENTAL CONDITIONS

MID-STATE
ENGINEERING & TESTING

REPORT OF GEOTECHNICAL INVESTIGATION

CENTRAL NEBRASKA VETERANS HOME FACILITY KEARNEY, NEBRASKA

M.S. PROJECT NO. 200-08-22
NOVEMBER 18, 2015
A-801

Prepared for:

Wilkins, Hinrichs, Stober Architects
2908 West 39th Street, Suite A
Kearney, NE 68845

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MID-STATE
ENGINEERING &
TESTING, INC.

REPORT OF GEOTECHNICAL INVESTIGATION

CENTRAL NEBRASKA VETERANS HOME FACILITY KEARNEY, NEBRASKA

M.S. PROJECT NO. 200-08-22
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INTRODUCTION

This report presents the results of the feasibility study performed at the site of a proposed Central Nebraska Veterans Home facility in Kearney, NE. The proposed site is located in the northeast quadrant of the intersection of Cherry Avenue and 56th Street on the east edge of Kearney, Nebraska. This report was authorized by Mr. Fred Zarate of State of Nebraska Department of Administrative Services based on our written proposal dated August 18th, 2015.

Included in this investigation were ten (10) soil borings, laboratory testing, and a report of conclusions and recommendations. The scope of our report was limited to the following:

- Identify in-situ soil conditions.
- Evaluating the engineering properties of the subgrade soils.
- Providing preliminary foundation design options.
- Evaluating soil bearing capacity and settlement.
- Evaluating soil characteristics for seepage analysis.
- Providing recommendations for earthwork and soil related construction with respect to the soils encountered.

This report was prepared by Mid-State Engineering and Testing, Inc., under the direct supervision of a professional engineer registered in the State of Nebraska. Recommendations are based on the applicable standards of the profession at the time of this study. This study has been prepared for the exclusive use of the State of Nebraska Department of Administrative Services for specific

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application to the planned development. All work was conducted in accordance with generally accepted soil and foundation engineering practices.

PROPOSED CONSTRUCTION

The proposed new Veterans facility site consists of an approximate 75 acre parcel located east of Cherry Avenue on 56th Street. Based on information provided, the project will consist of several one story, slab on grade, conventional wood and metal frame structures. Storm Shelters constructed with CMU block walls with precast mezzanines will be included in some of the buildings (Buildings A-H, J and K). Concrete or asphalt parking and drive areas are planned throughout the facility. And finally, a small fishing pond is planned near the center of the facility north of the proposed main building.

Structural information provided indicates a maximum wall load of 4 kips per lineal foot and isolated column loads up to 60 kips are indicated.

The proposed site is relatively level and currently used for row crop production. To provide positive drainage off and away from the facility, it is expected finish floor elevations will be established about 2 to 4 feet above existing grades.

FIELD WORK

The field investigation was conducted on November 7, 2015. The exploratory program consisted of ten (10) soil borings (one (1) at each structure, excluding the hubs), each extending to a depth of 15 feet below existing site elevations. Soil borings were completed with a Mobil truck-mounted rotary drilling rig using 4 ½-inch continuous flight augers. Boring locations are noted on the included Site Plan (Appendix A).

Soil samples were obtained at the sampling intervals noted on the Boring Logs (Appendix B). Recovered samples were extruded in the field, sealed in plastic containers, labeled, and protected for transportation to the laboratory for testing. Undisturbed samples, designated "U" samples were obtained with a 3.0-inch (outside diameter), thin-walled, tube samplers hydraulically pushed in general accordance with ASTM D1587-00 (Thin Walled Tube Sampling of Soils). Split-barrel samples, designated "S" samples, were obtained while performing Standard Penetration Tests (SPT) with a 1.50-inch (inside diameter), thick-walled sampler driven in accordance with ASTM D1586-84 (Penetration Test and Split-Barrel Sampling of Soils). The N-value, reported in blows per foot, equals the number of blows required to drive the split-barrel sampler over the last 12-inches of a normal 18-inch sampling interval.

The field boring logs were prepared by an experienced soils engineer in accordance with ASTM D2488-00, (Description of Soils by the Visual-Manual Procedure). Stratification lines represent the approximate boundary between soil types. In situ, the transition between sediments may be gradual.

LABORATORY TESTING

The field boring logs were reviewed to outline the depth, thickness, and extent of each soil stratum encountered. Based on site stratigraphy and the construction proposed, a testing program was established to evaluate the engineering properties of the bearing strata. Specific tests performed include:

- Moisture Contents
- Unit Weight Determinations
- Unconfined Compression Tests
- One Dimensional Consolidation Tests
- #200 Washed Sieve Analysis
- Atterberg Limits Testing

All tests were conducted in general accordance with current ASTM or state-of-the-art test procedures. Laboratory test results are presented in Appendix C.

Moisture contents and unit weight determinations were used to determine the overall uniformity/variability of the soils for the evaluation of bearing capacity and settlement.

Unconfined compression tests define the stress versus strain characteristics and related shear strengths of the soil.

The One-Dimensional Consolidation test defines the load/settlement relationship of the bearing soils.

Atterberg limits and the #200 washed sieve analysis were used to determine plasticity characteristics and to classify the soils using the Unified Soil Classification System (USCS).

Based on the results of this testing program, the field logs were reviewed and supplemented as shown in Appendix B. These final logs represent our interpretation of the field logs and reflect the additional information gained from the laboratory testing program.

SITE CONDITIONS

The proposed parcel is relatively level consisting of agricultural land currently being used for row crop production. Currently there is approximately 2 feet of variance in elevation across the site, with general site drainage towards the southeast. Little sign of prior development was noted on the surface of the site.

SOIL CONDITIONS

This site is situated in the higher elevations within the Historic Platte River flood plain. The generalized subsurface profile for this area consists of wind deposited Loessal soils atop water deposited soils of various ages. To the depth investigated, the soils encountered on this site consist

of development zone soils which overlie Colluvial sediments and Altered Loess (Peorian Age) deposits. Alluvial sands were encountered near the bottom of a majority of the boring locations.

Fill material was encountered below the development zone at the DH-2 boring location, extending to a depth of 1 foot. This thin layer of material consisted of brick and debris and visually classified as a very dark grey, moist, firm, moderately plastic lean clays with trace amounts of fine sand (CL).

Colluvial deposits were encountered directly below the development zone and fill material in all the boring locations, extending to depths ranging from 3 ½ to 6 feet below existing grades. These sediments were described as dark brown and light brown, moist, firm, lean clays. Specific in-situ engineering properties are as follows:

Moisture Contents (%)	14 – 24
Dry Unit Weights (pcf)	87 – 105
Percent Passing #200 Sieve (%)	94 – 99
Unconfined Compressive Strength (tsf)	0.7 – 2.4
Plastic Index (PI)	24 – 27

Based on Atterberg Limits testing and visual evaluation, these deposits classify as moderate to highly plastic lean (CL) soils with trace fine sands.

Altered Loess (Peorian Age) deposits were encountered below the Colluvial deposits in all 10 borings, extending to depths of approximately 13 feet below existing grades in drill hole locations DH-1, DH-3, DH-4, DH-5 and DH-6 and beyond the 15 foot depths investigated in the DH-2 and DH-7 through DH-9 locations. These sediments were described as light brown and brown, moist to very moist, firm, lean clays with trace fine sands. Specific in-situ engineering properties are as follows:

Moisture Contents (%)	18 – 32
Dry Unit Weight (pcf)	86 – 98
Percent Passing #200 Sieve (%)	98 – 99
Unconfined Compressive Strength (tsf)	0.9 – 1.1

Based on laboratory testing and visual evaluation, these deposits classified as low to moderately plastic lean clays (CL) with trace fine sands.

Alluvial sands were encountered below the Altered Loess deposits in boring locations DH-1, DH-3, DH-4, DH-5 and DH-6, extending beyond the bottom of the 15 foot borings. These sediments were described as light grey brown and light brown, moist, very loose to dense, poorly graded sands. Specific in-situ engineering properties are as follows:

Moisture Contents (%)	1 – 2
Material Passing #200 Sieve (%)	1 – 5
SPT Blow Counts (N)	4 – 46

Based on laboratory testing and visual evaluation, these deposits classified non plastic poorly graded fine sand (SP) with trace fines.

GROUNDWATER

At the time of drilling, groundwater was not encountered within the maximum 15 foot boring depths and consequently not expected to significantly impact the slab on grade construction expected at this time. It must be recognized, however, that relatively high soil moisture was encountered in the cohesive soils near the bottom of the borings. It should be noted that fluctuations in groundwater level may occur due to seasonal variations in rainfall, surface runoff, temperature, or other factors not evident at the time measurements were made.

Based on the site proximity to the Platte River, seasonal fluctuation on the order of 2 to 4 feet are typical in this region. Seasonal high groundwater levels typically occur in the spring prior to the start of the irrigation season. Long term monitoring would be required to determine seasonal and historical high water levels.

CONCLUSIONS AND RECOMMENDATIONS

GENERAL

Based on the soil conditions indicated, this site appears to be suitable for the planned development. With some minimal site modifications the site soils are generally capable of supporting the proposed structures and groundwater was not encountered across the site and consequently not expected to impact the anticipated slab on grade construction. Based on the site elevations, site grading will be required to raise the site to provide surface drainage away from the structure.

The primary concern for site development is the control of total and differential settlement across the site and the potential for additional areas of undocumented fill. Undocumented fill material was encountered in boring location DH-2 at the surface and based on a preliminary site investigation, additional fill (some deeper) is to be expected across the site. With construction taking place across such a large site, undocumented fill material could become widespread and create inconsistencies across each building. To alleviate the variable soils conditions, we recommend addition excavation to provide compacted structural fill below and around all load bearing footings. In addition, we recommend all overexcavations be observed by the engineer prior to placing fill in order to identify any inconsistencies and instability that may be present.

Based on design information provided and the information gained from the site investigation and laboratory testing, we recommend all load bearing footings bear atop a minimum of two (2) feet of structural fill constructed as outlined in the following sections of this report. In addition, we recommend a minimum of 12 inches of structural fill below all floor slabs and exterior pavements. We recommend all subgrades be observed by the Engineer to verify suitability and stability of the subgrade. Any instability indicated at that time will be addressed by the Engineer.

While building elevations have not yet been determined, it is anticipated the site will be elevated a minimum of 2 to 4 feet to provide drainage off and away from the proposed structures. Consequently, it appears additional excavation to provide the recommended two (2) feet of fill below frost depth foundations will be minimal and a majority of the fill to raise the site will be sufficient for interior foundations (2 feet minimum).

With regards to the fishing pond, the soils present in the upper 13 feet are generally suitable for creating a clay liner and sealing the fishing pond adequately. It should be noted that Alluvial sands (poorly graded, fine clean sands) were encountered near the bottom of the 15 foot borings and will be detrimental to keeping the pond full in dry years if the floor of the fishing pond is not situated at depth significantly above the sands and sealed utilizing moisture conditioned, properly compacted lean clay soils.

Recommendations regarding these and other aspects of this project are included in the following sections of this report.

FOUNDATION ANALYSIS

In order to meet the previous criteria, we have explored both the bearing capacity and load settlement characteristics of the on-site soil, assuming maximum loads of 4 klf for walls and 60 kips for isolated columns. The bearing capacity is based on a factor of safety of 3 against the full dead load plus normal live loads. A maximum total settlement of 1 inch and a differential settlement of ½ to ¾ inch
are generally considered acceptable and were used in our analysis. The allowable bearing pressure is expressed in terms of the net pressure transferred to the soil.

In the event the recommendations presented in this report are followed and footings are founded atop a minimum of two (2) feet of structural fill soils constructed as outlined in this report, a net allowable soil bearing pressure of up to 2,000 pounds per square foot may be utilized for the design of shallow foundation elements. Foundation elements designed in this manner will limit maximum total settlement, due to the foundation loads, to approximately ¾ inch or less while limiting differential settlement to approximately ½ inch per 100 lineal feet.

We recommend exterior footings and footings in unheated areas be founded at a minimum depth of 40 inches below surrounding grade for frost protection. Interior footings may be placed directly below the floor slab. All footings will require steel reinforcement and should conform to local code sizes.

We recommend concrete for footings be designed utilizing a minimum cement content of 517 lbs/yd^3 and a minimum compressive strength of 3500 psi. Most 6 sack sand and gravel mixes will meet these requirements.

EARTHWORK AND EXCAVATIONS

Prior to overall site grading, we recommend all topsoil and vegetation be stripped from site. In addition we recommend an additional 1 foot of old fill material (if encountered) be removed and the resultant subgrade scarified, moisture conditioned and recompacted in the presence of the Engineer. Any instability detected during performance of this work will need to be addressed as recommended by the soils engineer.

Based on laboratory testing it appears that all on-site soils will be suitable for use as structural fill for this project. We recommend structural fill for this project consist of select clean lean clay soils having a Plastic Index between 12 and 25. Low plastic silts and clean sand fill which can trap and hold water are not recommended for this project unless provisions are provided to drain any free draining granular fill layer. Off-site borrow material should be lean clay soils similar to the cohesive soils encountered across the site.

We recommend fill and backfill material below foundations and floor slabs be placed in loose lifts of 8-inches or less, with each lift compacted with a sheepsfoot type compactor. Based on expected structural loads, we recommend structural fill be compacted to a minimum of 95 percent of the material's standard proctor maximum dry density (ASTM D698-00). For ease of construction, we recommend soil moisture at the time of compaction be controlled within -3 and +3 percent of optimum.

Vertical cuts and excavations may stand for short periods but should not be considered stable in any case. The soils encountered in the soil borings classify as type B and C soils according to OSHA's Construction Standards for Excavations. In general, the maximum allowable slope for shallow excavations in a type B soil is 1H:1V and a type C soil is 1½H:1V. Trenching and excavation activities should conform to federal and local regulations. Based on the soil conditions encountered, vertical excavations will be acceptable for cuts up to six (6) feet.

We recommend a technician working under the supervision of an experienced soils engineer periodically monitor earthwork operations to evaluate compliance with the above recommendations.

FLOOR SLAB SUBGRADES

It is anticipated the site will be elevated 2 to 4 feet to promote positive drainage. Based on the somewhat variable consistency across the site, we recommend, a minimum of twelve (12) inches of structural fill be provided below all floor slabs. We recommend structural fill be compacted to a minimum of 95 percent of the material's standard Proctor maximum dry density (ASTM D-698). If a granular cushion is used beneath the floor slab, this layer should be free-draining and compacted by vibration prior to pouring concrete.

We recommend that concrete for floor slabs have a minimum cement content of 564 lbs/yd^3, and a minimum compressive strength of 3500 psi. A standard 6-sack non air entrained sand and gravel mix, placed at a normal water/cement ratio (less than 0.45) works well for light traffic floor slabs. This mix may also be used for exterior sidewalks by increasing the entrained air content to 5 to 8 percent.

PAVEMENT SUBGRADES

Pavement performance is directly affected by the degree of compaction, uniformity, and stability of subgrade soils. This is particularly important where heavy traffic is expected. Based on traffic consisting of light truck and car traffic with the occasional heavy truck, we recommend providing a minimum of 12 inches of structural fill below all exterior parking and drive areas except for the Fire Access Lane. Within this area we recommend providing a minimum of 24 inches structural fill below the grid tile system.

We recommend structural fill below paving be compacted to a minimum of 95 percent of the material's standard Proctor maximum dry density (ASTM D-698), with soil moisture controlled between +/- 3% of optimum (ASTM D-698). We recommend structural fill consist of materials as outlined in the "Earthwork and Excavations" section of this report.

Based on our experience with similar sites and the proposed site covering a vast area with variable soil conditions (consistency, mode of deposition, natural/fill) at the surface, we recommend all excavated subgrades be proof-rolled in the presence of the engineer prior to placing structural fill below pavement sections. Instability issues detected will need to be addressed as directed by the engineer.

For a subgrade consisting of the recommended select lean clay soils, a soaked CBR of four (4) and a corresponding modulus of subgrade reaction (k for pavements) of 125 pci is recommended for pavement design. Pavement thickness should be determined based on traffic volume and standard pavement design procedures. In no instance should concrete paving be less than 6 inches in thickness.

If a higher soaked CBR and corresponding modulus of subgrade reaction are desired, a subbase material can be incorporated into the pavement design. Crushed concrete is readily available in the area and has proven very effective as a subbase material. If this option is considered, we recommend a minimum thickness of 8 inches be provided below the concrete pavement. We recommend the subbase material be compacted to a minimum of 95 percent of the material's standard Proctor maximum dry density (ASTM D-698), with soil moisture controlled between +/- 3% of optimum (ASTM D-698). A soaked CBR of ten (10) and a modulus of subgrade reaction of 200 pci is recommended in the overall pavement section design process.

We recommend Portland cement concrete be air-entrained (5 – 7 ½ percent) and have a minimum compressive strength of 4000 psi (600 psi flexural strength). State of Nebraska Type 47B concrete has proven to be very durable in this area.

RECREATIONAL POND

Currently, a small recreational pond (fishing) is planned near the center of the campus just north of the main building. At this time exact pond size and depths have not been determined.

Based on the information provided from the two (2) borings preformed within the area (DH-6 and DH-7) of the proposed holding pond, soils consisted of cohesive Colluvial and Altered (Peorian Age) Loess and in turn Alluvial Sands in DH-6. Generally, these cohesive soils will be suitable for constructing a soil liner for sealing the proposed fishing pond. It should be noted the Alluvial sands present in the base of DH-6 will not be suitable for sealing the recreational pond. Consequently, the floor of the proposed pond will need to be sealed from these sands to maintain water levels within the pond. Care should be taken in order to keep a consistent interface between the two materials and mixed on the two soil types is minimal. A thicker clay liner could be utilized in the floor to help alleviate the potential of mixing.

While permeability testing was not conducted on a remolded sample of these soils, soil classification testing was conducted. Laboratory testing indicated Plastic Indices (PI) ranging from 24 to 27 in the cohesive soils within the proposed pond area. Based on our experience with similar soils, a permeability coefficient of the in-situ soils would be on the order of 10^{-5} in their natural state. Properly moisture conditioning (0 to +4% of optimum) and compacting of the onsite soils as outlined in the earthwork section of this report could provide a permeability coefficient on the order of 10^{-7}.

With regards to erosion, erosion potential is dependent on the size, shape and alignment of the lagoon, and the materials used in the embankments. The site soils themselves were evaluated as to their susceptibility to erosion both in their natural and remolded states based on established Federal Bureau of Reclamation criteria (Appendix D). Generally, the cohesive site soils, which will be used for liner construction, provide moderate to high resistance to erosion.

While the soils themselves are not considered erosive, wave action can have a detrimental effect on the soil liner. Consequently, we recommend side slopes (in cut areas) be overbuilt to minimize problems due to normal erosion of an earthen embankment.

SURFACE DRAINAGE

The success of a shallow foundation system is contingent upon keeping the subgrade soils at relatively constant moisture content and by not allowing surface drainage to migrate to bearing soils. Positive surface drainage away from structures must be maintained at all times.

During construction, temporary grades should be established to prevent runoff from entering excavations or footing trenches. Backfill should be placed when structural strength requirements are met and should be graded to drain away from the construction zone. Due to the moisture sensitive nature of bearing soils across this site, sand backfill should not be allowed on this project.

The final grade of foundation backfill and any overlying pavement should have a positive slope away from foundation walls on all sides. A minimum slope of 1-inch per foot for the first 5 to 10 feet is recommended. The slope may be decreased if the ground surface adjacent to foundations is

covered with concrete slabs or asphalt pavement. A minimum slope of 2% is recommended for all other areas of the site. Pavements and exterior slabs next to structures should be carefully sealed against moisture intrusion at the joints.

GENERAL COMMENTS

If any changes in the nature, design, or location of this project are planned, the conclusions and recommendations contained in this report shall not be considered valid unless those changes are reviewed and the conclusions of this report either modified or verified in writing by a Mid-State Geotechnical Engineer.

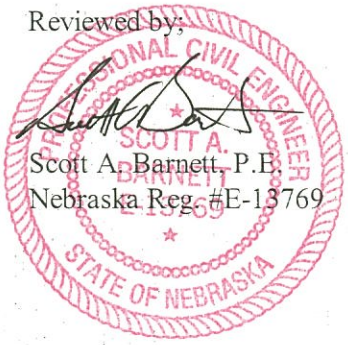
The analysis and recommendations submitted in this report are based in part upon the data obtained from ten (10) soil borings. The nature and extent of variations between borings may not become evident until construction. If variations appear, it may then be necessary to reevaluate the recommendations of this report.

It is recommended a Mid-State Geotechnical Engineer be allowed to review the final project design and specifications. It is also recommended the geotechnical engineer be retained to provide QA/QC testing services during the excavation, earthwork, and foundation construction phases of the project. This is to verify compliance with the proposed design, project specifications, or final recommendations and to modify these recommendations if subsurface conditions differ from those expected.

Respectfully submitted,
Mid-State Engineering and Testing, Inc.

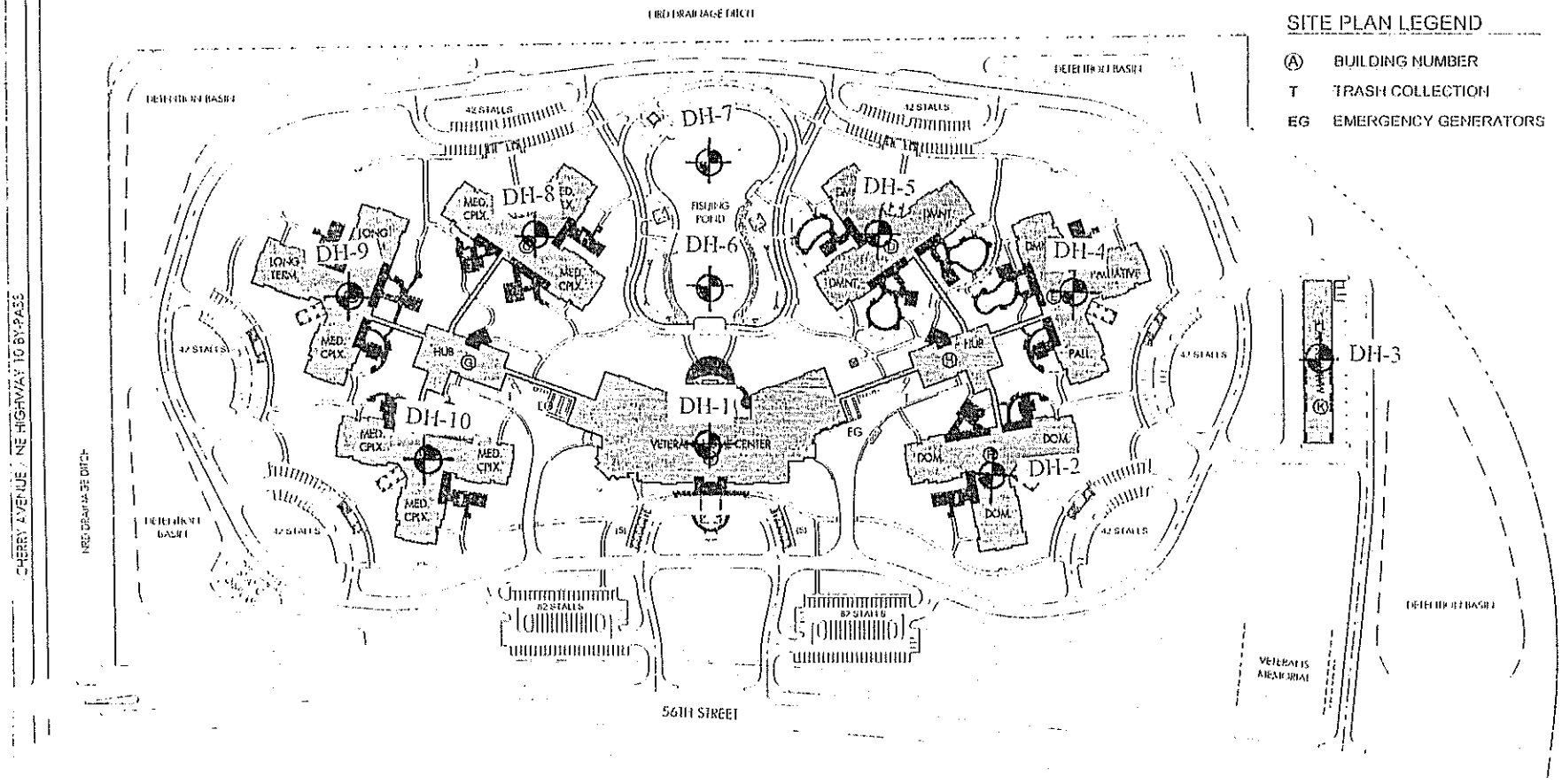
Jerry Stithem, E.I.T.
Project Engineer

Reviewed by:



Scott A. Barnett, P.E.
Nebraska Reg. #E-13769

APPENDIX A
BORING LOCATION PLAN



MID-STATE

ENGINEERING & TESTING, INC.

279 ROAD 'D', COLUMBUS, NE. 68601

BORING LOCATION PLAN

VETERANS HOME FACILITY

KEARNEY, NEBRASKA

APPENDIX B
BORING LOGS

MID-STATE ENGINEERING & TESTING, INC.

BORING LOG

PROJECT	Veterans Home
LOCATION	Kearney, Nebraska
JOB NO.	200-08-22
DATE	11/7/2015

DRILL HOLE NO.	LOCATION OF DRILL HOLE	ELEVATION	DATUM	TOTAL DEPTH
DH-1	N 40 43' 44.5" W 99 01' 16.3"			15

WATER LEVEL OBSERVATIONS			TYPE OF SURFACE	DRILLER
WHILE DRILLING	END OF DRILLING	HOURS	Top Soil	Robert Reiling
			DRILLING METHOD	LOGGER
			4 1/2' Continious Flight Auger	Richard Ringler

DEPTH FT	SAMPLE NO. & TYPE	N° BLOWS / FT	REC %	COLOR	MOIST	CONS.	SOIL TYPE (Class)	GEOLOGIC DESCRIPTION & OTHER REMARKS	MOIST %	DRY WEIGHT PCF	QU TSF	DEPTH FT
				Brown	Moist	Firm	CL	Top Soil				
	U-1			Dk Brn	Moist	Firm	CL	**COLLUVIAL DEPOSITS** Roots and Root Holes	24.6	96.0		
				Lt Brn					20.4	87.8		
5	U-2											5
				Brown	Moist	Firm	CL	**ALTERED LOESS (PEORIAN AGE)**				
	U-3								28.2	87.1		
10												10
15	S-4	13/22/24 (46)		Lt Brn	Moist	Dense	SP	**ALLUVIAL SANDS**	1.4			15
								Bottom of Hole 15.0'				
20												20
25												25
30												30
35												35

MID-STATE ENGINEERING & TESTING, INC.

BORING LOG

PROJECT: Veterans Home
LOCATION: Kearney, Nebraska
JOB NO.: 200-08-22
DATE: 11/7/2015

DRILL HOLE NO.	LOCATION OF DRILL HOLE	ELEVATION	DATUM	TOTAL DEPTH
DH-2	N 40 43' 44.3" W 99 01' 11.7"			15

WATER LEVEL OBSERVATIONS			TYPE OF SURFACE	DRILLER
WHILE DRILLING	END OF DRILLING	HOURS	Top Soil	Robert Reiling
			DRILLING METHOD	LOGGER
			4 1/2' Continious Flight Auger	Richard Ringler

DEPTH FT	SAMPLE NO. & TYPE	N" BLOWS / FT.	REC %	COLOR	MOIST	CONS.	SOIL TYPE (Class)	GEOLOGIC DESCRIPTION & OTHER REMARKS	MOIST %	DRY WEIGHT PCF	QU TSF	DEPTH FT.
				Brown	Moist	Firm	CL	Top Soil				
	U-1			Vr Dk Brn	Moist	Firm	CL	Fill Materal w/ Brick and Debris	25.1			
				Lt Brn	Moist	Firm	CL	**COLLUVIAL DEPOSITS**				
5	U-2								22.9	97.0	2.4	5
				Lt Brn	Moist	Firm	CL	**ALTERED LOESS (PEORIAN AGE)**				
10	U-3								32.0	89.4		10
15	S-4	6/14/14 (28)							27.7			15
								Bottom of Hole 15.0				
20												20
25												25
30												30
35												35

MID-STATE ENGINEERING & TESTING, INC.

BORING LOG

PROJECT	Veterans Home
LOCATION	Kearney, Nebraska
JOB NO.	200-08-22
DATE	11/7/2015

DRILL HOLE NO.	LOCATION OF DRILL HOLE	ELEVATION	DATUM	TOTAL DEPTH
DH-3	N 40 43' 46" W 99 01' 04.7"			15

WATER LEVEL OBSERVATIONS			TYPE OF SURFACE	DRILLER
WHILE DRILLING	END OF DRILLING	HOURS	Top Soil	Robert Reiling
			DRILLING METHOD	LOGGER
			4 1/2' Continious Flight Auger	Richard Ringler

DEPTH FT	SAMPLE NO & TYPE	N° BLOWS /FT	REC %	COLOR	MOIST	CONS.	SOIL TYPE (Class)	GEOLOGIC DESCRIPTION & OTHER REMARKS	MOIST %	DRY WEIGHT PCF	QU TSF	DEPTH FT.
				Brown	Moist	Firm	CL	Top Soil				
	U-1			Brown	Moist	Firm	CL	**COLLUVIAL DEPOSITS**	21.7	101.0		
				Lt Brn								
5	U-2							Very Blocky	23.9	89.1	1.0	5
				Lt Brn	Moist	Firm	CL	**ALLTERED LOESS (PEORIAN AGE)**				
10	U-3								23.8	98.3		10
15	S-4	5/6/7 (13)		Lt Brn	Moist	Firm	SP	**ALLUVIAL SANDS**	1.8			15
								Bottom of Hole 15.0'				
20												20
25												25
30												30
35												35

MID-STATE ENGINEERING & TESTING, INC.

BORING LOG

PROJECT: Veterans Home
LOCATION: Kearney, Nebraska
JOB NO.: 200-08-22
DATE: 11/7/2015

DRILL HOLE NO.	LOCATION OF DRILL HOLE	ELEVATION	DATUM	TOTAL DEPTH
DH-4	N 40 43' 49.5" W 99 01 08.1"			15

WATER LEVEL OBSERVATIONS			TYPE OF SURFACE	DRILLER
WHILE DRILLING	END OF DRILLING	HOURS	Top Soil	Robert Reiling
			DRILLING METHOD	LOGGER
			4 1/2' Continious Flight Auger	Richard Ringler

DEPTH FT	SAMPLE NO. & TYPE	N° BLOWS / FT	REC %	COLOR	MOIST	CONS.	SOIL TYPE (Class)	GEOLOGIC DESCRIPTION & OTHER REMARKS	MOIST %	DRY WEIGHT PCF	QU TSF	DEPTH FT.
				Brown	Moist	Firm	CL	Top Soil				
	U-1			Dk Brn	Moist	Firm	CL	**COLLUVIAL DEPOSITS**	20.7			
				Lt Brn								
5	U-2			Lt Brn	Moist	Firm	CL	**ALTERED LOESS (PEORIAN AGE)** Somewhat Silty	17.5	87.3	1.1	5
	U-3											
10									25.3	91.6		10
15	S-4	6/9/12 (21)		Lt Brn	Moist	Firm	SP	**ALLUVIAL SANDS** Fine Grained	2.1			15
								Bottom of Hole 15.0'				
20												20
25												25
30												30
35												35

MID-STATE ENGINEERING & TESTING, INC.

BORING LOG

PROJECT	Veterans Home
LOCATION	Kearney, Nebraska
JOB NO.	200-08-22
DATE	11/7/2015

DRILL HOLE NO.	LOCATION OF DRILL HOLE	ELEVATION	DATUM	TOTAL DEPTH
DH-5	N 40 43' 50.0" W 99 01' 11.3"			15

WATER LEVEL OBSERVATIONS			TYPE OF SURFACE	DRILLER
WHILE DRILLING	END OF DRILLING	HOURS	Top Soil	Robert Reiling
			DRILLING METHOD	LOGGER
			4 1/2' Continious Flight Auger	Richard Ringler

DEPTH FT	SAMPLE NO. & TYPE	N° BLOWS / FT	REC %	COLOR	MOIST	CONS.	SOIL TYPE (Class)	GEOLOGIC DESCRIPTION & OTHER REMARKS	MOIST %	DRY WEIGHT PCF	QU TSF	DEPTH FT
				Brown	Moist	Firm	CL	Top Soil				
	U-1			Dk Brn	Moist	Firm	CL	**COLLVUIAL DEPOSITS**	15.4	104.9		
				Lt Brn								
5	U-2			Lt Brn	Moist	Firm	CL	**ALTERED LOESS (PEORIAN AGE)** Somewhat Silty	19.3	86.2	0.9	5
10	U-3								27.2	91.4		10
15	S-4	1/2/4 (6)		Lt Brn	Moist	Firm	SP	**ALLUVIAL SANDS** Fine Grained	1.5			15
								Bottom of Hole 15.0'				
20												20
25												25
30												30
35												35

MID-STATE ENGINEERING & TESTING, INC.

BORING LOG

PROJECT	Veterans Home
LOCATION	Kearney, Nebraska
JOB NO.	200-08-22
DATE	11/7/2015

DRILL HOLE NO.	LOCATION OF DRILL HOLE	ELEVATION	DATUM	TOTAL DEPTH
DH-6	N 40 43' 47.6" W 99 01' 16.2"			15

WATER LEVEL OBSERVATIONS			TYPE OF SURFACE	DRILLER
WHILE DRILLING	END OF DRILLING	HOURS	Top Soil	Robert Reiling
			DRILLING METHOD	LOGGER
			4 1/2' Continious Flight Auger	Richard Ringler

DEPTH FT	SAMPLE NO. & TYPE	N" BLOWS / FT	REC %	COLOR	MOIST	CONS.	SOIL TYPE (Class)	GEOLOGIC DESCRIPTION & OTHER REMARKS	MOIST %	DRY WEIGHT PCF	QU TSF	DEPTH FT
				Brn	Moist	Firm	CL	Top Soil				
	U-1			Dk Brn	Moist	Firm	CL	**COLLUVIAL DEPOSITS**	24.2			
				Lt Brn								
	U-2											
5												5
				Lt Brn	Moist	Firm	CL	**ALTERED LOESS (PEORIAN AGE)** w/ Rust				
	U-3											
10									28.6			10
15	S-4	5/5/5 (10)		Lt Grey	Moist	Firm	SP	**ALLUVIAL SANDS** Fine Sands	1.8			15
								Bottom of Hole 15.0'				
20												20
25												25
30												30
35												35

MID-STATE ENGINEERING & TESTING, INC.

BORING LOG

PROJECT	Veterans Home
LOCATION	Kearney, Nebraska
JOB NO.	200-08-22
DATE	11/7/2015

DRILL HOLE NO.	LOCATION OF DRILL HOLE	ELEVATION	DATUM	TOTAL DEPTH
DH-7	N 40 43' 51.5" W 99 01' 16.4"			15

WATER LEVEL OBSERVATIONS			TYPE OF SURFACE	DRILLER
WHILE DRILLING	END OF DRILLING	HOURS	Top Soil	Robert Reiling
			DRILLING METHOD	LOGGER
			4 1/2' Continious Flight Auger	Richard Ringler

DEPTH FT	SAMPLE NO. & TYPE	N° BLOWS / FT	REC %	COLOR	MOIST	CONS.	SOIL TYPE (Class)	GEOLOGIC DESCRIPTION & OTHER REMARKS	MOIST %	DRY WEIGHT PCF	QU TSF	DEPTH FT
				Brn	Moist	Firm	CL	Top Soil				
	U-1			Dk Brn	Moist	Firm	CL	**COLLUVIAL DEPOSITS**	14.3			
				Lt Brn								
	U-2											
5									18.4			5
				Lt Brn	Moist	Firm	CL	**ALTERED LOESS (PEORIAN AGE)** w/ Rust				
	U-3											
10												10
	S-4	3/5/5 (10)			Very Moist				26.7			
15												15
								Bottom of Hole 15.0'				
20												20
25												25
30												30
35												35

MID-STATE ENGINEERING & TESTING, INC.

BORING LOG

PROJECT	Veterans Home
LOCATION	Kearney, Nebraska
JOB NO.	200-08-22
DATE	11/7/2015

DRILL HOLE NO.	LOCATION OF DRILL HOLE	ELEVATION	DATUM	TOTAL DEPTH
DH-8	N 40 43' 50.7" W 99 01' 22.4"			15

WATER LEVEL OBSERVATIONS			TYPE OF SURFACE	DRILLER
WHILE DRILLING	END OF DRILLING	HOURS	Top Soil	Robert Reiling
			DRILLING METHOD	LOGGER
			4 1/2' Continious Flight Auger	Richard Ringler

DEPTH FT	SAMPLE NO. & TYPE	N° BLOWS / FT	REC %	COLOR	MOIST	CONS.	SOIL TYPE (Class)	GEOLOGIC DESCRIPTION & OTHER REMARKS	MOIST %	DRY WEIGHT PCF	QU TSF	DEPTH FT
				Brown	Moist	Firm	CL	Top Soil				
	U-1			Vr Dk Brn	Moist	Firm	CL	**COLLUVIAL DEPOSITS**	23.7			
				Lt Brn								
5	U-2								18.0	87.8	1.5	5
				Lt Brn	Moist	Firm	CL	**ALTERED LOESS DEPOSITS** (PEORIAN AGE)				
10	U-3								22.1	91.5		10
15	S-4	5/5/5 (10)			Very Moist				28.5			15
								Bottom of Hole 15.0'				
20												20
25												25
30												30
35												35

MID-STATE ENGINEERING & TESTING, INC.

BORING LOG

PROJECT	Veterans Home
LOCATION	Kearney, Nebraska
JOB NO.	200-08-22
DATE	11/7/2015

DRILL HOLE NO.	LOCATION OF DRILL HOLE	ELEVATION	DATUM	TOTAL DEPTH
DH-9	N 40 43' 48.1" W 99 01' 28.8"			15

WATER LEVEL OBSERVATIONS			TYPE OF SURFACE	DRILLER
WHILE DRILLING	END OF DRILLING	HOURS	Top Soil	Robert Reiling
			DRILLING METHOD	LOGGER
			4 1/2' Continious Flight Auger	Richard Ringler

DEPTH FT	SAMPLE NO & TYPE	N° BLOWS / FT	REC %	COLOR	MOIST	CONS.	SOIL TYPE (Class)	GEOLOGIC DESCRIPTION & OTHER REMARKS	MOIST %	DRY WEIGHT PCF	QU TSF	DEPTH FT
				Brown	Moist	Firm	CL	Top Soil				
	U-1			Dk Brn	Moist	Firm	CL	**COLLUVIAL DEPOSITS**	23.0	98.8		
				Lt Brn								
5	U-2								23.8	90.7	1.3	5
				Lt Brn	Moist	Firm	CL	**ALTERED LOESS (PEORIAN AGE)**				
	U-3											
10									28.9	86.3		10
	U-4				Very Moist				31.0			
15												15
								Bottom of Hole 15.0'				
20												20
25												25
30												30
35												35

MID-STATE ENGINEERING & TESTING, INC.

BORING LOG

PROJECT: Veterans Home
LOCATION: Kearney, Nebraska
JOB NO.: 200-08-22
DATE: 11/7/2015

DRILL HOLE NO.	LOCATION OF DRILL HOLE	ELEVATION	DATUM	TOTAL DEPTH
DH-10	N 40 43' 43.7 W 99 01' 26.8"			15

WATER LEVEL OBSERVATIONS			TYPE OF SURFACE	DRILLER
WHILE DRILLING	END OF DRILLING	HOURS	Top Soil	Robert Reiling
			DRILLING METHOD	LOGGER
			4 1/2' Continious Flight Auger	Richard Ringler

DEPTH FT	SAMPLE NO. & TYPE	N° BLOWS / FT	REC %	COLOR	MOIST	CONS.	SOIL TYPE (Class)	GEOLOGIC DESCRIPTION & OTHER REMARKS	MOIST %	DRY WEIGHT PCF	QU TSF	DEPTH FT
				Brown	Moist	Firm	CL	Top Soil				
	U-1			Dk Brn	Moist	Firm	CL	COLLUVIAL DEPOSITS	20.4			
				Lt Brn								
5	U-2								16.1	87.0	1.1	5
				Lt Brn	Moist	Firm	Cl	ALTERED LOESS (PEORIAN AGE)				
10	U-3								23.6	93.6		10
15	S-4	4/2/2 (4)		Light Grey	Moist	Firm	CL	ALLUVIAL SANDS	2.1			15
								Bottom of Hole 15.0'				
20												20
25												25
30												30
35												35

APPENDIX C
SUMMARY OF SOILS TEST

MID-STATE ENGINEERING & TESTING, INC.

SUMMARY OF SOILS TESTING

PROJECT	Veterans Home
LOCATION	Kearney, Nebraska
JOB NO.	200-08-22
DATE	11/16/2015

DRILL HOLE NO.	SAMPLE NO.	SAMPLE DEPTH (ft.)	WATER CONTENT %	DENSITY WET (pcf)	DENSITY DRY (pcf)	VOID RATIO (e)	SAT (%)	UNCONFINED COMPRESSION QU (tsf)	UNCONFINED COMPRESSION Strain (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PL	ATTERBERG LIMITS PI	%PASS #200 SIEVE	CLASS.	SPT BLOW COUNTS	REMARKS
DH-1	U-1	1/2 - 2'	24.6	119.6	96.0	0.755	88									
	U-2	3 1/2 - 5'	20.4	105.7	87.8	0.919	60	0.7	2.1							
	U-3	8 1/2 - 10'	28.2	111.6	87.1	0.934	82									
	S-4	13 1/2 - 15'	1.4										4.5		46	
DH-2	U-1	1/2 - 2'	25.1													
	U-2	3 1/2 - 5'	22.9	119.2	97.0	0.737	84	2.4	3.4							
	U-3	8 1/2 - 10'	32.0	118.0	89.4	0.885	98									
	S-4	13 1/2 - 15'	27.7												28	
DH-3	U-1	1/2 - 2'	21.7	122.9	101.0	0.668	88									
	U-2	3 1/2 - 5'	23.9	110.4	89.1	0.891	72	1.0	1.3							
	U-3	8 1/2 - 10'	23.8	121.6	98.3	0.714	90									
	S-4	13 1/2 - 15'	1.8										1.8		13	
DH-4	U-1	1/2 - 2'	20.7													
	U-2	3 1/2 - 5'	17.5	102.5	87.3	0.930	51	1.1	1.3							
	U-3	8 1/2 - 10'	25.3	114.8	91.6	0.839	81									
	S-4	13 1/2 - 15'	2.1												21	
DH-5	U-1	1/2 - 2'	15.4	121.1	104.9	0.606	69									
	U-2	3 1/2 - 5'	19.3	102.8	86.2	0.955	55	0.9	1.1							
	U-3	8 1/2 - 10'	27.2	116.2	91.4	0.843	87									
	S-4	13 1/2 - 15'	1.5										1.2		6	

MID-STATE ENGINEERING & TESTING, INC.

SUMMARY OF SOILS TESTING

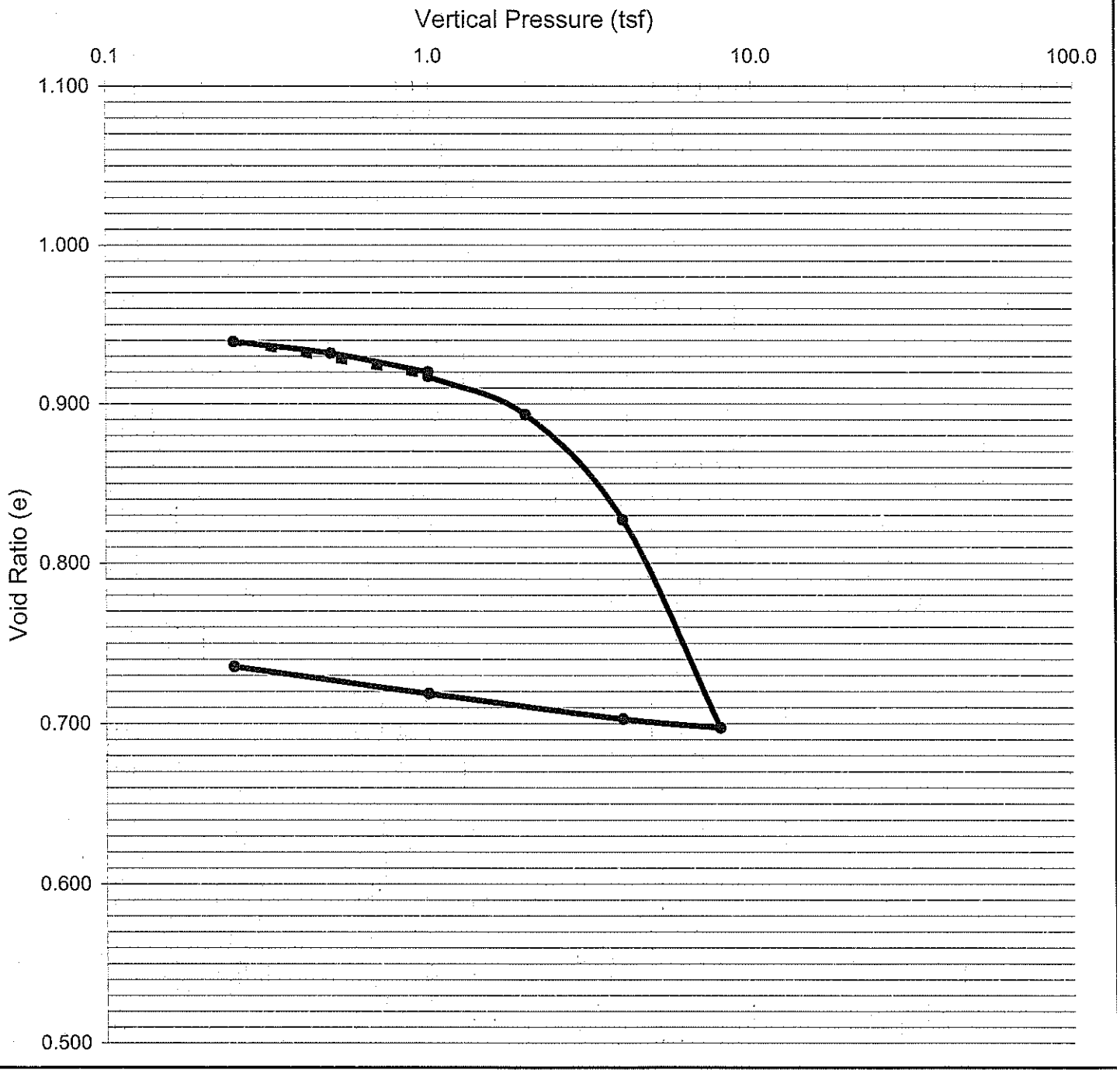
PROJECT	Veterans Home
LOCATION	Kearney, Nebraska
JOB NO.	200-08-22
DATE	11/16/2015

DRILL HOLE NO.	SAMPLE NO.	SAMPLE DEPTH (ft.)	WATER CONTENT %	DENSITY WET (pcf)	DENSITY DRY (pcf)	VOID RATIO (e)	SAT (%)	UNCONFINED COMPRESSION QU (tsf)	UNCONFINED COMPRESSION Strain (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PL	ATTERBERG LIMITS PI	%PASS #200 SIEVE	CLASS.	SPT BLOW COUNTS	REMARKS
DH-6	U-1	1/2 - 2'	24.2							47	20	27	93.5	CL		
	U-2	3 1/2 - 5'														
	U-3	8 1/2 - 10'	28.6													
	S-4	13 1/2 - 15'	1.8												10	
DH-7	U-1	1/2 - 2'	14.3													
	U-2	3 1/2 - 5'	18.4							44	20	24	98.6	CL		
	U-3	8 1/2 - 10'														
	S-4	13 1/2 - 15'	26.7										99.4		10	
DH-8	U-1	1/2 - 2'	23.7													
	U-2	3 1/2 - 5'	18.0	103.6	87.8	0.910	53	1.5	1.7							
	U-3	8 1/2 - 10'	22.1	111.8	91.5	0.641	71									
	S-4	13 1/2 - 15'	28.5													
															10	
DH-9	U-1	1/2 - 2'	23.0	121.5	98.8	0.705	88									
	U-2	3 1/2 - 5'	23.8	112.2	90.7	0.858	75	1.3	2.3							
	U-3	8 1/2 - 10'	28.9	111.1	86.3	0.952	82									
	U-4	13 1/2 - 15'	31.0										98.1			
DH-10	U-1	1/2 - 2'	20.4													
	U-2	3 1/2 - 5'	16.1	101.0	87.0	0.937	46	1.1	1.3							
	U-3	8 1/2 - 10'	23.6	115.6	93.6	0.800	80									
	S-4	13 1/2 - 15'	2.1												4	

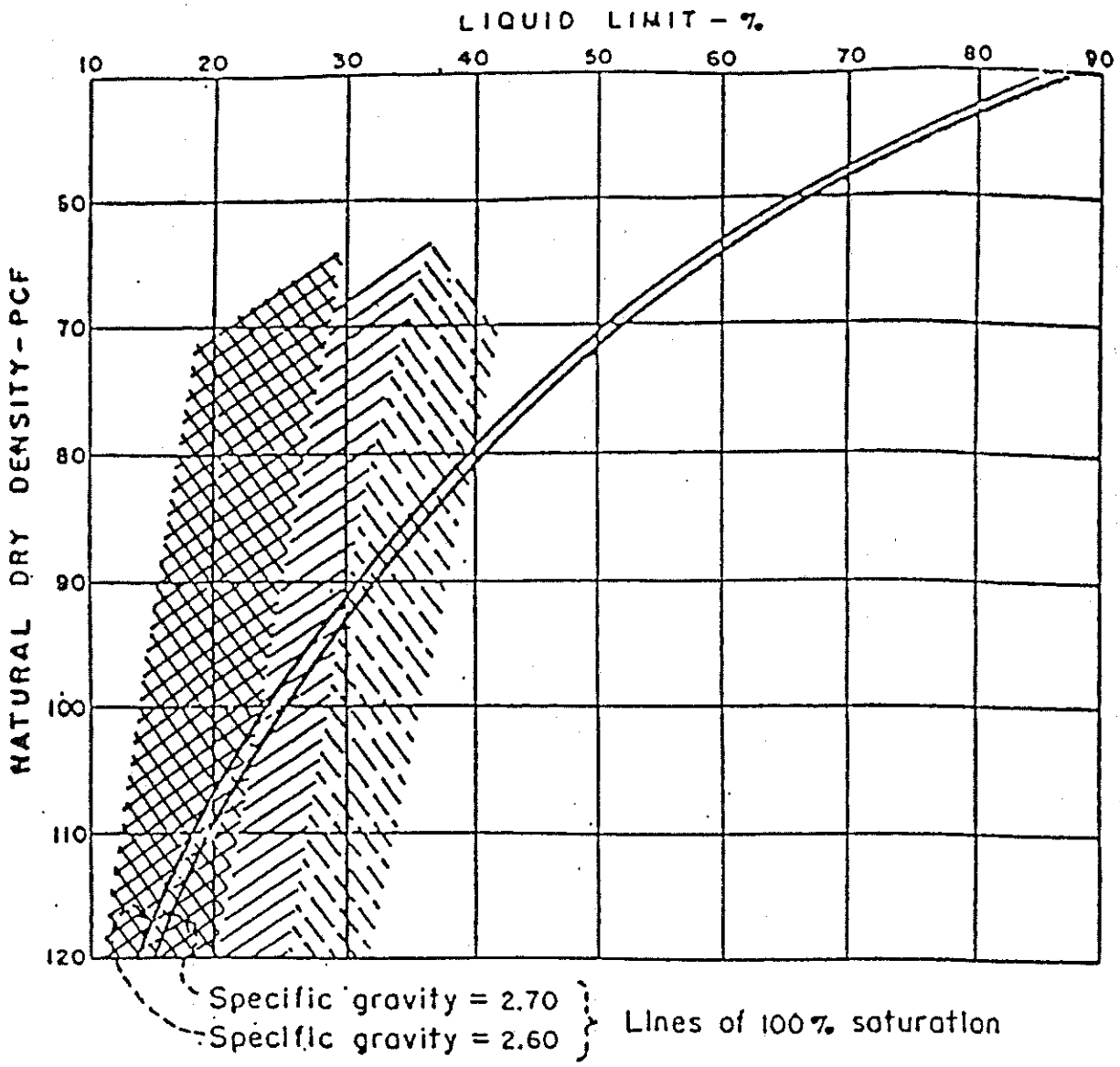
MID-STATE ENGINEERING & TESTING 11 EAST 11TH ST. KEARNEY, NE	Project:	Veterans Home	
	Location:	Kearney, NE	
	Job No. 200-08-22	Date:	11/15/2015

CONSOLIDATION TEST

Drill Hole #	DH-1	Sample #	U-3	Sample Depth Interval	8 1/2 - 10'
Sample Description	Light Brown Lean Clay w/ root holes, carbon spots, rust stains				
Initial Water Content (%)	27.5	Dry Unit Weight (pcf)	86.7	Initial Saturation (%)	78.6
Final Water Content (%)	29.2	Specific Gravity (Assumed)	2.70	3	
Liquid Limit	36	Plastic Limit	22	Plasticity Index	14
Classification	CL				



APPENDIX D
BUREAU OF RECLAMATIONS CRITERIA



EXPLANATION

Soils with highest resistance to erosion

Intermediate soils

Soils with lowest resistance to erosion

TRENDS SHOWN BY
NATURAL DENSITY VS. LIQUID LIMIT RELATIONSHIP

(CHART 8)

(CHART A)

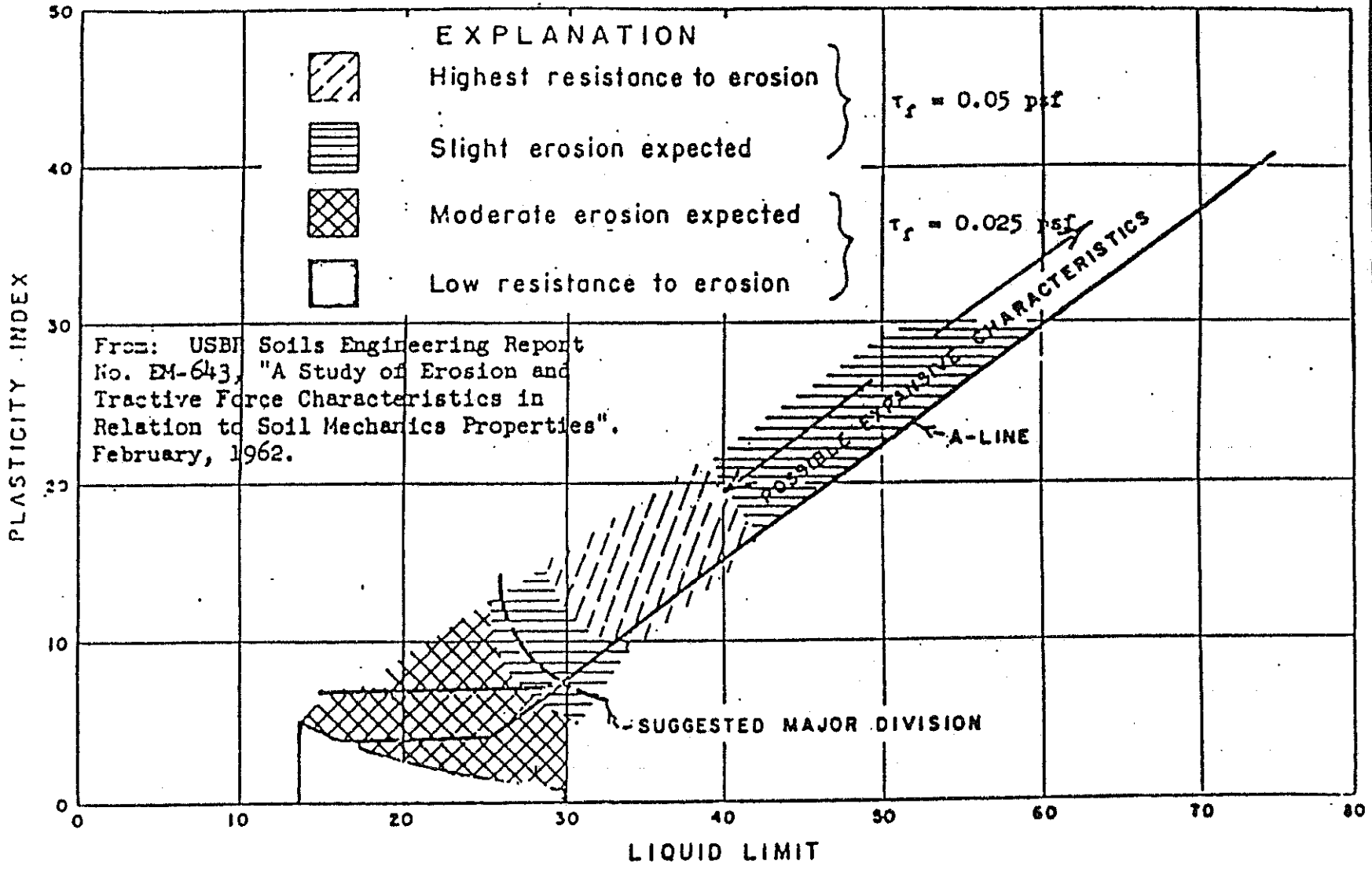


Figure 6. SUGGESTED TREND OF EROSION CHARACTERISTICS FOR FINE-GRAINED COHESIVE SOILS WITH RESPECT TO PLASTICITY

MID-STATE

ENGINEERING & TESTING, INC.
279 ROAD 'D', COLUMBUS, NE. 68601

SOIL PROPERTIES

UNIFIED SOILS CLASSIFICATION

(Including Identification and Description)

Group Symbols	Typical Names	Values as Subgrade When No Subject to Frost Action	Potential Frost Action	Compressibility and Expansion	Drainage Characteristics	Compaction Equipment	Compacted Dry Unit Weight (pcf) ASTM-D-698	Typical Design Values	
								CBR	Subgrade Modulus k lb. per cu. in.
GW	Well-graded gravels, gravel-Sand mixture, little or no fines	Excellent	None to Very Slight	Almost None	Excellent	Crawler-type tractor, rubber tired roller, steel-wheeled roller	125-140	40-80	300-500
GP	Poorly graded gravels, gravel-sand mixtures, little or no fines	Good to Excellent	None to Very Slight	Almost None	Excellent	Crawler-type tractor, rubber tired roller, steel-wheeled roller	110-140	30-60	300-500
GM	Silty gravels, gravel-sand-silt mixtures, <50% Silts & Clays	Good to Excellent	Slight to Medium	Slight	Fair to Poor	Rubber-tired roller Sheepfoot roller	115-135	20-60	200-500
GC	Clayey gravels, gravel-sand-clay mixtures, <50% Silts & Clays	Good	Slight to Medium	Slight	Poor to Practically Impervious	Rubber-tired roller Sheepfoot roller	130-145	20-40	200-500
SW	Well-graded sands, gravely sands, little or no fines	Good	None to Very Slight	Almost None	Excellent	Crawler-type tractor rubber-tired roller	110-130	20-40	200-400
SP	Poorly-graded sands, gravely sands, little or no fines	Fair to Good	None to Very Slight	Almost None	Excellent	Crawler-type tractor rubber-tired roller	105-135	10-40	150-400
SM	Silty sands, sand-silt mixtures <50% Silts & Clays	Fair to Good	Slight to High	Slight	Fair to Poor	Rubber-tired roller Sheepfoot roller	120-135	15-40	150-400
SC	Clayey sands, sand-clay mixtures <50% Silts & Clays	Poor to Fair	Slight to High	Slight to Medium	Poor to Practically Impervious	Rubber-tired roller Sheepfoot roller	100-135	5-20	100-300
ML	Inorganic silts and very fine sands rock flour, silty fine sands or clayey silts with slight plasticity	Poor to Fair	Medium to Very High	Slight to Medium	Fair to Poor	Rubber-tired roller Sheepfoot roller, close control of moisture	100-120	15 or Less	100-200
CL	Inorganic clays of low to medium plasticity, gravely clays, sandy clays, silty clays, lean clays	Poor to Fair	Medium to High	Medium	Practically Impervious	Rubber-tired roller Sheepfoot roller	90-130	15 or Less	50-150
OL	Organic silts and organic silty clays of low plasticity	Poor	Medium to High	Medium to High	Poor	Rubber-tired roller Sheepfoot roller	90-105	5 or Less	50-100
MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts	Poor	Medium to Very High	High	Fair to Poor	Sheepfoot roller Rubber-tired roller	90-105	10 or Less	50-100
CH	Inorganic clays or high plasticity fat clays	Poor to Fair	High	High	Practically Impervious	Sheepfoot roller Rubber-tired roller	90-115	15 or Less	50-150
OH	Organic clays of medium to high plasticity, organic silts	Poor to Very Poor	High	High	Practically Impervious	Sheepfoot roller Rubber-tired roller	80-110	5 or Less	25-100
Pt	Peat and other highly organic soils	Not Suitable	Very High	Very High	Fair to Poor	Compaction Not Practical			

SECTION 01 91 13
GENERAL COMMISSIONING REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes general requirements that apply to implementation of commissioning without regard to specific systems, assemblies, or components.

B. Commissioning is systematic processes to provide documented confirmation that building systems perform according to the criteria set forth in the design intent and satisfy the owner's operational needs.

C. The commissioning process does not take away from or reduce the responsibility of the system designers, installing contractors, or general contractor to provide a finished and fully functioning product.

D. Abbreviations. The following are common abbreviations used in the *Specifications* and in the *Commissioning Plan.* Definitions are found in Section 1.3.

A/E-	Architect and Design Engineers	GC-	General Contractor
CxA-	Commissioning Authority	MC-	Mechanical Contractor
CC	Controls Contractor	OR-	Owner's Representative
CM-	Construction Manager	TAB-	Test and Balance Contractor
Cx-	Commissioning	Subs-	Subcontractors to General
EC-	Electrical Contractor		

E. Related Sections: Section 07 08 00 ENCLOSURE COMMISSIONING, Section 23 08 00 COMMISSIONING OF HVAC SYSTEMS, Section 26 08 00 COMMISSIONING OF ELECTRICAL SYSTEMS

1.3 SYSTEMS TO BE COMMISSIONED

A. The following systems will be commissioned in this project.
1. HVAC Systems and Controls
2. Lighting Systems and Controls
3. Domestic Hot Water Systems and Controls
4. Building Envelope (Thermography)

1.4 DEFINITIONS

A. Acceptance Phase. Phase of construction after startup and initial checkout when functional performance tests, operations and maintenance documentation review and training occurs.

B. Approval. Acceptance that a piece of equipment or system has been properly installed and is functioning in the tested modes according to the Contract Documents.

C. Architect/Engineer (A/E): The prime consultant (architect) and sub-consultants who comprise the design team, generally the HVAC mechanical designer/engineer and the electrical designer/engineer.

D. BoD: Basis of Design. A document that records concepts, calculations, decisions, and product selections used to meet the OPR and to satisfy applicable regulatory requirements, standards, and guidelines. The document includes both narrative descriptions and lists of individual items that support the design process.

E. CxA: Commissioning Authority. An independent agent, not otherwise associated with the A/E team members or the Contractor. The CxA directs and coordinates the commissioning activities in accordance with the commissioning specifications and Commissioning Plan.

F. Cx Plan: Commissioning Plan: A document that outlines the organization, schedule, allocation of resources, responsibilities of the commissioning team, and documentation requirements of the commissioning process.

G. Datalogging: Monitoring flows, temperatures, humidity, occupancy, sound levels, status, pressures, etc. of equipment and/or systems using stand-alone dataloggers separate from the control system.

H. Deferred Functional Tests : Functional tests that are performed after substantial completion due to partial occupancy, equipment, seasonal requirements, design or other site conditions that disallow the test from being performed.

I. Deficiency: A condition in the installation or function of a component, piece of equipment or system that is not in compliance with code, industry standard, owner's requirements or the contract documents.

J. Design Intent: A dynamic document that provides the explanation of the ideas, concepts and criteria that are considered to be very important to the owner. It is initially the outcome of the programming and conceptual design phases.

K. Factory Testing: Testing of equipment at the factory or on-site by factory personnel with an Owner's representative present.

L. Final Commissioning Report: The compiled record of the executed commissioning process and documentation.

M. Functional Performance Test (FPT): Test of the dynamic function and operation of equipment and systems using manual (direct observation) or monitoring methods. Functional performance testing is the dynamic testing of systems (rather than just components) under full operation. Systems are tested under various modes and are demonstrated to operate through all the control system's sequences of operation and components are verified to be responding as the sequences state. The commissioning authority develops the functional test procedures in a sequential written form, coordinates, oversees and documents the actual testing, which is performed by the installing

contractor or vendor. FPTs are performed after prefunctional checklists are completed by the contractor, test and balance is finalized without issues, controls checkout is complete and documented, and equipment and system startup are complete.

N. General Contractor (GC): The genearl contractor for this project; Generally refers to all the general contractor's subcontractors as well. Also referred to as the Contractor, in some contexts.

O. Issues Log: The CxA shall maintain the Commissioning Issues Log, a written record of each issue identified during the commissioning process. The issues log shall include detail of non-compliance, date identified, responsible party, and record of resolution.

P. Monitoring: The recording of parameters (flow, temperature, current, status, pressure, etc.) of equipment operation using dataloggers or the trending capabilities of control systems.

Q. Non-Compliance: See Deficiency.

R. Non-Conformance: See Deficiency.

S. Owner's Project Requirements (OPR): A document that details the functional requirements of a project and the expectations of how it will be used and operated. These include Project goals, measurable performance criteria, cost considerations, benchmarks, success criteria, and supporting information.

T. Owner's Representative:

U. Prefunctional Checklist: A record of equipment installation provided by the CxA to the installing contractors for completion. Equipment checklists are primarily static inspections to verify that installation is in compliance with project documents and document procedures to prepare the equipment or system for initial operation. Prefunctional checklist items may include simple testing of the function of a component, a piece of equipment or system. Prefunctional checklists augment and are combined with the manufacturer's start-up checklist. The Prefunctional Checklists shall be completed by the installing contractor and reviewed and signed by the general contractor and/or construction manager to verify that the equipment and systems are complete and ready for functional performance testing. The checklists shall be submitted to the CxA prior to functional performance testing.

V. Sampling: Functionally testing only a fraction of the total number of identical or near identical pieces of equipment.

W. Seasonal Performance Tests: Functional performance tests that are deferred until the system(s) will experience conditions closer to their design conditions.

X. Systems Manual: The Systems Manual is intended to provide future operations staff the information needed to understand and optimally operate the commissioned systems. The Systems Manual will be developed by the commissioning team with guidance and reviewed by the commissioning authority. The manual will include the final versions of the the following documents, as available to the CxA: owner's project requirements, basis of design, single line diagrams, as-built sequence of operations and control drawings, operating instructions for building systems, and a recommended schedule for retesting of commissioned systems with blank test forms.

Y. Systems, Subsystems, Equipment, and Components: Where these terms are used together or separately, they shall mean "as-built" systems, subsystems, equipment, and components.

Z. Startup: The initial starting or activating of dynamic equipment, including executing prefunctional checklists.

AA. Subs: The subcontractors to the GC who provide and install building components and systems.

BB. Trending: Monitoring using the building control system.

1.5 COORDINATION

A. **Commissioning Team**. The members of the commissioning team consist of the Commissioning authority (CxA), the Owner's Representative (OR), the General Contractor (GC or Contractor), the architect and design engineers (A/E), the Mechanical Contractor (MC), the Electrical Contractor (EC), the testing, adjusting, and balance (TAB) representative, the Controls Contractor (CC), any other installing subcontractors or suppliers of equipment.

B. **Management**. The CxA directs and coordinates the commissioning activities and the reports to the owner's representative. All members work together to fulfill their contracted responsibilities and meet the objectives of the Contract Documents.

C. **Commissioning Kickoff Meeting**. The CxA will provide an overview of the commissioning events at the commissioning kickoff meeting. The *Commissioning Plan* shall be provided and discussed. The roles and responsibilities of all commissioning team members will be discussed and a preliminary schedule provided.

D. **Scheduling**. The CxA will work with the GC according to established protocols to schedule the commissioning activities. The CxA will provide sufficient notice to the GC for scheduling commissioning activities. The GC will integrate all commissioning activities into the master schedule. All parties will address scheduling problems and make necessary notifications in a timely manner in order to expedite the commissioning process.

1.6 COMMISSIONING PROCESS

A. **Commissioning Plan**. The commissioning plan provides guidance in the execution of the commissioning process and includes the roles and responsibilities for each member of the commissioning team. The *specifications* will take precedence over the *Commissioning Plan*.

B. **Commissioning Process**. The following narrative provides a brief overview of the typical commissioning tasks during construction and the general order in which they occur.

1. The Commissioning Plan will be presented and discussed during the Commissioning Kickoff Meeting. The meeting will be conducted by the CxA and will review the commissioning process, commissioning schedule, and team member responsibilities.
2. Additional commissioning meetings may be required throughout construction, scheduled by the CxA with necessary parties attending, to plan, scope, coordinate, schedule future activities and resolve issues.
3. The CxA shall conduct a design review of the design documents**,** OPR and BOD at the "100% State Review" construction documents phase and participate in meetings associated with these review comments.
4. Submittals and associated equipment documentation is submitted to the CxA. The CxA shall review contractor submittals applicable to systems being commissioned for

compliance with the OPR and BOD. The review shall be concurrent to the A/E submittal review and shall not replace the review by the designers of record.

5. The CxA shall record all design review comments, submittal review comments, equipment installation deficiencies, and functional testing non-compliance issues in the issues log. The issues log shall include detail of non-compliance, date identified, responsible party, and record of resolution. The issues log will be distributed to the commissioning team for response and/or resolution.
6. The CxA witnesses selected systems startup, and provides the Subs with prefunctional checklists to be completed.
7. Prefunctional Checklists are provided by the CxA for each piece of equipment and/or system to be commissioned. The Subs, under their own direction, execute and document the prefunctional checklists and perform startup and initial checkout. The GC shall review the completed checklists, sign, and provide to the CxA. The CxA documents that the checklists and startup were completed according to the approved plans. This may include the CxA witnessing start-up of selected equipment.
8. The CxA develops specific equipment and system functional performance test procedures. The installing contractors shall review the procedures and provide any comments within two (2) weeks of issuance.
9. The functional performance test procedures are executed by the Subs, under the direction of, and documented by the CxA. Required participants for functional performance testing will be provided in advance by the CxA for each functional test procedure test form.
10. Items of non-compliance in material, installation, setup, and/or operation will be documented by the CxA and are corrected at the Sub's expense and the system retested.
11. The CxA reviews and coordinates the training provided by the Subs and assists in documenting the training. The CxA will verify that the requirements for training operating personnel and building occupants have been completed.
12. The CxA assembles a Systems Manual including existing documentation relevant to the O&M of the building following construction.
13. Deferred testing and/or seasonal testing is conducted, as specified or required.
14. The CxA will prepare a formal reporting procedure for recording and responding to problems during the warranty phase.

1.7 COMMISSIONING TEAM

A. Members Appointed by Contractor(s): Individuals, each having the authority to act on behalf of the entity he or she represents, to implement the commissioning process through coordinated action. The commissioning team shall consist of, but not be limited to, the General Contractor (GC), and representatives of the Contractor, including Project superintendent and subcontractors, installers, suppliers, and specialists deemed appropriate by the CxA.

B. Members Appointed by Owner:

1. Commissioning Authority
2. Representatives of the facility user and operation and maintenance personnel.
3. The Owners Representative.
4. Architect and engineering design professionals.

1.8 OWNER'S AND OWNER'S REPRESENTATIVE (OR) RESPONSIBILITIES

A. Provide the owner's project requirement (OPR) documentation to the CxA and Contractor for information and use.

B. Assign operation and maintenance personnel and schedule them to participate in commissioning team activities as desired.

C. Provide the BoD documentation, prepared by Architect and approved by Owner, to the CxA and Contractor for use in developing the commissioning plan, systems manual, and operation and maintenance training.

D. Follow the Commissioning Plan.

E. Attend the commissioning kickoff meeting and additional meetings as necessary.

F. Participate in the warranty phase site visit to review the operation of the building with operations and maintenance staff and occupants within 10 months after substantial completion.

1.9 ARCHITECT/ENGINEERS (AE) RESPONSIBILITIES

A. The AE shall participate in and perform commissioning process activities including, but not limited to, the following:

1. Attend the commissioning kickoff meeting and selected commissioning team meetings.
2. Perform normal submittal review, construction observation, as-built drawing preparation, O&M manual preparation, etc., as contracted.
3. Prepare and provide the Basis of Design (BoD) document for use in developing the commissioning plan, systems manual, and operation and maintenance training.
4. Provide any design narrative and sequence documentation requested by the CxA. The designers shall assist (along with the contractors) in clarifying the operation and control of commissioned equipment in areas where the specifications, control drawings or equipment documentation is not sufficient for writing detailed testing procedures.
5. Provide written response to each commissioning design review comment, submittal review comment, and design-related construction phase deficiency within two (2) weeks of issuance by the CxA.
6. Prepare and submit information required for the Systems Manual as requested by the CxA, including (but not limited to): operating instructions for the integrated building systems, as-built documentation, and the final version of the BOD.
7. Participate in the resolution of non-compliance, non-conformance and design deficiencies identified during commissioning during design, construction and warranty-period commissioning.

1.10 CONTRACTOR'S (GC) RESPONSIBILITIES

A. Contractor shall assign representatives with expertise and authority to act on its behalf and shall schedule them to participate in and perform commissioning process activities including, but not limited to, the following:

1. Facilitate the coordination of the commissioning work by the CxA and ensure that commissioning activities are being scheduled into the master schedule.
2. Follow the Commissioning Plan.

3. Attend commissioning kickoff meetings and additional meetings as necessary. Assist in coordination and scheduling of meetings as requested by the CxA.
4. Review and comment, as needed, on the final *Commissioning Plan*.
5. Furnish a copy of all construction documents, addenda, requests for information, change orders and approved submittals and shop drawings related to commissioned equipment to the CxA.
6. Review the functional performance test procedures submitted by the CxA and provide comments within two (2) weeks of issuance by the CxA.
7. With the assistance of the subcontractors, coordinate and ensure that the commissioning process functional test procedures are executed for each system. Coordinate retesting as required.
8. Review commissioning progress and deficiency reports. Evaluate performance deficiencies identified in test reports and, in collaboration with entity responsible for system and equipment installation, recommend corrective action.
9. Coordinate the resolution of non-compliance and design deficiencies identified in all phases of commissioning. Review commissioning progress and deficiency reports and provide a written response to each issue within two (2) weeks of issuance by the CxA and weekly until the issue is resolved.
10. Upon completion of equipment installation and no later than one (1) week before scheduled commissioning functional performance testing, review, approve, and sign the completed Prefunctional Checklists and provide copies to the CxA for each piece of equipment and/or system to be commissioned. The Subs, under their own direction, execute and document the prefunctional checklists and perform startup and initial checkout.
11. Collect and review Training Agendas and provide copies to the CxA for review. Provide the Training Plan and coordinate the training of Owner personnel.
12. Execute seasonal or deferred functional performance testing (as needed) witnessed by the CxA to facilitate the Cx process.
13. Within two (2) weeks of scheduled commissioning functional performance testing, in coordination with the controls contractor, provide a list of final settings, setpoints, ranges, schedules, and/or trend logs required by the CxA.

1.11 SUB CONTRACTOR'S RESPONSIBILITIES

A. The subcontractors shall assign representatives with expertise and authority to act on their behalf and shall schedule them to participate in and perform commissioning process activities including, but not limited to, the following:
   1. Follow the Commissioning Plan.
   2. Attend commissioning kickoff meeting and additional meetings as necessary.
   3. Complete and sign each Commissioning Prefunctional Checklist for systems to be commissioned as provided by the CxA at least one (1) week prior to functional performance testing.
   4. Perform commissioning functional test procedures under the direction of the CxA.
   5. Review and respond to each Commissioning Issue as identified on commissioning progress and deficiency reports. Where responsible for system and equipment installation, recommend corrective action for all issues identified. Provide a written response to each issue within two (2) weeks of issuance by the CxA and weekly until the issue is resolved.
   6. Execute the resolution of non-compliance and deficiencies identified. Perform retesting as required.
   7. Include all special tools and instruments (those only available from vendor, specific to a piece of equipment) required for testing equipment according to these Contract Documents in the base bid price to the Contractor, except for stand-alone data logging equipment that may be used by the CxA.

8. The Contractors will provide all tools or the use of tools to start, check-out and functionally test equipment and systems, except for specified testing with portable data-loggers, which may be supplied and installed by the CxA.
9. Provide information requested by CxA regarding equipment sequence of operation and testing procedures.
10. Provide equipment Training Agenda for each system to be commissioned within six (6) weeks of submittal acceptance. Conduct operations & maintenance training per project specifications.

1.12 CxA'S RESPONSIBILITIES

A. The CxA is not responsible for design concept, design criteria, compliance with codes, design or general construction scheduling, cost estimating, or construction management. The CxA may assist with problem-solving non-conformance or deficiencies, but ultimately that responsibility resides with the general contractor and the A/E. The primary role of the CxA is to develop and coordinate the execution of a testing plan, observe and document performance—that systems are functioning in accordance with the documented design intent and in accordance with the Contract Documents.

1. Coordinate and direct the commissioning activities using consistent protocols and forms, centralized documentation, clear and regular communications and consultations with all necessary parties, frequently updated timelines and schedules and technical expertise.
2. Create, execute, and revise, as necessary, the Commissioning Plan.
3. Coordinate the commissioning work and, with the GC, take care that commissioning activities are being scheduled into the master schedule.
4. Review the owner's project requirements and basis of design documents for clarity and completeness.
5. Conduct a commissioning design review of the design documents at the "100% State Review" construction documents phase and back-check the review comments in the subsequent design submittal.
6. Plan and conduct a commissioning kickoff meeting and other commissioning meetings as required. Provide meeting minutes within one (1) week of meeting date.
7. Review and comment on selected pertinent Contractor submittals applicable to systems being commissioned for compliance with the OPR and BOD, concurrent with the A/E reviews.
8. Assist in the resolution of issues identified during the commissioning process. Maintain a master deficiency and resolution log (Issues Log). Provide the commissioning team with written progress reports and test results.
9. Write and distribute Prefunctional Checklists and Functional Performance Test Procedures. Incorporate comments from the commissioning team as required.
10. Witness selected systems start-up and initial systems checkout with Subs.
11. Perform site visits, as necessary, to observe component and system installations. Attend selected planning and job-site meetings to obtain information on construction progress. Review construction meeting minutes for revisions/substitutions relating to the commissioning process. Assist in resolving any discrepancies.
12. Review and approve completed Prefunctional Checklists thru onsite observation and review of contractor reports and startup documentation.
13. Review air and water systems balancing by spot testing, by reviewing completed reports and/or by selected site observation.
14. Analyze functional performance trend logs and monitoring data to verify performance as needed.
15. Coordinate, witness and approve manual functional performance tests performed by installing contractors. Coordinate retesting as necessary until satisfactory performance is achieved.

16. Verify that the training requirements for operating personnel and building occupants have been completed. Review training agendas and training plan prior to onsite operations and maintenance training.
17. Provide a Final Commissioning Report.
18. With the assistance of the contractor and design team, develop a System Manual from existing documentation relevant to O&M of the building following construction.
19. Coordinate and supervise required seasonal or deferred testing and deficiency corrections as needed.
20. Review operations during a walkthrough prior to the end of the warranty phase.

PART 2 - PRODUCTS

2.1 TEST EQUIPMENT

A. All standard testing equipment required to perform startup and initial checkout and required functional performance testing shall be provided by the installing contractor for the equipment being tested.

B. Special equipment, tools and instruments (only available from vendor, specific to a piece of equipment) required for testing equipment, according to these Contract Documents shall be included in the base bid price to the Contractor and provided to the owner at the completion of the project, except for stand-alone datalogging equipment that may be used by the CxA.

C. Datalogging equipment and software required to test equipment may be provided by the CxA, but shall not become the property of the Owner.

D. All testing equipment shall be of sufficient quality and accuracy to test and/or measure system performance with the tolerances specified in the specifications.

PART 3 - EXECUTION

3.1 MEETINGS

A. Commissioning Kickoff Meeting. The CxA will schedule, plan and conduct a commissioning kickoff meeting with the entire commissioning team in attendance. The Commissioning Plan will be provided and the roles and responsibilities of each commissioning team member will be discussed. Meeting minutes will be distributed to all parties by the CxA.

B. Additional Commissioning Meetings. The commissioning team shall attend additional commissioning meetings as planned and conducted by the CxA. These meetings will cover coordination, commissioning scheduling, planning issues, and deficiency resolution. The CxA will plan these meetings and will minimize unnecessary time being spent by Subs. These meetings will be held only as necessary.

3.2 REPORTING

A. The CxA will provide regular reports to the Owner, with increasing frequency as construction and commissioning progresses, including keeping the commissioning team apprised of

commissioning progress and scheduling changes through memos, progress reports, test reports, and meeting minutes.

B. The CxA shall provide the Commissioning Issues Log and updates to the commissioning team. For each issue, the responsible party shall provide a written response to each issue within two (2) weeks of issuance by the CxA and weekly until the issue is resolved.

C. A Final Commissioning Report by the CxA will be provided to the Owner, focusing on documenting the executed commissioning process. All acquired commissioning documentation, logs, minutes, reports, deficiency lists, communications, findings, unresolved issues, etc., will be included with the Final Commissioning Report. Completed prefunctional checklists and executed functional tests will also be included.

D. The Systems Manual will be developed by the commissioning team with guidance and reviewed by the commissioning authority (as needed) to provide future operations staff the information needed to understand and optimally operate the commissioned systems. The manual will include the final version of the owner's project requirements, basis of design, single line diagrams, as-built sequence of operations and control drawings, operating instructions for building systems, recommended schedule for retesting of commissioned systems with blank test forms, and maintenance requirements not included in the O&M Manuals. The Systems Manual for this project will be created only from already-existing documents.

3.3 SUBMITTALS

A. The commissioning process requires Submittal review simultaneously with engineering review for all major equipment associated with systems to be commissioned.

B. The Commissioning authority will review and provide comment on submittals related to the commissioned equipment for conformance to the Contract Documents as it relates to the commissioning process, to the functional performance of the equipment and adequacy for developing test procedures. This review is intended primarily to aid in the development of functional performance testing procedures. The commissioning authority will provide response and record discrepancies or request additional details utilizing the commissioning issues log.

C. The final approval of submittals are the responsibility of the Design Team, though the CxA will review and offer comment as applicable.

D. Contractor's responsibility for deviations in submittals from requirements of the Contract Documents is not relieved by the Commissioning Authority's review.

3.4 EQUIPMENT START-UP AND PREFUNCTIONAL CHECKLISTS

A. The following procedures apply to all equipment to be commissioned, according to Section 1.3, Systems to be Commissioned.

B. **Prefunctional Checklists** Equipment prefunctional checklists will be created by the CxA and distributed to the commissioning team for completion. The completion of the form with contractor signature ensures that functional performance testing may proceed without unnecessary delays. Equipment startup reports and associated required contractor test reports shall be attached to the associated prefunctional checklist. The completed prefunctional checklists shall be submitted to the CxA no later than one (1) week in advance of functional performance testing.

1. When completing prefunctional checklists, signatures are required for each installing contractor for verification of completion of their work.
2. The Subs and vendors shall execute startup and provide the CxA with a signed and dated copy of the completed start-up and prefunctional tests and checklists.
3. Only individuals that have direct knowledge and witnessed that a line item task on the prefunctional checklist was actually performed shall initial the item as complete. It is not acceptable for witnessing supervisors to fill out these forms.

4. The Subs shall clearly list any outstanding items of the initial start-up and prefunctional procedures that were not completed successfully at the bottom of the Prefunctional Checklist form or on an attached sheet.
5. The installing Subs or vendors shall correct all areas that are deficient or incomplete in the checklists and tests in a timely manner, and shall notify the CxA as soon as outstanding items have been corrected and resubmit documentation or update the CxA with a response to the commissioning issues log, as applicable.
6. Items left incomplete, which later cause deficiencies or delays during functional performance testing may result in back charges to the responsible party. Refer to Part 3.7 herein for details.

3.5 PHASED COMMISSIONING

A. The project may require TAB, startup and performance testing to be executed in phases. Phasing, if utilized, shall be coordinated with the Owner, GC, CxA, and AE and be reflected in the overall project schedule and commissioning schedule by the contractor. Final performance testing of all systems will be as required by the phasing plan. The performance testing of the "systems as a whole" may be performed before final turnover of the entire project.

3.6 FUNCTIONAL PERFORMANCE TESTING

A. This sub-section applies to all commissioning functional performance testing for all divisions.

B. The general list of equipment to be commissioned is found in Section 019113, Part 1.3.

C. **Coordination and Scheduling.** The Subs shall provide sufficient notice to the CxA regarding their completion schedule for the prefunctional checklists and startup of all equipment and systems. The CxA will schedule functional tests through the GC and affected Subs. The CxA shall direct, witness and document the functional performance testing of all equipment and systems. The Subs shall execute the tests.

1. Functional performance testing is conducted after equipment testing and startup has been satisfactorily completed.

2. The air balancing and water balancing is to be completed before functional performance testing of air-related or water-related equipment or systems.

3. Testing proceeds from components to subsystems to systems. When the proper performance of all interacting individual systems has been achieved, the interface or coordinated responses between systems can be checked.

4. Resolution Retesting will be scheduled after documented confirmation (controls trending, photograph, or completed work order form) that the issue has been resolved.

D. **Execution of Functional Performance Testing.** The CxA shall direct, witness, and document Functional performance testing. Each system should be operated through all modes of operation (seasonal, occupied, unoccupied, warm-up, cool-down, part- and full-load) where there is a specified system response. Verifying each sequence in the sequences of operation is required. Sample methods may be permitted as described in the Commissioning Plan.

E. **Deficiency Resolution** The CxA will document and recommend solutions to issues discovered during equipment installation and functional performance testing, however the burden of responsibility to solve, correct and demonstrate resolution of identified issues is with the GC, Subs and/or A/E.

3.7 DOCUMENTATION, NON-CONFORMANCE AND APPROVAL OF TESTS

A. **Documentation.** The CxA shall witness and document the results of all functional performance tests. The CxA will include the completed functional test procedures in the final commissioning report.

B. Non-Conformance.

1. All deficiencies or non-conformance issues shall be noted and reported on the issues log. If there is a dispute about a deficiency, regarding whether it is a deficiency or who is responsible, the issue will be discussed at a commissioning meeting. The general contractor shall be responsible for delivering an operational system that is compliant with design documents. Final interpretive authority is with the A/E. Final acceptance authority is with the owner.

2. The CxA will record the results of the functional test on the test form, and final results will be documented on the test form upon successful retesting.
3. Corrections of minor deficiencies identified may be made during the tests at the discretion of the CxA. In such cases the deficiency and resolution will be documented on the issues log.
4. Every effort will be made to expedite the testing process and minimize unnecessary delays, while not compromising the integrity of the procedures. However, the CxA will not be pressured into overlooking deficient work or loosening acceptance criteria to satisfy scheduling or cost issues, unless there is an overriding reason to do so at the request of the owner.

5. **Cost of Retesting.**
   a. The time for the CxA and GC to direct any retesting required because a specific prefunctional checklist or start-up test item, reported to have been successfully completed, but determined during functional performance testing to not have been completed, may be backcharged to the GC, who may choose to recover costs from the party responsible for signing the inaccurate prefunctional test form.
   b. For retesting of a system due to a deficiency identified that is not related to any prefunctional checklist or start-up fault, the following shall apply: The CxA and GC will direct the retesting of the equipment once at no “charge” for their time. However, the CxA’s and/or contractor’s time for a second retest will be charged to the GC, who may choose to recover costs from the responsible Sub.

6. The Contractor shall respond in writing to the CxA every two (2) weeks concerning the status of each outstanding discrepancy identified during commissioning. Discussion shall also cover explanations of any disagreements and proposals for their resolution.
7. The CxA retains the complete commissioning issues log throughout the project.

3.8 DEFERRED TESTING

A. **Unforeseen Deferred Tests.** If any check or test cannot be completed due to the building structure, required occupancy condition or other deficiency, execution of checklists and functional performance testing may be delayed upon approval of the OR. These tests will be conducted in the same manner as the seasonal tests as soon as possible. Services of necessary parties will be negotiated.

B. **Seasonal Testing.** During the warranty period, seasonal testing (tests delayed until weather conditions are closer to the system's design) shall be completed as part of this contract. The CxA shall coordinate this activity. Tests will be executed, documented and deficiencies corrected by the appropriate Subs, with facilities staff under the CxA direction.

3.9 TRAINING OF OWNER PERSONNEL

A. The GC shall be responsible for training coordination and scheduling and ultimately for ensuring that training is completed.

B. The CxA shall be responsible for overseeing and approving the content and adequacy of the training of Owner personnel for commissioned equipment.

1. The CxA may interview the facility manager and lead engineer to determine the special needs and areas where training will be most valuable. The Owner and CxA shall decide how rigorous the training should be for each piece of commissioned equipment. The CxA shall communicate the results to the Subs and vendors who have training responsibilities.

2. Each Sub and vendor responsible for training will submit a written training agenda to the CxA for review and approval prior to training. The agenda will cover the following elements:
    a. Equipment (included in training)
    b. Intended audience
    c. Location of training
    d. Objectives
    e. Subjects covered (description, duration of discussion, special methods, etc.)
        1) Equipment Description
        2) O&M Manual Review
        3) Safety and Emergency Shutoff
        4) Disable/Enable, General Sequence of Operation, and Typical Operation
        5) Current Setpoint and Operating Parameters
        6) Demonstration of Alarms and Safeties
        7) Troubleshooting and Diagnostics
        8) General Maintenance Procedures
    f. Duration of training on each subject
    g. Methods (classroom lecture, video, site walk-through, actual operational demonstrations, written handouts, etc.)
    h. Instructor, qualifications and contact information
    i. For the primary HVAC equipment, the Controls Contractor shall provide a discussion of the control of the equipment. This training may occur during the mechanical or electrical training conducted by others.

3.10 WRITTEN WORK PRODUCTS

A. The commissioning process generates a number of written work products described in various parts of the Specifications. The Commissioning Plan lists all the formal written work products, describes briefly their contents, who is responsible to create them, their due dates, who receives and approves them and the location of the specification to create them. In summary, the written products are:

Product	Developed By
1. Commissioning Plan	CxA
2. Cx Meeting Minutes	CxA
3. Commissioning Schedules	CxA with GC
4. Prefunctional Checklists	CxA (completed by Subs and GC)
5. Issues Log (deficiencies)	CxA (responses required by Subs and GC)
6. Functional Test Forms	CxA (executed by Subs; documented by CxA)
7. O&M Training Plan	GC
8. O&M Training Agendas	Subs
9. Final Commissioning Report	CxA
10. Systems Manual	CxA

END OF SECTION 01 91 13

SECTION 06 4100

ARCHITECTURAL WOOD CASEWORK

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Specially fabricated cabinet units.

B. Cabinet hardware.

C. Thermofoil door and drawer fronts.

1.2 RELATED REQUIREMENTS

A. Section 06 1000 - Rough Carpentry: Support framing, grounds, and concealed blocking.

B. Section 12 3600 - Countertops.

1.3 REFERENCE STANDARDS

A. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards; 2014.

B. BHMA A156.9 - American National Standard for Cabinet Hardware; Builders Hardware Manufacturers Association; 2010 (ANSI/BHMA A156.9).

C. NEMA LD 3 - High-Pressure Decorative Laminates; National Electrical Manufacturers Association; 2005.

1.4 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Shop Drawings: Indicate materials, component profiles, fastening methods, jointing details, and accessories.

C. Product Data: Provide data for hardware accessories.

D. Samples: Submit one (1) actual sample of each material scheduled for the following:
   1. Plastic laminates.
   2. Plastic edge banding materials.
   3. Thermoset melamine.

1.5 QUALITY ASSURANCE

A. Fabricator Qualifications: Company specializing in fabricating the products specified in this section with minimum five years of documented experience.

B. Perform work in accordance with AWI/AWMAC Architectural Woodwork Quality Standards Illustrated, Custom quality, unless other quality is indicated for specific items.

1.6 MOCK-UP

A. Provide mock-up of typical base cabinet, including hardware and finishes for each type indicated.

B. Locate where directed.

C. No Architectural Wood Casework production can be initiated until mock-up has been approved by Architect.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Protect units from moisture damage.

1.8 FIELD CONDITIONS

A. During and after installation of custom cabinets, maintain temperature and humidity conditions in building spaces at same levels planned for occupancy.

PART 2 PRODUCTS

2.1 CABINETS

A. Quality Grade: Unless otherwise indicated provide products of quality specified by AWI//AWMAC/WI (AWS) for Premium Grade.

B. Cabinets:
   1. Cabinet Design Series: As indicated on drawings.

2.2 THERMOFOIL DOOR AND DRAWER FRONTS

A. Door and Drawer Front Manufacturer:
   1. Northern Contours, Inc.: www.northerncontours.com.
   2. Substitutions: See Section 01 6000 - Product Requirements.

B. Type:
   1. Basis of Design: Northern Contours, Inc.; 1-piece Thermofoil Components.
      a. Door Style: Shaker Series - Shaker.
      b. Finish: All exposed sides.
      c. Edges: 3mm PVC.
      d. Color:
         1) TF-1: Island Bamboo 2179.
         2) TF-3: Cherry Blossom 206.

2.3 WOOD-BASED COMPONENTS

A. High Performance Core:
   1. Particleboard shall conform to ANSI A208.1-1993, type M-3. Balanced 3-ply construction with moisture content not to exceed 8%.
   2. Non-Formaldehyde Cabinet Body Core:
      a. Core material shall be formaldehyde free.
      b. Cabinet body and drawer components and related panel substrate materials shall be , a non-formaldehyde resin composition board, or approved equal, engineered to meet the performance requirements of ANSI A208.1-1993 for Grade M3 Particleboard. No formaldehyde emissions. No exceptions.
   3. Cabinet components shall be of the following minimum core thickness:
      a. 3/4 inch: Cabinet drawer body and drawer bottoms.
      b. 1/4 inch: Cabinet backs.
      c. 3/4 inch: Door and drawer face, base, upper, and tall cabinet tops and bottoms, cabinet sides, drawer spreaders, cabinet back rear hang strips, structural dividers, exposed cabinet backs, and shelves in cabinets.
      d. 1 inch: Door and drawer face, base, upper, and tall cabinet tops and bottoms, cabinet sides, and shelves in cabinets at 48 inches or larger in length.

2.4 LAMINATE MATERIALS

A. Provide products/colors listed in **Materials List** and **Room Finish Schedule** as shown on drawings.

B. High Pressure Decorative Laminate (HPDL): NEMA LD 3, types as recommended for specific applications.

C. Provide specific types as follows:
   1. Horizontal Surfaces: HGS, 0.048 inch nominal thickness, through color, colors as scheduled, finish as scheduled.

2. Vertical Surfaces: VGS, 0.028 inch nominal thickness, through color, colors as scheduled, finish as scheduled.
3. Thermoset Melamine: TM, 0.020 inch nominal thickness, .
4. Laminate Backer: BKL, 0.020 inch nominal thickness, undecorated; for application to concealed backside of panels faced with high pressure decorative laminate.

2.5 ACCESSORIES

A. Adhesive: Type recommended by fabricator to suit application.

B. Fasteners: Size and type to suit application.

C. Bolts, Nuts, Washers, Lags, Pins, and Screws: Of size and type to suit application; galvanized or chrome-plated finish in concealed locations and stainless steel or chrome-plated finish in exposed locations.

D. Concealed Joint Fasteners: Threaded steel.

E. Crown Moulding Accessory:
1. Basis of Design: Northern Contours, Inc.; 08023 Cove Crown.
   a. Type: 2 3/4 inch high plastic laminate crown moulding to match cabinet face.

2.6 HARDWARE

A. Specialty Cabinet Hardware: Reference drawings for type and location of specialty cabinet hardware not specified below.

B. Hardware: BHMA A156.9, types as recommended by fabricator for quality grade specified.

C. Adjustable Shelf Supports: 5mm diameter line bored shelf holes spaced 32mm apart with metal 5mm diameter single pin shelf rest.

D. Drawer and Door Pulls:
1. Product: Top Knobs M391 - Griggs Pull 5 1/16" (c-c) - Brushed Satin Nickel, Nouveau Collection. Length: 5-7/16". Width: 1/2". Projection: 1-13/16".

E. Cabinet Locks: Heavy-duty Cam type, keyed cylinder, two keys per lock, finish to match drawer/door pulls.
1. Keying: All locks to be keyed the same within the same room.
2. **ALL CABINET DOORS AND DRAWERS ARE TO RECEIVE LOCKS, unless specifically noted otherwise on the Drawings. Owner and Architect to approve all keying.**

F. Catches: Magnetic.

G. Drawer Slides:
1. Type: Full extension.
2. Static Load Capacity: Commercial grade.
3. Mounting: Bottom mounted.
4. Stops: Integral type.
5. Features: Silent and soft closing.
6. Finish: Epoxy coated.
7. Product: Blum, Grass or approved equal.

H. Hinges: European style concealed self-closing type, steel with polished finish.
1. Features: 3-dimensional adjustment, silent and soft closing with 110 degrees of opening.
2. Product: Blum; CLIP top BLUMOTION or approved equal.

I. Coat Hooks:
1. Product: IVES Hardware; 405 Coat & Hat Hook.

J. Pencil Drawer: Hafele, Item No. 429.59.340

K. File Drawer Hanging Hardware: Heavy duty sliding file hanging hardware with full extensions, commercial grade, side mounted, epoxy coated slides.
1. Locations: Provide on ALL drawers over 6" deep and also at ALL lateral file drawers/cabinets.

L. Limit Stops:
   1. Product: Hafele; Lid Stay / Door Restraint 371.32.755-Left 371.32.700-Right or approved equal.
      a. Location: All tall cabinets only, unless noted otherwise.

M. Blind Corner Cabinet Hardware with Tray Set:
   1. Product: Hafele; Magic Corner II 548.10.441-Left 548.10.440-Right: www.hafele.com.
   2. Tray Set Product: Hafele; 2 front and 2 back baskets 548.11.466: www.hafele.com.

N. Undercounter PC Bracket:
   1. Product: Humanscale; CPU555/BLACK: www.humanscale.com.

O. Undermount Trash Can Hardware:
   1. Product: Blum; TANDEMBOX waste/recycle set or approved equal.

P. Label/Tag Holders: Mockett CF2-94, as indicated on drawings.

Q. Resin, Chrome, and/or Pressed Glass:
   1. Product: 3form: www.3-form.com.
   2. Material/Color/Pattern: As indicated on drawings.

R. Closet Hardware:
   1. Product: As indicated on drawings.
   2. Manufacturer: Knape & Vogt: www.kv.com or approved equal.

2.7 FABRICATION

A. Assembly: Shop assemble cabinets for delivery to site in units easily handled and to permit passage through building openings.
   1. All upper cabinets to be 14 inches deep with the dimension measuring from the outside finish face of wall to the outside finish face of the cabinet door, unless noted otherwise in the Drawings.

B. Edging: Fit shelves, doors, and exposed edges with specified edging. Do not use more than one piece for any single length.

C. Fitting: When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide matching trim for scribing and site cutting.

D. Plastic Laminate: Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline; secure with concealed fasteners. Slightly bevel arises. Locate counter butt joints minimum 2 feet from sink cut-outs.

E. Plastic Laminate (PL) Cabinets:
   1. Cabinets: Frameless (Eurostyle).
      a. Exterior:
         1) All exposed surfaces: VGS.
         2) Cabinet box edge (face): VGS.
      b. Interior:
         1) All exposed surfaces: TM.
         2) All interior shelf surfaces: VGS.
         3) All interior shelf edges: 1mm Plastic Edge Banding.
   2. Cabinet Doors: Full overlay.
      a. Exterior:
         1) Front surface: VGS.
         2) All edges: 3mm Plastic Edge Banding.
      b. Interior:
         1) Exposed surface: VGS.
   3. Drawers:
      a. Exterior:
         1) Front surface: VGS.
         2) All drawer front edges: 3mm Plastic Edge Banding.
      b. Interior:

1) Sides and back drawer surfaces: TM.
2) Bottom drawer surface: TM.

4. Open Cabinets / Exposed Shelves:
   a. Exterior:
      1) All exposed surfaces: VGS.
      2) Cabinet box edge (face): VGS.
   b. Interior:
      1) All exposed surfaces: VGS.
      2) All interior shelf surfaces: VGS.
         (a) All interior shelf edges: VGS.

F. Thermofoil (TF) Cabinets (Thermoset Melamine cabinets with Thermofoil Drawer and Door Fronts):
   1. Cabinets: Frameless (Eurostyle).
      a. 3/4 inch sides, tops and bottoms: TM.
      b. 1/4 inch backs: TM.
      c. Cabinet box edge (face): 0.018 PVC to match exterior color.
   2. Cabinet Doors: Thermofoil Door Front.
   3. Drawers: Thermofoil Drawer Front.
      a. 5-piece drawer.
      b. 3/4 inch subfront, sides and end: TM.
      c. 1/4 inch bottom: TM.
   4. Open Cabinets / Exposed Shelves: Frameless (Eurostyle).
      a. 3/4 inch sides, tops and bottoms: TM.
      b. Cabinet box edge (face): 0.018 PVC to match exterior color.

G. All exposed sides (including bottoms) of upper cabinets, cabinet doors, interior shelves, exposed shelves, and tall cabinets will be covered with material as defined.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify adequacy of backing and support framing.

B. Verify location and sizes of utility rough-in associated with work of this section.

3.2 INSTALLATION

A. Set and secure custom cabinets in place, assuring that they are rigid, plumb, and level.

B. Use fixture attachments in concealed locations for wall mounted components.

C. Use concealed joint fasteners to align and secure adjoining cabinet units.

D. Carefully scribe casework abutting other components, with maximum gaps of 1/32 inch. Do not use additional overlay trim for this purpose.

E. Accessories: Install in accordance with manufacturer's written instructions.

F. Hardware: Install in accordance with manufacturer's written instructions.

G. Limit Stops: Stops shall be provided on all hinged doors adjacent to cabinets or countertops of greater depth, or adjacent to walls and shall not allow contact between the door or door pull and any adjacent surfaces. Install at top of door and cabinet.

3.3 ADJUSTING

A. Adjust installed work.

B. Adjust moving or operating parts to function smoothly and correctly.

3.4 CLEANING

A. Clean casework, counters, shelves, hardware, fittings, and fixtures.

END OF SECTION

SECTION 07 08 00
ENCLOSURE COMMISSIONING

PART 1 - GENERAL

1.1 DESCRIPTION

A. The requirements of this Section apply to all sections of Division 07 and Division 08.
B. This project will have selected building systems commissioned. The complete list of equipment and systems to be commissioned is specified in Section 01 91 13 GENERAL COMMISSIONING REQUIREMENTS. The commissioning process is defined in Section 01 91 13 GENERAL COMMISSIONING REQUIRMENTS.

1.2 RELATED WORK

A. Section 01 00 00 GENERAL REQUIREMENTS.
B. Section 01 91 13 GENERAL COMMISSIONING REQUIREMENTS.

1.3 SUMMARY

A. This Section includes requirements for commissioning the Facility exterior closure, related subsystems and related equipment. This Section supplements the general requirements specified in Section 01 91 13 GENERAL COMMISSIONING REQUIREMENTS.
B. Refer to Section 01 91 13 GENERAL COMMISSIONING REQUIREMENTS for more details regarding processes and procedures as well as roles and responsibilities for all Commissioning Team members.

1.4 DEFINITIONS

A. Refer to Section 01 91 13 GENERAL COMMISSIONING REQUIREMENTS for definitions.

1.5 COMMISSIONED SYSTEMS

A. Commissioning of a system or systems specified in Division 07 and Division 08 is part of the construction process. Documentation and testing of these systems, as well as training of the Owner's Operation and Maintenance personnel, is required in cooperation with the Owner and the Commissioning Agent.
B. The following Facility exterior closure systems will be commissioned:
    1. Exterior building envelope (above grade) including exterior opaque walls, sheathing, framing, insulation, and interior finish materials attached to exterior walls will receive thermographic analysis by the Commissioning Authority

PART 2 – TEST EQUIPMENT

2.1 TEST EQUIPMENT

A. Refer to Section 01 91 13 GENERAL COMMISSIONING REQUIREMENTS for more details regarding contractor required testing and equipment.

PART 3 - EXECUTION

3.1 COMMISSIONING MEETINGS AND REPORTING, ISSUES LOGS, PRE-FUNCTIONAL CHECKLISTS, FUNCTIONAL TESTING, AND OWNER TRAINING.

A. Refer to Section 01 91 13 GENERAL COMMISSIONING REQUIREMENTS for more details regarding processes and procedures as well as roles and responsibilities for all Commissioning Team members.

3.2 CONTRACTORS TESTS

A. Contractor tests as required by other sections of Division 07 or Division 08 shall be scheduled and documented in accordance with Section 01 00 00 GENERAL REQUIREMENTS. The Commissioning Agent will witness selected Contractor tests. Contractor tests shall be completed prior to scheduling Systems Functional Performance Testing, including:

1. None

END OF SECTION 07 08 00

SECTION 08 5212

ANDEREN VINYL-CLAD WOOD WINDOWS (ALTERNATE NO. 9)

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Casement windows.
   2. Glazing.
   3. Accessories.

1.2 SYSTEM DESCRIPTION

A. Performance Requirements: Provide products/systems that have been manufactured, fabricated, and installed to the following performance criteria:
   1. Comply with ANSI/AAMA/NWWDA 101/I.S.2.

B. Structural Requirements: Provide products/systems capable of withstanding wind loads based on testing units representative of those indicated for Project that pass AAMA/NWWDA 101/I.S.2/NAFS, Uniform Structural Load Test:
   1. Design Wind Loads: Determine design wind loads applicable to Product from basic wind speed indicated in miles per hour (meters per second) at 33 feet (10 meters) above grade, according to ASCE, Section 6, based upon mean roof heights indicted on Drawings.
      a. Basic Wind Speed: 90 MPH.
      b. Importance Factor: 1.0.
      c. Exposure Category: C.

1.3 SUBMITTALS

A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 01 Submittal Procedures Section.

B. Product Data: Submit manufacturer's product data and installation guides.

C. Shop Drawings: Provide drawings indicating direction of operable parts, typical jamb, head and sill conditions, and special mullion reinforcement details.

D. Color Samples: Submit selection and verification samples, including the following:
   1. Hardware: Submit Sample indicating typical finish on hardware.
   2. Cladding: Submit color samples of exterior cladding.

E. Quality Assurance/Control Submittals: Submit the following:
   1. Performance Data: Provide manufacturer's published performance data for specified products.

F. Contract Closeout Submittals: Submit the following:
   1. Warranty documents specified herein.
   2. Owner's Manual: Bound manual clearly identified with project name, location, and completion date. Identify type and size of units installed. Provide recommendations for periodic inspections, care, and maintenance. Identify common causes of damage with instructions for temporary repair.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Utilize an installer having demonstrated experience on projects of similar size and complexity.

1.5 DELIVERY, STORAGE, and HANDLING

A. General: Comply with Division 01 Product Requirements Section.

B. Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.

C. Delivery: Deliver materials in manufacturer's original unopened, undamaged containers with identification labels intact.

D. Storage and Protection: Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer.

E. Store materials and accessories off ground, under cover, and protected from weather and construction activities.

1.6 PROJECT CONDITIONS

A. Field Measurements: Verify actual dimension of openings by field measurement before fabrication. Record measurements on shop drawings. Coordinate field measurements and fabrication schedule with construction progress to avoid construction delays.

B. Install units in strict accordance with manufacturer's safety and weather recommendations.

1.7 WARRANTY

A. Project Warranty: Refer to Conditions of the Contract for project Warranty provisions.

B. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard limited warranty document. Manufacturer's limited warranty is in addition to, and not a limitation of, other rights Owner may have under contract documents.

PART 2 PRODUCTS

2.1 MANUFACTURER

A. Provide products from the following manufacturer:
   1. Andersen Windows, Inc.
   2. 100 4th Ave. N.
   3. Bayport, MN 55003-1096.
   4. Phone: (800) 299-9029.
   5. Fax: (800) 752-9230.
   6. E-mail: technicalsupport@andersenwindows.com.
   7. www.andersenwindows.com.

2.2 MANUFACTURED UNITS

A. Proprietary Product/Systems: Wood windows, including the following:
   1. Andersen® 400 Series Casement Windows.

2.3 MATERIALS

A. Frame and Sash: Fabricated from wood species approved in WDMA Industry Standard I.S.2.

B. Vinyl Cladding: Rigid vinyl (PVC) complying with requirements of ASTM D4216, in the following color:
   1. Color: White.

C. Weatherstripping:
   1. Venting Sash: Weatherstripped with the following material:
      a. Tubular flexible vinyl.
      b. Flexible EPDM foam.
   2. Stationary Casement/Awning Sash: Weatherstripped with foamed PVC gaskets or tubular flexible vinyl.

D. Interior Stops:

1. Unfinished pine.

2.4 GLAZING

A. General: Insulating glass units certified through the Insulating Glass Manufacturers Association of Canada (IGMAC) conforming to the requirements of Canadian General Standards Board CAN/CGSB 12.8 or ASTM E2190. Provide dual sealed units consisting of polyisobutylene primary seal and silicone secondary seal. Provide metal spacers with bent or soldered corners.

B. High-Performance™ Low-E4™ Glass Argon Blend Filled Insulating Glass Units:
   1. Glass - Operating Units: Insulating glass units consisting of an outboard lite of clear annealed glass conforming to ASTM C1036, Type 1, Class 1, q3 and an inboard lite of clear, heat strengthened glass conforming to ASTM C1048, Type 1, Class 1, q3, Kind HS.
   2. Magnetron sputtering vapor deposition (MSVD) TiO2 coating applied to the No. 1 surface.
   3. High-Performance™ Low-E4™ Coating: Magnetron sputtering vapor deposition (MSVD) Low-E coating applied to the No. 2 surface.
   4. Filling: Fill space between glass lites with argon gas blend.
   5. Protective removable polyolefin film applied to glass surfaces No. 1 and No. 4.

2.5 HARDWARE

A. Venting Casement Hardware:
   1. Hardened steel operator arm stamped with a gear ring. Set arm gear between nylon bushing and nylon spacer. Encase drive shaft and worm gear assemblies in zinc die cast base and removable polycarbonate cover.
      a. Maximum Clear Opening Dimensions in Full Open Position:
         1) Units with Split Arm Operator:
            (a) C Series: 14-7/16 inch (367 mm).
         2) Units with Straight Arm Operator:
            (a) C Series; 18-5/16 inch (465 mm).
   2. Hinges: Stainless steel and heavy gauge steel arms. Stainless steel reinforcing insert in low friction shoe for rectangle units. 2-knuckle stainless steel butt hinges for shaped units. Apply hinges to venting sash indicated on Drawings.
   3. Operator Handle and Covers:
      a. Andersen Classic™ zinc die cast handle with powder coated painted finish and polycarbonate operator cover with integral color in the following finish.
         1) Style: Compact.
         2) Color: White
         3) Color: Stone.
      b. Folding Handle: Zinc die cast handle with powder coated painted finish and polycarbonate operator cover with integral color in the following style and finish.
         1) Style: Traditional.
         2) Color: White
         3) Color: Stone.
      c. Estate™ forged brass handle and operator cover available in the following finish:
         1) Finish: Satin Nickel.
   4. Lock Handle and Bezel: Universal lock handle of die cast zinc with powder coated paint finish and polycarbonate bezel with the following integral color:
      a. Color: White
      b. Color: Stone.
      c. Estate™ Lock Handle and Stamped Bezel: Forged brass handle and operator cover available in the following finish:
         1) Finish: Satin Nickel.
   5. Sash Locks: Single actuation lock concealed by trim stops. Die cast zinc, galvanized steel link and engineered polymer components.
   6. Sash Stiffener: Prefinished aluminum sash stiffeners for impact resistant units over 54 inches (1372 mm) tall.
   7. Full Length Exterior Snugger: Provide full height prefinished aluminum exterior snugger for ventilating impact resistant units.

8. Limited Ventilation Control Adapters: Stainless steel limited ventilation control adapters designed to limit casement opening and projection. Adapters to work with the existing hinge hardware.
9. Operator Stud Cover: Baked enamel finish to match operator handle finish. Provide operator stud cover where operator handle is removed for controlled access.
10. Sash Locks: Single actuation lock concealed by trim stops. Die cast zinc, galvanized steel link and engineered polymer components in finishes to match handle options.
11. Hinges: Stainless steel hinges with brass shoe that has nylon block for screw adjustment of friction.

2.6 JOINING SYSTEMS

A. Wood Non-Reinforced Joining:
   1. Non-reinforced join with wood spacer.
   2. Gusset Plates: Galvanized metal gusset plates.

B. Aluminum Reinforced Joining.
   1. Reinforcing: Extruded aluminum profile of 6061-T6 aluminum with pre-drilled holes.
   2. End Plate: 0.080 inch (2.03 mm) 6061 T-5 stamped aluminum end plate with yellow chromate conversion coating and 1/2 inch (12.7 mm) stud that engages into aluminum profile.

C. Steel Reinforced Joining:
   1. Reinforcing: Provide 4 inch by 3/16 inch (100 mm by 4.8 mm) thick hot rolled steel plate conforming to ASTM A36 with zinc plating and yellow chromate conversion coat. Pre drill holes for attachment to window frames and end brackets.
   2. End Brackets: Predrilled steel end brackets that attach to each end of steel reinforcement member for attachment to rough opening.

D. LVL Reinforced Joining: 1-way.
   1. Reinforcing: 6-9/16 inch (167 mm).
      a. Engineered laminated veneer lumber, 3/4 inch (19 mm) thick, with extruded aluminum end cap.
      b. End Brackets: 18 gage (1.3 mm) galvanized preformed metal gusset plates.
   2. Jamb Clips: Stainless steel jamb clips.

E. LVL Reinforced Joining: 2-way:
   1. Reinforcing: 6-9/16 inch (167 mm).
      a. Engineered laminated veneer lumber 3/4 inch (19 mm) thick with extruded aluminum end cap.
      b. End Brackets: 14 gage (2.3 mm) galvanized end brackets with zinc dichromate finish.
      c. Intersection Brackets: 14 gage (2.3 mm) galvanized brackets with zinc dichromate finish.
   2. Jamb clips: Stainless steel jamb clips.

F. Fasteners: Corrosion resistant screws and bolts as provided by window manufacturer for fastening reinforcement members to wood frame and fastening end brackets to reinforcement members. Other fasteners provided by window installer.

G. Provide silicone sealant recommended by window manufacturer.

H. Provide vinyl trim strips as recommended by window manufacturer for each joining method used.
   1. Color: Match window unit exterior color.

I. Provide Head Flashing: 6 inch (152 mm) long sheet vinyl.
   1. Color: Match window unit exterior color.

J. Jamb clips: Stainless steel.

K. Inside Mull Casing: Provide mull casings in the following species.
   1. Casing Species: Pine.

2.7 ACCESSORIES

A. Insect Screens: Provide venting sash with an insect screen, including attachment hardware.

1. Frames: 0.024 inch (0.61 mm) rolled aluminum frame with chromate conversion coating. Provide matching corner locks and latch retainers.
    a. Insect Screen Cloth: 18 by 16 aluminum mesh, gunmetal finish.
    b. Frame Finish: High-bake polyester finish in the following color:
        1) Frame Finish: White.

B. Grilles:
1. Finelight™ Grilles: Provide contour profile aluminum muntin bars permanently mounted within insulating glass unit where indicated on Drawings.
    a. Grille Intersections: ABS concealed plastic connectors with nylon end keepers.
    b. Exterior and Interior Surface: White painted finish.
    c. Width: 3/4 inch (19.1 mm).
    d. Width: 1 inch (25.4 mm).
    e. Pattern as indicated on Drawings.

C. Extension Jambs: Wood members machined from clear material or veneered finger joined clear material approved in WDMA Industry Standard I.S.4. Pre-drill extension jambs for application.

2.8 FABRICATION

A. Preservative Treatment: Treat wood frame members after machining with a water repellent preservative in accordance with WDMA I.S.4.

B. Vinyl Cladding:
1. Sash Members: Completely encase sash members with seamless, 0.047 inch (1.19 mm) thick, rigid vinyl extrusions. Heat-weld corners.
2. Frame Units: Clad frame units with preformed rigid vinyl to provide joint-free cover. Provide integral flanges of 0.040 inch (1.02 mm) vinyl. Bond sheathing to wood frame with vinyl-to-wood adhesive.

C. Glazing: Factory glaze with high quality glazing sealant and snap-in rigid vinyl glazing bead.

D. Factory-apply weatherstripping.

PART 3 - EXECUTION

3.1 MANUFACTURER'S INSTRUCTIONS

A. Comply with the instructions and recommendations of the window manufacturer.

3.2 EXAMINATION

A. Site Verification of Conditions: Verify that site conditions are acceptable for installation of units, including the following:
1. Concrete surfaces are dry and free of excess mortar, rocks, sand, and other construction debris.
2. Masonry openings are square and dimensions are correct.
3. Rough openings are square and dimensions are correct.
4. Sill plates are level.
5. Wood frame walls are dry, clean, sound, and well nailed or glued, free of voids and without offsets at joints.
6. Nail heads are driven flush with surfaces in openings and within 3 inches (75 mm) of rough opening.

B. Do not proceed with installation of units until unacceptable conditions are corrected.

3.3 INSTALLATION

A. General:
1. Remove unit components, parts, accessories, and installation guides from carton.
2. Inspect unit components and verify that components are not damaged and that parts are included before disposing of carton.

3. Shop-assemble multiple units before installation in accordance with manufacturer's installation guides.

B. Interface With Other Work:
   1. Perform installation in accordance with Manufacturer's instructions.
   2. Install units level, plumb, square, true to line, without distortion, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction.
   3. Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other materials.
   4. Install insulation in shim space around unit perimeter to maintain continuity of building insulation. Do not overfill.
   5. Hold back exterior siding or other finish materials from edge of unit to allow for expansion and contraction and installation of proper joint sealant with backing materials. Seal perimeter of unit after exterior finish is applied per requirements of Division 07 "Joint Sealants" Section.
   6. Finish interior units per requirements specified in related sections. Refer to, and comply with, additional requirements in manufacturer's installation guides.
   7. Install optional hardware and unit accessories after cleaning.

C. Site Tolerances:
   1. Adjust operation, insect screens, hardware, and accessories for a tight fit at contact points and weatherstripping for smooth operation and weathertight closure.

3.4 CLEANING

A. Clean units using cleaning material and methods specifically recommended by window manufacturer.

B. Remove excess sealants, glazing materials, dirt, and other substances.

C. Avoid damaging protective coatings and finishes.

D. Protect unit surfaces from masonry cleaning solution that could damage insulation glass panels or hardware.

E. Remove debris from work site and properly dispose of debris.

3.5 PROTECTION

A. Protect installed work from damage due to subsequent construction activity on the site.

END OF SECTION

SECTION 10 1400

SIGNAGE

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Room signs.

B. Interior directional and informational signs.

C. Building identification signs.

D. Interior building dedication plaque.

E. Monument sign.

1.2 RELATED REQUIREMENTS

A. Section 01 2100 - Allowances.

1.3 REFERENCE STANDARDS

A. 36 CFR 1191 - Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines; current edition.

B. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design; 2010.

C. ICC A117.1 - Accessible and Usable Buildings and Facilities; International Code Council; 2009 (ANSI).

1.4 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Product Data: Manufacturer's printed product literature for each type of sign, indicating sign styles, font, foreground and background colors, locations, overall dimensions of each sign.

C. Signage Schedule: Provide information sufficient to completely define each sign for fabrication, including room number, room name, other text to be applied, sign and letter sizes, fonts, and colors.
   1. When room numbers to appear on signs differ from those on the drawings, include the drawing room number on schedule.
   2. When content of signs is indicated to be determined later, request such information from Owner through Architect at least 2 months prior to start of fabrication; upon request, submit preliminary schedule.
   3. Submit for approval by Owner through Architect prior to fabrication.

D. Samples: Submit two samples of each type of sign, of size similar to that required for project, illustrating sign style, font, and method of attachment.

E. Selection Samples: Where colors are not specified, submit two sets of color selection charts or chips.

F. Verification Samples: Submit samples showing colors specified.

G. Manufacturer's Installation Instructions: Include installation templates and attachment devices.

H. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 01 6000 - Product Requirements, for additional provisions.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three (3) years ofdocumented experience.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Package signs as required to prevent damage before installation.

B. Package room and door signs in sequential order of installation, labeled by floor or building.

C. Store tape adhesive at normal room temperature.

1.7 FIELD CONDITIONS

A. Do not install tape adhesive when ambient temperature is lower than recommended by manufacturer.

B. Maintain this minimum temperature during and after installation of signs.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Signs:
   1. ASI-Modulex, Inc.: www.asimodulex.com
   2. Innerface Architectural Signage Inc.: www.innerface-signage.com.
   3. Graphic Specialties, Inc.: www.signsbygsi.com.
   4. Substitutions: See Section 01 6000 - Product Requirements.

2.2 SIGNAGE APPLICATIONS

A. Accessibility Compliance: Signs are required to comply with ADA Standards and ICC A117.1 and applicable building codes, unless otherwise indicated; in the event of conflicting requirements, comply with the most comprehensive and specific requirements.

B. Interior Directional and Informational Signs: As indicated on drawings.

C. Building Identification Signs: As indicated on drawings.

D. Monument Signs: As indicated on drawings.

2.3 SIGN TYPES

A. Interior Directional and Informational Signs: Custom.
   1. Sizes: As indicated on drawings.
   2. Basis of Design: Innerface Architectural Signage Inc.; Innerdot Frame.
      a. Non-glare acrylic panel.
      b. Square/rectangle without perimeter.
      c. Digital print on clear material on back, then backed with metallic vinyl.
      d. Raised Characters and Grade 2 Braille Translation in Clear Acrylic Rasters. Dots are 1/10 inch on center in each cell with 2/10 inch space between cells. Dots are raised 1/32 inch minimum above the background.

2.4 DIMENSIONAL LETTERS

A. Metal Letters:
   1. Metal: Aluminum casting.
   2. Finish: As indicated.
   3. Mounting: Concealed screws.

B. Vinyl Letters.

2.5 ACCESSORIES

A. Concealed Screws: Stainless steel, galvanized steel, chrome plated, or other non-corroding metal.

B. Tape Adhesive: Double sided tape, permanent adhesive.

C. Back Cover: Provide for all signs mounted on transparent surfaces.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that substrate surfaces are ready to receive work.

3.2 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install neatly, with horizontal edges level.

C. Locate signs where indicated:
   1. If no location is indicated obtain Owner's instructions.

D. Protect from damage until Substantial Completion; repair or replace damage items.

END OF SECTION

CENTRAL NEBRASKA VETERANS HOME

Custom Fabrications are Acceptable for the following Equipment Items

ITEM#	DESCRIPTION	QUANTITY
002A	SOILED DISHTABLE	3
002B	SOILED DISHTABLE	3
004A	CLEAN DISHTABLE	3
004B	CLEAN DISHTABLE	3
007A	STAINLESS PREP TABLE WITH SINK	3
007B	STAINLESS PREP TABLE WITH SINK	3
013	STAINLESS PREP TABLE	6
014	WALL SHELF	6
016	STAINLESS PREP TABLE	6
029	BUMPER GUARD	18
032	DISHRACK SHELVING	6
038	DISHRACK SHELVING	6
039	WALL SHELF	6
040	STAINLESS STEEL ENDGUARD	36
042	STAINLESS STEEL CLADDING	18
301	TWO COMPARTMENT SINK	2
302	MIXER TABLE	1
304	STAINLESS PREP TABLE	2
305	STAINLESS PREP TABLE	1
307	PREP TABLE WITH POT RACK	1
308	STAINLESS PREP TABLE	1
310	STAINLESS PREP TABLE WITH SINK	1
311	STAINLESS PREP TABLE	2
312	STAINLESS PREP TABLE	1
313	STAINLESS PREP TABLE	1
315	STAINLESS PREP TABLE WITH SINK	1
317	STAINLESS PREP TABLE	1
319	STAINLESS PREP TABLE	1
321	STAINLESS PREP TABLE	2
323	STAINLESS PREP TABLE	2
324	STAINLESS PREP TABLE	1

CENTRAL NEBRASKA VETERANS HOME

Custom Fabrications are Acceptable for the following Equipment Items

ITEM#	DESCRIPTION	QUANTITY
603	SOILED DISHTABLE	1
604	DISHRACK SHELVING	3
605	CLEAN DISHTABLE	1
709	WALL SHELF	4
713	WALL SHELF	1
714	WALL SHELF	1
807	STAINLESS STEEL CORNERGUARDS	9
808	STAINLESS STEEL WALL CLADDING	1
809	STAINLESS STEEL WALL CLADDING	1
810	STAINLESS STEEL ENDGUARDS	18
928	STAINLESS PREP TABLE	1

SECTION 23 08 00
COMMISSIONING OF HVAC SYSTEMS

PART 1 - GENERAL

1.1 DESCRIPTION

A. The requirements of this Section apply to all sections of Division 23.
B. This project will have selected building systems commissioned. The complete list of equipment and systems to be commissioned is specified in Section 01 91 13 GENERAL COMMISSIONING REQUIREMENTS. The commissioning process is defined in Section 01 91 13 GENERAL COMMISSIONING REQUIRMENTS.

1.2 RELATED WORK

A. Section 01 91 13 GENERAL COMMISSIONING REQUIREMENTS.

1.3 SUMMARY

A. This Section includes requirements for commissioning the HVAC systems, subsystems and related equipment. This Section supplements the general requirements specified in Section 01 91 13 GENERAL COMMISSIONING REQUIREMENTS.
B. Refer to Section 01 91 13 GENERAL COMMISSIONING REQUIREMENTS for more details regarding processes and procedures as well as roles and responsibilities for all Commissioning Team members.

1.4 DEFINITIONS

A. Refer to Section 01 91 13 GENERAL COMMISSIONING REQUIREMENTS for definitions.

1.5 COMMISSIONED SYSTEMS

A. Commissioning of a system or systems specified in Division 23 is part of the construction process.
B. All new HVAC systems will be commissioned. Sampling will be allowed as determined by the Commissioning Authority (CxA). Refer to Section 01 91 13 GENERAL COMMISSIONING REQUIREMENTS for additional information.

PART 2 – TEST EQUIPMENT

2.1 TEST EQUIPMENT

A. Refer to Section 01 91 13 GENERAL COMMISSIONING REQUIREMENTS for more details regarding contractor required testing and equipment.

PART 3 - EXECUTION

3.1 COMMISSIONING MEETINGS AND REPORTING, ISSUES LOGS, PRE-FUNCTIONAL CHECKLISTS, CONTRACTOR'S TESTS, FUNCTIONAL TESTING, AND OWNER TRAINING.

A. Refer to Section 01 91 13 GENERAL COMMISSIONING REQUIREMENTS for more details regarding processes and procedures as well as roles and responsibilities for all Commissioning Team members.

END OF SECTION 23 08 00

Building Energy Management System (BEMS) Specification

1.1 GENERAL DESCRIPTION

Building Energy Management System shall continuously optimize building energy performance with general functions as follows:

- Real-time monitoring of all energy-related data gathered from meter, sub-meter, sensors or building automation systems.
- Automated Energy analytics and visualization technologies
- Advanced analytics to detect operational anomalies (faults) and identify potential Energy Conservation Measures
- Sustainability support including Energy Star ratings, tracking carbon emissions, personalized dashboards to engage occupants
- Financial Reporting facilities track budget vs actual performance in real-time.
- Enterprise Data Management: data and user management for building, campus or multi-site portfolio in secure environment to protect data while ensuring that energy data is available anywhere, anytime.
- Shall provide data collection, analytics and professional analysis for general facility performance, airside systems , variable air systems and chiller performance including, but not limited to, analytics, charts and graphs which indicate both current building performance and opportunities for building and HVAC system performance improvement.

1.2 ARCHITECTURE/COMMUNICATION

A. Building Energy Management System (BEMS) data shall be able to be gathered by:
   1. Hardwired, or wireless, direct connection to range of gateways including:
      a. Tridium (Niagara) platforms: JENE, JACE or other
      b. Tracer SC
      c. Trane Connectivity Module
   2. Communicated Building Automation System points gateway
      a. Any input or output point on the Building Automation System shall be available for monitoring and reporting through the BEMS software. Data collection shall be continuous collection of building/system data, 24 hours/day, 7 days/week

      Refer to system point lists for specific data points to be monitored as part of this installation.

B. BEMS Software shall store and provide data access via cloud-based server:
   1. Data is stored in a Class 5 secure hosting location protected by ISO 5001-complaint firewall and intrusion detection systems with support for major network security protocols such as HTTPS and SFTP to securely access and store data.
   2. BEMS data shall use “push” technology to communicate with and send data to the central server, requiring limited outbound ports

1.3 PROFESSIONAL ANALYSIS STANDARDS

A. Provider shall have trained personnel with relevant professional credentials in HVAC systems, energy management and building optimization methodologies to be able to:
   1. Identify building system performance trends and deviations from normal operation
   2. Prepare actionable recommendations to optimize HVAC system performance
   3. Prepare recommendations for operational adjustments
   4. Prepare risk analysis of emergency maintenance or failure
   5. Develop Energy Conservation Measures (ECMs).

1.4 OPERATOR INTERFACE

A. BEMS Software Access:
   1. Shall include user-friendly and secure software (web application) that ensures energy management functions are available from any internet-connected workstation, anytime.
   2. The user interface shall be accessible via a web browser using HTML5. No additional software application installation shall be required for communication with the software
   3. The operator interface shall support the following Internet web browsers:
      a. Internet Explorer 10.0+
      b. Firefox 4.0+
      c. Chrome 10.0+
      d. Opera
      e. Safari
   4. Access shall be controlled with a secure ID and password

1.5 BUILDING ENERGY MANAGEMENT SOFTWARE

A. BEMS Software shall provide comprehensive functionality to analyze energy use and costs, and shall validate performance of the building and its automation system by integrating meter data, and other Building Automation System points as noted.
   1. Shall provide real-time monitoring of all energy data gathered from meter, sub-meter, sensor or building automation systems.
   2. Shall provide advanced analytics that reveal previously undetected operational anomalies and provide insight into potential Energy Conservation Measures.
   3. The software shall be configured, not programmed. All software shall be configured by the vendor and delivered ready to use. This configuration shall include preparation of all graphics, and displays required as a part of this project.
   4. The software (web application) shall be a standard product offering with no customization required..
   5. Clients shall interface with the software via any standard browser application.

1.6 ENERGY MONITORING SOFTWARE

   1. Shall record and store interval data (minimum 15 min) for real-time monitoring of:
      a. Electricity
      b. Gas
      c. Water
      d. air
      e. high pressure steam
      f. low pressure steam
      g. propane
      h. oil
      i. solar
      j. wind
      k. emissions (carbon or GHG)
      l. thermal storage capacity
   2. Shall support multiple utility tariff structures for flat rate, time of day, demand surcharges, ratchet charges and tiered rate for specific calendar periods (seasons)
   3. Shall provide customizable dashboards for personalized, real-time view of energy use and costs for each individual or group of users
      a. Users shall have the ability to modify personal dashboards at any time in real-time using a library of widgets specific to the project site or drawing on a vendor-provided library of general widgets
   4. Shall provide advanced regression-based Energy Baseline Model which incorporates historical energy, enthalpy and occupancy data into the baseline calculation consistent with the Section 4.8.4 IPMVP Framework and interpolates data values to ensure that statistical error does not invalidate results.
      a. Use of 15 minute weather updates from national weather services
      b. Ability to select and customize baseline period
      c. Users can log adjustments to the baseline

d. Graphical charts covering:
    i) Predicted Baseline
    ii) Actual Energy Costs
    iii) Savings Estimate per baseline
    iv) Running tally of projected savings over baseline
e. Automated portfolio scorecards based on normalized baseline data:
    i) Ability to select building groupings
    ii) Automatic identification of best and worst performers
f. Users can record Energy Conservation Measures (ECMs) and link in related engineering analysis or other documentation

1.7 MANDATORY BUIDLING PERFORMANCE SERVICE CAPABILITIES AND TESTS

A. For all of the analytics listed is this section, the Building Performance Service must be capable of indicating evidence of failures and exceptions that could result in energy savings or improved performance.
    1. Outdoor Air Temperature and Relative Humidity Accuracy Test: Outdoor air temperature and relative humidity versus reference; the reference selection is auto-calculated based on the customer facility latitude and longitude. This test determines if the Outdoor Air Temperature and Relative Humidity sensors are accurate.
    2. Airside System Analytics Capabilities Shall include:
        a. Constant volume operation.
        b. Economizer damper status and operation.
        c. Percentage of outside air used to ventilate the building.
        d. Control of space temperature.
        e. Ventilation control.
    3. Economizer Operation Tests
        a. Air handling unit shall use mechanical cooling in lieu of economizer: this test indicates that the air-handling unit should have the capability to meet its cooling load by economizer alone. If this condition is detected, energy is being wasted and the opportunity to provide beneficial ventilation.
        b. Air handling unit controls making improper economizer decision: this test compares the calculated outdoor air intake percentage against the commanded economizer output percentage in order to identify improper economizer physical damper operation. This can detect outdoor air dampers stuck open or closed, both of which result in significant energy waste.
    4. Unitary System Tests
        a. Space, zone temperature versus setpoint: this test calculates the difference between the actual space, the zone temperature, and its setpoint. The defined averaged results are over a time range. In addition, this test detects excessively positive or negative space temperature control, which can result in approaching comfort and equipment service problems.
    5. Variable Air Systems (VAS) Analytics capabilities shall include:
        a. Distribution of VAV box airflows.
        b. Individual VAV box damper positions.
        c. Comparison of the current position of a VAV box to the mean position for the variable air system.
    6. Supply air temperature control tests shall include:
        a. Building and Air-handling Unit Static Pressure Tests
        b. Supply air pressure setpoint versus measured value; this calculates the difference between the actual supply air pressure and the mean of the supply air pressure setpoint values over a defined time range. This test detects erratic static pressure control that can result in energy waste and acoustic problems.
        c. Systemic variable air volume box (VAV) position versus variable air system (VAS) mean; this identifies prolonged periods of time when VAV boxes in a VAS remain below the normal range, indicating that the fan speed was unnecessarily high. This

test detects opportunities for the deployment of duct static pressure reset and associated energy savings.

d. Supply air pressure setpoint versus measured value; this calculates the difference between the actual supply air pressure and the setpoint. In addition, it also calculates the standard deviation of the value over the defined time range. This test detects erratic static pressure control that can result in energy waste and acoustic problems.

7. Variable Air Volume Box Terminal Test
   a. Analyzes the behavior of individual VAV box positions during occupied periods: under normal circumstances, the majority of VAV box position samples should lie within their identified normal control range. Abnormal position proportions shall be a precursor to problems with space ventilation, comfort, and acoustics.
8. Chiller Data Analytics Capabilities shall include analysis of the following parameters:
   a. Operating mode
   b. Approach temperature
   c. Condenser water and chilled water flow status
   d. Chilled water temperature control
   e. Performance of compressor, condenser, evaporator, various motors, purge system
   f. Overview of oil system.
9. Chiller Equipment Tests
   a. Compare chilled water setpoint to actual leaving value: this poor chilled water control can be an indicator of many issues including approaching maintenance conditions, obvious energy waste, and process and comfort problems.
   b. Compare condenser water set point to actual leaving value: a poor condenser water control can be an indicator of many issues including approaching maintenance conditions and obvious energy waste due to poor efficiency.
   c. Compare chilled water pump status to flow system status: detecting stuck closed switch status can help prevent improper chiller operation, which can result in machine damage.
   d. Compare condenser pump status to actual flow status: detecting stuck closed switch status can help prevent improper chiller operation, which can result in machine damage.
   e. Compressor short cycle: this compares the operation of compressors over time and determines if they are operating properly per specification. Excessive compressor starts and stops can deteriorate the life of a compressor.
   f. Motor performance: this compares voltage, current, and temperature of motor versus specification on an ongoing basis. This can determine approaching maintenance requirement and prevent failures.
   g. Purge pump out: this demonstrates activity of purge activity and can be used to detect oncoming centrifugal breach problems.
   h. Evaporator efficiency: this maps the evaporator approach temperatures versus chiller load over time. In addition, it compares this data to as built chiller data, and is used to troubleshoot evaporator issues and predicting maintenance events.
   i. Condenser efficiency: this maps the condenser approach temperatures versus chiller load over time. In addition, it compares this data to as built chiller data and is used to troubleshoot evaporator issues and predicting maintenance events.

1.8 AUTOMATED ENERGY ANALYTICS

A. Shall provide ability to generate energy consumption and demand charge savings using specific tariff schedules
   1. Shall provide analytics via trend or scatter plots including:
      a. Ability to plot multiple variable
      b. Ability to set time period
      c. Ability to export graphs as pdf or .csv files
      d. Automatic data interpolation of missing data points, clearly flagged as interpolated points in trend reports/graphics

2. Shall provide automated Off-Hour Analysis to identify excessive energy consumption during unoccupied hours including:
    a. Compares actual energy usage data against a calculated baseload
    b. visualization of off-hours waste in kilowatts and dollars
    c. Identifies which building asset appears to be wasting the most energy, the number of hours of waste, and the estimated cost of the waste
    d. Ability to define operating schedules for individual building assets for granular analysis
    e. identifies possible causes
    f. analysis can be exported as image or .csv
3. Shall provide advanced Spectral Analysis to visualize energy usage or demand over a select period in a single graphic without any loss of data resolution. Minimum capability shall include Heat Map visualization technique using colors to highlight high and low energy usage according to day of the week and time of day, in order to spot anomalies for:
    a. Demand
    b. Energy Consumption
    c. Apparent Power
    d. Power Factor
    e. Temperature
4. Shall Provide Load Duration Analytic plotting kW and percentage of time at demand peaks
5. Shall provide comparison metric tool to design and display variables between selectable periods of time
6. Shall provide Time-of-Use breakdowns for peak, off-peak, near-peak periods
7. Shall automatically calculate of carbon emissions from utility-sourced electricity
    a. Expressed as carbon units
    b. Ability to adjust carbon calculations by region and time period
8. Shall automatically calculate and display Carbon Equivalencies such as: Forest Acres, Oil Barrels, Gasoline Gallons, Waste Recycled Tons, Passenger Car Miles, Home Electricity
9. Shall provide Energy Performance Reports based on a library of key performance indicators (KPIs) including at a minimum:
    a. Monthly and annual energy consumption or demand, totals by utility type, energy intensity metrics (cost per sqft, W per sqft, peak kW/year), Energy Star Rating
    b. End Use breakdown for HVAC, Lighting, Plugloads, Heating, Cooling
    c. Ability to define KPIs for type of building space (lab, office area, data center)
    d. Reports are exportable to pdf, .xls, and .csv files.
10. Shall provide ability to schedule automatic delivery of KPI reports via email:
    a. Ability to design standard report templates
    b. Ability to define distribution lists
    c. Ability to customize outbound email message
    d. Option to attach pdf or xls file formats
11. Shall provide Energy Budget Tracking to set and track energy budgets based on current usage for a building, department or across a portfolio of buildings:
    a. Includes budget amount, actual amount and projection by month-end
    b. Based on local tariff schedules for each building
12. Shall support multiple utility tariff structures by building including flat rate, time of day, demand surcharges, and tiered rate for specific calendar periods (seasonality)
13. Shall provide Energy Demand Alerts to notify the energy manager to take action and avoid increased energy waste and utility charges
14. Shall provide Energy Demand Alerts as approach new demand peak, with ability to set alert thresholds
    a. Daily Energy Consumption Alerts with ability to set alert thresholds
    b. Off-hours Consumption Alert with ability to set sensitivity ranges
    c. Notification Email and SMS alerts based on customizable preferences

B. Enterprise and Data Management Functions

1. Shall provide user and user group management configuration tools to allow for secure access with the ability to grant or restrict access in the following ways:
   a. Limit data access to specific assets
   b. Limit ability to view report, analytics or specific software features
   c. Read Only vs Edit privileges where appropriate
2. Shall provide Message Notifications customizable per individual user or user group with settings for:
   a. Email notification frequency
   b. SMS text notification frequency
3. Shall provide embedded mapping and data management tools to allow administrative users to easily integrate additional buildings, equipment/sub-systems, sensors, meters, sub-meters, generation sources (without custom programming)
4. Shall provide Data Exports: Reports and analytical data shall be exportable in multiple, standard formats such as .csv files, PDF images or vectors
5. Shall provide embedded tariff templates with ability to modify tariff schedules for custom variables
6. Shall provide ability to assign End Use energy consumption using industry-standard classifications
7. Shall provide ability to set Carbon calculations based on region and season
8. Shall provide ability to create custom widgets without programming
9. Shall provide ability to create virtual meter points in simple tool, then trend and report in same manner as any point in the system
10. Shall provide automatic data interpolation of missing data points and clearly flagged as interpolated points in trend reports/graphics

SECTION 23 5533

GAS-FIRED UNIT HEATERS

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 gas-fired unit heaters.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of gas-fired unit heater.
   1. Include rated capacities, operating characteristics, and accessories.

B. Shop Drawings: For gas-fired unit heaters. Include plans, elevations, sections, and attachment details.

C. Sample Warranty: For special warranty.

D. Operation and Maintenance Data: For gas-fired unit heaters to include in emergency, operation, and maintenance manuals.

1.4 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
   1. Fan Belts: One for each belt-driven fan size.

1.5 QUALITY ASSURANCE

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

1.6 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace heat exchanger of gas-fired unit heater that fails in materials or workmanship within specified warranty period.
   1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Lennox International, Inc.
   2. Modine Manufacturing Company.
   3. Reznor/Thomas & Betts Corporation.
   4. Sterling HVAC Products; Div. of Mestek Technology Inc.
   5. Trane; a brand of Ingersoll Rand.
   6. Re-Verber-Ray

2.2 PERFORMANCE REQUIREMENTS

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

2.3 MANUFACTURED UNITS

A. Description: Factory assembled, piped, and wired, and complying with ANSI Z83.8/CSA 2.6.

B. Gas Type: Design burner for natural gas having characteristics same as those of gas available at Project site.

C. Type of Venting: Indoor, separated combustion, power vented.

D. Housing: Steel, with integral draft hood and inserts for suspension mounting rods.
   1. External Casings and Cabinets: Baked enamel over corrosion-resistant-treated surface.
   2. Discharge Louvers: Independently adjustable, horizontal blades.

E. Accessories:
   1. Four-point suspension kit.
   2. Power Venter: Centrifugal aluminized-steel fan, with stainless-steel shaft; 120-V ac motor.
   3. Concentric, Terminal Vent Assembly: Combined combustion-air inlet and power-vent outlet with wall or roof caps. Include adapter assembly for connection to inlet and outlet pipes, and flashing for wall or roof penetration.

F. Heat Exchanger: Aluminized steel.

G. Burner Material: Aluminized steel with stainless-steel inserts.

H. Propeller Unit Fan:
   1. Formed-steel or Aluminum propeller blades riveted to heavy-gage steel spider bolted to cast-iron hub, dynamically balanced, and resiliently mounted.
   2. Fan-Blade Guard: Galvanized steel, complying with OSHA specifications, removable for maintenance.

I. Centrifugal Unit Fan:
   1. Steel, centrifugal fan dynamically balanced and resiliently mounted.
   2. Belt-Driven Drive Assembly:
      a. Resiliently mounted to housing, with the following features:
         1) Fan Shaft: Turned, ground, and polished steel; keyed to wheel hub.
         2) Shaft Bearings: Permanently lubricated, permanently sealed, self-aligning ball bearings.
         3) Pulleys: Cast-iron, adjustable-pitch motor pulley.

J. Motors:
   1. Comply with NEMA designation, temperature rating, service factor, and efficiency requirements for motors specified in Section 23 0513 "Common Motor Requirements for HVAC Equipment."
   2. Enclosure Materials: Rolled steel.
   3. Efficiency: Premium efficient.

K. Controls: Regulated redundant gas valve containing pilot solenoid valve, electric gas valve, pilot filter, pressure regulator, pilot shutoff, and manual shutoff all in one body.
   1. Gas Control Valve: Single stage.
   2. Ignition: Electronically controlled electric spark with flame sensor.
   3. Fan Thermal Switch: Operates fan on heat-exchanger temperature.
   4. Vent Flow Verification: Flame rollout switch.
   5. Control transformer.
   6. High Limit: Thermal switch or fuse to stop burner.
   7. Thermostat: Devices and wiring are specified in Section 23 0900 "Instrumentation and Control for HVAC."
   8. Wall-Mounted Thermostat:
      a. Single stage.
      b. Fan on-off-automatic switch.
      c. 24-V ac.

d. 50 to 90 deg F operating range.

L. Electrical Connection: Factory wire motors and controls for a single electrical connection.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install and connect gas-fired unit heaters and associated gas and vent features and systems according to NFPA 54, applicable local codes and regulations, and manufacturer's written instructions.

3.2 EQUIPMENT MOUNTING

A. Suspended Units: Suspend from substrate using threaded rods, spring hangers, and building attachments. Secure rods to unit hanger attachments. Adjust hangers so unit is level and plumb.

3.3 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 gas-fired unit heater, allow space for service and maintenance.

C. Gas Piping: Comply with Section 23 1123 "Facility Natural-Gas Piping." Connect gas piping to gas train inlet; provide union with enough clearance for burner removal and service.

D. Vent Connections: Comply with Section 23 5100 "Breechings, Chimneys, and Stacks."

E. Ground equipment according to Section 26 0526 "Grounding and Bonding for Electrical Systems."

F. Connect wiring according to Section 26 0519 "Low-Voltage Electrical Power Conductors and Cables."

3.4 FIELD QUALITY CONTROL

A. Manufacturer's Field Service: Engage a factory-authorized service representative to test and inspect components, assemblies, and equipment installations, including connections.

B. Perform the following tests and inspections:
1. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
2. Verify bearing lubrication.
3. Verify proper motor rotation.

C. Gas-fired unit heater will be considered defective if it does not pass tests and inspections.

D. Prepare test and inspection reports.

3.5 ADJUSTING

A. Adjust initial temperature and humidity set points.

B. Adjust burner and other unit components for optimum heating performance and efficiency.

3.6 DEMONSTRATION

A. Train Owner's maintenance personnel to adjust, operate, and maintain gas-fired unit heaters.

END OF SECTION

SECTION 26 08 00
COMMISSIONING OF ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 DESCRIPTION

A. The requirements of this Section apply to all sections of Division 26.
B. This project will have selected building systems commissioned. The complete list of equipment and systems to be commissioned is specified in Section 01 91 13 GENERAL COMMISSIONING REQUIREMENTS. The commissioning process is defined in Section 01 91 13 GENERAL COMMISSIONING REQUIRMENTS.

1.2 RELATED WORK

A. Section 01 91 13 GENERAL COMMISSIONING REQUIREMENTS.

1.3 SUMMARY

A. This Section includes requirements for commissioning the electrical systems, subsystems and related equipment. This Section supplements the general requirements specified in Section 01 91 13 GENERAL COMMISSIONING REQUIREMENTS.
B. Refer to Section 01 91 13 GENERAL COMMISSIONING REQUIREMENTS for more details regarding processes and procedures as well as roles and responsibilities for all Commissioning Team members.

1.4 DEFINITIONS

A. Refer to Section 01 91 13 GENERAL COMMISSIONING REQUIREMENTS for definitions.

1.5 COMMISSIONED SYSTEMS

A. Commissioning of a system or systems specified in Division 26 is part of the construction process.
B. The following electrical systems will be commissioned:

1. Scheduled or occupancy sensor lighting controls
2. Interior lighting and control system
3. Exterior lighting and control system
4. Emergency lighting system

PART 2 – TEST EQUIPMENT

2.1 TEST EQUIPMENT

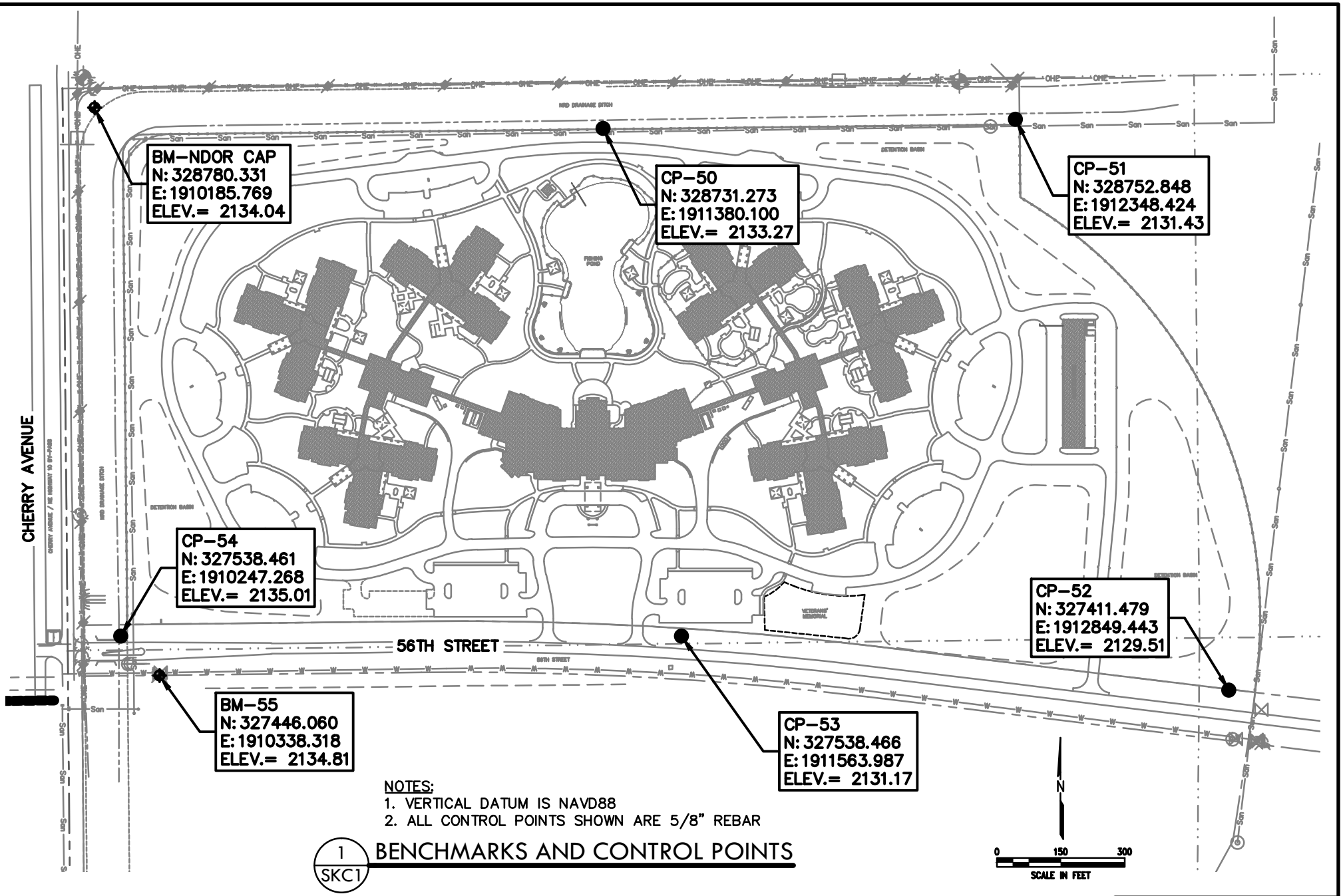
A. Refer to Section 01 91 13 GENERAL COMMISSIONING REQUIREMENTS for more details regarding contractor required testing and equipment.

PART 3 - EXECUTION

3.1 COMMISSIONING MEETINGS AND REPORTING, ISSUES LOGS, PRE-FUNCTIONAL CHECKLISTS, CONTRACTOR'S TESTS, FUNCTIONAL TESTING, AND OWNER TRAINING.

A. Refer to Section 01 91 13 GENERAL COMMISSIONING REQUIREMENTS for more details regarding processes and procedures as well as roles and responsibilities for all Commissioning Team members.

END OF SECTION 26 08 00



NOTES:
1. VERTICAL DATUM IS NAVD88
2. ALL CONTROL POINTS SHOWN ARE 5/8" REBAR

1 / SKC1 BENCHMARKS AND CONTROL POINTS

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Central Nebraska Veterans Home

Kearney, Nebraska

Project Number: **FAI-31-015**

Addendum No. 2

Overall Site Layout Plan

Sheet Ref: C1.00

Sketch Date: **12-3-2015**

Sketch Number:

SKC1

PUMP STATION SPECIFICATIONS:

NAME: *CENTRAL NEBRASKA VETERANS HOME, KEARNEY, NEBRASKA*
STATION MODEL: WMLV-9000-1-25X2/3VC-480-3-400-80

MAX LIFT: 10 FT

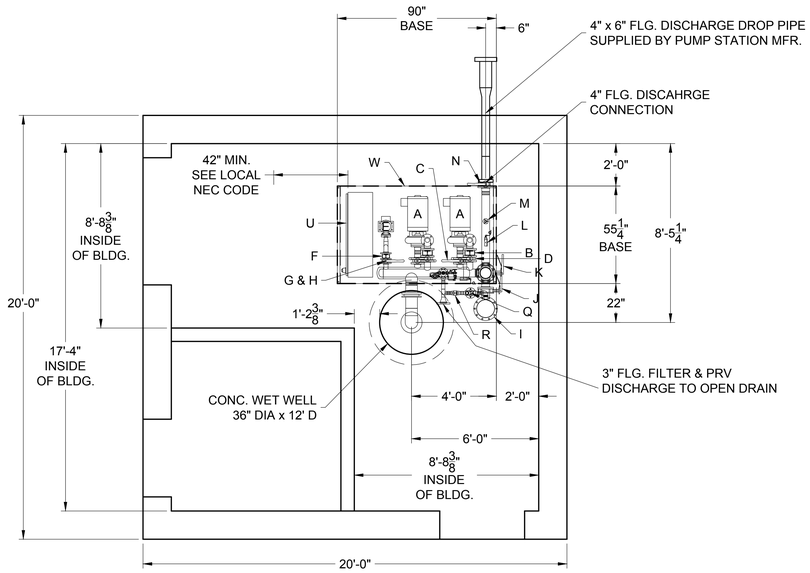
STATION TOTAL PERFORMANCE:
PUMP NO. 1 ~ 2: 400 GPM @ 80 PSI (200 GPM PER PUMP)
PRESSURE MAINTENANCE PUMP: 20 GPM @ 80 PSI

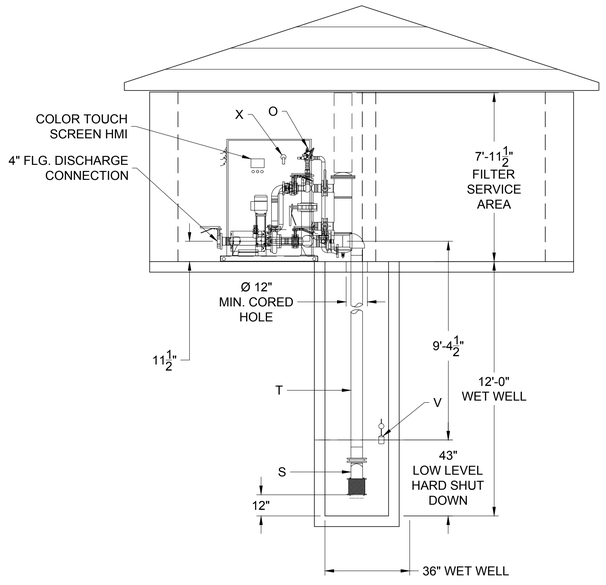
PRESSURE START

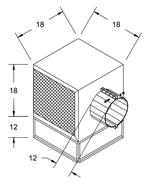
PUMP HORSEPOWER:
PUMP NO.1 ~ 2: 25HP (3600RPM)
PRESSURE MAINTENANCE PUMP: 3 HP (3600 RPM)
CHECK VALVES:
PUMP NO. 1 ~ 2: 3"
PRESSURE MAINTENANCE PUMP: 2"
ISOLATION VALVES:
PUMP NO. 1 ~ 2: 3"
PRESSURE MAINTENANCE PUMP: 2"
PRESSURE RELIEF: 1 1/2"

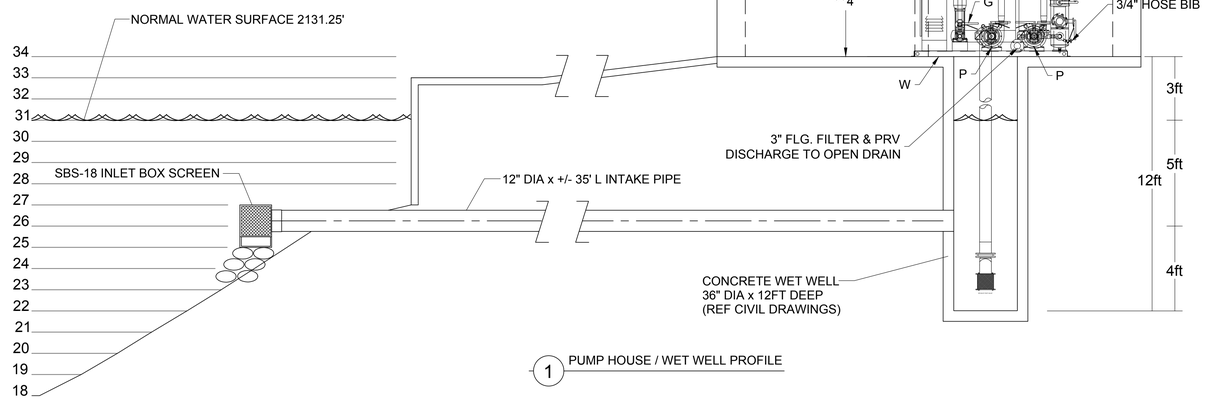
PUMP STATION DISCONNECT: 100 AMP
POWER REQUIREMENTS: 480 V, 60 HZ, 3 PHZ, 81 FLA

STATION COMPONENTS:
A 25 HP PUMP AND MOTOR
B 3" CHECK VALVE
C 3" PUMP INLET ISOLATION VALVE
D 3" PUMP DISCHARGE ISOLATION VALVE
E 3 HP PUMP AND MOTOR (PRESSURE MAINTENANCE PUMP)
F 2" CHECK VALVE
G 2" PUMP INLET ISOLATION VALVE
H 2" PUMP DISCHARGE ISOLATION VALVE
I AUTOMATIC SELF-CLEANING FILTER w/ 300 MICRON SCREEN
J 4" FILTER ISOLATION VALVE
K 4" FILTER BY-PASS VALVE
L PRESSURE TRANSDUCER WITH GAUGE
M PUMP FLOW SENSOR
N 4" STATION DISCHARGE ISOLATION VALVE
O 1 1/2" PRESSURE RELIEF VALVE ASSEMBLY
P TEMP SENSOR
Q FILTER FLUSH SOLENOID VALVE
R FILTER FLUSH ISOLATION BALL VALVE
S 6" INTAKE SCREEN w/ FOOT VALVE
T 6" HDPE SUCTION LINE
U NEMA 4 CONTROL PANEL (60" X 42" X 12")
V LOW LEVEL FLOAT (SELF-WEIGHTED)
W PAINTED STAINLESS STEEL BASE (SANDSTONE)
X STATION DISCONNECT









1 PUMP HOUSE / WET WELL PROFILE

1 L2.14 LANDSCAPE IRRIGATION PUMP STATION

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Central Nebraska Veterans Home
Kearney, Nebraska

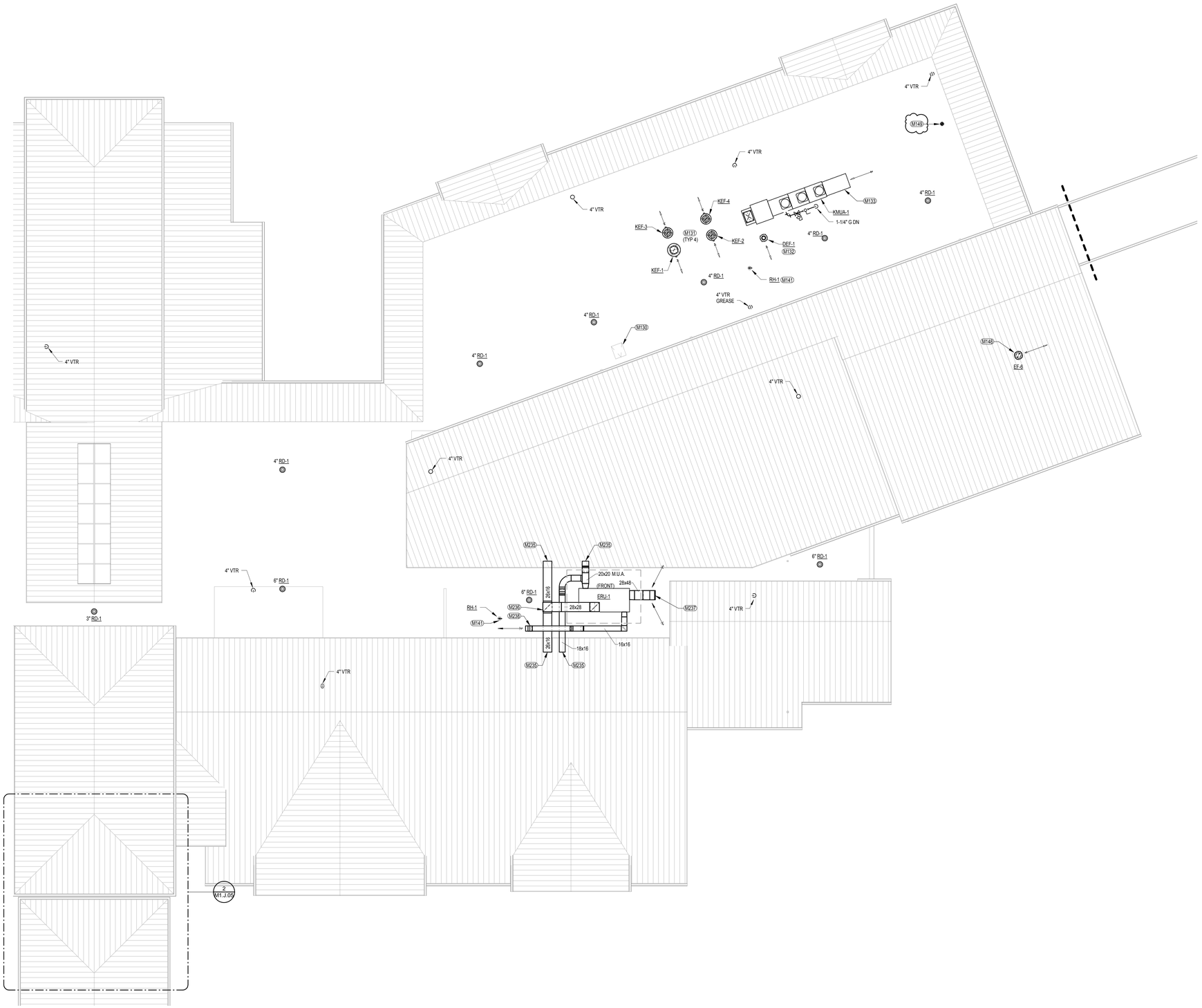
Revision/Issue	Date
Addendum #2	12/04/15

LANDSCAPE
IRRIGATION
PUMP STATION

FAI Number: **FAI-31-015**
Date: **October 15, 2015**

Sheet Number:

L2.14



1 M1.J.06 **BLDG J - ROOF - MECHANICAL - AREA 2**
SCALE: 3/32" = 1'-0"

GENERAL NOTES - MECHANICAL ROOF

A. SEE SHEET M0.00 FOR ALL APPLICABLE ROOF GENERAL NOTES FOR MECHANICAL SYSTEMS.

KEYNOTES

M130 MAINTAIN ACCESSIBILITY TO ROOF THROUGH ROOF HATCH.

M131 SEE KITCHEN EXHAUST FAN DETAIL 4, SHEET M6.01.

M132 SEE DISHWASHER EXHAUST FAN DETAIL 5, SHEET M6.01.

M133 SEE MAKE-UP AIR UNIT DETAIL 1, SHEET M6.02.

M141 ROUTE 1" CW FROM ROOF HYDRANT DN THROUGH ROOF. FLASH AND SEAL ROOF PENETRATION WATER TIGHT. INSTALL AND SUPPORT ROOF HYDRANT PER MANUFACTURER'S RECOMMENDATIONS. SEE SHEETS P2.J.02, P2.J.03 AND P3.04 FOR CONTINUATION. SEE DETAIL 8 SHEET P5.01.

M148 EXHAUST FAN SERVING GARAGE BELOW. SEE ASSOCIATED FLOOR PLAN FOR CONTINUATION OF DUCT ROUTING. COORDINATE EXACT LOCATION OF ROOF OPENING WITH STRUCTURE AND GENERAL CONTRACTOR. SEE SLOPED ROOF EXHAUST FAN DETAIL 1, SHEET M6.02.

M149 8" DIAMETER EXHAUST DUCT WITH ROOF CAP FAN SERVING EXHAUST FAN (EF-8), FOR CHEMICAL STORAGE (J415) BELOW. INSTALL CAP A MINIMUM OF 3'-0" ABOVE ROOF LEVEL. SEE ENLARGED DIETARY KITCHEN PLAN, DRAWING 1, SHEET M4.06, FOR CONTINUATION OF DUCT ROUTING. COORDINATE EXACT LOCATION OF ROOF OPENING WITH STRUCTURE AND GENERAL CONTRACTOR. MAINTAIN 25'-0" MINIMUM CLEARANCE TO OUTDOOR AIR INTAKES FOR BUILDING.

M235 CONTINUE DUCT FROM ROOF AREA THROUGH PAPAPET WALL INTO ATTIC SPACE. COORDINATE EXACT LOCATION OF ENVELOPE PENETRATION WITH STRUCTURE. SEE FLOOR PLANS ON SHEETS M2.J.03 & M2.J.04 FOR CONTINUATION.

M236 ROUTE 28/28 EXHAUST AIR DUCT UP TO CONNECTION ON TOP OF ERU. COORDINATE ROUTING TO MAINTAIN MANUFACTURER'S REQUIREMENTS FOR CLEARANCES.

M237 PROVIDE OUTDOOR AIR INTAKE DUCT (OR HOOD) PER MANUFACTURER'S RECOMMENDATIONS.

M238 ROUTE EXHAUST DUCT SUPPORTED ON ROOF, SLOPED DOWN AWAY FROM UNIT. TERMINATE WITH DUCT ANGLED DOWN TO ELIMINATE WATER PENETRATION. MAINTAIN MINIMUM 25'-0" CLEARANCE TO BUILDING AIR INTAKES.

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CHRISTOPHER P. REED E-3156 10/15/15 DATE OF VERIFICATION

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note:
do not scale drawings. verify all dimensions and clearances from architectural, structural, shop and other appropriate drawings or at site. lay out and coordinate all work prior to installation to provide clearances required for operation, maintenance, and codes and verify non-interference with other work. do not fabricate prior to verification of clearance for all trades.

Central Nebraska Veterans Home
Kearney, Nebraska

Revision/Issue	Date
ADDENDUM NO. 2	12/03/15

PARTIAL ROOF PLAN - BUILDING J - AREAS 3 & 4 - MECHANICAL

FAI Number: **FAI-31-015**
Date: **October 15, 2015**

Sheet Number:

M1.J.06

GENERAL NOTES - HVAC

A. SEE SHEET M0.00 FOR ALL APPLICABLE GENERAL NOTES FOR HVAC, VENTILATION, AND PIPING SYSTEMS.

KEYNOTES

M101 DO NOT ROUTE DUCTWORK ABOVE ELECTRICAL PANELS. MAINTAIN ALL CODE REQUIRED CLEARANCES.

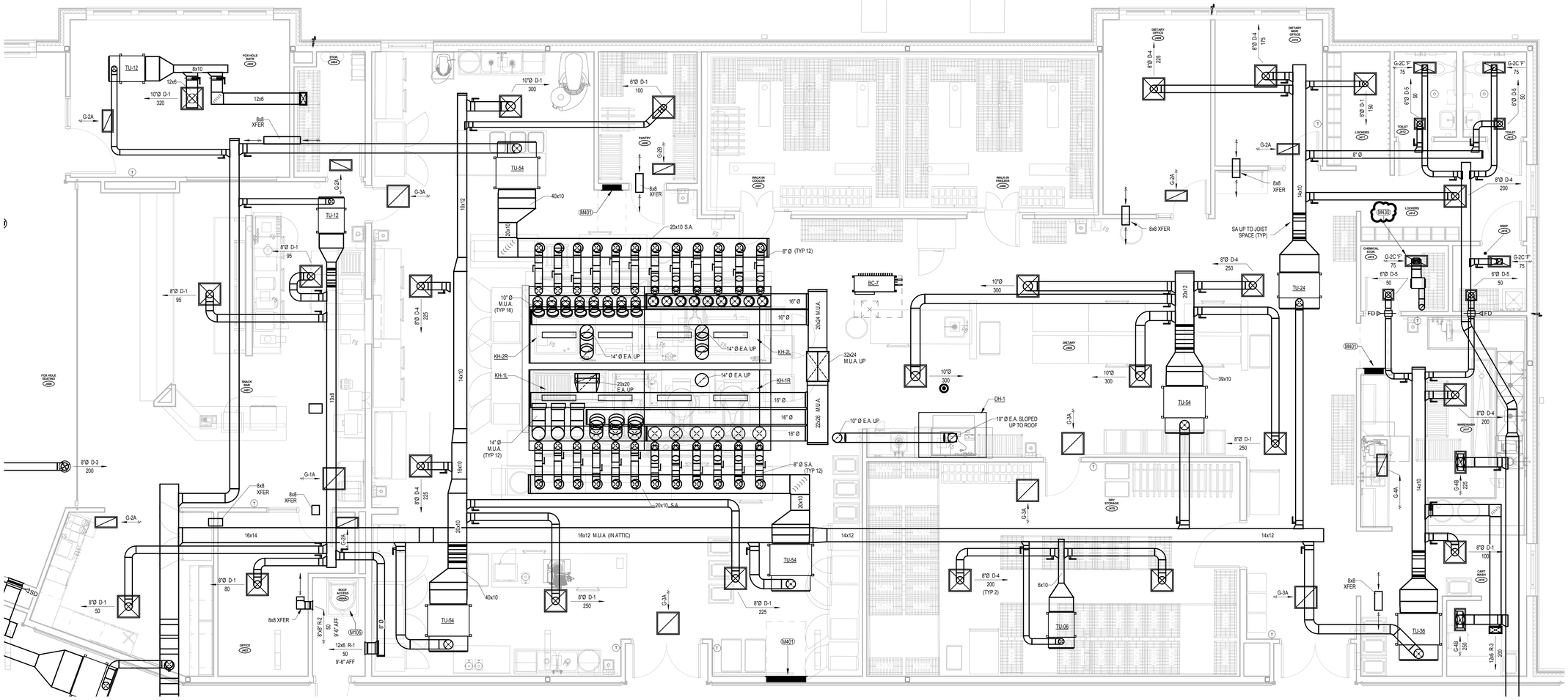
M102 ELECTRIC HEAT BY ELECTRICAL CONTRACTOR. SEE ELECTRICAL DRAWINGS.

M104 COORDINATE DUCT PENETRATION WITH STORM SHELTER WALL CONSTRUCTION. BOX OPENINGS IN WALL (ACCOUNTING FOR INSULATION) AT LOCATIONS INDICATED DURING CONSTRUCTION FOR DUCT ROUTING. COORDINATE WITH GENERAL CONTRACTOR.

M105 MAINTAIN CLEARANCE FOR ATTIC/ROOF ACCESS.

M401 DO NOT ROUTE DUCTWORK ABOVE ELECTRICAL PANELS. MAINTAIN ALL CODE REQUIRED CLEARANCES.

M430 EXHAUST CHEMICAL STORAGE (J415) DIRECT TO EXTERIOR VIA EXHAUST FAN (EF-8). SEE MECHANICAL ROOF PLAN, DRAWING 1, SHEET M1.J.06, FOR CONTINUATION. COORDINATE EXACT LOCATION OF EXHAUST GRILLE, FAN, AND DUCTWORK WITH STRUCTURE AND OTHER TRADES.



1 M4.06 **BLDG J - MAIN DIETARY KITCHEN**
SCALE: 1/4" = 1'-0"

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Kearney, Nebraska

Revision/Issue	Date
ADDENDUM NO. 2	12/03/15

ENLARGED PLANS - VETERANS HOME CENTER - DIETARY

FAI Number: **FAI-31-015**
Date: **October 15, 2015**

Sheet Number:

M4.06

ENERGY RECOVERY UNIT SCHEDULE

	PLAN TAG	ERU-1 (9)	ERU-2	
GENERAL	MANUFACTURER	VENMAR	VENMAR	
	MODEL NUMBER	VHC-50	VHC-42	
	SERVES	(1)	(1)	
	SIZE (LxWxH) (IN)	157" x 73" x 68"	145" x 62" x 60"	
	CONFIGURATION	(2)	(2)	
	REMARKS	(3, 4, 5, 6, 7)	(3, 4, 5, 6, 7)	
SUPPLY FAN	TOTAL AIRFLOW (CFM)	(8)	(8)	
	EXTERNAL STATIC PRESSURE (IN. W.C.)	1.0 (10)	1.0 (10)	
	MAXIMUM FAN RPM	-	-	
	MAXIMUM FAN BHP	6.36	2.85	
	REMARKS	-	-	
SUPPLY FAN MOTOR	RPM	1750	1750	
	HP	10.0	5	
	VOLTS	460	460	
	PHASE	3	3	
EXHAUST FAN	TOTAL AIRFLOW (CFM)	(8)	(8)	
	EXTERNAL STATIC PRESSURE (IN. W.C.)	1.5 (10)	1.5 (10)	
	MAXIMUM FAN RPM	-	-	
	MAXIMUM FAN BHP	3.82	2.12	
	REMARKS	-	-	
EXHAUST FAN MOTOR	RPM	1750	1750	
	HP	5	3	
	VOLTS	460	460	
	PHASE	3	3	
ENTHALPY WHEEL SUMMER	ENTERING AIR TEMP DB/WB (ºF)	95 / 78	95 / 78	
	LEAVING AIR TEMP DB/WB (ºF)	83 / 69	82 / 69	
	TOTAL CAPACITY (MBH)	220.2	95.6	
ENTHALPY WHEEL WINTER	ENTERING AIR TEMP (ºF)	0	0	
	LEAVING AIR TEMP (ºF)	43	46	
	TOTAL CAPACITY (MBH)	265.5	38.3	
HEAT EXCHANGER	WATER FLOW RATE (GPM)	53	30	
	PRESSURE DROP (FT OF WATER)	13.6	15.2	
	REMARKS	(11)	(12)	

REMARKS

(1) BUILDING VENTILATION. SEE PLANS FOR QUANTITY AND LOCATION.

(2) ENERGY RECOVERY UNIT WITH SUPPLY FAN, EXHAUST FAN, WATER SOURCE HEAT PUMP COOLING AND HEATING, HOT GAS REHEAT, ENTHALPY WHEEL, AND ELECTRIC PRE-HEAT.

(3) PROVIDE WITH SINGLE POINT ELECTRICAL CONNECTION, INTEGRAL DOOR INTERLOCKING DISCONNECT SWITCH, VARIABLE FREQUENCY DRIVES, CONTROL CIRCUIT FUSING, AND CONTROL TRANSFORMER FOR 24 VAC CIRCUIT AS STANDARD COMPONENTS IN THE CONTROL CENTER. ERU-1: MCA = 88.7, ERU-2: MCA = 47.6.

(4) INTEGRAL CONTROLS TO MAINTAIN DISCHARGE AIR TEMPERATURE AND PROVIDE DEFROST CONTROL. UNIT TO RUN CONTINUOUS. ERU-1 TO HAVE 18KW PRE-HEAT. ERU-2 TO HAVE 9 KW PRE-HEAT.

(5) UNIT MOUNTED 115 V CONTROL PANEL WITH THE FOLLOWING:
A. DIRTY SUPPLY AND EXHAUST FILTER INDICATORS
B. UNIT ON / OFF INDICATOR
C. ROTATION SENSOR INDICATOR
D. FROST CONTROL INDICATOR
E. 2-POSITION ON/OFF SWITCH
F. INTERFACE TO BUILDING AUTOMATION SYSTEM

(6) PROVIDE THE FOLLOWING:
A. 80% SUPPLY FILTER, 30% EXHAUST FILTER
B. ENTHALPY TYPE ENERGY RECOVERY WHEEL, ALUMINUM
C. FORWARD CURVED CENTRIFUGAL FANS WITH SPRING ISOLATORS
D. DOUBLE WALL CONSTRUCTION

(7) PROVIDE MOTORIZED DAMPERS ON INTAKE & EXHAUST. DAMPERS SHALL BE CLOSED WHEN UNIT IS OFF.

(8) SEE ENERGY RECOVERY UNIT AIR BALANCE SCHEDULE ON M2 SERIES SHEETS.

(9) ERU-1D IS LOCATED ON THE ROOF OF BUILDING J. PROVIDE UNIT WITH INSULATED ROOF CURB, BOTTOM HEAT PUMP PIPING CONNECTIONS, AND INTAKE AND RELIEF AIR HOODS.

(10) VERIFY TOTAL STATIC PRESSURE WITH MANUFACTURER'S INTERNAL STATIC PRESSURE REQUIREMENTS.

(11) WATER SOURCE HEAT PUMP PERFORMANCE:
- COOLING EAT 83ºF / 69ºF, LAT 51ºF / 51ºF, 305.1 MBH CAPACITY
- HEATING EAT 44.7ºF, LAT 107.7ºF, 368.3 MBH CAPACITY
- HGRH SUMMER LAT 66.0ºF DB.

(12) WATER SOURCE HEAT PUMP PERFORMANCE:
- COOLING EAT 82ºF / 69ºF, LAT 53ºF / 53ºF, 145.5 MBH CAPACITY
- HEATING EAT 50.6ºF, LAT 112.5ºF, 173.7 MBH CAPACITY
- HGRH SUMMER LAT 68.5ºF DB.

VRF WATER SOURCE HEAT PUMP SCHEDULE

	PLAN TAG	WSHP-1 (10)	
GENERAL (COMBINED)	MANUFACTURER	MITSUBISHI	
	MODEL NUMBER	PQRY-P240YSLMU-1	
	SERVES	VRV UNITS	
	CONFIGURATION	WATER COOLED	
	MAXIMUM SIZE (COMBINED) (LxWxH)(IN)	71x22x44	
	MAXIMUM WEIGHT (LBS.)	808	
	REMARKS	(4) (5) (6) (8) (9)	
ELECTRICAL (PER MODULE)	VOLTS	460	
	PHASE	3	
	MAXIMUM UNIT KW	-	
	MAXIMUM FUSE SIZE (AMPS)	20	
	MINIMUM CIRCUIT AMPACITY (MCA)	13	
	REMARKS	(7)	
COOLING (COMBINED)	ENTERING WATER TEMPERATURE (F)	(1)	
	MINIMUM NET SEER (ARI)	4.5	
	NOMINAL CAPACITY (TONS)	20.0	
	TOTAL COOLING (MBH)	240.0	
	SENSIBLE COOLING (MBH)	-	
HEATING (COMBINED)	ENTERING WATER TEMPERATURE (F)	(2)	
	MINIMUM NET COP (ARI)	4.60	
	MINIMUM HEATING CAPACITY (MBH)	270.0	
REFRIGERANT	TYPE	R-410A	
	MIN. NUMBER OF CIRCUITS	-	
	REMARKS	(3)	
COMPRES-SORS	TYPE	SCROLL	
	QUANITY	1	
	HP	-	
	REMARKS	-	
HEAT EXCHANGER (PER MODULE)	TYPE	PLATE	
	WATER FLOW RATE (GPM)	25	
	PRESSURE DROP (FT OF WATER)	8.0	
	REMARKS	-	

REMARKS

(1) NOMINAL COOLING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 80/67°F (DB/WB), CONDENSER WATER INLET OF 85°F

(2) NOMINAL HEATING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 70°F (DB), CONDENSER WATER INLET OF 70°F

(3) FOR SYSTEMS WITH MULTIPLE MODULES, REFRIGERANT PIPE DIMENSIONS INDICATE TOTAL SYSTEM COMBINED PIPING DOWNSTREAM OF MODULE TWINNING.

(4) CORRECTED CAPABITIES SHALL INCLUDE DERATES FOR 25% PROPYLENE GLYCOL WATER SOLUTION, REQUIRED REFRIGERANT PIPING LENGTHS, TOTAL INDOOR UNITS CONNECTED AS WELL AS WATER TEMPERATURES AND WATER FLOW RATES LISTED IN THIS SCHEDULE.

(5) MODULES SHALL HAVE AN INTERAL COOLING CIRCUIT TO REJECT HEAT TO VRF SYSTEM AND TO PREVENT HEAT TRANSFER FROM THE UNIT TO THE SPACE. FOR ALTERNATE MANUFACTURERS WITHOUT THIS OPTION, MECHANICAL ROOM COOLING AND VENTILATION TO DISSIPATE EQUIPMENT HEAT SHALL BE INCLUDED IN SYSTEM COSTS.

(6) SEE SCHEMATIC PIPING/CONTROL DIAGRAMS ON SHEETS M5.03, M5.04, M5.06, M5.07, M5.08, M5.09, M5.10, AND M5.11 FOR VRF SYSTEM LAYOUT AND ADDITIONAL REQUIREMENTS.

(7) EACH UNIT HAS TWO SEPARATE ELECTRICAL CONNECTIONS. ELECTRICAL DISCONNECT SWITCHES BY ELECTRICAL CONTRACTOR. SEE ELECTRICAL DRAWINGS.

(8) EACH UNIT HAS TWO SEPARATE HPLS/R CONNECTIONS. PROVIDE HOSE KIT FOR EACH REQUIRED CONNECTION. HOSE KIT SHALL INCLUDE 24" STAINLESS STEEL SUPPLY AND RETURN FLEXIBLE HOSES, BALL VALVES, UNIONS, MESH Y-STRAINER (50 MESH MINIMUM) WITH BLOW DOWN VALVE AND HOSE CONNECTION, MANUAL BALANCE VALVE WITH P/T PORTS ON EACH SIDE, INLET AND OUTLET P/T PORTS, AND 2-POSITION MODULATING CONTROL VALVE - SLOW CLOSING/FAST OPENING (CONTROL VALVE BY TEMPERATURE CONTROL CONTRACTOR). HOSES SHALL HAVE SWIVEL UNIONS INSTALLED ON EQUIPMENT CONNECTION SIDE. PROVIDE HOSE KIT ACCESSORIES PER MANUFACTURER'S RECOMMENDATIONS.

(9) CONTRACTOR TO FIELD BUILD METAL STAND FOR STACKED UNITS.

(10) AT THE CONTRACTORS OPTION SINGLE MODULE 20 TON UNITS MAY BE USED IN LIEU OF DUAL MODULE UNITS.

CONDENSING UNIT SCHEDULE

	PLAN TAG	ACCU-1	ACCU-2	
GENERAL	MANUFACTURER	MITSUBISHI	MITSUBISHI	
	MODEL NUMBER	PUY-A36NHA4	MUZ-FH12NA	
	SERVES	AC-1	AC-2	
	CONFIGURATION	-	-	
	MAXIMUM SIZE (LxW)(IN)	38x17x38	32x12x22	
	MAXIMUM WEIGHT (LBS.)	163	83	
	REMARKS	(3) (4)	(7) (8)	
ELECTRICAL	VOLTS	208	208	
	PHASE	1	1	
	MAXIMUM UNIT KW	-	-	
	MOCP	40.0	15.0	
	MINIMUM CIRCUIT AMPACITY (MCA)	25.0	11.0	
	REMARKS	-	-	
COOLING	AMBIENT AIR TEMPERATURE (F)	95.0	95.0	
	MINIMUN NET EER (ARI)	-	-	
	NOMINAL CAPACITY (TONS)	3.0	1.0	
	TOTAL COOLING (MBH)	(1)	(5)	
	SENSIBLE COOLING (MBH)	-	-	
REFRIGERANT	TYPE	R-410A	R-410A	
	MIN. NUMBER OF CIRCUITS	1	1	
	REMARKS	-	-	
COMPRES-SORS	TYPE	-	-	
	QUANITY/SIZE	-	-	
	HP	-	-	
	REMARKS	(2)	(6)	
CONDENSER FANS	TYPE	-	-	
	QUANITY/SIZE	-	-	
	HP	-	-	
	REMARKS	-	-	

REMARKS

(1) COOLING PERFORMANCE SHALL MATCH SCHEDULED AC UNIT CAPACITIES.

(2) PROVIDE DC INVERTER-DRIVEN TWIN ROTARY WITH 5 YEAR COMPRESSOR WARRANTY.

(3) UNIT SHALL CONSIST OF COMPRESSOR, AIR COOLED COIL, PROPELLER TYPE CONDENSER FAN, ACCUMULATOR, HOLDING REFRIGERANT CHARGE, LOW AMBIENT CONTROL (WIND BAFFLE KIT), 12" STAND AND CONTROL BOX.

(4) UNIT SHALL BE RATED FOR COOLING OPERATION DOWN TO -20 DEGREES F.

(5) HEATING AND COOLING PERFORMANCE SHALL MATCH SCHEDULED AC UNIT CAPACITIES.

(6) HEAT PUMP SYSTEM WITH 7-YEAR COMPRESSOR WARRARTY.

(7) UNIT SHALL CONSIST OF COMPRESSOR, AIR COOLED COIL, PROPELLER TYPE CONDENSER FAN, ACCUMULATOR, HOLDING REFRIGERANT CHARGE, LOW AMBIENT CONTROL (WIND BAFFLE KIT), WALL MOUNTING BRACKET, BASE PAN HEATER, REVERSING VALVE AND CONTROL BOX.

(8) UNIT SHALL BE RATED FOR HEATING OPERATION DOWN TO -13 DEGREES F.

VARIABLE REFRIGERANT FLOW AIR CONDITIONING INDOOR UNIT SCHEDULE

	PLAN TAG	TU-06	TU-08	TU-12	TU-15	TU-18	TU-24	TU-27	TU-30	TU-36	TU-48	TU-54	TU-24W	
GENERAL	MANUFACTURER	MITSUBISHI	MITSUBISHI	MITSUBISHI	MITSUBISHI	MITSUBISHI	MITSUBISHI	MITSUBISHI	MITSUBISHI	MITSUBISHI	MITSUBISHI	MITSUBISHI	MITSUBISHI	
	MODEL NUMBER	PEFY-P06NMAU-E	PEFY-P08NMAU-E	PEFY-P12NMAU-E	PEFY-P15NMAU-E	PEFY-P18NMAU-E	PEFY-P24NMAU-E	PEFY-P27NMAU-E	PEFY-P30NMAU-E	PEFY-P36NMAU-E	PEFY-P48NMAU-E	PEFY-P54NMAU-E	PKFY-P24NKMU-E	
	SERVES	SEE PLANS	SEE PLANS	SEE PLANS	SEE PLANS	SEE PLANS	SEE PLANS	SEE PLANS	SEE PLANS	SEE PLANS	SEE PLANS	SEE PLANS	SEE PLANS	
	CONFIGURATION	(1) (7)	(1) (7)	(1) (7)	(1) (7)	(1) (7)	(1) (7)	(1) (7)	(1) (7)	(1) (7)	(1) (7)	(1) (7)	(8) (7)	
	MAXIMUM SIZE (LxWxH)(IN)	28x29x10	28x29x10	28x29x10	36x29x10	36x29x10	44x29x10	44x29x10	44x29x10	55x29x10	56x29x10	63x29x10	47x12x15	
	REMARKS	(2) (8) (9)	(2) (8) (9)	(2) (8) (9)	(2) (8) (9)	(2) (8) (9)	(2) (8) (9)	(2) (8) (9)	(2) (8) (9)	(2) (8) (9)	(2) (8) (9)	(2) (8) (9)	(8) (9)	
FAN	AIRFLOW (CFM)	300 (10)	300 (10)	370 (10)	490 (10)	600 (10)	800 (10)	850 (10)	850 (10)	1150 (10)	1400 (10)	1400 (10)	920	
	EXTERNAL STATIC PRESSURE (IN. W.C.)	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.0	
	MOTOR KW	-	-	-	-	-	-	-	-	-	-	-	-	
ELECTRICAL DATA	FULL LOAD AMPS	.56	.56	.66	.67	.77	1.31	1.31	1.31	1.5	.34	.36	.07	
	MAXIMUM FUSE SIZE	15	15	15	15	15	15	15	15	15	15	15	15	
	VOLTS	208	208	208	208	208	208	208	208	208	208	208	208	
	PHASE	1	1	1	1	1	1	1	1	1	1	1	1	
	REMARKS	(11)	(11)	(11)	(11)	(11)	(11)	(11)	(11)	(11)	(11)	(11)	-	
COOLING	ENTERING DB (ºF)	-	-	-	-	-	-	-	-	-	-	-	-	
	ENTERING WB (ºF)	-	-	-	-	-	-	-	-	-	-	-	-	
	LEAVING DB (ºF)	-	-	-	-	-	-	-	-	-	-	-	-	
	LEAVING WB (ºF)	-	-	-	-	-	-	-	-	-	-	-	-	
	TOTAL CAPACITY (MBH)	6.0	8.0	12.0	15.0	18.0	24.0	27.0	30.0	36.0	48.0	54.0	24.0	
	SENSIBLE CAPACITY (MBH)	-	-	-	-	-	-	-	-	-	-	-	-	
	REMARKS	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	
HEATING	ENTERING AIR TEMP (ºF)	-	-	-	-	-	-	-	-	-	-	-	-	
	LEAVING AIR TEMP (ºF)	-	-	-	-	-	-	-	-	-	-	-	-	
	TOTAL CAPACITY (MBH)	6.7	9.0	13.5	17.0	20.0	27.0	30.0	34.0	40.0	54.0	60.0	27.0	
	REMARKS	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	
ACCESSORIES	FILTERS	(5)	(5)	(5)	(5)	(5)	(5)	(5)	(5)	(5)	(5)	(5)	-	
	HUMIDIFIER	-	-	-	-	-	-	-	-	-	-	-	-	
	THERMOSTAT	(6)	(6)	(6)	(6)	(6)	(6)	(6)	(6)	(6)	(6)	(6)	(6)	
	REMARKS	-	-	-	-	-	-	-	-	-	-	-	-	

REMARKS

(1) ABOVE CEILING, CONCEALED, VARIABLE REFRIGERANT VOLUME SPLIT SYSTEM WITH R-410A. MULTIPLE INDOOR UNITS ARE SERVED BY A SINGLE WATER SOURCE HEAT PUMP WITH PROGRAMMABLE CONTROLS.
(2) PROVIDE INDOOR UNIT WITH THREADED ROD WITH HANGING BRACKETS PER MANUFACTURER'S RECOMMENDATIONS, INTEGRAL CONDENSATE PUMP, AND HIGH CONDENSATE SHUT-OFF SWITCHES.
(3) RATED AT RETURN AIR DB TEMPERATURE OF 80°F AND INDOOR AIR DB TEMPERATURE OF 67°F.
(4) RATED AT RETURN AIR DB TEMPERATURE OF 70° F.
(5) PROVIDE WITH FBM SERIES FILTER BOX WITH 2" MERV 8 PLEATED DISPOSABLE FILTER AT INLET. PROVIDE 2" PLEATED MERV 8 FILTERS AT TIME OF INSTALLATION AND PROVIDE SECOND SET OF FILTERS DIRECTLY BEFORE BALANCING.
(6) PROVIDE MITSUBISHI HARDWIRED SIMPLE MA THERMOSTATS TO CONTROL ALL INDOOR UNITS. SEE FLOOR PLANS FOR THERMOSTAT QUANTITIES.
(7) SEE SCHEMATIC PIPING/CONTORL DIAGRAMS ON SHEETS M5.03, M5.04, M5.05, M5.06, M5.07, M5.08, M5.09, M5.10 AND M5.11 FOR INDICATION OF REQUIRED INDOOR UNIT REMOTE CONTROLLERS, SYSTEM CONTROLLERS, AND INTEGRATION DEVICES.
(8) PROVIDE INDOOR WALL MOUNTED UNIT WITH WALL MOUNTING BRACKETS, AIR FILTERS, INTEGRAL SUPPLY AND RETURN GRILLES, CONDENSATE DRAIN PUMP, AND HIGH CONDENSATE SHUT-OFF SWITCHES.
(9) PROVIDE CONNECTION TO MANUFACTURERS BRANCH CONTROLLER (BC) FOR EACH INDOOR UNIT FOR HEAT RECOVERY SYSTEM. SEE BC CONTROLLERS SCHEDULE AND PLANS FOR LOCATIONS.
(10) OUTSIDE AIR DUCTED TO RETURN AIR. SEE PLANS FOR OUTSIDE AIR VOLUME.
(11) ELECTRICAL DISCONNECTS BY ELECTRICAL CONTRACTOR. SEE ELECTRICAL DRAWINGS.

AIR CONDITIONING UNIT SCHEDULE

	PLAN TAG	AC-1	AC-2	
GENERAL	MANUFACTURER	MITSUBISHI	MITSUBISHI	
	MODEL NUMBER	PKA-A36KA4	MSZ-FH12NA	
	SERVES	SEE PLANS	SEE PLANS	
	CONFIGURATION	(1)	(1)	
	MAXIMUM SIZE (LxWxH)(IN)	47"x15"X12"	37"x10"x12"	
	REMARKS	(2)	(2)	
FAN	AIRFLOW (CFM)	920	261	
	EXTERNAL STATIC PRESSURE (IN. W.C.)	-	-	
	MOTOR HP	-	-	
ELECTRICAL DATA	FLA	1.0	0.67	
	MCA (AMPS)	2	1	
	VOLTS	208	208	
	PHASE	1	1	
	REMARKS	-	-	
COOLING & HEATING	ENTERING DB (ºF)	80.0	80.0	
	ENTERING WB (ºF)	67.0	67.0	
	LEAVING DB (ºF)	-	-	
	LEAVING WB (ºF)	-	-	
	TOTAL COOLING CAPACITY (MBH)	35.0	12.0	
	TOTAL HEATING CAPACITY (MBH)	-	13.6	
	REMARKS	(3)	(3)	

REMARKS

(1) WALL MOUNTED, DUCTLESS, AIR COOLED, AIR CONDITIONING UNIT.

(2) PROVIDE UNIT WITH HANGING BRACKETS, INTEGRAL FACE GRILLES, HIGH EFFICIENCY FILTER (MERV-10), WIRED WALL MOUNTED CONTROLLER, AND CONDENSATE PUMP (BLUEDIAMOND X87-711) 115V/1PH.

(3) SEE AIR COOLED CONDENSING UNIT SCHEDULE.

FAN SCHEDULE

	PLAN TAG	EF-1	EF-2	EF-3	EF-4	EF-5	EF-6	EF-7	EF-8
GENERAL	MANUFACTURER	GREENHECK	GREENHECK	DENLAR	GREENHECK	GREENHECK	GREENHECK	GREENHECK	GREENHECK
	MODEL NUMBER	SP-B80	GB-071-4	D-1000-WF	SP-B110	G-143-VG	G-098-VG	GB-101-4	SP-B110
	SERVES	PUMP HOUSE (M)	OXYGEN STORAGE	KH-3	MAINTENANCE (K)	MAINTENANCE (K)	GARAGE (J435)	WOOD FINISH (J145)	CHEM (J415)
	TYPE	CEILING	CENTRIFUGAL	EXTERIOR WALL	IN-LINE	CENTRIFUGAL	CENTRIFUGAL	CENTRIFUGAL	IN-LINE
	MAXIMUM WEIGHT (LBS)	10	81	20	15	75	75	77	15
	ROOF/WALL OPENING SIZE	-	14.5" x 14.5"	-	-	-	14.5" x 14.5"	14.5" x 14.5"	-
	ACCESSORIES	(1)	(8)	(2)	(1)	(2)	(2)	(8)	(1)
FAN	AIRFLOW (CFM)	50	175	150	100	925	450	650	75
	TOTAL SP (IN. W.C.)	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
	CLASS	-	-	-	-	-	-	-	-
	WHEEL TYPE	FC	BI	-	FC	BI	BI	BI	FC
	MINIMUM WHEEL DIA.	-	-	-	-	-	-	-	-
	MAXIMUM SONES	3.5	6.3	-	2.5	6.2	7.0	5.4	2.5
	MAXIMUM FAN RPM	900	1328	-	950	924	1315	1220	950
	MAXIMUM FAN BHP	-	-	-	-	-	-	-	-
MOTOR	RPM	-	1725	-	-	1200	1725	1725	-
	HP	54.3 WATTS	1/4	-	80.2 WATTS	1/2	1/4	1/4	80.2 WATTS
	VOLTS	115	115	115	115	208	115	115	115
	PHASE	1	1	1	1	1	1	1	1
	TYPE	ODP	EXP	ODP	ODP	ODP	ODP	EXP	ODP
	CONTROL DEVICE	(7)	(3)	(4)	-	(5)	(6)	(9)	(3)
	REMARKS	-	-	-		-	-	-	

REMARKS

(1) CEILING EXHAUST FAN. PROVIDE WITH UL LISTED, ROUND DUCT CONNECTION, DESIGNER GRILLE, ISOLATION KIT, AND MOTOR WITH THERMAL OVERLOAD.

(2) DIRECT DRIVE CENTRIFUGAL ROOF FAN. PROVIDE UL LISTED, DISCONNECT SWITCH, HINGED ROOF CURB FOR PITCHED ROOF, AND MOTOR CONTROL.

(3) CONTROLLED BY BUILDING AUTOMATION SYSTEM. SEE SPECIFICATIONS 230993.

(4) FAN TO CONTROLLED BY MANUAL SWITCH ON DENLAR RANGE HOOD (KH-3).

(5) FOR VEHICLE BAYS - BUILDING "K" HVAC CONTROLS AND CO/NO2 SENSORS. SEE SPECIFICATION 230900 HVAC INSTRUMENTATION AND CONTROLS.FOR SHOP AREAS - MANUAL ON/OFF SWITCH WITH SPEED CONTROL. SEE PLANS FOR LOCATIONS.

(6) BUILDING "J" HVAC CONTROLS AND CO / NO2 SENSORS. SEE SPECIFICATION 230900 HVAC INSTRUMENTATION AND CONTROLS.

(7) CONTROLLED BY LIGHTING SWITCH. SEE ELECTRICAL PLANS.

(8) BELT DRIVE CENTRIFUGAL ROOF FAN. PROVIDE UL LISTED, HINGED ROOF CURB FOR PITCHED ROOF, AND 1-YEAR WARRANTY.

(9) CONTROLLED BY WALL SWITCH. SEE ELECTRICAL PLANS.

GAS-FIRED UNIT HEATER SCHEDULE

	PLAN TAG	UH-1	UH-2	
GENERAL	MANUFACTURER	REZNOR	REZNOR	
	MODEL NUMBER	UDAS-45	UDAS-30	
	SERVES	MAINT. BLDG./GAR.	GARAGE	
	CONFIGURATION	(1)	(1)	
	MAXIMUM SIZE (LxWxH)(IN)	26" x 27" x 13"	26" x 27" x 13"	
	MAXIMUM WEIGHT (LBS.)	60	55	
	MINIMUM OUTSIDE AIRFLOW (CFM)	-	-	
	REMARKS	(2)	(2)	
FAN	AIRFLOW (CFM)	629	456	
	EXTERNAL STATIC PRESSURE (IN. W.C.)	(3)	(3)	
	MAXIMUM FAN BHP	-	-	
MOTOR	RPM	1,550	1,550	
	HP	0.03	0.02	
	VOLTS	115	115	
	PHASE	1	1	
	TYPE	(6)	(6)	
	CONTROL DEVICE	(4)	(4)	
	REMARKS	-	-	
HEATING	ENTERING AIR TEMP (ºF)	55°F	55°F	
	LEAVING AIR TEMP (ºF)	110°F	110°F	
	TOTAL CAPACITY (MBH)	45.0	30.0	
	REMARKS	-	-	
GAS - FIRED	FUEL	NAT GAS	NAT GAS	
	INPUT (MBH)	45.0	30.0	
	OUTPUT (MBH)	37.35	24.6	
	EFFICIENCY	83%	82%	
	VENT CONNECTION	(5)	(5)	
	REMARKS	-	-	

REMARKS

(1) CATEGORY I, GAS-FIRED, SEPARATED COMBUSTION, FAN-TYPE UNIT HEATER.

(2) PROVIDE UNIT WITH CEILING SUSPENSION KIT, SINGLE-STAGE NATURAL GAS VALVE, TOTALLY ENCLOSED FAN MOTOR, VERTICAL COMBUSTION AIR/VENT KIT INCLUDING CONCENTRIC ADAPTER, AND HORIZONTAL LOUVERS.

(3) FREE DISCHARGE WITH HORIZONTAL LOUVERS.

(4) FACTORY PROVIDED STAND-ALONE THERMOSTAT WITH FAN ON/AUTO SWITCH.

(5) 4"Ø VENT CONNECTION, 4"Ø COMBUSTION AIR INLET (VERIFY WITH MANUFACTURER'S RECOMMENDATIONS). TRANSITION TO CONCENTRIC WALL VENT CONNECTION - SEE PLANS. FLUE SHALL MEET THE REQUIREMENTS OF NFPA 54.

(6) TOTALLY ENCLOSED MOTOR

BC CONTROLLERS SCHEDULE

PLAN TAG	BC-1	BC-2	BC-3	BC-4	BC-5	BC-6	BC-7	BC-8	
MANUFACTURER	MITSUBISHI	MITSUBISHI	MITSUBISHI	MITSUBISHI	MITSUBISHI	MITSUBISHI	MITSUBISHI	MITSUBISHI	
MODEL NUMBER	CMB-P1016NU-HA	CMB-P108NU-GB	CMB-P1016NU-HB	CMB-P1010NU-HA1	CMB-P1013NU-GA	CMB-P1016NU-GA	CMB-P108NU-GA	CMB-P104NU-GB	
TYPE (DOUBLE / MAIN / SUB)	MAIN	SUB	SUB	MAIN	MAIN	MAIN	MAIN	SUB	
SERVES	VRF UNITS	VRF UNITS	VRF UNITS	VRF UNITS	VRF UNITS	VRF UNITS	VRF UNITS	VRF UNITS	
CAPACITY (MBH)	189.0	126.0	126.0	189.0	189.0	189.0	189.0	126.0	
SIZE (LxWxH) (IN.)	44"x21"x12"	26"x18"x12"	44"x18"x12"	44"x21"x12"	44"x21"x12"	44"x21"x12"	44"x21"x12"	26"x18"x12"	
NUMBER OF PORTS	16	8	16	10	13	16	8	4	
VOLTS	208	208	208	208	208	208	208	208	
PHASE	1	1	1	1	1	1	1	1	
MAXIMUM FUSE SIZE (AMPS)	15	15	15	15	15	15	15	15	
MINIMUM CIRCUIT AMPACITY (AMPS)	1.65	0.79	1.89	1.6	1.34	1.63	0.85	0.40	
REMARKS	(1) (2) (3) (4) (5)	(1) (2) (3) (4) (5)	(1) (2) (3) (4) (5)	(1) (2) (3) (4) (5)	(1) (2) (3) (4) (5)	(1) (2) (3) (4) (5)	(1) (2) (3) (4) (5)	(1) (2) (3) (4) (5)	

REMARKS

(1) ALL CONNECTIONS TO THE BRANCH CONTROLLERS SHALL BE BRAZED.
(2) INCLUDE DIAMONDBACK MANUAL BALL VALVES BV-SERIES, 700 PSIG WORKING PRESSURE, FULL PORT, 410A RATED AT EACH PORT FOR ALL CONNECTED REFRIGERANT LINES. UNUSED PORTS SHALL ALSO HAVE VALVES FOR FUTURE CONNECTION. BUILDINGS A, B, C, D, E, F, G, AND H SHALL HAVE AT LEAST TWO EXTRA PORTS THAT CAN BE CONNECTED TO WITHOUT EVACUATING THE SYSTEM. EACH SYSTEM IN BUILDING J SHALL HAVE AT LEAST TWO SPARE PORTS THAT CAN BE CONNECT TO WITHOUT EVACUATING THE SYSTEM.
(3) ELECTRICAL DISCONNECT BY ELECTRICAL CONTRACTOR. SEE ELECTRICAL DRAWINGS.
(4) PROVIDE PLENUM RATED CONDENSATE PUMP, HARTELL MODEL A2X-1965 DV, 1/10 HP AT 3000 RPM, 115V, 3.5 A, 1-1/4" INLET, 3/8" OUTLET, 1 GALLON CAPACITY, 20' MAX LIFT WITH AUXILARY SAFETY SWITCH.
(5) SEE SCHEMATIC PIPING/CONTROL DIAGRAMS ON SHEETS M5.03, M5.04, M5.06, M5.07, M5.08, M5.09, M5.10, AND M5.11 FOR VRF SYSTEM LAYOUT AND ADDITIONAL REQUIREMENTS.

DIFFUSER, REGISTER, GRILLE, AND LOUVER SCHEDULE

PLAN TAG	D-1	D-2	D-3	D-4	R-1	R-2	R-3	R-4	G-1	G-2A, B, C	G-3	G-4A, B, C	G-5	L-1	
MANUFACTURER	KRUEGER	KRUEGER	KRUEGER	KRUEGER	KRUEGER	KRUEGER	KRUEGER	KRUEGER	KRUEGER	KRUEGER	KRUEGER	KRUEGER	KRUEGER	RUSKIN	
MODEL NUMBER	PLQ	PLQ	RM2PLQ	PLQ	880H	80H	880H	80H	6490	6490	6490	6490	6690	ELF375DX	
FUNCTION	SUPPLY	SUPPLY	SUPPLY	SUPPLY	SUPPLY	RETURN/EXHAUST	SUPPLY	RETURN/EXHAUST	RETURN	RETURN	RETURN	RETURN	RETURN	OUTSIDE AIR	
DESCRIPTION	FLAT PLATE	FLAT PLATE	FLAT PLATE	FLAT PLATE	REGISTER	REGISTER	REGISTER	REGISTER	PERFORATED	PERFORATED	PERFORATED	PERFORATED	PERFORATED	LOUVER	
DEFLECTION	4-WAY	3-WAY	3-WAY	4-WAY	DOUBLE	SINGLE	DOUBLE	SINGLE	-	-	-	-	-	-	
MAXIMUM STATIC PRESSURE (IN W.G.)	0.1"	0.1"	0.1"	0.1"	0.1"	0.1"	0.1"	0.1"	0.08"	0.08"	0.08"	0.08"	0.08"	0.10"	
CONSTRUCTION MATERIAL	STEEL	STEEL	STEEL	ALUMINUM	STEEL	STEEL	ALUMINUM	ALUMINUM	STEEL	STEEL	ALUMINUM	ALUMINUM	STEEL	ALUMINUM	
FINISH	WHITE	WHITE	BLACK	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	(9)	
NECK SIZE (IN)	SEE PLANS	SEE PLANS	SEE PLANS	SEE PLANS	SEE PLANS	SEE PLANS	SEE PLANS	SEE PLANS	22x22	(12)	22x22	(12)	10"Ø	SEE PLANS (5)	
FACE SIZE (IN)	24x24	24x24	12" DIA.	24x24	SEE PLANS	SEE PLANS	SEE PLANS	SEE PLANS	24x24	24x12	24x24	24x12	24x24	SEE PLANS	
ACCESSORIES	O.B.D.	O.B.D.	O.B.D.	O.B.D.	O.B.D	O.B.D.	O.B.D	O.B.D.	-	-	-	-	-	-	
REMARKS (1) (2)	-	(3)	-	-	-	-	-	(7)	(8)	(8)	(8)	(8)	-	(10, 11)	

REMARKS

(1) VERIFY CEILING / WALL CONSTRUCTION PRIOR TO FURNISHING MATERIAL.
(2) NOISE CRITERIA (NC) SHALL BE LESS THAN 25 ON DIFFUSERS, REGISTERS AND GRILLES IN LOCATED OCCUPIED SPACES.
(3) PROVIDE WITH DIRECTIONAL BLOW TAB.
(4) CLEAR ANODIZED FINISH. COORDINATE WITH ARCHITECT.
(5) FIELD VERIFY ALL SIZES WITH ALL TRADES PRIOR TO LOUVER MANUFACTURING.
(6) NOT USED.
(7) PROVIDE RADIATION DAMPER WITH CEILING DEVICE WHERE 'R' IS INDICATED ON FLOOR PLANS (IE: 8" D-1 'R'). PROVIDE FIRE DAMPER IN RUNOUT AT PENETRATION OF GYP. BOARD AT BOTTOM OF ROOF TRUSSES WHERE 'F' IS INDICATED ON FLOOR PLANS (IE: 8" DIA D-1 'F'). COORDINATE ALL FIRE RATINGS WITH ARCHITECTURAL PLANS AND GENERAL CONTRACTOR PRIOR TO FURNISHING MATERIAL.
(8) PROVIDE RETURN AIR BOOT AT EACH G-1, G-2A, G2-B, G2-C, G-3, G4-A, G4-B, G4-C, AND G-5 GRILLE. SEE DETAIL 7/M6.01.
(9) COLOR SELECTED BY ARCHITECT.
(10) INSTALLED IN EXTERIOR WALL. VERIFY WALL CONSTRUCTION BEFORE PROVIDING MATERIAL.
(11) BEGINNING POINT OF WATER PENETRATION SHALL NOT BE LOWER THAN 800 FEET PER MINUTE.
(12) NECK SIZE: G-2A: 22x10, G-2B: 18x6, G-2C: 6x6, G-4A: 22x10, G-4B: 18x6, G-4C: 6x6.

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note:
do not scale drawings. verify all dimensions and clearances from architectural, structural, shop and other appropriate drawings or at site. lay out and coordinate all work prior to installation to provide clearances required for operation, maintenance, and codes and verify non-interference with other work. do not fabricate prior to verification of clearance for all trades.

Central Nebraska Veterans Home
Kearney, Nebraska

Revision/Issue	Date
ADDENDUM NO. 2	12/03/15

MECHANICAL
SCHEDULES

FAI Number: **FAI-31-015**
Date: **October 15, 2015**

Sheet Number:

M7.01

NOTE:
BUILDINGS C HOME 3, D HOME 1, E HOME 1, AND F HOME 3 ARE ALL SIMILAR TO BUILDING A HOME 1. REFER TO THIS SHEET FOR DESIGN INTENT. UNITS MAY BE MIRRORED AND/OR ROTATED. MODIFY PIPE ROUTING AS REQUIRED TO MAKE FINAL CONNECTIONS.

GENERAL NOTES - PLUMBING

A. SEE SHEET P0.00 FOR ALL APPLICABLE PLUMBING GENERAL NOTES.

KEYNOTES

P201 DO NOT ROUTE PIPING ABOVE ELECTRICAL PANELS. MAINTAIN ALL CODE REQUIRED CLEARANCES.

P202 DO NOT ROUTE PIPING THRU CUPOLA/CLERESTORY/HIGH CEILING AREA.

P203 MAINTAIN ACCESSIBILITY TO ATTIC AND ROOF THROUGH ATTIC ACCESS DOOR AND ROOF HATCH. DO NOT ROUTE PIPING BELOW ROOF HATCH. COORDINATE WITH GENERAL CONTRACTOR AND ARCHITECTURAL DRAWINGS.

P204 FIRE SPRINKLER PIPE SIZING AND ROUTING BY FIRE SPRINKLER CONTRACTOR. COORDINATE PIPE ROUTING WITH ALL OTHER TRADES.

P211 PROVIDE DRY-PIPE FIRE SPRINKLER HEAD IN STORAGE CLOSET. DO NOT ROUTE WATER PIPING IN AREA SUBJECT TO FREEZING.

P214 DOMESTIC WATER SUPPLY PIPING ROUTED THROUGH CORRIDORS TO BUILDING G. SEE SHEET P1.G.01 FOR CONTINUATION.

P216 3/4" CW DN CONCEALED IN WALL TO WALL HYDRANT. PROVIDE SHUT-OFF VALVE IN CORRIDOR ABOVE CEILING WITH ACCESS PANEL. COORDINATE EXACT LOCATION OF ACCESS PANEL WITH ARCHITECTURAL PLANS.

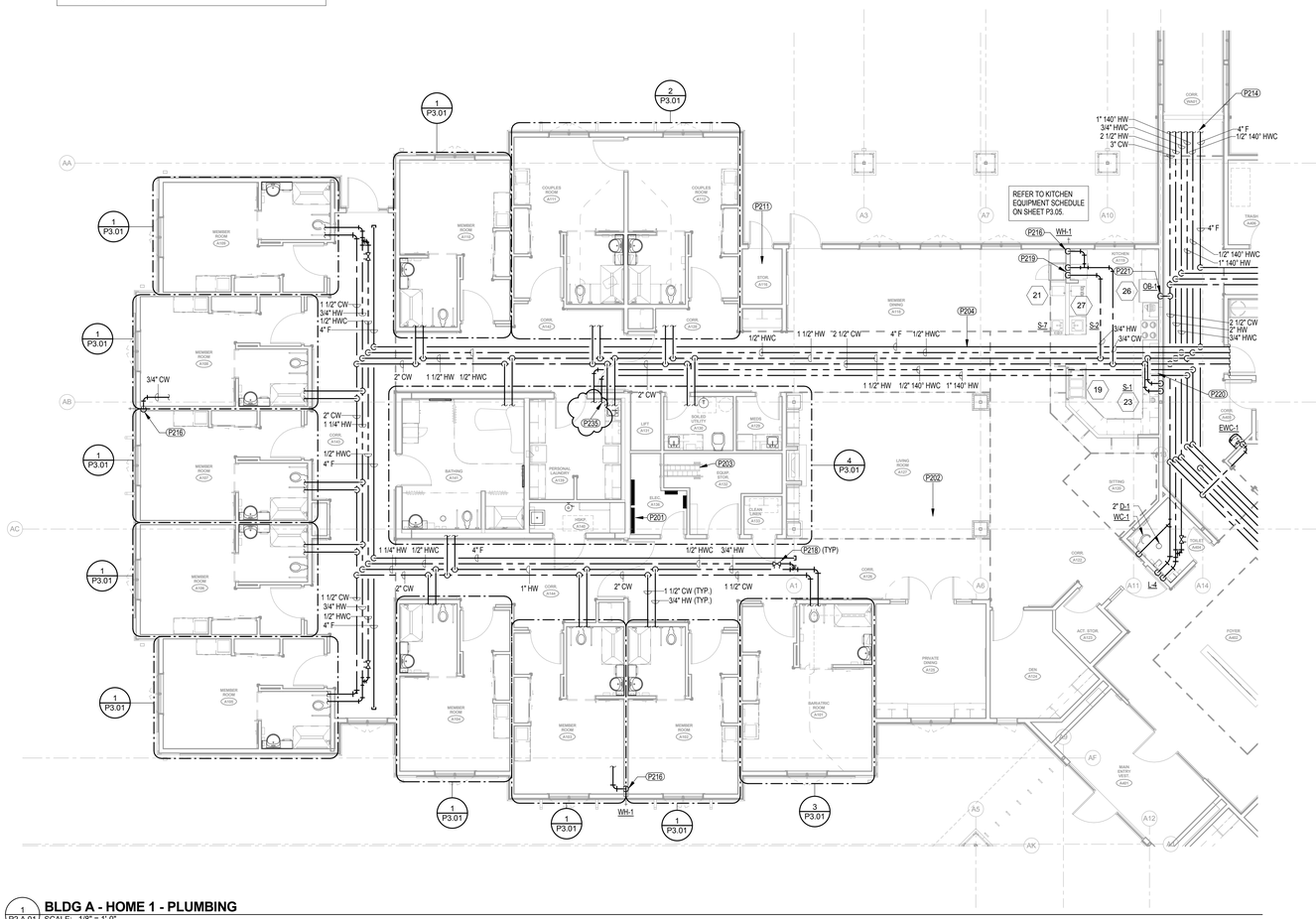
P218 AUTOMATIC BALANCING VALVE. SET TO 1.0 GPM IN BUILDING J. SET TO 0.5 GPM IN ALL OTHER LOCATIONS.

P219 3/4" CW AND 3/4" HW DN IN WALL BELOW COUNTERTOP TO SINKS AND KITCHEN EQUIPMENT. COORDINATE KITCHEN EQUIPMENT CONNECTIONS WITH KITCHEN EQUIPMENT SCHEDULE ON SHEET P6.01. PLUMBING CONTRACTOR TO MAKE FINAL CONNECTIONS.

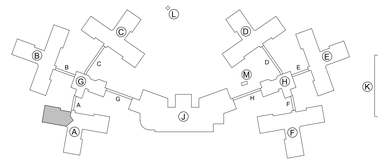
P220 PROVIDE PLUMBING CONNECTIONS TO DISHWASHER. SEE DETAIL 6, SHEET P5.01.

P221 PROVIDE 1/4". CW TO ICE MAKER BOX IN REFRIGERATOR. PROVIDE ISOLATION VALVE WALL BOX IN ACCESSIBLE LOCATION BEHIND REFRIGERATOR. COORDINATE EXACT LOCATION WITH OWNER.

P235 3/4" 140° HW AND 140° HWC SERVING CLOTHES WASHING MACHINE IN NEIGHBORHOOD LAUNDRY ROOM AS PER ADDENDUM #2.



1 P2.A.01 **BLDG A - HOME 1 - PLUMBING**
SCALE: 1/8" = 1'-0"



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Central Nebraska Veterans Home
Kearney, Nebraska

Revision/Issue	Date
ADDENDUM NO. 2	12/03/15

PARTIAL FLOOR PLAN - BUILDING A - HOME 1 - PLUMBING

FAI Number: **FAI-31-015**
Date: **October 15, 2015**

Sheet Number:

P2.A.01

GENERAL NOTES - PLUMBING

A. SEE SHEET P0.00 FOR ALL APPLICABLE PLUMBING GENERAL NOTES.

KEYNOTES

P201 DO NOT ROUTE PIPING ABOVE ELECTRICAL PANELS. MAINTAIN ALL CODE REQUIRED CLEARANCES.

P202 DO NOT ROUTE PIPING THRU CUPOLA/CLERESTORY/HIGH CEILING AREA.

P203 MAINTAIN ACCESSIBILITY TO ATTIC AND ROOF THROUGH ATTIC ACCESS DOOR AND ROOF HATCH. DO NOT ROUTE PIPING BELOW ROOF HATCH. COORDINATE WITH GENERAL CONTRACTOR AND ARCHITECTURAL DRAWINGS.

P204 FIRE SPRINKLER PIPE SIZING AND ROUTING BY FIRE SPRINKLER CONTRACTOR. COORDINATE PIPE ROUTING WITH ALL OTHER TRADES.

P207 1" CW BELOW GRADE FROM BUILDING D TO RV HOOK-UP. COORDINATE EXACT ROUTING WITH CIVIL ENGINEER. PROVIDE SHUT-OFF VALVE IN CORRIDOR ABOVE THE CEILING WITH ACCESS PANEL. COORDINATE ACCESS PANEL LOCATION WITH ARCHITECTRUAL PLANS.

P211 PROVIDE DRY-PIPE FIRE SPRINKLER HEAD IN STORAGE CLOSET. DO NOT ROUTE WATER PIPING IN AREA SUBJECT TO FREEZING.

P213 1-1/2" CW BELOW GRADE FROM BUILDING C TO BUILDING L. PROVIDE SHUT OFF VALVE IN CORRIDOR AOVE THE CEILING WITH ACCESS PANEL. COORDINATE ACCESS PANEL LOCATION WITH ARCHITECTURAL PLANS. COORDINATE EXACT BELOW GRADE PIPING WITH CIVIL DRAWINGS.

P216 3/4" CW DN CONCEALED IN WALL TO WALL HYDRANT. PROVIDE SHUT-OFF VALVE IN CORRIDOR ABOVE CEILING WITH ACCESS PANEL. COORDINATE EXACT LOCATION OF ACCESS PANEL WITH ARCHITECTURAL PLANS.

P218 AUTOMATIC BALANCING VALVE. SET TO 1.0 GPM IN BUILDING J. SET TO 0.5 GPM IN ALL OTHER LOCATIONS.

P219 3/4" CW AND 3/4" HW DN IN WALL BELOW COUNTERTOP TO SINKS AND KITCHEN EQUIPMENT. COORDINATE KITCHEN EQUIPMENT CONNECTIONS WITH KITCHEN EQUIPMENT SCHEDULE ON SHEET P6.01. PLUMBING CONTRACTOR TO MAKE FINAL CONNECTIONS.

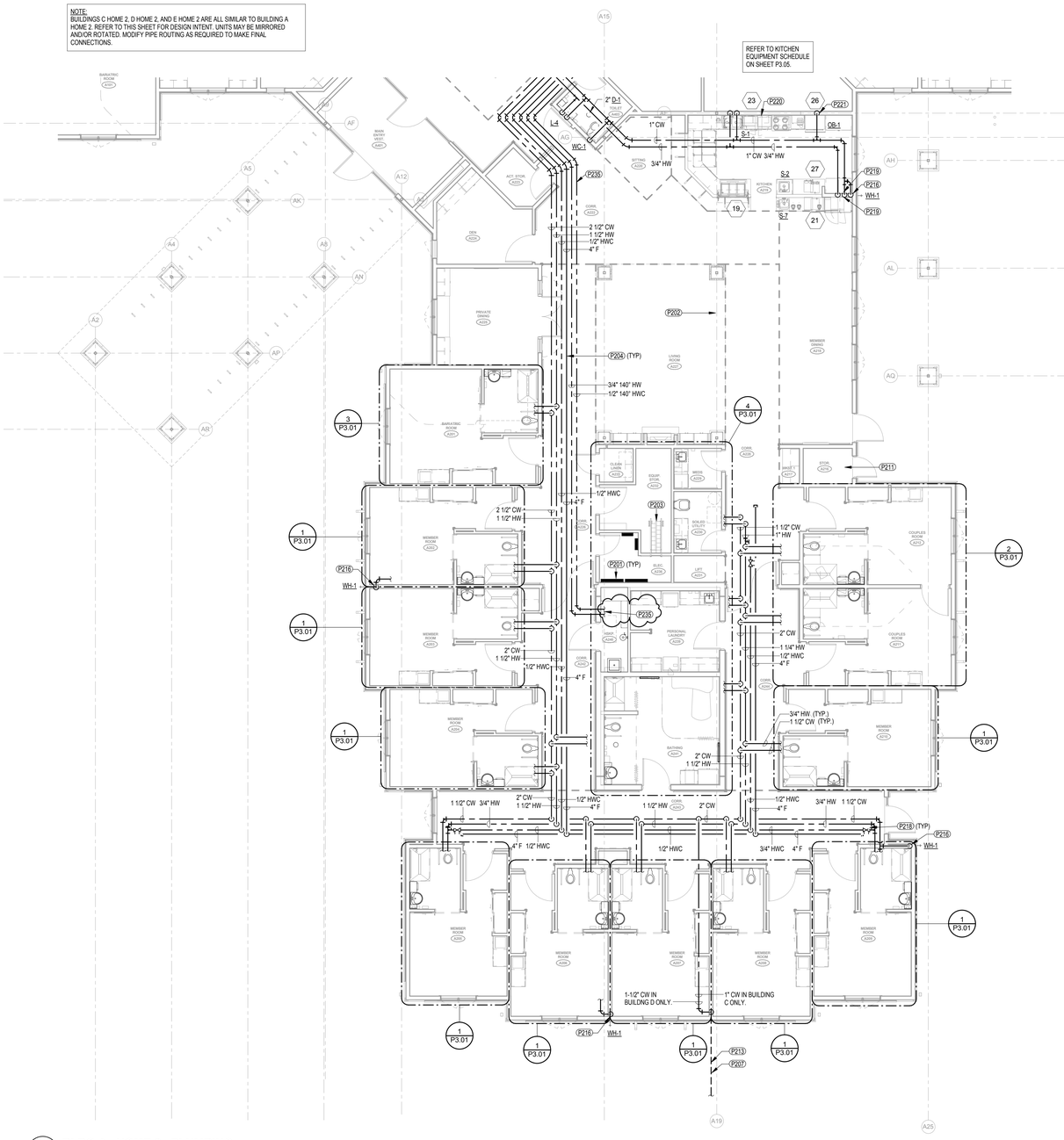
P220 PROVIDE PLUMBING CONNECTIONS TO DISHWASHER. SEE DETAIL 6, SHEET P5.01.

P221 PROVIDE 1/4" CW TO ICE MAKER BOX IN REFRIGERATOR. PROVIDE ISOLATION VALVE WALL BOX IN ACCESSIBLE LOCATION BEHIND REFRIGERATOR. COORDINATE EXACT LOCATION WITH OWNER.

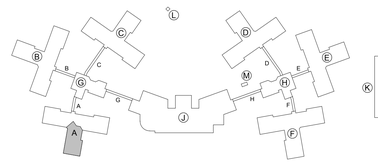
P235 3/4" 140° HW AND 140° HWC SERVING CLOTHES WASHING MACHINE IN NEIGHBORHOOD LAUNDRY ROOM AS PER ADDENDUM #2.

NOTE:
BUILDINGS C HOME 2, D HOME 2, AND E HOME 2 ARE ALL SIMILAR TO BUILDING A HOME 2. REFER TO THIS SHEET FOR DESIGN INTENT. UNITS MAY BE MIRRORED AND/OR ROTATED. MODIFY PIPE ROUTING AS REQUIRED TO MAKE FINAL CONNECTIONS.

REFER TO KITCHEN EQUIPMENT SCHEDULE ON SHEET P3.05.



1 P2.A.02 **BLDG A - HOME 2 - PLUMBING**
SCALE: 1/8" = 1'-0"



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Central Nebraska Veterans Home
Kearney, Nebraska

Revision/Issue	Date
ADDENDUM NO. 2	12/03/15

PARTIAL FLOOR PLAN - BUILDING A - HOME 2 - PLUMBING

FAI Number: **FAI-31-015**
Date: **October 15, 2015**

Sheet Number:

P2.A.02

NOTE:
BUILDINGS C HOME 1, D HOME 3, E HOME 3, AND F HOME 1 ARE ALL SIMILAR TO BUILDING A HOME 3. REFER TO THIS SHEET FOR DESIGN INTENT. UNITS MAY BE MIRRORED AND/OR ROTATED. MODIFY PIPE ROUTING AS REQUIRED TO MAKE FINAL CONNECTIONS.

GENERAL NOTES - PLUMBING

A. SEE SHEET P0.00 FOR ALL APPLICABLE PLUMBING GENERAL NOTES.

KEYNOTES

P201 DO NOT ROUTE PIPING ABOVE ELECTRICAL PANELS. MAINTAIN ALL CODE REQUIRED CLEARANCES.

P202 DO NOT ROUTE PIPING THRU CUPOLA/CLERESTORY/HIGH CEILING AREA.

P203 MAINTAIN ACCESSIBILITY TO ATTIC AND ROOF THROUGH ATTIC ACCESS DOOR AND ROOF HATCH. DO NOT ROUTE PIPING BELOW ROOF HATCH. COORDINATE WITH GENERAL CONTRACTOR AND ARCHITECTURAL DRAWINGS.

P204 FIRE SPRINKLER PIPE SIZING AND ROUTING BY FIRE SPRINKLER CONTRACTOR. COORDINATE PIPE ROUTING WITH ALL OTHER TRADES.

P211 PROVIDE DRY-PIPE FIRE SPRINKLER HEAD IN STORAGE CLOSET. DO NOT ROUTE WATER PIPING IN AREA SUBJECT TO FREEZING.

P214 DOMESTIC WATER SUPPLY PIPING ROUTED THROUGH CORRIDORS TO BUILDING G. SEE SHEET P1.G.01 FOR CONTINUATION.

P216 3/4" CW DN CONCEALED IN WALL TO WALL HYDRANT. PROVIDE SHUT-OFF VALVE IN CORRIDOR ABOVE CEILING WITH ACCESS PANEL. COORDINATE EXACT LOCATION OF ACCESS PANEL WITH ARCHITECTURAL PLANS.

P218 AUTOMATIC BALANCING VALVE. SET TO 1.0 GPM IN BUILDING J. SET TO 0.5 GPM IN ALL OTHER LOCATIONS.

P219 3/4" CW AND 3/4" HW DN IN WALL BELOW COUNTERTOP TO SINKS AND KITCHEN EQUIPMENT. COORDINATE KITCHEN EQUIPMENT CONNECTIONS WITH KITCHEN EQUIPMENT SCHEDULE ON SHEET P6.01. PLUMBING CONTRACTOR TO MAKE FINAL CONNECTIONS.

P220 PROVIDE PLUMBING CONNECTIONS TO DISHWASHER. SEE DETAIL 6, SHEET P5.01.

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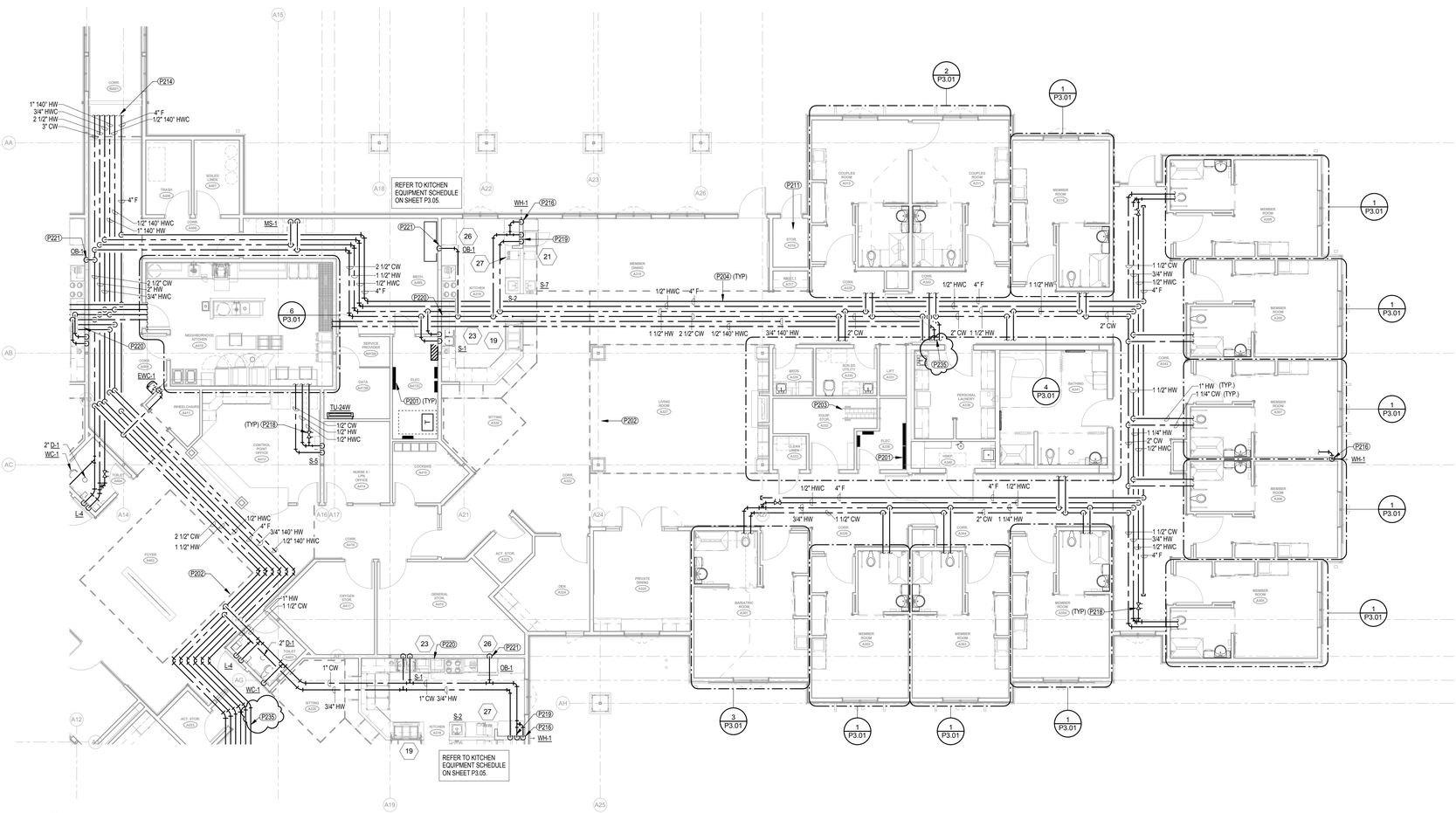
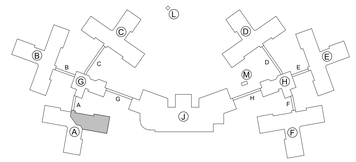


1 P2.A.03 **BLDG A - HOME 3 - PLUMBING**
SCALE: 1/8" = 1'-0"



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Central Nebraska Veterans Home
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Revision/Issue	Date
ADDENDUM NO. 2	12/03/15

PARTIAL FLOOR PLAN - BUILDING A - HOME 3 - PLUMBING

FAI Number: **FAI-31-015**
Date: **October 15, 2015**

Sheet Number:

P2.A.03

GENERAL NOTES - PLUMBING

A. SEE SHEET P0.00 FOR ALL APPLICABLE PLUMBING GENERAL NOTES.

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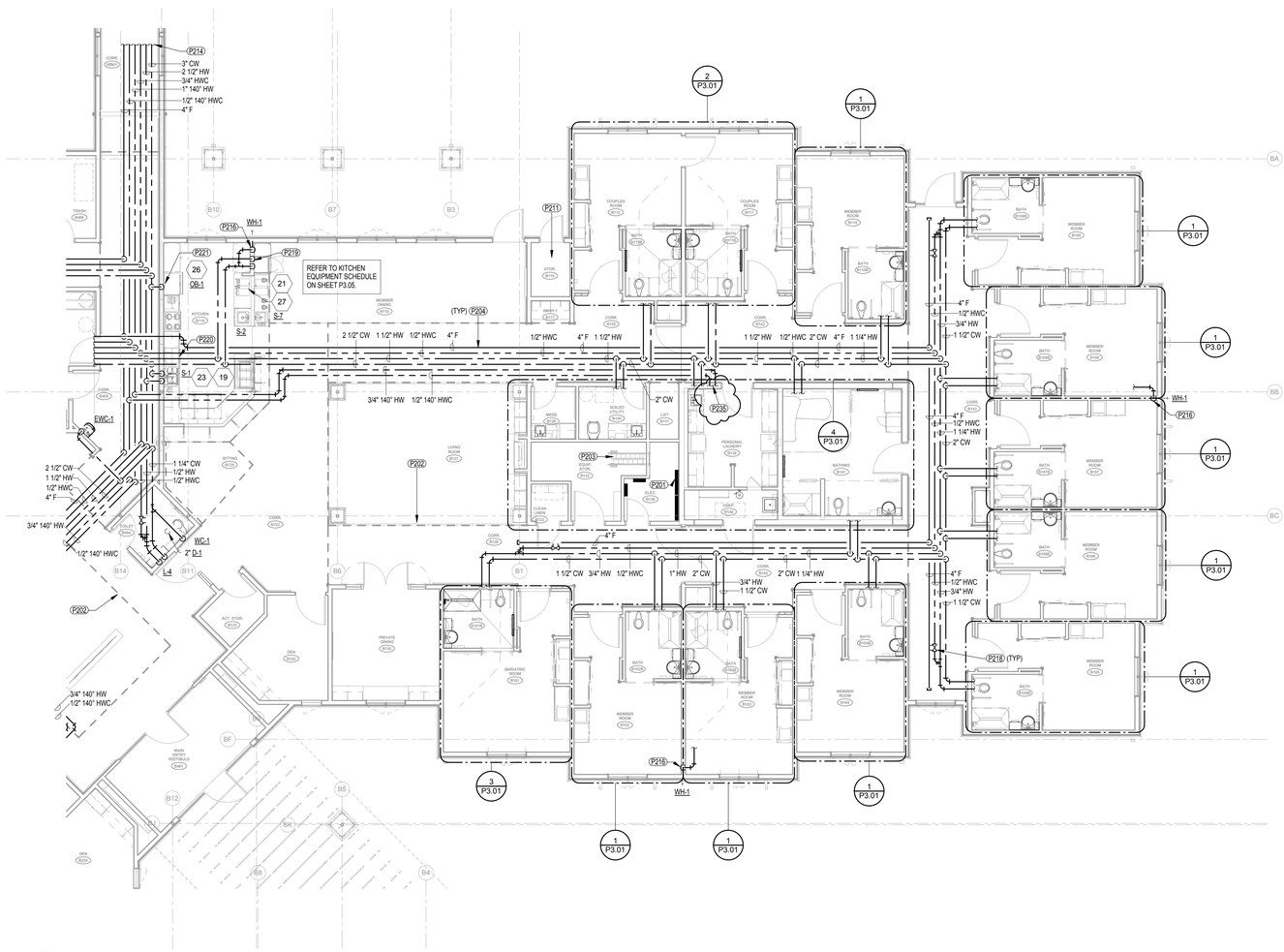
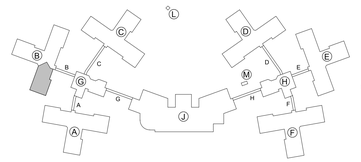


1 P2.B.01 **BLDG B - HOME 1 - PLUMBING**
SCALE: 1/8" = 1'-0"



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PARTIAL FLOOR PLAN - BUILDING B - HOME 1 - PLUMBING

FAI Number: **FAI-31-015**
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Sheet Number:

P2.B.01

GENERAL NOTES - PLUMBING

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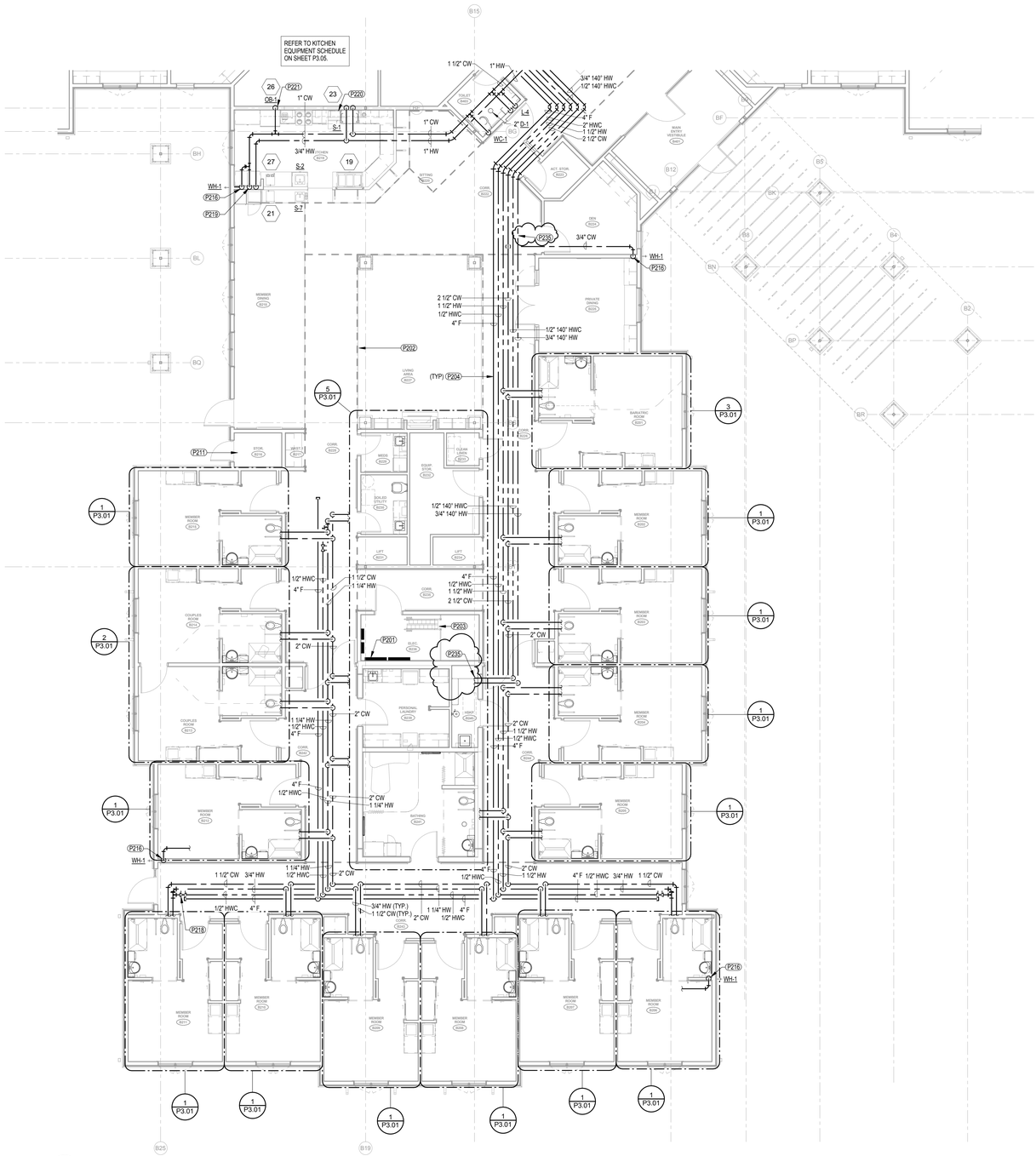
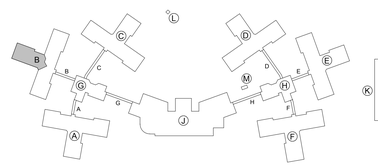
P235 3/4" 140° HW AND 140° HWC SERVING CLOTHES WASHING MACHINE IN NEIGHBORHOOD LAUNDRY ROOM AS PER ADDENDUM #2.

NOTE:
BUILDING F HOME 2 IS SIMILAR TO BUILDING B HOME 2. REFER TO THIS SHEET FOR DESIGN INTENT. UNIT MAY BE MIRRORED AND/OR ROTATED. MODIFY PIPE ROUTING AS REQUIRED TO MAKE FINAL CONNECTIONS.



1 P2.B.02 **BLDG B - HOME 2 - PLUMBING**
SCALE: 1/8" = 1'-0"



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PARTIAL FLOOR PLAN - BUILDING B - HOME 2 - PLUMBING

FAI Number: **FAI-31-015**
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Sheet Number:

P2.B.02

GENERAL NOTES - PLUMBING

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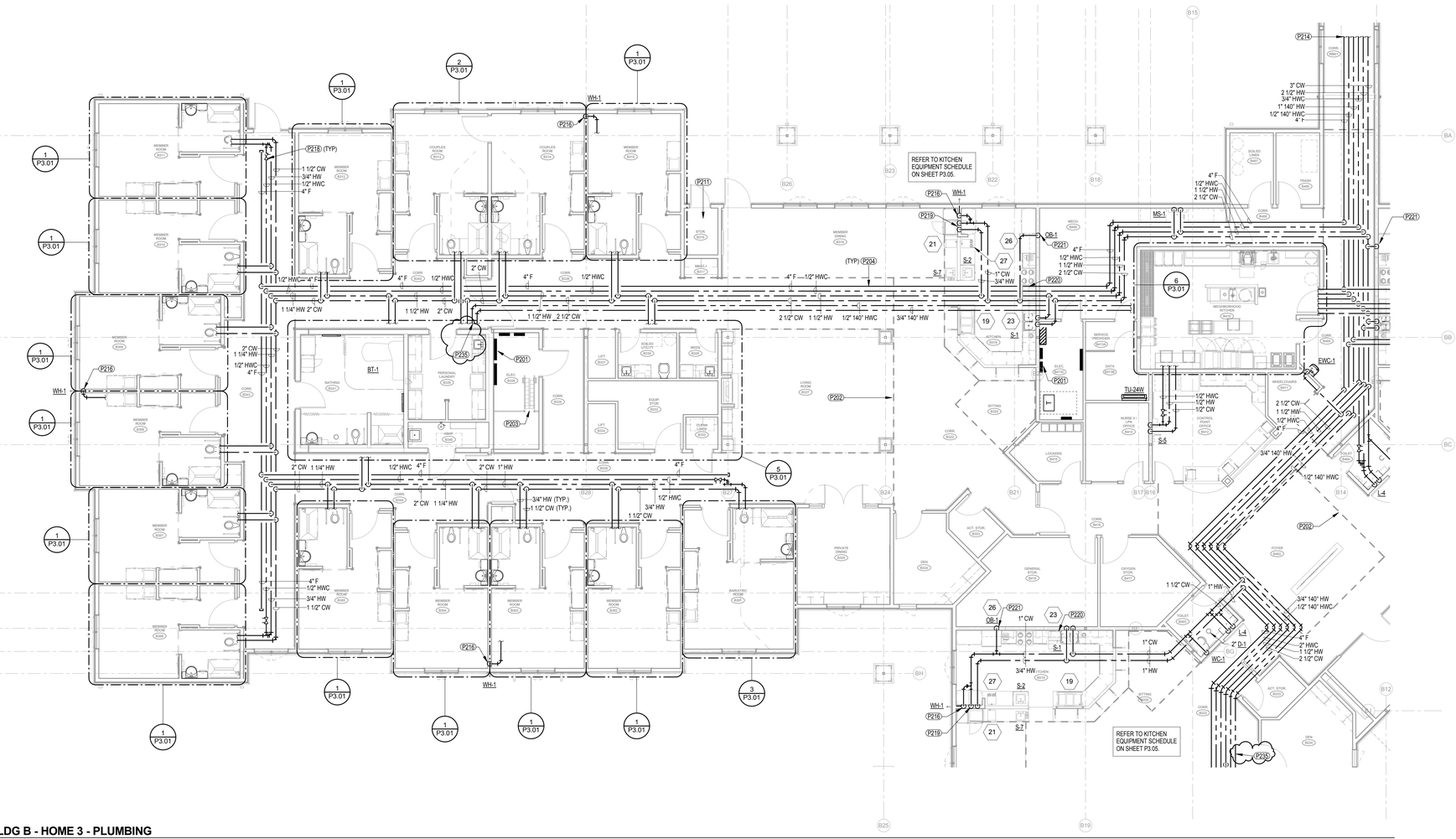
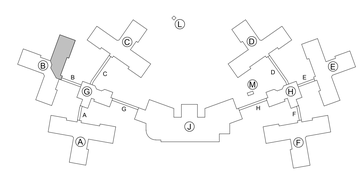


1 P2.B.03 **BLDG B - HOME 3 - PLUMBING**
SCALE: 1/8" = 1'-0"



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PARTIAL FLOOR PLAN - BUILDING B - HOME 3 - PLUMBING

FAI Number: **FAI-31-015**
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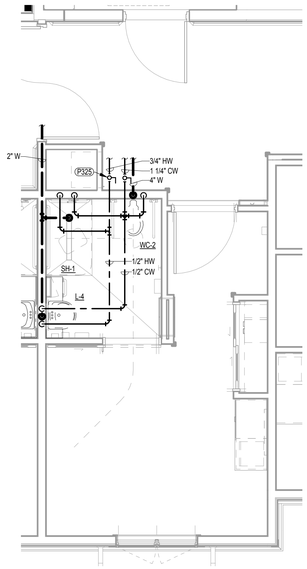
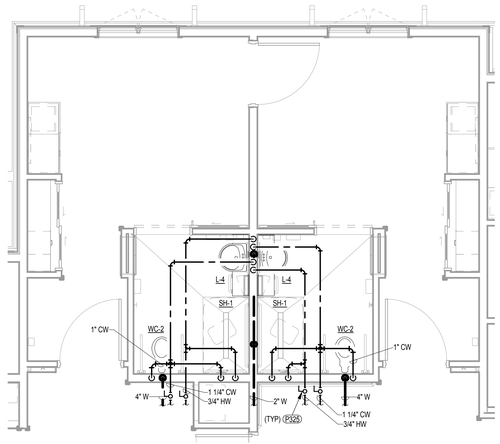
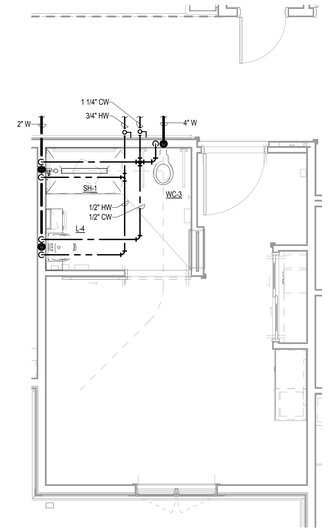
P2.B.03



1 P3.01 **BLDG-TYP-MEMBER_SGL_ROOM - PLUMBING**
SCALE: 1/4" = 1'-0"



2 P3.01 **BLDG-TYP-MEMBER_DBL_ROOM - PLUMBING**
SCALE: 1/4" = 1'-0"



3 P3.01 **BLDG-TYP-BARIATRIC_ROOM - PLUMBING**
SCALE: 1/4" = 1'-0"

GENERAL NOTES - PLUMBING

A. SEE SHEET P0.00 FOR ALL APPLICABLE PLUMBING GENERAL NOTES.

KEYNOTES

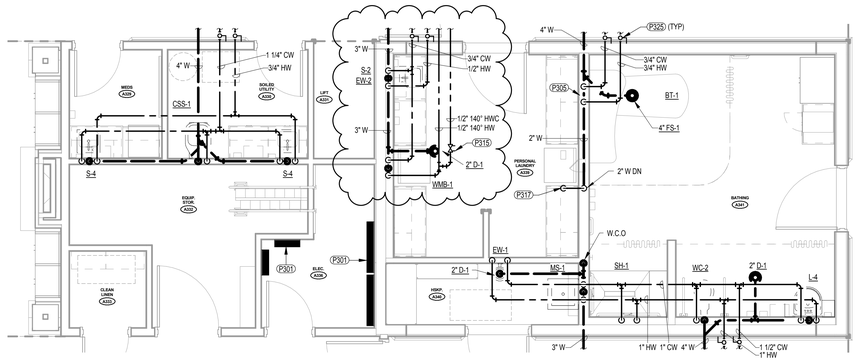
P301 DO NOT ROUTE PIPING ABOVE ELECTRICAL PANELS. MAINTAIN ALL CODE REQUIRED CLEARANCES.

P305 3/4" CW, 3/4" HW, 2" W, 1-1/2" V TO WHIRLPOOL TUB. COORDINATE CONNECTION REQUIREMENTS WITH MANUFACTURER'S RECOMMENDATIONS AND GENERAL CONTRACTOR. PROVIDE HOT AND COLD WATER HOSE BIBS FOR ISLOATION OF THE WATER SUPPLY. PROVIDE CODE REQUIRED BACKFLOW PREVENTION. INDIRECT DRAIN TUB TO FLOOR SINK.

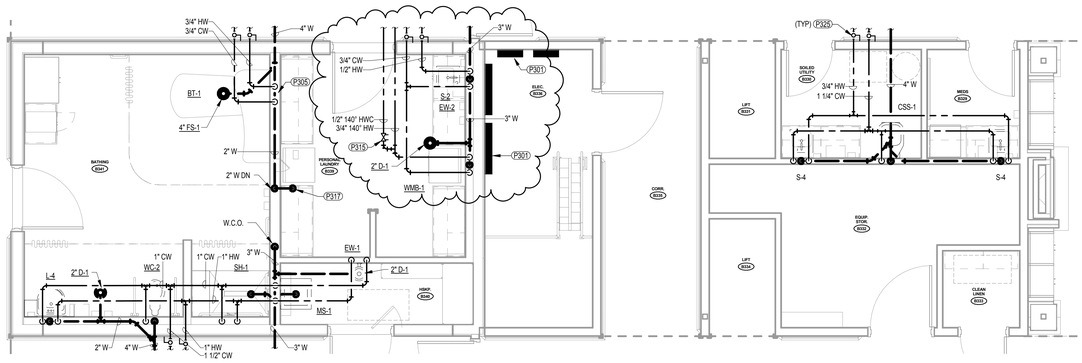
P315 AUTOMATIC BALANCING VALVE. SET TO 0.5 GPM.

P317 2" W UP TO FLOOR DRAIN, D-2, LOCATED IN MECHANICAL MEZZANINE. SEE MECHANICAL MEZZANINE PLAN 2 SHEET M4.02 FOR DRAIN LOCATION.

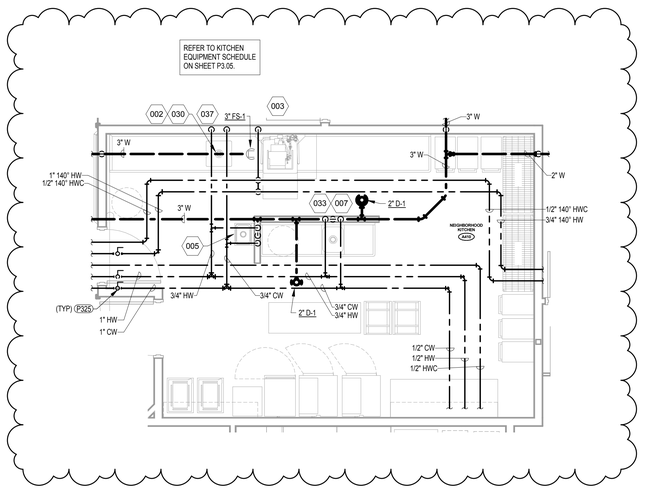
P325 PROVIDE ISOLATION VALVES IN CORRIDOR WITH ACCESS PANEL OR ABOVE CEILING IN ACCESSIBLE LOCATION. COORDINATE EXACT LOCATION OF ACCESS PANELS WITH ARCHITECTURAL PLANS AND GENERAL CONTRACTOR.



4 P3.01 **BLDG - TYP - ENLARGED NEIGHBORHOOD BATHING AREA PLAN - PLUMBING**
SCALE: 1/4" = 1'-0"



5 P3.01 **BLDG B - ENLARGED BATHING/SOILED UTILITY AREA - PLUMBING**
SCALE: 1/4" = 1'-0"



6 P3.01 **ENLARGED TYPICAL NEIGHBORHOOD KITCHEN PLAN - PLUMBING**
SCALE: 1/4" = 1'-0"

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CHRISTOPHER P. REED
E-9156
10/15/15
DATE OF VERIFICATION

morrissey engineering inc
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4940 North 118th Street
Omaha, NE 68164
P: 402.491.4144
www.morrisseyengineering.com

note:
do not scale drawings. verify all dimensions and clearances from architectural, structural, shop and other appropriate drawings or at site. lay out and coordinate all work prior to installation to provide clearances required for operation, maintenance, and codes and verify non-interference with other work. do not fabricate prior to verification of clearance for all trades.

Central Nebraska Veterans Home
Kearney, Nebraska

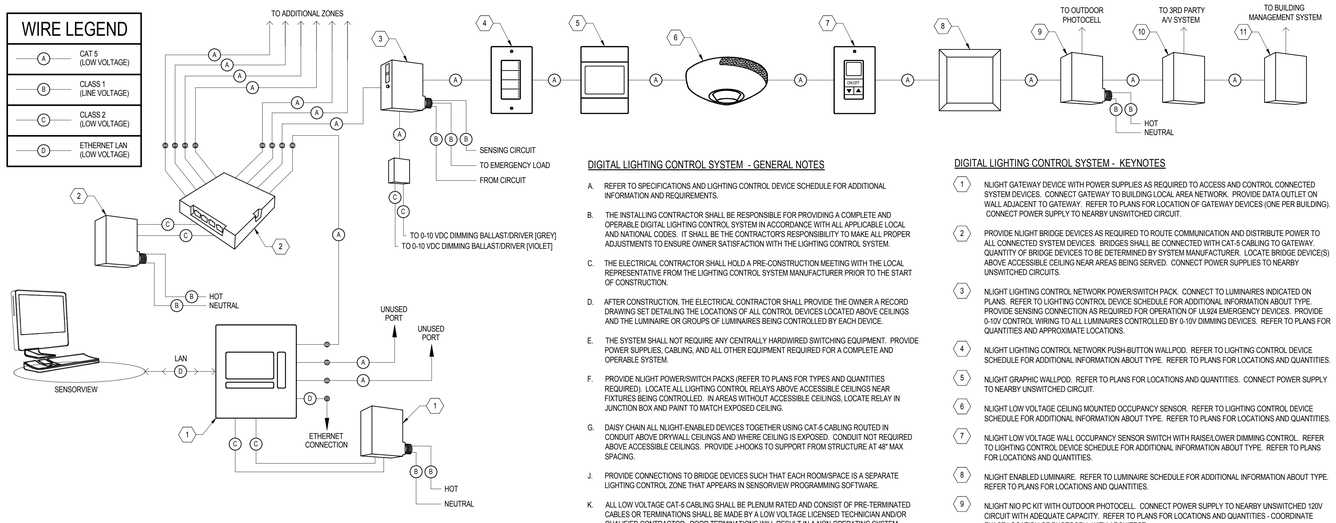
Revision/Issue	Date
ADDENDUM NO. 2	12/03/15

ENLARGED PLANS - NEIGHBORHOODS - PLUMBING

FAI Number: **FAI-31-015**
Date: **October 15, 2015**

Sheet Number:

P3.01



DIGITAL LIGHTING CONTROL SYSTEM - GENERAL NOTES

A. REFER TO SPECIFICATIONS AND LIGHTING CONTROL DEVICE SCHEDULE FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

B. THE INSTALLING CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A COMPLETE AND OPERABLE DIGITAL LIGHTING CONTROL SYSTEM IN ACCORDANCE WITH ALL APPLICABLE LOCAL AND NATIONAL CODES. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAKE ALL PROPER ADJUSTMENTS TO ENSURE OWNER SATISFACTION WITH THE LIGHTING CONTROL SYSTEM.

C. THE ELECTRICAL CONTRACTOR SHALL HOLD A PRE-CONSTRUCTION MEETING WITH THE LOCAL REPRESENTATIVE FROM THE LIGHTING CONTROL SYSTEM MANUFACTURER PRIOR TO THE START OF CONSTRUCTION.

D. AFTER CONSTRUCTION, THE ELECTRICAL CONTRACTOR SHALL PROVIDE THE OWNER A RECORD DRAWING SET DETAILING THE LOCATIONS OF ALL CONTROL DEVICES LOCATED ABOVE CEILINGS AND THE LUMINAIRE OR GROUPS OF LUMINAIRES BEING CONTROLLED BY EACH DEVICE.

E. THE SYSTEM SHALL NOT REQUIRE ANY CENTRALLY HARDWIRED SWITCHING EQUIPMENT. PROVIDE POWER SUPPLIES, CABLING, AND ALL OTHER EQUIPMENT REQUIRED FOR A COMPLETE AND OPERABLE SYSTEM.

F. PROVIDE NLIGHT POWER/SWITCH PACKS (REFER TO PLANS FOR TYPES AND QUANTITIES REQUIRED). LOCATE ALL LIGHTING CONTROL RELAYS ABOVE ACCESSIBLE CEILINGS NEAR FIXTURES BEING CONTROLLED. IN AREAS WITHOUT ACCESSIBLE CEILINGS, LOCATE RELAY IN JUNCTION BOX AND PAINT TO MATCH EXPOSED CEILING.

G. DAISY CHAIN ALL NLIGHT-ENABLED DEVICES TOGETHER USING CAT-5 CABLING ROUTED IN CONDUIT ABOVE DRYWALL CEILINGS AND WHERE CEILING IS EXPOSED. CONDUIT NOT REQUIRED ABOVE ACCESSIBLE CEILINGS. PROVIDE J-HOOKS TO SUPPORT FROM STRUCTURE AT 48" MAX. SPACING.

J. PROVIDE CONNECTIONS TO BRIDGE DEVICES SUCH THAT EACH ROOM/SPACE IS A SEPARATE LIGHTING CONTROL ZONE THAT APPEARS IN SENSORVIEW PROGRAMMING SOFTWARE.

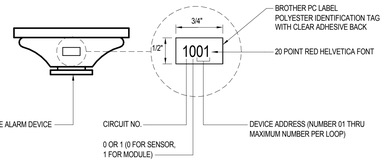
K. ALL LOW VOLTAGE CAT-5 CABLING SHALL BE PLENUM RATED AND CONSIST OF PRE-TERMINATED CABLES OR TERMINATIONS SHALL BE MADE BY A LOW VOLTAGE LICENSED TECHNICIAN AND/OR QUALIFIED CONTRACTOR. POOR TERMINATIONS WILL RESULT IN A NON-OPERATING SYSTEM.

L. INITIAL START-UP, COMMISSIONING, AND PROGRAMMING SHALL BE COMPLETED BY A QUALIFIED FACTORY REPRESENTATIVE. PROVIDE nFLOORPLAN LAYOUTS FOR ALL BUILDINGS WITH nLIGHT LIGHTING CONTROL SYSTEMS (GRAPHICAL FLOOR PLAN VIEWS OF nLIGHT NETWORKS). PROVIDE TRAINING FOR THE OWNER. TRAINING SHALL BE VIDEO AND AUDIO RECORDED. COORDINATE TIME WITH ARCHITECT, ELECTRICAL ENGINEER, AND OWNER.

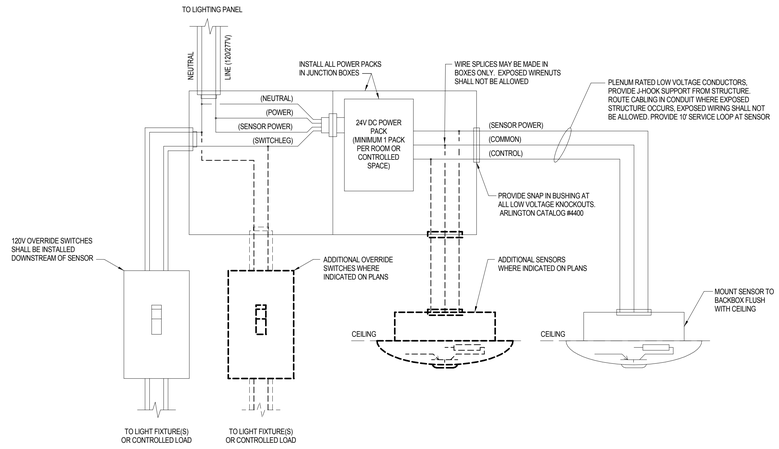
M. PROVIDE ENGRAVINGS FOR ALL WALLPOD DEVICES AND WALL SWITCH OCCUPANCY SENSORS.

DIGITAL LIGHTING CONTROL SYSTEM - KEYNOTES

1. NLIGHT GATEWAY DEVICE WITH POWER SUPPLIES AS REQUIRED TO ACCESS AND CONTROL CONNECTED SYSTEM DEVICES. CONNECT GATEWAY TO BUILDING LOCAL AREA NETWORK. PROVIDE DATA OUTLET ON WALL ADJACENT TO GATEWAY. REFER TO PLANS FOR LOCATION OF GATEWAY DEVICES (ONE PER BUILDING). CONNECT POWER SUPPLY TO NEARBY UNSWITCHED CIRCUIT.
2. PROVIDE NLIGHT BRIDGE DEVICES AS REQUIRED TO ROUTE COMMUNICATION AND DISTRIBUTE POWER TO ALL CONNECTED SYSTEM DEVICES. BRIDGES SHALL BE CONNECTED WITH CAT-5 CABLING TO GATEWAY. QUANTITY OF BRIDGE DEVICES TO BE DETERMINED BY SYSTEM MANUFACTURER. LOCATE BRIDGE DEVICE(S) ABOVE ACCESSIBLE CEILING NEAR AREAS BEING SERVED. CONNECT POWER SUPPLIES TO NEARBY UNSWITCHED CIRCUITS.
3. NLIGHT LIGHTING CONTROL NETWORK POWER/SWITCH PACK. CONNECT TO LUMINAIRES INDICATED ON PLANS. REFER TO LIGHTING CONTROL DEVICE SCHEDULE FOR ADDITIONAL INFORMATION ABOUT TYPE. PROVIDE SENSING CONNECTION AS REQUIRED FOR OPERATION OF UL924 EMERGENCY DEVICES. PROVIDE 0-10V CONTROL WIRING TO ALL LUMINAIRES CONTROLLED BY 0-10V DIMMING DEVICES. REFER TO PLANS FOR QUANTITIES AND APPROXIMATE LOCATIONS.
4. NLIGHT LIGHTING CONTROL NETWORK PUSH-BUTTON WALLPOD. REFER TO LIGHTING CONTROL DEVICE SCHEDULE FOR ADDITIONAL INFORMATION ABOUT TYPE. REFER TO PLANS FOR LOCATIONS AND QUANTITIES.
5. NLIGHT GRAPHIC WALLPOD. REFER TO PLANS FOR LOCATIONS AND QUANTITIES. CONNECT POWER SUPPLY TO NEARBY UNSWITCHED CIRCUIT.
6. NLIGHT LOW VOLTAGE CEILING MOUNTED OCCUPANCY SENSOR. REFER TO LIGHTING CONTROL DEVICE SCHEDULE FOR ADDITIONAL INFORMATION ABOUT TYPE. REFER TO PLANS FOR LOCATIONS AND QUANTITIES.
7. NLIGHT LOW VOLTAGE WALL OCCUPANCY SENSOR SWITCH WITH RAISE/LOWER DIMMING CONTROL. REFER TO LIGHTING CONTROL DEVICE SCHEDULE FOR ADDITIONAL INFORMATION ABOUT TYPE. REFER TO PLANS FOR LOCATIONS AND QUANTITIES.
8. NLIGHT ENABLED LUMINAIRE. REFER TO LUMINAIRE SCHEDULE FOR ADDITIONAL INFORMATION ABOUT TYPE. REFER TO PLANS FOR LOCATIONS AND QUANTITIES.
9. NLIGHT NIO PC KIT WITH OUTDOOR PHOTOCELL. CONNECT POWER SUPPLY TO NEARBY UNSWITCHED 120V CIRCUIT WITH ADEQUATE CAPACITY. REFER TO PLANS FOR LOCATIONS AND QUANTITIES - COORDINATE EXACT LOCATION OF PHOTOCELL WITH ARCHITECT.
10. NLIGHT NIO X KIT A/V INTERFACE. REFER TO PLANS FOR LOCATIONS AND QUANTITIES. PROVIDE RS-232 CONNECTION TO 3RD PARTY A/V SYSTEM.
11. NLIGHT nBACNET BACNET IP INTERFACE APPLIANCE WITH POWER SUPPLY AND CONTROL WIRING AS REQUIRED TO INTERFACE NLIGHT LIGHTING CONTROL SYSTEM WITH BUILDING MANAGEMENT SYSTEM. PROVIDE ONE nBACNET DEVICE PER GATEWAY (ONE PER BUILDING) - REFER TO PLANS FOR LOCATIONS. CONNECT POWER SUPPLY TO NEARBY UNSWITCHED CIRCUIT.

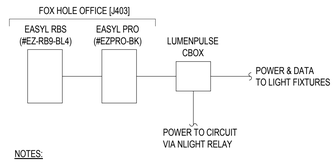


1 E5.02 DETECTOR LOCATION MARKER DETAIL
SCALE: NOT TO SCALE



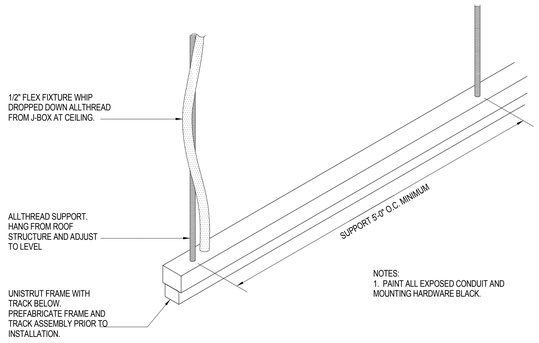
2 E5.02 TYPICAL OCCUPANCY SENSOR CONNECTION DETAIL (STAND ALONE TYPE)
SCALE: NOT TO SCALE

4 E5.02 TYPICAL NETWORK LIGHTING CONTROL SYSTEM CONNECTION DIAGRAM
SCALE: NOT TO SCALE



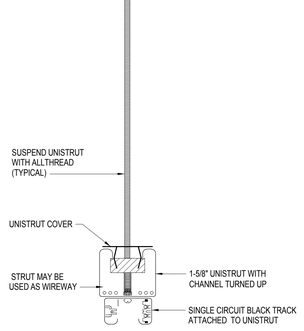
NOTES:
1. PROVIDE ALL CONTROL WIRING PER MANUFACTURER'S RECOMMENDATIONS.
2. PROVIDE STARTUP COMMISSIONING AND INITIAL PROGRAMMING TO BE COMPLETED BY FACTORY REPRESENTATIVE.
3. CONNECT POWER SUPPLIES FOR CONTROL DEVICES TO NEARBY CIRCUIT WITH SPARE CAPACITY.

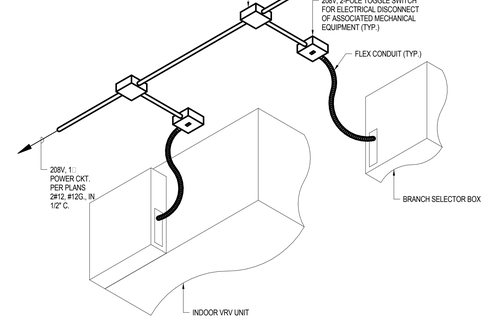
6 E5.02 COLOR CHANGING LIGHTING CONTROL SCHEMATIC
SCALE: NOT TO SCALE



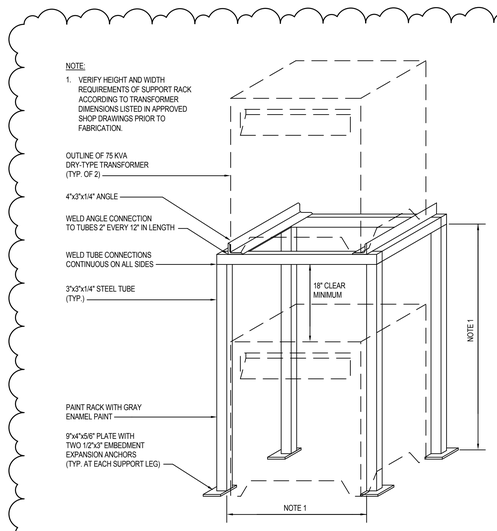
NOTES:
1. PAINT ALL EXPOSED CONDUIT AND MOUNTING HARDWARE BLACK.

5 E5.02 SUSPENDED TRACK LIGHTING DETAIL
SCALE: NOT TO SCALE

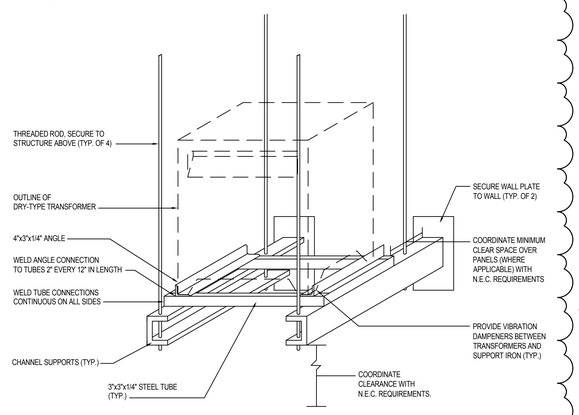




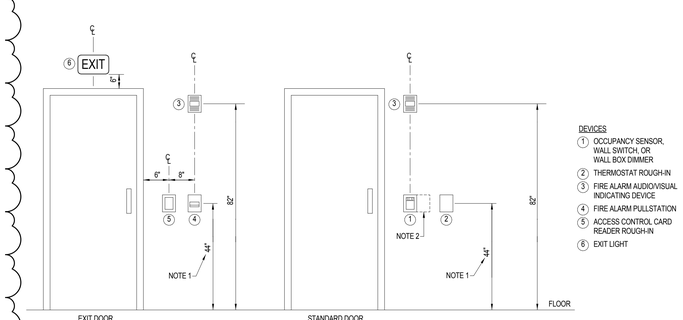
3 E5.02 INDOOR VRV UNIT/BRANCH SELECTOR CONNECTION DETAIL
SCALE: NOT TO SCALE



10 E5.02 STACKED TRANSFORMER MOUNTING DETAIL
SCALE: NOT TO SCALE

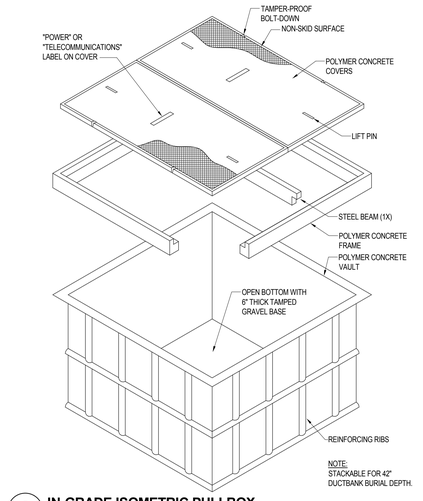


9 E5.02 RAISED TRANSFORMER MOUNTING DETAIL
SCALE: NOT TO SCALE



NOTES:
1. UNLESS INDICATED OTHERWISE ON PLANS: MOUNT SO THAT CENTER OF DEVICE IS 44" ABOVE FINISHED FLOOR. IF TWO OR MORE DEVICES ARE ADJACENT TOGETHER AND CANNOT BE MOUNTED SO THAT CENTER OF DEVICE IS AT 44" A.F.F., MOUNT SO THAT CENTER OF ADJACENT DEVICES ARE AT SAME ELEVATION, WHILE MAINTAINING ALL REQUIRED ADA MOUNTING HEIGHTS.
2. WHERE MULTIPLE SWITCHES OR WALL BOX DIMMERS ARE GANGED TOGETHER, ALIGN FIRST GANG WITH DEVICES ABOVE AND ADD DEVICES TO THE RIGHT AS REQUIRED.
3. NOT ALL DEVICE CONFIGURATIONS AND LOCATIONS ARE DEPICTED ON THIS DETAIL. ADDITIONAL CONFIGURATIONS MAY BE REQUIRED AND SHOULD BE COORDINATED WITH THE ENGINEER PRIOR TO ROUGH-IN. SEE FLOOR PLANS FOR INDIVIDUAL DOOR REQUIREMENTS.
4. HORIZONTAL DIMENSIONS ARE TO BE MEASURED FROM OUTSIDE EDGE OF DOOR FRAME OR TRIM. WHERE SIDE LIGHT WINDOWS ARE PROVIDED AT DOORS, DIMENSIONS SHOULD BE MEASURED FROM OUTSIDE EDGE OR TRIM OF SIDE LIGHT WINDOW.

8 E5.02 DEVICE ALIGNMENT DETAIL
SCALE: NOT TO SCALE



NOTE:
STACKABLE FOR 42" DUCTBANK BURIAL DEPTH.

7 E5.02 IN-GRADE ISOMETRIC PULLBOX
SCALE: NOT TO SCALE

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note:
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Central Nebraska Veterans Home
Kearney, Nebraska

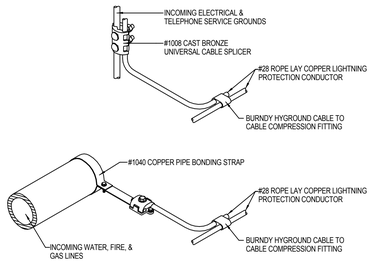
Revision/Issue	Date
ADDENDUM NO. 2	12/03/15

ELECTRICAL DETAILS

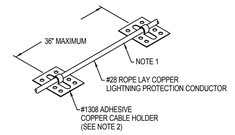
FAI Number: **FAI-31-015**
Date: **October 15, 2015**

Sheet Number:

E5.02

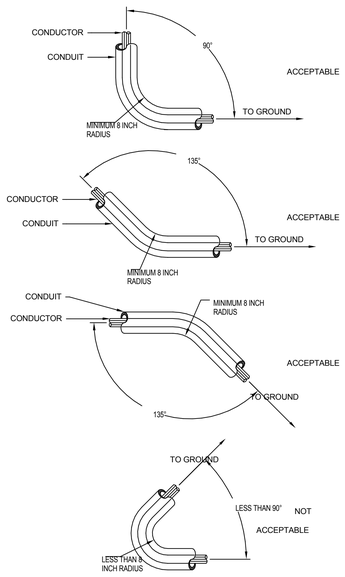


4 E5.03 **POTENTIAL EQUALIZATION**
SCALE: NOT TO SCALE

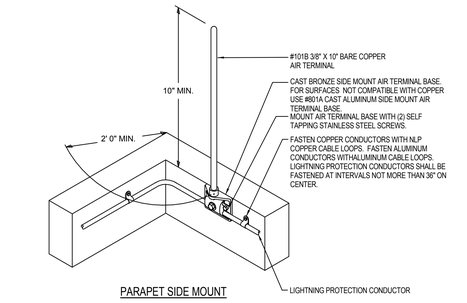


NOTES:
1. BOND ALL EQUIPMENT, VENTS, AND ROOF HATCHES WITHIN 15'-0" OF THE LIGHTNING PROTECTION CONDUCTOR.
2. ALL REQUIRED ROOF PADS, PAVERS, AND SLIP SHEETS SHALL BE FURNISHED AND INSTALLED BY THE ROOFING CONTRACTOR PRIOR TO THE LIGHTNING PROTECTION SYSTEM INSTALLATION. THE ROOFING CONTRACTOR SHALL INCLUDE ALL NECESSARY PROVISIONS FOR THE ROOF MOUNTED LIGHTNING PROTECTION EQUIPMENT IN THEIR INITIAL PROJECT BID. FAILURE TO ACCURATELY DESIGN AND ESTIMATE SAID ROOFING PROVISIONS IN THE INITIAL PROJECT BID WILL BE CORRECTED BY THE ROOFER WITHOUT ADDITIONAL COST TO THE OWNER.

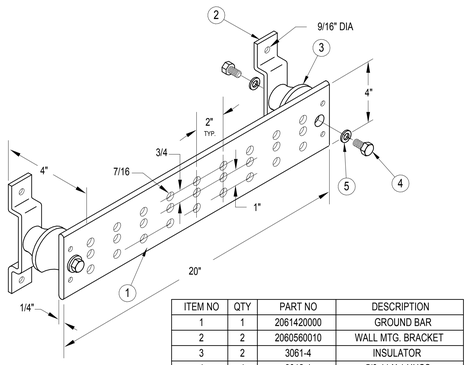
3 E5.03 **CONDUCTOR FASTENING**
SCALE: NOT TO SCALE



2 E5.03 **BEND REQUIREMENTS**
SCALE: NOT TO SCALE

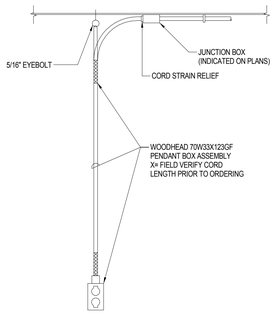


1 E5.03 **AIR TERMINALS**
SCALE: NOT TO SCALE

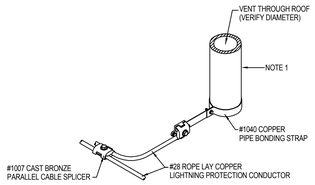


ITEM NO	QTY	PART NO	DESCRIPTION
1	1	2061420000	GROUND BAR
2	2	2060560010	WALL MTG. BRACKET
3	2	3061-4	INSULATOR
4	4	3012-1	5/8-11 X 1 HHCS
5	4	3015-8	5/8 LOCKWASHER

9 E5.03 **SERVICE GROUND BAR**
SCALE: NOT TO SCALE

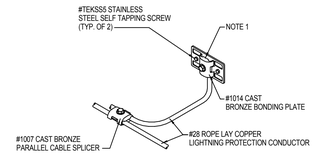


8 E5.03 **PENDANT RECEPTACLE**
SCALE: NOT TO SCALE



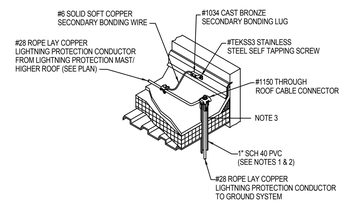
NOTES:
1. BOND ALL EQUIPMENT, VENTS, AND ROOF HATCHES WITHIN 15'-0" OF THE LIGHTNING PROTECTION CONDUCTOR.

7 E5.03 **TYPICAL PIPE BONDING**
SCALE: NOT TO SCALE



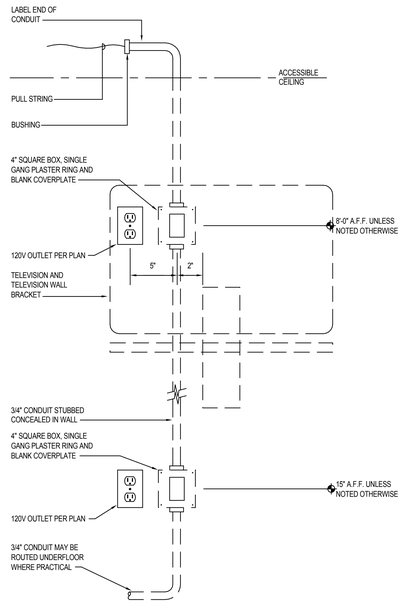
NOTES:
1. BOND ALL EQUIPMENT, VENTS, AND ROOF HATCHES WITHIN 15'-0" OF THE LIGHTNING PROTECTION CONDUCTOR.

6 E5.03 **TYPICAL BONDING**
SCALE: NOT TO SCALE

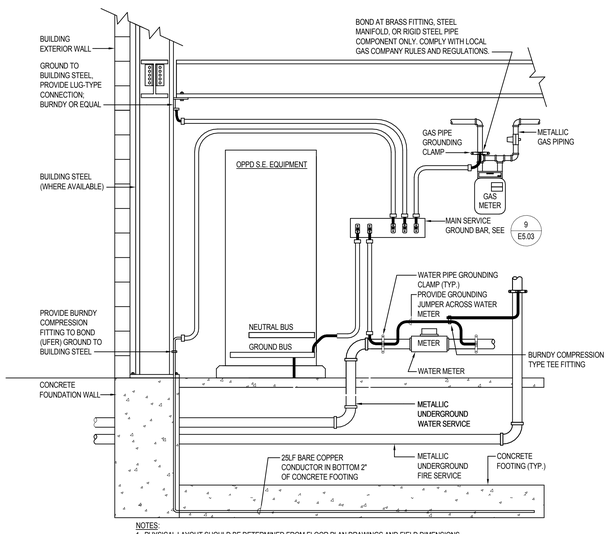


NOTES:
1. ALL REQUIRED 1" SCH 40 PVC CONDUIT SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR. CONDUIT SHALL BE FURNISHED WITH PULL TAPE AND CAPS AT EACH END OF THE CONDUIT RUN.
2. CONTRACTOR SHALL ROUTE DOWN CONDUCTORS CONCEALED THROUGH BUILDING.
3. ALL REQUIRED SEALING AND/OR FLASHING FOR ROOF PENETRATIONS SHALL BE FURNISHED AND INSTALLED BY THE ROOFING CONTRACTOR.

5 E5.03 **THROUGH ROOF CONNECTOR**
SCALE: NOT TO SCALE



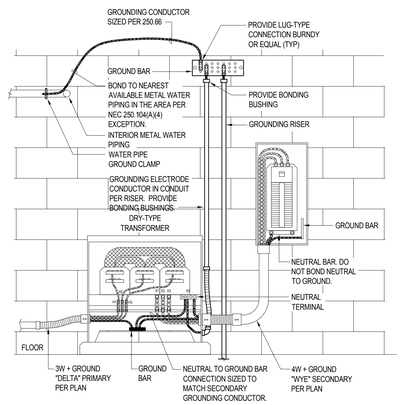
13 E5.03 **TV CONNECTION DETAIL**
SCALE: NOT TO SCALE



NOTES:
1. PHYSICAL LAYOUT SHOULD BE DETERMINED FROM FLOOR PLAN DRAWINGS AND FIELD DIMENSIONS.
2. ALL GROUNDING CONDUCTORS SIZED IN ACCORDANCE WITH NEC TABLE 250.66.
3. ALL CLAMPS AND FITTINGS SHALL BE UL LISTED FOR THE APPLICATION.

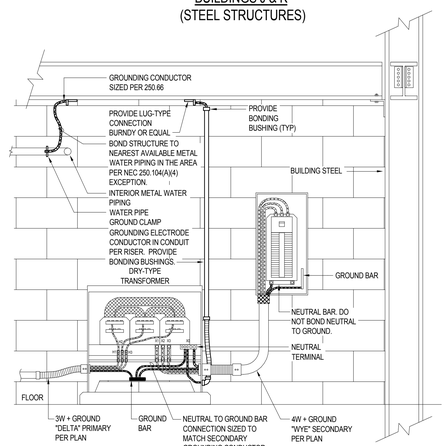
11 E5.03 **MAIN SERVICE GROUNDING DETAIL**
SCALE: NOT TO SCALE

BUILDINGS A - H
(WOOD STRUCTURES)



NOTE: PHYSICAL LAYOUT SHOULD BE DETERMINED FROM FLOOR PLAN DRAWINGS AND FIELD DIMENSIONS.

BUILDINGS J & K
(STEEL STRUCTURES)



NOTE: PHYSICAL LAYOUT SHOULD BE DETERMINED FROM FLOOR PLAN DRAWINGS AND FIELD DIMENSIONS.

10 E5.03 **TRANSFORMER GROUNDING DETAIL**
SCALE: NOT TO SCALE

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4940 North 118th Street
Omaha, NE 68164
P: 402.491.4144
www.morrisseyengineering.com

note:
do not scale drawings. verify all dimensions and clearances from architectural, structural, shop and other appropriate drawings or at site. lay out and coordinate all work prior to installation to provide clearances required for operation, maintenance, and codes and verify non-interference with other work. do not fabricate prior to verification of clearance for all trades.

Central Nebraska Veterans Home
Kearney, Nebraska

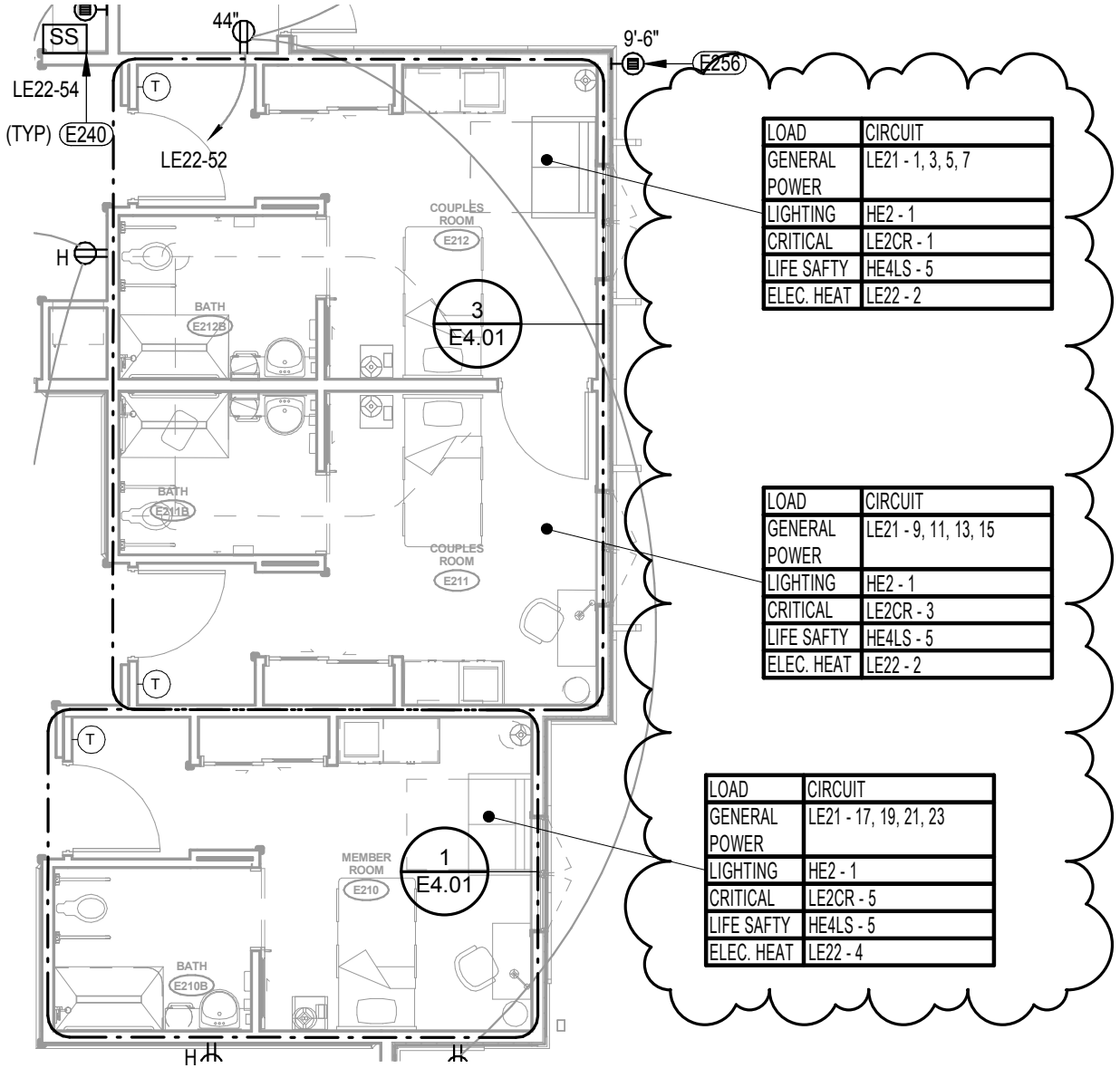
Revision/Issue	Date
ADDENDUM NO. 2	12/03/15

ELECTRICAL DETAILS

FAI Number: **FAI-31-015**
Date: **October 15, 2015**

Sheet Number:

E5.03



1 / SKE4 **BUILDING E - HOME 2 - POWER - ROOMS E210, E211 ,E212**

SCALE: 1/8" = 1'-0"

WILKINS
ARCHITECTURE | DESIGN | PLANNING

Central Nebraska Veterans Home

Kearney, Nebraska

Project Number: **FAI-31-015**

Addendum No. 2

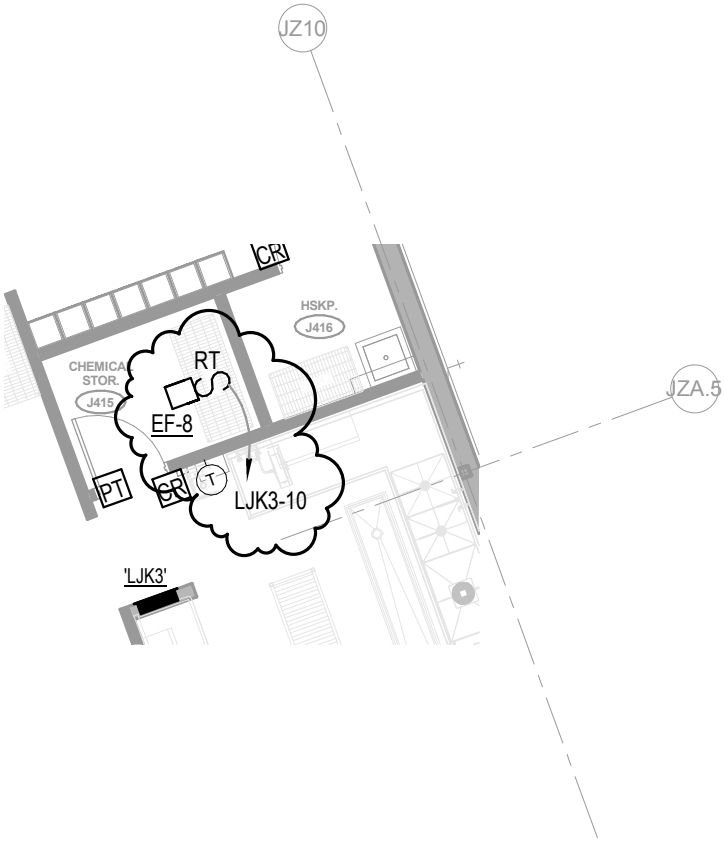
BUILDING E- HOME 2 - ROOMS E210, E211, E212

Sheet Ref: E2.E.02

Sketch Date: **12/03/15**

Sketch Number:

SKE4



1
SKE5

CHEMICAL STOR. J415

SCALE: 1/8" = 1'-0"

Lighting Panel: LJK3

Rating: 100 A
Mounting: Surface
Type:

Voltage: 120/208 Wye
Phase: 3
Wire: 4
A.I.C. Rating: SERIES

Circuit Description	O/C		CKT				CKT	O/C		Circuit Description
DRY STORAGE, DIETARY...	20	1	1				2	1	20	WAREWASHER, HSKP,...
DIETARY OFFICE	20	1	3				4	1	20	DIET. MGR. OFF,...
DIETARY (NORTH)	20	1	5				6	1	20	DIETARY (CENTER)
DIETARY (CENTER)	20	1	7				8	1	20	DIETARY (CENTER)
COOLER CONTROLS/LIGHTS	20	1	9				10	1	20	EF-8
FREEZER CONTROLS/LIGHTS	20	1	11				12	1	20	SPARE
FREEZER EVAP. (101B)	15	2	13				14	1	20	SPARE
--	--	--	15				16	1	20	FREEZER HEAT TAPE
FREEZER COND. UNIT (101)	45	2	17				18	1	20	COOLER EVEP. (100B)
--	--	--	19				20	1	20	SPRAY MASTER (822)
COOLER COND. UNIT (100A)	25	2	21				22	2	20	BLAST CHILLER (107)
--	--	--	23				24	--	--	--
DISPOSER (805)	15	3	25				26	3	15	DISPOSER (805)
--	--	--	27				28	--	--	--
--	--	--	29				30	--	--	--
DISPOSER (802)	15	3	31				32	3	30	POWER SOAK SINK (601)
--	--	--	33				34	--	--	--
--	--	--	35				36	--	--	--
POT AND PAN WASHER (6000	100	3	37				38	3	60	DISHWASHER (602)
--	--	--	39				40	--	--	--
--	--	--	41				42	--	--	--

Notes:

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Central Nebraska Veterans Home

Kearney, Nebraska

Project Number: **FAI-31-015**

Addendum No. 2

BUILDING J - POWER - CHEMICAL STOR. J415

Sheet Ref: E2.J.04

Sketch Date: **12/03/15**

Sketch Number:

SKE5