ADDENDUM

Public Building Commission of Chicago | Richard J. Daley Center | 50 West Washington Street, Room 200 | Chicago, Illinois 60602 | (312) 744-3090 | pbcchicago.com

ADDENDUM NO.: **01**

PROJECT NAME: **FPDCC Metal Buildings – McGinnis Field Station**

PROJECT NO.: **15070**

CONTRACT NO.: **C1613**

DATE OF ISSUE: **January 14, 2025**

NOTICE OF CHANGES, MODIFICATIONS, OR CLARIFICATIONS TO CONTRACT DOCUMENTS

The following changes, modifications, or clarifications are hereby incorporated and made an integral part of the Contract Documents. Unless clearly expressed otherwise by this Addendum, all terms and conditions defined in the original Contract Documents shall continue in full force and effect and shall have the same meaning in this Addendum. Issued Addenda represent responses/clarifications to various inquiries. Contractors shall be responsible for including all associated labor/material costs in its bid. Drawings/specifications corresponding to inquiry responses will be issued with the Issue for Construction Documents, upon issuance of building permit.

ITEM NO. 1: **CHANGE TO KEY DATES**

Change 1 A Site Visit has been scheduled for Friday, January 17, 2025, at 10:00am. Contractors are to meet at the McGinnis Field Station. Please see below for reference.

ITEM NO. 2: **REVISIONS TO BOOK 1 – PBC INSTRUCTIONS TO BIDDERS**

Change 2 Section II A (18) Notice of Award – **DELETE** 'November 2024' and **REPLACE WITH** 'February 2025'.

Change 3 Section II E Time of Completion – **DELETE** 'September 30, 2025' and **REPLACE WITH** 'October 31, 2025'

Change 4 Section II F Commission's Contract Contingency – **DELETE** '58,000' and **REPLACE WITH** '60,000.00'

ITEM NO. 3: **REVISIONS TO BOOK 2 – PBC STANDARD TERMS AND CONDITIONS**

None.

ITEM NO. 4: REVISIONS TO BOOK 3 – TECHNICAL SPECIFICATIONS/REPORTS

Change 1 Book 3 – Volume 1 – **REVISED** Specification Section 00 01 02 – Table of Contents: Highlighted to indicate revised specification sections.

Change 2 Book 3 – Volume 1 – **REVISED** Specification Section 07 41 13 – Pre-Insulated Metal Roof Panels: Changed 2.1.B., Acceptable Manufacturers to All Weather Insulated Panels (AWIP)

Change 3 Book 3 – Volume 1 – **REVISED** Specification Section 07 42 13 – Pre-Insulated Metal Wall Panels: Changed 2.1.B., Acceptable Manufacturers to All Weather Insulated Panels (AWIP)

Change 4 Book 3 – Volume 1 – **REVISED** Specification Section 13 34 19 – Metal Building Systems: Revised 1.2 Related Sections, Deleted 2.1.B.

ITEM NO. 5: REVISIONS TO DRAWINGS

Change 1 **REVISED** Drawing G1.1, Site Logistics & Phasing Plan – Revised note regarding relocation of existing propane tank

Change 2 **REVISED** Drawing C-3, Demolition Plan – To reflect revised area of asphalt pavement replacement

Change 3 **REVISED** Drawing C-4, Geometric Plan – To reflect revised area of asphalt pavement replacement

Change 4 **REVISED** Drawing C-6, Utility Plan – Added note regarding hand hole(s) for electrical for future EV chargers

Change 5 **REVISED** Drawing A1.0, Floor Plan – To add bollard locations & note regarding expansion joint requirements

Change 6 **REVISED** Drawing A5.1, Wall Panel Details – To revise notes for details 6/A5.1 and 7/A5.1

Change 7 **REVISED** Drawing E1.1, Site Plan – To add additional hand hole location to accommodate future EV chargers

Change 8 **REVISED** Drawing FP1.0A, Fire Protection Plan – To revise note 1B to correct governing jurisdiction

ITEM NO. 6: REQUESTS FOR INFORMATION

RFI-1.

Question: **13-34-19 Part 2, Manufacturers A. 1a Lists acceptable manufactures as metal Building Manufacturer as ACI Building Systems. A1.6 Says "or equal", B. says substitutions are "not permitted" What is your intention?**

Response: Other manufacturers are acceptable. Please refer to revised Specification 13 34 19, included in this addendum.

RFI-2.

Question: **If you buy the building from ACI, does that mean that their installed components, such as windows, doors and overhead doors are approved?**

Response: Windows, man doors, O.H. doors manufactured by MBM are acceptable if those components are in compliance with specified R-values and other technical characteristics of the subject components. All alternate or substituted components shall meet or exceed stated quality of specified components.

RFI-3.

Question: **Please provide a specification for the 100 Gal. tank per note 6 on P1.1A.**

Response: The 100 gallon tank referenced on sheet P1.1A Cold Water Supply – new Storage Building Note 6, of the Contract Documents, shall be model number T-119B as manufactured by Amtrol, or equal.

RFI-4.

Question: **Please confirm that the water supply comes from the local municipality.**

Response: Water supply is via well. Please refer to Survey and Civil Sheet C-2, Existing Condition of the Contract Documents.

RFI-5.

Question: **I work for a metal building manufacture and was seeing if we need to get approved?**

Response: Manufacturers do not need to be approved.

RFI-6.
Question: **Is there a plan holder or bidders list you can send me?**
Response: Please refer to list of Planholders below:

1. Accel Construction
2. All Construction Group
3. Apex Construction Group, Inc.
4. Burling Builders, Inc.
5. F.H. Paschen
6. Fabex Technologies, LLC
7. MYS Incorporated

RFI-7.
Question: **Can we get inside the buildings?**
Response: Yes. A Site Visit has been scheduled for Friday, January 17, 2024 at 10:00am. (Per Item No. 1 Change 1 above).

RFI-8.
Question: **Is the selected General Contractor responsible for getting the permit?**
Response: Yes, the General Contractor is responsible for obtaining permits as noted on sheet G1.1, General, Note #6, in Book 1 Time of Completion, as part of Schedule Milestone #1 responsibilities of the Contractor, and Book 2, Article 6 Permits and Licenses.

RFI-9.
Question: **Is there going to be a bathroom in the storage building we are building?**
Response: There is no bathroom in the building.

RFI-10.
Question: **Is the 100 Gal. storage tank part of the plumbing scope for the Fire Protection scope?**
Response: Yes. Please refer to RFI #3 above.

RFI-11.
Question: **Metal Building spec section 13 34 19 references the overhead door section as section 08 31 00. Please provide this section, it does not appear to be in the specifications.**
Response: Specification Section 13 34 19 has been revised and is included in this addendum. Reference to 08 31 00 has been removed. Specification (manufacturer and model number) for overhead doors is included on sheet A6.0 Door Schedule and Details, of the Contract Documents.

This Addendum includes the following attached Specifications and/or Documents:

1. 00 01 02 – Table of Contents, dated 01.14.2025
2. 07 41 13 – Pre-Insulated Metal Roof Panels, dated 01.14.2025
3. 07 42 13 – Pre-Insulated Metal Wall Panels, dated 01.14.2025
4. 13 34 19 – Metal Building Systems, dated 01.14.2025

This Addendum includes the following attached Drawings:

1. G1.1 – Site Logistics & Phasing Plan, dated 01.14.2025
2. C-3 – Demolition Plan, dated 01.14.2025
3. C-4 – Geometric Plan, dated 01.14.2025
4. C-6 – Utility Plan, dated 01.14.2025
5. A1.0 – Floor Plan, dated 01.14.2025
6. A5.1 – Wall Panel Details, dated 01.14.2025
7. E1.1 – Site Plan - Electrical, dated 01.14.2025
8. FP1.0A – Fire Protection Plan, dated 01.14.2025

END OF ADDENDUM NO. 01

SECTION 00 01 02

TABLE OF CONTENTS

END OF SECTION

SECTION 07 41 13

PRE-INSULATED METAL ROOF PANELS

PART 1 – GENERAL

1.1 Work Included

A. Pre-insulated Standing Seam Roof Panels where indicated on the drawings. Also included, are all necessary trims, fasteners and sealants as required for a weathertight installation. Panels shall be secured to the structure with concealed clips, mechanically closed single lock at the standing seam for weather tightness.
    1. Steel faced factory foamed-in-place profiled panels with compatible joinery.
    2. Sealants between panels and their intersection.
    3. Mechanically closed single lock standing seam at exterior side joint. Interior side joint is a single tongue and groove interlock.

1.2 Related Section

A. Section 07 62 00 – Sheet Metal Flashing and Trim
B. Section 07 92 00 – Joint Sealants

1.3 References

A. Fire Performance
    1. ASTM E 84 – Standard Test Method for Surface Burning Characteristics of Building Materials
B. Structural Performance
    1. ASTM E 1592 – Structural Performance of Metal Roof and Siding Systems by Uniform Static Air Pressure Difference
    2. FM Approval Standard 4471 – Class 1 Exterior Roof Structure Performance
    3. UL 580 – Uplift Resistance of Roof Assemblies
    4. UL 1897 – Uplift Test for Roof Covering Systems
C. Vapor Barrier Performance
    1. ASTM E 1646 – Water Penetration of Exterior Metal Roof Panel Systems by Static Air Pressure Difference
    2. ASTM E 1680 – Rate of Air Leakage Through Exterior Metal Roof Panel Systems
D. Thermal Performance
    1. ASTM C 518 – Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
E. Metal Coatings
    1. ASTM E 18 – Test Methods for Rockwell Hardness of Metallic Finishes
    2. ASTM A 653 – Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process
    3. ASTM A 792 – Standard Specification for Steel Sheet, Aluminum-Zinc Alloy Coated Steel by the Hot-Dip Process
    4. ASTM A 924 – General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process
F. Foam Properties
    1. ASTM D 1621 – Compressive Properties of Rigid Cellular Plastics
    2. ASTM D 1622 – Apparent Density of Rigid Cellular Plastics

3. ASTM D 1623 – Tensile and Tensile Adhesion Properties of Rigid Cellular Plastics
4. ASTM C 273 – Shear Properties of Sandwich Core Materials

1.4 Performance Requirements

A. Structural Tests
   1. FM Approval Standard 4471: The panel meets requirements for I-60 or I-90 windstorm classifications and a hailstorm classification of Class 1-SH.
   2. Underwriters Laboratory (UL) Uplift Tests for Roof Assemblies: UL Class 90 uplift in accordance with UL 580, 16 gauge support members at 7′-0″, maximum spacing. Uplift resistance of 166 psf at 5′-0″ and 140 psf at 7′-0″ in accordance with UL 1897, using 16 gauge support members.
   3. Static Air Pressure Difference: Conducted in accordance with ASTM E 1592 Structural Performance of Metal Roof and Siding Systems by Uniform Static Air Pressure Difference.
B. Thermal Performance
   1. Testing in accordance with ASTM C 518, “Measurement of Steady State Thermal Transmission”, the panels shall provide a K-factor of .140 btu/sf/hr/deg. F at 75° F (24° C) mean temperature.
C. Vapor Barrier
   1. Water and Air Penetration: The panel assembly was tested in accordance with ASTM E 1646 Water Penetration of Exterior Metal Roof Panel Systems by Static Air Pressure Difference and ASTM E 1680 Rate of Air Leakage Through Exterior Metal Roof Panel Systems. Both tests were found in compliance with the test methods.
D. Fire
   1. FM Approval Standard 4471: The panel meets requirements of a Class 1A fire classification.
   2. Surface Burning Characteristics: The insulated core shall have been tested in accordance with ASTM E 84 and CAN/ULC S102 for surface burning characteristics. The core shall have a maximum flame spread of 25 and a maximum smoke developed rating of 450.

1.5 Quality Assurance

A. **Installer Qualifications:** Installed by a contractor with a minimum of five (5) years’ experience with this type of construction, and documentation indicating successful completion of contracts for projects of similar size, scope and materials.
B. **Manufacturer’s Qualifications**: The manufacturer shall have a minimum of ten (10) years’ experience in production of factory foamed-in-place insulated metal panels.

1.6 Submittals

A. Submit under provisions of Section 01 60 00.
B. Manufacturer’s data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Material type, metal thickness and finish.
   4. Installation methods.
C. Shop Drawings: Including elevations, fastening patterns, sections of each condition and details as required.
D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer’s full range of available colors and patterns.

E. Panel Sample: Submit 1’ (305 mm) high joint panel sample for each profile specified indicating the metal, texture and finish.
F. Manufacturer’s Certificates: Certify products meet or exceed specified requirements.

1.7 Substitutions

A. Materials, accessories and testing specified shall establish the minimum level of quality, performance, dimension and appearance required of any substitution.
B. No substitution will be considered unless a written request to the specifying architect is received for approval at least ten (10) days prior to the established bid date. Evidence shall be submitted to demonstrate equivalency to the products and performance levels specified. Laminated panels shall not be considered acceptable substitutes for the specified foamed-in-place panels.
    1. A complete description of the substitution including details referenced to the roof panel shown on the contract drawings.
    2. Independent test reports verifying compliance with specified performance requirements.
    3. A detailed listing of each specification item with which the substitution does not fully comply.
C. The manufacturer or roof panel contractor proposing the substitution shall pay the costs of any other subcontractor affected by the proposed substitution.

1.8 Warranty

A. Submit manufacturer’s written two (2) year limited warranty providing panels to be free from defects in materials and workmanship, beginning from the date of substantial completion excluding coil coatings (paint finishes) that are covered under a separate warranty.
B. The installation contractor shall issue a separate one (1) year warranty against defects in installed materials and workmanship, beginning from the date of substantial completion of the installation.

1.9 Finish Warranty

A. Submit Manufacturer’s forty (40) year limited warranty on the exterior paint finish for adhesion to the metal substrate and thirty (30) year limited warranty on the exterior paint finish for chalk and fade.
Note to Specifier: No warranty is offered for the interior painted surface of the panel.

PART 2 – PRODUCTS

2.1 Acceptable Manufacturer:

A. CFR Roof Panels as manufactured by Metl-Span of Lewisville, TX, 75057, USA, Phone: (972) 221-6656, Fax: (972) 420-9382, Email: panel@metlspan.com Website: www.metlspan.com.
B. SR2 Standing Seam Roof Panels as manufactured by All Weather Insulated Panels (AWIP) of Vacaville, CA, 95688, USA, Phone: 888.970.2947, E-mail: sales@awipanels.com, Website: http://www.awipanels.com.
C. eco-FICIENT® Insulated BattenLok® Roof Panel as manufactured by MBCI, Phone: 877.713.6224, E-mail: info@mbci.com, Website: http://www.mbci.com

2.2 Panel Design

A. Panel – General Requirements: Metl-Span CFR Roof Panel – Roll-formed exterior and interior steel sheet faces chemically bonded to continuously foamed-in-place polyurethane core; laminated panels are not acceptable.
    1. Exterior Face: G-90 galvanized stucco embossed painted steel, minimum 22 gauge or AZ-50 Aluminum-Zinc stucco embossed, painted steel in 22ga.
    2. Interior Face: G-90 galvanized stucco embossed painted steel, minimum 26 gauge or AZ-50 Aluminum-Zinc stucco embossed painted steel, minimum 26ga, unless otherwise indicated.
    3. Longitudinal Joint Sealants: Field applied.
    4. Foam Core: Non-CFC, Non-VOC, Class I, polyurethane.
    5. Exterior Finish: One coat 70% polyvinylidene fluoride (PVDF) coil coating, nominal 0.7 mil (0.02 mm), over 0.2 mil (0.005 mm) primer; color as selected by Architect from manufacturer's standard colors; or a clear acrylic finish.
    6. Interior Finish: Once coat factory applied Polyester coil coating nominal 0.7 mil (0.02 mm) in Igloo White, over 0.2 mil (0.005 mm) primer.
B. Metl-Span CFR Roof Panel: The CFR insulated metal roof panel shall have a tongue and groove interlock at the base of the panel and a mechanically closed standing seam at the exterior surface of the panel. The CFR roof panel shall be attached to the structure with a clip and fasteners concealed within the side joint of the panel and the installation shall be completely from the exterior side of the building envelope. Exposed through fasteners into the ribs or flat areas of the panel from the exterior side are not acceptable. The roof panels shall be factory notched and swaged to facilitate endlapping of the panels, and the endlap extensions shall be factory cut and have all foam removed. Field notching, swaging and cutting of endlap extensions shall not be accepted. Endlaps shall also have factory installed backer plates to insure proper fit-up of the exterior faces for maximum water tightness.
    1. Exterior Profile: 2" high mechanically closed standing seam; with an 1/8" deep Mesa Wave profile between the seams
    2. Interior Profile: Mesa Wave Pattern, 1/8" deep or Light Mesa Wave Pattern, 1/16″ deep.
    3. Module Width: 42", Thickness: 5" (as required to achieve specified R-value).
    4. Foam core shall be continuously foamed-in-place min 92% closed cell structure, Non-CFC, Non-VOC polyurethane.
C. Flashing and trim shall be brake-formed sheet metal in the same thickness and finish to match the panels.

PART 3 – EXECUTION

3.1 Examination

A. Panel installer shall examine all structural steel before beginning installation to ensure that all supporting members are straight, level, plumb, properly braced and satisfactory for panel installation.
B. Proper alignment of the roof framing members is necessary to ensure proper fit up and performance of the roof assembly. Alignment tolerances required are specified below.
    1. Out of Square: The roof system can accommodate ¼" of saw tooth tolerance at the eave and end laps.
    2. Structural Length: The roof system can accommodate an overall +/- 2″ rake to rake tolerance or +/- 1″ at each rake.
    3. Structural Width: The roof system can accommodate an overall +/- 1″ eave to ridge tolerance, or +/- ½" at the eave, end lap and ridge.
    4. Vertical Alignment: The roof system can accommodate a vertical deviation from the nominal roof plane of +/- 1/8″ in any 5′ length, +/- ¼" in any 20′ length and +/- ½" over the entire roof area.
C. Do not begin installation until unsatisfactory conditions are corrected.

D. Start of installation shall signify structure and adjacent conditions as being proper and acceptable.

3.2 Delivery, Storage and Handling

A. Protect products of metal roof panel system during shipping, handling, and storage to prevent staining, denting, deterioration of components or other damage.
B. Deliver, unload, store, and erect insulated metal wall panels and accessory items without misshaping panels or exposing panels to surface damage from weather or construction operations.
C. Store in accordance with Manufacturer's written instruction.
D. Shield foam insulated metal wall panels from direct sunlight until installation.
E. Store products off the ground, with panels sloped for drainage and covered to protect factory finishes from damage. Stack bundles no more than two (2) high.

3.3 Installation

A. Installation of panels shall be made in accordance with manufacturer's recommended procedures, approved shop drawings, installation guide book and manufacturer's handbook of construction details.
B. Flashing and trim shall be installed true and in proper alignment. Sealant shall be installed where indicated, without skips and voids, to insure weather tightness and integrity of the vapor barrier.

3.4 Damaged Material

A. Replace damaged panels and other components of work that cannot be repaired by finish touch-up or similar minor repair.
B. The panel installer shall inspect and approve each completed wall area and shall be responsible for protection of completed work from damage by other trades.

3.5 Cleaning

A. Replace damaged panels and other components of work, which cannot be repaired by finish touch-up or similar minor repair.
B. Wipe finished surfaces clean of any filings caused by drilling or cutting to prevent rust staining.
C. Protective film on trim should be removed before exposure to sunlight.

END OF SECTION 07 41 13

SECTION 07 42 13

PRE-INSULATED METAL WALL PANELS

PART 1 – GENERAL

1.1 Work Included

A. Pre-insulated metal panel cladding where indicated on the drawings. Also included are all necessary trims, fasteners and sealants as required for a weathertight installation. Panels shall be secured to the structure with concealed clips and fasteners in the side joints.
   1. Steel faced factory foamed-in-place profiled panels with compatible joinery. Panels shall be designed for installation in a vertical orientation.
   2. Sealants between panels and their intersection.

1.2 Related Section

A. Section 07 60 00 – Sheet Metal Flashing and Trim
B. Section 07 92 00 – Joint Sealants

1.3 References

A. AAMA 501.1 – Standard Test Method for Exterior Windows, Curtain Walls and Doors for Water Penetration Using Dynamic Pressure.
B. ASTM A 653 – Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process.
C. ASTM A 792 – Standard Specification for Steel Sheet, Aluminum-Zinc Alloy Coated Steel by the Hot-Dip Process
D. ASTM C 518 – Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
E. ASTM E 72 – Standard Test Methods of Conducting Strength Tests of Panels for Building Construction
F. ASTM E 84 – Standard Test Method for Surface Burning Characteristics of Building Materials
G. ASTM E 283 – Standard Method for Determining the Rate of Air Leakage Through Exterior Window, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen
H. ASTM E 331 – Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Wall by Uniform Static Air Pressure Difference
I. CAN/ULC S102 – Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.

1.4 Performance Requirements

A. Structural and Wind load Tests:
   1. The design load/deflection criteria shall be verified from tests per ASTM E72 “Chamber Method” using a 20 psf (.96 kPa) simulated wind load. A deflection limit of L/180 for exterior wall panels, L/120 for partition and liner walls and L/240 for ceiling panels shall apply.
   2. FM Approval Standard 4881, Standard for Class 1 Exterior Wall Systems. Wind pressures are calculated per FM Global Property Loss Prevention Data Sheet 1-28, ratings are established and support spacing is determined based on FM Approval Standard 4881 listings.

3. Large Missile Impact Test: Conducted in accordance with ASTM E1886 Test Method for Performance of Exterior Windows, Curtain Walls, Doors and Impact Protective Systems and ASTM E1996 Windborne Debris in Hurricanes.

B. Thermal Performance:
   1. When tested in accordance with ASTM C518, “measurement of steady state thermal transmission”, the panels shall provide a K-factor of .14 btu/sf/hr./deg. F at a 75°F (24°C) mean temperature.

C. Vapor Barrier:
   1. Air Infiltration: Air infiltration shall not exceed .06 cfm per square foot of wall area when tested in accordance with ASTM E283 at a static pressure of 12 psf (.576 kPa)
   2. Static Water Penetration: There shall be no uncontrolled water penetration through the panel joints at a static pressure of 20 psf (.96 kPa) when tested in accordance with ASTM E331.
   3. Dynamic Water Penetration: There shall be no uncontrolled water penetration through the panel joints when subjected to a 95 mph (153 kph) slip stream air flow and application of water for a 15 minute period in accordance with AAMA501.1
   4. Condensation Resistance Factor: The minimum condensation resistance factor of the panel shall be 92 when tested in general accordance with AAMA 1503.1

D. Fire:
   1. Surface Burning Characteristics: The insulated core shall have been tested in accordance with ASTM E84 for surface burning characteristics. The core shall have a maximum flame spread of 25 and a smoke developed rating of 450.
   2. Factory Mutual Research Corporation (FMRC) Standard 4880, 50′ (15.24 m) High Corner Test for Unlimited Height Structures: The panel assembly shall not support a self-propagating fire which reaches any limits of the 50 foot (15.24 m) high corner test structure as evidenced by flaming or material damage of the ceiling of the assembly.

   3. National Fire Protection Association – Fire Propagation: The fire assembly shall meet the requirements of the standard for NFPA 285 Fire Propagation Characteristics of Exterior Non-Load Bearing Wall Assemblies and NFPA 286 Fire Tests for Evaluating Contribution of Wall and Ceiling Finish to Roof Fire Growth. Heat potential shall be determined using NFPA 259 Test Method for Potential Heat of Building Materials.
   4. IBC Chapter 26: Panel performance under the above test methods, shall meet the requirements of IBC, Chapter on foam plastics.

E. Bond Strength:
   1. Fatigue Test: The panel shall withstand deflection cycling at L/180 to two million alternate cycles with no evidence of delamination, core cracking or permanent bowing.
   2. Freeze/Heat Cycling: The panel shall exhibit no delamination, surface blistering or permanent bowing when subjected to cyclic temperature extremes of -20°F (-28°C) to +180°F (+82°C) for twenty-one (21) eight hour cycles.
   3. Humidity Test: The panel shall exhibit no delamination or metal corrosion at interface when subjected to a 140°F (60°C) temperature and 100% relative humidity for a total of 1200 hours.
   4. Autoclave Test: The panel shall exhibit no delamination of the foam core from metal skins when exposed to 2 psi (.122 kg/sq. cm) pressure at a temperature of 212°F (100°C) for a total of 2 ½ hours.

1.5 Quality Assurance

A. **Installer Qualifications:** Installed by a contractor with a minimum of five (5) years’ experience with this type of construction, and documentation indicating successful completion of contracts for projects of similar size, scope and materials.

B. **Manufacturer's Qualifications**: The manufacturer shall have a minimum of ten (10) years' experience in production of factory foamed-in-place insulated metal panels.

1.6 Submittals

A. Submit under provisions of Section 01 60 00.
B. Manufacturer's data sheets on each product to be used, including:
    1. Preparation instructions and recommendations.
    2. Storage and handling requirements and recommendations.
    3. Material type, metal thickness and finish.
    4. Installation methods.
C. Shop Drawings: Including elevations, fastening patterns, sections of each condition and details as required.
D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
E. Panel Sample: Submit 1' (305 mm) high by full width sample panel for each profile specified indicating the metal, texture and finish.
F. Manufacturer's Certificates: Certify products meet or exceed specified requirements.

1.7 Substitutions

A. Materials, accessories and testing specified shall establish the minimum level of quality, performance, dimension and appearance required of any substitution.
B. No substitution will be considered unless a written request to the specifying architect is received for approval at least ten (10) days prior to the established bid date. Evidence shall be submitted to demonstrate equivalency to the products and performance levels specified. Laminated panels shall not be considered acceptable substitutes for the specified foamed-in-place panels.
    1. A complete description of the substitution including details referenced to the wall panels shown on the contract drawings.
    2. Independent test reports verifying compliance with specified performance requirements.
    3. A detailed listing of each specification item with which the substitution does not fully comply.
C. The manufacturer or wall panel contractor proposing the substitution shall pay the costs of any other subcontractor affected by the proposed substitution.

1.8 Warranty

A. Submit manufacturer's written two (2) year limited warranty providing panels to be free from defects in materials and workmanship, beginning from the date of substantial completion excluding coil coatings (paint finishes) that are covered under a separate warranty.
B. The installation contractor shall issue a separate one (1) year warranty against defects in installed materials and workmanship, beginning from the date of substantial completion of the installation.

1.9 Finish Warranty

A. Submit Manufacturer's forty (40) year limited warranty on the exterior paint finish for adhesion to the metal substrate and thirty (30) year limited warranty on the exterior paint finish for chalk and fade.

PART 2 – PRODUCTS

2.1 Acceptable Manufacturer:

A. CF Fluted Insulated Metal Wall Panels as manufactured by Metl-Span of Lewisville, TX, 75057, USA, Phone: (972) 221-6656, Fax: (972) 420-9382, Email: panel@metlspan.com Website: www.metlspan.com.
B. Mesa DM40 Metal Wall Panels as manufactured by All Weather Insulated Panels (AWIP) of Vacaville, CA, 95688, USA, Phone: 888.970.2947, E-mail: sales@awipanels.com, Website: http://www.awipanels.com.
C. eco-FICIENT® Classic Metal Wall Panel as manufactured by MBCI, Phone: 877.713.6224, E-mail: info@mbci.com, Website: http://www.mbci.com

2.2 Panel Design

A. A. Panel – General Requirements: Roll-formed exterior and interior steel sheet faces chemically bonded to continuously foamed-in-place polyurethane core; laminated panels are not acceptable.
    1. Exterior Face: G-90 galvanized stucco embossed painted steel, minimum 22 gauge or AZ-50 Aluminum-Zinc stucco embossed painted steel, minimum Grade 33 in 22ga.
    2. Interior Face: G-90 galvanized stucco embossed painted steel, minimum 26 gauge or AZ-50 Aluminum-Zinc stucco embossed painted steel, minimum Grade 33 in 26ga.
    3. Foam Core: Non-CFC, Class I, polyurethane.
    4. Exterior Finish: Exterior face sheet shall be treated with a nominal 0.2 mil (5 microns) base primer, followed by a nominal 0.7 mil (17.5 microns) finish coat of full strength PVF2 fluoropolymer in manufacturer's standard colors.
    Note: Thick mil coatings for aggressive environments are available at extra cost. Siliconized Polyester is also available. Consult the factory for complete information.
    5. Interior Finish: The interior face sheet shall be a nominal 0.2 mil (5 microns) primer followed by a nominal 0.7 (17.5 microns) polyester coating in USDA compliant Igloo White.
B. Concealed fastener wall panels with offset double tongue and groove joinery and an extended metal shelf allowing fasteners to penetrate both metal faces with clips concealed in the side joint.
    1. Exterior Face Profile: Flute 1" wide, 3/8" deep
    2. Interior Face Profile: Mesa Wave Pattern, 1/8" deep
    3. Module Width: 42"
    4. Thickness: 4" (or as required to achieve specified R-value).
C. Foam core shall be continuously foamed-in-place, Non-CFC polyurethane.
D. Flashing and trim shall be brake-formed sheet metal in the same thickness and finish to match the panels.

PART 3 – EXECUTION

3.1 Examination

A. Panel installer shall examine all structural steel before beginning installation to insure that all supporting members are straight, level, plumb and satisfactory for panel installation.
    1. 0 to 1/4″ outward of the actual wall framing plane for members at 10′ or greater spacing.
    2. 0 to 1/8″ outward of the actual wall framing plane for members at 5′ to 10′ spacing.
    3. 0 to 1/16″ outward of the actual wall framing plane for members at less than 5′ spacing.
B. Do not begin installation until unsatisfactory conditions are corrected.
C. Beginning of installation shall signify the structure and adjacent conditions as being proper and acceptable.

D. Intermediate framing member (secondary structural supports) alignment tolerances required, as specified below:

3.2 Delivery, Storage and Handling

A. Protect products of metal roof panel system during shipping, handling, and storage to prevent staining, denting, deterioration of components or other damage.
B. Deliver, unload, store, and erect insulated metal wall panels and accessory items without misshaping panels or exposing panels to surface damage from weather or construction operations.
C. Store in accordance with Manufacturer's written instruction.
D. Shield foam insulated metal wall panels from direct sunlight until installation.
E. Store products off the ground, with panels sloped for drainage and covered to protect factory finishes from damage. Stack bundles no more than two (2) high.

3.3 Installation

A. Installation of panels shall be made in accordance with manufacturer's recommended procedures, approved shop drawings, installation guide book and manufacturer's handbook of construction details.
B. Flashing and trim shall be installed true and in proper alignment. Sealant shall be installed where indicated, without skips and voids, to insure weather tightness and integrity of the vapor barrier.

3.4 Damaged Material

A. Replace damaged panels and other components of work that cannot be repaired by finish touch-up or similar minor repair.
B. The panel installer shall inspect and approve each completed wall area and shall be responsible for protection of completed work from damage by other trades.

3.5 Cleaning

A. Replace damaged panels and other components of work, which cannot be repaired by finish touch-up or similar minor repair.
B. Wipe finished surfaces clean of any filings caused by drilling or cutting to prevent rust staining.
C. Remove Protective film on trim before exposure to sunlight.

END OF SECTION 074213

SECTION 13 34 19

METAL BUILDING SYSTEMS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Metal Framing Components

B. Metal Wall Panels and Trim

C. Metal Roof Panels and Trim

D. Metal Building Accessories

1.2 RELATED SECTIONS

A. Section 07 41 13 – Insulated Metal Roof Panels.

B. Section 07 42 13 - Insulated Metal Wall Panels.

C. Section 08 11 00 - Painting: Steel Doors & Frames

D. Section 08 52 13 – Metal Clad Windows

1.3 REFERENCE STANDARDS

A. American Institute of Steel Construction (AISC):
   1. 360, Specification for Structural Steel Buildings.
   2. RCSC, Specification for Structural Joints Using High Strength Bolts.
   3. Design Guide 3, Serviceability Design Considerations for Steel Buildings

B. Association for Iron & Steel Technology (AISE):
   1. AISE 13 – Specifications for Design and Construction of Mill Buildings.

C. ASTM International (ASTM):
   1. A36 – Standard Specification for Carbon Structural Steel
   2. A123 – Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
   3. A354 – Standard Specification for Quenched and Tempered Alloy Steel Bolts, Studs, and Other Externally Threaded Fasteners
   4. A475 – Specification for Zinc-Coated Steel Wire Strand
   5. A992 – Standard Specification for Structural Steel Shapes.
   6. A1039 – Specification for Steel, Sheet, Hot Rolled, Carbon, Commercial, Structural, and High-Strength Low-Alloy, Produced by Twin-Roll Casting Process
   7. E96 / E96M – Standard Test Methods for Water Vapor Transmission of Materials.
   8. E108 - Spread-of Flame Testing: Class 1A Rating.
   9. E331 – Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference.

10. E1592 – Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference
11. E1646 – Test Method for Water Penetration of Exterior Metal Roof Panel Systems by Uniform Static Air Pressure Difference
12. E1680 – Test Method for Rate of Air Leakage Through Exterior Metal Roof Panel Systems
13. E2140 – Test Method for Water Penetration of Metal Roof Panel Systems by Static Water Pressure Head
14. F436 – Specification for Hardened Steel Washers
15. F1554 – Specification for Anchor Bolts, Steel, 36, 55, and 105-ksi Yield Strength
16. F3125 – Standard Specification for High Strength Structural Bolts

D. FM Global:
1. FMRC Standard 4471 – Approval Standard for Class 1 Roofs for Hail Damage Resistance, Combustibility, and Wind Uplift Resistance.

E. Metal Building Manufacturers Association (MBMA):
1. MBMA Metal Building Systems Manual

F. Underwriters Laboratories (UL):
1. UL 580 – Standard for Tests for Uplift Resistance of Roof Assemblies

1.4 DEFINITIONS

A. Metal Building System: A building system that will employ:
- Either a continuous or simple-span ‘Z’ or ‘C’-shaped cold-formed purlins for support of the roof cladding.
- Either a continuous or simple-span ‘Z’ or ‘C’-shaped cold-formed for support of the steel wall cladding.
- Three-plate, built-up rigid space frames and/or cold-formed ‘C’ or hot-rolled I-shaped post-and-beam framing to support the roof and wall secondary members.
- All systems (cladding, roof and wall secondary, lateral primary framing, and longitudinal bracing) work together to provide resistance to vertical and lateral loading demands.

B. Roof Slope: Pitch expressed as inches of rise for each 12" of horizontal run.

C. Building Width: Measured from outside to outside of sidewall secondary structural member (girt).

D. Building Eave Height: A nominal dimension measured from the finished floor to top flange of eave strut.

E. Building Length: Measured from outside to outside of endwall secondary structural member.

F. Auxiliary Loads: Dynamic loads induced by cranes, conveyors, or other material handling systems.

G. Collateral Loads: The weight of any non-moving equipment or material, such as ceilings, electrical or mechanical equipment, sprinkler systems, plumbing, or ceilings.

H. Dead Load: The actual weight of the building system (as provided by the metal building supplier) supported by a given member.

I. Floor Live Loads: Loads induced on a floor system by occupants of a building and their furniture, equipment, etc.

J. Roof Live Loads: Loads produced by maintenance activities, rain, erection activities, and other movable or moving loads but not including wind, snow, seismic, crane, or dead loads.

K. Roof Snow Loads: Gravity load induced by the weight of snow or ice on the roof, assumed to act on the horizontal projection of the roof.

L. Seismic Loads: Loads acting in any direction on a structural system due to the action of an earthquake.

M. Wind Loads: The loads on a structure induced by the forces of wind blowing from any horizontal direction.

1.5 DESIGN REQUIREMENTS

A. General
1. The building manufacturer will use standards, specifications, recommendations, findings and/or interpretations of professionally-recognized groups such as AISC, AISI, AWS, ASTM, CSA, CWB, MBMA, Federal Specifications, and unpublished research by MBMA as the basis for establishing design, drafting, fabrication, and quality criteria, practices, and tolerances. The Manufacturer's design, drafting, fabrication and quality criteria, practices, and tolerances shall govern, unless specifically countermanded by the contract documents.
2. Design structural mill sections and built-up plate sections in accordance with:
   a. (US) code-appropriate edition of AISC's "Specification for the Design, Fabrication and Erection of Structural Steel for Buildings", ANSI/AISC 360 ASD method.
3. Cold-Formed steel structural members and panels will generally be designed in accordance with "Specifications for the Design of Cold-Formed Steel Structural Members", ANSI/AISI S-100.
4. Design weldments per the following:
   a. Structural Welding
      1) (US) Design per AWS D1.1, “Structural Welding Code – Steel”, Latest Edition.

B. Design Code:
1. Structural design for the building structural system shall be provided by the metal building system manufacturer for the following design criteria:
   a. Governing Building Code: International Building Code (IBC).
   b. Year/Version: 2021.
   c. Occupancy Category: S-2 Low-Hazard Storage.

C. Design Loads:
1. Risk Category of Building - II
2. Dead Load – 5
3. Roof Live Load – 20.
4. Collateral Load – 5.
   a. Ground Snow Load – 25.
   b. Minimum Snow Load – 25.
5. Wind Load:
   a. Basic Wind Speed –90.
   b. Exposure Category– B.
6. Auxiliary Loads: Auxiliary loads shall include dynamic loads, such as cranes and material handling systems, and will be defined in the Contract Documents. See Architectural Plan for additional load requirements.

D. General Serviceability Limits:
1. Deflection Limits shall be in accordance with the applicable provisions of the Metal Building Systems Manual (MBMA), latest edition.
2. Vertical deflection limits apply for snow load (50-year mean-recurrence interval) plus collateral load, or the code required live load. The horizontal drift and deflections limits apply for the loads induced by a basic wind speed corresponding to a 10 year mean-recurrence interval.

1.6 SUBMITTALS

A. Submit under provisions of Section 01 60 00.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.

C. Shop Drawings: Provide complete erection drawings for the proper identification and assembly of all building components. Drawings will show anchor bolt settings, transverse cross-sections, sidewall, endwall and roof framing, flashing, and sheeting, and accessory installation details.

D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.

E. Certifications: Shop drawings and design analysis shall bear the seal of a registered professional engineer upon request. Design analysis shall be on file and furnished by the manufacturer upon request.

F. Bill of Materials: Bills of material shall be furnished and shall include item weights.

G. Preventive Maintenance Manual.

H. Welder's Certifications: Certification of welder qualifications shall be furnished as specified by the Project Engineer.

I. Submit certification verifying that the metal roof system has been tested and approved by Underwriter’s Laboratory as Class 90.

1.7 QUALITY ASSURANCE

A. Manufacturer / Fabricator Qualifications:
   1. (US) All primary products specified in this section will be supplied by a single IAS AC 472 Accredited Manufacturer /Fabricator with a minimum of five (5) years’ experience.

B. Weldments/Welder/Weld Inspection Qualifications:
   1. (US) Welding inspection and welding inspector qualification for structural steel shall be in accordance with AWS D1.1, “Structural Welding Code – Steel”, latest edition. Welding inspection and welding inspector qualification for cold-formed steel shall be in accordance with AWS D1.3, “Structural Welding Code – Sheet Steel”, latest edition.

C. Erector Qualifications: All products listed in this section are to be installed by a single installer with a minimum of five (5) years demonstrated experience in installing products of the same type and scope as specified.

D. Design: Standard drawings and design analysis must bear the seal of a registered professional engineer. Design analysis must be on file and furnished by the manufacturer upon request.

1.8 DELIVERY, STORAGE AND HANDLING

A. Delivery and Acceptance Requirements: Deliver materials to site in manufacturer’s original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.

B. Storage and Handling Requirements:
1. Store and handle materials in accordance with manufacturer's instructions.
2. Keep materials in manufacturer's original, unopened containers and packaging until installation.
3. Do not store materials directly on ground.
4. Store materials on flat, level surface, raised above ground, with adequate support to prevent sagging.
5. Protect materials and finish during storage, handling, and installation to prevent damage.

C. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside the manufacturer's absolute limits.

D. Store and dispose of hazardous materials, and materials contaminated by hazardous materials, in accordance with requirements of local authorities having jurisdiction.

1.9 WARRANTY

A. Building System Warranty
1. Furnish manufacturer's standard warranty for the metal building system, excluding paint.
2. The manufacturer shall warrant the metal building system against failure due to defective material or workmanship for a period of one (1) year from date of shipment.
3. The liability under this warranty shall be limited to furnishing, but not dismantling or installing, necessary replacement material F.O.B. manufacturer's plant. In no event shall the manufacturer be liable for loss of profits, or other incidental, consequential, or special damages.

B. Standing Seam Roof Weathertightness Warranty
1. Furnish manufacturer's weathertightness warranty for a maximum of 20 years against leaks in standing seam roof panels, arising out of or caused by ordinary wear and tear under normal weather and atmospheric conditions.

C. Roof and Wall Paint Finish Warranty
1. Paint Systems
a. Furnish manufacturer's standard warranty for the metal panel paint system against chipping, peeling, blistering, fading in excess of 5 NBS Hunter units as set forth in ASTM-D-2244, and chalking in excess of 8 units as set forth in ASTM-D-4214.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturers:
1. Metal Building Manufacturer
a. ACI Building Systems; http://www.acibuildingsystems.com
b. OR EQUAL

2. Pre-Insulated Wall & Roof Panels
a. See Sections 07 41 13 and 07 42 13

2.2 MATERIALS

A. Primary Framing Steel:
1. Steel for hot rolled shapes must conform to the requirements of ASTM A36, A572 or A992, with minimum yield of 36 or 50 ksi, respectively.
2. Steel for built-up sections must conform to the requirements of ASTM A1011, A1018, A529, A572 or A36 as applicable, with minimum yield of 36, 50, or 55 ksi as indicated by the design requirements.
3. Round Tube must conform to the requirements of ASTM A-500 Grade B with minimum yield strength of 42 ksi.
4. Square and Rectangular Tube must conform to the requirements of ASTM A500 Grade B with a minimum yield strength of 46 ksi.
5. Steel for Cold-Formed sections must conform to the requirements of ASTM A1011 or A1039 Grade 55, or ASTM A653 Grade 55 with minimum yield strength of 55 ksi.
6. X-bracing will conform to ASTM A529 for rod bracing, ASTM A992 for angle bracing or ASTM A475 for cable bracing.

B. Secondary Framing Steel:
1. Steel used to form purlins, girts and eave struts must meet the requirements of ASTM A1011 or ASTM A1039 Grade 55 for primed material or ASTM A653 Grade 55 for galvanized material with a minimum yield of 55 ksi.
2. Design Thicknesses – Gauge to be determined by design to meet specified loading conditions.

C. Panels:
1. Roll-formed Galvalume®, pre-painted Galvalume® or Galvanized G90 Exterior-Side and G60 Interior-Side. In Canada, Galvanized panel will have a coating thickness of G90 on both sides.
2. Standing Seam Panels must have:
   a. (For US and Export) 50 percent minimum aluminum-zinc alloy- coating and conform to ASTM A792 or ASTM A653 with a minimum yield of 50 ksi.
   b. (For Canada) 55 percent minimum aluminum-zinc alloy- coating with Galvalume® finish or 50 percent minimum aluminum-zinc alloy- coating with paint finish and conform to ASTM A792or ASTM A653 with a minimum yield of 50 ksi.
3. Through-fastened panels must have:
   a. (For US and Export) 50 percent minimum aluminum-zinc alloy coating and conform to ASTM A792 or ASTM A653 with a minimum yield of 50 ksi.
   b. (For Canada) 55 percent minimum aluminum-zinc alloy- coating with Galvalume finish or 50 percent minimum aluminum-zinc alloy- coating with paint finish and conform to ASTM A792 or ASTM A653 with a minimum yield of 50 ksi.
4. Panel Finish:
   a. SP Finish: Modified Siliconized Polyester paint system with a 25-year finish warranty.
   b. PVDF Finish: 70% PVDF paint system with a 30-year finish warranty.

D. Panel Fasteners:
1. For Galvalume® and Painted finished roof panels: Long Life Cast Zinc head.
2. For wall panels: Coated carbon steel.
3. Color of exposed fastener heads to match the wall and roof panel finish.
4. Concealed Fasteners: Self-drilling type, of size required.

E. Flashing and Trim: Match material, finish, and color of adjacent components. Provide trim at rakes, including peak and corner assemblies, high and low eaves, corners, bases, framed openings and as required or specified to provide weathertightness and a finished appearance.

F. Roof Clips:
1. All clips must have factory-applied mastic and designed so that movement between the panel and the clip does not occur.

2. Short or Tall Fixed clips; shall be either 3 ½ inches (89mm) or 4 ½ inches (114mm) in height. Used for applications where only a moderate amount of thermal expansion and contraction in the roof panel is expected.
3. Short or Tall Sliding clips: shall be either 3 ½ inches (89mm) or 4 ½ inches (114mm) in height and provide either 1-7/8 inches from neutral position or 3 3/4 total inches of travel for panel thermal expansion and contraction, depending on clip choice.
4. Super Tall Sliding clips: shall be 5 ½ inches (140mm) in height and provide either 1-7/8 inches from neutral position or 3 3/4 total inches of travel for panel thermal expansion and contraction.

G. Sealant And Closures:
1. Sidelaps: Factory applied non-skinning Butyl mastic.
2. Endlaps, Eave, Ridge Assembly, and Gable Flashings: Field applied 100% solids butyl-based elastomeric tape sealant, furnished in pre-cut lengths.
3. Outside Closures: Closed-cell, plastic, or metal.
4. Inside Closures: Closed-cell, plastic, or metal.

2.3 PRIMARY FRAMING

A. Rigid Frames: Fabricated as welded built-up "I" sections or hot-rolled sections.
1. Frame Design: Gable Symmetrical.

B. Rigid Frame Columns:
1. Tapered

C. Rigid Frame Rafters:
1. Straight/Uniform depth
2. Tapered

D. Endwall Frames / Roof Beams: Fabricated as mill-rolled sections or built-up "I" sections depending on design requirements. Fabricate endwall columns of cold-formed sections, mill-rolled sections, or built-up "I" sections depending on design requirements.

E. Finish: Red-Oxide or Gray Primer, or galvanized (pre coated galvanized cold-form, hot-dipped otherwise).

F. Field Bolted Connections: All field bolted connections shall be designed and detailed utilizing ASTM F3125 Grades A325 or A490 as required by design.

2.4 SECONDARY FRAMING

A. Purlins and Girts: Purlins and girts shall be cold-formed "Z" sections and “C” sections with stiffened flanges. Flange stiffeners shall be sized to comply with the requirements of the latest edition of AISI S100. They shall be pre-punched at the factory to provide for field bolting to the rigid frames. They shall be simple or continuous span as required by design. Connection bolts will install through the purlin/girt webs, not purlin/girt flanges.

B. Purlins (Excluding Open Web Joists): Horizontal structural members which support roof coverings.
1. Depth: To be determined by design (8”, 9.5”, 10” or 12”)
2. Maximum Length: To be determined by design.
3. Finish: Gray Primer.

C. Girts: Horizontal structural members that support vertical panels.
   1. Depth: To be determined by design (8”, 9.5”, 10”, or 12”)
   2. Maximum Length: To be determined by design.
   3. Finish: Gray Primer.

D. Eave Struts: Equal flange, cold-formed "C" sections or “Z” purlins.
   1. Depth: To be determined by design (8”, 9.5”, 10” or 12”)
   2. Maximum Length: To be determined by design.
   3. Finish: Gray Primer.

E. Base Framing: Base members to which the base of the wall covering may be attached to the perimeter of the slab. Secured to the concrete slab with mechanical anchors.
   1. Formed base sill
   2. Base channel
      a. With flashing
   3. Base angle
      a. With flashing
   4. Base girt
      a. With flashing
   5. Finish: Gray Primer

2.5 ROOF PANELS

A. Metl-Span CFR Insulated Roof Panel: A mechanically seamed vertical rib standing seam roof sandwich panel with concealed clips. Installed directly over purlin. Tested in accordance with ASTM E 1646 and E 1680 for water penetration and air infiltration, and per ASTM E1592 for wind uplift capacity.
   1. Exterior panel gauge: 24 (Std.)
   3. Interior panel gauge: 26 (Std.)
   12. Size / Thermal Value: 36 inches (914mm) wide X 4 inches (102mm) thick (R-35.0)
   18. Color: As specified in Article 2.8 PANEL FINISHES
   19. Standard Finish
      a. Exterior: Embossed with Mesa Profile
      b. Interior: Deep Embossed with Mesa Profile

2.6 WALL PANELS

A. Metl-Span Light Mesa Insulated Panel: A through fastened wall sandwich panel with concealed fasteners,
   1. Exterior panel gauge: 26 (Std.)
   2. Interior panel gauge: 26 (Std.)
   3. Size / Thermal Value: 36 inches (914mm) by 4 inches (102mm) thick (R-35.0)
   4. Finish/Color: As specified in Article 2.8 PANEL FINISHES
   5. Standard Finish
      a. Exterior: Embossed with Light Mesa Profile

2.7 ACCESSORIES

A. Roof Line Trim:
   1. Basic Sculptured Trim Type: Low-Eave Gutter (on slope or horizontal) / Sculptured Rake Trim

B. Purlin Extensions: Overhanging or projecting roof structure at the end of a building.

C. Framed Openings: Used to frame out: doors, windows, louvers, and any other openings. Refers to the framing members and flashing which surround an opening and includes jambs, header and or sill, trim, and fasteners.

D. Walk Doors: Personnel entry doors.
1. Size: As noted on the Contract Drawings.
2. Accessories: As noted on the Contract Drawings

Roof Vents: Accessories used on the roof to allow air to pass through.
1. Gravity Ridge Vents: Can be used as single unit or continuous.
   a. Size: 9 inch by 10 foot (229x3048mm) with Damper & Lockerpull.

H. Pipe Flashings: Pipe flashing shall be of a one-piece construction and fabricated from an EPDM membrane and shall have an aluminum base that can be field conformed to any panel configuration. Pipe flashings shall be flexible for mounting on any roof slope. Service temperature ranges shall be from -30°F to +250°F. Three standard flashing sizes shall accommodate pipe sizes from 1/4” diameter up to 13” diameter.
1. Size: ¼” to 4” (6 to 102mm) Pipe
2. Size: 4” to 7” (102 to 178mm) Pipe
3. Size: 7” to 13” (178 to 330mm) Pipe

2.8 PANEL FINISHES

A. Insulated Roof panel:
1. Exterior panel:
   a. PVDF Panel Paint System (PVDF Resin, 30-year Finish Warranty):
      1) Color: Forest Green (FO)
2. Interior panel:
   a. Standard Panel Paint System (Siliconized Polyester Resin, 25-year Finish Warranty):
      1) Color: Igloo White (IG)

B. Insulated Wall panel:
1. Exterior panel:
   a. PVDF Panel Paint System (PVDF Resin, 30-year Finish Warranty):
      1) Color: Surrey Beige (SU)
2. Interior panel:
   a. Standard Panel Paint System (Siliconized Polyester Resin, 25-year Finish Warranty):
      1) Color: Igloo White (IG)

2.9 FABRICATION

A. General:
1. Shop-fabricate all framing members for field bolted assembly. The surfaces of the bolted connections must be smooth and free from burrs or distortions.
2. Shop connections must conform to the manufacturer's standard design practices as defined in this section. Certification of welder qualifications will be furnished when required and specified in advance.
3. All framing members must carry an identifying mark.

B. Primary Framing:
1. Plates, Stiffeners and Related Members: Factory weld base plates splice plates, cap plates, and stiffeners into place on the structural members.
2. Bolt Holes and Related Machining: Shop fabricated base plates, splices, and flanges to include bolt connection holes. Shop fabricated webs to include bracing holes.

3. Secondary structural connections (purlins and girts) to be ordinary bolted connections, which may include welded clips.
4. Manufacturer is responsible for all shop welding inspection in accordance with the manufacturer's IAS Accreditation or CAN/CSA A660 Certification. Special inspection by the buyer or owner may be done in the manufacturer's facility and must be noted on the Contract Documents.
5. Non-Destructive Testing (NDT) - NDT shall be performed and documented as required by the governing building code for this project.

C. Zee Purlins:
1. Fabricate purlins from cold-formed "Z" sections with stiffened flanges. Size flange stiffeners to comply with the requirements of the latest edition of AISI. Connection bolts will install through the webs, not the flanges.

D. Girts
1. Girts must be simple or continuous span as required by design. Connection bolts will install through the webs, not the flanges.

E. Bracing:
1. Diagonal Bracing:
   a. Longitudinal bracing in the roof and/or walls need not be furnished where it can be shown that the diaphragm strength of the roof and/or wall covering is adequate to resist the applied wind or seismic forces. Diagonal bracing in the roof and sidewalls may be used to resist longitudinal loads (wind, crane, etc.) in the structure if diaphragm action cannot be used.
   b. Diagonal bracing will be furnished to length and equipped with hillside washers and nuts at each end. It may consist of rods threaded at each end or galvanized cable with suitable threaded end anchors. If load requirements dictate, bracing may be of structural angle and/or pipe, bolted in place.

2. Special Bracing: When diagonal bracing is not permitted in the sidewall, a rigid frame type portal or fixed base column may be used. Shear walls can also be used where adequate to resist the applied wind or seismic forces.

3. Flange Braces: The inside compression flange of all primary framing must be braced laterally with angles connecting to the bottom chords of joists or to the webs of purlins/girts so that the flange compressive stress is within allowable limits for any combination of loading.

F. Vertical Rib Standing Seam Panels - General:
1. One side of the panel is configured as female, having factory applied mastic inside the female seam. The female side will hook over the male side and when seamed creates a continuous lock, forming a weathertight seam.

2. Panels are factory swaged when endlaps are required. Panels cannot start at both ends of the building and work towards each other.

3. Maximum panel length is 50 feet (16,764mm) unless otherwise noted in the Contract Documents.

4. Endlaps:
   a. Endlaps must have a 16 gauge backup plate and have the (5) endlap joint fasteners installed in dimpled locations in the flat at each endlap.
   b. Apply mastic between the panels and secured with #1/4-14 x 1 1/4 inch (32mm) self-drilling fasteners through the panels and backup plate to form a compression joint.
   c. "Through-the-Roof" fasteners may only be used at endlaps and eaves.

PART 3 EXECUTION

3.1 EXAMINATION

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

B. Before erection proceeds, survey elevations and locations of concrete and masonry bearing surfaces and locations of anchor rods, bearing plates and other embedment's to receive structural framing, with Erector present, for compliance with requirements and metal building system manufacturer's tolerances.

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

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Provide temporary shores, guys, braces, and other supports during erection to keep structural framing secure, plumb, and in alignment against temporary construction loads equal in intensity to design loads. Remove temporary supports when permanent structural framing connections and bracing are in place, unless otherwise indicated.

3.3 INSTALLATION

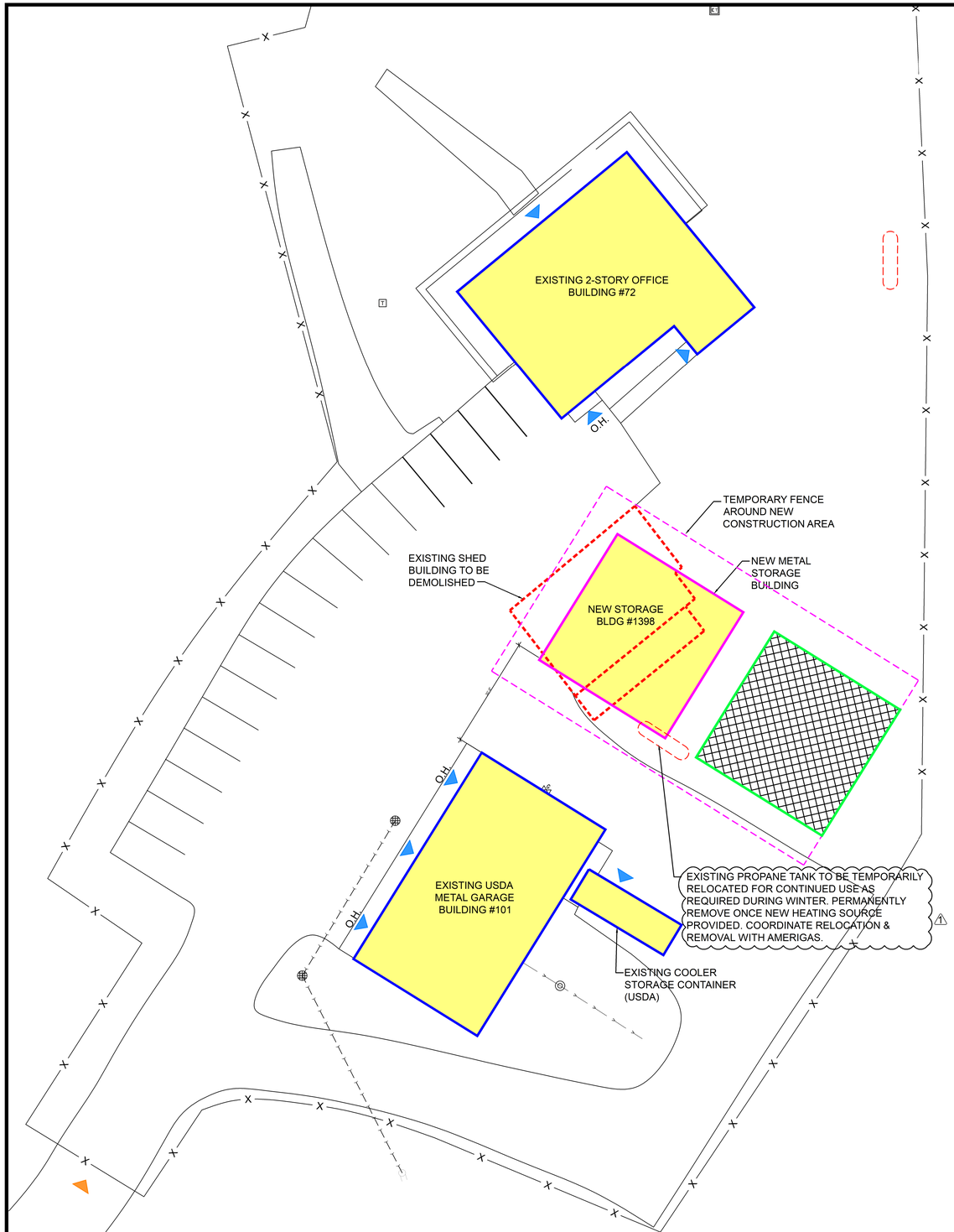
A. The erection of the building system shall be performed by a qualified erector, in accordance with the appropriate erection drawings, erection guides and /or other documents furnished by manufacturer, using proper tools, equipment and safety practices.
B. Erect framing in accordance with *MBMA Metal Building Systems Manual, Chapter IV Common Industry Practices*
C. There shall be no field modifications to primary structural members except as authorized and specified by the manufacturer.

3.4 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION



2 A0.0 SITE PLAN - MCGINNIS FIELD STATION

SCALE: 1/16' = 1'-0"

GENERAL NOTES:

A. EXISTING MAIN OFFICE & LABORATORY BUILDINGS SHALL REMAIN IN OPERATION DURING CONSTRUCTION.

B. CONTRACTOR SHALL PREPARE AND SUBMIT A SITE UTILIZATION PLAN FOR PBC REVIEW AND APPROVAL PRIOR TO WORK. SITE UTILIZATION PLAN SHOULD INCORPORATE ALL FENCING AND GATE REQUIREMENTS, INCLUDING RELOCATION AS REQUIRED THROUGH ALL PHASES OF WORK, TO PERMIT CONSTRUCTION OF THE NEW STORAGE BUILDING AND ASSOCIATED WORK. PLAN SHALL ACCOMMODATE EGRESS AND ACCESS TO DOORWAYS OF FACILITY IDENTIFIED IN LOGISTICS PLAN.

C. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND APPROVALS.

D. CONTRACTOR SHALL FURNISH, INSTALL, AND MAINTAIN ANY/ALL TEMPORARY CONSTRUCTION FACILITIES, INCLUDING FENCING AND GATES, IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND CITY OF TINLEY PARK SITE CLEANLINESS ORDINANCE.

E. CONTRACTOR SHALL PERFORM ALL SITE PREPARATION AND DEMOLITION WORK AT THE EXISTING OFFICE & GARAGE BUILDINGS, IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

F. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY/ALL TEMPORARY ENGINEERED FILL PLACEMENT WITHIN THE PROJECT WORK AREA. CONTRACTOR SHALL FURNISH AND INSTALL GEOTEXTILE FABRIC UNDER ALL TEMPORARY FILL PLACEMENT LOCATIONS.

G. PROJECT INCLUDES ONE (1) BUILDING. NEW BUILDING PERMIT (PERMIT #_____). REFER TO " REQUIREMENTS WITHIN TWO WEEKS OF NOTICE OF AWARD" LISTED BELOW

H. PROPERLY COORDINATE ANY/ALL INSPECTIONS FOR OCCUPANCY APPROVAL BY NO LATER THAN SEPTEMBER 23, 2025.

I. CONTRACTOR SHALL SUBMIT ALL CRITICAL SUBMITTALS, INCLUDING NEW METAL BUILDING AND PROCEDURES WRITING TWO (2) WEEKS OF ISSUANCE OF THE NOTICE OF AWARD.

J. CONTRACTOR TO PROVIDE SUBMITTALS FOR LONG LEAD ITEMS SUCH AS METAL BUILDING STRUCTURE, INSULATED METAL WALL & ROOF PANELS, SHEET METAL, CHILLERS, PUMPS, LIGHTING, MEP EQUIPMENT, ROOFING, PRIMARY SWITCH GEAR, ELECTRICAL PANELS, TRANSFORMERS AND STEEL, WITHIN TWO WEEKS OF NTP.

K. CONTRACT SHALL PREPARE AND MAINTAIN MATERIAL AND EQUIPMENT LONG LEAD AND SUPPLY CHAIN IMPACT LOGS. CONTRACTOR SHALL: SUBMIT THE LOGS ON A WEEKLY BASIS OR AS DIRECTED BY THE COMMISSION. CONTRACTOR SHALL BE PREPARED TO REVIEW THE LOGS DURING THE WEEKLY PROJECT MEETINGS, OR AS DIRECTED BY THE COMMISSION. CONTRACTOR SHALL BE PREPARED TO DISCUSS ANY/ALL MITIGATION STRATEGIES RELATED TO THIS MATTER.

L. CONTRACTOR SHALL COORDINATE ANY AND ALL UTILITY SHUTDOWN AND OR CUTOVERS WITH THE COMMISSION REPRESENTATIVE, FPDCC, AND MCGINNIS FIELD STATION STAFF PRIOR TO COMMENCING THE WORK.

M. CONTRACTOR PARKING AT THE PARKING LOT AND DRIVEWAY ON THE SOUTH AND SOUTH EAST SIDES OF THE GARAGE ARE OFF LIMITS FROM DECEMBER 2, 2024 THROUGH MARCH 28, 2025. CONTRACTOR TO MAINTAIN CLEAR ACCESS TO THE PARKING LOT AND ASSOSIATED DRIVEWAY DURING CONSTRUCTION.

N. CONTRACTOR IS REQUIRED TO PROVIDE 48HR NOTICE BEFORE AND POWER SHUTDOWN TO THE EXISTING LABORATORY GARAGE AND OFFICE BUILDING.

O. CONTRACTOR TO MAINTAIN POWER AT THE LABORATORY GARAGE BUILDING DURING APRIL 1, 2025 THROUGH APRIL 25, 2025 NO EXCEPTION.

P. TYPICAL HOURS OF OPERATION FOR THE EXISTING FACILITY ARE 7:00AM – 3:00PM MONDAY – FRIDAY.

Q. USDA STAFF ARE SCHEDULED TO WORK IN THE LABORATORY GARAGE AT NIGHT DURING THE DEER DAMAGE MANAGEMENT PROJECT FROM DECEMBER 2, 2024 THROUGH MARCH 28, 2025 EXCLUDING HOLIDAYS, WEEKS OF CHRISTMAS AND NEW YEARS. CONTRACTOR TO MAINTAIN POWER AT THE FACILITY DURING CONSTRUCTION.

R. CONTRACTOR TO MAINTAIN HEATING FOR ALL EXISTING BUILDINGS FOR THE DURATION OF THE WINTER SEASON.

SITE UTILIZATION NOTES:

A. This drawing is diagrammatic and not intended to illustrate all aspects of the work in detail, refer to other drawings, and project specifications for additional information.

B. Work areas designated on this drawing shall be used in conjunction w/ specification section 01 14 11 "construction operations and site utilization plan".

C. The contractor shall not mobilize to the project site until they have received written PBC approval Of the project specific mobilization + logistics plan

D. Contractor shall identify, mark and maintain all utilities in the area of work unless and until removal is required, subject to any restrictions.

E. The contractor is responsible for all means, methods, techniques, and sequences for implementation of the work within areas designated. This includes, but is not limited to, the determination of the need for (and design of) any and all shoring and bracing, underpinning, dewatering, soil stabilization, settlement monitoring, temporary fencing & gates, temporary signage, temporary emergency lighting, temporary facilities, permits, etc.

F. Where property, structures, or public way are disturbed and/or damaged as a result of the Contractor's means, methods, techniques, or temporary facilities, the contractor is responsible for restoration of all aspects of the building, site, and public way to original condition to the satisfaction of the authorized commission representative and user agencies (PBC).

G. The contractor is responsible for all temporary facilities, site fencing, gates, etc. Necessary for implementation of the work.

H. Equipment staging zone shown for reference. Staging zone shall be secured by contractor at all times. Restore lawn and/or surface to original conditions to the satisfaction of FPDCC. Coordinate extents and exact location with FPDCC.

REQUIREMENTS WITHIN TWO WEEKS OF NOTICE OF AWARD:

A. GENERAL CONTRACTOR'S LETTER:

•WRITTEN ON GC LETTERHEAD.

• GC'S WRITTEN CONFIRMATION OF CONTRACT AWARD (INCLUDE COPY OF "NOA")

• INCLUDE GC'S LICENSE NUMBER, WITH EXPIRATION DATE.

• INCLUDE CURRENT COPY GC'S INSURANCE CERTIFICATE.

B. EXCAVATION CERTIFICATE:

• EXECUTED BY THE EXCAVATOR, OWNER (PBC), AND SIGNED AND SEALED BY THE AOR.

• INCLUDE COPY SUBCONTRACTOR'S CURRENT INSURANCE CERTIFICATE.

C. MASONRY LETTER (IF Required):

• WRITTEN ON MASON'S LETTERHEAD.

• MASON'S WRITTEN CONFIRMATION OF CONTRACT AWARD.

• INCLUDE COPY OF SUBCONTRACTOR'S CURRENT INSURANCE CERTIFICATE.

D. HVAC LETTER:

• WRITTEN ON HVAC'S LETTERHEAD.

• HVAC'S WRITTEN CONFIRMATION OF CONTRACT AWARD.

• INCLUDE HVAC'S LICENSE NUMBER, WITH EXPIRATION DATE. ALSO, ATTACH A COPY HVAC'S "1010" BUSINESS LICENSE.

• THE 1010 BUSINESS LICENSE ALLOWS THE HVCA SUBCONTRACTOR TO PERFORM COMMERCIAL WORK.

• INCLUDE COPY SUBCONTRACTOR'S CURRENT INSURANCE CERTIFICATE.

E. REFRIGERATION LETTER (IF REFRIGERATION NOT BEING SELF-PERFORMED BY HVAC):

• WRITTEN ON REFRIGERATION'S LETTERHEAD.

• REFRIGERATION'S WRITTEN CONFIRMATION OF CONTRACT AWARD.

• INCLUDE REFRIGERATION'S LICENSE NUMBER, WITH EXPIRATION DATE. ALSO, ATTACH A COPY REFRIGERATION'S"CFC" CARD.

• THE CFC DESIGNATION STANDS FOR "CHLOROFLUOROCARBON".

• INCLUDE COPY SUBCONTRACTOR'S CURRENT INSURANCE CERTIFICATE.

F. ELECTRICAL PERMIT APPLICATION:

• COPY REQUIRED.

• EXECUTED BY THE ELECTRICAL SUBCONTRACTOR AND OWNER (PBC).

• INCLUDE COPY SUBCONTRACTOR'S CURRENT INSURANCE CERTIFICATE.

G. PLUMBING LETTER:

• WRITTEN ON PLUMBER'S LETTERHEAD.

• PLUMBER'S WRITTEN CONFIRMATION OF CONTRACT AWARD.

• INCLUDE PLUMBING SUBCONTRACTOR'S LICENSE NUMBER, WITH EXPIRATION DATE.

• INCLUDE COPY SUBCONTRACTOR'S CURRENT INSURANCE CERTIFICATE.

H. ALL CONTRACTORS PERFORMING WORK IN UNINCORPORATED COOK COUNTY ARE REQUIRED TO REGISTER WITH THE DEPARTMENT OF BUILDING & ZONING.

TIME OF COMPLETIONS REQUIREMENTS:

MILESTONE 1 (PERMITTING & MOBILIZATION) FEBRUARY 28, 2025

SUBSTANTIAL COMPLETION (NEW METAL BUILDING, RENOVATIONS, AND SITE IMPROVEMENTS) SEPTEMBER 30, 2025

• START NO SOONER THAN FEBRUARY 28, 2025

MILESTONE 2 (ASSOCIATED RENOVATIONS AT LABORATORY GARAGE BUILDING AND ASSOCIATED SITE IMPROVEMENTS) SEPTEMBER 30, 2025

• START NO SOONER THAN APRIL 28, 2025

GRAPHIC KEY / LEGEND:

- EXISTING STRUCTURE - DEMOLITION SCOPE
- EXISTING BUILDING - MISCELLANEOUS RENOVATION (MECHANICAL & ELECTRICAL SCOPE)
- NEW METAL STORAGE BUILDING - NEW CONSTRUCTION
- EXISTING BUILDING ACCESS POINTS TO REMAIN ACCESSIBLE DURING CONSTRUCTION ACTIVITIES. ACCESS POINTS ARE MAN DOORS UNLESS NOTED AS OVERHEAD (O.H.) DOOR.
- EXISTING SITE VEHICULAR ACCESS.
- EXISTING SITE FENCE. SEE CIVIL FOR SCOPE.
- TEMPORARY CONSTRUCTION FENCE. NEW CONSTRUCTION AREA.
- NEW CONSTRUCTION SITE LAY DOWN AREA

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Chicago, IL
Plumbing Engineers of Record

BRIAN A. TAYLOR
001-015425
REGISTERED PROFESSIONAL ARCHITECT
OF
ILLINOIS
EXPIRATION DATE: 11.30.2026

Issuance

Mark	Description	Date
10	**ISSUED FOR FINAL REVIEW**	10.04.24
11	**ISSUE FOR BID**	12.18.24
12	**ADDENDUM #1** 1	01.14.25

PBC Project Name: FPDCC 2023 METAL BUILDINGS

PBC Contract No: C1613

PBC Project No.: 15070

FPDCC Project No.: 23-80-42

Title
SITE LOGISTICS & PHASING PLAN

Sheet
G1.1

SURVEYOR LEGEND

- BIRD FEEDER
- AIR CONDITIONER
- WELL
- DRAIN PIPE
- CLEANOUT
- J.U.L.I.E. COMED
- GAS VALVE
- SANITARY MANHOLE
- F.E.S.
- CULVERT PIPE
- CATCH BASIN
- TELEPHONE PED
- ELECTRIC TRANSFORMER
- FINISHED FLOOR
- CHAIN LINK FENCE
- STORM LINE
- SANITARY LINE
- 713.00 CONTOUR

N

0 10' 20' 40'

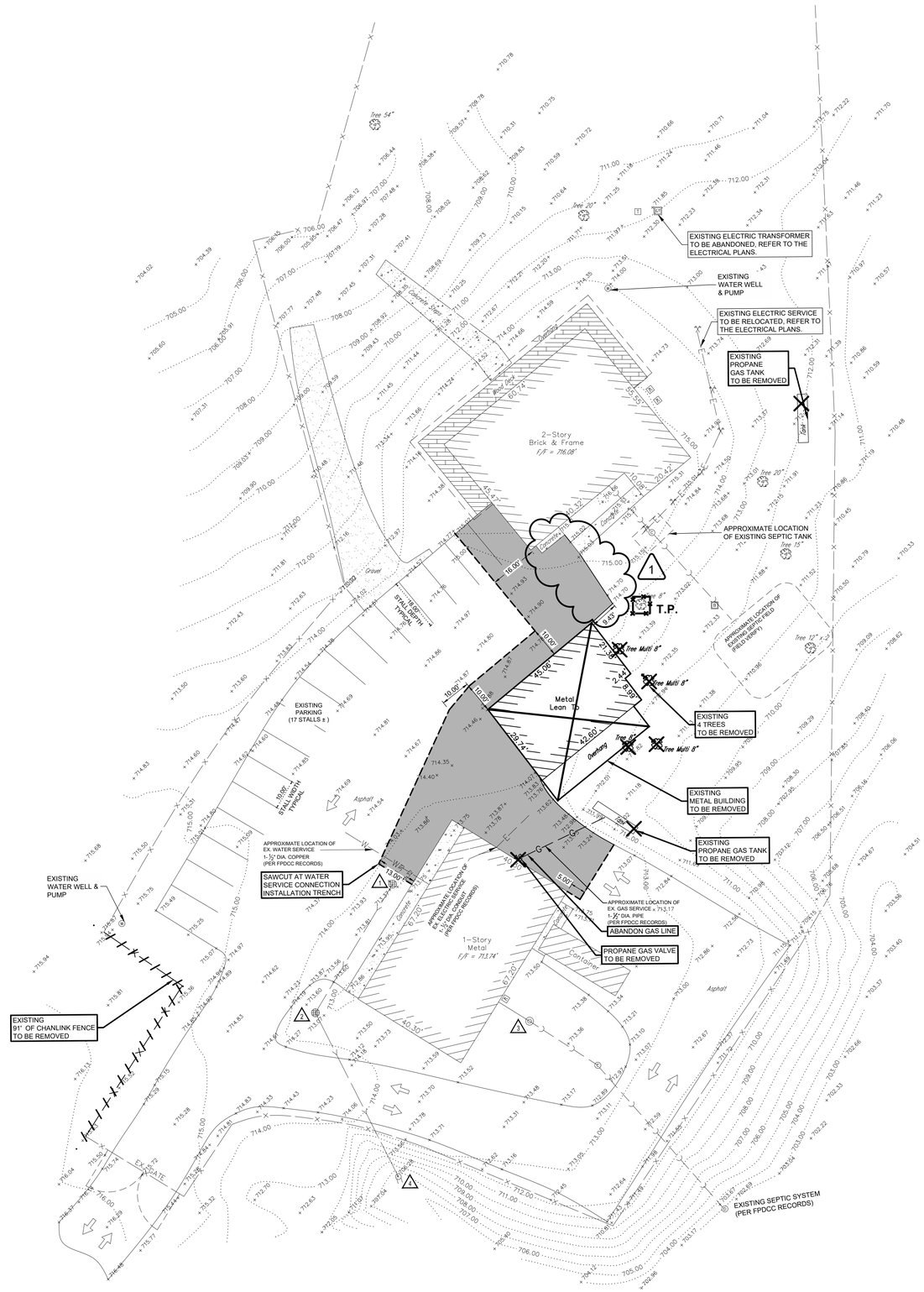
SCALE: 1" = 20'

SURVEYOR'S STRUCTURE DATA

1	Storm Catch Basin 1 RIM = 713.28' SW 12" Metal = 710.98'
2	Storm Catch Basin 2 RIM = 713.00' NE 12" Metal = 710.98' SE 12" Metal = 710.28'
3	Sanitary Manhole 3 RIM = 895.80' 4" Metal = 711.15' 4" Metal = 710.22'
4	Culvert Pipe 4 NW 12" Metal = 707.69'

LEGEND

- PAVEMENT AREA TO BE REMOVED.
- SAWCUT LINE
- REMOVAL OF A LINEAR ITEM.
- INDICATES ITEM TO BE REMOVED.
- T.P. TREE PROTECTION



SURVEYED BY:

Land Surveying Services, Inc.
574 W. Colfax Street Palatine, Illinois 60067
Ph. (847)991-7700 Fax. (847)991-7707
Professional Design Firm License No. 184-003632

SURVEYOR NOTES:

1. Field Work Completed on 11-13-2023
2. Prepared for Terra Consulting Group.
3. Site Address: 13700 110th Avenue, Orland Park, IL 60467
4. The utilities as shown on this drawing were developed from visible observations only.
5. All building dimensions and ties are to the current siding material and not to the foundation.
6. This is not intended as a boundary survey.
7. Benchmark

BM Cook County Benchmark DN4688 being a flange-encased rod in stainless steel rod in sleeve located 0.34 miles north of the intersection of South Will/Cook Road and West 131st Street on the east side of South Will/Cook Road.
Elevation = 727.93' (NAVD88)

BM Cook County Benchmark AE2559 being a flange-encased rod in stainless steel rod in sleeve located northwest of intersection of South Will/Cook Road and West 135th Street.
Elevation = 687.53' (NAVD88)

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PBC Project Name: FPDCC 2023 METAL BUILDINGS

PBC Contract No: C1613

PBC Project No.: 15070 **TCG No.: 1636**

FPDCC Project No.: 23-80-42

Title

DEMOLITION PLAN

Sheet

C-3

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N

0 5' 10' 20'
SCALE: 1" = 10'

LEGEND

- (X) PARKING STALLS COUNT
- NEW BITUMINOUS PAVEMENT
- NEW CONCRETE
- NEW FENCE TO MATCH EXISTING

FUTURE (2) DUAL EV CHARGING STATIONS

NEW ADA STALL WITH SIGN

SAWCUT LINE, SEE DEMOLITION PLAN

NEW BITUMINOUS PAVEMENT LIMITS EXTEND TO EXISTING PAVEMENT LIMITS, SEE DEMOLITION PLAN

NEW 4" WHITE PAVEMENT MARKINGS 4' O.C. IN ACCESS AREA

NEW BOLLARDS, TYP.

NEW CONCRETE APRON

EXISTING PARKING (17 STALLS ±)

SAWCUT LINE, SEE DEMOLITION PLAN

NEW STORAGE BUILDING

NEW CONCRETE STOOP WITH 2 STEPS (5.0' X 5.0')

SAWCUT LINE, SEE DEMOLITION PLAN

EXISTING 7.0' TALL CHAIN LINK FENCE (NO TOP RAIL) (FIELD VERIFY)

NEW PARKING AREA EXTENSION (10' x 20' STALL), TOTAL OF 7 STALLS

NEW FENCE TO ATTACH TO EXISTING FENCE POST (FIELD VERIFY)

NEW 91' OF 7.0' TALL CHAIN-LINK FENCE

EXISTING PARKING STALLS TO BE REPAINTED

4" WIDE WHITE PAVEMENT STALL MARKING, TYP.

NEW FENCE TO ATTACH TO EXISTING FENCE POST

EXISTING 7.0' TALL CHAIN LINK FENCE (NO TOP RAIL)

EX. GATE

Gravel
Concrete
Asphalt
Container
1-Story Metal
F/F = 713.74'
Tree 15"
Tree 8"
Tree 12" x 2
18.00' STALL DEPTH TYPICAL
10.13'
19.35'
40.00'
10.00'
OVERHEAD DOOR BAY 1
OVERHEAD DOOR BAY 2
DOOR
30.67'
40.30'
67.20'
R4.0'
10.00' STALL WIDTH TYPICAL
30' ±
70.00'
10.00' STALL
20.00' STALL
10.5'
6.0'
35.5' ±

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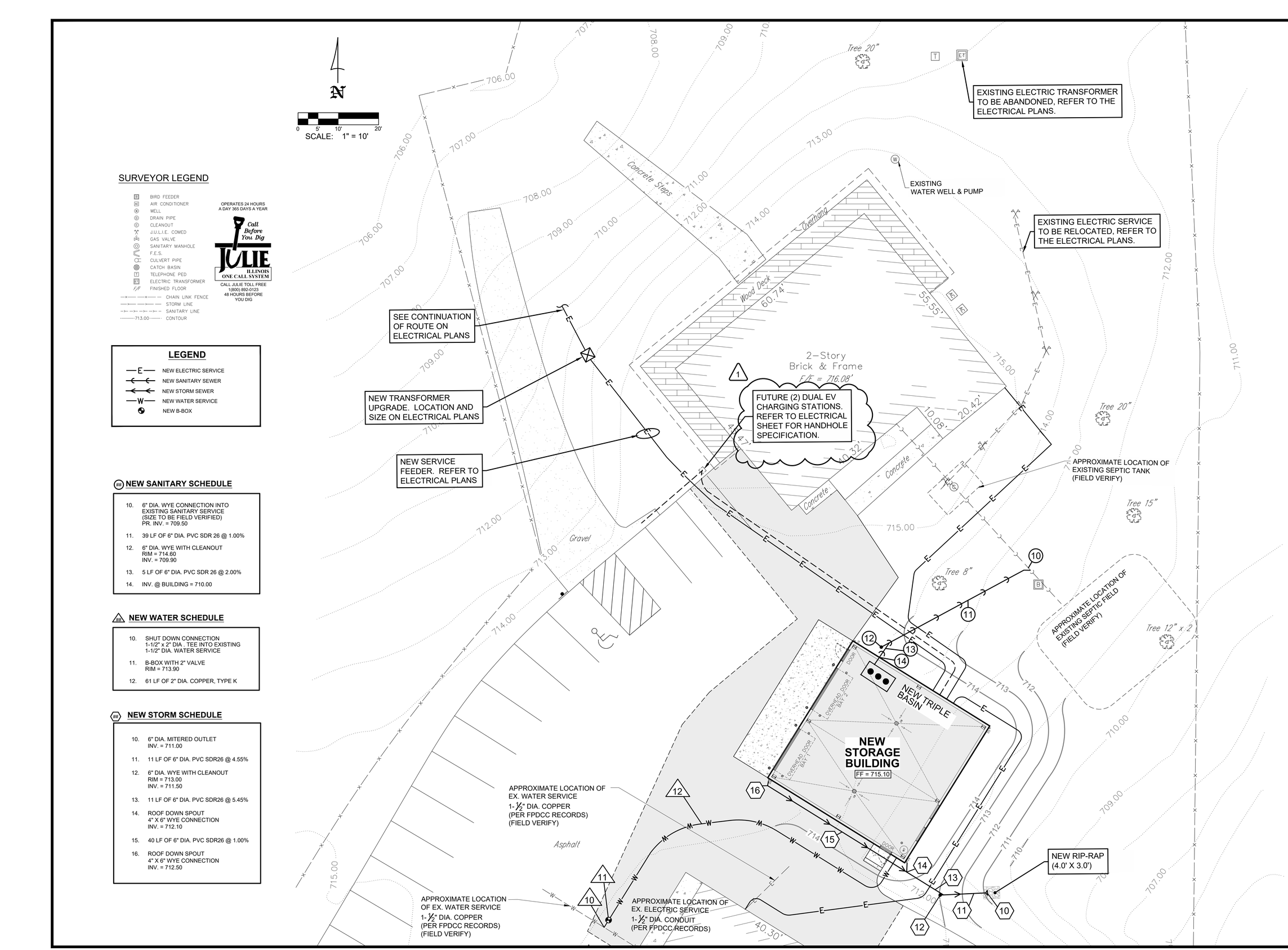
PBC Project Name: FPDCC 2023 METAL BUILDINGS
PBC Contract No: C1613
PBC Project No.: 15070 **TCG No.: 1636**
FPDCC Project No.: 23-80-42

Title
GEOMETRIC PLAN

Sheet
C-4



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FPDCC Project No.: 23-80-42

Title

UTILITY PLAN

Sheet

C-6

R-VALUE REQUIREMENTS:

ASHRAE ZONE: 5

WALL R-VALUE: MINIMUM R-13
STEM WALL ASSEMBLY - R-14.335 DESIGNED
4" PRE-INSUL METAL PANEL - R-29 TO R-35 DESIGNED

ROOF R-VALUE: MINIMUM R-30
5" PRE-INSUL STANDING SEAM - R-32 DESIGNED

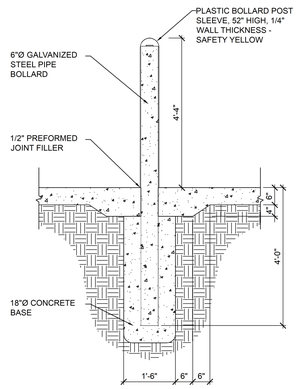
SLAB-ON-GRADE F-FACTOR (UNHEATED): MINIMUM .54
R-10 MINIMUM PERIMETER SLAB INSULATION
2" POLYISO RIDGID INSULATION - R-12 DESIGNED

METAL BUILDING DESIGN LOADS:

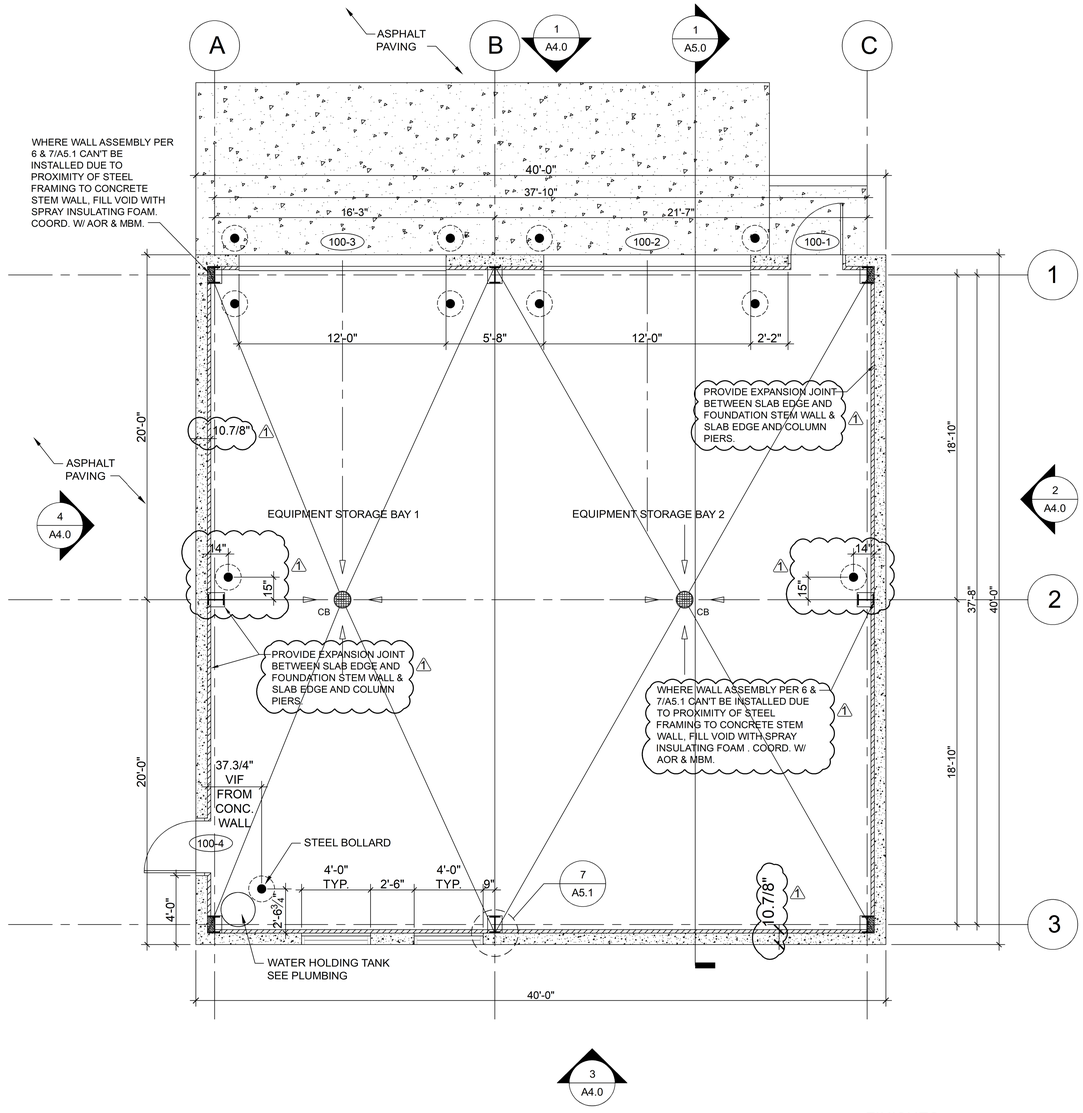
BUILDING RISK CATEGORY	II	
DEAD LOAD	5	PSF
ROOF LIVE LOAD	20	PSF
COLLATERAL LOAD	5	PSF
GROUND SNOW LOAD	25	PSF
MINIMUM SNOW LOAD, Pm (CONTROLS)	25	PSF
WIND SPEED	90	MPH
WIND EXPOSURE CATEGORY	B	
WIND CLOSURE CATEGORY	ENCLOSED	
INTERNAL PRESSURE COEFFICIENT	+/-0.18	Gcpi
SNOW IMPORTANCE FACTOR	1.00	Is
WIND IMPORTANCE FACTOR	1.00	Iw
SNOW EXPOSURE FACTOR	1.00	
ROOF THERMAL FACTOR	1.00	

GC / MBM REQUIREMENTS:

1. STRUCTURAL ENGINEERING & ARCHITECTURAL DESIGN ARE BASED ON CALCULATIONS PREPARED BY ACI BUILDING SYSTEMS. GENERAL CONTRACTOR IS RESPONSIBLE FOR SECURING A METAL BUILDING MANUFACTURER (MBM (ACI OR OTHER)) TO PREPARE METAL BUILDING FABRICATION / ERECTION DRAWINGS AND STRUCTURAL CALCULATIONS FOR THE STRUCTURAL FRAME, BASE PLATES, GIRTS, PURLINS, FRAMED OPENINGS, IMP'S, ALL REQUIRED CONNECTIONS, X-BRACING, FASTENER TYPE, AND FASTENER SPACING.
2. MBM DRAWINGS AND STRUCTURAL CALCULATIONS ARE TO BE STAMPED BY MBM LICENSED STRUCTURAL ENGINEER (STATE OF ILLINOIS). SUBMIT TO AOR & EOR (STRUCTURAL) FOR REVIEW. SUBMIT TO BUILDING DEPARTMENT FOR PERMIT REVIEW.
3. COORDINATE WITH AOR AND EOR (STRUCTURAL) FOR FINAL DESIGN REQUIREMENTS & ANY ADJUSTMENT TO CONCRETE FOOTINGS, PIERS, FOUNDATIONS, & ARCHITECTURAL DETAILS.



2 A1.0 BOLLARD DETAIL
SCALE: 1/2" = 1'-0"



1 A1.0 FLOOR PLAN - MCGINNIS FIELD STATION
NEW METAL STORAGE BUILDING #1398
SCALE: 1/4" = 1'-0"

4'-0" 0'-0" 2'-0" 4'-0" 8'-0"

NORTH

FINISHES:

- EXPOSED INTERIOR FLOOR SLAB: SHALL BE FINISHED WITH PENETRATING WATER REPELLENT SEALING COMPOUND. LIQUI-HARD ULTRA AS MANUFACTURED BY W. R. MEADOWS, 800.342.5976. PROVIDE ON-SITE 3'-0" X 3'-0" MOCK-UP / TEST AREA ON NEW CONCRETE SLAB FOR AOR & USER AGENCY REVIEW & APPROVAL PRIOR TO APPLICATION ON ENTIRE SLAB.
- INTERIOR & EXTERIOR SURFACE OF FOUNDATION STEM WALL: SHALL BE SEALED WITH AN ELASTOMERIC COATING - SERIES 156 ENVIRO-CRETE, AS MANUFACTURED BY TNEMEC, 816.483.3400.
- PRE-PRIMED HOLLOW METAL DOORS AND FRAMES: SHALL BE FIELD PAINTED WITH OIL-BASED PAINT. COLOR AS SPECIFIED BY AOR.

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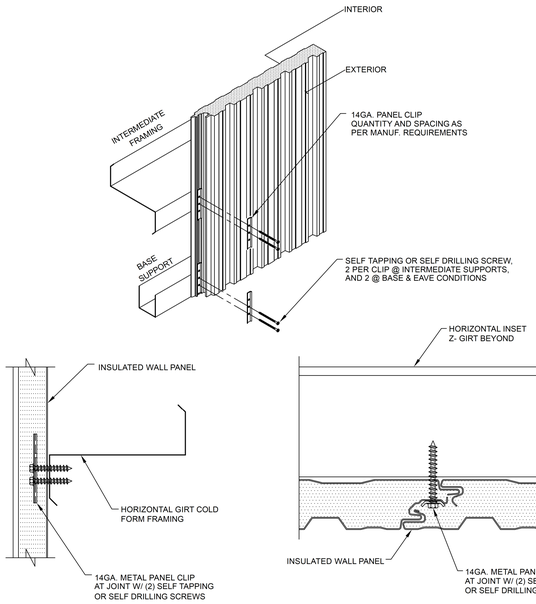
PBC Contract No: C1613

PBC Project No.: 15070

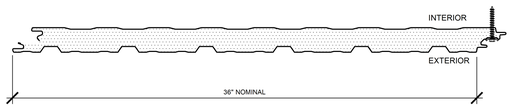
FPDCC Project No.: 23-80-42

Title
FLOOR PLAN
METAL STORAGE BUILDING

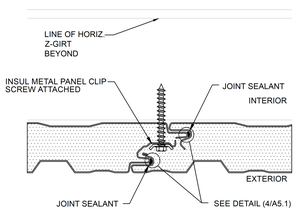
Sheet
A1.0



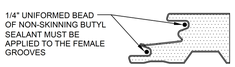
1 A5.1 ATTACHMENT @ COLD FORMED FRAMING
SCALE: NTS



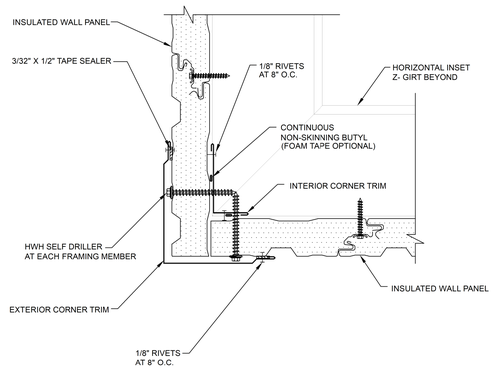
2 A5.1 INSULATED WALL PANEL DETAIL
SCALE: NTS



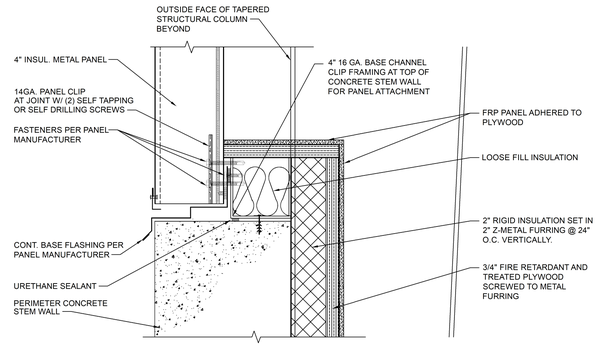
3 A5.1 JOINT SEALANT APPL. DETAIL
SCALE: NTS

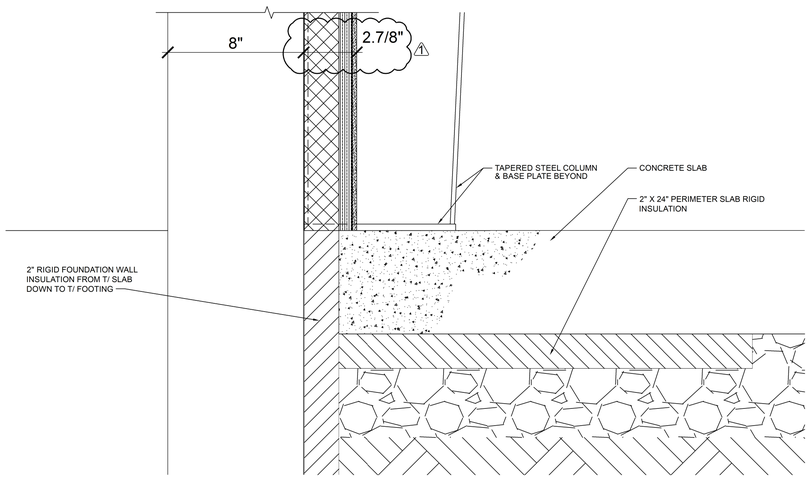


4 A5.1 ENLARGED JOINT SEALANT DETAIL
SCALE: NTS

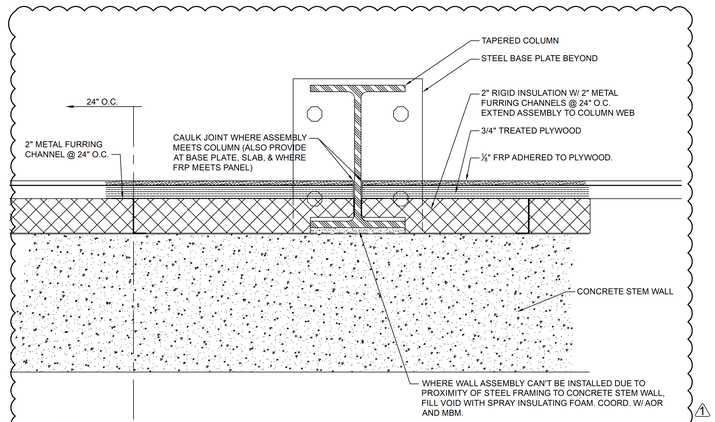


5 A5.1 OUTSIDE CORNER DETAIL
SCALE: NTS





6 A5.1 PERIMETER WALL SECTION DETAIL - STEM WALL
SCALE: 3" = 1'-0"



7 A5.1 PERIMETER WALL PLAN DETAIL - STEM WALL
SCALE: 3" = 1'-0"

NOTE:
DETAILS ON THIS PAGE THAT INCLUDE REPRESENTATION OF INSULATED METAL WALL PANEL OR ROOF PANELS UTILIZE MANUFACTURER STANDARD DETAILS AND ARE NOT INTENDED TO INDICATE OR CONVEY THE REQUIRED OR SPECIFIED THICKNESS OF THE INSULATED METAL PANELS. FOR METAL WALL & ROOF PANEL THICKNESS REFERENCE DRAWINGS A1.0, A3.0, & SPECIFICATIONS.

PUBLIC BUILDING COMMISSION
FOREST PRESERVES OF COOK COUNTY

MCGINNIS FIELD STATION
BUILDING ID #72, #101 & #1398

METAL STORAGE BUILDING
13700 SOUTH 110TH AVE.
ORLAND PARK, IL 60467

FOREST PRESERVE DISTRICT OF COOK COUNTY
PRESIDENT TONI PRECKWINKLE

Architect of Record:
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Chicago, IL
Plumbing Engineers of Record

BRIAN A. TAYLOR
001-015425
REGISTERED PROFESSIONAL ARCHITECT
OF
ILLINOIS
EXPIRATION DATE: 11.30.2026

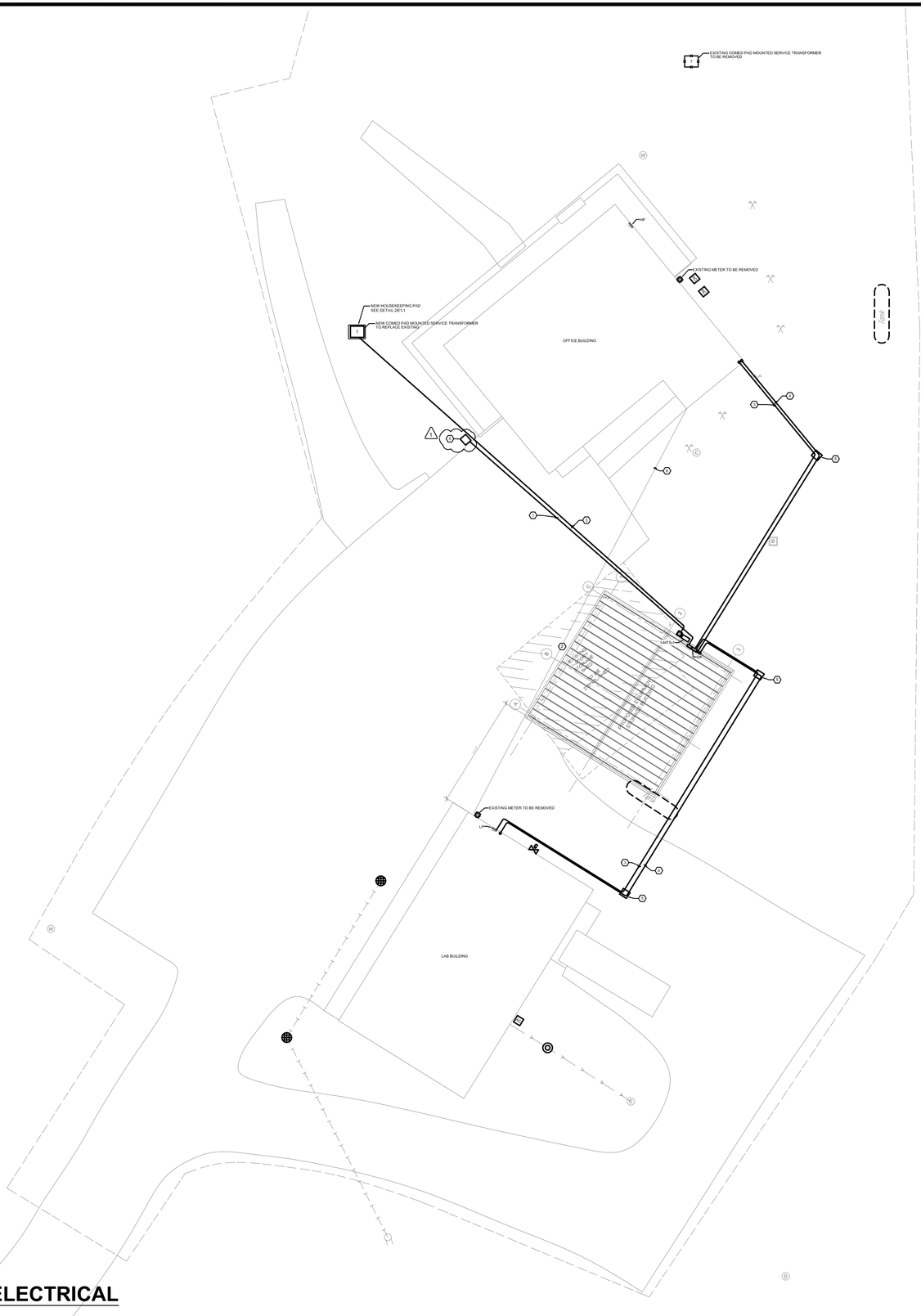
Issuance

Mark	Description	Date
10	**ISSUED FOR FINAL REVIEW**	10.04.24
11	**ISSUE FOR BID**	12.18.24
12	**ADDENDUM #1** 1	01.14.25

PBC Project Name: FPDCC 2023 METAL BUILDINGS
PBC Contract No: C1613
PBC Project No.: 15070
FPDCC Project No.: 23-80-42

Title
WALL PANEL DETAILS

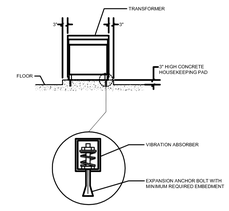
Sheet
A5.1



1 SITE PLAN - ELECTRICAL
NO SCALE

SHEET KEYNOTES

1. ROUTE 1" U.G. CONDUIT FROM PANEL 'DP' TO A 8"X8"X12" HAND HOLE IN PREPARATION FOR FUTURE EXTENSION TO EV CHARGING STATIONS. CONDUIT SHALL BE SCHEDULE 80 PVC UNDER PAVEMENT. (1)
2. DEMOLISH ALL ELECTRICAL DISTRIBUTION EQUIPMENT, LIGHTING, RECEPTACLES, CONDUIT, CONDUCTORS, ETC. WITHIN THE EXISTING 1-STORY STORAGE SHED.
3. SUGGESTED ROUTE FOR NEW UNDERGROUND FEEDER. FIELD TO DETERMINE FINAL ROUTING. REFER TO SINGLE LINE DIAGRAM FOR FEEDER SIZING. CONDUIT SHALL BE SCHEDULE 80 PVC UNDER PAVEMENT.
4. SUGGESTED ROUTE FOR NEW SPARE 4"C U.G. CONDUIT WITH PULL STRINGS. FIELD TO DETERMINE FINAL ROUTING.
5. HAND HOLE.
6. EXISTING EMPTY CONDUIT TO BE ABANDONED IN PLACE OR REMOVED AS REQUIRED.



DETAIL
2 PAD MOUNT TRANSFORMER ANCHORAGE
NO SCALE

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LICENSED PROFESSIONAL ENGINEER
F. THOMAS VOLTAGGIO
062045051
STATE OF ILLINOIS
Expires 11/30/2025

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PBC Project Name: FPDCC 2023 METAL BUILDINGS
PBC Contract No: C1613
Project No.: 15070
Title
SITE PLAN - ELECTRICAL

Sheet
E1.1

FIRE PROTECTION NOTES:

1. The fire protection system will be all new, the existing FP water service in may be reused. The contractor shall design/build and install a complete sprinkler system in accordance with the following:

   A. N.F.P.A. – 13

   B. Village of Orland Park

   C. Building Standard and Procedures

   D. Local Fire Protection Codes

2. Contractor shall be responsible for verification of system capacity, flow rates, system pressures and resultant sprinkler head coverage/density. Verify existing water pressure and provide a fire pump and jockey pump if required.

3. Contractor must submit shop drawings and hydraulic calculations and test results for approval from engineer, the local fire prevention bureau, owner's representative and insurance underwriter.

4. Contractor to field verify conditions prior to bid. Drawings are based on visual inspection and may not reveal true conditions. Add additional heads as required to avoid conflicts with light, ducts, etc. and to meet all code requirements.

5. Contractor to coordinate locations of sprinkler heads and pipes with all other trades prior to installation to avoid possible conflicts.

6. Sprinkler piping shall be supported in accordance with N.F.P.A. requirements. No other piping or equipment may be supported from pipe hanger system.

7. Main and branch piping shall be ASTM A53 Sch. 40 black steel. Piping may be shop welded using welding fittings. Threads on sprinkler piping having lesser wall thickness are not permitted. Mechanical grooved joints may be used in lieu of threaded or welded joints.

8. Fire extinguishers to be installed throughout facility during construction phase and permanently affixed upon completion. Location of fire extinguishers as shown on drawings and as required by N.F.P.A., local protection bureau and insurance underwriter.

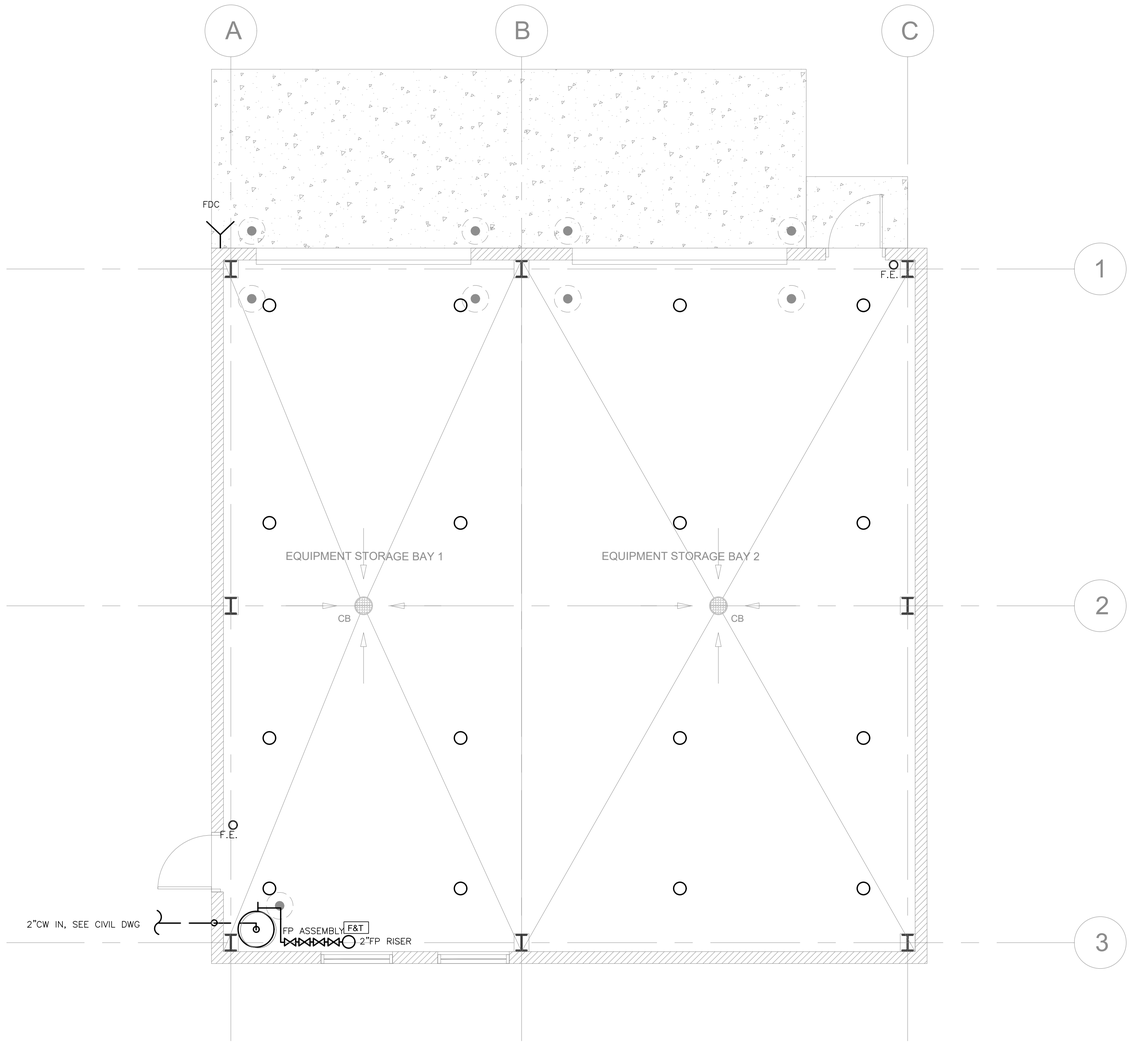
New extinguishers to be by Potter Romer figure No. 3010, 10lb. dry chemical pressurized enameled steel.

9. New sprinkler heads will be upright pendant type. Tenant shall modify existing sprinkler systems during tenant build out.

10. Provide 1" cross over pipe from main to sprinkler head. Tie–in to top of sprinkler main as required by local code.

11. Provide an alternate cost to provide a fire pump if required. Contractor to perform hydraulic calculations and test existing water pressure at onset of project to confirm.

12. Location of Fire Department connection to be coordinated with Fire Marshall.



1 / FP1.0A FIRE PROTECTION PLAN
SCALE: 1/4" = 1'–0"

NORTH

LEGEND

- NEW UPRIGHT SPRINKLER HEAD
- F.E. FIRE EXTINGUISHER

FIRE PROTECTION DESIGN CRITERIA

OCCUPANCY	HAZARD DESCRIPTION	DESIGN AREA	DENSITY (GPM/S.F.)	MAXIMUM AREA PER HEAD	SYSTEM TYPE	OUTSIDE HOSE ALLOWANCE
STORAGE	OH2	1500ft^2	0.20	130ft^2	WET	250GPM

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Title
FIRE PROTECTION PLAN
METAL STORAGE BUILDING
Sheet
FP1.0A