

# PAULDING CO. OFFICES

## INTERIOR ALTERATIONS OF FORMER FRITZ HOUSE

### 451 MCDONALD PIKE PAULDING, OHIO 45879



ROOM OCCUPANCY SCHEDULE					
ROOM	USE	NET AREA	SF PER OCC	DESIGN	OCCUPANTS
101	LOBBY	B	255		
102	CORRIDOR	B	282		
103	CORRIDOR	B	408		
104	CORRIDOR	B	258		
105	CORRIDOR	B	681		
106	Not Used	B			
107	MEETING ROOM	B	530	15	35
108	STORAGE	B	82	300	0
109	OFFICE	B	248	100	2
110	STORAGE	B	61	300	0
111	OFFICE	B	247	100	2
111A	STORAGE	B	56	300	0
111B	STORAGE	B	82	300	0
112	OFFICE	B	378	100	4
113	I.T.	B	42	300	0
114	JANITOR	B	33		
115	TOILET	B	30		
116	RECEPTION	B	577	100	6
117	BREAK ROOM	B	123	15	8
118	OFFICE	B	131	100	1
119	MEETING ROOM	B	1035	15	69
120	KITCHEN	B	787	200	4
121	JANITOR	B	33		
122	DRY FOOD STORAGE	B	97	300	0
123	WALK-IN UNIT	B	82	300	0
124	MECHANICAL	B	79		
125	ELECTRICAL	B	89		
126	OFFICE	B	238	100	2
127	OFFICE	B	297	100	3
128	OFFICE	B	133	100	1
129	OFFICE	B	597	100	6
130	MECHANICAL	B	230		
131	OFFICE	B	133	100	1
132	OFFICE	B	116	100	1
133	OFFICE	B	134	100	1
134	WAITING	B	70		
135	TOILET	B	49		
136	TOILET	B	49		
137	OFFICE	B	318	100	3
138	MEETING ROOM	B	606	15	40
139	Not Used	B			
140	TOILET	B	32		
141	CASE MANAGER	B	289	100	3
142	CASE MANAGER	B	298	100	3
143	FILES / ADMIN. ASSIST.	B	290	100	3
144	TOILET	B	32		
145	FILES / ADMIN. ASSIST.	B	302	100	3
146	SUPT. OFFICE	B	313	100	3
147	CASE MANAGER	B	277	100	3
148	TOILET	B	32		
149	HELP ME GROW	B	590	100	6
150	Not Used	B			
151	OFFICE	B	313	100	3
Occupancy Total					221

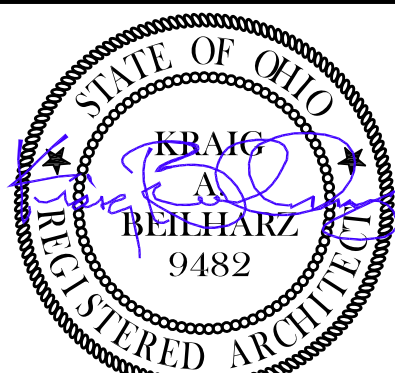
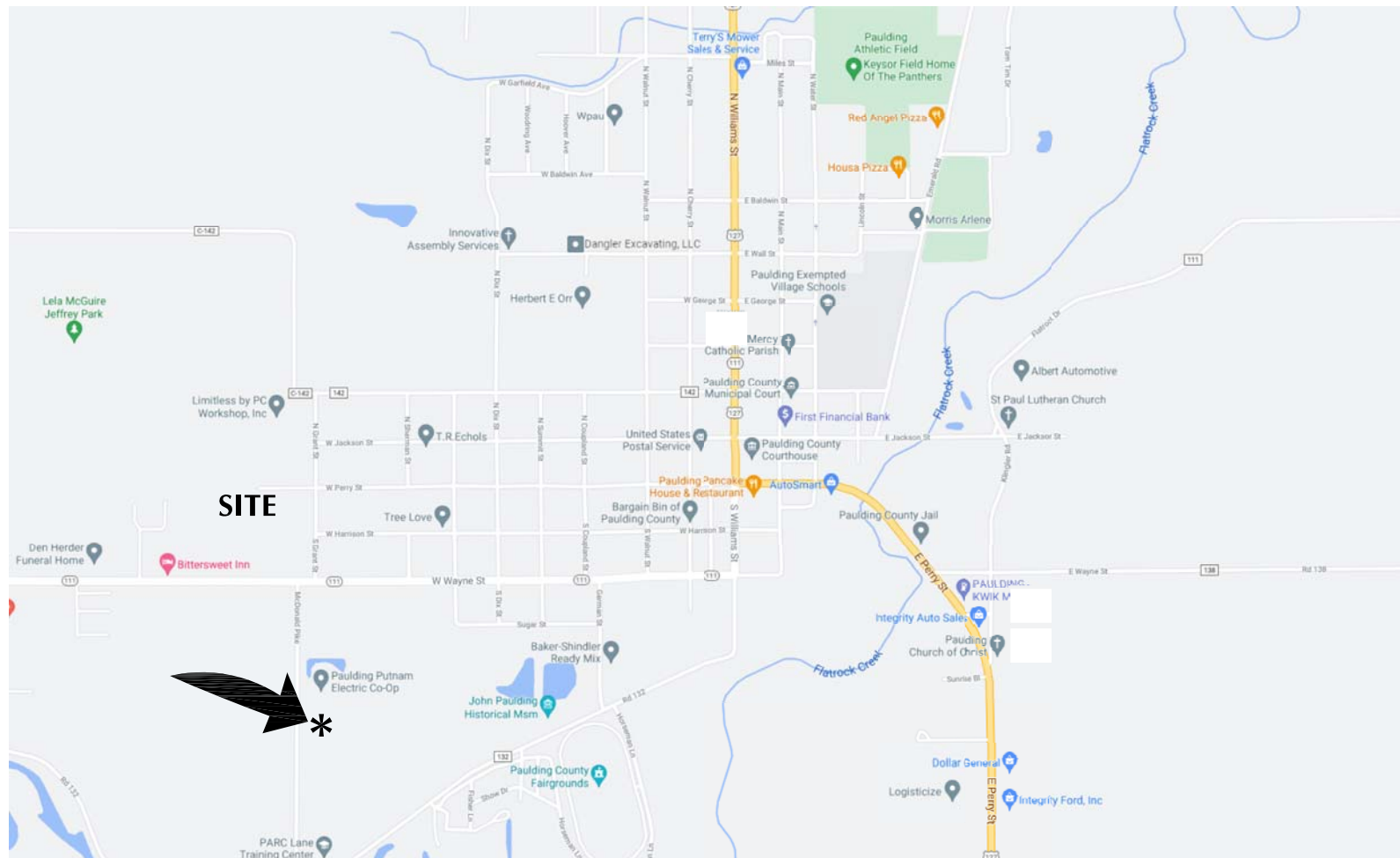
LIST OF DRAWINGS	
A-1	LIFE SAFETY PLAN, BUILDING CODE INFORMATION, AND LOCATION MAP
A-2	DEMOLITION PLAN
A-3	FLOOR PLAN, ROOM FINISH & DOOR SCHEDULES, AND DOOR DETAILS
M-1	HVAC PLAN, SCHEDULES, AND DETAILS
E-1	POWER PLAN, LIGHTING PLAN, SCHEDULES AND DETAILS
SP-1	SPECIFICATIONS - DIVISIONS 02-22
SP-2	SPECIFICATIONS - DIVISION 23
SP-3	SPECIFICATIONS - DIVISIONS 23-28

BUILDING CODE INFORMATION	
Building Code	2017 OBC w/2018 updates
Plumbing Code	2017 OPC w/2018 updates
Mechanical Code	2017 OMC w/2018 updates
Electrical Code	2017 NEC
Fire Code	2017 OFC w/2019 Errata
Accessibility Code	2009 ICC/ANSI A117.1/Chap. 11; 2017 OBC
Energy Code	ASHRAE 90.1-2010
Fuel Gas Code	2015 IFGC
Automatic Sprinkler Code	2016 NFPA 13
Fire Alarm & Signaling Code	2016 NFPA 72
Use and Occupancy	B
Construction Type	Type VB
Fire-Resistance Rating for Exterior Walls Based on Fire Separation Distance	10 < X < 30 0 Hour
Height and Area Limitations	
Allowable Building Height Above Grade Plane	40 Feet
Allowable Number of Stories Above Grade	1 Story
Allowable Building Area per Story	9,000 SF
Frontage Increase	4,500 SF
Automatic Sprinkler System Increase	0 SF
Total Allowable Building Area	13,500 SF
Building Height and Area Information	
Building Height Above Grade	18 Ft. avg. single
Existing Building Unaltered	7,108 SF
Altered Area	6,285 SF
Total Building Area	13,393 SF
Occupant Load	Total 221 occupants

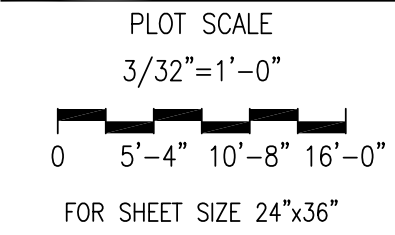
#### PROJECT NARRATIVE

- THE OCCUPANCY OF EXISTING STRUCTURE HAS BEEN AN I-2 (REST HOME) USE FOR AT LEAST THE PAST TWO YEARS WITHOUT ORDERS OF THE BUILDING OFFICIAL. PENDING, NO EVIDENCE OF FRAUD. SCOPE OF WORK SHALL INCLUDE A CHANGE OF OCCUPANCY FROM I-2 TO B (OFFICES)
- EXISTING BUILDING IS A SINGLE STORY STRUCTURE.
- SCOPE OF IMPROVEMENT INCLUDES:
  - RENOVATION OF APPROX. 6300 S.F. OF EXISTING INTERIOR AREA FOR USE AS OFFICE SPACE
  - INTERIOR ALTERATIONS OF EXISTING PLUMBING FIXTURES/TOILET ROOMS AND ELECTRICAL & LIGHTING DEVICES.
  - HVAC IMPROVEMENTS TO A PORTION OF NEW OFFICE AREA FOR ENHANCED CONTROL AND DISTRIBUTION.
- THE EXISTING BUILDING FIRE SUPPRESSION SYSTEM SHALL BE ABANDONED IN PLACE AND SHALL BE DONE IN A MANNER ACCEPTABLE TO THE LOCAL FIRE OFFICIAL.
- THE EXISTING FIRE ALARM SYSTEM SHALL BE ABANDONED IN PLACE AND SHALL BE DONE IN A MANNER ACCEPTABLE TO THE LOCAL FIRE OFFICIAL.

#### LOCATION MAP



KRAG A. BEILHARZ, LICENSE #9482  
EXPIRATION DATE: 12/31/2021



ISSUE DATE  
1 10.08.21 PERMITS/BIDS

© 2021 BEILHARZ ARCHITECTS, INC.  
THE CONTENT OF THIS DRAWING IS NOT INTENDED TO BE SUBMITTED FOR USE OR REUSE BY INDIVIDUALS, COMPANIES, CORPORATIONS, OR OTHER ENTITIES FOR ANY PURPOSE OTHER THAN THE INTENDED PURPOSE OF THIS DOCUMENT, NOR FOR USE ON ANY OTHER PROJECT. ANY REUSE OR REPRODUCTION WITHOUT WRITTEN VERIFICATION AND APPROVAL BY THE ARCHITECT FOR THE SPECIFIC PURPOSE INTENDED SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO THE ARCHITECT.

**PAULDING COUNTY OFFICES**  
INTERIOR ALTERATIONS OF FORMER FRITZ HOUSE  
451 MCDONALD PIKE  
PAULDING, OHIO 45879

COVER SHEET

PROJECT: C1-4750

DRAWN BY: LC, SB

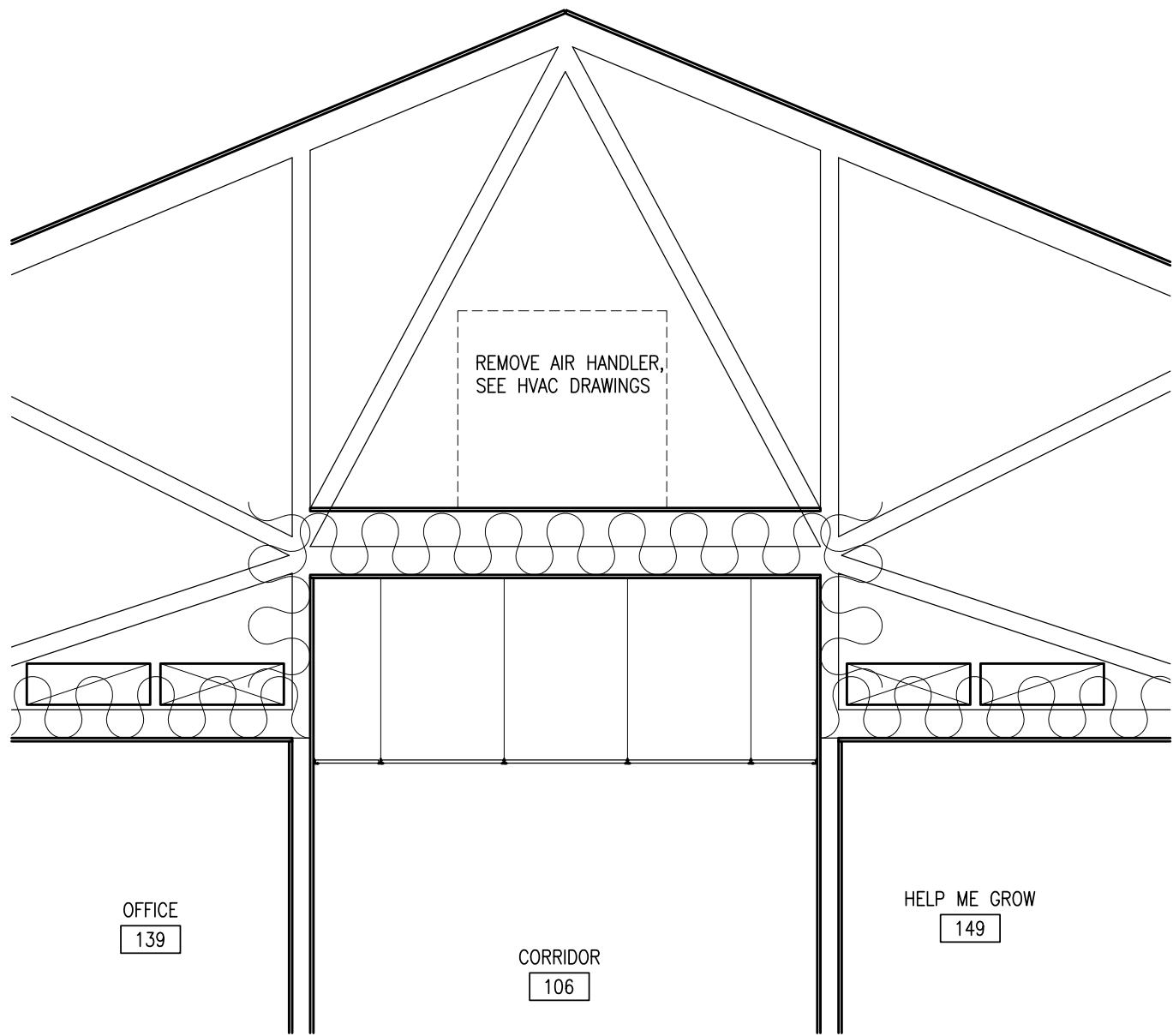
CHECKED BY: KAB

SHEET

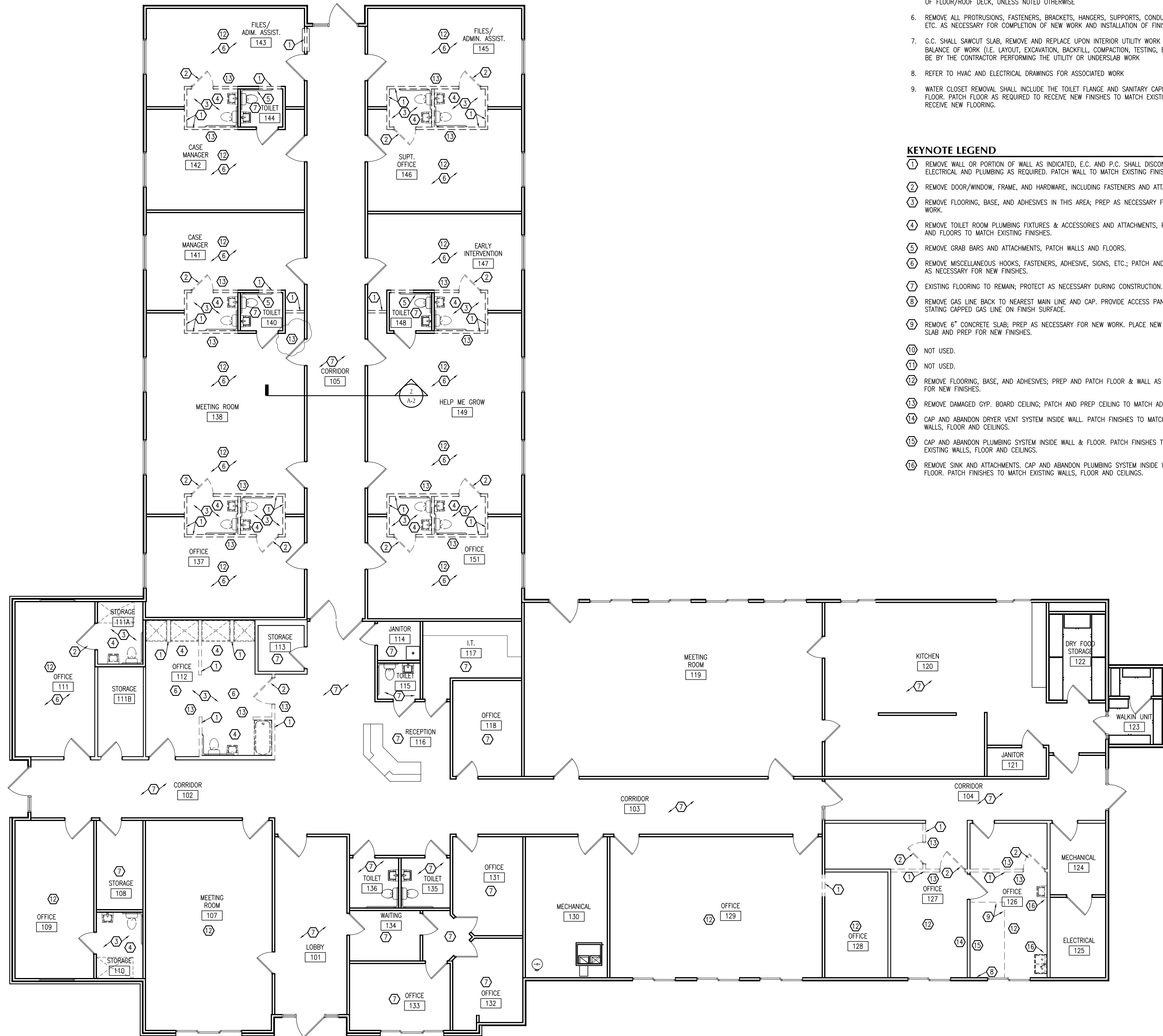
**A-1**

1 OF 8

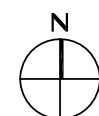




2  
A-2  
EXISTING PARTIAL SECTION  
SCALE: 3/8"=1'-0"



1  
A-2  
DEMOLITION PLAN  
SCALE: 1/8"=1'-0"

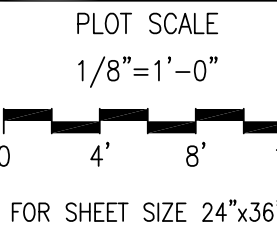
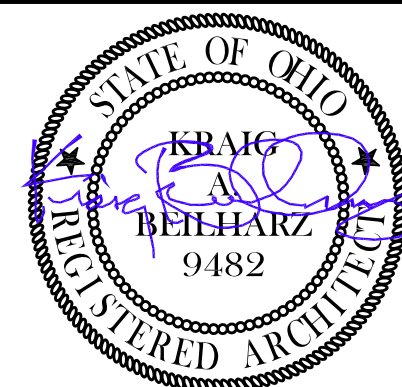


#### GENERAL DEMOLITION NOTES

- DEMOLITION DRAWINGS ARE REPRESENTATIVE OF EXISTING CONDITIONS AND COMPILED FROM RECORD DRAWINGS AND PHOTOS. THE ARCHITECT MAKES NO WARRANTY TO THE ACCURACY THEREOF. VERIFY ACTUAL FIELD CONDITIONS, REQUIREMENTS, AND INTERFERENCES
- WHERE DEMOLITION CAUSES DAMAGE TO EXISTING SURFACES OR COMPONENTS WHICH ARE TO REMAIN, CONTRACTOR PERFORMING DEMOLITION SHALL REPAIR DAMAGE AND PATCH SURFACES TO MATCH ADJACENT FINISHES
- OWNER SHALL RETAIN RIGHTS OF OWNERSHIP FOR ALL SALVAGEABLE MATERIALS AND/OR EQUIPMENT REMOVED DURING DEMOLITION. THIS SHALL NOT RELIEVE THE CONTRACTOR FROM THE RESPONSIBILITY OF REMOVING MATERIALS AND/OR EQUIPMENT AS REQUIRED FOR NEW CONSTRUCTION. COORDINATE LOCATION OF SALVAGED MATERIAL STORAGE DIRECTLY WITH THE OWNER
- STRUCTURAL DEMOLITION, REMOVAL AND PATCHING OF WALLS AND DOOR OPENINGS, AND RELATED WORK SHALL BE BY GENERAL CONTRACTOR, SHORE EXISTING STRUCTURE AS REQUIRED UNTIL NEW WORK IS IN PLACE AND SECURED
- WALL DEMOLITION SHALL INCLUDE ALL MATERIALS FROM TOP OF FLOOR SLAB TO UNDERSIDE OF FLOOR/ROOF DECK, UNLESS NOTED OTHERWISE
- REMOVE ALL PROTRUSIONS, FASTENERS, BRACKETS, HANGERS, SUPPORTS, CONDUIT, DEVICES, ETC. AS NECESSARY FOR COMPLETION OF NEW WORK AND INSTALLATION OF FINISHES
- G.G. SHALL SANCUT SLAB, REMOVE AND REPLACE UPON INTERIOR UTILITY WORK COMPLETION; BALANCE OF WORK (I.E. LAYOUT, EXCAVATION, BACKFILL, COMPACTION, TESTING, ETC.) SHALL BE BY THE CONTRACTOR PERFORMING THE UTILITY OR UNDERSLAB WORK
- REFER TO HVAC AND ELECTRICAL DRAWINGS FOR ASSOCIATED WORK
- WATER CLOSET REMOVAL SHALL INCLUDE THE TOILET FLANGE AND SANITARY CAPPED BELOW FLOOR. PATCH FLOOR AS REQUIRED TO RECEIVE NEW FINISHES TO MATCH EXISTING OR RECEIVE NEW FLOORING.

#### KEYNOTE LEGEND

- REMOVE WALL OR PORTION OF WALL AS INDICATED, E.C. AND P.C. SHALL DISCONNECT ALL ELECTRICAL AND PLUMBING AS REQUIRED. PATCH WALL TO MATCH EXISTING FINISHES.
- REMOVE DOOR/WINDOW, FRAME, AND HARDWARE, INCLUDING FASTENERS AND ATTACHMENTS.
- REMOVE FLOORING, BASE, AND ADHESIVES IN THIS AREA; PREP AS NECESSARY FOR NEW WORK.
- REMOVE TOILET ROOM PLUMBING FIXTURES & ACCESSORIES AND ATTACHMENTS, PATCH WALLS AND FLOORS TO MATCH EXISTING FINISHES.
- REMOVE GRAB BARS AND ATTACHMENTS, PATCH WALLS AND FLOORS.
- REMOVE MISCELLANEOUS HOOKS, FASTENERS, ADHESIVE, SIGNS, ETC.; PATCH AND PREP WALL AS NECESSARY FOR NEW FINISHES.
- EXISTING FLOORING TO REMAIN; PROTECT AS NECESSARY DURING CONSTRUCTION.
- REMOVE GAS LINE BACK TO NEAREST MAIN LINE AND CAP. PROVIDE ACCESS PANEL WITH SIGN STATING CAPPED GAS LINE ON FINISH SURFACE.
- REMOVE 6" CONCRETE SLAB; PREP AS NECESSARY FOR NEW WORK. PLACE NEW CONCRETE SLAB AND PREP FOR NEW FINISHES.
- NOT USED.
- NOT USED.
- REMOVE FLOORING, BASE, AND ADHESIVES; PREP AND PATCH FLOOR & WALL AS NECESSARY FOR NEW FINISHES.
- REMOVE DAMAGED GYP. BOARD CEILING; PATCH AND PREP CEILING TO MATCH ADJACENT FINISH WALLS, FLOOR AND CEILINGS.
- CAP AND ABANDON DRYER VENT SYSTEM INSIDE WALL. PATCH FINISHES TO MATCH EXISTING WALLS, FLOOR AND CEILINGS.
- CAP AND ABANDON PLUMBING SYSTEM INSIDE WALL & FLOOR. PATCH FINISHES TO MATCH EXISTING WALLS, FLOOR AND CEILINGS.
- REMOVE SINK AND ATTACHMENTS. CAP AND ABANDON PLUMBING SYSTEM INSIDE WALL & FLOOR. PATCH FINISHES TO MATCH EXISTING WALLS, FLOOR AND CEILINGS.



ISSUE DATE

10.08.21 PERMITS/BIDS

© 2021 BEILHARZ ARCHITECTS, INC.  
THE CONTENT OF THIS DRAWING IS NOT INTENDED TO BE SUBMITTED FOR USE OR REUSE BY INDIVIDUALS, COMPANIES, CORPORATIONS, OR OTHER ENTITIES FOR ANY PURPOSE OTHER THAN THE INTENDED PURPOSE OF THIS DOCUMENT, NOR FOR USE ON ANY OTHER PROJECT. ANY REUSE OR REPRODUCTION WITHOUT WRITTEN VERIFICATION AND APPROVAL BY THE ARCHITECT FOR THE SPECIFIC PURPOSE INTENDED SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO THE ARCHITECT.

**PAULDING COUNTY OFFICES**  
INTERIOR ALTERATIONS OF FORMER FRITZ HOUSE  
451 McDONALD PIKE  
PAULDING, OHIO 45879

DEMOLITION PLAN

PROJECT: C1-4750

DRAWN BY: LC, SB

CHECKED BY: KAB

SHEET

**A-2**

2 OF 8















SPECIFICATIONS

DIVISION 02: EXISTING CONDITIONS

- 024119 SELECTIVE DEMOLITION:
- A. Each trade and subcontractor shall be responsible for demolition of their own work. Repair and restoration of surfaces to remain shall be the responsibility of each trade, and shall be coordinated by the General Contractor.
  - B. Provide rubbish chutes and containers for the removal of debris as required. Protect floor and wall surfaces, sidewalks, and other construction to remain.
  - C. Cap abandoned plumbing, HVAC, and electrical components behind finished surfaces per applicable codes. Remove completely where indicated.
  - D. No cutting of existing structural members will be permitted unless specifically shown. Approval of structural demolition beyond that shown in the plans to be by the Architect/Engineer.
  - E. If the process of demolition uncovers conditions that will result in deviations from the proposed new plan, contact the Architect for instructions before proceeding.

DIVISION 03: CONCRETE

- 032000 CONCRETE REINFORCING: ASTM A184, CRSI Manual of Practice, and ACI SP-66.
- A. Reinforcing Steel: ASTM A615, 60 ksi yield grade; deformed billet steel bars, unfinished. Splice reinforcing bars minimum 12 inches and 36 bar diameters. Cold bend reinforcing bars to minimum bend diameters in accordance with ACI 301. Extend horizontal bars minimum 12 inches around corners.
  - B. Welded Steel Wire Fabric: ASTM A186 Plain Type; in flat sheets; unfinished; in maximum lengths. Lap adjacent sheets minimum 6 inches; secure lapped edges together at maximum 48 inches o.c. Hold fabric back minimum 2 inches from construction joints and expansion joints.
  - C. Remove rust scale and coatings which may reduce bond from reinforcing prior to fabrication.
  - D. Place, support, and secure reinforcement against displacement. Do not deviate from required position.
  - E. Maintain concrete cover around reinforcing in accordance with ACI 318. Maintain clear distance between reinforcing bars, minimum 1 inch and 1-1/3 times the maximum coarse aggregate size.
- 033000 CAST-IN-PLACE CONCRETE:
- A. Concrete Materials and Accessories:
    - 1. Portland Cement: ASTM C150, Type I – Normal.
    - 2. Fly Ash: ASTM C618, Type C or Type F. Fly ash may be substituted for up to 15 percent of the cement content for interior slabs and 25 percent for other locations.
    - 3. Ground Granulated Blast Furnace Slag (GGBFS): ASTM C989, Grade 100 minimum. GGBFS may be substituted for up to 35 percent of the cement content for each concrete mix.
    - 4. Fine and Coarse Aggregates: ASTM C33; maximum size in accordance with ACI 301.
    - 5. Water: Clean, potable and not detrimental to concrete.
    - 6. Admixtures: ASTM C494; water reducing, retarding, accelerating, water reducing and retarding, or water reducing and accelerating. Admixtures containing more than 0.1 percent chloride ions are not approved.
    - 7. Vapor Retarder: ASTM E1745, Class B; minimum 10 mil thickness; maximum 0.025 perms.
    - 8. Joint Sealant: ASTM C320 Type M, Grade P, Class 25, Use T; cold applied two part polyurethane, self leveling, with corresponding primer.
    - 9. Bonding Agent: Polymer resin emulsion.
    - 10. Joint Filler: ASTM D994 or D1751 asphalt impregnated fiberboard or felt, ASTM D4819 closed cell polyethylene, or ASTM D8139 closed cell polypropylene; ½ inch thick.
    - 11. Non-Shrink Grout for Dowels to Existing Concrete: Premixed compound of non-metallic aggregate, cement, water reducing and plasticizing agents; minimum compressive strength of 2400 psi in 48 hours and 7000 psi in 28 days.
  - B. Concrete Mixes: Proportion in accordance with ACI 301 Method 1 to achieve 3500 psi at 28 days. Mix in accordance with ACI 304. Deliver in accordance with ASTM C94. Slump shall be 3 inches ± 1 inch.
  - C. Placing Concrete: ACI 301.
    - 1. Verify that underslab construction, including mechanical and electrical work, is installed complete, backfilled, inspected, and approved. Verify that items to be cast into concrete are accurately placed and positioned securely.
    - 2. Prepare previously placed concrete by clearing with steel brush and applying bonding agent. Where new concrete is dowelled to existing work, drill holes minimum 6 inches into existing concrete at 18 inches o.c., insert ½ inch steel dowels, and pack solid with non-shrink grout.
    - 3. Install vapor retarder under interior slabs on grade in accordance with ASTM E1643. Lap joints minimum 6 inches and seal watertight by taping edges and ends. Seal openings and penetrations. Seal perimeter to adjoining construction. Repair damaged areas immediately prior to placing concrete.
    - 4. Maximum Variation of Surface Flatness: ¼ inch in 10 ft, ACI 301 Class B.
    - 5. Separate slabs from vertical surfaces with joint filler. Provide isolated or sawcut control joints, ¼ depth of slab thickness, at maximum 20 ft o.c. in interior slabs. Apply joint sealant.
  - D. Concrete Finishing: ACI 301 and ACI 302; brotowed finish.

- 033900 CONCRETE CURING: ACI 308.
- A. Protect concrete from premature drying, excessively hot or cold temperatures, excessive temperature changes, and mechanical injury. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.
  - B. Cure horizontal surfaces by ponding, spraying, absorptive mat, or membrane curing compound.
    - 1. Ponding: Maintain 100 percent coverage of water over floor slab areas continuously for 4 days.
    - 2. Spraying: Spray water over surfaces and maintain wet for 7 days.
    - 3. Absorptive Mats: ASTM C171, butyl-polyethylene, minimum 8 oz/sq yd, or reinforced water-resistant laminated paper, bonded to prevent separation during handling and placing. Saturate material and place over floor slab areas, lapping ends and sides; maintain in place for 7 days.
    - 4. Liquid Membrane Curing Compound: ASTM C309, Type I, Class B; dissipating type. Apply in two coats with second coat applied at right angles to first. Clean thoroughly with power scrubber and industrial strength detergents prior to installing floor coverings.

DIVISION 06: WOOD, PLASTICS, AND COMPOSITES

- 061053 MISCELLANEOUS ROUGH CARPENTRY: Provide solid blocking at built-in components to allow for secure attachment.
- A. Miscellaneous Framing and Blocking: Southern Pine or Spruce-Pine-Fir, Utility or better grade, 2 to 4 inches thick, 19 percent maximum moisture content.
  - B. Flexible wood backing plate system fabricated from ¾ inch fire retardant treated plywood may be used for blocking.

- 066116 SOLID SURFACING: Window sill counters and aprons; min. 1/2 inch thick homogeneous-filled plastic resin with finished edges; color as selected. Securely attach at sill and caulk perimeter.

DIVISION 07: THERMAL AND MOISTURE PROTECTION

- 079200 JOINT SEALANTS: ASTM C920 and ASTM C834; colors as selected.

DIVISION 08: OPENINGS

- 081213 HOLLOW METAL FRAMES: ANSI A250.8, NFPA 80, and UL 10C where fire rating is required; 16 gauge cold rolled steel; factory primed; with silencers. Provide product data submittal.
- 081400 WOOD DOORS: WDMA IS-1A, Custom grade, heavy duty; flush type; WDMA PC-5 or FD-5; NFPA 80 and UL 10C where fire rating is required; composite wood core; veneer species and finish to match existing. Provide product data submittal.
- 083100 ACCESS DOORS: Formed steel; 16 gauge frame and 14 gauge door; prime painted. At fire-resistance rated construction, provide fire rated units with closer and latch. Coordinate size and location with components requiring access.

SPECIFICATIONS

2 of 12

- 087100 DOOR HARDWARE: As scheduled. Provide product data submittal.
- A. Hinges: 4-1/2 x 4-1/2 inch 5-knuckle full mortise butts.
  - B. Locksets: ANSI A156.2, Series 4000, Grade 1; lever trim.
  - C. Exit Devices: UL 305; ANSI A156.3, Grade 1.
    - 1. Electric Lock Type: Lever electrically unlocked, full secure; with dogging cylinder, power supply, power transfer, and interconnecting wiring.
      - a. Sequence of Operation: Intercom entry system shall unlock lever.
  - D. Keying: Coordinate keying of individual locks with building Owner.
  - E. Closures: ANSI A156.4, Grade 1, rated for 10 million cycles; pull side mounting at inswing doors; push side mounting with parallel arm and stop at outswinging doors. Adjust for opening and operating forces in accordance with ADA.
  - F. Provide wall stop, overhead stop, or closer with stop for all doors. At locations where type of stop scheduled does not suit field conditions, contact Architect for resolution.
    - 1. Wall Stops: 2½ inch diameter plate with concealed mounting; concave bumper; ¾ inch projection.
    - 2. Overhead Stops: Concealed type with extruded track, slide, arm, and frame bracket.
  - G. Kickplates: Stainless steel, 0.050 inch thick, 8 inch height; 2 inches less than door width.
  - H. Sweeps: Surface applied, with neoprene sweep.

- 088000 GLAZING:
- A. Annealed Glass: ASTM C1036, Type 1, Class 1, Quality g3; clear.
  - B. Tempered Safety Glass: Install in locations indicated and as required by building codes. Tempered glass shall display manufacturer's permanent certification mark.
  - C. Fire Rated Glazing: CPSC 16 CFR 1201; fire-resistance rating as scheduled; Category I or Category II, as required by location and size; 3/16 inch minimum thickness. Each panel of fire-rated glazing shall be permanently labeled for use in approved labeled opening protectives. For locations scheduled for safety glazing, provide impact resistant type with surface applied film.
  - D. Sliding Glass Track Assemblies: Extruded aluminum, clear anodized finish; double compartment upper and lower channels with insert rails in lower channel; guides for top of glass; extruded shoe with nylon wheels for bottom of glass. (C. R. Laurence D2301 series)

DIVISION 09: FINISHES

- 090100 MAINTENANCE OF FINISHES:
- A. Where surface defects in gypsum board and plaster surfaces are scheduled to be repaired, use repair methods as recommended in USG Gypsum Construction Handbook, "Problems, Remedies & Preventative Measures."
  - B. Patch repaired area flush with adjacent surfaces; match texture and appearance.
  - C. Prime and paint surface in accordance with Section 099000; match color and finish of adjacent materials.
- 092216 NON-STRUCTURAL METAL FRAMING: ASTM C645; fabricated from ASTM A653 sheet steel with minimum G40 galvanized coating. Thickness as determined by size, height, load, and deflection; minimum 16 gauge, or embossed pattern with equivalent structural properties documented by third party testing acceptable to authorities having jurisdiction. Provide fasteners and bracing in accordance with manufacturer's instructions.
- 092900 GYPSUM BOARD: ASTM C1396; 5/8 inch thick, lapped edges, 48 inch width, lengths as long as practical to minimize joints. Finish to GA 214 Level 4 at locations exposed to view and scheduled to be painted. Finish to Level 1 above suspended ceilings.
- A. Joint Compound: ASTM C475.
  - B. Control Joints: GA 234, maximum 30 foot spacing, aligned with masonry control joints and door and window openings.
  - C. Tearaway Bead: Rigid vinyl with tearoff leg.
- 096513 RESILIENT BASE AND ACCESSORIES:
- A. Rubber Cove Base: ASTM F1861, Type TS; style, size, and color as selected.
  - B. Transition Strips at Dissimilar Flooring: Rubber, color as selected.
- 096613 TILE CARPETTING: Size as scheduled; color and installation pattern as selected. Install per CRI 104 Section 14. (Show/Contact Set Up series with EcoWax backing)
- 098100 ACOUSTIC INSULATION: ASTM C764 glass fiber or ASTM C1149 cellulose fiber, sprayed installation.
- A. Acoustical Sealant: ASTM C834; apply continuous to perimeter of acoustical assemblies per ASTM C919.
- 099100 PAINTING: Paint primed surfaces and exposed materials not prefinished, factory finished, or indicated to be unfinished.
- A. Colors: As selected.
  - B. Provide base coat and intermediate coat products compatible with finish coat as recommended by manufacturer of finish coat. Provide ready-mixed paints. Do not job mix or tint materials.
  - C. Basis of Design Products: Sherwin-Williams, except where otherwise indicated.
    - 1. Interior Gypsum Board: 1 coat Pro-Mer 200 latex primer; 2 coats Pro-Mer 200 latex, sheen as scheduled.
    - 2. Interior Metals: Hollow metal frames, pipes, conduits, electrical panel covers, and related items: 1 coat Pro Industrial Pro-Cryl universal primer; 2 coats Pro-Mer 200 semi-gloss.
- 099413 TEXTURED FINISHING: Material and finish to match existing; spray applied.

DIVISION 10: SPECIALTIES

- 101402 INTERIOR SIGNAGE: Injection molded plastic with mounting frame; size and copy as indicated; font style and colors as selected; raised graphics and copy; grade 2 Braille. Provide product data submittal.
- A. Toilet Rooms: 8 x 8 inch, unisex, with international symbol of accessibility.
  - B. Exits: 8 x 3 inch; "Exit"; at each exit discharge door, and as indicated.
  - C. Locate in accordance with ADA; 9 inches from latch edge of door to center of sign; 60 inches above finish floor to top of sign.

DIVISION 22: PLUMBING

- 220500 COMMON WORK RESULTS FOR PLUMBING:
- A. Ensure products and installation are in conformance with applicable recommendations and requirements of Factory Mutual Engineering, Owner's Insurance Underwriter, NFPA, OSHA, UL, and local utility companies. Identification: ANSI A13.1.
    - 1. Identify each pipe in exposed or accessible space (except architecturally finished spaces) at each major change of direction, at 20 foot intervals in straight runs, each branch connection, each riser, equipment connections, and both sides of walls.
    - 2. Valve Tags: Securely fasten tags to all valves and cocks, chained to hand wheel, on main lines and branches, and at switches, equipment, and controls. Indicate piping system and purpose of valve; indicate whether valve is normally closed (N.C.) or normally open (N.O.) in service; supply (S) or return (R); indicate direction of flow. Tags may be omitted for local stop or shutoff valves to an item of equipment.
  - C. Testing: Pay for all required tests and inspections. Furnish labor, materials, and instruments; bear other costs in connection with all tests. Coordinate testing and inspection with utility companies and authorities having jurisdiction.
    - 1. Test piping systems before piping is concealed, covered, or insulated. Before testing pipe systems, remove or otherwise protect from damage components not designed to withstand the pressures used in testing piping.
- 220529 PLUMBING HANGERS AND SUPPORTS: ANSI B31.1, ASTM F708, and MSS SP58. Install in accordance with ANSI B31.9 and ASTM F708.
- A. Rigidly support systems and equipment using methods suitable for weight of components being supported. Include provisions for vertical and lateral adjustment, and accommodate expansion.
  - B. Support each pipe independently from the building structure, not supported from other pipes. Where interferences occur, provide trapeze type hangers or supports.

SPECIFICATIONS

3 of 12

- 220700 PLUMBING INSULATION: ASTM E84; maximum flame spread 25, maximum smoke developed 50.
- A. Fiberglass Pipe Insulation: ASTM C547, Class I; rigid one piece construction with vapor retarder; minimum 36 inch sections; rated for applications to 850 degrees F; maximum K value 0.23 at 75 degrees F.
    - 1. Exposed Piping in Finished Areas: ASTM D1784 preformed PVC jacket from floor to eight feet above floor; PVC fitting covers with precut fiberglass insulation insert; minimum two layers of insulation inserts where pipe operating temperature is below 45 degrees F or above 250 degrees F.
  - B. Closed Cell Pipe Insulation: ASTM C534, Type II; flexible elastomeric tubing, black color; maximum K value 0.28 at 75 degrees F.
    - 1. Adhesive: Air drying contact type, for joining seams and butt joints.
    - 2. Finish Paint: Water based latex enamel, semi-gloss; white color.
  - C. Heavy Duty Pipe Insulation: ASTM C533, Type I; rigid block molded from hydrous calcium silicate; specially formulated for high temperature, high strength, abuse resistant and fire protection applications; maximum K value 0.40 at 300 degrees F.
  - D. Apply insulation over clean, dry pipe with joints butted firmly together. Secure longitudinal jacket laps and butt strips according to manufacturer's recommendations.
    - 1. Extend insulation continuous through wall and ceiling openings and sleeves. Where piping penetrates fire rated assemblies, provide heavy duty pipe insulation to completely fill space between pipe and sleeve.
    - 2. Assure continuous, unbroken vapor seal at seams, butt joints, and fittings where vapor barrier jackets are used, and on cold service piping below 60 degrees F. Provide adequate insulation and vapor seal to prevent condensation at hangers and support areas secured directly to cold surfaces. Extend surface finishes to protect all surfaces, ends and raw edges of insulation.
    - 4. Install galvanized metal shields between hangers or supports and pipe insulation. Form shields to fit insulation and extend up to the center line of the pipe, with minimum 12 inch length for pipe sizes to 6 inch.
    - 5. Install heavy duty pipe insulation between pipe and hangers, thickness equal to adjoining insulation, length equal to metal shield, with vapor barrier where required.
  - E. Insulate all piping, fittings, valves, flanges and unions not factory insulated.
    - 1. Exposed Condensate Waste (up to 1 Inch): 1 inch fiberglass.
    - 2. Concealed Condensate Waste (up to 2 Inch): ¾ inch closed cell.
    - 3. For pipe sizes larger than scheduled, provide insulation thickness ¾ inch greater than scheduled thickness.

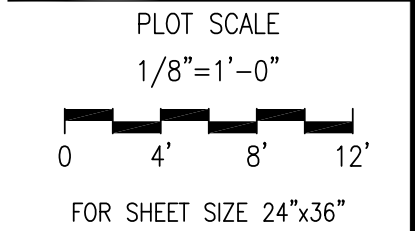
- 221100 PLUMBING PIPING:
- A. Solder Materials: ASTM B32, Alloy Sn65 and Sn94.
  - B. Solvents for PVC Piping: ASTM D2564, with ASTM F656 primer.
  - C. Unions For Steel Pipe:
    - 1. Sizes to 2 inch: Class 150 malleable iron unions with ground joint brass to iron seat, galvanized or black.
    - 2. Sizes 2½ inch and Over (Welded): Class 150 malleable iron forged steel slip-on flanges, preformed neoprene gaskets, and carbon steel bolts.
    - 3. Sizes 2½ inch and Over (Screwed): Class 150 malleable iron threaded steel flanges, galvanized or black, preformed neoprene gaskets, and carbon steel bolts.
  - D. Unions For Copper Pipe:
    - 1. Sizes to 3 inch: Class 150 bronze unions with soldered joints.
    - 2. Sizes 3½ inch and Over: Class 150 slip-on bronze flanges; preformed neoprene gaskets.
  - E. Dielectric Unions:
    - 1. Sizes to 2 inch: Steel body and nut with insulating gasket (250 lb to 210 degrees F) and copper connector. (EPCO Models FX, EA, and FB)
    - 2. Sizes 2½ inch and Over: Cast iron body flanges with insulating gasket (250 lb to 210 degrees F) and copper connector. (EPCO Model GX and GA)

- F. Floor, Wall, and Ceiling Plates (Escutcheons):
  - 1. Finished Areas and Casework: Chrome plated brass.
  - 2. Unfinished and Concealed Areas: Stamped brass, split hinged type.
- G. Piping Installation:
  - 1. Verify piping and tubing is round and straight prior to installation. Prevent deformation during cutting and threading. Do not permit tool marks on exposed piping in finished areas.
  - 2. Ream pipe and tube ends. Remove burrs. Bevel plain end and ferrous pipe.
  - 3. Remove scale and foreign material from inside and outside before assembly.
  - 4. Prepare piping connections to equipment with flanges or unions, arranged for quick disconnect for maintenance. Use the same material and finish as the piping system.
    - a. Use non-conducting dielectric connections wherever joining dissimilar metals.
    - b. Do not use unions or flanged unions in straight runs of pipe or in concealed locations except for flanged valve applications.
  - 5. Route piping in orderly manner, plumb and parallel to building structure. Maintain gradient.
  - 6. Install piping to conserve building space, to not interfere with use of space and other work, and to maintain required headroom and clearances for equipment, door and window swings, and related conditions.
  - 7. Place piping in concealed spaces above finished ceilings. In areas without finish ceilings, route piping through spaces in open web joists, trusses, or girders.
  - 8. Conceal vertical piping in stud wall cavities, furred wall spaces, pipe chases, and masonry cores where possible. Except in unfinished spaces, obtain approval prior to installing exposed piping.
  - 9. Group piping whenever practical at common elevations. When installing piping in parallel, leave sufficient space between pipe lines to facilitate future work on any line.
  - 10. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment. Utilize offsets, changes in direction and expansion loops, constructed to allow maximum anticipated variation in piping length.
  - 11. Provide clearance in hangers and from structure and other equipment for installation of insulation and access to valves and fittings.
  - 12. Install valves at service connections to equipment and at branch connections to main lines.
  - 13. Slope piping and arrange systems to drain at low points. Use eccentric reducers to maintain top of pipe level.
  - 14. Prime coat and prepare for finish painting exposed pipe, fittings, supports, and accessories scheduled for field painting. Components located in pipe shafts and suspended ceiling spaces are not considered exposed. Where pipe support members are welded to structural building framing, scrape, brush clean, and apply one coat of zinc rich primer to weld.
  - 15. Do not penetrate building structural members unless indicated.
  - 16. When installing more than one piping system material, ensure system components are compatible and joined to ensure the integrity of the system. Provide necessary joining fittings. Ensure flanges, union, and couplings for servicing are consistently provided.
  - 17. Die cut threaded joints with full cut standard taper pipe threads with non-toxic joint compound applied to male threads only.
  - 18. Install valves with stems upright or horizontal, not inverted. Remove protective coatings after installation.
  - 19. Provide valves for shut-off and to isolate service equipment, parts of systems, or vertical risers.
  - 20. Install valves for throttling, bypass, or manual flow control services.
  - 21. Install unions downstream of valves and at equipment or apparatus connections.
  - 22. Install brass male adapters each side of valves in copper piped system. Solder adapters to pipe.
  - 23. Clean and flush piping
- H. Joining Pipe and Fittings:
  - 1. Steel Pipe and Fittings:
    - a. Threaded Joints: Right hand tapered national pipe threads; pipe joint compound on male threads only.
    - b. Welded Joints: In accordance with ASME SEC IX and NCPWB.

SPECIFICATIONS

4 of 12

- I. Copper Pipe and Fittings:
  - a. Thoroughly clean the tube end and fitting portions of the joint prior to assembly.
  - b. When applying flux, prevent excess paste from entering joint.
  - c. Remove excess flux from outside of assembly before applying heat.
- J. Plastic Pipe and Fittings: Thoroughly clean all joint surfaces before starting the joining process. Make all connections to other piping systems using adapters. Do not thread Schedule 40 pipe. Schedule 80 pipe may be threaded. Solvent weld in accordance with ASTM D2855.
- K. Pipe Sleeves: Provide sleeves and escutcheons when penetrating foundations, floors, walls and partitions. Cut escutcheons as necessary to fit in close quarters.
  - 1. Size sleeves to provide minimum ¾ inch clearance around all sides of piping and insulation.
  - 2. Maintain sleeves plumb, level, and in proper position throughout construction. Inspect sleeves in cast-in-place concrete during and after concrete pour and correct any deviation from proper position.
  - 3. Seal pipe and sleeve penetrations to achieve fire resistance equivalent to fire separation required. Where fire separation is not required, apply waterproof sealant.
  - 4. Existing Construction: 22 gauge galvanized steel.
  - 5. Roofs, Interior Stud Walls, and Floors (Concealed): 22 gauge galvanized steel.
  - 6. Exterior Walls, Interior Masonry Walls, and Floors (Exposed): Galvanized steel pipe, ASTM A53, Type E, Grade A, Schedule 40. Install sleeves reamed with welded flanged ends flush with wall, 4 inches above floor in equipment rooms and wet areas, and ¾ inch above floor in other locations.
  - 7. Mechanical Sleeve Seals: Interlocking rubber link type, shaped to continuously fill annular space between pipe and sleeve; with connecting bolts and pressure plates.
- L. DRAINAGE PIPING:
  - A. Condensate Drain Piping:
    - 1. Galvanized Steel Pipe (Sizes to 2 Inch): ASTM A53, Schedule 40; seamless or welded; threaded and coupled ends.
      - a. Fittings: ANSI B16.3; Class 150 malleable iron, threaded type.
    - 2. Copper Drainage Tubing: ASTM B306, Type DWV.
      - a. Wrought Copper Solder Joint Fittings: ANSI B16.29.
      - b. Polyvinyl Chloride (PVC) Pipe: ASTM D2665, Schedule 80, with PVC fittings.
  - B. Installation: Discharge condensate waste into sanitary drainage system using approved indirect waste connection.
    - 1. Slope piping ¼ inch per foot minimum, ½ inch per foot maximum; support to prevent sags and traps.
    - 2. Provide cleanouts at locations required by applicable codes; where indicated on Drawings; at flow direction changes greater than 45 degrees; at base of each riser or stack; in all P-traps installed above grade; and at maximum 50 foot intervals in horizontal lines.
      - a. Cleanouts: Cleanout in finished floor or wall surface. Lubricate threaded cleanout plugs with mixture of graphite and linseed oil. Ensure clearance at cleanout for ridding of drainage system.
      - b. Install floor cleanouts at elevation to accommodate finished floor.
  - C. Testing and Inspection: Test condensate drain piping at a pressure of 5 psig for 15 minutes, using methods approved by state and local regulatory agencies.
    - 1. Perform test in presence of authorized plumbing inspector. Submit approval certificate.
- M. NATURAL GAS PIPING: AGA, ANSI B31.2, NFPA 54, and local utility company.
- N. Design natural gas piping system to all gas fired equipment indicated, in accordance with applicable codes and utility company requirements.
  - 1. Obtain load and pressure requirements from equipment supplier for each piece of gas fired equipment. Adjust pipe sizes and provide additional regulators as required to ensure that the correct pressure is provided to each piece of equipment.
  - 2. Field verify load and pressure requirements for existing gas fired equipment to remain.
- O. Pipe and Fittings: Black steel pipe; ASTM A53, Schedule 40; seamless; beveled ends for welding.
  - 1. Threaded and coupled ends may be used at exposed locations, for pipe sizes 1½ inch and smaller.
  - 2. Fittings for Welded Joints: ASTM A234; wrought steel welding type.
    - a. Make tee connections with welding toes; mitered tees will not be permitted in welded lines. The use of weldlets is permitted in lieu of welding tees in welded lines provided they are installed in prefabricated assemblies and the pipe interior is cleaned of slag. Field installation of weldlets is permitted in lines of 5 inches and larger, if the installation is cleaned inside after welding.
    - b. Use welding elbows for all bends; mitered elbows in welded lines will not be permitted.
    - c. Make reductions in line sizes with welding reducers; mitered reducers will not be permitted in welded lines.
    - d. Carefully prepare pipe ends in all tees, laterals and reducers to provide for proper weld penetration.
    - e. End to end joints of the same size pipe, sizes ¾ inch through 1 inch, may be butt welded provided that an internal welding ring is used.
- P. Manual Gas Valves:
  - 1. Sizes to 2 inch: ANSI Z21.15; full port type; all brass construction with check; lever operator.
  - 2. Sizes 2½ inch and Larger: MSS SP78; 125 psi, cast iron body and bonnet, cast iron lubricated plug; square head wrench operated.
- Q. Gas Pressure Regulators: Cast iron body; cast aluminum alloy diaphragm with nylon fabric insert, external vent connection, interchangeable brass offsets; adjustment range 4 inches to 12 inches w.c., or as required by equipment.
- R. Installation: Weld joints in accordance with ANSI B31.2.
  - 1. Connect piping system to existing gas piping system.
  - 2. Install plugged drip pockets at low points of piping.
  - 3. Make branch connections with premanufactured fittings only. Do not torch cut holes for branch connections.
  - 4. Clean welding slag and carbon from welded connections. Paint welded area with primer.
  - 5. Route indoor piping as close to roof as possible. Piping exposed to view in public areas is not permitted.
  - 6. Where piping is concealed in walls and at floor penetrations, wrap pipe with ¾ inch closed cell insulation.
  - 7. On inlet piping to equipment, install valve, union and dirt leg, including safety shut-off valves where required or indicated. Do not install valves or unions in accessible spaces above ceilings, or in air plenums.
  - 8. Cap all outlets scheduled for future use or not connected to equipment.
  - 9. Install gas pressure regulator at each equipment connection, sized in accordance with equipment.
  - 10. Pipe vents from pressure reducing valves to outdoors and terminate with turndown elbow and insect screen. Maintain required distances from air intakes.
- S. Testing and Inspection: NFPA 54.
  - 1. Before connecting fixtures and equipment, test gas piping with compressed air at a pressure of 60 psig for two hours without pressure loss.
  - 2. Purge gas lines in accordance with NFPA 54.
  - 3. After connecting equipment, operate all equipment and valves and verify proper performance of system without leaks. Use leak detector to check for leaks at all fittings and connections, and at meter



ISSUE DATE	
1	10.08.21 PERMITS/BIDS

© 2021 BEILHARZ ARCHITECTS, INC.  
THE CONTENT OF THIS DRAWING IS NOT INTENDED TO BE SUBMITTED FOR USE OR REUSE BY INDIVIDUALS, COMPANIES, CORPORATIONS, OR OTHER ENTITIES FOR ANY PURPOSE OTHER THAN THE INTENDED PURPOSE OF THIS DOCUMENT, NOR FOR USE ON ANY OTHER PROJECT. ANY REUSE OR REPRODUCTION WITHOUT WRITTEN VERIFICATION AND APPROVAL BY THE ARCHITECT FOR THE SPECIFIC PURPOSE INTENDED SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO THE ARCHITECT.

PAULDING COUNTY OFFICES  
INTERIOR ALTERATIONS OF FORMER FRITZ HOUSE  
451 McDONALD PIKE  
PAULDING, OHIO 45879

SPECIFICATIONS  
DIVISIONS 02-22

PROJECT: C1-4750

DRAWN BY: LJR

CHECKED BY: KAB

SHEET

SP-1



## DIVISION 23: HEATING, VENTILATING, AND AIR CONDITIONING

## 23 0500 COMMON WORK RESULTS FOR HVAC:

- A. Regulatory Requirements: Factory Mutual Engineering, Owner's insurance underwriter, NFPA, OSHA, UL, and local utility companies.
- All work involving refrigerants, including servicing of and modifications to existing systems, shall comply with the Clean Air Act and current Amendments, and applicable EPA regulations.
  - Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories, Inc., or other testing firm acceptable to the authority having jurisdiction, as suitable for the purpose specified and indicated.
- B. General Requirements for Equipment: All similar equipment shall be the product of one manufacturer.
- Motors: Baldor, Emerson Electric, General Electric, Magnetek, Westinghouse. Motors shall comply with applicable UL, NEMA, ANSI, and IEEE standards.
    - Motor Sizes 1 HP and Over: High efficiency type; minimum power factor 82 percent.
    - Vertical position: Belt bearing with end thrust bearing.
    - Horizontal position: Sleeve bearings.
    - Motors shall operate at full speed and full load without heating any portion of the windings more than 40 degrees C above ambient temperature.
    - Equip motors and fans with adjustable drives, sheaves, and accessories as recommended by the manufacturer for 150 percent of the motor horsepower ratings. Select adjustable drive for its midrange based on rpm of fan scheduled.
  - Provide starters and disconnects as indicated and as required. Provide filters as indicated.
  - Lubrication: Lubricate all rotating and reciprocating equipment with the correct grade, type and quality of lubricant before being placed in service. Each shaft containing a packing gland shall be checked for condition by backing the packing gland off and examining for proper grade, amount and type of packing. Maintain all lubrication gaskets and packing during construction and assure that all are in proper operating condition. Extend lubrication fittings as required for service access.
  - Guards: Provide OSHA approved guards for exposed belt drives and other exposed drives such as pump couplings. Provide opening in guard to allow use of revolution counter on both motor and fan shafts. Provide opening in guard for service access to grease fittings.
- C. Equipment Installation:
- Locate and install equipment to facilitate service, maintenance, repair, and replacement of components. Maintain manufacturer's recommended clearances.
  - Maintain factory packaging, lubrication and gaskets during construction; remove immediately prior to Substantial Completion, except when temporary construction use is approved.
  - Require manufacturer to provide authorized representative to be present at site to inspect, check, and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation. Submit a written report that equipment or system has been properly installed and is functioning correctly.
  - Demonstrate operation and maintenance of equipment to Owner's personnel.
  - Appoint, employ, and pay for services of an independent firm acceptable to Architect and Owner to perform testing, adjusting, and balancing as specified in Section 23 0593. The independent firm shall promptly submit reports to Architect, indicating observations and results of tests and indicating compliance or non-compliance with Contract Documents.
  - Install new disposable type filters at Substantial Completion. Thoroughly clean permanent type filters.
  - Alteration Projects: Provide start-up and inspection services on existing equipment. Check proper air flow, air filters, heat and cooling operation, economizer operation and sequence of operation. Submit a written start-up report to the Architect. In the event of damaged or defective parts, notify the Architect and obtain proper authorization before making repairs. Costs incurred as a result of defective existing parts are the responsibility of the Owner.
- D. Identification: ANSI A13.1.
- Piping: Identify each pipe in exposed or accessible space (except architecturally finished spaces) at each major change of direction, at 20 foot intervals in straight runs, each branch connection, each riser, equipment connections, and both sides of walls.
  - Valve Tags: Securely fasten tags to all valves and cocks, chained to hand wheel, on main lines and branches, and at switches, equipment, and controls. Indicate piping system and purpose of valve; indicate whether valve is normally closed (N.C.) or normally open (N.O.) in service; supply (S) or return (R); indicate direction of flow. Tags may be omitted for local stop or shutoff valves to an item of equipment.
  - Equipment: Install identification labels on equipment.
  - Controls: Identify controls, relays, thermostats (except individual space thermostats), damper motors, thermometers and associated items with engraved plastic nameplates securely fastened with screws. Where space is limited, valve tags may be used where approved.
- E. Testing: Pay for all required tests and inspections. Furnish labor, materials, and instruments; bear other costs in connection with all tests.
- Notice of Tests: Give written notice in ample time to all concerned of date when tests will be conducted.
  - Prior Tests: Concealed or insulated work shall remain uncovered until required tests have been completed, but if construction schedule requires it, arrange for prior tests on parts of system as approved by the Architect.
  - All equipment, fans, and motors shall run at their required speed without showing undue vibration, objectionable noise or sparking.
  - All piping systems shall be tested before piping is concealed, covered, or insulated. Before testing pipe systems, remove or otherwise protect from damage the components which are not designed to withstand the pressures used in testing piping.
  - Make adjustments, repairs, and alterations as required to meet specified test results. Correct defects disclosed by tests or inspection, and replace defective parts when directed. In replacing defective parts, use only new materials; in the case of pipe, replace with same length as defective piece. Repeat tests after defects have been corrected and parts replaced, as directed and until pronounced satisfactory.
  - Responsibility for Damage: Bear the cost of repairs and restoration of the work of other Contractors damaged by the tests or cutting required in connection with the tests.

## 23 0529 HVAC HANGERS AND SUPPORTS: Rigidly support systems and equipment. Include provisions for vertical and lateral adjustment, and accommodate expansion. Comply with ANSI B31.1, ASTM F708 and MSS SP58. Install in accordance with ANSI B31.9 and ASTM F708.

- A. Support Attachments to Structural Steel: Attach hangers to structural members with clamps; at steel joists, support at panel points only. Do not suspend hangers from roof deck.
- Pipe Sizes to 2 Inch: Malleable iron C-clamps with lock nuts and cup formed set screws.
- B. Hanger Attachments to Piping: Provide solid steel hanger rods for each pipe hanger. Equip each hanger rod with 3 semi-finished hex nuts not including the insert nut. Install hangers to provide minimum ½ inch space between finished covering and adjacent work. Place hangers within 12 inches of each horizontal elbow. Use hangers with ½ inch minimum vertical adjustment. Design hangers for pipe movement without disengagement of supported pipe.
- Uninsulated Copper Tubing: Copper plated plastic-coated adjustable tubing rings.
  - Insulated Piping to 4 Inch: Adjustable clevis type with insulation shield of 18 gauge galvanized steel in 180 degree segments, minimum 12 inches long.
- C. Multiple Pipe Supports: Trapeze hangers, preformed channel, enamel finish, with clamps to secure individual piping.

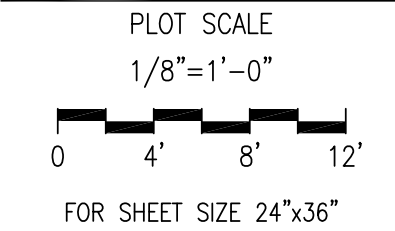
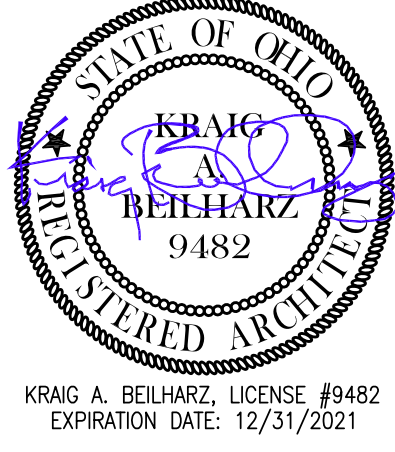
- D. Wall Support for Pipe Sizes to 3 Inches: Cast iron hook.
- E. Floor Support: Cast iron adjustable pipe saddle, lock nut, nipple, floor flange, and concrete pier or steel support.
- F. Where several pipes can be installed in parallel and at same elevation, provide multiple or trapeze hangers.
- G. Provide packing between hanger or support and piping. Insulate dissimilar metals against direct contact.
- H. Where pipe support members are welded to structural building framing, scrape, brush clean, and apply one coat of zinc rich primer to welding.
- I. Provide hangers adjacent to motor driven equipment with vibration isolation.
- 23 0593 TESTING, ADJUSTING, AND BALANCING:
- A. Submittals:
- Project Record Documents: Record test data on a copy of the latest revised set of drawings. Submit four copies.
  - Balance Report: Include line diagrams of all systems; individual unit diagrams for each supply system with diagrammatic arrangement of zone dampers, trimming dampers, and mixing box dampers, with pressure drops at each location. Record initial filter pressure drops and calibration of instruments. Include confirmation of the volume circulated during full cooling cycles on minimum outside air as well as 100 percent outside air. Record design data and observed data to facilitate comparisons.
    - The report shall be certified by a Professional Engineer or member of ASBC specializing in the field of air and water testing and who is not affiliated with any firm involved in the construction of the project.
  - Air Balance Data:
    - Mechanical Equipment: Manufacturer and model; size; arrangement, discharge, and class; total cfm, static pressure (external and total), and percent outside air; motor HP, voltage, phase, RPM, and full load amps (all phases); location and mark number; inlet and outlet dry bulb and wet bulb temperatures; starter heater element data; drive and belt data; outside temperature and wind velocity.
    - Duct Systems: Duct size and location of traverse; number of readings; velocity measurements; average velocity, temperature and static pressure; actual cfm.
    - Individual Air Terminals: Manufacturer and model; location and mark number; applicable calculation factors for velocity and capacity; cfm and thermal capacities; electrical data.
- B. Quality Assurance: Perform balancing in accordance with AABC standards.
- Balancing Contractor: Member of Associated Air Balance Council, or an independent firm specializing in balancing of systems whose principals are Professional Engineers. All personnel shall be regular employees experienced and technically trained specifically in the total balancing of mechanical systems.
  - Provide all labor, engineering and test equipment required to adjust and balance all heating, ventilating, air conditioning and exhaust systems.
  - Test all electrical interlocking for proper operation. Require attendance of Contractors responsible for piping, equipment, ductwork, and controls, as applicable.
  - Permanently mark final settings of valves, splitters, dampers, and other adjustment devices so that adjustment can be restored if disturbed at any time.
- C. Equipment: Furnish required test equipment. Verify calibration of all instruments prior to beginning work. Equipment specifically furnished for this project such as flow meters shall be turned over to the Owner in good operating condition at completion.
- D. General Procedures:
- Adjust and balance the complete mechanical system under conditions approximating actual operation. Work must be completed prior to the final inspection of the building mechanical system.
  - Check each piece of equipment or system for proper lubrication, drive rotation, belt tension, control sequence, and other conditions which may cause damage.
  - Verify that tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.
  - Verify wiring and support components for equipment are complete and tested.
  - Install at each piece of mechanical equipment a "Data Register" enclosed in a clear plastic holder securely attached to the equipment or wall in immediate area, showing all significant operating temperatures, pressures, amperes, voltage, brake horsepower, etc.
  - Install the Owner's personnel along with HVAC Contractor and equipment suppliers in the proper operation and maintenance of each piece of equipment.
  - Any changes required for final balancing results as determined by Balancing Contractor will be provided for the respective installing contractors who shall supply and install such equipment under their contractual obligations. Such changes may include, but are not limited to, the changing of pulleys, belts, dampers, or adding dampers or access holes.
- E. Forced Air Systems Balance Procedure:
- Measure air volumes in duct system by the pilot tube duct traverse method across the entire cross-sectional area (usually a minimum of 16 readings). Indicate locations of readings on record drawings and attach reference to report. Record static pressure and air temperature at each traverse point.
  - Pressure test supply, return and exhaust duct systems; verify that leakage rate is within permissible values.
  - Seal test holes with permanent type snap-in plugs when test is complete. Do not use duct tape to seal test holes. Do not make test holes in flexible duct or flexible equipment connectors.
  - Regulate air volumes by adjusting splitter dampers and branch duct dampers to obtain required quantities of supply, return and exhaust air. Utilize dampers at grilles, registers, and diffusers for "fine" adjustments only. Adjustment shall not create objectionable air patterns, drafts, or sound levels. Do not use devices other than dampers to adjust air volume.
  - Adjust air volume at terminals within 10 percent of the individual requirements specified. Measure air volume at each register, grille, diffuser, etc., by methods approved or recommended by the manufacturer of the terminal device.
  - Regulate total air delivery of fan systems by adjusting fan speed, motor speed, or fan blade pitch. Do not load drive motors above the corrected full load amperage rating.
  - Plug instrument test holes with permanent closure on completion of work.

## 23 0713 DUCT INSULATION: External duct insulation, 2 inch typical thickness; ASTM E84; maximum flame spread 25, maximum smoke developed 50.

- A. Concealed Locations Above Ceilings: ASTM C533, Type II, Class F-1; flexible fiberglass blanket; formaldehyde-free; maximum K value 0.25 at 75 degrees F.
- B. Other Locations: ASTM C812, Type 2; rigid and semi-rigid fiberglass board, 3.0 pcf density; maximum K value 0.23 at 75 degrees F.
- C. Facing: ASTM C1136; foil-scim-kraft vapor retardant type; aluminum foil reinforced with fiberglass yarn and laminated with fire-resistant adhesive to kraft paper.
- D. Seam Tape: To match facing finish.
- E. Installation: Maintain visibility and accessibility of testing laboratory labels, equipment nameplates, and access panels.
- Flexible Insulation: Apply insulation to clean, dry, tightly sealed ducts with edges tightly butted. Overlap facing minimum 2 inches at seams. Secure seams with outward clinching staples at 6 inches o.c.; seal seam with pressure-sensitive tape. At underside of ducts greater than 24 inches wide, secure insulation with mechanical fasteners and speed clips spaces 18 inches o.c.; cut fasteners flush with surface and seal with seam tape.
  - Rigid and Semi-Rigid Insulation: Apply insulation to clean, dry, tightly sealed ducts with edges tightly butted and impaled over stick clips or pins welded to the duct and secured with speed clips. Space pins as required to hold insulation firmly in place, maximum 18 inches o.c. both ways. Seal joints and penetrations of the vapor barrier with 3 inch wide strips of heat-sensitive tape.
  - Where reinforcing angles are greater than the insulation thickness specified, increase insulation thickness equal to the angle depth.

- 23 0700 HVAC PIPING INSULATION: ASTM E84; maximum flame spread 25, maximum smoke developed 50.
- A. Fiberglass Pipe Insulation: ASTM C547, Class I; rigid one piece construction with vapor barrier; minimum 36 inch sections; rigid on applications to 850 degrees F; maximum K value 0.23 at 75 degrees F.
- Exposed Piping in Finished Areas: PVC jacket from floor to eight feet above floor; PVC fitting covers with precut fiberglass insulation insert; minimum two layers of insulation inserts where pipe operating temperature is below 45 degrees F or above 250 degrees F.
    - PVC Jacket: ASTM D1784; preformed to shape of pipe or fitting; glossy white finish.
  - Outdoor Piping: Metal jacket with preformed aluminum fitting covers.
    - Metal Jacket: Aluminum sheet, minimum 0.016 inch thick, with laminated moisture retarder.
  - Piping Not Otherwise Scheduled: All purpose jacket; PVC fitting covers with precut fiberglass insulation insert; minimum two layers of insulation inserts where pipe operating temperature is below 45 degrees F or above 250 degrees F.
    - All Purpose Jacket: ASTM C1136, Type I; reinforced foil-kraft laminate, with pressure sensitive tape sealing system at butt joints and longitudinal seams; white finish.
- B. Closed Cell Pipe Insulation: ASTM C534, Type I; flexible elastomeric tubing, black color; maximum K value 0.28 at 75 degrees F.
- C. Finish Paint: Water based latex enamel, semi-gloss, white color.
- D. Heavy Duty Pipe Insulation: ASTM C533, Type I; rigid block insulation from hydrous calcium silicate; specially formulated for high temperature, high strength, abuse resistant and fire protection applications; maximum K value 0.40 at 300 degrees F. (Johns Manville Thermo-12 Gold)
- E. Mastic: Vapor retardant type, compatible with adjoining materials.
- F. Apply insulation over clean, dry pipe with all joints butted firmly together. Secure longitudinal jacket laps and butt strips according to manufacturer's recommendations.
- Extend insulation continuous through wall and ceiling openings and sleeves. Where piping penetrates fire rated assemblies, provide heavy duty pipe insulation to completely fill space between pipe and sleeve.
  - Assure continuous, unbroken vapor seal at seams, butt joints, and fittings where vapor barrier jackets are used, and on cold service piping below 60 degrees F. Provide adequate insulation and vapor seal to prevent condensation at hangers and support anchors secured directly to cold surfaces.
  - Extend surface finishes to protect all surfaces, ends and raw edges of insulation.
  - Install galvanized metal shields between hangers or supports and pipe insulation. Form shields to fit insulation and extend up to the center line of the pipe, with minimum 12 inch length for pipe sizes to 6 inch.
  - Install heavy duty pipe insulation between pipe and hangers, thickness equal to adjoining insulation, with vapor barrier where required. Insulation inserts shall have the same length as specified for shields.
  - Closed Cell Insulation: Push unsit sections over open ends of pipe where practical; otherwise slit tubular sections and wrap around pipe. Adhere and seal seams and butt joints with adhesive.
    - Cold Piping: Adhere insulation to pipe at high end of run with one inch strip of adhesive on both insulation and pipe. Coat exposed end cuts with adhesive.
    - Outdoor Exposed Piping: Locate seams on lower half of pipe. Apply two coats of finish paint.
  - Metal Jacket: Install with minimum 2 inch laps, configured to shed water; secure system with ½ inch aluminum bands at 12 inches o.c.
- F. Refrigerant Suction Piping (up to 2 Inch):
- Exposed Piping: 1½ inch fiberglass or 1 inch closed cell.
  - Concealed Piping: Refrigerant Suction (up to 2 Inch): 1 inch closed cell.
  - For pipe sizes larger than scheduled, provide insulation thickness ½ inch greater than scheduled thickness.
  - Where piping is exposed to outdoor ambient temperatures, provide insulation thickness ½ inch greater than scheduled thickness.
- 23 0800 INSTRUMENTATION AND CONTROL: Wire, conduit and related materials as specified in Division 26.
- A. Control Wiring Diagrams: Indicate equipment and components; terminal to terminal schematics of all wiring; sequence of operation.
- B. Quality Assurance:
- Installer Qualifications: Company specializing in performing the work of this section with minimum five years documented experience.
  - Obtain shop drawings, product data, wiring diagrams, installation instructions and all other relevant data from HVAC equipment suppliers and Electrical Contractor. Coordinate layout of control systems with this information.
  - Install all wiring in accordance with National Electrical Code.
  - Provide assistance and coordination to HVAC manufacturer's start-up representatives.
- C. Controls for Heating and Cooling Systems: Low voltage electronic programmable thermostat with sub-base; single stage heating, single stage cooling, or as required for scheduled operations; Off/Heat/Auto/Cool mode switch; On/Auto fan switch; auxiliary relay outputs for control of outdoor air damper; LCD display; keyboard lockout switch; battery backup; capable of remote communications using open network protocol. (Honeywell T7300 series)
- Sequence of Operation: 7 day programming with 2 occupied and 2 unoccupied periods per day; proportional plus integral temperature control; override control for temporary setpoint changes; recovery feature to optimize start time depending on building load; minimum on and off times to prevent equipment short cycling.
    - Occupied Mode: Maintain temperature between occupied heat and occupied cool setpoints; operate fan continuously; adjust outdoor air damper to scheduled position.
    - Unoccupied Mode: Maintain temperature between unoccupied heat and unoccupied cool setpoints; operate fan only on call for heating or cooling; close outdoor air damper.
- D. Wire equipment and control devices according to approved wiring diagrams.
- Conceal low voltage wiring (less than 50 volts AC) within wall cavities, in joist spaces, in ceiling plenums, or in conduit to avoid physical damage. Run line voltage wiring (above 50 volts AC) in conduit. Install all wiring in accordance with Division 26.
  - Locate in-space thermostats or as shown.
    - Mounting Height: 48 inches above finish floor.
- 23 2000 HVAC PIPING:
- A. Piping Specifications:
- Solder Materials: ASTM B32, Alloy Sn65 and Sn64.
  - Unions For Copper Pipe (Sizes to 3 Inch): Class 150 bronze unions with soldered joints.
  - Dielectric Unions (Sizes to 2 Inch): Steel body and nut with insulating gasket (250 lb at 210 degrees F) and copper connector. (EPCCO Models FX, EA, and FB)
  - Floor, Wall, and Ceiling Plates (Escutcheons):
    - Finished Areas: Chrome plated brass.
    - Unfinished and Concealed Areas: Stamped brass, split hinged type.
- B. Piping Installation:
- Verify piping and tubing is round and straight prior to installation. Prevent deformation during cutting and threading. Do not permit tool marks on exposed piping in finished areas.
  - Ream pipe and tube ends. Remove burrs. Bevel plain end and ferrous pipe.
  - Remove scale and foreign material from inside and outside before assembly.
  - Prepare piping connections to equipment with flanges or unions, arranged for quick disconnect for maintenance. Use the same material and finish as the piping system.
    - Pipe Size 2 Inch and Smaller: Install unions adjacent to each valve on the downstream side, and at connection to each piece of equipment.

- Use non-conducting dielectric connections wherever joining dissimilar metals.
  - Do not use unions or flanged unions in straight runs of pipe or in concealed locations except for flanged valve applications.
5. Route piping in orderly manner, plumb and parallel to building structure. Maintain gradient.
6. Install piping to conserve building space, to not interfere with use of space and other work, and to maintain required headroom and clearances for equipment, door and window swings, and related conditions.
7. Place piping in concealed spaces above finished ceilings. In areas without finish ceilings, route piping through spaces in open web joists, trusses, or girders.
8. Conceal vertical piping in stud wall cavities, furred wall spaces, pipe chases, and masonry cores where possible. Except in unfinished spaces, obtain approval prior to installing exposed piping.
9. Group piping whenever practical at common elevations. When installing piping in parallel, leave sufficient space between pipe lines to facilitate future work on any line.
10. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment. Utilize offsets, changes in direction and expansion loops, constructed to allow maximum anticipated variation in piping length.
11. Provide clearance in hangers and from structure and other equipment for installation of insulation and access to valves and fittings.
12. Install valves at service connections to equipment and at branch connections to main lines.
13. Slope piping and arrange systems to drain at low points. Use eccentric reducers to maintain top of pipe level.
14. Prime coat and prepare for finish painting exposed pipe, fittings, supports, and accessories scheduled for field painting. Components located in crawl spaces, pipe shafts, and suspended ceiling spaces are not considered exposed. Where pipe support members are welded to structural building framing, scrape, brush clean, and apply one coat of zinc rich primer to weld.
15. Do not penetrate building structural members unless indicated.
16. When installing more than one piping system material, ensure system components are compatible and joined to ensure the integrity of the system. Provide necessary joining fittings. Ensure flanges, union, and couplings for servicing are consistently provided.
17. Install bell and spigot pipe with bell and upstream.
18. Do cut threaded joints with full cut standard taper pipe threads with non-toxic joint compound applied to male threads only.
19. Install valves with stems upright or horizontal, not inverted. Remove protective coatings after installation.
20. Provide valves for shut-off and to isolate service equipment, parts of systems, or vertical risers.
21. Install valves for throttling, bypass, or manual flow control services.
22. Install unions downstream of valves and at equipment or apparatus connections.
23. Install brass male adapters each side of valves in copper piped system. Solder adapters to pipe.
- C. Joining Copper Pipe and Fittings: 95-5 tin-antimony solder and soldering flux paste.
- Thoroughly clean the tube end and fitting portions of the joint prior to assembly.
  - When applying flux, prevent excess paste from entering joint.
  - Remove excess flux from outside of assembly before applying heat.
- D. Pipe Sleeves: Provide sleeves and escutcheons when penetrating foundations, floors, walls and partitions. Cut escutcheons as necessary to fit in close quarters.
- Size sleeves to provide minimum ¼ inch clearance around all sides of piping and insulation.
  - Maintain sleeves plumb, level, and in proper position throughout construction. Inspect sleeves in cast-in-place concrete during and after concrete pour and correct any deviation from proper position.
  - Seal pipe and sleeve penetrations to achieve fire resistance equivalent to fire separation required. Where fire separation is not required, apply waterproof sealant.
  - Existing Construction: 22 gauge galvanized steel.
  - Roofs, Interior Stud Walls, and Floors (Concealed): 22 gauge galvanized steel.
  - Exterior Walls, Interior Masonry Walls, and Floors (Exposed): Galvanized steel pipe, ASTM A53, Type E, Grade A, Schedule 40. Install sleeves reamed with welded flanged ends flush with wall, 4 inches above floor in equipment rooms and wet areas, and ½ inch above floor in other locations.
  - Mechanical Sleeve Seals: Interlocking rubber link type, shaped to continuously fill annular space between pipe and sleeve; with connecting bolts and pressure plates.
- 23 2300 REFRIGERANT PIPING:
- A. System Description:
- Provide pre-charged and pre-insulated refrigerant piping when available.
  - Provide field charged and field insulated refrigerant piping and required accessories for systems with non-condensable HVAC systems.
  - Obtain and follow equipment manufacturer's recommendations for pipe sizes, schematic system layout, and required accessories and specialties.
- B. Warranty: Provide written guarantee of a leak-proof refrigerant system for 90 days after start-up.
- C. Pipe and Fittings:
- Piping: ASTM B88, Type L; ACR hard copper tubing.
  - Fittings: ANSI B16.22; wrought copper solder joint type.
- D. Valves and Accessories: Alco; Sporn; Henry; Mueller.
- Line Valve Sizes to 3/8 Inch: Bronze body solder end, diaphragm, packless.
  - Line Valve Sizes 7/8 Inch and Over: Bronze body solder end and globe valves, backseating.
  - Solenoid Valves: Brass body, packless, with manual opening stem; coils and pressure controls as required.
  - Back Pressure Regulators: Bronze body, welded stainless steel diaphragm, sensitive waterproof pressure adjustment; light, oil-resistant composition seat.
  - Thermostatic Expansion Valves: Furnish with remote bulb, external equalizer, and external superheat adjustment.
  - Strainers: Angle or Y-type with removable strainer screens of 60 to 80 mesh Monel wire cloth, reinforced with 10 mesh brass screen, or stainless steel with brass ring to suit intended size and service.
- E. Cleaning and Flushing: Clean and flush system prior to testing. Blow out all piping with compressed air through dirt pockets and open ends of piping until air shows no evidence of contamination. Remove and clean control valves. Clean debris from strainers and dirt pockets.
- F. Testing and Inspection: ANSI B31.5.
- Pressure Test: Charge system to 400 psi (high side) and 150 psi (low side). Maintain pressure for 24 hours without pressure loss. Check for leaks using electronic or halide leak detector. Repeat entire test procedure until all leaks have been repaired.
  - Vacuum Test: Provide auxiliary heat as required to maintain ambient temperature of minimum 60 degrees F during evacuation. Evacuate system to 2.5 mm Hg absolute. This evacuation is to be broken with dry nitrogen. Open compressor service valve for final evacuation. Maintain minimum vacuum of 2.0 mm Hg for 12 hours. Check vacuum with electronic gauge.
- G. Charging: After testing is complete, charge system with scheduled refrigerant in the amount recommended by equipment manufacturer, or the amount required to clear the sight glass under all operating conditions plus 20 percent, whichever is greater. Do not overcharge system.
- 23 2300 HVAC DUCTS: Construct to SMACNA, NFPA 90A, and NFPA 90B standards.
- A. No variation of duct configuration or sizes permitted except by written permission. Size round ducts installed in place of rectangular ducts, or vice versa, in accordance with ASHRAE table of equivalent rectangular and round ducts.



ISSUE DATE	
1	10.08.21 PERMITS/BIDS

© 2021 BEILHARZ ARCHITECTS, INC.  
THE CONTENT OF THIS DRAWING IS NOT INTENDED TO BE SUBMITTED FOR USE OR REUSE BY INDIVIDUALS, COMPANIES, CORPORATIONS, OR OTHER ENTITIES FOR ANY PURPOSE OTHER THAN THE INTENDED PURPOSE OF THIS DOCUMENT, NOR FOR USE ON ANY OTHER PROJECT. ANY REUSE OR REPRODUCTION WITHOUT WRITTEN VERIFICATION AND APPROVAL BY THE ARCHITECT FOR THE SPECIFIC PURPOSE INTENDED SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO THE ARCHITECT.

## PAULDING COUNTY OFFICES

INTERIOR ALTERATIONS OF FORMER FRITZ HOUSE  
451 MCDONALD PIKE  
PAULDING, OHIO 45879

SPECIFICATIONS  
DIVISION 23

PROJECT: C1-4750

DRAWN BY: LJR

CHECKED BY: KAB

SHEET

SP-2



