RDA GROUP ARCHITECTS
7945 Washington Woods Drive
Dayton, Ohio 45459
937.610.3440

Addendum #2

Addition & Alterations to the Preble County Council on Aging Senior Center

January 25, 2023

This Addendum modifies and shall become a part of the original Contract Documents and is hereby made part of the Bidding Documents for the referenced project.

All bidders shall indicate in their bid/proposal that this Addendum has been received and considered in their bid proposal.

The Addendum items are intended to supplement, clarify or correct parts of the bid proposal package. Items in the addendum shall take precedence over items corrected and shall be of equal value with items supplemented or clarified. Any questions in reference to this addendum must be directed, in writing, to:

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Addendum Items:

1. Project Estimate: The base bid estimate for the project is $4,750,000.
2. Supplementary Conditions: 2.3.1: Substantial Completion: CHANGE as follows: Milestone Completion date for the addition at 300 calendar days from commencement of the work and an overall project completion date of not later than 365 days from the commencement of the work.
3. CLARIFICATION: The existing building contains a NFPA 13 sprinkler system. The existing system will need to be altered as necessary for the proposed alterations to the existing building. The existing sprinkler system shall be extended to the addition. The sprinkler system is a delegated design by the sprinkler contractor. All costs associated with the sprinkler system design and implementation shall be included in the bid amount.
4. CLARIFICATION: The existing building contains an NFPA 72 Fire Alarm System. The existing system shall be modified and extended into the addition. The fire alarm is a delegated design by the fire alarm contractor. All costs associated with the fire alarm system design and implementation shall be included in the bid amount.
5. CLARIFICATION: Roof Truss loading is indicated as 20-8-0-12. The loading is as follows: 20 PSF live load at top chord; 8 PSF dead load at top chord; 0 PSF live load at bottom chord; 12 PSF dead load at bottom chord.
6. CLARIFICATION: Builder's Risk Insurance: Insurance is being provided by the Owner.
7. CLARIFICATION: Walk In Cooler and Freezer are being provided by Owner.
8. CLARIFICATION: Exhaust Hood, equipment, and associated ductwork shall be by Owner. Contractor shall coordinate installation and utility connections. Make up air unit and associated ductwork by Contractor.

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9. Sheet C-3.0: Grading Plan: The grading plan creates a net cut on the site of approximately 2,400 CY. Excess spoils may be distributed on-site, exact locations, spreading of spoils, etc. to be field confirmed with the Owner prior to work.
10. Sheet A1.12: ADD the following note: Add Alternate #3 shingle roof replacement – include removal and replacement of [10] sheets of wood sheathing as part of the base bid amount of the project.
11. Sheet A1.15: ADD the following note to the Alternate #2 Key Notes: #5: Existing plastic laminate reception deck to remain. Remove existing, install new rubber base.
12. Sheet E0.2: Light Fixture Schedule: CHANGE / ADD schedule as follows:

    Add ER – remote heads, Compass Lighting #CORD

    Change PL1: Kim #UR28-96L-155-4K7-5W-UNV-FM44-DBT-DF-CLR

    Change PL2: Kim #UR28-96L-155-4K7-3-UNV-FM44-DBT-DF-CLR

    Change PL3: Kim #UR28-96L-155-4K7-4W-UNV-FM44-DBT-DF-CLR

    Add PL4: Kim #UR20-24L-65-4K7-3-UNV-FM44-DBT-DF-CLR

    Change LP1 to: Kim #RSA-K-16-40-B-TA-DBT

    Add LP2: Kim #RSA-K-10-40-B-TA-DBT

    Provide Type LP1 pole for Type PL1, PL2 and PL3 fixtures.

    Provide Type LP2 pole for Type PL4 fixtures.
13. Sheet E1.1: CHANGE Drawing Note #11, as shown on drawing in Multi-Purpose Room B – 121, to Drawing Note #9.
14. Sheet E1.2: ADD the following scope for the expansion of the fire alarm panel / equipment: Provide (2) dedicated 120V-20A circuits from Panel P1. Utilize spare breakers where possible. Field Verify exact locations.
15. Sheet E2.1: Add the following scope at the exterior adjacent to Vestibule 111: Provide (1) Type ER remote head at entrance/exit. Connect to Type X1 exit sign at this location.
16. Sheet E2.1: Add the following scope at the exterior adjacent to Corridor 122 east end: Provide (1) Type ER remote head at entrance/exit. Connect to Type X1 exit sign at this location.
17. Sheet E3.0: CHANGE as follows:

    Type EX-1 poles and fixtures shall be Type PL1/LP1.

    Type EX-2 poles and fixtures shall be Type PL2/LP1.

    Type EX-3 poles and fixtures shall be Type PL4/LP2.
18. Sketch SK1.1: REPLACE Detail H / A1.13 to provide additional detail / clarification on the loading dock railing and chain rail system.
19. Sketch SK1.2: REPLACE Detail E / A1.13 to change the cantilever requirement for the metal canopy system. The cantilever is reduced to 3'.
20. Section 01 00 00: 1,4, B: CHANGE as follows: Date of Substantial Completion: Milestone Completion date for the addition at 300 calendar days from commencement of the work and an overall project completion date of not later than 365 days from the commencement of the work.
21. Section 08 35 13: 2.1, A: Add Oldcastle; Tubelite as an approved manufacturer.
22. Section 12 20 00: 2.1, A: Add Spring Window Fashions as an approved manufacturer.
23. Section 08 36 13: New Specification Section attached to this addendum has been added to the set for the overhead sectional garage door and operator at the Transportation Building.

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24. Section 21 13 13: NEW Specification Section attached to this addendum has added to the set for the performance based sprinkler system design.
25. Section 28 31 11: NEW Specification Section attached to this addendum has added to the set for the performance based fire alarm system design.

End.

SECTION 08 36 13 - SECTIONAL DOORS

PART 1 GENERAL

1.1 SUMMARY

A. Section includes electrical overhead sectional doors of steel panels of flush design, operating hardware, and controls.

1.2 SYSTEM DESCRIPTION

A. Operating System: Conform to following criteria:
   1. Electric operation with manual operation in case of power failure; transit speed of 12 inches per second.

1.3 SUBMITTALS

A. Shop Drawings: Indicate opening dimensions and tolerances, component construction, connections and details, anchorage methods and spacing, hardware and locations, and installation details.

B. Product Data: Submit data on electric operating devices.

1.4 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: Submit data for motor and transmission, shaft and gearing, lubrication frequency, control adjustments, spare part sources.

1.5 QUALITY ASSURANCE

A. Perform Work in accordance with DASMA 102.

B. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories, Inc., as suitable for purpose specified.

C. Surface Burning Characteristics:
   1. Foam Insulation: Maximum 75/450 flame spread/smoke developed index when tested in accordance with ASTM E84.

D. Apply label from agency approved by authority having jurisdiction to identify each foam plastic insulation board.

1.6 WARRANTY

A. Provide two-year warrant on sectional doors, including hardware and operators.

PART 2 PRODUCTS

2.1 SECTIONAL OVERHEAD DOORS

A. Manufacturers:
   1. Overhead Door Company – Basis of Design, 470 Series Insulated Steel Doors
   2. Clopay Building Products
   3. Wayne-Dalton Corporation
   4. Raynor
   5. CHI Overhead Doors

B. Product Description: Steel sectional overhead doors, electric operation, and associated hardware.
   1. Door Assembly: Rigid steel construction; fully insulated on the inside face with continuous steel backing on the inside face. Fabricated with steel end stiles and tongue and groove sections.
   2. Door Nominal Thickness: 2 inches thick.

3. Exterior Surface: Ribbed.
4. Exterior Steel: 26 gauge, hot-dipped galvanized with an embossed simulated wood grain texture.
5. Interior Steel: 29 gauge, hot-dipped galvanized
6. Springs: 25,000 cycles.
7. Insulation: Polystyrene. R-value of 9.83; U-value of 0.102.
8. Finish and Color: Two coat baked-on polyester. Color as selected from full range of manufacturer colors.
9. Manual Operation: Pull rope.
10. Electric Motor Operation: Provide UL listed electric operator, size and type as recommended by manufacturer to move door in either direction at not less than 2/3 foot nor more than 1 foot per second. Operator shall meet UL325/2010 requirements for continuous monitoring of safety devices.
    a. Entrapment Protection: Required for momentary contact, includes radio control operation.
        1) Pneumatic sensing edge up to 18 feet wide. Constant contact only complying with UL 325/2010.
        2) Electric sensing edge monitored to meet UL 325/2010.
        3) Photoelectric sensors monitored to meet UL 325/2010.
    b. Operator Controls:
        1) Push-button operated control stations with open, close, and stop buttons.
        2) Surface mounting.
        3) Interior location.
    c. Special Operation:
        1) Pull switch.
        2) Vehicle detector operation.

2.2 TRACKS, SUPPORTS, AND ACCESSORIES

A. Tracks: Manufacturer's standard, galvanized-steel track system of configuration indicated, sized for door size and weight, designed for lift type indicated and clearances shown on Drawings, and complying with ASTM A 653 for minimum G60 zinc coating. Provide complete track assembly including brackets, bracing, and reinforcement for rigid support of ball-bearing roller guides for required door type and size. Slot vertical sections of track spaced 2 inches apart for door-drop safety device. Slope tracks at proper angle from vertical or design tracks to ensure tight closure at jambs when door unit is closed.

B. Track Reinforcement and Supports: Galvanized-steel track reinforcement and support members, complying with ASTM A 36 and ASTM A 123. Secure, reinforce, and support tracks as required for door size and weight to provide strength and rigidity without sag, sway, and vibration during opening and closing of doors.
    1. Vertical Track Assembly: Track with continuous reinforcing angle attached to track and attached to wall with jamb brackets.
    2. Horizontal Track Assembly: Track with continuous reinforcing angle attached to track and supported at points from curve in track to end of track by laterally braced attachments to overhead structural members.

C. Weatherseals: Replaceable, adjustable, continuous, compressible weather-stripping gaskets of flexible vinyl, rubber, or neoprene fitted to bottom and top of sectional door unless otherwise indicated.

2.3 HARDWARE/SAFETY DEVICES

A. General: Provide heavy-duty, corrosion-resistant hardware, with hot-dip galvanized, stainless-steel, or other corrosion-resistant fasteners, to suit door type.

B. Hinges: Heavy-duty, galvanized-steel hinges of not less than 0.079-inch nominal coated thickness at each end stile and at each intermediate stile, according to manufacturer's written recommendations for door size. Attach hinges to door sections through stiles and rails with bolts and lock nuts or lock washers and nuts. Use rivets or self-tapping fasteners where access to nuts is not possible. Provide double-end hinges where required, for doors over 16 feet wide unless otherwise recommended by door manufacturer.

C. Rollers: Heavy-duty rollers with steel ball-bearings in case-hardened steel races, mounted with varying projections to suit slope of track. Extend roller shaft through both hinges where double hinges are required. Provide 3-inch diameter roller tires for 3-inch wide track and 2-inch diameter roller tires for 2-inch wide track.

D. Push/Pull Handles: For push-up or emergency-operated doors, provide galvanized-steel lifting handles on each side of door.

E. Safety Devices
   1. Provide roller shields, to help to prevent fingers from getting caught by roller in track.
   2. Provide tapered reverse angle mounted tracks, in lieu of standard reverse angle mounted, to keep fingers from reaching in from the outside.
   3. Provide center back-hang and rear back-hanging device in case one would ever fail.

2.4 LOCKING DEVICES

A. Slide Bolt: Fabricate with side-locking bolts to engage through slots in tracks for locking by padlock, located on single-jamb side, operable from inside only.

2.5 COUNTERBALANCE MECHANISM

A. Torsion Spring: Counterbalance mechanism consisting of adjustable-tension torsion springs fabricated from steel-spring wire complying with ASTM A 229/A 229M, mounted on torsion shaft made of steel tube or solid steel. Provide springs designed for number of operation cycles indicated.

B. Cable Drums and Shaft for Doors: Cast-aluminum or gray-iron casting cable drums mounted on torsion shaft and grooved to receive door-lifting cables as door is raised. Mount counterbalance mechanism with manufacturer's standard ball-bearing brackets at each end of torsion shaft. Provide one additional midpoint bracket for shafts up to 16 feet long and two additional brackets at one-third points to support shafts more than 16 feet long unless closer spacing is recommended by door manufacturer.

C. Cables: Galvanized-steel lifting cables with cable safety factor of at least 7 to 1.

D. Cable Safety Device: Include a spring-loaded steel or spring-loaded bronze cam mounted to bottom door roller assembly on each side and designed to automatically stop door if either lifting cable breaks.

E. Bracket: Provide anchor support bracket as required to connect stationary end of spring to the wall and to level the shaft and prevent sag.

F. Bumper: Provide a spring bumper at each horizontal track to cushion door at end of opening operation.

2.6 ELECTRICAL CHARACTERISTICS AND COMPONENTS

A. Requirements for electrical characteristics.
   1. 1/2 hp motor.
   2. 115 volts, single phase, 60 Hz service.
   3. 20 amperes maximum circuit breaker size.

B. Motor Type: NEMA MG1, Type 4.

C. Wiring Terminations: Furnish terminal lugs to match branch circuit conductor quantities, sizes, and materials indicated. Enclose terminal lugs in terminal box sized to NFPA 70.

D. Disconnect Switch: Factory mount disconnect switch on equipment.

E. Electric Operator: Center mounted draw bar assembly, adjustable safety friction clutch; brake system actuated by independent voltage solenoid controlled by motor starter; enclosed gear driven limit switch; enclosed magnetic cross line reversing starter; mounting brackets and hardware.

F. Control Station: Standard three button (open-close-stop) momentary type, control for each electric operator; 24 volt circuit, surface mounted.

G. Hand Held Transmitter: Digital control, resettable.

H. Safety Edge: At bottom of door panel, full width; electro-mechanical sensitized type, wired to reverse door upon striking object; hollow neoprene or rubber covered to provide weatherstrip seal.

I. Photoelectric Sensor: Furnish system which detects obstruction and reverses door without requiring door to contact obstruction.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify wall openings are ready to receive work and opening dimensions and tolerances are within limits.

3.2 PREPARATION

A. Prepare door opening components to permit installation of door unit and preserve continuity of wall air barrier and vapor retarder seal.

3.3 INSTALLATION

A. Anchor components securely to wall construction and building framing without distortion or stress. Secure tracks to structural members only.

B. Fit and align door assembly including hardware, level and plumb, to provide smooth operation.

C. Coordinate installation of electrical service. Complete wiring from disconnect to unit components.

D. Coordinate installation of sealants and backing materials at frame perimeter as specified in Section 07 90 00.

3.4 ERECTION TOLERANCES

A. Maximum Variation From Plumb: 1/16 inch.

B. Maximum Variation From Level: 1/16 inch.

C. Longitudinal or Diagonal Warp: Plus or minus 1/8 inch from 10 ft straight edge.

END OF SECTION

SECTION 21 13 13 - SPRINKLER SYSTEMS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes: Wet-pipe and Dry-pipe sprinkler system, system design, installation, and certification.

B. The sprinkler system is a delegated design by the Sprinkler Contractor. All costs associated with the sprinkler system design and implementation shall be included in the bid amount. This specification is general in nature, and all items, requirements, and components shall be field confirmed by the Sprinkler Contractor prior to submitting a bid for the project.

1.2 SYSTEM DESCRIPTION

A. System to provide coverage for the entire building. Modify sprinkler system where required by proposed work at the existing building. Extend existing sprinkler system into the addition to provide coverage at the entire building.

B. Provide hydraulically designed system to NFPA 13 ordinary hazard, Group 1 occupancy requirements.

C. Determine volume and pressure of incoming water supply from water flow test, accomplish all required coordination and testing required to confirm available water pressure.

D. Interface system with building control system.

E. Provide fire department connections as required by City of Eaton.

1.3 SUBMITTALS

A. Shop Drawings: Indicate layout of finished ceiling areas indicating sprinkler locations coordinated with ceiling installation. Indicate detailed pipe layout, hangers and supports, sprinklers, components and accessories. Indicate system controls.

B. Product Data: Sprinklers, valves, and specialties, including manufacturers catalog information. Performance ratings, rough-in details, weights, support requirements, and piping connections.

C. Design Data: Calculations; signed and sealed by professional engineer.

D. Manufacturer's Certificate: Products meet or exceed specified requirements.

1.4 CLOSEOUT SUBMITTALS

A. Project Record Documents: Record actual locations of sprinkler heads.

B. Operation and Maintenance Data: Submit description of components of system, servicing requirements, record drawings, inspection data, and parts lists.

1.5 QUALITY ASSURANCE

A. Perform Work according to NFPA 13 standards.

B. Manufacturer: Company specializing in manufacturing products specified in this Section with five years' experience.

C. Installer: Company specializing in performing Work of this Section with five years' experience.

D. Design system under direct supervision of professional engineer experienced in design of this Work and licensed in State of Ohio.

1.6 WARRANTY

A. Furnish five-year manufacturer warranty for sprinkler system components.

1.7 MAINTENANCE

A. Furnish extra sprinklers under provisions of NFPA 13.

B. Furnish suitable wrenches for each sprinkler type.

PART 2 PRODUCTS

2.1 VALVES

A. Gate Valves
   1. Up to and including 2 inches: Bronze body and trim, rising stem, hand wheel, solid wedge or disc, threaded ends.
   2. Over 2 inches: Iron body, bronze trim, rising stem pre-grooved for mounting tamper switch, hand wheel, OS&Y, solid bronze or cast iron wedge, flanged or grooved ends.

B. Ball Valves:
   1. Up to and including 2 inches: Bronze two piece body, brass, chrome plated bronze, or stainless steel ball, teflon seats and stuffing box ring, lever handle and balancing stops, threaded ends with union.
   2. Over 2 inches: Cast steel body, chrome plated steel ball, teflon seat and stuffing box seals, lever handle, flanged.

C. Butterfly Valves:
   1. Bronze body, stainless steel disc, resilient replaceable seat, threaded ends, extended neck, hand wheel and gear drive and integral indicating device, and built-in tamper switch.
   2. Iron body, iron or bronze disc, EPDM seat, wafer, lug, or grooved ends, extended neck, hand wheel and gear drive, integral indicating device, and tamper switch.

D. Check Valves:
   1. Up to and including 2 inches: Bronze body and swing disc, rubber seat, threaded ends.
   2. Over 2 inches: Iron body, bronze trim, swing check with rubber disc, renewable disc and seat, flanged ends with automatic ball check.
   3. 4 inches and Over: Iron body, bronze disc with stainless steel spring, resilient seal and threaded, wafer or flanged ends.

E. Drain Valves
   1. Bronze compression stop with hose thread nipple and cap.
   2. Brass ball valve with cap and chain, 3/4 inch hose thread.

2.2 PIPING

A. Steel Pipe: ASTM A53/A53M, Grade B; schedule 40 black.
   1. Steel Fittings: ASME B16.9, wrought steel, butt welded; ASME B16.25, butt weld ends;
   2. Cast Iron Fittings: ASME B16.4, threaded fittings.
   3. Malleable Iron Fittings: ASME B16.3, threaded fittings.
   4. Mechanical Grooved Couplings: Malleable iron housing clamps to engage and lock, "C" shaped elastomeric sealing gasket, steel bolts, nuts, and washers; galvanized for galvanized pipe.
   5. Mechanical Formed Fittings: Carbon-steel housing with integral pipe stop and O-ring pocked and O-ring uniformly compressed into permanent mechanical engagement onto pipe.

2.3 PIPE HANGERS AND SUPPORTS

A. Conform to NFPA 13.

B. Hangers for Pipe Sizes 1/2 to 1-1/2 inch: Malleable iron or carbon steel, adjustable swivel, split ring.

C. Hangers for Pipe Sizes 2 inch and Over: Carbon steel, adjustable, clevis.

D. Multiple or Trapeze Hangers: Steel channels with welded spacers and hanger rods.

E. Wall Support for Pipe Sizes to 3 inches: Cast iron hook.

F. Wall Support for Pipe Sizes 4 inches and Over: Welded steel bracket and wrought steel clamp.

G. Vertical Support: Steel riser clamp or Angle ring.

H. Floor Support: Cast iron adjustable pipe saddle, lock nut, nipple, floor flange, and concrete pier or steel support.

2.4 SPRINKLERS

A. Manufacturers:
   1. Reliable
   2. Approved Equal or as required to be compatible with existing sprinkler system installation.

B. Suspended Ceiling Type:
   1. Standard Response
   2. Type: Concealed pendant type with matching escutcheon and cover plate.
   3. Finish: Brass or Chrome plated to match existing conditions.
   4. Escutcheon Plate Finish: Enamel, color white or Chrome plated to match existing.
   5. Cover Plate: White
   6. Fusible Link: Fusible solder link type temperature rated for specific area hazard. Match existing conditions

C. Exposed Area Type:
   1. Standard Response
   2. Type: Standard upright type.
   3. Finish: Brass or Chrome plated to match existing conditions
   4. Fusible Link: Fusible-solder link type temperature rated for specific area hazard. Match existing conditions.

D. Side-Wall Type:
   1. Type: Standard or Recessed horizontal side wall type with matching escutcheon plate.
   2. Finish: Brass or Chrome plated.
   3. Escutcheon Plate Finish: Enamel, color white or Chrome plated to match existing.
   4. Fusible Link: Fusible-solder link type temperature rated for specific area hazard. Match existing conditions

2.5 PRESSURE MAINTENANCE PUMP

A. Type: Close-coupled motor and positive displacement pump unit.

B. Construction: Bronze with stainless steel shafts, carbon bearings.

C. Performance: as required to suit the system.

D. Motor: Open drip-proof, permanently lubricated.

E. Accessories: as required to suit the system.

2.6 PIPING SPECIALTIES

A. Wet Pipe and Dry Pipe Sprinkler Alarm Valve: Check type valve with divided seat ring, rubber faced clapper to automatically actuate water motor alarm and electric alarm, with pressure retard chamber and variable pressure trim; test and drain valve.

B. Water Motor Alarm: Hydraulically operated impeller type alarm with aluminum alloy gong and motor housing, nylon bearings, and inlet strainer.

C. Electric Alarm: Electrically operated gong with pressure alarm switch.

D. Water Flow Switch: Vane type switch for mounting horizontal or vertical, with two contacts; rated 10 amps at 125 volts AC and 2.5 amps at 24 volts DC.

E. Fire Department Connections:
   1. Type: Confirm requirements with Local Fire Department. Existing FDC to remain.

F. Air Compressor: Single unit, electric motor driven, ASME rated horizontal receiver tank, air pressure operated, automatic mechanical alternator, safety valves, check valves, automatic tank drain, muffler-filter, belt guard, controls and 0.25 HP, 115 volt, single phase, 60 Hz motor.
   1. As required for the installation of the sprinkler system.

2.7 FIRE PUMP

A. Pumps
   1. Type: UL 448 Centrifugal, direct connected.
   2. Casing: Cast iron, split case, single or double suction, rated for 150 psig or 1.25 times working discharge pressure, renewable bronze wearing rings, flanged suction and discharge.
   3. Impeller: Bronze, fully enclosed, keyed to shaft.
   4. Shaft: High-grade alloy steel with copper, bronze or stainless steel shaft sleeves.
   5. Bearings: Grease lubricated ball bearings.
   6. Drive: Flexible coupling with coupling guard.
   7. Seals: Packing gland with minimum four rings packing.
   8. Baseplate: High grade heat-treated cast iron or reinforced steel with integral drain rim.

B. Accessories:
   1. Check valve in discharge pipe.
   2. OS&Y gate or butterfly valves on system side of check valve and on supply side of pump.
   3. Fire pump bypass fitted with OS&Y gate or butterfly valves and check valve.
   4. Relief valve and closed type cone.
   5. Pressure gages, suction and discharge.
   6. Temperature relief valve.
   7. Umbrella cock, automatic air release.
   8. Splash shield between pump and motor.
   9. Manifold with hose gate valves.
   10. Flow metering system for closed loop testing.

C. Electric Drive: as applicable to the system.

D. Electric Motor Controls: as applicable to the system.

E. Operating Controls: Hand-off-automatic switch, fire water pressure switch to operate pump drive, fire water pressure switches for alarms, with indicating lights for low fire water pressure and high fire water pressure and contacts for remote circuits to indicate pump operational status and alarm status.

PART 3 EXECUTION

3.1 INSTALLATION

A. Design and Install System according to NFPA 13 and Local Fire Department Requirements.

B. Install buried shut-off valves in valve box. Furnish post indicator.

C. Maintain existing back-flow preventer assembly at sprinkler system water source connection, unless required to change or upgrade as a result of the proposed work.

D. Route piping in orderly manner, plumb, and parallel to building structure. Maintain gradient.

E. Install piping to conserve building space, to not interfere with use of space and other work.

F. Install pipe sleeve at piping penetrations through foundation, walls, and floors as applicable to the conditions. Seal pipe and sleeve penetrations to maintain fire resistance equivalent to fire separation.

G. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment.

H. Pipe Hangers and Supports: Install in accordance with NFPA 13.
   1. Install hangers to with minimum 1/2 inch space between finished covering and adjacent work.
   2. Place hangers within 12 inches of each horizontal elbow.
   3. Use hangers with 1-1/2 inch minimum vertical adjustment. Design hangers for pipe movement without disengagement of supported pipe.
   4. Where installing several pipes in parallel and at same elevation, provide multiple or trapeze hangers.

I. Slope piping and arrange systems to drain at low points. Install eccentric reducers to maintain top of pipe level.

J. Prepare pipe, fittings, supports, and accessories for finish painting. Where pipe support members are welded to structural building framing, scrape, brush clean, and apply one coat of zinc rich primer to welding. Refer to Section 09 90 00.

K. Die cut threaded joints with full cut standard taper pipe threads with red lead and linseed oil or other non-toxic joint compound applied to male threads only.

L. Install valves with stems upright or horizontal, not inverted. Remove protective coatings prior to installation.

M. Install gate, ball, and/or butterfly valves for shut-off or isolating service.

N. Install drain valves at main shut-off valves, low points of piping and apparatus.

O. Locate outside alarm-gong on building wall where required by sprinkler design.

P. Remove scale and foreign material, inside and outside, before assembly.

Q. Install sleeves where penetrating footings, floors, or walls. Seal pipe and sleeve penetration to maintain fire resistance equivalent to fire separation of footings, floors, or walls.

R. Install pipe runs to minimize obstruction to other work. Offset around ductwork.

S. Install piping in concealed spaces above finished ceilings.

T. Center sprinklers in two directions in ceiling tile and install piping offsets. Coordinate exact requirements and placement with other trades.

U. Install butterfly valves for shut-off or isolating service.

V. Install drain valves at main shut-off valves, low points of piping and apparatus.

W. Connect system to water source ahead of domestic water connection with double check valve and/or reduced pressure back flow preventer assembly.

X. Install heads to coordinate with reflected ceiling plan.

Y. Protection:
   1. Apply temporary tape or paper cover to sprinkler heads to protect from painting.
   2. Protect concealed sprinkler head cover plates from painting.

Z. Install drain piping from tank to nearest floor drain.

AA. Interface sprinkler system with building fire and smoke alarm system.

BB. Install drain piping from pump bases, pump stuffing boxes, and pump casings to floor sinks or drains. Install air vents on pump cases.

CC. Flush entire piping system of foreign matter.

DD. Hydrostatically test entire system.

EE. Install and connect to fire pump system according to NFPA 13.

3.2 INTERFACE WITH OTHER PRODUCTS

A. Verify signal devices are installed and connected to fire alarm system.

3.3 CLEANING

A. Flush entire piping system of foreign matter.

END OF SECTION

SECTION 28 31 11 – FIRE ALARM SYSTEMS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes: Non-coded, addressable fire alarm system with automatic sensitivity control of certain smoke detectors and multiplexed signal transmission, dedicated to fire alarm service only.

B. The Fire Alarm system is a delegated design by the Fire Alarm Contractor. All costs associated with the fire alarm system design and implementation shall be included in the bid amount. This specification is general in nature, and all items, requirements, and components shall be field confirmed by the Fire Alarm Contractor prior to submitting a bid for the project.

1.2 SUBMITTALS

A. Shop Drawings: For fire-alarm system. Include plans, elevations, sections, details, and attachments to other work. Include the following as a minimum shop drawing requirement.
   1. Submit to City of Eaton for approval.
   2. Shop Drawings shall be prepared by persons with the following qualifications: Trained and certified by manufacturer in fire-alarm system design.
   3. Comply with recommendations in the "Documentation" Section of the "Fundamentals of Fire Alarm Systems" Chapter in NFPA 72.
   4. Include voltage drop calculations for notification appliance circuits.
   5. Include battery-size calculations.
   6. Include voice/alarm communication signaling-service equipment layout and single-line connection diagram, grounding schematic, loudspeaker and amplifier power calculations, including loudspeaker and amplifier quantities and locations.
   7. Include voice/alarm communication signaling-service intelligibility calculations to meet all applicable National, State and Local Codes. Intelligibility calculations shall be provided for rooms/spaces determined to be an Acoustically Distinguishable Space (ADS) by the Designer performing the calculations. The Contractor shall field verify conditions for rooms/spaces to be calculated as required (e.g. room/space dimensions, ceiling height(s) room/space characteristics, room/space finishes characteristics).
   8. Include floor plans to indicate final device locations showing address and connection requirements of each system device. Indicate wiring requirements and route of cable and conduits. Include system riser diagram and installation details.
   9. Include plans of heating, ventilating, and air-conditioning ducts, coordinating installation of duct smoke detectors and access to them. Show critical dimensions that relate to placement and support of sampling tubes, detector housing, and remote status and alarm indicators. Locate detectors according to manufacturer's written recommendations.
   10. Include performance parameters and installation details for each detector, verifying that each detector is listed for complete range of air velocity, temperature, and humidity possible when air-handling system is operating.
   11. Provide written Warranty as follows
      a. The Fire Alarm System shall have a 1 year warranty starting for the date of Beneficial Occupancy.
      b. Batteries shall have a full 1-year warranty and a 5-year pro rata warranty starting for the date of Substantial Completion.
   12. Include a listing or matrix of system performance functions upon alarm, supervisory or trouble conditions on the cover sheet of the wiring diagrams portion of the Submittal. Listing or matrix shall also include any other performance functions required by Code not listed in this Section.

1.3 CLOSEOUT SUBMITTALS

A. Project Record Documents: Record actual locations of fire alarm devices and equipment.

B. Operation and Maintenance Data: Submit description of components of system, servicing requirements, record drawings, inspection data, and parts lists.

1.4 QUALITY ASSURANCE

A. Perform Work according to NFPA 13 standards.

B. Manufacturer: Company specializing in manufacturing products specified in this Section with five years' experience.

C. Installer: Company specializing in performing Work of this Section with five years' experience.

D. Design system under direct supervision of professional engineer experienced in design of this Work and licensed in State of Ohio.

1.5 PROJECT CONDITIONS

A. Interruption of Existing Fire-Alarm Service: Do not interrupt fire-alarm service to facilities occupied by Owner unless permitted under the following conditions and then only after arranging to provide temporary guard service according to requirements indicated:
   1. Notify Owner no fewer than two days in advance of proposed interruption of fire-alarm service.

1.6 SEQUENCING AND SCHEDULING

A. Existing Fire-Alarm Equipment: Maintain existing equipment fully operational until new equipment has been tested and accepted. As new equipment is installed, label it "NOT IN SERVICE" until it is accepted. Remove labels from new equipment when put into service and label existing fire-alarm equipment "NOT IN SERVICE" until removed from the building.
   1. Equipment Removal: After acceptance of new fire-alarm system, remove existing disconnected fire-alarm equipment and wiring.

PART 2 PRODUCTS

2.1 MAUFACTURERS:

A. Fire-Lite Addressable Fire Alarm System to match / extend existing system.

2.2 SYSTEMS OPERATIONAL DESCRIPTION

A. Fire-alarm signal initiation shall be by one or more of the following devices and systems:
   1. Manual stations.
   2. Heat detectors.
   3. Smoke detectors.
   4. Carbon Monoxide detectors.
   5. Automatic sprinkler system water flow.
   6. Heat detectors in elevator shaft and pit.
   7. Fire-extinguishing system operation, including kitchen hoods.
   8. Water flow switches.

B. Fire-alarm signal shall initiate the following actions:
   1. Continuously operate alarm notification appliances.
   2. Identify alarm at fire-alarm control panel and remote annunciators.
   3. Transmit an alarm signal to the remote alarm receiving station.
   4. Unlock electric door locks in designated egress paths.
   5. Release fire and smoke doors held open by magnetic door holders.
   6. Activate voice/alarm communication system.

7. Switch designated heating, ventilating, and air-conditioning equipment controls to fire-alarm mode.
8. Close smoke dampers in air ducts of designated air-handling duct systems.
9. Activate kitchen equipment shunt-trip circuit breakers on fire-extinguishing system operation.
10. Activate fire alarm system interface relays provided for interface with fire alarm contact on Emergency Transfer Device in emergency luminaires to operate emergency luminaires at full brightness for egress lighting upon initiation of fire alarm system.

C. Supervisory signal initiation shall be by one or more of the following devices and actions:
1. Valve supervisory switch.
2. Low-air-pressure switch of a dry-pipe sprinkler system.
3. Kitchen equipment shunt-trip supervision.
4. Duct smoke detectors.

D. System trouble signal initiation shall be by one or more of the following devices and actions:
1. Open circuits, shorts, and grounds in designated circuits.
2. Opening, tampering with, or removing alarm-initiating and supervisory signal-initiating devices.
3. Loss of primary power at fire-alarm control panel.
4. Ground or a single break in fire-alarm control panel internal circuits.
5. Abnormal ac voltage at fire-alarm control panel.
6. Break in standby battery circuitry.
7. Failure of battery charging.
8. Abnormal position of any switch at fire-alarm control panel or annunciator.
9. Fire-pump power failure, including a dead-phase or phase-reversal condition.
10. Low-air-pressure switch operation on a dry-pipe or preaction sprinkler system.

E. System Trouble and Supervisory Signal Actions: Initiate notification appliance and annunciate at fire-alarm control panel and remote annunciators. Record the event in system memory.

2.3 FIRE-ALARM CONTROL PANEL

A. General Requirements for Fire-alarm control panel:
1. Field-programmable, microprocessor-based, modular, power-limited design with electronic modules, complying with UL 864 and listed and labeled by an NRTL.
a. System software and programs shall be held in flash electrically erasable programmable read-only memory, retaining the information through failure of primary and secondary power supplies.
b. Include a real-time clock for time annotation of events on the event recorder.
2. Addressable initiation devices that communicate device identity and status.
a. Smoke sensors shall additionally communicate sensitivity setting and allow for adjustment of sensitivity at fire-alarm control panel.
b. Temperature sensors shall additionally test for and communicate the sensitivity range of the device.
3. Addressable control circuits for operation of mechanical equipment.

B. Alphanumeric Display and System Controls: Arranged for interface between operator at fire-alarm control panel and addressable system components including annunciation and supervision. Display alarm, supervisory, and component status messages and the programming and control menu.

C. Circuits:
1. Initiating Device, Notification Appliance, and Signaling Line Circuits: NFPA 72, Class B.
2. Serial Interfaces: Two RS-232 ports for service modem and printer.

D. Remote Smoke-Detector Sensitivity Adjustment: Controls shall select specific addressable smoke detectors for adjustment, display their current status and sensitivity settings, and change those

settings. Allow controls to be used to program repetitive, time-scheduled, and automated changes in sensitivity of specific detector groups. Record sensitivity adjustments and sensitivity-adjustment schedule changes in system memory, and capability to print out the final adjusted values on a printer.

E. Transmission to Remote Alarm Receiving Station: Automatically transmit alarm, supervisory, and trouble signals to a remote alarm station.

F. Primary Power: 24-V dc obtained from 120-V ac service and a power-supply module. Initiating devices, notification appliances, signaling lines, trouble signals, supervisory and digital alarm communicator transmitters shall be powered by 24-V dc source.

G. Secondary Power: 24-V dc supply system with batteries, automatic battery charger, and automatic transfer switch.

2.4 SYSTEM SMOKE DETECTORS

A. General Requirements for System Smoke Detectors:
   1. Comply with UL 268; operating at 24-V dc, nominal.
   2. Base Mounting: Detector and associated electronic components shall be mounted in a twist-lock module that connects to a fixed base. Provide terminals in the fixed base for connection to building wiring.
   3. Self-Restoring: Detectors do not require resetting or readjustment after actuation to restore them to normal operation.
   4. Integral Visual-Indicating Light: LED type indicating detector has operated and power-on status.
   5. Remote Control: Unless otherwise indicated, detectors shall be digital-addressable type, individually monitored at fire-alarm control panel for calibration, sensitivity, and alarm condition and individually adjustable for sensitivity by fire-alarm control panel.
      a. Provide multiple levels of detection sensitivity for each sensor.

B. Photoelectric Smoke Detectors:
   1. Detector address shall be accessible from fire-alarm control panel and shall be able to identify the detector's location within the system and its sensitivity setting.

C. Duct Smoke Detectors: Photoelectric type complying with UL 268A.
   1. Detector address shall be accessible from fire-alarm control panel and shall be able to identify the detector's location within the system and its sensitivity setting.
   2. Weatherproof Duct Housing Enclosure: NEMA 250, Type 4X; NRTL listed for use with the supplied detector.
   3. Each sensor shall have multiple levels of detection sensitivity.
   4. Sampling Tubes: Design and dimensions as recommended by manufacturer for specific duct size, air velocity, and installation conditions where applied.
   5. Relay Fan Shutdown: Rated to interrupt fan motor-control circuit.

D. Provide a Remote Status and Alarm Indicator accessory for each smoke detector or duct smoke detector that is not readily visible from normal viewing position.

2.5 HEAT DETECTORS

A. General Requirements for Heat Detectors: Comply with UL 521.

B. Heat Detector, Combination Type: Actuated by either a fixed temperature of 135 deg F or a rate of rise that exceeds 15 deg F per minute unless otherwise indicated.
   1. Mounting: Twist-lock base interchangeable with smoke-detector bases.
   2. Integral Addressable Module: Arranged to communicate detector status (normal, alarm, or trouble) to fire-alarm control panel.

C. Heat Detector, Fixed-Temperature Type: Actuated by temperature that exceeds a fixed temperature of 190 deg F.
   1. Mounting: Twist-lock base interchangeable with smoke-detector bases.
   2. Integral Addressable Module: Arranged to communicate detector status (normal, alarm, or trouble) to fire-alarm control panel.

D. Provide a Remote Status and Alarm Indicator accessory for each heat detector that is not readily visible from normal viewing position.

2.6 NOTIFICATION APPLIANCES

A. General Requirements for Notification Appliances: Connected to notification appliance signal circuits, with screw terminals for system connections, and shall be mounted on recessed outlet box. If indicated as surface mounted, provide manufacturer's surface back box.
   1. Combination Devices: Factory-integrated audible and visible devices in a single-mounting assembly, equipped for mounting as indicated and with screw terminals for system connections.
   2. Mounting Faceplate: Factory finished, White with Red “FIRE” label.

B. Horns: Electric-vibrating-polarized type, 24-V dc; with provision for housing the operating mechanism behind a grille. Comply with UL 464. Horns shall produce a sound-pressure level of 90 dBA, measured 10 feet from the horn, using the coded signal prescribed in UL 464 test protocol.

C. Visible Notification Appliances: Xenon strobe lights comply with UL 1971, with clear or nominal white polycarbonate lens mounted on faceplate.
   1. Rated Light Output: Multi-candela (selectable to 15, 30, 75, 110 cd, unless indicated otherwise) or fixed-candela with rating of 177cd where indicated on Drawings.
   2. Flashing shall be in a temporal pattern, synchronized with other units.

D. Voice/Alarm/Visible Notification Appliances:
   1. Appliances shall comply with UL 1480 and shall be listed and labeled by an NRTL.
   2. Xenon strobe lights comply with UL 1971, with clear or nominal white polycarbonate lens mounted on faceplate.

E. Voice/Alarm Notification Appliances:
   1. Appliances shall comply with UL 1480 and shall be listed and labeled by an NRTL.

F. Weatherproof Bells: Electric-vibrating, 24-V dc, under-dome type; with provision for housing operating mechanism behind bell. Bells shall produce a sound-pressure level of 94 dBA, measured 10 feet from bell. 10-inch size, unless otherwise indicated.

2.7 NOTIFICATION APPLIANCE CIRCUIT POWER SUPPLY UNITS

A. General Requirements for Notification Appliance Circuit Power Supply Unit:
   1. Power-limited design, complying with UL 864 and listed and labeled by an NRTL.

2.8 REMOTE ANNUNCIATOR

A. Description: Annunciator functions shall match those of fire-alarm control panel for alarm, supervisory, and trouble indications. Manual switching functions shall match those of fire-alarm control panel, including acknowledging, silencing, resetting, and testing. Annunciator shall also include a voice/alarm communications microphone station.
   1. Mounting: Flush cabinet, NEMA 250, Type 1.

2.9 GRAPHIC MAP

A. Graphic Map Type and Functional Performance:

1. Graphic Map: Provide a graphic map at each location with floor plan graphic oriented to depict and match building orientation when standing in front of the graphic map at each individual location.
   a. Floor plan of each level with room numbers.
   b. Location of fire-alarm control panel and remote annunciators at each graphic map shall be shown in red, with "YOU ARE HERE" printed in red indicating the applicable control device at each respective graphic map location.
   c. Initiating devices and addressable devices, including device addresses.
   d. Fire Alarm System Vendor Company name and telephone number.
   e. Third Party Monitoring Service Company name and telephone number.
   f. Identification of Main Electrical Room in red text.

2.10 ADDRESSABLE INTERFACE DEVICE

A. Description: Microelectronic monitor module, NRTL listed for use in providing a system address for alarm-initiating devices for wired applications with normally open contacts.

B. Integral Relay: Capable of providing a direct signal to the following:
   1. Circuit-breaker shunt trip for power shutdown.
   2. Heating, ventilating, and air-conditioning equipment controllers for power shutdown.
   3. Gas and fuel solenoid valves for emergency shut-off.

C. Voltage Sensing Relay: Capable of detecting presence of 120 V ac for supervision of control power for shunt-trip circuit breakers.

2.11 DIGITAL ALARM COMMUNICATOR TRANSMITTER

A. Digital alarm communicator transmitter shall be acceptable to the remote central station and shall comply with UL 632 and be listed and labeled by an NRTL, and comply with NFPA 72, 2016 edition.

B. Dual-Path Communicator: Primary transmission channel for dedicated telephone line connection and Secondary transmission channel for Internet Protocol (IP) communication, and shall comply with UL 864 and be listed and labeled by an NRTL, and comply with NFPA 72, 2016 edition.

C. Functional Performance: Unit shall receive an alarm, supervisory, or trouble signal from fire-alarm control panel and automatically capture one telephone line and dial a preset number for a remote central station. A secondary transmission channel via IP communicator shall also be employed. When contact is made with central station, signals shall be transmitted. If service on either channel is interrupted for longer than 45 seconds, transmitter shall initiate a local trouble signal and transmit the signal indicating loss of channel to the remote alarm receiving station over the remaining channel within 4 minutes. Transmitter shall automatically report telephone service restoration to the central station.

2.12 PATHWAYS/SUPPORTS

A. Support of Open Cabling: NRTL labeled for support of Category 6 cabling, designed to prevent degradation of cable performance and pinch points that could damage cable.
   1. Support brackets with cable tie slots for fastening cable ties to brackets.
   2. Lacing bars, spools, J-hooks, and D-rings.
   3. Straps and other devices.
   4. Cable Ties.

B. Conduit and Boxes: Comply with requirements in Division 26.

2.13 FIRE ALARM WIRE AND CABLE

A. General Wire and Cable Requirements: NRTL listed and labeled as complying with NFPA 70, Article 760. NRTL-listed plenum cable in environmental air spaces, including plenum ceilings.

B. Signaling Line Circuits: Twisted, shielded pair, not less than No. 18 AWG.

C. Non-Power-Limited Circuits: Solid-copper conductors with 600-V rated, 75 deg C, color-coded insulation.
   1. Low-Voltage Circuits: No. 16 AWG, minimum.
   2. Line-Voltage Circuits: No. 12 AWG, minimum.
   3. Multiconductor Armored Cable: NFPA 70, Type MC, copper conductors, Type TFN/THHN conductor insulation, copper drain wire, copper armor with red identifier stripe, NTRL listed for fire alarm and cable tray installation, plenum rated, and complying with requirements in UL 2196 for a 2-hour rating.

PART 3 EXECUTION

3.1 FIRE ALARM WIRING INSTALLATION

A. Comply with NECA 1 and NFPA 72.

3.2 EQUIPMENT INSTALLATION

A. Comply with NECA 305.

B. Comply with NFPA 72 for installation of fire-alarm equipment.

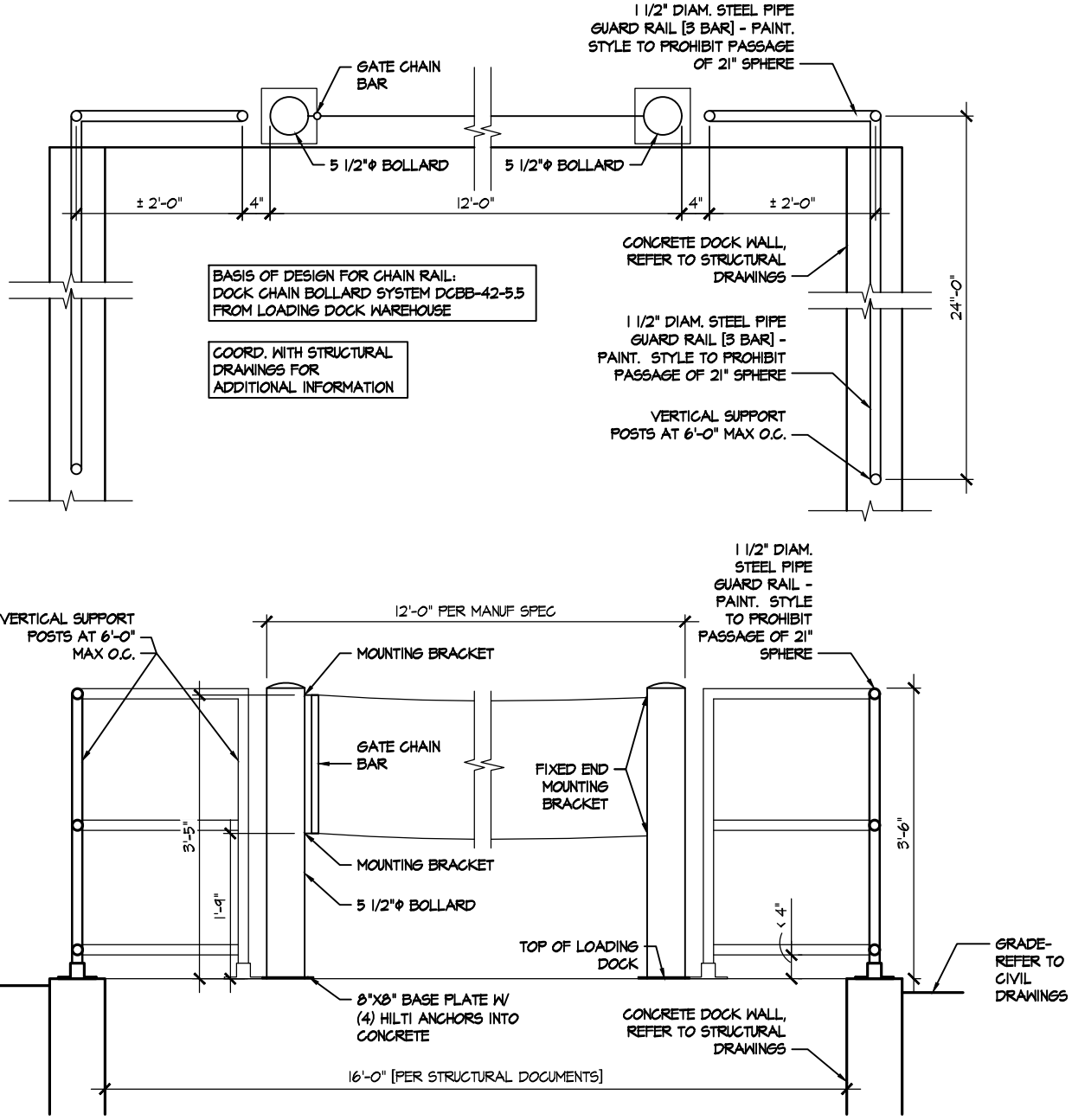
3.3 INTERFACE WITH OTHER PRODUCTS

A. Verify signal devices are installed and connected to fire alarm system.

3.4 DEMONSTRATION AND TRAINING

A. Engage a factory-authorized service representative to train maintenance personnel to adjust, operate, and maintain fire-alarm system.

END OF SECTION



B **DOCK RAIL/CHAIN**

SCALE: 1/2" = 1'-0"

Addition and Alterations to the:

Preble County Council on Aging Senior Center

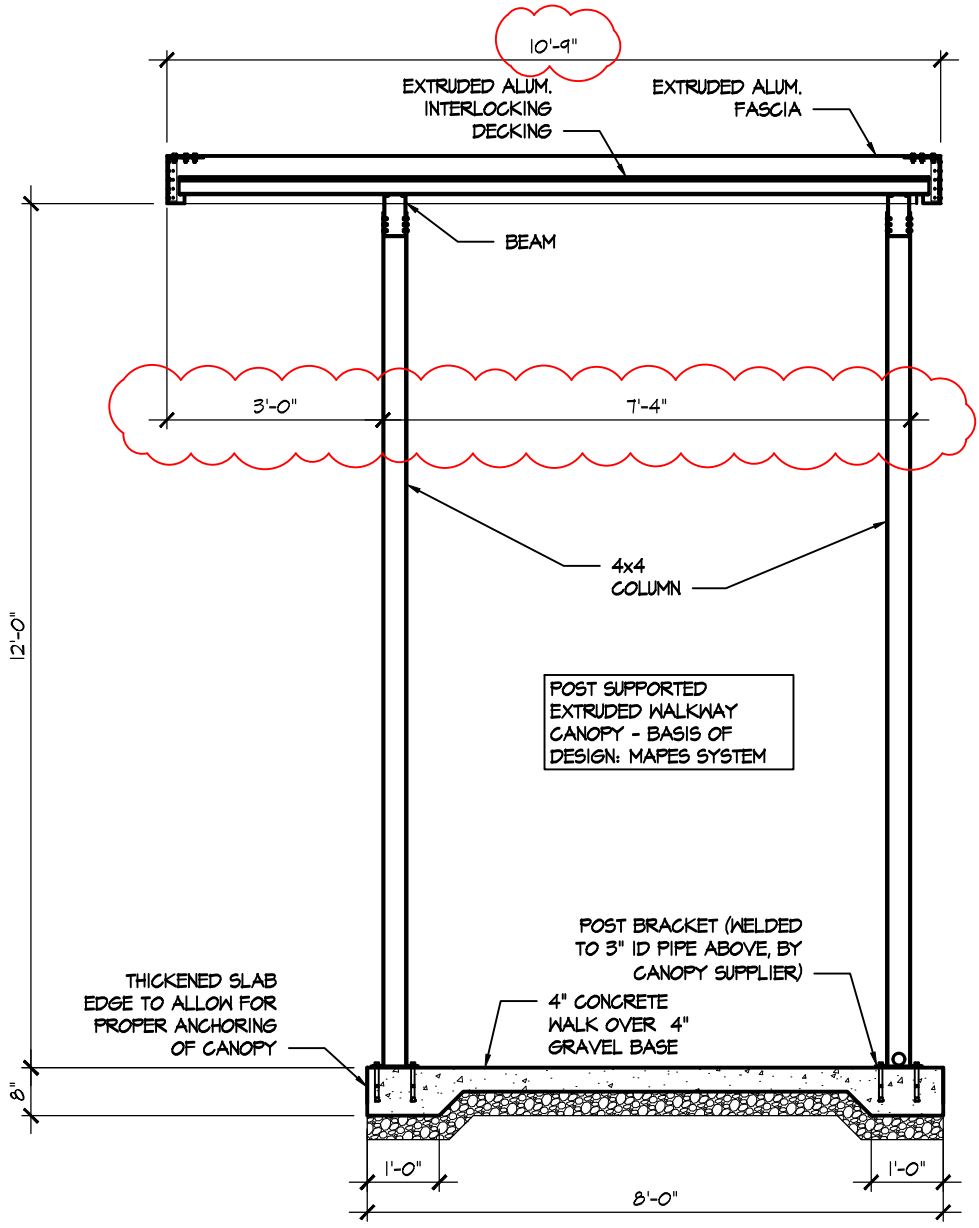
800 East St. Clair Street
Eaton, OH 454320

RDA GROUP ARCHITECTS LLC
7945 Washington Woods Drive
Dayton, Ohio 45459
O: 937.610.3440
F: 937.610.3441

Project Number: 2022-086
Date: January 24, 2023

STATE OF OHIO
JONATHAN ROBERT SCHAAF 14503
REGISTERED ARCHITECT

Jonathan Robert Schaaf #14503
Expiration Date 12/31/2023



E **COLUMN DETAIL**

SCALE: 3/8" = 1'-0" 0 6" 12" 24"

RDA GROUP ARCHITECTS LLC
7945 Washington Woods Drive
Dayton, Ohio 45459
O: 937.610.3440
F: 937.610.3441

Addition and Alterations to the:

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