2017 Ohio Building Code Summary

Existing Building:

Construction Type: IIIB

Fire Suppression System: No

Fire Resistant Ratings for Elements:
- Structural Frame = 0 hours (Existing, No Changes)
- Exterior Bearing Walls = 2 hours (Existing, No Changes)
- Int. Nonbearing Walls = 0 Hours
- Floor Construction = 0 Hours (Existing, No Changes)

Existing Building Use: A2 (Assembly, "*Taverns & Bars*")

Proposed Change of Use: B- (Business, *"Professional Services"*)

Required Exits: 3 Existing per Original Approved Construction Permit

Existing Interior Square Footage:
First Floor = 1,028.34
Second Floor= 979.59
Total Interior Floor Area = 2,007.93

Existing Occupant Load per OBC Table 1004.1.2: 98 Occupants

New Calculated Load: Business: 2,007.93 / 100 sq. ft. per occupant = 21 Occupants

Proposed Occupant Load: per OBC 1004.2: Based on Seating per Plan
- First Floor = 36 Occupants
- Second Floor = 13 Occupants
- Total Proposed = 49 Occupants

Plumbing Requirements per OBC Table 2902.1:

Restrooms:
- Required: Men = 1 Water Closet, 1 Lavatory; Women = 1 Water Closet, 1 Lavatory
- Provided: Men = 1 Water Closet, 1 Lavatory; Women = 1 Water Closet, 1 Lavatory

Rev. 08.01.23

Service Sink: 1 Required = 1 Provided

Drinking Fountain: 1 Required = Owner / Tenant to Provide Potable Water Service Water Jug or Bottled Water services, or equivalent

General Notes:

THE DRAWINGS ARE INTENDED TO GRAPHICALLY DEPICT THE GENERAL REQUIREMENTS FOR THE SCOPE OF WORK REQUIRED TO COMPLETE THE PROJECT. THEY DO NOT SHOW OR IDENTIFY EACH AND EVERY COMPONENT, MATERIAL, ITEM OR INSTALLATION METHOD NECESSARY TO MEET MANUFACTURERS' OR REGULATORY REQUIREMENTS. SPECIFIC REGULATORY COMPLIANCE ITEMS OR PROVISIONS ARE IDENTIFIED AND/OR REFERRED TO BY INDICATION OF THE APPROPRIATE ASSEMBLY DESIGNATION OR GENERAL TERMINOLOGY. THE CONTRACTOR(S) SHALL BE REQUIRED TO FAMILIARIZE THEMSELVES WITH THE APPLICABLE CODE PROVISIONS, ASSEMBLY DESIGNATION OR MATERIAL IDENTIFIED AND SHALL COMPLETE THE PROJECT IN COMPLIANCE WITH THE APPLICABLE REQUIREMENTS.

1. CONTRACTOR AND/OR OWNER TO PAY FOR NECESSARY FEES AND PERMITS

2. THE CONTRACTOR(S) SHALL BE SOLELY RESPONSIBLE FOR THE MEANS, METHODS, SEQUENCING AND SAFETY REQUIREMENTS FOR THE PROJECT. EACH CONTRACTOR, SUBCONTRACTOR, LABORER OR OTHER PERSONS PERFORMING WORK ON THE PROJECT SITE SHALL BE RESPONSIBLE FOR COMPLIANCE WITH ALL APPLICABLE WORKPLACE & CONSTRUCTION SAFETY REGULATIONS PROMULGATED BY FEDERAL, STATE OR LOCAL AUTHORITIES, INCLUDING BUT NOT LIMITED TO, US DEPT. OF LABOR OCCUPATIONAL SAFETY & HEALTH ACT (OSHA), THE INDUSTRIAL COMMISSION OF THE STATE OF OHIO OR OTHER INDUSTRY REQUIREMENTS APPLICABLE TO CONSTRUCTION SITES AND SAFETY. THE GENERAL CONTRACTOR/CONSTRUCTION MANAGER IS SOLELY RESPONSIBLE FOR ASSURING THAT SITE SPECIFIC SAFETY REQUIREMENTS ARE DOCUMENTED AND DISSEMINATED TO ALL PARTIES AND SHALL MAINTAIN ALL REQUIRED RECORDS, FORMS, MANUALS, RULES OR OTHER DOCUMENTS AT THE SITE.

3. ALL MATERIAL USED IN THE CONSTRUCTION OF THIS PROJCT SHALL BE NEW UNLESS OTHERWISE NOTED. REJECT AND REPLACE ANY DAMAGED MATERIAL RESULTING FROM WARPAGES OR OTHER CAUSES. INTERIOR FINISHES NOT SHOWN ON THE DRAWINGS SHALL BE COORDINATED WITH THE OWNER.

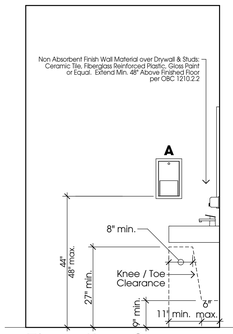
4. THE CONTRACTOR AND/OR THE APPLICABLE TRADE CONTRACTOR IS RESPONSIBLE FOR THE LOCATION OF ALL UNDERGROUND UTILITIES, PUBLIC OR PRIVATE, IN THE AREAS OF WORK PRIOR TO THE START OF WORK. ALL UTILITIES SHALL BE PROTECTED FROM DAMAGE DURING THE COMPLETION OF THE PROJECT. GENERAL CONTRACTOR OR CONSTRUCTION MANAGER TO COORDINATE ACCESS TO ALL EXISTING UTILITIES IN CONJUNCTION WITH BUILDING OWNER, INCLUDING BUT NOT LIMITED TO SUPPLY LOCATIONS, METERING METHODS, METER LOCATIONS, EXHAUST LOCATIONS, AND ANY OR ALL ZONING AND HISTORICAL LIMITATIONS.

5. EACH SHEET CONTAINED IN THIS SET OF DRAWINGS IS AN INTEGRAL COMPONENT OF THE CONSTRUCTION DOCUMENTS FOR THE PROJECT. PORTIONS OF THE WORK DESCRIBED ON ONE SHEET MAY IMPACT, BE IMPACTED BY, OR RELY UPON INFORMATION OR WORK SHOWN ON THE OTHER SHEETS WITHIN DRAWINGS OR WITHIN THE SPECIFICATIONS. EACH CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH THE SCOPE OF WORK REQUIRED FOR THE ENTIRE PROJECT AND SHALL BE RESPONSIBLE FOR COORDINATION OF THEIR RESPECTIVE PORTIONS WITH OTHER TRADES TO ASSURE THAT THE WORK PROGRESSES IN AN ORDERLY AND TIMELY FASHION.

6. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS APPROVED BY THE AUTHORITIES HAVING JURISDICTION OVER THE PROJECT. EACH CONTRACTOR, SUBCONTRACTOR OR OTHER PERSON PERFORMING WORK ON THE PROJECT SHALL REFER TO THE APPROVED DOCUMENTS FOR THE SCOPE OF WORK REQUIRED. USE OF BID SETS, LOOSE SHEETS OR OTHER ITEMS/DOCUMENTS NOT PART OF THE APPROVED DOCUMENTS IS DONE AT THE RESPECTIVE PARTIES SOLE RISK. THE GENERAL CONTRACTOR/CONSTRUCTION MANAGER SHALL BE RESPONSIBLE FOR MAINTENANCE AND SAFEKEEPING OF THE APPROVED DOCUMENTS.

7. DO NOT SCALE DRAWINGS. IF ANY DISCREPANCY IS FOUND OR ANY INFORMATION OR CLARIFICATION IS NEEDED WHICH CANNOT BE REASONABLY DETERMINED BY THE CONSTRUCTION DOCUMENTS, CONTACT THE ARCHITECT FOR RESOLUTION. IN CASE OF DISCREPANCY REGARDING THE QUANTITY OR QUALITY, THE HIGHER QUALITY OR GREATER QUANTITY SHALL BE PROVIDED UNLESS DIRECTED OTHERWISE BY THE OWNER OR ARCHITECT.

8. ALL WORK DESCRIBED HEREIN IS DESIGNED, AND INTENDED TO COMPLY WITH THE PROVISIONS OF THE AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES ("ADAAG"). FOR RENOVATIONS THE WORK IS DESIGNED TO COMPLY WITH THE ADAAG TO THE MAXIMUM EXTENT FEASIBLE WITH ALL ELEMENTS THAT CAN BE MADE ACCESSIBLE UNLESS TECHNICALLY INFEASIBLE OR BEYOND APPLICABLE THRESHOLD REQUIREMENTS. THE CONTRACTOR SHALL ENSURE THE WORK IS COMPLETED TO MEET THE APPLICABLE REQUIREMENTS AND SHALL BECOME FAMILIAR WITH THE APPLICABLE PROVISIONS BEFORE COMPLETING THE WORK DESCRIBED HEREIN.



Elevation 2

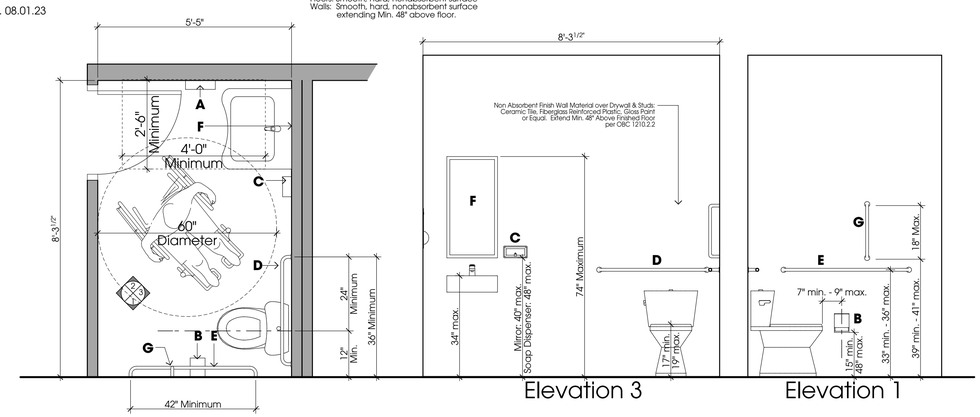
Restroom Key

- **A** Paper Towel Dispenser
- **B** Toilet Paper Dispenser
- **C** Soap Dispenser
- **D** Rear Grab Bar
- **E** Side Grab Bar
- **F** Mirror
- **G** Vertical Grab Bar

NOTE: Water supply and drain pipes under lavatories and sinks shall be insulated or otherwise configured to protect against contact. There shall be no sharp or abrasive surfaces under lavatories and sinks. Per ICC606.6

All restroom fixtures and accessories shall be A.D.A. accessible.

Finish Materials: OBC 1210
Floors: Smooth, hard, nonabsorbent surface
Walls: Smooth, hard, nonabsorbent surface extending Min. 48" above floor.



Elevation 3 Elevation 1

Typical Accessible Bath
Scale: 1/2" = 1'-0"

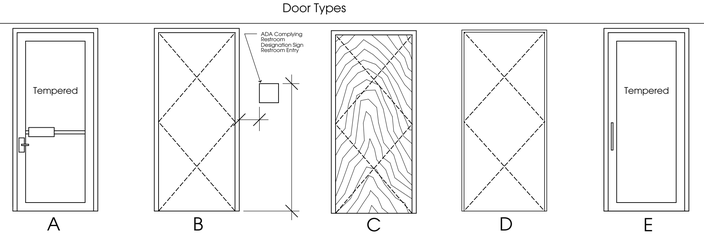
Door and Frame Schedule

Door Code	Door Size W x H	Door Thick	Door Type	Door Material	Door Finish	Frame Material	Frame Finish	Label (Min.)	Remarks
1	3'-0" x 7'-0"	1 3/4"	A	IM	PT	M	TG	-	Existing First Floor Egress Door Previously Approved by Gahanna
2	3'-0" x 7'-0"	1 3/4"	B	M	PT	M	PT	-	New Restroom Doors / ADA Signage First Floor Only
3	3'-0" x 7'-0"	1 3/4"	E	M	PT	M	TG	-	Office Doors
4	3'-0" x 7'-0"	1 3/4"	D	M	PT	M	PT	-	Misc. Mechanical / Storage
5	3'-0" x 7'-0"	1 3/4"	D	M	PT	M	PT	2 Hr	Existing Second Floor Egress Doors Previously Approved by Gahanna Install New Operating Hardware per OBC 1010.1.9.1 As R'Qrd.
6	6'-0" x 6'-0"	1 3/4"	-	M	PT	M	PT	-	New External Sliding Glass Door (Not Emergency Egress)

General Notes / Abbreviations:

1. W = Wood CW = Clad Solid Wood PT = Painted ST = Stained IM = Insulated Metal M=Metal TG= Tempered Glass
2. All Latched Doors to have A.D.A approved lever operated hardware sets per ADAAG 4.13.9
3. All Egress Doors Shall be Readily Operable as per OBC 1010.1.9

Door Types



Room Treatment Schedule

	Room Name	Floor Material	Base Material	Walls Material	Ceiling Material	Ceiling Height	Remarks
100	Open Office Area	3	A	1	N/A	Existing	Replace Water Damaged Materials As R'Qrd.
101	New Womens Restroom	2	C	3	B	Existing	
102	Mechanical Room	3	D	3	B	Existing	
200	Open Office Area	3	A	1	N/A	Vaulted	Replace Water Damaged Materials As R'Qrd.
201	New Mens Restroom	2	C	3	B	Existing	Flat Clg. @ Bottom of Trusses
202	Mechanical Room	3	D	3	B	Vaulted	Open to Trusses
203	Office Nook #1	3	A	1	B	Existing	Flat Clg. @ Bottom of Trusses
204	Private Office #1	3	A	1	B	Existing	Flat Clg. @ Bottom of Trusses
205	Private Office #2	3	A	1	B	Existing	Flat Clg. @ Bottom of Trusses
206	Private Office #3	3	A	1	B	Existing	Flat Clg. @ Bottom of Trusses
207	Office Nook #2	3	A	1	B	Existing	Flat Clg. @ Bottom of Trusses

Floor	Base	Walls	Ceiling
1. Concrete	A. Wood	1. Gypsum Board - Painted	A. Unfinished
2. VCT	B. 6" Ceramic Tile	2. Gypsum Board (Type "X") - Painted	B. Gypsum Board - Painted
3. Wood	C. 4" Rubber	3. Gypsum Board (Moisture Resistant) - Painted	C. Accoustical Tile Dropped Lay-In Ceiling
4. Ceramic Tile	D. None	4. Fiberglass Reinforced Plastic (FRP) Panels, White, Pebble Finish	
		5. Storefront Glass System	

Location Plan
No Scale

Project Description

New interior renovation and remodel of existing free-standing single use commercial space. Existing use of Bar/Tavern to be converted to new office space. No proposed modifications to existing building footprint or existing building site. No modifications to existing structural components. All new proposed interior walls non-load bearing and non-rated per OBC. Remove all existing restaurant equipment, and remove all water damaged building materials. Remove inoperable HVAC attic units. New dedicated first floor HVAC system and new dedicated second floor HVAC system. New miscellaneous electrical modifications to reflect new floor plan and use.

Drawing Index

STATE OF OHIO GENE MILHOAN 4423 REGISTERED ARCHITECT

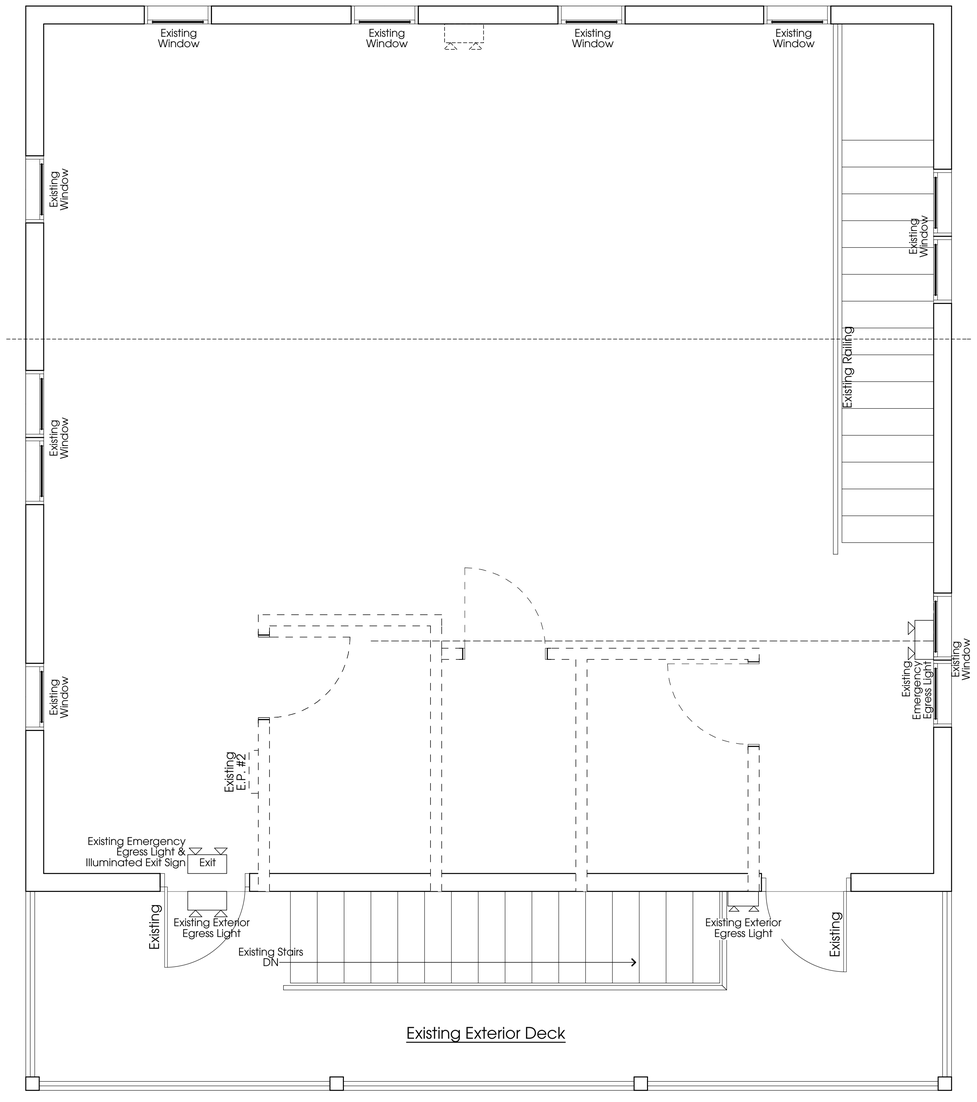
57 Mill, LLC Office
New Change of Use
57 Mill Street • Gahanna, OH • 43230

MILHOAN architects LLC
Long Street Studio • 300 East Long Street Columbus, Ohio 43215 • 614 • 222 • 0001

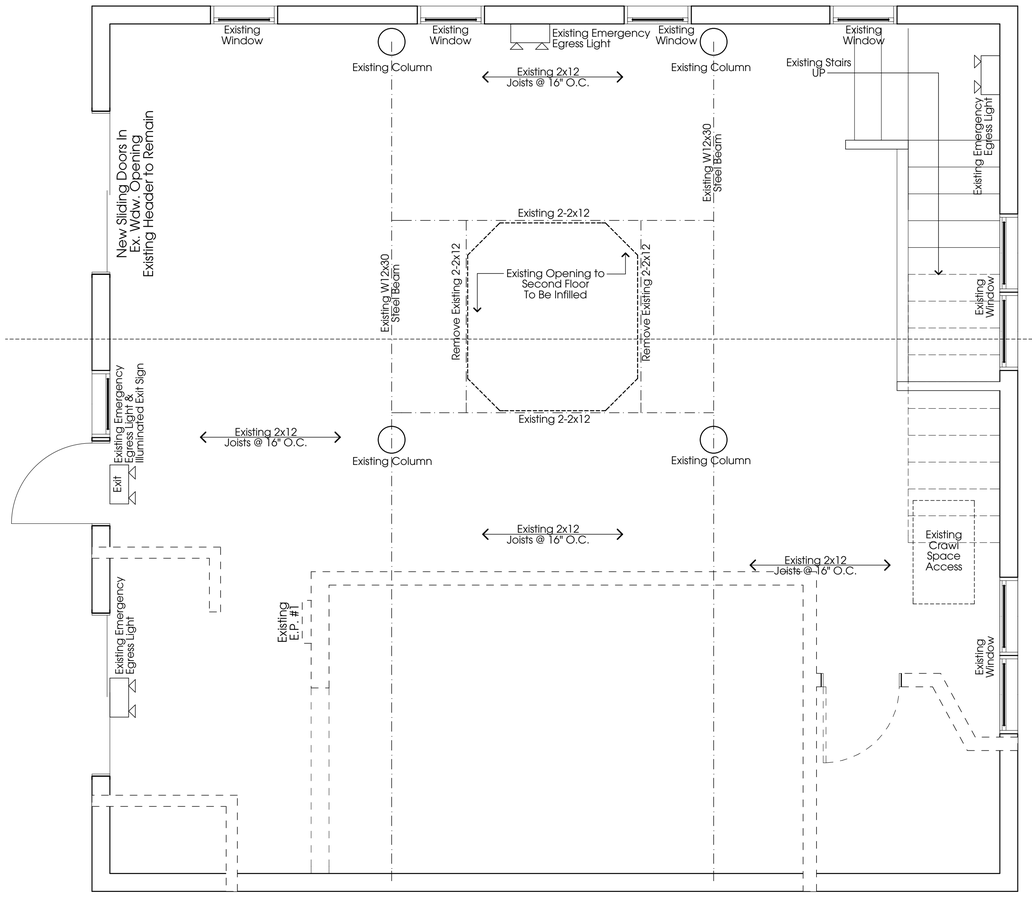
DRAWN By: AJC / DAM
CHECKED By: GRM
PROJECT NO.: BDM-02
DATE: 05.15.23 Permit
REVISIONS: 06.14.23 Revs.
08.01.23 Revs.

C1

OF SHEETS



Second Floor Demolition Plan
Scale: 3/8" = 1'-O"



First Floor Demolition Plan
Scale: 3/8" = 1'-O"

57 Mill, LLC Office
New Change of Use
57 Mill Street • Gahanna, OH • 43230

MILHOAN architects LLC
Long Street Studio • 300 East Long Street
Columbus, Ohio 43215 • 614 • 222 • 0001

DRAWN By:	AIC / DAM
CHECKED By:	GRM
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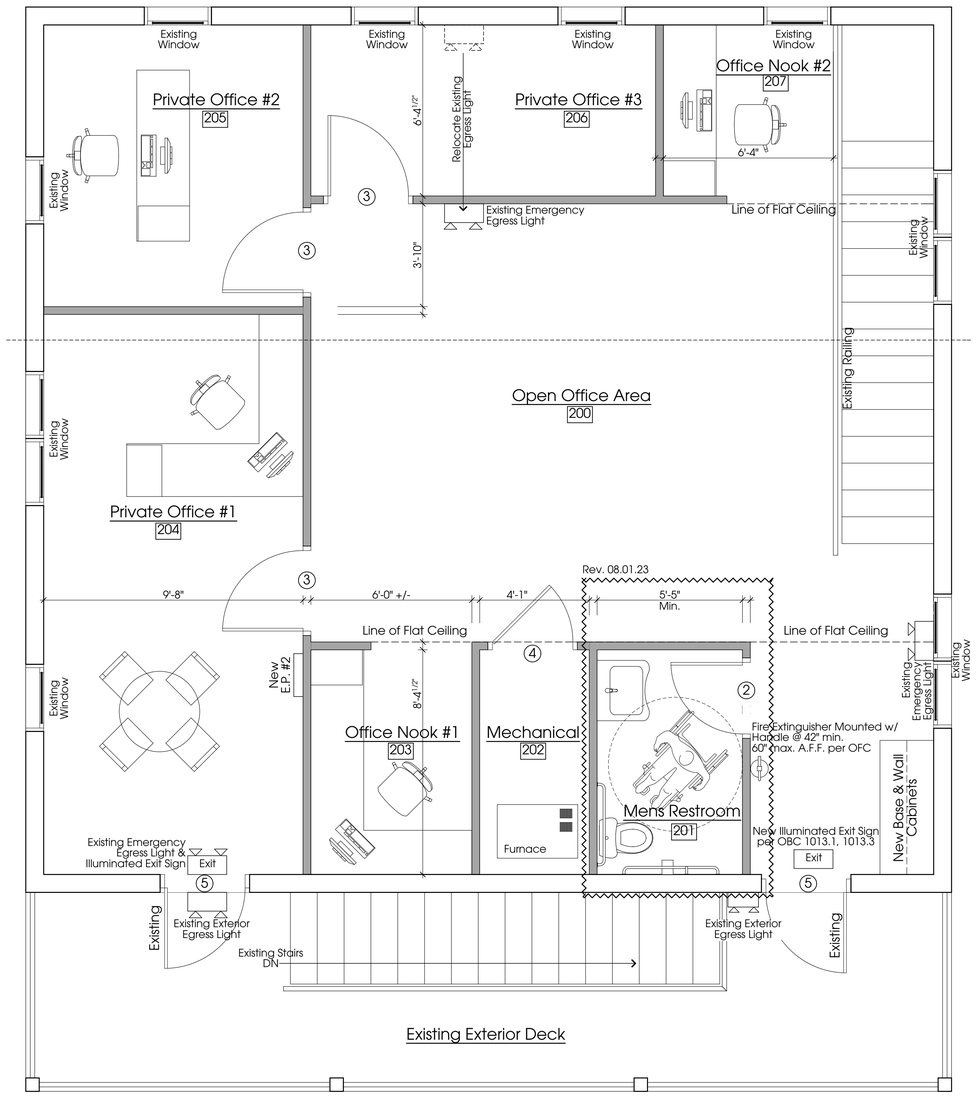
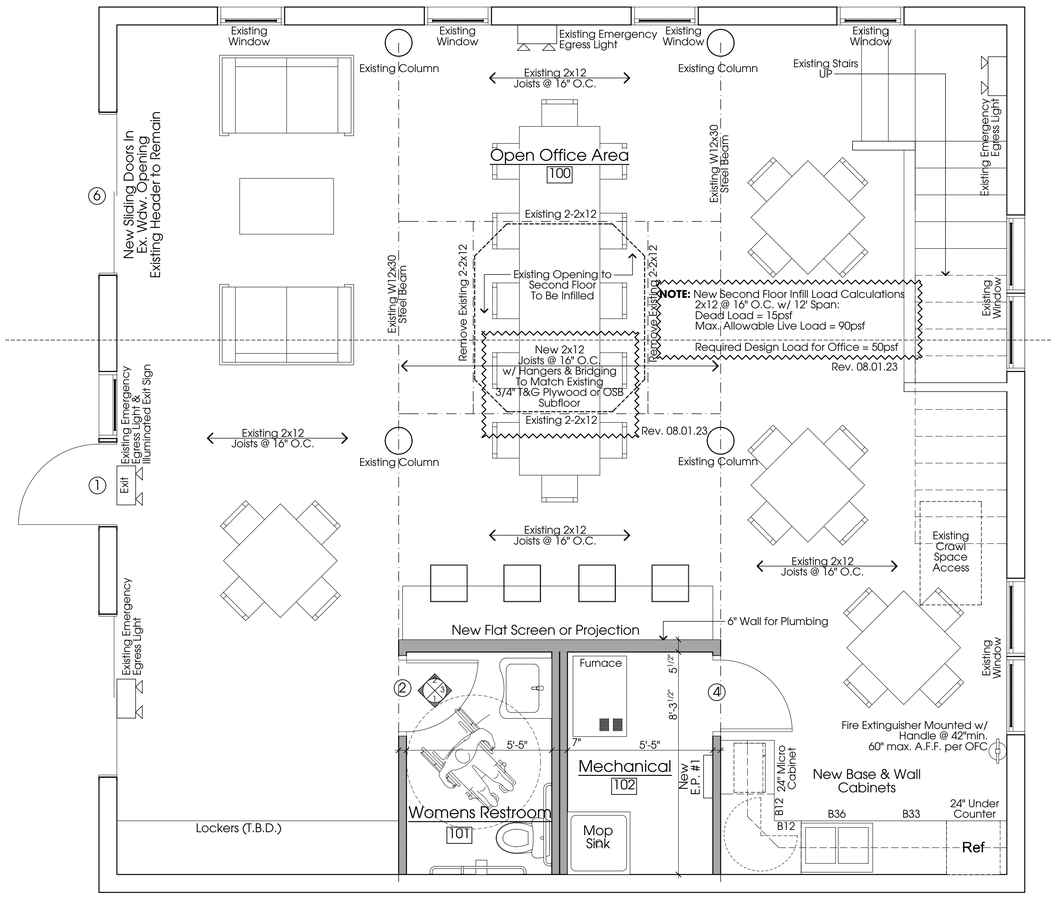
A1

OF SHEETS



New Second Floor Plan
Scale: 3/8" = 1'-0"



New First Floor Plan
Scale: 3/8" = 1'-0"

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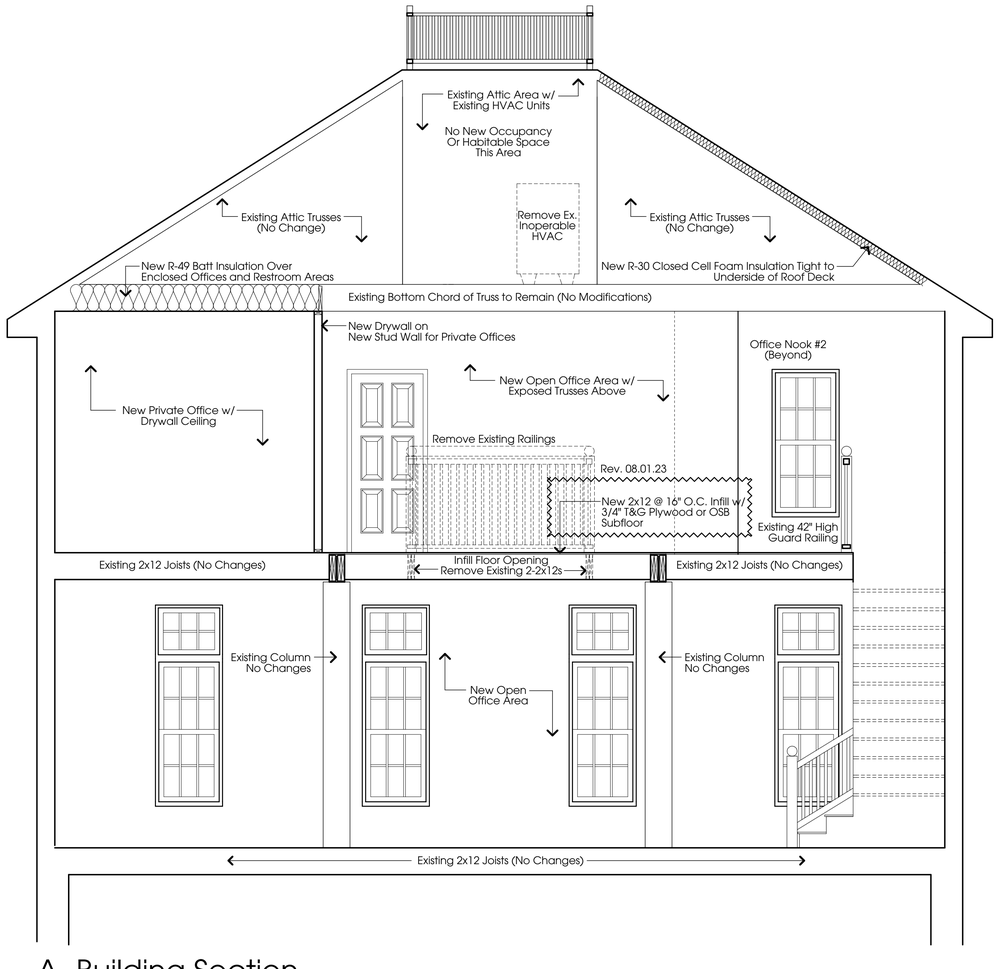
A2

OF SHEETS



A- Building Section
Scale: 3/8" = 1'-O"

Replace Existing Glass Opening w/
New 2hr Rated Sliding Glass Doors
New Door Threshold to Comply w/ OBC 1010.1.7
Maximum 1/2" Height Above Finished Floor Elevation

Existing Swing Door Previously Approved w/ Original Construction
No New Changes

Existing West Elevation

Existing East Elevation

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	08.01.23 Revs.

A3

OF SHEETS

Existing Egress Swing Door
Previously Approved w/ Original Construction
Remove "Door Blocked" Label
Install New Operating Hardware per OBC 1010.1.9.1 As R'Qrd.

Existing 42" High Guards
No Changes

Existing Exterior Egress Staircase
No Changes

Existing Approved Thresholds per
OBC 1010.1.7
Existing Matching Interior & Exterior
Floor Elevations per OBC 1010.1.5

Existing South Elevation

Existing Second Floor Egress Door Thresholds

Existing North Elevation

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MILHOAN architects LLC
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Columbus, Ohio 43215 • 614 • 222 • 0001

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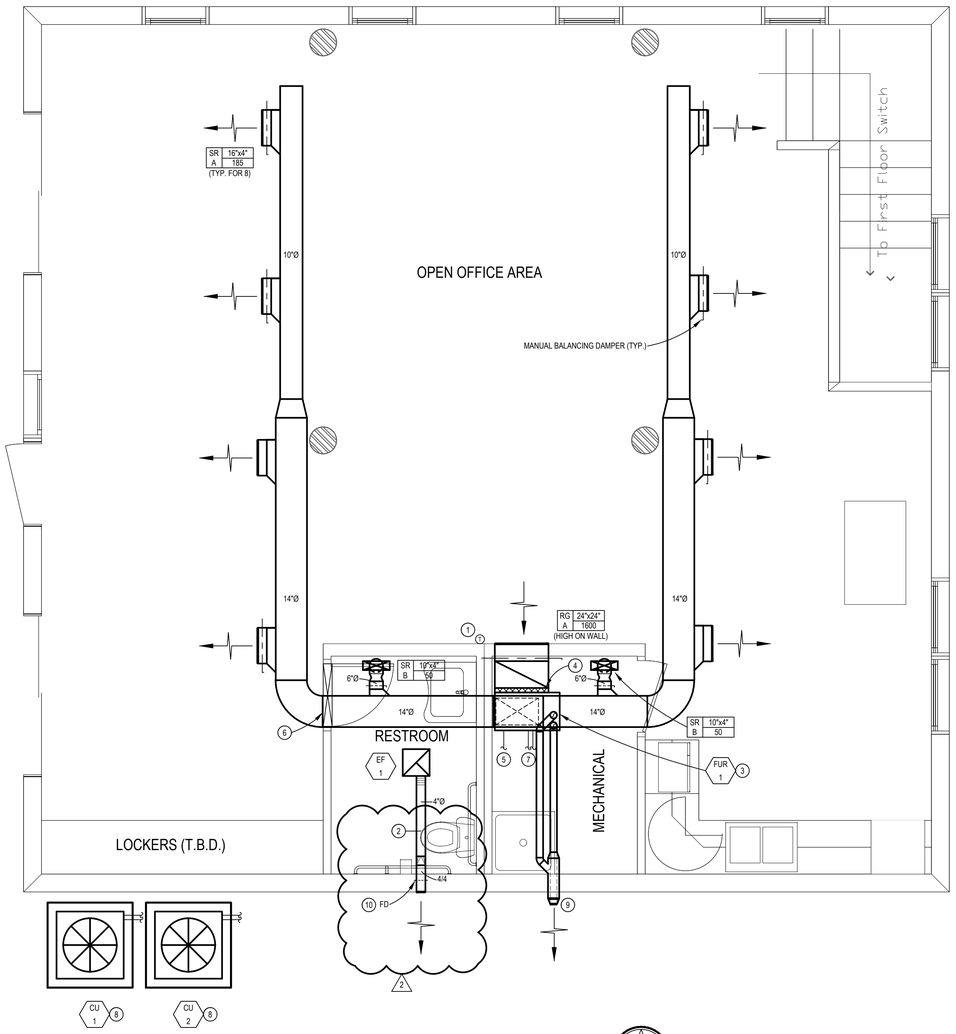
	08.01.23 Revs.

A4

OF SHEETS



FIRST FLOOR MECHANICAL PLAN

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

DUCTWORK SCHEDULE

DUCT SYSTEM	SMACNA PRESSURE CLASS	SMACNA SEAL CLASS	DUCT MATERIAL	INSULATION
SUPPLY AIR EXPOSED	2"	B	GALVANIZED STEEL	DOUBLE WALL INSULATED
SUPPLY AIR CONCEALED	2"	B	GALVANIZED STEEL	2" DUCT WRAP (MIN. R-8)
RETURN AIR DUCTWORK	1"	B	GALVANIZED STEEL	INTERNALLY LINED
EXHAUST AIR	1"	B	GALVANIZED STEEL	--

NOTE:
1. ALL DUCTWORK SIZES ARE AIRWAY DIMENSIONS.
2. CONEALED DUCTWORK SHALL BE INSULATED WITH A MINIMUM R-6.4 DUCT WRAP.
3. ANY DUCTWORK ROUTED IN ATTIC SPACE (OUTSIDE OF THERMO ENVELOPE) SHALL BE INSULATED WITH A MINIMUM R-8 DUCT WRAP.

NATURAL VENTILATION FRESH AIR CALCULATIONS FIRST FLOOR OPEN OFFICE AREA	
EXTERIOR DOOR	
(1) 3'-0" x 7'-0" OPENING	21.0 SQ.FT. OPENING
SLIDING GLASS DOOR	
(2) 6'-0" x 10'-0" OPENING	120.0 SQ.FT. OPENING
MEETING & CONFERENCE AREA = 1050 SQ.FT.	
1050 SQ.FT. x .04% = 42.0 SQ.FT. OPENING REQ'D | TOTAL OPENINGS = 141.0 SQ.FT.	

MECHANICAL LEGEND

SYMBOL	DESCRIPTION
SA	SUPPLY AIR
FUR	FURNACE
CU	CONDENSING UNIT
	CONNECT TO EXISTING
EF	EXHAUST FAN
CD	CEILING DIFFUSER
(E)	EXISTING TO REMAIN
RA	RETURN AIR
RG	RETURN GRILLE
PC	PLUMBING CONTRACTOR
EC	ELECTRICAL CONTRACTOR
MC	MECHANICAL CONTRACTOR
GC	GENERAL CONTRACTOR
AFF	ABOVE FINISHED FLOOR
T	THERMOSTAT
TOD	TOP OF DUCT
BOD	BOTTOM OF DUCT
	FLEXIBLE DUCT CONNECTOR
	DUCT W/ INTERNAL LINING
	MANUAL VOLUME DAMPER
	ELBOW W/ DBL THICKNESS TURNING VANES
	FRESH/RETURN/EXHAUST AIR DUCT
	SUPPLY AIR DUCT

MECHANICAL GENERAL NOTES:

1. MECHANICAL CONTRACTOR TO COORDINATE WITH ELECTRICAL CONTRACTOR FOR ALL POWER AND VOLTAGE REQUIREMENTS.
2. THE MECHANICAL CONTRACTOR SHALL ACCURATELY COORDINATE THE SIZES AND LOCATION OF ALL DUCTWORK, PIPING AND EQUIPMENT WITH THE LOCATION OF LIGHTING FIXTURES, STRUCTURAL MEMBERS AND WORK OF ALL OTHER TRADES TO PREVENT CONFLICT.
3. ALL DUCTWORK DIMENSIONS NOTED ON PLAN REFERS TO THE CLEAR INSIDE OPENING REQUIRED.
4. ALL WALL, FLOOR AND ROOF CUTTING, PATCHING AND FLASHING REQUIRED TO INSTALL THE MECHANICAL SYSTEMS SHALL BE MADE BY THE MECHANICAL CONTRACTOR.
5. HANGERS, ANCHORS AND SUPPORTS SHALL SUPPORT THE PIPING AND THE CONTENT OF THE PIPING. HANGERS AND STRAPPING MATERIALS SHALL BE OF APPROVED MATERIALS THAT WILL NOT PROMOTE GALVANIC ACTION.
6. ALL DUCTWORK JOINTS SHALL BE SECURELY FASTENED AND SEALED WITH MASTICS.
7. REGISTERS, GRILLES AND DIFFUSERS SHALL BE INSTALLED PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
8. DUCT INSULATION SHALL HAVE FLAME INDEX OF 25 OR LESS AND SMOKE INDEX OF 50 OR LESS. EXTERNAL DUCT INSULATION FACTORY INSULATED FLEXIBLE DUCT SHALL HAVE IDENTIFIED THE MANUFACTURER, R-VALUE, FLAME AND SMOKE INDEX.
9. THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE, THE MECHANICAL CONTRACTOR SHALL INCLUDE ALL NEEDED OFFSETS, CHANGES IN DIRECTION, TRANSITIONS, ETC. NEEDED FOR COMPLETE AND OPERATIONAL SYSTEMS. EXISTING DUCTWORK LAYOUT IS BASED ON EXISTING DRAWINGS PROVIDED BY OWNER.
10. PERFORM ALL WORK IN ACCORDANCE WITH THE, RULES & REGULATIONS OF THE APPROPRIATE STATE AND LOCAL BUILDING CODES AND SUBTITLES.
11. QUESTIONS REGARDING THESE DRAWINGS SHALL BE ADDRESSED TO THE ENGINEER PRIOR TO THE AWARDING OF THE CONTRACT. OTHERWISE THE ENGINEER'S INTERPRETATION OF THE MEANING AND INTENT OF THE DRAWINGS SHALL BE FINAL.
12. MECHANICAL CONTRACTOR TO ENSURE A MINIMUM OF 10' CLEARANCE BETWEEN FRESH AIR INTAKES AND EXHAUST VENTS, PLUMBING VENTS AND GAS FLUES.

MECHANICAL CODED NOTES

1. NEW 7-DAY PROGRAMMABLE, WALL MOUNTED THERMOSTAT. MC TO PROVIDE CONTROL WIRING FROM THERMOSTAT BACK TO FURNACE UNIT LOCATED IN BACK OF HOUSE.
2. 4"Ø EXHAUST DUCT ABOVE CEILING TO WALL.
3. NEW FURNACE UNIT TO BE INSTALLED VERTICALLY ON METAL STAND. MC TO PROVIDE ALL NECESSARY COMPONENTS; CONCENTRIC FLUE WALL TERMINATION KIT, RETURN AIR FILTER SECTION AND ALL OTHER ACCESSORIES NEEDED FOR A COMPLETE AND OPERATIONAL INSTALLATION. MC TO FOLLOW MANUFACTURER'S RECOMMENDED INSTALLATION GUIDELINES AND REQUIREMENTS.
4. MC TO PROVIDE 1" FILTER SECTION ON RETURN DUCT AT ACCESSIBLE LOCATION. PROVIDE 2 SETS 1" DISPOSABLE FILTERS AFTER FINAL CONSTRUCTION IS COMPLETE.
5. 3/4" PVC CONDENSATE DRAIN FROM DX COIL TO BE ROUTED TO NEAREST MOP SINK AND TERMINATED WITH A MINIMUM 2" AIR GAP.
6. GC TO UNDER CUT DOOR 1".
7. MC TO ROUTE REFRIGERANT LIQUID & SUCTION LINES FROM FURNACE (FUR-1) T0 PAD MOUNTED CONDENSING UNIT (CU-1). MAKE FINAL CONNECTION AND TEST SYSTEM FOR REFRIGERANT FLOW. SEAL WALL PENETRATION WEATHER TIGHT. INSULATE PIPING WITH 1" BLACK ARMAFLEX INSULATION (TYPICAL) .
8. CONDENSING UNIT TO BE MOUNTED ON CONCRETE HOUSEKEEPING PAD. PAD TO BE 4" LARGER THAN CONDENSING UNIT AND 4" HIGH. MC TO CONNECT NEW CONDENSING UNIT TO NEW REFRIGERANT LINES FROM FURNACE (FUR-1 & FUR-2).
9. NEW CONCENTRIC FLUE AND INTAKE PIPE TO BE ROUTED (ABOVE AND BELOW) TO EXTERIOR OF THE BUILDING AND TERMINATED WITH CONCENTRIC FLUE TERMINATION KIT. INSTALL PER MANUFACTURER'S RECOMMENDATIONS AND GUIDELINES. PROVIDE WALL SLEEVE AND SEAL PENETRATION WEATHER TIGHT.
10. MC TO PROVIDE NEW 4"x4", 1-1/2 HOUR STATIC FIRE DAMPER BY RUSKIN OR APPROVED EQUAL. FIRE DAMPER TO BE UL555 RATED, 20 GAUGE GALVANIZED STEEL, 14" SLEEVE, 165° FUSIBLE LINK. EXISTING PENETRATION FOR FIRST FLOOR VENT IS TO BE EVALUATED BY GC AND MC SO OPENING CAN ACCEPT FIRE DAMPER, SLEEVE AND METAL WALL GRILLE.

STATE OF OHIO
KEVIN K HERBERT E-53288
REGISTERED PROFESSIONAL ENGINEER

DATE	REVISION
5/11/2023	PERMIT
6/13/2023	BLDG DEPT COMMENTS
8/1/2023	BLDG DEPT COMMENTS

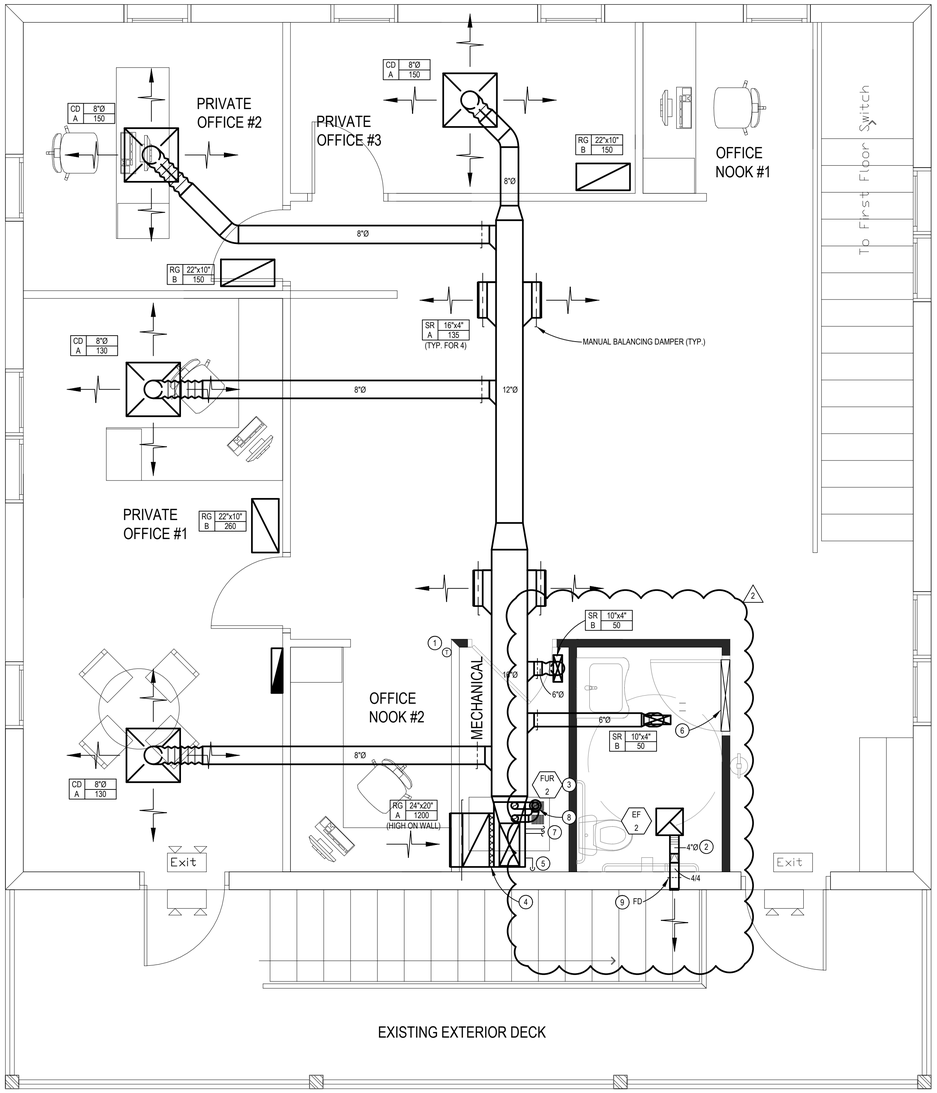
Point One Design, Ltd.
Consulting Engineers
9941 York Theta Drive North Royalton, Ohio 44133
440-230-1800 Fax 440-230-1831
cleveland@pointonedesign.com
2800 Corporate Exchange Dr., Suite 270 Columbus, Ohio 43231
614-540-3500 Fax 614-540-3502
columbus@pointonedesign.com

57 MILL, LLC OFFICE

BOLD REACH CORPORATION
HEADQUARTERS
57 MILL STREET
GAHANNA, OH 43230

PROJECT NO.	BDM-02
DRAWN BY:	LWC
CHECKED BY:	KKH
SCALE:	AS NOTED
DATE:	04/20/2023

Sheet No.
M1



SECOND FLOOR MECHANICAL PLAN

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

MECHANICAL CODED NOTES

1. NEW 7-DAY PROGRAMMABLE, WALL MOUNTED THERMOSTAT. MC TO PROVIDE CONTROL WIRING FROM THERMOSTAT BACK TO FURNACE UNIT LOCATED IN BACK OF HOUSE.
2. 4"Ø EXHAUST DUCT UP IN CEILING AND TO WALL. COORDINATE PENETRATION WITH GC PRIOR TO START OF CONSTRUCTION.
3. NEW FURNACE UNIT TO BE INSTALLED VERTICALLY ON METAL STAND. MC TO PROVIDE ALL NECESSARY COMPONENTS, CONCENTRIC FLUE WALL TERMINATION KIT, RETURN AIR FILTER SECTION AND ALL OTHER ACCESSORIES NEEDED FOR A COMPLETE AND OPERATIONAL INSTALLATION. MC TO FOLLOW MANUFACTURER'S RECOMMENDED INSTALLATION GUIDELINES AND REQUIREMENTS.
4. MC TO PROVIDE 1" FILTER SECTION ON RETURN DUCT AT ACCESSIBLE LOCATION. PROVIDE 2 SETS 1" DISPOSABLE FILTERS AFTER FINAL CONSTRUCTION IS COMPLETE.
5. 3/4" PVC CONDENSATE DRAIN FROM DX COIL TO BE ROUTED THRU FLOOR AND DOWN TO 1ST FLOOR MOP SINK AND TERMINATED WITH A MINIMUM 2" AIR GAP.
6. GC TO UNDER CUT DOOR 1".
7. MC TO ROUTE REFRIGERANT LIQUID & SUCTION LINES FROM FURNACE (FUR-2) T0 PAD MOUNTED CONDENSING UNIT (CU-2). MAKE FINAL CONNECTION AND TEST SYSTEM FOR REFRIGERANT FLOW. SEAL WALL PENETRATION WEATHER TIGHT. INSULATE PIPING WITH 1" BLACK ARMAFLEX INSULATION (TYPICAL) .
8. NEW CONCENTRIC FLUE AND INTAKE PIPE TO BE ROUTED TO ROOF OF THE BUILDING AND TERMINATED WITH CONCENTRIC FLUE TERMINATION KIT. INSTALL PER MANUFACTURER'S RECOMMENDATIONS AND GUIDELINES. PROVIDE ROOF SLEEVE AND SEAL PENETRATION WEATHER TIGHT.
9. MC TO PROVIDE NEW 4"x4", 1-1/2 HOUR STATIC FIRE DAMPER BY RUSKIN OR APPROVED EQUAL. FIRE DAMPER TO BE UL555 RATED, 20 GAUGE GALVANIZED STEEL, 14" SLEEVE, 165° FUSIBLE LINK. COORDINATE WITH GC FOR SECOND FLOOR VENT OPENING TO ACCEPT FIRE DAMPER COMPLETE.

NOTE: ALTERNATE MANUFACTURER'S FOR MECHANICAL EQUIPMENT MAY BE SUBMITTED TO OWNER/ARCHITECT FOR REVIEW AND APPROVAL.

NATURAL VENTILATION FRESH AIR CALCULATIONS SECOND FLOOR - OPEN OFFICE	
EXTERIOR DOOR	
(1) 3'-0" x 7'-0" OPENING	21.0 SQ.FT. OPENING
OPERABLE WINDOWS	
(5) 2'-6" x 4'-0" OPENING	25.0 SQ.FT. OPENING
OPEN OFFICE AREA INCLUDING OFFICE NOOK 1 & 2 = 456 SQ.FT.	
456 SQ.FT. x .04% = 18.3 SQ.FT. OPENING REQ'D	TOTAL OPENINGS = 46.0 SQ.FT.
NATURAL VENTILATION FRESH AIR CALCULATIONS SECOND FLOOR - PRIVATE OFFICE 1	
EXTERIOR DOOR	
(1) 3'-0" x 7'-0" OPENING	21.0 SQ.FT. OPENING
OPERABLE WINDOWS	
(3) 2'-6" x 4'-0" OPENING	15.0 SQ.FT. OPENING
PRIVATE OFFICE 1 = 215 SQ.FT.	
215 SQ.FT. x .04% = 8.6 SQ.FT. OPENING REQ'D	TOTAL OPENINGS = 36.0 SQ.FT.
NATURAL VENTILATION FRESH AIR CALCULATIONS SECOND FLOOR - PRIVATE OFFICE 2	
OPERABLE WINDOWS	
(2) 2'-6" x 4'-0" OPENING	10.0 SQ.FT. OPENING
PRIVATE OFFICE 2 = 100 SQ.FT.	
100 SQ.FT. x .04% = 4.0 SQ.FT. OPENING REQ'D	TOTAL OPENINGS = 10.0 SQ.FT.
NATURAL VENTILATION FRESH AIR CALCULATIONS SECOND FLOOR - PRIVATE OFFICE 3	
OPERABLE WINDOWS	
(2) 2'-6" x 4'-0" OPENING	10.0 SQ.FT. OPENING
PRIVATE OFFICE 3 = 78 SQ.FT.	
78 SQ.FT. x .04% = 3.2 SQ.FT. OPENING REQ'D	TOTAL OPENINGS = 10.0 SQ.FT.

FAN SCHEDULE

TAG	MANUFACTURER & MODEL NUMBER	AREA SERVED	SERVICE	CFM	ESP	MOTOR & VOLTAGE	FAN TYPE	MAX. SOUND LEVEL	WEIGHT (LBS)	REMARKS
EF 1 & 2	BROAN HB80RL	RESTROOM	EXHAUST	80	.375	27 WATTS 120V, 1PH	CLG MTD	2.5	10	NOTES 1-4

NOTES: PROVIDE WITH THE FOLLOWING ITEMS:
1. DISCONNECT SWITCH
2. AUTOMATIC BACKDRAFT DAMPER
3. 120V SOLID STATE SPEED CONTROL SWITCH (INTEGRAL MTD. FOR BALANCING ONLY)
4. WIRED TO OCCUPANCY SENSOR BY EC

GRILLE, REGISTER AND DIFFUSER SCHEDULE

TAG	MANUFACTURER & MODEL NUMBER	CFM	AIR PATTERN	NECK SIZE	DAMPER	FRAME STYLE	PANEL SIZE	MAXIMUM NC LEVEL	FINISH	MATERIAL	REMARKS
CD A	TITUS OMNI	AS NOTED	AS SHOWN	AS NOTED	OPPOSED BLADE	GYPSUM CLG	AS NOTED	30	WHITE	STEEL	
SR A	TITUS 300RL	AS NOTED	AS SHOWN	AS NOTED	OPPOSED BLADE	DUCT MOUNTED	16"x4"	30	WHITE	STEEL	
SR B	TITUS 300RL	AS NOTED	AS SHOWN	AS NOTED	OPPOSED BLADE	GYPSUM CLG	10"x4"	30	WHITE	STEEL	
RG A	TITUS 50F	AS NOTED	RETURN	AS NOTED	NONE	SURFACE MOUNT FRAME	24"x24"	30	WHITE	ALUMINUM	
RG B	TITUS 50F	AS NOTED	RETURN	AS NOTED	NONE	SURFACE MOUNT FRAME	24"x12"	30	WHITE	ALUMINUM	

TAG / NECK SIZE / CFM

FURNACE SCHEDULE

TAG	MANUFACTURER & MODEL NUMBER	CFM	ESP (IN.)	HEATING CAPACITY INPUT (MBH)	HEATING CAPACITY OUTPUT (MBH)	HEATING CAPACITY EFF. %	MOTOR HP & VOLTAGE	DX COOLING COIL DATA MODEL No.	DX COOLING COIL DATA TOTAL (MBH)	DX COOLING COIL DATA SENSIBLE (MBH)	DX COOLING COIL DATA E.A.T. (DB/WB)	AIR COOLED CONDENSING UNIT TAG	AIR COOLED CONDENSING UNIT MODEL No.	NOMINAL TONNAGE	AMBIENT AIR TEMP.	SEER / EER	VOLTAGE	MCA	MOCP	WEIGHT (LBS.) INDOOR / OUTDOOR	REMARKS
FUR 1	CARRIER 59SC5B080E17--16	1600	0.7	80	76	95	0.75 120/1	CARRIER CNPVP4817ACA	48.0	35.5	80 / 67	CU 1	CARRIER 24ACC648A	4.0	95°F	16	208/230-1	26.1	40	150/250	SEE NOTES BELOW.
FUR 2	CARRIER 59SC5B060E14--12	1200	0.7	60	76	95	0.5 120/1	CARRIER CNPVP3614ACA	36.0	27.0	80 / 67	CU 2	CARRIER 24ACC636A	3.0	95°F	16	208/230-1	18.1	30	150/250	SEE NOTES BELOW.

FURNISH WITH THE FOLLOWING:

INDOOR UNIT:
1. 2 SETS OF 1" THICK PLEATED THROWAWAY FILTERS.
2. REFRIGERANT ACCESSORIES AND LINE SIZE KIT (SUCTION LINE TO BE INSULATED)
3. PROGRAMMABLE HT/COOL T'STAT
4. FLUE AND COMBUSTION AIR CONCENTRIC VENT TERMINATION KIT
5. RETURN AIR STAND

OUTDOOR UNIT:
1. BALL BEARING FAN MOTOR
2. CRANKCASE HEATER
3. LOW AMBIENT CONTORAL TO 0°F
4. CYCLE PROTECTOR
5. EVAPORATOR FREEZE THERMOSTAT
6. FILTER DRYER
7. LOW PRESSURE SWITCH
8. OUTDOOR AIR TEMP SENSOR
9. WINTER START CONTROL

STATE OF OHIO — KEVIN K HERBERT E-53288 — REGISTERED PROFESSIONAL ENGINEER

DATE	REVISION / PERMIT
5/11/2023	BLDG DEPT COMMENTS
6/13/2023	BLDG DEPT COMMENTS
8/1/2023	

Point One Design, Ltd.
Consulting Engineers
9941 York Theta Drive North Royalton, Ohio 44133
440-230-1800 Fax 440-230-1831
clevelan@pointonedesign.com
2800 Corporate Exchange Dr. Suite 270 Columbus, Ohio 43231
614-540-3500 Fax 614-540-3502
columbus@pointonedesign.com

57 MILL, LLC OFFICE

BOLD REACH CORPORATION HEADQUARTERS
57 MILL STREET
GAHANNA, OH 43230

PROJECT NO. BDM-02
DRAWN BY: LWC
CHECKED BY: KKH
SCALE: AS NOTED
DATE: 04/20/2023

Sheet No.
M2

MECHANICAL GENERAL

A. THE CONTRACTOR FOR THIS WORK IS REFERRED TO "INSTRUCTIONS TO BIDDERS" AND "GENERAL CONDITIONS" AND "SPECIAL CONDITIONS" AS PART OF THIS CONTRACT.

B. CONTRACTOR ALSO REFERRED TO ALL ARCHITECTURAL, STRUCTURAL, ELECTRICAL AND OTHER OWNER DRAWINGS PERTAINING TO PROJECT. ALL OF ABOVE MENTIONED DRAWINGS, AS WELL AS THEIR RESPECTIVE SPECIFICATIONS, ARE A PART OF CONTRACT DOCUMENTS.

C. MECHANICAL DRAWINGS AND SPECIFICATIONS ARE INTENDED TO SUPPLEMENT EACH OTHER, FURNISH ANY MATERIAL OR LABOR CALLED FOR IN ONE EVEN THOUGH NOT SPECIFICALLY MENTIONED IN BOTH.

D. INSTALL AND CONNECT EQUIPMENT, SERVICES AND MATERIALS IN ACCORDANCE WITH BEST ENGINEERING PRACTICE AND ACCORDANCE WITH VARIOUS MANUFACTURER'S WRITTEN INSTRUCTIONS AND RECOMMENDATIONS. FURNISH AND INSTALL COMPLETE AUXILIARY PIPING, VALVES, WATER SEALS, ELECTRICAL CONNECTIONS, ETC., RECOMMENDED BY MANUFACTURER OR REQUIRED FOR PROPER OPERATION.

E. FURNISH MATERIAL OR LABOR WHICH IS NEITHER SHOWN ON DRAWINGS OR CALLED FOR IN SPECIFICATIONS BUT WHICH IS OBVIOUSLY A COMPONENT PART OF AND NECESSARY TO COMPLETE WORK OF SIMILAR CHARACTER.

F. THIS CONTRACTOR SHALL PROCURE AND PAY FOR ALL PERMITS OR LICENSES REQUIRED TO CARRY OUT THIS WORK. HE SHALL PAY FOR ALL CHARGES MADE BY INSPECTION. NOTE: ALL CONTRACTORS SHALL BE LICENSED IN THE COUNTY, CITY, ETC. TO PERFORM ALL NEW WORK.

G. THIS CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES, ORDINANCES AND ALL LOCAL LEGAL REQUIREMENTS. ALL LAWS, RULES AND REGULATIONS OF STATE AND LOCAL GOVERNING AGENCIES SHALL BE CONSIDERED A PART OF THESE SPECIFICATIONS AS FULLY AS IF WRITTEN HEREIN. NO EXTRA COMPENSATION WILL BE ALLOWED FOR ANY CHANGES NECESSARY FOR CODE COMPLIANCE REGARDLESS OF THE METHOD OF INSTALLATION SHOWN ON THE DRAWINGS OR SPECIFIED.

H. THIS CONTRACTOR SHALL TAKE OUT PERMIT WITH PROVISIONS OF INSPECTION BEFORE STARTING ANY WORK. FEE FOR SAME SHALL BE PART OF THIS CONTRACT.

I. WHEN WORK IS COMPLETED, THIS CONTRACTOR SHALL FURNISH TO THE ARCHITECT CERTIFICATES OF APPROVAL FROM THE RESPONSIBLE INSPECTION AGENCIES BEFORE FINAL PAYMENT OF CONTRACT WILL BE ALLOWED.

J. TESTING OF ALL WORK UNDER THIS CONTRACT SHALL BE DONE BY THE CONTRACTOR IN THE PRESENCE OF THE OWNER OR HIS REPRESENTATIVE. ALL APPARATUS, EQUIPMENT, FIXTURES, ETC., SHALL FULLY MEET THE REQUIREMENTS OF THESE SPECIFICATIONS AND DRAWINGS.

K. THE BID SHALL CONTEMPLATE THE FURNISHING AND INSTALLING OF MATERIAL AND EQUIPMENT, EXACTLY AS SPECIFIED OR SHOWN AS SIMILAR BY THE CONTRACT DOCUMENTS. THE CONTRACTOR SUBMITTING ON SIMILAR EQUIPMENT WILL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH CHANGES IN ARCHITECTURAL, STRUCTURAL, MECHANICAL AND/OR ELECTRICAL TRADES DUE TO THE SIMILAR EQUIPMENT CHARACTERISTICS SUBMITTED. BIDS SUBMITTED SHALL LIST ANY ITEMS OF MATERIAL OR EQUIPMENT OTHER THAN SPECIFIED OR SIMILAR TO THE ONES CALLED FOR. SUBSTITUTIONS SHALL BE APPROVED SEVEN WORKING DAYS BEFORE BIDS ARE SUBMITTED; OTHERWISE, THIS CONTRACTOR SHALL COMPLY WITH SPECIFICATION REQUIREMENTS.

L. INSTALL FINAL APPLICATION OF LUBRICATION OIL, REFRIGERANT CHARGE, AND ALL OTHER SUPPLIES NECESSARY TO PLACE THE EQUIPMENT IN OPERATION.

M. CONTRACTOR SHALL GUARANTEE HIS WORK TO BE FREE FROM DEFECTS IN WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE (1) YEAR FROM DATE OF FINAL ACCEPTANCE.

N. ALL POWER WIRING OF MECHANICAL EQUIPMENT SHALL BE DONE BY THE ELECTRICAL CONTRACTOR. FURNISH THE ELECTRICAL CONTRACTOR WIRING DIAGRAMS FOR ALL ELECTRICALLY POWERED EQUIPMENT PROVIDED WITH THE CONTRACT WHICH SHALL INDICATE THE SERVICE REQUIRED AND ELECTRIC LOAD INVOLVED.

O. THIS CONTRACTOR SHALL VISIT SITE BEFORE SUBMITTING BID AND MAKE ALL NECESSARY OBSERVATIONS, MEASUREMENTS, AND NOTE CONDITIONS UNDER WHICH HIS WORK IS TO BE PERFORMED. NO EXTRA COMPENSATION WILL BE ALLOWED FOR FAILURE TO DO SO. THIS CONTRACT INVOLVES REMODELING OF EXISTING BUILDING AND THEREFORE SHALL FIELD LOCATE EXISTING DUCTWORK, PIPING AND SEWERS BEFORE STARTING WORK.

P. SUBMIT SHOP DRAWINGS, CATALOG SHEETS FOR EQUIPMENT, FIXTURES, DUCTWORK LAYOUT, WIRING DIAGRAMS, ETC., IN SIX (6) COPIES TO THE ARCHITECT FOR REVIEW. EACH CONTRACTOR IS RESPONSIBLE TO DISTRIBUTE APPROVED SHOP DRAWINGS TO ALL OTHER TRADES AFFECTED BY HIS WORK, EQUIPMENT, ETC., FOR COORDINATION.

Q. ASSEMBLE AND SUBMIT TO THE ARCHITECT FOR SUBSEQUENT SUBMISSION TO THE OWNER, THREE (3) COMPLETE SETS OF OPERATIONS MANUALS AND MAINTENANCE REQUIREMENTS, COPY OF FIXTURE CUTS WITH MANUFACTURER'S NAME AND MODEL NUMBER, EQUIPMENT WARRANTIES, ETC., FOR EACH ITEM FURNISHED.

R. ALL CONTRACTORS MUST COORDINATE EACH PIECE OF EQUIPMENT WITH ALL OTHER TRADES (GENERAL CONTRACTOR, PLUMBING CONTRACTOR, MECHANICAL CONTRACTOR, ELECTRICAL CONTRACTOR, ETC.) AFFECTED BY THAT PIECE OF EQUIPMENT (ROOF OPENINGS, WEIGHTS, POWER REQUIREMENTS, VOLTAGES, ETC.) PRIOR TO ORDERING EQUIPMENT AND AGAIN PRIOR TO INSTALLATION (ROOFTOP EQUIPMENT PRIOR TO LIFTING ONTO ROOF). NO EXTRA COMPENSATION WILL BE APPROVED IF COORDINATION IS NOT PERFORMED BY EACH RESPECTIVE CONTRACTOR AND SUBCONTRACTOR.

S. CONTRACTOR HAS EXAMINED THE CONTRACT DOCUMENTS AND REPRESENTS TO OWNER THAT THE CONTRACT DOCUMENTS ARE COMPLETE AND SUFFICIENT AND INCLUDE ALL ITEMS NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK FOR THE CONTRACT SUM. CONTRACTOR FURTHER REPRESENTS THAT THE CONTRACTOR HAS VISITED THE SITE AND HAS BECOME FAMILIAR WITH THE ACCESS REQUIREMENTS AND OTHER CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED AND HAS RECEIVED ALL CLARIFICATIONS NEEDED BY CONTRACTOR TO ASSURE ITSELF THAT THE WORK CAN BE PERFORMED FOR THE CONTRACT SUM. IF THERE IS ANY INCONSISTENCY IN THE QUALITY OR QUANTITY OF WORK REQUIRED UNDER THE CONTRACT DOCUMENTS, OR SHOULD THE DRAWINGS AND SPECIFICATIONS APPEAR TO BE IN DISAGREEMENT WITH EACH OTHER RELATIVE TO THE QUALITY OR QUANTITY OF WORK REQUIRED, THE CONTRACTOR SHALL PROVIDE THE BETTER QUALITY AND/OR GREATER QUANTITY UNLESS WRITTEN INSTRUCTIONS ARE OTHERWISE FURNISHED TO CONTRACTOR BY OWNER.

T. DEVIATIONS FROM THESE CONSTRUCTION DOCUMENTS WITHOUT WRITTEN OWNER OR ARCHITECT CONSENT WILL BE AT RISK TO THE G.C. ANY EFFORT MADE BY THE ARCHITECT AND/OR ENGINEER TO MODIFY THE CONSTRUCTION DOCUMENTS OR LETTERS OF RESPONSIBILITY FOR APPROVAL BY INSPECTORS DUE TO WORK PERFORMED BY CONTRACTOR OTHER THAN THE ORIGINAL DESIGN WILL BE BILLED TO CLIENT WHO WILL BACK CHARGE TO G.C. AS A DEDUCT FROM THEIR PAYMENTS.

U. NOTE: THE MECHANICAL AND PLUMBING CADD FILES OF THE CONSTRUCTION DOCUMENTS ARE THE INTELLECTUAL PROPERTY OF POINT ONE DESIGN, LLC, AND WILL NOT BE AVAILABLE FOR THE CONSTRUCTION PHASE UNLESS MET WITH A REDUCTION IN COST TO THE OWNER AND/OR PURCHASED AT A NOMINAL RATE PER DRAWING (TO BE NEGOTIATED).

PLUMBING SPECIFICATIONS

A. CONNECT SEWER, GAS, VENTS AND WATER LINES AS INDICATED ON THE PLUMBING PLANS. DETERMINE THE EXACT LOCATION OF ALL EXISTING SERVICE CONNECTIONS BEFORE STARTING THE INSTALLATION OF ANY WORK. COORDINATE ALL WORK WITH OTHER TRADES, THE GENERAL CONTRACTOR AND THE OWNER'S FIELD REPRESENTATIVE.

B. PLUMBING WORK SHALL CONFORM TO GOOD ENGINEERING PRACTICE AND BE IN ACCORDANCE WITH THE APPLICABLE PLUMBING CODES AND OWNER'S REQUIREMENTS. PLUMBING CONTRACTOR SHALL BE LICENSED IN THIS AREA TO PERFORM THE NEW WORK.

C. SANITARY SEWERS AND VENTS INSIDE OF THE BUILDING SHALL BE SERVICE WEIGHT, CAST IRON, NO HUB WITH COMPRESSION TYPE NEOPRENE JOINTS. ABS OR PVC SCHEDULE 40 PIPING SHALL BE AS APPROVED BY THE LOCAL AUTHORITY AND OWNER IN CONCEALED (UNDERFLOOR) LOCATIONS.

D. ALL COLD AND HOT WATER LINES SHALL BE TYPE 'L' COPPER WITH 98-2 TIN ANTIMONY (NO LEAD) SOLDER.

E. GAS PIPING ABOVE GROUND SHALL BE SCHEDULE 40 BLACK STEEL WITH 125 POUND BLACK MALLEABLE IRON SCREWED FITTINGS. GAS PIPING COMPOUND AT JOINTS SHALL BE PER NFPA BULLETIN #54 AND LOCAL CODES. GAS VALVES SHALL BE UL LISTED FOR GAS SERVICE SUCH AS DEZURICK MODEL S-425 FOR 2" AND LESS.

F. INSULATE ALL NEW HOT AND COLD WATER PIPING WITH NONCOMBUSTIBLE ARMSTRONG "ARMAFLEX" TYPE II FOAM INSULATION WITH SEALED JOINTS OR WITH OWENS CORNING FIBERGLASS ASJ/SSL-II HEAVY DENSITY PIPE INSULATION WITH VAPOR BARRIER AND SEALED JOINTS. INSULATION THICKNESS SHALL BE AS FOLLOWS:

HOT & COLD WATER BRANCH PIPING UP TO 1"	1/2" THICKNESS
HOT & COLD WATER MAIN PIPING UP TO 1-1/2"	1" THICKNESS
HOT & COLD WATER MAIN PIPING 2" AND OVER	1-1/2" THICKNESS

ALL PIPING BELOW ROOF DECK TO BE INSULATED WITH NEXT SIZE PIPE THICKNESS.

G. PLUMBING CONTRACTOR SHALL INSTALL SHOCK ABSORBERS IN PIPING SYSTEM TO PREVENT NOISE AND DAMAGE DUE TO WATER HAMMER, WHERE NECESSARY. BRANCH PIPING SHALL HAVE ACCESSIBLE SERVICE VALVES. PROVIDE SHUT-OFF VALVES IN THE SUPPLY PIPING TO EVERY FIXTURE.

H. PLUMBING CONTRACTOR SHALL PROVIDE 1 SET OF 'AS-BUILT' DRAWINGS TO THE OWNER.

I. CHLORINATION OF WATER PIPING: THE DOMESTIC WATER PIPING SYSTEM SHALL BE FLUSHED WITH CLEAN POTABLE WATER UNTIL CONTAMINATED WATER DOES NOT APPEAR AT THE OUTLET AND SHALL BE FILLED WITH A SOLUTION CONTAINING 50 PARTS PER MILLION OF CHLORINE AND ALLOWED TO STAND FOR A PERIOD (AS PRESCRIBED BY THE CODE) BEFORE FLUSHING. THE SYSTEM SHALL BE FLUSHED COMPLETELY WITH CLEAR WATER UNTIL ALL RESIDUAL CHLORINE CONTENT IS REMOVED. CHLORINATION SHALL BE PERFORMED AFTER ALL PIPING AND FINAL CONNECTIONS AND PRESSURE TESTING HAS BEEN COMPLETED. IF, AFTER THE PIPES HAVE BEEN CHLORINATED, THE PIPES HAVE TO BE DISMANTLED, THE CHLORINATION PROCESS MUST BE REPEATED.

J. LABOR SHALL BE PERFORMED IN A WORKMANLIKE MANNER BY MECHANICS SKILLED IN THEIR PARTICULAR TRADE. PIPE AND EQUIPMENT SHALL BE INSTALLED SQUARE AND PLUMB AND ACCESSIBLE FOR PROPER OPERATION AND SERVICE.

K. CUTTING OR PATCHING NECESSARY TO PERMIT THE INSTALLATION OF ANY WORK UNDER THIS CONTRACT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR.

L. PROVIDE ANY NECESSARY EXCAVATING AND BACKFILLING FOR THE INSTALLATION OF WORK SPECIFIED IN THIS DIVISION. AFTER THE PIPE HAS BEEN INSTALLED, TESTED AND APPROVED, THE TRENCHES SHALL BE BACKFILLED AND WELL TAMPED TO GRADE WITH APPROVED MATERIAL.

M. PIPING

1. ALL PIPING SHALL BE RUN CONCEALED EXCEPT WHERE SHOWN OTHERWISE ON DRAWINGS.
2. VALVES, TRAPS, CLEANOUTS AND OTHER APPARATUS SHALL BE INSTALLED IN AN EASILY ACCESSIBLE LOCATION.
3. SOIL WASTE, VENT, OFFSETS AND HOUSE DRAINS SHALL BE INSTALLED WITH A MINIMUM UNIFORM GRADE OF 1/8" TO THE FOOT FOR 3" THRU 6" PIPE AND 1/4" TO THE FOOT FOR 2-1/2" AND LESS.
4. HOT AND COLD WATER LINES SHALL BE AT LEAST 12" APART WHERE PIPING IS PARALLEL.
5. ESCUTCHEON PLATES SHALL BE PROVIDED WHERE ALL PIPE PASSES THROUGH A FINISHED WALL.
6. CONNECTIONS FROM STEEL TO COPPER PIPING SHALL BE MADE WITH DIELECTRIC TYPE UNIONS, EPCO OR OTHER APPROVED TYPE.

N. COPPER PIPING SHALL BE SUPPORTED AT INTERVALS NOT TO EXCEED 7'-0" AND AT EACH CHANGE IN HORIZONTALS OF VERTICAL. HANGERS SHALL SUPPORT PIPING AT PIPE WITH INSULATION OVER TOP OR WITH METAL SLEEVE TO PROTECT INSULATION FROM BEING CRUSHED.

1. HANGER SHIELD: HANGERS FOR PIPING SHALL BE PLACED AROUND THE OUTSIDE OF THE INSULATION AND PROTECTIVE SHIELDS SHALL BE INSTALLED AT EVERY HANGER LOCATION. SHIELD SHALL NOT BE LESS THAN 2/3 THE CIRCUMFERENCE OF THE INSULATION AND WHERE SPEED CLIPS ARE USED, THE METAL SHIELD SHALL BE CONTINUOUS AROUND THE CIRCUMFERENCE OF THE PIPE INSULATION. SHIELDS SHALL BE FABRICATED OF THE FOLLOWING GAUGES:

NOMINAL PIPE SIZE	METAL GAUGE
0" - 1-1/2"	20
2" - 3"	16
3-1/2" AND UP	14

O. CLEAN OUT ALL LINES, ADJUST ALL VALVES AND CLEAN ALL PLUMBING FIXTURES AND EQUIPMENT. ROUT OUT ALL EXISTING SANITARY SEWERS BEING TIED INTO TO INSURE THE PROPER FLOW. PLUMBING CONTRACTOR TO FURNISH AND INSTALL CLEAR SILICONE CAULK AROUND PERIMETER OF PLUMBING FIXTURES.

P. AFTER THE PLUMBING PIPING HAS BEEN INSTALLED, INSPECTED AND APPROVED, THE PIPING SYSTEM SHALL BE FLUSHED TO REMOVE ANY FOREIGN MATTER FROM THE PIPES.

Q. ALL PARTS OF THE PLUMBING FIXTURES AND ASSOCIATED EQUIPMENT SHALL BE MAINTAINED BY THE CONTRACTOR THROUGHOUT THE GUARANTEE PERIOD OF ONE YEAR AFTER FINAL ACCEPTANCE OF THE BUILDING.

R. NOTE: ALL PIPE INSULATION (HOT AND COLD PIPE INSULATION, ROOF DRAIN SUMPS, STORM LEADERS AND DOWNSPOUTS) SHALL CONFORM TO THE FIRE AND SMOKE RATES BELOW:

FLAME SPREAD - 25 OR LESS
SMOKE DEVELOPED - 50 OR LESS

S. GENERAL REQUIREMENTS OF PLUMBING FIXTURES AND TRIM:

1. PLUMBING CONTRACTOR SHALL FURNISH AND INSTALL ALL STOPS, TRAPS, ESCUTCHEONS, CONNECTIONS, ETC., AS NECESSARY FOR A COMPLETE INSTALLATION.
2. TERMINATE ALL WATER ROUGH-INS WITH SHUT-OFF VALVES BEFORE CONNECTING EQUIPMENT AND FIXTURES.
3. PURGE ALL WATER LINES BEFORE MAKING FINAL CONNECTIONS.
4. FLASH AND COUNTERFLASH ALL OPENINGS THRU ROOFS WITH APPROVED ROOFING MATERIALS BUILT A MINIMUM OF 10" INTO THE ROOFING IN ALL DIRECTIONS FROM THE OUTSIDE OF THE PIPE.
5. WATER AND WASTE LINES TO BE ROUGHED INSIDE WALLS: EXTEND WATER AND WASTE LINES OUT OF WALLS TO EQUIPMENT AND FIXTURES.
6. WHERE THE WORD "FURNISH" OR "INSTALL" APPEARS FOR THE PLUMBING CONTRACT, IT SHALL BE INTERPRETED TO MEAN THE PLUMBING CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, EQUIPMENT AND SUPPLIES NECESSARY TO INSTALL AND PLACE IN OPERATION CONDITION.
7. GENERAL WATER PRESSURE SHALL NOT EXCEED 60 PSI. PLUMBING CONTRACTOR SHALL FURNISH AND INSTALL PRESSURE REDUCING VALVES FOR WATER AS REQUIRED.

DEMOLITION NOTES:

1. PLUMBING CONTRACTOR SHALL REMOVE ALL EXPOSED SANITARY, VENT, WATER PIPING, ETC., NOT REUSED FOR THE NEW SPACE LAYOUT.
2. PLUMBING CONTRACTOR SHALL PLUG AND ABANDON ALL EXISTING FLOOR DRAINS, TRENCH DRAINS, ETC., NOT REUSED FOR THE NEW SPACE LAYOUT.
3. PLUMBING CONTRACTOR SHALL REMOVE ANY AND ALL EXISTING PLUMBING FIXTURES COMPLETE WITH WASTE, VENTS AND WATER LINES NOT REUSED FOR THE NEW SPACE LAYOUT.
4. PLUMBING CONTRACTOR SHALL DISCONNECT AND REMOVE ANY AND ALL GAS PIPING FROM MECHANICAL EQUIPMENT TO EXISTING GAS METER, NOT REUSED FOR THE NEW SPACE LAYOUT.
5. SEE ARCHITECTURAL DEMOLITION DRAWINGS FOR ADDITIONAL DETAILS AND INFORMATION.

HEATING, VENTILATING & AIR CONDITIONING SPECIFICATIONS

A. IN RESPECT TO ALL MATERIALS REQUIRED, THE CONTRACTOR SHALL FURNISH MATERIALS MEETING AIEE, NEMA, NELA, ASME AND ASTM SPECIFICATIONS. THE INSTALLATION OF ALL WORK SHALL CONFORM TO ASHRAE GUIDE AND SHEET METAL PROMOTION PLAN STANDARDS. THE MECHANICAL CONTRACTOR IS RESPONSIBLE TO PAY ALL FEES FOR PERMITS PRIOR TO STARTING WORK.

B. MATERIALS SHALL BE NEW AND IN PERFECT CONDITION WHEN INSTALLED, AND SHALL BE PROTECTED FROM ALL INJURY UNTIL FINAL ACCEPTANCE OF THE SYSTEM. MECHANICAL CONTRACTOR SHALL BE LICENSED IN THIS AREA TO PERFORM THE NEW WORK.

C. THIS CONTRACTOR SHALL REMOVE ALL TOOLS, SURPLUS MATERIALS AND DEBRIS OF ALL KINDS FROM HIS WORK AND LEAVE ALL IN A CLEAN, PERFECT CONDITION, FULLY SATISFACTORY TO THE ARCHITECT.

D. CONTRACTOR SHALL PROVIDE OWNER WITH ONE (1) SET OF "AS-BUILT" DRAWINGS.

E. FURNISH ALL MATERIALS, TRANSPORTATION, RIGGING, HOISTING, ETC. TO PROVIDE A COMPLETE AND OPERABLE HEATING, AIR CONDITIONING AND VENTILATING SYSTEM.

F. ALL EQUIPMENT IS TO BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER, ACCORDING TO MANUFACTURERS RECOMMENDATIONS AND GOOD PRACTICES. COORDINATE ALL WORK WITH OTHER TRADES AND WITH THE GENERAL CONTRACTOR.

G. ALL TEMPERATURE CONTROL WIRING SHALL BE DONE BY THE MECHANICAL CONTRACTOR. THIS CONTRACTOR SHALL FURNISH ALL REQUIRED CONTROLS AND WIRING DIAGRAMS AND SHALL SUPERVISE INSTALLATION.

H. SYSTEM IS TO BE AIR BALANCED BY AN INDEPENDENT BALANCE COMPANY, TO INCLUDE DIFFUSER CFM, RETURN CFM AND EXHAUST CFM WITH THREE (3) REPORTS SUBMITTED TO THE OWNER AND THREE (3) MAINTENANCE MANUALS TURNED OVER TO OWNER BEFORE FINAL ACCEPTANCE. ALL SYSTEMS AND EQUIPMENT ARE TO BE GUARANTEED FOR PARTS AND LABOR FOR ONE YEAR (EXCEPT AIR CONDITIONING COMPRESSOR SHALL HAVE FIVE (5) YEAR WARRANTY).

I. DUCTWORK AND PLENUMS SHALL BE AS SCHEDULED ON THE DRAWINGS PER SMACNA "DUCT CONSTRUCTION" CLASSIFICATION.

J. SHEET METAL FABRICATION AND INSTALLATION SHALL BE AS FOLLOWS:

1. ALL DUCTWORK SHALL BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH STANDARDS SET FORTH IN LATEST EDITION OF THE ASHRAE GUIDE AND SMACNA STANDARDS UNLESS MODIFIED HEREIN.
2. DUCT DIMENSIONS ARE GROSS EXCEPT FOR LINED DUCTS WHERE DIMENSIONS ARE NET FREE AREA.
3. DUCT SIZES SHOWN ON THE PLANS ARE ACTUAL SHEET METAL INSIDE DIMENSIONS AND SHALL BE ADHERED TO UNLESS JOB CONDITIONS REQUIRE ALTERATIONS. REVISIONS TO DUCT SIZES SHALL BE BASED ON THE "EQUAL FRICTION" METHOD.
4. ALL ELBOWS IN THE DUCT SYSTEM SHALL BE MADE WITH CENTERLINE RADIUS OF ONE AND ONE-HALF (1 1/2) TIMES THE TURNING WIDTH OF THE DUCT. WHERE SPACE PROHIBITS THE SPECIFIED MINIMUM RADIUS, SQUARE ELBOWS WITH DOUBLE RADIUS TURNING VANES SHALL BE INSTALLED. CHANGES IN DUCT SIZES SHALL BE 15 DEG. DIVERGING AND 60 DEG. CONTRACTING, FLOW MAXIMUM ANGLES.
5. THE GENERAL ROUTE OF THE DUCTS IS SHOWN ON THE PLANS. THE EXACT ROUTE SHALL BE DETERMINED BY JOB CONDITIONS AND SHALL BE COORDINATED WITH ALL OTHER TRADES. ALL GRILLES, REGISTERS, DIFFUSERS, ETC., SHALL BE LOCATED SYMMETRICALLY WITH ELECTRIC LIGHT ARCHITECTURAL TREATMENT, ETC.
6. HANGERS TO BE 8 FT. CENTERS MAXIMUM WITH STRAPS FOR DUCTS (BENT UNDER BOTTOM OF DUCT AND ATTACHED). DUCTWORK SHALL BE SEALED.
7. INSTALL DUCTWORK TIGHT TO BOTTOM OF STRUCTURAL STEEL.
8. NO FIBERGLASS DUCTBOARD WILL BE PERMITTED.

K. FURNISH AND INSTALL ALL MANUAL SPLITTER DAMPERS AND DEFLECTORS INDICATED ON DRAWINGS OR NECESSARY TO PROPERLY DISTRIBUTE AND BALANCE AIR.

L. HVAC EQUIPMENT SHALL BE AS SCHEDULED ON DRAWING.

M. INSULATION SHALL BE AS FOLLOWS:

1. ALL INSULATION, VAPOR BARRIER, JACKETS AND ADHESIVE USED FOR APPLYING INSULATION SHALL HAVE FIRE AND SMOKE HAZARD RATINGS AS TESTED UNDER ASTM-84, NFPA-255, AND U.L. 723 NOT EXCEEDING A FLAME SPREAD 25 AND SMOKE DEVELOPED OF 50.
2. ALL NEW CONCEALED SUPPLY AIR DUCTWORK SHALL BE WRAPPED WITH OWENS-CORNING TYPE 150, 2" DUCT WRAP (6.0 R-VALUE). TAPE ALL SEAMS WITH MINIMUM 2" WIDE TAPE. RETURN AIR DUCTWORK SHALL BE LINED WITH 1" ACOUSTIC LINING, OWENS-CORNING TYPE 300.
3. DUCTS PASSING THRU ROOF SHALL BE PROVIDED WITH INSULATED ROOF CURB AND COUNTERFLASHING.
4. OTHER APPROVED MANUFACTURERS: MANSVILLE, KNAUF, CERTAINTEED.

N. PROVIDE WITH SPIN-IN TRUNK CONNECTIONS WITH AIR SCOOP AND VOLUME DAMPER.

O. FLEXIBLE CONNECTION AT THE INLET AND OUTLET OF THE AIR MOVING UNIT, EXHAUST FANS AND HVAC UNIT CONNECTED TO DUCTWORK. MATERIALS SHALL BE NON-COMBUSTIBLE TWELVE (12) OUNCES PER SQUARE YARD, NFPA-90A APPROVED.

P. FLEXIBLE INSULATED DUCT SHALL BE THERMAFLEX TYPE M-KE FACTORY ASSEMBLED DUCT CONSISTING OF COLD ROLLED FLAT STEEL SPRING, CONTINUOUS NON-PERFORATED INNER AIR SEAL LINER, 0.23 THERMAL CONDUCTANCE FIBERGLASS INSULATION, AND FIBERGLASS REINFORCED METALIZED FILM VAPOR BARRIER. DUCTS SHALL BE LISTED BY UL, CONFORM TO NFPA CLASS I WITH FLAME SPREAD RATING OF 25 OR LESS AND SMOKE DEVELOPMENT OF 50 OR LESS.

GENERAL NOTES:

1. THE MECHANICAL CONTRACTOR SHALL ALSO ARRANGE THE FINAL INSPECTIONS BY THE BUILDING AUTHORITIES.
2. NO PIPING, HANGERS, DUCTWORK, ETC., SHALL BE SUSPENDED FROM ROOF DECK. ALL ITEMS SHALL BE SUSPENDED FROM STRUCTURAL STEEL.
3. MECHANICAL CONTRACTOR TO MAINTAIN MINIMUM 10 FEET BETWEEN EXHAUST VENTS, FANS, ETC., AND OUTSIDE AIR INTAKES.
4. MECHANICAL CONTRACTOR SHALL VERIFY VOLTAGES WITH ELECTRICAL CONTRACTOR PRIOR TO ORDERING OF ANY AND ALL MECHANICAL EQUIPMENT.

HEATING, VENTILATING & AIR CONDITIONING SPECIFICATIONS CONT.

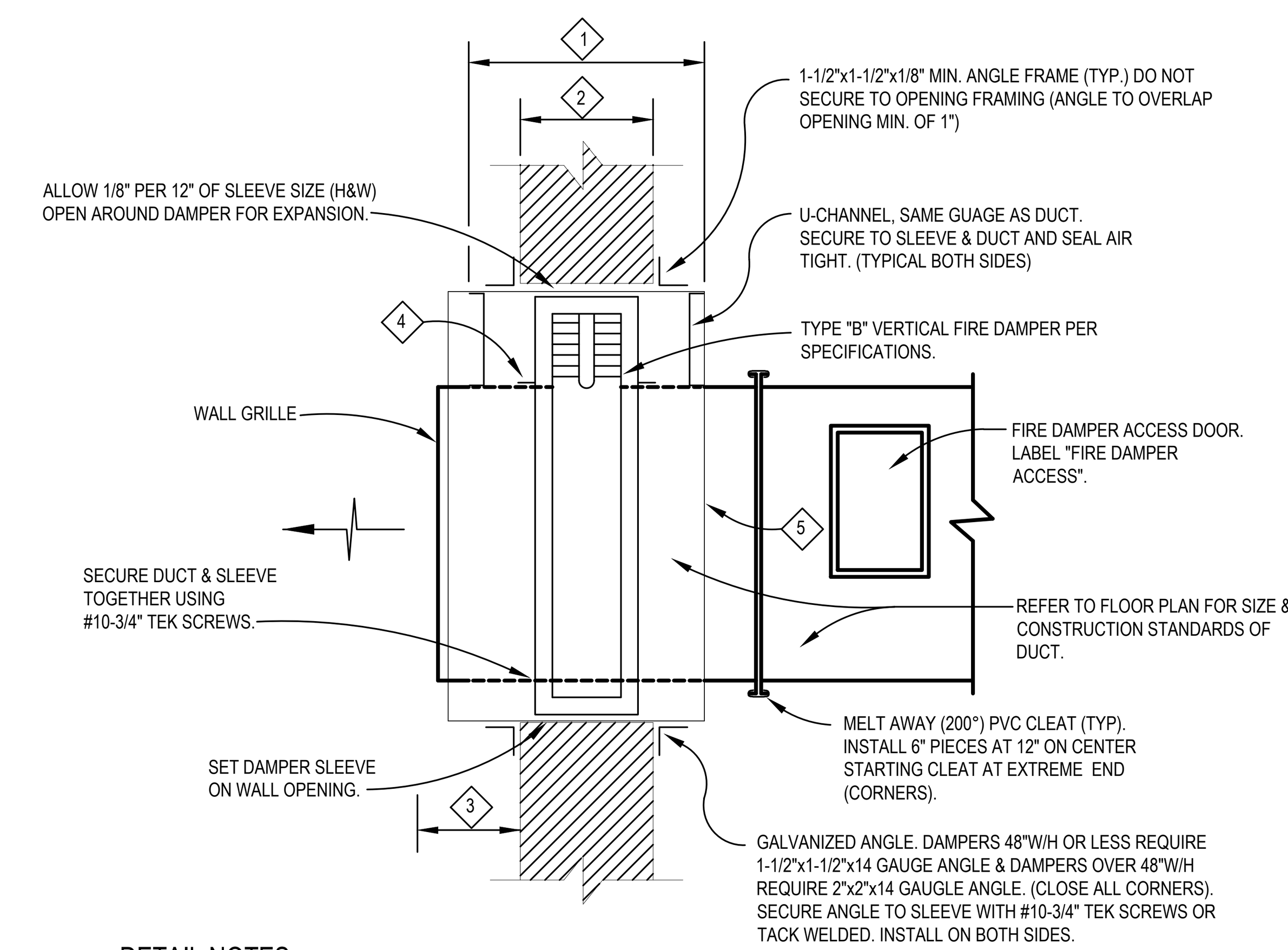
DEMOLITION NOTES:

1. MECHANICAL CONTRACTOR SHALL REMOVE ALL EXISTING SUPPLY AND EXHAUST AIR DUCTWORK INCLUDING HANGERS, GRILLES, INSULATION, ETC., NOT REUSED FOR THE NEW SPACE. FIELD VERIFY EXISTING CONDITIONS.
2. MECHANICAL CONTRACTOR SHALL REMOVE ALL EXISTING RETURN AIR DUCTWORK INCLUDING HANGERS, GRILLES, INSULATION, ETC., NOT REUSED FOR THE NEW SPACE. FIELD VERIFY EXISTING CONDITIONS.
3. MECHANICAL CONTRACTOR SHALL REMOVE ALL EXISTING MECHANICAL EQUIPMENT, FANS, AIR HANDLING UNITS, ROOFTOP EQUIPMENT, ETC., COMPLETE ASSOCIATED WITH NEW SPACE UNLESS OTHERWISE NOTED TO REMAIN. ELECTRICAL CONTRACTOR TO DISCONNECT POWER AND THE PLUMBING CONTRACTOR SHALL DISCONNECT ANY AND ALL GAS PIPING. COORDINATE WITH OWNER. SEE ARCHITECTURAL DEMOLITION DRAWINGS FOR FURTHER DETAILS AND INFORMATION.

REFRIGERANT PIPING NOTES:

1. A/C CONDENSATE DRAIN PIPING SHALL BE TYPE 'L' HARD DRAWN COPPER TUBING (ASTM B-88 LATEST REVISION) WITH WROUGHT COPPER FITTING AND SOLDERED JOINTS WITH 95-5 TIN ANTIMONY.
2. CONNECTION BETWEEN COPPER PIPING AND FERROUS PIPING OR EQUIPMENT SHALL BE MADE WITH DIELECTRIC UNION.
3. REFRIGERANT PIPING SHALL BE TYPE 'L' HARD DRAWN COPPER (REFRIGERATION GRADE ARC), WROUGHT COPPER FITTINGS (LONG RADIUS ELBOWS). COPPER TO BRASS OR STEEL JOINTS SHALL BE MADE USING A 45% SILVER ALLOY SUCH AS 'EASY-FLO' WITH FLUX. INERT NITROGEN SHALL BE PASSED THROUGH THE PIPING DURING BRAZING OPERATIONS TO PREVENT OXIDATION. PIPING SHALL BE CUT USING TUBING CUTTER ONLY, HACKSAW CUTS ARE PROHIBITED.
4. AFTER THE INSTALLATION IS COMPLETE, LEAK TEST THE COMPLETE SYSTEM USING A MIXTURE OF NITROGEN AND SYSTEM REFRIGERANT PRESSURIZED TO 75 PSIG.
5. AFTER LEAK TESTING, THE ENTIRE PIPING SYSTEM SHALL BE EVACUATED TO 1,500 MICRONS.
6. AFTER EVACUATION, THE SYSTEM SHALL BE CHARGED WITH THE PROPER AMOUNT OF REFRIGERANT FOR DESIGNED OPERATION.
7. THE REFRIGERANT LINES MAY BE PRE-ENGINEERED SYSTEM BY UNIT MANUFACTURER INSTEAD OF MATERIAL LISTED ABOVE.
8. PIPING INSULATION
   A) REFRIGERANT PIPING SUCTION LINE TO BE INSULATED WITH 1" THICK ARMAFLEX PIPE INSULATION.
   B) CONDENSATE DRAIN LINE FROM AHU TO BE INSULATED WITH 1" THICK ARMAFLEX PIPE INSULATION.

2



DETAIL NOTES:

1. OVERALL LENGTH OF SLEEVE EQUALS FINISHED WALL PLUS 6" MAXIMUM.
2. FINISHED WALL THICKNESS PER CONTRACT DRAWINGS.
3. 6" MAXIMUM FROM FINISHED WALL TO BREAK AWAY JOINT.
4. SECURE TOP & BOTTOM OF DAMPER TO DUCT WITH #10-3/4" TEK SCREWS. OR TACK WELD. (SEAL AIR TIGHT)
5. SLEEVE TO BE 16 GAUGE FOR DAMPERS NOT EXCEEDING 36"Wx24"H AND SHALL BE 14 GAUGE ON SIZES OVER 36"W & 24"H.
6. INSTALL "WARD" CONNECTOR PER STANDARD INSTALLATION REQUIREMENTS. PROVIDE NYLON BOLTS TO INSURE TRUE BREAKAWAY JOINT.
7. PROVIDE ACCESS DOOR OF ADEQUATE SIZE TO ALLOW FOR RESETTING LINK.

FIRE DAMPER VERTICAL DETAIL WITH ACCESS DOOR

NO SCALE

STATE OF OHIO
KEVIN K. HERBERT E-53288
REGISTERED PROFESSIONAL ENGINEER

DATE	REVISION
	PERMIT
5/11/2023	BLDG DEPT COMMENTS
6/13/2023	BLDG DEPT COMMENTS
8/1/2023	

Point One Design, Ltd.
Consulting Engineers
9941 York Theta Drive North Royalton, Ohio 44133
440-230-1800 Fax 440-230-1831
cleveland@pointonedesign.com
2800 Corporate Exchange Dr., Suite 270 Columbus, Ohio 43231
614-540-3500 Fax 614-540-3502
columbus@pointonedesign.com

57 MILL, LLC OFFICE

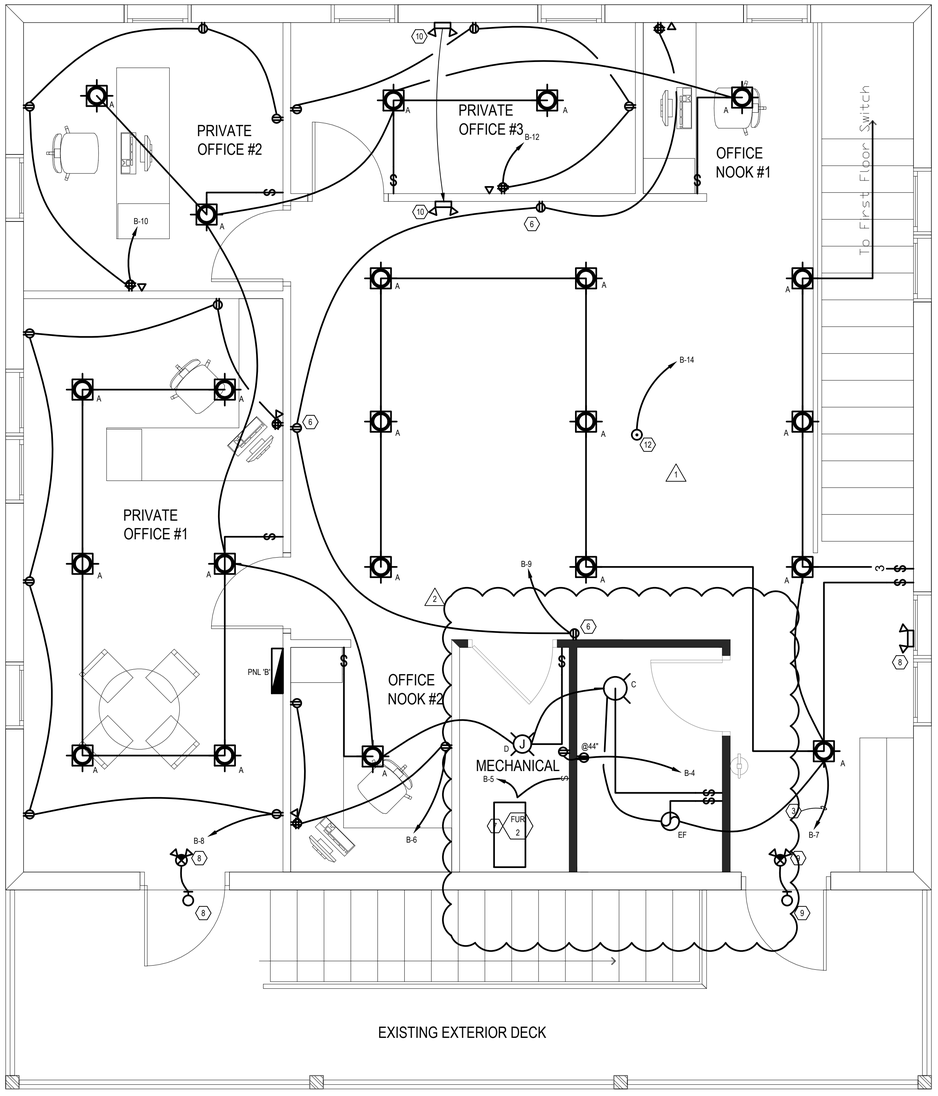
BOLD REACH CORPORATION HEADQUARTERS
57 MILL STREET
GAHANNA, OH 43230

PROJECT NO.	BDM-02
DRAWN BY:	LWC
CHECKED BY:	KKH
SCALE:	AS NOTED
DATE:	04/20/2023

Sheet No.
M3

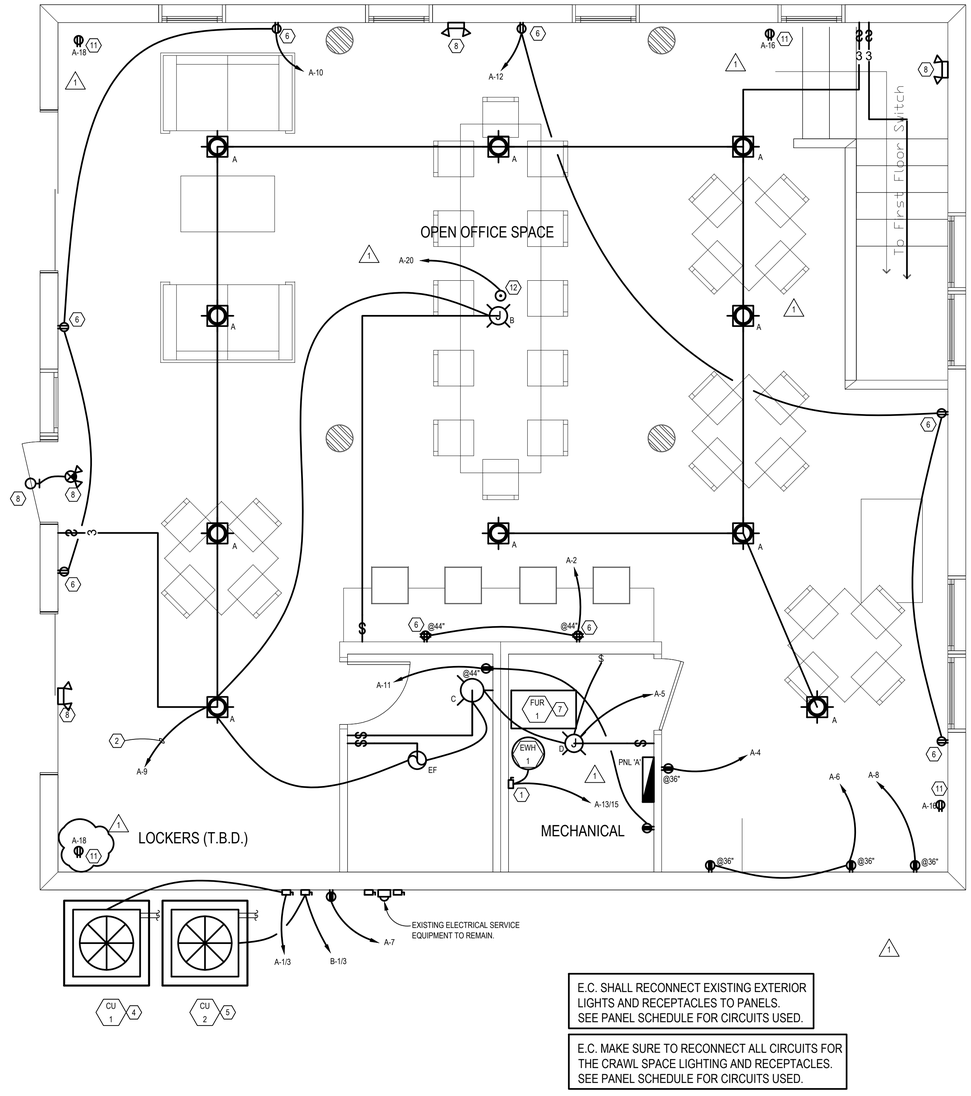
ELECTRICAL CODED NOTES:

1. ELECTRIC WATER HEATER (6KW, 240V, 1Ø) E.C.TO FURNISH AND INSTALL A 30A, 2P, 240V DISCONNECT. COORDINATE MOUNTING REQUIREMENTS IN FIELD. RUN (2) #10 AND #10 GROUND IN 3/4" CONDUIT TO A 30 AMP, 2 POLE BREAKER IN THE ELECTRIC PANEL
2. PROVIDE TIME CLOCK (TC-1) PER DETAIL 'B' ON E2.0.
3. PROVIDE TIME CLOCK (TC-2) PER DETAIL 'B' ON E2.0.
4. CONDENSING UNITS - CU-1 (208V, 1Ø) RUN 2 #8 AND #10 GROUND IN 3/4" CONDUIT FROM A 60A-2P DISCONNECT TO A 40 AMP, 2 POLE BREAKER IN THE ELECTRIC PANEL. CIRCUIT RECEPTACLE AS SHOWN.
5. CONDENSING UNITS - CU-2 (208V, 1Ø) RUN 2 #10 AND #10 GROUND IN 3/4" CONDUIT FROM A 30A-2P DISCONNECT TO A 30 AMP, 2 POLE BREAKER IN THE ELECTRIC PANEL. CIRCUIT RECEPTACLE AS SHOWN.
6. PROVIDE TAMPER RESISTANT RECEPTACLES.
7. FURNACE UNITS - FUR-1 & 2 (120V , 1Ø) RUN 2 #12 AND #12 GROUND IN 1/2" CONDUIT FROM A 20A-1P TOGGLE SWITCH A 20A-1P POLE BREAKER IN THE ELECTRIC PANEL. CIRCUIT RECEPTACLE AS SHOWN.
8. EXISTING EXIT / EGRESS LIGHT TO REMAIN.
9. E.C. TO MATCH EXISTING EXIT / EGRESS LIGHT FOR NEW EXIT / EGRESS LIGHTS.
10. E.C. TO RELOCATE EXISTING EGRESS LIGHT TO NEW LOCATION AS INDICATED.
11. CEILING MOUNTED RECEPTACLES FOR CAMERA AND SPEAKERS. WIRE TO CIRCUIT AS SHOW.
12. E.C. TO COORDINATE WITH OWNER FOR FINAL FLOOR RECEPTACLE LOCATION.



SECOND FLOOR ELECTRICAL PLAN

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



E.C. SHALL RECONNECT EXISTING EXTERIOR LIGHTS AND RECEPTACLES TO PANELS. SEE PANEL SCHEDULE FOR CIRCUITS USED.

E.C. MAKE SURE TO RECONNECT ALL CIRCUITS FOR THE CRAWL SPACE LIGHTING AND RECEPTACLES. SEE PANEL SCHEDULE FOR CIRCUITS USED.

FIRST FLOOR ELECTRICAL PLAN

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

STATE OF OHIO
VIRGIL W. ELLETT
E-86281
REGISTERED PROFESSIONAL ENGINEER

DATE	REVISION
5/11/2023	PERMIT
6/13/2023	BLDG DEPT COMMENTS
8/1/2023	BLDG DEPT COMMENTS

Point One Design, Ltd.
Consulting Engineers
9941 York Theta Drive North Royalton, Ohio 44133
440-230-1800 Fax 440-230-1831
cleveland@pointonedesign.com
2800 Corporate Exchange Dr. Suite 270 Columbus, Ohio 43231
614-540-3500 Fax 614-540-3502
columbus@pointonedesign.com

57 MILL, LLC OFFICE

BOLD REACH CORPORATION HEADQUARTERS
57 MILL STREET
GAHANNA, OH 43230

PROJECT NO.	BDM-02
DRAWN BY:	PME
CHECKED BY:	VWE
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Sheet No.
E1

ELECTRICAL SPECIFICATIONS

1. THE REQUIREMENTS AS SET FORTH UNDER GENERAL CONDITIONS, INSTRUCTIONS TO BIDDERS AND GENERAL REQUIREMENTS ARE A PART OF THIS CONTRACT. BIDS SHALL BE BASED ON A COMPLETE/FULL SET OF DRAWINGS. CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF WORK WITH WORK PERFORMED BY OTHER TRADES.

2. CONTRACTOR SHALL VISIT SITE PRIOR TO BIDDING. BIDS SHALL SERVE AS EVIDENCE OF KNOWLEDGE OF EXISTING CONDITIONS. FIELD VERIFY ALL EXISTING ELECTRICAL LOCATIONS, CONDITIONS ETC. FAILURE TO VISIT THE SITE SHALL NOT RELIEVE THE CONTRACTOR FROM ANY RESPONSIBILITY IN THE PERFORMANCE OF THE ELECTRICAL WORK. BEGINNING OF WORK INDICATES ACCEPTANCE OF EXISTING CONDITIONS.

3. FURNISH ALL LABOR, MATERIALS, TESTING, EQUIPMENT, INCIDENTALS AND TOOLS TO PERFORM ELECTRICAL WORK SHOWN, NOTED OR SCHEDULED FOR A COMPLETE AND FINISHED INSTALLATION. MATERIALS, PRODUCTS AND EQUIPMENT, INCLUDING ALL COMPONENTS THEREOF, SHALL BE NEW AND AS SUCH APPEAR ON THE UNDERWRITERS LABORATORIES LIST OF APPROVED ITEMS AND SHALL BE SIZED IN CONFORMITY WITH REQUIREMENTS OF THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE AND OTHER APPLICABLE CODES, WHICHEVER ARE MORE STRINGENT.

4. ALL WORK IS TO BE IN ACCORDANCE WITH THE LATEST EDITION OF THE NEC AND ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES. ALL ELECTRICAL EQUIPMENT & MATERIALS SHALL BE U.L. LABELED AND LISTED PER NEC 110.3.

5. SECURE AND PAY FOR ALL REQUIRED PERMITS, FEES, ASSESSMENTS AND INSPECTION CERTIFICATES THAT RELATE TO THE ELECTRICAL CONTRACT. FURNISH APPROVED CERTIFICATE OF FINAL INSPECTION, AND TURN OVER TO OWNER AT COMPLETION OF PROJECT.

6. THESE ELECTRICAL PLANS ARE DIAGRAMMATIC, NOT SHOWING EVERY ITEM IN EXACT LOCATION OR DETAIL. MEASUREMENTS AND LOCATIONS MUST BE FIELD-VERIFIED AND COORDINATED WITH ARCHITECTURAL, PLUMBING, HVAC, FIRE PROTECTION, STRUCTURAL AND OTHER BUILDING DRAWINGS.

7. THE ELECTRICAL CONTRACTOR SHALL FURNISH SHOP DRAWINGS, REVIEWED AND STAMPED APPROVED BY THE CONTRACTOR, FOR APPROVAL BY THE ARCHITECT AND ENGINEER, PRIOR TO ORDERING EQUIPMENT SUCH AS LIGHT FIXTURES, DISTRIBUTION EQUIPMENT, AND FIRE ALARM SYSTEM.

8. CONDUIT SHALL BE STANDARD STEEL RIGID OR EMT (THIN WALL) ACCORDING TO LOCAL CODE REQUIREMENTS. CONDUIT SHALL BE CONCEALED IN FINISHED AREAS, EXCEPT AS OTHERWISE APPROVED BY THE ARCHITECT. THE USE OF SURFACE RACEWAY EXCEPT AS CALLED FOR ON DRAWINGS SHALL REQUIRE APPROVAL OF THE ARCHITECT. EMT CONNECTIONS SHALL BE COMPRESSION OR SET- SCREW TYPE. FLEXIBLE CONDUIT OR TYPE MC CABLE SHALL BE APPROVED FOR CONCEALED BRANCH CIRCUITING AND FOR FINAL CONNECTIONS TO LIGHT FIXTURES, MOTORS AND VIBRATING EQUIPMENT AND WHERE SO USED TO BE GROUNDED WITH A SEPARATE FULL SIZED GREEN GROUNDING CONDUCTOR. EXPOSED FINAL TYPE MC/FLEX CONNECTIONS SHALL BE LIMITED TO 10'-0" IN LENGTH. ARRANGE CIRCUITS SO AS TO AVOID THE USE OF JUNCTION BOXES ABOVE DRYWALL CEILING AREAS, JUNCTION BOXES LOCATED ABOVE LAY-IN CEILINGS ARE ACCEPTABLE.

9. MINIMUM SIZES OF CONDUITS SHALL BE 1/2". ALL CONDUIT AND WIRING SHALL BE RUN PARALLEL OR PERPENDICULAR TO BUILDING WALLS.

10. PROVIDE ALL CUTTING AND PATCHING REQUIRED FOR INSTALLATION OF ELECTRICAL WORK. ALL CORE DRILLING OR CUTTING OF FIRE-RATED FLOORS, SHAFTS AND WALLS SHALL BE FIRE-STOPPED PRIOR TO FINISH PATCHING. ALL PENETRATIONS SHALL BE FIRE SEALED TO MATCH THE FIRE RATING OF THE FLOOR, SHAFT OR WALL PENETRATED.

11. WIRE SHALL BE SINGLE CONDUCTOR COPPER WITH 600 VOLT INSULATION. MINIMUM WIRE SIZE SHALL BE #12 AWG, ALL WIRE AND CABLE SHALL BE NEW AND SHALL BE BROUGHT TO THE SITE IN UNBROKEN PACKAGES. INCREASE CONDUCTOR BY ONE SIZE FOR EVERY 150' INCREMENT OF DISTANCE FROM THE PANEL BOARD FOR 120 VOLT CIRCUITS. GENERAL WIRING SHALL BE THW, THWN, THHN, OR XHHW. ALUMINUM CONDUCTORS ARE NOT PERMITTED.

12. FURNISH AND INSTALL A COMPLETE WIRED GROUNDING SYSTEM FOR ELECTRICAL SERVICE ENTRANCE, ELECTRICAL EQUIPMENT AND CIRCUITS AS SHOWN ON THE DRAWINGS AND REQUIRED PER N.E.C. ARTICLE 250. ALL GROUNDING CONDUCTORS SHALL BE GREEN, WHERE EXPOSED IN PANEL, OUTLETS, BOXES, ETC.

13. RECEPTACLES SHALL BE 20 AMP, 3-WIRE GROUNDING TYPE EQUAL TO HUBBELL 5362. WALL SWITCHES SHALL BE 20 AMP SPECIFICATION GRADE, RATED AT 120 VOLT OR 277 VOLT AS REQUIRED. ALL DEVICE COVERPLATES SHALL BE PASS AND SEYMOUR OR EQUAL.

14. RECEPTACLES, LIGHTS, EQUIPMENT AND WIRING IN PATIENT CARE AREAS SHALL BE HOSPITAL GRADE AND SHALL HAVE AN ADDITIONAL INSULATED GROUNDING CONDUCTOR, PER NEC 517.

15. PROVIDE BRANCH CIRCUIT PANELS WHICH SHALL BE OF THE BOLTED CIRCUIT BREAKER TYPE WITH SOLID COPPER BUSSING FULL SIZED NEUTRAL, 25% GROUND BUSSING, OVERALL HINGED/LOCKABLE DOOR, AND TYPEWRITTEN DIRECTORY INSIDE DOOR. ALL SERVICE ENTRANCE EQUIPMENT SHALL BEAR THE MANUFACTURER'S LABEL WHICH SHALL STATE THAT THE EQUIPMENT IS RATED FOR SERVICE ENTRANCE APPLICATION IN ACCORDANCE WITH N.E.C. #230-70. LOAD BALANCE ALL ELECTRICAL PHASES AT PANEL. TWO AND THREE POLE BREAKERS SHALL BE COMMON TRIP TYPE. SQUARE D OR EQUAL BY EATON, CUTLER-HAMMER, OR GENERAL ELECTRIC.

16. STEP-DOWN TRANSFORMER:
A. PROVIDE A DRY-TYPE TRANSFORMER OF THE ENCLOSED VENTILATED TYPE WITH KVA AND VOLTAGE RATINGS AS CALLED FOR ON THE DRAWINGS AND WITH COILS DESIGNED FOR 150 DEGREES C. RISE ABOVE A 40 DEGREE C. AMBIENT WITH 100% OF RATED LOAD CONNECTED TO THE SECONDARY, CLASS H INSULATION AND MINIMUM OF SIX STANDARD FULL CAPACITY TAPS. (TWO ABOVE AND FOUR BELOW NORMAL) SOUND LEVEL/DECIBELS SHALL BE IN ACCORDANCE WITH "NEMA" STANDARDS, AND INSTALLATION SHALL INCLUDE KORFOUND OR EQUAL VIBRATION-DAMPENING MOUNTS AND FLEXIBLE STEEL CONDUIT FOR PRIMARY AND SECONDARY CONNECTIONS TO MINIMIZE SOUND TRANSMISSION. MOUNT TRANSFORMER ON SEPARATE VIBRATION ISOLATORS. THESE ARE ADDITIONAL VIBRATION ISOLATORS AND ARE USED IN CONJUNCTION WITH ANY INTEGRAL FACTORY INSTALLED VIBRATION ISOLATORS. MANUFACTURED BY SQUARE D, HEAVY DUTY, ACME, GENERAL ELECTRIC OR WESTINGHOUSE.

17. PROVIDE SAFETY AND DISCONNECT SWITCHES, FUSED OR NONFUSED, AS CALLED FOR ON DRAWINGS AND AS REQUIRED BY CODE. FUSES AS MANUFACTURED BY BUSSMAN OR EQUAL. DISCONNECT SWITCHES THAT ARE INSTALLED AT AIR CONDITIONING EQUIPMENT, HEAT PUMPS, ETC SHALL BE FUSED IN ACCORDANCE WITH THE EQUIPMENT'S NAME PLATE REQUIREMENTS PER N.E.C. 440-21 & 110-3B. SWITCHES SHALL BE HEAVY DUTY, QUICK MAKE/QUICK BREAK TYPE, FUSIBLE OR NON-FUSIBLE. LOAD AND HORSEPOWER RATED AS MANUFACTURED BY SQUARE D, EATON, CUTLER HAMMER, OR GENERAL ELECTRIC, WEATHERPROOF WHERE APPLICABLE.

18. PROVIDE ARC-FLASH HAZARD WARNING LABELS ON ALL ELECTRICAL EQUIPMENT INCLUDING SWITCHBOARDS, PANELBOARDS, MOTOR CONTROLLERS, AND ANY OTHER EQUIPMENT LIKELY TO REQUIRE EXAMINATION, ADJUSTMENT, SERVICING OR MAINTENANCE WHILE ENERGIZED. THE LABELS SHALL BE LOCATED SO AS TO BE CLEARLY VISIBLE TO QUALIFIED PERSONS BEFORE EXAMINATION.

19. OUTLET BOXES AND COVERS SHALL BE GALVANIZED, ONE-PIECE PRESSED STEEL KNOCKOUT. JUNCTION, PULL BOXES AND COVERS SHALL BE GALVANIZED STEEL, CODE GAUGE SIZE. INSTALL BOXES RIGIDLY ON BUILDING STRUCTURE AND SUPPORT INDEPENDENTLY OF THE CONDUIT SYSTEM. ALSO PROVIDE APPROPRIATE BOX EXTENSIONS TO EXTEND BOXES TO FINISHED FACES OF WALLS ETC. ALL OUTLET BOXES TO HAVE SUITABLE BLOCKING BEHIND THEM TO MINIMIZE THE DEFLECTION THAT OCCURS WHEN PLUGGING/UNPLUGGING INTO THESE DEVICES.

20. ELECTRICAL CONTRACTOR SHALL PROVIDE TEMPORARY SERVICE AND PROVIDE LIGHTING, POWER AND WIRING AS REQUIRED TO FACILITATE APPLICABLE TEMPORARY NEEDS FOR ALL TRADES. HE SHALL FURNISH EXTENSION CORDS FOR HIS OWN USE. ANY TEMPORARY WIRING, FUSES, ETC., SHALL BE REMOVED UPON COMPLETION OF THE PROJECT. PROVIDE GROUND FAULT PROTECTION AS REQUIRED BY N.E.C. AND LOCAL CODES.

21. PROVIDE ELECTRICAL SERVICE AS SHOWN ON THE DRAWINGS. FIELD VERIFY EXACT REQUIREMENTS PRIOR TO BIDS. ALL WORK NOT SPECIFICALLY NOTED AS BEING BY THE OWNER OR POWER COMPANY SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR. COORDINATE ENTIRE INSTALLATION WITH POWER COMPANY. PROVIDE EQUIPMENT THAT IS COMPATIBLE WITH AVAILABLE FAULT CURRENT LEVELS AND PROVIDE "CABLE LIMITERS" IF NECESSARY FOR SYSTEM COORDINATION. FIELD VERIFY EXACT TYPE, SIZE, LOCATION, ETC. OF EXISTING UTILITIES PRIOR TO BIDDING PROJECT.

22. SERVICE EQUIPMENT SHALL BE LEGIBLY MARKED IN THE FIELD WITH THE AVAILABLE FAULT CURRENT & CURRENT DATE.

23. ALL ELECTRIC WORK SHALL BE INSTALLED SO AS TO BE READILY ACCESSIBLE FOR OPERATING, SERVICING, MAINTAINING AND REPAIRING. HANGERS SHALL INCLUDE ALL MISCELLANEOUS STEEL SUCH AS CHANNELS, RODS, ETC., NECESSARY FOR THE INSTALLATION OF WORK AND SHALL BE FASTENED TO BUILDING STEEL, CONCRETE OR MASONRY, BUT NOT PIPING OR DUCTWORK. ALL CONDUIT SHALL BE CONCEALED WHEREVER POSSIBLE. CONDUITS SHALL BE IN STRAIGHT LINES PARALLEL WITH OR AT RIGHT ANGLES TO COLUMN LINES OR BEAMS AND SEPARATED AT LEAST 3 INCHES FROM WATER LINES WHEREVER THEY RUN ALONGSIDE OR ACROSS SUCH LINES. ALL CONDUCTORS SHALL BE IN CONDUIT, DUCTS OR OTHER CODE APPROVED RACEWAYS.

24. PANELBOARDS AND DISCONNECT SWITCHES SHALL BE IDENTIFIED WITH ENGRAVED BAKELITE NAMEPLATES AS TO DESIGNATION AND VOLTAGE.

25. MATERIALS, EQUIPMENT AND INSTALLATION SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR FROM DATE OF ACCEPTANCE. DEFECTS APPEARING IN THAT PERIOD SHALL BE CORRECTED AT THE ELECTRICAL CONTRACTOR'S EXPENSE. FOR THE SAME PERIOD, ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO PREMISES CAUSED BY DEFECTS IN WORKMANSHIP OR IN THE WORK OR EQUIPMENT FURNISHED AND/OR INSTALLED BY THE ELECTRICAL CONTRACTOR.

26. IT IS THE INTENT THAT THE FOREGOING WORK SHALL BE COMPLETE IN EVERY RESPECT AND THAT ANY MATERIAL OR WORK NOT SPECIFICALLY MENTIONED OR SHOWN ON THE DRAWINGS, BUT NECESSARY TO FULLY COMPLETE THE WORK SHALL BE FURNISHED.

27. THE ELECTRICAL SERVICE SHOWN ON THE PLAN IS SHOWN FOR INTENT, ONLY. THE ELECTRICAL CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ALL COMMUNICATION AND COORDINATION WITH THE UTILITY COMPANY, INCLUDING THE EXACT LOCATION FOR CONNECTING TO THE INCOMING PRIMARY SERVICE AND THE REQUIREMENTS FOR PRIMARY ELECTRIC SERVICE. THE EXACT LOCATION OF THE TRANSFORMER AND CT ENCLOSURE, THE METER, GROUNDING REQUIREMENTS AND THE REQUIREMENTS FOR THE SECONDARY CONDUITS AND CONDUCTORS.

28. THE ELECTRICAL CONTRACTOR SHALL ALSO BE FULLY RESPONSIBLE FOR ALL COMMUNICATION AND COORDINATION WITH THE TELEPHONE COMPANY, AND RESPONSIBLE FOR FURNISHING AND INSTALLING ALL CONDUITS, TRENCHING, BACKFILLING, ETC. TO COMPLY WITH TELEPHONE COMPANY REQUIREMENTS TO ACHIEVE THE INTENT OF THE DRAWINGS.

29. PROVIDE O & M MANUALS & AS-BUILT DRAWINGS TO THE OWNER WITH-IN 30 DAYS OF FINAL ACCEPTANCE.

LIGHTING FIXTURE SCHEDULE

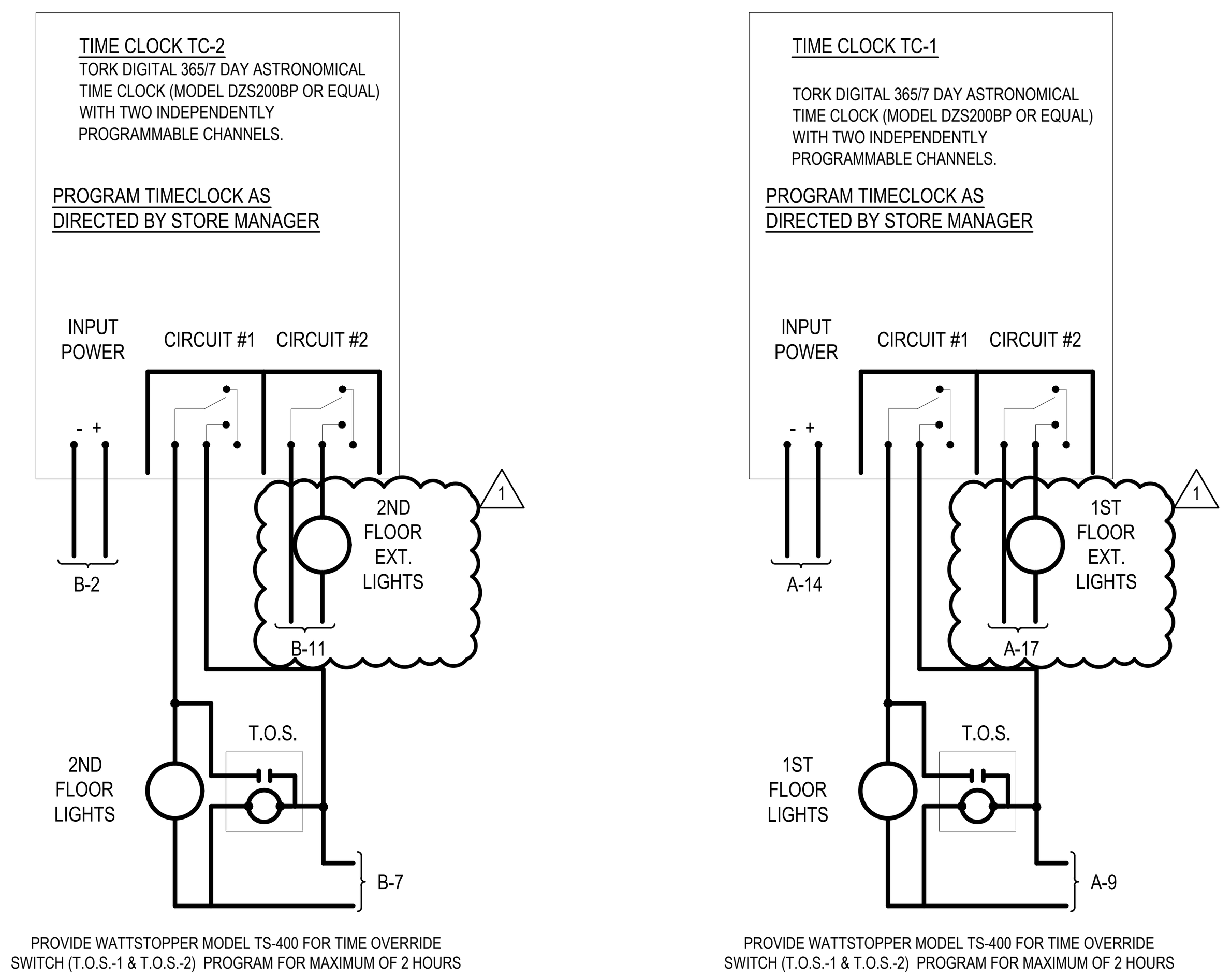
MARK	DESCRIPTION	VOLT	LAMP	MOUNT	MANUFACTURER
A	CAN LIGHTS	120V	30W LED	RECESSED	OWNER TO SELECT FIXTURE
B	PENDENT LIGHT FIXTURE	120V	50W LED	SUSPENDED	OWNER TO SELECT FIXTURE
C	VANITY LIGHT FIXTURE	120V	40W LED	WALL	OWNER TO SELECT FIXTURE
D	GENERAL LIGHT FIXTURE	120V	40W LED	SURFACE/ SUSPENDED	OWNER TO SELECT FIXTURE

NOTES:
1. CONNECT ALL EXIT & EMERGENCY LIGHTS TO LOCAL AREA LIGHTING CIRCUIT AHEAD OF ANY SWITCHING AND AUTOMATIC CONTROLS.
2. EQUAL FIXTURES BY COOPER, HUBBELL, LSI, PHILLIPS OR LITHONIA.

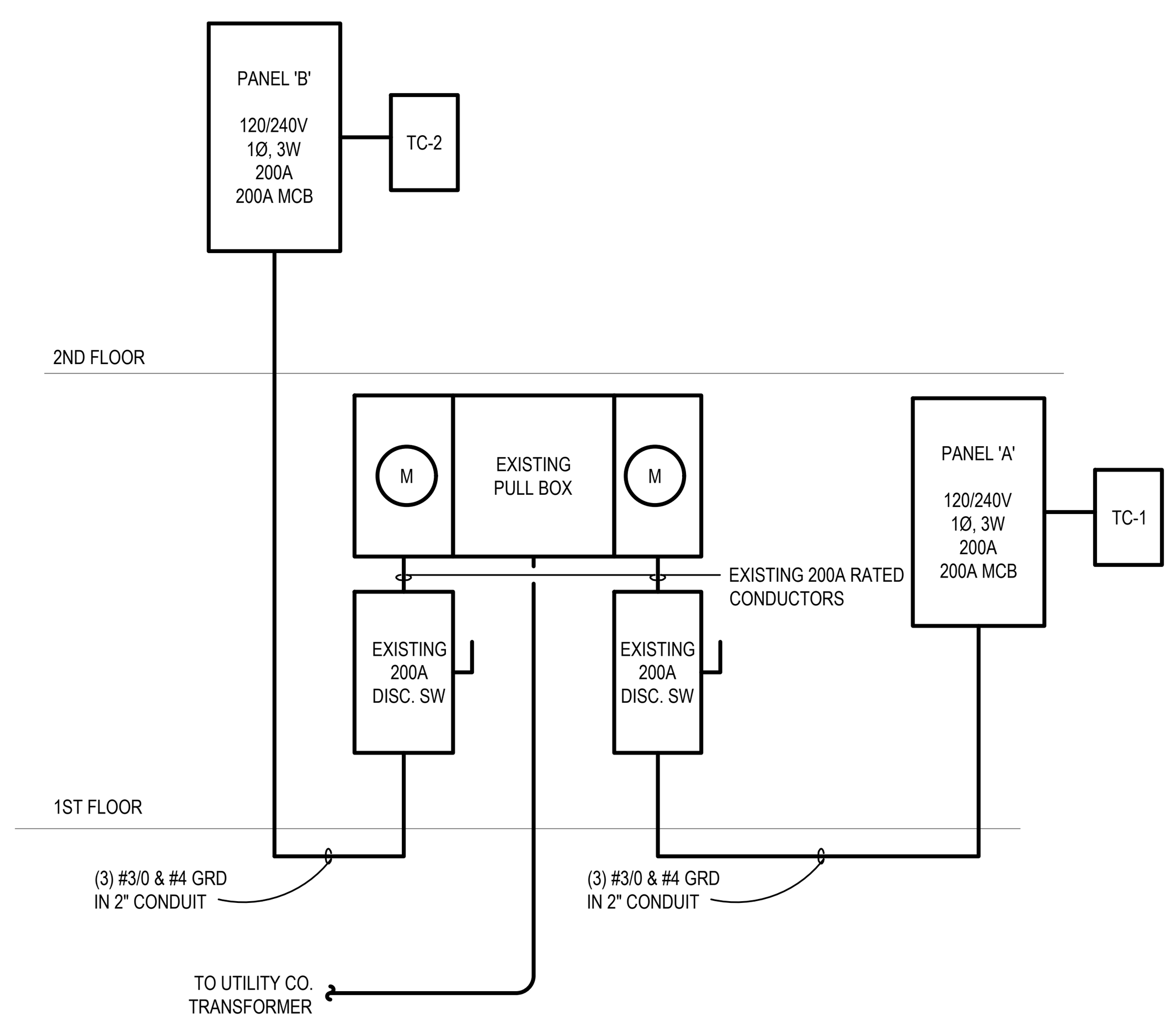
ELECTRICAL LEGEND

ELECTRICAL LEGEND NOTES:
1. MOUNTING HEIGHTS INDICATED ARE TO THE TOP OF THE DEVICE OR FIXTURE.
2. MOUNTING HEIGHTS ARE TYPICAL UNLESS NOTED OTHERWISE ON THE FLOOR PLANS.
3. REFER TO ARCHITECTURAL ELEVATIONS FOR ADDITIONAL INFORMATION ON EXACT DEVICE AND FIXTURE LOCATIONS, MOUNTING HEIGHTS AND COORDINATION WITH ARCHITECTURAL HARDWARE AND FIXTURES.
4. NOT ALL SYMBOLS APPLY.

LIGHTING		POWER	
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
$	WALL SWITCH @48" A.F.F. 20A, 120V		DUPLEX RECEPTACLE @20" A.F.F, 20A, 125V
$3	THREE-WAY SWITCH @48" A.F.F., 20A, 120V		DUPLEX RECEPTACLE WITH GROUND FAULT CIRCUIT INTERRUPTER @20" A.F.F.; 20A, 125V
OS	OCCUPANCY SENSOR WALL MOUNTED @48" A.F.F.	WP	DUPLEX RECEPTACLE WITH WEATHERPROOF WHILE-IN-USE COVER @18" A.F.F. OR A.F.G. 20A, 125V
OS	OCCUPANCY SENSOR CEILING MOUNTED		DOUBLE DUPLEX RECEPTACLE @ 20" A.F.F, 20A, 125V
	LIGHTING OUTLET, RECESSED OR SURFACE MOUNTED PER FIXTURE SCHEDULE.		SPECIAL RECEPTACLE AMPERAGE, @20" A.F.F COORDINATE NEMA CONFIG. WITH EQUIPMENT FED.
NL	LIGHT FIXTURE ON NIGHT LIGHT	J	JUNCTION BOX MOUNTED AS NOTED.
	CEILING LIGHTING OUTLET, RECESSED OR SURFACE MOUNTED PER FIXTURE SCHEDULE		SAFETY DISCONNECT SWITCH @60" A.F.F. TO TOP
	WALL LIGHTING OUTLET @ HEIGHT PER FIXTURE SCHEDULE OF ARCHITECTURAL ELEVATIONS.		PANELBOARD, SURFACE MOUNTED @6'-0" A.F.F. TO TOP
	EMERGENCY EXIT LIGHT, SINGLE FACE, CLG. MOUNTED.		PANELBOARD, FLUSH MOUNTED @6'-0" A.F.F. TO TOP
	EMERGENCY EXIT LIGHT, SINGLE FACE, WALL MOUNTED	EF	CEILING EXHAUST FAN BY M.C. WIRED BY (FURN E.C.) MAKE ALL CONNECTIONS AS INDICATED ON DRAWING.
	COMBINATION EMERGENCY EXIT/EGRESS LIGHT, SINGLE FACE, CEILING MOUNTED		4" SQ. BOX W/IG PLASTER RING @20" A.F.F FOR TELEPHONE OUTLET. COVERPLATE WIRING & TERMINATION BY OWNER RUN 3/4"C. FROM BOX UP IN WALL TO ABOVE ACCESSIBLE CEILING
	EMERGENCY EGRESS LIGHT @90" A.F.F WALL MOUNTED		
EMR	EMERGENCY REMOTE HEAD FOR EXIT DISCHARGE	OSD	COMBINATION OCCUPANCY DIMMER(ON)/SENSOR(OFF) @48" AFF



B LIGHTING CONTROL WIRING DIAGRAM



A RISER DIAGRAM
NO SCALE

Panel ID: A | Voltage: 240 / 120 | Panel Type: NQOD
Location: FIRST FLOOR | Phase: 1 | Type Encl.: NEMA-1
Mounting: SURFACE | Wire: 3
Main Type: MCB | Main Size: 200 Amps

All phases to be balanced to within 7% using actual connected loads.
All Circuit breakers shall be standard bolt-on type, unless noted otherwise.

CKT NO.	WIRE SIZE	BRANCH CIRCUIT DESCRIPTION	CKT BKR SIZE	CKT BKR OPTION	N.E.C. LOAD (KVA)	ACTUAL LOAD (KVA)	PHASE	ACTUAL LOAD (KVA)	N.E.C. LOAD (KVA)	CKT BKR OPTION	CKT BKR SIZE	BRANCH CIRCUIT DESCRIPTION	WIRE SIZE	CKT NO.
1	8	CU-1	40/2		3.132	3.132	A	0.720	0.720		20/1	COUNTER REC	12	2
3	8	-- --	--		3.132	3.132	B	1.200	1.200		20/1	MICROWAVE	12	4
5	12	FUR-1	20/1		1.200	1.200	A	0.500	0.500		20/1	BREAK COUNTER REC	12	6
7	12	EXTERIOR REC	20/1		0.180	0.180	B	0.500	0.500	GF	20/1	REFRIG REC	12	8
9	12	GENERAL LIGHTS	20/1	TC	0.500	0.500	A	0.540	0.540		20/1	OPEN OFFICE REC	12	10
11	12	RR/ MECH. RM REC	20/1		0.360	0.360	B	0.360	0.360		20/1	OPEN OFFICE REC	12	12
13	10	WATER HEATER	30/2		3.000	3.000	A	0.100	0.100		20/1	TIMECLOCK	12	14
15	10	-- --	--		3.000	3.000	B	0.540	0.540		20/1	CRAWL SPACE REC	12	16
17	12	1ST FL EXT LIGHTS	20/1		1.000	1.000	A	0.100	0.100		20/1	CRAWL SPACE LIGHTS	12	18
19		SPACE			0.000	0.000	B	0.360	0.360		20/1	1ST FL FLOOR REC	12	20
21		SPACE			0.000	0.000	A	0.000	0.000			SPACE		22
23		SPACE			0.000	0.000	B	0.000	0.000			SPACE		24
25		SPACE			0.000	0.000	A	0.000	0.000			SPACE		26
27		SPACE			0.000	0.000	B	0.000	0.000			SPACE		28
29		SPACE			0.000	0.000	A	0.000	0.000			SPACE		30
31		SPACE			0.000	0.000	B	0.000	0.000			SPACE		32
33		SPACE			0.000	0.000	A	0.000	0.000			SPACE		34
35		SPACE			0.000	0.000	B	0.000	0.000			SPACE		36

Actual Load Panel Summary: Phase A: 10.8 KVA; Phase B: 9.6 KVA; Total: 20.4 KVA
N.E.C. Load Panel Summary: Phase A: 10.8 KVA 89.9 AMPS; Phase B: 9.6 KVA 80.3 AMPS; Total: 20.4 KVA 85.1 AMPS
Breaker Options (If Used):
TC - Wire Thru TimeClock
LO - Lock-On Device
GF - GND Fault CKT Interrupter
QO - Standard Bolt-On Breaker
HR - HACR Rated Circuit Breaker

Panel ID: B | Voltage: 240 / 120 | Panel Type: NQOD
Location: SECOND FLOOR | Phase: 1 | Type Encl.: NEMA-1
Mounting: SURFACE | Wire: 3
Main Type: MCB | Main Size: 200 Amps

All phases to be balanced to within 7% using actual connected loads.
Provide with Isolated Ground Bar

CKT NO.	WIRE SIZE	BRANCH CIRCUIT DESCRIPTION	CKT BKR SIZE	CKT BKR OPTION	N.E.C. LOAD (KVA)	ACTUAL LOAD (KVA)	PHASE	ACTUAL LOAD (KVA)	N.E.C. LOAD (KVA)	CKT BKR OPTION	CKT BKR SIZE	BRANCH CIRCUIT DESCRIPTION	WIRE SIZE	CKT NO.
1	10	CU-2	30/2		2.172	2.172	A	0.100	0.100		20/1	TIMECLOCK	12	2
3	10	-- --	--		2.172	2.172	B	0.360	0.360		20/1	RR/ MECH RM REC	12	4
5	12	FUR-2	20/1		1.200	1.200	A	0.720	0.720		20/1	OFF. NOOK #2 REC	12	6
7	12	GENERAL LIGHTS	20/1	TC	0.500	0.500	B	1.260	1.260		20/1	PRIV OFF. #1 REC	12	8
9	12	GENREAL REC	20/1		0.900	0.900	A	0.900	0.900		20/1	PRIV OFF. #2 REC	12	10
11	12	2ND FL EXT. LIGHTS	20/1		1.000	1.000	B	0.900	0.900		20/1	PRIV OFF. #3 REC	12	12
13	12	2ND FL EXT. REC	20/1		0.540	0.540	A	0.360	0.360		20/1	2ND FL FLOOR REC	12	14
15		SPACE			0.000	0.000	B	0.000	0.000			SPACE		16
17		SPACE			0.000	0.000	A	0.000	0.000			SPACE		18
19		SPACE			0.000	0.000	B	0.000	0.000			SPACE		20
21		SPACE			0.000	0.000	A	0.000	0.000			SPACE		22
23		SPACE			0.000	0.000	B	0.000	0.000			SPACE		24
25		SPACE			0.000	0.000	A	0.000	0.000			SPACE		26
27		SPACE			0.000	0.000	B	0.000	0.000			SPACE		28
29		SPACE			0.000	0.000	A	0.000	0.000			SPACE		30
31		SPACE			0.000	0.000	B	0.000	0.000			SPACE		32
33		SPACE			0.000	0.000	A	0.000	0.000			SPACE		34
35		SPACE			0.000	0.000	B	0.000	0.000			SPACE		36

Actual Load Panel Summary: Phase A: 6.9 KVA; Phase B: 6.2 KVA; Total: 13.1 KVA
N.E.C. Load Panel Summary: Phase A: 6.9 KVA 57.4 AMPS; Phase B: 6.2 KVA 51.6 AMPS; Total: 13.1 KVA 54.5 AMPS
Breaker Options (If Used):
TC - Wire Thru TimeClock
LO - Lock-On Device
IG- Isolated Ground Conductor
DF - Drinking Fountain

STATE OF OHIO
VIRGIL W. ELLETT
E-86261
REGISTERED PROFESSIONAL ENGINEER

REVISION	DATE
PERMIT	5/11/2023
BLDG DEPT COMMENTS	6/13/2023

Point One Design, Ltd.
Consulting Engineers
9941 York Theta Drive North Royalton, Ohio 44133
440-230-1800 Fax 440-230-1831
cleveland@pointonedesign.com
2600 Corporate Exchange Dr. Suite 270 Columbus, Ohio 43231
614-540-3500 Fax 614-540-3502
columbus@pointonedesign.com

57 MILL, LLC OFFICE
BOLD REACH CORPORATION HEADQUARTERS
57 MILL STREET
GAHANNA, OH 43230

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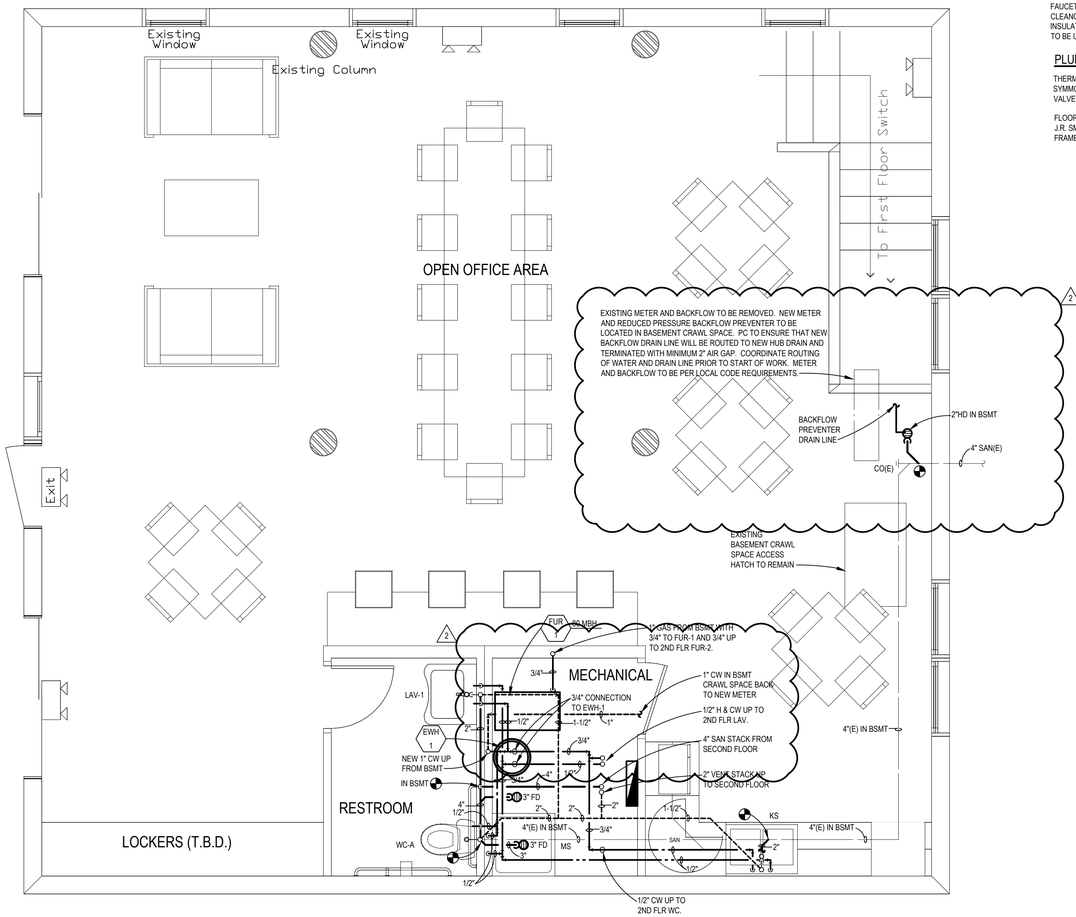
Sheet No.
E2



FIRST FLOOR PLUMBING PLAN

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

PLUMBING FIXTURE SCHEDULE

MARK	ITEM	FIXTURE	FAUCET/VALVE	MTG. HT.	CW	HW	TRAP	ACCESSORIES
WC-A	WATER CLOSET (HANDICAP)	AM. STD. 270AA.101	-	16-1/2"	1/2"	--	INTEG.	NOTE-1
LAV-1	LAVATORY	AM. STD. 9024.000EC	AM. STD. R350 & T064.395	REFER TO ARCH. DWGS.	1/2"	1/2"	1-1/2"	NOTE-2
LAV-2	LAVATORY	AM. STD. 9024.000EC	AM. STD. 7427801	REFER TO ARCH. DWGS.	1/2"	1/2"	1-1/2"	NOTE-5
MS	MOP SINK	FIAT MSB-2424	FIAT 830-AA	--	1/2"	1/2"	3"	NOTE-3
KS	KITCHEN SINK	ELKAY LR3322	ELKAY LKD2439BHC	COUNTERTOP	1/2"	1/2"	1-1/2"	NOTE-4

NOTE-1
FLOOR MOUNTED, VITREOUS CHINA, ELONGATED BOWL, SIPHON-JET FLUSHING ACTION, 1.28 GPF. FURNISH WITH CHURCH #9500C OPEN FRONT SEAT LESS COVER, SUPPLY AND STOP. MOUNT LEVER ON WC OPPOSITE OF WALL.

NOTE-2
WALL MOUNTED, VITREOUS CHINA, 20"x18" NOMINAL SIZE, REAR OVERFLOW. FURNISH WITH WALL HANGER, GRID DRAIN, ELECTRONIC HAND WASHING FAUCET, 6 VDC ADAPTER POWERED, SENSOR ACTIVATED, 0.5 GPM, PROVIDE COMPLETE WITH CHROME PLATED CAST BRASS TRAP WITH CLEANOUT AND CHROME SUPPLIES WITH WHEEL STOPS. INSULATE WASTE AND WATER LINES WITH TRUEBRO "HANDI-LAV-GUARD" INSULATION KIT WITH WHITE FINISH TO CONFORM TO ADA REQUIREMENTS.

NOTE-3
MOLDED STONE MOP BASIN PROVIDED WITH HOSE AND HOSE BRACKET #832-AA AND MOP HANGER #889-CC.

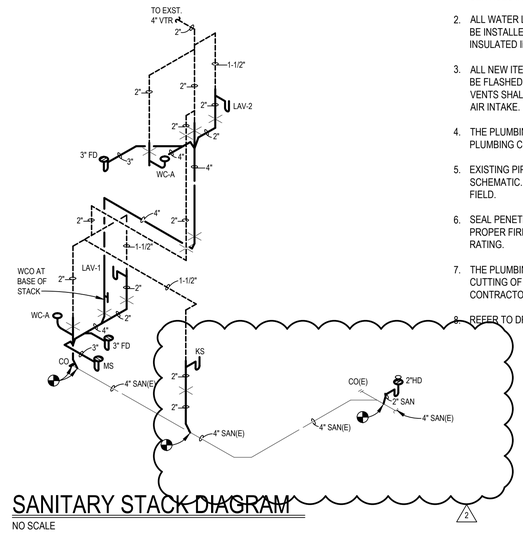
NOTE-4
33"x22"x8-1/8" ID NOMINAL SIZE, DOUBLE BOWL, STAINLESS STEEL, SELF-RIMMING. PROVIDE WITH GOOSENECK FAUCET, STAINLESS STEEL CONICAL STRAINER BASKET WITH FLEX STEM & RUBBER STOPPER & WASTE FITTING FOR DOUBLE BOWL SINK. FURNISH WITH WASTE DRAIN AND TRAP, SUPPLIES AND STOPS, IN-SINK-ERATOR MODEL #BADGER #5 FOOD WASTE DISPOSER, 1/2 H.P., 120 VOLT, 1 PHASE.

NOTE-5
COUNTERTOP, VITREOUS CHINA, 20"x18" NOMINAL SIZE, REAR OVERFLOW. FURNISH WITH GRID DRAIN, ELECTRONIC HAND WASHING FAUCET, 6 VDC ADAPTER POWERED, SENSOR ACTIVATED, 0.5 GPM, PROVIDE COMPLETE WITH CHROME PLATED CAST BRASS TRAP WITH CLEANOUT AND CHROME SUPPLIES WITH WHEEL STOPS. INSULATE WASTE AND WATER LINES WITH TRUEBRO "HANDI-LAV-GUARD" INSULATION KIT WITH WHITE FINISH TO CONFORM TO ADA REQUIREMENTS. COORDINATE WITH ARCHITECT FOR EXACT FIXTURE AND FAUCET TO BE USED.

PLUMBING EQUIPMENT SCHEDULE:

THERMOSTATIC TEMPERING VALVE (TTV):
SYMMONS "MAXLINE" MODEL 7-210-CK WITH A MINIMUM FLOW OF .5 GPM AND 2 GPM @ 10 PSI PRESSURE DIFFERENTIAL. NOTE: TEMPERING VALVE SHALL BE LISTED TO ASSE 1070 STANDARD. TYPICAL FOR ALL HAND SINKS.

FLOOR DRAIN (FD):
J.R. SMITH MODEL NO. 3021, CAST IRON FLOOR DRAIN WITH ACID RESISTANT COATING AND SEDIMENT BUCKET, NICKEL BRONZE GRATE & FRAME. SET TOP FLUSH WITH FINISH FLOOR. PROVIDE TRAP SEAL BASED ON SURESEAL WATERLESS INLINE DRAIN TRAP SEAL 3".



SANITARY STACK DIAGRAM

NO SCALE

GAS DEMAND

FURNACE (FUR-1)	80.0 CFH
FURNACE (FUR-2)	60.0 CFH
TOTAL	140.0 CFH

NOTES:
1. GAS PRESSURE AFTER METER IS 7" W.C.
2. GAS PIPE SIZES ARE BASED ON THE 2015 INTERNATIONAL FUEL GAS CODE: TABLE 402.4(2) SCHEDULE 40 METALLIC PIPE: INLET PRESSURE OF LESS THAN 2 PSI; PRESSURE DROP OF 0.5" W.C. AND 80 FEET (TOTAL DEVELOPED LENGTH OF PIPE).

GAS PIPING NOTES:

1. PLUMBING CONTRACTOR TO NOTIFY THE AUTHORITY HAVING JURISDICTION WHEN THE INSTALLATION IS READY FOR INSPECTION (AT ROUGH-IN PRIOR TO COVERING AND FINAL).
2. PLUMBING CONTRACTOR SHALL FURNISH AND INSTALL MANUAL SHUT-OFF VALVE. DRIPS AND/OR SEDIMENT TRAPS AT EACH PIECE OF EQUIPMENT AND AT THE OUTLET OF THE METER. VALVES AND DRIPS SHALL BE READILY ACCESSIBLE TO PERMIT CLEANING, EMPTYING OR SERVICING.
3. GAS PIPING IS SIZED WITH LONGEST LENGTH METHOD AND BASED ON THE INTERNATIONAL FUEL GAS CODE; SCHEDULE 40 METALLIC PIPE TABLE 402.4(5).
4. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR PRESSURE TESTING AND INSPECTION PRIOR TO ACCEPTANCE, PER NFPA 54. TEST PRESSURE SHALL BE NO LESS THAN 1-1/2 TIMES THE MAXIMUM WORKING PRESSURE, BUT NOT LESS THAN 3 PSI. TEST SHALL BE NOT LESS THAN 1/2 HOUR PER 500 CF OF PIPE VOLUME.
5. GAS PIPING ABOVE GROUND SHALL BE SCHEDULE 40 BLACK STEEL WITH 125 POUND BLACK MALLEABLE IRON SCREWED FITTINGS FOR 2" AND SMALL AND WELDED FOR 2-1/2" AND ABOVE. GAS PIPING COMPOUND AT JOINTS SHALL BE PER NFPA BULLETIN #54 AND LOCAL CODES. GAS VALVES SHALL BE UL LISTED FOR GAS SERVICE SUCH AS DEZURICK MODEL S-425 FOR 2" AND LESS AND MODEL F-425 FOR 2-1/2" AND LARGER. NOTE: WELDED PIPE TO BE WITH APPROVED WELD-O-LET FITTINGS.
6. ALL NEW EXTERIOR GAS PIPING IS TO BE PRIMED AND PAINTED WITH TWO (2) COATS OF RUST RESISTANT PAINT, COLOR AS SELECTED BY ARCHITECT AS REQUIRED BY SECTION 404 OF THE INTERNATIONAL FUEL GAS CODE.

GENERAL PLUMBING NOTES:

1. THE LOCATIONS OF PIPING AND EQUIPMENT AS SHOWN ON THE DRAWING ARE GENERAL ONLY. THE PLUMBING CONTRACTOR SHALL COORDINATE EXACT LOCATION OF SERVICES IN BUILDING PRIOR TO STARTING ANY WORK.
2. ALL WATER LINES INSTALLED IN EXTERIOR WALLS SHALL BE INSTALLED INSIDE OF WALL INSULATION AND INSULATED INDIVIDUALLY TO PROTECT FROM FREEZING.
3. ALL NEW ITEMS PROJECTING THROUGH THE ROOF SHALL BE FLASHED A MINIMUM OF 12" ABOVE THE ROOF. ALL VENTS SHALL BE A MINIMUM OF 10'-0" FROM ANY OUTSIDE AIR INTAKE.
4. THE PLUMBING CONTRACTOR TO MAKE ALL FINAL PLUMBING CONNECTIONS TO FIXTURES & EQUIPMENT.
5. EXISTING PIPING AND EQUIPMENT LOCATIONS ARE SCHEMATIC. VERIFY EXACT LOCATION AND ELEVATIONS IN FIELD.
6. SEAL PENETRATIONS THRU FIRE-RATED WALLS WITH THE PROPER FIRE STOPPING MATERIAL TO MAINTAIN FIRE RATING.
7. THE PLUMBING CONTRACTOR TO COORDINATE ALL CUTTING OF ROOF, WALLS AND FLOORS WITH GENERAL CONTRACTOR PRIOR TO EXECUTING HIS WORK.
8. REFER TO DRAWING M3 FOR SPECIFICATIONS.

PLUMBING LEGEND

SYMBOL	DESCRIPTION
	COLD WATER PIPING
	HOT WATER PIPING
	SANITARY SEWER (ABOVE GRADE)
	SANITARY SEWER (BELOW GRADE)
FD	FLOOR DRAIN
FS	FLOOR SINK
CO	FLOOR CLEANOUT
CO	HORIZONTAL CLEANOUT
V	SANITARY VENT PIPING
CD	CONDENSATE DRAIN
G	GAS PIPING-LOW PRESSURE
	CAP ON END OF PIPE
	SHUT-OFF VALVE
	CHECK VALVE
	DOUBLE CHECK BACKFLOW PREVENTOR
	WATER METER
	SHUT-OFF VALVE IN RISER
	GAS SHUT-OFF VALVE
	RISER DOWN (ELBOW)
	RISER UP (ELBOW)
	BRANCH-TOP CONNECTION
	BRANCH-BOTTOM CONNECTION
	TEE
	ELBOW
FPHB	FROSTPROOF HOSE BIBB
DS	DOWN SPOUT
HD	HUB DRAIN
TP	TRAP PRIMER
TTV	THERMOSTATIC TEMPERING VALVE
WC	WATER CLOSET
LAV	LAVATORY
SK	SINK
PC	PLUMBING CONTRACTOR
GC	GENERAL CONTRACTOR
EC	ELECTRICAL CONTRACTOR
MC	MECHANICAL CONTRACTOR
A.F.F.	ABOVE FINISHED FLOOR
VTR	VENT THRU ROOF
	CONNECT TO EXISTING

KEVIN K HERBERT E-53288
REGISTERED PROFESSIONAL ENGINEER
STATE OF OHIO

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1. Point One Design, Ltd.
Consulting Engineers
9941 York Theta Drive North Royalton, Ohio 44133
440-230-1800 Fax 440-230-1831
steveteal@pointonedesign.com
2800 Corporate Exchange Dr. Suite 270 Columbus, Ohio 43231
614-540-3500 Fax 614-540-3502
columbus@pointonedesign.com

57 MILL, LLC OFFICE

BOLD REACH CORPORATION
HEADQUARTERS
57 MILL STREET
GAHANNA, OH 43230

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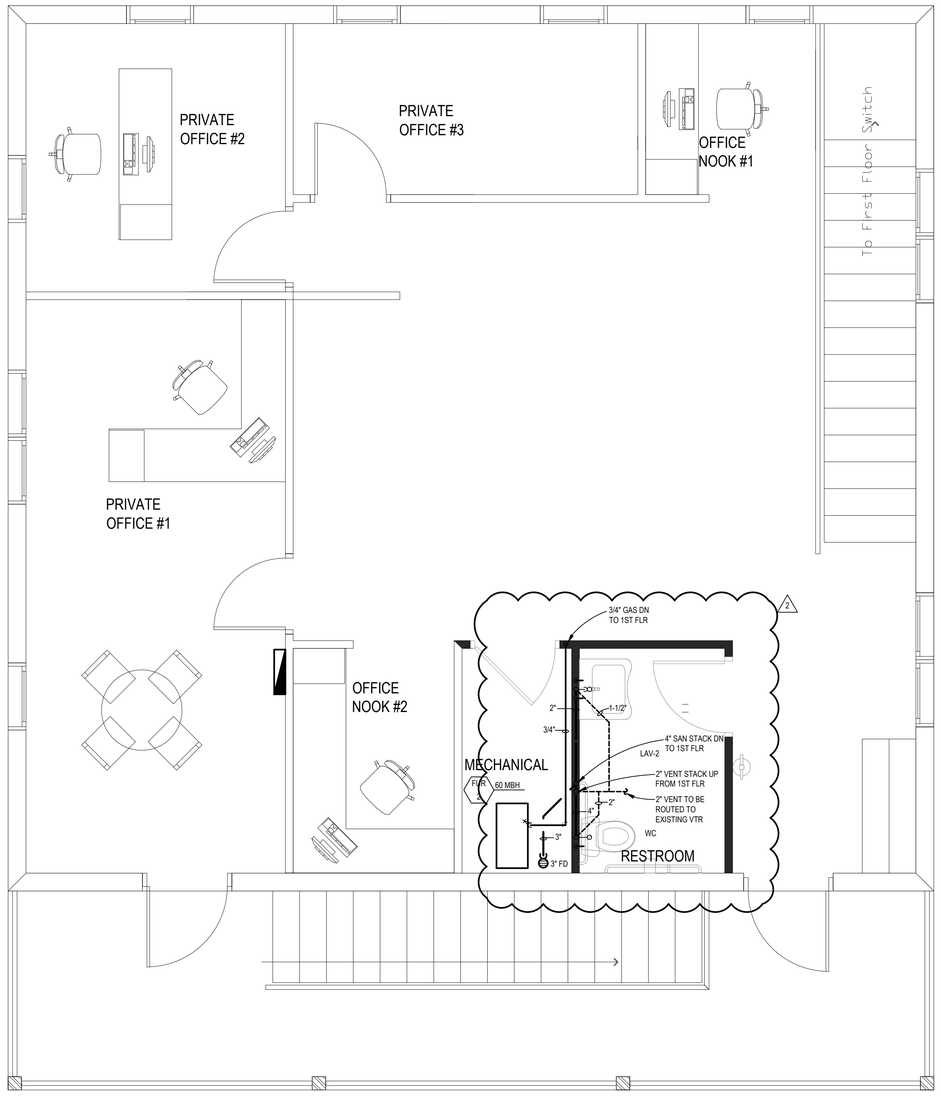
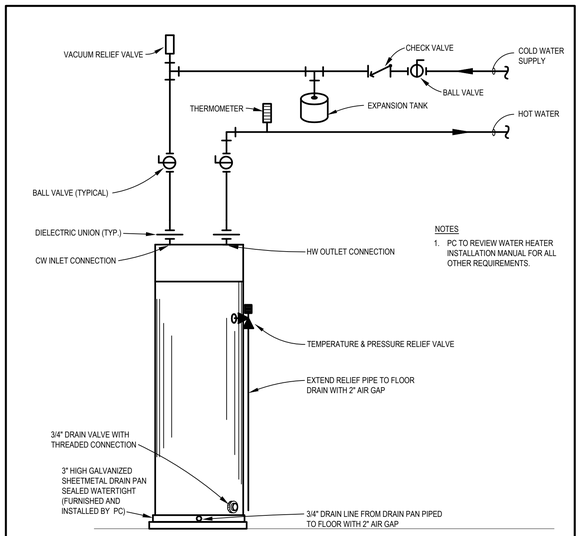


SECOND FLOOR PLUMBING PLAN

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

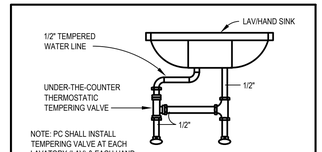


ELECTRIC WATER HEATER (EWH-1):
A.O. SMITH MODEL EJCS-20 (OR SIMILAR-OWNER APPROVED), ELECTRIC TYPE, 19 GALLON STORAGE CAPACITY, 6 KW ELECTRICAL INPUT @ 240V 1 PHASE, 11 GPH RECOVERY AT 90 DEG TEMPERATURE RISE, .92 ENERGY FACTOR. TEMPERATURE AND PRESSURE VALVE FACTORY MOUNTED. INSTALL PER MANUFACTURER'S RECOMMENDATIONS AND GUIDELINES. WATER HEATER TO BE PLACED ON 4" HIGH PRE-FABRICATED HOUSE KEEPING PAD.

EXPANSION TANK (ET):
AMTROL "THERM-X-TROL" MODEL #ST-5, 2.1 GALLON TANK VOLUME, NON-ASME CONSTRUCTION, 3/4" SYSTEM CONNECTION (OR SIMILAR-OWNER APPROVED). INSTALL PER MANUFACTURER'S RECOMMENDATIONS AND GUIDELINES.

WATER HEATER DETAIL

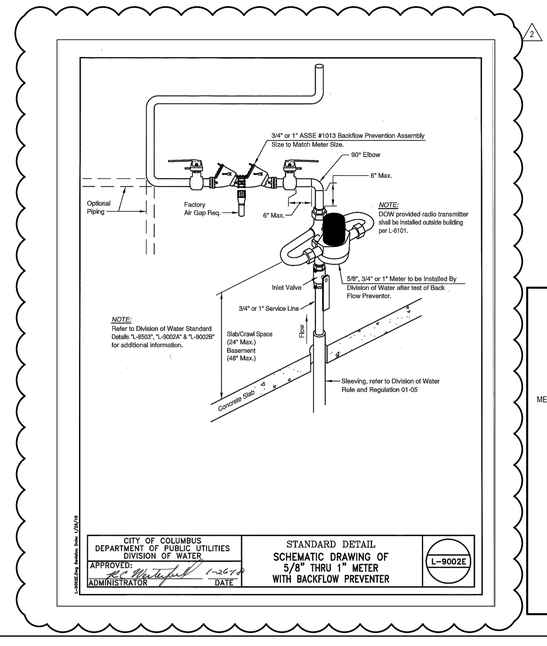
NO SCALE

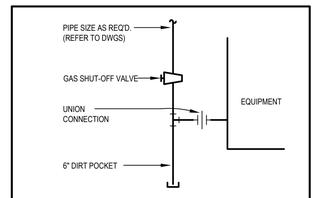


NOTE: PC SHALL INSTALL TEMPERING VALVE AT EACH LAVATORY (LAV) & EACH HAND SINK IN KITCHEN.

THERMOSTATIC TEMPERING VALVE (TTV) DETAIL

NO SCALE

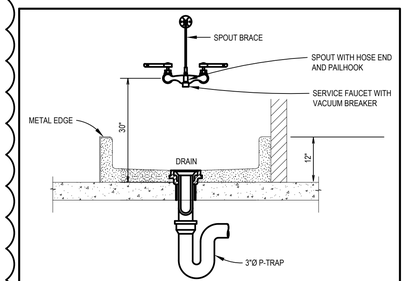




NOTE: FINAL CONNECTIONS BY P.C.

TYPICAL GAS CONNECTION FOR ALL GAS FIRED EQUIPMENT

NO SCALE



MOP SINK DETAIL

NO SCALE

KEVIN K HERBERT E-53288 REGISTERED PROFESSIONAL ENGINEER STATE OF OHIO

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Consulting Engineers
9941 York Theta Drive North Royalton, Ohio 44133
440-230-1800 Fax 440-230-1831
clevelan@pointonedesign.com
2800 Corporate Exchange Dr., Suite 270 Columbus, Ohio 43231
614-540-3500 Fax 614-540-3502
columbus@pointonedesign.com

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