ADDENDUM # 01 **May 3, 2024**

Project: Plumbing for CTE Welding

From: The Office of the Construction Manager – GCE Construction

This Addendum forms part of the Contract Documents. It supplements and modifies them as follows:

A. **Drawings – Revised: G000, C002, C100, C101, C200, C300, C400, L100, A001, A101, A102, A201, A202, A301, A401, A502, A601, A602, A603, A701, A901, S101, FP101, M101, M301, P102, P301, E101, E102, E103, E104, E201, E202, E203.**

B. **Specifications –** 33 11 00 Water Distribution.

PART 1 GENERAL

1.01 SUMMARY

A. This Section includes water-distribution piping and specialties outside the building for the following:
1. Water services.
2. Combined water service and fire-service mains.
3. Utility-furnished products include water meters that will be furnished to the site, ready for installation.

1.02 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.03 DEFINITIONS

A. Combined Water Service and Fire-Service Main: Exterior water piping for both domestic-water and fire-suppression piping.

B. Water Service: Exterior domestic-water piping

C. PVC: Polyvinyl chloride plastic

D. DIP: Ductile Iron Pipe

1.04 SUBMITTALS

A. Product Data: For the following:
1. Piping materials and fittings.
2. Piping specialties.
3. Valves and accessories.
4. Water meters and accessories.
5. Backflow preventers and assemblies.
6. Protective enclosures.
7. Fire hydrants.
8. Flushing hydrants.
9. Post hydrants.

B. Shop drawings for precast concrete vaults, including frames and covers, ladders, and drains.

C. Shop drawings for power, signal, and control wiring diagrams.

D. Coordination Drawings: For piping and specialties including relation to other services in same area. Show piping and specialty sizes and valves, meter and specialty locations, and elevations.

E. Field Quality-Control Test Reports.

F. Operation and Maintenance Data: For specialties to include in emergency, operation, and maintenance manuals. In addition to items specified in Division 1 Section 013300,"Submittals" include the following:
1. Water meters.
2. Valves.
3. Backflow preventers.
4. Protective enclosures.
5. Fire hydrants.
6. Flushing hydrants.
7. Post hydrants.

1.05 QUALITY ASSURANCE

A. Product Options: Drawings indicate sizes, profiles, and dimensional requirements of piping and specialties and are based on specific system indicated.

B. Regulatory Requirements:
1. Comply with requirements of utility company supplying water. Include tapping of water mains and backflow prevention.
2. Comply with standards of authorities having jurisdiction for potable-water-service piping, including materials, installation, testing, and disinfection.
3. Comply with standards of authorities having jurisdiction for fire-suppression water-service piping, including materials, hose threads, installation, and testing.

C. Piping materials shall bear label, stamp, or other markings of specified testing agency.

D. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

E. Comply with ASTM F 645 for selection, design, and installation of thermoplastic water piping.

F. Comply with FM's "Approval Guide" or UL's "Fire Protection Equipment Directory" for fire-service-main products.

G. Comply with NFPA 24 for materials, installations, tests, flushing, and valve and hydrant supervision for fire-service-main piping for fire suppression. Comply with NSF 14 for plastic potable-water-service piping. Include marking "NSF-pw" on piping. Comply with NSF 61 for materials for water-service piping and specialties for domestic water.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Preparation for Transport: Prepare valves, including fire hydrants, according to the following:
1. Ensure that valves are dry and internally protected against rust and corrosion.
2. Protect valves against damage to threaded ends and flange faces.
3. Set valves in best position for handling. Set valves closed to prevent rattling.

B. During Storage: Use precautions for valves, including fire hydrants, according to the following:
1. Do not remove end protectors unless necessary for inspection; then reinstall for storage.
2. Protect from weather. Store indoors and maintain temperature higher than ambient dew-point temperature. Support off the ground or pavement in watertight enclosures when outdoor storage is necessary.

C. Handling: Use sling to handle valves and fire hydrants if size requires handling by crane or lift. Rig valves to avoid damage to exposed parts. Do not use handwheels or stems as lifting or rigging points.

D. Deliver piping with factory-applied end caps. Maintain end caps through shipping, storage, and handling to prevent pipe-end damage and to prevent entrance of dirt, debris, and moisture.

E. Protect stored piping from moisture and dirt. Elevate above grade. Do not exceed structural capacity of floor when storing inside.

F. Protect flanges, fittings, and specialties from moisture and dirt.

G. Store plastic piping protected from direct sunlight. Support to prevent sagging and bending.

1.07 PROJECT CONDITIONS

A. Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
   1. Notify Architect not less than two days in advance of proposed utility interruptions.
   2. Do not proceed with utility interruptions without Architect's written permission.

1.08 COORDINATION

A. Coordinate connection to water main with utility company.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. In other Part 2 articles where subparagraph titles below introduce lists, the following requirements apply for product selection:
   1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the products specified.
   2. Products: Subject to compliance with requirements, provide one of the products specified.
   3. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the manufacturers specified.
   4. Manufacturers: Subject to compliance with requirements, provide products by the manufacturers specified.

2.02 DUCTILE-IRON PIPE AND FITTINGS

A. Push-on-Joint, Ductile-Iron Pipe: AWWA C151, with push-on-joint, bell- and plain-spigot end unless grooved or flanged ends are indicated.

B. Push-on-Joint, Ductile-Iron Fittings: AWWA C153, ductile-iron compact pattern.

C. Gaskets: AWWA C111, rubber.

D. Ductile-Iron Expansion Joints: Three-piece, ductile-iron assembly consisting of telescoping sleeve with gaskets and restrained-type, ductile-iron, bell-and-spigot end sections complying with AWWA C110 or AWWA C153. Select and assemble components for expansion indicated. Include AWWA C111, ductile-iron glands, rubber gaskets, and steel bolts.

2.03 COPPER TUBE AND FITTINGS

A. Soft Copper Tube: ASTM B 88, Type K (ASTM B 88M, Type A), water tube, annealed temper.

B. Copper Fittings: ASME B16.22, wrought-copper, solder-joint pressure type. Furnish only wrought-copper fittings.

C. Bronze Flanges: ASME B16.24, Class 150, with solder-joint end. Furnish Class 300 flanges if required to match piping.

D. Copper Unions: MSS SP-123, cast-copper-alloy, hexagonal-stock body with ball-and-socket, metal-to-metal seating surfaces, and solder-joint or threaded ends.

2.04 PVC PIPE AND FITTINGS

A. PVC, Schedule 40 Pipe: ASTM D 1785. Socket Fittings: ASTM D 2466.

B. PVC, AWWA Pipe: AWWA C900, Class 200, with bell end with gasket, and with spigot end.
   1. Comply with UL 1285 for fire-service mains if indicated.
   2. Push-on-Joint, Ductile-Iron Fittings: AWWA C110, ductile- or gray-iron standard pattern or AWWA C153, ductile-iron compact pattern.
   3. Gaskets: AWWA C111, rubber.
   4. Mechanical-Joint, Ductile-Iron Fittings: AWWA C110, ductile- or gray-iron standard pattern or AWWA C153, ductile-iron compact pattern.

2.05 JOINING MATERIALS

A. Refer to Division 2 Section "Utility Materials" for commonly used joining materials.

B. Transition Couplings:
   1. Underground Piping, NPS 1-1/2 (DN 40) and Smaller: Manufactured fitting or coupling same size as, with pressure rating at least equal to and ends compatible with, piping to be joined.
   2. Underground Piping, NPS 2 (DN 50) and Larger: AWWA C219, metal, sleeve-type coupling same size as, with pressure rating at least equal to and ends compatible with, piping to be joined.
   3. Aboveground or Vault Piping: Pipe fitting same size as, with pressure rating at least equal to and ends compatible with, piping to be joined.

C. Brazing Filler Metals: AWS A5.8, BCuP Series.

D. Soldering Flux: ASTM B 813, water-flushable type.

E. Solder Filler Metal: ASTM B 32, lead-free type with 0.20 percent maximum lead content.

F. Plastic Pipe-Flange Gasket, Bolts, and Nuts: Type and material recommended by piping system manufacturer, unless otherwise indicated.

2.06 JOINING MATERIALS

A. Refer to Division 2 Section "Utility Materials" for commonly used joining materials.

B. Transition Couplings:
   1. Underground Piping, NPS 1-1/2 (DN 40) and Smaller: Manufactured fitting or coupling same size as, with pressure rating at least equal to and ends compatible with, piping to be joined.
   2. Underground Piping, NPS 2 (DN 50) and Larger: AWWA C219, metal, sleeve-type coupling same size as, with pressure rating at least equal to and ends compatible with, piping to be joined.
   3. Aboveground or Vault Piping: Pipe fitting same size as, with pressure rating at least equal to and ends compatible with, piping to be joined.

C. Brazing Filler Metals: AWS A5.8, BCuP Series.

D. Soldering Flux: ASTM B 813, water-flushable type.

E. Solder Filler Metal: ASTM B 32, lead-free type with 0.20 percent maximum lead content.

F. Plastic Pipe-Flange Gasket, Bolts, and Nuts: Type and material recommended by piping system manufacturer, unless otherwise indicated.

2.07 PIPING SPECIALTIES

A. Flexible Connectors:
   1. Nonferrous-Metal Piping: Bronze hose covered with bronze wire braid; with copper-tube, pressure-type, solder-joint ends or bronze flanged ends brazed to hose.
   2. Ferrous Piping: Stainless-steel hose covered with stainless-steel wire braid; with ASME B1.20.1, threaded steel pipe nipples or ASME B16.5, steel pipe flanges welded to hose.

B. Transition Fittings: Manufactured fitting or coupling same size as, with pressure rating at least equal to and ends compatible with, piping to be joined.

C. Tubular-Sleeve Pipe Couplings:
1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   a. Cascade Waterworks Manufacturing.
   b. Dresser, Inc.; Dresser Piping Specialties.
   c. Ford Meter Box Company, Inc. (The); Pipe Products Div.
   d. Hays Fluid Controls; a division of ROMAC Industries Inc.
   e. JCM Industries.
   f. Smith-Blair, Inc.
   g. Viking Johnson.
2. Description: Metal, bolted, sleeve-type, reducing or transition coupling, with center sleeve, gaskets, end rings, and bolt fasteners and with ends of same sizes as piping to be joined.
   a. Standard: AWWA C219.
   b. Center-Sleeve Material: Manufacturer's standard.
   c. Gasket Material: Natural or synthetic rubber.
   d. Pressure Rating: 200 psig (1380 kPa) minimum.
   e. Metal Component Finish: Corrosion-resistant coating or material.

D. Split-Sleeve Pipe Couplings:
1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   a. Victaulic Depend-O-Lok.
2. Description: Metal, bolted, split-sleeve-type, reducing or transition coupling with sealing pad and closure plates, O-ring gaskets, and bolt fasteners.
   a. Standard: AWWA C219.
   b. Sleeve Material: Manufacturer's standard.
   c. Sleeve Dimensions: Of thickness and width required to provide pressure rating.
   d. Gasket Material: O-rings made of EPDM rubber, unless otherwise indicated.
   e. Pressure Rating: 200 psig (1380 kPa) minimum.
   f. Metal Component Finish: Corrosion-resistant coating or material.

E. Dielectric Fittings:
1. Assembly of copper alloy and ferrous materials with separating nonconductive insulating material. Include end connections compatible with pipes to be joined.
2. Dielectric Unions:
   a. Standard: ASSE 1079.
   b. Pressure Rating: 250 psig (1725 kPa).
   c. End Connections: Solder-joint copper alloy and threaded ferrous.
3. Dielectric Flanges:
   a. Standard: ASSE 1079.
   b. Factory-fabricated, bolted, companion-flange assembly.
   c. Pressure Rating: 300 psig (2070 kPa).
   d. End Connections: Solder-joint copper alloy and threaded ferrous; threaded solder-joint copper alloy and threaded ferrous.
4. Dielectric-Flange Insulating Kits:
   a. Nonconducting materials for field assembly of companion flanges.
   b. Pressure Rating: 150 psig (1035 kPa).
   c. Gasket: Neoprene or phenolic.
   d. Bolt Sleeves: Phenolic or polyethylene.
   e. Washers: Phenolic with steel backing washers.
5. Dielectric Nipples:
   a. Standard: IAPMO PS 66
   b. Electroplated steel nipple. complying with ASTM F 1545.

c. Pressure Rating: 300 psig (2070 kPa) at 225 deg F (107 deg C).
d. End Connections: Male threaded or grooved.
e. Lining: Inert and noncorrosive, propylene.

2.08 CORROSION-PROTECTION ENCASEMENT FOR PIPING

A. Encasement for Underground Metal Piping: ASTM A 674 or AWWA C105, PE film, 0.008-inch (0.20-mm) minimum thickness, tube or sheet.

2.09 CAST IRON GATE VALVES

A. Available Manufacturers:
1. American AVK Co.; Valves & Fittings Div.
2. American Cast Iron Pipe Co.; American Flow Control Div.
3. American Cast Iron Pipe Co.; Waterous Co. Subsidiary.
4. Crane Co.; Crane Valve Group; Stockham Div.
5. East Jordan Iron Works, Inc.
6. Grinnell Corporation; Mueller Co.; Water Products Div.
7. McWane, Inc.; Clow Valve Co. Div. (Oskaloosa).
8. McWane, Inc.; Kennedy Valve Div.
9. McWane, Inc.; Tyler Pipe; Utilities Div.
10. NIBCO INC.
11. United States Pipe and Foundry Company.

B. Nonrising-Stem, Resilient-Seated Gate Valves: AWWA C509, gray- or ductile-iron body and bonnet; with bronze or gray- or ductile-iron gate, resilient seats, bronze stem, and stem nut.
1. Minimum Working Pressure: 200 psig (1380 kPa).
2. End Connections: Mechanical joint.
3. Interior Coating: Complying with AWWA C550.

C. OS&Y, Rising-Stem, Resilient-Seated Gate Valves: Cast- or ductile-iron body and bonnet, with bronze or gray- or ductile-iron gate, resilient seats, and bronze stem.
1. Standard: AWWA C509.
2. Minimum Pressure Rating: 200 psig (1380 kPa).
3. End Connections: Flanged.

2.10 GATE VALVE ACCESSORIES AND SPECIALTIES

A. Tapping-Sleeve Assemblies: Comply with MSS SP-60. Include sleeve and valve compatible with drilling machine.
1. Available Manufacturers:
a. American Cast Iron Pipe Co.; Waterous Co. Subsidiary.
b. East Jordan Iron Works, Inc.
c. Grinnell Corporation; Mueller Co.; Water Products Div.
d. International Piping Services Company.
e. McWane, Inc.; Clow Valve Co. Div. (Oskaloosa).
f. McWane, Inc.; Kennedy Valve Div.
g. McWane, Inc.; M & H Valve Company Div.
h. United States Pipe and Foundry Company.
2. Tapping Sleeve: Ductile-iron two-piece bolted sleeve with flanged outlet for new branch connection. Include sleeve matching size and type of pipe material being tapped and with recessed flange for branch valve.
3. Valve: AWWA, cast-iron, nonrising-stem, resilient-seated gate valve with one raised face flange mating tapping-sleeve flange.

B. Valve Boxes: Comply with AWWA M44 for cast-iron valve boxes. Include top section, adjustable extension of length required for depth of burial of valve, plug with lettering "WATER," bottom section with base of size to fit over valve, and approximately 5-inch- (125-mm-) diameter barrel.
   1. Operating Wrenches: Steel, tee-handle with one pointed end, stem of length to operate deepest buried valve, and socket matching valve operating nut.

2.11 CORPORATION VALVES AND CURB VALVES

A. Available Manufacturers:
   1. Amcast Industrial Corporation; Lee Brass Co.
   2. Ford Meter Box Company, Inc. (The).
   3. Grinnell Corporation; Mueller Co.; Water Products Div.
   4. Jones, James Company.
   5. Master Meter, Inc.
   6. McDonald, A. Y. Mfg. Co.
   7. Red Hed Manufacturing Co.

B. Service-Saddle Assemblies: Comply with AWWA C800. Include saddle and valve compatible with tapping machine.
   1. Service Saddle: Copper alloy with seal and AWWA C800, threaded outlet for corporation valve.
   2. Corporation Valve: Bronze body and ground-key plug, with AWWA C800, threaded inlet and outlet matching service piping material.
   3. Manifold: Copper fitting with two to four inlets as required, with ends matching corporation valves and outlet matching service piping material.

2.12 WATER METERS

A. Water meters will be furnished by utility company.

B. Description: AWWA C700, displacement-type, bronze main case. Register flow in gallons unless cubic feet are indicated.

2.13 WATER-METER BOXES

A. Description: Cast-iron body and cover for disc-type water meter with lettering "WATER METER" in cover; and slotted, open-bottom base section of length to fit over service piping.
   1. Option: Base section may be cast-iron, PVC, clay, or other pipe.

B. Description: For traffic areas - Polymer-concrete body and cover for disc-type water meter with lettering "WATER" in cover; and slotted, open-bottom base section of length to fit over service piping. Include vertical and lateral design loadings of 15,000 lb. minimum over 10 by 10 inches (6800 kg minimum over 254 by 254 mm) square.

2.14 BACKFLOW PREVENTERS

A. Reduced-Pressure-Principle Backflow Preventers:
   1. Basis-of-Design Product: Subject to compliance with requirements, provide the product indicated on Drawings or a comparable product by one of the following:
      a. Ames Fire & Waterworks; a division of Watts Regulator Co.
      b. Conbraco Industries, Inc.
      c. FEBCO; SPX Valves & Controls.
      d. Flomatic Corporation.
      e. Watts Water Technologies, Inc.
      f. Wilkins; a Zurn company.
   2. Standard: AWWA C511.
   3. Operation: Continuous-pressure applications.
   4. Pressure Loss: 12 psig (83 kPa) maximum, through middle 1/3 of flow range.

5. Size: Per utility plan.
6. Body: Bronze for NPS 2 (DN 50) and smaller; cast iron with interior lining complying with AWWA C550 or that is FDA approved stainless steel for NPS 2-1/2 (DN 65) and larger.
7. End Connections: Threaded for NPS 2 (DN 50) and smaller; flanged for NPS 2-1/2 (DN 65) and larger.
8. Configuration: Designed for vertical inlet, horizontal center section, and vertical outlet flow.
9. Accessories: Ball type with threaded ends on inlet and outlet of NPS 2 (DN 50) and smaller; OS&Y gate type with flanged ends on inlet and outlet of NPS 2-1/2 (DN 65) and larger. Air-Gap Fitting: ASME A112.1.2, matching backflow preventer connection.

B. Double-Check, Backflow-Prevention Assemblies:
1. Basis-of-Design Product: Subject to compliance with requirements, provide the product indicated on Drawings or a comparable product by one of the following:
   a. Ames Fire & Waterworks; a division of Watts Regulator Co.
   b. Conbraco Industries, Inc.
   c. FEBCO; SPX Valves & Controls.
   d. Flomatic Corporation.
   e. Watts Water Technologies, Inc.
   f. Wilkins; a Zurn company.
2. Standard: AWWA C510.
3. Operation: Continuous-pressure applications, unless otherwise indicated.
4. Pressure Loss: 5 psig (35 kPa) maximum, through middle 1/3 of flow range.
5. Size: Per utility plan.
6. Body: Bronze for NPS 2 (DN 50) and smaller; cast iron with interior lining complying with AWWA C550 or that is FDA approved stainless steel for NPS 2-1/2 (DN 65) and larger.
7. End Connections: Threaded for NPS 2 (DN 50) and smaller; flanged for NPS 2-1/2 (DN 65) and larger.
8. Configuration: Designed for horizontal, straight through flow.
9. Accessories: Ball valves with threaded ends on inlet and outlet of NPS 2 (DN 50) and smaller; OS&Y gate valves with flanged ends on inlet and outlet of NPS 2-1/2 (DN 65) and larger.
10. Backflow Preventer Test Kits: Factory calibrated, with gages, fittings, hoses, and carrying case with test-procedure instructions. Subject to compliance with requirements, provide the product indicated on Drawings or a comparable product by one of the following:
    a. Conbraco Industries, Inc.
    b. FEBCO; SPX Valves & Controls.
    c. Flomatic Corporation.
    d. Watts Water Technologies, Inc.
    e. Wilkins; a Zurn company.

2.15 CONCRETE VAULTS

A. Description: Precast, reinforced-concrete vault, designed for A-16 load designation according to ASTM C 857 and made according to ASTM C 858.

B. Ladder: ASTM A 36/A 36M, steel or polyethylene-encased steel steps.

C. Manhole: ASTM A 48, Class No.35 (ASTM A48M, Class No.250) minimum tensile strength, gray-iron traffic frame and cover, 24-inch (610-mm) diameter or greater, unless otherwise indicated.

D. Drain: ASME A112.21.1M, cast-iron floor drain with outlet of size indicated. Include body anchor flange, light-duty cast-iron grate, bottom outlet, and integral or field-installed clapper-type backwater valve.

2.16 PROTECTIVE ENCLOSURES

A. Available Manufacturers:
1. G&C Enclosures, Inc.
2. Hot Box, Inc.

3. HydroCowl, Inc.
4. Watts Industries, Inc.; Water Products Div.

B. Freeze-Protection Enclosures: Insulated and with heat source to maintain minimum internal temperature of 40° F (4° C) when external temperatures reach as low as -34° F (-36° C).
1. Class I: For equipment or devices other than pressure or atmospheric vacuum breakers.
2. Class I-V: For pressure or atmospheric vacuum breaker equipment or devices. Include drain opening in housing.
   a. Housing: Reinforced -fiberglass construction.
      i. Drain opening for units with drain connection.
      ii. Access doors with locking devices.
      iii. Insulation inside housing.
      iv. Anchoring devices for attaching housing to concrete base.
3. Electric heating cable or heater with self-limiting temperature control.

C. Precast concrete base of dimensions required to extend at least 6 inches (150 mm) beyond edges of enclosure housings. Include openings for piping.

2.17 FREESTANDING FIRE HYDRANTS

A. Dry-Barrel, High-Pressure Fire Hydrants: AWWA C502, one NPS 4-1/2 (DN 115) and two NPS 2-1/2 (DN 65) outlets, 5-1/4 inch (133 mm) main valve, drain valve, and NPS 6 (DN 150) mechanical-joint inlet. Include interior coating according to AWWA C550. Hydrant shall have cast-iron body, compression-type valve opening against pressure and closing with pressure, and 250-psig (1725-kPa) minimum working-pressure design.
1. Available Manufacturers:
   a. American AVK Co.; Valves & Fittings Div.
   b. American Cast Iron Pipe Co.; American Flow Control Div.
   c. American Cast Iron Pipe Co.; Waterous Co. Subsidiary.
   d. American Foundry Group, Inc.
   e. East Jordan Iron Works, Inc.
   f. Grinnell Corporation; Mueller Co.; Water Products Div.
   g. McWane, Inc.; Clow Valve Co. Div. (Oskaloosa).
   h. McWane, Inc.; Kennedy Valve Div.
   i. McWane, Inc.; M & H Valve Company Div.
   j. Troy Valve.
   k. United States Pipe and Foundry Company.
2. Outlet Threads: NFPA 1963, with external hose thread used by local fire department. Include cast-iron caps with steel chains.
3. Operating and Cap Nuts: Pentagon, 1-1/2 inches (40 mm) point to flat.
4. Operation: Open hydrant valve by turning operating nut to left or counterclockwise.
5. Exterior Finish: Red alkyd-gloss enamel paint, unless otherwise indicated. Verify color requirements with jurisdiction having authority.

2.18 FIRE DEPARTMENT CONNECTIONS

A. Fire Department Connections:
1. Basis-of-Design Product: Subject to compliance with requirements, provide the product indicated on Drawings or a comparable product by one of the following:
   a. Elkhart Brass Mfg. Co., Inc.
   b. Fire End & Croker Corporation.
   c. Guardian Fire Equipment, Inc.
   d. Kidde Fire Fighting.
   e. Potter Roemer.
   f. Reliable Automatic Sprinkler Co., Inc.
2. Description: Freestanding, with cast-bronze body, thread inlets according to NFPA 1963 and matching local fire department hose threads, and threaded bottom outlet. Include lugged caps,

gaskets, and chains; lugged swivel connection and drop clapper for each hose-connection inlet; 18-inch- (460-mm-) high brass sleeve; and round escutcheon plate.
a. Standard: UL 405.
b. Connections: Two NPS 2-1/2 (DN 65) inlets and one NPS 4 (DN 100) outlet.
c. Inlet Alignment: Inline, horizontal.
d. Finish Including Sleeve: Polished bronze.
e. Escutcheon Plate Marking: "AUTO SPKR."

2.19 ALARM DEVICES

A. Alarm Devices, General: UL 753 and FMG approved, of types and sizes to mate and match piping and equipment.

B. Supervisory Switches: Single pole, double throw; designed to signal valve in other than fully open position.

PART 3 EXECUTION

3.01 EARTHWORK

A. Refer to Division 31 Section for excavating, trenching, and backfilling.

3.02 PIPING APPLICATIONS

A. General: Use pipe, fittings, and joining methods for piping systems according to the following applications.

B. Transition couplings and special fittings with pressure ratings at least equal to piping pressure rating may be used in applications below, unless otherwise indicated.

C. Do not use flanges, unions, or keyed couplings for underground piping.

D. Flanges, unions, keyed couplings, and special fittings may be used, instead of joints indicated, on aboveground piping and piping in vaults.

E. Underground Water-Service Piping NPS ¾ to NPS 3. Use the following piping materials for each size range unless otherwise indicated on the drawings:
1. Soft copper tube, ASTM B 88, Type K (ASTM B 88M, Type A); wrought-copper, solder-joint fittings; and brazed joints; or
2. PVC, Schedule 40 pipe; PVC, Schedule 40 socket fittings; and solvent-cemented joints.

F. Underground water-service piping NPS 4 to NPS 8. Use the following piping materials for each size range unless otherwise indicated on the drawings:
1. Ductile-iron, push-on-joint pipe; ductile-iron, push-on-joint fittings; and gasketed mechanical-joint pipe; ductile-iron, mechanical-joint fittings; and mechanical joints; or
2. PVC, AWWA Class 200 pipe; mechanical-joint, ductile-iron fittings; and gasketed joints.

G. Water Meter Box Water-Service Piping NPS 3/4 to NPS 3 shall be same as underground water-service piping.

H. Underground Fire-Service-Main Piping NPS 4 to NPS 12. Use the following piping materials for each size range unless otherwise indicated on the drawings:
1. Ductile-iron, push-on-joint pipe; ductile-iron, push-on-joint fittings; and gasketed mechanical-joint pipe; ductile-iron, mechanical-joint fittings; and mechanical joints; or
2. PVC, AWWA Class 200 pipe listed for fire-protection service; mechanical-joint, ductile-iron fittings; and gasketed joints.

I. Underground Combined Water-Service and Fire-Service-Main Piping NPS 6 to NPS 12. Use the following piping materials for each size range unless otherwise indicated on the drawings:
   1. Ductile-iron, push-on-joint pipe; ductile-iron, push-on-joint fittings; and gasketed mechanical-joint pipe; ductile-iron, mechanical-joint fittings; and mechanical joints.
   2. PVC, AWWA Class 200 pipe listed for fire-protection service; mechanical-joint, ductile-iron fittings; and gasketed joints.

3.03 VALVE APPLICATIONS

A. General Application: Use mechanical-joint-end valves for NPS 3 (DN 80) and larger underground installation. Use flanged-end valves for installation in vaults. Use UL/FM, nonrising-stem gate valves for installation with indicator posts. Use corporation valves and curb valves with ends compatible with piping, for NPS 2 (DN 50) and smaller installation.

B. Drawings indicate valve types to be used. Where specific valve types are not indicated, the following requirements apply:
   1. Underground Valves, NPS 3 (DN 80) and Larger: AWWA, cast-iron, nonrising-stem, resilient seated gate valves with valve box.

3.04 JOINT CONSTRUCTION

A. Make pipe joints according to the following:
   1. Ductile-Iron Piping, Gasketed Joints for Water-Service Piping: AWWA C600 and AWWA M41.
   2. Ductile-Iron Piping, Gasketed Joints for Fire-Service-Main Piping: UL 194.
   3. Copper Tubing Soldered Joints: ASTM B 828. Use flushable flux and lead-free solder.
   4. PVC Piping Gasketed Joints: Use joining materials according to AWWA C900. Construct joints with elastomeric seals and lubricant according to ASTM D 2774 or ASTM D 3139 and pipe manufacturer's written instructions.
   5. Dissimilar Materials Piping Joints: Use adapters compatible with both piping materials, with OD, and with system working pressure. Refer to Division 2 Section "Utility Materials" for joining piping of dissimilar metals.

3.05 PIPING INSTALLATION

A. Water-Main Connection: Arrange with utility company for tap of size and in location indicated in water main.

B. Water-Main Connection: Tap water main according to requirements of water utility company and of size and in location indicated.

C. Make connections larger than NPS 2 (DN 50) with tapping machine according to the following:
   1. Install tapping sleeve and tapping valve according to MSS SP-60.
   2. Install tapping sleeve on pipe to be tapped. Position flanged outlet for gate valve.
   3. Use tapping machine compatible with valve and tapping sleeve; cut hole in main. Remove tapping machine and connect water-service piping.
   4. Install gate valve onto tapping sleeve. Comply with MSS SP-60. Install valve with stem pointing up and with valve box.

D. Make connections NPS 2 (DN 50) and smaller with drilling machine according to the following:
   1. Install service-saddle assemblies and corporation valves in size, quantity, and arrangement required by utility company standards.
   2. Install service-saddle assemblies on water-service pipe to be tapped. Position outlets for corporation valves.
   3. Use drilling machine compatible with service-saddle assemblies and corporation valves. Drill hole in main. Remove drilling machine and connect water-service piping.
   4. Install corporation valves into service-saddle assemblies.
   5. Install manifold for multiple taps in water main.

6. Install curb valve in water-service piping with head pointing up and with service box.

E. Comply with NFPA 24 for fire-service-main piping materials and installation.
1. Install PE corrosion-protection encasement according to ASTM A 674 or AWWA C105.

F. Install ductile-iron, water-service piping according to AWWA C600 and AWWA M41.
1. Install PE corrosion-protection encasement according to ASTM A 674 or AWWA C105.

G. Install copper tube and fittings according to CDA's "Copper Tube Handbook."

H. Install PVC, AWWA pipe according to AWWA M23 and ASTM F 645.

I. Unless otherwise indicated on drawings, bury piping with depth of cover over top at least 36 inches, with top at least 12 inches below level of maximum frost penetration, and according to the following:
1. Under Driveways and Roads: With at least 36 inches cover over top.
2. Under Railroad Tracks: With at least 48 inches cover over top.
3. In Loose Gravelly Soil and Rock: With at least 12 inches additional cover.
4. Under Roads: With at least 36 inches cover over top.

J. Install piping by tunneling, jacking, or combination of both, under streets and other obstructions that cannot be disturbed.

K. Extend water-service piping and connect to water-supply source and building water piping systems at outside face of building wall in locations and pipe sizes indicated.
1. Terminate water-service piping at building wall until building water piping systems are installed. Terminate piping with caps, plugs, or flanges as required for piping material. Make connections to building water piping systems when those systems are installed.

L. Sleeves and mechanical sleeve seals are specified elsewhere.

M. Install underground piping with restrained joints at horizontal and vertical changes in direction. Use restrained-joint piping, thrust blocks, anchors, tie-rods and clamps, and other supports.

N. Anchor service-entry piping to building wall.

O. See Division 22 sections for potable-water piping inside the building.

P. See Division 21 sections for fire-suppression water piping inside the building.

Q. Install water-supply piping with shutoff valve in water supply to each and any post hydrant and drinking fountain indicated. Use curb valve and service box.

R. Install trap below frost line on drain outlet of each and any drinking fountain indicated.

3.06 ANCHORAGE INSTALLATION

A. Install anchorages for tees, plugs and caps, bends, crosses, valves, and hydrant branches. Include anchorages for the following piping systems:
1. Gasketed-Joint, Ductile-Iron, Water-Service Piping: According to AWWA C600.
2. Gasketed-Joint, PVC Water-Service Piping: According to AWWA M23.

B. Apply full coat of asphalt or other acceptable corrosion-resistant material to surfaces of installed ferrous anchorage devices.

3.07 VALVE INSTALLATION

A. AWWA Gate Valves: Comply with AWWA C600 and AWWA M44. Install each underground valve with stem pointing up and with valve box.

B. Corporation Valves and Curb Valves: Install each underground curb valve with head pointed up and with service box.

3.08 WATER-METER INSTALLATION

A. Install water meters, piping, and specialties according to utility company's written requirements.

B. Water Meters: Install displacement-type water meters, NPS 2 (DN 50) and smaller, in meter boxes with shutoff valves on water-meter inlets. Include valves on water-meter outlets and valved bypass around meters unless prohibited by authorities having jurisdiction.

3.09 ROUGHING-IN FOR WATER METERS

A. Rough-in piping and specialties for water-meter installation according to utility company's written instructions and requirements.

3.10 BACKFLOW-PREVENTER INSTALLATION

A. Install backflow preventers of type, size, and capacity indicated. Include valves and test cocks. Install according to requirements of plumbing and health department and authorities having jurisdiction.

B. Do not install backflow preventers with relief drain in vault or other space subject to flooding.

C. Do not install bypass piping around backflow preventers.

D. Support NPS 2-1/2 (DN 65) and larger backflow preventers, valves, and piping near floor and on brick or concrete piers.

3.11 VAULT CONSTRUCTION /INSTALLATION

A. See Section 03 30 00 "Concrete Work" for concrete vaults.

B. Install precast concrete vaults according to ASTM C 891.

C. Connect drain outlet to storm drainage piping. Refer to Division 33 41 00 for Storm Drainage

3.12 PROTECTIVE ENCLOSURE INSTALLATION

A. Install concrete base level and with top approximately 2 inches (50 mm) above grade.

B. Install protective enclosure over valves and equipment.

C. Anchor protective enclosure to concrete base.

3.13 FIRE HYDRANT INSTALLATION

A. General: Install each fire hydrant with separate gate valve in supply pipe, anchor with restrained joints or thrust blocks, and support in upright position.

B. AWWA-Type Fire Hydrants: Comply with AWWA M17.

3.14 POST HYDRANT INSTALLATION

A. Install post hydrants in pavement or with concrete anchor.

3.15 FIRE DEPARTMENT CONNECTION INSTALLATION

A. Install ball drip valves at each check valve for fire department connection to mains.

B. Install protective pipe bollards on two sides of each fire department connection. Pipe bollards are specified in Division 05 Section "Metal Fabrications."

3.16 ALARM DEVICE INSTALLATION

A. General: Comply with NFPA 24 for devices and methods of valve supervision. Underground valves with valve box do not require supervision.

B. Supervisory Switches: Supervise valves in open position.
1. Valves: Grind away portion of exposed valve stem. Bolt switch, with plunger in stem depression, to OS&Y gate-valve yoke.
2. Indicator Posts: Drill and thread hole in upper-barrel section at target plate. Install switch, with toggle against target plate, on barrel of indicator post.

C. Locking and Sealing: Secure unsupervised valves as follows:
1. Valves: Install chain and padlock on open OS&Y gate valve.
2. Post Indicators: Install padlock on wrench on indicator post.

D. Pressure Switches: Drill and thread hole in exposed barrel of fire hydrant. Install switch.

E. Connect alarm devices to building fire alarm system. Wiring and fire-alarm devices are specified in Division 28 Section "Fire Detection and Alarm."

3.17 CONNECTIONS

A. Piping installation requirements are specified in other Sections. Drawings indicate general arrangement of piping and specialties.

B. See Plumbing Sections for piping connections to valves and equipment.

C. Connect water-distribution piping to utility water main. Use tapping sleeve and tapping valve or to local utility specifications.

D. Connect water-distribution piping to interior domestic-water and fire-suppression piping.

E. Connect waste piping from drinking fountains to sanitary sewerage system. See Section 33 30 00 "Sanitary Sewerage" for connection to sanitary-sewer piping.

F. Ground equipment according to Division 26 requirements for Grounding.

G. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.

3.18 FIELD QUALITY CONTROL

A. Piping Tests: Conduct piping tests before joints are covered and after thrust blocks have hardened sufficiently. Fill pipeline 24 hours before testing and apply test pressure to stabilize system. Use only potable water.

B. Hydrostatic Tests: Test at not less than 1-1/2 times working pressure for 2 hours.
1. Increase pressure in 50-psig (350-kPa) increments and inspect each joint between increments. Hold at test pressure for 1 hour; decrease to 0 psig (0 kPa). Slowly increase again to test pressure and hold for 1 more hour. Maximum allowable leakage is 2 quarts (1.89 L) per hour per 100 joints. Remake leaking joints with new materials and repeat test until leakage is within allowed limits.

C. Prepare reports of testing activities.

3.19 IDENTIFICATION

A. Install continuous underground detectable warning tape during backfilling of trench for underground water-service piping. Locate below finished grade, directly over piping. See Earthwork Section for underground warning tapes.

B. Permanently attach equipment nameplate or marker, indicating plastic water-service piping, on main electrical meter panel. See Plumbing Specifications for additional identification requirements.

3.20 CLEANING

A. Clean and disinfect water-distribution piping as follows:
   1. Purge new water-distribution piping systems and parts of existing systems that have been altered, extended, or repaired before use.
   2. Use purging and disinfecting procedure prescribed by authorities having jurisdiction or, if method is not prescribed by authorities having jurisdiction, use procedure described in NFPA 24 for flushing of piping. Flush piping system with clean, potable water until dirty water does not appear at points of outlet.
   3. Use purging and disinfecting procedure prescribed by authorities having jurisdiction or, if method is not prescribed by authorities having jurisdiction, use procedure described in AWWA C651 or as described below:
      a. Fill system or part of system with water/chlorine solution containing at least 50 ppm of chlorine; isolate and allow to stand for 24 hours.
      b. Drain system or part of system of previous solution and refill with water/chlorine solution containing at least 200 ppm of chlorine; isolate and allow to stand for 3 hours.
      c. After standing time, flush system with clean, potable water until no chlorine remains in water coming from system.
      d. Submit water samples in sterile bottles to authorities having jurisdiction. Repeat procedure if biological examination shows evidence of contamination.

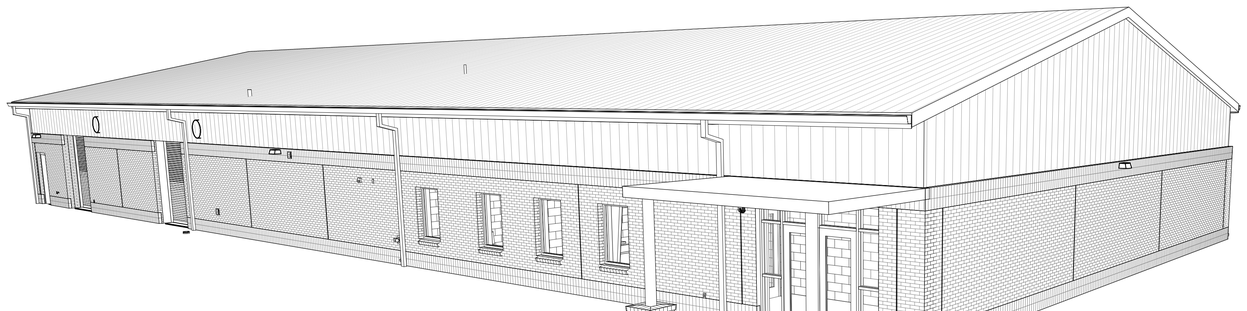
B. Prepare reports of purging and disinfecting activities.

C. After completing drinking fountain installation, inspect unit. Remove paint splatters and other spots, dirt, and debris. Repair damaged finish to match original finish. Clean drinking fountains, on completion of installation, according to manufacturer's written instructions.

END OF SECTION

ARCH D

CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

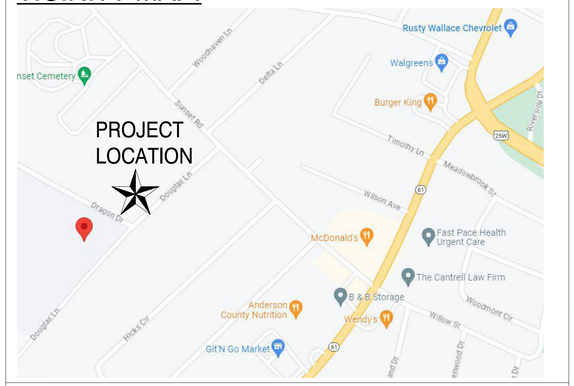


411 DOUGLAS LN
CLINTON, TN 37716

ABBREVIATIONS:

AFF	- ABOVE FINISH FLOOR	MTL	- METAL
ALT	- ALTERNATE	MG	- MANUFACTURING
ALUM	- ALUMINUM	MFR	- MANUFACTURER
ARCH	- ARCHITECTURAL	MIN	- MINIMUM
ACT	- ACOUSTICAL TILE CEILING	MISC	- MISCELLANEOUS
ASPH	- ASPHALT	NIC	- NOT IN CONTRACT
BF	- BOTTOM FACE	NTS	- NOT TO SCALE
BSMT	- BASEMENT	NO. #	- NUMBER
BM	- BENCH MARK	OC	- ON CENTER
BLDG	- BUILDING	OD	- OUTSIDE DIAMETER
BLK	- BLOCK	P	- PLATE
BRG	- BEARING	PLAS	- PLASTIC
CB	- CATCH BASIN	P LAM	- PLASTIC LAMINATE
CJ	- CONTROL JOINT	PLYWD	- PLYWOOD
CHB	- CHALK BOARD	PTD	- PAINTED
CLG	- CEILING	RAD;R	- RADIUS
CLOS, CL	- CLOSET	RD	- ROOF DRAIN
CLR	- CLEAR	REINF	- REINFORCING
COL	- COLUMN	REQ'D	- REQUIRED
COMP	- COMPOSITION	RS	- RISER
CONC	- CONCRETE	RM	- ROOM
CONST	- CONSTRUCTION	RO	- ROUGH OPENING
CMU	- CONCRETE MASONRY UNIT	SCHED	- SCHEDULE
CT	- CERAMIC TILE	SCWD	- SOLID CORE WOOD
DTL	- DETAIL	SECT	- SECTION
D, DIA	- DIAMETER	SHT	- SHEET
DN	- DOWN	SIM	- SIMILAR
DWG	- DRAWING	SPECS	- SPECIFICATIONS
DF	- DRINK FOUNTAIN	SQFT / SF	- SQUARE FEET
DS	- DOWNSPOUT	STD	- STANDARD
EA	- EACH	STL	- STEEL
EF	- EACH FACE	STOR	- STORAGE
ELEC	- ELECTRIC	SD	- STORM DRAIN
EWC	- ELECTRIC WATER COOLER	SUSP	- SUSPENDED
ELEV	- ELEVATION	SQ	- SQUARE
EXIST	- EXISTING	TB	- TACK BOARD
EXT	- EXTERIOR	THOLD	- THRESHOLD
EJ	- EXPANSION JOINT	TLT	- TOILET
FE	- FIRE EXTINGUISHER	TD, TDS	- THREAD (S)
FL	- FLOOR	TF	- TOP FACE
FD	- FLOOR DRAIN	TYP	- TYPICAL
FT	- FOOT	U	- URINAL
FTNG	- FOOTING	VIF	- VERIFY IN FIELD
GALV	- GALVANIZED IRON	VS	- VENT STACK
GA	- GAUGE	VOL	- VOLUME
GYP	- GYPSUM	VT	- VINYL TILE
HB	- HOSE BIB	VERT	- VERTICAL
HCWD	- HOLLOW CORE WOOD	WSCT	- WAINSCOT
HDW	- HARDWARE	WC	- WATER CLOSET
HGT	- HEIGHT	WH	- WATER HEATER
HM	- HOLLOW METAL	WPFG	- WATERPROOFING
ID	- INSIDE DIAMETER	WF	- WIDE FLANGE
IN	- INCH	WDW	- WINDOW
INV	- INVERT	WD	- WOOD
JAN	- JANITOR	W/	- WITH
JST	- JOIST	WWF	- WELDED WIRE FABRIC
LAV	- LAVATORY	WWM	- WELDED WIRE MESH
lb	- POUND	L	- ANGLE
MH	- MANHOLE	@	- AT
MAX	- MAXIMUM	C	- CHANNEL
MECH	- MECHANICAL	⌀	- DIAMETER

VICINITY MAP:



MATERIALS LEGEND:

CONCRETE BLOCK	CONCRETE IN SECTION	RIGID INSULATION, EIFS AS NOTED
BRICK	SOIL IN SECTION	PLYWOOD
METAL IN SECTION	CRUSHED STONE	FINISH WOOD
GYP, BOARD, PLASTER, OR CONCRETE IN PLAN AS NOTED	BATT INSULATION	WOOD FRAMING

PROJECT INFORMATION:

PROJECT DESCRIPTION
A NEW 9,282 S.F. WELDING BUILDING AND AGRICULTURE FOR CLINTON HIGH SCHOOL.

JURISDICTION
CITY OF CLINTON, TN
CODES ENFORCEMENT
100 N. BOWLING STREET
CLINTON, TN 37716
PHONE NUMBER (865) 259-1107 OR (865) 259-1108

RESPONDING FIRE DEPARTMENT:
JEFF LITTLE, FIRE CHIEF
100 N. BOWLING STREET
CLINTON, TN 37716
PHONE: 865-457-2131
EMAIL: JLITTLE@CLINTONTN.NET

DESIGN CODES
2018 INTERNATIONAL BUILDING CODE
2017 NATIONAL ELECTRICAL CODE
2018 INTERNATIONAL FIRE CODE
2018 INTERNATIONAL MECHANICAL CODE
2018 INTERNATIONAL FUEL CODE
2018 INTERNATIONAL PLUMBING CODE
2012 INTERNATIONAL ENERGY CONSERVATION CODE
2009 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES CODE (ICC A117.12009)

TYPE OF CONSTRUCTION: II-B, SPRINKLERED.
OCCUPANCY: EDUCATIONAL
NUMBER OF STORIES: 1 STORY

IECC CLIMATE ZONE: 4A, CLINTON, TENNESSEE

STATE DESIGN CODES
2012 INTERNATIONAL EXISTING BUILDING CODE
2012 INTERNATIONAL BUILDING CODE (EXCLUDING CHAPTER 11 AND SECTION 3411)
2017 NATIONAL ELECTRICAL CODE, NFPA 70
2012 INTERNATIONAL FIRE CODE
2012 INTERNATIONAL MECHANICAL CODE
2012 INTERNATIONAL PLUMBING CODE
2012 INTERNATIONAL FUEL GAS CODE
2012 INTERNATIONAL ENERGY CONSERVATION CODE
2010 ADA STANDARDS FOR ACCESSIBLE DESIGN
2012 NFPA - 101 LIFE SAFETY CODE

NOTE:
WHERE THERE IS A DISCREPANCY BETWEEN THE STATE AND LOCAL BUILDING CODES, THE MORE STRINGENT REQUIREMENT SHALL APPLY

PROJECT DIRECTORY:

OWNER:
ANDERSON COUNTY
DR. TIM PARROTT - DIRECTOR
101 S. MAIN ST.
CLINTON, TN 37716
865-463-2800

ARCHITECT:
MBI COMPANIES INC.
VALERIE NIPPER
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
865-584-0999

SURVEYING:
MCGREW ENGINEERING & SURVEYING
ALEX MCGREW
353 CULLOM ST.,
CLINTON, TN 37716
865-457-1664

STRUCTURAL ENGINEER:
MBI COMPANIES INC.
NICK DEAL
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
865-584-0999

ELECTRICAL ENGINEER:
VREELAND ENGINEERS INC.
HAROLD DAMRON
3107 SUTHERLAND AVENUE
KNOXVILLE, TN 37919
865-745-4402

GENERAL CONTRACTOR:
GCE CONSTRUCTION
TIMOTHY GAYLOR
P.O. BOX 177
LAFOLLETTE, TN 37766
MOBILE: 423-494-1410
EMAIL: tim@gceco.net

MECHANICAL ENGINEER:
MBI COMPANIES INC.
JOHN BUCHANAN
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
865-584-0999

CIVIL ENGINEER:
MBI COMPANIES INC.
AWS AL HADEETHI
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
865-584-0999

LIST OF DRAWINGS:

SHEET #	DRAWING TITLE	REV #
GENERAL		
G000	COVER SHEET	1
CIVIL AND SITE ENGINEERING		
C001	CIVIL NOTES AND LEGEND	
C002	OVERALL SITE PLAN	2
C100	PHASE 1 EROSION PREVENTION & SEDIMENT CONTROL PLAN	1
C101	PHASE 2 EROSION PREVENTION & SEDIMENT CONTROL PLAN	2
C200	SITE DEMOLITION PLAN	1
C300	SITE LAYOUT & UTILITY PLAN	2
C400	SITE GRADING & DRAINAGE PLAN	2
C800	CIVIL DETAILS	
C801	CIVIL DETAILS	
C802	CIVIL DETAILS	
C803	CIVIL DETAILS	
L100	LANDSCAPE PLAN	2
ARCHITECTURAL		
A000	GENERAL NOTES AND ACCESSIBILITY DETAILS	
A001	LIFE SAFETY INFORMATION	1
A101	NOTED FLOOR PLANS	1
A102	DIMENSION FLOOR PLANS	1
A201	DOOR SCHEDULE, DOOR/FRAME ELEVATIONS	1
A202	DOOR AND WINDOW DETAILS	1
A301	ROOF PLAN AND DETAILS	1
A401	EXTERIOR ELEVATIONS	1
A501	WALL SECTIONS	
A502	WALL SECTIONS	1
A601	ENLARGED PLANS, INTERIOR ELEVATIONS AND DETAILS	1
A602	ENLARGED PLANS, INTERIOR ELEVATIONS AND DETAILS	1
A603	ENLARGED PLANS, INTERIOR ELEVATIONS AND DETAILS	1
A701	REFLECTED CEILING PLAN AND DETAILS	1
A901	FLOOR FINISH PLAN	1
STRUCTURAL ENGINEERING		
S001	STRUCTURAL NOTES	
S002	SPECIAL INSPECTIONS	
S003	TYPICAL FOUNDATION AND SLAB ON GRADE DETAILS	
S004	TYPICAL CMU DETAILS W/ HORIZONTAL JOINT REINFORCING	
S101	FOUNDATION PLAN	1
MECHANICAL		
FP001	FIRE PROTECTION LEGENDS, SPECIFICATIONS, AND NOTES	
FP101	FLOOR PLAN - FIRE PROTECTION	1
FP201	FIRE PROTECTION DETAILS	
FP202	FIRE PROTECTION DETAILS	
M001	HVAC LEGENDS, SPECIFICATIONS, AND NOTES	
M101	FLOOR PLAN - HVAC	1
M201	HVAC SCHEDULES	
M301	HVAC DETAILS	1
P001	PLUMBING LEGEND AND NOTES	
P101	FLOOR PLAN - SANITARY	
P102	FLOOR PLAN - WATER	1
P103	ENLARGED BATHROOM PLAN	
P201	PLUMBING SCHEDULES	
P301	PLUMBING DETAILS	1
ELECTRICAL ENGINEERING		
E101	FIRST FLOOR PLAN - LIGHTING	1
E102	FIRST FLOOR PLAN - POWER	1
E103	FIRST FLOOR PLAN - COMMUNICATION	1
E104	FIRST FLOOR PLAN - FIRE ALARM AND HVAC WIRING	1
E201	LEGEND, SCHEDULES, DETAILS	1
E202	PANELBOARD SCHEDULES, FEEDER DIAGRAM	1
E203	DETAILS	1
Grand total: 54		

APPROVED for Construction by Dennis Rhodes
2024.04.03 13:56:36 -05'00'

FIRE STOPPING REQUIREMENT
Fire stopping methods and materials employed on the job site may not deviate from the approved systems detailed within this approved set.

OCCUPANT NOTIFICATION
Occupant notification shall be in accordance with IFC 907.2.7.1 and/or NFPA 101 9.6.3 with respect to type and number as required by applicable codes. The location of devices shall be installed per NFPA 72.

This building has been reviewed for significant items of the standard(s) adopted in the Tennessee Public Building Accessibility Act. It has not been reviewed for compliance with the Americans with Disabilities Act.

Fire sprinkler shop drawings must be submitted to the Division of Fire Prevention, Codes Enforcement Section, for review and approval prior to installation.

TFM # 00017-D
PROJECT # 2023-10-31-01

CIVIL: AWS AL HADEETHI, REGISTERED ENGINEER, AGRICULTURE, COMMERCE, No. 104351, STATE OF TENNESSEE, 10/06/2023

STRUCTURAL: NICHOLAS W. DEAL, REGISTERED ENGINEER, AGRICULTURE, COMMERCE, No. 111663, STATE OF TENNESSEE, 10/6/23

MECHANICAL: JOHN C. BUCHANAN, REGISTERED ENGINEER, AGRICULTURE, COMMERCE, No. 104351, STATE OF TENNESSEE, 10/6/2023

ELECTRICAL: HAROLD E. DAMRON, REGISTERED ENGINEER, AGRICULTURE, COMMERCE, No. 022989, STATE OF TENNESSEE, 10-6-23

THESE PLANS AND SPECIFICATIONS ARE REQUIRED TO BE KEPT ON THE JOB SITE UNTIL A FINAL CERTIFICATE OF OCCUPANCY OR PROJECT COMPLETION FORM IS ISSUED BY THIS OFFICE.

No alterations, deletions, additions or modifications of any kind are allowed to this approved set without written permission of this office.

TENNESSEE STATE FIRE MARSHAL'S OFFICE

MBI

MBI COMPANIES INC.
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com

CONSULTANT

SEAL

VALERIE DOWLEN NIPPER, REGISTERED ARCHITECT, No. 104008, STATE OF TENNESSEE, 10/6/24

PROJECT INFORMATION

PROJECT:
CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS:
411 DOUGLAS LN
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE
- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO:	DATE	DESCRIPTION
1	01.29.2024	ADDENDUM #01

KEY PLAN

SHEET INFORMATION
SHEET ISSUED: 10/06/2023
DESIGNED BY: CMG
DRAWN BY: MDC
REVIEWED BY: CMG
SHEET TITLE: COVER SHEET
SHEET NO.: G000

PROJECT # 2023-10-31-01 TFM # 00017-D FIELD SET

GENERAL NOTES

1. COMPLY WITH ALL PERTINENT PROVISIONS OF THE "MANUAL OF ACCIDENT PREVENTION IN CONSTRUCTION" ISSUED BY A.G.C. OF AMERICA, INC. AND THE SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION ISSUED BY THE U.S. DEPARTMENT OF LABOR, 29 CFR 1926 OSHA.
2. THE APPROPRIATE TRAFFIC CONTROL SIGNS AS DEFINED BY THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, F.H.W.A., 2009", SHALL BE INSTALLED AT THE INCEPTION OF CONSTRUCTION AND SHALL BE PROPERLY MAINTAINED AND/OR OPERATED DURING THE TIME SUCH SPECIAL CONDITIONS EXIST. THEY SHALL REMAIN IN PLACE ONLY AS LONG AS THEY ARE NEEDED AND SHALL BE REMOVED IMMEDIATELY AFTER NEED.
3. NOTHING IN THE GENERAL NOTES OR SPECIAL PROVISIONS SHALL RELIEVE THE CONTRACTOR FROM THEIR RESPONSIBILITIES TOWARD THE SAFETY AND CONVENIENCE OF THE GENERAL PUBLIC.
4. VERIFY THE LOCATIONS OF ALL PROPOSED ITEMS PRIOR TO COMMENCING CONSTRUCTION. NOTIFY A/E IMMEDIATELY OF ANY DISCREPANCIES BEFORE STARTING WORK. COMMENCEMENT OF CONSTRUCTION AFTER SUCH DISCOVERY SHALL BE AT THE CONTRACTOR'S RISK.
5. ANY AREA THAT IS DISTURBED OUTSIDE THE LIMITS OF CONSTRUCTION DURING THE LIFE OF THE PROJECT SHALL BE REPAIRED BY THE CONTRACTOR AT THEIR EXPENSE.

DEMOLITION NOTES

1. DO ALL DEMOLITION WORK REQUIRED TO REMOVE EXISTING MASONRY WALLS, PAVING, FOUNDATIONS, CONCRETE SLABS, EXISTING UNDERGROUND PIPING, CONDUIT, BUILDING FINISHES, DOORS, WINDOWS AS SHOWN ON THE DRAWINGS AND ANY OTHER NECESSARY ITEMS TO INSTALL THE PROPOSED WORK.
2. CONTRACTORS SUBMITTING PROPOSALS SHALL DETERMINE THE QUANTITIES OF DEMOLITION WORK REQUIRED BY FIELD INVESTIGATION OF THE BUILDING AND SITE.
3. SUBMIT A DEMOLITION SCHEDULE TO THE PROJECT MANAGER PRIOR TO EXECUTION OF THE WORK. INDICATE PROPOSED METHODS AND SEQUENCE OF OPERATIONS. INCLUDE PROPOSAL FOR CONTROL OF DUST AND NOISE, AND COORDINATION FOR SHUT-OFF, CAPPING, AND CONTINUATION OF UTILITY SERVICES.
4. MAINTAIN TEMPORARY BARRICADES FOR PROTECTION OF JOB PERSONNEL AND THE PUBLIC. REMOVE BARRICADES WHEN NO LONGER REQUIRED.
5. CONDUCT OPERATIONS IN SUCH A MANNER AS TO MINIMIZE INTERFERENCE WITH USE OF PUBLIC WAYS AND ADJACENT USED FACILITIES. DO NOT CLOSE, BLOCK OR OTHERWISE OBSTRUCT USE OF PUBLIC WAYS OR FACILITIES WITHOUT WRITTEN CONSENT OF AUTHORITIES HAVING JURISDICTION. PROVIDE ALTERNATIVE ROUTES TO CLOSED OR OBSTRUCTED FACILITIES AS REQUIRED BY LOCAL REGULATIONS.
6. EXISTING UTILITIES INDICATED TO REMAIN SHALL BE KEPT IN SERVICE AND PROTECTED FROM DAMAGE DURING DEMOLITION OPERATIONS.
7. DO NOT INTERRUPT EXISTING UTILITIES USED OR OCCUPIED FACILITIES UNLESS AUTHORIZED IN WRITING BY AUTHORITIES HAVING JURISDICTION IF INTERRUPTION IS ALLOWED, PROVIDE ALTERNATIVE TEMPORARY SERVICES ACCEPTABLE TO GOVERNING AUTHORITIES.
8. LOCATE, IDENTIFY, SHUT OFF, CAP AND DISCONNECT UTILITIES AT PROPERTY LINE OR VALVE AS REQUIRED. PROVIDE BY-PASS CONNECTIONS AS REQUIRED TO MAINTAIN SERVICES TO ADJACENT PROPERTIES AND FACILITIES. PROVIDE A MINIMUM OF 72 HOURS ADVANCE NOTICE TO PROPERTY OWNERS IF SHUT-DOWN OF SERVICES IS REQUIRED DURING THE CHANGE-OVER.
9. COORDINATE WITH ALL UTILITY COMPANIES 48 HOURS PRIOR TO ANY DEMOLITION WORK.
10. REMOVE DEBRIS, RUBBISH, AND OTHER SUBSTANCES FROM SITE. LEGALLY TRANSPORT AND DISPOSE OF SUCH MATERIALS OFF-SITE.
11. BURYING OR BURNING OF MATERIALS ON THE PROJECT SITE IS FORBIDDEN.
12. AVAILABILITY FOR DEMOLITION MUST BE CONFIRMED BY OWNER JUST PRIOR TO DEMOLITION.
13. THE USE OF EXPLOSIVES IS STRICTLY PROHIBITED.
14. HISTORIC ARTIFACTS, INCLUDING CORNERSTONES, THEIR CONTENTS, COMMEMORATIVE PLAQUES AND TABLETS, ANTIQUES, AND OTHER ITEMS OF SIGNIFICANCE SHALL REMAIN THE PROPERTY OF THE OWNER. NOTIFY OWNERS REPRESENTATIVE IF SUCH ARTICLES ARE ENCOUNTERED. OBTAIN APPROVAL REGARDING METHOD OF REMOVAL. SALVAGE SUCH ARTICLES AND TURN OVER TO OWNER.
15. IF HAZARDOUS MATERIALS ARE ENCOUNTERED, COMPLY WITH APPLICABLE REGULATIONS IN HANDLING, REMOVING, AND PROTECTING AGAINST EXPOSURE OR ENVIRONMENTAL POLLUTION.
16. REGRADE ALL AREAS WHERE DEMOLITION HAS OCCURRED. PROVIDE SMOOTH TRANSITION BETWEEN EXISTING AND NEW GRADING, THERE SHALL NOT BE ANY VOIDS, PITS, OR MOUNDING OF EARTHWORK.

SITE NOTES

1. WHERE PROPOSED PAVEMENT ABUTS EXISTING PAVEMENT, THE EXISTING PAVEMENT SHALL BE CUT IN A NEAT STRAIGHT LINE THROUGH PAVEMENT AND BASE. PROVIDE A SMOOTH TRANSITION.
2. INSTALL EXPANSION JOINT MATERIAL BETWEEN NEW AND EXISTING CONCRETE AND/OR ASPHALT.
3. MAINTAIN AND PROTECT EXISTING PAVEMENT OR GRAVEL SURFACES WHICH ARE TO REMAIN. CONTRACTOR SHALL REPLACE DAMAGED AREAS, MATCHING DEPTH, MATERIAL AND GRADE OF EXISTING SURFACES.
4. DIMENSIONS SHOWN ARE TO FACE OF CURB, CENTER OF COLUMN, EDGE OF BUILDING EXTERIOR OR CENTER OF PAINTED STRIPES.
5. SIDEWALK AND PAVING JOINTS ARE SHOWN FOR REFERENCE ONLY. REVIEW JOINT LAYOUT WITH ALL SPECIFICATIONS AND DETAILS BEFORE POURING CONCRETE.

SURVEY NOTES

1. BOUNDARY AND TOPOGRAPHIC INFORMATION WAS PREPARED BY **MCGREW ENGINEERING & SURVEYING, 353 CULLOM ST., CLINTON, TN 37716. SURVEY RECEIVED 07/17/2023.**
2. COORDINATES ARE IN FEET AND REFERENCE TO **TENNESSEE STATE PLANE SYSTEM OF 1983**.
3. BEARINGS SHOWN ARE BASED ON MAGNETIC NORTH.
4. THE VERTICAL DATUM IS BASED ON **THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)**.
5. FIELD VERIFY THE LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. EXISTING UTILITIES SHOWN ON DRAWINGS ARE APPROXIMATE IN DEPTH AND LOCATION. REPAIR EXISTING UTILITIES DAMAGED DURING CONSTRUCTION AT NO COST TO THE OWNER.

GRADING NOTES

1. FIELD VERIFY CRITICAL GRADES AT CONNECTION POINTS SUCH AS ENTRANCES PRIOR TO CONSTRUCTION AND NOTIFY PROJECT MANAGER OR ENGINEER OF ANY DISCREPANCIES.
2. THE MINIMUM SLOPE FOR PARKING, SIDEWALKS, AND LANDSCAPED AREAS IS 1%. FIELD VERIFY MINIMUM SLOPE IS ACHIEVED.
3. MAXIMUM SLOPE IN HANDICAP PARKING AREAS IS 2%. MAXIMUM LONGITUDINAL SIDEWALK SLOPE IS 5%. SLOPE SIDEWALKS AWAY FROM BUILDING AT $1\frac{1}{2}$% CROSS SLOPE UNLESS OTHERWISE NOTED. SIDEWALK CROSS SLOPE CANNOT EXCEED 2% IN ANY CASE.
4. UNLESS OTHERWISE NOTED, ELEVATIONS SHOWN REPRESENT FINISHED GRADES. ADJUST FOR PAVEMENT THICKNESS, TOPSOIL, ETC.
5. ADJUST DRAINAGE STRUCTURE TOPS AS NECESSARY TO MATCH FINAL GRADES.
6. NO SLOPE SHALL BE STEEPER THAN 2(H):1(V)
7. ALL EARTHWORK SHALL MEET THE FOLLOWING REQUIREMENTS AT A MINIMUM:
   - A. FOLLOW RECOMMENDATIONS OF THE PROJECT SUBSURFACE INVESTIGATION REPORT. REPORT ANY CONTRADICTIONS TO THE PROJECT MANAGER. SOIL EXCAVATION SHALL BE CONSIDERED AS UNCLASSIFIED.
   - B. OBTAIN CERTIFICATION FROM A TESTING LAB, SIGNED AND SEALED BY AN ENGINEER, STATING THAT ALL EARTHWORK IS IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND SUBSURFACE INVESTIGATION REPORT AND SOILS ARE CAPABLE OF SUPPORTING THE STRUCTURE AND IMPROVEMENTS.
   - C. SUBMIT SOIL SAMPLES FOR TESTING AS REQUIRED BY THE PROJECT GEOTECHNICAL ENGINEER.
   - D. SOIL FOR COMPACTED BACKFILL AND ENGINEERED FILL SHALL CONSIST OF CLEAN GRANULAR SOILS, CLAY SOILS, OR SHALE SOILS HAVING A PLASTICITY INDEX OF LESS THAN 35 AND A MINIMUM DENSITY OF 90 POUNDS PER CUBIC FOOT WHEN COMPACTED TO ONE HUNDRED PERCENT (100%) OF ITS MAXIMUM DRY DENSITY PER STANDARD PROCTOR TEST. (ASTM D698) MATERIAL SHALL BE FREE OF VEGETATION, ROOTS, ROCKS LARGER THAN 2" IN ANY DIMENSION, DEBRIS AND OTHER DELETERIOUS MATERIALS. RESIDUAL SOIL EXCAVATED AT THE SITE MAY BE USED FOR BACKFILL IF IT MEETS THE SPECIFICATION REQUIREMENTS. THE MOISTURE CONTENT OF THE FILL SOILS SHOULD BE MAINTAINED WITHIN +3 AND -3 PERCENTAGE POINTS OF OPTIMUM MOISTURE CONTENT DETERMINED FROM THE STANDARD PROCTOR COMPACTION TEST.
   - E. ALL FILL IN AREAS TO BE OCCUPIED BY THE BUILDING(S) AND PAVING, INCLUDING AN AREA 10 FEET OUTSIDE THE PERIMETERS THEREOF, SHALL BE CONTROLLED (ENGINEERED) FILL AND THE COMPACTION SHALL BE TESTED BY A LICENSED AND QUALIFIED GEOTECHNICAL ENGINEER. CONTROLLED FILL IN AREAS OF BUILDINGS SHALL BE COMPACTED IN MAXIMUM 4" LIFTS TO AT LEAST 98% OF MAXIMUM DRY DENSITY WITHIN 3% OF OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH ASTM SPECIFICATION D-698 (STANDARD PROCTOR). FILL IN AREAS OF ASPHALT PAVING SHALL BE COMPACTED IN MAXIMUM 6" LIFTS TO AT LEAST 98% OF MAXIMUM DRY DENSITY WITHIN 3% OF OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH ASTM SPECIFICATION D-698. THE UPPER 12 INCHES OF FILL BENEATH PAVEMENTS AND UPPER 24 INCHES BENEATH FOOTINGS AND GRADE SLABS SHALL BE COMPACTED TO 100%. PROVIDE 95% COMPACTION IN ALL OTHER AREAS.
   - F. AFTER STRIPPING TOPSOIL, ALL FILL AREAS SHALL BE PROOFROLLED AND MONITORED BY THE PROJECT GEOTECHNICAL ENGINEER.
   - G. FILL OUTSIDE OF BUILDING AND PAVEMENT SHALL BE PLACED IN 8" LIFTS IN THE PRESENCE OF A REPRESENTATIVE OF THE SOIL TESTING LAB, COMPACTED TO SPECIFIED REQUIREMENTS, AND TESTED EVERY 900 SF FOR EACH LAYER OF FILL. REMEDY ANY INADEQUATELY PLACED FILL TO MEET PROJECT SPECIFICATIONS.
   - H. ALL LANDSCAPED AND GRASS AREAS SHALL HAVE A MINIMUM OF 5" OF CLEAN TOPSOIL.
   - I. TOLERANCES FOR SURFACES: HARDSCAPE: ± 0.025'
LANDSCAPE/GRASSED AREAS: ± 0.1'
   - J. ALL OFFSITE BORROW AND SPOIL SITES, IF REQUIRED, SHALL BE PROPERLY PERMITTED.

DRAINAGE NOTES

1. FIELD VERIFY CRITICAL GRADES AT CONNECTION POINTS PRIOR TO CONSTRUCTION OR FABRICATION OF PRECAST STRUCTURES.
2. UNLESS OTHERWISE NOTED, HDPE SHALL BE HANCOR, LANE HDPE, OR ADS N-12 SMOOTH INTERIOR WALL HDPE PIPE. PROVIDE #57 STONE BEDDING AND BACKFILL TO PAVEMENT SUBGRADE OR 12" ABOVE PIPE IN GRASS AREAS. ALL PIPE AND FITTINGS SHALL MEET THE REQUIREMENTS OF AASHTO M252, TYPE S (4"-10") OR AASHTO M294, TYPE S (12"-48"). GASKET SHALL MEET THE REQUIREMENTS OF ASTM F477. INSTALLATION SHALL BE IN ACCORDANCE WITH ASTM D2321. JOINTS SHALL BE SILT TIGHT AND NON-RATED WATERTIGHT GASKETS SHALL BE COVERED WITH A REMOVABLE WRAP BY THE MANUFACTURER TO ENSURE THAT THE GASKET IS FREE FROM DEBRIS.
3. UNLESS OTHERWISE NOTED, RCP SHALL BE CLASS III CONFORMING TO ASTM C-76 (LATEST REVISION): "STANDARD SPECIFICATION FOR REINFORCED CONCRETE CULVERT, STORM DRAIN, AND SEWER PIPE".
4. ROOF LEADERS SHALL BE ASTM D3034 SDR 35 PVC WITH GASKET JOINTS. UNLESS OTHERWISE NOTED ON THE PLANS, 4" SHALL BE LAID AT A 2% MINIMUM SLOPE AND 6" SHALL BE LAID AT 1% MINIMUM SLOPE.
5. COORDINATE WITH GOVERNING AGENCY FOR ALL REQUIRED MATERIAL APPROVALS, INSPECTIONS AND TESTING.

EROSION CONTROL NOTES

1. UNLESS SHOWN OTHERWISE, ALL DISTURBED AREAS NOT ULTIMATELY RECEIVING A HARD SURFACE SHALL HAVE A MINIMUM DEPTH OF 5" OF TOPSOIL AND BE STABILIZED WITH GRASS.
2. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL APPLICABLE PERMITS AND COMPLYING WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS RELATED TO SITE GRADING, EROSION AND SEDIMENTATION CONTROL, AND STORMWATER RUNOFF.
3. NO LAND DISTURBANCE IS PERMISSIBLE UNTIL THE CONTRACTOR HAS SUBMITTED A SIGNED NOTICE OF INTENT AND RECEIVED A NOTICE OF COVERAGE FROM THE TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION (TDEC). COORDINATE WITH OWNER TO ENSURE THAT ALL NECESSARY PERMITS HAVE BEEN RECEIVED PRIOR TO LAND DISTURBANCE.
4. A NOTICE WILL BE POSTED BY NEAR THE CONSTRUCTION ENTRANCE BEFORE WORK BEGINS CONTAINING:
   - A. A COPY OF THE NOC WITH THE TRACKING NUMBER ASSIGNED BY TDEC.
   - B. THE NAME, COMPANY NAME, TELEPHONE NUMBER, EMAIL AND ADDRESS OF THE PROJECT SITE OPERATOR INCLUDING A LOCAL CONTACT PERSON.
   - C. A PROJECT DESCRIPTION
5. FURNISH, ERECT AND MAINTAIN EROSION AND SEDIMENTATION CONTROL MEASURES IN CONFORMITY WITH THE TENNESSEE EROSION AND SEDIMENT CONTROL HANDBOOK, FOURTH EDITION, AS PREPARED BY TDEC. SEE PLAN AND DETAILS FOR SPECIFIC EROSION AND SEDIMENTATION CONTROL MEASURES.
6. EROSION AND SEDIMENTATION CONTROL MEASURES SHOWN ON THIS PLAN ARE A MINIMUM REQUIREMENT. MAINTAIN, MODIFY AND ADD EROSION AND SEDIMENTATION CONTROL MEASURES DURING CONSTRUCTION AS NECESSARY TO PREVENT SEDIMENT FROM LEAVING THE SITE.
7. ENVIRONMENTAL PERMIT REQUIREMENTS: SHOW COMPLIANCE WITH ALL REQUIREMENTS OF THE GENERAL NPDES PERMIT FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES CURRENTLY ADOPTED BY TDEC (CGP). PROVIDE ENGINEER AND TDEC WITH COPIES OF ALL REQUIRED PAPERWORK. PERFORM AND PROVIDE ALL MAINTENANCE, INSPECTIONS, RECORD KEEPING, AND REPORTING.
8. INSPECTIONS WILL BE PERFORMED BY PERSONNEL CERTIFIED IN THE TDEC LEVEL 1 EROSION CONTROL COURSE. PROOF OF INSPECTOR'S CERTIFICATION SHALL BE KEPT ON FILE AT THE JOBSITE ALONG WITH ALL INSPECTION REPORTS AND OTHER REQUIRED PAPERWORK IDENTIFIED IN THE CGP. MAINTENANCE REPAIR NEEDS IDENTIFIED BY INSPECTIONS SHALL BE ADDRESSED WITHIN 7 DAYS OR BEFORE THE NEXT RAIN EVENT. DOCUMENT WHEN MAINTENANCE ITEMS ARE COMPLETED ON THE INSPECTION REPORT.
9. MAINTAIN A RAIN GAUGE AND RAINFALL RECORDS ON SITE AS REQUIRED BY TDEC.
10. EROSION AND SEDIMENTATION CONTROL IMPLEMENTATION:
    - A. STAKE THE DISTURBED AREA LIMITS AND UNDISTURBED AREAS IN THE FIELD BEFORE BEGINNING WORK
    - B. INSTALL CONSTRUCTION EXIT
    - C. TEMPORARY EROSION AND SEDIMENTATION CONTROL: PROVIDE MEASURES TO PREVENT SOIL EROSION AND DISCHARGE OF SOIL-BEARING WATER RUNOFF AND AIRBORNE DUST TO UNDISTURBED AREAS AND TO ADJACENT PROPERTIES AND WALKWAYS, ACCORDING TO THE SITE EROSION AND SEDIMENTATION CONTROL DRAWINGS AS WELL AS THE CGP.
    - D. BEGIN SITE GRADING
    - E. VERIFY THAT FLOWS OF WATER REDIRECTED FROM CONSTRUCTION AREAS OR GENERATED BY CONSTRUCTION ACTIVITY DO NOT ENTER OR CROSS TREE- OR PLANT- PROTECTION ZONES.
    - F. INSPECT, REPAIR, AND MAINTAIN EROSION AND SEDIMENTATION CONTROL MEASURES DURING CONSTRUCTION UNTIL PERMANENT VEGETATION HAS BEEN ESTABLISHED.
    - G. CLEAN, REPAIR, AND RESTORE ADJOINING PROPERTIES AND ROADS AFFECTED BY EROSION AND SEDIMENTATION FROM THE PROJECT SITE DURING THE COURSE OF THE PROJECT. OBTAIN PERMISSION AND APPROPRIATE PERMITS TO ACCESS AREAS OUTSIDE THIS SITE.
    - H. AFTER FINAL STABILIZATION OF THE SITE, REMOVE EROSION AND SEDIMENTATION CONTROLS AND RESTORE AND STABILIZE AREAS DISTURBED DURING REMOVAL.
    - I. STORMWATER CONTROL: COMPLY WITH REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION. PROVIDE BARRIERS IN AND AROUND EXCAVATIONS AND SUBGRADE CONSTRUCTION TO PREVENT FLOODING BY RUNOFF OF STORMWATER FROM HEAVY RAINS.
    - J. PROJECT MANAGER OR ENGINEER MAY DIRECT CONTRACTOR TO LIMIT SURFACE AREA OF ERODIBLE EARTH MATERIAL EXPOSED BY CLEARING AND GRUBBING, EXCAVATION, BORROW AND EMBANKMENT OPERATIONS AND MAY DIRECT CONTRACTOR TO PROVIDE IMMEDIATE PERMANENT OR TEMPORARY POLLUTION CONTROL MEASURES.
    - K. PROVIDE PERMANENT EROSION CONTROL MEASURES AT EARLIEST PRACTICAL TIME TO MINIMIZE REQUIREMENT FOR TEMPORARY EROSION CONTROLS. PERMANENTLY SEED AND MULCH CUT SLOPES AS EXCAVATION PROCEEDS.
    - L. MAINTAIN TEMPORARY EROSION CONTROL SYSTEMS INSTALLED BY CONTRACTOR AS DIRECTED BY PROJECT MANAGER OR ENGINEER TO CONTROL SILTATION AT ALL TIMES THROUGHOUT WORK. PROVIDE MAINTENANCE OR ADDITIONAL WORK DIRECTED BY ENGINEER WITHIN 48 HOURS OF NOTIFICATION BY ENGINEER.
12. EROSION CONTROL SHALL BE MAINTAINED UNTIL PAVING IS COMPLETED AND LAWNS HAVE BEEN ESTABLISHED. PROTECT ADJACENT PROPERTIES AND WATER RESOURCES FROM EROSION AND SEDIMENT DAMAGE THROUGHOUT THE LIFE OF THE PROJECT UNTIL A NOTICE OF TERMINATION IS FILED WITH TDEC. CONTRACTOR COORDINATE WITH THE ENGINEER AND OWNER FOR APPROVAL TO FILE A NOTICE OF TERMINATION AT THE APPROPRIATE TIME.
13. STABILIZATION MEASURES WILL BE INITIATED AS SOON AS POSSIBLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED. TEMPORARY OR PERMANENT SOIL STABILIZATION AT THE CONSTRUCTION SITE (OR PHASE OF THE PROJECT) MUST BE COMPLETED NO LATER THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. SLOPES STEEPER THAN 3:1 SHALL BE STABILIZED NOT LATER THAN 7 DAYS AFTER CONSTRUCTION ACTIVITY ON THE SLOPE HAS TEMPORARILY OR PERMANENTLY CEASED. PERMANENT STABILIZATION WITH PERENNIAL VEGETATION OR OTHER PERMANENTLY STABLE, NON-ERODING SURFACE SHALL REPLACE ANY TEMPORARY MEASURES AS SOON AS PRACTICABLE. UNPACKED GRAVEL CONTAINING FINES OR CRUSHER RUNS WILL NOT BE CONSIDERED A NON-ERODING SURFACE.
14. ALL WATER DISCHARGED FROM EXCAVATIONS AND TEMPORARY SEDIMENT PONDS SHALL BE FILTERED USING SEDIMENT CONTROLS ACCEPTABLE TO TDEC AS WELL AS THE LOCAL AUTHORITY HAVING JURISDICTION.
15. UNLESS OTHERWISE NOTED, RIP-RAP SHALL BE T.D.O.T. MACHINED CLASS A-1 WITH A MEDIAN RIP-RAP SIZE D50 OF 6", 9" THICK AND SHALL BE UNDERLAIN WITH A NON-WOVEN GEOTEXTILE FABRIC.
16. CONCRETE WASHOUT AREA SHALL BE IN CONFORMANCE WITH STANDARDS OF TDEC, AS WELL AS THE LOCAL PERMITTING AUTHORITY HAVING JURISDICTION.
17. AT THE END OF THE PROJECT, DURING FINAL SITE STABILIZATION, DEWATER TEMPORARY SEDIMENT PONDS AND TRAPS IN CONFORMANCE WITH STANDARDS OF TDEC, AS WELL AS THE LOCAL PERMITTING AUTHORITY HAVING JURISDICTION. REMOVE ALL TEMPORARY EROSION CONTROLS AT THE END OF THE PROJECT AND COORDINATE WITH OWNER TO FILE NOTICE OF TERMINATION, AT THE APPROPRIATE TIME, WITH AUTHORITY HAVING JURISDICTION.
18. CONTRACTOR COORDINATE WITH ENGINEER AT BEGINNING OF LAND DISTURBANCE TO DETERMINE WHETHER OR NOT AN INITIAL SITE ASSESSMENT INSPECTION BY THE ENGINEER IS REQUIRED. IF REQUIRED, THE SITE ASSESSMENT INSPECTION BY THE ENGINEER MUST BE PERFORMED WITHIN 1 MONTH OF STARTING CONSTRUCTION. ALLOW ENGINEER A MINIMUM OF 1 WEEK NOTICE IN SCHEDULING SITE ASSESSMENT INSPECTIONS.

UTILITY NOTES

1. COORDINATE WITH EXISTING UTILITIES AND STORM SEWER INSTALLATION TO AVOID CONFLICTS . UTILITY INSTALLATION AND MATERIAL SHALL MEET THE REQUIREMENTS OF **CLINTON UTILITY BOARD & POWELL CLINCH UTILITY DISTRICT** AND ALL APPLICABLE CODES. COORDINATE WITH **CLINTON UTILITY BOARD & POWELL CLINCH UTILITY DISTRICT** PRIOR TO CONSTRUCTION TO DETERMINE MATERIAL, INSTALLATION TESTING AND INSPECTION REQUIREMENTS. VERIFY LOCATION AND ELEVATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
2. PAVEMENT REPAIR AND TRAFFIC CONTROL SHALL MEET THE REQUIREMENTS OF THE AGENCY HAVING JURISDICTION.
3. COORDINATE LOCATION OF GAS LINE TO AVOID CONFLICTS WITH OTHER UTILITIES. CONNECTION TO EXISTING GAS SERVICE SHALL MEET THE REQUIREMENTS OF **POWELL CLINCH UTILITY DISTRICT.** CONTACT **POWELL CLINCH UTILITY DISTRICT** AND COORDINATE INSTALLATION.
4. GAS METER AND SUPPLY LINE SHALL BE SIZED AND INSTALLED BY **POWELL CLINCH UTILITY DISTRICT** FOR THE LOADS SHOWN ON THE PLUMBING DRAWINGS. PROVIDE 4" SLEEVE UNDER PAVED AREAS.
5. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ANY AND ALL PERMITS AND LICENSES REQUIRED TO WORK IN THE PUBLIC R.O.W. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TAP FEES AND COORDINATION WITH **CLINTON UTILITY BOARD** TO ESTABLISH WATER AND SEWER SERVICE.
6. PROVIDE 10' MIN. HORIZONTAL SEPARATION BETWEEN WATER AND SEWER LINES. WHERE CROSSINGS OCCUR, PROVIDE 18" MIN SEPARATION BETWEEN WATER AND SEWER LINES. PROVIDE 6" MIN. CLEARANCE BETWEEN STORM SEWERS AND OTHER UTILITIES. UNLESS OTHERWISE NOTED PROVIDE 3' MINIMUM COVER FOR ALL UTILITIES. PROVIDE #57 STONE BEDDING AND BACKFILL TO SUBGRADE FOR ALL UTILITIES LOCATED IN PAVED AREAS.
7. ADJUST ALL EXISTING UTILITY STRUCTURES, WHETHER SPECIFICALLY INDICATED ON THE DRAWINGS OR NOT, TO MATCH FINAL GRADES. ADJUSTMENTS SHALL MEET THE REQUIREMENTS OF **CLINTON UTILITY BOARD & POWELL CLINCH UTILITY DISTRICT**.
8. COORDINATE WITH **CLINTON UTILITY BOARD & POWELL CLINCH UTILITY DISTRICT** TO REMOVE OR ABANDON EXISTING UTILITIES, WHETHER SPECIFICALLY INDICATED ON THE DRAWINGS OR NOT, THAT ARE LOCATED WITHIN THE PROJECT LIMITS AND NO LONGER IN USE.
9. UNLESS OTHERWISE NOTED, ALL SANITARY SEWER PIPE AND FITTINGS SHALL BE PVC MEETING THE REQUIREMENTS OF ASTM D 3034. USE SDR 35 UNLESS OTHERWISE SPECIFIED. FITTINGS SHALL MEET THE REQUIREMENTS OF ASTM D 3311 AND ASTM D 2665. PIPE SHALL HAVE AN INTEGRAL BELL END WITH GASKET SEAL WHICH HAS BEEN REINFORCED WITH A STEEL RING, BAND, OR OTHER RIGID MATERIAL THAT PERMANENTLY LOCKS THE GASKET IN PLACE. THE JOINT SHALL MEET THE REQUIREMENTS OF ASTM D 3212. GASKETS SHALL BE OF A LOCK-IN TYPE GASKET, REIBER TYPE OR APPROVED SUBSTITUTE, MEETING THE REQUIREMENTS OF ASTM F-477. UNLESS OTHERWISE NOTED, MINIMUM SLOPE SHALL BE 2.0% FOR 4" LINE AND 1.0% FOR 6" LINES.
10. UNLESS OTHERWISE NOTED, ALL WATER LINES SHALL BE AWWA C900 PVC (CLASS 200) WITH BELL END FOR PUSH-ON TYPE JOINTS. JOINTS SHALL CONSIST OF COMPACT PATTERN DUCTILE IRON FITTINGS MEETING THE REQUIREMENTS OF AWWA C 153 WITH RUBBER GASKETS MEETING THE REQUIREMENTS OF AWWA C 111. INSTALLATION SHALL COMPLY WITH UL 1285.
11. ALL FIRE WATER LINES SHALL BE CLASS 350 DUCTILE IRON WITH PUSH-ON TYPE JOINTS. PIPE SHALL COMPLY WITH AWWA C151 AND CEMENT - MORTAR LINING SHALL COMPLY WITH AWWA C104. INSTALLATION SHALL COMPLY WITH AWWA C600.
12. FIRE LINE SIZE SHALL BE VERIFIED BY SPRINKLER CONTRACTOR. CERTIFIED CALCULATIONS SHALL BE SUBMITTED TO THE OWNER. SEE THE FIRE PROTECTION PLAN FOR FURTHER REQUIREMENTS. ALL FIRE PROTECTION PIPING STARTING FROM THE POINT OF SERVICE MUST BE INSTALLED BY A TENNESSEE REGISTERED SPRINKLER CONTRACTOR.
13. ALL WATER LINE MATERIALS SHALL BE LEAD FREE.

ABBREVIATIONS

NOTE: ALL ABBREVIATIONS MAY NOT APPLY TO THIS PROJECT

@	AT
&	AND
AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY & TRANSPORTATION OFFICIALS
ADA	AMERICANS WITH DISABILITIES ACT
APP'D	APPROVED
APPROX. OR ~	APPROXIMATE
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS
ASPH.	ASPHALT
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWWA	AMERICAN WATER WORKS ASSOCIATION
B/C	BACK OF CURB
BLDG.	BUILDING
BLVD.	BOULEVARD
BM	BENCHMARK
B/W	BOTTOM OF WALL
Δ	CURVE DELTA ANGLE
CB	CATCH BASIN
CFS	CUBIC FEET PER SECOND
CGP	CONSTRUCTION GENERAL PERMIT
CI	CURB INLET
C	CENTERLINE
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
C.U.B.	CLINTON UTILITIES BOARD
C.O.	CLEANOUT
CONC.	CONCRETE
CONT.	CONTINUOUS
°	DEGREES
DCB	DOUBLE CATCH BASIN
DIA. OR Ø	DIAMETER
DIP	DUCTILE IRON PIPE
DWG.	DRAWING
E	EAST
EA.	EACH
E.F.	EACH FACE
EIP	EXISTING IRON PIPE
EL. OR ELEV.	ELEVATION
EOP	EDGE OF PAVEMENT
EPA	ENVIRONMENTAL PROTECTION AGENCY
ETC.	ET CETERA
E.W.	EACH WAY
EX. OR EXIST.	EXISTING
F/C	FACE OF CURB
FFE	FINISHED FLOOR ELEVATION
FIN.	FINISHED
FP	FIRE PROTECTION
FT.	FEET
GC	GENERAL CONTRACTOR
GI	GRATE INLET
GPM	GALLONS PER MINUTE
GV	GAS VALVE
H	HORIZONTAL
HDPE	HIGH DENSITY POLYETHYLENE
HP	HIGH POINT
HP HDPE	HIGH PERFORMANCE HIGH DENSITY POLYETHYLENE
HWY.	HIGHWAY
ID	INSIDE DIAMETER OR INLINE DRAIN
IN.	INCH(ES)
INV.	INVERT
IPF	IRON PIN FOUND
JB	JUNCTION BOX
L	LENGTH
LBS.	POUNDS
LF	LINEAR FEET
MAX.	MAXIMUM
MH	MANHOLE
MIN.	MINIMUM
MUTCD	MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES
N	NORTH
N/A	NOT APPLICABLE
NFPA	NATIONAL FIRE PROTECTION AGENCY
NIC	NOT IN CONTRACT
NIP	NEW IRON PIN
NO. OR #	NUMBER
NOI	NOTICE OF INTENT
NPDES	NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM
N.T.E.	NOT TO SCALE
O.C.	ON CENTER
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
PIV	POST INDICATOR VALVE
POB	POINT OF BEGINNING (ALIGNMENT)
POE	POINT OF ENDING (ALIGNMENT)
PP	POWER/UTILITY POLE
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
Q1	1 YEAR STORM PEAK FLOW
Q10	10 YEAR STORM PEAK FLOW
QLP	QUALIFYING LOCAL PROGRAM
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
REF.	REFERENCE
REQ'D	REQUIRED
REV.	REVISION
R.O.W.	RIGHT-OF-WAY
S	SOUTH
SAN.	SANITARY
SCH.	SCHEDULE
SD	STORM DRAIN
SDR	STANDARD DIMENSION RATIO
SF	SQUARE FEET
SPAP	SPECIAL POLLUTION ABATEMENT PERMIT
SQ.	SQUARE
ST.	STREET
STA.	STATION
SS	SANITARY SEWER
SSFM	SANITARY SEWER FORCE MAIN
SWPPP	STORM WATER POLLUTION PREVENTION PLAN
TBM	TEMPORARY BENCH MARK
TDEC	TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
T.D.O.T.	TENNESSEE DEPARTMENT OF TRANSPORTATION
THK.	THICK
TC	TOP OF CASTING
T/C	TOP OF CURB ELEVATION
TP	TOP OF PAVEMENT ELEVATION
T/W	TOP OF WALL
TYP.	TYPICAL
V	VERTICAL
W	WEST
W/	WITH
WS	WATER SURFACE
WV	WATER VALVE
W.W.F.	WELDED WIRE FABRIC
W.W.M.	WELDED WIRE MESH
YD	YARD DRAIN

LEGEND

EXISTING	LEGEND	PROPOSED
P/E	EASEMENT	C/E
R/W	RIGHT-OF-WAY	R/W
PL	PROPERTY LINE	PL
2010	MAJOR CONTOUR	2010
2011	MINOR CONTOUR	2011
SS x	SANITARY SEWER	SS
G x	GAS PIPING	G
W x	WATER LINE	W
OU x	OVERHEAD UTILITIES	OU
UE x	ELECTRIC (UNDERGROUND)	UE
UT x	TELEPHONE/COMM.	T
SD x	STORM SEWER	SD
	ROOF DRAINS	RD
	FIRE SUPPRESSION LINE	F
	FORCE MAIN	SSFM
	SILT FENCE	SF
	REINFORCED SILT FENCE	SSF
	CONSTRUCTION LIMITS	
	SETBACK	
	EXISTING TO BE REMOVED	
	DRAINAGE SWALE	
	CHECK DAM	
	DIVERSION DITCH	TD
	TUBES AND WATTLES	
	CURBLINE	
	CURBLINE	
	BUILDING	
X	FENCE	X
	VEGETATION	
S	SEWER MANHOLE	S
GT	GREASE TRAP	GT
ST	STORM MANHOLE	ST
JB	JUNCTION BOX	JB
CB	CATCH BASIN	
CB	CURB INLET	
	THROATED INLET	
©	CLEAN OUT	©
	HEADWALL	
XXX.XX ×	SPOT GRADE	XXX.XX
	OUTFALL	OUT
	RIPRAP OUTLET PROTECTION	
	TEMP. CONSTRUCTION EXIT	
	INLET PROTECTION	
	THRUST BLOCK	
W	WATER VALVE	
W	WATER METER	W
PIV	POST INDICATOR VALVE	
FH	FIRE HYDRANT	
	FIRE DEPARTMENT CONNECTION	
IV	IRRIGATION VALVE	
G	GAS VALVE	
GM	GAS METER	G
	UTILITY POLE	
EV	ELECTRICAL VAULT	
EM	ELECTRIC METER	
E	ELECTRICAL BOX	
GW	GUY WIRE	
	LIGHT STANDARD	
T	TELEPHONE PEDESTAL	
	BOLLARD	
	SLOPE DRAIN	
	SLOPE MATTING	
	TEMPORARY STABILIZATION	TS
	PERMANENT STABILIZATION	PS
	CONCRETE WASHOUT	CW
	FILTER RING	
	BENCHMARK	
	CONTROL POINT	

PROPERTY INFORMATION

OWNER

NAME: DR. TIM PARROT, DIRECTOR OF SCHOOLS
ADDRESS: 100 N MAIN ST.
CLINTON, TN 37716

PROPERTY DATA

ADDRESS: 411 DOUGLAS LN.
CLINTON, TN 37716

MAP: 074P
PARCEL ID: 008.00
ZONING: R-1

VERTICAL DATUM: NAVD 88

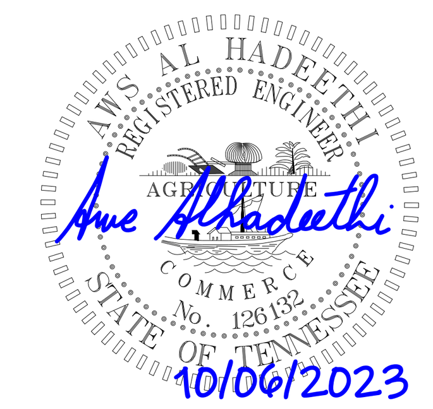
SETBACKS: 30' FRONT
25' REAR
10' SIDE

Know what's below. Call before you dig.
In Tennessee call 811 or 1-800-351-1111

ENGINEER:
MBI COMPANIES INC.
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com

CONSULTANT

SEAL



PROJECT INFORMATION

PROJECT: CLINTON HIGH SCHOOL WELDING AND AGRICULTURAL BUILDING

PROJECT ADDRESS: 411 DOUGLAS LN. CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	09/25/2023
DESIGNED BY:	I.A.J.
DRAWN BY:	I.A.J.
REVIEWED BY:	A.M.A.

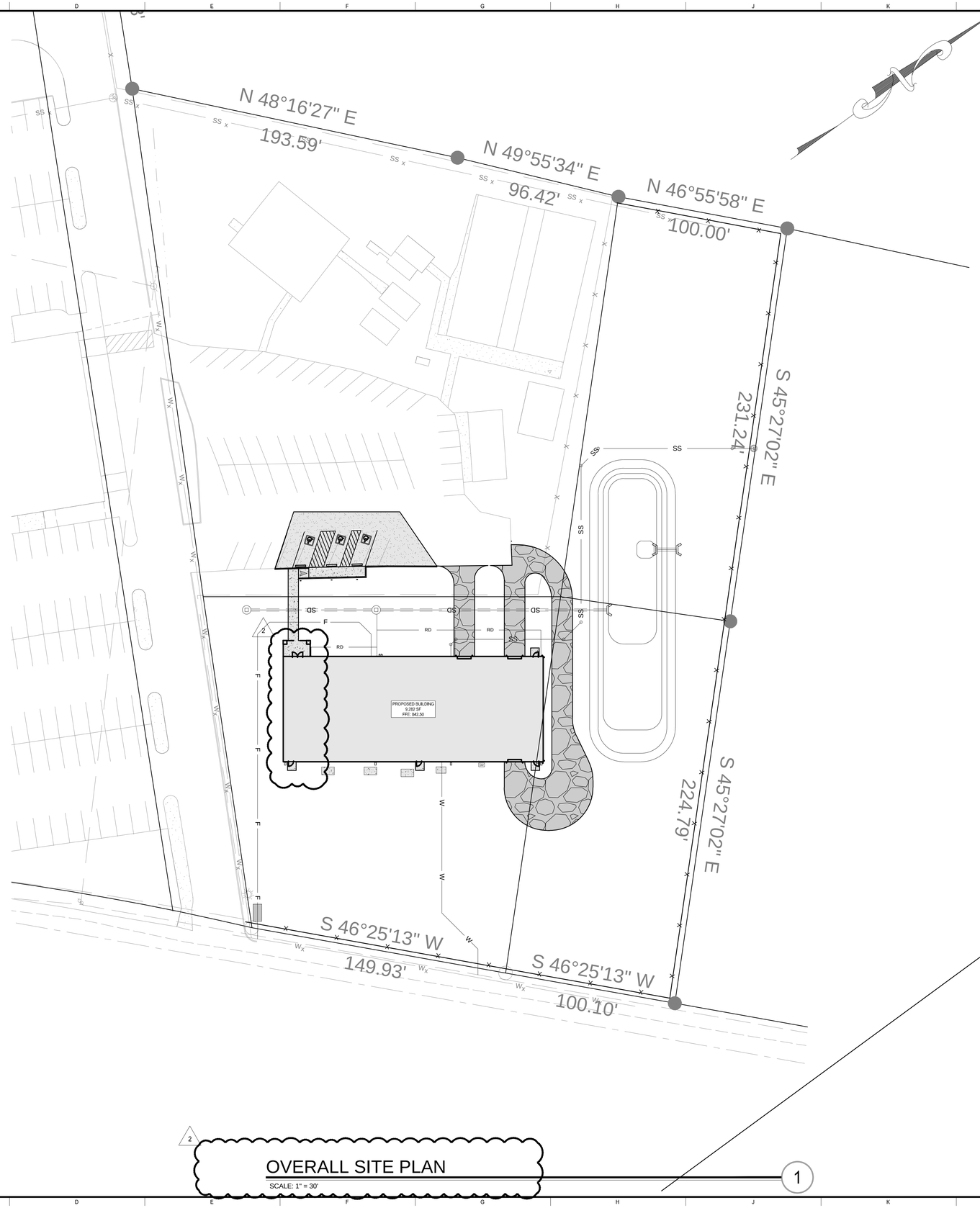
SHEET TITLE: CIVIL NOTES & LEGEND

SHEET NO.: C001

PROJECT # 2023-10-31-01 TFM # 00017-D

FIELD SET

R:\Revit Projects\2022\220042_Anderson County Schools\220042-02_Clinton High School Welding Building\03_Civil\03_CAD\03_220042-02_CB1.dwg, 9/25/2023 9:13:56 AM



2 OVERALL SITE PLAN

SCALE: 1" = 30'

1

GENERAL SHEET NOTES:

1. SEE SHEET C001 FOR CIVIL NOTES AND LEGENDS

ENGINEER:
MBI COMPANIES INC.
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com
CONSULTANT

SEAL

ANAS AL HADEETHI
REGISTERED ENGINEER
AGRICULTURE
COMMERCE
No. 136155
STATE OF TENNESSEE
03/20/2024

PROJECT INFORMATION

PROJECT:

CLINTON HIGH SCHOOL
WELDING AND
AGRICULTURAL BUILDING

PROJECT ADDRESS:

411 DOUGLAS LN.
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION
1	01/25/2024	
2	03/20/2024	SFMO REVIEW COMMENTS

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	10/06/2023
DESIGNED BY:	I.A.J.
DRAWN BY:	I.A.J.
REVIEWED BY:	A.M.A.

SHEET TITLE:

OVERALL SITE PLAN

SHEET NO.:

C002

811 Know what's below. Call before you dig.
In Tennessee call 811 or 1-800-351-1111

GRAPHIC SCALE
30 0 15 30 60 90
1 INCH = 30'

PROJECT # 2023-10-31-01 TFM # 00017-D
FIELD SET

R:\Revit Projects\2022\220042_Anderson County Schools\220042-02_Clinton High School Welding Building\03_Civil\03_CAD\03_220042-02_CB1.dwg, 3/20/2024 7:20:09 AM

PHASE 1 EROSION PREVENTION & SEDIMENT CONTROL PLAN

SCALE: 1" = 20'

1

GENERAL SHEET NOTES

1. SEE SHEET C001 FOR CIVIL NOTES AND LEGENDS
2. TEMPORARY STABILIZATION IS REQUIRED WHEN GRADING OPERATIONS ARE TEMPORARILY HALTED FOR OVER 14 DAYS AND ON SOIL STOCKPILES. SEED AREAS THAT SHOW SIGNS OF EXCESSIVE EROSION.
3. CONSTRUCTION LIMITS SHALL BE CLEARLY MARKED IN THE FIELD.

EROSION CONTROL LEGEND

SF — SILT FENCE; SEE DETAIL 3/C800

CONSTRUCTION EXIT; SEE DETAIL 1/C800

ENGINEER:
MBI COMPANIES INC.
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com
CONSULTANT

SEAL

PROJECT INFORMATION

PROJECT:

CLINTON HIGH SCHOOL
WELDING AND
AGRICULTURAL BUILDING

PROJECT ADDRESS:

411 DOUGLAS LN.
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION
1	01/25/2024	

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	10/06/2023
DESIGNED BY:	I.A.J.
DRAWN BY:	I.A.J.
REVIEWED BY:	A.M.A.

SHEET TITLE:

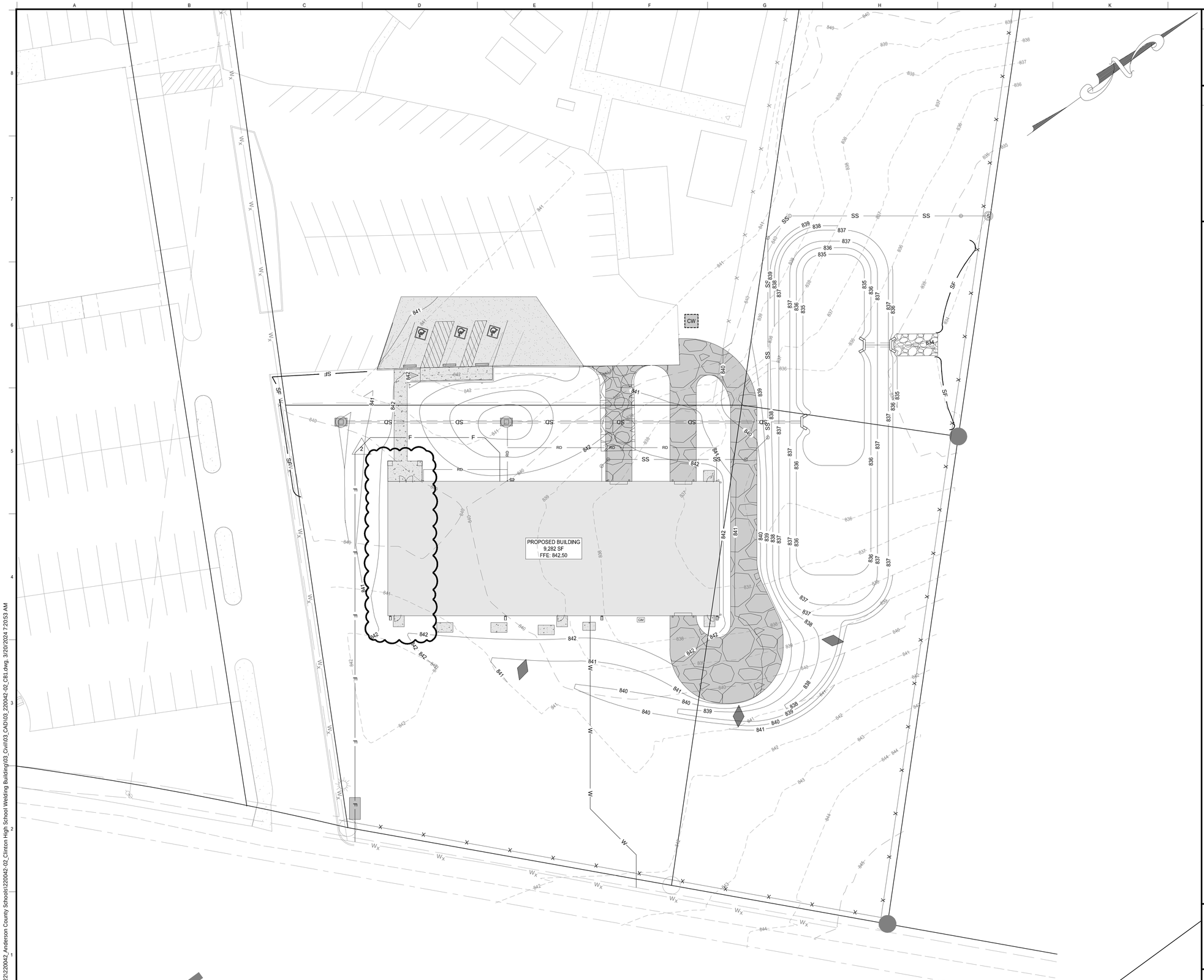
PHASE 1 EROSION PREVENTION & SEDIMENT CONTROL PLAN

SHEET NO.: C100

811 Know what's below. Call before you dig.
In Tennessee call 811 or 1-800-351-1111

GRAPHIC SCALE
20 0 10 20 40 60
1 INCH = 20'

PROJECT # 2023-10-31-01 TFM # 00017-D FIELD SET



PHASE 2 EROSION PREVENTION & SEDIMENT CONTROL PLAN

SCALE: 1" = 20'

1

GENERAL SHEET NOTES:

1. SEE SHEET C001 FOR CIVIL NOTES AND LEGENDS
2. PERMANENT STABILIZATION IS REQUIRED WHEN GRADING OPERATIONS ARE COMPLETED AND WHEN CONSTRUCTION OPERATIONS WILL NOT IMPACT THE DISTURBED AREA. SEED AREAS THAT SHOW SIGNS OF EXCESSIVE EROSION.
3. CONSTRUCTION LIMITS SHALL BE CLEARLY MARKED IN THE FIELD.
4. SLOPE MATTING SHALL BE PLACED ON ALL SLOPES GREATER THAN 2:1; SEE DETAIL 2/C800

EROSION CONTROL LEGEND

SF	SILT FENCE; SEE DETAIL 3/C800
	CONSTRUCTION EXIT; SEE DETAIL 1/C800
	INLET PROTECTION; SEE DETAIL 4/C800
	CHECK DAM; SEE DETAIL 6/C800
	15'L x 8'W x 1.5'D CLASS A-1 RIP RAP OUTLET PROTECTION
CW	CONCRETE WASHOUT; SEE DETAIL 5/C800

ENGINEER:
MBI COMPANIES INC.
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com
CONSULTANT

SEAL

PROJECT INFORMATION

PROJECT:

CLINTON HIGH SCHOOL
WELDING AND
AGRICULTURAL BUILDING

PROJECT ADDRESS:

411 DOUGLAS LN.
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION
1	01/25/2024	
2	03/20/2024	SFMO REVIEW COMMENTS

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	10/06/2023
DESIGNED BY:	I.A.J.
DRAWN BY:	I.A.J.
REVIEWED BY:	A.M.A.

SHEET TITLE:

PHASE 2 EROSION PREVENTION & SEDIMENT CONTROL PLAN

SHEET NO.:

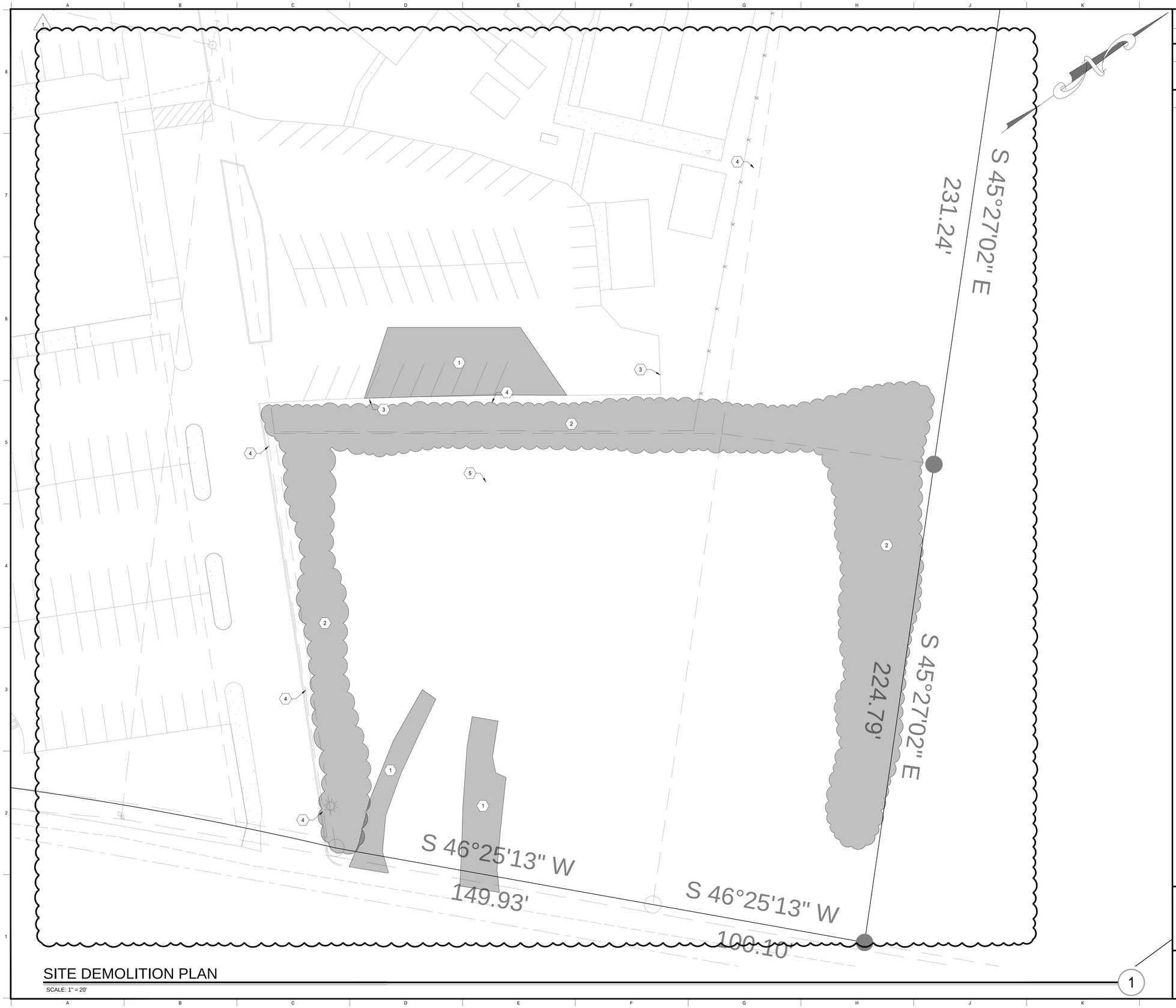
C101

811 Know what's below. Call before you dig.
In Tennessee call 811 or 1-800-351-1111

GRAPHIC SCALE
20 0 10 20 40 60
1 INCH = 20'

PROJECT # 2023-10-31-01 TFM # 00017-D
FIELD SET

R:\Revit Projects\2022\220042_Anderson County Schools\220042-02_Clinton High School Welding Building\03_Civil\03_CAD\03_220042-02_CB1.dwg, 3/20/2024 7:20:53 AM



SITE DEMOLITION PLAN

SCALE: 1" = 20'

GENERAL SHEET NOTES:

1. SEE SHEET C001 FOR CIVIL NOTES AND LEGENDS

DEMOLITION LEGEND

TO BE DEMOLISHED

DEMOLITION KEYED NOTES

1. EXISTING ASPHALT/CONCRETE PAVING TO BE DEMOLISHED
2. EXISTING VEGETATION TO BE DEMOLISHED
3. EXISTING CONCRETE CURB TO BE DEMOLISHED
4. EXISTING CHAIN LINK FENCE WITH BARBED WIRE TO BE DEMOLISHED
5. EXISTING UTILITY POLE TO BE DEMOLISHED

Know what's below. Call before you dig.
In Tennessee call 811 or 1-800-351-1111

GRAPHIC SCALE

20 0 10 20 40 60

1 INCH = 20'

ENGINEER:
MBI COMPANIES INC.
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com

CONSULTANT

SEAL

PROJECT INFORMATION

PROJECT:

CLINTON HIGH SCHOOL
WELDING AND
AGRICULTURAL BUILDING

PROJECT ADDRESS:

411 DOUGLAS LN.
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION
1	01/25/2024	

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	10/06/2023
DESIGNED BY:	I.A.J.
DRAWN BY:	I.A.J.
REVIEWED BY:	A.M.A.

SHEET TITLE:

SITE DEMOLITION PLAN

SHEET NO.:

C200

PROJECT # 2023-10-31-01 TFM # 00017-D

FIELD SET

CERTIFICATE OF PLANNED UNIT DEVELOPMENT APPROVAL

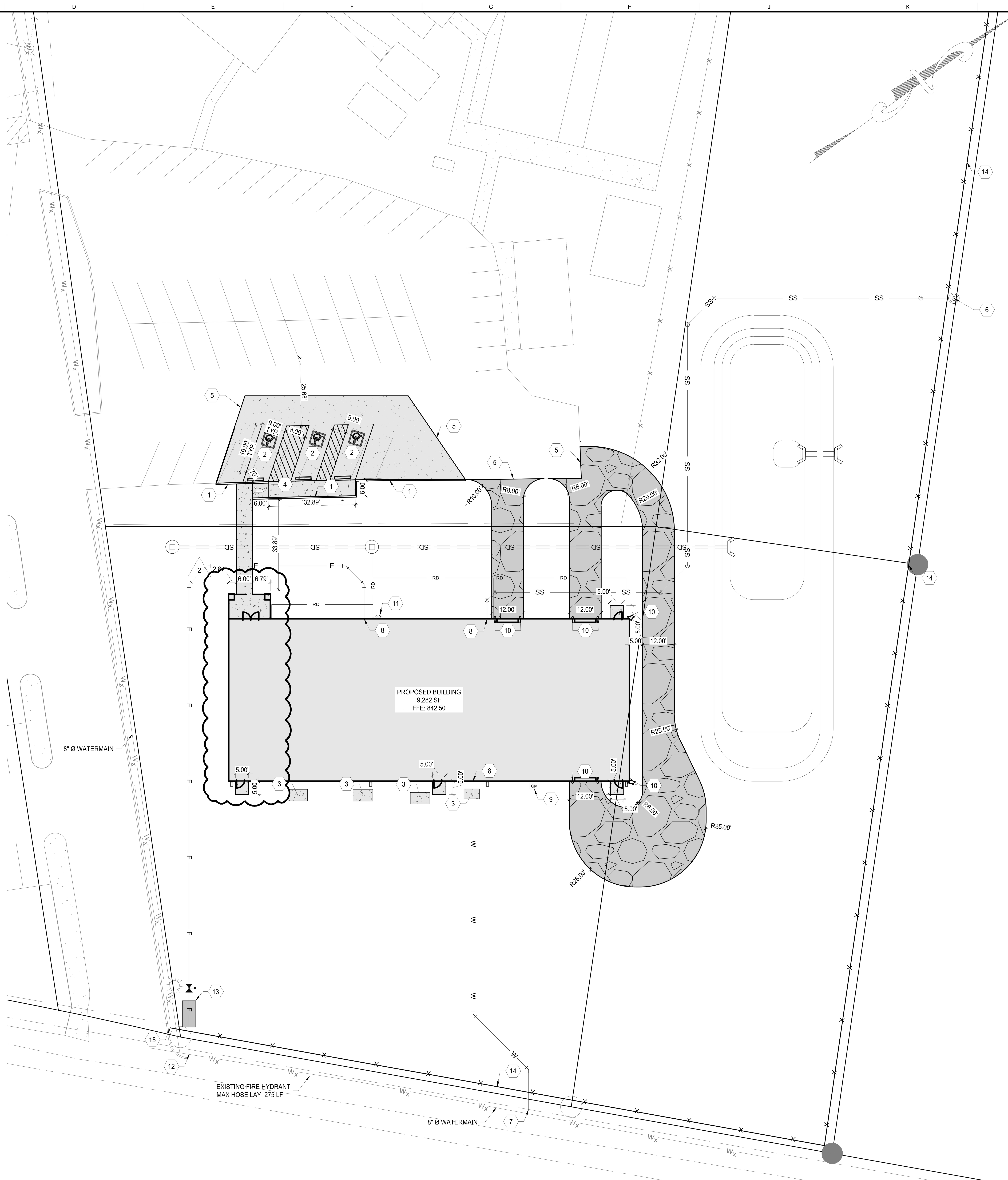
We hereby certify that this Planned Unit Development (PUD) has been found to comply with the zoning and PUD regulations of the Clinton Municipal/Regional Planning Commission, with the exception of such alterations or variances, if any, as noted in the minutes of the Clinton Municipal/Regional Planning Commission and the Clinton Board of Zoning Appeals.

Date	Chairman Clinton Municipal/Regional Planning Commission
Date	Secretary Clinton Municipal/Regional Planning Commission

CERTIFICATE OF PUD APPLICATION AND AGREEMENT

I (we) hereby certify that I (we) understand that the approval of a Planned Unit Development (PUD) shall expire twelve (12) months after the date of approval.

Date	Applicant
Date	Applicant



SITE LAYOUT & UTILITY PLAN

SCALE: 1" = 20'

1

GENERAL SHEET NOTES:

1. SEE SHEET C001 FOR CIVIL NOTES AND LEGENDS
2. FOR TYPICAL ANGLED PARKING SPACE LAYOUT, SEE 7/C800
3. ALL RADII NOT LABELED ARE TO BE R3.00'
2. COORDINATE ALL UTILITY CROSSINGS; SEE DETAIL 5/C802
3. FIELD LOCATE ALL EXISTING UTILITIES PRIOR TO START OF CONSTRUCTION. DETERMINE LOCATED, SIZE, MATERIAL & INVERTS. REPORT ANY DISCREPANCIES TO OWNER & ENGINEER BEFORE PROCEEDING WITH CONSTRUCTION & INSTALLATION.
4. ALL POURED CONCRETE SHALL BE CONSTRUCTED WITH EXPANSION JOINTS; SEE DETAIL 4/C801

UTILITY CONTACTS

WATER
CLINTON UTILITY BOARD
1001 CHARLES G. SEIVERS BLVD.,
P.O. BOX 296
CLINTON, TN 37717
(865) 457-9232

SEWER
CLINTON UTILITY BOARD
1001 CHARLES G. SEIVERS BLVD.,
P.O. BOX 296
CLINTON, TN 37717
(865) 457-9232

GAS
POWELL CLINCH UTILITY DISTRICT
203 E. FIRST ST.
ROCKY TOP, TN 37769
(865) 426-2822

ELECTRIC
CLINTON UTILITY BOARD
1001 CHARLES G. SEIVERS BLVD.,
P.O. BOX 296
CLINTON, TN 37717
(865) 457-9232

SHEET LEGEND

- HEAVY DUTY ASPHALT PAVING; SEE DETAIL 2/C801
- 6" CRUSHER RUN
- CONCRETE SIDEWALK; SEE DETAIL 1/C801
- ADA COMPLIANT 'NO PARKING' STRIPING; 8/C800
- WATER METER BY LOCAL UTILITY
- CO-CLEANOUT; SEE DETAIL 4/C802
- C.U.B. TYPICAL SANITARY SEWER MANHOLE; SEE DETAIL 1/C803
- F — 6" DUCTILE IRON C900 FIRE PROTECTION SERVICE LINE; SEE DETAIL 2/C802
- W — 2" POTABLE WATER (PVC CLASS 200); SEE DETAIL 2/C802
- SS — 4" ASTM D3034 SDR35 PVC BUILDING SANITARY SEWER SERVICE LINE @ 2.0% MIN. SLOPE; SEE DETAIL 2/C802
- THRUST BLOCK; SEE DETAIL 2/C803
- POST INDICATOR VALVE; SEE DETAIL 9/C802

SHEET KEYED NOTES

1. CONCRETE CURB; SEE DETAIL 3/C801
2. ADA COMPLIANT PARKING SPACE; SEE DETAIL 7/C801
3. MECHANICAL UNITS; SEE MECHANICAL PLANS FOR DETAILS
4. ADA COMPLIANT RAMP; SEE DETAIL 6/C801
5. PROVIDE SMOOTH TRANSITION TO EXISTING SURFACE
6. FIELD LOCATE AND CONNECT TO EXISTING PER LOCAL UTILITY REQUIREMENTS.
7. WATER LINE CONNECTION TO EXISTING METER; COORDINATE WITH LOCAL UTILITY COMPANY.
8. FOR CONTINUATION SEE PLUMBING PLAN
9. GAS METER; SEE MECHANICAL PLANS FOR DETAILS; COORDINATE INSTALLATION WITH LOCAL UTILITY COMPANY
10. 6" BOLLARD; SEE DETAIL 5/C801
11. FIRE DEPARTMENT CONNECTION; SEE MECHANICAL PLANS FOR DETAILS
12. FIRE SERVICE LINE CONNECTION BY LOCAL UTILITY COMPANY. COORDINATE TAP & METER LOCATIONS.
13. FIRE LINE METER PIT; TO BE INSTALLED PER LOCAL UTILITY REQUIREMENTS
14. CHAIN LINK FENCE WITH BARBED WIRE SHALL ENCOMPASS ENTIRE PROPERTY; MATCH EXISTING HEIGHT; SEE DETAIL 3/C803
15. CHAIN LINK FENCE TO CONNECT TO EXISTING FENCE POST

AREAS & CALCULATIONS

IMPERVIOUS AREA

EXISTING		PROPOSED		TOTAL INCREASE	
0.15	Acres	0.34	Acres	0.19	Acres
6,354	sqft	14,867	sqft	8,513	sqft

DISTURBED AREA

TOTAL SITE AREA		DISTURBED AREA	
1.89	Acres	0.98	Acres
82,256	sqft	42,689	sqft

PARKING CALCULATION

REQUIREMENT:
1 SPACE PER EACH FACULTY MEMBER AND 5 ADDITIONAL SPACES FOR VISITOR PARKING, PLUS 1 SPACE FOR EACH 4 PUPILS

CALCULATION:
5 FACULTY: 1 x 5 = 5 SPACES
60 PUPILS: 60 / 4 = 15 SPACES
5 VISITOR SPACES

REQUIRED		PROVIDED	
REGULAR	24	REGULAR	40
ACCESSIBLE	01	ACCESSIBLE	03
TOTAL	25	TOTAL	43

811 Know what's below. Call before you dig.
In Tennessee call 811 or 1-800-351-1111

GRAPHIC SCALE
20 0 10 20 40 60
1 INCH = 20'

THESE PLANS AND SPECIFICATIONS ARE REQUIRED TO BE KEPT ON THE JOB SITE UNTIL A FINAL CERTIFICATE OF OCCUPANCY OR PROJECT COMPLETION FORM IS ISSUED BY THIS OFFICE.
No alterations, deletions, additions or modifications of any kind are allowed to this approved set without written permission of this office.
TENNESSEE STATE FIRE MARSHAL'S OFFICE

MBI

ENGINEER:

MBI COMPANIES INC.
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com

CONSULTANT

SEAL

STATE OF TENNESSEE REGISTERED ENGINEER AGRICULTURE COMMERCE No. 126132
03/20/2024

PROJECT INFORMATION

PROJECT:
CLINTON HIGH SCHOOL WELDING AND AGRICULTURAL BUILDING

PROJECT ADDRESS:
411 DOUGLAS LN.
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE
- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION
1	01/25/2024	
02	03/20/2024	SFMO REVIEW COMMENTS

KEY PLAN

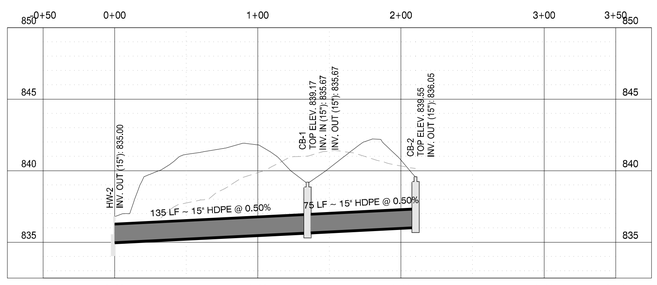
SHEET INFORMATION

SHEET ISSUED:	10/06/2023
DESIGNED BY:	I.A.J.
DRAWN BY:	I.A.J.
REVIEWED BY:	A.M.A.

SHEET TITLE:
SITE LAYOUT & & UTILITY PLAN

SHEET NO.: C300

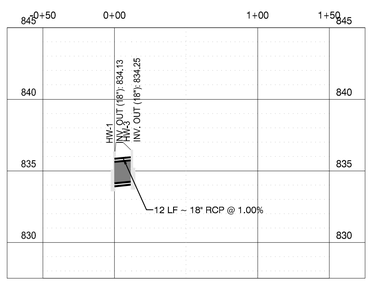
TFM # 00017-D
PROJECT # 2023-10-31-01
FIELD SET



STORM LINE #1

SCALE: H: 1" = 50'-0" V: 1" = 5'-0"

2



STORM LINE #2

SCALE: H: 1" = 50'-0" V: 1" = 5'-0"

2

SITE GRADING & DRAINAGE PLAN

SCALE: 1" = 20'

1

GENERAL SHEET NOTES

1. SEE SHEET C001 FOR CIVIL NOTES AND LEGENDS

DRAINAGE LEGEND

- HW-HEADWALL
- CB-CATCH BASIN; SEE DETAIL 3/C802

PROFILE LEGEND

- EXISTING GRADE
- PROPOSED GRADE

DRAINAGE KEYED NOTES

1. STORM SEWER DRAINAGE PIPE & UTILITY TRENCH; SEE DETAIL 1/C802
2. DOWNSPOUT BOOT; SEE DETAIL 6/C802
3. ASTM D 3034 SDR35 PVC STORM DRAIN @ 1.0% MIN. SLOPE; ALL SIZES TO BE 8" UNLESS OTHERWISE NOTED
4. DETENTION POND; SEE DETAIL 8/C802
5. SPLASH BLOCK; SEE DETAIL 7/C802

MBI COMPANIES INC.
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com
CONSULTANT

SEAL

PROJECT INFORMATION

PROJECT:

CLINTON HIGH SCHOOL
WELDING AND
AGRICULTURAL BUILDING

PROJECT ADDRESS:

411 DOUGLAS LN.
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION
1	01/25/2024	
2	03/20/2024	SFMO REVIEW COMMENTS

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	10/06/2023
DESIGNED BY:	I.A.J.
DRAWN BY:	I.A.J.
REVIEWED BY:	A.M.A.

SHEET TITLE:

SITE GRADING
& DRAINAGE PLAN

SHEET NO.:

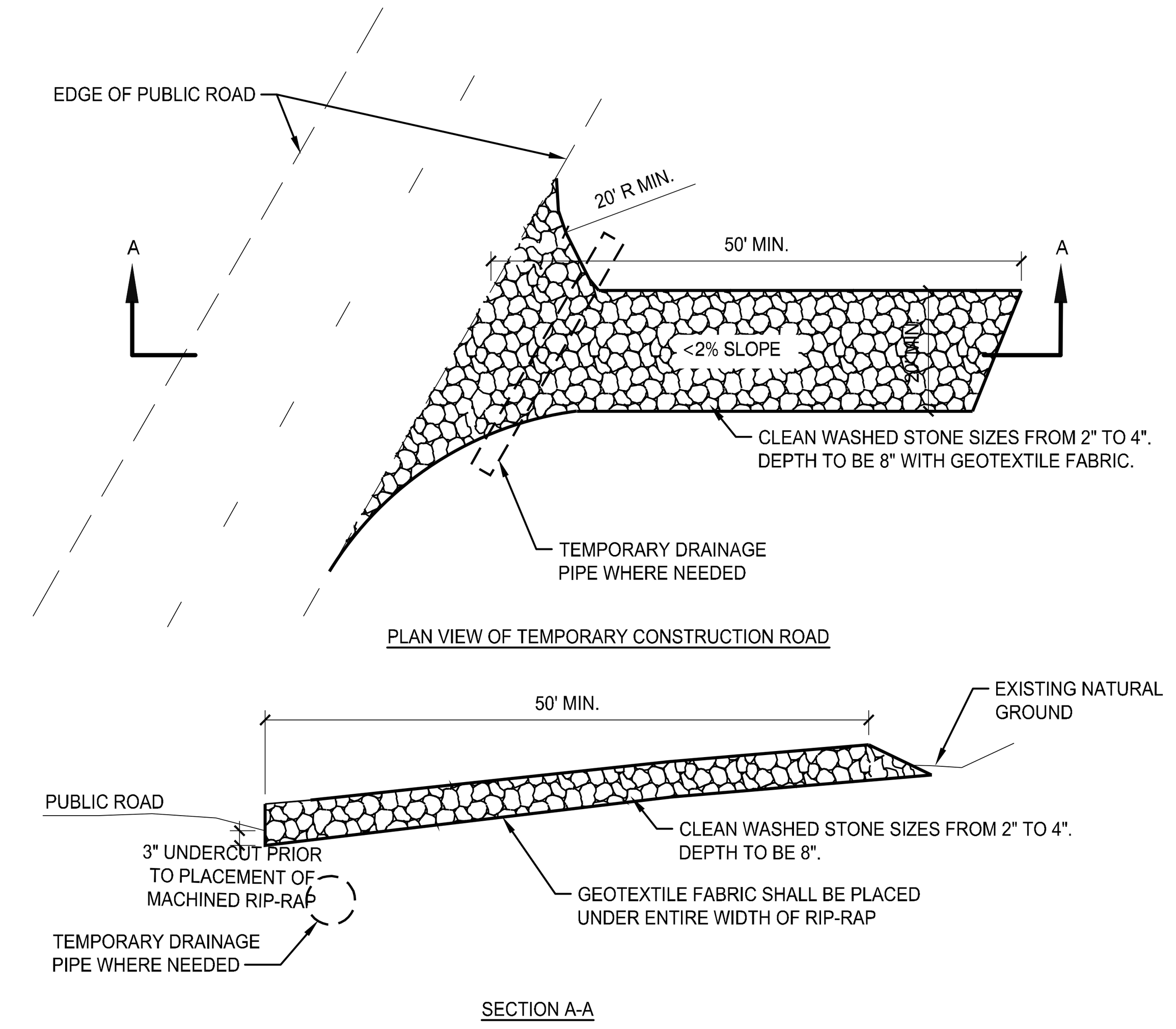
C400

811 Know what's below. Call before you dig.
In Tennessee call 811 or 1-800-351-1111

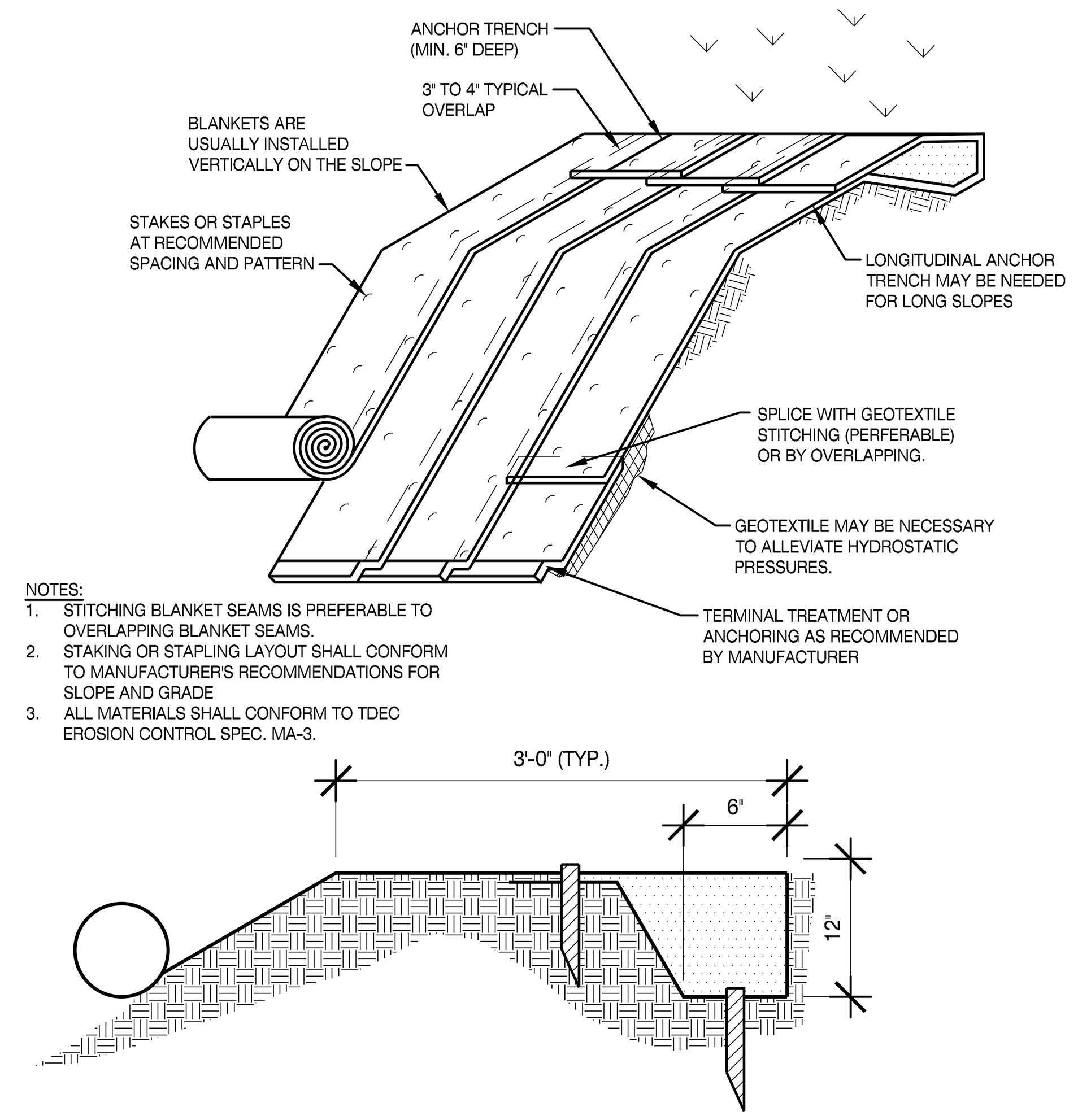
GRAPHIC SCALE
20 0 10 20 40 60
1 INCH = 20'

PROJECT # 2023-10-31-01 TFM # 00017-D
FIELD SET

R:\Revit Projects\2022\220042_Anderson County Schools\220042-02_Clinton High School Welding Building\03_Civil\03_CAD\03_220042-02_CB1.dwg, 3/20/2024 7:25:01 AM

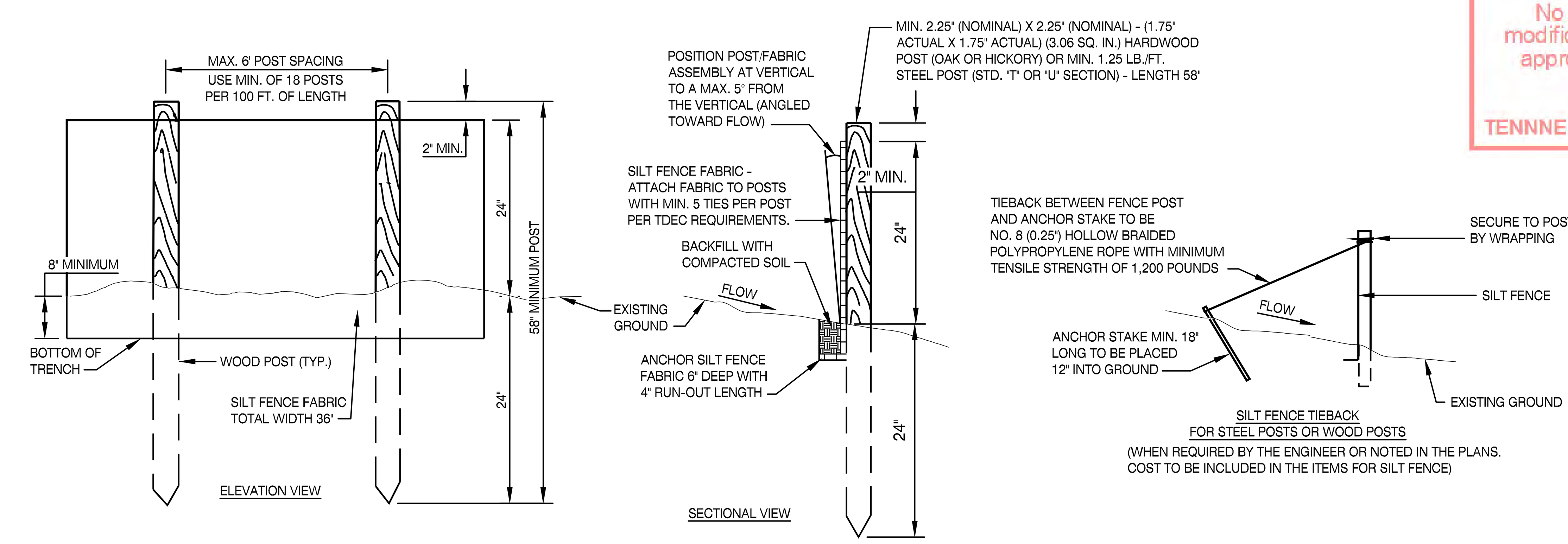


CONSTRUCTION EXIT 1

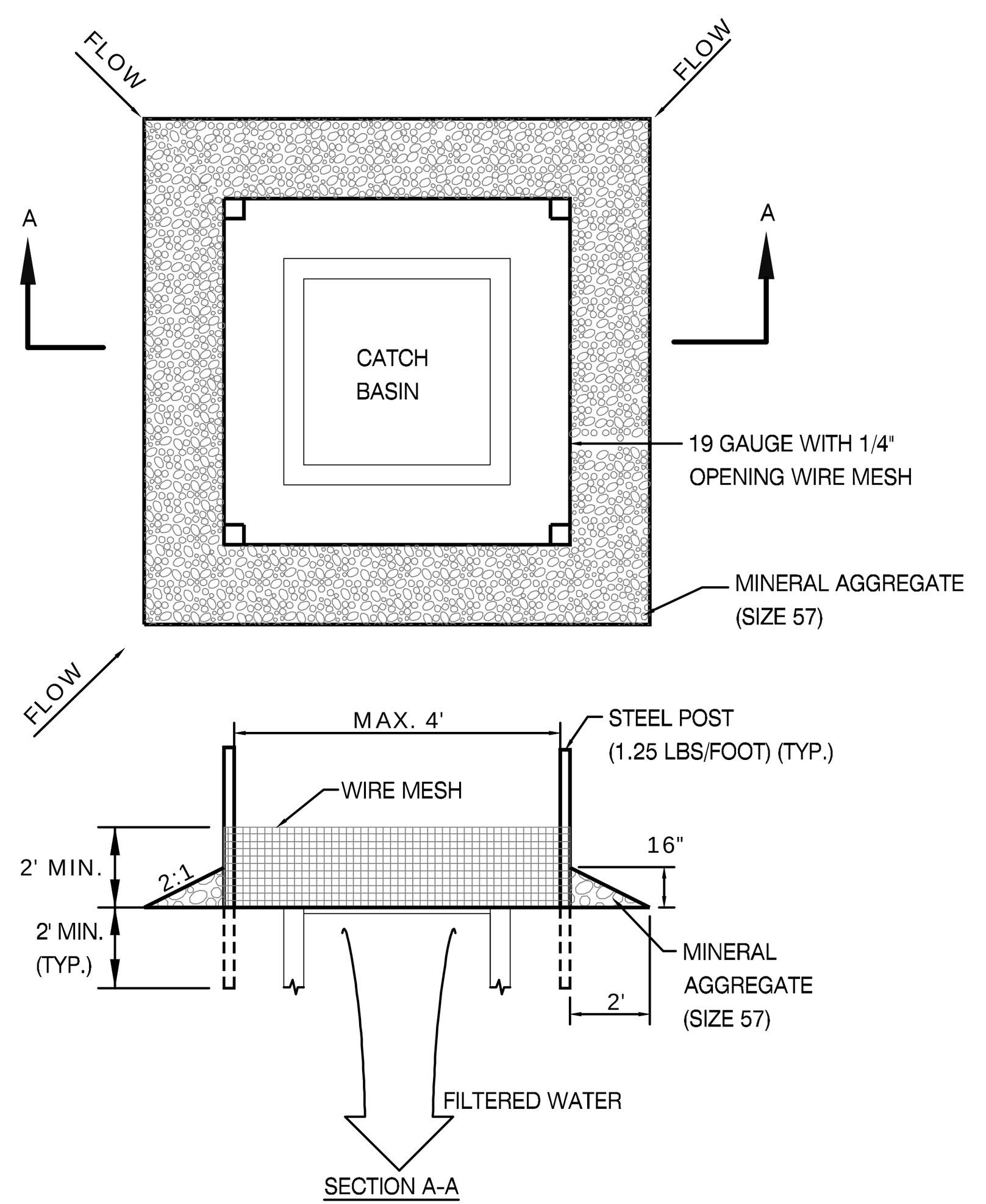


NOTES:
1. STITCHING BLANKET SEAMS IS PREFERABLE TO OVERLAPPING BLANKET SEAMS.
2. STAKING OR STAPLING LAYOUT SHALL CONFORM TO MANUFACTURER'S RECOMMENDATIONS FOR SLOPE AND GRADE
3. ALL MATERIALS SHALL CONFORM TO TDEC EROSION CONTROL SPEC. MA-3.

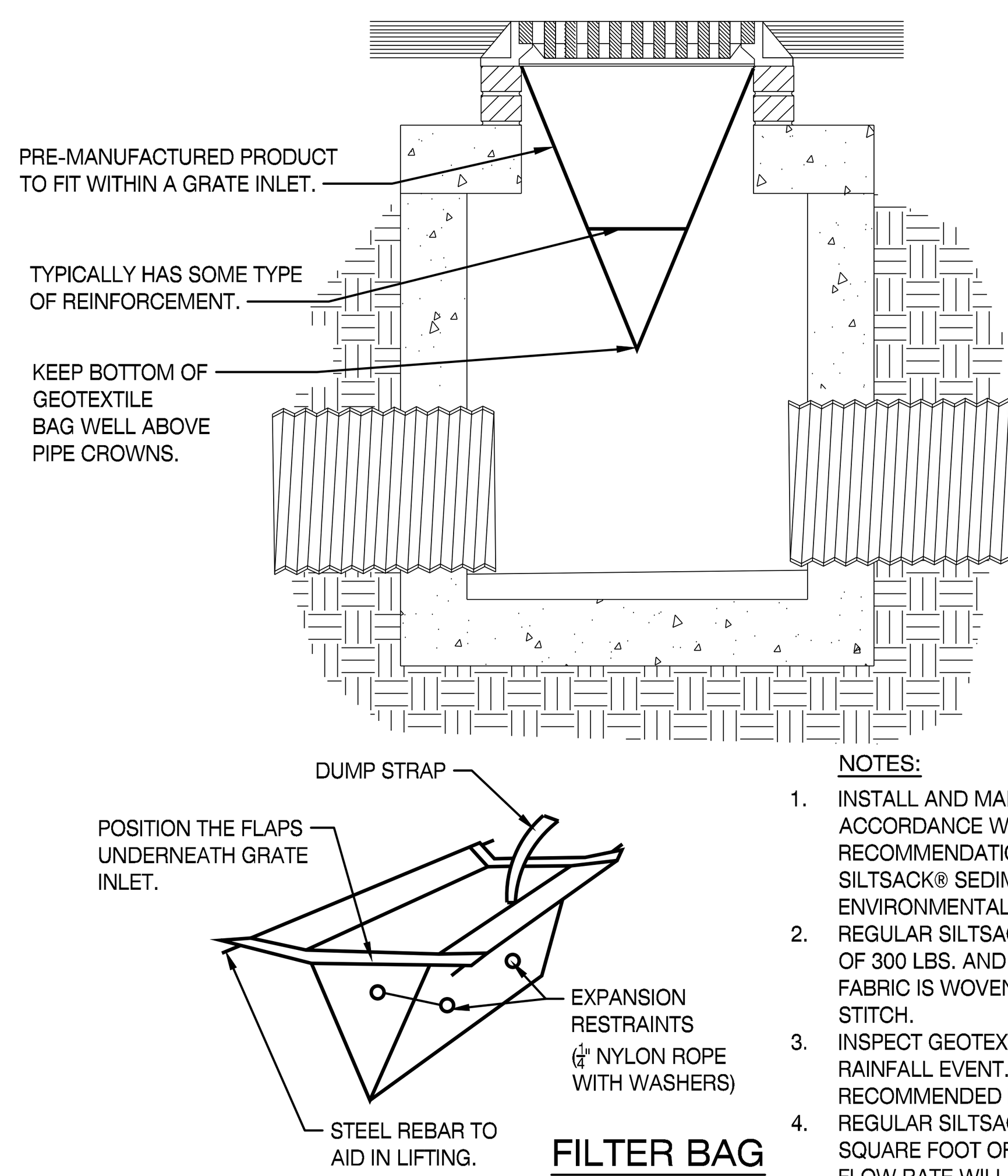
SLOPE MATTING 2



SILT FENCE 3



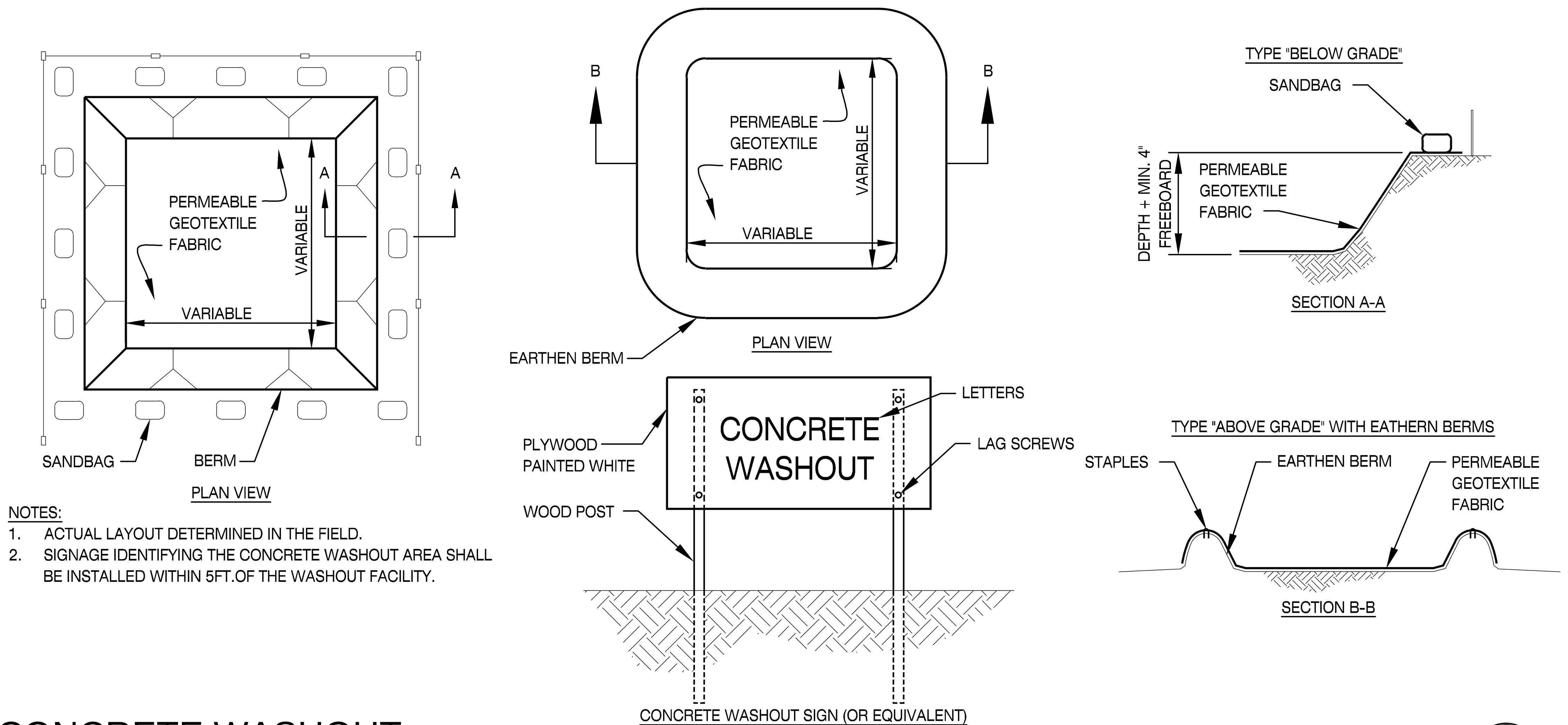
HARDWARE CLOTH AND GRAVEL INLET PROTECTION



FILTER BAG

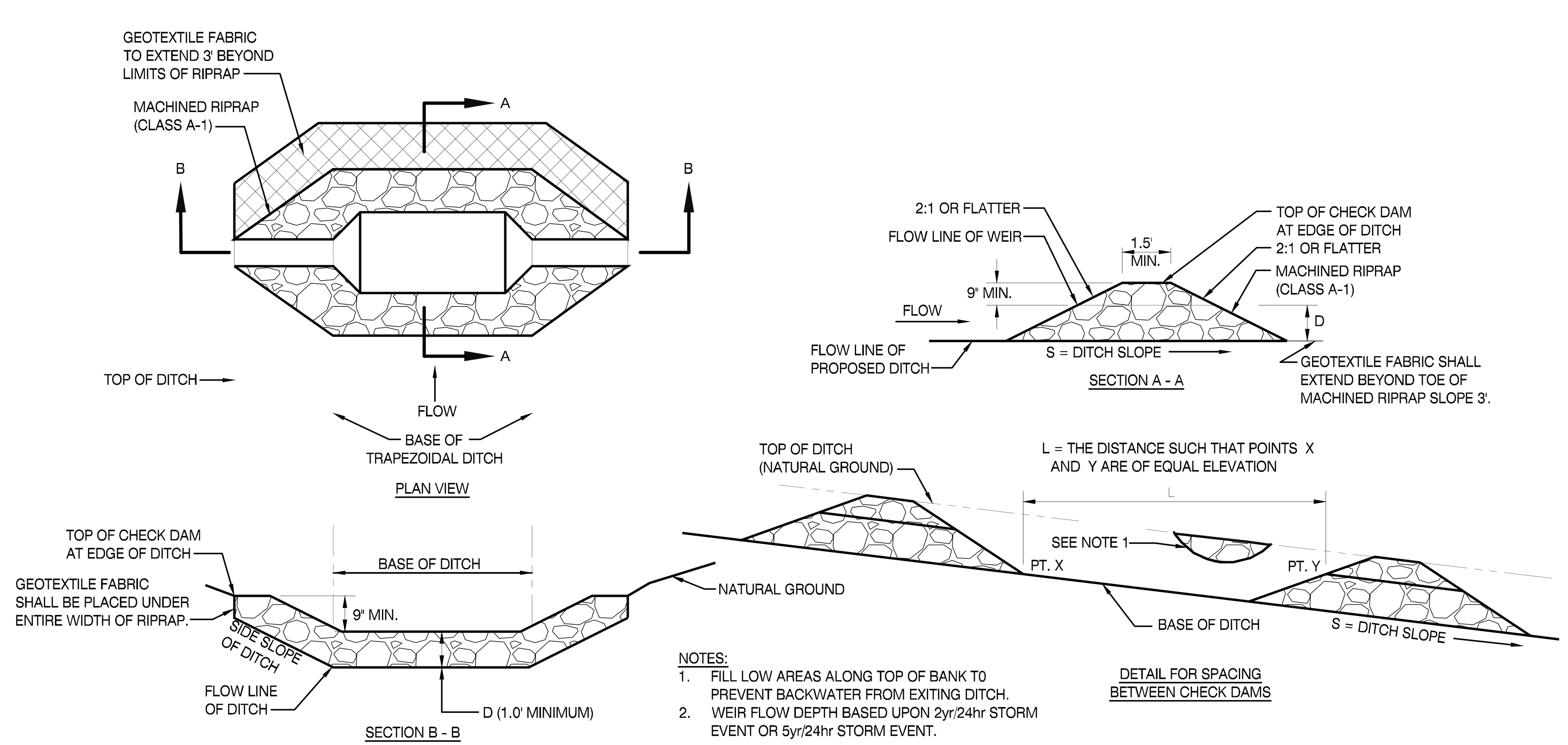
NOTES:
1. INSTALL AND MAINTAIN GEOTEXTILE FILTER BAG IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS. PRODUCT SHOWN IS THE SILTSACK® SEDIMENT CONTROL DEVICE MADE BY ACF ENVIRONMENTAL.
2. REGULAR SILTSACK® HAS A GRAB TENSILE STRENGTH OF 300 LBS. AND PUNCTURE STRENGTH OF 120 LBS. FABRIC IS WOVEN POLYPROPYLENE WITH DOUBLE STITCH.
3. INSPECT GEOTEXTILE FILTER BAG AFTER EACH RAINFALL EVENT. REMOVE SEDIMENT AS RECOMMENDED BY MANUFACTURER.
4. REGULAR SILTSACK® HAS A FLOW RATE OF 40 GPM PER SQUARE FOOT OF CLEAN GEOTEXTILE MATERIAL. THE FLOW RATE WILL BE MUCH LOWER WHEN FILLED WITH SEDIMENT.

INLET PROTECTION 4



NOTES:
1. ACTUAL LAYOUT DETERMINED IN THE FIELD.
2. SIGNAGE IDENTIFYING THE CONCRETE WASHOUT AREA SHALL BE INSTALLED WITHIN 5FT.OF THE WASHOUT FACILITY.

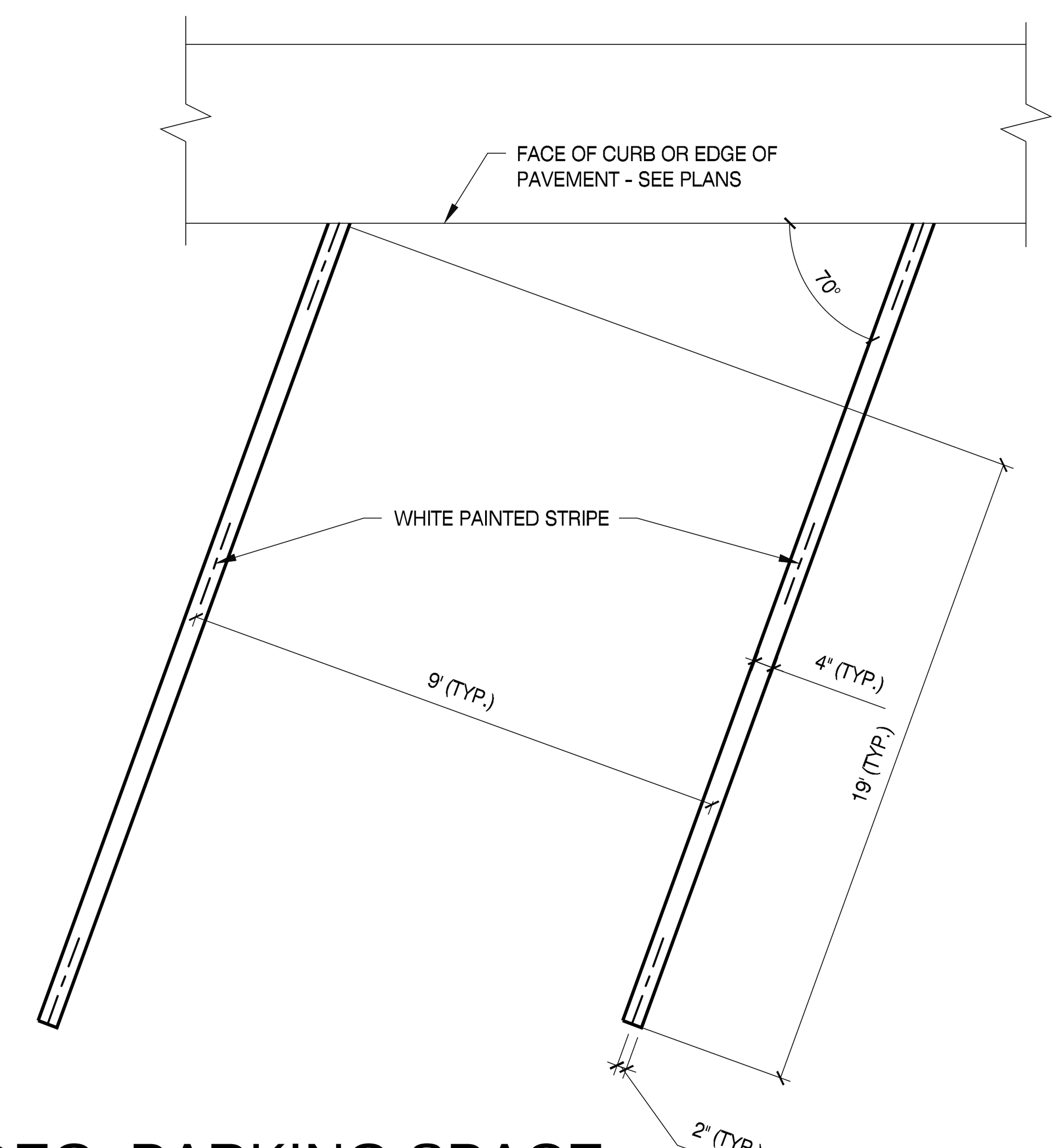
CONCRETE WASHOUT 5



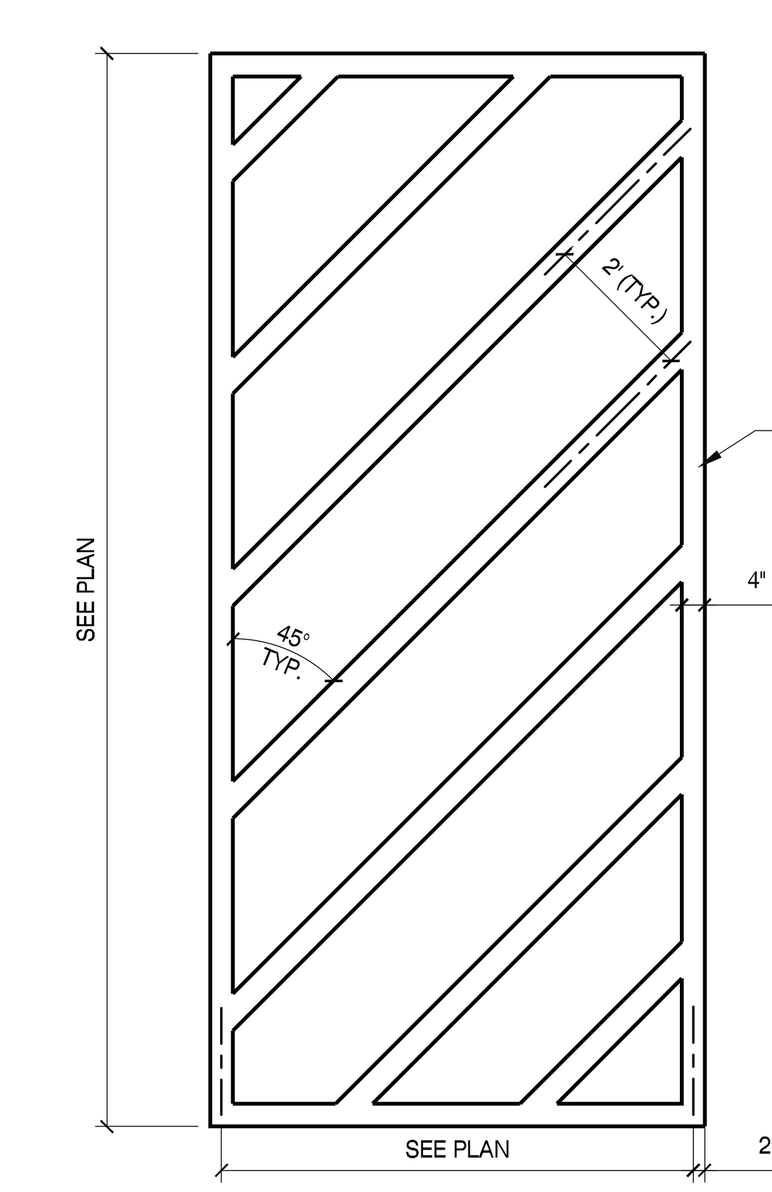
NOTES:
1. FILL LOW AREAS ALONG TOP OF BANK TO PREVENT BACKWATER FROM EXITING DITCH.
2. WEIR FLOW DEPTH BASED UPON 2yr/24hr STORM EVENT OR 5yr/24hr STORM EVENT.

D (DEPTH)	S (SLOPE)	L (LENGTH)
1'-0"	1 %	100'
1'-0"	2 %	50'
1'-0"	3 %	33'
1'-0"	4 %	25'
1'-0"	5 %	20'
1'-0"	6 %	17'
1'-0"	7 %	14'
1'-0"	8 %	13'
1'-0"	9 %	11'
2'-0"	1 %	200'
2'-0"	2 %	100'
2'-0"	3 %	66'
2'-0"	4 %	50'
2'-0"	5 %	40'
2'-0"	6 %	34'
2'-0"	7 %	28'
2'-0"	8 %	26'
2'-0"	9 %	22'

CHECK DAM 6



70 DEG. PARKING SPACE 7



'NO PARKING' AREA 8

MBI
ENGINEER:
MBI COMPANIES INC.
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com

CONSULTANT

SEAL

10/06/2023

PROJECT INFORMATION

PROJECT: CLINTON HIGH SCHOOL WELDING AND AGRICULTURAL BUILDING

PROJECT ADDRESS: 411 DOUGLAS LN. CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE
- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION

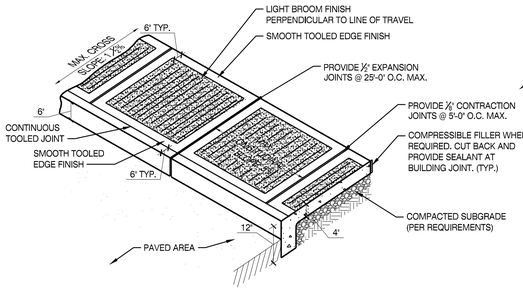
KEY PLAN

SHEET INFORMATION
- SHEET ISSUED: 09/25/2023
- DESIGNED BY: I.A.J.
- DRAWN BY: I.A.J.
- REVIEWED BY: A.M.A.
- SHEET TITLE: CIVIL DETAILS
- SHEET NO.: C800

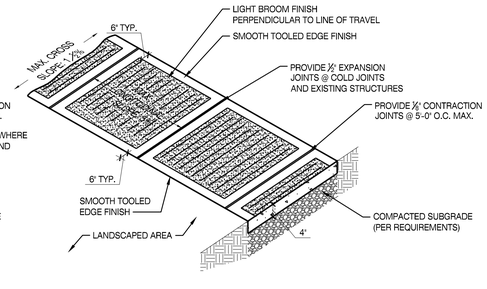
TFM # 00017-D

PROJECT # 2023-10-31-01

FIELD SET



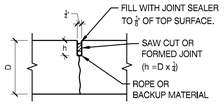
AT PAVED AREA



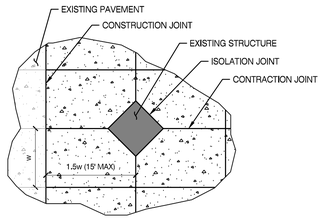
AT LANDSCAPED AREA

CONCRETE SIDEWALK 1

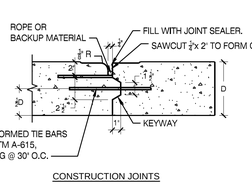
NOTES:
1. JOINT SPACING SHALL BE UNIFORM AND TYPICALLY LESS THAN 30xSLAB THICKNESS. IN NO CASES SHALL JOINT SPACING EXCEED 15'
2. THE LENGTH OF JOINT SPACING SHALL NOT EXCEED 1.5w
3. SAWING OF THE JOINTS SHALL BEGIN AS SOON AS THE CONCRETE HAS HARDENED SUFFICIENTLY TO PERMIT SAWING WITHOUT EXCESSIVE RAVELING BUT IN NO CASE LONGER THAN 18 HOURS AFTER POURING. ALL JOINTS SHALL BE SAWED BEFORE UNCONTROLLED SHRINKAGE CRACKING OCCURS. IF NECESSARY, THE SAWING OPERATIONS SHALL BE CARRIED ON BOTH DAY AND NIGHT REGARDLESS OF WEATHER CONDITIONS. A STANDBY SAW SHALL BE AVAILABLE IN THE EVENT OF BREAKDOWN.
4. CONCRETE SHALL BE THOROUGHLY CONSOLIDATED AGAINST AND ALONG THE FACES OF ALL FORMS AND ALONG THE FULL LENGTH AND ON BOTH SIDES OF ALL JOINTS.
5. THE JOINTS CAN BE COMPLETELY FILLED WITH SEALANT MATERIAL OR PREMOLDED JOINT FILLER CAN BE INSERTED IN THE JOINT FIRST TO REDUCE THE AMOUNT OF SEALANT REQUIRED.
6. SEALER TO BE POURED TO WITHIN ¼" OF TOP OF PAVEMENT.
7. PRIOR TO SEALING, JOINT SURFACES MUST BE CLEANED AND FREE OF CURING COMPOUND, RESIDUE, LAITANCE AND ANY OTHER FOREIGN MATERIAL.
8. THE SURFACE SHOULD BE DRY WHEN THE SEALANT IS POURED.
9. THE CONCRETE SHALL BE DEPOSITED ON A MOIST GRADE IN SUCH MANNER AS TO REQUIRED AS LITTLE REHANDLING AS POSSIBLE. PLACING SHALL BE CONTINUOUS BETWEEN TRANSVERSE JOINTS WITHOUT THE USE OF INTERMEDIATE BULKHEADS. NECESSARY HAND SPREADING SHALL BE DONE WITH SHOVELS, NOT RAKES. WORKMEN SHALL NOT BE ALLOWED TO WALK ON THE FRESHLY MIXED CONCRETE WITH BOOTS OR SHOES COATED WITH EARTH OR FOREIGN SUBSTANCES.
10. ALL JOINT DOWELS MUST BE LEVEL, TRUE AND ADEQUATELY SUPPORTED SO THERE IS NO MOVEMENT DURING THE PLACEMENT OF CONCRETE.
11. TRANSVERSE CONSTRUCTION JOINTS ARE NECESSARY FOR PLANNED INTERRUPTIONS, AND WHERE EMERGENCY INTERRUPTIONS SUSPEND OPERATIONS FOR 30 MINUTES OR MORE.
12. ALL JOINTS & JOINT SEALANTS SHALL MEET T.D.O.T.'S STANDARDS AND SPECIFICATIONS.



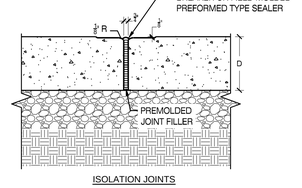
CONTRACTION JOINTS



TYPICAL JOINT PLACEMENT



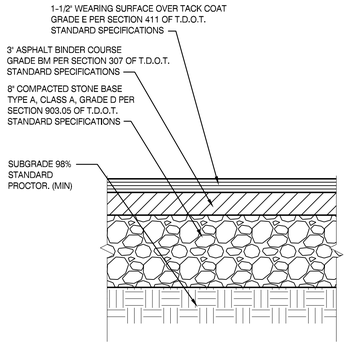
CONSTRUCTION JOINTS



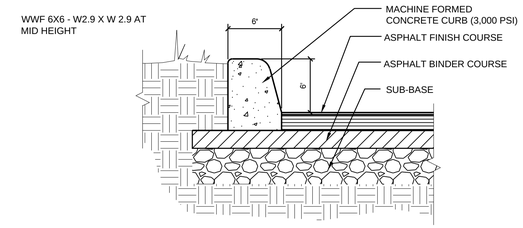
ISOLATION JOINTS

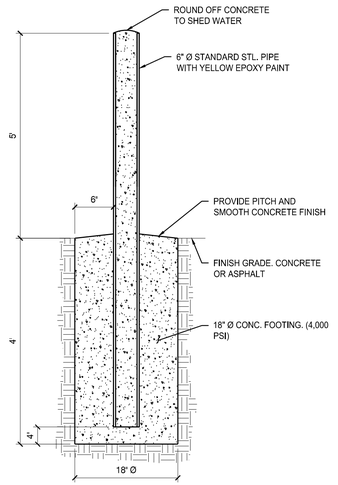
CONCRETE JOINTS 4

HEAVY DUTY ASPHALT PAVING 2

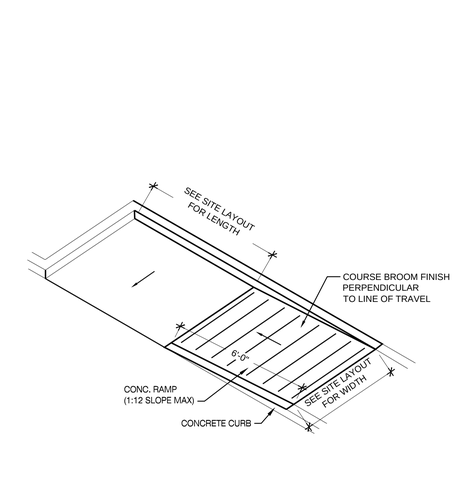


CONCRETE CURB 3

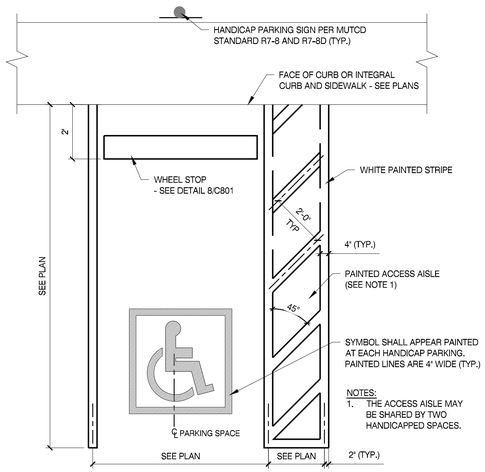




6" BOLLARDS 5

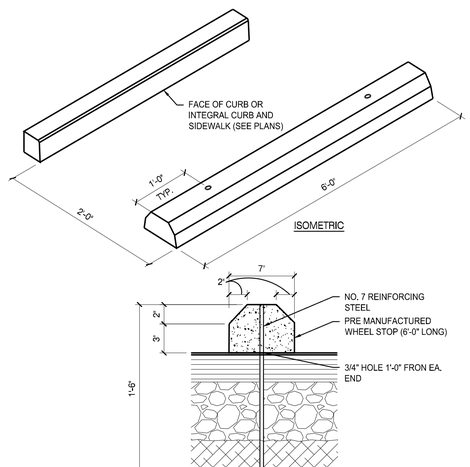


ADA RAMP 6

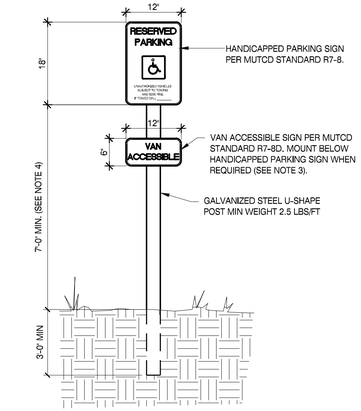


NOTES:
1. THE ACCESS AISLE MAY BE SHARED BY TWO HANDICAPPED SPACES.

HANDICAP PARKING SPACE 7

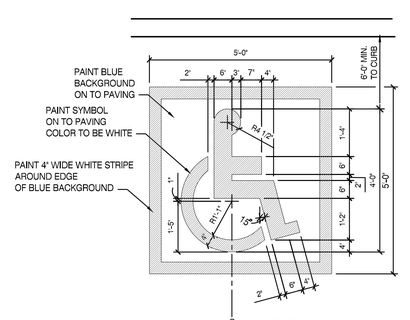


WHEEL STOP 8



NOTES:
1. CONTRACTOR TO PROVIDE NEW SIGN AT ALL HANDICAP PARKING STALLS.
2. CONTRACTOR TO VERIFY NAME AND NUMBER OF CONTACT PERSON OR COMPANY PRIOR TO FABRICATION OF SIGNAGE.
3. ONE OF EVERY 6 HANDICAPPED SPACES AND NO LESS THAN ONE SHALL BE VAN ACCESSIBLE.
4. MOUNTING HEIGHT FOR SIGN MAY BE REDUCED TO 5'-0" ABOVE GROUND LEVEL IF IT IS LOCATED IN A NON-PEDESTRIAN AREA, SUCH AS ON A BUILDING OR IN A LANDSCAPED AREA.

STANDARD HANDICAP SIGN 9



PAINTED HANDICAP SYMBOL 10

ENGINEER:
MBI COMPANIES INC.
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com
CONSULTANT

SEAL

WILLIAM L. HADDELTH
REGISTERED ENGINEER
AGRICULTURE
COMMERCE
No. 129196
STATE OF TENNESSEE
10/06/2023

PROJECT INFORMATION

PROJECT:

CLINTON HIGH SCHOOL WELDING AND AGRICULTURAL BUILDING

PROJECT ADDRESS:

411 DOUGLAS LN.
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	09/25/2023
DESIGNED BY:	I.A.J.
DRAWN BY:	I.A.J.
REVIEWED BY:	A.M.A.

SHEET TITLE:

CIVIL DETAILS

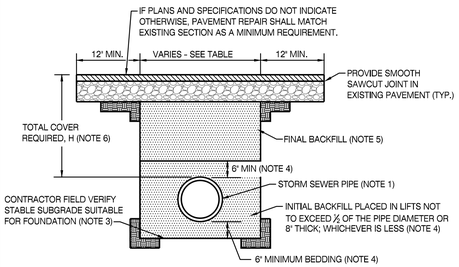
SHEET NO.:

C801

PROJECT # 2023-10-31-01 TFM # 00017-D

FIELD SET

R:\Revit Projects\2022\220042_Anderson County Schools\220042-02_Clinton High School Welding Building\03_Civil\03_CAD\03_220042-02_C81.dwg, 9/25/2023 8:11:30 AM

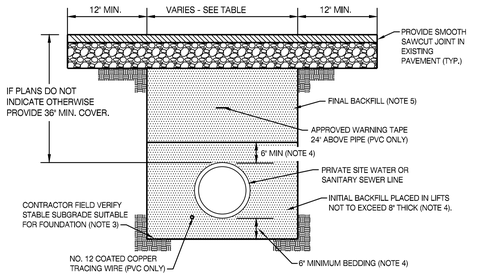


1. ALL HDPE PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, LATEST ED., AND ALL CMP SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM A 798, LATEST ED.
2. THIS DETAIL ADDRESSES A TRENCH TYPE INSTALLATION. FOR EMBANKMENT OR OTHER INSTALLATIONS, FOR CMP SEE AASHTO SECTION 27, FOR HDPE SEE AASHTO SECTION 30, THIS DETAIL DOES NOT ADDRESS OSHA TRENCH SAFETY REQUIREMENTS. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO MEET ALL HEALTH AND SAFETY ISSUES REGARDING TRENCH SAFETY.
3. WHERE THE TRENCH BOTTOM IS UNSUITABLE FOR FOUNDATION IN THE OPINION OF THE PROJECT GEOTECHNICAL ENGINEER, THE CONTRACTOR SHALL STABILIZE THE TRENCH BOTTOM ACCORDING TO THE RECOMMENDATIONS OF THE PROJECT GEOTECHNICAL ENGINEER.
4. BEDDING AND INITIAL BACKFILL TO 6" ABOVE THE CROWN OF THE PIPE SHALL BE #57 CRUSHED STONE. ELIMINATE VOIDS BY KNIFING UNDER AND AROUND PIPE WITH SHOVEL OR OTHER MEANS AT THE DISCRETION OF THE CONTRACTOR.
5. FINAL BACKFILL FOR ALL PIPES LOCATED IN PAVED AREAS SHALL BE COMPACTED #57 CRUSHED STONE MEETING THE REQUIREMENTS OF THE TENNESSEE STATE DEPARTMENT OF TRANSPORTATION. FOR GRASS OR LANDSCAPED AREAS, PROVIDE #57 CRUSHED STONE INITIAL BACKFILL TO 6" ABOVE CROWN OF PIPE AND COVER GRAVEL WITH A NONWOVEN GEOTEXTILE TO PREVENT MIGRATION OF FINES. FINAL BACKFILL TO SURFACE SHALL BE SOIL FREE OF FOREIGN DEBRIS. SOIL BACKFILL SHALL BE PLACED IN 8" LOOSE LIFTS AND BE COMPACTED TO 90% STANDARD DENSITY PER AASHTO T-99 OR PER PROJECT SPECIFICATIONS, WHICHEVER IS MORE STRINGENT. TOP 6" SHALL BE TOPSOIL FROM SITE STRIPPING OPERATIONS LOOSELY PLACED.
6. MINIMUM COVER, H, IS 24" UP TO 48" DIAMETER PIPE. H IS 36" FOR 54" TO 60" DIAMETER PIPE. H IS MEASURED FROM TOP OF PIPE TO TOP OF FLEXIBLE PAVEMENT OR GROUND SURFACE IN GRASS OR LANDSCAPE AREAS WHERE APPLICABLE. FOR RCP AND CONCRETE PIPE, H IS 12" MINIMUM.

RCP AND CONCRETE	
PIPE DIA (IN)	MINIMUM WIDTH (IN)
12	22
15	26
18	31
24	40
30	50
36	59
42	68
48	78
54	87
60	98

ALUMINIZED CMP, HDPE AND PVC	
PIPE DIA (IN)	MINIMUM WIDTH (IN)
4	21
6	23
8	26
10	28
12	30
15	34
18	39
24	48
30	56
36	64
42	72
48	80
54	88
60	96

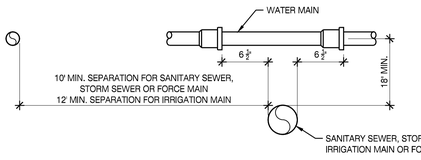
STORM SEWER TRENCH 1



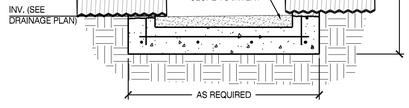
NOTES:
1. ALL PRIVATE SITE UTILITIES SHALL BE INSTALLED IN ACCORDANCE WITH THE APPLICABLE PLUMBING CODE, LOCAL UTILITY REQUIREMENTS, AND THE LOCAL AGENCY HAVING JURISDICTION OVER BUILDING CONSTRUCTION.
2. THIS DETAIL ADDRESSES A TRENCH TYPE INSTALLATION. THIS DETAIL DOES NOT ADDRESS OSHA TRENCH SAFETY REQUIREMENTS. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO MEET ALL HEALTH AND SAFETY ISSUES REGARDING TRENCH SAFETY.
3. WHERE THE TRENCH BOTTOM IS UNSUITABLE FOR FOUNDATION IN THE OPINION OF THE PROJECT GEOTECHNICAL ENGINEER, THE CONTRACTOR SHALL STABILIZE THE TRENCH BOTTOM ACCORDING TO THE RECOMMENDATIONS OF THE PROJECT GEOTECHNICAL ENGINEER.
4. BEDDING AND INITIAL BACKFILL TO 6" ABOVE THE CROWN OF THE PIPE SHALL BE #57 CRUSHED STONE. ELIMINATE VOIDS BY KNIFING UNDER AND AROUND PIPE WITH SHOVEL OR OTHER MEANS AT THE DISCRETION OF THE CONTRACTOR.
5. FINAL BACKFILL FOR ALL PIPES LOCATED IN PAVED AREAS SHALL BE COMPACTED #57 CRUSHED STONE MEETING THE REQUIREMENTS OF THE STATES DEPARTMENT OF TRANSPORTATION.
6. FOR GRASS OR LANDSCAPED AREAS, PROVIDE #57 CRUSHED STONE INITIAL BACKFILL TO 6" ABOVE CROWN OF PIPE AND COVER GRAVEL WITH A NONWOVEN GEOTEXTILE TO PREVENT MIGRATION OF FINES. FINAL BACKFILL TO SURFACE SHALL BE SOIL FREE OF FOREIGN DEBRIS. SOIL BACKFILL SHALL BE PLACED IN 8" LOOSE LIFTS AND BE COMPACTED TO 90% STANDARD DENSITY PER AASHTO T-99 OR PER PROJECT SPECIFICATIONS, WHICHEVER IS MORE STRINGENT. TOP 6" SHALL BE TOPSOIL FROM SITE STRIPPING OPERATIONS LOOSELY PLACED.
7. IF PLANS AND SPECIFICATIONS DO NOT INDICATE OTHERWISE, PAVEMENT REPAIR SHALL MATCH EXISTING SECTION AS A MINIMUM REQUIREMENT.

MINIMUM TRENCH WIDTHS	
PIPE DIA. (IN.)	MIN. WIDTH (IN.)
< 4	18
4	21
6	23
8	26

WATER AND SEWER TRENCH 2



1. WATER MAINS SHALL BE SEPARATED FROM STORM SEWER, SANITARY SEWER, NON-POTABLE IRRIGATION MAINS, AND FORCE MAINS BY A MINIMUM CLEAR VERTICAL DISTANCE OF 18" MEASURED BETWEEN THE BOTTOM OF THE UPPER PIPE AND THE TOP OF THE LOWER PIPE. THE 18" MINIMUM VERTICAL SEPARATION DISTANCE DOES NOT APPLY TO SEPARATION OF SEWER LATERALS AND POTABLE WATER MAIN PIPELINE INSTALLATIONS. ALSO, WATER MAINS SHALL BE SEPARATED FROM STORM SEWER, SANITARY SEWER AND FORCE MAINS BY 10' AND FROM IRRIGATION MAINS BY 12' MEASURED HORIZONTALLY BETWEEN OUTSIDE OF PIPES.
2. ALL CROSSINGS WITH VERTICAL CLEARANCE LESS THAN 18" SHALL REQUIRE SUBMISSION AND APPROVAL OF A DEVIATION. IF A DEVIATION IS SUBMITTED, THE FOLLOWING MINIMUM STIPULATIONS APPLY: THE CROSSING SHALL BE MADE USING THICKNESS CLASS 200 AWWA C-900 DR14, PVC (CLASS 235 AWWA C-905, DR 18, PVC FOR PIPES GREATER THAN 12" IN DIAMETER) OR DUCTILE IRON, PRESSURE CLASS 250 PIPE FOR A HORIZONTAL DISTANCE OF 10' ON EACH SIDE OF THE CROSSING. WATER MAIN CONCRETE ENCASEMENT SHALL ONLY BE MADE AFTER WRITTEN APPROVAL OF THE WATER DIRECTOR OR HIS DESIGNEE.
3. 18' CLEAR DISTANCE SHALL NOT BE REDUCED IN CASES WHERE WATER CROSSES UNDER SEWER LINE.
4. WATER MAINS, SANITARY SEWER, STORM SEWER, AND NON-POTABLE IRRIGATION MAINS SHALL BE IN SEPARATE TRENCHES.
5. WATER MAINS CROSSING ANY TYPE OF SANITARY SEWER, INCLUDING FORCE MAIN, OR STORM SEWER SHALL HAVE THE ONE FULL LENGTH OF WATER MAIN CENTERED ABOVE OR BELOW THE OTHER PIPELINE SO THAT THE WATER JOINTS WILL BE AS FAR AS POSSIBLE FROM THE OTHER PIPELINE, ALTERNATIVELY, AT SUCH CROSSINGS, THE PIPES SHALL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST 3' FROM ALL JOINTS IN VACUUM-TYPE SANITARY SEWERS, STORM SEWERS, STORMWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER.
6. 10' STONE SHALL BE UTILIZED FOR SEPARATION BETWEEN GRAVITY SANITARY SEWER LINES AND STORMWATER LINES.



DUMP NO WASTE — DRAINS TO WATERWAYS

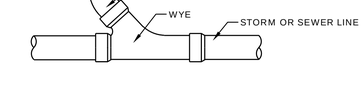
ENVIRONMENTAL MESSAGE

* SYMBOL SHALL BE PERMANENTLY CAST INTO GRATE

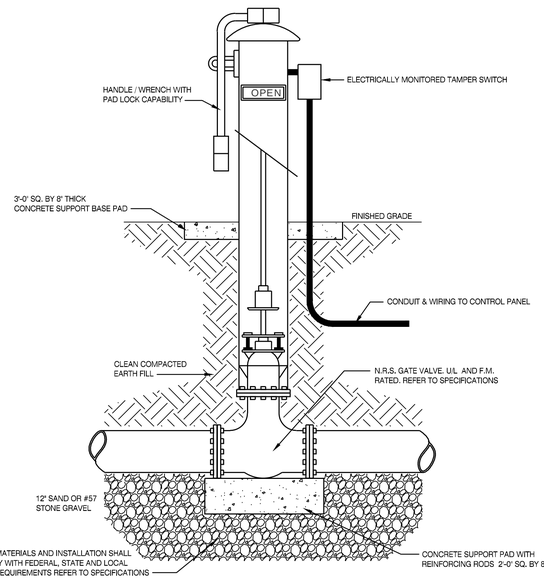
NOTES:
1. PRECAST SQUARE OR ROUND CATCHBASINS ARE ACCEPTABLE. CATCHBASINS SHALL MEET T.D.O.T. REQUIREMENTS. PRECAST VENDER SELECT STRUCTURE BEST SUITED FOR PIPE CONFIGURATION AND DEPTH.
2. PROVIDE ADJUSTING RINGS OR BRICK COURSES BELOW GRATE TO ALLOW FOR FINAL ADJUSTMENT AS SHOWN.
3. SLOPE GRATE TO MATCH SLOPE.
4. KNOCK OUT HOLE IN ADJUSTING RING OR BRICK COURSE TO ALLOW SITE DRAINAGE UNTIL FINAL PAVEMENT IS COMPLETE. PATCH HOLE WITH GROUT BEFORE PAVING.
5. SEE STORM DRAINAGE PLAN FOR TYPE AND SIZING OF PIPES AND INVERT ELEVATIONS.
6. CLEAN CATCH BASIN OF ALL CONSTRUCTION DEBRIS AND SILT AT COMPLETION OF SITE WORK.
7. PROVIDE #V-5636 WHERE LARGE GRATE IS INDICATED ON PLAN. GRATE SHALL INCLUDE PERMANENTLY STAMPED ENVIRONMENTAL MESSAGE TO PREVENT DUMPING OF ILLEGAL WASTE. PROVIDE V-56-36-80 WHERE LARGE ADA GRATE IS INDICATED ON THE PLAN. IF INLET IS LOCATED IN A PUBLIC ROAD, PROVIDE TDOT-STANDARD CAST IRON GRATE PER STANDARD DRAWING D-C6B-42
8. UNLESS OTHERWISE NOTED, PROVIDE A PRECAST T.D.O.T. NO. 42 CATCH BASIN.

SECTION A-A

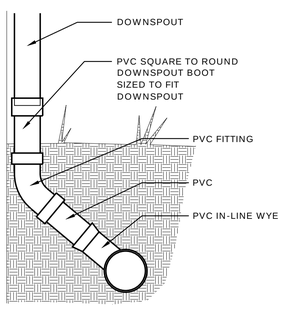
CATCH BASIN 3



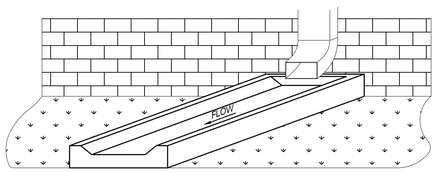
STORM/SEWER CLEANOUT 4

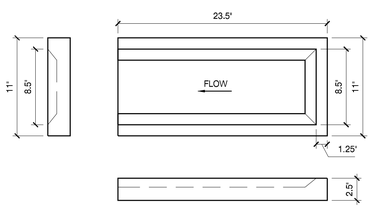


POST INDICATOR VALVE 9

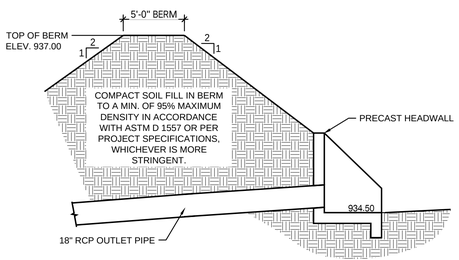


DOWNSPOUT BOOT 6





DRAINAGE SPLASH BLOCK 7



DETENTION POND 8

ENGINEER:
MBI COMPANIES INC.
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com
CONSULTANT

SEAL

PROJECT INFORMATION

PROJECT:

CLINTON HIGH SCHOOL WELDING AND AGRICULTURAL BUILDING

PROJECT ADDRESS:

411 DOUGLAS LN.
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	09/25/2023
DESIGNED BY:	I.A.J.
DRAWN BY:	I.A.J.
REVIEWED BY:	A.M.A.

SHEET TITLE: CIVIL DETAILS

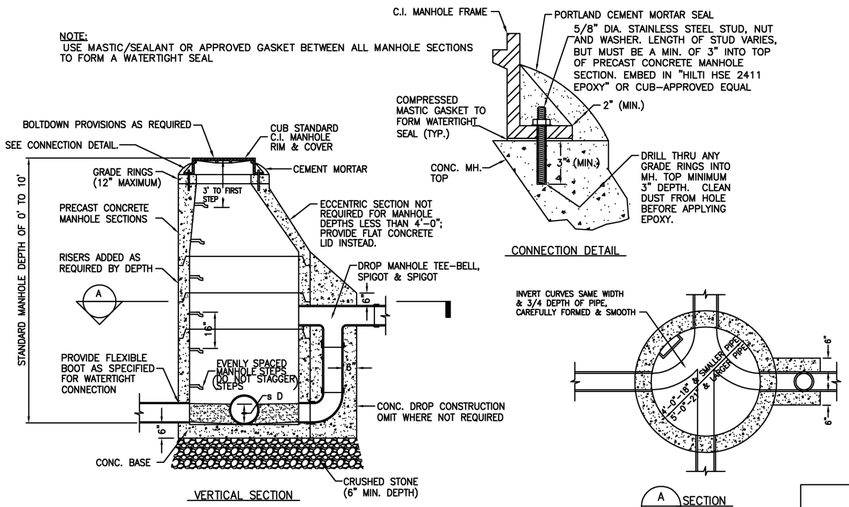
SHEET NO.: C802

PROJECT # 2023-10-31-01 TFM # 00017-D

FIELD SET

R:\Revit Projects\2022\220042_Anderson County Schools\220042-02_Clinton High School Welding Building\03_Civil\03_CAD\03_220042-02_CB1.dwg, 9/25/2023 8:11:19 AM

NOTE:
USE MASTIC/SEALANT OR APPROVED GASKET BETWEEN ALL MANHOLE SECTIONS TO FORM A WATERTIGHT SEAL



NOTES

1. STEPS TO BE PROVIDED ONLY AS DIRECTED BY CUB.

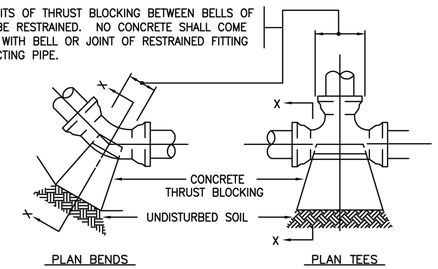
MANHOLE (4-10' DEEP) DETAIL N.T.S.

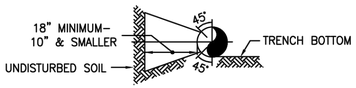
STANDARD SPECIFICATIONS

REVISIONS				
NO.	DR.	CHK.	DATE	DESCRIPTION
1	J.B.B.	D.A.H.	7/1/2009	STEP NOTE

C.U.B. TYPICAL SANITARY SEWER MANHOLE 1

CONFINE LIMITS OF THRUST BLOCKING BETWEEN BELLS OF FITTING TO BE RESTRAINED. NO CONCRETE SHALL COME IN CONTACT WITH BELL OR JOINT OF RESTRAINED FITTING AND CONNECTING PIPE.





NOTE: WRAP ALL FITTINGS TO BE RESTRAINED WITH PLASTIC BEFORE POURING CONCRETE

MINIMUM CONCRETE THRUST BLOCK SIZE IN CONTACT WITH THE BEARING SOIL IN SQUARE FEET.

PIPE SIZE	BENDS				STD. TEE
	11-1/4°	22-1/2°	45°	90°	
4	1.0	1.0	1.5	2.5	2.0
6	1.5	2.0	3.0	5.5	4.0
8	1.5	2.5	5.0	10.0	7.0
10	2.0	4.0	7.5	14.5	10.0
12	3.0	6.0	11.5	21.5	14.5
14	4.0	7.5	15.0	28.0	19.5
16	5.0	10.0	20.0	35.0	25.5
18	6.5	12.5	24.56	35.0*	32.0
20	8.5	16.5	32.6	35.0*	35.0*
24	10.0	20.0	35.0*	35.0*	35.0*
30	18.0	34.5	35.0*	35.0*	35.0*
36	25.0	35.0*	35.0*	35.0*	35.0*
42	32.5	35.0*	35.0*	35.0*	35.0*

BLOCKING SCHEDULE BASED ON 200 PSI WATER PRESSURE, 2,000 PSF SOIL BEARING PRESSURE & 1.25 SAFETY FACTOR.

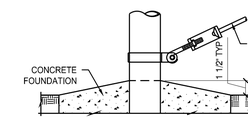
* INDICATES FITTINGS REQUIRING RESTRAINED JOINTS IN ADDITION TO CONC. THRUST BLOCKING.

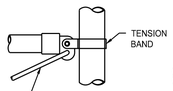
THRUST BLOCKING DETAIL N.T.S.

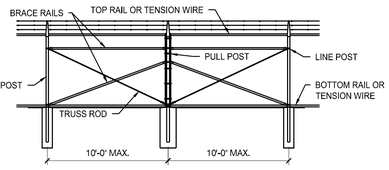
STANDARD SPECIFICATIONS

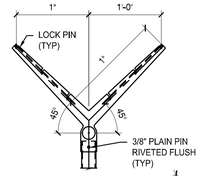
REVISIONS				
NO.	DR.	CHK.	DATE	DESCRIPTION
1	J.B.B.	D.A.H.	7/1/2009	ADDED NOTE

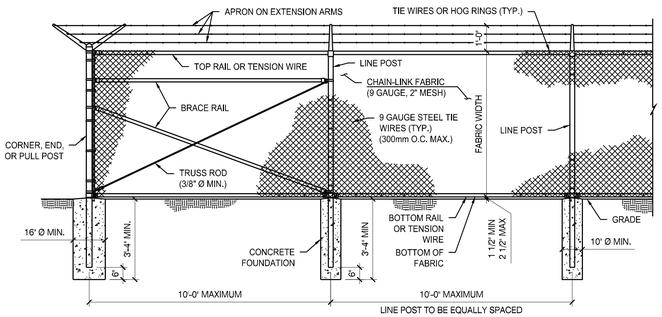
C.U.B. TYPICAL THRUST BLOCK 1

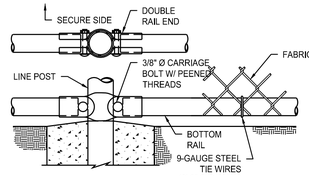


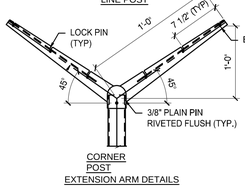


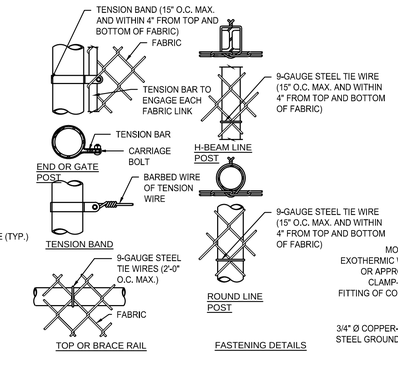


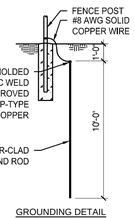












STEEL POST SCHEDULE			
	MINIMUM OUTSIDE DIMENSIONS (NOMINAL)		
USE AND SECTION	FABRIC WIDTH 72" OR LESS	FABRIC WIDTH 84" TO 96"	FABRIC WIDTH 108" AND OVER
CORNER END & PULL POSTS TUBULAR - ROUND TUBULAR - SQUARE C-SECTION (ROLL-FORMED)	2.375" O.D. 2.00" SQ. 3.50" X 3.50"	2.875" O.D. 2.50" SQ. 3.50" X 3.50"	4.00" O.D. 3.00" SQ.
LINE POSTS TUBULAR - ROUND H-SECTION C-SECTION (ROLL-FORMED)	1.90" O.D. 2.25" X 1.70" 1.875" X 1.625"	2.375" O.D. 2.25" X 1.70" 2.25" X 1.70"	2.875" O.D. 2.25" X 1.70"
TOP, BOTTOM & BRACE RAILS TUBULAR - ROUND TUBULAR - SQUARE H-SECTION C-SECTION (ROLL-FORMED)	1.66" O.D. 1.50" SQ. 1.625" X 1.50" 1.625" X 1.25"		

NOTES:
1. DETAILS SHOWN ARE TO CLARIFY REQUIREMENTS AND ARE NOT INTENDED TO LIMIT OTHER TYPES OF FENCE SECTIONS AND METHODS OF INSTALLATION THAT COMPLY WITH THE SPECIFICATIONS.
2. WIRE TIES, RAILS, POSTS, AND BRACES SHALL BE CONSTRUCTED ON THE SECURE SIDE OF THE FENCE ALIGNMENT. CHAIN-LINK FABRIC SHALL BE PLACED ON THE SIDE OPPOSITE THE SECURE AREA.
3. C-SECTION POSTS SHALL BE INSTALLED SO THAT THE VOID INSIDE THE POST IS COMPLETELY FILLED WITH CONCRETE UP TO THE TOP OF THE FOUNDATION.
4. BOTTOM RAIL SHALL BE ATTACHED TO DOUBLE RAIL ENDS USING
5. 3/8" CARRIAGE BOLTS AS SHOWN.
6. PROVIDE BRACE PANEL WHENEVER STRAIGHT RUNS EXCEED 500 FEET.

LEGEND:
TYPE FE5 - CHAIN-LINK FENCE WITHOUT BARBED-WIRE APRON
TYPE FE9 - CHAIN-LINK FENCE WIBARBED-WIRE ON SINGLE OUTRIGGER
TYPE FE7 - CHAIN-LINK FENCE WIBARBED-WIRE ON DOUBLE OUTRIGGER
TYPE FE8 - CHAIN-LINK FENCE WIBARBED-WIRE AND BARBED-TAPE ON DOUBLE OUTRIGGER
TR - FENCE WITH TOP RAIL AND TENSION WIRE AT BOTTOM
TBR - FENCE WITH TOP AND BOTTOM RAILS
TWB - TENSION WIRE TOP AND BOTTOM
TWBR - FENCE WITH TOP TENSION WIRE AND BOTTOM RAIL
FINAL NUMBER IS FABRIC WIDTH IN INCHES.

EXAMPLES:
FE6-TR-72 - CHAIN-LINK SECURITY FENCE WITH BARBED-WIRE ON SINGLE OUTRIGGER, TOP RAIL, AND 72 INCH FABRIC WIDTH.
FE5-TWB-84 - CHAIN-LINK SECURITY FENCE WITH NO APRON, TOP AND BOTTOM TENSION WIRE, AND 84 INCH FABRIC WIDTH.

CHAIN LINK FENCE 3

MBI COMPANIES INC.
299 N WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com
CONSULTANT

SEAL

PROJECT INFORMATION

PROJECT:

CLINTON HIGH SCHOOL WELDING AND AGRICULTURAL BUILDING

PROJECT ADDRESS:

411 DOUGLAS LN.
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	09/25/2023
DESIGNED BY:	I.A.J.
DRAWN BY:	I.A.J.
REVIEWED BY:	A.M.A.

SHEET TITLE:

CIVIL DETAILS

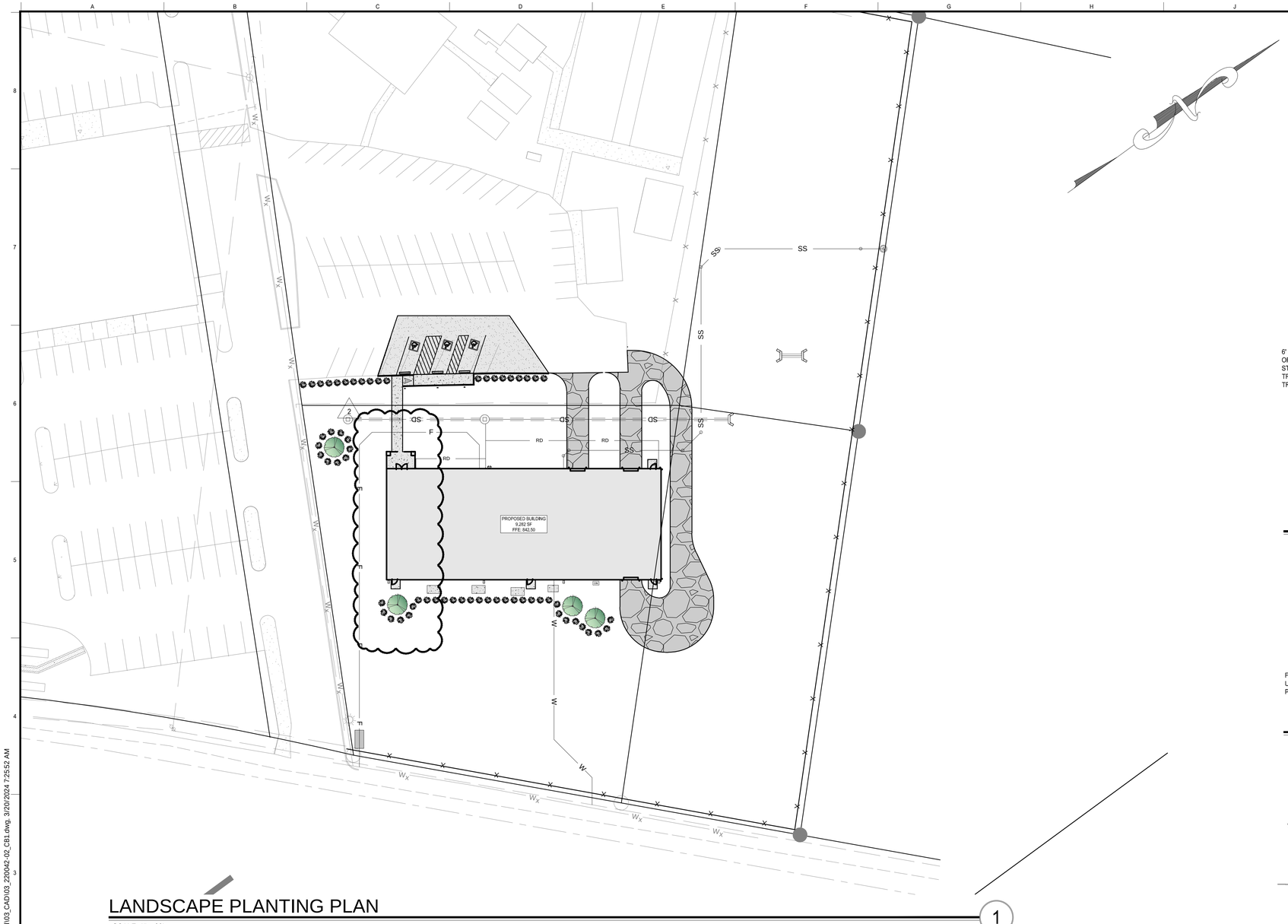
SHEET NO.:

C803

PROJECT # 2023-10-31-01 TFM # 00017-D

FIELD SET

R:\Revit Projects\2022\220042_Anderson County Schools\220042-02_Clinton High School Welding Building\03_Civil\03_CAD\03_220042-02_CB1.dwg, 9/25/2023 8:10:48 AM



LANDSCAPE PLANTING PLAN

SCALE: 1" = 30'

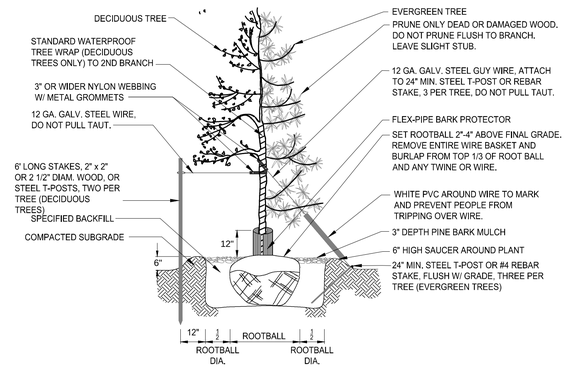
1

GENERAL LANDSCAPE NOTES

1. CARE IS TO BE TAKEN TO PROTECT ALL UNDERGROUND UTILITIES. THE GENERAL CONTRACTOR IS TO VERIFY AND MARK THE EXACT LOCATION OF ALL EXISTING UTILITIES (WATER, SEWER, GAS, ELECTRIC, SEPTIC TANKS, ETC.)
2. SOIL USED IN THE BACKFILL OF PLANTING PITS AND LANDSCAPE BEDS SHALL BE CLEAN AND WEED FREE, AND SHALL BE MIXED WITH 25% PEAT MOSS/PINE BARK BY VOLUME.
3. 12:6:6 PENNINGTON NURSERY FERTILIZER OR EQUAL SHALL BE USED IN ALL PLANTING PITS.
4. HERBICIDE, TREFLAN OR EQUAL TO BE APPLIED TO PLANTING BEDS FOR NOXIOUS WEED CONTROL.
5. ALL PLANTING BEDS TO HAVE A MINIMUM 3" OF PINE BARK MULCH.
6. PRESSURE TREATED WOODEN STAKES SHALL BE USED FOR TREES OVER 2" CALIPER OR IN AREAS WHERE HEAVY WIND IS A FACTOR.
7. ALL LANDSCAPING MATERIAL SHALL BE INSTALLED IN A PROFESSIONAL MANNER, AND ACCORDING TO ACCEPTED PLANTING PROCEDURES.
8. TOPSOIL FURNISHED BY THE OWNER OR LANDSCAPE CONTRACTOR SHALL BE NATURAL, FERTILE,FRIABLE SOIL POSSESSING CHARACTERISTICS REPRESENTATIVE OF PRODUCTIVE SOILS IN THE AREA. SOIL SHALL NOT BE EXCESSIVELY ACIDIC, ALKALINE OR TOXIC THAT IT MAY BE HARMFUL TO PLANT GROWTH. TOPSOIL SHOULD BE FREE OF CLAY LUMPS, STONES, STUMPS, ROOTS, OR SUBSTANCE 2" OR MORE IN DIAMETER.
9. ALL TREES RETAINED OR NEW SHALL BE PROPERLY MAINTAINED TO ENSURE THEIR SURVIVAL FOR 12 MONTHS AFTER DATE OF SUBSTANTIAL COMPLETION. ANY TREE WHICH FAILS TO SURVIVE AFTER 12 MONTHS SHALL BE REPLACED WITHIN 9 MONTHS OF LOSS.
10. LAWN QUALITY SHALL BE PROVIDED WITH FRESH, CLEAN, NEW-CROP SEED COMPLYING WITH TOLERANCE FOR PURITY AND GERMINATION ESTABLISHED BY OFFICIAL SEED ANALYSIS OF SEED VENDER'S CERTIFIED STATEMENT FOR EACH GRASS SEED MIXTURE. PROJECT CONDITIONS PROCEED WITH AND COMPLETE LAWNS AND GRASSES AS RAPIDLY AS PORTIONS OF SITE BECOME AVAILABLE. FERTILIZER WITH COMMERCIAL PERCENTAGE TO BE DETERMINED WITH ANALYSIS AND SEASON OF INSTALLATION. LIME TO BE NATURAL DOLOMITIC LIMESTONE CONTAINING NOT LESS THAN 85% OF TOTAL CARBONATE WITH MINIMUM OF 30% MAGNESIUM CARBONATES. SOD TYPE SHALL BE STRONGLY ROOTED, FRESHLY CULTIVATED SOD, NOT LESS THAN 1 YEAR OLD, FREE OF WEEDS AND UNDESIRABLE NATIVE GRASSES.
11. PROPOSED PLANT MATERIAL WILL NOT INTERFERE WITH ANY EXISTING AND/OR PLANNED UNDERGROUND OR OVERHEAD UTILITIES.
12. APPLY TEMPORARY SEEDING WHENEVER GRADING OPERATIONS ARE TEMPORARILY HALTED FOR OVER 14 DAYS AND FINAL GRADING OF EXPOSED SURFACES IS TO BE COMPLETED WITHIN ONE YEAR. APPLY TEMPORARY SEEDING TO SOIL STOCKPILES.
13. APPLY PERMANENT SEEDING WHENEVER GRADING OPERATIONS ARE COMPLETED AND ALL CONSTRUCTION OPERATIONS WILL NOT IMPACT THE DISTURBED AREA. APPLY PERMANENT SEEDING TO ALL NON-CONSTRUCTION AREAS, WHICH SHOW SIGNS OF EXCESSIVE EROSION.
14. THE GUYING OF TREES IS OPTIONAL BUT, THE LANDSCAPE CONTRACTOR SHALL BE WHOLLY RESPONSIBLE FOR THE STABILITY AND PLUMB CONDITION OF ALL TREES AND SHRUBS AND SHALL BE LEGALLY LIABLE FOR ANY DAMAGE CAUSED BY THE INSTABILITY OF ANY PLANT MATERIALS. THE GUYING DETAILS ARE AN APPROVED METHOD OF TREE GUYING, OR EQUAL.
15. CONTRACTOR SHALL ADHERE TO ALL LOCAL LANDSCAPE ORDINANCES.

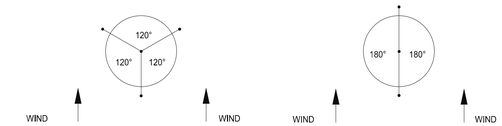
811 Know what's below. Call before you dig.
In Tennessee call 811 or 1-800-351-1111

GRAPHIC SCALE
20 0 10 20 40 60
1 INCH = 20'



TREE PLANTING & GUYING

3

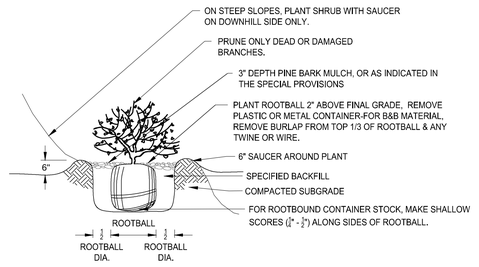


FOR TREES ON 4:1 OR STEEPER SLOPES, PLACE 2 GUYS UPSLOPE, ONE DOWNSLOPE; OTHERWISE PLACE FOR PREVAILING WIND.

GUYING PATTERN FOR DECIDUOUS TREE PLANTING

GUYING PATTERN

3



SHRUB PLANTING DETAIL

4

PLANT SCHEDULE

FLOWERING TREES	QTY	COMMON NAME / BOTANICAL NAME	SIZE	CAL	CONT
	4	DOGWOOD / Cornus florida	15-30' H	2"	

DECIDUOUS SHRUBS	QTY	COMMON NAME / BOTANICAL NAME	SIZE	CONT
	61	SPIREA / Spiraea x 'Little Princess'	18-24" H	3 gal

ENGINEER:
MBI COMPANIES INC.
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com
CONSULTANT

SEAL

PROJECT INFORMATION

PROJECT:

CLINTON HIGH SCHOOL WELDING AND AGRICULTURAL BUILDING

PROJECT ADDRESS:

411 DOUGLAS LN.
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION
1	01/25/2024	
2	03/20/2024	SFMO REVIEW COMMENTS

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	10/06/2023
DESIGNED BY:	I.A.J.
DRAWN BY:	I.A.J.
REVIEWED BY:	A.M.A.

SHEET TITLE:

SITE LANDSCAPE PLAN

SHEET NO.:

L100

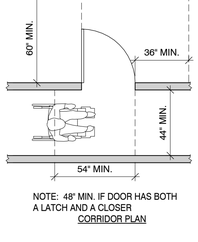
PROJECT # 2023-10-31-01 TFM # 00017-D

FIELD SET

R:\Revit Projects\2022\220042_Anderson County Schools\220042_02_Clinton High School Welding Building\03_Civil\03_CAD\03_220042-02_CB1.dwg, 3/20/2024 7:25:52 AM

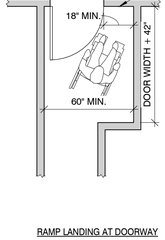
ARCH D

NOTES:
1. CLEAR SPACES MUST BE LEVEL TO PREVENT WHEELCHAIRS FROM ROLLING WHEN THE OCCUPANT RELEASES THE WHEEL GRIPS TO REACH FOR THE DOOR. 1/4" SLOPE PER FOOT IS ALLOWED FOR DRAINAGE.
2. WHERE DOORS OPEN ONTO BUT NOT INTO A CORRIDOR. THE REQUIRED LEVEL AREA BEYOND THE DOORS MAY BE A MINIMUM OF 48" A.F.F.

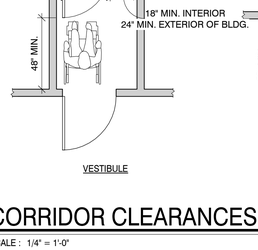


NOTE: 48" MIN. IF DOOR HAS BOTH A LATCH AND A CLOSER

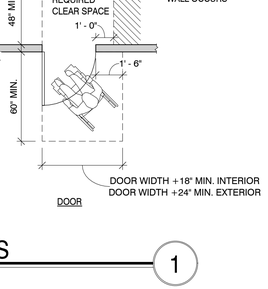
CORRIDOR PLAN



RAMP LANDING AT DOORWAY

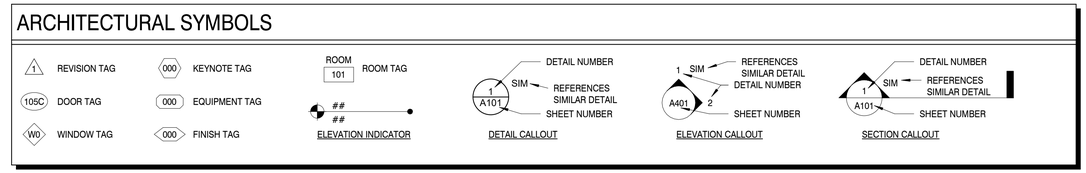


VESTIBULE

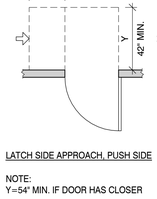


DOOR

ARCHITECTURAL SYMBOLS

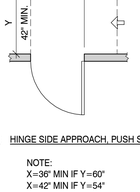


NOTE: Y=48" MIN. IF DOOR HAS CLOSER X 24" MIN.



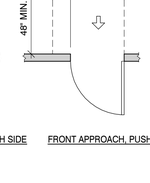
LATCH SIDE APPROACH, PUSH SIDE

NOTE: Y=48" MIN. IF DOOR HAS BOTH LATCH AND CLOSER



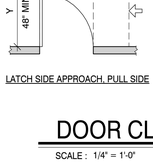
HINGE SIDE APPROACH, PUSH SIDE

NOTE: X=12" IF DOOR HAS BOTH A CLOSER AND LATCH



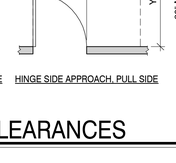
FRONT APPROACH, PUSH SIDE

NOTE: Y=54" MIN. IF DOOR HAS CLOSER X 24" MIN.

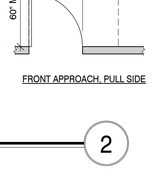


LATCH SIDE APPROACH, PULL SIDE

NOTE: X=36" MIN IF Y=60" X=42" MIN IF Y=54"

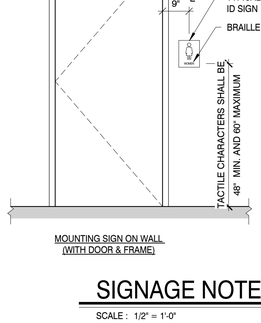


HINGE SIDE APPROACH, PULL SIDE

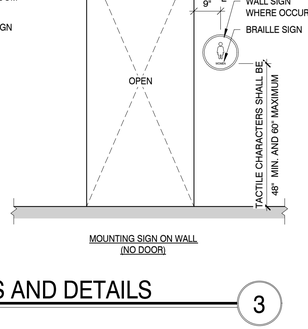


FRONT APPROACH, PULL SIDE

NOTES:
1. WHERE A SIGN CONTAINING RAISED CHARACTERS AND BRAILLE IS PROVIDED AT A DOOR, THE SIGN SHALL BE ALONGSIDE THE DOOR AT THE LATCH SIDE. WHERE A SIGN CONTAINING RAISED CHARACTERS AND BRAILLE IS PROVIDED AT DOUBLE DOORS WITH ONE ACTIVE LEAF, THE SIGN SHALL BE LOCATED ON THE INACTIVE LEAF. WHERE A SIGN CONTAINING RAISED CHARACTERS AND BRAILLE IS PROVIDED AT DOUBLE DOORS WITH TWO ACTIVE LEAVES, THE SIGN SHALL BE TO THE RIGHT OF THE RIGHT-HAND DOOR. WHERE THERE IS NO WALL SPACE ON THE LATCH SIDE OF A SINGLE DOOR, OR TO THE RIGHT SIDE OF DOUBLE DOORS, SIGNS SHALL BE ON THE NEAREST ADJACENT WALL. SIGNS CONTAINING RAISED CHARACTERS AND BRAILLE SHALL BE LOCATED SO THAT A CLEAR FLOOR AREA 18 INCHES (455 MM) MINIMUM BY 18 INCHES (455 MM) MINIMUM, CENTERED ON THE RAISED CHARACTERS IS PROVIDED BEYOND THE ARC OF ANY DOOR SWING BETWEEN THE CLOSED POSITION AND 45 DEGREE OPEN POSITION.
2. RAISED CHARACTERS SHALL BE 48 INCHES (1220 MM) MINIMUM ABOVE THE FLOOR, MEASURED TO THE BASELINE OF THE LOWEST RAISED CHARACTER AND 60 INCHES (1525 MM) MAXIMUM ABOVE THE FLOOR, MEASURED TO THE BASELINE OF THE HIGHEST RAISED CHARACTER.



MOUNTING SIGN ON WALL (WITH DOOR & FRAME)



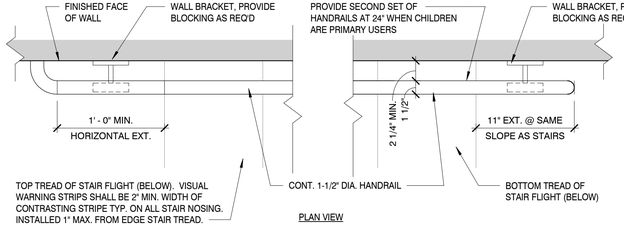
MOUNTING SIGN ON WALL (NO DOOR)

GENERAL NOTES

1. THE ARCHITECT HAS MADE EVERY EFFORT TO SET FORTH IN THE CONTRACT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE CONTRACTOR IS NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS AND DISCREPANCIES IN THE DRAWINGS AND SPECIFICATIONS SHALL NOT EXCUSE HIM FROM PROVIDING A COMPLETED FACILITY AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS. IN THE EVENT OF DISCREPANCIES, CONTRACTOR SHALL PRICE THE MORE EXPENSIVE AND EXTENSIVE WORK, UNLESS DIRECTED OTHERWISE.
2. DETAILS ARE INTENDED TO SHOW END RESULT OF DESIGN. MINOR MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS, AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF THE WORK. THESE DRAWINGS, GENERAL NOTES AND SPECIFICATIONS ARE COMPLIMENTARY, AND WHAT IS CALLED FOR BY ANY WILL BE BINDING AS IF CALLED FOR BY ALL. WORK SHOWN OR REFERRED TO ON ANY DRAWING SHALL BE PROVIDED AS THOUGH SHOWN ON ALL RELATED DRAWINGS. IF THERE IS ANY CONFLICT OR DISCREPANCY WITHIN OR BETWEEN ANY OF THE CONTRACT DOCUMENTS INVOLVING THE QUALITY OR QUANTITY OF WORK REQUIRED, THE WORK OF HIGHEST QUALITY AND/OR GREATEST QUANTITY SHOWN OR SPECIFIED SHALL BE FURNISHED.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR BECOMING FAMILIAR WITH ALL CONTRACT DOCUMENTS AND FIELD CONDITIONS, AND CONFIRM THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION.
4. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK, USING HIS BEST SKILL AND ATTENTION. HE SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT. THE CONTRACTOR SHALL PROVIDE AT THE PROJECT SITE A FULL SET OF CONSTRUCTION DOCUMENTS ANNOTATED WITH THE LATEST REVISIONS AND CLARIFICATIONS FOR THE USE BY ALL.
5. CONDUCT OPERATIONS IN SUCH A MANNER AS TO MINIMIZE INTERFERENCE WITH USE OF PUBLIC WAYS AND ADJACENT USED FACILITIES. DO NOT CLOSE, BLOCK OR OTHERWISE OBSTRUCT USE OF PUBLIC WAYS OR FACILITIES WITHOUT WRITTEN CONSENT OF AUTHORITIES HAVING JURISDICTION. PROVIDE ALTERNATE ROUTES TO CLOSED OR OBSTRUCTED FACILITIES AS REQUIRED BY LOCAL REGULATIONS.
6. EXCEPT WHERE OTHERWISE SPECIFIED, THE CONTRACTOR SHALL AT ALL TIMES PROVIDE PROTECTION AGAINST WEATHER TO MAINTAIN ALL WORK, MATERIALS, APPARATUS, AND FIXTURES FROM INJURY OR DAMAGES. AT THE END OF THE DAY'S WORK, ALL NEW WORK LIKELY TO BE DAMAGED SHALL BE COVERED OR OTHERWISE PROTECTED AS REQUIRED.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING HIS OWN TELEPHONE AND TOILET FOR ALL SCOPE OF WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL TAPS, EXTENSIONS, VALVES, OR OTHER DEVICES NECESSARY TO RUN POWER TOOLS AND EQUIPMENT. SUCH MODIFICATIONS TO EXISTING UTILITIES MUST BE REMOVED AT COMPLETION OF THE PROJECT.
8. THE CONTRACTOR SHALL LIMIT THE INGRESS AND EGRESS OF WORKERS AND EQUIPMENT TO THE CONSTRUCTION SITE TO AUTHORIZED PERSONS ONLY. DAMAGE TO ANY EXISTING INTERIOR OR EXTERIOR CONSTRUCTION SHALL BE REPAIRED TO "LIKE NEW" CONDITION UNDER THIS CONTRACT.
9. THE CONTRACTOR SHALL MAINTAIN AT ALL TIMES ADEQUATE SAFETY BARRICADES FOR PROTECTION OF JOB PERSONNEL AND THE PUBLIC AND CLEAR ACCESS IN AND OUT OF THE WORK SITE SO AS TO FACILITATE DAILY TRAFFIC MOVEMENT, DELIVERIES, AND SAFETY. REMOVE BARRICADES WHEN NO LONGER REQUIRED.
10. REMOVE DEBRIS, RUBBISH, AND OTHER SUBSTANCES FROM SITE. LEGALLY TRANSPORT AND DISPOSE OF SUCH MATERIALS OFF-SITE. BURYING OR BURNING OF "TO BE REMOVED" MATERIALS ON THE PROJECT SITE IS FORBIDDEN.
11. COOPERATE WITH THE APPLICABLE CITY OR OTHER GOVERNMENT OFFICIALS AND INSPECTORS AT ALL TIMES. IF SUCH OFFICIAL OR INSPECTOR DEEMS SPECIAL INSPECTION NECESSARY, PROVIDE ALL ASSISTANCE AND FACILITIES THAT WILL EXPEDITE HIS INSPECTION.
12. ALL DETAILS OF CONSTRUCTION SHALL CONFORM WITH THE APPLICABLE CODES (SEE PROJECT INFORMATION ON COVER SHEET)
13. PROVIDE HIGH SECURITY SURFACE MOUNTED BOX W/ TAMPER SWITCH (FIRE DEPARTMENT KEY BOX) AT THE ENTRANCE. THREE COMPLETE SETS OF KEYS MUST BE PROVIDED. KEYS MUST BE PROVIDED FOR ALL ROOMS CONTAINING FIRE AND LIFE SAFETY SYSTEM CONTROLS. PRIOR TO INSTALLATION VERIFY EXACT LOCATION AND EXACT TYPE OF BOX REQUIRED WITH LOCAL AUTHORITY HAVING JURISDICTION.
14. MOUNT FIRE EXTINGUISHERS LISTED IN SPECIFICATIONS AT LOCATIONS SHOWN AND/OR DIRECTED BY FIRE DEPARTMENT CODE OFFICIAL HAVING JURISDICTION.
15. INSTALL ALL MANUFACTURED ITEMS, MATERIALS, AND EQUIPMENT IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDED SPECIFICATIONS, UNLESS OTHERWISE INDICATED OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE. ALL WORK PERFORMED AND MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE, AS A MINIMUM STANDARD, WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES HAVING JURISDICTION. CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY BEARING ON THE PERFORMANCE OF THE WORK.
16. PLANS ARE NOT TO BE SCALED. THESE PLANS ARE INTENDED TO BE A DIAGRAMMATIC OUTLINE ONLY, UNLESS NOTED OTHERWISE. THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT AND APPURTENANCES, AND LABOR NECESSARY TO AFFECT ALL INSTALLATIONS INDICATED ON THE DRAWINGS. THE WORK SHALL ALSO INCLUDE ALL MATERIALS, DETAIL AND LABOR NECESSARY FOR THE SUCCESSFUL INSTALLATION OF THE WORK DESCRIBED HEREIN.
17. ALL DIMENSIONS ARE TO FACE OF CONC. BLOCK, CONC. PANEL, FACE OF EXISTING FINISH, OR FACE OF NEW STUD, UNLESS OTHERWISE NOTED. "CLEAR" DENOTES FINISH TO FINISH DIMENSIONS.
18. CONTRACTOR IS TO COORDINATE THE BUILDING PLANS WITH THE CIVIL AND SURVEY DRAWINGS FOR EXACT ELEVATIONS AND SLOPES OF EXTERIOR GRADES FOR INSTALLATION OF NEW EXTERIOR STAIRS, RAMPS AND SIDEWALKS. CONTRACTOR TO FIELD VERIFY EXTERIOR GRADES AT BUILDING ENTRANCES TO ALIGN WITH FINISHED FLOOR ELEVATIONS AND/OR NEW STAIR/RAMP ELEVATIONS. GRADING AT BUILDING PERIMETER TO SLOPE AWAY FROM BUILDING MIN. 1/4" PER FOOT.
19. ALL GRADES, LINES, LEVELS, AND DIMENSIONS SHOWN ON THE DRAWINGS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO START OF CONSTRUCTION. ANY ERROR OR INCONSISTENCY SHALL BE REPORTED TO THE ARCHITECT FOR INSTRUCTIONS PRIOR TO START OF CONSTRUCTION.
20. CONTRACTOR IS TO FIELD VERIFY LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO START OF CONSTRUCTION AND NOTIFY THE ARCHITECT OF ANY DISCREPANCIES OR POSSIBLE CONFLICTS.
21. CONTRACTOR IS TO FIELD VERIFY LOCATIONS AND RUNS OF ALL NEW AND EXISTING STORM SEWER PIPING AND ROOF TIE-INS. REPORT ANY DISCREPANCY TO THE ARCHITECT PRIOR TO START OF CONSTRUCTION.
22. DO NOT INTERRUPT EXISTING UTILITIES IN OCCUPIED FACILITIES UNLESS AUTHORIZED IN WRITING BY AUTHORITIES HAVING JURISDICTION. IF INTERRUPTION IS ALLOWED, PROVIDE ALTERNATE TEMPORARY SERVICES ACCEPTABLE TO GOVERNING AUTHORITIES. CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES 48 HOURS PRIOR TO ANY DEMOLITION WORK.
23. CONTRACTOR SHALL PERFORM HIGH QUALITY PROFESSIONAL WORK. JOIN MATERIALS TO UNIFORM ACCURATE FITS SO THEY MEET WITH NEAT, STRAIGHT LINES, FREE OF SMEARS OR OVERLAPS. INSTALL EXPOSED MATERIALS APPROPRIATELY LEVEL, PLUMB AND AT THE ACCURATE RIGHT ANGLES, OR FLUSH WITH ADJOINING MATERIALS. WORK OF EACH TRADE SHALL MEET ALL NATIONAL STANDARDS PUBLISHED BY THAT TRADE.
24. BEFORE ORDERING ANY MATERIALS OR DOING ANY WORK THE CONTRACTOR SHALL VERIFY ALL MEASUREMENTS AND SHALL BE RESPONSIBLE FOR THEIR CORRECTNESS. ANY DIFFERENCES BETWEEN DIMENSIONS INDICATED ON THE DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT FOR INSTRUCTIONS AND CONSIDERATIONS BEFORE PROCEEDING WITH THE WORK.
25. FURNISH AND INSTALL ALL REQUIRED BACKING FOR ALL SHELVES, CABINETS, FIXTURES, HANDRAILS AND EQUIPMENT. COORDINATING WITH OWNER AND CONTRACTOR FOR EXACT SIZE, NUMBER, AND LOCATION PRIOR TO START OF CONSTRUCTION. METAL BACKING PLATES TO BE FLAT STOCK (20 GAUGE MIN.) WHEN APPLIED TO METAL FRAMING. ALL WOOD BLOCKING, NAILERS, ETC. MUST BE FIRE RETARDANT TREATED.
26. GLAZING IN DOORS AND ADJACENT PANELS MUST BE TEMPERED. RESPONSIBILITY OF GLAZING SUBCONTRACTOR TO VERIFY & PLACE TEMPERED GLASS AS REQUIRED BY THE LOCAL BUILDING CODE & INSPECTOR.
27. SPOUT OUTLETS FOR WHEELCHAIR ACCESSIBLE DRINKING FOUNTAINS SHALL BE 36" MAX A.F.F. AND FOR STANDING PERSONS SHALL BE 38" MIN A.F.F. AND 43" MAX. A.F.F.
28. FILL ALL C.M.U. CELLS BELOW FINISH FLOOR OR FINISHED GRADE, WHICHEVER IS HIGHER SHALL BE SOLID GROUTED.
29. PROVIDE ADA COMPLIANT SIGNAGE AT ALL TOILET AND BATHROOMS. APPROPRIATELY IDENTIFIED AS "MEN" AND "WOMEN".
30. ALL TOILET ROOMS AND BATHROOMS WALLS SHALL EXTEND FROM FINISH FLOOR TO FLOOR/ ROOF DECK ABOVE, PROVIDE SOUND BATT INSULATION IN ENTIRE STUD CAVITY.
31. ALL WALLS WITHIN 24" OF SERVICE SINK, URINAL AND/ OR WATER CLOSET SHALL HAVE A SMOOTH, HARD, NONABSORBENT SURFACE, TO A HEIGHT OF NOT LESS THAN 48" A.F.F. IF TILE OR FRP IS NOT SPECIFIED PROVIDE EPOXY PAINT, COLOR TO BE SELECTED BY ARCHITECT.
32. ALL WALL BASE IN TOILET ROOMS, BATHROOMS AND KITCHENS SHALL BE COVED AND EXTEND UPWARD ONTO THE WALL A MIN. OF 4" A.F.F.

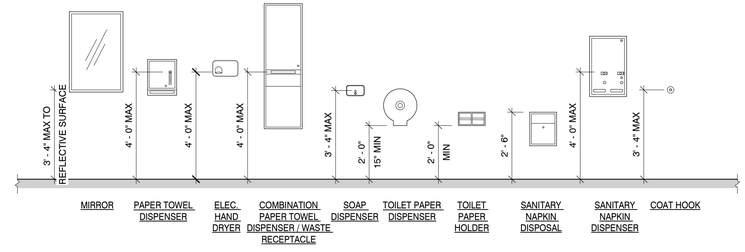
CORRIDOR CLEARANCES 1

SCALE : 1/4" = 1'-0"



DOOR CLEARANCES 2

SCALE : 1/4" = 1'-0"



SIGNAGE NOTES AND DETAILS 3

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

STAIR HANDRAIL DETAILS AND NOTES 4

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

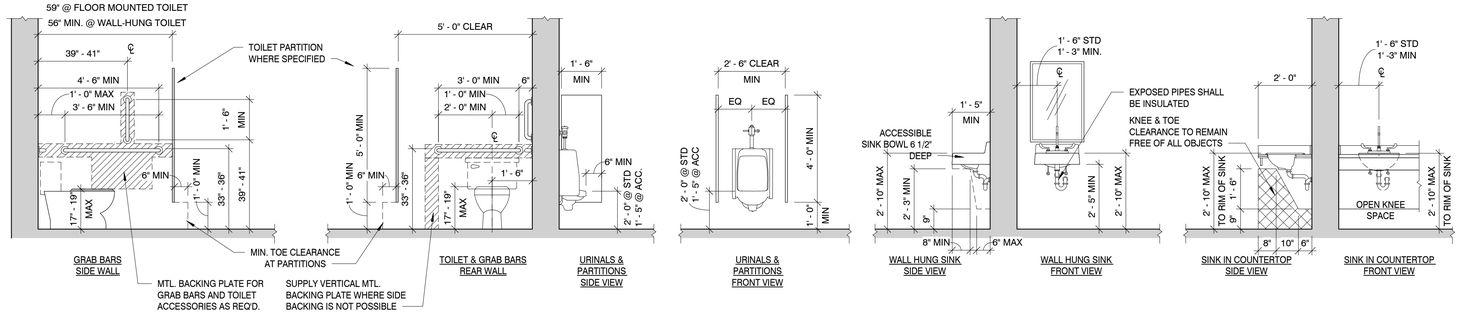
NOTES:
1. ALL GRAB BARS SHALL BE 1 1/4" - 1 1/2"Ø W/ 1 1/2" CLEAR BETWEEN GRAB BAR & FINISH SURFACE OF WALL.
2. FIXED SIDE WALL GRAB BARS SHALL BE 42" MIN. IN LENGTH, LOCATED 12" MAX. FROM REAR WALL AND EXTENDING 54" MIN. FROM REAR WALL. IN ADDITION, A VERT. GRAB BAR 18" MIN. IN LENGTH SHALL BE MOUNTED WITH THE BOTTOM OF THE BAR BETWEEN 39" - 41" A.F.F. AND THE CENTER LINE OF THE BAR LOCATED BETWEEN 39" - 41" FROM REAR WALL. [ANSI 604.5.1]
3. REAR WALL GRAB BAR SHALL BE 36" MIN. IN LENGTH, AND EXTEND FROM THE CENTERLINE OF THE WATER CLOSET 12" MIN. ON SIDE CLOSEST TO WALL, AND 24" MIN. ON THE TRANSFER SIDE. [ANSI 604.5.2]
4. ALLOWABLE STRESS SHALL NOT BE EXCEED FOR MATERIALS USED WHERE A VERT. OR HORZ. FORCE OF 250 POUNDS IS APPLIED AT ANY POINT ON THE GRAB BAR, FASTENER MOUNTING DEVICE, OR SUPPORTING STRUCTURE. [ANSI 609.8]
5. GRAB BARS SHALL BE INSTALLED IN A HORIZ. POSITION, 33" MIN - 36" MAX. A.F.F. MEASURED TO THE TOP OF THE GRIPPING SURFACE. [ANSI 609.4]

RESTROOM ACCESSORY MOUNTING HEIGHTS 5

SCALE : 3/8" = 1'-0"

PLUMBING FIXTURES DETAILS 6

SCALE : 3/8" = 1'-0"



MBI COMPANIES INC.
209 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com
CONSULTANT

SEAL

VALERIE DOWLEN NIPPER
REGISTERED ARCHITECT
No. 104008
STATE OF TENNESSEE
10/6/2023

PROJECT INFORMATION

PROJECT:

CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS:

411 DOUGLAS LN
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	10/06/2023
DESIGNED BY:	CMG
DRAWN BY:	MDC
REVIEWED BY:	CMG

SHEET TITLE:

GENERAL NOTES AND ACCESSIBILITY DETAILS

SHEET NO.:

A000

TFM # 00017-D
2023-10-31-01
PROJECT # 20
FIELD SET

Autodesk Docs://220042-02_Clinton High School Welding Building/220042-02_ArchS.rvt
10/6/2023 10:28:56 AM

ARCH D

BUILDING OCCUPANCY

BUILDING OCCUPANCY CLASSIFICATIONS PER IBC CHAPTERS 3, 4, 5

BUILDING OCCUPANCY GROUP: *IBC CHAPTER 3*

- ○ GROUP A-1
- ○ GROUP A-2
- ○ GROUP A-3
- ○ GROUP A-4
- ○ GROUP A-5
- ○ GROUP B
- ● GROUP E
- ○ GROUP F-1
- ○ GROUP F-2
- ○ GROUP H-1
- ○ GROUP H-2
- ○ GROUP H-3
- ○ GROUP H-4
- ○ GROUP H-5
- ○ GROUP I-1
- ○ GROUP I-2
- ○ GROUP I-3
- ○ GROUP I-4
- ○ GROUP M
- ○ GROUP R-1
- ○ GROUP R-2
- ○ GROUP R-3
- ○ GROUP R-4
- ○ GROUP S-1
- ○ GROUP S-2
- ○ GROUP U

MIXED USE / OCCUPANCY: *IBC SECTIONS 508 / 509*

- ○ ACCESSORY OCCUPANCIES *IBC SECTION 508.2*
- ○ NONSEPARATED OCCUPANCIES *IBC SECTION 508.3*
- ○ SEPARATED OCCUPANCIES *IBC SECTION 508.4*
- ○ INCIDENTAL USES *IBC SECTION 509*

SPECIAL REQUIREMENTS: *IBC CHAPTERS 4, 5*

- ○ HIGH-RISE BUILDING *IBC SECTION 403*
- ○ ATRIUM *IBC SECTION 404*
- ○ HAZARDOUS MATERIALS *IBC SECTION 414*
- ○ MEZZANINE *IBC SECTION 505.2*
- ○ EQUIPMENT PLATFORM *IBC SECTION 505.3*

MEANS OF EGRESS

DOORS: *PER IBC 1010*

- THE CLEAR WIDTH OF AN EGRESS DOOR OPENING SHALL NOT BE LESS THAN 32" AND NOT MORE THAN 48". THE CLEAR HEIGHT OF AN EGRESS DOOR OPENING SHALL NOT BE LESS THAN 80".
- DOORS SHALL SWING IN THE DIRECTION OF EGRESS TRAVEL WHERE SERVING A ROOM OR AREA CONTAINING AN OCCUPANT LOAD OF 50 OR MORE PERSONS OR A GROUP H OCCUPANCY.

STAIRWAYS: *PER IBC 1011*

- THE CLEAR WIDTH OF A STAIRWAY SHALL NOT BE LESS THAN 44". THE MINIMUM HEADROOM SHALL NOT BE LESS THAN 80" AS MEASURED FROM THE NOSING.

LIFE SAFETY SYSTEMS:

LIFE SAFETY SYSTEMS ARE PER IBC CHAPTER 9

- ● AUTOMATC SPRINKLER SYSTEM PER NFPA 13
- ● FIRE ALARM SYSTEM PER NFPA 72
- ● PORTABLE FIRE EXTINGUISHERS PER NFPA 10
- ○ STANDPIPE SYSTEM PER NFPA 14

EGRESS CAPACITY FACTORS

EGRESS CAPACITY FACTORS ARE PER: IBC 1005

- ● AUTOMATC SPRINKLER SYSTEM
- ○ EMERGENCY VOICE/ALARM COMMUNICATION SYSTEM

MINIMUM REQUIRED EGRESS WIDTH:

STAIRWAYS:	0.3
OTHER EGRESS COMPONENTS:	0.2

LIFE SAFETY LOAD CALCULATIONS

NO.	NAME	AREA SQ.FT.	OCCUPANT LOAD FACTOR	CALCULATED LOAD
ACCESSORY STORAGE AREA / MECHANICAL ROOM				
112	STORAGE	149 SF	300	1
116	ELEC. MECH.	89 SF	300	1
115	STORAGE	81 SF	300	1
106	STOR	83 SF	300	1
CORE				
113	CORRIDOR	321 SF		
109	WOMENS	152 SF		
110	MENS	152 SF		
102	CORRIDOR	616 SF		
EDUCATIONAL - CLASSROOM				
105	OFFICE	167 SF	20	9
100	VESTIBULE	169 SF	20	9
103	WORKROOM	200 SF	20	11
101	LOBBY/REC.	231 SF	20	12
108	CLASSROOM	959 SF	20	48
104	STORAGE	960 SF	20	48
102	CLASSROOM	1017 SF	20	51
EDUCATIONAL - SHOPS / VOCATIONAL ROOMS				
114	WELDING SHOP	1747 SF	50	35
111	AG INNOVATION	1774 SF	50	36
GRAND TOTALS		6867 SF		263

CONSTRUCTION TYPE AND ALLOWABLE BUILDING AREA

BUILDING AREAS AND CONSTRUCTION TYPE PER IBC CHAPTER 5

CONSTRUCTION TYPE: *IBC CHAPTER 5*

TYPE

CLASS	I	II	III	IV	V
A					
B		●			
HT					

BUILDING AREA MODIFICATIONS: *IBC CHAPTER 5*

- ○ AUTOMATIC SPRINKLER SYSTEM
  - ○ HEIGHT INCREASE *IBC SECTION 504.3*
  - ○ AREA INCREASE *IBC SECTION 506.2*
- ○ FRONTAGE INCREASE *IBC SECTION 506.3*
- ○ UNLIMITED AREA *IBC SECTION 507*

BUILDING AREA AND HEIGHT: *IBC TABLE 506.2 / 504.3*

MAXIMUM AREA ALLOWED:
ACTUAL BUILDING AREA:
MAXIMUM HEIGHT ALLOWED:
ACTUAL BUILDING HEIGHT:

ADDITIONAL FIRE RESISTANCE RATING INFORMATION

DESCRIPTION	FIRE RATING	CODE
SHAFT / HOISTWAY ENCLOSURES		*PER IBC 713.4 / 3002.1*
• 4 STORIES OR GREATER	2 HR	
• LESS THAN 4 STORES	1 HR	
EXIT ENCLOSURES		*PER IBC 1022.2*
• 4 STORIES OR GREATER	2 HR	
• LESS THAN 4 STORES	1 HR	
EXIT PASSAGEWAYS	1 HR	*PER IBC 1023.3*

MINIMUM NUMBER OF EXITS PER IBC TABLE 1006.3.2

OCCUPANT LOAD	MIN NUMBER OF EXITS PER STORY
1-500	2
501-1000	3
> 1000	4

SPACES WITH ONE EXIT PER IBC TABLE 1006.2.1

OCCUPANCY	MAXIMUM OCCUPANT LOAD
A, B, E, F, M, U	49
H-1, H-2, H-3	3
H-4, H-5, I, R-1	10
R-2, R-3, R-4	20
S	29

EGRESS DOOR SCHEDULE

DOOR MARK	DOOR WIDTH REQUIRED	DOOR WIDTH PROVIDED	EGRESS OCCUPANT LOAD	EGRESS MAXIMUM LOAD
LEVEL 1				
100B		67.5"		337
102B	32"	33"	25	165
111A	32"	33"	19	165
111B	32"	33"	37	165
113A	32"	33"	106	165
114A	32"	33"	19	165
114C	32"	33"	37	165

FIRE RESISTANCE RATING REQUIREMENTS

FIRE RESISTANCE RATING REQUIREMENTS PER IBC TABLE 601

TYPE OF CONSTRUCTION:	IIB
PRIMARY STRUCT FRAME:	0 HOURS
BEARING WALLS (EXT):	0 HOURS
BEARING WALLS (INT):	0 HOURS
NONBEARING WALLS AND PARTITIONS (EXT):	PER IBC TABLE 602
NONBEARING WALLS AND PARTITIONS (INT):	0 HOURS
FLOOR CONSTRUCTION:	0 HOURS
ROOF CONSTRUCTION:	0 HOURS

IBC TABLE 602: EXTERIOR WALL FIRE RATING

SEPERATION DISTANCE	CONS TYPE	OCCUPANCY GROUP H	F-1, M, S-1	A, B, E, F-2, I, R, S-2, U
X < 5	ALL	3	2	1
5 ≤ X ≤ 10	IA	3	2	1
	OTHERS	2	1	1
10 ≤ X ≤ 30	IA, IB	2	1	1
	IIB, VB	1	0	0
	OTHERS	1	1	1
X ≥ 30	ALL	0	0	0

CORRIDOR FIRE RATING PER IBC TABLE 1020.1

OCCUPANCY	OCCUPANT LOAD SERVED BY CORRIDOR	REQD FIRE RATING W/ SPRINKLER SYSTEM
A, B, E, F, M, S, U	> 30	0

COMMON PATH OF TRAVEL PER IBC 1006.2.1

OCCUPANCY	SPRINKLERED
A, E, M	75

MAXIMUM TRAVEL DISTANCE PER IBC 1017.2

OCCUPANCY	SPRINKLERED
A, E, F-1, M, R, S-1	250

DEAD END CORRIDOR PER IBC 1020.4

OCCUPANCY	SPRINKLERED
E	50

CORRIDOR FIRE RATING PER IBC TABLE 1018.1

OCCUPANCY	OCCUPANT LOAD SERVED BY CORRIDOR	REQ FIRE RATING W/ SPRINKLER SYSTEM
E	> 30	0 HOURS

COMMON PATH OF TRAVEL PER IBC 1014.3

OCCUPANCY	SPRINKLERED	MAX DISTANCE
E	YES	75 FT

MAXIMUM TRAVEL DISTANCE PER IBC 1016.2

OCCUPANCY	SPRINKLERED	MAX DISTANCE
E	YES	250 FT

DEAD END CORRIDOR PER IBC 1018.4

OCCUPANCY	SPRINKLER	MAX DISTANCE
E	YES	50 FT

LIFE SAFETY PLAN LEGEND

AREA OCCUPANCY TAG
- AREA NAME
- AREA NUMBER
- AREA OCCUPANT TYPE
- AREA OCCUPANT LOAD
- AREA SQUARE FOOTAGE

DOOR / STAIR EGRESS TAG
- REQ WIDTH
- ACTUAL LOAD
- MAX LOAD
- ACTUAL WIDTH

- F — FIRE ALARM PULL STATION
- L — CEILING MOUNTED FIRE ALARM COMBINATION AUDIO/VISUAL SPEAKER STROBE DEVICE
- L — CEILING MOUNTED FIRE ALARM VISUAL STROBE DEVICE
- EXIT SIGN
- S — CEILING MOUNTED SMOKE DETECTOR DEVICE
- FACP — FIRE ALARM CONTROL PANEL
- FEC — FIRE EXTINGUISHER CABINET MTD W/ HIGHEST OPERABLE PART @ 48" AFF MAX

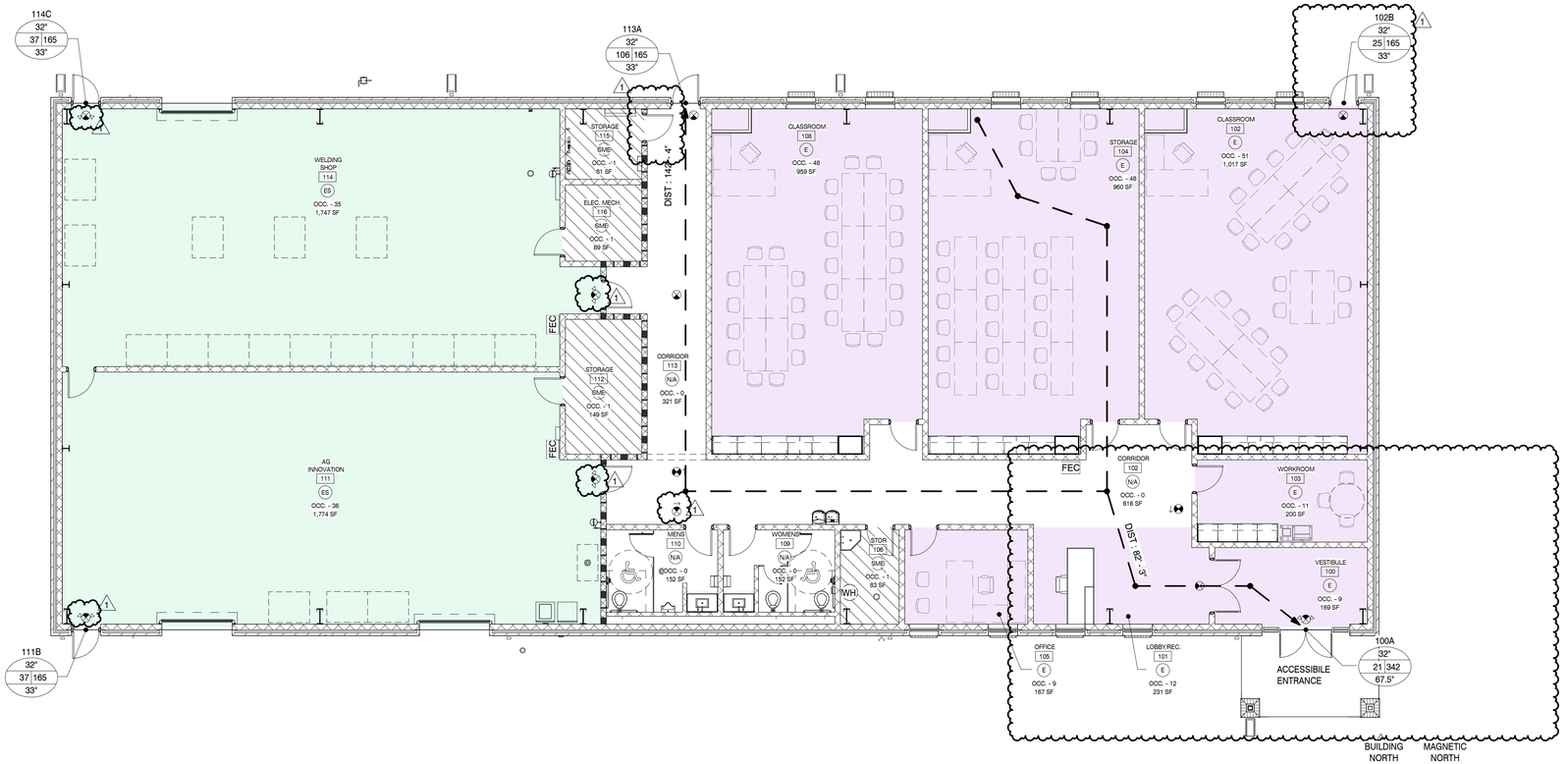
- INDICATES DISTANCE TO EXIT
- PATH OF TRAVEL
- 0 HR RATED WALL
- 1 HR RATED STUD WALL
- 1 HR RATED CMU WALL
- 2 HR RATED STUD WALL
- 2 HR RATED CMU WALL
- FUTURE TENANT WALL

LIFE SAFETY CODE SPACE FUNCTIONS PER IBC...

ABBREV	SPACE FUNCTION	GROSS / NET SF
E	EDUCATIONAL - CLASSROOM	NSF
ES	EDUCATIONAL - SHOPS / VOCATIONAL ROOMS	NSF
N/A	CORE	
SME	ACCESSORY STORAGE AREA / MECHANICAL ROOM	GSF

LIFE SAFETY PLAN

SCALE : 1/8" = 1'-0"



1

TFM # 00017-D
PROJECT # 2023-10-31-01

MBI COMPANIES INC.
209 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com

CONSULTANT

SEAL

VALERIE DOWLEN NIPPER
REGISTERED ARCHITECT
No. 104006
STATE OF TENNESSEE
10/28/24

PROJECT INFORMATION

PROJECT:

CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS:

411 DOUGLAS LN
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION
1	01.29.2024	ADDENDUM #01

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	10/06/2023
DESIGNED BY:	CMG
DRAWN BY:	MDC
REVIEWED BY:	CMG

SHEET TITLE: LIFE SAFETY INFORMATION

SHEET NO.: A001

TFM # 00017-D
PROJECT # 2023-10-31-01
FIELD SET

ARCH D

WALL TYPE NOTES:

WALL TYPE TAG

WALL TYPE ID — SD 10 / 2 A — CORE THICKNESS; FIRE RATING; ADDITIONAL COMPONENTS

WALL TYPE ID

S = METAL STUD M = MASONRY / CMU W = WOOD STUD
CH = METAL CH STUD C = CONCRETE

CORE THICKNESS

METAL STUD	WOOD STUD	MASONRY
H = 7/8" HAT CHANNEL	2 = 2x2 STUD	4 = 4" CMU
1 = 1 5/8" STUD	3 = 2x3 STUD	6 = 6" CMU
2 = 2 1/2" STUD	4 = 2x4 STUD	8 = 8" CMU
3 = 3 5/8" STUD	6 = 2x6 STUD	12 = 12" CMU
4 = 4" STUD	8 = 2x8 STUD	
5 = 5 1/2" STUD	10 = 2x10 STUD	
6 = 6" STUD		
8 = 8" STUD		
10 = 10" STUD		
12 = 12" STUD		

STUD WALL FIRE RATING CONSTRUCTION

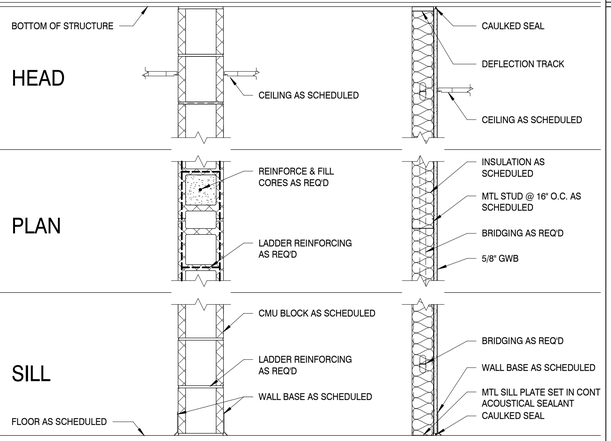
WALL RATING	STUD WALL CONSTRUCTION
0 = NO FIRE RATING	GWB AS SHOWN
1 = 1 HOUR FIRE RATING	GWB AS SHOWN
2 = 2 HOUR FIRE RATING	2 LAYERS GWB EACH SIDE
3 = 3 HOUR FIRE RATING	3 LAYERS GWB EACH SIDE
4 = 4 HOUR FIRE RATING	4 LAYERS GWB EACH SIDE
S = SMOKE BARRIER	GWB AS SHOWN

WALL TYPE ADDITIONAL COMPONENTS

ADDITIONAL COMPONENTS GROUP CODE	A	B	C	D	E	F	G	NOTES
ADD SOUND ATTENUATION BATTS	•							
. STC RATING	45							
ADD RIGID INSULATION								
ADD SPRAYFOAM INSULATION								
PROVIDE LEAD LINED GYPSUM BOARD								
PROVIDE FOIL LINED GYPSUM BOARD								
PROVIDE SECURITY MESH ABOVE CEILING TO STRUCTURE ABOVE								
ADD SMOKE SEAL		•						

NOTES:
1. ALL FIRE RATED WALL ASSEMBLIES SHALL BE CONSTRUCTED IN ACCORDANCE WITH UL 263
2. PROVIDE TYPE-X GWB WHERE WALLS ARE FIRE RATED
3. ALL PENETRATIONS THROUGH FIRE RATED WALLS SHALL BE FIRE STOPPED AND SEALED IN ACCORDANCE WITH UL 263
4. PARTITION WALLS ARE UNINSULATED EXCEPT WHERE FIRE RATED OR WHERE NOTED IN THE ADDITIONAL COMPONENTS SCHEDULE.
5. SILL PLATES, TOP PLATES, AND DEFLECTION TRACKS SHALL BE OF SAME SIZE AND GAGE AS STUD
6. WHERE FURRING WALLS ARE UNINSULATED, GWB MAY STOP A MIN. OF 6" ABOVE CEILING
7. COORDINATE LOCATIONS OF EXPANSION JOINTS IN MASONRY WALLS WITH STRUCT DWGS
8. PROVIDE WATER RESISTANT BACKING BOARD ON BOTH SIDES OF WET WALLS WHERE BOTH SIDES ARE WET
9. PROVIDE WATER RESISTANT BACKING BOARD IN LIEU OF GWB AT THE FOLLOWING LOCATIONS.
   A. WHERE INDICATED BY WALL TYPE
   B. WET LOCATIONS SUCH AS WATER FOUNTAINS, SHOWER STALLS, TUB SURROUNDS.
   C. WHERE CERAMIC TILE FINISHES ARE INDICATED. REFER TO FINISH PLANS FOR ADDITIONAL INFORMATION.
   D. WITHIN 2 FEET HORIZONTALLY AND 4 FEET VERTICALLY OF JANITOR / MOP SINKS
10. WALL TYPES INDICATED ARE INDEPENDENT OF APPLIED FINISHES. SEE FINISH PLANS FOR ADDITIONAL INFORMATION.
11. WATER RESISTANT BACKING BOARD SHALL BE TYPE-X AND ON OUTSIDE LAYER WHERE WET WALLS ARE FIRE RATED.

INTERIOR WALL TYPES LEGEND



WALL TYPE ID M MASONRY CMU WALL F METAL STUD FURRING WALL

OPAQUE THERMAL ENVELOPE REQ'S

ROOFS	
INSULATION ENTIRELY ABOVE DECK	R-25CI
METAL BUILDING	R-19 + R-11 LS W/ R-5 THERMAL BLOCKS (a, b)
ATTIC & OTHER	R-38
WALLS, ABOVE GRADE	
MASS	R-9.5CI
METAL BUILDING	R-13 + R-13CI
METAL FRAMED	R-13 + R-7.5CI
WOOD FRAMED AND OTHER	R-13 + R-3.8CI OR R-20
WALLS, BELOW GRADE	
BELOW GRADE WALL (d)	R-7.5CI
FLOORS	
MASS	R-10CI
JOIST / FRAMING	R-30
SLAB-ON-GRADE FLOORS	
UNHEATED SLAB	R-10 FOR 24 BELOW
HEATED SLAB	R-15 FOR 24 BELOW
OPAQUE DOORS	
SWINGING	U-0.61
ROLL-UP OR SLIDING	R-4.75

FOR SI: 1 INCH = 25.4 MM. CI = CONTINUOUS INSULATION. NR = NO REQUIREMENT.

LS = LINER SYSTEM—A CONTINUOUS MEMBRANE INSTALLED BELOW THE PURLINS AND UNINTERRUPTED BY FRAMING MEMBERS. UNCOMPRESSED, UNFACED INSULATION RESTS ON TOP OF THE MEMBRANE BETWEEN THE PURLINS.

(a) ASSEMBLY DESCRIPTIONS CAN BE FOUND IN ANSI/ASHRAE/IESNA APPENDIX A

(b) WHERE USING R-VALUE COMPLIANCE METHOD, A THERMAL SPACER BLOCK SHALL BE PROVIDED, OTHERWISE USE THE U-FACTOR COMPLIANCE METHOD IN TABLE C402.1.2.

(c) R-5.7CI IS ALLOWED TO BE SUBSTITUTED WITH CONCRETE BLOCK WALLS COMPLYING WITH ASTM C 90, UNGROUTED OR PARTIALLY GROUTED AT 32 INCHES OR LESS ON CENTER VERTICALLY AND 48 INCHES OR LESS ON CENTER HORIZONTALLY, WITH UNGROUTED CORES FILLED WITH MATERIALS HAVING A MAXIMUM THERMAL CONDUCTIVITY OF 0.44 BTU-IN/H-F2 °F.

(d) WHERE HEATED SLABS ARE BELOW GRADE, BELOW-GRADE WALLS SHALL COMPLY WITH THE EXTERIOR INSULATION REQUIREMENTS FOR HEATED SLABS.

(e) STEEL FLOOR JOIST SYSTEMS SHALL BE INSULATED TO R-38.

WALL LEGEND

SD 10 / 2 A

- EXTERIOR WALL - BRICK VENEER ON MTL STUD
- EJ
- WALL PARTITION - MTL STUD WALL
- WALL PARTITION - CMU WALL
- WALL PARTITION - 2 HOUR - CMU WALL - SEE UL905 (1)

- EJ = EXPANSION JOINT
- FOR MASONRY EXPANSION JOINTS - SEE STRUCTURAL SHEETS
- BRACE ALL METAL STUD WALLS TO STRUCTURE ABOVE @ 4'-0" O.C. MINIMUM.
- SEE INTERIOR WALL TYPES SHEET ON A0.x FOR MORE INFORMATION
- SEE WALL SECTIONS FOR MORE INFORMATION ON EXTERIOR WALL CONSTRUCTION
- INTERIOR WALLS ARE TYPE S-3-0 UNLESS OTHERWISE NOTED
- INTERIOR FURRINGS ARE TYPE F-3-0 UNLESS OTHERWISE NOTED

WALL TYPE TAG

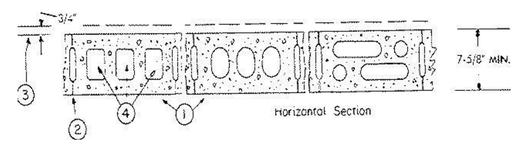
WALL TYPE ID — SD 10 / 2 A — CORE THICKNESS; FIRE RATING; ADDITIONAL COMPONENTS

FLOOR PLAN KEYNOTES

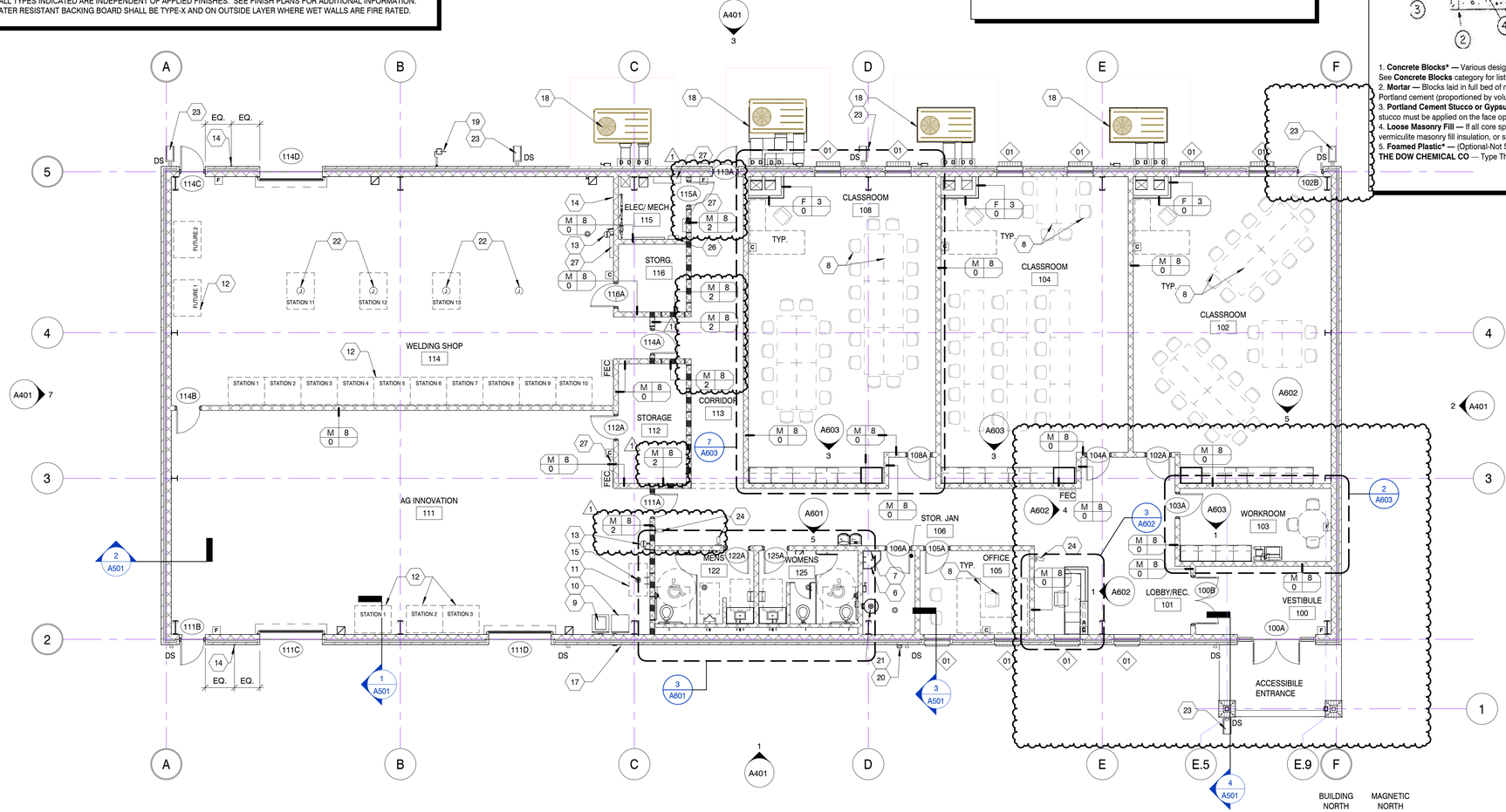
1. ALIGN FINISHES
2. CONCRETE FLOOR WITH INTERGRAL 4" WALL BASE
3. REMOVABLE LAVATORY VANITY - ANGLED APRON
4. PRE-ENGINEERED METAL BUILDING COLUMN
5. MILLWORK - REFER TO INTERIOR ELEVATIONS
6. MOP SINK - SEE PLUMBING. PROVIDE 48" HIGH FRP
7. PANEL WAINSCOT AT SIDE AND REAR WALL
   WALL-MOUNTED MOP AND BROOM RACK
8. FURNITURE - (N.I.C.)
9. WASHER - (O.F.C.I.)
10. DRYER - (O.F.C.I.)
11. DOG WASH STATION - (O.F.C.I.)
12. WELDING STATION - (O.F.C.I.)
13. EYE WASH STATION
14. HOSE BIB 24" A.F.F.
15. FLOOR DRAIN
16. PACKAGED UNIT CLEARANCE
17. DRYER VENT THRU
18. PACKAGED UNIT
19. GAS METER, SIZED FOR 360 MBH OVER 125' SET REGULATOR FOR 0.5 PSI
20. FIRE DEPARTMENT INLET CONNECTION
21. HOT WATER HEATER
22. CEILING RETRACTABLE COIL EXTENSION CORD REEL
23. SPLASHBLOCK
24. CAMERA SYSTEM THAT MONITORS EACH ENTERANCE HALLWAY. MOUNTING HEIGHT TO BE VERIFIED WITH OWNER. (1)
25. PRINTER - (O.F.C.I.)
26. FIRE ALARM CONTROL PANEL
27. PANELBOARD
28. PROVIDE GROMMETS IN OPEN COUNTER WORKSTATIONS. GROMMET LOCATIONS TO BE VERIFIED BY OWNER.

UL DESIGN NO. U905

March 17, 2004
Bearing Wall Rating — 2 HR.
Nonbearing Wall Rating — 2 HR
Load Restricted for Canadian Applications — See Guide BXUV7



1. **Concrete Blocks* —** Various designs. Classification D-2 (2 hr).
See **Concrete Blocks** category for list of eligible manufacturers.
2. **Mortar —** Blocks laid in full bed of mortar, nom. 3/8 in. thick, of not less than 2-1/4 and not more than 3-1/2 parts of clean sharp sand to 1 part Portland cement (proportioned by volume) and not more than 50 percent hydrated lime (by cement volume). Vertical joints staggered.
3. **Portland Cement Stucco or Gypsum Plaster —** Add 1/2 hr to classification if used. Where combustible members are framed in wall, plaster or stucco must be applied on the face opposite framing to achieve a max. Classification of 1-1/2 hr. Attached to concrete blocks (Item 1).
4. **Loose Masonry Fill —** If all core spaces are filled with loose dry expanded slag, expanded clay or shale (Rotary Kiln Process), water repellant vermiculite masonry fill insulation, or silicone treated perlite loose fill insulation add 2 hr to classification.
5. **Foamed Plastic* —** (Optional-Not Shown) — 1-1/2 in. thick max, 4 ft wide sheathing attached to concrete blocks (Item 1).
THE DOW CHEMICAL CO — Type Thermax



NOTED FLOOR PLAN

SCALE : 1/8" = 1'-0"

TFM # 00017-D
PROJECT # 2023-10-31-01

MBI COMPANIES INC.
209 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com

CONSULTANT

SEAL

VALERIE DOWLEN NIPPER — REGISTERED ARCHITECT — STATE OF TENNESSEE — No. 104008 — 12/9/24

PROJECT INFORMATION

PROJECT:
CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS:
411 DOUGLAS LN
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION
1	01.29.2024	ADDENDUM #01

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	10/06/2023
DESIGNED BY:	CMG
DRAWN BY:	MDC
REVIEWED BY:	CMG

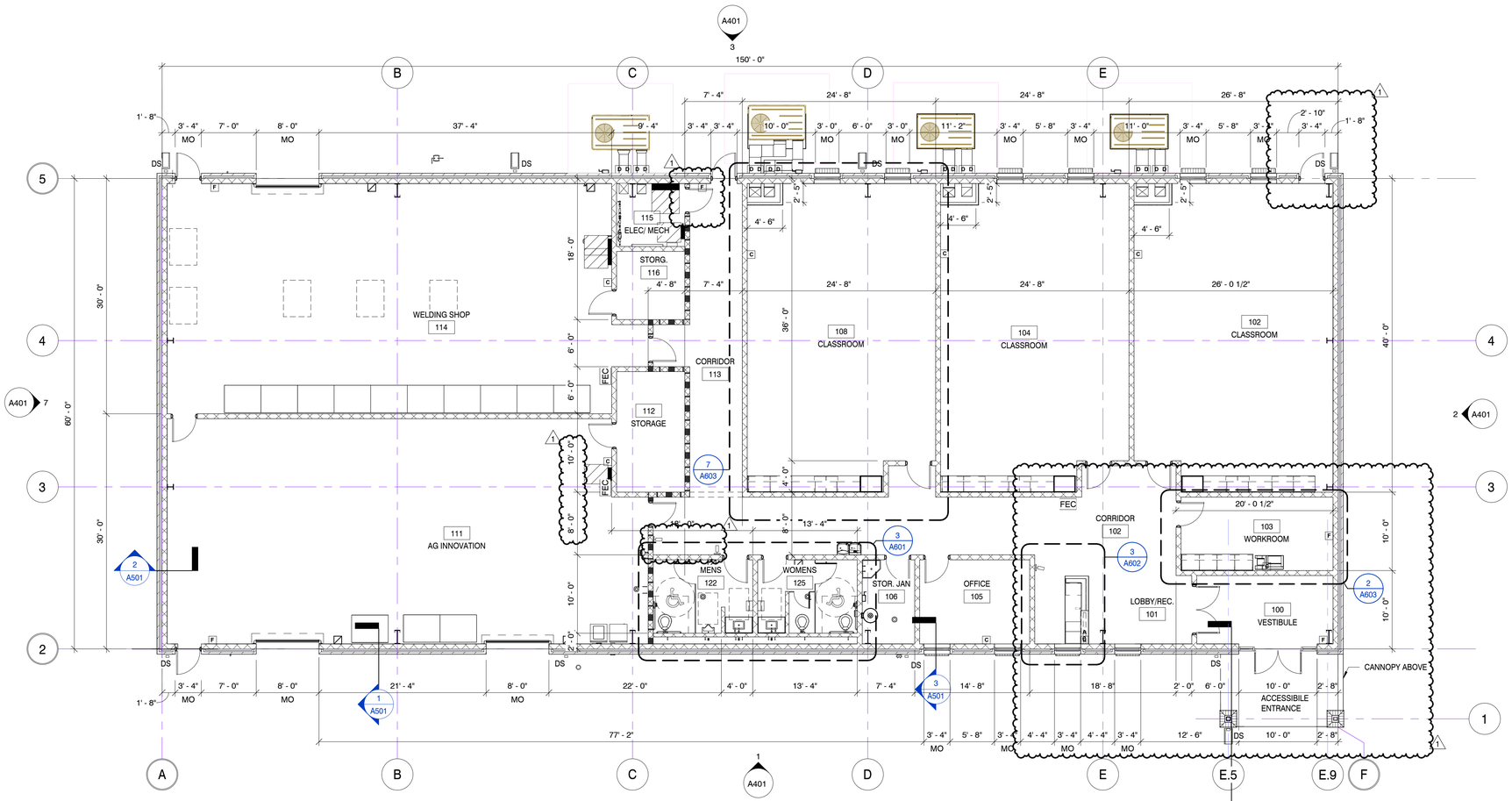
SHEET TITLE: NOTED FLOOR PLANS

SHEET NO.: A101

TFM # 00017-D
PROJECT # 2023-10-31-01
FIELD SET

Autodesk Docs://220042-02_Clinton High School Welding Building/220042-02_Rv23.rvt
3/19/2024 4:35:28 PM

ARCH D



DIMENSION FLOOR PLAN

SCALE : 1/8" = 1'-0"

BUILDING NORTH

MAGNETIC NORTH

WALL LEGEND

- EXTERIOR WALL - BRICK VENEER ON MTL STUD
- WALL PARTITION - MTL STUD WALL
- WALL PARTITION - CMU WALL
- WALL PARTITION - 2 HOUR - CMU WALL - SEE UL905

- EJ = EXPANSION JOINT
- FOR MASONRY EXPANSION JOINTS - SEE STRUCTURAL SHEETS
- BRACE ALL METAL STUD WALLS TO STRUCTURE ABOVE @ 4'-0" O.C. MINIMUM.
- SEE INTERIOR WALL TYPES SHEET ON A0.x FOR MORE INFORMATION
- SEE WALL SECTIONS FOR MORE INFORMATION ON EXTERIOR WALL CONSTRUCTION
- INTERIOR WALLS ARE TYPE S-3-0 UNLESS OTHERWISE NOTED
- INTERIOR FURRINGS ARE TYPE F-3-0 UNLESS OTHERWISE NOTED

WALL TYPE TAG

WALL TYPE ID — SD 10 / 2 A — CORE THICKNESS

FIRE RATING — ADDITIONAL COMPONENTS

MBI COMPANIES INC.
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com

CONSULTANT

SEAL

VALERIE DOWLEN NIPPER
REGISTERED ARCHITECT
STATE OF TENNESSEE
No. 104008
5/3/24

PROJECT INFORMATION

PROJECT:

CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS:

411 DOUGLAS LN
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION
1	01.29.2024	ADDENDUM #01

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	10/06/2023
DESIGNED BY:	CMG
DRAWN BY:	MDC
REVIEWED BY:	CMG
SHEET TITLE:	

DIMENSION FLOOR PLANS

SHEET NO.: A102

TFM # 00017-D
PROJECT # 2023-10-31-01

TFM # 00017-D
PROJECT # 2023-10-31-01
FIELD SET

Autodesk Docs://220042-02_Clinton High School Welding Building/220042-02_RvDI.rvt
3/19/2024 4:33:34 PM

ARCH D

DOOR AND FRAME SCHEDULE

DOOR NUMBER	DOOR PANELS: D-TYPE	THICK	HEIGHT	FULL WIDTH	PANEL CONFIG	LEAF (LEAF)	D-MAT	D-FINISH	LABEL	DOOR FRAME: SCHED FRAME	FRAME TYPE	F-TYPE	F-HEIGHT	F-WIDTH	DOOR HEAD	DOOR JAMBS	F-MAT	F-FINISH	DETAILS: HEAD	JAMB	T-HOLD	H-WARE	REMARKS
100A	AG	3/4"	7' - 0"	6' - 0"	PAIR - SWING	3' - 0" (3' - 0")	AL/GL			CW/SF		CW/SF					NA				9/A202	1	CARD READER ACCESS
100B	FG	1 3/4"	7' - 0"	6' - 0"	PAIR - SWING	3' - 0" (3' - 0")	AL/GL	PAINTED		S		S	7' - 2"	6' - 4"	2"	2"	HM	PAINTED	1/A201	13/A201	--	6	
102A	N	3/4"	7' - 0"	3' - 0"	SINGLE - SWING	3' - 0"	WD	PAINTED		S		S	7' - 2"	3' - 4"	2"	2"	HM	PAINTED	2/A201	2/A201	--	6	
102B	F	1 3/4"	7' - 0"	3' - 0"	SINGLE - SWING	3' - 0"	HM	PAINTED		S		S	7' - 2"	3' - 4"	2"	2"	HM	PAINTED	11/A202	10/A202	9/A202	3	
103A	F	1 3/4"	7' - 0"	3' - 0"	SINGLE - SWING	3' - 0"	WD	PAINTED		S		S	7' - 2"	3' - 4"	2"	2"	HM	PAINTED	2/A201	2/A201	--	12	
104A	N	3/4"	7' - 0"	3' - 0"	SINGLE - SWING	3' - 0"	WD	PAINTED		S		S	7' - 2"	3' - 4"	2"	2"	HM	PAINTED	2/A201	2/A201	--	6	
105A	N	3/4"	7' - 0"	3' - 0"	SINGLE - SWING	3' - 0"	WD	PAINTED		S		S	7' - 4"	3' - 4"	4"	2"	HM	PAINTED	2/A201	2/A201	--	11	
106A	N	1 3/4"	7' - 0"	3' - 0"	SINGLE - SWING	3' - 0"	WD	PAINTED		S		S	7' - 4"	3' - 4"	4"	2"	HM	PAINTED	2/A201	2/A201	--	5	
106C	N	3/4"	7' - 0"	3' - 0"	SINGLE - SWING	3' - 0"	WD	PAINTED		S		S	7' - 2"	3' - 4"	2"	2"	HM	PAINTED	2/A201	2/A201	--	6	
111A	N	1 3/4"	7' - 0"	3' - 0"	SINGLE - SWING	3' - 0"	WD	PAINTED	90	S		S	7' - 2"	3' - 4"	2"	2"	HM	PAINTED	2/A201	2/A201	--	4	
111B	F	1 3/4"	7' - 0"	3' - 0"	SINGLE - SWING	3' - 0"	HM	PAINTED		S		S	7' - 4"	3' - 4"	4"	2"	HM	PAINTED	11/A202	10/A202	9/A202	3	
111C	OC	3"	10' - 0"	8' - 0"	OHD COILING	8' - 0"	STL	PRE-FINISHED		N/A		N/A	10' - 0"	8' - 0"			STL	PRE-FINISHED	8/A202	7/A202	6/A202	--	
111D	OC	3"	10' - 0"	8' - 0"	OHD COILING	8' - 0"	STL	PRE-FINISHED		N/A		N/A	10' - 0"	8' - 0"			STL	PRE-FINISHED	8/A202	7/A202	6/A202	--	
112A	F	1 3/4"	7' - 0"	3' - 0"	SINGLE - SWING	3' - 0"	WD	PAINTED		S		S	7' - 2"	3' - 4"	2"	2"	HM	PAINTED	2/A201	2/A201	--	8	
113A	F	1 3/4"	7' - 0"	3' - 0"	SINGLE - SWING	3' - 0"	HM	PAINTED	1	S		S	7' - 2"	3' - 4"	2"	2"	HM	PAINTED	11/A202	10/A202	9/A202	3	
114A	N	1 3/4"	7' - 0"	3' - 0"	SINGLE - SWING	3' - 0"	WD	PAINTED	90	S		S	7' - 2"	3' - 4"	2"	2"	HM	PAINTED	2/A201	2/A201	--	4	
114B	F	1 3/4"	7' - 0"	3' - 0"	SINGLE - SWING	3' - 0"	WD	PAINTED		S		S	7' - 2"	3' - 4"	2"	2"	HM	PAINTED	2/A201	2/A201		9	
114C	F	1 3/4"	7' - 0"	3' - 0"	SINGLE - SWING	3' - 0"	HM	PAINTED		S		S	7' - 2"	3' - 4"	2"	2"	HM	PAINTED	11/A202	10/A202	9/A202	3	
114D	OC	3"	10' - 0"	8' - 0"	OHD COILING	8' - 0"	STL	PRE-FINISHED	1	N/A		N/A	10' - 0"	8' - 0"			STL	PRE-FINISHED	8/A202	7/A202		--	
115A	F	1 3/4"	7' - 0"	3' - 0"	SINGLE - SWING	3' - 0"	WD	PAINTED	90	S		S	7' - 2"	3' - 4"	2"	2"	HM	PAINTED	2/A201	2/A201	--	5	PANIC HARDWARE AND DOOR CLOSER
116A	F	1 3/4"	7' - 0"	3' - 0"	SINGLE - SWING	3' - 0"	WD	PAINTED		S		S	7' - 2"	3' - 4"	2"	2"	HM	PAINTED	2/A201	2/A201	--	7	
122A	F	1 3/4"	7' - 0"	3' - 0"	SINGLE - SWING	3' - 0"	WD	PAINTED		S		S	7' - 2"	3' - 4"	2"	2"	HM	PAINTED	2/A201	2/A201		10	
125A	F	1 3/4"	7' - 0"	3' - 0"	SINGLE - SWING	3' - 0"	WD	PAINTED		S		S	7' - 4"	3' - 4"	4"	2"	HM	PAINTED	2/A201	2/A201		10	

GLAZING SCHEDULE

(X)

- (IG) 1" THICK INSULATED GLASS WITH 1/2" AIR SPACE AND TWO 1/4" LITES
- (IG-T) 1" THICK INSULATED GLASS WITH 1/2" AIR SPACE AND TWO 1/4" LITES, FULLY TEMPERED
- (E) ENTRY-RESISTANT FILM. FILM SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTION
- (F) 5/16" CLEAR AND WIRELESS FIRE-RATED GLASS CERAMIC (20 MIN - 3 HOUR FOR DOORS, 20 MIN - 90 MIN IN OTHER APPLICATIONS) FIRE RATING LISTED AND LABELED BY UL FOR FIRE RATING SCHEDULED AT OPENING LOCATIONS ON DRAWINGS, WHEN TESTED IN ACCORDANCE WITH ASTM E2074 AND E2010, NFPA 252 AND 257, AND UL 9, 10B AND 10C

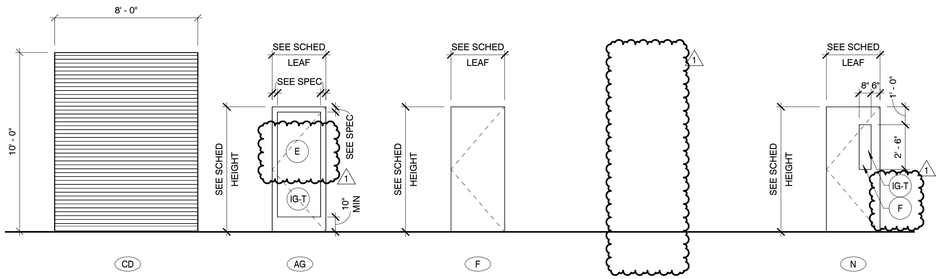
GENERAL WINDOW NOTES

1. ALL GRADES SHOWN HERE ARE FOR REFERENCE ONLY. CONTRACTOR TO FIELD VERIFY ALL GRADES PRIOR TO BIDDING AND BE RESPONSIBLE FOR ANY ADDITIONAL WORK THAT THE VARYING GRADES MAY REQUIRE TO COMPLETE THE SCOPE OF WORK.
2. CONTRACTOR TO FIELD VERIFY EXACT NUMBER OF WINDOWS EXISTING PRIOR TO BIDDING AND IS RESPONSIBLE FOR REPLACING ALL WINDOWS IN ALL BUILDINGS UNLESS SPECIFICALLY NOTED OTHERWISE.
3. ALL NEW WINDOWS IN EXISTING BATHROOMS ARE TO HAVE FROSTED TRANSLUCENT GLASS.
4. VERIFY EXACT SIZE OF EXISTING OPENINGS IN FIELD, PROVIDE SHIMS AND OR BLOCKING AS REQ'D TO ALLOW FOR NEW WINDOWINSTALLATION.
5. REPAIR/ REPLACE ALL CAULK AS REQ'D. VERIFY CONDITION W/ OWNER'S REPRESENTATIVE PRIOR TO START OF DEMO WORK.
6. ALL WINDOWS TO HAVE VINYL MINI BLINDS, PROVIDED AND INSTALLED BY CONTRACTOR.
7. ALL WINDOWS IN DOORS AND NEXT TO DOORS TO HAVE TEMPERED GLASS.
8. PROVIDE AN ADDITIONAL (12) TOP WINDOW PANELS, AN ADDITIONAL (12) BOTTOM WINDOW PANELS FOR EACH WINDOW TYPE. PROVIDE THESE ADDITIONAL WINDOWS TO THE OWNER AT TIME OF PROJECT CLOSE-OUT.
9. ALL WINDOWS TO INCLUDE INSECT SCREENS.
10. ALL NEW WINDOWS IN EXISTING BEDROOMS SHALL MEET MIN. REQUIREMENTS OF NFPA 2003: SECTION 33.2.2.3. FOR EGRESS CLEARANCE

NOTES:
SEE SPECIFICATIONS FOR ALUMINUM FRAME REQUIREMENTS.
SEE DETAILS FOR ADDITIONAL DIMENSIONS AND INFORMATION.

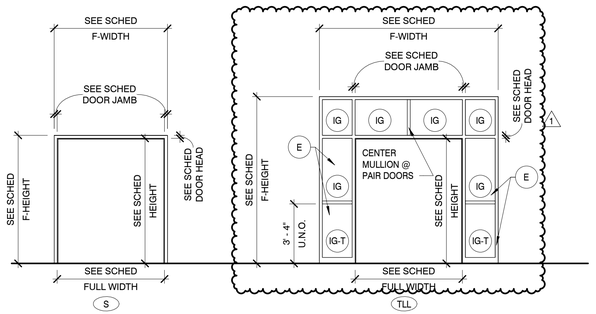
GENERAL DOOR NOTES

1. INTERIOR WOOD DOORS TO BE FACTORY FINISH. WOOD SPECIES TO BE ROTARY CUT BIRCH.
2. EXTERIOR HOLLOW METAL DOORS ARE TO BE INSULATED.
3. EXTERIOR HOLLOW METAL DOORS AND FRAMES ARE TO BE FACTORY PRIMED AND FIELD PAINTED.



DOOR TYPES

SCALE : 1/4" = 1'-0"



NOTES:
SEE SPECIFICATIONS FOR ALUMINUM FRAME REQUIREMENTS.
SEE DETAILS FOR ADDITIONAL DIMENSIONS AND INFORMATION.

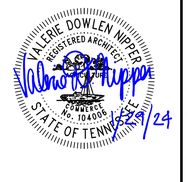
DOOR FRAME TYPES

SCALE : 1/4" = 1'-0"

1 TFM # 00017-D
PROJECT # 2023-10-31-01

MBI COMPANIES INC.
209 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com
CONSULTANT

SEAL



PROJECT INFORMATION

PROJECT:

CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS:

411 DOUGLAS LN
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION
1	01.29.2024	ADDENDUM #01

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	10/06/2023
DESIGNED BY:	CMG
DRAWN BY:	MDC
REVIEWED BY:	CMG

SHEET TITLE:

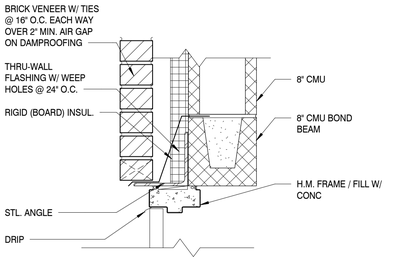
DOOR SCHEDULE, DOOR/FRAME ELEVATIONS

SHEET NO.:

A201

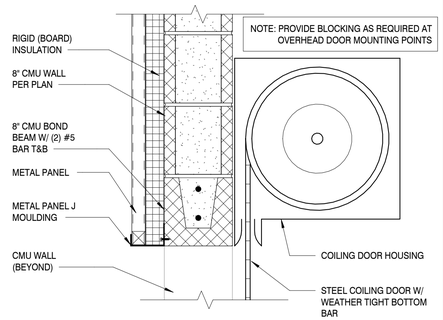
TFM # 00017-D
PROJECT # 2023-10-31-01
FIELD SET

ARCH D



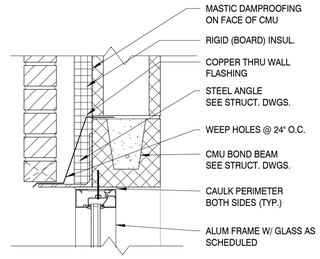
DOOR HEAD DETAIL 11

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



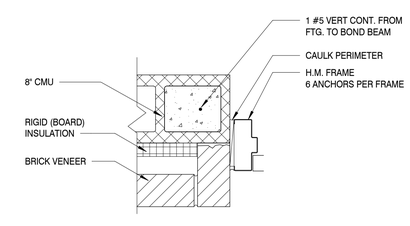
COILING DOOR HEAD DETAIL 8

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



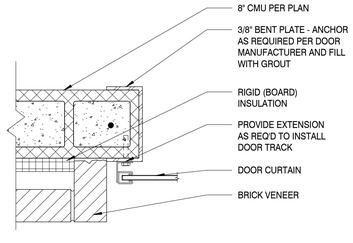
WINDOW HEAD DETAIL 5

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



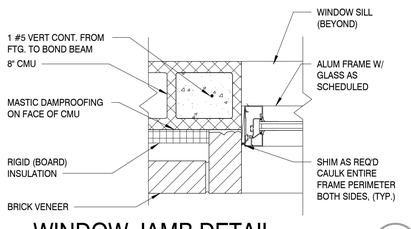
DOOR JAMB DETAIL 10

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



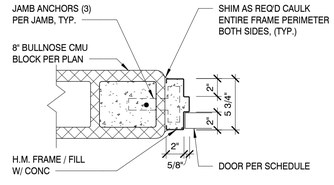
COILING DOOR JAMB DETAIL 7

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



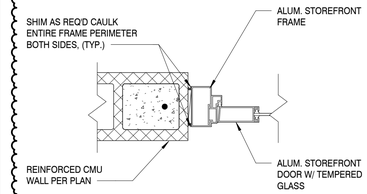
WINDOW JAMB DETAIL 4

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



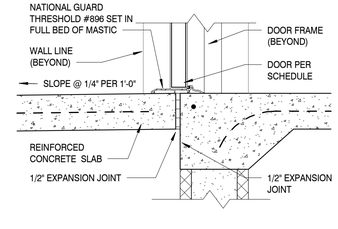
JAMB DETAIL 12

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



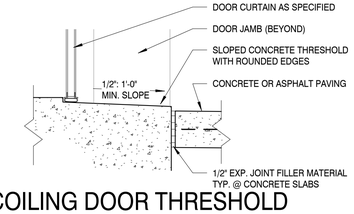
JAMB DETAIL 13

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



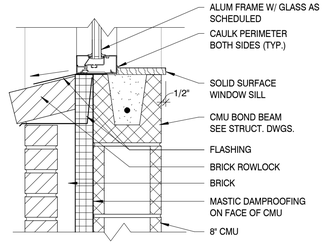
DOOR THRESHOLD DETAIL 9

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



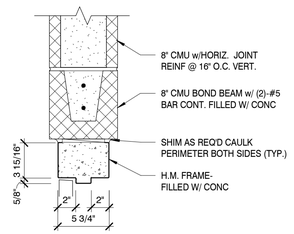
COILING DOOR THRESHOLD DETAIL 6

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



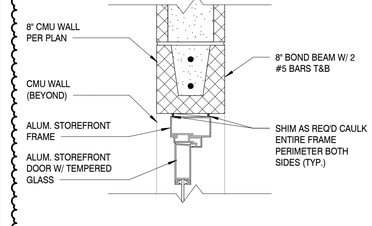
WINDOW SILL DETAIL 3

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



HEAD DETAIL 2

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



HEAD DETAIL 1

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

TFM # 00017-D
PROJECT # 2023-10-31-01

MBI COMPANIES INC.
209 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com

CONSULTANT

SEAL

VALERIE DOWLEN NIPPER
REGISTERED ARCHITECT
No. 104098
STATE OF TENNESSEE
10/29/24

PROJECT INFORMATION

PROJECT:

CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS:

411 DOUGLAS LN
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION
1	01.29.2024	ADDENDUM #01

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	10/06/2023
DESIGNED BY:	CMG
DRAWN BY:	MDC
REVIEWED BY:	CMG

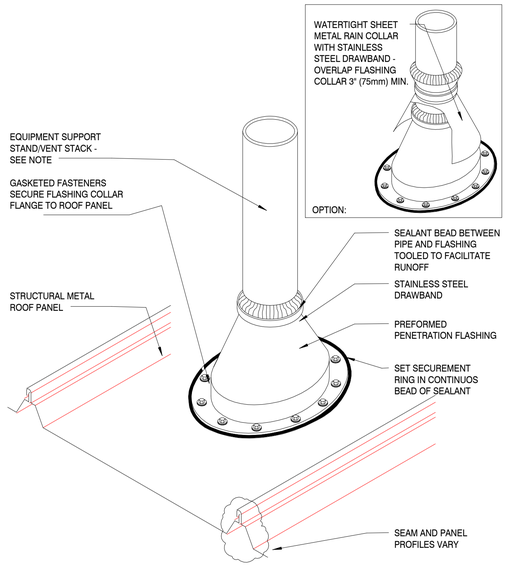
SHEET TITLE:

DOOR AND WINDOW DETAILS

SHEET NO.: A202

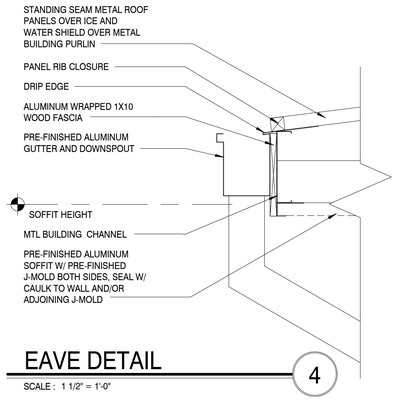
PROJECT # 2023-10-31-01 TFM # 00017-D FIELD SET

Autodesk Docs://220042-02_Clinton High School Welding Building/220042-02_R23.rvt
3/19/2024 5:15:13 PM



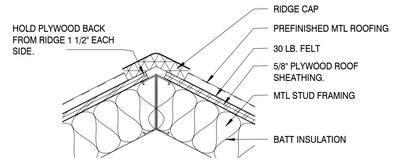
VENT PIPE DETAIL 5

SCALE : 12" = 1'-0"



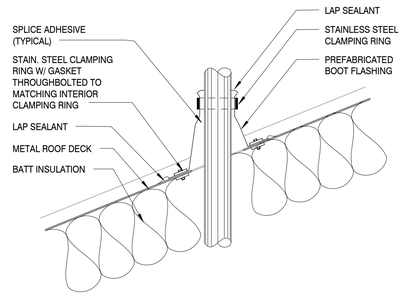
EAVE DETAIL 4

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



PIPE PENETRATION DTL 3

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



PIPE PENETRATION DTL 2

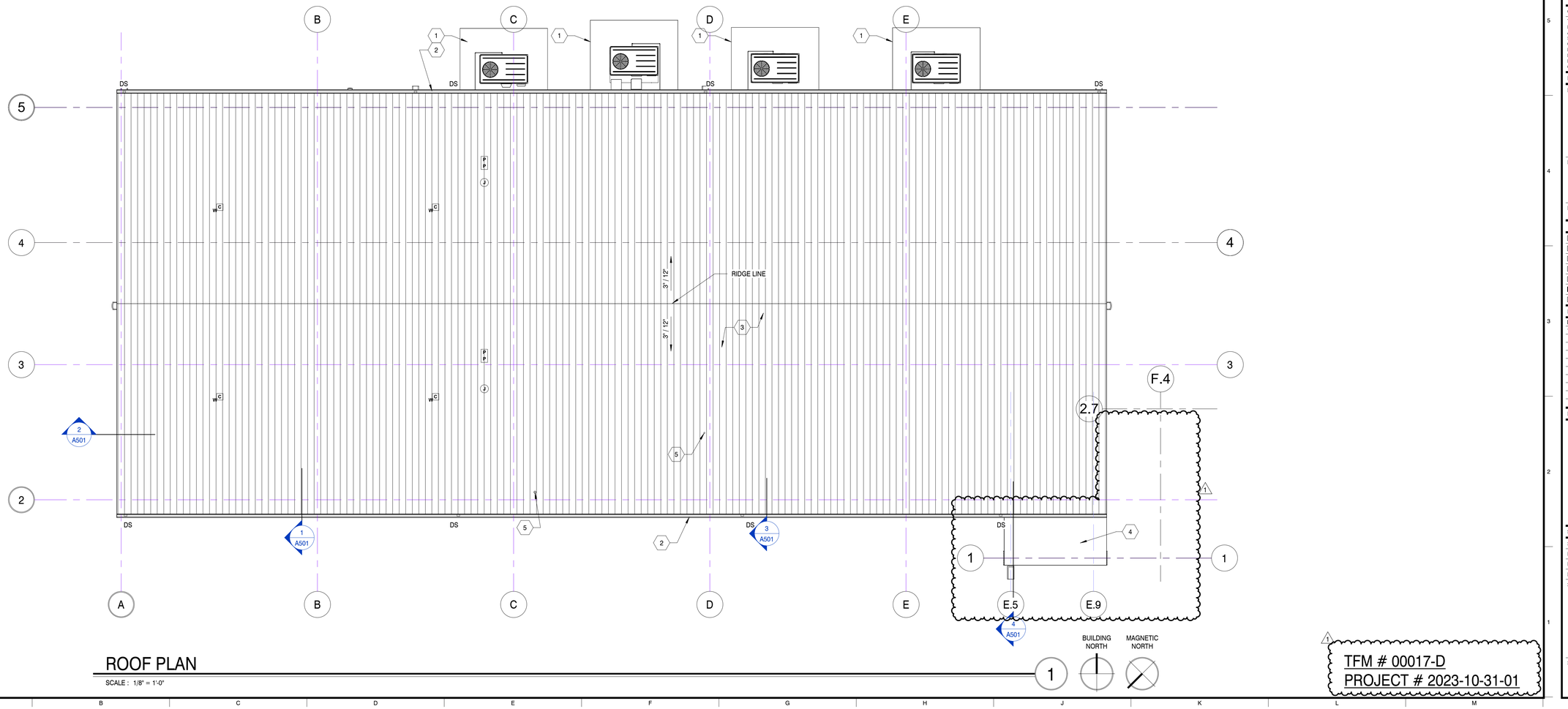
SCALE : 1 1/2" = 1'-0"

ROOF GENERAL NOTES

1. CONTRACTOR SHALL FIELD VERIFY NUMBER, TYPE, AND LOCATIONS OF ALL UTILITIES AND EQUIPMENT, INCLUDING BUT NOT LIMITED TO SATELLITE DISHES, HVAC UNITS, FANS, VENT PIPES, ETC. THAT WILL AFFECT HIS SCOPE OF WORK. CONTRACTOR SHALL INCLUDE IN HIS BID ALL NECESSARY WORK TO COORDINATE THE INSTALLATION OF NEW WORK WITH EXISTING UTILITIES AND EQUIPMENT.
2. THE CONTRACTOR SHALL AT ALL TIMES PROTECT ALL EXISTING INTERIOR SPACES EXPOSED DURING CONSTRUCTION AGAINST DAMAGE DUE TO WEATHER OR CONSTRUCTION.
3. REUSE EXISTING CURBS. THOSE CURBS THAT ARE TOO SHORT BECAUSE OF ADDITIONAL INSULATION SHALL RECEIVE NEW TALLER NAILERS AT TOP OF CURB.
4. COORDINATE STAGING AREAS AND CONSTRUCTION ACCESS WITH OWNER PRIOR TO START OF CONSTRUCTION.
5. REPAIR AND RESEED ANY EXISTING GRASS AREAS DISTURBED DURING CONSTRUCTION OR STAGING.
6. PROVIDE SPLASH BLOCKS ON 24" X 24" PROTECTION MATS AT ALL EXISTING ROOF DRAINS FROM HIGH ROOF. VERIFY QUANTITY NEEDED IN FIELD PRIOR TO BIDDING.
7. COORDINATE STAGING AREA AND CONSTRUCTION ACCESS WITH OWNER PRIOR TO START OF CONSTRUCTION
8. PROVIDE GUTTER EXPANSION JOINTS AT 48' MAX. O.C. AND 24' MAX. FROM CORNERS

ROOF PLAN KEYNOTES

1. CLEARANCE OF OUTDOOR UNIT
2. PRE-FINISHED ALUMINUM GUTTER & DOWNSPOUT
3. STANDING SEAM ROOF
4. PREMANUFACTURED CANOPY
5. ROOF VENT PIPE SEE DETAIL 2/A301



ROOF PLAN 1

SCALE : 1/8" = 1'-0"

TFM # 00017-D
PROJECT # 2023-10-31-01

MBI COMPANIES INC.
209 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com

CONSULTANT

SEAL

VALERIE DOWLEN NIPPER
REGISTERED ARCHITECT
No. 104006
STATE OF TENNESSEE
3/29/24

PROJECT INFORMATION

PROJECT:

CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS:

411 DOUGLAS LN
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION
1	01.29.2024	ADDENDUM #01

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	10/06/2023
DESIGNED BY:	CMG
DRAWN BY:	MDC
REVIEWED BY:	CMG

SHEET TITLE:

ROOF PLAN AND DETAILS

SHEET NO.:

A301

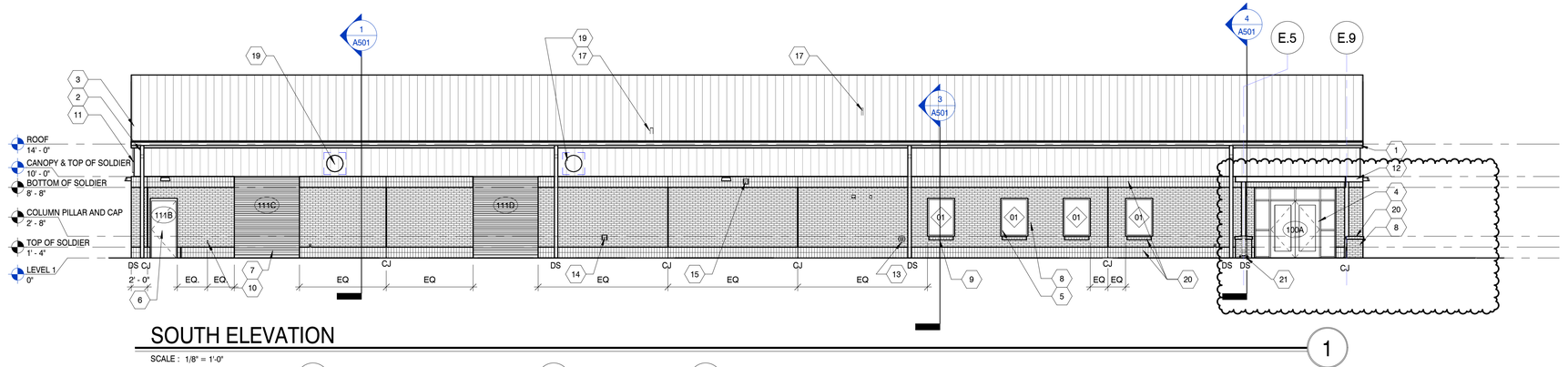
PROJECT # 2023-10-31-01 TFM # 00017-D FIELD SET

Autodesk Docs://220042-02_Clinton High School Welding Building/220042-02_Rv23.rvt
3/19/2024 5:18:21 PM

EXTERIOR ELEVATION KEYNOTES

1. PRE-FINISHED METAL WRAPPED FASCIA (COLOR TO BE SELECTED FROM STANDARD MANUF. CHART)
2. PRE-FINISHED ALUMINUM GUTTER & DOWNSPOUT (COLOR TO BE SELECTED FROM STANDARD MANUF. CHART)
3. STANDING SEAM ROOF (COLOR TO BE SELECTED FROM STANDARD MANUF. CHART)
4. INSULATED. ALUMINUM STOREFRONT (COLOR TO BE SELECTED FROM STANDARD MANUF. CHART)
5. INSULATED. ALUMINUM WINDOW (COLOR TO BE SELECTED FROM STANDARD MANUF. CHART)
6. INSULATED HOLLOW METAL DOOR & FRAME
7. INSULATED. ALUMINUM COILONG DOOR (COLOR TO BE SELECTED FROM STANDARD MANUF. CHART)
8. BRICK VENEER AND MORTAR COLOR 1 (BROWN) MATCH CLINTON HIGH SCHOOL ATHLETIC CENTER
9. BRICK VENEER AND MORTAR ROWLOCK COLOR 2 MATCH CLINTON HIGH SCHOOL ATHLETIC CENTER
10. HOSE BIB 24" A.F.F. - SEE PLUMBING DRAWINGS
11. METAL BUILIDING LOUVERS
12. PRE-MANUFACTURED CANOPY
13. FIRE DEPARTMENT INLET CONNECTION - SEE FIRE PROTECTION DRAWINGS
14. DRYER VENT THRU - SEE MECHANICAL DRAWINGS
15. EXHAUST FAN - SEE MECHANICAL DRAWINGS
16. PACKAGED UNIT - SEE MECHANICAL DRAWINGS
17. ROOF VENT PIPE SEE DETAIL 2/A301
18. GAS METER, SIZED FOR 360 MBH OVER 125' SET REGULATOR FOR 0.5 PSI
19. WALL EXHAUST FAN - SEE MECHANICAL DRAWINGS
20. BRICK VENEER AND MORTAR COLOR 2 (GRAY) MATCH CLINTON HIGH SCHOOL ATHLETIC CENTER
21. SPLASHBLOCK

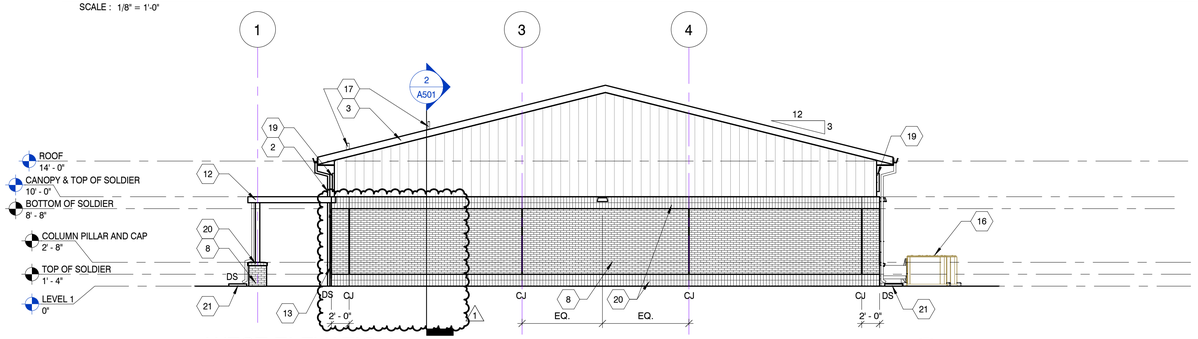
ALL EXPOSED PIPING ON EXTERIOR OF BUILING TO BE PAINTED TO COLOR MATCH ADJACENT MATERIAL
CJ - CONTROL JOINT (IN BRICK VENEER)
DS - PRE-FINISHED METAL GUTTER & DOWNSPOUT W/ DOWNSPOUT BOOT



SOUTH ELEVATION

SCALE : 1/8" = 1'-0"

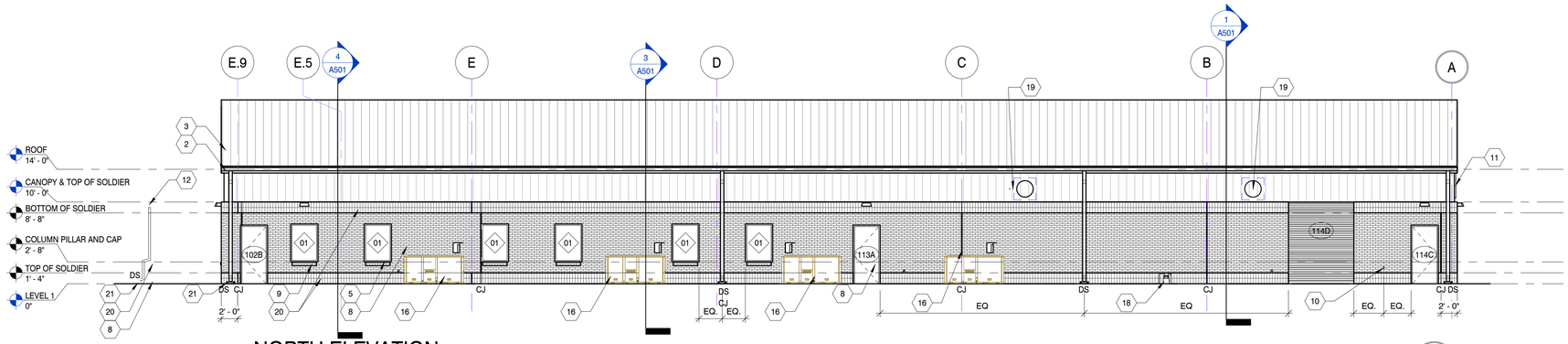
1



WEST ELEVATION

SCALE : 1/8" = 1'-0"

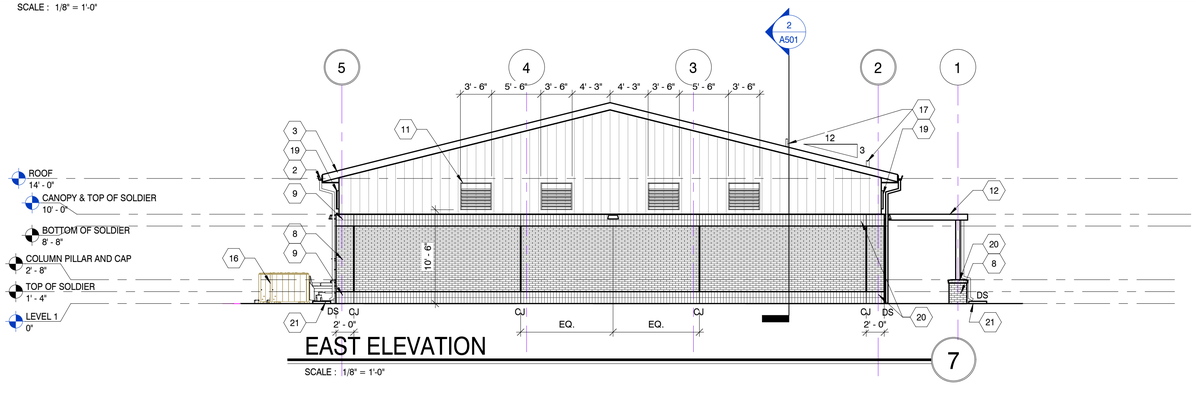
2



NORTH ELEVATION

SCALE : 1/8" = 1'-0"

3



EAST ELEVATION

SCALE : 1/8" = 1'-0"

7

TFM # 00017-D
PROJECT # 2023-10-31-01

MBI COMPANIES INC.
209 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com

CONSULTANT

SEAL

VALERIE DOWLEN NIPPER
REGISTERED ARCHITECT
No. 104008
STATE OF TENNESSEE
10/6/23

PROJECT INFORMATION

PROJECT:

CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS:

411 DOUGLAS LN
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION
1	01.29.2024	ADDENDUM #01

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	10/06/2023
DESIGNED BY:	CMG
DRAWN BY:	MDC
REVIEWED BY:	CMG

SHEET TITLE:

EXTERIOR ELEVATIONS

SHEET NO.:

A401

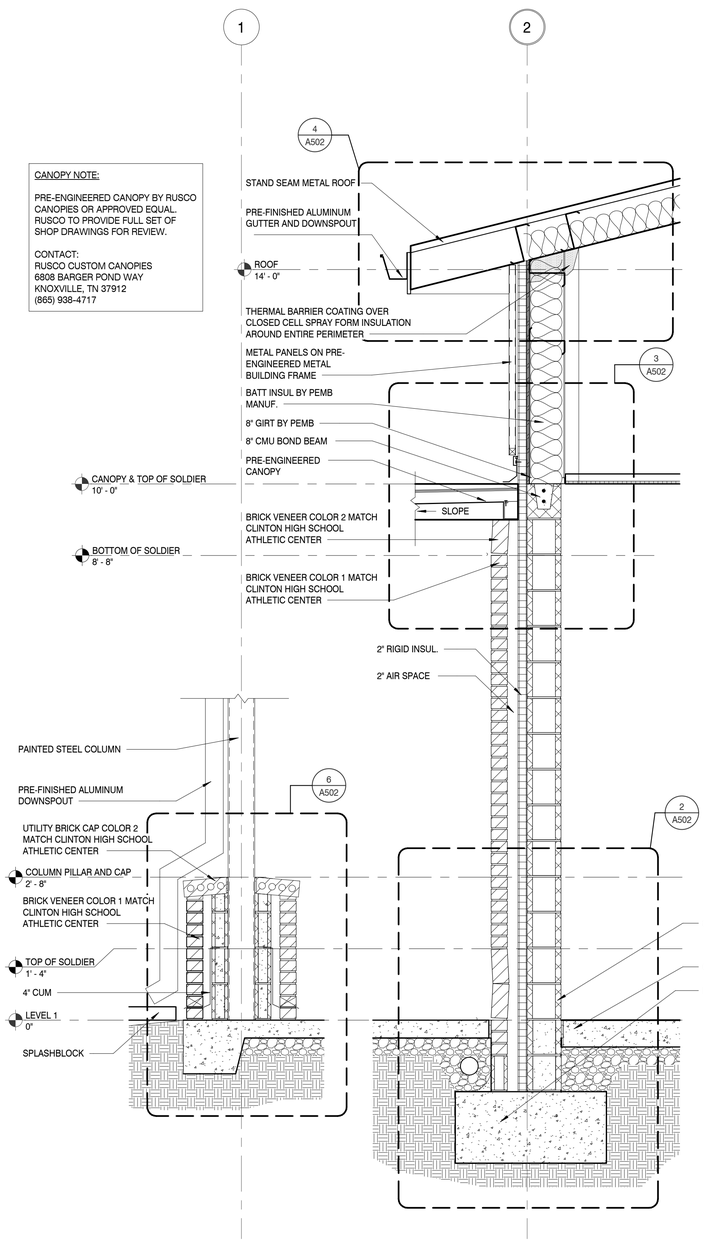
PROJECT # 2023-10-31-01 TFM # 00017-D FIELD SET

Autodesk Docs://220042-02_Clinton High School Welding Building/220042-02_R23.rvt
3/19/2024 5:18:24 PM

CANOPY NOTE:

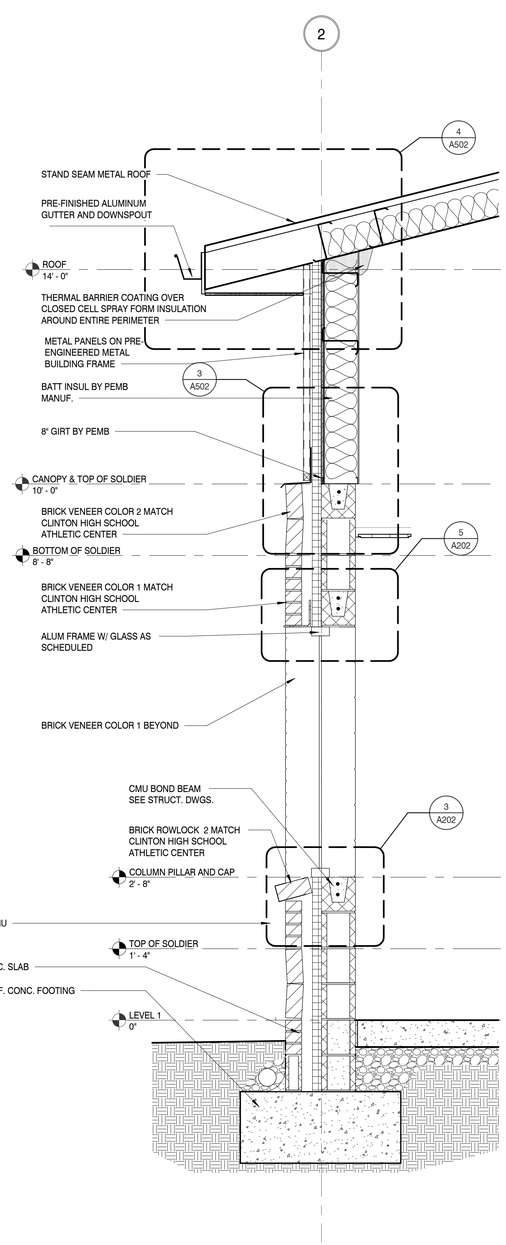
PRE-ENGINEERED CANOPY BY RUSCO CANOPIES OR APPROVED EQUAL. RUSCO TO PROVIDE FULL SET OF SHOP DRAWINGS FOR REVIEW.

CONTACT:
RUSCO CUSTOM CANOPIES
6808 BARGER POND WAY
KNOXVILLE, TN 37912
(665) 938-4717



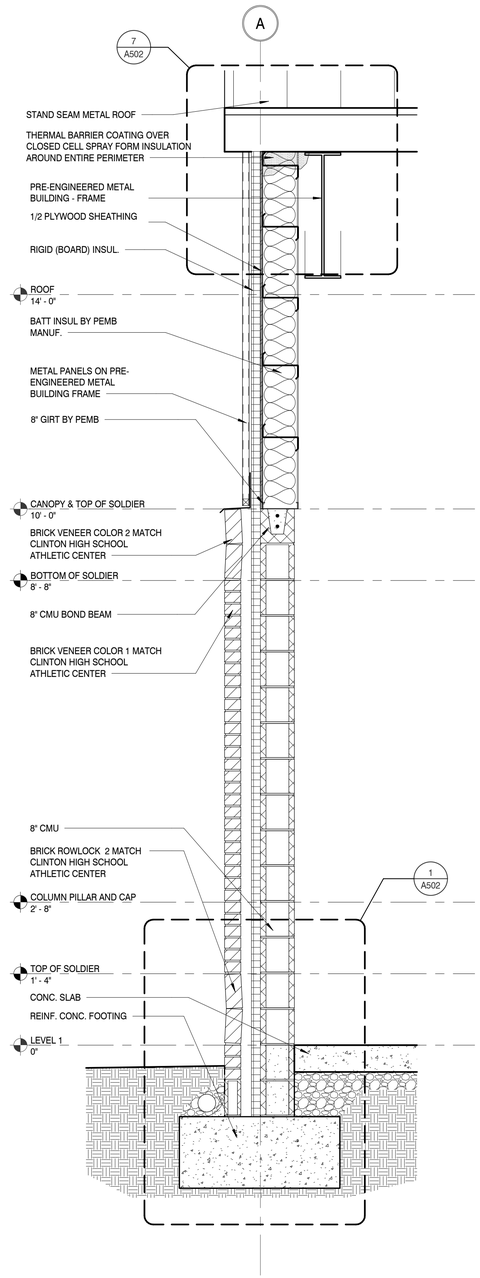
WALL SECTION 4

SCALE : 3/4" = 1'-0"



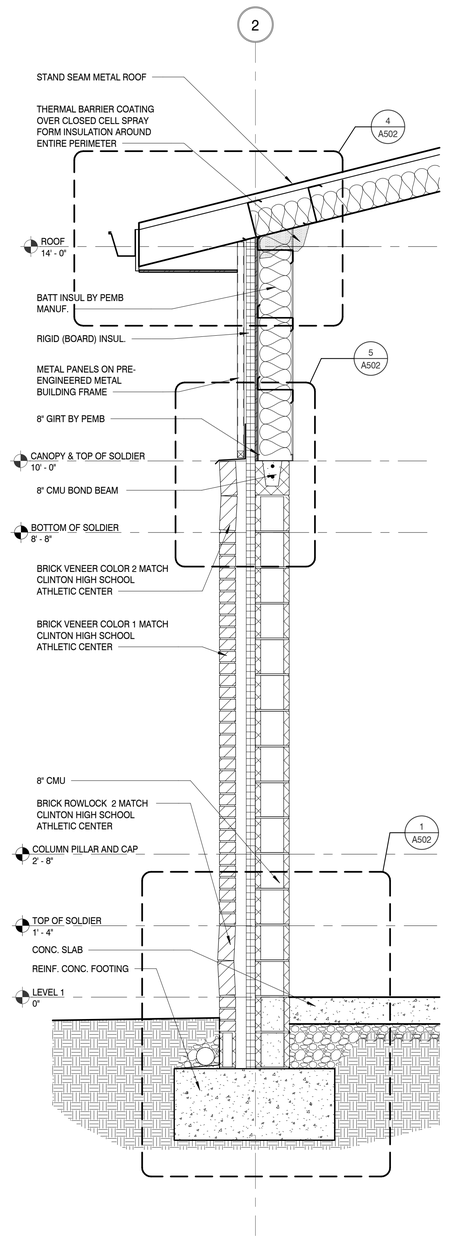
WALL SECTION 3

SCALE : 3/4" = 1'-0"



WALL SECTION 2

SCALE : 3/4" = 1'-0"



WALL SECTION 1

SCALE : 3/4" = 1'-0"

MBI COMPANIES INC.
209 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com

CONSULTANT

SEAL

VALERIE DOWLEN NIPPER
REGISTERED ARCHITECT
No. 104009
COMMERCE
STATE OF TENNESSEE
10/6/2023

PROJECT INFORMATION

PROJECT:

CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS:

411 DOUGLAS LN
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	10/06/2023
DESIGNED BY:	CMG
DRAWN BY:	MDC
REVIEWED BY:	CMG

SHEET TITLE:

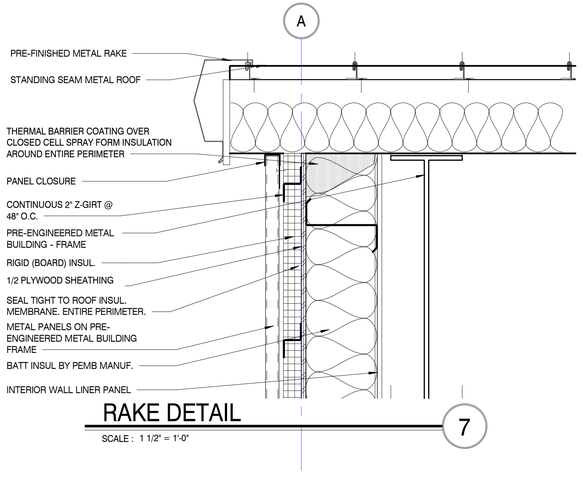
WALL SECTIONS

SHEET NO.:

A501

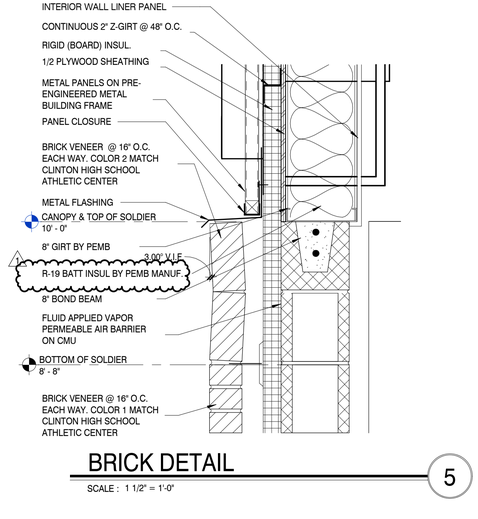
PROJECT # 2023-10-31-01 TFM # 00017-D FIELD SET

Autodesk Docs://220042-02_Clinton High School Welding Building/220042-02_Rv23.rvt
10/6/2023 10:33:05 AM



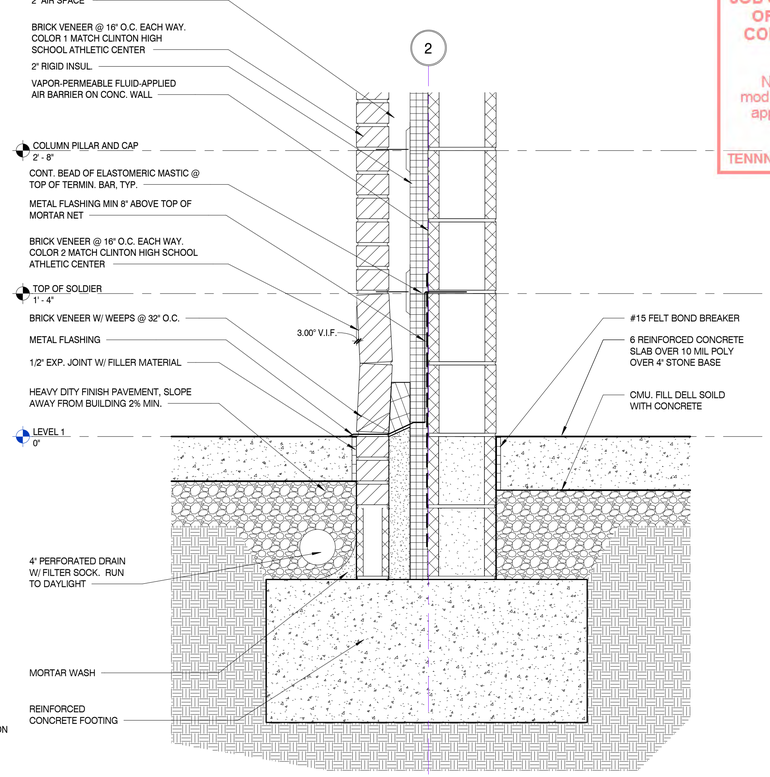
RAKE DETAIL 7

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



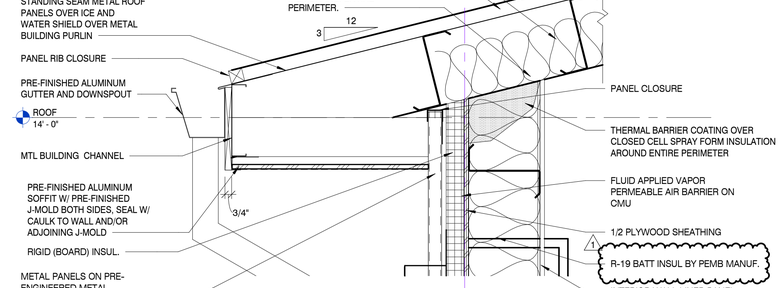
BRICK DETAIL 5

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



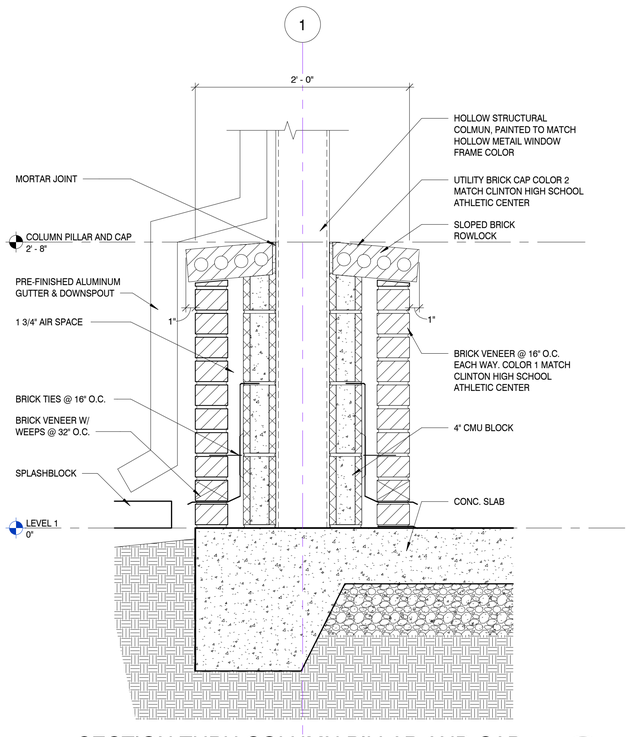
FOUNDATION DETAIL 2

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



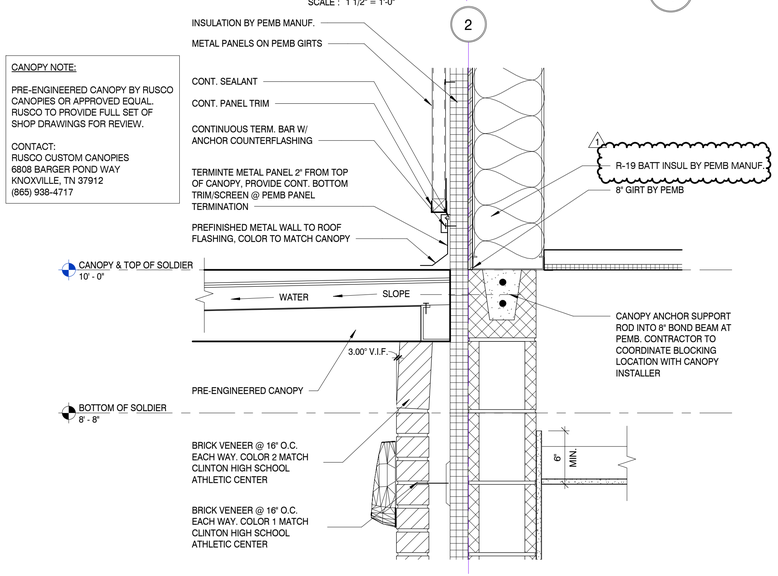
EAVE DETAIL 4

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



SECTION THRU COLUMN PILLAR AND CAP 6

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



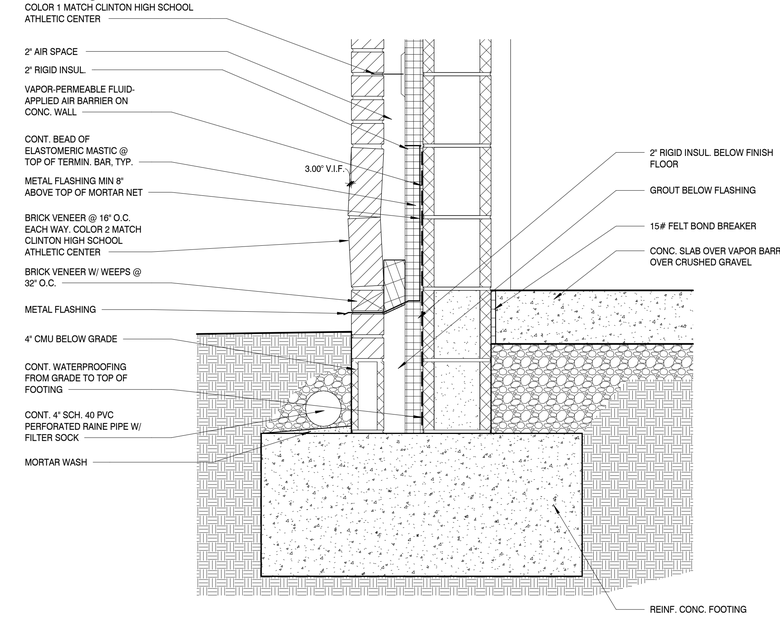
CANOPY NOTE:

PRE-ENGINEERED CANOPY BY RUSCO CANOPIES OR APPROVED EQUAL. RUSCO TO PROVIDE FULL SET OF SHOP DRAWINGS FOR REVIEW.

CONTACT:
RUSCO CUSTOM CANOPIES
6808 BARGER POND WAY
KNOXVILLE, TN 37912
(865) 938-4717

WALL CONNECTION DETAIL TO CANOPY 3

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



FOUNDATION DETAIL 1

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

TFM # 00017-D
PROJECT # 2023-10-31-01

MBI COMPANIES INC.
209 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com

CONSULTANT

SEAL

VALERIE DOWLEN NIPPER
REGISTERED ARCHITECT
CERTIFICATE
No. 104005
STATE OF TENNESSEE
1/29/24

PROJECT INFORMATION

PROJECT:

CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS:

411 DOUGLAS LN
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION
1	01.29.2024	ADDENDUM #01

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	10/06/2023
DESIGNED BY:	CMG
DRAWN BY:	MDC
REVIEWED BY:	CMG

SHEET TITLE:

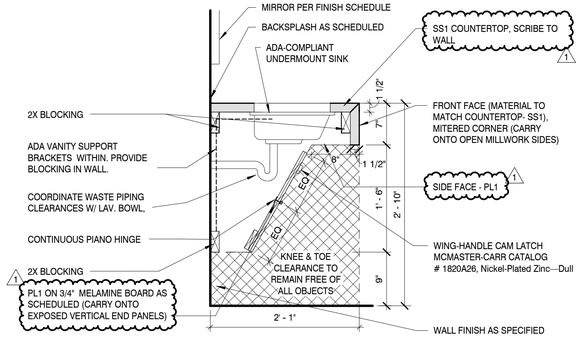
WALL SECTIONS

SHEET NO.:

A502

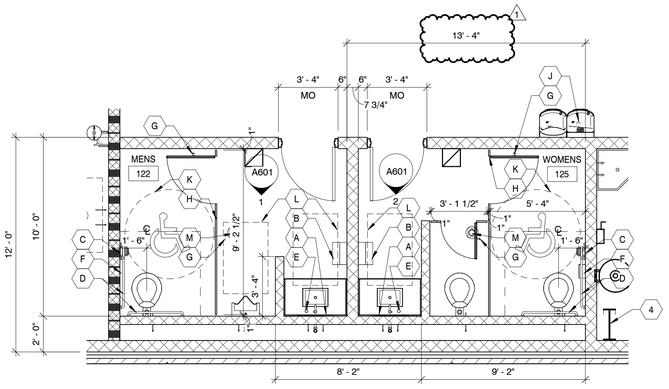
TFM # 00017-D
PROJECT # 2023-10-31-01
FIELD SET

Autodesk Docs://220042-02_Clinton High School Welding Building/220042-02_RvD1.rvt
3/19/2024 5:19:33 PM



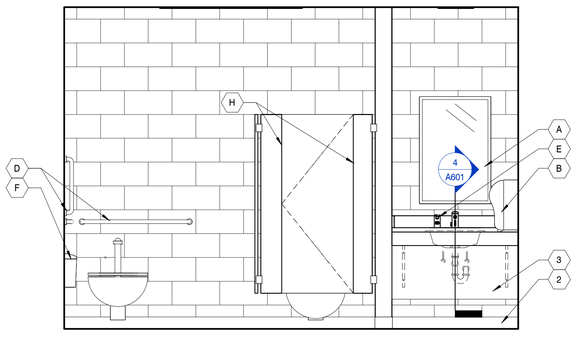
MILLWORK - LAVATORY VANITY - ANGLED APRON 4

SCALE : 1" = 1'-0"



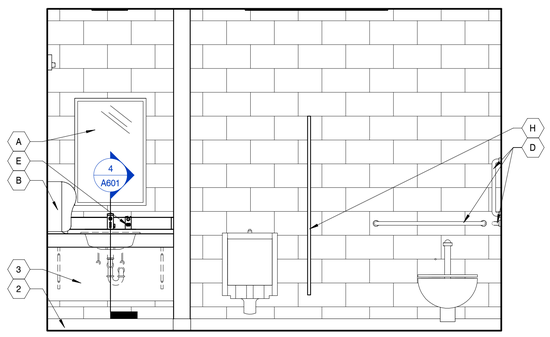
ENLARGED RESTROOM PLAN 3

SCALE : 1/4" = 1'-0"



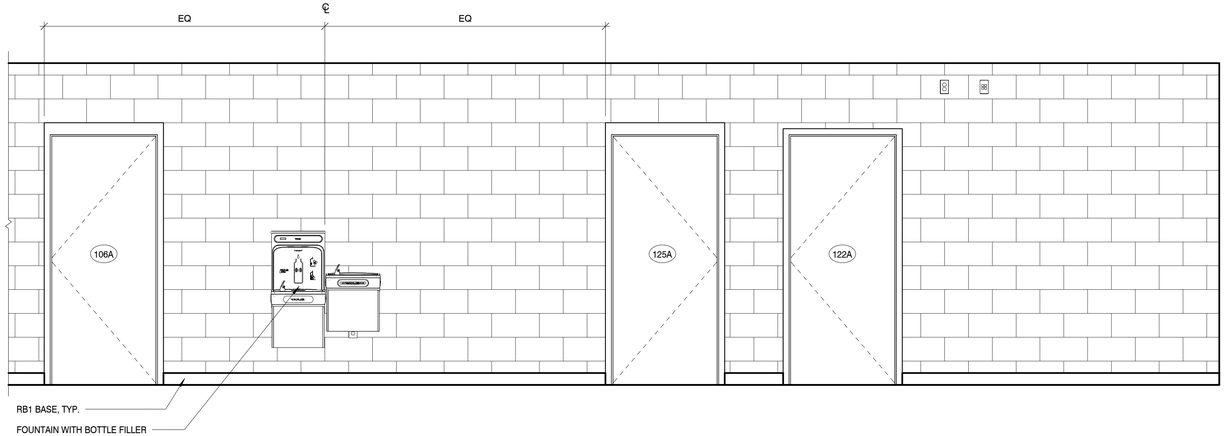
RESTROOM ELEVATION WOMENS 2

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



RESTROOM ELEVATION - MENS 1

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



INTERIOR ELEVATION - RESTROOM GRAPHICS 5

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

GENERAL PLUMBING NOTES

1. ALL PLUMBING MATERIAL AND INSTALLATIONS SHALL BE IN ACCORDANCE WITH ALL APPLICABLE CODES AND ORDINANCES.
2. SEE PLUMBING DRAWINGS FOR LOCATIONS AND SIZES OF ACCESS PANELS.
3. ALL FIXTURES AND ACCESSORIES SHALL COMPLY WITH THE CURRENT A.D.A., STATE OR LOCAL REGULATIONS FOR MOUNTING HEIGHTS AND CLEARANCES.
4. ALL HOT WATER AND DRAIN PIPES SHALL BE INSULATED PER A.D.A. REQUIREMENTS. MINIMUM HOT WATER SUPPLY INSULATION SHALL BE PRE-MOLDED FIBERGLASS PIPE INSULATION WITH WHITE ALL SERVICE JACKET. INSULATION THICKNESS SHALL BE MIN. 1". SEE PLUMBING DRAWINGS.
5. ALL GRAB BARS IN NEW CONSTRUCTION SHALL BE INSTALLED WITH CONCEALED ANCHOR PLATES.
6. THE FLUSH ACTIVATOR SHALL BE LOCATED ON THE WIDE CLEARANCE SIDE OF HANDICAPPED UNITS AND SHALL BE LEVER TYPE. THE FORCE TO ACTIVATE SHALL NOT EXCEED 5 POUNDS. ACTIVATION SHALL BE WITHIN 40" OF FIN. FLOOR.
7. LAVATORY FAUCET CONTROLS SHALL BE LEVER TYPE AND THE FORCE TO ACTIVATE SHALL NOT EXCEED 5 POUNDS.
8. PROVIDE BLOCKING IN WALLS AS REQ'D FOR ALL FIXTURES AND EQUIPMENT.
9. ALL DIMENSIONS ARE TO FACE OF STUD OR FACE OF FURRING UNLESS OTHERWISE NOTED. "CLEAR" DENOTES FINISH TO FINISH.
10. TOILET ROOM WALLS TO HAVE SOUND BATT INSULATION FROM FLOOR TO DECK ABOVE.
11. GYP. BD. IN ALL WET AREAS TO BE WATER RESISTANT GYP. BD.
12. CONCRETE BACKER BOARD SHALL BE PROVIDED BEHIND TILE AT WALLS.
13. ADJUST SUPPLY LINE WALL PENETRATION HEIGHTS AS NEEDED TO AVOID CONFLICTS BETWEEN FLUSH VALVES AND GRAB BAR MOUNTING HEIGHTS. GRAB BAR MOUNTING HEIGHTS ARE TO TAKE PRIORITY.
14. CONTRACTOR TO CORRIDATE WITH SPECIFIED FIXTURES AND FINISHES TO ENSURE RIM OF LAVATORIES TO BE 34" A.F.F. MAX.

RESTROOM ACCESSORIES X

A. 24" x 36" FRAMELESS MIRROR W/ 1/4" FLOAT PLATE SET IN SILICONE. (40" A.F.F. TO BOTTOM OF REFLECTIVE SURFACE), CENTER ABOVE SINK, TYP.
B. PAPER TOWEL
C. TOILET TISSUE DISPENSER (WALL MOUNTED). DISPENSER SHALL BE LOCATED ITHIN 12" OF THE FRONT EDGE OF THE TOILET SEAT. (1 PER STALL)
D. 42" & 36" HORIZ. AND 18" VERT. STAINLESS STEEL GRAB BAR, (SURFACE MOUNTED). 1 1/4" - 1 1/2"Ø MOUNTED 1 1/2" FROM WALL.
E. SOAP DISPENSER
F. FEMININE NAPKIN RECEPTACLE
G. COAT / ROBE HOOK
H. BATHROOM PARTITION
I. 36" MOP RACK
J. HI-LO WATER FOUNTAIN WITH BOTTLE FILLER
K. 60"X56" CLEAR FLOOR AREA AT WATER CLOSET
L. 30"X48" ACCESSIBLE FLOOR AREA
M. FLOOR DRAIN - SEE PLUMBING DRAWINGS

FLOOR PLAN KEYNOTES

1. ALIGN FINISHES
2. CONCRETE FLOOR WITH INTERGRAL 4" WALL BASE
3. REMOVABLE LAVATORY VANITY - ANGLED APRON
4. PRE-ENGINEERED METAL BUILDING COLUMN
5. MILLWORK - REFER TO INTERIOR ELEVATIONS
6. MOP SINK - SEE PLUMBING. PROVIDE 48" HIGH FRP
7. PANEL WAINSCOT AT SIDE AND REAR WALL WALL-MOUNTED MOP AND BROOM RACK
8. FURNITURE - (N.I.C.)
9. WASHER - (O.F.C.I.)
10. DRYER - (O.F.C.I.)
11. DOG WASH STATION - (O.F.C.I.)
12. WELDING STATION - (O.F.C.I.)
13. EYE WASH STATION
14. HOSE BIB 24" A.F.F.
15. FLOOR DRAIN
16. PACKAGED UNIT CLEARANCE
17. DRYER VENT THRU
18. PACKAGED UNIT
19. GAS METER, SIZED FOR 360 MBH OVER 125' SET REGULATOR FOR 0.5 PSI
20. FIRE DEPARTMENT INLET CONNECTION
21. HOT WATER HEATER
22. CEILING RETRACTABLE COIL EXTENSION CORD REEL
23. SPLASHBLOCK
24. CAMERA SYSTEM THAT MONITORS EACH ENTERANCE HALLWAY. MOUNTING HEIGHT TO BE VERIFIED WITH OWNER.
25. PRINTER - (O.F.C.I.)
26. FIRE ALARM CONTROL PANEL
27. PANELBOARD
28. PROVIDE GROMMETS IN OPEN COUNTER WORKSTATIONS. GROMMET LOCATIONS TO BE VERIFIED BY OWNER.

1 TFM # 00017-D
PROJECT # 2023-10-31-01

MBI COMPANIES INC.
209 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com

CONSULTANT

SEAL

VALERIE DOWLEN NIPPER
REGISTERED ARCHITECT
No. 104008
STATE OF TENNESSEE
10/29/24

PROJECT INFORMATION

PROJECT:

CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS:

411 DOUGLAS LN
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION
1	01.29.2024	ADDENDUM #01

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	10/06/2023
DESIGNED BY:	CMG
DRAWN BY:	MDC
REVIEWED BY:	CMG

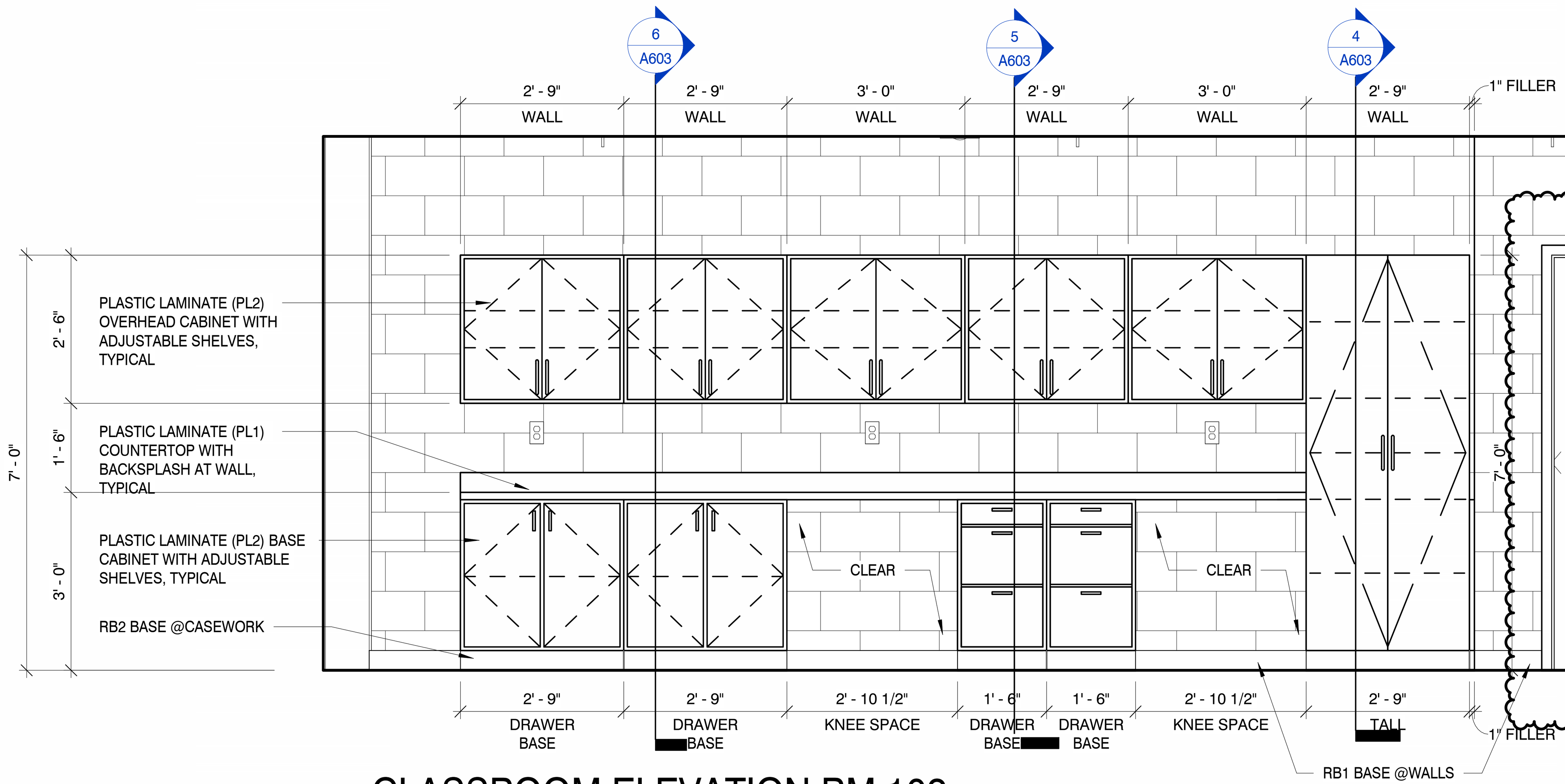
SHEET TITLE:

ENLARGED PLANS, INTERIOR ELEVATIONS AND DETAILS

SHEET NO.: A601

PROJECT # 2023-10-31-01 TFM # 00017-D FIELD SET

Autodesk Docs://220042-02_Clinton High School Welding Building/220042-02_R23.rvt
3/19/2024 5:23:14 PM



CLASSROOM ELEVATION RM 102

5

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

FLOOR PLAN KEYNOTES

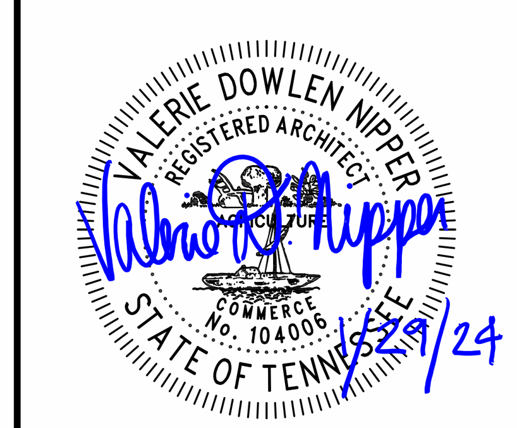
1. ALIGN FINISHES
2. CONCRETE FLOOR WITH INTERGRAL 4" WALL BASE
3. REMOVABLE LAVATORY VANITY - ANGLED APRON
4. PRE-ENGINEERED METAL BUILDING COLUMN
5. MILLWORK - REFER TO INTERIOR ELEVATIONS
6. MOP SINK - SEE PLUMBING. PROVIDE 48" HIGH FRP
7. PANEL WAINSCOT AT SIDE AND REAR WALL WALL-MOUNTED MOP AND BROOM RACK
8. FURNITURE - (N.I.C.)
9. WASHER - (O.F.C.I.)
10. DRYER - (O.F.C.I.)
11. DOG WASH STATION - (O.F.C.I.)
12. WELDING STATION - (O.F.C.I.)
13. EYE WASH STATION
14. HOSE BIB 24" A.F.F.
15. FLOOR DRAIN
16. PACKAGED UNIT CLEARANCE
17. DRYER VENT THRU
18. PACKAGED UNIT
19. GAS METER, SIZED FOR 360 MBH OVER 125' SET REGULATOR FOR 0.5 PSI
20. FIRE DEPARTMENT INLET CONNECTION
21. HOT WATER HEATER
22. CEILING RETRACTABLE COIL EXTENSION CORD REEL
23. SPLASHBLOCK
24. CAMERA SYSTEM THAT MONITORS EACH ENTERANCE HALLWAY. MOUNTING HEIGHT TO BE VERIFIED WITH OWNER.
25. PRINTER - (O.F.C.I.)
26. FIRE ALARM CONTROL PANEL
27. PANELBOARD
28. PROVIDE GROMMETS IN OPEN COUNTER WORKSTATIONS. GROMMET LOCATIONS TO BE VERIFIED BY OWNER.

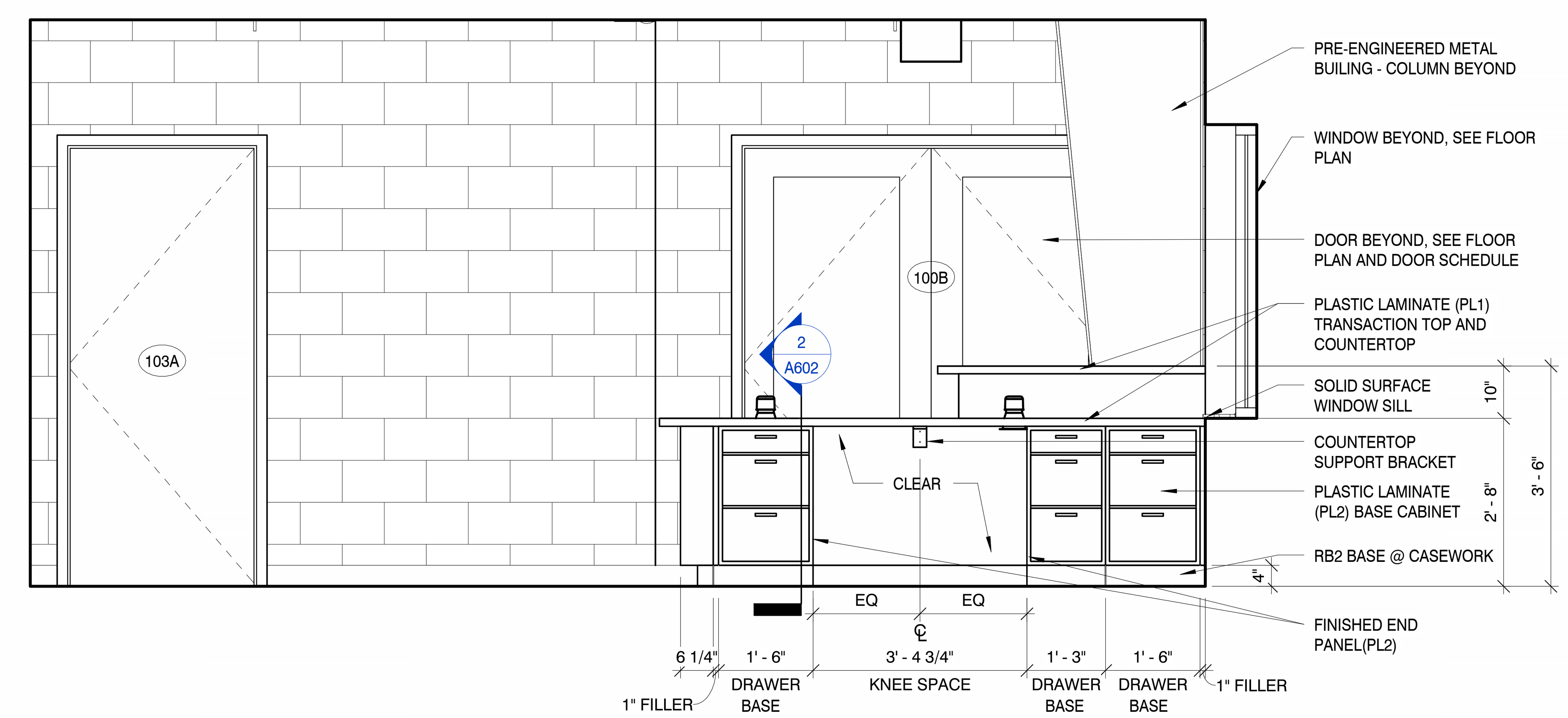
MBI COMPANIES INC.
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919

PHONE:	(865) 584-0999
FAX:	(865) 584-5213
WEB:	mbicompanies.com

CONSULTANT

SEAL

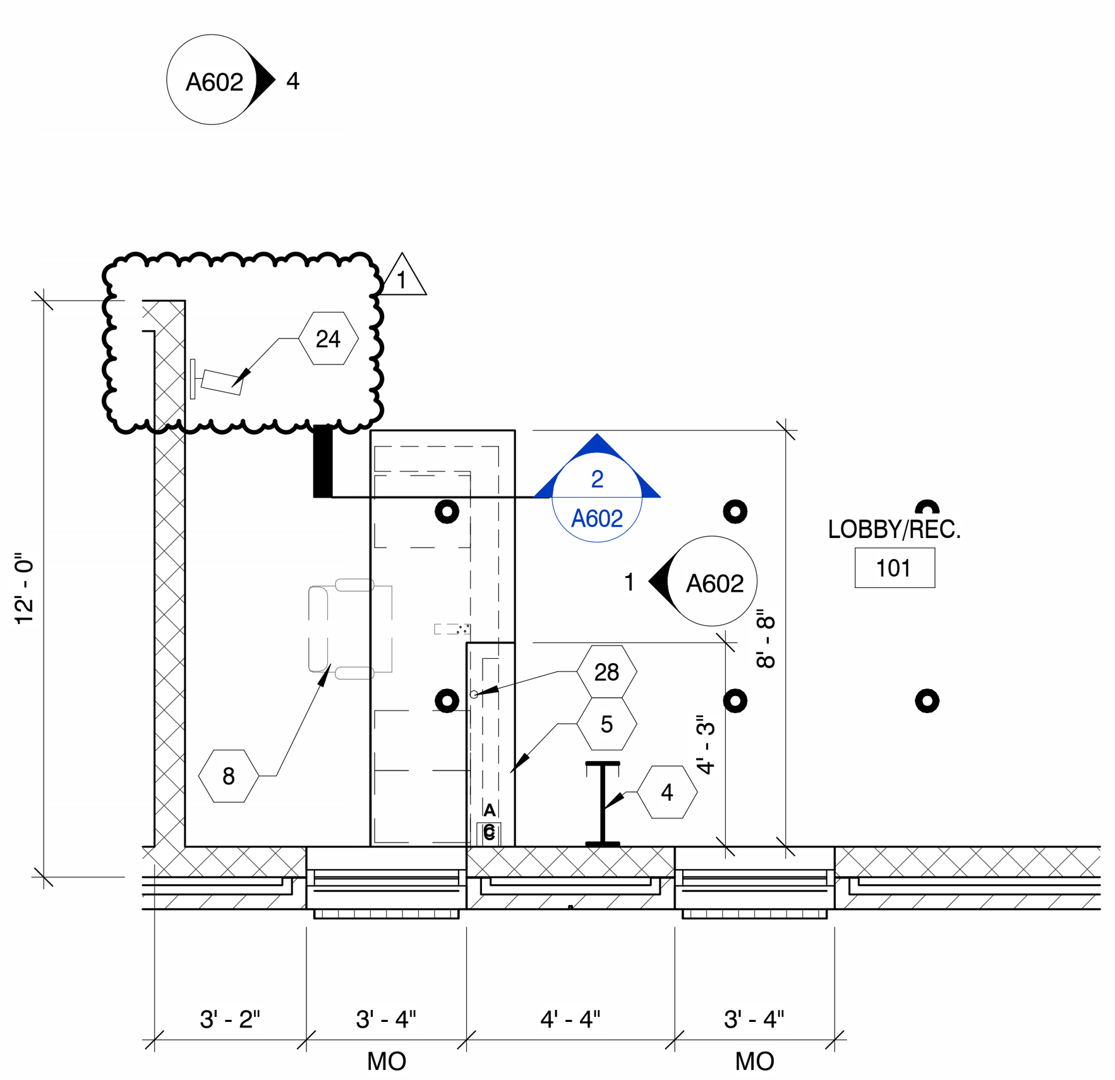




INTERIOR ELEVATION - EAST RECEPTION DESK

4

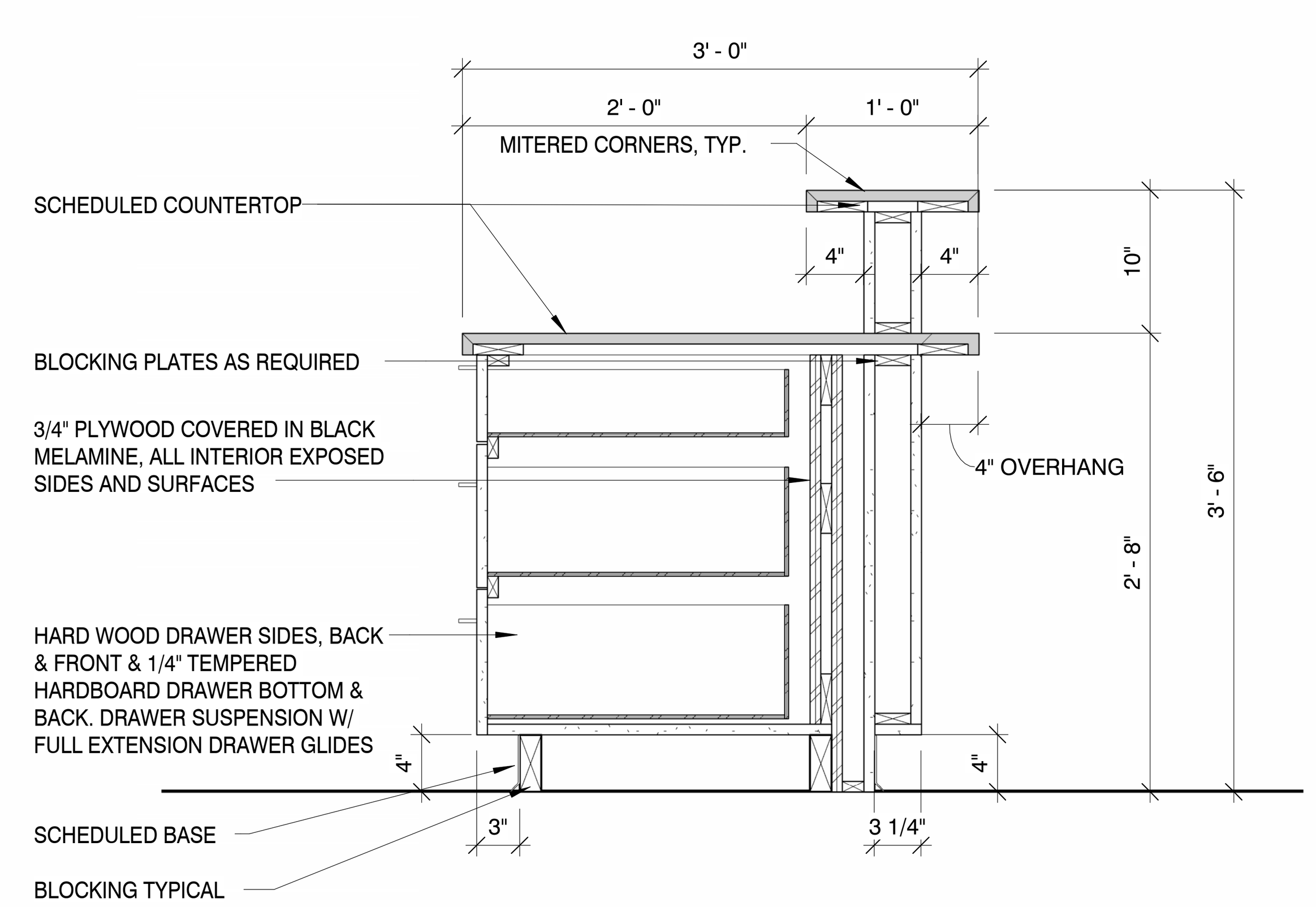
SCALE : 1/2" = 1'-0"



ENLARGED RECEPTION PLAN

3

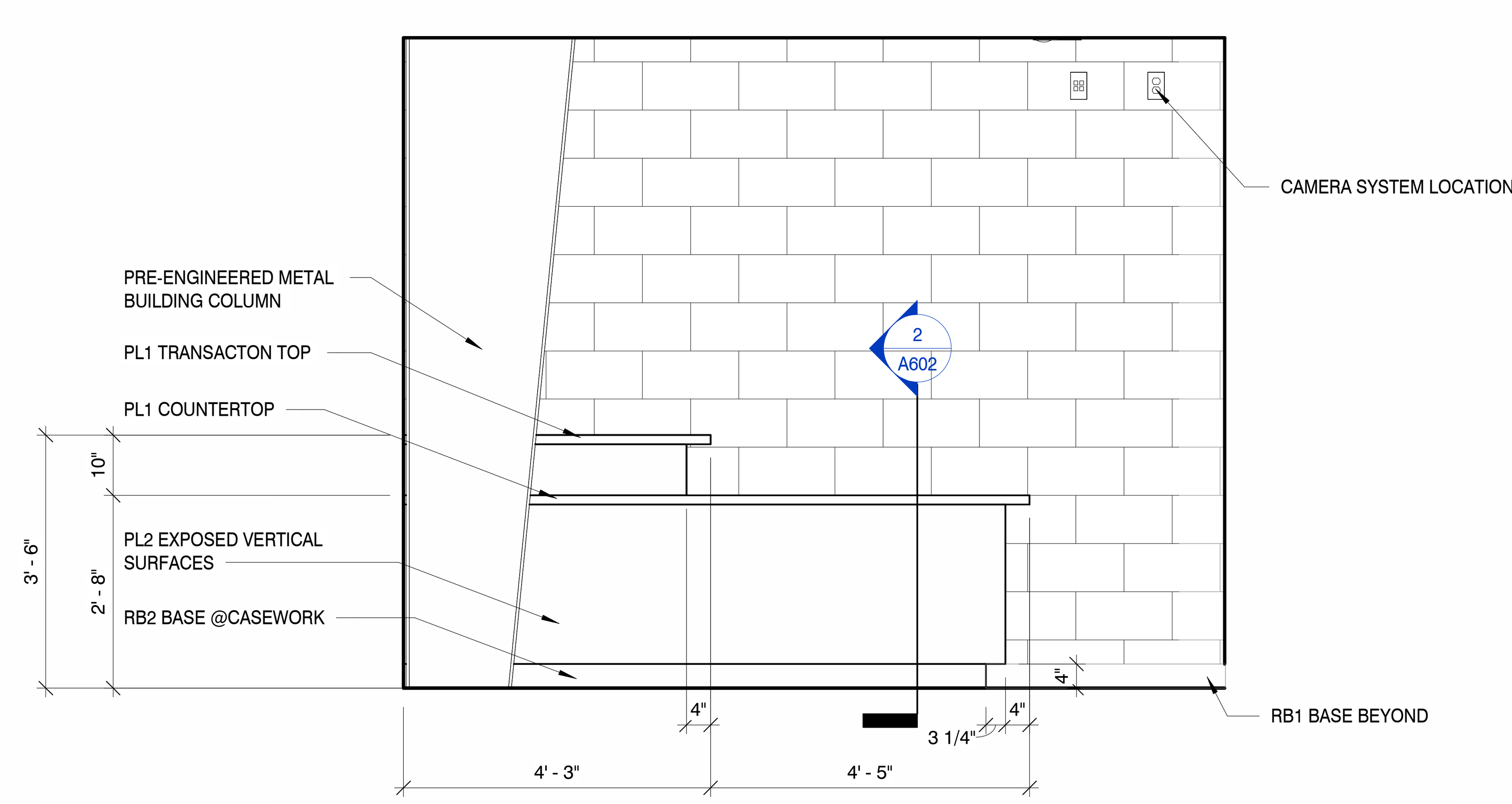
SCALE : 1/4" = 1'-0"



MILLWORK DEATIL - RECEPTION

2

SCALE : 1" = 1'-0"



INTERIOR ELEVATION REC. 101

1

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

TFM # 00017-D
PROJECT # 2023-10-31-01

PROJECT INFORMATION

PROJECT:

CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS:

411 DOUGLAS LN
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION
1	01.29.2024	ADDENDUM #01

KEY PLAN

SHEET INFORMATION

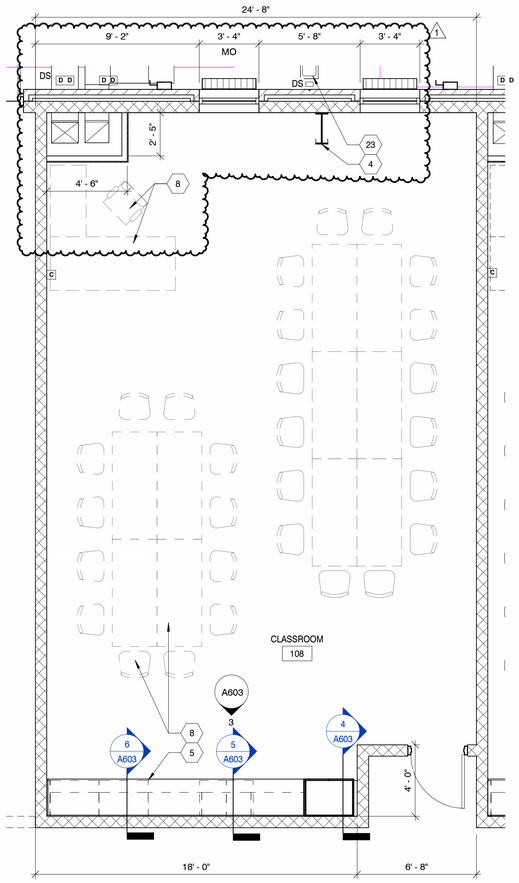
SHEET ISSUED:	10/06/2023
DESIGNED BY:	CMG
DRAWN BY:	MDC
REVIEWED BY:	CMG

SHEET TITLE:

ENLARGED PLANS, INTERIOR ELEVATIONS AND DETAILS

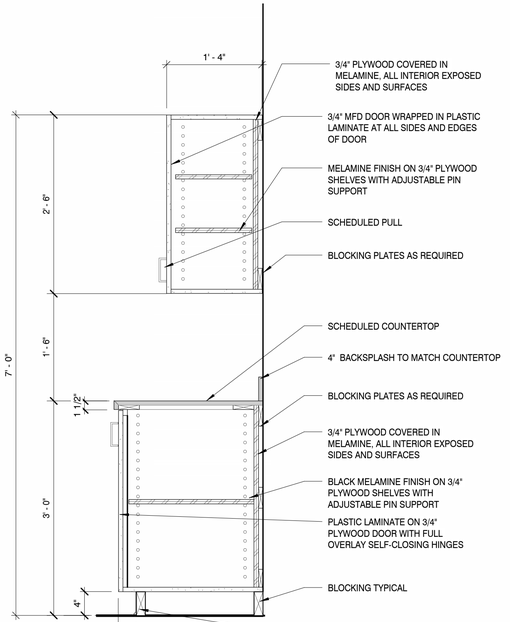
SHEET NO.: A602

FIELD SET PROJECT # 2023-10-31-01 TFM # 00017-D



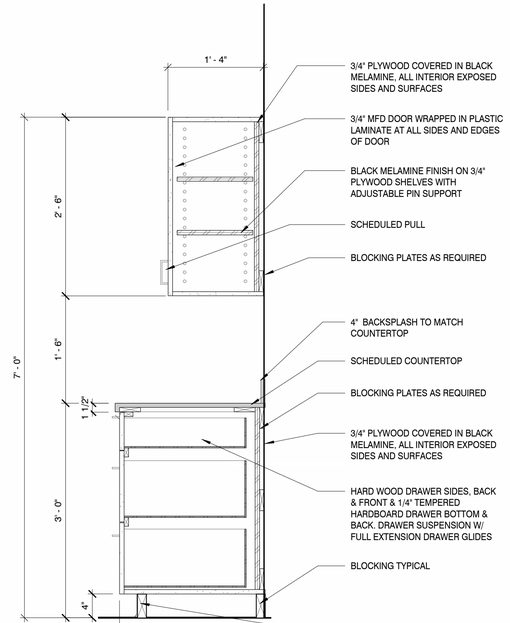
ENLARGED CLASSROOM PLAN 7

SCALE : 1/4" = 1'-0"



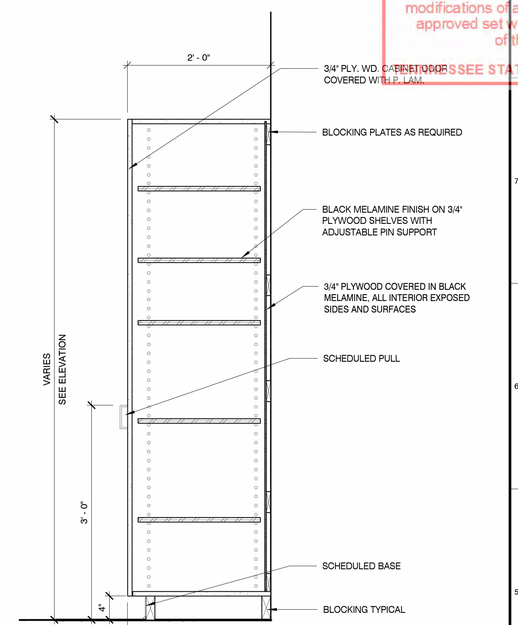
MILLWORK DETAIL 6

SCALE : 1" = 1'-0"



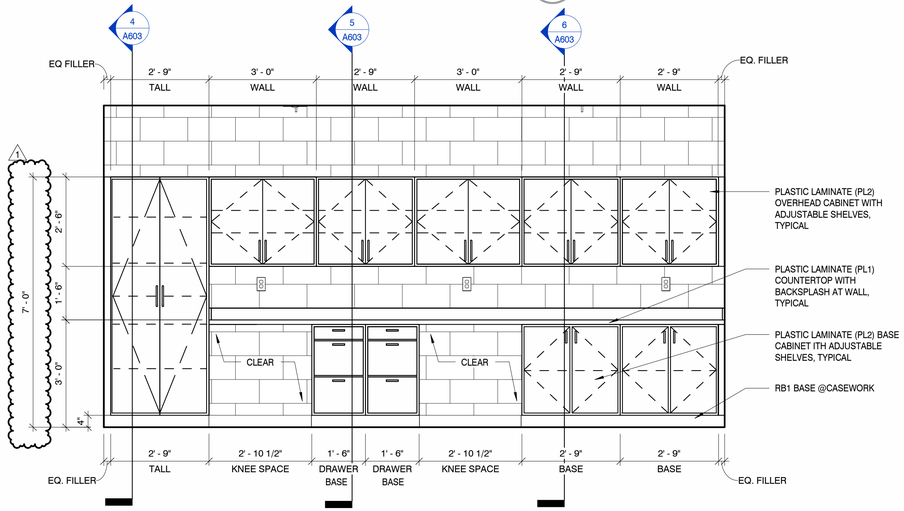
MILLWORK DETAIL 5

SCALE : 1" = 1'-0"



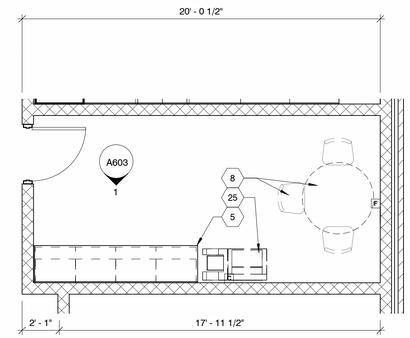
MILLWORK DETAIL 4

SCALE : 1" = 1'-0"



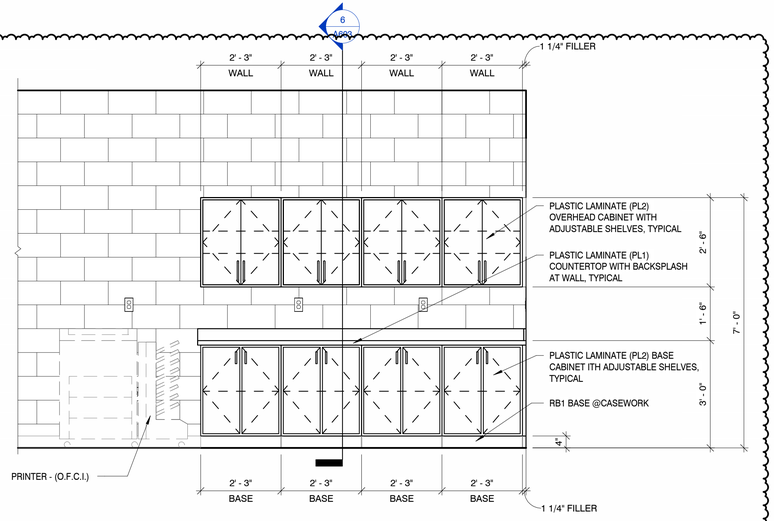
CLASSROOM ELEVATION RM 104 & 108 3

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



ENLARGED WORKROOM PLAN 2

SCALE : 1/4" = 1'-0"



INTERIOR ELEVATION SOUTH WORKROOM 103 1

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

TFM # 00017-D
PROJECT # 2023-10-31-01

MBI COMPANIES INC.
209 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com

CONSULTANT

SEAL

VALERIE DOWLEN NIPPER
REGISTERED ARCHITECT
No. 104008
STATE OF TENNESSEE
3/29/24

PROJECT INFORMATION

PROJECT:

CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS:

411 DOUGLAS LN
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION
1	01.29.2024	ADDENDUM #01

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	10/06/2023
DESIGNED BY:	CMG
DRAWN BY:	MDC
REVIEWED BY:	CMG

SHEET TITLE:

ENLARGED PLANS, INTERIOR ELEVATIONS AND DETAILS

SHEET NO.:

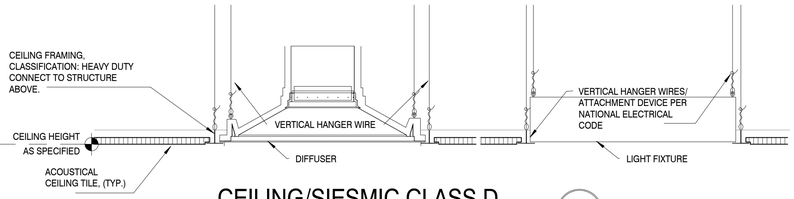
A603

PROJECT # 2023-10-31-01 TFM # 00017-D FIELD SET

Autodesk Docs://220042-02_Clinton High School Welding Building/220042-02_Rv23.rvt
3/19/2024 5:39:09 PM

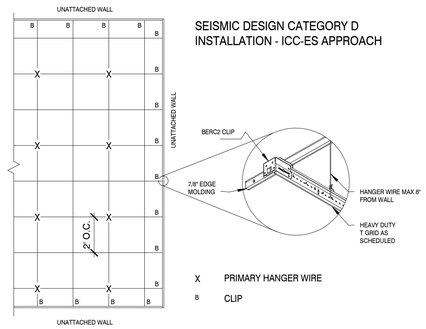
ARCH D

NOTE:
1. CEILING GRID SHALL BE SUPPORTED FROM STRUCTURE ABOVE PER MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR SEISMIC CATEGORY D, AND ALSO IN ACCORDANCE WITH ASCE 7-16. 12 GAUGE MIN. VERTICAL HANGER WIRES AT 4'-0" O.C. MAX. REFER TO SPECIFICATION 095113 ACOUSTICAL TREATMENT FOR ADDITIONAL INFORMATION.
2. LIGHT FIXTURES SHALL BE SUPPORTED FROM STRUCTURE ABOVE WHERE REQUIRED PER MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR SEISMIC CATEGORY D AND ALSO IN ACCORDANCE WITH ASCE 7-16. 12 GAUGE MIN. VERTICAL HANGER WIRE. PER ASTM E580, 5.3.1 ALL LIGHT FIXTURES SHALL BE POSITIVELY ATTACHED TO THE SUSPENDED CEILING SYSTEM BY MECHANICAL MEANS AS SPECIFIED IN THE NATIONAL ELECTRICAL CODE, UNLESS INDEPENDENTLY SUPPORTED. THE ATTACHMENT DEVICE SHALL HAVE THE CAPACITY OF 100% OF THE LIGHTING FIXTURE WEIGHT ACTING IN ANY DIRECTION. A MINIMUM OF TWO ATTACHMENT DEVICES ARE REQUIRED FOR EACH FIXTURE. REFER TO ELECTRICAL FOR ADDITIONAL INFORMATION.
3. MECHANICAL DIFFUSERS SHALL BE SUPPORTED FROM STRUCTURE ABOVE WHERE REQUIRED PER MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR SEISMIC CATEGORY D AND ALSO IN ACCORDANCE WITH ASCE 7-16. REFER TO MECHANICAL FOR ADDITIONAL INFORMATION



CEILING/SIESMIC CLASS D 5

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



SEISMIC DESIGN CATEGORY D
INSTALLATION - ICC-ES APPROACH

X PRIMARY HANGER WIRE

B CLIP

SIESMIC BRACING DETAIL 4

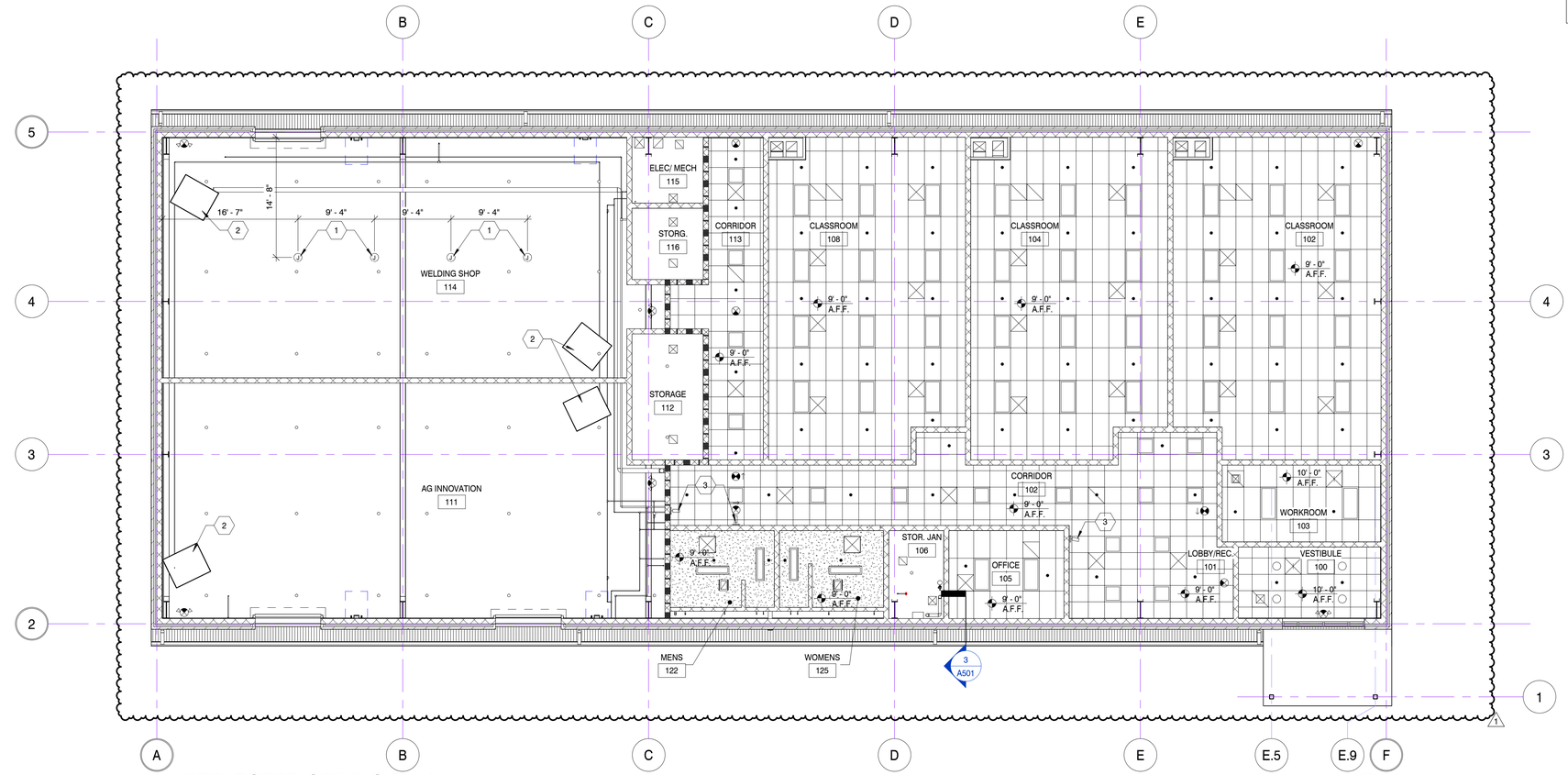
SCALE : 1/4" = 1'-0"

CEILING PLAN KEYNOTES

1. CEILING RETRACTABLE COIL EXTENSION CORD REEL
2. GAS UNIT HEATER
3. CAMERA SYSTEM THAT MONITORS EACH ENTERANCE HALLWAY. MOUNTING HEIGHT TO BE VERIFIED WITH OWNER.

REFLECTED CEILING LEGEND

- 2X4, FLAT PANEL LED FIXTURE
- 2X2, FLAT PANEL LED FIXTURE
- PENDENT SPRINKLER
- UPRIGHT SPRINKLER
- 8', LENSED STRIP INDUSTRIAL LED
- 1X4, FLANGED, FLAT PANEL INDUSTRIAL LED
- 6" DOWN LIGHT
- EXIT SIGN WITH BUILT-IN TWIN HEAD EMERGENCY LIGHT
- EXIT LIGHT
- HVAC SUPPLY DIFFUSER
- HVAC R/A GRILL
- EXHAUST FAN
- 24"X24" ACOUSTICAL CEILING TILE (ACT2 UNLESS OTHERWISE NOTED)
- 24"X48" ACOUSTICAL CEILING TILE (ACT2 UNLESS OTHERWISE NOTED)
- 5/8" GYP. BD. CEILING (TO BE PAINTED P1 UNLESS NOTED OTHERWISE)
- PREFINISHED FLUSH SEAM ALUMINUM SOFFIT
- 9'-0" A.F.F. — CEILING HEIGHT UNLESS OTHERWISE NOTED



REFLECTED CEILING PLAN 1

SCALE : 1/8" = 1'-0"

TFM # 00017-D
PROJECT # 2023-10-31-01

MBI COMPANIES INC.
209 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com
CONSULTANT

SEAL

VALERIE DOWLEN NIPPER
REGISTERED ARCHITECT
No. 104006
STATE OF TENNESSEE
12/9/24

PROJECT INFORMATION

PROJECT:

CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS:

411 DOUGLAS LN
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION
1	01.29.2024	ADDENDUM #01

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	10/06/2023
DESIGNED BY:	CMG
DRAWN BY:	MDC
REVIEWED BY:	CMG

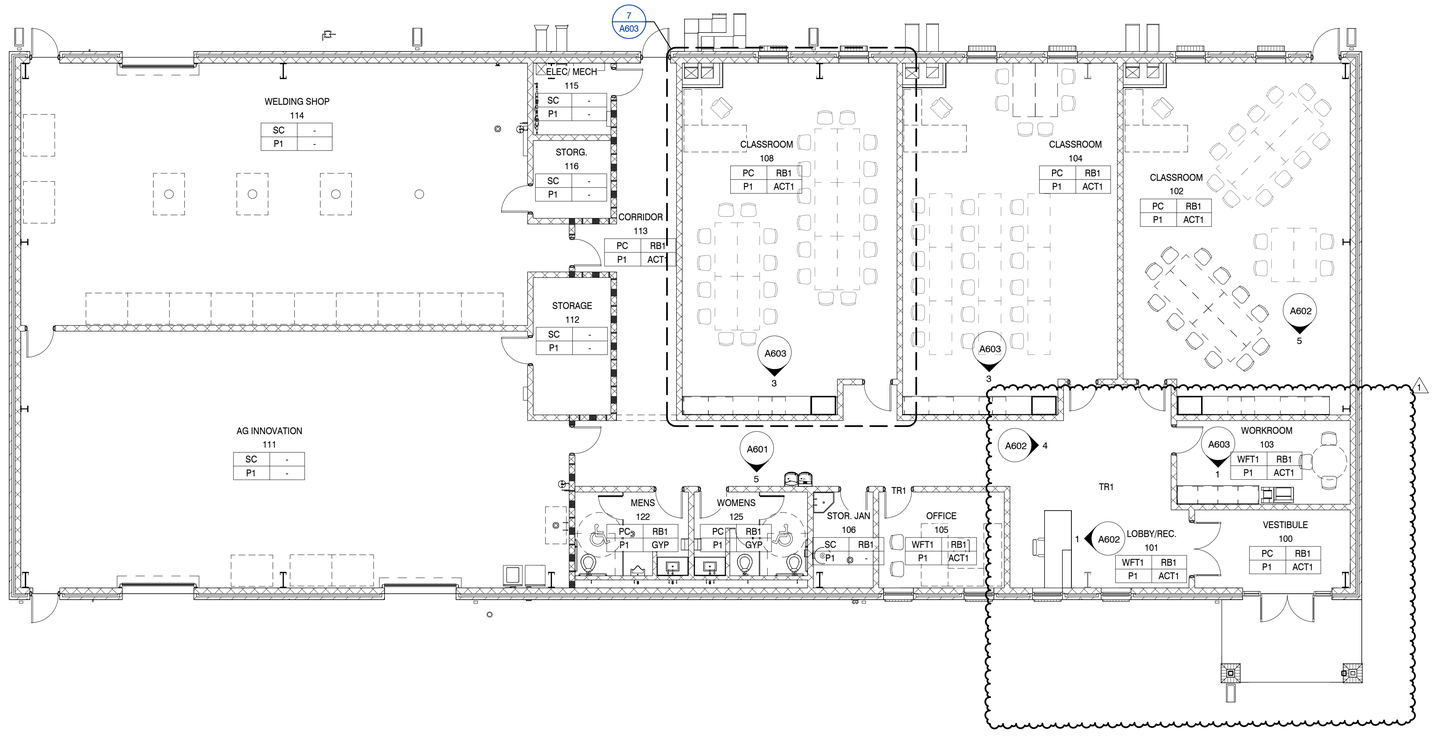
SHEET TITLE:

REFLECTED CEILING PLAN AND DETAILS

SHEET NO.:

A701

PROJECT # 2023-10-31-01 TFM # 00017-D FIELD SET



FIRST FLOOR PLAN

SCALE : 1/8" = 1'-0"

1

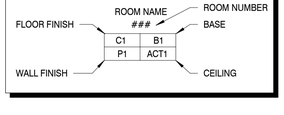
FINISH SCHEDULE

CODE	ITEM	MANUFACTURER	DESCRIPTION
	FLOORING		NOTE: LOCATE THE FLOOR FINISH CHANGE AT DOOR OPENINGS AT THE CENTERLINE OF THE DOOR LEAF
WFT1	WOVEN FLOOR TILE	J+J FLOORING	KINETEX, AGAINST THE GRAIN 1840, COLOR: BARLEY 2819, 12X48, PARQUET INSTALLATION
SC	SEALED CONCRETE	_____	GRAY STAIN
PC	POLISHED CONCRETE	_____	GRAY STAIN
	WALL BASE		
RB1	RUBBER BASE	BPI	TARKETT, BURNT UMBER 63, 4" STANDARD
RB2	RUBBER BASE	BPI	TARKETT, 4" MILLWORK MONUMENT, MW-63-S4, BURNT UMBER 63 (MILLWORK LOCATIONS)
	WALLS		
P1	PAINT	SHERWIN WILLIAMS	SW 7064 PASSIVE (GENERAL WALL PAINT U.N.O.)
P2	PAINT	SHERWIN WILLIAMS	SW 7674 PEPPERCORN (HOLLOW METAL PAINT)
	CEILING		
ACT1	ACOUSTICAL CEILING TILE	ARMSTRONG	STYLE: CALLA-2824 SQUARE TEGULAR, SIZE: 24" x 24" x 1", COLOR: WHITE, GRID: 9/16"
GYP	GYP. BD. BULKHEAD	SHERWIN WILLIAMS	PAINT (P1) UNLESS NOTED OTHERWISE
	MISC.		
ST1	STAIN	MASONITE	ASPIRO SERIES, SPECIES: WHITE BIRCH, COLOR: COCOA BEAN
TP1	TOILET PARTITION	SCRANTON	HINY HIDERS, FLOOR MOUNTED-OVERHEAD BRACE,ORANGE PEEL,SHALE, CONTINUOUS 71" H STAINLESS STEEL HELIX , OCCUPANCY INDICATOR, STAINLESS STEEL 71" CONTINUOUS STRIKE
PL1	PLASTIC LAMINATE	FORMICA	FOG 961C-58 (COUNTERTOP, RESTROOM APRON W/ MATCHING EDGEBAND)
PL2	PLASTIC LAMINATE	FORMICA	STORM 912C-58 (CABINET FRONT/SIDES)
TR1	TRANSITION	BPI	TARKETT, SLT-63-L
SS1	SOLID SURFACE	LIVINGSTONE	L721 AVALANCE, 3CM EASED EDGE (RESTROOM COUNTERTOP

GENERAL INTERIOR NOTES

1. ALL FURR DOWNS TO BE PAINTED P1 UNLESS OTHERWISE NOTED
2. ALL HOLLOW METAL PAINT SHALL HAVE SEMI-GLOSS FINISH
3. CONTRACTOR TO PROVIDE APPROPRIATE TRANSITIONS AS REQUIRED
4. PRIOR TO CONSTRUCTION, CONTRACTOR TO SUBMIT ALL SAMPLES TO ARCHITECT FOR REVIEW AND APPROVAL
5. ALL GYPSUM WALL BOARD TO BE PAINTED
6. CONTRACTOR SHALL PROVIDE APPROPRIATE SEAM SEALANT FOR ALL CARPET TRANSITIONS
7. CONTRACTOR SHALL PROVIDE APPROPRIATE GROUT & SEALANT FOR ALL FLOOR & WALL TILE APPLICATIONS

INTERIOR FINISH TAG



1

TFM # 00017-D
PROJECT # 2023-10-31-01

MBI COMPANIES INC.
209 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com

CONSULTANT

SEAL

PROJECT INFORMATION

PROJECT:

CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS:

411 DOUGLAS LN
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION
1	01.29.2024	ADDENDUM #01

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	10/06/2023
DESIGNED BY:	CMG
DRAWN BY:	AJA
REVIEWED BY:	CMG
SHEET TITLE:	

FLOOR FINISH PLAN

SHEET NO.: A901

TFM # 00017-D
PROJECT # 2023-10-31-01
FIELD SET

Autodesk Docs://220042-02_Clinton High School Welding Building/220042-02_R23.rvt
3/19/2024 5:38:03 PM

ARCH D

GENERAL NOTES

1. Structural drawings are intended to be used in close coordination with the civil, architectural, mechanical, plumbing and electrical drawings. Any discrepancies or omissions shall be brought to the attention of the Architect and resolved prior to the beginning of construction.
2. Submit written request to the Architect for approval of any proposed change to the requirements of the contract documents. Splicing, cutting, notching or other alterations to structural members are not permitted without written authorization of the Structural Engineer. Any unauthorized deviation from the contract documents, and correction thereof, is the responsibility of the Contractor.
3. The Contractor is responsible for the means and methods of construction in regards to job site safety.
4. The Contractor shall verify all dimensions and conditions. The Architect shall be notified of any discrepancies.
5. The Contractor is responsible for bracing the structure prior to the completion of all roof, floor, and wall diaphragms.
6. The Contractor shall coordinate the structural foundation and framing layouts with other trades.
7. Where live loads for which each floor or portion thereof a commercial or industrial building is or has been designed to exceed 50 psf, such design live loads shall be conspicuously posted by the owner in that part of each story in which they apply using durable signs.

SUBMITTAL NOTES

1. The Structural Engineer's review is only for general conformance with the design concept, the construction documents and specifications. Corrections or comments made on this review do not relieve the contractor from compliance with the plans and specifications. Comments on this review do not authorize an increase in the construction budget.
2. Approval of shop drawings does not indicate acceptance of deviations from the contract documents, unless accepted by the Engineer in writing prior to submission of shop drawings. Conflicts resulting from such deviations, conflicts between this work and the work of other trades due to such deviations, and dimensional conflicts as a result of such deviations shall be deemed the Contractor's responsibility.
3. Any changes to the details shown in these contract documents shall be submitted in writing by RFI and approved by the Architect and Engineer prior to submitting shop drawings. All such changes shall be "bubbled" on the shop drawings and referenced to the proper RFI.
4. Submittals shall conform to the requirements of the contract documents. Non-conforming or non-reviewed submittals will be returned without review.
5. Submittals shall be checked and marked "Reviewed - No Exceptions Taken" by the Contractor prior to submittal to the Architect. Submittals that have not been reviewed by the Contractor prior to submittal will be returned without review.
6. Submittals shall not contain reproductions of the contract documents. Submittals containing such reproductions will be returned without review.
7. Submit the following items for the Engineer's review:
   a) Concrete mix designs
   b) Reinforcing steel
   c) Pre-engineered Metal Building
   d) Contraction joint locations in masonry walls
   e) Pre-engineered Canopy

DESIGN CODES AND SPECIFICATIONS

Building Code	2018 International Building Code
Design Loads	ASCE 7-16: Minimum Design Loads for Buildings and Other Structures
Concrete	ACI 318-14: Building Code Requirements for Structural Concrete
	ACI 315-99: Manual of Standard Practice for Detailing Concrete Structures
	ACI 301-10: Specifications for Structural Concrete
	ACI 305.1-06: Specifications for Hot Weather Concrete
	ACI 306.1-90: Standard Specification for Cold Weather Concreting
	ACI 302.1R-15: Guide for Concrete Floor and Slab Construction
	ACI 304.R-00: Guide for Measuring, Mixing, Transporting and Placing Concrete
	CRSI 10th Edition: Placing Reinforcing Bars
	AWS D1.4/D1.4M-2018 Structural Welding Code - Reinforcing Steel
Steel	AISC 360-16: Specification for Structural Steel Buildings
	AWS D1.1/D1.1M-2020: Structural Welding Code - Steel
	AWS D1.8/D1.8M-2016: Structural Welding Code - Seismic Supplement
Masonry	TMS 402-16: Building Code Requirements for Masonry Structures

DESIGN LOADS

1. Dead Load	
Roof	Self-weight +8 psf
2. Live Load	
Lobbies and Corridors	100 psf
Shop Areas	250 psf
Classrooms	40 psf
Roof (unreducible)	20 psf
3. Snow Load	
Ground Snow Load, Pg	10 psf
Risk Category	II
Importance Factor, I	1.0
Exposure Factor, Ce	1.0
Thermal Factor, Ct	1.0
Flat Roof Snow Load, Pf	7 psf
4. Wind Load	
Ultimate Wind Speed	105 mph
Nominal Wind Speed	81 mph
Risk Category	II
Exposure Category	B
Enclosure Classification	Enclosed
Internal Pressure Coefficient	±0.18
Mean Roof Height, h	14 ft
Velocity Pressure, qh	10.1 psf
Wall C&C Pressure (zone 5)	
Effective Area < 50 sf	+11.9 / -15.9 psf
50 sf ≤ Effective Area < 100 sf	+10.7 / -13.4 psf
Effective Area ≥ 100 sf	+10.1 / -12.4 psf
Roof C&C Pressure (flat roof, zone 3)	
Effective Area < 50 sf	+10.0 / -32.1 psf
50 sf ≤ Effective Area < 100 sf	+10.0 / -27.7 psf
Effective Area ≥ 100 sf	+10.0 / -17.6 psf
Note: Wind pressures above are reported at nominal level (0.6W)	
5. Seismic Load	
Risk Category	II
Importance Factor, I	1.0
Site Class	D
Mapped Acceleration Parameters	
Ss	50.8%
S1	12.1%
Design Spectral Acceleration Parameters	
Sds	0.472
Sd1	0.190
Seismic Design Category	C
Analysis Method	Equivalent Lateral Force
Basic Seismic Force Resisting System	
Structural Steel Systems not Specifically Detailed for Seismic Resistance	
Response Modification Coefficient, R	3
System Overstrength Factor, Ωo	2.5
Deflection Amplification Factor, Cd	3
Seismic Base Shear Coefficient, Cs	0.157

FOUNDATION NOTES

1. Foundation design parameters have been assumed and should be verified by a Geotechnical Engineer prior to construction.
2. Foundation design parameters:
   a) Minimum Frost Protection Depth = 18"
   b) Allowable Soil Bearing Pressure = 2000 psf
   c) Subgrade Modulus = 100 pci
3. All footings shall bear on firm undisturbed residual soil and/or engineered earth fill compacted to 98% of its maximum dry density as per ASTM D698 (Standard Proctor), unless noted otherwise. THE SOIL BEARING CAPACITY IS TO BE VERIFIED BY A GEOTECHNICAL ENGINEER PRIOR TO CONSTRUCTION.
4. Provide the minimum frost depth protection depth from finished grade to the bottom of any exterior footing or turn down building slab. Also provide a minimum of 1'-0" cover from finished grade to the top of any exterior footing. Contractor to coordinate the location and depths of footing steps as required by finished grade conditions.
5. Contractor to coordinate the location and depths of footing steps as required to allow for the passage of underground plumbing and utilites.
6. Backfill retaining walls with clean crushed stone (No. 57 or 67 size) 2-6" wide (minimum) from the top of the footing to within 1'-0" of finished grade.
7. Provide 6" diameter perforated pipe footing drains at all retaining walls and foundation walls in which finished grade occurs above the finished floor elevation. Footing drains are to be totally independent and not connect with any other type of water drainage systems except at the footing drain terminations. The Architect or Structural Engineer should approve connections at the footing drain terminations.
8. Provide continuous waterstops between footings and concrete/masonry walls at locations where finished grade is located above the adjacent finished floor or at floor pits (i.e. elevator shaft).
9. Contractor shall treat soil under slabs, footings and crawl spaces with EPA approved chemical vermin control or as required per the building code.
10. Refer to the mechanical, plumbing or electrical drawings for concrete pads and foundations not shown on the structural drawings.

CONCRETE NOTES

1. All concrete elements shall be installed and detailed in accordance with the appropriate ACI documents. Contractor to have copies of the ACI documents at the job site during construction.
2. Concrete compressive strength, fc, at 28-days shall be as follows at minimum unless noted otherwise:
   a) Footings: 3000 psi (2500 psi used in design)
   b) Interior Slabs on Grade Less Than 6" Thick: 3000 psi (non air entrained)
   c) CMU Core Fill: 3000 psi
   d) Concrete Exposed to Weather: 4000 psi (w/ 4%-6% air entrainment)
3. The maximum water-to-cement ratios shall be as follows:
   a) Concrete exposed to freezing and thawing: 0.50
   b) Concrete subject to deicers and/or required to be watertight: 0.45
   c) All other concrete types: 0.58
4. Concrete mix designs shall be submitted as follows:
   a) Each mix design shall be labeled to indicate the area in which the concrete is to be placed (i.e. foundations, slab on grade, columns, etc.). Failure to do so will cause delay and/or rejection of submittals.
   b) Proposed mix design shall be in accordance with Method 1 or Method 2 of ACI 301. Provide supporting data in tabular form for each separate proposed mix.
   c) Submit concrete mix designs for each proposed class of concrete.
5. Fly ash, meeting ASTM C618 Class C or Class F may be used to replace up to 25% of Portland cement. Contractor and supplier shall coordinate to ensure that required set times for concrete are not adversely affected by use of fly ash. Contractor and all concrete subcontractors shall have experience with handling, placing and finishing concrete with fly ash.
6. Grout used in grout beds under column base plates shall be cement based, non-shrink grout. The grout shall exhibit no shrinkage in accordance with ASTM C827, "Test Method for Early Volume Change of Cementitious Mixtures" and shall have a minimum 28-day compressive strength of 5000 psi when tested in accordance with ASTM C109, "Test Method for Compressive Strength of Hydraulic Cement Mortars."
7. The following minimum concrete cover shall be provided for reinforcing bars:
   a) Cast against and permanently exposed earth: 3"
   b) Formed and exposed to earth or weather (#6 thru #18 bars): 2"
   c) Formed and exposed to earth or weather (#5 bars, W31 wire and smaller): 1-1/2"
   d) Slabs, walls & joists formed and not exposed to weather or in contact with the ground (#11 bar and smaller): 3/4"
   e) Beams, girders & columns formed and not exposed to weather or in contact with the ground: 1-1/2"
8. Unless noted otherwise, slabs on grade shall be 4" thick with 6x6-W1.4xW1.4 W.W.F. on 20 mil polyethylene vapor barrier on 4" thick crushed stone base.
9. Slab on grade contraction joints may be saw cuts 1/8" wide x 1/4 slab thickness as detailed or other submitted and approved method. Joints shall be placed at 24'-0" o.c. maximum spacing. Areas created by joints shall have a maximum aspect ratio of 1.5:1.
10. Slab on grade construction joints shall be as detailed or other submitted and approved method.
11. Vapor barrier shall be placed over prepared base material where indicated below slabs on grade. Vapor barrier shall be no less than 20 mil thick in accordance with ACI 302.1R.
12. Vapor barrier shall conform to ASTM E1745, Class B or higher unless noted otherwise. The membrane shall have a water-vapor permeance rate no greater than 0.3 perms when tested in accordance with ASTM E154, Section 11, a minimum tensile strength of 30 lb/in when tested in accordance with ASTM E154, Section 9 and a resistance to puncture of 1700 grams in accordance with ASTM E154, Section 10.
13. Vapor barrier shall be arranged in a layout to minimize seams and penetrations. Overlap all seams a minimum of 6" and seal with tape. All penetrations must be sealed using a combination of seam tape and mastic in accordance with manufacturer's latest printed instructions.
14. See architectural, mechanical, plumbing, fire protection and electrical drawings for drips, chamfers, reglets, slots, sleeves, rustications, inserts and anchors not noted on structural drawings. Unless shown on structural drawings, no openings larger than 12" x 12" shall be placed in slabs or walls without prior approval from the Architect or Engineer. Approvals must be obtained prior to fabrication of steel and placement of concrete.
15. Contractor to include with contract price an allowance for ten (10) cubic yards of reinforced concrete including materials and labor.

REINFORCING STEEL NOTES

1. Reinforcing steel and accessories shall be detailed, fabricated and placed in accordance with the latest edition of the ACI Detaling Manual. Provide shop drawings for reinforcing steel prior to fabrication.
2. Bar reinforcing shall conform to ASTM A615, Grade 60.
3. Welded bar reinforcing shall conform to ASTM A706, Grade 60.
4. Bar reinforcing lap splices shall be Class "B" but not less than 24", unless noted otherwise.
5. Reinforcing shall be held securely in position with standard accessories in accordance with ACI 315 and CRSI Manual of Standard Practice.
6. Welded wire fabric shall conform to ASTM A185.
7. Welded wire fabric lap splices shall be the cross wire spacing plus 6" but not less than 10"
8. Welded wire fabric located in concrete slabs shall be located in the center of the slab unless noted otherwise. Supports used shall be spaced at a maximum of 3'-0" o.c. in any direction.
9. Provide top steel reinforcing, same size and spacing as bottom steel, in footings at any location where the soil changes from residual to engineered fill. Top steel shall extend 8'-0" minimum each side of the soil transition area. Use #3 stirrups at 18" o.c. at these locations to tie top and bottom steel.
10. Provide top steel reinforcing, same size and spacing as bottom steel, in footings at any corner in load bearing walls. Top steel shall extend 8'-0" minimum each way from the wall corner. Use #3 stirrups at 18" o.c. at these locations to tie top and bottom reinforcing.
11. Provide (2) #4 bars x 4'-0" long in slabs on grade at all re-entrant corners, contraction joint terminations and isolation joint terminations.
12. Provide 2'-6" x 2'-6" corner bars at the corners of all continuously reinforced elements such as footings, walls, bond beams, etc. Corner bars shall be the same size, spacing, location and quantity as the continous reinforcing.

STRUCTURAL STEEL NOTES

1. Structural steel shall be designed, fabricated, erected, etc. as per the AISC Manual of Steel Construction.
2. Submit shop drawings of structural steel prior to fabrication.
3. Structural steel material to be as follows:
   a) Channels, angles and plates: ASTM A36
   b) W- and WT-shapes: ASTM A992
   c) Pipes: ASTM A53 Grade B
   d) HSS: ASTM A500 Grade B
4. Structural steel exposed to weather shall be hot dipped galvanized in accordance with ASTM A123 unless directed otherwise by the Architect.
5. Protect structural steel from earth, gravel and/or concrete with 1/8" thick hydrocide mastic.
6. Post-installed adhesive anchors may be considered as a substitute for 3/4" diameter cast-in-place anchor rods provided the adhesive anchors are field tested to resist forces specified by the Structural Engineer. Submit request to Structural Engineer prior to installation for approval. See Post-Installed Anchor Notes for approved adhesive anchors.
7. Post-installed adhesive anchors for connecting steel members to concrete or masonry shall use approved adhesive anchors listed in Post-Installed Anchor Notes. Threaded rods shall be ASTM A36 material unless noted otherwise. Submit request to Structural Engineer to use alternate adhesive anchor for approval prior to installation.
8. Post-installed expansion/screw anchors for connecting steel members to concrete or masonry shall use approved mechanical anchors listed in Post-Installed Anchor Notes. Submit request to Structural Engineer to use alternate expansion/screw anchor for approval prior to installation.
9. Welding shall be performed by operators qualified in accordance with AWS tests for the types of welding required for this project. All welders must be certified for the type of welding specified and shall be in accordance with an approved WPS. All quality procedures and personnel shall be in accordance with AWS D1.1.
10. Minimum welds unless noted otherwise:
    a) Bar joists to supports: 1/8" x 2 1/2" fillet weld each side
    b) Joist girders to supports: 1/4" x 2 1/2" fillet weld each side
    c) All others not specified: 1/8" x 2" long fillet weld except where noted as "all around"
11. Refer to civil, architectural, mechanical, plumbing, fire protection and electrical drawings for structural steel items not shown on the structural drawings.
12. Contractor to include with the contract price an allowance for two (2) tons of structural steel including materials and labor.

POST-INSTALLED ANCHOR NOTES

1. Post-installed anchors shall be used only where specified on structural drawings.
2. The installation of post-installed anchors for missing or misplaced cast-in-place anchors shall be approved by the Structural Engineer.
3. Care shall be given to avoid conflicts with existing reinforcing when drilling holes. Existing reinforcing bars in the concrete structure shall not be cut unless approved by the Structural Engineer.
4. Submittal of all proposed products with technical data and current ICC-ES reports is required for review and approval by the Structural Engineer. Additional application calculations may be required by the Structural Engineer.
5. All anchors shall be installed in strict accordance with manufacturer's printed installation instructions (MPII) in conjunction with edge distance, spacing and embedment depth as indicated on the drawings.
6. The contractor shall arrange for a manufacturer's field representative to provide installation training for all products to be used prior to commencement of work. Only trained installers shall perform post-installed anchor installation. A record of training shall be kept on site and be made available to the Structural Engineer or inspector as requested.
7. Adhesive anchors installed in horizontal to vertically overhead orientation to support sustained tension loads shall be done by a certified adhesive anchor installer (AAI) as certified through ACI/CRSI. Proof of current certification shall be submitted to the EOR for approval prior to commencement of installation.
8. Adhesive anchors must be installed in concrete aged a minimum of 21 days.
9. Mechanical anchors into concrete shall have been tested and qualified for use in accordance with ACI 355.2 and ICC-ES AC193 for cracked, uncracked and seismic concrete recognition. Approved anchors include the following:
   a) Hilti KH-EZ
   b) Simpson Titen HD
   c) DeWalt Screw-Bolt+
10. Adhesive anchors into concrete shall have been tested and qualified for use in accordance with ACI 355.4 and ICC-ES AC308 for cracked, uncraced and seismic concrete recognition. Approved anchors include the following:
    a) Hilti RE-500 V3
    b) Simpson SET-XP
    c) DeWalt Pure 110+
11. Mechanical anchors into masonry shall have been tested and qualified for use in accordance with ICC-ES AC01 or AC106. Approved anchors include the following:
    a) Hilti KH-EZ
    b) Simpson Titen HD
    c) DeWalt Screw-Bolt+
12. Adhesive anchors into masonry shall have been tested and qualified for use in accordance with ICC-ES AC58. Approved anchors include the following:
    a) Hilti HY-70
    b) Simpson AT-XP
    c) DeWalt AC100+ Gold
13. Provide Special Inspection for all mechanical and adhesive anchors per the applicable building code and per the current ICC-ES report. Adhesive anchors installed in horizontal of upwardly inclined orientations to resist sustained tension loads shall be continuously inspected during installation by an inspector specially approved for that purpose by the building official.

MASONRY NOTES

1. Structural masonry is defined as being either load bearing or serving as the lateral force resisting system. Structural masonry is shown on the structural plans, and is defined in schedules and details on the structural drawings. Partition walls, masonry veneer and other non-structural masonry are shown on the architectural drawings.
2. Concrete masonry units shall be light weight and shall conform to ASTM C90.
3. Minimum concrete masonry compressive strength, f'm, shall be 2000 psi at 28 days.
4. Mortar shall conform to ASTM C270. Type S mortar shall be used for structural masonry and partition walls. Type N mortar shall be used for veneer.
5. Masonry bar reinforcing shall conform to ASTM A615, Grade 60.
6. Masonry joint reinforcing shall be Hohmann and Barnard, Inc. assembly or approved equal and shall have product approval of governing code. Reinforcing shall be ladder type and shall be manufactured from cold drawn steel wire conforming to ASTM A1064. Cross rods and side rods shall not be less than W1.7 (9 ga) wire. May provide preformed corners and tees to match type, size and spacing of joint reinforcing.
7. Structural masonry walls shall be reinforced as follows unless noted otherwise:
   a) 6" CMU: (1) #4 vertical @ 48" o.c.
   b) 8" CMU: (1) #5 vertical @ 48" o.c.
8. See architectural drawings for interior non-structural masonry partition walls which may or may not be shown on the structural drawings. Interior non-structural masonry partition walls should be reinforced as follows for the given unbraced height for an out-of-plane load of 10 psf unless noted otherwise. Brace the top of partition walls as shown in the typical details. Braces to be located at a maximum spacing of 12'-0" o.c. along the wall length with braces located no further than 1'-0" from an unsupported free end (without a corner) and 8'-0" from tees or corners. Braces not required when wall length is less than 12'-0" between tees or corners.
   a) 6" CMU up to 17'-6" unbraced: (1) #5 vertical @ 48" o.c.
   b) 6" CMU up to 20'-6" unbraced: (1) #5 vertical @ 32" o.c.
   c) 6" CMU up to 23'-0" unbraced: (1) #5 vertical @ 16" o.c.
   d) 8" CMU up to 24'-6" unbraced: (1) #5 vertical @ 32" o.c.
   e) 8" CMU up to 28'-3" unbraced: (1) #6 vertical @ 32" o.c.
   f) 8" CMU up to 31'-9" unbraced: (1) #6 vertical @ 16" o.c.
9. All masonry walls shall have horizontal joint reinforcing consisting of (2) W1.7 wires spaced at 16" o.c. unless noted otherwise.
10. All vertical bar reinforcing shall extend from the foundation to the top of wall. Provide dowels same size and spacing as vertical bar reinforcing into foundation.
11. All vertical bar reinforcing shall extend through all bond and tie beams.
12. All vertical reinforcing shall be located within the center of the wall unless noted otherwise. For reinforcing which is not centered, provide 3/4" clear space between reinforcing and face shell.
13. All horizontal bar reinforcing shall be placed within bond beam units.
14. Masonry bar reinforcing development length and lap splice length shall be 64 bar diameters but not less than 12 inches.
15. Masonry joint reinforcing lap splice length shall be 36 wire diameters, but not less than 6 inches.
16. Fill reinforced masonry cores, bond beams and lintels with grout conforming to ASTM C476. Fine and coarse grouts shall attain a minimum compressive strength of 3000 psi at 28 days. Grout shall attain 80% of design strength prior to application of service loads.
17. All cells below finished floor or finished grade, whichever is higher, shall be solid grouted.
18. The selection of fine and coarse grouts and the maximum grout pour height shall be in conformance with the grout space requirements set forth in the Specification for Masonry Structures (ACI 530.1 / ASCE 6 / TMS 602).
19. Each grout lift shall not exceed 5'-0" unless inspection cleanouts are provided in the bottom course of the lift.
20. Stop each intermediate grout lift 1-1/2" below the top of masonry at the top of the lift.
21. Grout shall be consolidated immediately after pouring and reconsolidated.
22. Provide reinforcing positioners at 5'-0" on center minimum vertically.
23. Furnish all special shapes, such as bond beam, open end, lintel and pilaster units, as required to accomodate reinforcing.
24. When it is necessary to cut masonry, use an approved masonry saw. Use no units less than half size.
25. Provide bond beam at joist and beam bearing locations.
26. Provide tie bond beam at floor or roof diaphragms and at top of wall. Where diaphragms slope, step tie bond beam as required to follow slope and provide lap splice for tie bond beam reinforcing at each step.
27. Bond and tie bond beams shall be reinforced as follows unless noted otherwise:
    a) 6x8 Bond / Tie Bond Beam: (1) #4 cont.
    b) 6x16 Bond / Tie Bond Beam: (1) #4 cont. T&B
    c) 6x8 Bond / Tie Bond Beam: (2) #5 cont.
    d) 8x16 Bond / Tie Bond Beam: (2) #5 cont. T&B

MASONRY NOTES

28. Vertical contraction joints in concrete masonry shall be spaced at 25'-0" on center maximum unless noted otherwise on architectural or structural plans (See notes 29 & 30 for reinforcing required at joint). Joints shall be 3/8" wide and shall extend the full height of the wall. Joints shall be free of mortar and grout. Head joints to align full height of joint. Preferred joint locations are as follows. Submit joint layout for approval with masonry submittal. See typical contraction joint detail for more information.
    a) Not less than 1'-4" from a joist or beam bearing plate
    b) Near wall openings, not less than required lintel jamb width away from opening
    c) Near wall corners in one of the two joining walls, not greater than 5'-0" from corner
    d) Near column lines
    e) At changes in wall height
    f) At changes in wall thickness
    g) At tee intersections between an interior and exterior wall
29. All horizontal joint reinforcing shall be discontinuous at vertical contraction joints.
30. All horizontal bar reinforcing shall be discontinuous at vertical contraction joints except where reinforcing is used as a tie bond beam at floor or roof diaphragms and at top of wall.
31. Lintels at wall openings shall be provided as follows unless noted otherwise. See typical lintel detail for more information.
    a) Opening width up to 4'-0": 8" nominal depth w/ (2) #4 bars
    b) Opening with over 4'-0" up to 8'-0": 16" nominal depth w/ (2) #5 bars T&B
    c) Opening width over 8'-0" up to 12'-0": 24" nominal depth w/ (2) #6 bars T&B
    d) Opening width over 12'-0" up to 16'-0": 32" nominal depth w/ (2) #6 bars T&B
32. Jambs at wall openings shall be provided as follows unless noted otherwise. See typical jamb detail for more information.
    a) Opening width up to 4'-0": (1) bar and 8" min. width each side
    b) Opening width over 4'-0" up to 8'-0": (2) bars and 16" min. width each side
    c) Opening width over 8'-0" up to 12'-0": (3) bars and 24" min. width each side
    d) Opening width over 12'-0" up to 16'-0": (4) bars and 32" min. width each side
33. Pre-cast lintels shall not be permitted unless noted otherwise.
34. Provide lintels above mechanical, plumbing or electrical wall penetrations which exceed 16" wide.
35. All anchors shall be located within solid grouted cells.

PRE-ENGINEERED METAL BUILDING (PEMB) NOTES

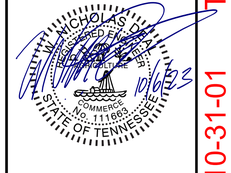
1. THE FOOTING SIZES AND REINFORCEMENTS SHOWN ARE ASSUMED AND MAY BE ADJUSTED WHEN THE FINAL REACTIONS ARE FURNISHED BY THE PEMB MANUFACTURER.
2. Contractor shall submit actual reactions from the PEMB manufacturer for review by the Engineer of Record prior to fabrication/construction.
3. A concrete allowance identified in the Concrete Notes has been provided for use if larger footings are required. Contractor to provide credit for any unused portion of concrete allowance.
4. See Design Loads and Criteria for loading information.
5. Deflection criteria:
   a) Wall panels: L/240 (10 yr. wind)
   b) Girts/beams:
      -Supporting brick or CMU: L/360 ≤ 1" (10 yr. wind)
   c) Main frames:
      -Supporting CMU exterior walls with hinged base: H/100 (10 yr. wind)
   d) Purlins:
      -Live, snow or wind load only: L/240
      -Dead+Live Load: L/180
6. X-bracing (cable or rod) is not permitted for lateral stability. Provide portal frames at preferred locations depicted on plans. If additional portal frames are needed or if locations need to be adjusted, contact the Engineer of Record prior to shop drawing submission.
7. End walls are non-expandable.
8. All columns are to be designed with pinned bases.

MBI COMPANIES INC.
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com

CONSULTANT
STRUCTURAL ENGINEER:

MBI COMPANIES INC.
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com

SEAL



PROJECT INFORMATION

PROJECT:

CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS:

411 DOUGLAS LN
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	10/06/2023
DESIGNED BY:	ZSP
DRAWN BY:	TLT
REVIEWED BY:	WND

SHEET TITLE:

STRUCTURAL NOTES

SHEET NO.:

S001

PROJECT # 2023-10-31-01 TFM # 00017-D

FIELD SET

ARCH D

GENERAL SPECIAL INSPECTION NOTES

1. Special inspection is defined by the building code as "inspection of construction requiring the expertise of an approved special inspector in order to ensure compliance with this code and the approved construction documents" (see 2018 IBC Chapter 17).
2. Definitions of special inspection frequency:
   a) Continuous: Special inspection by the special inspector who is present when and where the work to be inspected is being performed.
   b) Periodic: Special inspection by the special inspector who is intermittently present where the work to be inspected has been or is being performed.
   c) Perform: Tasks to be performed for each welded joint or member or for each bolted connection.
   d) Observe: Items to be observed on a random basis. Operations need not be delayed pending these inspection.
   e) Document: Create a report documenting that the work has been performed in accordance with the contract documents.
3. The owner or the owner's agent shall employ one or more special inspectors to provide inspections during construction on the types of work listed under 2018 IBC Section 1705. The special inspector shall be a qualified person who shall demonstrate competence, to the satisfaction of the building official, for inspection of the particular type of construction or operation requiring special inspection. The special inspector shall disclose all possible conflicts of interest so that objectivity can be confirmed by the building official and/or the design professional.
4. Special inspectors are as defined in specification section 014500. All other testing falls under specification section 014000.
5. Report requirements:
   a) Special inspectors shall keep records of inspections. The special inspector shall furnish inspection reports to the building official, and to the registered design professional in responsible charge. Reports shall indicate that work inspected was done in conformance to the approved construction documents.
   b) Discrepancies shall be brought to the immediate attention of the contractor for correction. If the discrepancies are not corrected, the discrepancies shall be brought to the attention of the building official and to the registered design professional in responsible charge prior to the completion of that phase of the work.
   c) A final report documenting required special inspections and correction of any discrepancies noted in the inspections shall be submitted at a point in time agreed upon by the permit applicant and the building official prior to the start of the work.
6. In the event that the project locale does not require a building official to be involved, the owner or owner's agent shall review the special inspection requirements with the design professional to determine which items for special inspection are mandatory.
7. Special inspection items listed in the following tables are required if the inspection item pertains to the project.

STATEMENT OF SPECIAL INSPECTIONS

Project: CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING
Location: 411 DOUGLAS LN , CLINTON, TN 37716
Owner: ANDERSON CO. SCHOOLS
Design Professional: W. NICHOLAS DEAL, P.E., S.E.

This Statement of Special Inspections is submitted in accordance with Section 1704.3 of the 2018 IBC. It includes a Schedule of Special Inspection Services applicable to the above referenced Project as well as the identity of the individuals, agencies, or firms intended to be retained for conducting these inspections. If applicable, it includes Requirements for Seismic Resistance and/or Requirements for Wind Resistance.

Are requirements for Seismic Resistance included in the Statement of Special Inspections? No
Are requirements for Wind Resistance included in the Statement of Special Inspections? No

The Special Inspector(s) shall keep records of all inspections and shall furnish interim inspection reports to the Building Official and to the Registered Design Professional in Responsible Charge at a frequency agreed upon by the Design Professional and the Building Official prior to the start of work. Discrepancies shall be brought to the immediate attention of the Contractor for correction. If the discrepancies are not corrected, the discrepancies shall be brought to the attention of the Building Official and the Registered Design Professional in Responsible Charge prior to completion of that phase of work. A Final Report of Special Inspections documenting required special inspections and corrections of any discrepancies noted in the inspections shall be submitted to the Building Official and the Registered Design Professional in Responsible Charge at the conclusion of the project.

Frequency of interim report submittals to the Building Official and Registered Design Professional in Responsible Charge shall be as follows:

Building Official: Monthly
Design Professional in Responsible Charge: Bi-weekly

Statement of Special Inspections Prepared by:

W. NICHOLAS DEAL, P.E., S.E.

Type or print name

Signature Date

Building Official's Acceptance:

Signature Date

Preparer's Seal

CONCRETE CONSTRUCTION

Concrete (2018 IBC: Table 1705.3, 1705.12.1)

Required	Task	Extent	Description	Service
YES	1. Reinforcing steel, including prestressing tendons	Periodic	Verify prior to placing concrete that reinforcing is of specified type, grade and size; that it is free of oil, dirt and rust; that it is located and spaced properly; that hooks, bends, ties, stirrups and supplemental reinforcement are placed correctly; that lap lengths, stagger and offsets are provided; and that all mechanical connections are installed per the manufacturer's instructions and/or evaluation report.	Field inspection
YES	2. Anchors cast in concrete	Periodic	Verify prior to placing concrete that cast in anchors have proper embedment, spacing and edge distance.	Field inspection
YES	3. Post-installed anchors or dowels	Periodic	Inspect all post-installed anchors/dowels as required by the approved ICC-ES report.	Field inspection and/or anchor capacity testing
YES	4. Use of required mix design	Periodic	Verify that all mixes used comply with the approved construction documents.	Submittal review and field verification
YES	5. Concrete slump, air content, and temperature	Continuous	At the time fresh concrete is sampled to fabricate specimens for strength test, verify these tests are performed.	Field inspection
YES	6. Concrete & shotcrete placement	Continuous	Verify proper application techniques are used during concrete conveyance and depositing avoids segregation or contamination. Verify that concrete is properly consolidated.	Field inspection
YES	7. Curing temperature and techniques	Periodic	Inspect curing, cold weather protection and hot weather protection procedures	Field inspection
NO	8. Pre-stressed concrete	Continuous	Verify application of prestressing forces and grouting of bonded prestressing tendons in the seismic force-resisting system.	Field inspection
NO	9. Erection of precast concrete	Periodic	Verify that all precast elements are lifted, assembled and braced in accordance with the approved construction documents.	Field inspection
YES	10. In-situ concrete strength verification	Periodic	Prior to the removal of shores and forms or the stressing of post-tensioned tendons, verify that adequate strength has been achieved.	Field inspection
YES	11. Formwork	Periodic	Inspect the forms to ensure that they are placed plumb and conform to the shapes, lines, and dimensions of the members as required by the approved construction documents.	Field inspection
NO	12. Reinforcement complying with ASTM A615 in special moment frames, special structural walls and coupling beams (only when Special Inspections for seismic resistance is required)	Periodic	Verify that ASTM A615 reinforcing steel used in these areas complies with ACI 318: 21.1.5.2 by means of certified mill test reports. If this reinforcing steel is to be welded, chemical tests shall be performed in accordance with ACI 318: 3.5.2.	Field inspection
NO	13. Reinforcement placement within progressive collapse resisting system (only when Special Inspections for progressive collapse resistance is required)	Continuous	Visually inspect reinforcing steel placement with a particular emphasis on reinforcing steel anchorages, laps and other details within the progressive collapse resisting system, including horizontal tie force elements, vertical tie force elements and bridging elements.	Field inspection

STRUCTURAL STEEL CONSTRUCTION

Prior to Welding (AISC 360-16: Table N5.4-1; AISC 341-16: Table J6-1)

Required	Task	Extent	Description	Service
YES	1. Verify welding procedure specifications (WPS) and consumable certificates	Perform		Submittal review
YES	2. Material identification (type/grade)	Observe		Shop and field inspection
YES	3. Welder identification system	Observe	A system shall be maintained by which a welder who has welded a joint or member can be identified. Stamps, if used, shall be the low-stress dye type.	Submittal review
YES	4. Fit-up of groove welds (including joint geometry)	Observe	Verify joint preparation, dimensions (alignment, root opening, root face, bevel), cleanliness (condition of surface steel), tacking (tack weld quality and location), and backing type and fit (if applicable).	Shop and field inspection
YES	5. Configuration and finish of access holes	Observe		Shop and field inspection
YES	6. Fit-up of fillet welds	Observe	Verify dimensions (alignment, gaps at root), cleanliness (condition of steel surfaces), and tacking (tack weld quality and location).	Shop and field inspection

During Welding (AISC 360-16: Table N5.4-2; AISC 341-16: Table J6-2)

Required	Task	Extent	Description	Service
YES	1. Use of qualified welders	Observe		Shop and field inspection
YES	2. Control and handling of welding consumables	Observe	Verify packaging and exposure control.	Shop and field inspection
YES	3. No welding over cracked tack welds	Observe		Shop and field inspection
YES	4. Environmental conditions	Observe	Verify wind speed within limits and precipitation and temperature criteria being met.	Shop and field inspection
YES	5. WPS followed	Observe	Verify settings on weld equipment, travel speed, selecting welding materials, shielding gas type/flow rate, preheat applied, interpass temperature maintained (min./max.), proper position (F, V, H, OH), and intermix of filler metals avoided unless approved.	Submittal review with shop and field verification
YES	6. Welding techniques	Observe	Verify interpass and final cleaning, each pass within profile limitations, and each pass meets quality requirements.	Shop and field inspection
YES	7. Placement and installation of steel headed stud anchors	Perform		Field inspection

After Welding (AISC 360-16: Table N5.4-3; AISC 341-16: Table J6-3)

Required	Task	Extent	Description	Service
YES	1. Welds cleaned	Observe		Shop and field inspection
YES	2. Size, length and location of welds	Perform		Shop and field inspection
YES	3. Welds meet visual acceptance criteria	Perform	Verify crack prohibition, weld/base-metal fusion, crater cross section, weld profiles, weld size, undercut, and porosity.	Shop and field inspection
YES	4. Arc strikes	Perform		Shop and field inspection
YES	5. k-area	Perform	When welding of doubler plates, continuity plates or stiffeners has been performed in the k-area, visually inspect the web k-area for cracks within 3" of the weld.	Shop and field inspection
YES	6. Backing removed and weld tabs removed (if required)	Perform / Document		Shop and field inspection
YES	7. Backing removed, weld tabs removed and finished, and fillet welds added (if required)	Perform / Document		Shop and field inspection
YES	8. Placement of reinforcing or contouring fillet welds (if required)	Perform / Document		Shop and field inspection
YES	9. Repair activities	Perform\		Shop and field inspection
YES	10. Document acceptance or rejection of welded joint or member	Perform		Shop and field inspection

After Bolting (AISC 360-16: Table N5.6-3; AISC 341-16: Table J7-3)

Required	Task	Extent	Description	Service
YES	1. Document acceptance or rejection of bolted connections	Perform		Field inspection

Other Steel Inspections (AISC 360-16: N5.8)

Required	Task	Extent	Description	Service
YES	1. Anchor rods and other embedments supporting structural steel	Perform	Verify the diameter, grade, type and length of the anchor rod or embedded item, and the extent or depth of embedment prior to placement of concrete.	Field inspection
YES	2. Fabricated steel or erected steel frame	Observe	Verify compliance with the details shown on the construction documents, such as braces, stiffeners, member locations and proper application of joint details at each connection.	Field inspection

MASONRY CONSTRUCTION - LEVEL B

Prior to Construction (TMS 402/602-16: 1.5)

Required	Task	Extent	Description	Service
YES	1. Review material certificates, mix designs, test results and construction procedures	Periodic	Verify that materials conform to the requirements of the approved construction documents.	Submittal review

As Construction Begins (TMS 402/602-16: Table 4)

Required	Task	Extent	Description	Service
YES	1. Proportions of site-prepared mortar	Periodic	Verify that mortar is of the type and color specified on the construction documents, that it conforms to ASTM C270, and that it is mixed in accordance with TMS 602: 2.1, 2.6A, and 2.6C.	Submittal review and field verification
NO	2. Grade and size of prestressing tendons and anchorages	Periodic	Verify that prestressing tendons comply with TMS 602: 2.4B and that anchorages, couplers, and end blocks comply with 2.4H.	Field inspection
YES	3. Grade, type, and size of reinforcement, connectors, and prestressing tendons and anchorages	Periodic	Verify that reinforcement is placed in accordance with TMS 602: 3.4. Prestressing tendons shall be placed per 3.6A.	Field inspection
NO	4. Prestressing technique	Periodic	Verify that prestressing technique complies with TMS 602: 3.6B.	Field inspection
NO	5. Properties of thin-bed mortar for AAC masonry	Continuous / Periodic	Verify that mortar complies with TMS 602: 2.1 C.1. Continuous inspection for the first 5000 sf of wall and periodic for all following applications.	Field inspection
NO	6. Sample panel construction	Periodic	Verify that sample panels contain full range of unit and mortar color. Each procedure should be demonstrated on sample panel per TMS 602: 1.6D.	Field inspection

Prior to Grouting (TMS 402/602-16: Table 4)

Required	Task	Extent	Description	Service
YES	1. Grout space	Periodic	Verify that grout space is free of mortar droppings, debris, loose aggregate, and other deleterious materials and that cleanouts are provided per TMS 602: 3.2D and 3.2F.	Field inspection
NO	2. Placement of prestressing tendons and anchorages.	Periodic	Verify that provided reinforcement conforms to TMS 602 2.4. Confirm tolerances for prestressed tendon placement and forces meet TMS 602: 3.6.	Field inspection
YES	3. Placement of reinforcement, connectors, and anchor bolts.	Periodic	Verify reinforcement was placed in grout space prior to grouting. Confirm reinforcement, wall ties, and anchors are sized, selected, and located as specified in the project drawings. TMS 602: 3.2E and 3.4.	
YES	4. Proportions of site-prepared grout and prestressing grout for bonded tendons	Periodic	Verify that grout is proportioned per ASTM C476 and has a slump between 8" to 11". Self-consolidated grout shall not be proportioned onsite.	Field inspection

During Construction (TMS 402/602-16: Table 4)

Required	Task	Extent	Description	Service
YES	1. Materials and procedures with the approved submittals	Periodic	Ensure materials are used in compliance with construction procedures outlined in TMS 602: 1.5	Field Inspection
YES	2. Placement of masonry units and mortar joint construction	Periodic	Verify bed joins are constructed in compliance with TMS 602: 3.3B	Field Inspection
YES	3. Size and location of structural members	Periodic	Verify the locations of structural elements with respect to the approved construction documents and confirm that tolerances meet the requirements of TMS 602: 3.3F.	Field inspection
YES	4. Type, size, and location of anchors, including other details of anchorage of masonry to structural members, frames, or other construction.	Periodic	Verify that correct anchorages and connections are provided per the approved construction documents and TMS 402: 1.2.1, 6.2.1, and 6.3.1.	Field inspection
NO	5. Welding of reinforcement	Continuous	Verify welded reinforcement meets the requirements of TMS 402: 6.1.6.1.2.	Field inspection
YES	6. Preparation, construction, and protection of masonry during cold weather (<40°F) or hot weather (>90°F)	Periodic	Verify that cold weather construction is performed in accordance with TMS 602: 1.8C and hot weather construction per TMS 602: 1.8D.	Field inspection
NO	7. Application and measurement of prestressing force	Continuous	Verify the proper prestressing force is applied per TMS 602: 3.6B.	Field inspection
YES	8. Placement of grout and prestressing grout for bonded tendons is in compliance	Continuous	Verify placement of grout is done in accordance with TMS 602: 3.5 and placement of grout for bonded tendons is in accordance with TMS 602: 3.6C.	Field inspection
NO	9. Placement of AAC masonry units and construction of thin-bed mortar joints	Continuous / Periodic	Verify that mortar is placed in accordance with TMS602: 3.3B.9 and 3.3F.1.b. Continuous inspection for the first 5000 sf of wall and periodic for all following applications.	Field inspection
YES	10. Observation of grout specimens, mortar specimens, and/or prisms	Periodic	Confirm that specimens/prisms are performed as required by TMS 602: 1.4.	Field inspection

SOILS CONSTRUCTION

Soil (2018 IBC: Table 1705.6)

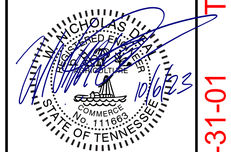
Required	Task	Extent	Description	Service
YES	1. Foundation bearing capacity	Periodic	Verify the materials below foundations are adequate to achieve the design bearing capacity.	Field inspection
YES	2. Excavations	Periodic	Verify the excavations are extended to the proper depth and have reached proper material.	Field inspection
YES	3. Perform classification and testing of compacted fill materials	Periodic		Field inspection
YES	4. Compacted fill material	Continuous	Verify the use of proper materials, densities and lift thicknesses during placement and compaction of compacted fill.	Field inspection
YES	5. Subgrade	Periodic	Prior to placement of compacted fill, observe sub-grade and verify that the site has been properly prepared.	Field inspection

MBI COMPANIES INC.
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com

CONSULTANT
STRUCTURAL ENGINEER:

MBI COMPANIES INC.
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com

SEAL



PROJECT INFORMATION

PROJECT:

CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS:

411 DOUGLAS LN
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	10/06/2023
DESIGNED BY:	ZSP
DRAWN BY:	TLT
REVIEWED BY:	WND

SHEET TITLE:

SPECIAL INSPECTIONS

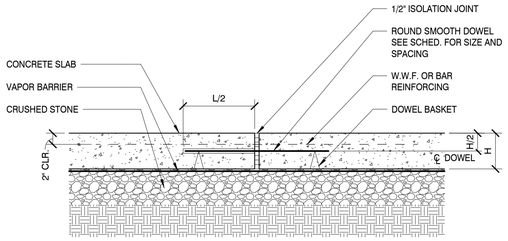
SHEET NO.:

S002

PROJECT # 2023-10-31-01 TFM # 00017-D

FIELD SET

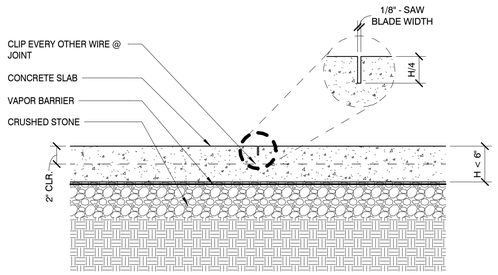
Autodesk Docs://220042-02_Clinton High School Welding Building/220042.02_RvD3.rvt
10/5/2023 5:05:32 PM



DOWEL SCHEDULE			
SLAB THICKNESS	DIAMETER	LENGTH (L)	SPACING
H ≤ 6"	3/4" Ø	14"	12" O.C.
6" < H ≤ 8"	1" Ø	16"	12" O.C.
8" < H ≤ 12"	1-1/4" Ø	18"	12" O.C.

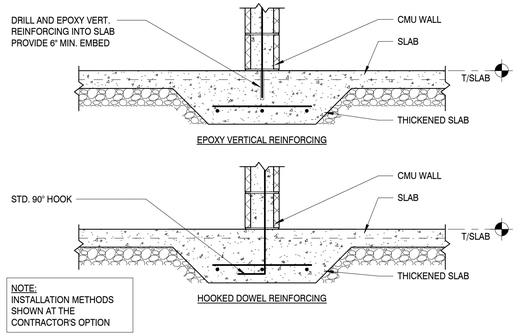
CONSTRUCTION JOINT DETAIL 1

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



CONTRACTION JOINT DETAIL 2

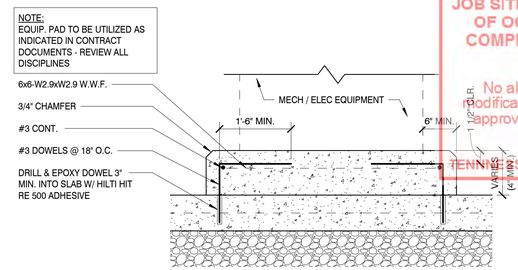
SCALE : 1 1/2" = 1'-0"



NOTE:
INSTALLATION METHODS SHOWN AT THE CONTRACTOR'S OPTION

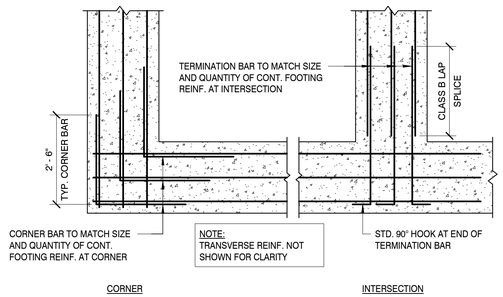
THICKENED SLAB DETAIL 3

SCALE : 3/4" = 1'-0"



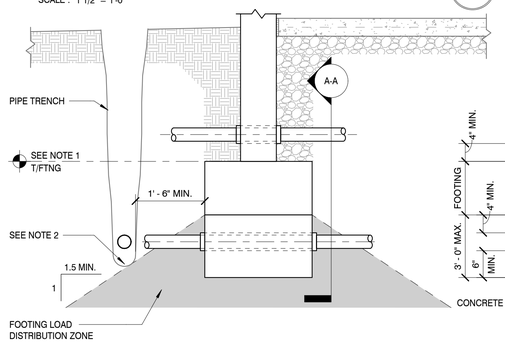
INTERIOR EQUIP. PAD DETAIL 4

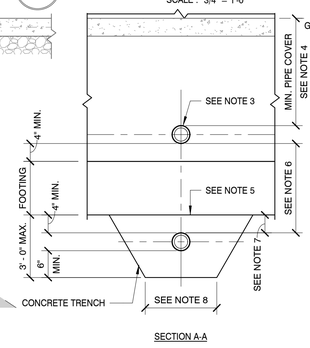
SCALE : 1 1/2" = 1'-0"



TYP. WALL FOOTING REINF. LAYOUT 5

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



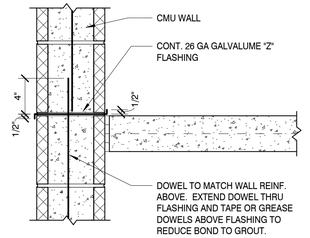


SECTION A-A

NOTES:
1. STEP FOOTING AS REQUIRED TO ALLOW TRANSVERSE PIPES TO CROSS ABOVE OR BELOW FOOTING AS SHOWN.
2. FOR PIPES RUNNING PARALLEL TO FOOTING, FOOTING DEPTH AND PIPE LOCATION SHALL BE COORDINATED SO THAT THE PIPE TRENCH IS NOT LOCATED WITHIN THE FOOTING LOAD DISTRIBUTION ZONE THAT EXTENDS OUT FROM THE BOTTOM EDGE OF THE FOOTING.
3. PROVIDE PIPE SLEEVE AND COMPRESSIBLE FILLER MATERIAL AS REQUIRED TO ACCOMMODATE 1" SETTLEMENT UNLESS NOTED OTHERWISE IN GEOTECHNICAL REPORT AT ALL PIPE PENETRATIONS.
4. TRANSVERSE PIPE PENTRATIONS MAY BE PLACED BETWEEN THE TOP OF FOOTING AND THE SLAB ON GRADE THROUGH THE STEM WALL PROVIDED MINIMUM PIPE COVER IS MAINTAINED.
5. TRENCH AND FOOTING MAY BE POURED MONOLITHICALLY AT THE CONTRACTORS OPTION.
6. TRANSVERSE PIPES SHALL NOT CROSS THROUGH FOOTING OR AREA 4" ABOVE AND BELOW FOOTING.
7. IF CROWN OF PIPE IS LOCATED GREATER THAN 4'-0" BELOW BOTTOM OF FOOTING, NO CONCRETE TRENCH IS REQUIRED.
8. TRENCH WIDTH SHALL BE EQUAL TO FOOTING WIDTH ABOVE.

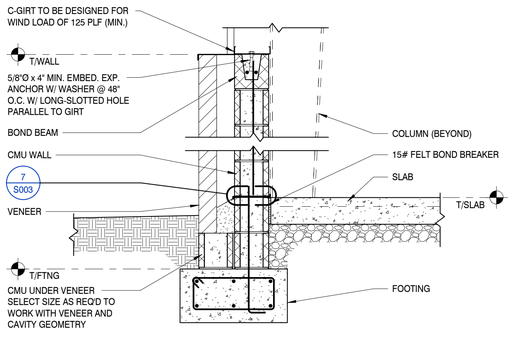
TYPICAL PIPE AND TRENCH LOCATIONS AT FOUNDATION 6

SCALE : 3/4" = 1'-0"



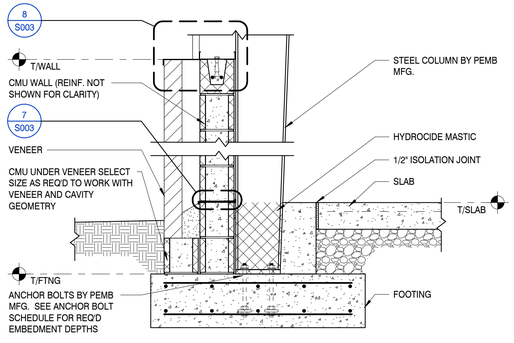
HORIZ. CONTROL JOINT DETAIL 7

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



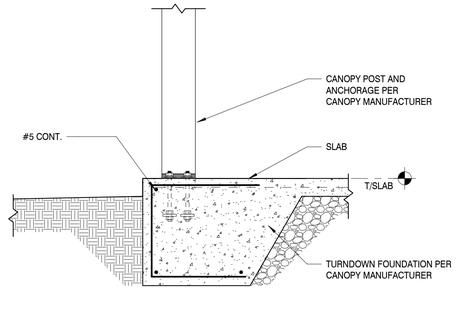
FOUNDATION DETAIL 8

SCALE : 3/4" = 1'-0"



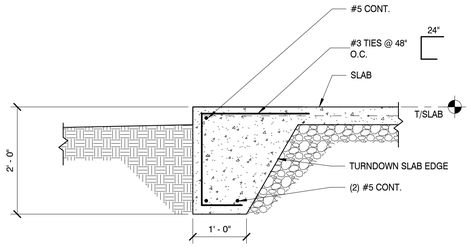
FOUNDATION DETAIL 9

SCALE : 3/4" = 1'-0"



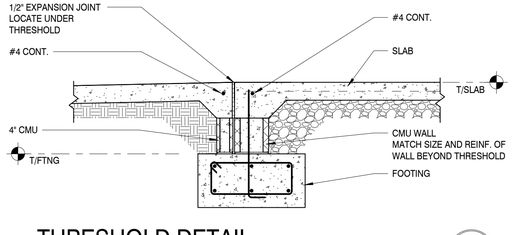
TURNDOWN SLAB DETAIL 10

SCALE : 3/4" = 1'-0"



TURNDOWN SLAB DETAIL 11

SCALE : 3/4" = 1'-0"



THRESHOLD DETAIL 12

SCALE : 3/4" = 1'-0"

MBI COMPANIES INC.
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com

CONSULTANT

STRUCTURAL ENGINEER:

MBI COMPANIES INC.
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com

SEAL

PROJECT INFORMATION

PROJECT:

CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS:

411 DOUGLAS LN
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	10/06/2023
DESIGNED BY:	ZSP
DRAWN BY:	TLT
REVIEWED BY:	WND

SHEET TITLE:

TYPICAL FOUNDATION AND SLAB ON GRADE DETAILS

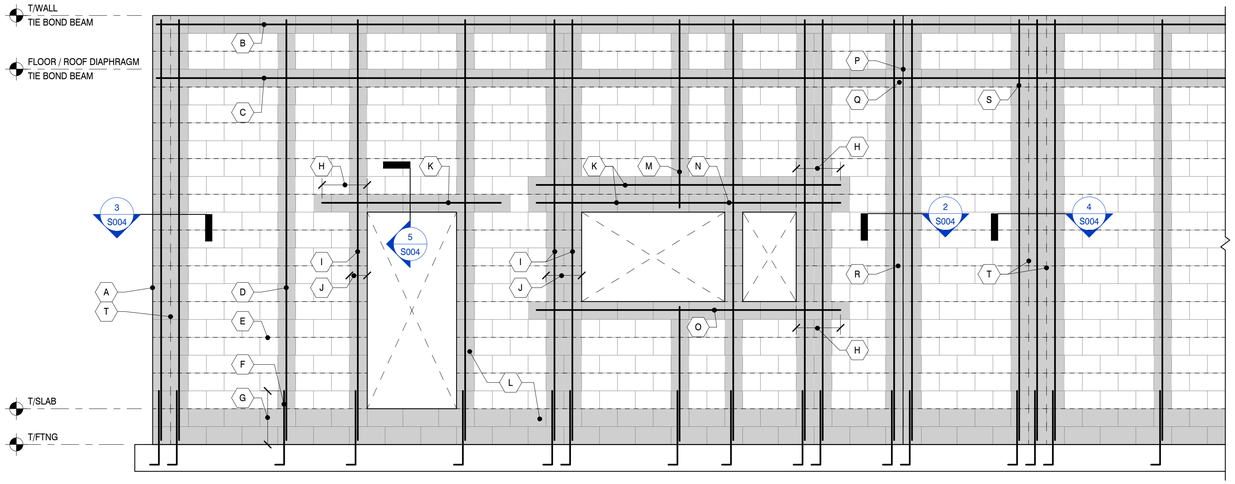
SHEET NO.:

S003

PROJECT # 2023-10-31-01 TFM # 00017-D

FIELD SET

Autodesk Docs://220042-02_Clinton High School Welding Building/220042-02_R23.rvt
10/5/2023 5:05:34 PM



CMU WALL ELEVATION GUIDE (W/ HORIZONTAL JOINT REINFORCING)

1

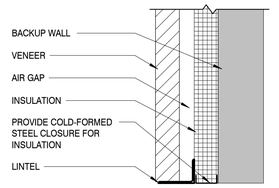
SCALE : 3/8" = 1'-0"

GENERAL NOTES

1. THIS DETAIL IS FOR REFERENCE ONLY TO IDENTIFY THE COMPONENTS OF MASONRY WALL CONSTRUCTION. FOR SPECIFIC REQUIREMENTS OF WALL CONSTRUCTION, REFER TO NOTES, PLANS AND DETAILS.

KEYED NOTES

A. WALL CORNER
B. TIE BOND BEAM AT TOP OF WALL
C. TIE BOND BEAM AT FLOOR / ROOF DIAPHRAGM
D. VERTICAL BAR REINFORCING
E. HORIZONTAL JOINT REINFORCING
F. FOUNDATION DOWELS
G. REINFORCING SPLICE LENGTH OF 64 BAR DIAMETERS BUT NOT LESS THAN 12"
H. EXTEND REINFORCING BEYOND EDGE OF OPENING FOR DEVELOPMENT INTO WALL A DISTANCE OF 40 BAR DIAMETERS BUT NOT LESS THAN 24"
I. JAMB REINFORCING EACH SIDE OF OPENING
J. JAMB WIDTH
K. LINTEL REINFORCING
L. SOLID GROUTED CELLS
M. CONTINUATION OF INTERRUPTED VERTICAL WALL REINFORCING ABOVE OPENINGS
N. WHEN PIER BETWEEN SERIES OF OPENINGS IS LESS THAN 1'-4" WIDE, CONSIDER OVERALL WIDTH OF SERIES TO DETERMINE LINTEL SIZE
O. 8" HIGH BOND BEAM AT BOTTOM OF ALL OPENINGS
P. CONTRACTION JOINT (CJ)
Q. TIE BOND BEAM REINFORCING TO BE CONTINUOUS ACROSS CONTRACTION JOINT AT TOP OF WALL AND FLOOR / ROOF DIAPHRAGM
R. HORIZONTAL JOINT REINFORCING TO BE DISCONTINUOUS ACROSS CONTRACTION JOINT
S. KNOCK OUT BOND BEAM UNITS REQUIRED AT VERTICAL REINFORCING
T. WALL BEYOND



BRICK LINTEL DETAIL

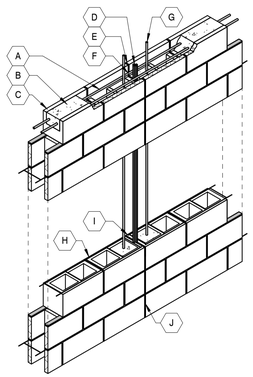
6

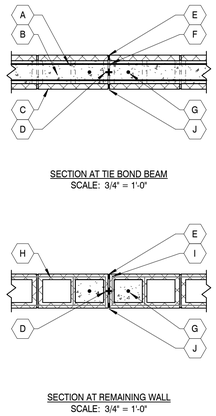
SCALE : 1" = 1'-0"

LOOSE LAID LINTEL SCHEDULE

OPENING WIDTH	LINTEL SIZE
4'-0" OR LESS	L6x3-1/2x5/16 LLV
OVER 4'-0" TO 8'-0"	L6x4x5/16 LLV
OVER 8'-0" TO 12'-0"	L8x6x5/8
OVER 12'-0" TO 14'-0"	L8x6x7/16 LLV

NOTES:
1. PROVIDE 8" (MIN.) BEARING EACH END OF LINTEL.
2. ALL LINTELS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123.
3. HORIZONTAL LEG SIZE ABOVE COINCIDES WITH A 4" NOMINAL WIDTH VENEER AND A 2" MIN. AIR GAP. INCREASE HORIZONTAL LEG SIZE AS REQUIRED TO MAINTAIN 1" MAX. VENEER OVERHANG PAST LINTEL EDGE.





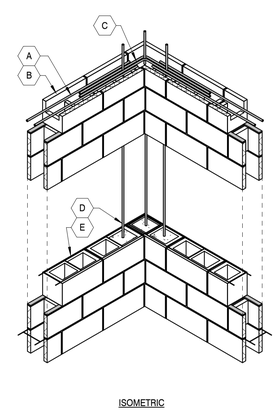
KEYED NOTES

A. TIE BOND BEAM REINFORCING
B. GROUT
C. BOND BEAM UNIT
D. PREFORMED GASKET IN SASH UNIT
E. BACKER ROD AND SEALANT
F. TIE BOND BEAM REINFORCING CONTINUOUS ACROSS JOINT
G. VERTICAL BAR REINFORCING (MATCH SIZE AND QUANTITY OF VERTICAL WALL REINFORCING) AT (1) CELL EACH SIDE OF JOINT
H. HORIZONTAL JOINT REINFORCING
I. TERMINATE HORIZONTAL JOINT REINFORCING EACH SIDE OF JOINT
J. HEAD JOINTS TO ALIGN FULL HEIGHT OF JOINT AND SHALL BE FREE OF MORTAR AND GROUT

CMU CONTRACTION JOINT DETAIL

2

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



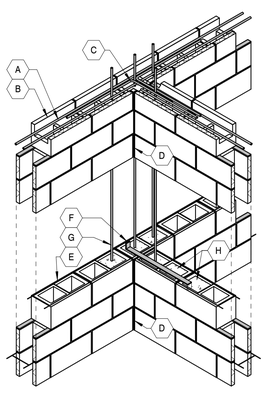
KEYED NOTES

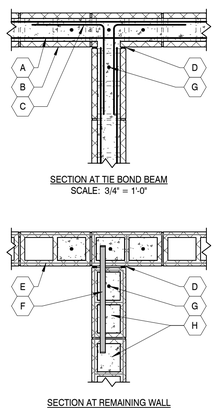
A. TIE BOND BEAM REINFORCING (GROUT NOT SHOWN IN ISOMETRIC FOR CLARITY)
B. GROUT
C. BOND BEAM UNIT
D. VERTICAL BAR REINFORCING (MATCH SIZE AND QUANTITY OF HORIZONTAL BAR REINFORCING), LAP WITH HORIZONTAL BAR REINFORCING
E. HORIZONTAL JOINT REINFORCING
F. TIE BOND BEAM REINFORCING (GROUT NOT SHOWN IN ISOMETRIC FOR CLARITY)
G. BOND BEAM UNIT
H. CORNER BAR (MATCH SIZE AND QUANTITY OF HORIZONTAL BAR REINFORCING), LAP WITH HORIZONTAL BAR REINFORCING
I. VERTICAL BAR REINFORCING (MATCH SIZE AND QUANTITY OF VERTICAL WALL REINFORCING) AT (3) CELLS AT CORNER
J. HORIZONTAL JOINT REINFORCING

CMU WALL CORNER DETAIL

3

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





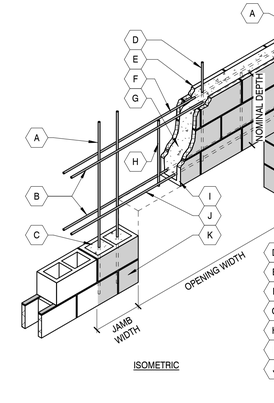
KEYED NOTES

A. TIE BOND BEAM REINFORCING (GROUT NOT SHOWN IN ISOMETRIC FOR CLARITY)
B. BOND BEAM UNIT
C. CORNER BAR (MATCH SIZE AND QUANTITY OF TIE BOND BEAM REINFORCING), LAP WITH TIE BOND BEAM REINFORCING
D. RAKE OUT MORTAR AND CAULK
E. HORIZONTAL JOINT REINFORCING
F. 1/4" x 1 1/2" W x 24" L Z-STRAP CONNECTOR WITH 2", 90° BEND EXTENSIONS EACH END SPACED AT 48" O.C. MAX.
G. VERTICAL BAR REINFORCING (MATCH SIZE AND QUANTITY OF VERTICAL WALL REINFORCING) AT (4) CELLS AT CORNER
H. GROUT ADDITIONAL CELLS AT Z-STRAP CONNECTOR

CMU WALL INTERSECTION DETAIL

4

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



KEYED NOTES

A. VERTICAL JAMB BAR REINFORCING TO MATCH SIZE OF WALL REINFORCING IN WHICH IT IS CONTAINTED UNLESS NOTED OTHERWISE. REINFORCING TO EXTEND FULL HEIGHT OF WALL. PLACE ONE (1) BAR EACH CELL FOR SINGLE LAYER REINFORCED WALLS AND TWO (2) BARS EACH CELL FOR DUAL LAYER (EACH FACE) REINFORCED WALLS.
B. EXTEND REINFORCING BEYOND EDGE OF OPENING FOR DEVELOPMENT INTO WALL A DISTANCE OF 40 BAR DIAMETERS BUT NOT LESS THAN 24"
C. GROUTED CELL AT VERTICAL JAMB BAR REINFORCING
D. CONTINUATION OF INTERRUPTED VERTICAL WALL REINFORCING ABOVE OPENING
E. BOND BEAM BLOCK AT TOP OF LINTEL
F. TOP LINTEL REINFORCING
G. GROUT FULL DEPTH OF LINTEL ACROSS OPENING
H. #4 DOWEL @ 16" O.C. MAX. NOT REQUIRED WHEN COINCIDES WITH VERTICAL WALL REINFORCING.
I. LINTEL BLOCK AT BOTTOM OF LINTEL
J. BOTTOM LINTEL REINFORCING
K. SHADED AREA DENOTES EXTENT OF GROUTED CELLS FOR LINTEL AND JAMBS

LINTEL SCHEDULE

OPENING WIDTH	NOMINAL DEPTH	REINFORCING	NO. JAMB BARS	JAMB WIDTH
4'-0" OR LESS	8"	(2) #4 BOT.	(1)	8"
OVER 4'-0" TO 8'-0"	1'-4"	(2) #5 T&B	(2)	1'-4"
OVER 8'-0" TO 12'-0"	2'-0"	(2) #6 T&B	(3)	2'-0"
OVER 12'-0" TO 16'-0"	2'-8"	(2) #6 T&B	(4)	2'-8"

CMU LINTEL DETAIL

5

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

MBI COMPANIES INC.
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com

CONSULTANT

STRUCTURAL ENGINEER:

MBI COMPANIES INC.
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com

SEAL

PROJECT INFORMATION

PROJECT:

CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS:

411 DOUGLAS LN
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	10/06/2023
DESIGNED BY:	ZSP
DRAWN BY:	TLT
REVIEWED BY:	WND

SHEET TITLE:

TYPICAL CMU DETAILS W/ HORIZONTAL JOINT REINFORCING

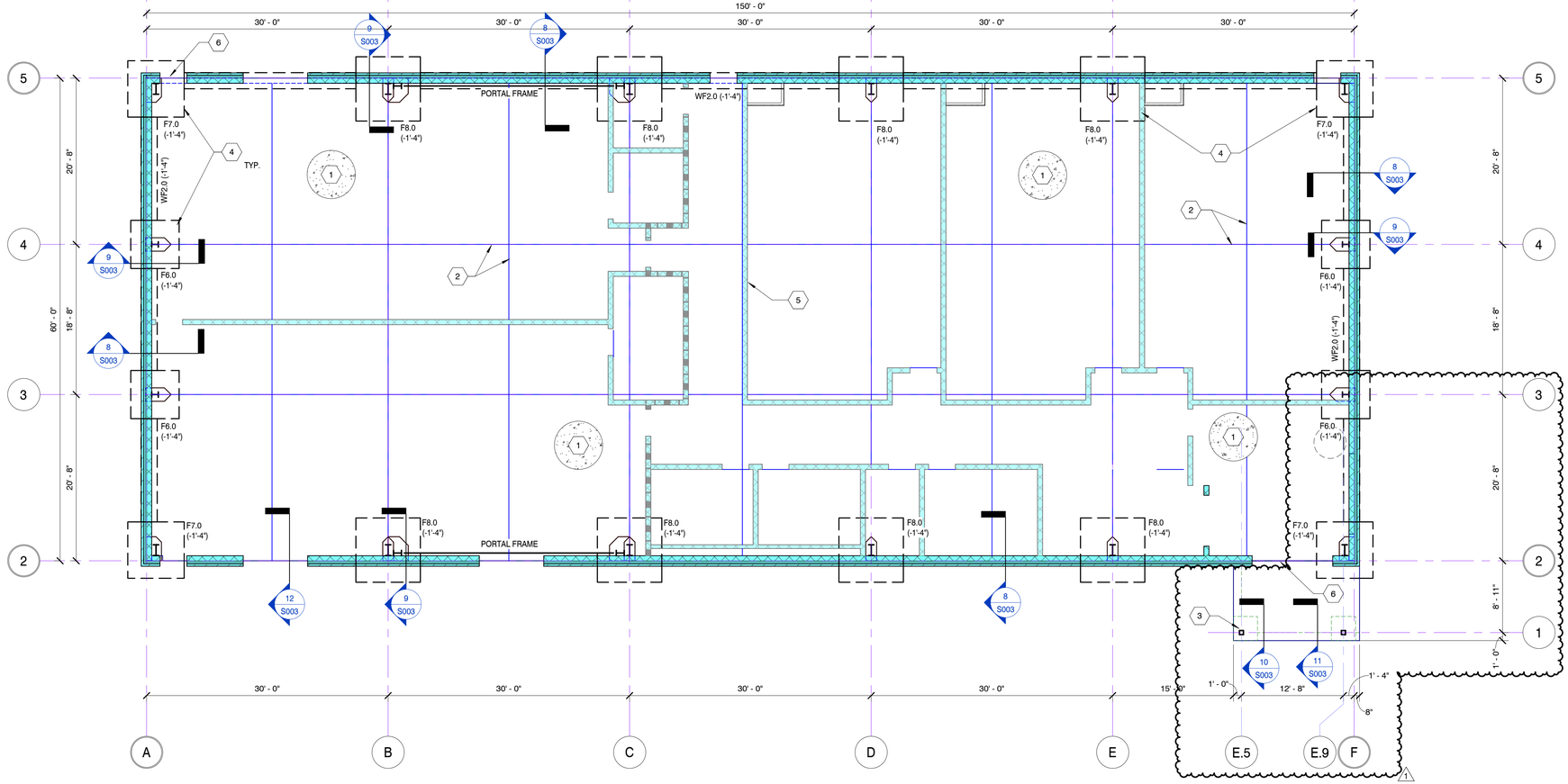
SHEET NO.:

S004

PROJECT # 2023-10-31-01 TFM # 00017-D

FIELD SET

Autodesk Docs://220042-02_Clinton High School Welding Building/220042-02_R23.rvt
10/5/2023 5:05:38 PM



FOUNDATION PLAN

SCALE : 1/8" = 1'-0"

1

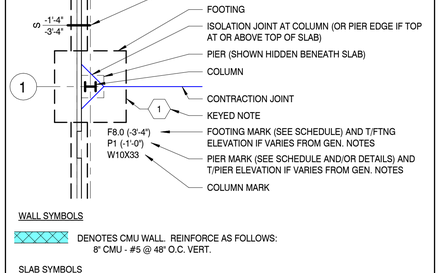
GENERAL NOTES - FOUNDATION PLAN

1. ELEVATIONS ARE REFERENCED FROM THE FIRST LEVEL TOP OF SLAB (T/SLAB) DATUM ELEVATION OF 0'-0". SEE CIVIL DRAWINGS FOR EQUIVALENT MEAN SEA LEVEL ELEVATION.
2. CONTRACTOR TO COORDINATE LOCATION AND SIZE OF FOOTING STEPS AND SHOULD ADJUST AS REQUIRED TO MAINTAIN 1'-0" MINIMUM COVER OVER TOP OF FOOTING AND MEET LOCAL FROST DEPTH CRITERIA. COORDINATE WITH SITE GRADING PLAN. SEE FOUNDATION NOTES ON S0.0 FOR MORE INFORMATION.
3. TOP OF FOOTING (T/FTNG) ELEVATIONS ARE -1'-4" UNLESS NOTED OTHERWISE. ELEVATIONS ARE REFERENCED FROM THE DATUM LISTED IN NOTE #1.
4. COORDINATE FOUNDATION LAYOUT WITH PLUMBING AND OTHER UNDERGROUND UTILITIES. STEP AND/OR LOWER FOUNDATIONS AS NECESSARY TO PREVENT CONFLICTS.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR THE MEANS AND METHODS OF DEWATERING AREAS EXCAVATED FOR BUILDING CONSTRUCTION.
6. SEE S00 SHEETS FOR ADDITIONAL NOTES AND TYPICAL DETAILS NOT SPECIFICALLY REFERENCED ON STRUCTURAL DRAWINGS.

KEYED NOTES - FOUNDATION PLAN

1 FLOOR SLAB TO BE 4" THICK SLAB ON GRADE WITH 6x6-W1.4xW1.4 WWF ON 20 MIL POLY VAPOR BARRIER OVER 4" CRUSHED STONE.
2 DENOTES SLAB CONTRACTION JOINT. SEE S000 SHEETS FOR ADDITIONAL INFORMATION.
3 CANOPY COLUMNS AND FOUNDATION PER CANOPY MANUFACTURER
4 PEMB FOUNDATION SIZES ARE PRELIMINARY AND MAY BE ADJUSTED BASED ON FINAL REACTIONS PROVIDED BY PEMB MANUFACTURER. FOUNDATION INSTALLATION ON HOLD UNTIL PEMB DRAWINGS ARE REVIEWED AND APPROVED.
5 NON-STRUCTURAL MASONRY WALLS (DEPICTED AS HALF-TONE OR NOT SHOWN) SHALL BEAR ON A THICKENED SLAB (SEE DETAIL 4/S003) UNLESS NOTED OTHERWISE. AT CONTRACTOR'S OPTION, A WALL FOOTING (TYPE WF2.0) MAY BE SUBSTITUTED FOR THICKENED SLAB.
6 SEE S004 FOR DOOR AND WINDOW LINTEL SCHEDULE.

LEGEND - FOUNDATION PLAN



COLUMN GRID LINE
BUILDING LINE
FOOTING STEP LOCATION WITH TOP OF FOOTING (T/FTNG) ELEVATIONS
FOOTING
ISOLATION JOINT AT COLUMN (OR PIER EDGE IF TOP AT OR ABOVE TOP OF SLAB)
PIER (SHOWN HIDDEN BENEATH SLAB)
COLUMN
CONTRACTION JOINT
KEYED NOTE
FOOTING MARK (SEE SCHEDULE) AND T/FTNG ELEVATION IF VARIES FROM GEN. NOTES
PIER MARK (SEE SCHEDULE AND/OR DETAILS) AND T/PIER ELEVATION IF VARIES FROM GEN. NOTES
COLUMN MARK

WALL SYMBOLS

DENOTES CMU WALL. REINFORCE AS FOLLOWS: 8" CMU - #5 @ 48" O.C. VERT.

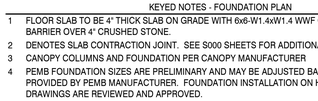
SLAB SYMBOLS

STEP DOWN / UP
STEP DOWN W/ SLOPE
STEP UP W/ SLOPE
SLOPE UP
SLOPE DOWN
RIDGE
CURB
TRENCH
VALLEY

FOUNDATION SCHEDULE

MARK	WIDTH	LENGTH	THICKNESS	REINFORCING	COMMENTS
F6.0	6' - 0"	6' - 0"	1' - 4"	(7) #5 E.W. T&B	
F7.0	7' - 0"	7' - 0"	1' - 6"	(7) #6 E.W. T&B	
F8.0	8' - 0"	8' - 0"	1' - 8"	(9) #6 E.W. T&B	
WF2.0	2' - 0"	--	1' - 0"	(3) #5 CONT. T&B W/ #3 TIES @ 48" O.C. TRANS	CONT. WALL FOUNDATION

ANCHOR BOLT SCHEDULE



NOTES:
1. SEE ANCHOR BOLT LAYOUT FROM PRE-ENGINEERED METAL BUILDING (PEMB) MANUFACTURER FOR ANCHOR BOLT LOCATIONS.
2. ALL ANCHORS BOLTS SHALL BE ASTM F1554 GRADE 36 U.N.O. CHEMICALLY GROUTED ANCHOR RODS WILL BE CONSIDERED FOR EQUIVALENCE UNDER CERTAIN CIRCUMSTANCES DEEMED APPROPRIATE BY THE ENGINEER OF RECORD.
3. A MINIMUM OF FOUR (4) ANCHOR BOLTS PER COLUMN BASE PLATE.
4. J-BOLTS & L-BOLTS ARE NOT ACCEPTABLE.
5. ANCHOR BOLT EMBEDMENT IS BASED ON PRELIMINARY REACTIONS AND MAY BE ADJUSTED UPON REVIEW OF FINAL PEMB SUBMITTAL.

MBI COMPANIES INC.
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com

CONSULTANT

STRUCTURAL ENGINEER:

MBI COMPANIES INC.
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com

SEAL

PROJECT INFORMATION

PROJECT:

CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS:

411 DOUGLAS LN
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO:	DATE	DESCRIPTION
1	01.29.2024	ADDENDUM #01

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	10/06/2023
DESIGNED BY:	ZSP
DRAWN BY:	TLT
REVIEWED BY:	WND

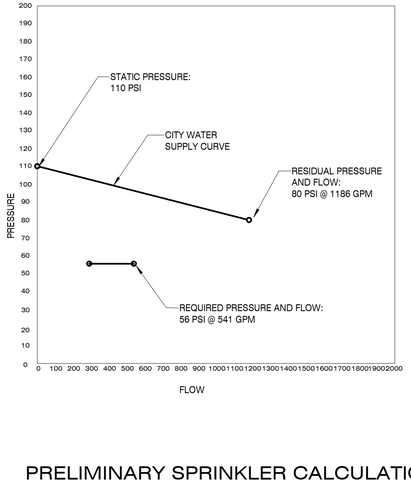
SHEET TITLE: FOUNDATION PLAN

SHEET NO.: S101

TFM # 00017-D
2023-10-31-01
PROJECT #
FIELD SET

FIRE PROTECTION SPECIFICATIONS

SECTION 15300 - FIRE PROTECTION
PART I GENERAL
1.01 DESCRIPTION OF WORK:
A. EXTENT OF FIRE PROTECTION WORK IS INDICATED ON DRAWINGS AND SCHEDULES, AND BY REQUIREMENTS OF THIS SECTION.
B. THE SYSTEM SHALL BE WET PIPE SYSTEM
1.02 QUALITY ASSURANCE:
A. CODES AND STANDARDS:
1. NFPA COMPLIANCE: INSTALL FIRE PROTECTION SYSTEM IN ACCORDANCE WITH NFPA 13 'STANDARDS FOR THE INSTALLATION OF SPRINKLER SYSTEMS'. NFPA 14, 'STANDARDS FOR THE INSTALLATION OF STANDPIPE AND HOSE SYSTEMS' AND NFPA 24 'STANDARD FOR OUTSIDE PROTECTION.'
2. UL COMPLIANCE: PROVIDE FIRE PROTECTION PRODUCTS IN ACCORDANCE WITH UL STANDARDS; PROVIDE UL LABEL ON EACH PRODUCT.
3. FIRE DEPARTMENT/MARSHAL COMPLIANCE: INSTALL FIRE PROTECTION SYSTEMS IN ACCORDANCE WITH LOCAL REGULATIONS OF FIRE DEPARTMENT OR FIRE MARSHAL.
4. QUALIFICATIONS: HYDRAULIC CALCULATIONS AND PREPARATION OF SHOP DRAWINGS SHALL BE PERFORMED UNDER THE DIRECT SUPERVISION OF A RESPONSIBLE MANAGING EMPLOYEE WHO HOLDS A NCET LEVEL III CERTIFICATION. INSTALLATION SHALL BE PERFORMED BY A LICENSED SPRINKLER CONTRACTOR.
1.03 SUBMITTALS:
A. PRODUCT DATA: SUBMIT MANUFACTURER`S TECHNICAL PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR FIRE PROTECTION MATERIALS AND PRODUCTS WITH A TABLE OF CONTENTS. IDENTIFY MATERIAL, SIZE , AND MODEL NUMBER OF EACH PRODUCT.
B. SHOP DRAWINGS: SUBMIT SCALED LAYOUT DRAWINGS FOR FIRE PROTECTION PIPE AND FITTINGS INCLUDING, BUT NOT LIMITED TO, PIPE AND TUBE SIZES, LOCATIONS, ELEVATIONS, AND SLOPES OF HORIZONTAL RUNS, WALL AND FLOOR PENETRATIONS, AND CONNECTIONS. INDICATE INTERFACE AND SPATIAL RELATIONSHIPS BETWEEN PIPING AND APPROXIMATE EQUIPMENT.
C. APPROVAL DRAWINGS: PREPARE APPROVAL DRAWINGS OF FIRE PROTECTION SYSTEMS INDICATING PIPE SIZES, PIPE LOCATIONS, FITTINGS, SHUTOFFS, EQUIPMENT, ETC. SUBMIT TO AGENCY HAVING JURISDICTION FOR APPROVAL. SUBMIT ONE APPROVED COPY, BEARING STAMP AND/OR SIGNATURE OF AGENCY HAVING JURISDICTION, BEFORE PROCEEDING WITH INSTALLATION.
D. APPROVAL CALCULATIONS: PREPARE HYDRAULIC CALCULATIONS OF FIRE PROTECTION SYSTEM USING A FIRE HYDRANT FLOW TEST THAT IS NO MORE THAN 6 MONTHS OLD. SUBMIT TO AGENCY HAVING JURISDICTION FOR APPROVAL. SUBMIT TO ARCHITECT, ONE APPROVED COPY, BEARING STAMP AND/OR SIGNATURE OF AGENCY HAVING JURISDICTION, BEFORE PROCEEDING WITH INSTALLATION.
E. RECORD DRAWINGS: AT PROJECT CLOSEOUT, SUBMIT RECORD DRAWINGS OF INSTALLED FIRE PROTECTION PIPING AND PRODUCTS.
PART II PRODUCTS
2.01 MATERIALS AND PRODUCTS:
A. GENERAL: PROVIDE PIPING MATERIALS AND FACTORY-FABRICATED PIPING PRODUCTS OF SIZES, TYPES, PRESSURE RATINGS, TEMPERATURE RATINGS, AND CAPACITIES AS INDICATED. WHERE NOT INDICATED, PROVIDE PROPER SELECTION AS DETERMINED BY INSTALLER TO COMPLY WITH INSTALLATION REQUIREMENTS. PROVIDE SIZES AND TYPES MATCHING PIPING AND EQUIPMENT CONNECTIONS; PROVIDE FITTINGS OF MATERIALS WHICH MATCH PIPE MATERIALS USED IN FIRE PROTECTION SYSTEM.
2.02 BASIC IDENTIFICATION:
A. GENERAL: PROVIDE IDENTIFICATION AS FOLLOWS;
1. FIRE PROTECTION PIPING: PLASTIC PIPE MARKERS
2. FIRE PROTECTION VALVES: PLASTIC VALVE TAGS.
2.03 BASIC PIPES AND PIPE FITTINGS:
A. GENERAL: PROVIDE PIPES AND PIPE FITTINGS AS FOLLOWS:
B. BLACK STEEL PIPE: SCHEDULE 40 FOR ABOVE 6"; BLACK STEEL PIPE: SCHEDULE 10 FOR 6" AND SMALLER; MECHANICAL GROOVED PIPE COUPLINGS (VICTAULIC 009N108 IGS SYSTEM OR EQUAL) AND FITTINGS (FIRELOCK, VICTAULIC IR FITTINGS, OR EQUAL); ROLL-GROOVE AND MECHANICAL LOCKING TYPE.
C. DUCTILE IRON PRESSURE PIPE: AWWA C-106 WITH FITTINGS COMPLYING WITH AWWA C-110 AND RUBBER GASKETS COMPLYING WITH AWWA C-111.
D. BRAIDED FLEXIBLE, SPRINKLER HOSE FITTINGS: BRAIDED, FLEXIBLE HOSE FOR CONNECTION TO SPRINKLER WITH BRACKET FOR CONNECTION TO CEILING GRID.
1. APPROVED MANUFACTURERS: VICTAULIC [AH2, AH2CC, AB6, VS1, OR VS2] OR EQUAL.
E. BRANCH OUTLET FITTINGS:
1. BODY MATERIAL: DUCTILE-IRON HOUSING WITH EPDM SEALS AND BOLTS AND NUTS.
2. TYPE: MECHANICAL-T AND -CROSS FITTINGS.
3. BRANCH OUTLETS: GROOVED, PLAIN-END PIPE, OR THREADED.
4. APPROVED MANUFACTURERS: ANVIL, TYCO, AND VICTAULIC.
2.04 BASIC PIPING SPECIALTIES:
A. GENERAL: PROVIDE PIPING SPECIALTIE:
1. PIPE ESCUTCHEONS
2. DIELECTRIC UNIONS
3. DRIP PANS
4. PIPE SLEEVES
5. SLEEVE SEALS
6. FIRE BARRIER PENETRATION SEALS
2.05 BASIC SUPPORTS AND ANCHORS:
A. GENERAL: PROVIDE SUPPORTS AND ANCHORS AS FOLLOWS:
1. ADJUSTABLE STEEL CLEVIS HANGERS, ADJUSTABLE STEEL BAND HANGERS, OR ADJUSTABLE BAND HANGERS, FOR HORIZONTAL PIPING HANGERS AND SUPPORTS.
2. TWO-BOLT RISER CLAMPS FOR VERTICAL PIPING SUPPORTS.
3. STEEL TURNBUCKLES AND MALLEABLE IRON SOCKETS FOR HANGER-ROD ATTACHMENTS.
4. CONCRETE INSERTS, TOP-BEAM C-CLAMPS, SIDE BEAM OR CHANNEL CLAMPS OR CENTER BEAM CLAMPS FOR BUILDING ATTACHMENTS.
B. ANCHORS:
1. GENERAL: PROVIDE ANCHORAGES FOR TEES, PLUGS, CAPS, BENDS, AND HYDRANTS IN ACCORDANCE WITH NFPA 24.
2. CLAMPS, STRAPS AND WASHERS: STEEL, ANSI/ASTM A-506
3. RODS: STEEL, ANSI/ASTM A-575
4. OD COUPLINGS: MALLEABLE IRON, ANSI/ASTM A-197
5. BOLTS: STEEL, ANSI/ASTM A-307
6. CAST-IRON WASHERS: ANSI/ASTM A-126, CLASS A
7. THRUST BLOCKS: 2500 PSI CONCRETE
2.06 BASIC VALVES:
A. GENERAL: PROVIDE VALVES AS FOLLOWS:
B. INTERIOR VALVES:
1. SECTIONAL: GATE VALVES OR BUTTERFLY VALVES; UL LISTED.
2. CHECK: SWING CHECK VALVES; UL LISTED.
C. EXTERIOR VALVES:
1. GATE VALVES: STANDARD SHUT-OFF VALVES CAST INTO BODY, OUTSIDE-SCREW-AND-YOKE TYPE COMPLYING WITH AWWA C-500. SIZES 2" AND SMALLER SHALL BE BRONZE, 175 PSI WG, RISING STEM, SCREWED BONNET. SIZES 2 1/2" AND LARGER SHALL BE IRON BODY BRONZE MOUNTED, 175 PSI WG, SOLID WEDGE, REPLACEABLE SEAT (VICTAULIC SERIES 771, OR EQUAL).
2. CHECK VALVES: GRAVITY-OPERATED, REGULAR TYPE, IRON-BODIED, BRONZE FITTED WITH METAL-TO-METAL OR RUBBER FACED CHECKS, COMPLYING WITH ASTM A-12 (VICTAULIC SERIES 717, OR EQUAL).
3. BUTTERFLY VALVES: RUBBER SEATED, EQUIPPED WITH GEAR OR TRAVELLING NUT ACTUATOR TO MINIMIZE WATER HAMMER, COMPLYING WITH AWWA C-50 (VICTAULIC SERIES 705 FIRELOCK, OR EQUAL).
4. INDICATOR POSTS: TELESCOPIC BARREL TYPE FOR USE WITH UNDERGROUND GATE VALVES.
2.07 SPECIAL VALVES:
A. GENERAL: PROVIDE VALVES, UL LISTED, IN ACCORDANCE WITH THE FOLLOWING LISTING. PROVIDE SIZES AND TYPES WHICH MATE AND MATCH PIPING AND EQUIPMENT CONNECTIONS.
B. ALARM CHECK VALVE: PROVIDE CAST-IRON WATER FLOW ALARM CHECK VALVE, 175 PSI WORKING PRESSURE. PROVIDE TRIM FOR BYPASS, DRAIN, ALARM, PRESSURE GAUGES AND FILL LINE.
1. APPPROVED ALARM CHECK VALVE MANUFACTURERS: BERMAD, VICTAULIC (FIREPAC ALLOWED), OR EQUAL.
C. FIRE DEPARTMENT CONNECTION VALVE: PROVIDE FIRE DEPARTMENT CONNECTION IRON SWING CHECK VALVE, 175 PSI RATED WORKING PRESSURE, OF SIZE AND END TYPE INDICATED.
D. DETECTOR CHECK VALVES: PROVIDE CAST-IRON BODY DETECTOR CHECK VALVE, BRONZE FITTED, WITH TAPPED BOSSES ON EACH SIDE FOR BY-PASS METER, AIR VENT, AND COVER-MOUNTED EYEBOLT.
1. APPPROVED DETECTOR CHECK VALVE MANUFACTURERS: AMES, WATTS, WILKINS
E. BACKFLOW PREVENTION VALVES
1. PROVIDE APPROVED DOUBLE VALVE ASSEMBLIES TO SEPARATE AUTOMATIC FIRE SPRINKLER SYSTEM FROM POTABLE WATER SYSTEM.
2. APPPROVED DOUBLE CHECK VALVE MANUFACTURERS: AMES, WATTS, WILKINS
2.08 HYDRANTS:
A. GENERAL: PROVIDE CAST-IRON SIDEWALK FIRE HYDRANTS WITH THREADED MALE NOZZLE CONFORMING TO "AMERICAN NATIONAL STANDARD FIRE HOSE CONNECTION SCREW THREADS" UNLESS OTHER HOSE CONNECTION REQUIRED BY LOCAL FIRE AUTHORITIES.
B. PROVIDE DRY-BARREL FIRE HYDRANTS (BASE VALVE TYPE) COMPLYING WITH AWWA C-502 AND AS FOLLOWS:
1. WORKING PRESSURE, L50 PSI UNLESS OTHERWISE INDICATED.
2. VALVE OPENING DIRECTION, CLOCKWISE, INDICATED BY ARROW AND THE WORD 'OPEN' CAST ON DOME.
3. NOZZLES, TWO 2-1/2" HOSE CONNECTIONS AND ONE 4-1/2" PUMPER CONNECTION WITH CAPS AND CHAINS. NOZZLE CAP NUTS TO MATCH OPERATING STEM NUTS. PROVIDE NATIONAL STANDARD HOSE THREADS ON 2-1/2". HOSE THREADS ON 4-1/2" PUMPER CONNECTION SHALL CONFORM TO THE FOLLOWING SPECIFICATIONS: O.D.-4.875", P.D.-4.777", ROOT DIAMETER 4.653", 6 THREADS PER INCH, GAUGE 2C.
2.09 AUTOMATIC SPRINKLERS:
A. GENERAL: PROVIDE AUTOMATIC SPRINKLERS OF TYPE INDICATED ON DRAWINGS, AND IN ACCORDANCE WITH THE FOLLOWING LISTING. PROVIDE FUSIBLE LINKS FOR 165°F (74°C) AND SPRINKLERS WITH NOMINAL 1/2" DISCHARGE ORIFICE UNLESS OTHERWISE INDICATED.
1. UPRIGHT
2. PENDENT
3. FLUSH PENDENT
4. CONCEALED PENDENT
5. HORIZONTAL SIDEWALL
6. FINISH: CHROME PLATE FOR OCCUPIED AREAS, CAST BRASS FOR UNOCCUPIED AREAS, WAX COATED WHERE EXPOSED TO ACIDS, CHEMICALS, OR OTHER CORROSIVE FUMES.
B. APPPROVED SPRINKLER HEAD MANUFACTURERS: RELIABLE, VICTAULIC, VIKING, TYCO
C. SPRINKLER CABINET AND WRENCH: FURNISH STEEL, BAKED RED ENAMELED, SPRINKLER BOX WITH CAPACITY TO STORE 12 SPRINKLERS AND WRENCH SIZED TO SPRINKLERS.
D. IN AREAS SUBJECT TO PHYSICAL ABUSE SUCH AS GYMNASIUMS AND MECHANICAL ROOMS, PROVIDE STEEL WIRE GUARDS OVER SPRINKLERS.
E. IN VARIOUS APPLICATIONS, UL LISTED AND FM APPROVED VICTAULIC V9 INSTALLATION READY COUPLING MAY BE USED TO JOIN 1/2", 3/4", OR 1" SPRINKLER HEADS ONTO THE 1" IGS OUTLET, OR APPROVED EQUAL.
2.10 WALL TYPE SIAMESE CONNECTIONS:
A. GENERAL: PROVIDE WALL TYPE CAST BRASS SIAMESE CONNECTIONS AND ESCUTCHEON PLATE ASSEMBLY, WITH 2, 2-1/2" FIRE DEPARTMENT INLETS WITH FEMALE HOSE CONNECTIONS, AMERICAN NATIONAL FIRE HOSE CONNECTION SCREW THREAD, EQUIPPED WITH INDIVIDUAL DROP CLAPPER VALVES, EQUIPPED WITH PLUGS AND CHAINS, CONSTRUCTION FEATURES AS INDICATED, AND CONSTRUCTED WITH THE FOLLOWING ADDITIONAL CONSTRUCTION FEATURES:
1. FINISH: POLISHED BRASS
2. INLET PIPE: 4" PIPE.
3. CAST LETTERING: "AUTO. SPKR."
4. ESCUTCHEON: 12" DIAMETER OF 7" X 14" RECTANGLE
5. SIAMESE CONNECTION: FLUSH, STACKED INLETS; FLUSH, ADJACENT INLETS; Y-TYPE, INLETS STRAIGHT, PROJECTING CONFIGURATION; OR Y-TYPE, INLETS 45°, PROJECTING CONFIGURATION.
6. PROVIDE KNOX BOX.
7. APPROVED MANUFACTURERS: CROKER, GUARDIAN FIRE, POTTER ROEMER, AND VIKING
PART III EXECUTION
3.01 INSPECTION:
A. GENERAL: EXAMINE AREAS AND CONDITIONS UNDER WHICH FIRE PROTECTION MATERIALS AND PRODUCTS ARE TO BE INSTALLED. DO NOT PROCEED WITH WORK UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED IN MANNER ACCEPTABLE TO INSTALLER.
3.02 INSTALLATION OF BASIC IDENTIFICATION:
A. GENERAL: INSTALL MECHANICAL IDENTIFICATION SUCH THAT ALL FIRE PROTECTION PIPING AND EQUIPMENT CAN BE IDENTIFIED.
B. INSTALL FIRE PROTECTION SIGNS ON PIPING IN ACCORDANCE WITH NFPA 13 AND NFPA 14 REQUIREMENTS.
3.03 INSTALLATION OF OUTSIDE PIPING:
A. GENERAL: INSTALL EXTERIOR FIRE WATER SYSTEM IN COMPLIANCE WITH APPLICABLE PROVISIONS OF NFPA 24 AND AS HEREIN SPECIFIED. ARRANGE AND PAY FOR TAPS AND SERVICE BY LOCAL WATER UTILITY. FOR SLIP-JOINT PIPE, PROVIDE 3000 PSI CONCRETE THRUST BLOCKS AGAINST UNDISTURBED SOIL.
B. DUCTILE-IRON PIPE: INSTALL IN ACCORDANCE WITH RECOMMENDED PROCEDURES OF THE CAST-IRON PIPE RESEARCH ASSOCIATION.
C. HYDRANTS: INSTALL IN ACCORDANCE WITH AWWA M-17.
D. CONTROL VALVES: INSTALL IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS.
E. JOINT ADAPTERS: MAKE JOINTS BETWEEN CAST-IRON PIPE AND OTHER TYPES OF PIPE WITH STANDARD MANUFACTURED CAST-IRON ADAPTERS AND FITTINGS.
F. INTERIOR INSPECTION: INSPECT CONDUIT TO DETERMINE WHETHER LINE DISPLACEMENT OR OTHER DAMAGE HAS OCCURRED.
1. IF THE INSPECTION INDICATES POOR ALIGNMENT, DEBRIS, DISPLACED PIPE, INFILTRATION, OR OTHER DEFECTS, CORRECT SUCH DEFECTS TO SATISFACTION OF ARCHITECT/ENGINEER.
G. CLEANING CONDUIT: CLEAR INTERIOR OF CONDUIT OF DIRT AND OTHER SUPERFLUOUS MATERIALS AS WORK PROGRESSES. MAINTAIN SWAB OR DRAG IN LINE AND PULL PAST EACH JOINT AS IT IS COMPLETED. PLACE PLUGS IN END OF UNCOMPLETED CONDUIT AT END OF DAY OR WHENEVER WORK STOPS. FLUSH LINES TO REMOVE COLLECTED DEBRIS BEFORE CONNECTING TO OTHER FIRE PROTECTION SYSTEMS. FLUSH CONDUIT AT RATES OF FLOW RECOMMENDED BY NFPA 24 UNLESS HIGHER RATES REQUIRED BY LOCAL AUTHORITIES.
3.04 INSTALLATION OF PIPES AND PIPE FITTINGS:
A. GENERAL: INSTALL PIPES AND PIPE FITTINGS IN ACCORDANCE WITH DRAWING AND REQUIREMENT OF AUTHORITY HAVING JURISDICTION. NOTE THAT ALL WORK INCLUDING UNDERGROUND LINES MUST BE INSTALLED BY A LICENSED SPRINKLER CONTRACTOR.
B. COMPLY WITH REQUIREMENTS OF NFPA 13 AND NFPA 14 FOR INSTALLATION OF FIRE PROTECTION PIPING MATERIALS. INSTALL PIPING PRODUCTS WHERE INDICATED, IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS, AND IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES TO ENSURE THAT PIPING SYSTEMS COMPLY WITH REQUIREMENTS AND SERVE INTENDED PURPOSES.
C. COORDINATE WITH OTHER WORK, INCLUDING PLUMBING PIPING, AS NECESSARY, TO INTERFACE COMPONENTS OF FIRE PROTECTION PIPING PROPERLY WITH OTHER WORK.
D. INSTALL DRAIN PIPING AT LOW POINTS OF PIPING SYSTEMS. PROVIDE DRY DRUM DRIPS WHERE INDICATED.
E. INSTALL SECTIONAL VALVES IN INLET PIPING, AT BOTTOM OF EACH RISER, AND IN LOOPS.
F. INSTALL FIRE DEPARTMENT CONNECTION VALVES IN PIPING WHERE FIRE DEPARTMENT CONNECTIONS ARE INDICATED.
G. INSTALL WATER FLOW INDICATORS WHERE INDICATED.
1. APPROVED MANUFACTURERS: POTTER, VIKING, AND WATTS.
H. MOUNT SUPERVISORY SWITCHES ON EACH SECTIONAL VALVE.
I. INSTALL PRESSURE GAGES ON RISER OR MAIN FEED, AT EACH SPRINKLER TEST CONNECTION, AND AT TOP OF EACH STANDPIPE.
J. INSTALL MANUAL SHUTOFF AT EACH AUDIBLE ALARM STATION.
K. INSTALL INSPECTOR'S TEST CONNECTIONS WHERE INDICATED, OR AT MOST REMOTE POINT FROM RISER.
L. INSTALL ELECTRICALLY OPERATED ALARM BELL NEAR FIRE DEPARTMENT CONNECTION.
1. FINISH: RED-ENAMEL FACTORY FINISH, SUITABLE FOR OUTDOOR USE.
2. APPROVED MANUFACTURERS: FIRE-LITE ALARMS, NOTIFIER, AND POTTER.
3.05 INSTALLATION OF VALVES:
A. INSTALL VALVES IN PER MANUFACTURES WRITTEN RECOMMENDATIONS.
B. DETECTOR CHECK VALVES: INSTALL IN HORIZONTAL POSITION AS INDICATED, ORIENTED FOR PROPER FLOW DIRECTION. INSTALL BY-PASS METER WITH GLOBE VALVE AND CHECK VALVE, IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION DIRECTIONS.
C. INSTALL BACKFLOW PREVENTION VALVE TO SEPARATE SPRINKLER SYSTEM FROM POTABLE WATER SYSTEM.
3.06 INSTALLATION OF FIRE PROTECTION SPECIALTIES:
A. GENERAL: INSTALL FIRE PROTECTION SPECIALTIES AS INDICATED, AND IN ACCORDANCE WITH NFPA 13 AND 14. FURNISH WIRING REQUIREMENTS TO ELECTRICAL INSTALLER FOR ELECTRICAL WIRING OF SUPERVISORY SWITCHES.
3.07 FIELD QUALITY CONTROL:
A. SPRINKLER PIPING FLUSHING: PRIOR TO CONNECTING SPRINKLER RISERS FOR FLUSHING, FLUSH WATER FEED MAINS, LEAD-IN CONNECTIONS AND CONTROL PORTIONS OF SPRINKLER PIPING. AFTER FIRE SPRINKLER PIPING INSTALLATION HAS BEEN COMPLETED AND BEFORE PIPING IS PLACED IN SERVICE, FLUSH ENTIRE SPRINKLER SYSTEM, AS REQUIRED TO REMOVE FOREIGN SUBSTANCES, UNDER PRESSURE AS SPECIFIED IN NFPA 13. CONTINUE FLUSHING UNTIL WATER IS CLEAR, AND CHECK TO ENSURE THAT DEBRIS HAS NOT CLOGGED SPRINKLERS.
B. PERFORM HYDROSTATIC TESTING OF COMPLETED OUTSIDE LINES IN ACCORDANCE WITH NFPA 24 UNLESS MORE STRINGENT TEST REQUIRED BY LOCAL AUTHORITIES HAVING JURISDICTION.
C. HYDROSTATIC TESTING: AFTER FLUSHING SYSTEM, TEST FIRE SPRINKLER PIPING HYDROSTATICALLY, FOR PERIOD OF 2 HOURS, AT NOT LESS THAN 200 PSI OR AT 50 PSI IN EXCESS OF MAXIMUM STATIC PRESSURE WHEN MAXIMUM STATIC PRESSURE IS IN EXCESS OF 150 PSI. CHECK SYSTEM FOR LEAKAGE OF JOINTS. MEASURE HYDROSTATIC PRESSURE AT LOW POINT OF EACH SYSTEM OR ZONE BEING TESTED.
D. REPAIR OR REPLACE PIPING SYSTEM AS REQUIRED TO ELIMINATE LEAKAGE IN ACCORDANCE WITH NFPA STANDARDS FOR 'LITTLE OR NO LEAKAGE' AND RETEST AS SPECIFIED TO DEMONSTRATE COMPLIANCE.
3.08 ADJUSTING AND CLEANING:
A. CLEANING AND INSPECTING: CLEAN AND INSPECT FIRE PROTECTION SYSTEMS TO BE WIP-DOWN CLEAN AND FREE FROM LEAKS AND DEFECTS. INSPECT PIPE HANGERS TO INSURE SECURE STRUCTURAL CONNECTION AND THE HANGER IS TIGHT AND CARRYING THE WEIGHT OF THE PIPE.
3.09 EXTRA STOCK:
A. HEADS: FOR EACH STYLE AND TEMPERATURE RANGE REQUIRED, FURNISH ADDITIONAL SPRINKLER HEADS, AMOUNTING TO ONE UNIT FOR EVERY 100 INSTALLED UNITS, BUT NOT LESS THAN 5 UNITS OF EACH.
B. WRENCHES: FURNISH 2 SPANNER WRENCHES FOR EACH TYPE AND SIZE OF VALVE CONNECTION AND FIRE HOSE COUPLING.



PRELIMINARY SPRINKLER CALCULATION

Flow test Data
Static Pressure: 110
Residual Pressure: 80
Flow (GPM) : 1186
Date taken: JULY 03, 2023
Time: 2:20 PM
Test taken by: CLINTON FIRE DEPARTMENT
Elevation of Hydrant: 0

GPM Demand of BLDG.		
Most remote area or highest demand (Room Name)	WELDING SHOP	
Design Density (NFPA 13 or supplied by Insurance Co.)	0.15	
Design Area (Square footage)	1500	
Overage Factor (1.20 typ.)	1.2907	
Remote area GPM demand(Density x Area x Overage)	290.4075	
Standpipe GPM demand (If required)(500 gpm for the first, 250 after)	0	
Hose GPM demand (100 Light, 250 ordinary, 500 extra hazard)	250	
Total GPM (Remote Area + Standpipe + Hose)	540.4075	
Available Pressure		
Density	0.15	
Max Sprinkler Head coverage (As per NPFA 13 table 4-2.2)	121	
Square footage spacing x Density = GPM sprinkler head (Q)	18.15	
K-Factor of Sprinkler head (K)	5.6	
Equation: Pressure required at head=(Q / K)2	11	
Elevation difference from test hydrant to base of riser x .433	10	4.33
Elevation difference from base of riser to remote area x .433	15	6.495
Backflow Preventer pressure drop	5	
Safety Factor (5 psi min.) (SF)	5	
Fixed Pressure drop =	31	
Estimated Friction Drop Thru Fire Line		
Length of run from test hydrant to riser (HR)	300	
Pipe C Factor (Ductile Iron C-100)	100	
Nominal Pipe Inside Diameter (10", 8", 6", 4", 3")	6	
Friction loss in pipe (psi/ft) (Based on Hazen William Equation) (HW1)	0.016637	
HR x 1.30 x HW1 =	6	
Length of run from riser to last sprinkler head (estimated.) (RS)		
Base of Riser to farthest sprinkler	160	
Pipe C Factor (Black Steel C-120)	120	
Nominal Pipe Inside Diameter (6", 4", 3", 2-1/2", 2")	4	
Friction loss in pipe (psi/ft) (Based on Hazen William Equation) (HW2)	0.085537	
RS x 1.30 x HW2 =	18	
Estimated Required Flow Data for Building		
Required GPM	540.4075	
Required PSI	56	

SPRINKLER LEGEND

SY	DESCRIPTIO	SPRA	TYP	TEMP.	ORIFICE	K	MODEL #	FINISH
●	PENDENT	15' X 15'	QUICK RESPONSE	165°	1/2"	5.6	V2708	SEMI-RECESSED WHITE
○	UPRIGHT	15' X 15'	STANDARD	212°	1/2"	5.6	V2703	BRASS
▶	DRY SIDEWALL	15'	STANDARD	175°	1/2"	5.6	V3509-VS1	BRASS

FIRE PROTECTION GENERAL NOTES

1. THE SPRINKLER HEADS SHOWN ARE GENERAL IN NUMBER AND LOCATION. THE EXACT NUMBERS AND LOCATIONS SHALL BE DETERMINED BY THE SUCCESSFUL SPRINKLER INSTALLER AND SHALL BE SHOWN ON HIS SHOP DRAWINGS. THE SPRINKLER SYSTEM SHALL BE IN ACCORDANCE WITH SPECIFICATIONS AND NFPA 13 & 24.
2. PROVIDE A HYDRAULICALLY DESIGNED FULL COVERAGE SPRINKLER SYSTEM.
3. PROVIDE DRY PENDANT TYPE HEADS IN COOLER, FREEZER AND/OR OTHER AREAS THAT ARE SUBJECT TO FREEZING FOR FREEZE PROTECTION.
4. THE SPRINKLER CONTRACTOR SHALL COORDINATE LOCATIONS OF SPRINKLER HEADS AND ASSOCIATED PIPING WITH ALL OTHER TRADES.
5. ALL SPRINKLER HEADS LOCATED IN 2'x4' TILES SHALL BE CENTERED.
6. SPRINKLER SYSTEM SHALL BE LIGHT HAZARD IN ALL AREAS, EXCEPT ORDINARY HAZARD GROUP I IN THE WELDING SHOP, AG INNOVATION, ELECTRICAL/MECHANICAL ROOM.
7. CONTRACTOR SHALL VERIFY LOCATION AND INSTALLATION REQUIREMENTS OF BACKFLOW PREVENTER WITH THE LOCAL AUTHORITY HAVING JURISDICTION, AND LOCAL WATER UTILITY BEFORE CONSTRUCTION OR SITE EXCAVATION HAS BEGUN.
8. SPRINKLER CONTRACTOR SHALL BE RESPONSIBLE FOR FULL REPLACEMENT COST OF SURFACES DAMAGED BY DRAINAGE FROM THE SPRINKLER SYSTEM.
9. THE CONTRACTOR MUST PROVIDE A CERTIFIED CALCULATION DEMONSTRATING THE CHARACTERISTICS OF THE PROPOSED SYSTEM AND SHOWING PIPE SIZE AND SYSTEM FLOW.
10. THE MINIMUM PIPE SIZE FOR THE UNDERGROUND SPRINKLER MAIN IS 6", CONTRACTOR TO VERIFY WITH A CERTIFIED CALCULATION. THE MINIMUM BURY DEPTH FOR THE FIRE MAIN IS 36" BELOW FINISHED GRADE.
11. PROVIDE A 'PUMPER' HYDRANT WITHIN 100' OF THE FIRE DEPARTMENT CONNECTION AS REQUIRED BY THE AHJ.
12. THE NEW SPRINKLER SYSTEM IS AN NFPA 13-4.1 WET PIPE.
13. ALL FIRE PROTECTION PIPING STARTING FROM POINT OF SERVICE ON MUST BE INSTALLED BY A LICENSED FIRE PROTECTION CONTRACTOR. SEE THE SITE UTILITY DRAWING FOR UNDERGROUND PIPING AND VALVES REQUIRED.
14. ALL WORKMANSHIP AND MATERIALS SHALL BE IN STRICT ACCORDANCE WITH APPLICABLE LOCAL CODES, RULES AND ORDINANCES.
15. THE VELOCITY OF WATER FOR SPRINKLER PIPING SHALL NOT EXCEED 21 FPS (FEET PER SECOND).
16. CONTRACTOR SHALL MAKE ARRANGEMENTS FOR CONNECTIONS TO ALL UTILITY LINES AND PAY ALL FEES AND COSTS FOR CONNECTIONS TO THOSE SERVICES.
17. SEE MECHANICAL SHEETS FOR DIFFUSER LOCATIONS.
18. SEE ELECTRICAL LIGHTING SHEETS FOR LOCATION OF LIGHTS.

MBI COMPANIES INC.
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com
CONSULTANT
MECHANICAL ENGINEER:
MBI COMPANIES INC.
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com
SEAL

JOHN C. BUCHANAN — REGISTERED ENGINEER — AGRICULTURAL — PRINCIPAL — No. 104351 — STATE OF TENNESSEE — 10-31-23

PROJECT INFORMATION
PROJECT:
CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING
PROJECT ADDRESS:
411 DOUGLAS LN
CLINTON, TN 37716
PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE
- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

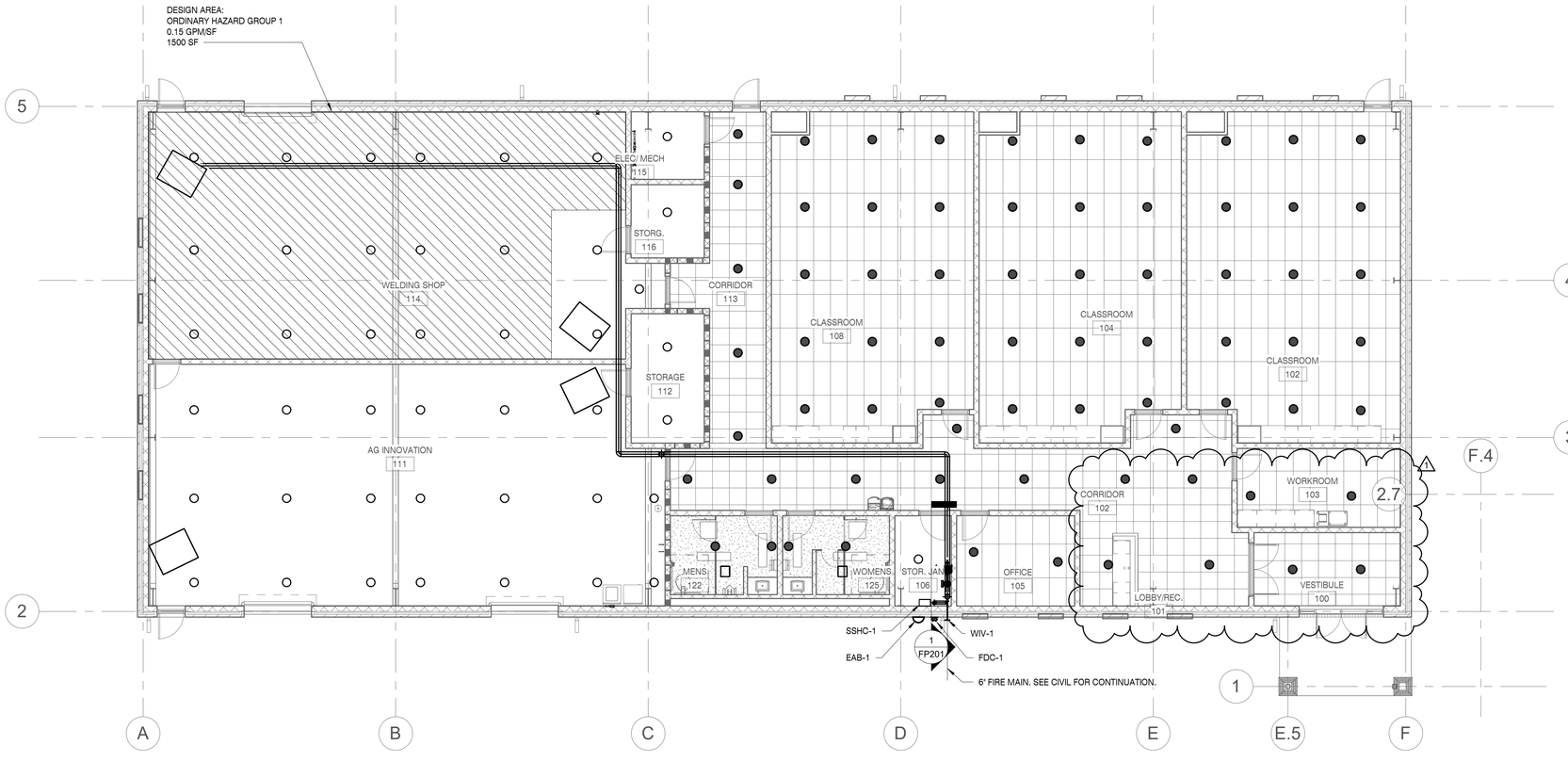
NO.	DATE	DESCRIPTION

KEY PLAN

SHEET INFORMATION
SHEET ISSUED: 10/06/2023
DESIGNED BY: JEJ
DRAWN BY: JEJ
REVIEWED BY: JCB
SHEET TITLE:
FIRE PROTECTION LEGENDS, SPECIFICATIONS, AND NOTES
SHEET NO.:
FP001

PROJECT # 2023-10-31-01
TFM # 00017-D
FIELD SET

Autodesk Docs://220042-02_Clinton High School Welding Building/07_220042-02_Mechanical_R23.rvt
10/6/2023 9:37:34 AM



FLOOR PLAN - FIRE PROTECTION 1

SCALE: 1/8" = 1'-0"

MBI COMPANIES INC.
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com

CONSULTANT

MECHANICAL ENGINEER:

MBI COMPANIES INC.
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com

SEAL

JOHN C. BUCHANAN
REGISTERED ENGINEER
No. 104351
STATE OF TENNESSEE
AGRICULTURE
COMMERCE
1/29/2024

PROJECT INFORMATION

PROJECT:

CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS:

411 DOUGLAS LN
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION
1	1/29/2024	REV #1

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	10/06/2023
DESIGNED BY:	JEJ
DRAWN BY:	JEJ
REVIEWED BY:	JCB

SHEET TITLE:

FLOOR PLAN - FIRE PROTECTION

SHEET NO.:

FP101

PROJECT # 2023-10-31-01 TFM # 00017-D

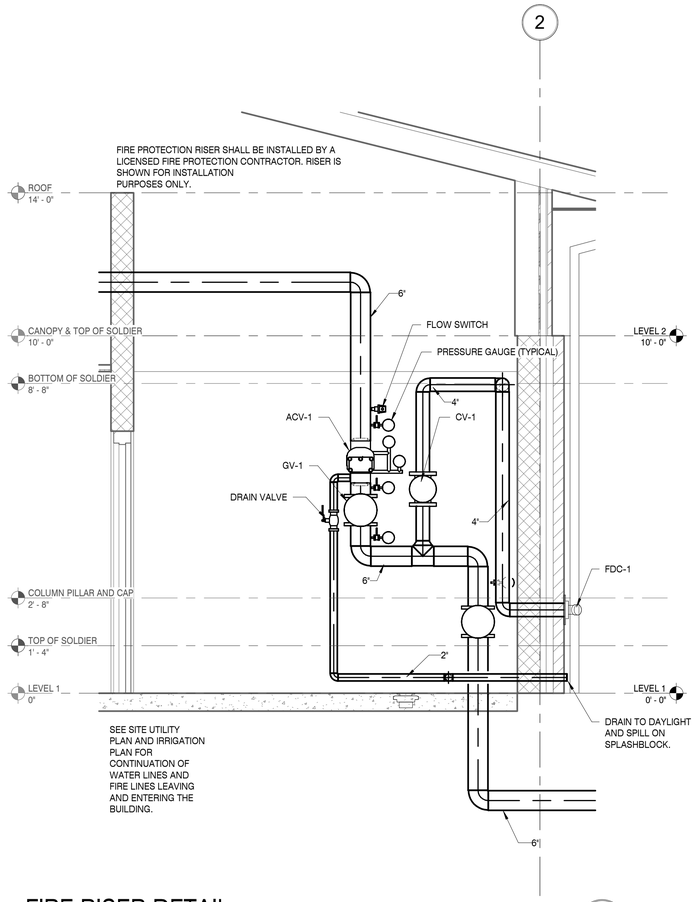
FIELD SET

ARCH D

FIRE PROTECTION VALVE SCHEDULE

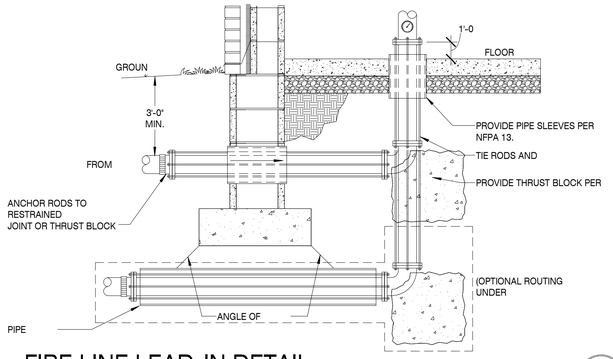
ID	DESCRIPTION	PIPE SIZE	MANUFACTURER & MODEL #	REMARKS
GV-1	GATE VALVE	6"	VICTAULIC SERIES 771F	1, 2
CV-1	CHECK VALVE	4"	VICTAULIC SERIES 717	1
FDC-1	FIRE DEPARTMENT CONNECTION	4"	CROKER 6440	1
SSHC-1	SPARE SPRINKLER HEAD CABINET	N/A	VICTAULIC SA1-000-0000	1
EAB-1	ELECTRIC ALARM BELL	N/A	POTTER MBA-8-24	1
ACV-1	ALARM CHECK VALVE	6"	VICTAULIC SERIES UMC	1

NOTES:
1. SEE FIRE PROTECTION SPECIFICATIONS ON SHEET FP0.1 FOR MORE INFORMATION.
2. PROVIDE TAMPER SWITCH AND CONNECT TO FIRE ALARM.



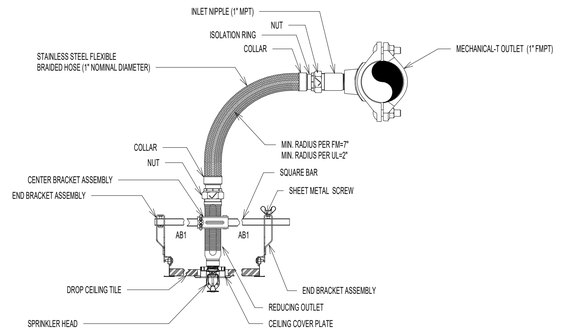
FIRE RISER DETAIL

SCALE: 1/2" = 1'-0" — 1



FIRE LINE LEAD-IN DETAIL

SCALE: 1/8" = 1'-0" — 2



BRAIDED FLEXIBLE SPRINKLER HEAD CONNECTION

SCALE: 1/2" = 1'-0" — 3

SEISMIC RESTRAINT FOR PIPING

BRACING OF PIPES:

A. VERTICAL PIPING

(1) ATTACHMENT - VERTICAL PIPING SHALL BE SECURED AT SUFFICIENTLY CLOSE INTERVALS TO KEEP THE PIPE IN ALIGNMENT AND CARRY THE WEIGHT OF THE PIPE AND CONTENTS. STACKS SHALL BE SUPPORTED AT THEIR BASES AND IF OVER 2 STORIES IN HEIGHT AT EACH FLOOR BY APPROVED METAL FLOOR CLAMPS.

(2) SCREWED PIPE - SCREWED PIPE (I.P.S.) SHALL BE SUPPORTED AT NOT - LESS THAN EVERY OTHER STORY HEIGHT.

(3) COPPER TUBING - COPPER TUBING SHALL BE SUPPORTED AT EACH STORY FOR PIPING 1 1/2" AND LARGER DIAMETER, AT NOT MORE THAN 6 FOOT INTERVALS FOR PIPING 1 1/2" AND SMALLER IN DIAMETER.

(4) PIPES OF OTHER APPROVED MATERIAL SHALL BE SUPPORTED IN ACCORDANCE WITH THEIR APPROVED INSTALLATION STANDARDS.

(5) VERTICAL RISERS SHALL BE SUPPORTED WITH A RISER CLAMP AT EACH FLOOR. WHERE THERMAL EXPANSION OCCURS, ANCHOR THE RISER AT THE MIDPOINT OR AT THE NEXT FLOOR ABOVE THE MIDPOINT WITH ADDITIONAL SUPPORTS ADJACENT TO THE TOP AND BOTTOM OF THE RISER; INSTALL GUIDES ON THE RISER AT EACH IMMEDIATE FLOOR. RISERS IN HIGH RISE BUILDINGS (SIX STORIES AND ABOVE) SHALL BE DESIGNED INDIVIDUALLY.

B. HORIZONTAL PIPING

(1) SUPPORTS - HORIZONTAL PIPING SHALL BE SUPPORTED AT SUFFICIENTLY CLOSE INTERVALS TO KEEP IT IN ALIGNMENT AND PREVENT SAGGING.

(2) SCREWED PIPE - SCREWED PIPE (I.P.S.) OR FLANGED PIPE SHALL BE SUPPORTED AT APPROXIMATELY 10 FOOT INTERVALS.

(3) COPPER TUBING - COPPER TUBING SHALL BE SUPPORTED AT APPROXIMATELY 6 FOOT INTERVALS FOR TUBING 1 1/2" AND SMALLER IN DIAMETER AND 10 FOOT INTERVALS FOR TUBING 2" AND LARGER IN DIAMETER.

(4) PIPES OF OTHER APPROVED MATERIALS SHALL BE SUPPORTED IN ACCORDANCE WITH THEIR APPROVED INSTALLATION STANDARDS.

3. TRANSVERSE BRACING AT 40' - 0" O.C. MAXIMUM UNLESS OTHERWISE NOTED.

4. LONGITUDINAL BRACING AT 80' - 0" O.C. MAXIMUM UNLESS OTHERWISE NOTED. WHEN THERMAL EXPANSION OR CONTRACTION IS INVOLVED, PROVIDE LONGITUDINAL BRACINGS AT ANCHOR POINTS. THE LONGITUDINAL BRACES AND THE CONNECTIONS MUST BE CAPABLE OF RESISTING THE FORCE INDUCED BY EXPANSION AND CONTRACTION.

5. TRANSVERSE BRACING FOR ONE PIPING SECTION MAY ALSO ACT AS LONGITUDINAL BRACING FOR THE PIPING SECTION CONNECTED PERPENDICULAR TO IT, IF THE BRACING IS INSTALLED 24' OF THE ELBOW OR TEE OF SIMILAR SIZE.

6. FOR THREADED PIPING THE FLEXIBILITY MAY BE PROVIDED BY THE INSTALLATION OF SWING JOINTS. IN WELDED OR SOLDER JOINT PIPING THE FLEXIBILITY SHALL BE PROVIDED BY EXPANSION LOOPS OR MANUFACTURED FLEXIBLE CONNECTORS. FOR PIPING WITH MANUFACTURED BALL JOINTS SELECT LENGTH OF PIPING OFFSET USING 'SEISMIC DRIFT' IN PLACES OF 'EXPANSION PER JOINT MANUFACTURERS' SELECTION TABLE. SEISMIC DRIFT = 0.015 FT. PER FOOT OF HEIGHT.

7. DO NOT USE BRANCH LINES TO BRACE MAIN LINES.

8. TRAPEZE HANGERS MAY BE USED. PROVIDE FLEXIBILITY IN JOINTS WHERE PIPES PASS THROUGH BUILDING SEISMIC OR EXPANSION JOINTS, OR WHERE RIGIDLY SUPPORTED PIPES CONNECT TO EQUIPMENT WITH VIBRATION ISOLATORS.

9. A RIGID PIPING SYSTEM SHALL NOT BE BRACED TO DISSIMILAR PARTS OF A BUILDING OR TWO DISSIMILAR BUILDING SYSTEMS THAT MAY RESPOND IN A DIFFERENT MODE DURING AN EARTHQUAKE. EXAMPLES: WALL AND A ROOF; SOLID CONCRETE WALL AND A METAL DECK WITH LIGHTWEIGHT CONCRETE FILL.

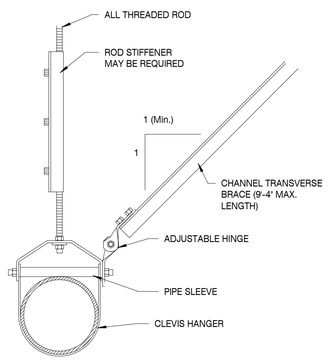
10. PROVIDE LARGE ENOUGH PIPE SLEEVES THROUGH WALLS OR FLOORS TO ALLOW FOR ANTICIPATED DIFFERENTIAL MOVEMENTS.

11. AT VERTICAL PIPE RISERS, WHEREVER POSSIBLE, SUPPORT THE WEIGHT OF THE RISER AT A POINT OR POINTS ABOVE THE CENTER OF GRAVITY OF THE RISER. PROVIDE LATERAL GUIDES AT THE TOP AND BOTTOM OF THE RISER, AND AT INTERMEDIATE POINTS NOT TO EXCEED 30' - 0" ON CENTER.

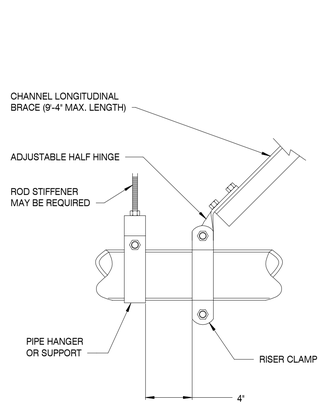
12. FOR GAS PIPING, THE BRACING DETAILS, SCHEDULES AND NOTES IN THE SMACNA GUIDE MAY BE USED EXCEPT THAT TRANSVERSE BRACING SHALL BE AT 20' - 0" O.C. MAXIMUM AND LONGITUDINAL BRACING AT 40' - 0" O.C. MAXIMUM. ALSO 1", 1 1/4", 1 1/2", AND 2" DIAMETER PIPES SHALL BE BRACED THE SAME AS 2 1/2" DIAMETER PIPE IN THE SMACNA GUIDE. (NO BRACING IS REQUIRED FOR PIPES 3/4" DIAMETER AND SMALLER).

PIPING SEISMIC BRACING DETAIL

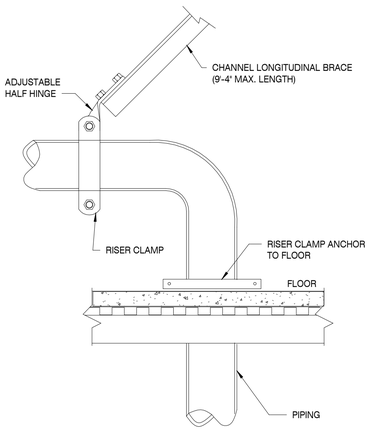
SCALE: N.T.S. — 4



CLEVIS TRANSVERSE
NTS



LONGITUDINAL
NTS



TOP OF RISER
NTS

MBI COMPANIES INC.
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com

CONSULTANT
MECHANICAL ENGINEER:

MBI COMPANIES INC.
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com

SEAL

JOHN C. BUCHANAN
REGISTERED ENGINEER
No. 104351
STATE OF TENNESSEE

PROJECT INFORMATION

PROJECT:

CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS:

411 DOUGLAS LN
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	10/06/2023
DESIGNED BY:	JEJ
DRAWN BY:	JEJ
REVIEWED BY:	JCB

SHEET TITLE:

FIRE PROTECTION DETAILS

SHEET NO.:

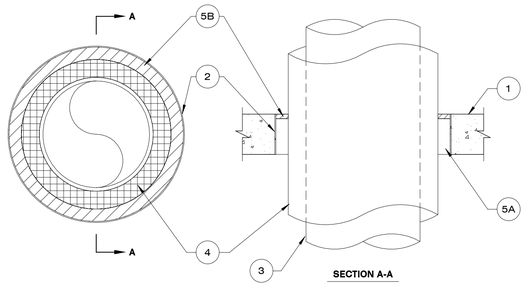
FP201

PROJECT # 2023-10-31-01 TFM # 00017-D

FIELD SET

Autodesk Docs://220042-02_Clinton High School Welding Building/07_220042-02_Mechanical_R23.rvt
10/6/2023 8:37:36 AM

System No. C-AJ-5091
F Rating — 2 Hr
T Rating — 1 Hr
L Rating At Ambient — 4 CFM/Sq Ft
L Rating At 400 F — Less Than 1 CFM/Sq Ft

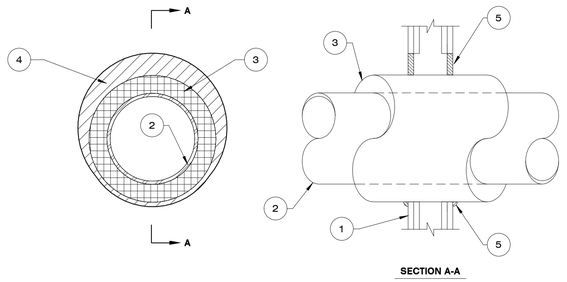


1. Floor or Wall Assembly — Min 4-1/2 in. thick reinforced lightweight or normal weight (100-150 pcf) concrete. Wall may also be constructed of any UL Classified Concrete Blocks*. Max diam of opening is 19-1/2 in. See Concrete Blocks (CAZT) category in the Fire Resistance directory for names of manufacturers.
2. Metallic Sleeve — (Optional) — Nom 20 in. diam (or smaller) Schedule 10 (or heavier) steel pipe.
2A. Sheet Metal Sleeve — (Optional) - Max 6 in. diam, min 26 ga galv steel provided with a 26 ga galv steel square flange spot welded to the sleeve at approximately mid- height, or flush with bottom of sleeve in floors, and sized to be a min of 2 in. larger than the sleeve diam. The sleeve is to be cast in place flush with bottom surface of floor and may extend a max of 1 in. above the top surface of the floor.
2B. Sheet Metal Sleeve — (Optional) - Max 12 in. diam, min 24 ga galv steel provided with a 24 ga galv steel square flange spot welded to the sleeve at approximately mid- height, or flush with bottom of sleeve in floors, and sized to be a min of 2 in. larger than the sleeve diam. The sleeve is to be cast in place flush with bottom surface of floor and may extend a max of 1 in. above the top surface of the floor.
3. Through Penetrants — One metallic pipe or tubing to be installed either concentrically or eccentrically within the firestop system. Pipe or tubing to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of metallic pipes or tubing may be used:
A. Steel Pipe — Nom 12 in. diam (or smaller) Schedule 10 (or heavier) steel pipe.
B. Iron Pipe — Nom 12 in. diam (or smaller) cast or ductile iron pipe.
C. Copper Pipe — Nom 6 in. diam (or smaller) Regular (or heavier) copper pipe.
D. Copper Tubing — Nom 6 in. diam (or smaller) Type L (or heavier) copper tubing.
4. Pipe Covering — Nom 2 in. thick hollow cylindrical heavy density (min 3.5 pcf) glass fiber units jacketed on the outside with an all-service jacket. Longitudinal joints sealed with metal fasteners or factory-applied, self-sealing lap tape. Transverse joints secured with metal fasteners or with butt tape supplied with the product. The annular space between the insulated pipe and the edge of the periphery of the opening shall be min 1/2 in. to a max 2-1/4 in.
See Pipe Equipment Covering — Materials — (BRGU) category in the Building Materials Directory for names of manufacturers. Any pipe covering material meeting the above specifications and bearing the UL Classification Marking with a Flame Spread Index of 25 or less and a Smoke Developed Index of 50 or less may be used.
4A. Pipe Covering — (Not Shown) — As an alternate to Item 4, max 2 in. thick cylindrical calcium silicate (min 14 pcf) units sized to the outside diam of the pipe or tube may be used. Pipe insulation secured with stainless steel bands or min 8 AWG stainless steel wire spaced max 12 in. OC. The annular space shall be min 1/2 in. to max 2-1/4 in.
5. Firestop System — The firestop system shall consist of the following:
A. Packing Material — Min 4 in. thickness of min 4 pcf mineral wool batt insulation firmly packed into opening as a permanent form. Packing material to be recessed from top surface of floor or from both surfaces of wall as required to accommodate the required thickness of fill material.
B. Fill, Void or Cavity Material* — Sealant — Min 1/2 in. thickness of fill material applied within the annulus, flush with top surface of floor or with both surfaces of wall.
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-One Sealant
*Bearing the UL Classification Mark

FIRE PENETRATION DETAIL 1

SCALE: N.T.S.

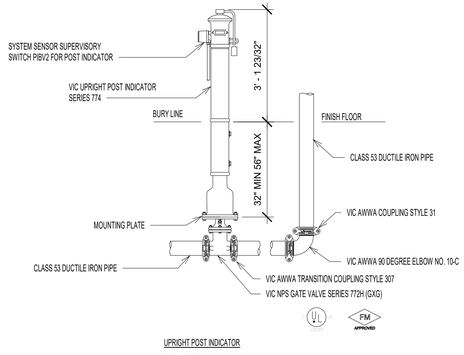
System No. W-L-5029
F Ratings — 1 and 2 Hr (See Item 1)
T Ratings — 1/2, 3/4, 1, 1-1/2 and 1-3/4 Hr (See Item 3)
L Rating At Ambient — 4 CFM/Sq Ft
L Rating At 400 F — Less Than 1 CFM/Sq Ft



1. Wall Assembly — The 1 or 2 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300 or U400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
A. Studs — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. lumber spaced 16 in. OC. Steel studs to be min 2-1/2 in. wide and spaced max 24 in. OC.
B. Gypsum Board* — 5/8 in. thick, 4 ft wide, with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual Wall and Partition Design. Max diam of opening is 18-5/8 in.
The hourly F Rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is installed.
2. Through Penetrants — One metallic pipe or tubing to be centered within the firestop system. Pipe or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes or tubing may be used:
A. Steel Pipe — Nom 12 in. diam (or smaller) Schedule 10 (or heavier) steel pipe.
B. Iron Pipe — Nom 12 in. diam (or smaller) cast or ductile iron pipe.
C. Copper Tubing — Nom 6 in. diam (or smaller) Type L (or heavier) copper tubing.
D. Copper Pipe — Nom 6 in. diam (or smaller) Regular (or heavier) copper pipe.
jacketed on the outside with an all service jacket. Longitudinal joints sealed with metal fasteners or factory-applied self-sealing lap tape. Transverse joints secured with metal fasteners or with butt tape supplied with the product.
See Pipe and Equipment Covering — Materials (BRGU) category in the Building Material Directory for the names of manufacturers. Any pipe covering material meeting the above specifications and bearing the UL Classification Marking with a Flame Spread Index of 25 or less and a Smoke Developed Index of 50 or less may be used.
The hourly T Rating of the firestop system is dependent on the hourly fire rating of the wall assembly in which it is installed, the size and type of through penetrant and the pipe covering thickness, as shown in the table below:

Wall Assembly Rating Hr	Through Penetrant		Pipe Covering Thkns In.	Annular Space		T Rating Hr
	Type +	Max Diam In.		Min In.	Max In.	
1	A	4	1	0	1-1/2	1/2
1	B or C	2	1 or 1-1/2	0	1-1/2	1/2
1	A	4	1-1/2	0	1-1/2	1
1	A	12	2	0	1-7/8	3/4
1	B or C	6	2	0	1-7/8	1
2	A	4	1	0	1-1/2	1
2	B or C	4	1 or 1-1/2	0	1-1/2	1
2	B or C	6	2	0	1-7/8	1
2	A	4	1-1/2	0	1-1/2	1-3/4
2	A	12	2	0	1-7/8	1-1/2
2	B or C	6	2	0	1-7/8	1

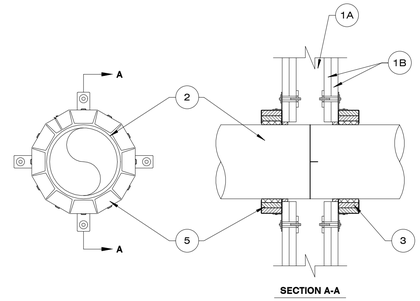
+Indicates penetrant type as itemized in Item 2.
3A. Pipe Covering* — (Not Shown) — As an alternate to Item 3, max 2 in. thick cylindrical calcium silicate (min 14 pcf) units sized to the outside diam of the pipe or tube may be used. Pipe insulation secured with stainless steel bands or min 8 AWG stainless steel wire spaced max 12 in. OC. When the alternate pipe covering is used, the T Rating shall be determined from the table above.
See Pipe and Equipment Covering — Materials (BRGU) category in the Building Materials Directory for names of manufacturers. Any pipe covering material meeting the above specifications and bearing the UL Classification Marking with a Flame Spread Index of 25 or less and a Smoke Developed Index of 50 or less may be used.
4. Fill, Void or Cavity Material* — Sealant — Min 5/8 in. thickness of fill material applied within the annulus, flush with both surfaces of wall . At the point contact location between pipe covering and gypsum board, a min 1/2 in. diam bead of fill material shall be applied at the pipe covering/gypsum board interface on both surfaces of wall.
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-One Sealant
*Bearing the UL Classification Mark



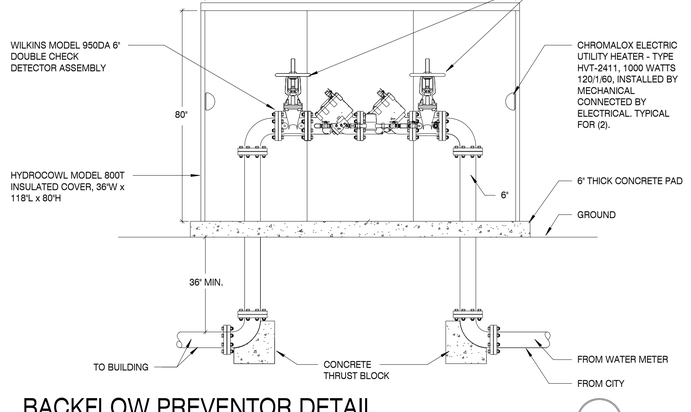
UPRIGHT INDICATOR 774-772H 2

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

System No. W-L-2078
F Ratings — 1 and 2 Hr (See Item 1)
T Ratings — 0, 1 and 2 Hr (See Items 2 and 3)
L Rating At Ambient — 3 CFM/sq ft
L Rating At 400 F — Less Than 1 CFM/sq ft



1. Wall Assembly — The fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300, U400 or V400 Series Wall and Partition Designs in the UL fire Resistance Directory and shall include the construction features noted below:
A. Studs — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. lumber spaced max 16 in. OC. Steel studs to be min 2-1/2 in. wide and spaced max 24 in. OC.
B. Gypsum Board* — Nom 5/8 in. thick gypsum board, as specified in the individual Wall and Partition Design. Max diam of opening is 11-1/2 in.
The hourly F Rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is installed.
2. Through-Penetrants — One nonmetallic pipe, conduit or tubing to be installed within the firestop system. The annular space between pipe and periphery of opening shall be min 0 in. (point contact) to max 1/2 in. Pipe or conduit to be rigidly supported on both sides of the wall assembly. The following types and sizes of nonmetallic pipes may be used:
A. Polyvinyl Chloride (PVC) Pipe — Nom 10 in. diam (or smaller) Schedule 40 solid-core or cellular core PVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping system.
B. Chlorinated Polyvinyl Chloride (CPVC) Pipe — Nom 10 in. diam (or smaller) SDR13.5 CPVC pipe for use in closed (process or supply) piping systems.
C. Acrylonitrile Butadiene Styrene (ABS) Pipe — Nom 6 in. diam (or smaller) Schedule 40 solid-core or cellular core ABS pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems
D. Flame Retardant Polypropylene (FRPP) Pipe — Nom 6 in. diam (or smaller) Schedule 40 FRPP pipe for use in closed (process or supply) or vented (drain, waste or vent) piping system.
E. Polyvinylidene Fluoride (PVDF) Pipe — Nom 4 in. diam (or smaller) PVDF pipe for use in closed (process or supply) or vented (drain, waste or vent) piping system.
When max 6 in. diam pipe is used, T Rating is equal to the hourly fire rating of the wall. When nom 8 in. or 10 in. diam pipe is used, T Rating is 0 hr.
3. Firestop Device* — Firestop Collar — Firestop collar shall be installed in accordance with the accompanying installation instructions. Collar to be installed and latched around the pipe and secured to both sides of the wall using the anchor hooks provided with the collar. (Minimum two anchor hooks for 1-1/2 and 2 in. diam pipes, three anchor hooks for 3 and 4 in. diam pipes, four anchor hooks for 6 in. diam pipes, ten anchor hooks for 8 in. diam pipes and twelve anchor hooks for 10 in. diam pipes). The anchor hooks are to be secured to the surface of wall with 3/16 in. diam by 2-1/2 in. long steel toggle bolts along with washers. As an alternate for pipe sizes of nom 4 in. diam or less, min No. 10 by 1-1/2 in. long drywall or laminate screws with min 3/4 in. steel washers may be used. When the drywall or laminate screw is used, T Rating shall not exceed 1 hr.
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP 643 50/1.5"N, CP 643 63/2"N, CP 643 90/3"N, CP 643 110/4"N, CP 643 160/6"N, CP 644 200/8" andCP 644 250/10" Firestop Collars
4. Fill, Void or Cavity Material* — Sealant - (Not Shown) — Min 1/2 in. thickness of sealant applied within the annular space for nom 8 in. and 10 in. diam pipes, flush with each side of wall. Sealant in annular space is optional for max 6 in. diam pipes. A min 1/4 in. thickness of sealant is required within the annular space, flush with each side of wall, to attain the L Ratings for max 6 in. diam pipes.
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-One Sealant
*Bearing the UL Classification Mark



BACKFLOW PREVENTOR DETAIL 3

SCALE: N.T.S.

MBI COMPANIES INC.
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com
CONSULTANT
MECHANICAL ENGINEER:

MBI COMPANIES INC.
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com
SEAL

JOHN C. BUCHANAN REGISTERED ENGINEER MECHANICAL AGRICULTURE PRINCIPAL No. 104351 STATE OF TENNESSEE

PROJECT INFORMATION

PROJECT:
CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS:
411 DOUGLAS LN
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	10/06/2023
DESIGNED BY:	JEJ
DRAWN BY:	JEJ
REVIEWED BY:	JCB

SHEET TITLE:
FIRE PROTECTION DETAILS

SHEET NO.:
FP202

PROJECT # 2023-10-31-01 TFM # 00017-D FIELD SET

ARCH D

AIR DISTRIBUTION EQUIPMENT SCHEDULE

DESIGNATIO		SERVIC	DESCRIPTIO	MATERIAL/FINI	MANUFACTURER	SIZING CFM
	CD1	SQUARE, 3-CONE, CEILING SUPPLY	24"x24" FACE T-BAR LAY-IN ADJUSTABLE PATTERN W/	ALUMINUM WHITE ENAMEL	PRICE ASCDA	0-110 6"Ø 111-240 8"Ø 241-420
	CD2	SQUARE, 3-CONE, CEILING SUPPLY	SURFACE MOUNTED, ADJUSTABLE PATTERN WITH O.B.D.	ALUMINUM WHITE ENAMEL	PRICE ASCDA	
	SWS1	SIDEWALL SUPPLY	DOUBLE DEFLECTIO	ALUMINUM WHITE	PRICE 620D	
	LSD1	LINEAR SLOT DIFFUSER	(_) __" SLOTS 2-WAY PATTERN	ALUMINUM WHITE	PRICE ________	
	CR1	EGGCRATE FACE CEILING RETURN GRILLE	1/2"x1/2"x1/2" CORE, PANEL MTD, T-BAR LAY-IN, BORDER TYPE 3, WITH ALUMINUM O.B.D.	ALUMINUM CORE ALUMINUM FRAME WHITE ENAMEL	PRICE 80DAL-F	0-415 10x10 416-815 14x14
	CR2		1/2"x1/2"x1/2" CORE, PANEL MTD, SURFACE MOUNT, BORDER TPE 1, WITH ALUMINUM O.B.D.	ALUMINUM CORE ALUMNIUM FRAME WHITE ENAMEL		
	TG	EGGCRATE FACE TRANSFER	1/2"x1/2"x1/2" CORE, PANEL MTD, SURFACE MOUNT OR T-BAR LAY-IN AS REQUIRED	ALUMINUM CORE ALUMNIUM FRAME WHITE ENAMEL	PRICE 80	0-350 10x10 351-680 14x14
	SWR1	SIDEWALL RETURN	O DEG. FIXED HORZONTAL FACE BARS	ALUMINUM WHITE	PRICE 510ZD	
	CE1	EGGCRATE FACE CEILING EXHAUST GRILLE	1/2"x1/2"x1/2" CORE, PANEL MTD, T-BAR LAY-IN, BORDER TYPE 3 WITH ALUMINUM O.B.D.	ALUMINUM CORE ALUMNIUM FRAME WHITE ENAMEL	PRICE 80DAL-TB	0-415 10x10 416-815 14x14
	CE2		1/2"x1/2"x1/2" CORE, PANEL MTD,SURFACE MOUNT, BODER TYPE 1 WITH ALUMINUM O.B.D.		PRICE 80DAL-F	

NOTES AND ACCESSORIES:
- SIZING COLUMN GOVERNS DEVICE NECK SIZE ONLY. RUN-OUT DUCT SIZES MAY VARY (SEE FLOOR PLAN DRAWINGS.) PROVIDE DUCT TRANSITIONS INCLUDING SQUARE TO ROUND AS REQUIRED.
- ALTERNATE MANUFACTURERS: KRUEGER, METALAIRE, PRICE
- MECHANICAL CONTRACTOR SHALL PROVIDE DIFFUSERS WITH APPROPRIATE AIR PATTERN AS SHOWN ON PLANS.
- PRIOR TO ORDERING DEVICES MECHANICAL CONTRACTOR SHALL PROVIDE TO ARCHITECT A COLOR/FINISH SELECTION CHART FOR EACH DEVICE SCHEDULED. SELECTIONS MAY DIFFER ON A SPACE BY SPACE BASIS PER ARCHITECTS' OPTION. IF COLOR/FINISH IS NOT COORDINATED WITH ARCHITECT PRIOR TO ORDERING MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING AND PAINTING TO MATCH INTERIOR.
- ORDER DIFFUSERS WITH VOLUME DAMPER.
- FOR SIDEWALL DIFFUSERS ADJUST VERTICAL BLADES FOR A 45 DEGREE HORIZONTAL SPREAD.
- FOR SIDEWALL DIFFUSER, GRILLES, AND REGISTERS SIZES ARE SHOWN ON FLOOR PLAN DRAWINGS.
- VERIFY EXACT FRAME TYPE WITH ARCHITECTURAL DRAWINGS AND SPECIFICATIONS.

HVAC SPECIFICATIONS

PART 1 - GENERAL

1.01 SCOPE
FURNISH ALL LABOR, MATERIALS, EQUIPMENT, CONTROL SYSTEMS, DEVICES, ACCESS PANELS, PERMITS, AND SERVICES NECESSARY TO INSTALL THE COMPLETE AND OPERABLE AIR CONDITIONING, HEATING, AND VENTILATING SYSTEM INDICATED ON THE DRAWINGS, AS SPECIFIED HEREIN, AND IN ACCORDANCE WITH ALL CITY, STATE, AND NATIONAL CODES, IF THERE IS A CONFLICT BETWEEN CODES AND OR THE CONTRACT DOCUMENTS, THE CONTRACTOR IS TO FOLLOW THE MORE STRINGENT OF THE REQUIREMENTS. ALL MATERIALS SHALL BE NEW AND ALL WORKMANSHIP AND MATERIALS SHALL BE IN STRICT ACCORDANCE WITH APPLICABLE LOCAL CODES, PRODUCT APPROVAL, RULES AND ORDINANCES. ANY DAMAGED EQUIPMENT SHALL BE REPLACED OR RESTORED TO ORIGINAL CONDITION. ALL MECHANICAL EQUIPMENT SHALL BE ARI & UL LISTED WHERE APPLICABLE AND RATED FOR THE REQUIRED SERVICE, PRESSURES, TEMPERATURES AND SHALL BE PROVIDED WITH ALL NECESSARY TRANSFORMERS, SEALS, VALVES, CONNECTIONS, ETC. TO FUNCTION PROPERLY.

1.02 ELECTRICAL WORK
ALL CONDUIT, ROUGH IN ELECTRICAL BOXES AND WIRING, EXCLUDING LOW VOLTAGE CONTROL WIRING, SHALL BE INCLUDED UNDER THE ELECTRICAL SECTION OF THE CONTRACT DOCUMENTS, COORDINATE REQUIREMENTS AND ROUGH IN LOCATIONS FOR ALL EQUIPMENT. CONTROL WIRING SHALL BE PROVIDED AND INSTALLED UNDER THE MECHANICAL SECTION OF THE CONTRACT DOCUMENTS.

1.03 SUBMITTAL DATA
PRIOR TO ORDERING EQUIPMENT THE CONTRACTOR SHALL SUBMIT FOR APPROVAL A MINIMUM OF THREE (3) COPIES OF THE EQUIPMENT BROCHURES, TECHNICAL DATA AND/OR SHOP DRAWINGS. AS AN ALTERNATIVE, AN ELECTRONIC SUBMITTAL IS ACCEPTABLE. CONTRACTOR IS INSTRUCTED TO CONSOLIDATE INFORMATION WHEN SUBMITTING ELECTRONICALLY AND AVOID MULTIPLE COMMUNICATIONS.

1.04 NOISE AND VIBRATION
EQUIPMENT SHALL OPERATE QUIETLY. THE OPERATION OF THE EQUIPMENT SHALL CAUSE NO PERCEPTIVE VIBRATION NOR OBJECTIONABLE NOISE IN ANY PORTION OF THE BUILDING OR STRUCTURE.

1.05 MAINTENANCE MANUALS
FURNISH (3) THREE SETS OF OPERATING INSTRUCTIONS AND MAINTENANCE MANUALS COVERING HEATING, VENTILATING, AND AIR CONDITIONING SYSTEMS AS WELL AS EQUIPMENT WARRANTIES, CONTROL SEQUENCES AND DIAGRAMS. MANUALS ARE TO BE BOUND AND COVERED. DELIVER MANUALS TO THE ARCHITECT. INCLUDE A COMPLETE DESCRIPTION OF THE OPERATION OF THE CONTROL SYSTEM. THE CONTRACTOR SHALL INSTRUCT THE OWNER'S REPRESENTATIVE IN THE PROPER OPERATION OF ALL EQUIPMENT.

1.06 WARRANTIES
1. ALL WARRANTIES SHALL BEGIN UPON FINAL ACCEPTANCE BY THE OWNER, NOT BENEFICIAL USE BY THE CONTRACTOR.
2. FURNISH A FIVE (5) YEAR WARRANTY ON ALL COMPRESSORS AND REFRIGERATION CIRCUIT AND A ONE (1) YEAR WARRANTY ON ALL CONTROLS AND OTHER EQUIPMENT.
3. THE MC WILL WARRANTY ALL MECHANICAL SYSTEMS, DUCTWORK, THERMOSTATS, AND ALL OTHER EQUIPMENT, PARTS, AND LABOR SHOWN ON THE MECHANICAL DRAWINGS AND IN THE SPECIFICATIONS FOR A PERIOD OF ONE (1) YEAR AFTER ISSUANCE OF THE CERTIFICATE OF OCCUPANCY. SEE HVAC GENERAL NOTE 17.
4. ANY REPAIRS REQUIRING SYSTEM SHUT DOWN WILL BE DONE DURING NON-OPERATIONAL PERIODS.
5. THE MC SHALL COORDINATE WITH ALL OTHER TRADES PRIOR TO BIDDING AND PURCHASING ANY EQUIPMENT.
6. AN INDEPENDENT CONTRACTOR SHALL TEST AND BALANCE ALL MECHANICAL EQUIPMENT AIR DEVICES, EXTRACTORS, DAMPERS, AHU'S AND FANS, ETC. TO PROVIDE THE DESIGN QUANTITIES (+/- 5%) AS SHOWN ON THE PLANS OR SCHEDULES. PROVIDE T & B REPORT IN ACCORDANCE WITH THE AIR BALANCE COUNCIL (ABC) STANDARDS, SIGNED AND SEALED BY A REGISTERED ENGINEER. PROVIDE FINAL BALANCING FOR ALL SYSTEMS TO SATISFACTION OF OWNER AND ENGINEER. T & B CONTRACTOR SHALL VISIT THE JOB SITE DURING CONSTRUCTION TO ENSURE THAT ALL DUCTS, DAMPERS, AND OTHER AIR CONTROL DEVICES ARE INSTALLED FOR PROPER AND QUIET AIR DELIVERY.
7. PROVIDE ALL MATERIALS AND LABOR REQUIRED FOR EQUIPMENT ANCHORAGE TO BUILDING STRUCTURE.

1.07 PERMITS, ORDINANCES, AND INSPECTIONS
1. OBTAIN AND PAY FOR ALL PERMITS AND INSPECTION FEES REQUIRED. DELIVER TO THE ARCHITECT, ALL CERTIFICATES AND INSPECTION REPORTS.
2. ALL WORK SHALL BE DONE IN ACCORDANCE WITH ALL APPLICABLE CITY, COUNTY, STATE, OR NATIONAL ORDINANCES AND CODES. EFFORT HAS BEEN MADE TO MEET OR EXCEED REQUIREMENTS. THE CONTRACTOR SHALL MAKE ANY MINOR ADJUSTMENTS TO MEET THESE REQUIREMENTS AT NO ADDITIONAL COST TO OWNER.

PART 2 - PRODUCTS

2.01 DUCTWORK
1. GENERAL
   A. SEE HVAC GENERAL NOTES FOR ADDITIONAL REQUIREMENTS.
   B. DIMENSIONS INDICATED ON THE DRAWINGS ARE INSIDE AREAS. WHERE DUCTS ARE TO BE INTERNALLY INSULATED OR LINED INCREASE SHEET METAL OVERALL DIMENSIONS TO ACCOMMODATE INSULATION THICKNESS.
   C. PROVIDE FLEXIBLE WOVEN DUCT CONNECTIONS IN DUCTS AS INDICATED. SECURE CONNECTIONS WITH GALVANIZED CHANNELS. PROVIDE A BRAIDED
3. LOW PRESSURE DUCTWORK
   A. CONCEALED SYSTEMS. (DEFINED AS ANY DUCTWORK NOT VISIBLE TO OCCUPANTS OF A SPACE) PROVIDE MINIMUM 26 GAUGE RECTANGULAR AND/OR ROUND GALVANIZED STEEL SHEET METAL DUCTWORK CONSTRUCTED AND INSTALLED IN THE VENTILATION SYSTEMS IN ACCORDANCE WITH ASHRAE AND SMACNA STANDARDS. SEE HVAC GENERAL NOTES FOR ADDITIONAL REQUIREMENTS.
   B. EXPOSED SYSTEMS. (DEFINED AS ANY DUCTWORK VISIBLE TO OCCUPANTS OF A SPACE) FOR ALL DUCTWORK SYSTEMS PROVIDE GALVANEALED STEEL (ASTM A875) SPIRAL ROUND AND/OR SPIRAL FLAT OVAL CONSTRUCTED SHEET METAL DUCTWORK AND FITTINGS (SIZED AS INDICATED ON PLANS) AS MANUFACTURED BY EASTERN SHEET METAL OR APPROVED EQUAL. ALL DUCTWORK IS TO BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH ASHRAE AND SMACNA STANDARDS.
      I. PROVIDE 2" WG LEAKAGE CLASS FOR ALL SYSTEMS
      II. FOR SUPPLY AND OUTSIDE AIR INTAKE DUCTWORK PROVIDE DUAL WALL CONSTRUCTION WITH 2" FIBERGLASS INSULATION (MIN. K= 0.27). INNER WALL SHALL BE SOLID, PERFORATED INNER WALLS ARE NOT ACCEPTABLE.
      III. FOR RETURN AND EXHAUST DUCTWORK PROVIDE SINGLE WALL CONSTRUCTION.
      IV. ALL DUCTWORK IS TO BE CLEANED OF GREASE, OIL, AND DIRT THEN PRIMED PRIOR TO APPLICATION OF A TOP COAT. CLEANING AND PRIMING ARE TO BE PERFORMED BY PAINTING CONTRACTOR PER THE PAINT MANUFACTURER'S RECOMMENDATION. PAINT COLOR SELECTION IS TO BE APPROVED BY THE ARCHITECT.
4. MEDIUM PRESSURE DUCTWORK. (DEFINED AS SUPPLY DUCTWORK DOWNSTREAM OF AIR HANDLER AND UPSTREAM OF VAV BOX) PROVIDE GALVANEALED STEEL (ASTM A875) SPIRAL ROUND AND/OR SPIRAL FLAT OVAL CONSTRUCTED SHEET METAL DUCTWORK AND FITTINGS (SIZED AS INDICATED ON PLANS) AS MANUFACTURED BY EASTERN SHEET METAL OR APPROVED EQUAL. ALL DUCTWORK IS TO BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH ASHRAE AND SMACNA STANDARDS.
   A. CONCEALED SYSTEMS. (DEFINED AS ANY DUCTWORK NOT VISIBLE TO OCCUPANTS OF A SPACE) FOR ALL DUCTWORK SYSTEMS PROVIDE GALVANIZED (ASTM A653) OR GALVANEALED (ASTM A875) STEEL SPIRAL ROUND AND/OR SPIRAL FLAT OVAL CONSTRUCTED SHEET METAL DUCTWORK AND FITTINGS (SIZED AS INDICATED ON PLANS) AS MANUFACTURED BY EASTERN SHEET METAL OR APPROVED EQUAL. ALL DUCTWORK IS TO BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH ASHRAE AND SMACNA STANDARDS.
      I. PROVIDE 4" WG LEAKAGE CLASS FOR ALL SYSTEMS
      II. PROVIDE DUAL WALL CONSTRUCTION WITH 2" FIBERGLASS INSULATION (MIN. K=0.27). INNER WALL SHALL BE SOLID, PERFORATED INNER WALLS ARE NOT ACCEPTABLE.
      III. CONNECTIONS BETWEEN ALL DUCT SECTIONS AND FITTINGS TO BE GASKET SEALED.
   B. EXPOSED SYSTEMS. (DEFINED AS ANY DUCTWORK VISIBLE TO OCCUPANTS OF A SPACE) FOR ALL DUCTWORK SYSTEMS PROVIDE GALVANEALED STEEL (ASTM A875) SPIRAL ROUND AND/OR SPIRAL FLAT OVAL CONSTRUCTED SHEET METAL DUCTWORK AND FITTINGS (SIZED AS INDICATED ON PLANS) AS MANUFACTURED BY EASTERN SHEET METAL OR APPROVED EQUAL. ALL DUCTWORK IS TO BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH ASHRAE AND SMACNA STANDARDS.
      I. PROVIDE 4" WG LEAKAGE CLASS FOR ALL SYSTEMS
      II. PROVIDE DUAL WALL CONSTRUCTION WITH 2" FIBERGLASS INSULATION (MIN. K=0.27). INNER WALL SHALL BE SOLID, PERFORATED INNER WALLS ARE NOT ACCEPTABLE.
      III. ALL DUCTWORK IS TO BE CLEANED OF GREASE, OIL, AND DIRT THEN PRIMED PRIOR TO APPLICATION OF A TOP COAT. CLEANING AND PRIMING ARE TO BE PERFORMED BY PAINTING CONTRACTOR PER THE PAINT MANUFACTURER'S RECOMMENDATION. PAINT COLOR SELECTION IS TO BE APPROVED BY THE ARCHITECT.
      IV. CONNECTIONS BETWEEN ALL DUCT SECTIONS AND FITTINGS TO BE GASKET SEALED.

2.02 DAMPERS.
PROVIDE APPROVED MANUAL BALANCE DAMPERS WHERE SHOWN ON THE PLANS FOR THE PROPER REGULATION OF THE AIR HANDLING SYSTEM AND SO LOCATE AS TO BE ACCESSIBLE.

2.03 GRILLES, REGISTERS, AND DIFFUSERS
1. FURNISH AND INSTALL WHERE INDICATED RETURN AND SUPPLY GRILLES, COMPLETE WITH BAKED ENAMEL FINISH AND OPPOSED BLADE DAMPERS.
2. ALL DUCTWORK AND DIFFUSERS SHALL BE RATED FOR THE USE, PRESSURE AND TEMPERATURE SPECIFIED AND AS REQUIRED BY THE CEILING OR WALL SYSTEM RATING. IF THE CEILING ASSEMBLY IS RATED PROVIDE RADIATION DAMPERS AT THE PENETRATION WHEN THE AREA OF ALL PENETRATIONS, INCLUDING DUCT AND DIFFUSERS, IN THE MEMBRANE EXCEED AN AGGREGATE AREA OF 100 SQUARE INCHES IN ANY 100 SQUARE FEET OF CEILING AREA.
3. DUCT INSULATION: INSULATE ALL SUPPLY, RETURN AND OUTDOOR AIR DUCTWORK WITH A MINIMUM OF 2" THICK 3/4# DENSITY DUCTWRAP INSULATION. ALL INSULATION WILL HAVE FIRE/SMOKE RATING LESS THAN 25/50. ALL EXTERIOR DUCTWORK SHALL BE WEATHER-PROOFED WITH A COVERING OF "ALUMIGUARD" WRAP.

2.04 EXHAUST FANS
FANS SHALL BE AS INDICATED ON DRAWINGS.

2.05 CONTROLS
CONTROLS SHALL BE ELECTRIC/ELECTRONIC TYPE, PROVIDE ALL WIRING, ACTUATORS, AND CONTROL DEVICES. FURNISH ALL THERMOSTATS AND SENSORS WITH INSULATED SUB-BASE.

1. CONSTANT VOLUME SYSTEMS
   A. MOUNT THERMOSTATS AS INDICATED ON DRAWINGS.
   B. INSTALL TEMPERATURE AND HUMIDITY SENSORS IN MAIN RETURN TRUNK DUCT CLOSEST TO UNIT, IF SHOWN ON DRAWINGS.
2. VARIABLE AIR VOLUME (VAV) SYSTEMS
   A. MOUNT THERMOSTATS AS INDICATED ON DRAWINGS.
   B. THERMOSTAT SHALL COMMUNICATE WITH WEB-BASED CONTROLLER.
   C. CONTROL PANELS TO BE LOCATED AS REQUIRED. FOR CONTROLS SYSTEM TO OPERATE, IT SHALL BE ENERGIZED BY 120/1Ø, COORDINATED WITH ELECTRICAL CONTRACTOR AT NO COST TO PROJECT.

2.06 PROTECTIVE DEVICES

HVAC GENERAL NOTES

1. REFERENCE HVAC SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

2. ALL WARRANTIES SHALL BEGIN UPON FINAL ACCEPTANCE BY THE OWNER, NOT BENEFICIAL USE BY THE CONTRACTOR.

3. THE DRAWINGS ARE GENERALLY DIAGRAMMATIC AND INDICATE THE APPROXIMATE ROUTING OF PIPING AND DUCTWORK. THE CONTRACTOR SHALL COORDINATE WITH OTHER TRADES TO AVOID CONFLICTS AND DELAYS MINOR OFFSETS AND ADJUSTMENTS SHALL BE PROVIDED WHERE REQUIRED AT NO ADDITIONAL COST TO THE OWNER.

4. COORDINATE CEILING DIFFUSERS AND REGISTER LOCATIONS WITH THE ARCHITECTURAL REFLECTED CEILING. COORDINATE SIDE WALL GRILLES AND REGISTERS WITH STRUCTURAL AND ARCHITECTURAL ELEMENTS.

5. DUCT DIMENSIONS INDICATED ON THE DRAWINGS ARE NET AIR SIDE DIMENSIONS.

6. DUCTWORK SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH SMACNA STANDARDS. SEAL ALL DUCTS, JOINTS, AND SEAMS IN DUCTWORK TO INSURE AGAINST LEAKAGE. MITERED ELBOWS SHALL BE PROVIDED WITH SINGLE THICKNESS TURNING VANES. SUPPLY, RETURN, AND OUTSIDE AIR DUCTWORK SHALL BE GALVANIZED STEEL WITH INSULATION AS NOTED. EXHAUST DUCTWORK SHALL BE GALVANIZED STEEL.

7. INSULATE SUPPLY, RETURN, AND OUTSIDE AIR DUCTWORK WITH A MINIMUM OF 2" THICK 3/4 PCF BLANKET INSULATION WITH FOIL VAPOR BARRIER. SEAL ALL JOINTS AND SEAMS IN THE VAPOR BARRIER. FOR ACCOUSTICAL REASONS, IN ADDITION TO EXTERIOR INSULATION, ALL RETURN AIR DUCTS WITHIN 15' OF AIR HANDLER ARE TO BE INTERNALLY LINED WITH 1" LAYER OF 3/4 LB DENSITY LINER.

8. DUCT SEALING: PRESSURE SENSITIVE TAPE USED AS THE PRIMARY SEALANT IS TO BE CERTIFIED AND SHALL COMPLY WITH UL-181A OR UL-181B. PROVIDE LONGITUDINAL SEAMS ON RIGID DUCT AND TRANSVERSE SEAMS ON ALL DUCTS. MECHANICAL FASTENERS AND SEALANTS SHALL BE USED TO CONNECT DUCTS AND AIR DISTRIBUTION DEVICES.

9. RECTANGULAR SUPPLY AND RETURN BRANCH TAKE-OFFS SHALL BE 45° THROAT TAKE-OFFS WITH BALANCING DAMPERS IN THE BRANCH DOWNSTREAM OF THE TAKE-OFF. ROUND SUPPLY AND RETURN TAKE-OFFS SHALL BE BELL-MOUTH OR SPIN-IN FITTINGS WITH DAMPERS IN THE BRANCH DOWNSTREAM. PROVIDE BACKDRAFT DAMPERS ON ALL EXHAUST FANS AND/OR INLINE FANS.

10. ALL LOUVERS, ALL GRILLES, EXPOSED PIPING, EXPOSED EQUIPMENT, AND EXPOSED DUCTWORK SHALL BE PAINTED TO MATCH ADJACENT SURFACE COLOR AND TEXTURE OR AS DIRECTED BY THE ARCHITECT. VERIFY COLOR AND TEXTURE WITH THE ARCHITECT PRIOR TO PAINTING. PAINT ALL EXPOSED MECHANICAL EQUIPMENT WITH BENJAMIN MOORE EPOXY ENAMEL 182 OR AS DIRECTED BY THE ARCHITECT.

11. THERMOSTATS AND SENSORS SHALL BE LOCATED 48" A.F.F. UNLESS OTHERWISE NOTED. ALL CONDUIT, ROUGH IN ELECTRICAL BOXES AND WIRING, EXCLUDING LOW VOLTAGE CONTROL WIRING, SHALL BE INCLUDED UNDER THE ELECTRICAL SECTION OF THE CONTRACT DOCUMENTS, COORDINATE REQUIREMENTS AND ROUGH IN LOCATIONS FOR ALL CONTROL DEVICES, ELECTRICAL CONNECTIONS TO EQUIPMENT, AND SWITCH LOCATION. CONTROL WIRING SHALL BE PROVIDED AND INSTALLED UNDER THE MECHANICAL SECTION OF THE CONTRACT DOCUMENTS.

12. PROVIDE A 12/12 (MINIMUM) ACCESS DOOR FOR ACCESS TO ALL DAMPERS, CONTROL DAMPERS, EXTRACTORS, PLENUMS, OR ANY OTHER DEVICE MOUNTED IN THE DUCT SYSTEM.

13. INSTALL ALL EQUIPMENT ACCORDING TO THE MANUFACTURERS' INSTRUCTIONS.

14. REFRIGERANT PIPING SHALL BE PRE-CHARGED TUBING PACKAGES OR TYPE ACR COPPER TUBING IN ACCORDANCE WITH MANUFACTURES RECOMMENDATIONS.

15. PROVIDE A MINIMUM OF 10' CLEARANCE BETWEEN FRESH AIR INTAKES AND EXHAUST OUTLETS, RELIEF OUTLETS, PLUMBING VENTS, ETC.

16. PROVIDE CONDENSATE DRAINS WITH A VENTED P-TRAP FOR ALL COOLING COILS. P-TRAPS TO BE PVC ON INTERIOR INSTALLED EQUIPMENT AND TYPE M COPPER ON EXTERIOR INSTALLED EQUIPMENT.

17. THE OUTSIDE AIR QUANTITIES ARE CALCULATED ACCORDING TO TABLE 6-1 "MINIMUM VENTILATION RATES IN BREATHING ZONE" OF ASHRAE STANDARD 62.1. CHAPTER 6 "DESIGN FOR VARYING OPERATING CONDITIONS" HAS BEEN UTILIZED AS ALLOWED TO REDUCE AIRFLOW RATES FOR INTERMITTENT USE.

18. AFTER THE CONSTRUCTION OF THE BUILDING HAS REACHED A POINT WHERE THE PERMANENT HEATING AND COOLING SYSTEMS ARE OPERABLE, THE CONTRACTOR MAY, AT HIS OPTION, USE THE PERMANENT HEATING AND COOLING EQUIPMENT FOR TEMPORARY ENVIRONMENTAL CONTROL. THE CONTRACTOR MUST SUBMIT A REQUEST FOR USE TO THE ARCHITECT OUTLINING THE INTENDED USE. THE HEATING SYSTEM SHALL NOT BE USED FOR TEMPORARY HEAT UNTIL THE BUILDING IS BROOM CLEAN AND SHALL NOT BE USED WITHOUT ALL FILTERS IN PLACE. FILTERS MUST BE CHECKED WEEKLY AND REPLACED AS REQUIRED TO PROTECT THE EQUIPMENT AND DUCT SYSTEMS. UPON THE COMPLETION OF THE WORK, AND PRIOR TO SUBSTANTIAL COMPLETION. ALL DUCTWORK AND EQUIPMENT SHALL BE INTERNALLY CLEANED AND ALL FILTERS SHALL BE REPLACED WITH NEW FILTERS.

19. ALL OF THE COSTS ASSOCIATED WITH PROVIDING TEMPORARY HEATING AND COOLING SHALL BE BORNE SOLELY BY THE CONTRACTOR, INCLUDING BUT NOT LIMITED POWER CONSUMPTION, ADDITIONAL ACCESS DOORS FOR CLEANING, FILTERS, DUCT AND EQUIPMENT CLEANING, ENGINEER'S TIME, TEST AND BALANCE AGENT TIME TO SUPPORT THE ENGINEER'S INSPECTION, ETC.

20. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THE ELECTRICAL CHARACTERISTICS AND REQUIREMENTS OF ALL EQUIPMENT WITH THE ELECTRICAL SERVICE AND THE EC. THE SCOPE OF THIS COORDINATION INCLUDES BUT IS NOT LIMITED TO, REQUIRED VOLTAGE, PHASE, AMP CAPACITY, WIRE SIZE, CONDUIT SIZE AND LOCATION, DISCONNECT SIZE AND LOCATION, FUSE SIZE, ETC. IN THE EVENT OF A CONFLICT, THE MC IS TO NOTIFY THE ENGINEER PRIOR TO MECHANICAL AND ELECTRICAL EQUIPMENT BEING ORDERED.

21. ALL CUTTING, PATCHING, STRUCTURAL STEEL, WEATHER PROOFING, PAINTING, AND WALL OPENINGS REQUIRED FOR THE INSTALLATION OF MECHANICAL WORK SHALL BE PROVIDED BY THE CONTRACTOR AT NO COST TO THE OWNER. COORDINATE WITH OTHER TRADES.

HVAC SYMBOLS AND ABBREVIATIONS

SYMBOL	DESCRIPTION
12"	ROUND DUCTWORK. DIAMETER INDICATED IN INCHES
20x1	RECTANGULAR SUPPLY AND RETURN DUCTWORK. SIZE INDICATED IN INCHES, FIRST NUMBER IS SIDE SHOWN
	FLEXIBLE
	SUPPLY OR OUTSIDE AIR
	SUPPLY OR OUTSIDE AIR DUCT
	RETURN AIR DUCT
	RETURN AIR DUCT
20X1	EXISTING DUCTWORK TO REMAIN
X 20X1 X	EXISTING DUCTWORK TO BE REMOVED
	90 DEGREE DUCTWORK
	RADIUS DUCTWORK ELBOW - ROUND OR RECTANGULAR
	FLARED SPIN-IN WITH DAMPER AND FLEX DUCT (DIFFUSER CONNECTION)
	ROUND AND RECTANGULAR DUCT BRANCH TAKE-OFF FROM RECTANGULAR MAIN WITH
	DUCTWORK SIZE
	DUCTWORK SQUARE TO ROUND
	POINT OF CONNECTION TO EXISTING
(T) EQUIP-	THERMOST
(S) EQUIP-	SENSO
($) EQUIP-	SWITC
(M)	MOTOR OPERATED
(S)	SMOKE DETECTOR - FURNISHED AND WIRED BY ELECTRICAL CONTRACTOR AND INSTALLED BY MECHANICAL CONTRACTOR
◆	FIRE
●	SECURITY
(C)	PROVIDE AND INSTALL A U.L. LISTED FIRE RATED CEILING DAMPER IN ACCORDANCE WITH FIRE RATING. DAMPER SHALL BE RUSKIN CFD TYPE OR APPROVED SUBSTITUTE
CD-10 TYPE AIRFLOW (CFM)	DIFFUSER/GRILLE
	VOLUME CONTROL
CW	CHILLED WATER SUPPLY
CW	CHILLED WATER RETURN
HW	HOT WATER SUPPLY
HW	HOT WATER RETURN
E(NAME)	EXISTING PIPING TO
X E(NAME) X	EXISTING TO BE
RH	REFRIG. HOT GAS
R	REFRIG. LIQUID
R	REFRIG SUCTION
	STRAINE
	GAS
	BALANCING
	PLUG
	GATE
	BUTTERFLY
	BALL
	CHECK
	TRIPLE DUTY
	PRESSURE RELIEF
	PIPE TURNING
	PIPE TURNING
T	THERMOMET
	GAUG
	PIPE SLEEVE OR
X	PIPE
G	GAUGE

ABBREVIATION	MEANING
AC	AIR CONDITIONER (ING)
ACCU	AIR COOLED CONDENSING UNIT
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
BALV	BALANCING VALVE
BF	BUTTERFLY VALVE
BHP	BRAKE HORSEPOWER
BOD	BOTTOM OF DUCT
BTU	BRITISH THERMAL UNIT
BTUH	BTU/HOUR
BV	BALL VALVE
CAD	COMPUTER AIDED DRAFTING
CCC	CLOSED CIRCUIT COOLER
CD	CEILING DIFFUSER
CFM	CUBIC FEET PER MINUTE
CH	CHILLER
COP	COEFFICIENT OF PERFORMANCE
CP	CONTROL PANEL
CR	CEILING RETURN OR CONDENSATE RETURN
CS	CIRCUIT SETTER
CT	COOLING TOWER
CU	CONDENSING UNIT
CWR	CHILLED WATER RETURN
CWS	CHILLED WATER SUPPLY
DB	DRY BULB (TEMPERATURE)
DG	DOOR GRILLE
DMS	DUCTLESS MINI-SPLIT SYSTEM
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EC	ELECTRICAL CONTRACTOR
EER	ENERGY EFFICIENCY RATING
EF	EXHAUST FAN
ELEV	ELEVATION
ERV	ENERGY RECOVERY VENTILATOR
EVAP	EVAPORATION OR EVAPORATIVE
EWT	ENTERING WATER TEMPERATURE
FC	FAN COIL
FD	FLOOR DRAIN
FP	FIRE PROTECTION
FPC	FIRE PROTECTION CONTRACTOR
FPM	FEET PER MINUTE
FS	FLOOR SINK
FZ	FREEZE
GC	GENERAL CONTRACTOR
GV	GATE VALVE
HD	HUB DRAIN
HEPA	HIGH EFFICIENCY PARTICULATE ARRESTANCE
HP	HEAT PUMP OR HORSEPOWER
HVAC	HEATING, VENTILATING, AND AC
HWR	HEATING WATER RETURN
HWS	HEATING WATER SUPPLY
MBH	1,000 BTU/HOUR
KW	KILOWATT
LAT	LEAVING AIR TEMPERATURE
LEED	LEADERSHIP IN ENERGY EFFICIENT DESIGN
LWT	LEAVING WATER TEMPERATURE
M	MOTOR
MAT	MIXED AIR TEMPERATURE
MAU	MAKE UP AIR UNIT
MC	MECHANICAL CONTRACTOR
MCA	MINIMUM CIRCUIT AMPERES
MOCP	MAXIMUM OVER CURRENT PROTECTION (AMPERES)
MOD	MOTOR OPERATED DAMPER
MVD	MANUAL VOLUME DAMPER
OA	OUTSIDE AIR
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
PA	PRESSURIZATION AIR
PC	PLUMBING CONTRACTOR OR PERSONAL COMPUTER
PL	PRIMARY LOOP
PTAC	PACKAGED TERMINAL AC
PT	PRESSURE TRANSMITTER
PU	PACKAGED UNIT
PWR	PROCESS WATER RETURN
PWS	PROCESS WATER SUPPLY
RA	RETURN OR RELIEF AIR
RF	RETURN OR RELIEF FAN
RH	REHEAT OR RELATIVE HUMIDITY
RPM	REVOLUTIONS PER MINUTE
RTU	ROOFTOP UNIT
SA	SUPPLY AIR
SEER	SEASONAL ENERGY EFFICIENCY RATTING
SF	SUPPLY FAN
SL	SECONDARY LOOP
SS	STAINLESS STEEL
ST	STEAM
SWS	SIDE WALL SUPPLY (GRILLE)
SWR	SIDE WALL RETURN (GRILLE)
TDV	TRIPLE DUTY VALVE
TG	TRANSFER GRILLE
TOD	TOP OF DUCT
TT	TEMPERATURE TRANSMITTER
UV	ULTRAVIOLET LIGHT
VAV	VARIABLE AIR VOLUME
VEL	VELOCITY
VFD	VARIABLE FREQUENCY DRIVE
VVT	VARIABLE (VOLUME) VARIABLE (TEMPERATURE)

MBI
MBI COMPANIES INC.
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com

CONSULTANT

SEAL

JOHN C. BUCHANAN REGISTERED ENGINEER AGRICULTURE COMMERCE No. 104351 STATE OF TENNESSEE
10-6-2023

PROJECT INFORMATION
PROJECT:
CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING
PROJECT ADDRESS:
411 DOUGLAS LN
CLINTON, TN 37716
PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE
- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	10/06/2023
DESIGNED BY:	DRJ
DRAWN BY:	DRJ
REVIEWED BY:	JCB

SHEET TITLE:
HVAC LEGENDS, SPECIFICATIONS, AND NOTES

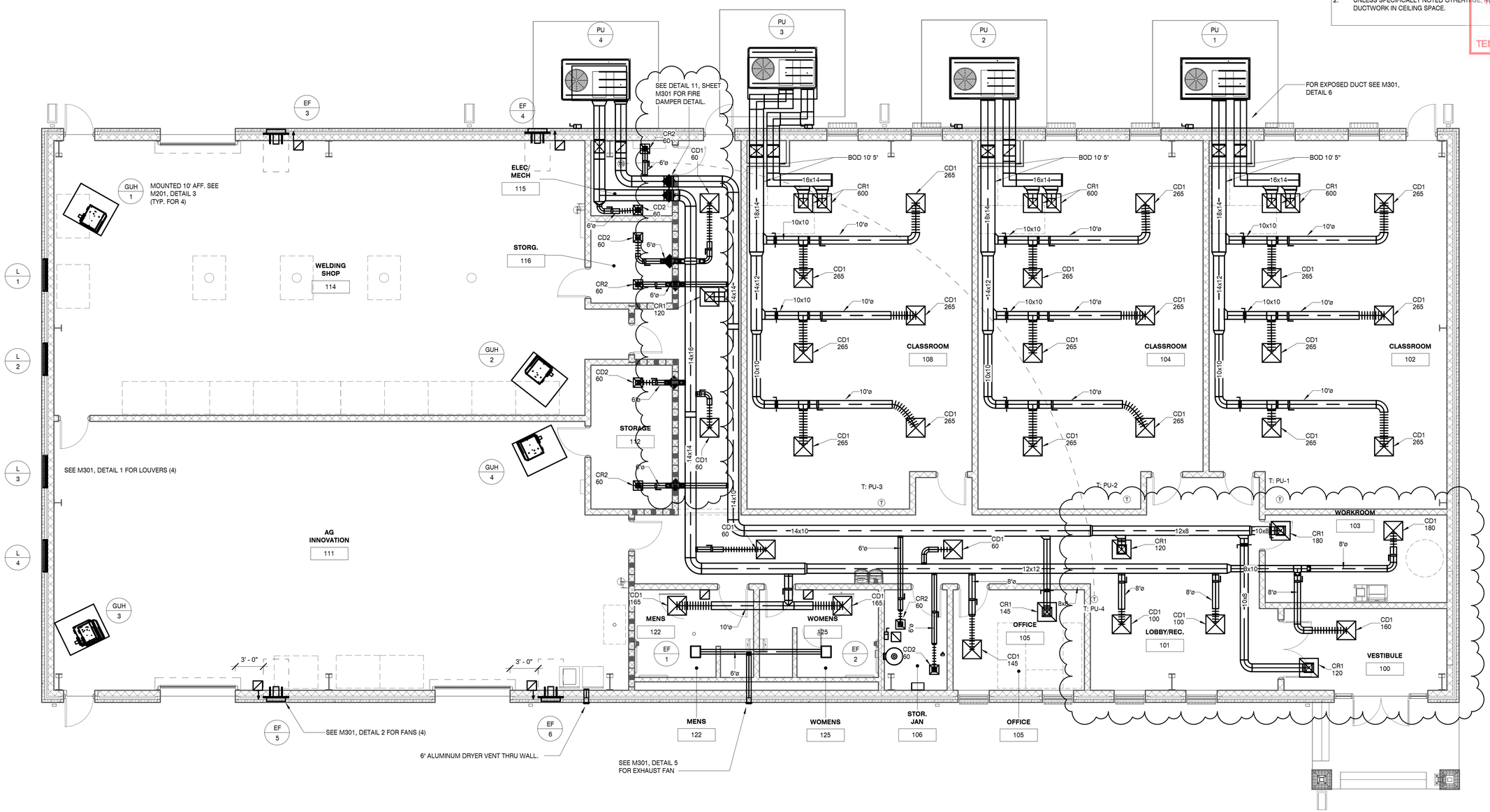
SHEET NO.:
M001

FIELD SET PROJECT # 2023-10-31-01 TFM # 00017-D

ARCH D

GENERAL NOTES

1. COORDINATE EXACT CEILING GRILLE LOCATION WITH REFLECTED CEILING PLAN AND LIGHTING PLAN.
2. UNLESS SPECIFICALLY NOTED OTHERWISE, ROUTE ALL DUCTWORK IN CEILING SPACE.



FIRST FLOOR PLAN - HVAC

1

SCALE: 3/16" = 1'-0"

MBI COMPANIES INC.
209 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com

CONSULTANT

SEAL

JOHN C. BUCHANAN REGISTERED ENGINEER No. 104351 STATE OF TENNESSEE

PROJECT INFORMATION

PROJECT:

CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS:

411 DOUGLAS LN
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION
1	1/29/2024	REV #1

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	10/06/2023
DESIGNED BY:	DRJ
DRAWN BY:	DRJ
REVIEWED BY:	JCB

SHEET TITLE:

FLOOR PLAN - HVAC

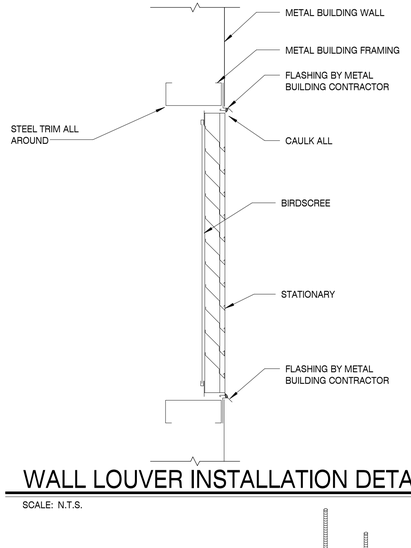
SHEET NO.:

M101

PROJECT # 2023-10-31-01 TFM # 00017-D

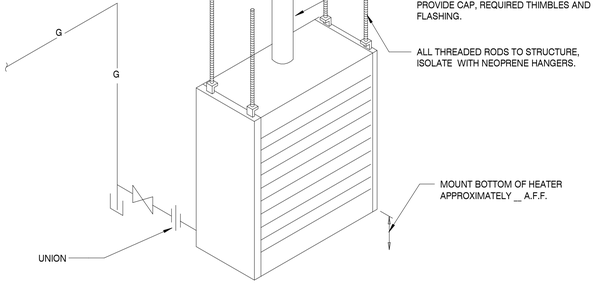
FIELD SET

Autodesk Docs://220042-02_Clinton High School Welding Building/07_220042-02_Mechanical_R23.rvt
1/26/2024 3:27:20 PM



WALL LOUVER INSTALLATION DETAIL — 1

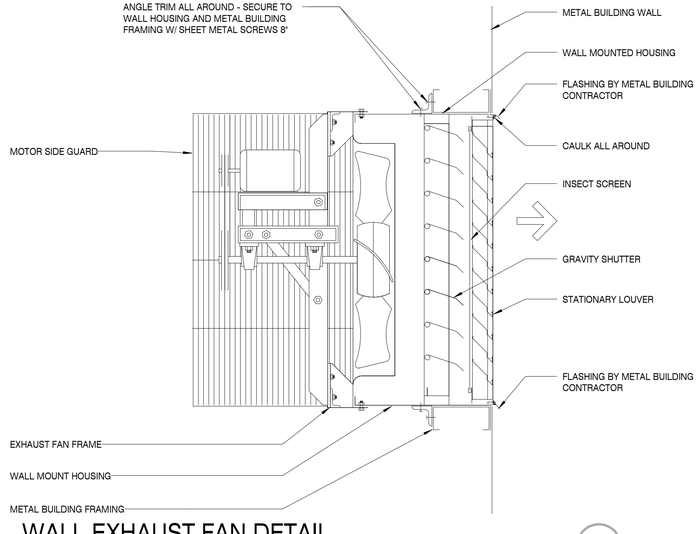
SCALE: N.T.S.



1. SUSPEND THE UNIT HEATER DEAD LEVEL BOTH VERTICALLY AND HORIZONTALLY.
2. SUSPEND THE UNIT HEATER SO THAT IT MAY BE EASILY DISCONNECTED AND REMOVED FOR SERVICE.
3. LUBRICATE AS RECOMMENDED BY THE MANUFACTURER.
4. CHECK OPERATION OF THERMOSTAT.
5. CHECK PROPELLER BLADES FOR BALANCING BY RUNNING FAN AND CHECKING VIBRATION.
6. ADJUST PIPE HANGERS SO THAT PIPING DOES NOT REST ON UNIT HEATER.
7. ADJUST SUPPORT RODS SO THAT UNIT DOES NOT REST ON PIPING.

GAS FIRED UNIT HEATER DETAIL — 2

SCALE: N.T.S.



WALL EXHAUST FAN DETAIL — 3

SCALE: N.T.S.

GAS FIRED PACKAGED UNIT WITH DX COOLING SCHEDULE

DRAWING SYMBOL	SUPPLY AIR			OUTSIDE AIR CFM	COOLING				HEATING		SMOKE DETECTORS		EFFICIENCIES			SINGLE POINT ELECTRICAL			WEIGHT (LBS.)	MFR MODEL NUMBER
					TEMPS (°F) @ 95°F AMBIENT		CAPACITIES (MBH)		CAPACITIES (MBH)											
	TOTAL CFM	EXT. SP (IN. WG)	FAN HP		UNIT ENT AIR	COIL LVG AIR	TOTAL	SENS	INPUT	OUTPUT	SUPPLY	RETURN	EER	SEER	AFUE	MCA	MOCP	VOLTAGE		
PU 1	1600	0.75	1.0	317	80.00 DB / 67.00 WB	58.46 DB / 56.78 WB	48.35	35.07	60.00	49.00	YES	YES	13	17.5	82	30.0	40.0	208/3/60	763	TRANE YHC047E3RLA
PU 2	1600	0.75	1.0	317	80.00 DB / 67.00 WB	58.46 DB / 56.78 WB	48.35	35.07	60.00	49.00	YES	YES	13	17.5	82	30.0	40.0	208/3/60	763	TRANE YHC047E3RLA
PU 3	1600	0.75	1.0	317	80.00 DB / 67.00 WB	58.46 DB / 56.78 WB	48.35	35.07	60.00	49.00	YES	YES	13	17.5	82	30.0	40.0	208/3/60	763	TRANE YHC047E3RLA
PU 4	1485	0.75	1.0	300	80.00 DB / 67.00 WB	58.46 DB / 56.78 WB	48.35	35.07	60.00	49.00	YES	YES	13	17.5	82	30.0	30.0	208/3/60	763	TRANE YHC047E3RLA

ACCESSORIES AND FEATURES:
- 5 YEAR COMPRESSOR WARRANTY.
- FILTER RACK AND THROW-AWAY 1" THICK FILTER FURNISHED WITH UNIT.
- ROOF CURB COMPATIBLE WITH ROOF SYSTEM INSTALLED.
- UNITS SHALL BE TRANE OR APPROVED SUBSTITUTE.
- COOLING CAPACITIES ARE SCHEDULED AT 80/67 DEGREES INDOOR AND 95 DEGREES OUTDOOR TEMPERATURE.
- EQUIPMENT TO BE ARI CERTIFIED AND U.L. AND A.G.A. APPROVED.
- AUTOMATIC CHANGEOVER THERMOSTAT WITH LOCKING PLASTIC COVER.
- PROVIDE DUCT SMOKE DETECTORS WHERE SCHEDULED ABOVE. INSTALL PER NFPA & ALL LOCAL CODES.
- COOLING CAPACITIES DO NOT HAVE FAN MOTOR HEAT DEDUCTED.
- ECONOMIZER W/ POWERED EXHAUST
- HOT GAS REHEAT

EXHAUST FAN SCHEDULE

DRAWING SYMBOL	USE	AMCA CFM	S.P. IN. WG	RPM	TIP SPEED	WATTS/ HP	TYPE	VOLTAGE	SONES	WEIGHT (LBS.)	MANUFACTURER MODEL NO.
EF 1	122 - MENS	180	0.266	1400	1,590	48 W	CEILING EXHUAST FAN	115/60/1	1.5	24	GREENHECK SP-A190
EF 2	125 - WOMENS	180	0.266	1400	1,590	48 W	CEILING EXHAUST FAN	115/60/1	1.5	24	GREENHECK SP-A190
EF 3	114 - WELDING SHOP	3,000	0.25	947	5,982	3/4 HP	WALL AXIAL EXHAUST FAN	115/60/1	9.9	80	GREENHECK AER-24-02-315-VG
EF 4	114 - WELDING SHOP	3,000	0.25	947	5,982	3/4 HP	WALL AXIAL EXHAUST FAN	115/60/1	9.9	80	GREENHECK AER-24-02-315-VG
EF 5	111 - AG SHOP	3,000	0.25	947	5,982	3/4 HP	WALL AXIAL EXHAUST FAN	115/60/1	9.9	80	GREENHECK AER-24-02-315-VG
EF 6	111 - AG SHOP	3,000	0.25	947	5,982	3/4 HP	WALL AXIAL EXHAUST FAN	115/60/1	9.9	80	GREENHECK AER-24-02-315-VG

ACCESSORIES AND FEATURES:
- ROOF FANS: ROUND LOW SILHOUETTE ALUMINUM HOUSING; CENTRIFUGAL ALUMINUM WHEEL; BIRDSCREEN & BACKDRAFT DAMPER; SAFETY DISCONNECT @ FAN; PREFAB CURB TO MATCH ROOF CONSTRUCTION AND SLOPE; WALL SWITCH OR STARTER.
- CEILING FANS; ALUMINUM INLET GRILLE; LINED HOUSING; CENTRIFUGAL FAN; BACKDRAFT DAMPER; FLAT ROOF CAP OR ROOF JACK AS APPLICABLE; SOLID STATE SPEED CONTROLLER MTD. TO UNIT FOR BALANCING AND WALL SWITCH FOR ON/OFF CONTROL.
- WALL FANS: WALL SHUTTER (HEAVY DUTY); WALL COLLAR; MOTOR SIDE GUARD; DISCONNECT @ FAN

LOUVER SCHEDULE

DRAWING SYMBOL	LOUVER SIZE (WIDTH x HEIGHT)	CFM	MINIMUM SQFT FREE AREA	MAXIMUM PRESSURE DROP (IN. WG)	MANUFACT-URER & MODEL NO.
L 1	36 X 42	3000	3.73	0.12	RUSKIN ELF211D
L 2	36 X 42	3000	3.73	0.12	RUSKIN ELF211D
L 3	36 X 42	3000	3.73	0.12	RUSKIN ELF211D
L 4	36 X 42	3000	3.73	0.12	RUSKIN ELF211D

ACCESSORIES AND FEATURES: (BY EQUIPMENT INSTALLER)
- LOUVERS SHALL BE BEAR AMCA SEAL AND SHALL BE TESTED IN ACCORDANCE WITH AMCA 5111.
- WATER PENETRATION THROUGH LOUVER SHALL NOT OCCUR BELOW 1000 FPM (FREE AREA)

GAS UNIT HEATER SCHEDULE

DRAWING SYMBOL	TYPE	CFM	HEAT (MBH) IN	HEAT (MBH) OUT	VOLTAGE FAN HP	WEIGHT (LBS)	MANUFACTURER MODEL NO.
GUH 1	NATURAL GAS SEPARATED COMB. LOW STATIC	456	30	24.6	115/1Ø 0.06	58	REZNOR UDZ - A
GUH 2	NATURAL GAS SEPARATED COMB. LOW STATIC	456	30	24.6	115/1Ø 0.06	58	REZNOR UDZ - A
GUH 3	NATURAL GAS SEPARATED COMB. LOW STATIC	456	30	24.6	115/1Ø 0.06	58	REZNOR UDZ - A
GUH 4	NATURAL GAS SEPARATED COMB. LOW STATIC	456	30	24.6	115/1Ø 0.06	58	REZNOR UDZ - A

ACCESSORIES AND FEATURES:
- PROVIDE MOUNTING HARDWARE.
- ELECTRONIC IGNITION, PROVIDE 120V SUPPLY WITH 24 VOLT CONTROL TRANSFORMER.
- ALTERNATIVE MANUFACTURERS: MODINE
- PROVIDE GAS TRAIN PIPING INCLUDING MANUAL SHUT OFF. GAS CONTROL VALVE PACKAGE, UNION AND DIRT LEG.
- PROVIDE CONCENTRIC VENT KIT AND VENT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- PROVIDE TYPE B GAS VENT WITH ROOF THIMBLE AND CAP.
- PROVIDE 2-WAY DISCHARGE LOUVERS.

MBI COMPANIES INC.
209 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com
CONSULTANT

SEAL

JOHN C. BUCHANAN REGISTERED ENGINEER STATE OF TENNESSEE 104351

PROJECT INFORMATION

PROJECT:

CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS:

411 DOUGLAS LN
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	10/06/2023
DESIGNED BY:	DRJ
DRAWN BY:	DRJ
REVIEWED BY:	JCB
SHEET TITLE:	

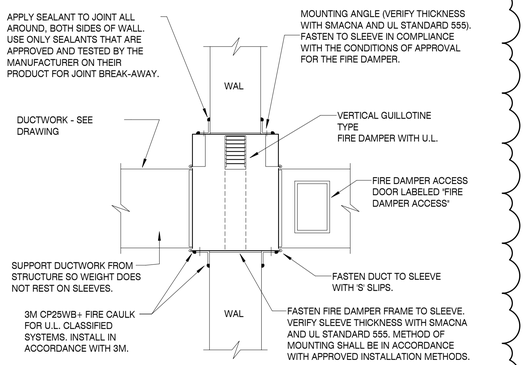
HVAC SCHEDULES

SHEET NO.: M201

TFM # 00017-D

PROJECT # 2023-10-31-01

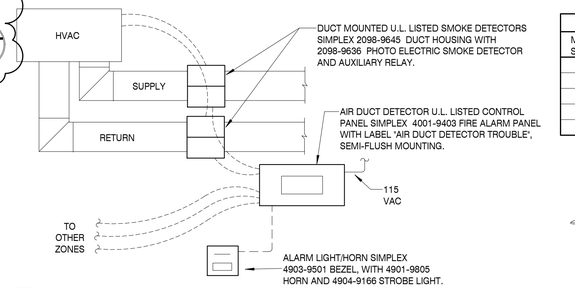
FIELD SET



* COMPLETED INSTALLATION SHALL COMPLY WITH THE THIRD EDITION OF THE SMACNA FIRE, SMOKE AND RADIATION DAMPER INSTALLATION GUIDE FOR HVAC SYSTEMS AS WELL AS IN ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS.

FIRE DAMPER HORIZONTAL DUCT DETAIL 11

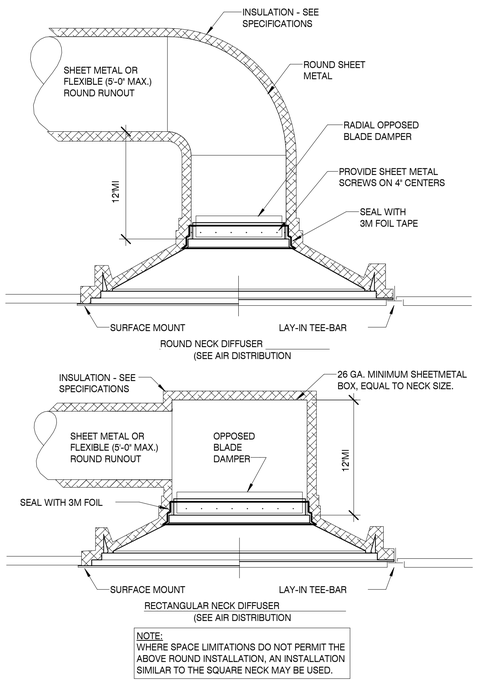
SCALE: 1/8" = 1'-0"



NOTES:
1. LOCATE FIRE ALARM CONTROL PANEL AND HORN / LIGHT AS INDICATED ON THE DRAWINGS.
2. INTERLOCK HVAC UNIT TO SHUT DOWN UPON AN ALARM CONDITION.
3. ALL HVAC UNITS SHALL SHUT DOWN UPON AN ALARM FROM ANY DEVICE.
4. ALL PANELS AND CONTROL WIRING TO EQUIPMENT SHALL BE BY THE MECHANICAL INSTALLER.
5. SMOKE DETECTORS AND WIRING TO BE SUPERVISED AND GIVE A TROUBLE ALARM AND LIGHT IF A PROBLEM IS DETECTED.

FIRE ALARM CONTROL DETAIL 10

SCALE: 1/8" = 1'-0"

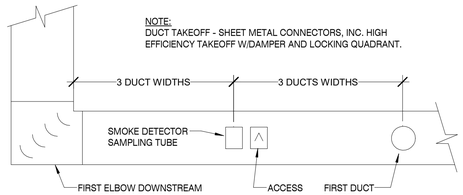


NOTE:
WHERE SPACE LIMITATIONS DO NOT PERMIT THE ABOVE ROUND INSTALLATION, AN INSTALLATION SIMILAR TO THE SQUARE NECK MAY BE USED.

TYPICAL CEILING DIFFUSER DETAIL 9

SCALE: N.T.S.

NOTE:
DUCT TAKEOFF - SHEET METAL CONNECTORS, INC. HIGH EFFICIENCY TAKEOFF W/DAMPER AND LOCKING QUADRANT.



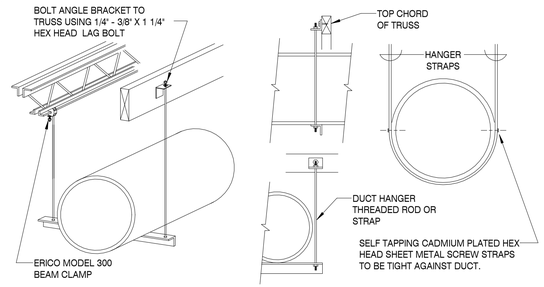
DUCT DETECTOR DETAIL 8

SCALE: N.T.S.

HANGER SIZES FOR ROUND DUCT			
MAX SIDE	HANGE	HORIZONTAL SUPPORT ANGLE	MAXIMUM SPACING
30	1"x 18-GAGE	1-1/2"x1/2"x1/	10'-
36	1/4" ROUND	1-1/2"x1/2"x1/	8'-0
48	1/4" ROUND	2"x2"x1/	8'-0
60	5/16" ROUND	2"x2"x1/	8'-0
84	5/16" ROUND	2"x2"x1/	8'-0

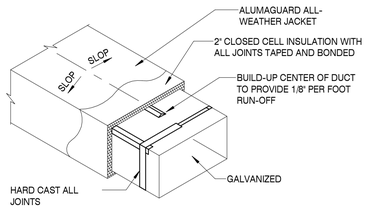
NOTE:
ALL SUPPLY AIR DUCTS SHALL BE WRAPPED EXTERNALLY AS PER SPECIFICATIONS.

NO POP RIVETS



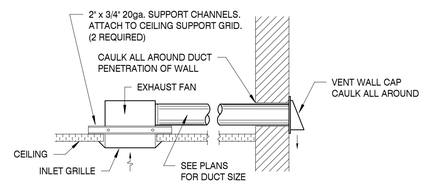
ROUND DUCT HANGER DETAIL 7

SCALE: 1/8" = 1'-0"



DUCT EXPOSED TO WEATHER DETAIL 6

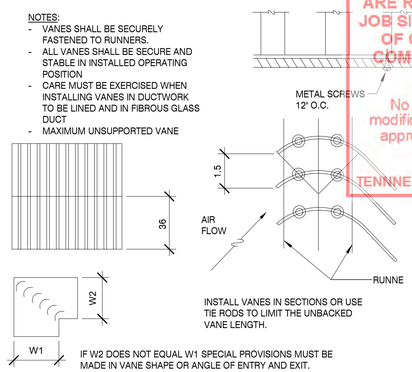
SCALE: N.T.S.



CEILING EXHAUST FAN DETAIL 5

SCALE: N.T.S.

NOTES:
- VANES SHALL BE SECURELY FASTENED TO RUNNERS.
- ALL VANES SHALL BE SECURE AND STABLE IN INSTALLED OPERATING POSITION
- CARE MUST BE EXERCISED WHEN INSTALLING VANES IN DUCTWORK TO BE LINED AND IN FIBROUS GLASS DUCT
- MAXIMUM UNSUPPORTED VANE



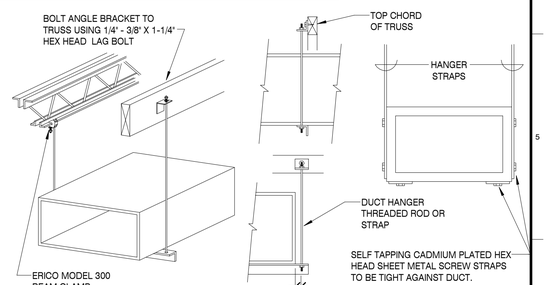
TURNING VANES DETAIL 1

SCALE: N.T.S.

HANGER SIZES FOR ROUND DUCT			
MAX SIDE	HANGE	HORIZONTAL SUPPORT ANGLE	MAXIMUM SPACING
30	1"x 18-GAGE	NONE REQUIRED	10'-
36	1/4" ROUND	1-1/2"x1/2"x1/8"	8'-0
48	1/4" ROUND	1-1/2"x1/2"x1/8"	8'-0
60	5/16" ROUND	2"x2"x1/8"	8'-0

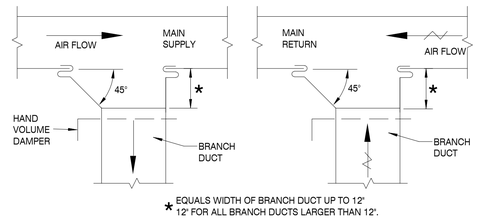
NOTE:
ALL SUPPLY AIR DUCTS SHALL BE WRAPPED EXTERNALLY AS PER SPECIFICATIONS.

NO POP RIVETS



RECTANGULAR DUCT HANGER DETAIL 2

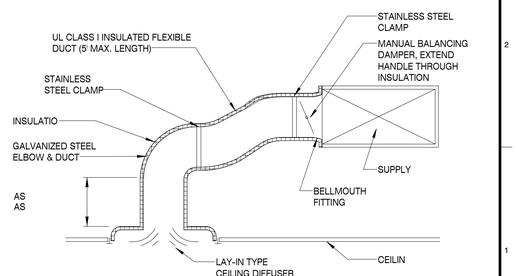
SCALE: N.T.S.



* EQUALS WIDTH OF BRANCH DUCT UP TO 12" 12" FOR ALL BRANCH DUCTS LARGER THAN 12".

BRANCH DUCT TAKE-OFF DETAIL 3

SCALE: N.T.S.



SUPPLY BRANCH TAKE-OFF DETAIL 4

SCALE: N.T.S.

MBI COMPANIES INC.
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com

CONSULTANT

SEAL

JOHN C. BUCHANAN REGISTERED ENGINEER No. 104361 STATE OF TENNESSEE AGRICULTURE COMMERCE

PROJECT INFORMATION

PROJECT:

CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS:

411 DOUGLAS LN
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION
1	1/29/2024	REV #1

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	10/06/2023
DESIGNED BY:	DRJ
DRAWN BY:	DRJ
REVIEWED BY:	JCB
SHEET TITLE:	

HVAC DETAILS

SHEET NO.: M301

PROJECT # 2023-10-31-01 TFM # 00017-D FIELD SET

Autodesk Docs://220042-02_Clinton High School Welding Building/07_220042-02_Mechanical_R23.rvt
1/29/2024 3:27:20 PM

ARCH D

PLUMBING

- COLD WATER
- HOT WATER
- HOT WATER RETURN
- 110 — HOT WATER
- 140 — HOT WATER
- F — FILTERED
- SANITARY DRAIN
- VENT
- G — GAS
- L — LIQUID
- A — AI
- C — CONDENSATE
- O — OXYGE
- N — NITROUS
- V — VACUU
- G — GREASE WASTE
- A — ACID
- A — ACID
- S — STORM
- R — ROOF
- RW — RAIN WATER
- F — FLOOR
- F — FLOOR
- H — HUB
- VT — VENT THRU
- C — CLEAN OUT IN
- C — CLEAN OUT IN EXPOSED ABOVE CEILING
- C — CLEAN OUT IN
- WATER HAMMER
- H — HOSE
- SUPPLY STOP ZURN
- PIPE TURNING
- PIPE TURNING
- BALL
- BALANCING
- PRESSURE REDUCING
- REDUCED PRESSURE BACKFLOW PREVENTER
- STRAINE
- T — THERMOMET
- G — GAUGE
- GATE
- CHECK
- UNIO
- VACUUM
- CONNECT TO
- GAS
- AIR
- LP
- CIRCULATING

PLUMBING

GENERAL

A. SCOPE: FURNISH ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY FOR THE INSTALLATION OF ALL PLUMBING WORK REQUIRED ON THE DRAWINGS AND AS SPECIFIED HEREIN.

B. WORK REQUIRED: IN GENERAL, THE WORK CONSISTS OF, BUT IS NOT LIMITED TO THE FOLLOWING:
1. DOMESTIC WATER SYSTEM CONNECTING TO EXISTING UTILITY
2. SANITARY SEWER SYSTEM CONNECTING TO EXISTING UTILITY
3. HOT WATER PIPING SYSTEM
4. PLUMBING FIXTURES
5. CONNECTION TO KITCHEN EQUIPMENT

C. PERMITS, ORDINANCES, AND INSPECTIONS:
1. OBTAIN AND PAY FOR ALL PERMITS AND INSPECTION FEES REQUIRED. DELIVER TO ARCHITECT, CERTIFICATES.
2. ALL WORK SHALL BE DONE IN ACCORDANCE WITH ALL APPLICABLE CITY, COUNTY, STATE, OR NATIONAL ORDINANCES AND CODES. EFFORT HAS BEEN MADE TO MEET OR EXCEED REQUIREMENTS. THE CONTRACTOR SHALL MAKE ANY MINOR ADJUSTMENTS TO MEET THESE REQUIREMENTS AT NO ADDITIONAL COST TO OWNER.

D. INSTRUCTIONS AND INSTRUCTION BOOKLETS: THE CONTRACTOR SHALL INSTRUCT THE OWNER REPRESENTATIVE IN THE PROPER OPERATION OF ALL EQUIPMENT AND SYSTEMS. FURNISH LITERATURE PROVIDED BY THE MANUFACTURER. PRINTED INSTRUCTIONS AND MAINTENANCE DATA SHALL BE BOUND WITH COVER IN DUPLICATE AND DELIVERED TO THE ARCHITECT.

E. SUBMITTAL DATA: SUBMIT FOR APPROVAL, FIVE (5) COPIES, OF THE EQUIPMENT BROCHURES, TECHNICAL DATA AND/OR SHOP DRAWINGS.

PRODUCTS

A. ALL MATERIALS SHALL BE NEW, FIRST CLASS, AND COMPLY WITH LATEST ASTM SPECIFICATIONS AND STANDARDS RELATING TO SUCH MATERIALS.

B. WATER PIPING:
1. FURNISH AND INSTALL DIELECTRIC OR ISOLATION FITTINGS AT ALL POINTS WHERE COPPER PIPE CONNECTS TO WROUGHT IRON OR STEEL PIPE.
2. EXPOSED PIPE IN TOILET ROOMS: CHROME PLATED BRASS, AMERICAN BRASS COMPANY, OR EQUIVALENT. FURNISH AND INSTALL CHROME WALL PLATES.
3. PIPING UNDER FLOOR SLAB SHALL BE TYPE K SOFT TEMPER COPPER TUBING ASTM B-88 NO JOINTS SHALL BE PERMITTED UNDER FLOOR SLAB.
4. PIPING ABOVE FLOOR SLAB SHALL BE TYPE L HARD DRAWN COPPER TUBING ASTM B-88 USE WROUGHT COPPER SWEAT FITTINGS.

C. SANITARY WASTE, AND VENT PIPING: PIPING SHALL BE CAST IRON NO HUB DWV PIPE AND FITTINGS ABOVE GRADE MEETING ASTM A 888 or CISPI 301 STANDARDS. BELOW GRADE PIPING SHALL BE SOLID WALL SCHEDULE 40 PVC MEETING ASTM D 2665 STANDARDS.

D. PIPE HANGERS: ADJUSTABLE WROUGHT CLEVIS TYPE HANGER AND RODS; GRINNELL COMPANY OR EQUIVALENT.

E. CLEANOUTS:
1. FLOOR CLEANOUTS FOR SOIL AND WASTE LINES SHALL HAVE BODIES OF STANDARD PIPE SIZES AS MANUFACTURED BY ZURN OR EQUIVALENT.
2. WALL CLEANOUTS FOR SOIL AND WASTE LINES SHALL HAVE BODIES OF STANDARD PIPE SIZES AS MANUFACTURED BY ZURN OR EQUIVALENT.

F. VALVES:
1. BUTTERFLY VALVES 2 1/2" AND LARGER.
2. BALL VALVES 2" AND SMALLER.
3. UNIONS SHALL HAVE BRASS TO METAL GROUND JOINT SEAL.

G. ESCUTCHEON PLATES: PROVIDE CHROME PLATED ESCUTCHEON PLATES WHERE EXPOSED PIPE PASSES THROUGH WALLS, FLOORS, OR CEILING IN FINISHED AREAS. SEAL ALL PIPE PENETRATIONS WITH FIRE STOP AS REQUIRED, DRYWALL MUD OR GROUT TO MATCH ADJACENT WALL.

H. PIPE INSULATION:
1. ALL HOT WATER PIPE ABOVE GRADE SHALL BE INSULATED WITH 1" FIBERGLASS, LOW PRESSURE INSULATION WITH WHITE UNIVERSAL JACKET. APPLY IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS
2. ALL COLD WATER PIPE ABOVE GRADE SHALL BE INSULATED WITH 1/2" FIBERGLASS AS ABOVE.

I. WALL HYDRANT: "FROST PROOF" TYPE WITH VACUUM BREAKER ON ALL HOSE BIBS

J. FIXTURES:
1. FURNISH AND INSTALL ALL PLUMBING FIXTURES INDICATED ON DRAWINGS. FIXTURES SHALL BE AMERICAN STANDARD, KOHLER, ELJER, OR AS SPECIFIED IN THE PLUMBING FIXTURE SCHEDULE.
2. TRAPS: FOR LAVATORIES AND SINKS: BRASS, CHROME PLATED.
3. PROVIDE DEEP SEAL TRAPS AND TRAP PRIMERS FOR ALL FLOOR DRAINS AND HUB DRAINS.

K. HOT WATER HEATERS:
1. 99,000 BTUH INPUT AND LESS:
CONTRACTOR SHALL MAKE PROVISIONS TO KEEP 18" CLEAR AROUND HEATER.
2. 100,000 BTUH TO 199,000 BTUH INPUT:
CONTRACTOR SHALL MAKE PROVISIONS TO KEEP 18" CLEAR AROUND HEATER, AND SUBMIT A "APPLICATION FOR PERMISSION TO INSTALL" TO THE BOILER UNIT OF THE TENNESSEE DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT'S WORKPLACE REGULATIONS AND COMPLIANCE DIVISION (REGISTRATION AND INSPECTION).
3. 200,000 BTUH TO 399,000 BTUH INPUT:
CONTRACTOR SHALL MAKE PROVISIONS TO KEEP 18" CLEAR AROUND HEATER, THE HEATER MUST BE ASME CODE COMPLIANT, AND MUST BE FILED FOR REGISTRATION AND INSPECTION.

GENERAL PLUMBING NOTES

1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN STRICT ACCORDANCE WITH APPLICABLE LOCAL CODES, RULES AND ORDINANCES.
2. THE CONTRACTOR SHALL VISIT THE JOB SITE AND THOROUGHLY FAMILIARIZE HIMSELF WITH ALL EXISTING CONDITIONS.
3. ALL WORK SHALL BE PERFORMED BY A LICENSED PLUMBING CONTRACTOR, IN A FIRST-CLASS AND WORKMANLIKE MANNER. THE COMPLETE SYSTEM SHALL BE FULLY OPERATIVE.
4. ALL EXCAVATION AND BACKFILL, AS REQUIRED, FOR THIS PHASE OF CONSTRUCTION SHALL BE A PART OF THIS CONTRACT.
5. PROOF OF INSURANCE SHALL BE PROVIDED BY THE CONTRACTOR FOR PROTECTION AGAINST PUBLIC LIABILITY AND PROPERTY DAMAGE FOR THE DURATION OF WORK.
6. VERIFY LOCATION, SIZE, INVERTS AND ALL EXISTING UTILITIES PRIOR TO BEGINNING OF CONSTRUCTION. ADVISE ENGINEER OF ANY DISCREPANCIES.
7. WATER PIPING SHALL BE TYPE "L" COPPER FOR 2 1/2" ABOVE GRADE. ALL UNDERGROUND WATER PIPING SHALL BE TYPE "K" COPPER WITH NO JOINTS UNDER SLAB.
8. SOIL, WASTE, VENT AND RAINWATER PIPING SHALL BE CAST IRON NO HUB ABOVE GRADE MEETING ASTM A 888 or CISPI 301 STANDARDS. BELOW GROUND PIPING SHALL BE SOLID WALL SCHEDULE 40 PVC MEETING ASTM D 2665 STANDARDS.
9. AIR CONDITIONING CONDENSATE DRAIN PIPING SHALL BE COPPER DWV PIPE AND FITTINGS. INSULATE ALL CONDENSATE PIPING ABOVE GRADE.
10. INSULATE ALL HOT WATER SUPPLY, HOT WATER RETURN, RAINWATER AND CONDENSATE LINES ABOVE GRADE AS FOLLOWS: HOT WATER SUPPLY AND RETURN, 1" THICK FIBERGLASS. RAINWATER LEADERS 1 1/2" THICK FIBERGLASS BLANKET ON DRAIN BODY AND 1" HORIZONTAL RWL. CONCEALED CONDENSATE PIPING 1/2" ARMAFLEX PERFORM.
11. ALL FIXTURES MUST BE PROVIDED WITH READILY ACCESSIBLE STOPS AND MARKED ACCESS PANELS.
12. FURNISH AND INSTALL APPROVED AIR CHAMBERS AT EACH PLUMBING FIXTURE GROUP AND P.D.I. APPROVED SHOCK ARRESTERS ON MAIN LINES OR RISERS.
13. DIELECTRIC COUPLINGS ARE REQUIRED BETWEEN ALL DISSIMILAR METAL PIPING AND EQUIPMENT CONNECTIONS.
14. ISOLATE COPPER PIPE FROM HANGER OR SUPPORTS WITH ISOLATOR PAD (HAIR FELT LINING) SUPER STRUT MODEL C15/16. FILL VOIDS BETWEEN PIPE AND WALL/FLOOR SLEEVES WITH FIRE-RATED FOAM SIMILAR TO CHASE TECHNOLOGY CORP. - CIC PR-855.
15. CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP FREE FROM DEFECTS FOR A PERIOD OF ONE (1) YEAR FROM DATE OF C.O. CORRECTION OF ANY DEFECTS SHALL BE COMPLETED WITHOUT ADDITIONAL CHARGE AND SHALL INCLUDE REPLACEMENT OR REPAIR OF ANY OTHER PHASE OF THE INSTALLATION WHICH MAY HAVE BEEN DAMAGED.
16. PROVIDE 1/4" TRAP PRIMER LINE FOR ALL FLOOR DRAINS FROM THE NEAREST PLUMBING FIXTURE. PROVIDE MINIMUM 3' RADIUS, 1/4" PER FOOT SLOPE AROUND ALL FLOOR DRAINS.
17. PROVIDE ACCESS PANELS FOR ALL CONCEALED VALVES AND ALL WATER HAMMER ARRESTORS. ACCESS PANELS IN RATED WALLS MUST MAINTAIN THE RATING. ALL ACCESS PANELS MUST MATCH THE FINISH OF THE WALL IN WHICH IT IS INSTALLED.
18. PROVIDE CHROME-PLATED COMBINATION COVER PLATE AND CLEANOUT PLUG FOR ALL WALL CLEANOUTS - JOSAM 58890 SERIES OR EQUAL.
19. PROVIDE EACH FIXTURE GROUP WITH ISOLATION VALVES, BOTH HOT (110) AND COLD WATER.
20. NO COMBUSTIBLE MATERIALS CAN BE USED IN MECHANICAL ROOMS OR IN CEILING SPACES WHERE USED AS RETURN AIR PLENUMS.
21. PROVIDE BACKFLOW PREVENTER - WILKINS MOD. # 575 OR EQUAL.
22. THE DRAWINGS ARE GENERALLY DIAGRAMMATIC AND INDICATE THE APPROXIMATE ROUTING OF PIPING AND LOCATION OF FIXTURES. THE CONTRACTOR SHALL COORDINATE WORK WITH OTHER TRADES AND MAKE MINOR OFFSETS AND ADJUSTMENTS AS REQUIRED AT NO ADDITIONAL COST TO THE OWNER.
23. COORDINATE FIXTURES LOCATIONS WITH ARCHITECTURAL DRAWINGS.
24. CONTRACTOR SHALL MAKE ARRANGEMENTS FOR CONNECTIONS TO ALL UTILITY LINES AND PAY ALL FEES AND COSTS FOR CONNECTIONS TO THOSE SERVICES.
25. ALL PIPING SHALL BE RUN IN CONCEALED LOCATIONS EXCEPT WHERE NOTED.
26. PLUMBING FIXTURES SHALL BE FIRST QUALITY VITREOUS CHINA, STAINLESS STEEL OR PLASTIC AS NOTED ON FIXTURE SCHEDULE. ALL FIXTURES SHALL BE RIGIDLY CONNECTED TO THE BUILDING AND SHALL BE CLEANED AND FUNCTIONAL PRIOR TO ACCEPTANCE.
27. REFER TO ARCHITECTURAL DRAWINGS FOR FINISHED GRADES.
28. CONTRACTOR SHALL PROVIDE PRESSURE REDUCING VALVE AND REDUCED PRESSURE BACKFLOW PREVENTION VALVE INSIDE BUILDING WHERE SERVICE ENTERS OR AS SHOWN ON THE SITE PLAN.
29. EXPOSED PIPING BELOW FIXTURES SHALL BE CHROME PLATED. PIPING AT FIXTURES IN HANDICAPPED ACCESSIBLE AREAS SHALL BE INSULATED TO PROTECT AGAINST BURNS.
30. ALL BURIED PIPING SHALL BE BEDDED AND COVERED IN SAND, GRAVEL, OR CRUSHED STONE.
31. AFTER COMPLETION OF PIPING TEST POTABLE WATER PIPING TO 125 LBS. PER SQ. INCH AND HOLD FOR 24 HOURS.
32. TEST DRAIN WASTE AND VENT PIPING BY FILLING TO LEVEL OF HIGHEST THE VENT.
33. AFTER INSTALLATION AND TESTING OF POTABLE WATER PIPING, STERILIZE ALL LINES IN ACCORD WITH CODES AND HEALTH DEPARTMENT REGULATIONS AND FLUSH AND FILL WITH CLEAN WATER.
34. PITCH POTABLE WATER LINES TOWARD DRAINS, INSTALL DRAIN WASTE AND VENT PIPING WITH MINIMUM SLOPES OF 1/4" PER FOOT FOR LINES UP TO 2 1/2" AND 1/8" PER FOOT FOR LINES 3" AND LARGER.
35. PROVIDE A TWO PIPE DIAMETER AIR GAP BETWEEN ALL INDIRECT WASTE AND THE RECEIVER.
36. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS AND RATINGS OF FIRE WALLS AND FLOOR CEILING ASSEMBLIES.
37. INSTALL FIRE STOP MATERIAL IN ACCORD WITH U.L. LISTING AT ALL PENETRATIONS.
38. PIPE WATER HEATER RELIEF VALVE TO EXTERIOR PER CODE OR TO FLOOR DRAIN.
39. PROVIDE MAXITROL SERIES GF OR EQUAL FUEL GAS STRAINER PER NFPA 86 UPSTREAM OF SAFETY SHUTOFF VALVES. (PHONE NUMBER - (248) 356-1400)
40. INSTALL WATER HEATERS IN ACCORD WITH MANUFACTURERS INSTRUCTION AND ALL STATE AND LOCAL CODE REQUIREMENTS. WATER STORAGE SHALL HAVE A TEMPERATURE OF 140 DEGREES.
41. ALL LAVATORIES AND HAND SINKS SHALL HAVE AN APPROVED ASSE 1070 DEVICE(S) PROVIDING A MAXIMUM OF 110° F FOR HOT WATER. PROVIDE SHOP DRAWINGS FOR APPROVAL.
42. ALL FOOD RELATED EQUIPMENT WITH DRAIN LINES, E.G., FOOD PREPARATION SINKS, WAREWASH SINKS, ETC. WASTE THROUGH A TWO PIPE DIAMETER AIR GAP OR APPROVED AIR BREAK. WATER HEATER/BOILER POP-OFF LINES; ICE MACHINE AND ICE BIN MELTWATER DRAIN LINES, WATER FILTER/TREATMENT EQUIPMENT DRAIN LINES, AND SIMILAR DRAINS FROM EQUIPMENT USING DOMESTIC WATER (INCLUDING DIPPER WELLS) MUST HAVE A TWO PIPE DIAMETER AIR GAP AT THE SEWER. EQUIPMENT SUCH AS DIPPER WELLS, STEAMERS, WOK TABLE FLUSH SYSTEMS, AND SIMILAR DEVICES WITH THE POTENTIAL FOR SUBMERGED INLETS, ETC. MUST HAVE AN APPROVED TWO PIPE DIAMETER AIR GAP OR DUAL CHECK VALVE MEETING ASSE STANDARD 1012, 1024, OR EQUIVALENT INSTALLED ON THE POTABLE WATER SUPPLY.
43. ALL SANITARY AND GREASE WASTE PIPING IN AND/OR BELOW KITCHEN AREAS SHALL BE CAST

PLUMBING ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
AHJ	AUTHORITY HAVING JURISDICTION
AIR	COMPRESSED AIR
AFUE	ANNUAL FUEL UTILIZATION EFFICIENCY
BOP	BOTTOM OF PIPE
BTU	BRITISH THERMAL UNIT
BTUH	BTU PER HOUR
CFH	CUBIC FEET PER HOUR
CF	CUBIC FEET
CI	CAST IRON
CO	CLEANOUT
CON	CONDENSATE
CPVC	CHLORINATED POLYVINYL CHLORIDE
CU	COPPER
CW	COLD WATER (DOMESTIC)
DF	DRINKING FOUNTAIN
DI	DUCTILE IRON
EC	ELECTRICAL CONTRACTOR
EWC	ELECTRIC WATER COOLER
FD	FLOOR DRAIN
FR	FLOOD RIM
FS	FLOOR SINK
FT	FEET OR FOOT
FZ	FREEZE
GAL	GALLON
GC	GENERAL CONTRACTOR
GI	GREASE INTERCEPTOR
GPD	GALLON PER DAY
GPM	GALLON PER MINUTE
HB	HOSE BIBB
HD	HUB DRAIN
HS	HAND SINK
IDW	INDIRECT WASTE
IFGC	INTERNATIONAL FUEL GAS CODE
INV	INVERT ELEVATION
IPC	INTERNATIONAL PLUMBING CODE
IR	INFRARED
LAV	LAVATORY
LT	LAUNDRY TUB
MANF	MANUFACTURER
MV	MIXING VALVE
M	METER
MBH	1,000 BTU PER HOUR
MC	MECHANICAL CONTRACTOR
MS	MOP SINK
NG	NATURAL GAS
NIC	NOT IN CONTRACT
NO	NITROUS OXIDE
NTS	NOT TO SCALE
OI	OIL INTERCEPTOR
PC	PLUMBING CONTRACTOR
PE	POLYTHINE
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
RD	ROOF DRAIN
RPBP	REDUCED PRESSURE BACKFLOW PREVENTER
RWL	RAIN WATER LEADER
SAN	SANITARY SEWER
SD	STORM DRAIN
SQ	SQUARE
SS	SERVICE SINK
TOP	TOP OF PIPE
UR	URINAL
VAC	VACUUM
VIF	VERIFY IN FIELD
VTR	VENT TO ROOF

MBI COMPANIES INC.
209 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com
CONSULTANT

SEAL

JOHN C. BUCHANAN
REGISTERED ENGINEER
AGRICULTURE & ENVIRONMENTAL
STATE OF TENNESSEE
No. 104351

PROJECT INFORMATION

PROJECT:

CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS:

411 DOUGLAS LN
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	10/06/2023
DESIGNED BY:	DRJ
DRAWN BY:	DRJ
REVIEWED BY:	JCB
SHEET TITLE:	

PLUMBING LEGEND AND NOTES

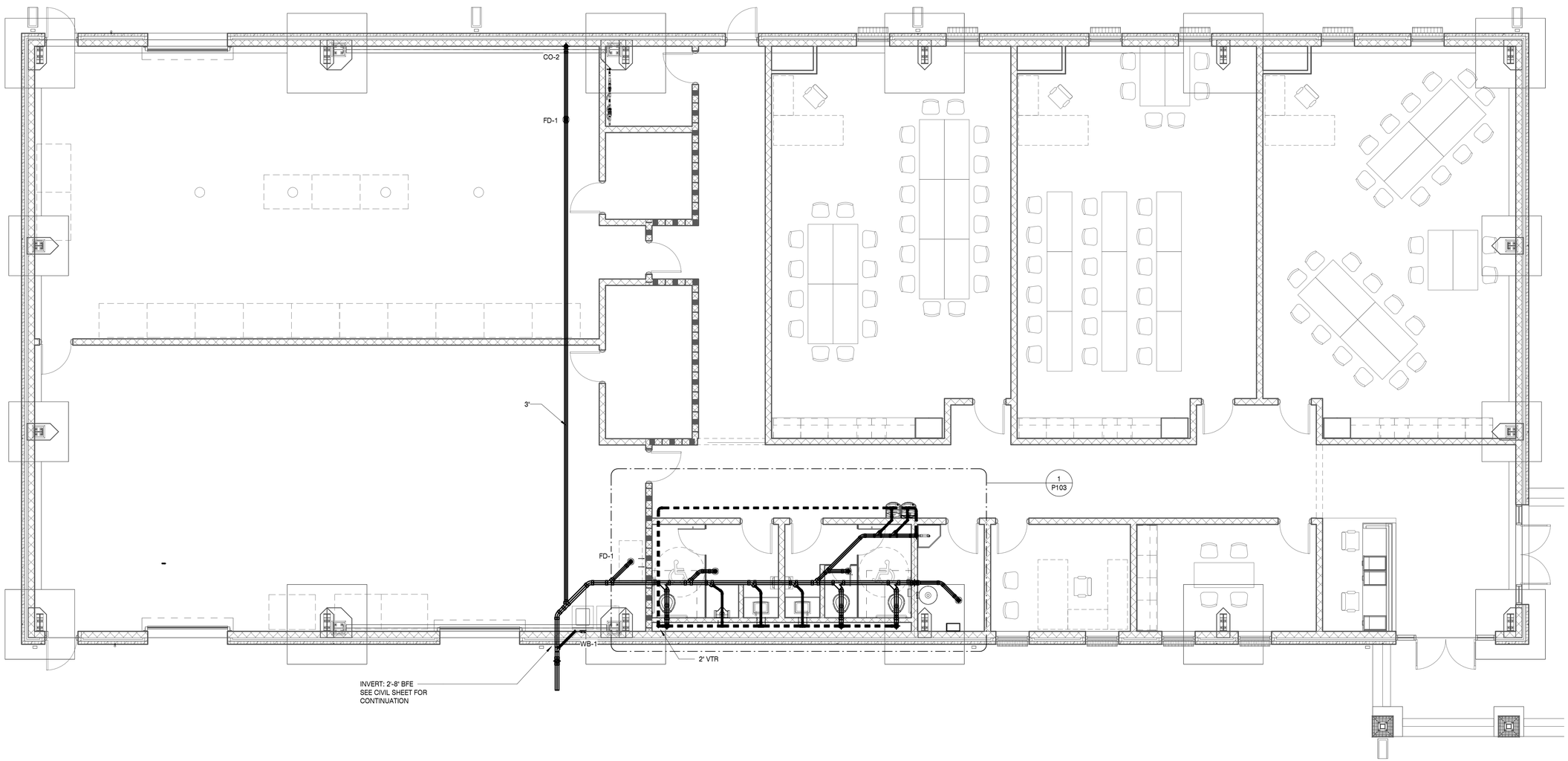
SHEET NO.:

P001

PROJECT # 2023-10-31-01 TFM # 00017-D

FIELD SET

ARCH D



FIRST FLOOR PLAN - SANITARY

1

SCALE: 3/16" = 1'-0"

MBI COMPANIES INC.
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com

CONSULTANT

SEAL

JOHN C. BUCHANAN
REGISTERED ENGINEER
STATE OF TENNESSEE
No. 104351

PROJECT INFORMATION

PROJECT:

CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS:

411 DOUGLAS LN
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	10/06/2023
DESIGNED BY:	DRJ
DRAWN BY:	DRJ
REVIEWED BY:	JCB

SHEET TITLE:

FLOOR PLAN - SANITARY

SHEET NO.:

P101

PROJECT # 2023-10-31-01 TFM # 00017-D

FIELD SET

ARCH D

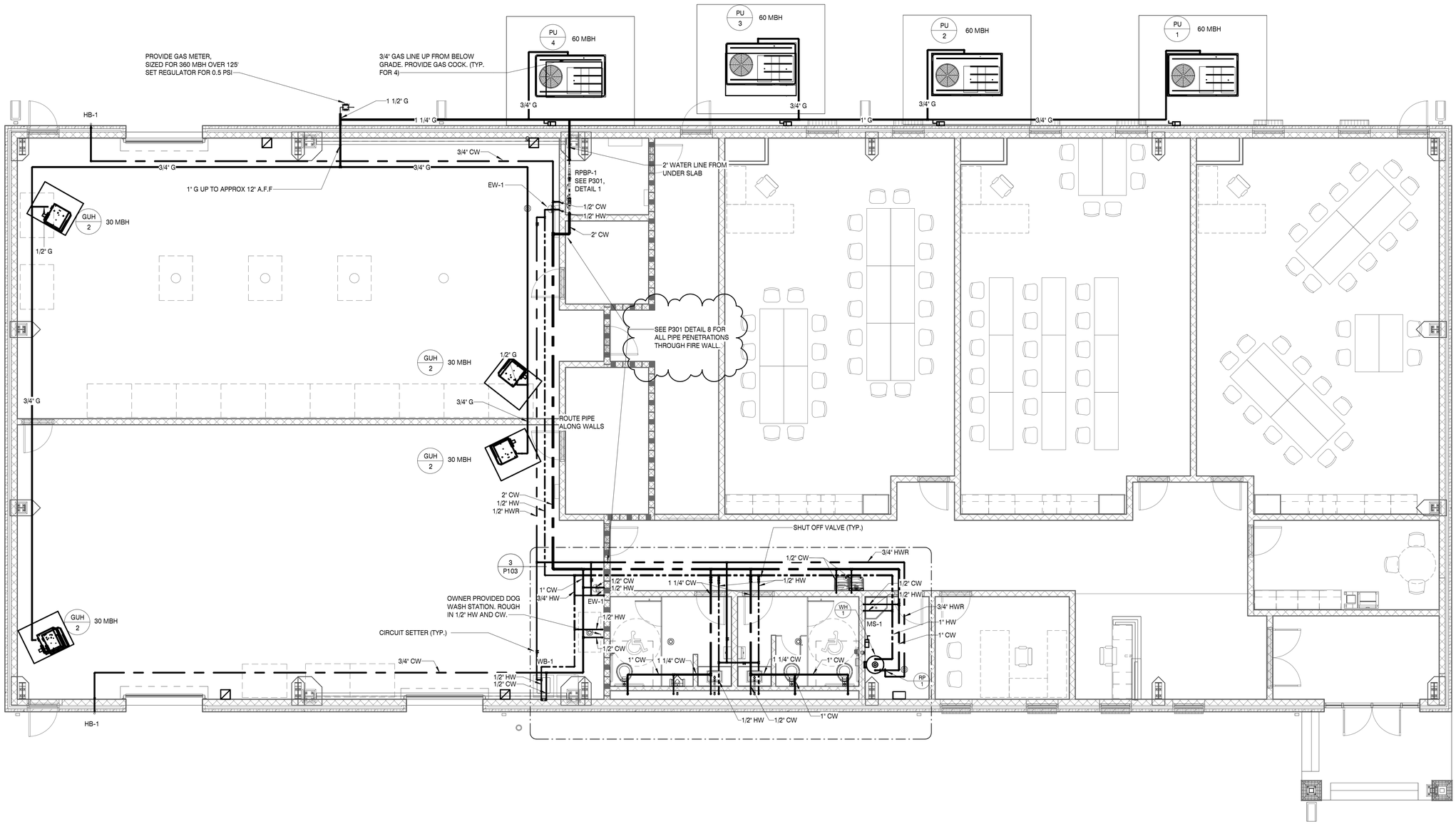
THESE PLANS AND SPECIFICATIONS ARE REQUIRED TO BE KEPT ON THE JOB SITE UNTIL A FINAL CERTIFICATE OF OCCUPANCY OR PROJECT COMPLETION FORM IS ISSUED BY THIS OFFICE.

No alterations, deletions, additions or modifications of any kind are allowed to this approved set without written permission of this office.

TENNESSEE STATE FIRE MARSHAL'S OFFICE

GAS DEMAND

ID	TYPE	INPUT (MBH)
PU-1	PACKAGE UNIT - CLASSROOM 102	60
PU-2	PACKAGE UNIT - CLASSROOM 104	60
PU-3	PACKAGE UNIT - CLASSROOM 108	60
PU-4	PACKAGE UNIT - HALLWAY	60
GUH-1	UNIT HEATER	30
GUH-1	UNIT HEATER	30
GUH-1	UNIT HEATER	30
GUH-1	UNIT HEATER	30
	TOTAL:	360



FLOOR PLAN - WATER & GAS

SCALE: 3/16" = 1'-0"

1

MBI COMPANIES INC.
209 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com

CONSULTANT

SEAL

JOHN C. BUCHANAN REGISTERED ENGINEER No. 104351 STATE OF TENNESSEE

PROJECT INFORMATION

PROJECT:

CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS:

411 DOUGLAS LN
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION
1	1/29/2024	REV #1

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	10/06/2023
DESIGNED BY:	DRJ
DRAWN BY:	DRJ
REVIEWED BY:	JCB

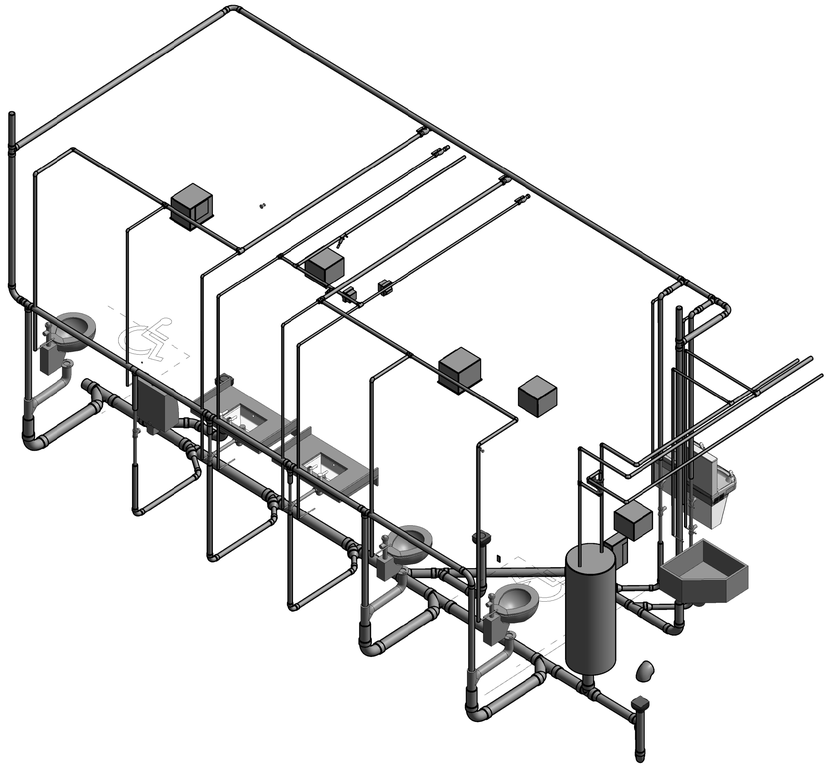
SHEET TITLE: FLOOR PLAN - WATER

SHEET NO.: P102

PROJECT # 2023-10-31-01 TFM # 00017-D

FIELD SET

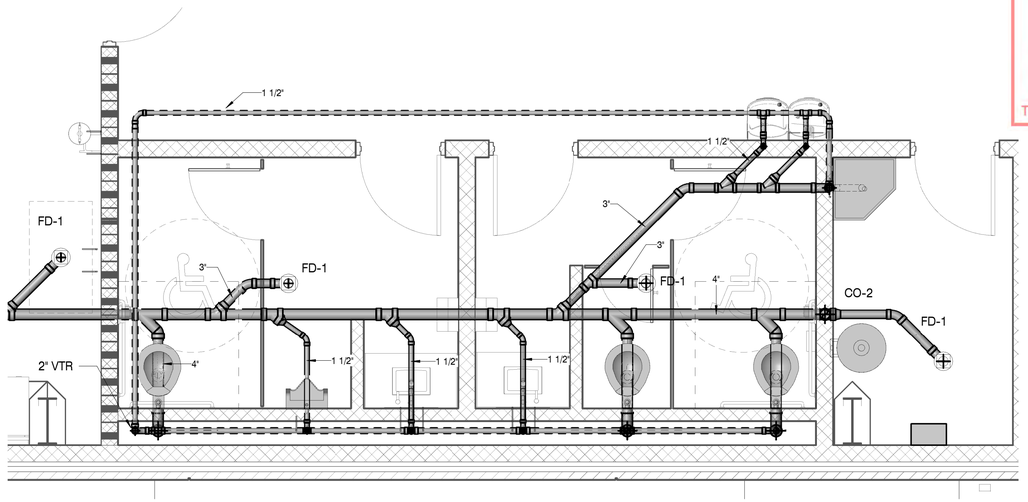
Autodesk Docs://220042-02_Clinton High School Welding Building/07_220042-02_Mechanical_R23.rvt
1/29/2024 3:27:21 PM



BATHROOM RISER

SCALE:

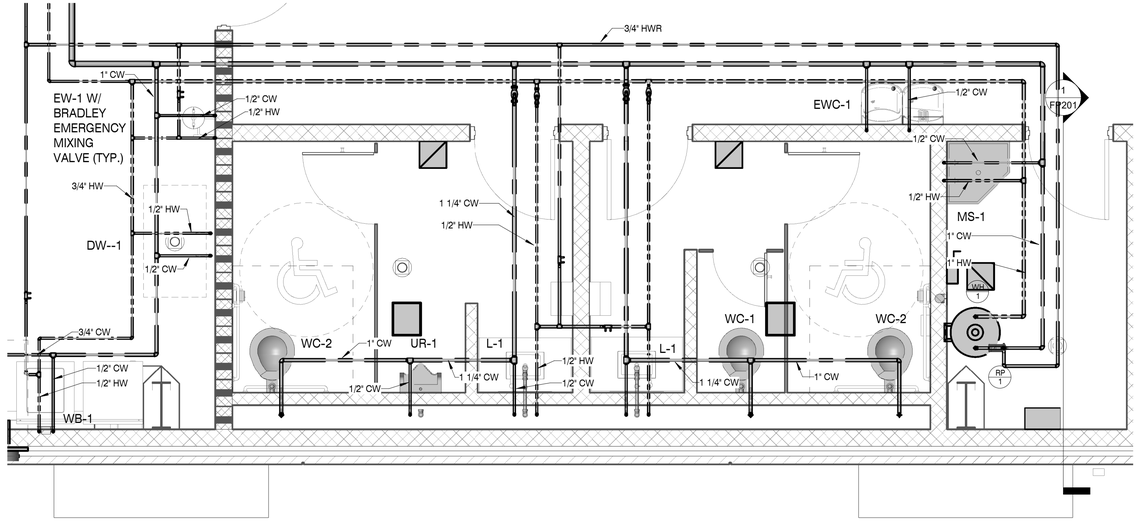
2



BATHROOM SANITARY PLAN

SCALE: 3/8" = 1'-0"

1



BATHROOM WATER PLAN

SCALE: 3/8" = 1'-0"

3

MBI COMPANIES INC.
209 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com

CONSULTANT

SEAL

JOHN C. BUCHANAN
REGISTERED ENGINEER
STATE OF TENNESSEE
104351
10/06/2023

PROJECT INFORMATION

PROJECT:

CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS:

411 DOUGLAS LN
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	10/06/2023
DESIGNED BY:	DRJ
DRAWN BY:	DRJ
REVIEWED BY:	JCB

SHEET TITLE:

ENLARGED BATHROOM PLAN

SHEET NO.:

P103

PROJECT # 2023-10-31-01 TFM # 00017-D

FIELD SET

Autodesk Docs://220042-02_Clinton High School Welding Building/07_220042-02_Mechanical_R23.rvt
10/6/2023 9:37:32 AM

PLUMBING FIXTURE SCHEDULE

**TRIM PRODUCTS (STOPS, PTRAPS, SUPPLIES ETC.) SHALL BE FROM SAME MANUFACTURER. ANY CONFLICTS WITH THE SCHEDULE AND THE CONSTRUCTION DOCUMENTS SHALL BE DIRECTED TO THE ENGINEER OF RECORD A MIN THREE (3) DAYS BEFORE BID DATE. CONTRACTOR SHALL PROVIDE A MIN OF THREE (3) COPIES OF SHOP DRAWINGS FOR APPROVAL. SEE SPECIFICATIONS

EQUAL PRODUCTS AND ALTERNATE MANUFACTURERS LISTED SHALL ALSO BE CONSIDERED: SLOAN, JOSAM, LEONARD, GUARDIAN, DURA-TRENCH, OASIS, HALSEY-TAYLOR, WILLOUGHBY

RPBP-1	BACKFLOW PREVENTER	WILKINS, MODEL # 975XL2TCUSAG REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER "Y" PATTERN BODY. PROVIDED WITH "Y" STAINER ON INLET SIDE OF DEVICE AND PROVIDED WITH AIRGAP AND TEST COCKS FACING UP FOR TESTER. INSTALLED HEIGHT MIN 4'-0" A.F.F. MAX 7'-0" A.F.F.					SEE PLUMBING AND IRRIGATION DRAWINGS FOR SIZE OF DEVICE
	PRESS. RED. VALVE	WILKINS, MODEL # 500 SERIES BRONZE BODY CONSTRUCTION SERVICEABLE INLINE, CAN BE INSTALLED IN ANY POSITION. INSTALL ON INLET SIDE OF RPZ BACKFLOW DEVICE.					
	PRESSURE GUAGE	WILKINS, MODEL # 2004-25-300, 0-300 POUND GUAGE TO BE INSTALLED ON INLET AND OUTLET SIDE OF PRV.					
UR-1	URINAL - HC	ZURN, Z5755-U OMNI-FLOW .125 TO 1GPF WALL MOUNTED TOP SPUD ASYMMETRIC BACK WALL URINAL WITH INTEGRAL P-TRAP AND VANDAL RESISTANT OUTLET STRAINER	3/4"		2"	1-1/2"	
	VALVE	ZURN, ZER6003AV-WS1-CCP AQUAVANTAGE BATTERY OPERATED SENSOR FLUSH VALVE 1 GPF CLOG RESISTANT TRIPLE FILTERED BY-PASS, DUAL SEAL AND CHLORAMINE RESISTANT INTERNAL PARTS. SENSOR TO HAVE 6VDC MOTOR WITH OVERRIDE BUTTON					
	CARRIER	ZURN, MODEL #ZR-1222 SUPPORT W/BEARING PLATE					
	HAMMER ARRESTOR	ZURN, MODEL #Z-1700-100 PLUMBING DRAINAGE INSTITUTE RATING "A" (1-11 FU)					
WC-1	WATER CLOSET	ZURN, Z5655-BWL1 1.6GPF SIPHON JET FLUSH ACTION FLOOR MOUNTED STANDARD HEIGHT WATER CLOSET WITH 2-1/8" FULLY GLAZED TRAPWAY	1"		4"	2"	
	CLOSET FLANGE	ZURN MODEL # CF2982 CAST IRON TORQUE SET CLOSET FLANGE WITH INTEGRAL TEST CAP					
	VALVE	ZURN, ZER6000AV-WS1-CCP AQUAVANTAGE BATTERY OPERATED SENSOR FLUSH VALVE 1.6 GPF CLOG RESISTANT TRIPLE FILTERED BY-PASS, DUAL SEAL AND CHLORAMINE RESISTANT INTERNAL PARTS. SENSOR TO HAVE 6VDC MOTOR WITH OVERRIDE BUTTON					
	SEAT	ZURN, Z5955SS-EL-STS ELONGATED WHITE OPEN FRONT TOILET SEAT LESS COVER WITH SELF SUSTAINING STAINLESS STEEL CHECK HINGE					
	HAMMER ARRESTOR	ZURN, MODEL #Z-1700-100 PLUMBING DRAINAGE INSTITUTE RATING "A" (1-11 FU)					
WC-2	WATER CLOSET	ZURN, Z5665-BWL1 1.6GPF ADA SIPHON JET FLUSH ACTION FLOOR MOUNTED ADA HEIGHT WATER CLOSET WITH 2-1/8" FULLY GLAZED TRAPWAY	1"		4"	2"	
	CLOSET FLANGE	ZURN MODEL # CF2982 CAST IRON TORQUE SET CLOSET FLANGE WITH INTEGRAL TEST CAP					
	VALVE	ZURN, ZER6000AV-WS1-CCP AQUAVANTAGE BATTERY OPERATED SENSOR FLUSH VALVE 1.6 GPF CLOG RESISTANT TRIPLE FILTERED BY-PASS, DUAL SEAL AND CHLORAMINE RESISTANT INTERNAL PARTS. SENSOR TO HAVE 6VDC MOTOR WITH OVERRIDE BUTTON					
	SEAT	ZURN, Z5955SS-EL-STS ELONGATED WHITE OPEN FRONT TOILET SEAT LESS COVER WITH SELF SUSTAINING STAINLESS STEEL CHECK HINGE					
	HAMMER ARRESTOR	ZURN, MODEL #Z-1700-100 PLUMBING DRAINAGE INSTITUTE RATING "A" (1-11 FU)					
WB-1	WASHER BOX	SYMMONS, MODEL #LM-600-F-A LAUNDRY MATE SUPPLY & DRAIN 2" P-TRAP, PROVIDE VACUUM BREAKERS & HOSE CONNECTION WASTE 2", VENT	1/2"	1/2"	2"	1-1/2"	

ITEM	DESCRIPTION	SPECIFICATION	CW (inch)	HW (inch)	W (inch)	V (inch)	REMARK
CO-1	CLEANOUT	ZURN, MODEL #ZN-1400 INTERIOR FINISH FLOOR, 5" ROUND NICKEL BRONZE TOP					
CO-2	CLEANOUT	ZURN LC, MODEL #CO2413-PVC-ST 3" X 4" WALL CLEANOUT BODY AND PLUG					
	WALL PLATE	ZURN LC, MODEL #CO2530-SS7 7" ROUND STAINLESS STEEL AQCCESS COVER W/ SECURING SCREW.					
EW-1	EMERGENCY EYE WASH UNIT	BRADLEY, MODEL #S19-214EW EMERGENCY EYE WASH UNIT W/INLINE FILTER AND DRAIN DOWN EYE WASH SYSTEM	1/2"	1/2"			
	MIXING VALVE	BRADLEY, MODEL #S19-2000 EMERGENCY FIXTURE THERMOSTATIC MIXING VALVE WITH COLD WATER BYPASS					
	TRAP	2" P-TRAP					
EWC-1	ELEC. WTR. COOLER-HC	ELKAY, MODEL # LZSTLBWSLP BI-LEVEL WALL MOUNTED NON-PRESSURIZED WATER COOLER W/ FLEX GUARD BUBBLE, 3000 GAL FILTER AND BOTTLE FILLER. 1.1 GPM 115V/60HZ 4.0AMP 370 WATTS. COOLER SHALL BE ALL METAL CONSTRUCTION, WATER LINES, REFRIGERANT LINES AND SOLID CONNECTION TO DRAIN. PROVIDE IN LIGHT GRAY	1/2"		1-1/4"	1-1/4"	
	SUPPLY	ZURN, Z8804-XL-LRLKA-PC 1/2" X 3/8" COMP X COMP LAVATORY SUPPLY KIT WITH ESCUTCHEON, 1/4 TURN CHROME PLATED STOP AND CHROME PLATED COPPER TUBE SUPPLY LINE					
	CARRIER	PROVIDE WITH APPROPRIATE ZURN CARRIER					
	P-TRAP	ZURN, Z8700-PC 1-1/4" CAST BRASS 17GA P-TRAP WITH CLEANOUT					
FD-1	FLOOR DRAIN	ZURN,MODEL #ZN415-6SZ1 GENERAL SERVICE DRAIN WITH 6" SQUARE STRAINER& SEDIMENT BUCKET			3"	1-1/2"	
	TRAP GUARD	ZURN, Z1072 ZSHIELD TRAP GUARD					
	TRAP	ZURN, MODEL #Z-1000-P DEEP SEAL TRAP					
HB-1	HOSE BIBB	ZURN, MODEL #Z-1321-P34-PC-BFP CHROME PLATED HOSE BIBB WITH WHEEL HANDLE AND VACUUM BREAKER. 3/4" MALE PIPE THREAD INLET CONNECTION, AND 3/4" MALE HOSE CONNECTION.	3/4"				
L-1A	LAVATORY	ZURN, Z5114 OVAL 20"X17" 4"CC VITREOUS CHINA DROP IN LAVATORY	1/2"	1/2"	1-1/4"	1-1/4"	
	FAUCET	SYMMONS, S-20-0-1.5 SYMMETRIX SINGLE HANDLE 4CC LAVATORY FAUCET WITH 1.5GPM AERATOR AND CERAMIC DISC CARTRIDGE					
	THERMOSTATIC MIXING VALVE	SYMMONS, 7-210-CK MAXLINE 3/8" THERMOSTATIC ASSE 1017/1070 MIXING VALVE					
	DRAIN	ZURN, Z8743-PC 1-1/4" CHROME PLATED CAST BRASS 17GA GRID DRAIN					
	P-TRAP	ZURN, Z8700-PC 1-1/4" CAST BRASS 17GA P-TRAP WITH CLEANOUT					
	SUPPLY	ZURN, Z8804-XL-LRLKQ-PC 1/2" X 3/8" COMP X COMP LAVATORY SUPPLY KIT WITH ESCUTCHEONS, 1/4 TURN CHROME PLATED STOPS AND CHROME PLATED COPPER TUBE SUPPLY LINES					
L-1B	LAVATORY	ZURN, Z5344 20"X18" WALL HUNG 4"CC VITREOUS CHINA CONCEALED ARM LAVATORY	1/2"	1/2"	1-1/4"	1-1/4"	
	FAUCET	SYMMONS, S-20-0-1.5 SYMMETRIX SINGLE HANDLE 4CC LAVATORY FAUCET WITH 1.5GPM AERATOR AND CERAMIC DISC CARTRIDGE					
	THERMOSTATIC MIXING VALVE	SYMMONS, 7-210-CK MAXLINE 3/8" THERMOSTATIC ASSE 1017/1070 MIXING VALVE					
	DRAIN	ZURN, Z8743-PC 1-1/4" CHROME PLATED CAST BRASS 17GA GRID DRAIN					
	P-TRAP	ZURN, Z8700-PC 1-1/4" CAST BRASS 17GA P-TRAP WITH CLEANOUT					
	SUPPLY	ZURN, Z8804-XL-LRLKQ-PC 1/2" X 3/8" COMP X COMP LAVATORY SUPPLY KIT WITH ESCUTCHEONS, 1/4 TURN CHROME PLATED STOPS AND CHROME PLATED COPPER TUBE SUPPLY LINES					
	TRAP WRAP	ZURN, Z8946-1-NT COMBINATION TRAP WRAP KIT WITH ONE TRAP AND TWO SUPPLY PROTECTION WRAPS					
	CARRIER	PROVIDE WITH APPROPRIATE APPROVED ZURN CARRIER					
LT-1	LAUNDRY TUB	ZURN, MODEL # MS2620-F SINGLE BASIN MOLDED STONE LAUNDRY TUB WITH ENAMELED ANGLE LEGS.	1/2"	1/2"	1-1/2"	1-1/2"	
	FAUCET	ZURN, MODEL # Z812-XL-N1 4"CC SOLID BRASS FAUCET WITH 2-1/2" HANDLES AND 6" CAST BRASS SPOUT WITH VACUUM BREAKER.					
	TRAP AND SUPPLY	ZURN, MODEL # Z9904.000.0.19.B5.0 1-1/2" CAST BRASS P-TRAP WITH CLEANOUT, ½"NOM X 3/8"OD STOPS WITH 20" BRAIDED STAINLESS STEEL SUPPLY LINES AND ESCUTCHEONS.					
MS-1	MOP SINK	STERN WILLIAMS, MODEL # HL-1800-T35-T40-D 24" X 24" X 12" TERRAZZO "HILOW" SQUARE SERVICE SINK W/SS CAP. PROVIDE 18" HIGH STAINLESS STEEL BACK SPLASH, CAULK EDGES FOR WATER TIGHT SEAL. PROVIDE WITH HOSE AND WALL BRACKET, S.S. MOP HANGER 24" LENGTH WITH 3 SPRING LOADED RUBBER GRIPS	1/2"	1/2"	3"	1-1/2"	
	FAUCET	ZURN, MODEL # Z841M1-RC SERVICE SINK FAUCET W/VACUUM BREAKER SPOUT AND INTEGRAL ¾" HOSE THREADED OUTLET, PAIL HOOK AND WALL BRACE.					
	TRAP	ZURN, MODEL # Z-1000, 3" DEEP SEAL TRAP W/TRAP PRIMER Z-1022					

WATER HEATER SCHEDULE (ELECTRIC)

DRAWING SYMBOL	STORAGE CAPACITY	NUMBER OF ELEMENTS	KILOWATT PER	VOLTAGE	RECOVERY GPH @ 70° RISE	MANUFACTURER & MODEL #	DIMENSIONS
WH 1	50 GAL.	1	24.0	208/3/60	142	AO SMITH DRE-52-24	21.75" X 55.75"

ACCESSORIES AND FEATURES:
- ALTERNATE MANUFACTURERS: LOCHINVAR, STATE IND.
- UNIT SHALL BE ASME LISTED
- PROVIDE ASSE 1016/1017 DEVICE SET AT MAX 110° F
- NON-SIMULTANEOUS OPERATION

RECIRCULATION PUMP SCHEDULE

DRAWING SYMBOL	HP	VOLTAGE	MOTOR RPM	WEIGHT (LBS.)	MANUFACTURER & MODEL #	SYSTEM
RP 1	1/12	115	2,650	11.6	BELL & GOSSETT PL-30B	HW-RECRIC

ACCESSORIES AND FEATURES:
- ALL BRONZE CIRCULATOR PUMP
- PROVIDE WITH FLANGED BALL VALVES ON INLET AND OUTLET.
- SEE SPECIFICATIONS FOR OTHER PERTINENT INFORMATION.

MBI COMPANIES INC.
209 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com

CONSULTANT

SEAL

JOHN C. BUCHANAN
REGISTERED ENGINEER
STATE OF TENNESSEE
No. 104351
AGRICULTURE BUILDING
PRIMARY

PROJECT INFORMATION

PROJECT:

CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS:

411 DOUGLAS LN
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	10/06/2023
DESIGNED BY:	DRJ
DRAWN BY:	DRJ
REVIEWED BY:	JCB
SHEET TITLE:	

PLUMBING SCHEDULES

SHEET NO.: P201

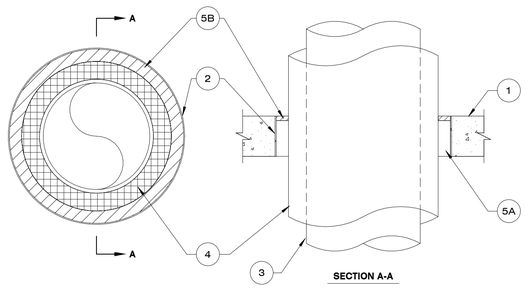
PROJECT # TFM # 00017-D

FIELD SET 2023-10-31-01

Autodesk Docs://220042-02_Clinton High School Welding Building/07_220042-02_Mechanical_R23.rvt
10/6/2023 9:37:33 AM

System No. C-AJ-5091

F Rating — 2 Hr
T Rating — 1 Hr
L Rating At Ambient — 4 CFM/Sq Ft
L Rating At 400 F — Less Than 1 CFM/Sq Ft

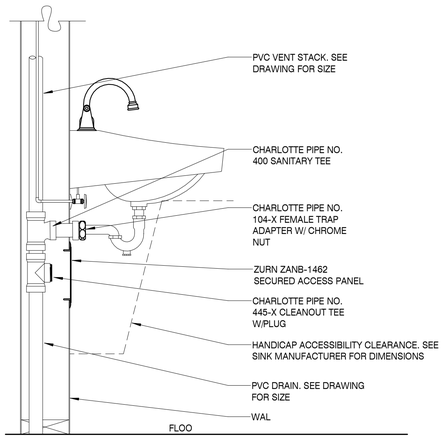


SECTION A-A

1. Floor or Wall Assembly — Min 4-1/2 in. thick reinforced lightweight or normal weight (100-150 pcf) concrete. Wall may also be constructed of any UL Classified Concrete Blocks*. Max diam of opening is 19-1/2 in. See Concrete Blocks (CAZT) category in the Fire Resistance directory for names of manufacturers.
2. Metallic Sleeve — (Optional) — Nom 20 in. diam (or smaller) Schedule 10 (or heavier) steel pipe.
2A. Sheet Metal Sleeve — (Optional) - Max 6 in. diam, min 26 ga galv steel provided with a 26 ga galv steel square flange spot welded to the sleeve at approximately mid- height, or flush with bottom of sleeve in floors, and sized to be a min of 2 in. larger than the sleeve diam. The sleeve is to be cast in place flush with bottom surface of floor and may extend a max of 1 in. above the top surface of the floor.
2B. Sheet Metal Sleeve — (Optional) - Max 12 in. diam, min 24 ga galv steel provided with a 24 ga galv steel square flange spot welded to the sleeve at approximately mid- height, or flush with bottom of sleeve in floors, and sized to be a min of 2 in. larger than the sleeve diam. The sleeve is to be cast in place flush with bottom surface of floor and may extend a max of 1 in. above the top surface of the floor.
3. Through Penetrants — One metallic pipe or tubing to be installed either concentrically or eccentrically within the firestop system. Pipe or tubing to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of metallic pipes or tubing may be used:
A. Steel Pipe — Nom 12 in. diam (or smaller) Schedule 10 (or heavier) steel pipe.
B. Iron Pipe — Nom 12 in. diam (or smaller) cast or ductile iron pipe.
C. Copper Pipe — Nom 6 in. diam (or smaller) Regular (or heavier) copper pipe.
D. Copper Tubing — Nom 6 in. diam (or smaller) Type L (or heavier) copper tubing.
4. Pipe Covering — Nom 2 in. thick hollow cylindrical heavy density (min 3.5 pcf) glass fiber units jacketed on the outside with an all-service jacket. Longitudinal joints sealed with metal fasteners or factory-applied, self-sealing lap tape. Transverse joints secured with metal fasteners or with butt tape supplied with the product. The annular space between the insulated pipe and the edge of the periphery of the opening shall be min 1/2 in. to a max 2-1/4 in.
See Pipe Equipment Covering — Materials — (BRGU) category in the Building Materials Directory for names of manufacturers. Any pipe covering material meeting the above specifications and bearing the UL Classification Marking with a Flame Spread Index of 25 or less and a Smoke Developed Index of 50 or less may be used.
4A. Pipe Covering — (Not Shown) — As an alternate to Item 4, max 2 in. thick cylindrical calcium silicate (min 14 pcf) units sized to the outside diam of the pipe or tube may be used. Pipe insulation secured with stainless steel bands or min 8 AWG stainless steel wire spaced max 12 in. OC. The annular space shall be min 1/2 in. to max 2-1/4 in.
5. Firestop System — The firestop system shall consist of the following:
A. Packing Material — Min 4 in. thickness of min 4 pcf mineral wool batt insulation firmly packed into opening as a permanent form. Packing material to be recessed from top surface of floor or from both surfaces of wall as required to accommodate the required thickness of fill material.
B. Fill, Void or Cavity Material* — Sealant — Min 1/2 in. thickness of fill material applied within the annulus, flush with top surface of floor or with both surfaces of wall.
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-One Sealant
*Bearing the UL Classification Mark

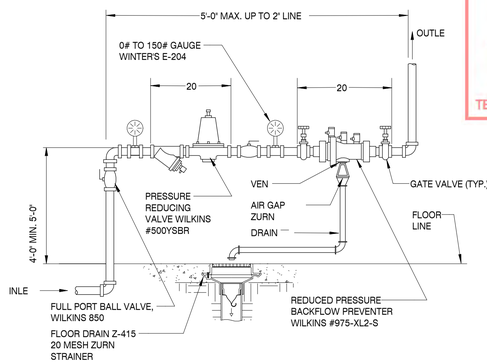
FIRE PENETRATION DETAIL 8

SCALE: N.T.S.



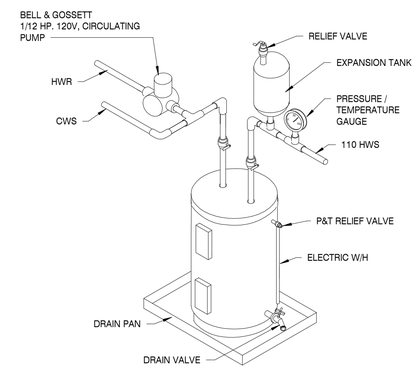
STACK CLEANOUT DETAIL 4

SCALE: 1/8" = 1'-0"



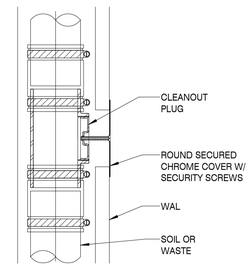
WATER SERVICE ENTRANCE DETAIL 1

SCALE: 1/8" = 1'-0"



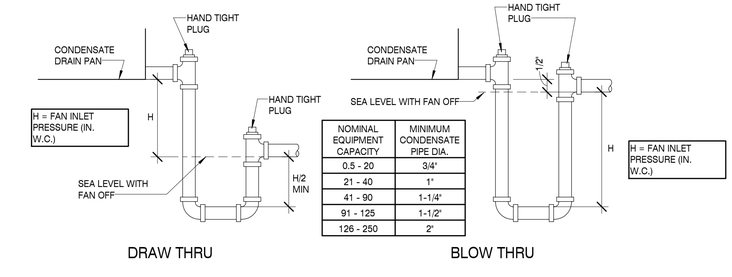
ELECTRIC WATER HEATER DETAIL 5

SCALE: N.T.S.



WALL CLEANOUT 2

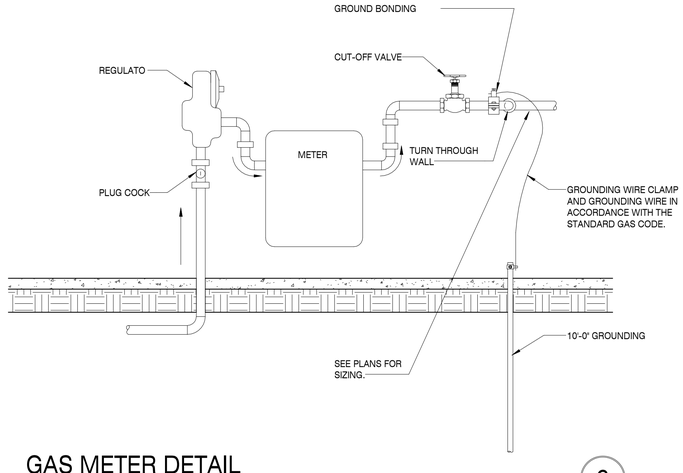
SCALE: N.T.S.



NOMINAL EQUIPMENT CAPACITY	MINIMUM CONDENSATE PIPE DIA.
0.5 - 20	3/4"
21 - 40	1"
41 - 90	1-1/4"
91 - 125	1-1/2"
126 - 250	2"

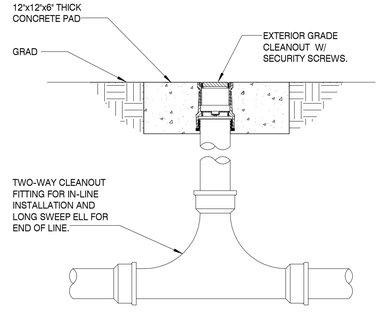
CONDENSATE TRAP DETAIL 7

SCALE: 1/8" = 1'-0"



GAS METER DETAIL 6

SCALE: N.T.S.



EXTERIOR GRADE CLEANOUT 3

SCALE: N.T.S.

MBI COMPANIES INC.
209 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbiccompanies.com

CONSULTANT

SEAL

JOHN C. BUCHANAN REGISTERED ENGINEER No. 104351 STATE OF TENNESSEE AGRICULTURE COMMERCE

PROJECT INFORMATION

PROJECT:

CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS:

411 DOUGLAS LN
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION
1	1/29/2024	REV #1

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	10/06/2023
DESIGNED BY:	DRJ
DRAWN BY:	DRJ
REVIEWED BY:	JCB

SHEET TITLE:

PLUMBING DETAILS

SHEET NO.:

P301

PROJECT # 2023-10-31-01 TFM # 00017-D FIELD SET

Architects Docs:/220042-02_Clinton High School Welding Building/07_220042-02_Mechanical_R23.rvt
1/26/2024 3:27:22 PM

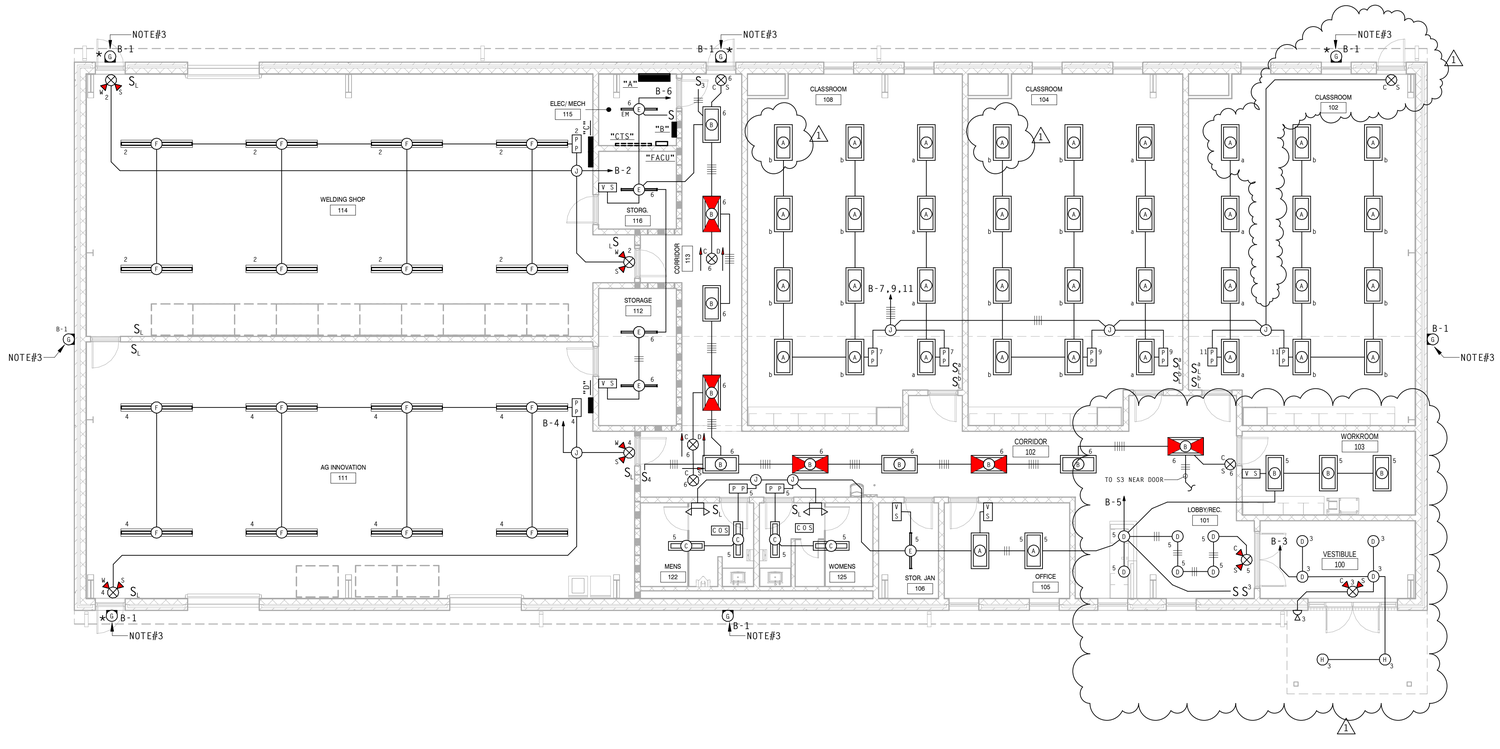
ARCH D

LIGHTING NOTES:

1. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATIONS OF ALL LIGHTING FIXTURES.
2. EXIT SIGNS, BUILT-IN BATTERY PACKS AND EXTERIOR EMERGENCY LIGHTS SHALL BE CONNECTED TO LOCAL UNSWITCHED LIGHTING CIRCUITS AS INDICATED ON DRAWINGS.
3. WIRING ROUTING TO EXTERIOR LIGHTING FIXTURE NOT SHOWN FOR DRAWING CLARITY. PROVIDE 20 AMPERE BRANCH CIRCUIT INDICATED TO THIS FIXTURE, SIMILAR TO OTHER LIGHTING CIRCUITS SHOWN ON PLANS.

WALL LEGEND

- EXTERIOR WALL - BRICK VENEER ON MTL STUD
- WALL PARTITION - MTL STUD WALL
- WALL PARTITION - SOUND BARRIER - MTL STUD WALL
- WALL PARTITION - 1 HOUR - MTL STUD WALL - SEE ULXXXX
- WALL PARTITION - 2 HOUR - MTL STUD WALL - SEE ULXXXX
- WALL PARTITION - SMOKE BARRIER - MTL STUD WALL
- WALL PARTITION - CMU WALL
- WALL PARTITION - 2 HOUR - CMU WALL - SEE ULXXXX



FIRST FLOOR PLAN - LIGHTING

SCALE : 1/8" = 1'-0"

BUILDING NORTH / MAGNETIC NORTH

1

MBI COMPANIES INC.
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com

CONSULTANT

Vreeland Engineers Inc.
3107 Sutherland Ave.
P.O. Box 10648
Knoxville, TN. 37939
PH: (865)637-4451
1-800-362-9789
vreelandengineers.com
VEI Job No. 23193

SEAL

HAROLD E. DAMRON REGISTERED ENGINEER AGRICULTURE COMMERCE NO. 022989 STATE OF TENNESSEE 1-24-24

PROJECT INFORMATION

PROJECT:

CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS:

411 DOUGLAS LN
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ☐ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION
1	01.29.2024	ADDENDUM #01

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	10/06/2023
DESIGNED BY:	HED
DRAWN BY:	VEI
REVIEWED BY:	HED

SHEET TITLE: FIRST FLOOR PLAN - LIGHTING

SHEET NO.: E101

TFM# 00017-D
PROJECT # 2023-10-31-01

Autodesk Docs://220042-02_Clinton High School Welding Building/E29_220042-02.rvt
12/4/2024 2:10:08 PM

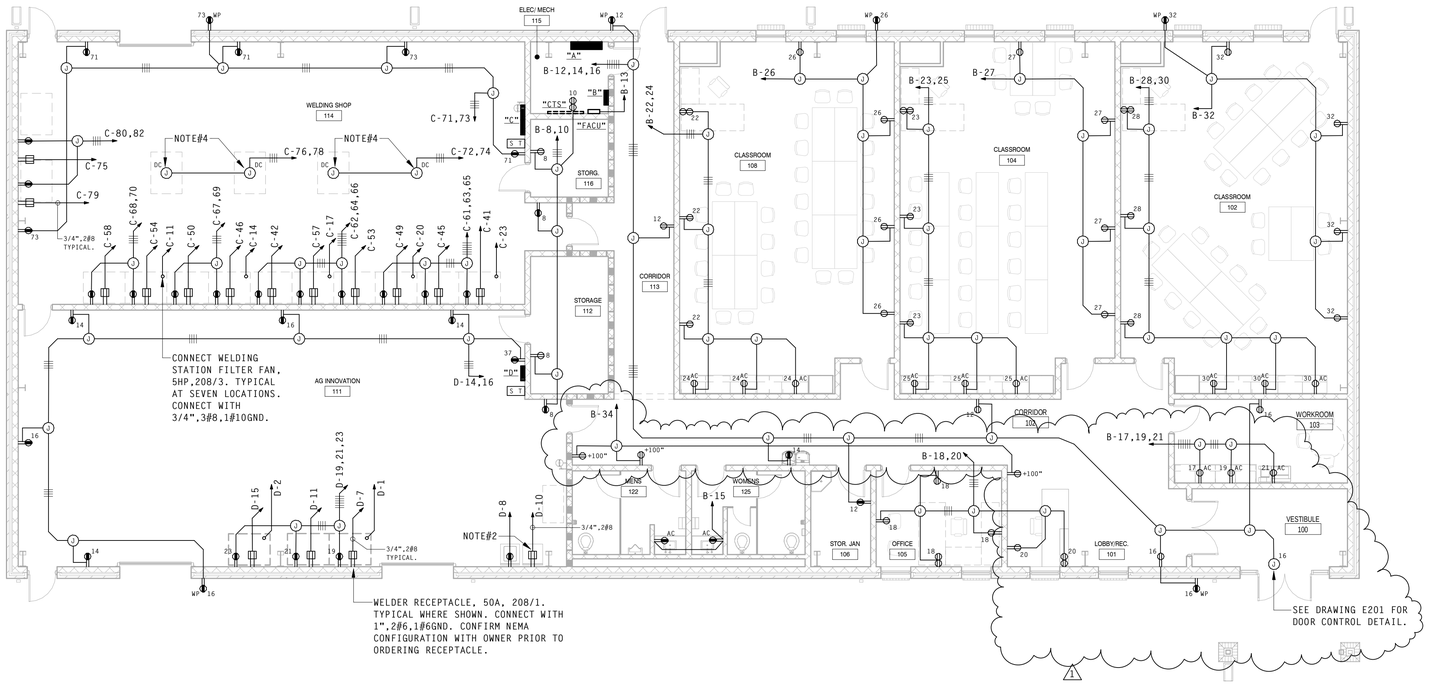
ARCH D

POWER NOTES:

1. RECESSED OUTLET BOXES ON OPPOSITE SIDES OF FIRE RATED PARTITIONS SHALL BE SEPARATED BY A HORIZONTAL DISTANCE OF AT LEAST 24 INCHES.
2. PROVIDE NEMA 14-30R RECEPTACLE FOR ELECTRIC DRYER.
3. "AC" BY DEVICE INDICATES DEVICE TO BE MOUNTED ABOVE COUNTER SUCH THAT BOTTOM OF BOX IS 2" ABOVE COUNTER OR COUNTER BACKSPLASH, AS APPLICABLE. REFER TO ARCHITECTURAL INTERIOR ELEVATIONS FOR COUNTER DETAILS.
4. "DC" BY JUNCTION BOX INDICATES RETRACTABLE POWER CORD, 120-VOLT, 20 AMPERE, SIMILAR AND EQUAL TO DANIEL WOODHEAD CO. INDUSTRIAL DUTY CORD REEL WITH MINIMUM 20'-0" 12/3 RETRACTABLE CORD, RATED 600 VOLT AC. EQUIP EACH CORD REEL WITH 20 AMPERE PENDANT OUTLET BOX WITH NEMA 5-20R DUPLEX RECEPTACLE. CONFIRM EXACT LOCATIONS OF CORD REELS WITH ARECHITECT/OWNER PRIOR TO INSTALLATION. PROVIDE SUITABLE MOUNTING SUPPORT AT CEILING/STRUCTURE FOR CORD REEL. COORDINATE WITH GC.

WALL LEGEND

- EXTERIOR WALL - BRICK VENEER ON MTL STUD
- WALL PARTITION - MTL STUD WALL
- WALL PARTITION - SOUND BARRIER - MTL STUD WALL
- WALL PARTITION - 1 HOUR - MTL STUD WALL - SEE ULXXXX
- WALL PARTITION - 2 HOUR - MTL STUD WALL - SEE ULXXXX
- WALL PARTITION - SMOKE BARRIER - MTL STUD WALL
- WALL PARTITION - CMU WALL
- WALL PARTITION - 2 HOUR - CMU WALL - SEE ULXXXX



FIRST FLOOR PLAN - POWER

SCALE : 1/8" = 1'-0"

1

BUILDING NORTH

MAGNETIC NORTH

TFM# 00017-D
PROJECT # 2023-10-31-01

Autodesk Docs://220042-02_Clinton High School Welding Building/E20_220042-02.rvt
1/24/2024 2:10:41 PM

MBI COMPANIES INC.
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com

CONSULTANT

Vreeland Engineers Inc.
3107 Sutherland Ave.
P.O. Box 10648
Knoxville, TN. 37939
PH: (865)637-4451
1-800-362-9789
vreelandengineers.com
VEI Job No. 23193

SEAL

HAROLD E. DAMRON REGISTERED ENGINEER AGRICULTURE COMMERCE NO. 022989 STATE OF TENNESSEE 1-24-24

PROJECT INFORMATION

PROJECT:

CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS:

411 DOUGLAS LN
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ☐ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION
1	01.29.2024	ADDENDUM #01

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	10/06/2023
DESIGNED BY:	HED
DRAWN BY:	VEI
REVIEWED BY:	HED

SHEET TITLE:

FIRST FLOOR PLAN - POWER

SHEET NO.:

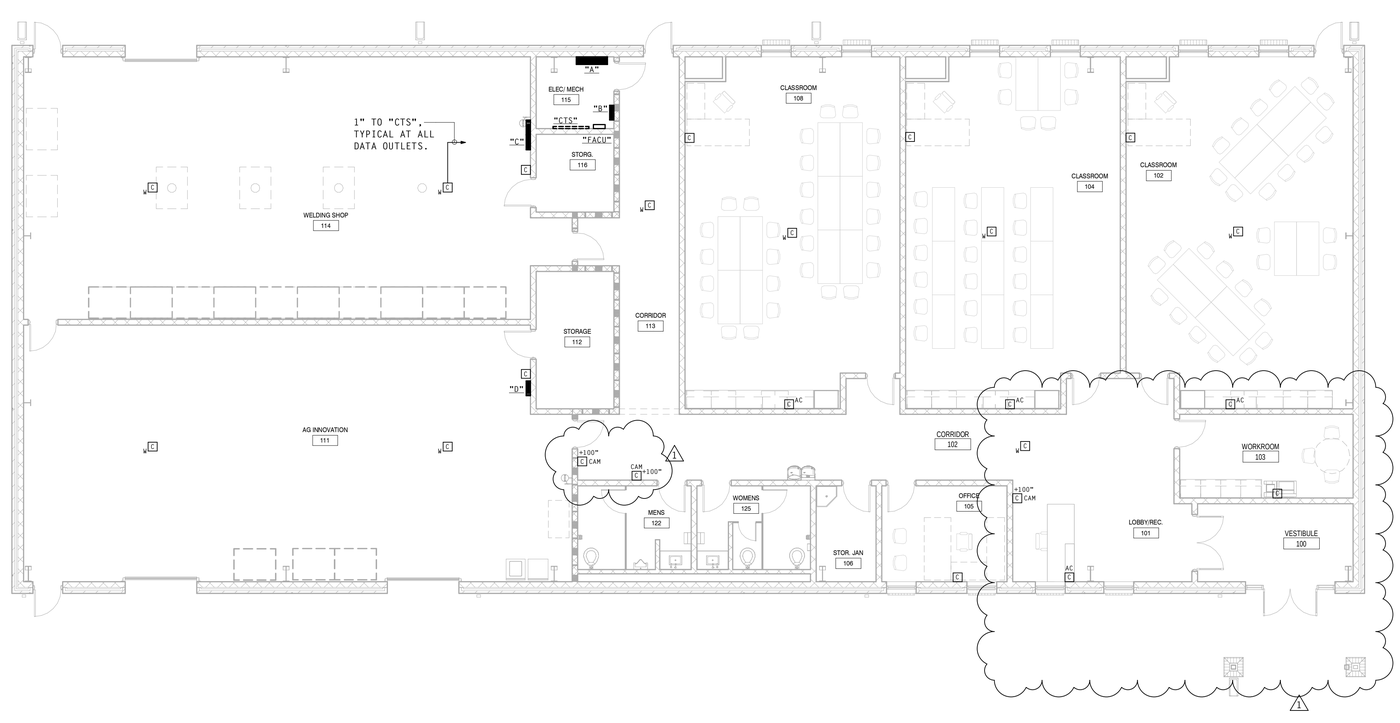
E102

TFM # 00017-D
PROJECT # 2023-10-31-01
FIELD SET

ARCH D

WALL LEGEND

- EXTERIOR WALL - BRICK VENEER ON MTL STUD
- WALL PARTITION - MTL STUD WALL
- WALL PARTITION - SOUND BARRIER - MTL STUD WALL
- WALL PARTITION - 1 HOUR - MTL STUD WALL - SEE ULXXXX
- WALL PARTITION - 2 HOUR - MTL STUD WALL - SEE ULXXXX
- WALL PARTITION - SMOKE BARRIER - MTL STUD WALL
- WALL PARTITION - CMU WALL
- WALL PARTITION - 2 HOUR - CMU WALL - SEE ULXXXX



FIRST FLOOR PLAN - COMMUNICATIONS

SCALE : 1/8" = 1'-0"

1

BUILDING NORTH

MAGNETIC NORTH

TFM# 00017-D
PROJECT # 2023-10-31-01

MBI COMPANIES INC.
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com

CONSULTANT

Vreeland Engineers Inc.
3107 Sutherland Ave.
P.O. Box 10648
Knoxville, TN. 37939
PH: (865)637-4451
1-800-362-9789
vreelandengineers.com
VEI Job No. 23193

SEAL

HAROLD E. DAMRON
REGISTERED ENGINEER
AGRICULTURE
COMMERCE
NO. 022989
STATE OF TENNESSEE
1-29-24

PROJECT INFORMATION

PROJECT:

CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS:

411 DOUGLAS LN
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ☐ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION
1	01.29.2024	ADDENDUM #01

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	10/06/2023
DESIGNED BY:	HED
DRAWN BY:	VEI
REVIEWED BY:	HED

SHEET TITLE:

FIRST FLOOR PLAN - COMMUNICATIONS

SHEET NO.:

E103

FIELD SET
PROJECT # 2023-10-31-01
TFM # 00017-D

Autodesk Docs://220042-02_Clinton High School Welding Building/E23_220042-02.rvt
1/24/2024 2:10:42 PM

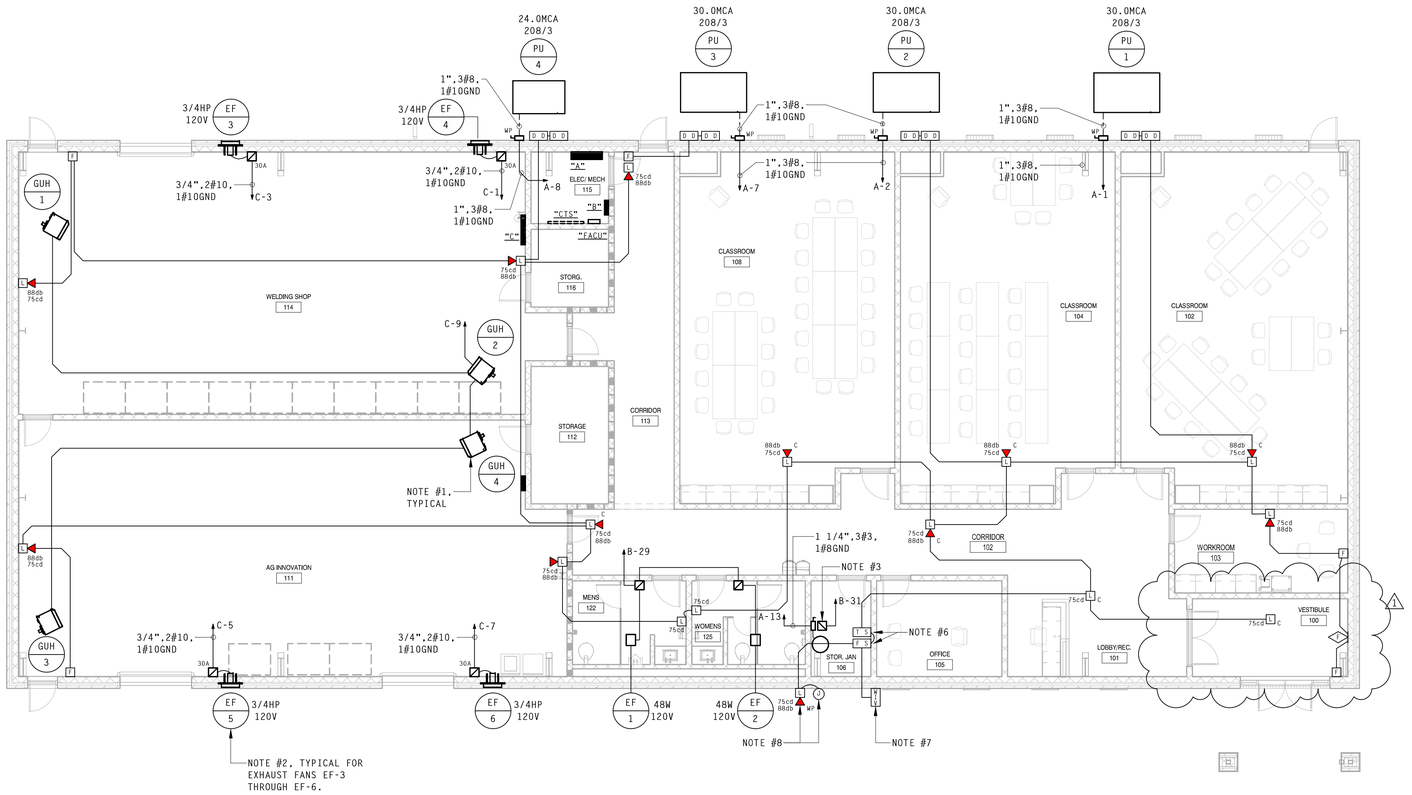
ARCH D

FIRE ALARM AND HVAC WIRING NOTES:

1. GAS FIRED UNIT HEATER PROVIDED BY HVAC CONTRACTOR. EACH "GUH" IS RATED 0.06HP. 120V. PROVIDE A 20 AMP, 120V. PROVIDE A 20 AMP, 120V TOGGLE SWITCH AT EACH "GUH" AND CONNECT AS REQUIRED.
2. EXHAUST FANS EF-3, EF-4, EF-5, AND EF-6 PROVIDED BY HVAC CONTRACTOR WITH FUSED SAFETY SWITCH. CONNNECT AS REQUIRED.
3. CONNECT WATER HEATER, 24.0KW, 208/3 AND RECIRCULATING PUMP, 1/12HP, 120V.
4. PRIOR TO BEGINNING CONDUIT INSTALLATION FOR HVAC/PLUMBING EQUIPMENT ELECTRICAL CONTRACTOR SHALL CONFIRM WITH MECHANICAL/PLUMBING CONTRACTOR THE VOLTAGES FOR ALL HVAC/PLUMBING EQUIPMENT REQUIRING ELECTRICAL SERVICE. ELECTRICAL CONTRACTOR SHALL CALL ANY DISCREPANCIES BETWEEN ELECTRICAL DRAWINGS AND VOLTAGE INFORMATION PROVIDED BY MECHANICAL/PLUMBING CONTRACTOR TO THE ATTENTION OF ENGINEER PRIOR TO PROCEEDING WITH WORK.
5. CONFIRM EXACT ROUGH-IN LOCATIONS FOR ALL HVAC/PLUMBING EQUIPMENT WITH MECHANICAL/PLUMBING CONTRACTOR PRIOR TO INSTALLATION OF CONDUIT.
6. CONNECT ALL SPRINKLER FLOW/TAMPER SWITCHES TO BUILDING FIRE ALARM SYSTEM. QUANTITIES SHOWN ARE DIAGRAMMATIC ONLY. CONFIRM EXACT QUANTITIES WITH SPRINKLER SYSTEM SUBCONTRACTOR.
7. EXTEND 3/4" WITH FIRE ALARM WIRING TO WALL INDICATOR VALVE (WIV). CONNECT TAMPER SWITCH AT PIV TO BUILDING FIRE ALARM SYSTEM. REFER TO FIRE PROTECTION/SITE UTILITY DRAWINGS FOR EXACT LOCATION OF WIV.
8. CONNECT SPRINKLER ALARM BELL ON EXTERIOR OF BUILDING. COORDINATE ROUGH-IN AND CONNECTION REQUIREMENTS WITH SPRINKLER SUBCONTRACTOR. PROVIDE "WEATHERPROOF" FIRE ALARM A/V DEVICE ON EXTERIOR OF BUILDING ADJACENT TO SPRINKLER BELL.

WALL LEGEND

- EXTERIOR WALL - BRICK VENEER ON MTL STUD
- WALL PARTITION - MTL STUD WALL
- WALL PARTITION - SOUND BARRIER - MTL STUD WALL
- WALL PARTITION - 1 HOUR - MTL STUD WALL - SEE ULXXXX
- WALL PARTITION - 2 HOUR - MTL STUD WALL - SEE ULXXXX
- WALL PARTITION - SMOKE BARRIER - MTL STUD WALL
- WALL PARTITION - CMU WALL
- WALL PARTITION - 2 HOUR - CMU WALL - SEE ULXXXX



FIRST FLOOR PLAN - FIRE ALARM AND HVAC WIRING

SCALE : 1/8" = 1'-0"

BUILDING NORTH / MAGNETIC NORTH — 1

MBI COMPANIES INC.
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com

CONSULTANT

Vreeland Engineers Inc.
3107 Sutherland Ave.
P.O. Box 10648
Knoxville, TN. 37939
PH: (865)637-4451
1-800-362-9789
vreelandengineers.com
VEI Job No. 23193

SEAL

HAROLD E. DAMRON REGISTERED ENGINEER AGRICULTURE COMMERCE NO. 022989 STATE OF TENNESSEE 1-29-24

PROJECT INFORMATION

PROJECT:

CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS:

411 DOUGLAS LN
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ☐ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION
1	01.29.2024	ADDENDUM #01

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	10/06/2023
DESIGNED BY:	HED
DRAWN BY:	VEI
REVIEWED BY:	HED

SHEET TITLE:

FIRST FLOOR PLAN - FIRE ALARM AND HVAC WIRING

SHEET NO.: E104

TFM# 00017-D
PROJECT # 2023-10-31-01

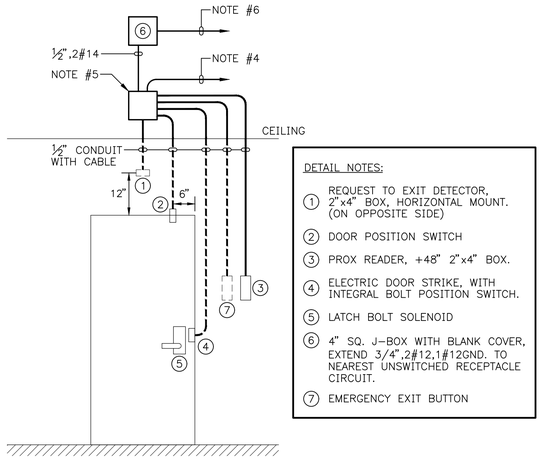
TFM # 00017-D 2023-10-31-01 PROJECT # FIELD SET

Autodesk Docs://220042-02_Clinton High School Welding Building/E29_220042-02.rvt
12/4/2024 2:10:45 PM

LIGHTING FIXTURE SCHEDULE

DESIGNATION	ILLUMINATION: WATTS	ILLUMINATION: DELIVERED LUMENS	ILLUMINATION: COLOR TEMPERATURE (°K)	ILLUMINATION: MINIMUM CRI	MOUNTING: CEILING: PENDANT STEM LENGTH	MOUNTING: CEILING: SURFACE	MOUNTING: CEILING: RECESSED	MOUNTING: WALL: HEIGHT ABOVE FINISHED FLOOR OR GRADE	DESCRIPTION: SHIELDING, TYPE MATERIALS, FINISH, MOUNTING	MANUFACTURER'S PRODUCT ITEM: COMPANY	MANUFACTURER'S PRODUCT ITEM: CATALOG NO.	✳EQUAL PRODUCT PERMITTED: YES	✳EQUAL PRODUCT PERMITTED: NO	REMARKS
A	36.7	4660	3500	80	–		•		2X4, FLAT PANEL	LITHONIA	CPX 2X4 4000LM 80CRI 35K A12 MIN10 ZT MVOLT	•		
B	24.6	3180	3500	80	–		•		2X4, FLAT PANEL	LITHONIA	CPX 2X4 3000LM 80CRI 35K A12 MIN10 ZT MVOLT E10WLCP	•		PROVIDE BATTERY BACKUP, WHERE SHOWN ON PLANS.
C	29.3	3251	3500	80	–		•		1X4, FLANGED, FLAT PANEL	LITHONIA	CPX 1X4 3200LM 80CRI 35K A12 MIN10 ZT MVOLT DGA14	•		
D	29.5	3077	3500	80	–		•		6" DOWNLIGHT	GOTHAM	EVO6 35/30 AR LSS WD MVOLT GZ10	•		
E	26.5	3000	3500	80	–	•			4FT., LENSED STRIP	LITHONIA	CLX L48 3000LM SEF FDL WD MVOLT GZ10 35K 80CRI E10WLCP	•		PROVIDE BATTERY BACKUP, WHERE NOTED WITH "EM" ON PLANS.
F	81	7300	3500	80	–	•			8FT., LENSED STRIP	LITHONIA	PTNSL 8' WD MVOLT OSR2 35K 80CRI DNA	•		
G	51	6615	4000	70	–	•			WALL PACK, FULL CUT–OFF	LITHONIA	ARC2 LED P5 40K MVOLT E8WC DDBXD	•		PROVIDE BATTERY BACKUP, WHERE SHOWN ON PLANS.
H	29.5	3077	4000	80	–		•		6" DOWNLIGHT, EXTERIOR	GOTHAM	EVO6 40/30 AR LSS WD MVOLT GZ10	•		

✳ UNLESS NOTED, EQUAL PRODUCT TO THAT SPECIFIED WILL BE ACCEPTED. THE DESIGN PROFESSIONAL SHALL HAVE SOLE JUDGEMENT CONCERNING EQUIVALENCY OF SUBSTITUTION.



DETAIL NOTES:

1. REQUEST TO EXIT DETECTOR, 2"x4" BOX, HORIZONTAL MOUNT. (ON OPPOSITE SIDE)
2. DOOR POSITION SWITCH
3. PROX READER, +48" 2"x4" BOX.
4. ELECTRIC DOOR STRIKE, WITH INTEGRAL BOLT POSITION SWITCH.
5. LATCH BOLT SOLENOID
6. 4" SQ. J–BOX WITH BLANK COVER, EXTEND 3/4",2#12,1#12GND. TO NEAREST UNSWITCHED RECEPTACLE CIRCUIT.
7. EMERGENCY EXIT BUTTON

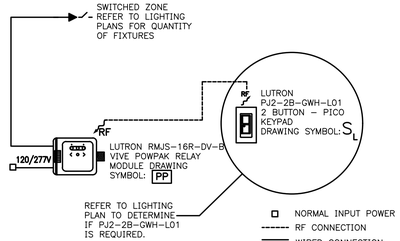
NOTES:

1. CONTRACTOR TO PROVIDE ALL CONDUIT, LOW VOLTAGE CABLE, AND JUNCTION BOXES NECESSARY FOR ROUGH–IN. MAKE FINAL CONNECTIONS. COORDINATE WITH DOOR HARDWARE SUPPLIER.
2. VERIFY ALL LOCATIONS PRIOR TO ROUGH–IN.
3. ALL DOOR HARDWARE AND ELECTRONIC EQUIPMENT IS PROVIDED BY OTHERS.
4. ¾" CONDUIT WITH CABLE; EXTEND TO DOOR INTERFACE IN COMM. ROOM..
5. 4" SQ. JUNCTION BOX TO BE LOCATED ABOVE ADJACENT LAY–IN (ACCESSIBLE) CEILING OR FLUSH IN WALL OR CEILING. DRAWING SYMBOL: DC
6. ½",2#12,1#12G; CONNECT TO NEAREST 120V UNSWITCHED CIRCUIT.
7. DETAIL IS ILLUSTRATED FROM ENTRY SIDE, AS INDICATED BY SOLID LINES. DASHED LINES INDICATE WORK ON SECURED AREA SIDE.
8. ANY LOSS OF POWER SHALL AUTOMATICALLY UNLOCK DOOR.

DOOR CONTROL DETAIL
NO SCALE

L E G E N D

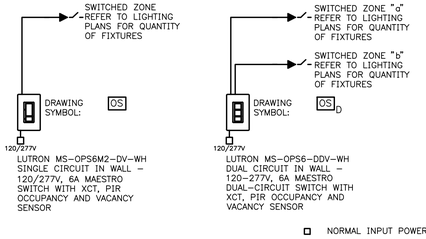
SYMBOL	DESCRIPTION
M	MANUAL MOTOR STARTER TO CONTROL MOTOR INDICATED, SAME MOUNTING HEIGHT AS WALL SWITCH WHERE STARTER IS WALL MOUNTED. "2P" BY STARTER INDICATES TWO POLE STARTER TO BE PROVIDED FOR 208–VOLT, SINGLE–PHASE EQUIPMENT.
D	FUSED DISCONNECT SWITCH, HEAVY DUTY "HP" RATED, PROVIDE NEMA 3R ENCLOSURE OUTDOORS.
F	FIRE ALARM MANUAL PULL STATION, TOP OF BOX 48" AFF.
L	WALL MOUNTED FIRE ALARM VISUAL STROBE UNIT, CANDELA RATING AS NOTED ON DRAWINGS. PROVIDE BACKBOX FOR STROBE SUCH THAT BOTTOM OF STROBE LENS IS 81" ABOVE FINISHED FLOOR, COORDINATE BACKBOX TYPE AND EXACT MOUNTING HEIGHT WITH FIRE ALARM EQUIPMENT SUPPLIER. "WG" BY STROBE INDICATES CONTRACTOR TO PROVIDE WIRE GUARD.
H	CEILING MOUNTED FIRE ALARM HEAT DETECTOR.
C L	FIRE ALARM VISUAL STROBE UNIT, CANDELA RATING AS NOTED ON DRAWINGS, "C" INDICATES STROBE UNIT TO BE CEILING MOUNTED. "WG" BY DEVICE INDICATES CONTRACTOR TO PROVIDE WIRE GUARD.
C	FIRE ALARM COMBINATION SPEAKER/STROBE UNIT, CANDELA AND DBA RATING AS NOTED ON DRAWINGS, "C" INDICATES SPEAKER/STROBE UNIT TO BE CEILING MOUNTED. "WG" BY DEVICE INDICATES CONTRACTOR TO PROVIDE WIRE GUARD.
	WALL MOUNTED FIRE ALARM COMBINATION SPEAKER/STROBE UNIT, CANDELA AND DBA RATING AS NOTED ON DRAWINGS. PROVIDE BACKBOX SUCH THAT BOTTOM OF STROBE LENS IS 81" ABOVE FINISHED FLOOR, COORDINATE BACKBOX TYPE AND EXACT MOUNTING HEIGHT WITH FIRE ALARM EQUIPMENT SUPPLIER. "WC" BY SPEAKER/STROBE INDICATES CONTRACTOR TO PROVIDE WIRE GUARD.
"FACU"	WALL MOUNTED FIRE ALARM REMOTE ANNUNCIATOR PANEL, TOP 54" AFF.
	WALL MOUNTED FIRE ALARM CENTRAL CONTROL UNIT, TOP 6'–0" AFF.
DD	FIRE ALARM DUCT SMOKE DETECTOR, FURNISHED BY ELECTRICAL, INSTALLED DUCTWORK BY MECHANICAL, CONNECTED TO FIRE ALARM SYSTEM BY ELECTRICAL, CONNECT TO SHUT UNIT DOWN UPON ALARM. FURNISH AND INSTALL "LED" REMOTE STATUS INDICATOR, FIELD VERIFY LOCATION.
WIV	SPRINKLER SYSTEM WALL MOUNTED INDICATOR VALVE, CONNECT TO SEPARATE ZONE IN BUILDING FIRE ALARM SYSTEM.
TS	SPRINKLER SYSTEM TAMPER SWITCH, CONNECT TO SEPARATE ZONE IN BUILDING FIRE ALARM SYSTEM.
FS	SPRINKLER SYSTEM FLOW SWITCH, CONNECT TO SEPARATE ZONE IN BUILDING FIRE ALARM SYSTEM.
GUH	GAS FIRED UNIT HEATER, KW AND VOLTAGE AS INDICATED ON PLANS, PROVIDE DISCONNECT SWITCH AND CONNECT.
W C	DATA/VOICE OUTLET, PROVIDE 4 11/16" SQUARE BOX WITH SINGLE–GANG DEVICE RING AND BLANK COVERPLATE. EXTEND EMPTY 1" CONDUIT FROM OUTLET BOX TO POINT ABOVE ACCESSIBLE LAY–IN CEILING AND TERMINATE WITH BUSHING. LOCATE OUTLET BOX 3" ABOVE BACKSPLASH AT WORK COUNTERS AND +18" AFF ELSEWHERE UNLESS NOTED TO A DIFFERENT HEIGHT ON DRAWINGS. "W" BY DEVICE INDICATES DEVICE TO BE DEDICATED FOR WIRELESS ACCESS POINT USE. "CAM" BY DEVICE INDICATES DEVICE TO BE DEDICATED FOR CAMERA SYSTEM USE.
"CTS"	COMMUNICATION TERMINAL SPACE, 3/4" PLYWOOD BOLTED TO WALL, TOP 6–FEET ABOVE FINISHED FLOOR.



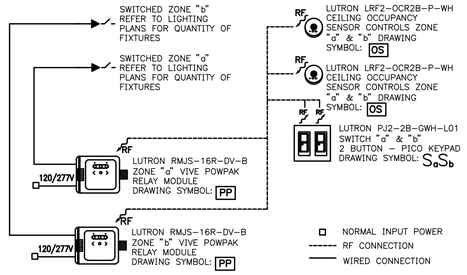
TYPICAL CEILING MOUNTED SENSOR LIGHTING CONTROL DETAIL
NO SCALE

NOTE:

1. DETAIL ABOVE DEPICTS "WIRELESS" ARRANGEMENT FOR SENSORS AND SWITCHES. ALTERNATE SYSTEMS UTILIZING LOW VOLTAGE WIRING FROM POWER PACKS TO CEILING SENSORS AND SWITCHES SHALL BE ACCEPTABLE FOR USE PROVIDED THAT FUNCTIONALITY OF SPACE MATCHES WORK INDICATED ON THIS DETAIL AND SHOWN ON DRAWINGS.



TYPICAL IN WALL SENSOR LIGHTING CONTROL DETAIL
NO SCALE



TYPICAL BI–LEVEL SWITCHING LIGHTING CONTROL DETAIL
NO SCALE

NOTE:

1. DETAIL ABOVE DEPICTS "WIRELESS" ARRANGEMENT FOR SENSORS AND SWITCHES. ALTERNATE SYSTEMS UTILIZING LOW VOLTAGE WIRING FROM POWER PACKS TO CEILING SENSORS AND SWITCHES SHALL BE ACCEPTABLE FOR USE PROVIDED THAT FUNCTIONALITY OF SPACE MATCHES WORK INDICATED ON THIS DETAIL AND SHOWN ON DRAWINGS.

L E G E N D

SYMBOL	DESCRIPTION
b A 3 ✳	LED LIGHTING FIXTURE; "A" REFERS TO DESIGNATION IN THE LIGHTING FIXTURE SCHEDULE; "b" REFERS TO SWITCH CONTROL AND "3" REFERS TO CIRCUIT NUMBER. ASTERISK (✳) INDICATES LUMINAIRE TO BE EQUIPPED WITH BATTERY PACK FOR EGRESS LIGHTING.
a B 2	LED LIGHTING FIXTURE; "B" REFERS TO DESIGNATION IN THE LIGHTING FIXTURE SCHEDULE; "a" REFERS TO SWITCH CONTROL; AND "2" REFERS TO CIRCUIT NUMBER.
	LED LIGHTING FIXTURE WITH BUILT–IN EMERGENCY BATTERY PACK TO PROVIDE LIGHTING UPON LOSS OF NORMAL POWER. PROVIDE SEPARATE UNSWITCHED ENERGIZED CONDUCTOR TO BATTERY PACK IN ORDER TO ALLOW NORMAL SWITCHING OF LIGHTING FIXTURES WITHOUT DISCHARGING BATTERY. BATTERY PACK SHALL PROVIDE POWER FOR A DURATION OF NOT LESS THAN 90 MINUTES IN ACCORDANCE WITH SECTION 2702, IBC1006.3.
	WALL–MOUNTED TWIN–HEAD EMERGENCY LIGHTING FIXTURE WITH BUILT–IN BATTERY PACK, CONNECT TO UNSWITCHED LIGHTING CIRCUIT. MOUNT 7'–6" AFF EXCEPT NOT LESS THAN 6" BELOW CEILING. BATTERY PACK SHALL PROVIDE POWER FOR A DURATION OF NOT LESS THAN 90 MINUTES IN ACCORDANCE WITH SECTION 2702, IBC1006.3.
1 P WP S K 4	WALL SWITCH; SINGLE POLE UNLESS NOTED 3– OR 4–WAY; "P" INDICATES EQUIPPED WITH PILOT LIGHT TO INDICATE WHEN SWITCH IS ON; W.P. INDICATES WEATHERPROOF, "K" INDICATES KEY OPERATED SWITCH; +48"/– ABOVE FLOOR EXCEPT IN MASONRY WALLS WHERE HEIGHT SHALL BE ADJUSTED TO HAVE BOX EDGE OCCUR AT A MASONRY JOINT. PROVIDE NEUTRAL CONDUCTOR IN ADDITION TO LINE AND SWITCHED CONDUCTORS.
D	WALL MOUNTED DIMMER TO CONTROL LIGHTING FIXTURES INDICATED, SAME MOUNTING HEIGHT AS REGULAR WALL SWITCH. PROVIDE NEUTRAL CONDUCTOR IN ADDITION TO LINE AND SWITCHED CONDUCTORS.
W C C P D	EXIT SIGN, "W" INDICATES WALL MOUNTING, "C" INDICATES CEILING MOUNTING, "S" INDICATES SINGLE FACE, "D" INDICATES DOUBLE FACE, "P" INDICATES PENDANT MOUNTED. PROVIDE DIRECTIONAL ARROWS ON EXIT SIGNS AS INDICATED ON PLANS. UNIT EQUIPPED WITH BATTERY BACK–UP. CONNECT TO UNSWITCHED, "HOT", LIGHTING CIRCUIT. BATTERY PACK SHALL PROVIDE POWER FOR A DURATION OF NOT LESS THAN 90 MINUTES IN ACCORDANCE WITH SECTION 2702, IBC1006.3.
W S C P D	EXIT SIGN WITH BUILT–IN TWIN HEAD EMERGENCY LIGHT, "W" INDICATES WALL MOUNTING, "C" INDICATES CEILING MOUNTING, "S" INDICATES SINGLE FACE, "D" INDICATES DOUBLE FACE, "P" INDICATES PENDANT MOUNTED. PROVIDE DIRECTIONAL ARROWS ON EXIT SIGNS AS INDICATED ON PLANS. UNIT EQUIPPED WITH BATTERY BACK–UP. CONNECT TO UNSWITCHED, "HOT", LIGHTING CIRCUIT. BATTERY PACK SHALL PROVIDE POWER FOR A DURATION OF NOT LESS THAN 90 MINUTES IN ACCORDANCE WITH SECTION 2702, IBC1006.3.
1	DUPLEX PLUG RECEPTACLE; 120–VOLTS; 20–AMPERES; MOUNT 3" ABOVE BACKSPLASH AT WORK COUNTERS AND LAVATORIES AND +18" AFF ELSEWHERE UNLESS NOTED TO A DIFFERENT HEIGHT. TAMPER RESISTANT, UNLESS NOT REQUIRED BY CODE.
	SPECIAL PURPOSE 208–VOLT, SINGLE–PHASE RECEPTACLE, MOUNT +18" AFF UNLESS NOTED OTHERWISE, SEE PLANS FOR ADDITIONAL INFORMATION.
	SPECIAL PURPOSE 208–VOLT, THREE–PHASE RECEPTACLE, MOUNT +18" AFF UNLESS NOTED OTHERWISE, SEE PLANS FOR ADDITIONAL INFORMATION.
	QUADRAPLEX PLUG RECEPTACLE, 120–VOLTS, 20–AMPERES. MOUNT 3" ABOVE BACKSPLASH AT WORK COUNTERS/LAVATORIES AND +18" AFF ELSEWHERE UNLESS NOTED TO A DIFFERENT HEIGHT. TAMPER RESISTANT, UNLESS NOT REQUIRED BY CODE.
	DUPLEX PLUG RECEPTACLE, 120–VOLTS, 20–AMPERES, SHADED CENTER INDICATES EQUIPPED WITH BUILT–IN GROUND FAULT CIRCUIT INTERRUPTER, MOUNT 3" ABOVE BACKSPLASH AT WORK COUNTERS/LAVATORIES AND +18" AFF ELSEWHERE UNLESS NOTED TO A DIFFERENT HEIGHT. PROVIDE WEATHER RESISTANT DEVICE AND WEATHERPROOF "EXTRA DUTY WHILE IN USE" COVER WHERE LOCATED OUTDOORS. TAMPER RESISTANT, UNLESS NOT REQUIRED BY CODE.
	PANELBOARD, RECESSED OR SURFACE MOUNTED AS INDICATED ON DRAWINGS, TOP 6–FEET ABOVE FINISHED FLOOR ADJUSTED TO OCCUR AT A MASONRY JOINT, SEE PANELBOARD SCHEDULE FOR EQUIPMENT CONTAINED.
A–1,3,5	CONDUIT AND CONDUCTORS EXTENDED TO PANELBOARD A, CIRCUITS 1, 3, AND 5. CROSS LINES INDICATE #12 AWG PHASE AND NEUTRAL CONDUCTORS WHERE MORE THAN TWO. SINGLE CIRCUIT BRANCH CIRCUIT WIRING RUNS SHOWN WITHOUT CROSS LINES SHALL BE PROVIDED WITH 2#12, 1#12G. EACH 20 AMPERE BRANCH CIRCUIT SHALL BE PROVIDED WITH SEPARATE NEUTRAL CONDUCTOR. SHARING OF NEUTRAL CONDUCTORS SHALL NOT BE PERMITTED. PROVIDE EQUIPMENT GROUNDING CONDUCTOR IN EACH CONDUIT RUN.
	CONDUIT IN THE FLOOR CONSTRUCTION OR UNDERGROUND SHOWN TURNING UP.
	CONDUIT IN THE WALL OR CEILING CONSTRUCTION SHOWN TURNING DOWN.
J	JUNCTION BOX, SIZE AND USE AS REQUIRED; COVERPLATE SHALL OVERLAP THE BOX EDGE BY 1/2" WHERE RECESSED IN WALL WITH CONCEALED WIRING.
OS	OCCUPANCY/VACANCY SENSOR FOR LIGHTING CONTROL, CEILING OR WALL MOUNTED AS INDICATED ON PLANS. MOUNT WALL–MOUNTED SENSOR AT SAME HEIGHT AS WALL SWITCH (+48" ABOVE FINISHED FLOOR). "D" BY SENSOR ON PLANS INDICATES DUAL RELAY TYPE SENSOR ALLOWING INDEPENDENT CONTROL OF TWO SEPARATE LIGHTING LOADS. PROVIDE NEUTRAL CONDUCTOR IN ADDITION TO LINE AND SWITCHED CONDUCTORS.
PP	POWER PACK ROOM CONTROLLER FOR CEILING MOUNTED OCCUPANCY SENSOR SYSTEM, SEE PLANS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.
S_L	LOW–VOLTAGE WALL SWITCH, SAME MOUNTING HEIGHT AS REGULAR WALL SWITCH. REFER TO DETAIL THIS SHEET.
1 ST	WALL MOUNTED EXTERIOR LED EMERGENCY LIGHTING UNIT FULL CUTOFF "DARK SKY" COMPLIENT TYPE, WITH BUILT–IN NICKEL CADMIUM BATTERY FOR EMERGENCY OPERATION ONLY. UPON LOSS OF NORMAL UTILITY POWER, WET LOCATION LISTED, WITH INTERNAL BATTERY HEATER. VERIFY FINISH AND EXACT MOUNTING HEIGHT WITH ARCHITECT. UNIT SHALL BE SIMILAR AND EQUAL TO MULE LIGHTING MERU–LED–EM–FIN–IH. UNIT SHALL HAVE TWO LED LAMPS FOR REDUNDANCY, TOTAL 11 WATTS. BATTERY PACK SHALL PROVIDE POWER FOR A DURATION OF NOT LESS THAN 90 MINUTES IN ACCORDANCE WITH SECTION 2702, IBC1006.3.
	SHUNT–TRIP OPERATOR FOR EMERGENCY SHUT DOWN OF PANELBOARD.

MBI COMPANIES INC.
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbiccompanies.com

CONSULTANT

Vreeland Engineers Inc.
3107 Sutherland Ave.
P.O. Box 10648
Knoxville, TN. 37939
PH: (865)637-4451
1-800-362-9789
vreelandengineers.com
VEI Job No. 23193

SEAL

HAROLD E. DAMRON
REGISTERED ENGINEER
AGRICULTURE
No. 022989
STATE OF TENNESSEE
1-24-24

PROJECT INFORMATION

PROJECT:

CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS:

411 DOUGLAS LN
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION
1	01.29.2024	ADDENDUM #01

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	10/06/2023
DESIGNED BY:	HED
DRAWN BY:	VEI
REVIEWED BY:	HED
SHEET TITLE:	

LEGEND, SCHEDULES, DETAILS

SHEET NO.: E201

TFM # 00017-D
PROJECT # 2023-10-31-01
FIELD SET

E201 - CHS WELDING - LEGEND, SCHEDULES, DETAILS.dwg
A.L.S. 01/24/24 2:06 PM HD 23193(AS)

ELECTRICAL SPECIFICATIONS:

1. SCOPE: FURNISH PLANT, LABOR, MATERIAL, SERVICES, AND EQUIPMENT NECESSARY FOR AND REASONABLY INCIDENTAL TO THE INSTALLATION OF ELECTRICAL FACILITIES SHOWN ON THE DRAWINGS AND CALLED FOR HEREINAFTER.

2. CODES AND PERMITS: SECURE NECESSARY PERMITS, PAY NECESSARY FEES, CONFORM TO ALL APPLICABLE LOCAL, STATE, AND NATIONAL CODES.

3. POWER SERVICE: POWER SERVICE SHALL BE TAKEN UNDERGROUND FROM A NEW UTILITY COMPANY PAD MOUNTED TRANSFORMER AT 120/208–VOLTS, 3–PHASE, 4–WIRE, WYE. REFER TO DRAWINGS FOR ADDITIONAL INFORMATION. CAREFULLY COORDINATE POWER SERVICE ARRANGEMENT, METERING, ETC., WITH UTILITY COMPANY PRIOR TO COMMENCING WITH WORK. INCLUDE ALL UTILITY COMPANY "AID TO CONSTRUCTION" CHARGES IN BID PRICE.

4. 600–VOLT WIRING: EXTERIOR UNDERGROUND CONDUIT RUNS OR CONDUIT RUNS IN OR BELOW CONCRETE FLOOR SLAB INSIDE BUILDING SHALL BE INSTALLED IN SCHEDULE 40 PVC CONDUIT WITH GALVANIZED RIGID STEEL ELBOWS WHERE CONDUITS TURN UP THROUGH CONCRETE FLOOR SLAB. NO PVC CONDUIT WILL BE PERMITTED ABOVE FLOOR LEVEL INSIDE THE BUILDING. EXPOSED CONDUIT ON THE EXTERIOR OF THE BUILDING SHALL BE GALVANIZED RIGID STEEL OR INTERMEDIATE METAL CONDUIT. FINAL CONNECTIONS TO HVAC EQUIPMENT SHALL BE MADE USING LIQUID–TIGHT FLEXIBLE CONDUIT (SEALTITE). OTHERWISE, ALL OVERHEAD WIRING INSIDE THE BUILDING IN DRY LOCATIONS SHALL BE INSTALLED IN ELECTRIC–METALLIC TUBING (EMT). METAL CLAD (MC) CABLE SHALL BE PERMISSIBLE FOR FINAL CONNECTIONS TO LAY–IN LIGHTING FIXTURES FROM LOCAL JUNCTION BOXES IN INDIVIDUAL LENGTHS NOT EXCEEDING 6'. ALL CONDUCTORS ON THE PROJECT SHALL BE COPPER WITH "THHN/THWN" INSULATION. CONDUCTORS SHALL BE COLOR CODED IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE REQUIREMENTS. WIRING SHALL BE INSTALLED CONCEALED TO THE MAXIMUM EXTENT PRACTICABLE. ALL WIRING SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER, PARALLEL OR PERPENDICULAR TO BUILDING STRUCTURAL ELEMENTS. NO OVERHEAD DIAGONAL RUNS WILL BE PERMITTED.

5. PANELBOARDS: FURNISH AND INSTALL NEW PANELBOARDS WHERE INDICATED ON DRAWINGS. PANELBOARDS SHALL BE SIMILAR AND EQUAL TO EATON POW–R–LINE PANELBOARDS, RATED 120/208–VOLTS, 3–PHASE, 4–WIRE, WYE. SIMILAR AND EQUAL EQUIPMENT BY SQUARE D, SIEMENS, OR GENERAL ELECTRIC WILL BE APPROVED FOR USE. AIC RATING OF PANELBOARD SHALL BE AS INDICATED ON DRAWINGS. ALL PANELBOARD BUSING SHALL BE COPPER. UTILIZE MOLDED CASE, BOLT–ON TYPE CIRCUIT BREAKERS. THE USE OF "PLUG–IN" STYLE CIRCUIT BREAKERS SHALL NOT BE PERMISSIBLE. PROVIDE EACH PANELBOARD WITH A TYPEWRITTEN CIRCUIT DIRECTORY INDICATING LOADS SERVED. PROVIDE ENGRAVED NAMEPLATE ON EACH PANELBOARD INDICATING PANELBOARD DESIGNATION, VOLTAGE, AND FEEDER SERVICE ORIGINATION LOCATION.

6. SAFETY SWITCHES: FURNISH AND INSTALL HEAVY–DUTY FUSIBLE TYPE SAFETY SWITCHES WHERE INDICATED ON DRAWINGS. SAFETY SWITCHES SHALL BE HORSEPOWER RATED, QUICK–MAKE, QUICK–BREAK, WITH ARC SHIELDS. SAFETY SWITCHES LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURES. SAFETY SWITCHES LOCATED INSIDE SHALL HAVE NEMA 1 ENCLOSURES. WHERE SAFETY SWITCHES ARE REQUIRED TO BE INSTALLED AWAY FROM WALLS, CONTRACTOR SHALL PROVIDE A SUITABLE SUPPORT TO ALLOW THE SWITCH TO BE IN A POSITION OF 4–1/2' ABOVE FLOOR OR FINISHED GRADE. WHERE NECESSARY, PROVIDE A STEEL FRAME ATTACHED TO FLOOR/GROUND. SWITCHES MAY BE MOUNTED ON EQUIPMENT WHERE SPECIFIC APPROVAL IS PROVIDED BY EQUIPMENT SUPPLIER. COORDINATE EXACT ROUGH–IN LOCATIONS OF SAFETY SWITCHES WITH HVAC CONTRACTOR PRIOR TO INSTALLATION. PROVIDE FUSING IN SAFETY SWITCHES TO MATCH MOCP RATING INDICATED ON UNIT NAMEPLATE DATA.

7. MANUAL MOTOR STARTERS: FURNISH AND INSTALL MANUAL MOTOR STARTERS FOR 120–VOLT EXHAUST FANS AS SHOWN ON DRAWINGS AND AS CALLED FOR HEREINAFTER. MANUAL MOTOR STARTERS SHALL BE EQUIPPED WITH MELTING ALLOY THERMAL OVERLOAD RELAY. UNIT SHALL BE SIMILAR AND EQUAL TO SQUARE D COMPANY 2510 SERIES, CATALOG NO. FF–1P. PROVIDE 2–POLE MANUAL MOTOR STARTERS TO SERVE 208–VOLT, SINGLE–PHASE EQUIPMENT WHERE INDICATED ON DRAWINGS.

8. LIGHTING FIXTURES: FURNISH AND INSTALL LIGHTING FIXTURES AS SHOWN ON DRAWINGS COMPLETE WITH LAMPS. REFER TO LIGHTING FIXTURE SCHEDULE FOR ADDITIONAL INFORMATION. CATALOG NUMBERS INDICATED ON LIGHTING FIXTURE SCHEDULE INDICATE THE MINIMUM STANDARD OF QUALITY EXPECTED FOR EACH LIGHTING FIXTURE TYPE. SIMILAR AND EQUAL EQUIPMENT BY OTHER MANUFACTURERS WILL BE ACCEPTABLE FOR USE.

9. OCCUPANCY SENSORS: FURNISH AND INSTALL OCCUPANCY SENSORS FOR CONTROL OF LIGHTING WHERE INDICATED ON DRAWINGS., REFER TO DETAILS ON DRAWINGS FOR ADDITIONAL INFORMATION.

10. WIRING DEVICES: FURNISH AND INSTALL WIRING DEVICES (WALL SWITCHES, DUPLEX PLUG RECEPTACLES, GFCI DUPLEX RECEPTACLES, TAMPER–RESISTANT DUPLEX RECEPTACLES, ETC., AS INDICATED ON DRAWINGS). ALL 120–VOLT DEVICES SHALL HAVE A MINIMUM RATING OF 20–AMPERES. THE USE OF 15–AMPERE RATED DEVICES SHALL NOT BE PERMISSIBLE. COLOR OF DEVICES SHALL BE IVORY, WHITE, OR GRAY AS DIRECTED BY ARCHITECT. UTILIZE STAINLESS STEEL COVERPLATES. REFER TO DRAWINGS FOR ADDITIONAL INFORMATION. CONTRACTOR SHALL CONFIRM THAT ALL DEVICES, INCLUDING OCCUPANCY SENSORS, HAVE SAME FINISH.

11. COMMUNICATIONS RACEWAY FACILITY: FURNISH AND INSTALL A SYSTEM OF EMPTY CONDUIT AND BOXES FOR COMMUNICATIONS SYSTEMS USE IN THE BUILDING. OWNER WILL EMPLOY THE SERVICES OF A SEPARATE LOW–VOLTAGE VENDOR FOR INSTALLATION OF ALL LOW–VOLTAGE WIRING WITH THE EXCEPTION OF FIRE ALARM SYSTEM. COORDINATE EXACT ROUGH–IN LOCATIONS FOR COMMUNICATIONS SYSTEM EQUIPMENT PRIOR TO ROUGH–IN. PROVIDE A #1/0 AWG GROUND FROM EACH COMMUNICATIONS TERMINAL SPACE TO THE MAIN ELECTRICAL SERVICE GROUND IN THE BUILDING. PROVIDE COPPER GROUNDING BAR AT EACH COMMUNICATIONS TERMINAL SPACE TO TERMINATE #1/0 AWG COPPER GROUNDING CONDUCTOR.

12. EXIT SIGNS/EMERGENCY LIGHTING: FURNISH AND INSTALL EXIT SIGNS AND EMERGENCY LIGHTING AS INDICATED ON DRAWINGS. ALL EXIT SIGNS SHALL BE LED, POLYCARBONATE HOUSING WITH MATTE WHITE FINISH AND GREEN LETTERS. EACH EXIT SIGN SHALL BE EQUIPPED WITH A MAINTENANCE–FREE, NICKEL–CADMIUM STANDBY BATTERY BACKUP. EXIT SIGNS SHALL BE SIMILAR AND EQUAL TO LITHONIA NO. LQM–S–W–3–R–MVOLT–FL–N. PROVIDE COMBO EXIT SIGNS/TWIN HEAD EMERGENCY LIGHTS SHERE NOTED ON PLANS, LITHONIA CO. NO. LHQM–LED–R–M6. TWIN–HEAD EMERGENCY LIGHTING UNITS SHALL BE MATTE WHITE FINISH, THERMOPLASTIC HOUSING, WITH TWO 1.5–WATT LED LAMPS AND SEALED MAINTENANCE–FREE, NICKEL–CADMIUM BATTERY, SIMILAR AND EQUAL TO LITHONIA NO. ELM2L LED. INSTALL EXIT SIGNS AND EMERGENCY LIGHTING UNITS IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. EXTERIOR EMERGENCY LIGHTING SHALL BE PROVIDED VIA BUILT–IN BATTERY PACKS IN THE EXTERIOR LIGHTING FIXTURES BEING PROVIDED. SEE LIGHTING FIXTURE SCHEDULE FOR ADDITIONAL INFORMATION.

13. FIRE ALARM SYSTEM: FURNISH AND INSTALL A COMPLETE ADDRESSABLE VOICE EVACUATION STYLE FIRE ALARM SYSTEM FOR THE BUILDING. EQUIPMENT SPECIFIED HEREIN IS THAT BY JOHNSON CONTROLS (SIMPLEX). SIMILAR AND EQUAL EQUIPMENT BY OTHER MANUFACTURERS WILL BE ACCEPTABLE FOR USE.

   A. NEW CONTROL PANEL SHALL BE ANALOG ADDRESSABLE WITH BATTERY SUPPLY, INCLUDING CHARGER. USE SIMPLEX GRINNELL 4010–9101. PROVIDE VOICE EVAC PANEL WITH NECESSARY AMPLIFIER RATING TO SERVE SPEAKERS IN BUILDING. VISIBLE ALARM SIGNALS AND PRE–RECORDED VOICE ANNOUNCEMENT SHALL BE PROVIDED THROUGHOUT BUILDING UPON ALARM CONDITION IN ACCORDANCE WITH NFPA 72, NFPA 101, AND IBC.

   B. REMOTE ANNUNCIATOR SHALL BE LCD, 80–CHARACTER, SIMPLEXGRINNELL 4603–9101.

   C. MANUAL STATIONS SHALL BE ADDRESSABLE SIMPLEXGRINNELL MODEL NO. 4099–9001.

   D. CEILING–MOUNTED SMOKE DETECTORS SHALL BE ANALOG, INTELLIGENT, PHOTOELECTRIC TYPE, SIMPLEX GRINNELL MODEL 4098–9710.

   E. HEAT DETECTORS SHALL BE COMBINATION RATE–OF–RISE, FIXED TEMPERATURE TYPE.

   F. BASIS FOR INTELLIGENT DETECTOR SHALL BE SIMPLEX GRINNELL 4098–9792.

   G. DUCT DETECTORS SHALL BE PHOTOELECTRIC, ANALOG, INTELLIGENT TYPE, SIMPLEX GRINNELL 4098–9753. PROVIDE WEATHERPROOF HOUSINGS WHERE LOCATED OUTDOORS. PROVIDE REMOTE TEST SWITCH FOR EACH DUCT DETECTOR. EQUIP EACH DUCT DETECTOR WITH NECESSARY SAMPLING TUBES. DUCT DETECTORS WILL BE FURNISHED BY ELECTRICAL TRADE, INSTALLED IN DUCTWORK BY MECHANICAL TRADE, AND CONNECTED TO FIRE ALARM SYSTEM BY ELECTRICAL TRADE. ARRANGE FOR UNIT SHUTDOWN WITH MECHANICAL CONTRACTOR A REQUIRED. PROVIDE ADDRESSABLE MONITOR AND CONTROL MODULES AS REQUIRED.

   H. PROVIDE FLASHING STROBE LIGHTS AS INDICATED ON DRAWINGS. STROBE LIGHTS SHALL BE SIMPLEX GRINNELL MODEL 4904 SERIES, CANDELA RATING AS NOTED ON DRAWINGS.

   I. CEILING–MOUNTED COMBINATION AUDIO/VISUAL DEVICES SHALL BE PROVIDED WHERE SHOWN IN THE OFFICE AREA. UNITS SHALL BE SIMPLEX GRINNELL 4903 SERIES WITH CANDELA RATING AS NOTED ON DRAWINGS WITH 25–VOLT RMS SPEAKERS. INSTALLATION SHALL BE IN STRICT COMPLIANCE WITH MANUFACTURER'S WRITTEN RECOMMENDATIONS. COLOR CODE ALL CONDUCTORS. ALL CONDUCTORS SHALL BE INSTALLED IN METALLIC RACEWAY SYSTEM, MINIMUM SIZE 3/4". PLENUM–RATED "OPEN" CABLING SHALL BE PERMISSIBLE ABOVE ACCESSIBLE LAY–IN CEILINGS PROVIDED THAT NEC REQUIRED SUPPORTING MEANS FOR ALL CABLING IS PROVIDED. AT COMPLETION OF WORK, PROVIDE COMPLETE TESTING OF SYSTEM. INCLUDE SUCCESSFUL TEST REPORTS AS PART OF PROJECT CLOSE–OUT DOCUMENTS.

14. GROUNDING: PROVIDE GROUNDING OF NEW ELECTRICAL SERVICE AS DESCRIBED HEREINAFTER. PROVIDE THREE DRIVEN 3/4" X 10' LONG COPPERWELD GROUND RODS. LOCATE GROUND RODS MINIMUM 15' APART FROM EACH OTHER. PROVIDE A #3/0 AWG BARE COPPER GROUNDING CONDUCTOR BONDED TO GROUND RODS AND EXTENDED TO MAIN DISTRIBUTION PANEL AND BONDED TO GROUND BUS/SYSTEM NEUTRAL. ALL BONDING CONNECTIONS TO GROUND RODS SHALL BE BY CADWELD PROCESS. ALSO, EXTEND A #3/0 AWG COPPER GROUNDING CONDUCTOR FROM MAIN ELECTRICAL SERVICE GROUND AND BOND MAIN METALLIC COLD WATER PIPE AT POINT WHERE IT ENTERS BUILDING. PROVIDE GROUNDING OF REBAR IN STRUCTURAL STEEL FOOTING TO MAIN ELECTRICAL SERVICE GROUND IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE REQUIREMENTS. GROUND MAIN TELECOMMUNICATIONS SPACE AS NOTED ELSEWHERE IN THESE SPECIFICATIONS. PROVIDE A CODE–SIZED EQUIPMENT GROUNDING CONDUCTOR IN ALL FEEDER AND BRANCH CIRCUIT WIRING RUNS. SEPARATE GROUNDING CONDUCTOR IS GENERALLY NOT INDICATED ON DRAWINGS BUT SHALL BE REQUIRED. GROUND BY DIRECT CONNECTION ALL INTERIOR PIPING SYSTEMS. GROUND EQUIPMENT AND LIGHTING FIXTURES IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE.

15. SURGE PROTECTIVE DEVICE: AT PANELS NOTED IN DRAWINGS, PROVIDE A SURGE PROTECTIVE DEVICE(SPD). SPD SHALL MEET REQUIREMENTS OF U.L. 1449 AND 1283, ANSI/IEEE C62.41–1991 AND C62.45–1992, NATIONAL ELECTRICAL MANUFACTURES ASSOCIATION NEMA LS–1 REVISION 2007, AND NFPA 70. SPD MANUFACTURER SHALL BE ISO 9000 CERTIFIED. SPD SHALL INCORPORATE 200KA 8/20 MICROSECOND MOV PROTECTION PER PHASE.

16. FIRESTOPPING: ELECTRICAL CONTRACTOR SHALL PROVIDE FIRESTOPPING OF ALL CONDUIT PENETRATIONS OF RATED WALLS AND AND FLOORS PER DETAILS. REFER TO ARCHITECTURAL DRAWINGS.

17. SUBMITTALS: PROVIDE ELECTRICAL SUBMITTALS AS CALLED FOR HEREINAFTER. SUBMITTALS SHALL INCLUDE MANUFACTURER'S CUTSHEET WITH SPECIFIC MODEL MODEL NUMBERS IDENTIFIED AS THEY APPLY TO THIS PROJECT. SUBMITTALS SHALL INCLUDE LIGHTING, LIGHTING CONTROLS, WIRING DEVICES, AND SWITCHGEAR.

18. GUARANTY: GUARANTEE ALL WORK TO BE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP FOR ONE YEAR AFTER DATE OF FINAL ACCEPTANCE.

PANEL (B) — MAINS: 100A; MAIN BREAKER: NO; FEEDER SIZE: #2; VOLTAGE/PHASE: 120/208V,3ø,4W; SHORT CKT. CAPACITY: 10,000; FED FROM: "A"; MOUNTING: SURFACE; ENTRY: BOTTOM; BUS: COPPER

CKT. NO.	SERVES	LOAD (kVA) øA	øB	øC	BREAKER TRIP	POLE	BREAKER POLE	TRIP	LOAD (kVA) øA	øB	øC	SERVES	CKT. NO.
1	EXTERIOR LIGHTING	0.7			20	1	1	20	0.8			LTG–WELDING SHOP	2
3	EXTERIOR CANOPY LTG.		0.4		20	1	1	20		0.8		LTG–AG INNOVATION	4
5	LTG–LOBBY/OFFICE			1.0	20	1	1	20			0.8	LTG–STORAGE.HALLWAY	6
7	LTG–CLASSROOM	0.6			20	1	1	20	0.8			RECEPTACLES	8
9	LTG–CLASSROOM		0.6		20	1	1	20		0.4		RECEPTACLE–CTS	10
11	LTG–CLASSROOM			0.6	20	1	1	20			0.8	RECEPTACLES	12
13	FACU	0.5			20	1	1	20	1.0			WATER FOUNTAIN	14
15	TOILET RECEPTACLES		0.4		20	1	1	20		0.6		RECEPTACLES	16
17	RECEPTACLES			0.2	20	1	1	20			1.0	RECEPTACLES	18
19	RECEPTACLES	0.2			20	1	1	20	0.6			RECEPTACLES	20
21	RECEPTACLES		0.2		20	1	1	20		0.8		REC–CLASSROOM	22
23	REC–CLASSROOM			0.8	20	1	1	20			0.6	REC–CLASSROOM	24
25	REC–CLASSROOM	0.6			20	1	1	20	1.0			REC–CLASSROOM	26
27	REC–CLASSROOM		1.0		20	1	1	20		0.8		REC–CLASSROOM	28
29	EF–1 / EF–2			0.4	20	1	1	20			0.6	REC–CLASSROOM	30
31	RECIRCULATION PUMP	0.2			20	1	1	20	1.0			REC–CLASSROOM	32
33	SPARE				20	1	1	20		0.6		CAMERA RECEPTACLES	34
35	SPARE				20	1	1	20				SPARE	36
37	SPARE				20	1	1	20				SPARE	38
39	SPARE				20	1	1	20				SPARE	40
41	SPARE				20	1	1	20				SPARE	42
SUB TOTAL CONNECTED		2.8	2.6	3.0					5.2	4.0	3.8	SUB TOTAL CONNECTED	

SUB TOTAL CONNECTED øA: 8.0 SUB TOTAL CONNECTED øB: 6.6 SUB TOTAL CONNECTED øC: 6.8 TOTAL CONNECTED: 21.4

NOTES:
1. ROUTE CIRCUITS B–1 AND B–3 THROUGH LIGHTING CONTACTOR, SEE FEEDER DIAGRAM.

(Revision 1 cloud at circuits 32–36)

PANEL (A) — MAINS: 1000A; MAIN BREAKER: YES (1000A); FEEDER SIZE: 3#400MCM/PH; VOLTAGE/PHASE: 120/208V,3ø,4W; SHORT CKT. CAPACITY: 42,000; FED FROM: UTILITY TRANSFORMER; MOUNTING: SURFACE; ENTRY: BOTTOM; BUS: COPPER

CKT. NO.	SERVES	LOAD (kVA) øA	øB	øC	BREAKER TRIP	POLE	BREAKER POLE	TRIP	LOAD (kVA) øA	øB	øC	SERVES	CKT. NO.
1	HVAC UNIT PU–1	2.9			50	3	3	50	2.9			HVAC UNIT PU–2	2
3			2.9		|	|	|	|		2.9			4
5				2.9	|	|	|	|			2.9		6
7	HVAC UNIT PU–3	2.9			50	3	3	50	2.9			HVAC UNIT PU–4	8
9			2.9		|	|	|	|		2.9			10
11				2.9	|	|	|	|			2.9		12
13	WATER HEATER	8.0			90	3	3	100	8.0			PANEL "B"	14
15			8.0		|	|	|	|		6.6			16
17				8.0	|	|	|	|			6.8		18
19	PANELBOARD "D"	13.6			200	3	3	600	43.1			PANEL "C"	20
21			16.4		|	|	|	|		44.7			22
23				15.8	|	|	|	|			48.4		24
25	SPACE ONLY					3	3					SPACE ONLY	26
27					|	|	|	|					28
29					|	|	|	|					30
31	SPACE ONLY					3	3					SPACE ONLY	32
33					|	|	|	|					34
35					|	|	|	|					36
37	SURGE PROTECTIVE DEVICE				50	3	3					SPACE ONLY	38
39	(SPD)				|	|	|	|					40
41					|	|	|	|					42
SUB TOTAL CONNECTED		27.4	30.2	29.6					56.9	57.1	61.0	SUB TOTAL CONNECTED	

SUB TOTAL CONNECTED øA: 84.3 SUB TOTAL CONNECTED øB: 87.3 SUB TOTAL CONNECTED øC: 90.6 TOTAL CONNECTED: 262.2

NOTES:
1. PANELBOARD "A" SHALL BE UL LISTED FOR 120/208–VOLT, 3–PHASE, 4–WIRE, WYE SERVICE ENTRANCE USE.

PANEL (D) — MAINS: 200A; MAIN BREAKER: YES (200/3); FEEDER SIZE: #3/0; VOLTAGE/PHASE: 120/208V,3ø,4W; SHORT CKT. CAPACITY: 22,000; FED FROM: "A"; MOUNTING: SURFACE; ENTRY: BOTTOM; BUS: COPPER

CKT. NO.	SERVES	LOAD (kVA) øA	øB	øC	BREAKER TRIP	POLE	BREAKER POLE	TRIP	LOAD (kVA) øA	øB	øC	SERVES	CKT. NO.
1	WELDING FILTER	1.7			40	3	3	40	1.7			WELDING FILTER	2
3			1.7		|	|	|	|		1.7			4
5				1.7	|	|	|	|			1.7		6
7	WELDER RECEPTACLE	4.0			50	2	1	20	1.0			CLOTHES WASHER	8
9			4.0		|	|	2	50		4.0		CLOTHES DRYER	10
11	WELDER RECEPTACLE			4.0	50	2	|	|			4.0		12
13		4.0			|	|	1	20	0.8			AG INNOVATION RECEPTS.	14
15	WELDER RECEPTACLE		4.0		50	2	1	20		0.6		AG INNOVATION RECEPTS.	16
17				4.0	|	|	1	20				SPARE	18
19	WELDING CONV. RECEPTACLE	0.4			20	1	1	20				SPARE	20
21	WELDING CONV. RECEPTACLE		0.4		20	1	1	20				SPARE	22
23	WELDING CONV. RECEPTACLE			0.4	20	1	1	20				SPARE	24
25	SPARE				20	1	1	20				SPARE	26
27	SPARE				20	1	1	20				SPARE	28
29	SPARE				20	1	1	20				SPARE	30
31	SPACE ONLY					1	1					SPACE ONLY	32
33	SPACE ONLY					1	1					SPACE ONLY	34
35	SPACE ONLY					1	1					SPACE ONLY	36
37	SPACE ONLY					1	1					SPACE ONLY	38
39	SPACE ONLY					1	1					SPACE ONLY	40
41	SPACE ONLY					1	1					SPACE ONLY	42
SUB TOTAL CONNECTED		10.1	10.1	10.1					3.5	6.3	5.7	SUB TOTAL CONNECTED	

SUB TOTAL CONNECTED øA: 13.6 SUB TOTAL CONNECTED øB: 16.4 SUB TOTAL CONNECTED øC: 15.8 TOTAL CONNECTED: 45.8

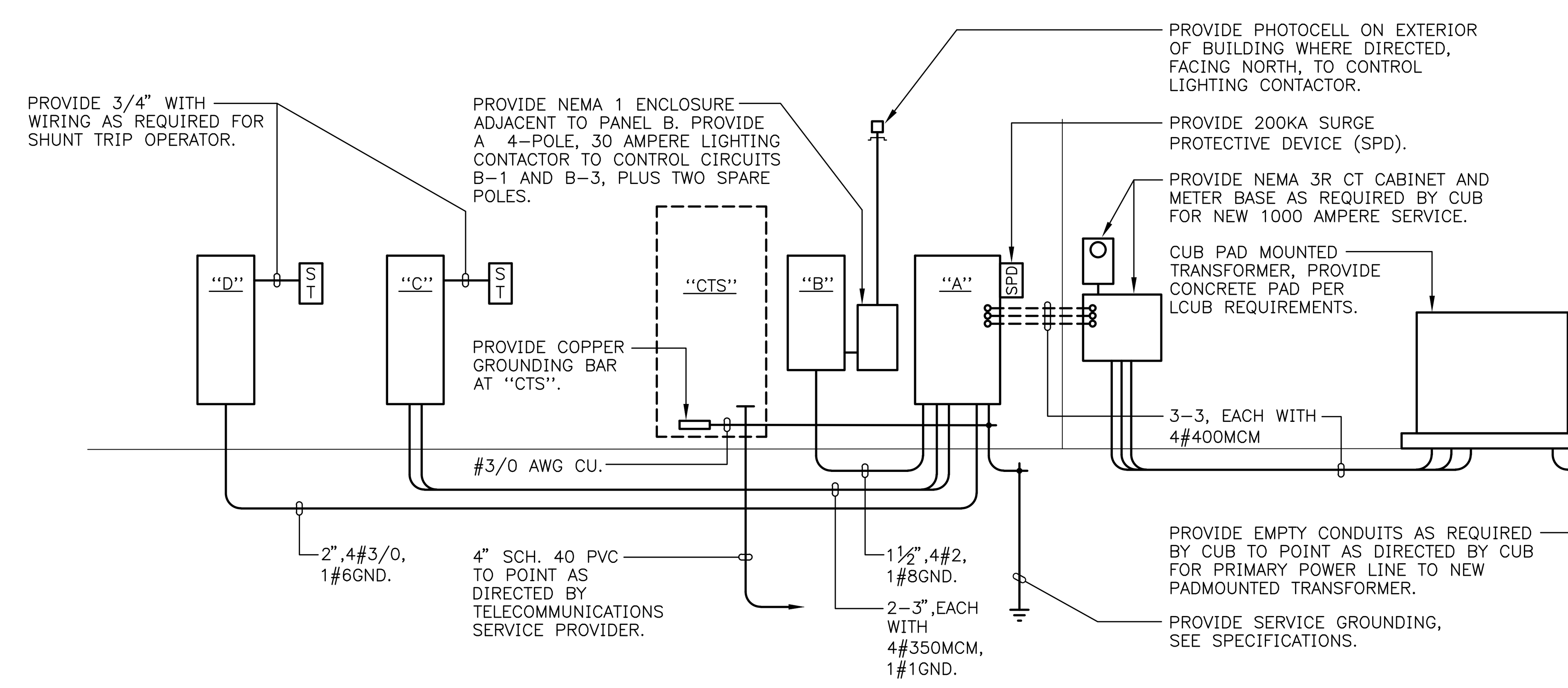
NOTES:
1. PROVIDE "SHUNT TRIP" TYPE MAIN BREAKER. PROVIDE INTERLOCK WIRING WITH WALL MOUNTED SHUNT TRIP OPERATOR, SEE FEEDER DIAGRAM.

PANEL (C) — MAINS: 600A; MAIN BREAKER: YES; FEEDER SIZE: 2–3#350MCM; VOLTAGE/PHASE: 120/208V,3ø,4W; SHORT CKT. CAPACITY: 22,000; FED FROM: "A"; MOUNTING: SURFACE; ENTRY: BOTTOM; BUS: COPPER

CKT. NO.	SERVES	LOAD (kVA) øA	øB	øC	BREAKER TRIP	POLE	BREAKER POLE	TRIP	LOAD (kVA) øA	øB	øC	SERVES	CKT. NO.
1	EXHAUST FAN EF–4	1.7			30	1	3					SPACE ONLY	2
3	EXHAUST FAN EF–3		1.7		30	1	|	|					4
5	EXHAUST FAN EF–5			1.7	30	1	|	|					6
7	EXHAUST FAN EF–6	1.7			30	1	3					SPACE ONLY	8
9	GAS FIRED HEATERS		0.1		20	1	|	|					10
11	WELDING FILTER			1.7	40	3	|	|					12
13		1.7			|	|	3	40	1.7			WELDING FILTER	14
15			1.7		|	|	|	|		1.7			16
17	WELDING FILTER			1.7	40	3	|	|			1.7		18
19		1.7			|	|	3	40	1.7			WELDING FILTER	20
21			1.7		|	|	|	|		1.7			22
23	WELDING FILTER			1.7	40	3	|	|			1.7		24
25		1.7			|	|	2	50				SPARE	26
27			1.7		|	|	|	|					28
29	SPARE				50	2	2	50				SPARE	30
31					|	|	|	|					32
33	SPARE				50	2	1	20				SPARE	34
35					|	|	1	20				SPARE	36
37	SPARE				20	1	1	20				SPARE	38
39	SPARE				20	1	1	20				SPARE	40
41	WELDER RECEPTACLE			4.0	50	2	2	50			4.0	WELDER RECEPTACLE	42
43		4.0			|	|	|	|	4.0				44
45	WELDER RECEPTACLE		4.0		50	2	2	50		4.0		WELDER RECEPTACLE	46
47				4.0	|	|	|	|			4.0		48
49	WELDER RECEPTACLE	4.0			50	2	2	50	4.0			WELDER RECEPTACLE	50
51			4.0		|	|	|	|		4.0			52
53	WELDER RECEPTACLE			4.0	50	2	2	50			4.0	WELDER RECEPTACLE	54
55		4.0			|	|	|	|	4.0				56
57	WELDER RECEPTACLE		4.0		50	2	2	50		4.0		WELDER RECEPTACLE	58
59				4.0	|	|	|	|			4.0		60
61	WELDING CONV. RECEPTACLE	0.4			20	1	1	20	0.4			WELDING CONV. RECEPTACLE	62
63	WELDING CONV. RECEPTACLE		0.4		20	1	1	20		0.4		WELDING CONV. RECEPTACLE	64
65	WELDING CONV. RECEPTACLE			0.4	20	1	1	20			0.4	WELDING CONV. RECEPTACLE	66
67	WELDING CONV. RECEPTACLE	0.4			20	1	1	20	0.4			WELDING CONV. RECEPTACLE	68
69	WELDING CONV. RECEPTACLE		0.4		20	1	1	20		0.4		WELDING CONV. RECEPTACLE	70
71	WELDING SHOP RECEPTS.			0.6	20	1	1	20			0.4	WELDING SHOP CEIL. PWR.	72
73	WELDING SHOP RECEPTS.	0.8			20	1	1	20	0.4			WELDING SHOP CEIL. PWR.	74
75	WELDER RECEPTACLE		4.0		50	2	1	20		0.4		WELDING SHOP CEIL. PWR.	76
77				4.0	|	|	1	20			0.4	WELDING SHOP CEIL. PWR.	78
79	WELDER RECEPTACLE	4.0			50	2	1	20	0.4			WELDING CONV. RECEPTACLE	80
81			4.0		|	|	1	20		0.4		WELDING CONV. RECEPTACLE	82
83	SPARE				20	1	1					SPACE ONLY	84
SUB TOTAL CONNECTED		26.1	27.7	27.8					17.0	17.0	20.6	SUB TOTAL CONNECTED	

SUB TOTAL CONNECTED øA: 43.1 SUB TOTAL CONNECTED øB: 44.7 SUB TOTAL CONNECTED øC: 48.4 TOTAL CONNECTED: 136.2

NOTES:
1. PROVIDE 6"X40" DOUBLE SECTION PANEL.
2. PROVIDE "SHUNT TRIP" TYPE MAIN BREAKER. PROVIDE INTERLOCK WIRING WITH WALL MOUNTED SHUNT TRIP OPERATOR, SEE FEEDER DIAGRAM.



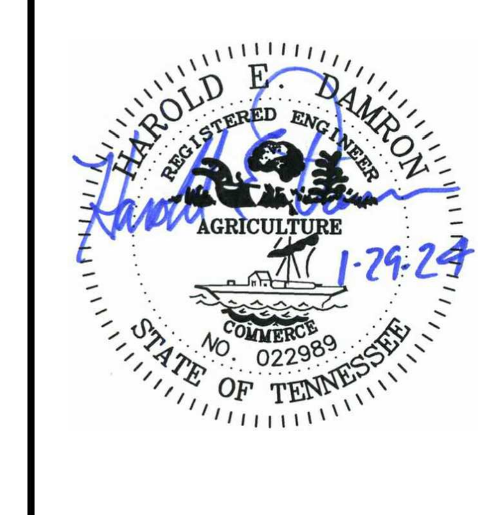
F E E D E R D I A G R A M
NO SCALE

TFM# 00017-D
PROJECT # 2023-10-31-01

MBI COMPANIES INC.
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com

CONSULTANT
Vreeland Engineers Inc.
3107 Sutherland Ave.
P.O. Box 10648
Knoxville, TN. 37939
PH: (865)637-4451
1-800-362-9789
vreelandengineers.com
VEI Job No. 23193

SEAL



PROJECT INFORMATION
PROJECT:
CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING
PROJECT ADDRESS:
411 DOUGLAS LN
CLINTON, TN 37716
PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE
- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION
1	01.29.2024	ADDENDUM #01

KEY PLAN

SHEET INFORMATION
SHEET ISSUED: 10/06/2023
DESIGNED BY: HED
DRAWN BY: VEI
REVIEWED BY: HED
SHEET TITLE:
PANELBOARD SCHEDULES, FEEDER DIAGRAM
SHEET NO.: E202

PROJECT # 2023-10-31-01 TFM # 00017-D
FIELD SET

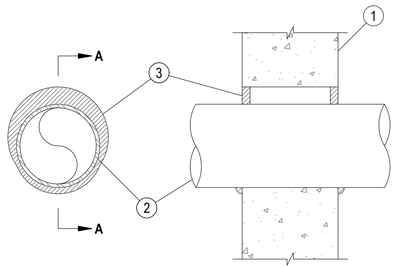
E202 – CHS WELDING – PANELBOARD SCHEDULES, FEEDER DIAGRAM.dwg
A.L.S. 01/24/24 2:06 PM HD23193(AS)

ARCH D

System No. W-J-1067

CLASSIFIED C UL US
Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating — 1 and2 Hr (See Items 1 and 3)	F Rating — 1 and 2 Hr (See Items 1 and 3)
T Rating — 0 Hr	FT Rating — 0 Hr
L Rating At Ambient — Less Than 1 CFM/sq ft	FH Rating — 1 and 2 Hr (See Items 1 and 3)
L Rating At 400 F — Less Than 1 CFM/sq ft	FTH Rating — 0 Hr
	L Rating At Ambient — Less Than 1 CFM/sq ft
	L Rating At 400 F — Less Than 1 CFM/sq ft



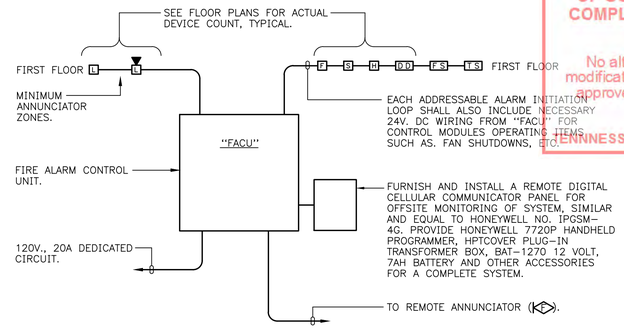
SECTION A-A

1. Wall Assembly — Min 3-3/4 in. and 5 in. thick reinforced lightweight or normal weight (100-150 pcf) concrete for 1 and 2 h rated assemblies, respectively. Wall may also be constructed of any UL Classified Concrete Blocks*. Max diam of opening is 32-1/4 in.
   See Concrete Blocks (CAZT) category in the Fire Resistance Directory for names of manufacturers.
2. Through—Penetrants — One metallic pipe, conduit or tubing to be centered within the firestop system. The annular space shall be min 0 in. to max 2-1/4 in. Pipe may be installed with continuous point contact. Pipe, conduit or tube may be installed at an an angle not greater than 45 degrees from perpendicular. Pipe, conduit or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:
   A. Steel Pipe — Nom 30 in. diam (or smaller) Schedule 10 (or heavier) steel pipe.
   B. Iron Pipe — Nom 30 in. diam (or smaller) cast or ductile iron pipe.
   C. Conduit — Nom 4 in. diam (or smaller) steel electrical metallic tubing or 6 in. diam (or smaller) steel conduit.
   D. Copper Tubing — Nom 6 in. diam (or smaller) Type L (or heavier) copper tubing.
   E. Copper Pipe — Nom 6 in. diam (or smaller) Regular (or heavier) copper pipe.
3. Fill, Void or Cavity Material* — Min 5/8 in. thickness of fill material applied within the annulus, flush with both surfaces of wall. At the point or continuous contact locations between pipe and wall, a min 1/2 in. diam bead of fill material shall be applied at the pipe-wall interface on both surfaces of wall.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-One Sealant

*Bearing the UL Classification Mark

HILTI
Hilti Firestop Systems

Reproduced by HILTI, Inc. Courtesy of Underwriters Laboratories, Inc.
November 26, 2012



FIRE ALARM RISER DIAGRAM

N.T.S.

FIRE ALARM NOTES:

1. THE FIRE ALARM CONTRACTOR MUST BE CERTIFIED IN ACCORDANCE WITH THE TENNESSEE ALARM CONTRACTORS LICENSING ACT OF 1991, TCA TITLE 62, CHAPTER 32. CALL 615-741-9771 FOR ADDITIONAL INFORMATION.
2. CONTRACTOR SHALL SUBMIT BATTERY CALCULATIONS FOR NEW FIRE ALARM SYSTEM IN ACCORDANCE WITH REQUIREMENTS OF NFPA 72. BATTERY CALCULATIONS SHALL BE INCLUDED AS PART OF SUBMITTALS FOR FIRE ALARM SYSTEM.
3. ALL REQUIRED DOCUMENTATION REGARDING THE DESIGN OF FIRE DETECTION, ALARM, AND COMMUNICATIONS SYSTEMS AND THE PROCEDURES FOR MAINTENANCE, INSPECTION, AND TESTING OF FIRE DETECTION, ALARM, AND COMMUNICATIONS SYSTEMS SHALL BE MAINTAINED AT AN APPROVED, SECURED LOCATION FOR THE LIFE OF THE SYSTEM (NFPA 101 9.6.1.9 AND IFC 901.6.2.1).
4. THE FIRE ALARM CONTROL UNIT CIRCUIT DISCONNECTING MEANS SHALL HAVE A RED MARKING, SHALL BE ACCESSIBLE ONLY TO AUTHORIZED PERSONNEL, AND SHALL BE IDENTIFIED AS "FIRE ALARM CIRCUIT." THE LOCATION OF THE CIRCUIT DISCONNECTING MEANS SHALL BE PERMANENTLY IDENTIFIED AT THE FIRE ALARM CONTROL UNIT
5. TWO OR MORE VISIBLE NOTIFICATION APPLIANCES IN THE SAME ROOM OR ADJACENT SPACE WITHIN THE FIELD OF VIEW MUST FLASH IN SYNCHRONIZATION. (NFPA 72 7.5.4.1.1 AND 7.5.4.1.2(3))
6. PROVIDE VOICE EVACUATION FIRE ALARM SYSTEM IN ACCORDANCE WITH PROJECT MANUAL REQUIREMENTS. VOICE EVACUATION SHALL BE INSTALLED IN ACCORDANCE WITH REQUIREMENTS OF NFPA 72(3.3.208), NFPA 101(12.3.4, 9.6.2, 9.6.3.), AND IBC (907.2.1.1 AND 907.5.2.2). VOICE ANNOUNCEMENTS SHALL BE PRE-RECORDED AND SHALL BE AUDIBLE ABOVE AMBIENT NOISE LEVEL IN ACCORDANCE WITH CODE REQUIREMENTS. STANDBY BATTERIES IN FACP SHALL BE SIZED TO SERVE REQUIRED VOICE ANNOUNCEMENTS.
7. DIGITAL ALARM COMMUNICATION SYSTEMS WHERE APPLICABLE SHALL BE INSTALLED AS PER THE FOLLOWING:
   A. DIGITAL ALARM COMMUNICATOR TRANSMITTER (DACT) SHALL BE CONNECTED TO THE UL S789 LISTED EXTERNAL REMOTE SINGLE OR DUAL PATH COMMERCIAL FIRE COMMUNICATOR IN ACCORDANCE WITH NFPA 70 AND NFPA 72 REQUIREMENTS. COMMUNICATOR SHALL BE PROGRAMMED TO OPERATE OVER COMMON CELLULAR NETWORKS INCLUDING 2G, 3G, AND 4G.
      1. SYSTEM SHALL BE CONFIGURED TO PROVIDE SELECTABLE REPORTING PATHS PER NFPA 72, CHAPTER 26. SYSTEM SUPERVISION INTERVALS SHALL BE PROVIDED TO MEET NFPA 72 CHAPTER 26 REQUIREMENTS FOR SYSTEM SUPERVISION.
      2. SYSTEM SHALL CONTAIN A DIALER CAPTURE MODULE WHICH AUTOMATICALLY DETECTS A FIRE ALARM SYSTEM EVENT AT THE FACP AND PROVIDES A DIAL TONE TO ALLOW FACP MESSAGE TRANSMISSION TO THE CENTRAL STATION VIA THE GLOBAL SYSTEM FOR MOBILE (GSM) DIGITAL CELLULAR NETWORK IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA.

1 ENTIRE DRAWING ADDED.

TFM# 00017-D
PROJECT # 2023-10-31-01

E203 - CHS WELDING - DETAILS.dwg
A.L.S. 01/24/24 2:06 PM HD23193(AS)

MBI COMPANIES INC.
209 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com
CONSULTANT

Vreeland Engineers Inc.
3107 Sutherland Ave.
P.O. Box 10648
Knoxville, TN. 37939
PH: (865)637-4451
1-800-362-9789
vreelandengineers.com
VEI Job No. 23193

SEAL

HAROLD E. DAMRON
REGISTERED ENGINEER
AGRICULTURE
1-24-24
No. 022989
STATE OF TENNESSEE

PROJECT INFORMATION

PROJECT:

CLINTON HIGH SCHOOL WELDING AND AGRICULTURE BUILDING

PROJECT ADDRESS:

411 DOUGLAS LN
CLINTON, TN 37716

PROJECT NO.: 220042-02

ACTIVE DESIGN PHASE

☐	FOR REVIEW ONLY
☐	FOR PERMITTING ONLY
☐	SCHEMATIC DESIGN
☐	DESIGN DEVELOPMENT
☐	CONSTRUCTION BIDDING
■	CONSTRUCTION DOCUMENTS
☐	AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION
1	01.29.2024	ADDENDUM #01

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	10/06/2023
DESIGNED BY:	HED
DRAWN BY:	VEI
REVIEWED BY:	HED

SHEET TITLE:

1 DETAILS

SHEET NO.: E203

TFM # 00017-D
PROJECT # 2023-10-31-01
FIELD SET