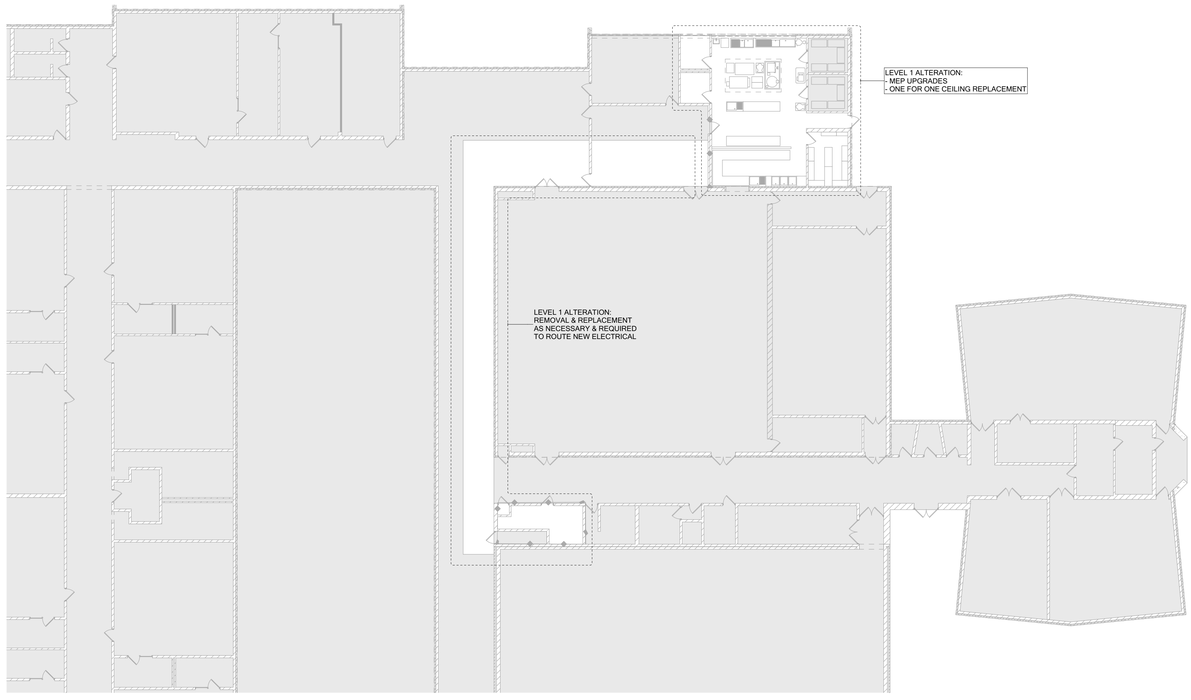
Owen Intermediate - HVAC Upgrades

Van Buren Public Schools

45201 Owen Street Belleville MI 48111



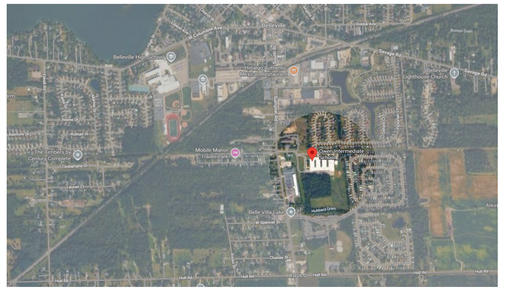
6 FIRST FLOOR LIFE SAFETY PLAN 1/16" = 1'-0"

BUILDING CODE:	2021 MICHIGAN BUILDING CODE 2021 MICHIGAN REHABILITATION CODE
TYPE OF PROJECT:	LEVEL 1 ALTERATION - MECHANICAL UPGRADES
EXISTING USE GROUP:	E
EXISTING CONSTRUCTION CLASSIFICATION:	IIB
FIRE SPRINKLER SYSTEM:	NOT SPRINKLED

PROJECT DESCRIPTION

PARTIAL ROOF DEMOLITION AND MECHANICAL UNIT UPGRADES WITH PARTIAL INTERIOR FINISH REMOVAL AND CEILING DISASSEMBLY AND REUSE.

EXISTING FIRE RATED WALL



CAMPUS / CITY MAP



PROJECT MAP

DRAWING INDEX: (ALL DRAWINGS LISTED BELOW, EXCEPT THOSE UNDER "DEFFERRED SUBMITTALS" ARE INCLUDED IN THIS PACKAGE, UNLESS NOTED OTHERWISE)

DEFERRED SUBMITTALS

THE FOLLOWING ITEMS ARE NOT INCLUDED IN THIS PACKAGE AND ARE CONSIDERED "DEFERRED SUBMITTALS" AS THEIR DESIGN & CONTENT ARE DELEGATED DESIGNS TO BE AUTHORED BY THE CONTRACTOR(S) AND/OR THE CONTRACTOR'S ENGINEER(S). CONTRACTOR(S) AND/OR CONTRACTOR'S ENGINEER(S) ARE RESPONSIBLE TO SUBMIT THE NECESSARY DOCUMENTS & DRAWINGS TO THE LOCAL AUTHORITY-HAVING-JURISDICTION (AHJ) FOR REVIEW AND APPROVED TO OBTAIN THE REQUIRED PERMITTING TO EXECUTE THE WORK LISTED BELOW.

LIST OF DEFERRED SUBMITTALS:

LIFE SAFETY & CODE INFORMATION

DEMOLITION

D0.00	FIRST FLOOR DEMOLITION PLAN
D0.01	REFLECTED CEILING DEMOLITION PLAN
D0.02	ROOF DEMOLITION PLAN

ARCHITECTURAL

A0.00	GENERAL INFORMATION
A1.00	OVERALL FLOOR PLAN
A1.01	OVERALL ROOF PLAN
A1.10	FIRST FLOOR PLAN
A1.11	ROOF PLAN
A1.30	FIRST FLOOR REFLECTED CEILING PLAN

MECHANICAL

M0.00	MECHANICAL GENERAL INFORMATION
M1.00	COMPOSITE MECHANICAL FIRST FLOOR PLAN
M2.00	COMPOSITE MECHANICAL ROOF PLAN
M4.10	ENLARGED MECHANICAL DEMOLITION AND NEW WORK PLAN - KITCHEN
M4.20	ENLARGED MECHANICAL DEMOLITION AND NEW WORK PLAN - ROOF
M5.00	MECHANICAL DETAILS
M6.00	MECHANICAL SCHEDULES & TEMPERATURE CONTROLS

ELECTRICAL

E0.00	ELECTRICAL GENERAL INFORMATION
E4.10	ENLARGED LIGHTING DEMOLITION AND NEW WORK PLAN - KITCHEN
E4.20	ENLARGED POWER DEMOLITION AND NEW WORK PLAN - ROOF
E5.00	ELECTRICAL DETAILS

THE COLLABORATIVE

ANDREW BROCK ENGINEER
structural & civil engineering

Unified Building Systems

11.02.2026	BIDDING AND PERMITS

STATE OF MICHIGAN
Michael A. Muse
License No. 1301048954
LICENSED ARCHITECT

Michael A. Muse, 1301048954
Expiration Date 05/06/2027

TC JOB NO. 107509

OWNER JOB NO. ####

One SeaGate, Park Level 118
Toledo, OH 43604 / 419.242.7405

213 South Main Street, Suite 200
Ann Arbor, MI 48104 / 734.922.8002

383 North Front Street Arena District
Columbus, OH 43215 / 614.228.1586



A2 FIRST FLOOR DEMOLITION PLAN
SCALE: 1/4" = 1'-0"

DEMOLITION LEGEND

REFER TO THE FOLLOWING TAG FOR GENERAL CEILING AND FLOORING DEMOLITION INFORMATION FOR EACH ROOM UNLESS OTHERWISE NOTED.

C-1 ← CEILING DEMOLITION KEYNOTE
F-1 ← FLOORING DEMOLITION KEYNOTE

DEMOLITION GENERAL NOTES

1. REFER TO MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS FOR DEMOLITION SCOPE RELATED TO EXISTING MEP SYSTEMS.
2. FOR ALL REMOVED FINISHES, FURNISHINGS, CASEWORK, AND BUILDING ELEMENTS, REMOVE ALL ASSOCIATED MOUNTING MATERIALS, ADHESIVES, HARDWARE, AND RELATED ELEMENTS.
3. PATCH ALL DISTURBED SUBSTRATES AT LOCATIONS OF REMOVED ELEMENTS AS REQUIRED TO CREATE SMOOTH SURFACES FOR NEW CONSTRUCTION.
4. AT INTERIOR WALLS WHERE DOORS AND WINDOWS HAVE BEEN REMOVED, PATCH OPENINGS TO MATCH EXISTING CONSTRUCTION AS REQUIRED FOR NEW WORK.
5. AT ALL REMOVED DOORS, SALVAGE THE FOLLOWING HARDWARE AND RETURN TO OWNER (CONTRACTOR TO DISPOSE OF ALL OTHER HARDWARE):
   A. LOCKSETS
   B. PANIC HARDWARE
6. REFER TO FLOOR PLAN FOR COORDINATION REQUIREMENTS FOR NEW CONSTRUCTION

DEMOLITION KEYNOTES

(NOTE: NOT ALL NUMBERS ARE USED)

C: CEILINGS

C-0A: NO CEILING DEMOLITION IN THIS AREA, EXPOSED STRUCTURE ABOVE
C-0B: NO CEILING DEMOLITION IN THIS AREA, EXISTING CEILING TO REMAIN
C-1: REMOVE ACOUSTICAL PANEL CEILING SYSTEM AND METAL SUSPENSION SYSTEM
C-2: REMOVE GYPSUM BOARD CEILING SYSTEM
C-3: REMOVE DIRECT-MOUNT ACOUSTICAL CEILING TILES, SUBSTRATE, AND SUSPENSION SYSTEM

CA: CASEWORK
CA-0: EXISTING CASEWORK AND/OR SHELVING TO REMAIN
CA-1: REMOVE BUILT-IN CASEWORK AND/OR SHELVING

D: DOORS:
D-1: REMOVE SINGLE DOOR
D-2: REMOVE DOUBLE DOORS
D-3: REMOVE OVERHEAD DOOR AND TRACK
D-5: REMOVE ACCESS PANEL/ACCESS DOOR AND FRAME
D-6: REMOVE COILING DOOR/SHUTTER, TRACK AND MECHANISM
D-7: REMOVE ALUMINUM ENTRANCE DOOR(S) AND ADJACENT STOREFRONT SYSTEM

DF: DOOR FRAMES
DF-1: REMOVE HOLLOW METAL DOOR FRAME
DF-2: REMOVE WOOD DOOR FRAME
DF-3: REMOVE ALUMINUM DOOR FRAME

F: FLOORING
F-0: NO FLOORING DEMOLITION IN THIS AREA - EXISTING EXPOSED CONCRETE FLOOR TO REMAIN
F-1: NO FLOORING DEMOLITION IN THIS AREA - EXISTING FLOOR FINISH TO REMAIN
F-2: REMOVE RESILIENT FLOORING
F-3: REMOVE CARPET AND ACCESSORIES
F-4: REMOVE TILE FLOORING TO STRUCTURAL SUBFLOOR
F-5: REMOVE TERRAZZO FLOORING TO STRUCTURAL SUBFLOOR
F-6: REMOVE FLOOR GRATING AND FRAMES

FD: FLOOR DRAINS
FD-1: PLUG FLOOR DRAIN BELOW FLOOR LINE. SEE PLUMBING DRAWINGS FOR LINE TERMINATION REQUIREMENTS. FILL DRAIN WITH CONCRETE. APPLY LEVELING COMPOUND TO AREA AROUND DRAIN TO MAKE FLOOR LEVEL WITH ADJACENT FLOOR ELEVATION.
FD-2: REMOVE TRENCH FLOOR DRAIN GRATING AND PLUG EXISTING FLOOR DRAIN BELOW FLOOR LINE. SEE PLUMBING DRAWINGS FOR LINE TERMINATION REQUIREMENTS. FILL DRAIN WITH CONCRETE. APPLY LEVELING COMPOUND TO AREA AROUND DRAIN TO MAKE FLOOR LEVEL WITH ADJACENT FLOOR ELEVATION.

T: TOILET FIXTURES:
T-1: REMOVE SINK AND ASSOCIATED PLUMBING LINES
T-2: REMOVE TOILET AND ASSOCIATED PLUMBING LINES
T-3: REMOVE TOILET PARTITIONS AND DOORS
T-4: REMOVE SHOWER FIXTURE AND ALL ASSOCIATED PLUMBING LINES

W: WALLS AND PARTITONS:
W-1: REMOVE CMU WALL
W-2: REMOVE STUD AND GYPSUM BOARD PARTITION
W-3: REMOVE DECORATIVE WALL FINISH (PANELING, WALLCOVERING, TILE, ETC.), AND ASSOCIATED ADHESIVE, FURRING, MORTAR, ANCHORS, ETC. DOWN TO SUBSTRATE

WN: WINDOWS, STOREFRONTS, & CURTAIN WALL SYSTEMS:
WN-1: REMOVE WINDOW
WN-2: REMOVE STOREFRONT/CURTAIN WALL SYSTEM

THE COL LAB ORAT IVE

STATE OF MICHIGAN
Michael A. Muse
License No. 1301048954
LICENSED ARCHITECT

Michael A. Muse, 1301048954
Expiration Date 05/06/2027

KEY PLAN
N.T.S.

PROJECT TITLE

Van Buren Public Schools

Owen Intermediate - HVAC Upgrades

45201 Owen Street
Belleville, MI 48111

11.02.2026	BID & PERMIT

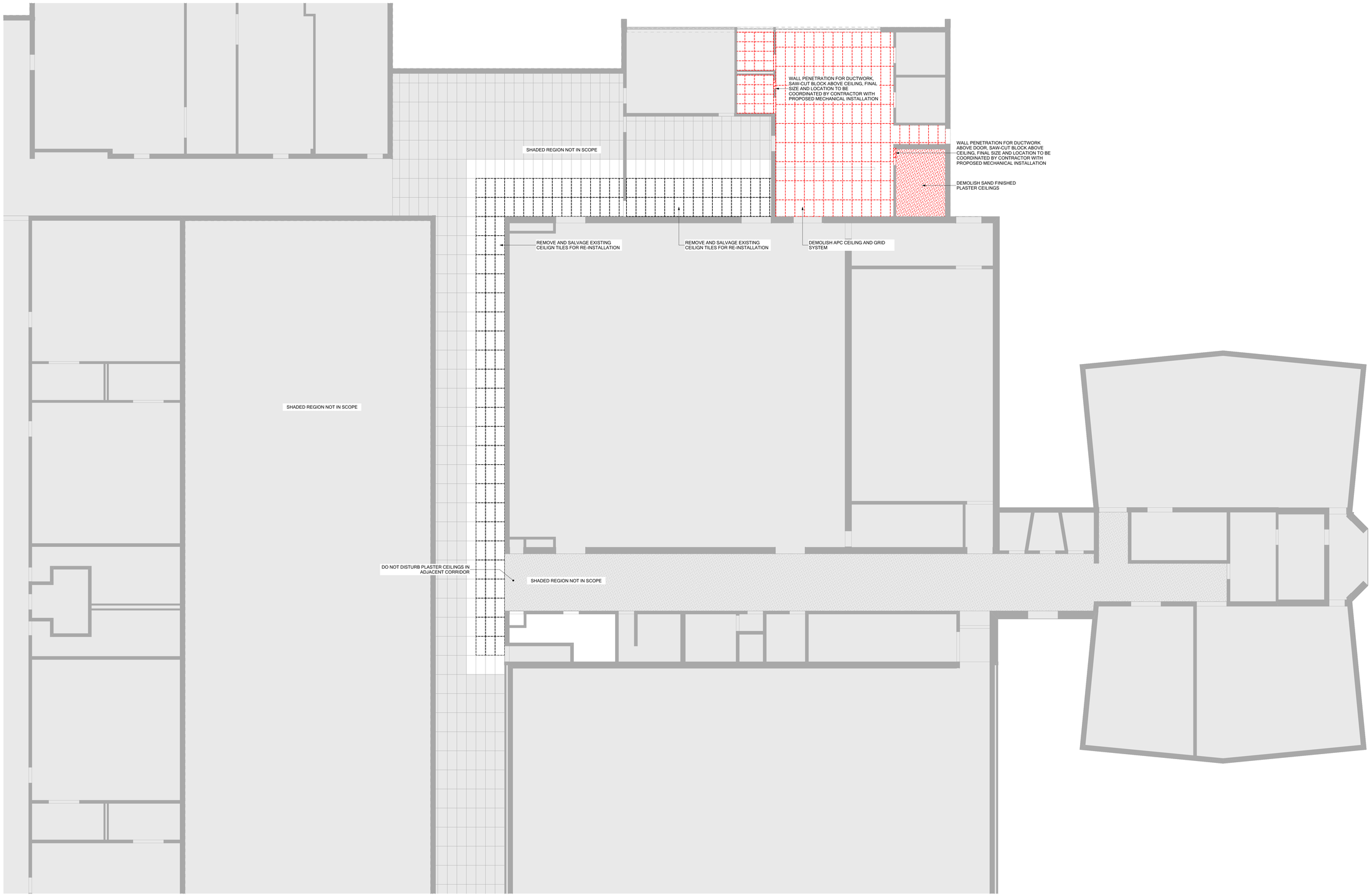
TC JOB NO. 107509

SHEET TITLE

FIRST FLOOR DEMOLITION PLAN

SHEET NO.

D0.00



A1 FIRST FLOOR DEMOLITION REFLECTED CEILING PLANS
SCALE: 1/8" = 1'-0"

THE COLLABORATIVE

STATE OF MICHIGAN
Michael A. Muse
License No. 1301048954
REGISTERED ARCHITECT

Michael A. Muse, 1301048954
Expiration Date 05/06/2027

KEY PLAN
N.T.S.

PROJECT TITLE

Van Buren Public Schools

Owen Intermediate - HVAC Upgrades

45201 Owen Street
Belleville, MI 48111

11.02.2026	BID & PERMIT

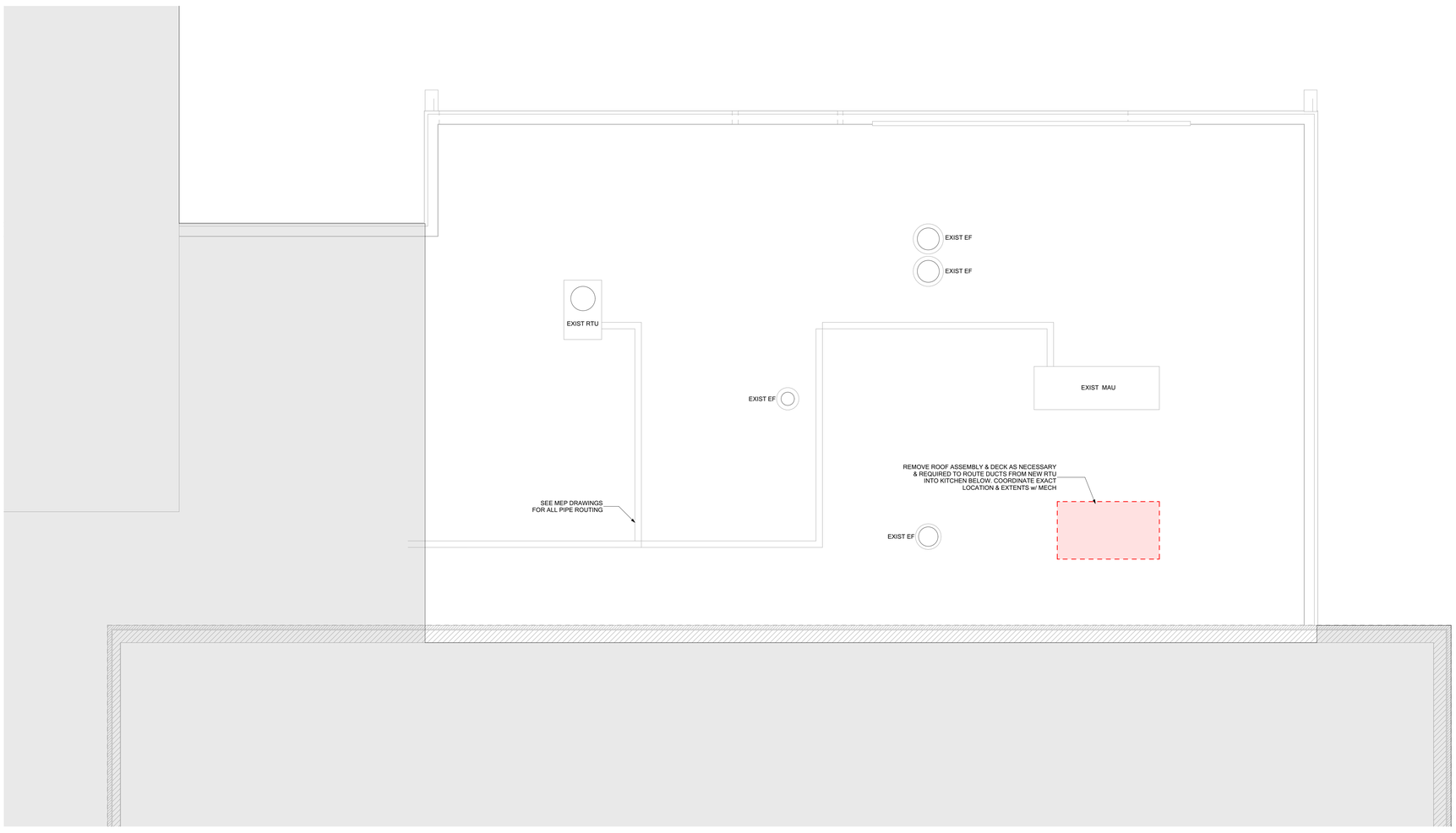
TC JOB NO. 107509

SHEET TITLE

REFLECTED CEILING DEMOLITION PLAN

SHEET NO.

D0.01



A2 ROOF DEMOLITION PLAN
SCALE: 1/4" = 1'-0"

THE COLLABORATIVE

STATE OF MICHIGAN
Michael A. Muse
License No. 1301048954
REGISTERED ARCHITECT

Michael A. Muse, 1301048954
Expiration Date 05/06/2027

KEY PLAN
N.T.S.

PROJECT TITLE

Van Buren Public Schools

Owen Intermediate - HVAC Upgrades

45201 Owen Street
Belleville, MI 48111

11.02.2026	BID & PERMIT

TC JOB NO. 107509

SHEET TITLE

ROOF DEMOLITION PLAN

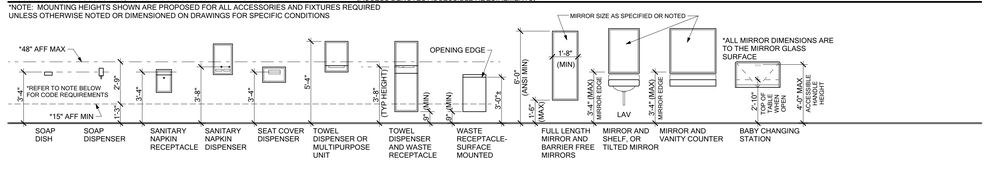
SHEET NO.

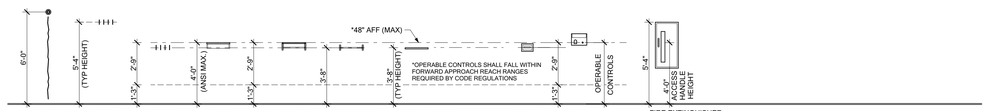
D0.02

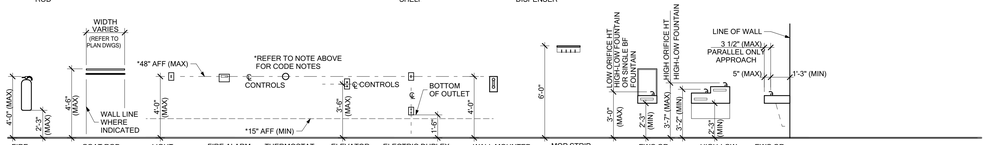
TYPICAL MOUNTING HEIGHTS (BASED ON ICC - A117.1 - 2009)

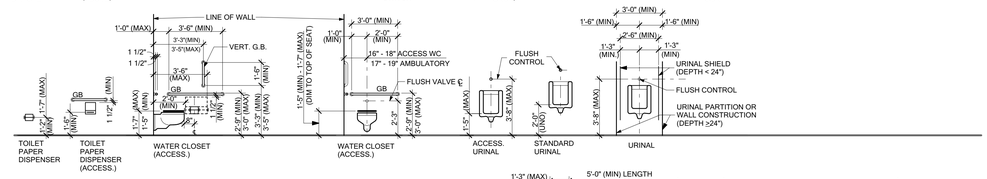
MISCELLANEOUS ACCESSORIES, TOILET ACCESSORIES AND FIXTURES (ACCESS DENOTES ACCESSIBLE REQUIREMENTS)

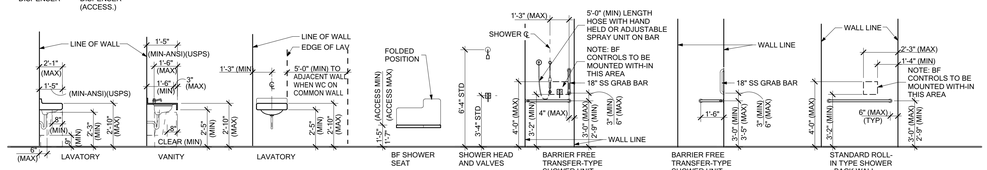
*NOTE: MOUNTING HEIGHTS SHOWN ARE PROPOSED FOR ALL ACCESSORIES AND FIXTURES REQUIRED UNLESS OTHERWISE NOTED OR DIMENSIONED ON DRAWINGS FOR SPECIFIC CONDITIONS











REFERENCE SYMBOLS

ROOM NAME AND NUMBER IDENTIFICATION

ROOM NAME
000 — ROOM IDENTIFICATION NUMBER

KEYED NOTE IDENTIFICATION

XX-# — KEYED NOTE IDENTIFICATION NUMBER AS LISTED IN "KEYED NOTES LEGEND"

GRID LINE IDENTIFICATION

A — GRID ID (NEW CONSTRUCTION)

A — GRID ID (EXISTING CONSTRUCTION)

WALL TYPE IDENTIFICATION

C — WALL CONSTRUCTION TYPE LETTER AS LISTED IN "WALL TYPES" SHEET

(DESCRIPTION ORIGINATES AT WALL SURFACE DESIGNATION)

FENESTRATION IDENTIFICATION

A — WINDOW IDENTIFICATION NUMBER, REFER TO WINDOW SCHEDULE

SF-A — STOREFRONT IDENTIFICATION NUMBER, REFER TO STOREFRONT ELEVATIONS

CW-A — CURTAIN WALL IDENTIFICATION NUMBER, REFER TO CURTAIN WALL ELEVATIONS

DOOR IDENTIFICATION

101
101A — DOOR IDENTIFICATION NUMBER

STAIR DIRECTION NOTATION

10 T (11 R) — NUMBER OF TREADS (OR RISERS) IN STAIR RUN

UP (DN) — STAIR DIRECTION TO FLOOR ABOVE (UP) OR BELOW (DN.)

MATERIAL OR WORK DIVISION NOTATION

MATERIAL "A" (NEW CONST.) / MATERIAL "B" (EXIST. CONST.) — JOINT BETWEEN MATERIALS (OR CONSTRUCTION WORK DIVISION LINE)

DRAWING DIMENSION LINES

5'-3" — NOTE: DO NOT SCALE DRAWINGS WITHOUT GRAPHIC SCALES WITH PROPORTIONS OTHER THAN 1:1

NORTH INDICATION

N — ASSUMED NORTH IF NOT TRUE NORTH OR PLAN NORTH WHERE TRUE NORTH IS INDICATED BY ARROW NOTATION

DRAWING NOTE

MATERIAL NOTATION AND INFORMATION (REFER TO TECHNICAL SPECIFICATIONS FOR MATERIAL DESCRIPTIONS AND METHODS OF CONSTRUCTION)

DRAWING/DETAIL/SECTION IDENTIFICATION

X — IDENTIFICATION NUMBER; DRAWING/DETAIL/SECTION TITLE; SCALE: 1/8" = 1'-0"

SECTION LOCATION INDICATION

X / X.XXX — SECTION IDENTIFICATION NUMBER; SHEET IDENTIFICATION NUMBER

DETAIL LOCATION INDICATION

AX / XX.XX — DETAIL IDENTIFICATION NUMBER; SHEET IDENTIFICATION NUMBER

MATCH LINE INDICATION

A1.1 / A1.2 — SHEET IDENTIFICATION NUMBER (INDICATES SHEET NUMBER OF DRAWING); ZONE 'A'; ZONE 'B'; SHEET IDENTIFICATION NUMBER (INDICATES SHEET NUMBER WHERE DRAWING IS CONTINUED)

ELEVATION INDICATION

X / XX.XX — ELEVATION IDENTIFICATION NUMBER(S); INDICATES DIRECTION OF VIEW OR MULTIPLE VIEWS; SHEET IDENTIFICATION NUMBER

DOOR INDICATION

DOOR SWING INDICATION- NEW DOOR

DOOR SWING INDICATION- EXISTING DOOR

DOOR SWING INDICATION- EXISTING DOOR TO BE REMOVED

BULLETIN OR ADDENDUM IDENTIFICATION

1 — BULLETIN NUMBER

1 — (CURRENT REVISIONS SHALL BE SHOWN ENCIRCLED BY A FREEFORM LINE)

ABBREVIATIONS

A	
AB	ACOUSTIC BAFFLE
A/C	AIR CONDITIONING
ABV	ABOVE
ACCU	AIR COOLED CONDENSING UNIT
AD	AREA DRAIN
ADO	AUTOMATIC DOOR OPENER
ADJ	ADJUSTABLE / ADJACENT
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISH GRADE
AHJ	AUTHORITY HAVING JURISDICTION
AHU	AIR HANDLING UNIT
AL / ALUM	ALUMINUM
ALT	ALTERNATE
ANOD	ANODIZED
APC	ACOUSTIC PANEL CEILING
ARCH	ARCHITECT/ARCHITECTURAL
AVG	AVERAGE
AWT	ACOUSTIC WALL TREATMENT
B	
BB	BULLETIN BOARD
BSMT	BASEMENT
BM	BEAM
BRG	BEARING
BD	BOARD
BLR	BOILER
BOD	BASIS OF DESIGN
BOT	BOTTOM
BLDG	BUILDING
BUR	BUILT-UP ROOFING
C	
C&G	CURB AND GUTTER
CAB	CABINET
CAP	CAPACITY
CB	CATCH BASIN
CBB	CEMENTITOUS BACKER BOARD
CEM	CEMENT / CEMENTITOUS
CF	CONTRACTOR FURNISHED
CFMF	COLD-FORMED METAL FRAMING
CG	CORNER GUARD
CHBD	CHALKBOARD
CI	CONTRACTOR INSTALLED
CIP	CAST-IN-PLACE
CJ	CONTROL JOINT/ CONSTRUCTION JOINT

C (CONT)	
CL	CENTERLINE
CLG	CEILING
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
CNTR	COUNTER
CO	CLEAN OUT
COL	COLUMN
CONC	CONCRETE
CONT	CONTINUE/CONTINUOUS
COORD	COORDINATE
CORR	CORRUGATED
CPT	CARPET
CSMT	CASEMENT
CT	CERAMIC TILE
CTB	CERAMIC TILE BASE
CTF	CERAMIC TILE FLOOR
CTR	CENTER
CU	COPPER
CU FT	CUBIC FEET/ CUBIC FOOT
CU YD	CUBIC YARD
CUH	CABINET UNIT HEATER
CW	COLD WATER PIPING
D	
D	DEEP
DEMO	DEMOLISH, DEMOLITION
DF	DRINKING FOUNTAIN
DIA	DIAMETER
DIAG	DIAGONAL
DIFF	DIFFUSER
DIM	DIMENSION
DIR	DIRECTION
DISC	DISCONNECT
DIST	DISTANCE
DL	DEAD LOAD
DN	DOWN
DR	DOOR
DS	DOWNSPOUT
DW	DISHWASHER
E	
EA	EACH
EIFS	EXTERIOR INSULATION FINISH SYSTEM
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRIC/ELECTRICAL

E (CONT)	
ELEV	ELEVATOR
EMER	EMERGENCY
ENGR	ENGINEER
EP	ELECTRICAL PANEL
EPT	EPOXY PAINT
EQ	EQUAL
EQUIP	EQUIPMENT
EW	EACH WAY
EWC	ELECTRIC WATER COOLER
EXH	EXHAUST
EXIST	EXISTING
EXT	EXTERIOR
F	
F	FILLER PANEL
FA	FIRE ALARM
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FACP	FIRE ALARM CONTROL PANEL
FBO	FURNISHED BY OTHERS
FCO	FLOOR CLEAN OUT
FCU	FAN COIL UNIT
FD	FLOOR DRAIN
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FF&E	FURNITURE, FIXTURES & EQUIPMENT
FGL	FIBERGLASS
FH	FIRE HYDRANT
FIN	FINISH/FINISHED
FIXT	FIXTURE
FLR	FLOOR
FLG	FLOORING
FP	FIRE PROTECTION
FR	FIRE RATING / FIRE RESISTANCE
FRP	FIBERGLASS REINFORCED PLASTIC
FRT	FIRE RETARDANT TREATED
FTG	FOOTING
G	
GA	GAUGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFRC	GLASS-FIBER REINFORCED CONCRETE
GFRG	GLASS-FIBER REINFORCED GYPSUM
GL	GLASS
GR	GRADE
GYP	GYPSUM

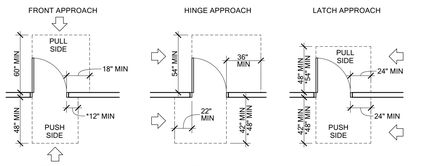
H	
H	HIGH / HEIGHT
HB	HOSE BIBB
HC	HOLLOW CORE
HD	HAND DRYER
HDR	HEADER
HDW	HARDWARE
HDWD	HARDWOOD
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HP	HIGH POINT
HT	HEIGHT
HVAC	HEATING, VENTILATING, & AIR CONDITIONING
HW	HOT WATER PIPING
I	
ID	INSIDE DIAMETER / DIMENSION
INCL	INCLUDE/INCLUDING
INSUL	INSULATION
INT	INTERIOR
INV	INVERT
J	
J-BOX	JUNCTION BOX
JT	JOINT
L	
LAM	LAMINATED
LAV	LAVATORY
LF	LINEAR FEET
LH	LEFT HAND
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LP	LOW POINT
LT	LIGHT
M	
MATL	MATERIAL
MAU	MAKE-UP AIR UNIT
MAX	MAXIMUM
MDF	MEDIUM DENSITY FIBERBOARD
MDO	MEDIUM DENSITY OVERLAY
MECH	MECHANICAL
MEMB	MEMBRANE
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MIR	MIRROR
MISC	MISCELLANEOUS

M (CONT)	
MO	MASONRY OPENING
MP	METAL PANEL
MTD	MOUNTED
MTL	METAL
MULL	MULLION
N	
NIC	NOT-IN-CONTRACT
NOM	NOMINAL
NRC	NOISE REDUCTION COEFFICIENT
NSMF	NON-STRUCTURAL METAL FRAMING
NTS	NOT-TO-SCALE
O	
OC	ON CENTER
OCC	OCCUPY / OCCUPANTS
OD	OUTSIDE DIAMETER
OF	OWNER FURNISHED
OH	OVERHEAD
OI	OWNER INSTALLED
OPNG	OPENING
OPP	OPPOSITE
ORD	OVERFLOW ROOF DRAIN
P	
PB	PUSH BUTTON
PC	POUNDS PER CUBIC FOOT
PCF	POUNDS PER CUBIC FOOT
PERF	PERFORATED
PERIM	PERIMETER
PERP	PERPENDICULAR
PLAM	PLASTIC LAMINATE
PLBG	PLUMBING
PLF	POUNDS PER LINEAR FOOT
PNL	PANEL
PREFAB	PREFABRICATED
PREFIN	PREFINISHED
PRKG	PARKING
PROJ	PROJECT
PROP	PROPERTY
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	PAINT
PTR	PRESERVATIVE TREATED
PVG	PAVING
PWD	PLYWOOD
PWR	POWER

Q	
QT	QUARRY TILE
QTB	QUARRY TILE BASE
QTF	QUARRY TILE FLOOR
QTY	QUANTITY
R	
RAD	RADIUS
RBR	RUBBER
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
REC	RECESSED
RECPT	RECEPTACLE
RECT	RECTANGLE/RECTANGULAR
REF	REFRIGERATOR
REINF	REINFORCE
REQD	REQUIRED
RESIL	RESILIENT
RFG	ROOFING
RH	RIGHT HAND
RM	ROOM
RO	ROUGH OPENING
ROW	RIGHT OF WAY
RTF	RUBBER TILE FLOOR
RTU	ROOF TOP UNIT
RWB	RESILIENT WALL BASE
S	
SAFB	SOUND ATTENUATION FIRE BLANKET
SAFM	SPRAY-APPLIED FIRE-RESISTIVE MATERIAL
SAN	SANITARY
SC	SOLID CORE
SCHED	SCHEDULE
SCRN	SCREEN
SCWD	SOLID CORE WOOD
SD	SMOKE DETECTOR
SF	SQUARE FEET
SHT	SHEET
SIM	SIMILAR
SM	SHEET METAL
SPEC	SPECIFICATIONS
SPKLR	SPRINKLER
SPKR	SPEAKER
SS	SOLID SURFACE
SSR	STANDING SEAM ROOF
SST	STAINLESS STEEL
STC	SOUND TRANSMISSION CLASS
STL	STEEL
STRUCT	STRUCTURAL
SURF	SURFACE
SUSP	SUSPEND / SUSPENDED

T	
T&G	TONGUE AND GROOVE
T&B	TOP AND BOTTOM
TB	TERRAZO BASE
TD	TRENCH DRAIN
TEMP	TEMPORARY
TER	TERRAZZO
TG	TRANSFER GRILLE
THK	THICK/ THICKNESS
TME	TO MATCH EXISTING
TO	TOP OF
TOC	TOP OF CURB / CONCRETE
TSTAT	THERMOSTAT
TYP	TYPICAL
U	
UG	UNDERGROUND
UH	UNIT HEATER
UL	UNDERWRITER'S LABORATORY
UNFIN	UNFINISHED
UNO	UNLESS NOTED OTHERWISE
V	
VAR	VARIATION / VARIES / VARIOUS
VAV	VARIABLE AIR VOLUME
VCT	VINYL COMPOSITION TILE
VERT	VERTICAL/ VERTICALLY
VIF	VERIFY IN FIELD
VNR	VENEER
VWC	VINYL WALL COVERING
W	
W	WIDTH
W/	WITH
W/O	WITHOUT
WB	WOOD BASE
WBL	WOOD BLOCKING
WC	WATER CLOSET
WCO	WALL CLEAN OUT
WD	WOOD
WH	WATER HEATER
WM	WATER METER
WP	WORKING POINT
WT	WEIGHT
WWF	WELDED WIRE FABRIC

DOOR CLEARANCE REQUIREMENTS



THE COLLABORATIVE

STATE OF MICHIGAN
Michael A. Muse
License No. 1301048954
LICENSED ARCHITECT

Michael A. Muse, 1301048954
Expiration Date 05/06/2027

KEY PLAN N.T.S.

PROJECT TITLE

Van Buren Public Schools

Owen Intermediate - HVAC Upgrades

45201 Owen Street
Belleville, MI 48111

11.02.2026 — BID & PERMIT

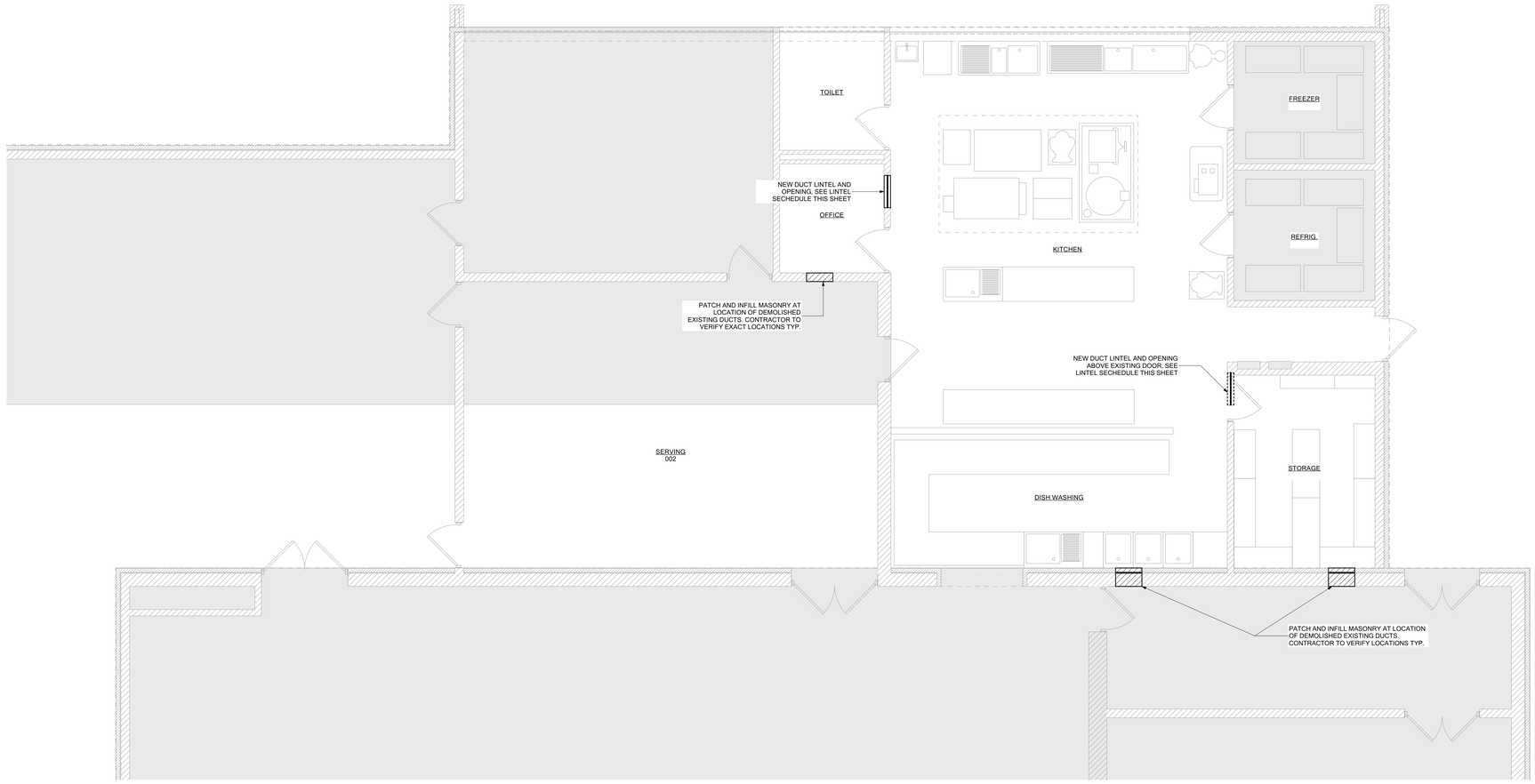
TC JOB NO. 107509

SHEET TITLE

GENERAL INFORMATION

SHEET NO.

A0.00



A2 ENLARGED FIRST FLOOR PLAN
SCALE: 1/4" = 1'-0"

PLAN GENERAL NOTES:

1. COORDINATE SIZE AND LOCATION OF ALL HOUSEKEEPING PADS AND/OR EQUIPMENT SUPPORTS WITH APPROPRIATE EQUIPMENT MANUFACTURER.
2. COORDINATE SIZES AND LOCATIONS OF ALL MISCELLANEOUS ACCESS PANELS REQUIRED. ACCESS PANELS ARE SPECIFIED ARCHITECTURALLY BUT ARE TO BE PROVIDED BY TRADES REQUIRING THEM. ALL LOCATIONS MUST BE APPROVED BY ARCHITECT PRIOR TO INSTALLATION.
3. FLOOR PLANS ARE DIMENSIONED TO ACTUAL WALL THICKNESS UNLESS OTHERWISE NOTED.
4. DIMENSIONS FOLLOWED BY ▪ MUST BE FIELD REVIEWED AND ALL NECESSARY ADJUSTMENTS MADE PRIOR TO FABRICATION AND/OR INSTALLATION OF AFFECTED WORK. NOTIFY ARCHITECT IF DISCREPANCIES ARISE BEFORE PROCEEDING WITH THE WORK.
5. PROVIDE INTERIOR GYPSUM BOARD CONTROL JOINTS @ 25' O.C. AT LOCATIONS SHOWN ON PLANS AND/OR INTERIOR ELEVATIONS OR AS DIRECTED BY ARCHITECT.
6. VERIFY QUANTITIES, SIZES, AND LOCATIONS OF ALL FLOOR, ROOF AND WALL OPENINGS FOR MECHANICAL AND ELECTRICAL WORK WITH THE APPROPRIATE TRADES. PROVIDE ALL OPENINGS SHOWN OR REQUIRED FOR THE COMPLETION OF THE WORK. PROVIDE ALL LINTELS REQUIRED FOR THESE OPENINGS PER SPECIFICATIONS.
7. REFER TO LS & A0 SERIES DRAWINGS FOR LOCATIONS OF REQUIRED FIRE RESISTANCE RATINGS, UL DESCRIPTIONS, AND JOINT DETAILS.
8. REFER TO FINISH PLANS FOR FLOOR FINISHES, ROOM FINISHES, AND FINISH LAYOUTS.
9. SEE REFLECTED CEILING PLANS FOR WINDOW SHADE LOCATIONS. REFER TO SPECIFICATIONS FOR REQUIREMENTS.

KEYNOTES:

XX-#
(NOTE: NOT ALL NUMBERS ARE USED)

AWP: ACOUSTIC WALL PANEL, SEE FINISH PLAN AND LEGEND

CSW: CASEWORK, SEE INT ELEVATIONS / DETAILS

DOM: DOMESTIC APPLIANCES
DOM-01 DOMESTIC REFRIGERATOR (OFCI OR OFOI OR CFCI)
DOM-02 DOMESTIC MICROWAVE (OFCI OR OFOI OR CFCI)
DOM-03 DOMESTIC RANGE (OFCI OR OFOI OR CFCI)
DOM-04 DOMESTIC DISHWASHER (OFCI OR OFOI OR CFCI)
DOM-05 DOMESTIC WASHING MACHINE (OFCI OR OFOI OR CFCI)
DOM-06 DOMESTIC DRYER (OFCI OR OFOI OR CFCI)
DOM-07 DOMESTIC COMBINATION WASHER/DRYER (OFCI OR OFOI OR CFCI)

EQP: EQUIPMENT
EQP-01 MONITOR (OFCI OR OFOI OR CFCI)
EQP-02 PROJECTION SCREEN (OFCI OR OFOI OR CFCI)
EQP-03 MARKERBOARD (OFCI OR OFOI OR CFCI)

LKR: LOCKERS
LKR-01 LOCKER
LKR-05 LOCKER ROOM BENCH

LIST OF SYMBOLS

X PUNCHED OPENING WINDOW TYPE. SEE ENLARGED WINDOW SHEET(S)
CW CURTAIN WALL WINDOW TYPE. SEE ENLARGED WINDOW SHEET(S)
SF STOREFRONT WINDOW TYPE. SEE ENLARGED WINDOW SHEET(S)
IGW INTERIOR GLASS WALL. SEE ENLARGED WINDOW SHEET(S).
X WALL PARTITION TYPE. SEE WALL TYPES SHEET

TOILET ACCESSORIES:

(SEE ENLARGED TOILET PLAN SHEET(S) FOR ACCESSORY LEGEND)

C SOAP DISPENSER
G PAPER TOWEL DISPENSER

STEEL ANGLE LINTEL SCHEDULE FOR NON-BEARING BRICK VENEER ONLY

CLEAR SPAN	LINTEL	END BEARING	NOTES
UP TO 5'-0"	L3-1/2x3-1/2x5/16	6"	
5'-0" - 7'-0"	L4x3-1/2x5/16 LLV	8"	
7'-0" - 8'-0"	L5x3-1/2x5/16 LLV	8"	
8'-0" - 9'-0"	L5x3-1/2x3/8 LLV	8"	
9'-0" - 10'-8"	L6x3-1/2x3/8 LLV	8"	
10'-8" +	SEE PLAN		

NOTES:

1. PROVIDE (1) ANGLE FOR EACH ~4" OF BRICK THICKNESS TYPICAL.
2. REFER TO ARCH. PLANS FOR OPENING LOCATIONS & CLEAR SPANS
3. ALL BRICK VENEER LOOSE ANGLE LINTELS, GALVANIZED

NOT APPROVED

THE COL LAB ORAT IVE



Michael A. Muse, 1301048954
Expiration Date 05/06/2027

KEY PLAN
N.T.S.

PROJECT TITLE
Van Buren Public Schools

Owen Intermediate - HVAC Upgrades

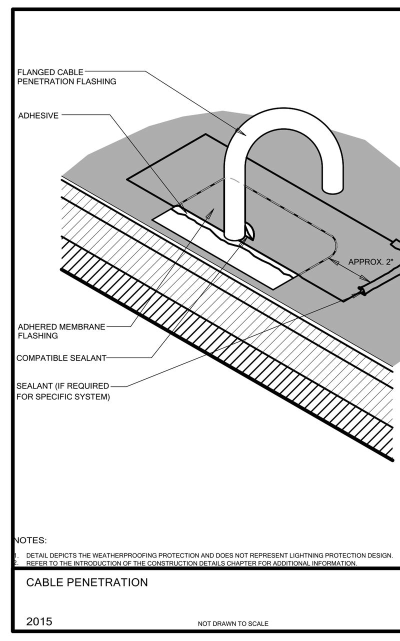
45201 Owen Street
Belleville, MI 48111

11.02.2026	BID & PERMIT

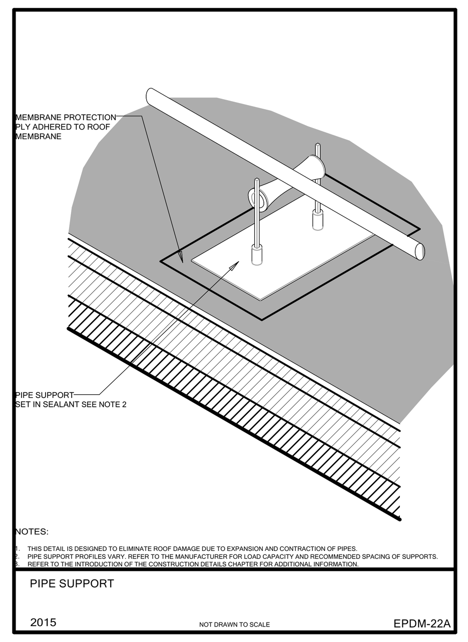
TC JOB NO. 107509

SHEET TITLE
FIRST FLOOR PLAN

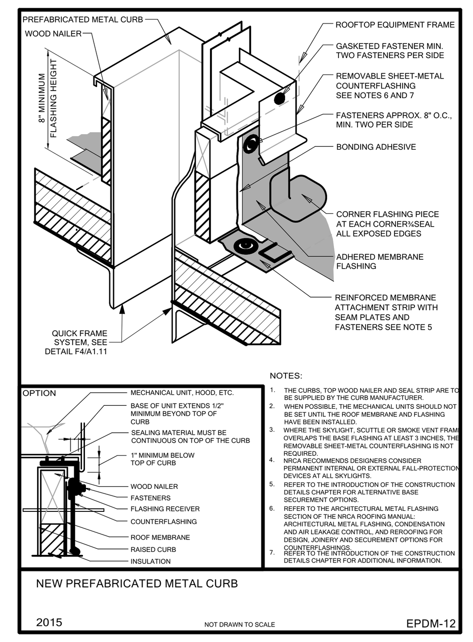
SHEET NO.
A1.10



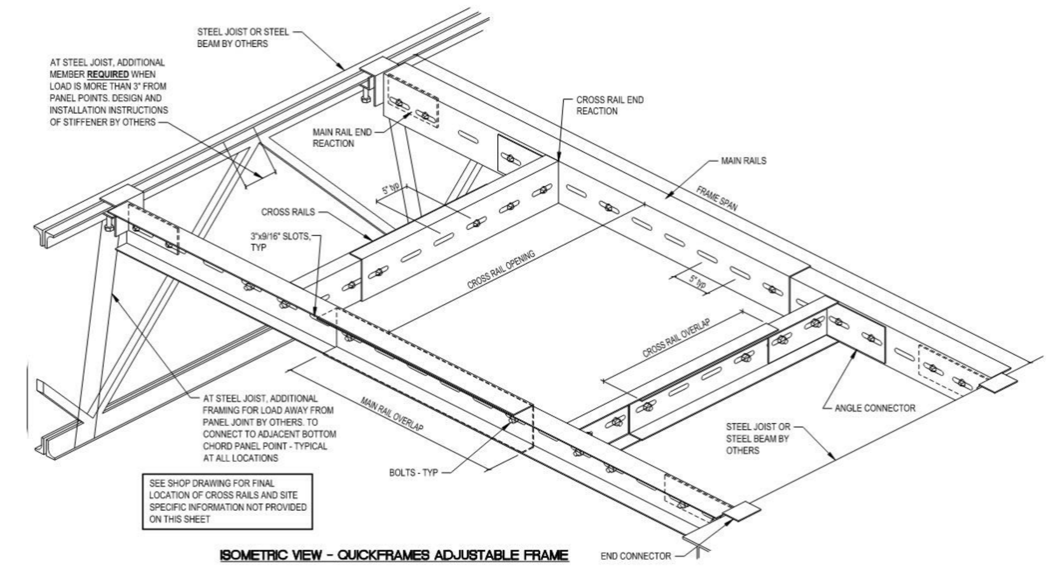
F8 **CONDUIT PENETRATION DETAIL**
SCALE: 1/8" = 1'-0"



F7 **PIPE SUPPORT DETAIL**
SCALE: 1/8" = 1'-0"

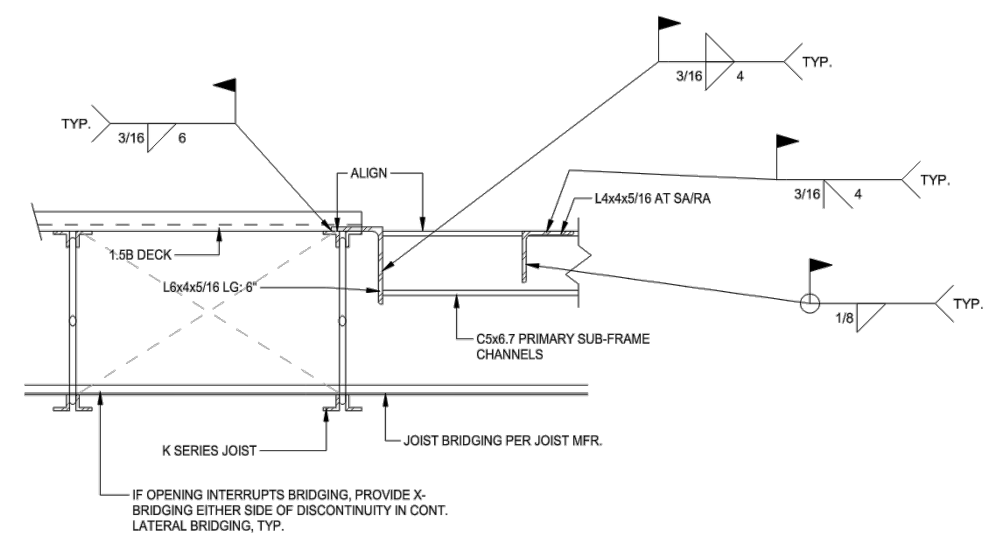


F5 **NEW CURB DETAIL**
SCALE: 1/8" = 1'-0"

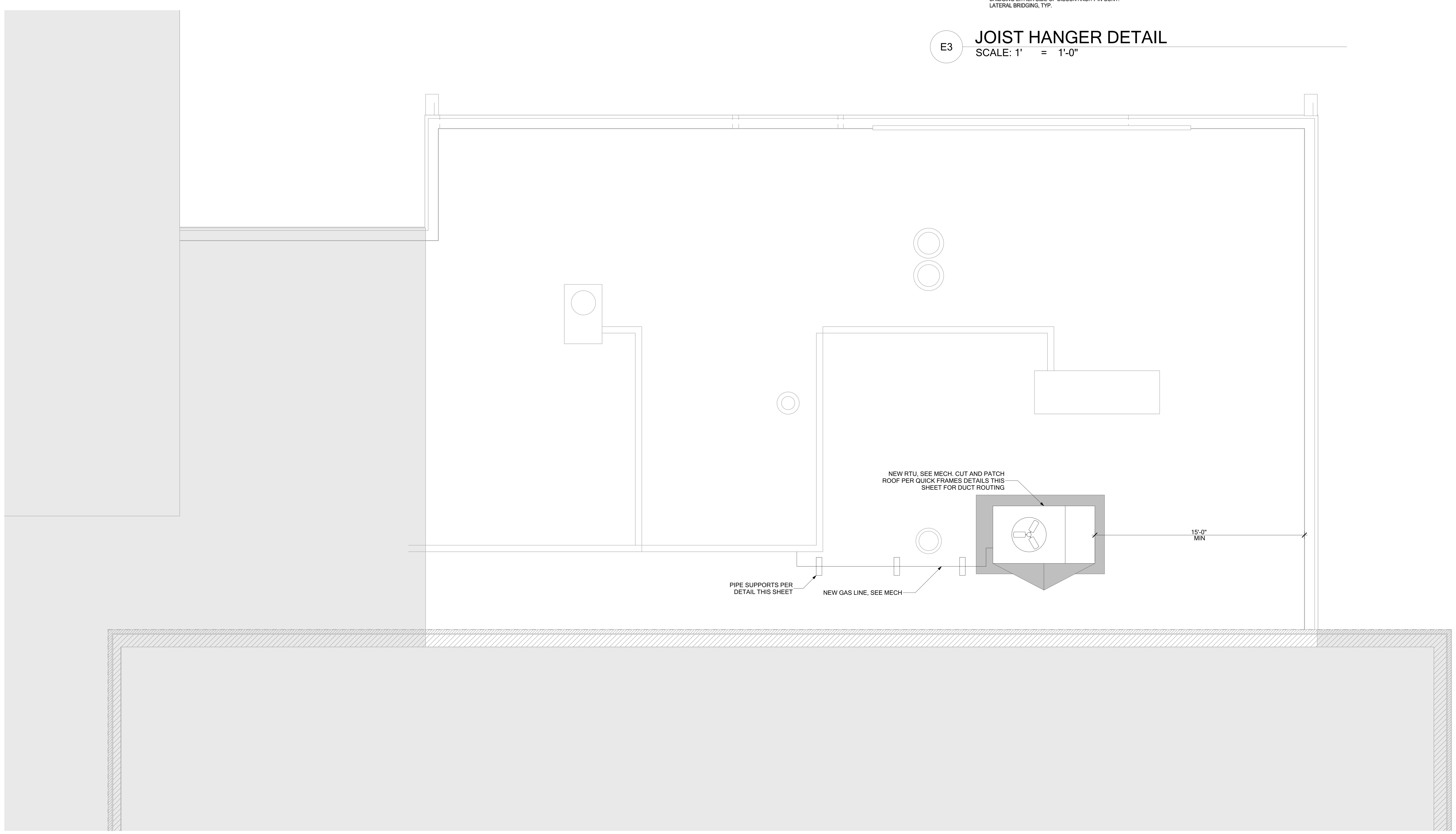


F3 **ISOMETRIC VIEW - QUICKFRAMES ADJUSTABLE FRAME**
SCALE: 1' = 1'-0"

ALTERNATE ASSEMBLY TO QUICK FRAMES



E3 **JOIST HANGER DETAIL**
SCALE: 1' = 1'-0"



A2 **ENLARGED ROOF PLAN**
SCALE: 1/4" = 1'-0"

ROOF SYMBOLS LEGEND

→	ROOF SLOPE (HIGH TO LOW)
◎	ROOF DRAIN (RD)
○	PLUMB/MECH VENT STACK (VTR)
EF	EXHAUST FAN (EF)
⬚	DUCT SUPPORT CURB (DSC)
□	WALKWAY PAD

ROOF GENERAL NOTES:

1. MAINTAIN ROOF DRAINS IN FUNCTIONING CONDITION TO ENSURE ROOF DRAINAGE AT END OF EACH WORKDAY.
2. PREVENT DEBRIS FROM ENTERING OR BLOCKING ROOF DRAINS AND CONDUCTORS.
3. PATCH ROOF SYSTEM AT ALL REMOVED PENETRATIONS, CURBS, AND EQUIPMENT. REFER TO MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS.
4. PATCH ROOF SYSTEM AND PROVIDE FLASHING AT ALL NEW ROOF PENETRATIONS, CURBS, AND EQUIPMENT. REFER TO MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS.
5. SEE MECHANICAL, ELECTRICAL & PLUMBING DRAWINGS FOR GENERAL ROOFING NOTES SPECIFIC TO THOSE TRADES.
6. PROVIDE CRICKETS ON HIGH SIDE OF ROOFTOP UNITS & OTHER EQUIPMENT, TYPICAL.
7. FINAL LOCATION OF ROOFTOP EQUIPMENT TO BE COORDINATED WITH STRUCTURAL AND MECHANICAL WORK.
8. PAINT ALL EXPOSED ROOFTOP NATURAL GAS LINES, REFER TO SPECIFICATIONS.
9. ALL EQUIPMENT IS TO REMAIN OPERATIONAL DURING CONSTRUCTION. COORDINATE REMOVAL AND OR REPLACEMENT OF EQUIPMENT WITH OWNER.
10. ROOF SLOPES INDICATED ON THE DRAWINGS ARE TO INDICATE DESIGN INTENT ONLY. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS FOR THE COMPLETE ROOFING SYSTEM TO ENSURE PROPER DRAINAGE, INCLUDING TAPERED INSULATION LAYOUT, FLOW DIRECTIONS, DRAIN LAYOUT, AND CRICKET LOCATIONS. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
11. PROVIDE ROOF FLASHING FOR ALL ROOF MOUNTED EQUIPMENT AND PENETRATIONS AT ALL NEW ROOFING LOCATIONS. REFER TO PLUMBING, MECHANICAL & ELECTRICAL DRAWINGS.
12. REFER TO GENERAL ROOFING ASSEMBLY DETAILS AND SPECIFICATIONS FOR R-VALUE REQUIRED OF ROOFING INSULATION.
13. SEE ASSEMBLY DETAILS AND SPECIFICATIONS FOR COVERBOARD AND VAPOR RETARDER/AIR BARRIER REQUIREMENTS.
14. AT EXISTING AREAS TO RECEIVE NEW ROOFING, REMOVE ALL EXISTING ROOF RELATED ACCESSORIES INCLUDING, BUT NOT LIMITED TO, SNOW GUARDS, PITCH POCKETS, PIPE PENETRATION SLEEVES, EXPANSION JOINTS, CANTS, SADDLES, CRICKETS, ATTIC VENTS, RIDGE VENTS, WALKWAY PADS AND SIMILAR.

XX-# **KEYNOTES:**
(NOTE: NOT ALL NUMBERS ARE USED)

RFG: ROOFING

RFG-01	SINGLE-PLY MEMBRANE ROOFING
RFG-02	ROOF MEMBRANE FLASHING
RFG-03	ROOFING INSULATION, R-20 MIN
RFG-04	TAPERED ROOFING INSULATION, R-20 MIN
RFG-05	ROOFING VAPOR RETARDER
RFG-06	TERMINATION BAR
RFG-07	PREFORMED PIPE BOOT
RFG-08	STANDING-SEAM METAL ROOFING
RFG-09	STANDING-SEAM ROOF FLASHING
RFG-10	ROOFING UNDERLAYMENT
RFG-11	ASPHALT SHINGLES ON UNDERLAYMENT

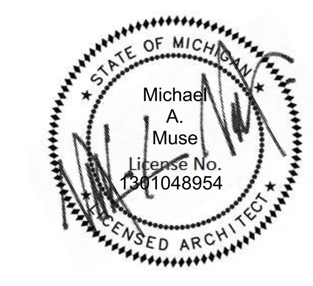
SHM: SHEET METAL FABRICATIONS

SHM-01	GUTTER
SHM-02	DOWNSPOUT
SHM-03	GRAVEL STOP
SHM-04	COPING
SHM-05	SHEET METAL FLASHING
SHM-06	DRIP EDGE
SHM-07	COUNTERFLASHING

ROOF PLAN LEGEND:

- MEMBRANE ROOF SYSTEM ON FLAT INSULATION
- MEMBRANE ROOF SYSTEM ON TAPERED INSULATION
- ROOF WALKWAY PADS

THE COL LAB ORAT IVE



Michael A. Muse, 1301048954
Expiration Date 05/06/2027

KEY PLAN
N.T.S.

PROJECT TITLE
Van Buren Public Schools

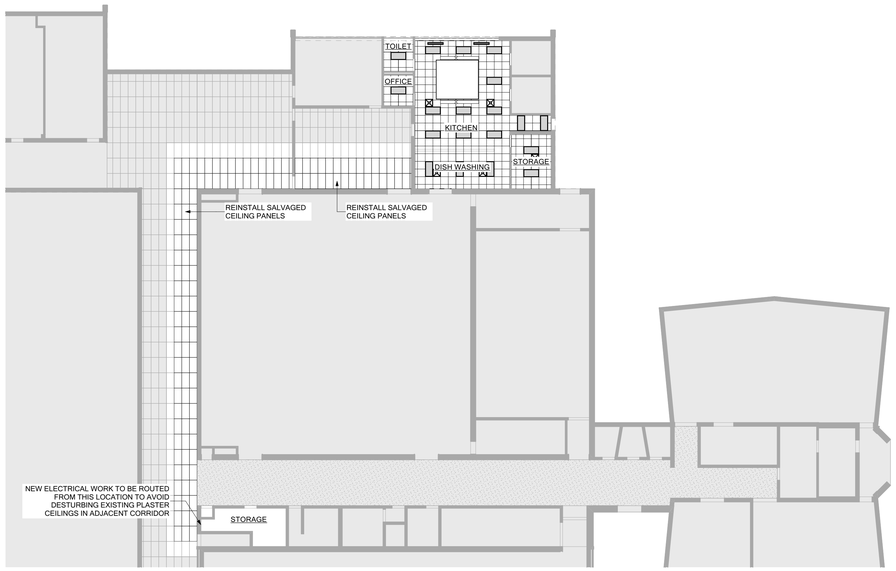
Owen Intermediate - HVAC Upgrades
45201 Owen Street
Belleville, MI 48111

11.02.2026 BID & PERMIT

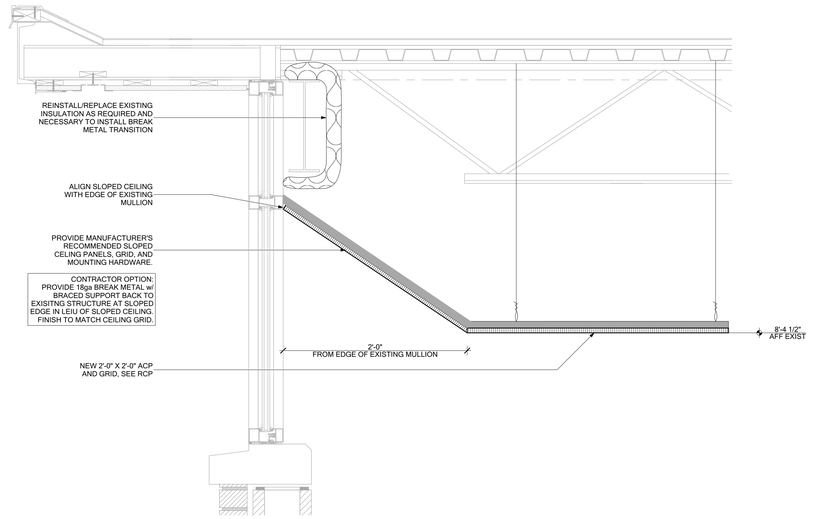
TC JOB NO. 107509

SHEET TITLE
ROOF PLAN

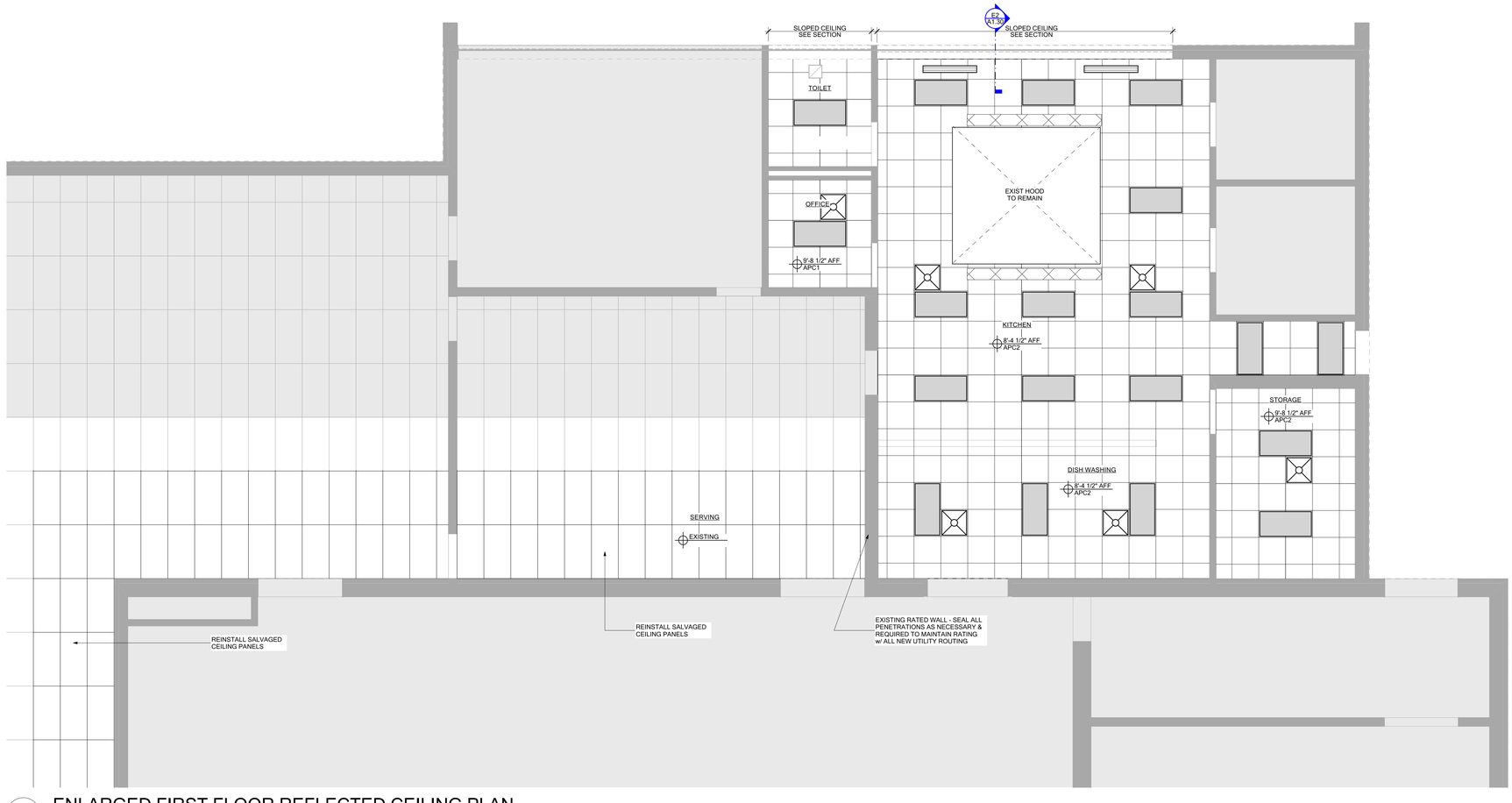
SHEET NO.
A1.11



E6 FIRST FLOOR REFLECTED CEILING PLAN
SCALE: 1/16" = 1'-0"



E2 CEILING TRANSITION DETAIL
SCALE: 1 1/2"= 1'-0"



A2 ENLARGED FIRST FLOOR REFLECTED CEILING PLAN
SCALE: 1/4" = 1'-0"

CEILING LEGEND

REFER TO THE FOLLOWING TAG FOR CEILING TYPE & BOTTOM ELEVATION INFORMATION FOR EACH ROOM OR ELEMENT UNLESS OTHERWISE NOTED.

9'-0" — CEILING HEIGHT AS MEASURED TO BOTTOM OF ELEMENT
GYP-01 — CEILING TYPE/FINISH

CEILING GENERAL NOTES

1. REFER TO ARCHITECTURAL PLANS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION ON MATERIALS AND CONSTRUCTION.
2. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR FIXTURE TYPES AND ADDITIONAL INFORMATION PERTAINING TO MECHANICAL AND ELECTRICAL WORK.
3. COORDINATE SIZE AND LOCATION OF ALL ACCESS PANELS WITH TRADE REQUIRING THE SAME. ACCESS PANELS ARE SPECIFIED ARCHITECTURALLY BUT ARE REQUIRED TO BE PROVIDED BY TRADE. INDICATE ALL LOCATIONS WITHIN FIXED GYPSUM BOARD CEILINGS BEFORE INSTALLATION OF GYPSUM BOARD AND RECEIVE WRITTEN APPROVAL FROM ARCHITECT BEFORE PROCEEDING WITH INSTALLATION.
4. COORDINATE INSTALLATION OF CEILING SUSPENSION SYSTEMS WITH OTHER CEILING SPACE EQUIPMENT SUPPORTS.
5. ALL SMOKE BARRIER PARTITIONS, HORIZONTAL EXIT ENCLOSURES AND FIRE RATED PARTITIONS THAT EXTEND TO DECK ABOVE SHALL BE MARKED EVERY *20'-0"* HORIZONTALLY WITHIN THE CEILING SPACE: "FIRE AND SMOKE BARRIER - PROTECT ALL OPENINGS."
6. ALL GYPSUM BOARD FASCIAS AT SOFFITS ADJACENT TO ACOUSTICAL PANEL CEILINGS SHALL EXTEND 6"MINIMUM ABOVE ACOUSTICAL PANEL CEILINGS.
7. PROVIDE WOOD BLOCKING ABOVE GYPSUM BOARD CEILINGS AS REQUIRED FOR MISCELLANEOUS SUSPENDED ITEMS, INCLUDING CURTAIN TRACKS, WINDOW SHADES, ACOUSTICAL BAFFLES, ETC.
8. CENTER ALL SPRINKLER HEADS IN CEILING PANELS UNLESS SHOWN OTHERWISE.
9. CONTRACTOR TO PAINT ALL NON-FINISH ELEMENTS IN AREAS NOTED AS EXP-PT TO INCLUDE, BUT NOT LIMITED TO, STRUCTURE (BEAMS, JOISTS, STRUCTURAL DECK, ETC), FP/PLUMB LINES (PIPING, HANGERS, ETC), MECHANICAL DUCTWORK AND PIPING (HANGERS, STRAPPING, UNISTRUT, ETC), ELECTRICAL (CONDUITS, HANGERS, BACKBOXES, ETC), AND TECHNOLOGY (CONDUITS, HANGERS, BACKBOXES, ETC). COORDINATE WITH ARCHITECT FOR QUESTIONS RELATED TO ELEMENTS TO BE PAINTED.

CEILING FIXTURE LEGEND

NOTE: NOT ALL SYMBOLS SHOWN ARE USED ON DRAWINGS. FOR REFERENCE ONLY, SEE ELEC DWGS FOR FIXTURES

ELECTRICAL FIXTURES

- LAY-IN TROFFER FIXTURE
- SUSPENDED INDUSTRIAL FIXTURE
- SURFACE MOUNTED FIXTURE
- PENDANT MOUNTED FIXTURE
- RECESSED DOWNLIGHT
- EXIT SIGN / LIGHT
- SPEAKER

MECHANICAL EQUIPMENT / FIXTURES

- CEILING MOUNTED CABINET UNIT HEATER
- EXHAUST / RETURN GRILLE
- SUPPLY DIFFUSER
- LINEAR SLOT DIFFUSER

MISCELLANEOUS FIXTURES

- WINDOW SHADE TO BE PROVIDED AT OPENING

CEILING MATERIAL LEGEND

- GYPSUM BOARD OR SYNTHETIC VENEER PLASTER CEILING / SOFFIT / BULKHEAD
- SUSPENDED ACOUSTICAL PANEL CEILING
- EXPOSED OR EXISTING CONSTRUCTION TO REMAIN

CEILING LEGEND

ACOUSTICAL PANEL CEILINGS (APC):

APC1	USG., ECLIPSE 76775, 2'-0"X2'-0" TEGULAR SLT EDGE, WHITE
APC2	USG., KITCHEN LAY-IN ACOUSTICAL 3210, 2'-0"X2'-0" TEGULAR SLT EDGE, WHITE

THE COLLABORATIVE

STATE OF MICHIGAN
Michael A. Muse
License No. 1301048954
LICENSED ARCHITECT

Michael A. Muse, 1301048954
Expiration Date 05/06/2027

KEY PLAN
N.T.S.

PROJECT TITLE

Van Buren Public Schools

Owen Intermediate - HVAC Upgrades

45201 Owen Street
Belleville, MI 48111

11.02.2026	BID & PERMIT

TC JOB NO. 107509

SHEET TITLE

FIRST FLOOR REFLECTED CEILING PLAN

SHEET NO.

A1.30

MECHANICAL ABBREVIATIONS

ABBREV.	DESCRIPTION
AAV	AUTOMATIC AIR VENT / AIR ADMITTANCE VALVE
AD	ACCESS DOOR
AE	AIR EXTRACTOR
AFF	ABOVE FINISHED FLOOR
APD	AIR PRESSURE DROP
ASR	AUTOMATIC SPRINKLER RISER
BFP	BACKFLOW PREVENTER
BHP	BRAKE HORSEPOWER
BOD	BOTTOM OF DUCT
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNITS PER HOUR
BWV	BACKWATER VALVE
CAP	CAPACITY
CAV	CONSTANT AIR VOLUME
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CIRC	CIRCULATING
CLG	COOLING
CO	CLEAN OUT
CONT	CONTINUATION OR CONTINUED
CONV	CONVECTOR
CUH	CABINET UNIT HEATER
CV	CONTROL VALVE
DB	DRY BULB TEMPERATURE
DEG	DEGREES
DDC	DIRECT DIGITAL CONTROL
DN	DOWN
DTC	DRAIN TILE CONNECTION
DWH	DOMESTIC WATER HEATER
(E)	EXISTING
EA/EXH	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EDB	ENTERING DRY BULB TEMPERATURE
EF	EXHAUST FAN
EJ	EXPANSION JOINT
EL	ELEVATION
ELECT	ELECTRICAL
EMS	ENERGY MANAGEMENT SYSTEM
ESP	EXTERNAL STATIC PRESSURE
EWB	ENTERING WET BULB TEMPERATURE
EWC	ELECTRIC WATER COOLER
°F	DEGREES FAHRENHEIT
FA	FACE AREA (COIL) / FREE AREA (LOUVER)
FC	FLEXIBLE CONNECTION
FD	FLOOR DRAIN
FDC	FIRE DEPARTMENT CONNECTION
FH	FIRE HYDRANT
FHC	FIRE HOSE CABINET
FHR	FIRE HOSE RACK
FHV	FIRE HOSE VALVE
FLA	FULL LOAD AMPS
FLR	FLOOR
FPM	FEET PER MINUTE
FFD	FUNNEL FLOOR DRAIN
FFE	FINISHED FLOOR ELEVATION
FS	FLOOR SINK
FT	FEET
FURN	FURNISHED
FV	FACE VELOCITY
FVC	FIRE VALVE CABINET
GAL	GALLON
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
HB	HOSE BIBB
HO	HUB OUTLET
HP	HORSEPOWER

MECHANICAL ABBREVIATIONS

ABBREV.	DESCRIPTION
HR	HOUR
HTG	HEATING
HYD	HYDRANT
HZ	HERTZ
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IN	INCHES
INST	INSTALLED
INV	INVERT
ISP	INTERNAL STATIC PRESSURE
IW	INDIRECT WASTE
KW	KILOWATT
LAT	LEAVING AIR TEMPERATURE
LAV	LAVATORY
LBS/HR	POUNDS PER HOUR
LDB	LEAVING DRY BULB TEMPERATURE
LRA	LOCKED ROTOR AMPS
LWB	LEAVING WET BULB TEMPERATURE
MAV	MANUAL AIR VENT
MAX	MAXIMUM
MBH	1000 BRITISH THERMAL UNITS PER HOUR
MCA	MINIMUM CIRCUIT AMPACITY
MECH	MECHANICAL
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MOD	MOTOR OPERATED DAMPER (AUTOMATIC)
MOP	MAXIMUM OVER-CURRENT PROTECTION
N.C.	NOISE CRITERIA
NIC	NOT IN CONTRACT
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NOM	NOMINAL
OA	OUTSIDE AIR
OBD	OPPOSED BLADE DAMPER
OC	ON CENTER / CENTER TO CENTER
OD	OUTSIDE DIAMETER
OED	OPEN ENDED DUCT
ORS	OVERFLOW ROOF SUMP
OS&Y	OUTSIDE SCREW AND YOKE
PD	PRESSURE DROP (FEET OF WATER)
PRV	PRESSURE REDUCING VALVE
PSIA	POUNDS PER SQUARE INCH - ABSOLUTE
PSIG	POUNDS PER SQUARE INCH - GAUGE
PT	PRESSURE / TEMPERATURE PORT
RA	RETURN AIR
RH	RELATIVE HUMIDITY
REQD	REQUIRED
RELA	RELIEF AIR
RPM	REVOLUTIONS PER MINUTE
RPZ	REDUCED PRESSURE ZONE
RS	ROOF SUMP
SA	SUPPLY AIR
SH	SHOWER
SP	STATIC PRESSURE
SqFt / SF	SQUARE FOOT/SQUARE FEET
SS	SERVICE SINK
TC	TEMPERATURE CONTROL
T & P	TEMPERATURE AND PRESSURE
TSP	TOTAL STATIC PRESSURE
TYP	TYPICAL
UG	UNDERGROUND
UH	UNIT HEATER
UL	UNDERWRITERS LABORATORY
UNO	UNLESS NOTED OTHERWISE

MECHANICAL ABBREVIATIONS

ABBREV.	DESCRIPTION
UR	URINAL
VD	VOLUME DAMPER (MANUALLY ADJUSTABLE)
VTR	VENT THRU ROOF
W	WASTE
W&V	WASTE AND VENT
WB	WET BULB TEMPERATURE
WC	WATER CLOSET
WG	WATER GAUGE
WH	WALL HYDRANT

MECHANICAL PIPING SYMBOLS

ABBREV.	DESCRIPTION
	PIPE ELBOW UP
	PIPE ELBOW DOWN
	PIPE TEE DOWN
	DIRECTION OF FLOW
	UNION
	STRAINER
	CONCENTRIC REDUCER
	ECCENTRIC REDUCER
	EXPANSION JOINT
	FLEXIBLE CONNECTION
	PIPE ANCHOR
	PIPE GUIDE
	PIPE CAP OR PLUG
	ISOLATION VALVE
	CIRCULATING PUMP
	GLOBE VALVE
	BALL VALVE
	BUTTERFLY VALVE
	ANGLE VALVE
	CHECK VALVE (SWING)
	CHECK VALVE (SPRING)
	PLUG VALVE
	NEEDLE VALVE
	OUTSIDE SCREW AND YOKE VALVE (OS&Y)
	PRESSURE REGULATING VALVE
	SOLENOID VALVE
	CONTROL VALVE (2-WAY / 3-WAY)
	CENTRIFUGAL FAN
	AUTOMATIC GAS SHUT-OFF VALVE
	TRAP (PLAN VIEW)
	FLOOR DRAIN / FUNNEL FLOOR DRAIN (PLAN VIEW)
	FLOOR DRAIN / FUNNEL FLOOR DRAIN (PLAN VIEW)
	UNDERGROUND FLOOR SINK
	ABOVE GROUND FLOOR SINK
	ROOF SUMP
CO	CLEAN OUT (IN FLOOR)
CO	CLEAN OUT (IN LINE)
WCO	CLEAN OUT (WALL)
BFP	BACKFLOW PREVENTER
M	WATER METER ASSEMBLY
	HOSE BIBB, WALL HYDRANT
	DIRECTION OF PIPE PITCH
	SPRINKLER HEAD (UPRIGHT)
	SPRINKLER HEAD (SIDEWALL)
FS	FLOW SWITCH
	SIAMESE CONNECTION (YARD)
	SIAMESE CONNECTION (WALL MOUNTED)
	FIRE HYDRANT
	FLOW MEASURING DEVICE
	BALANCING VALVE
	COMBINATION FLOW MEASURING AND BALANCING DEVICE
AAV	AUTOMATIC AIR VALVE
MAV	MANUAL AIR VALVE

MECHANICAL SYMBOLS

ABBREV.	DESCRIPTION
	RECTANGULAR TAKE-OFF (SINGLE LINE)
	RECTANGULAR TAKE-OFF (DOUBLE LINE)
	ROUND TAKE-OFF (SINGLE LINE)
	ROUND TAKE-OFF (DOUBLE LINE)
	SPIN-IN FITTING (WITH VOLUME DAMPER)
	ELBOW (WITH TURNING VANES)
	RADIUS RECTANGULAR ELBOW
	RADIUS ROUND ELBOW
	RECTANGULAR ELBOW UP
	ROUND ELBOW UP
	RECTANGULAR ELBOW DOWN
	ROUND ELBOW DOWN
	CONCENTRIC TRANSITION (DOUBLE LINE)
	CONCENTRIC TRANSITION (SINGLE LINE)
	ECCENTRIC TRANSITION (DOUBLE LINE)
	ECCENTRIC TRANSITION (SINGLE LINE)
R	INCLINED RISE IN DIRECTION OF AIR FLOW (DOUBLE LINE)
R	INCLINED RISE IN DIRECTION OF AIR FLOW (SINGLE LINE)
D	INCLINED DROP IN DIRECTION OF AIR FLOW (DOUBLE LINE)
D	INCLINED DROP IN DIRECTION OF AIR FLOW (SINGLE LINE)
	FLEXIBLE CONNECTION
	FLEXIBLE DUCT CONNECTION TO SUPPLY DIFFUSER
	SUPPLY DIFFUSER
	LINEAR SLOT DIFFUSER
	RETURN OR EXHAUST GRILLE
	TRANSFER GRILLE
	CROSS SECTION OF SUPPLY AIR DUCT
	CROSS SECTION OF EXHAUST OR RETURN AIR DUCT
EXISTING	FIRE DAMPER (HORIZONTAL)
NEW	
EXISTING	FIRE DAMPER (VERTICAL)
NEW	
EXISTING	SMOKE DAMPER
NEW	
EXISTING	COMBINATION FIRE/SMOKE DAMPER (VERTICAL)
NEW	
EXISTING	COMBINATION FIRE/SMOKE DAMPER (HORIZONTAL)
NEW	
	VOLUME DAMPER (MANUALLY ADJUSTABLE)
M	MOTORIZED DAMPER
SD	SMOKE DETECTOR
CO2	CO2 SENSOR
T	THERMOSTAT OR TEMPERATURE SENSOR
H	HUMIDISTAT OR HUMIDITY SENSOR
	RETURN OR EXHAUST / SUPPLY AIR FLOW

PIPING LEGEND

ABBREV.	DESCRIPTION
CA	COMPRESSED AIR PIPING
CD	CONDENSATE DRAIN PIPING
DT	DRAIN TILE
F	FIRE PROTECTION PIPING
FOR	FUEL OIL RETURN PIPING
FOS	FUEL OIL SUPPLY PIPING
G	NATURAL GAS PIPING
BCW	BOOSTED-DOMESTIC COLD WATER PIPING
BHW	BOOSTED-DOMESTIC HOT WATER PIPING
CW	DOMESTIC COLD WATER PIPING
NPCW	NON POTABLE COLD WATER PIPING
TW	TEMPERED WATER PIPING
HW	DOMESTIC HOT WATER PIPING
HW(140°F)	DOMESTIC 140°F HOT WATER PIPING
HWR	DOMESTIC HOT WATER RETURN PIPING
SAN	SANITARY WASTE PIPING
PSAN	PUMPED SANITARY PIPING
V	VENT PIPING
ST	STORM SEWER PIPING
PST	PUMPED STORM PIPING
RC	RAIN CONDUCTOR PIPING
ORC	OVERFLOW RAIN CONDUCTOR PIPING
CHWR	CHILLED WATER RETURN PIPING
CHWS	CHILLED WATER SUPPLY PIPING
CWR	CONDENSER WATER RETURN PIPING
CWS	CONDENSER WATER SUPPLY PIPING
HHWR	HEATING HOT WATER RETURN PIPING
HHWS	HEATING HOT WATER SUPPLY PIPING
HPLR	HEAT PUMP LOOP RETURN PIPING
HPLS	HEAT PUMP LOOP SUPPLY PIPING
RL	REFRIGERANT LIQUID PIPING
RS	REFRIGERANT SUCTION PIPING
HGB	HOT GAS BY-PASS PIPING
GXHR	GEO HEAT EXCHANGE RETURN
GXHS	GEO HEAT EXCHANGE SUPPLY
STM	STEAM PIPING
HPS	HIGH PRESSURE STEAM PIPING
LPS	LOW PRESSURE STEAM PIPING
CR	STEAM CONDENSATE RETURN PIPING
PCR	PUMPED STEAM CONDENSATE RETURN PIPING
LPC	LOW PRESSURE CONDENSATE PIPING
HPC	HIGH PRESSURE CONDENSATE PIPING
MA	MEDICAL AIR PIPING
N	NITROGEN GAS PIPING
O2	OXYGEN GAS PIPING
VAC	VACUUM PIPING

DRAWING INDEX

SHT. NO.	DESCRIPTION
M0.00	MECHANICAL GENERAL INFORMATION
M1.00	COMPOSITE MECHANICAL FIRST FLOOR PLAN
M2.00	COMPOSITE MECHANICAL ROOF PLAN
M4.10	ENLARGED MECHANICAL DEMOLITION AND NEW WORK PLAN - KITCHEN
M4.20	ENLARGED MECHANICAL DEMOLITION AND NEW WORK PLAN - ROOF
M5.00	MECHANICAL DETAILS
M6.00	MECHANICAL SCHEDULES & TEMPERATURE CONTROLS

DRAWING NOTATION

SYMBOL	DESCRIPTION
1	NEW WORK KEY NOTE NO. 1
1	DEMOLITION KEY NOTE NO. 1
AHU-1	NEW EQUIPMENT DESIGNATION, (I.E. AIR HANDLER UNIT NUMBER 1)
(E)AHU	EXISTING EQUIPMENT DESIGNATION, (I.E. EXISTING AIR HANDLER UNIT)
S-1 12x12 150-2	AIR TERMINAL TAG: IE: DIFFUSER TYPE = S-1 NECK SIZE = 12x12 CFM = 150 (TYPICAL FOR 2)
	S = SUPPLY R = RETURN E = EXHAUST T = TRANSFER
	EXISTING DEVICES OR EQUIPMENT
	NEW OR MODIFIED DEVICES OR EQUIPMENT
	EXISTING SYSTEM COMPONENT TO BE REMOVED
	POINT OF NEW CONNECTION

APPLICABLE CODES AND REGULATIONS

YEAR	CODE
2021	MICHIGAN BUILDING CODE
2021	MICHIGAN REHABILITATION CODE FOR EXISTING BUILDINGS
2021	MICHIGAN PLUMBING CODE
2021	MICHIGAN MECHANICAL CODE
2019	MICHIGAN UNIFORM ENERGY CODE
2015	INTERNATIONAL FUEL GAS CODE
2012	NFPA 101 WITH BFS AMENDMENTS

THE COLLABORATIVE

UNIFIED BUILDING SYSTEMS ENGINEERING
69 S. GRATIOT AVE.
MT. CLEMENS, MI 48043
UBS PROJECT : 047.26.11

STATE OF MICHIGAN
MICHAEL PAUL HARRIS, II
ENGINEER
No. 6201067299
LICENSED PROFESSIONAL ENGINEER

PROJECT TITLE

Van Buren Public Schools

Owen Intermediate

- HVAC Upgrades

45201 Owen Street,
Belleville, MI 48111

11.02.2026	BID & PERMIT

TC JOB NO. 107509

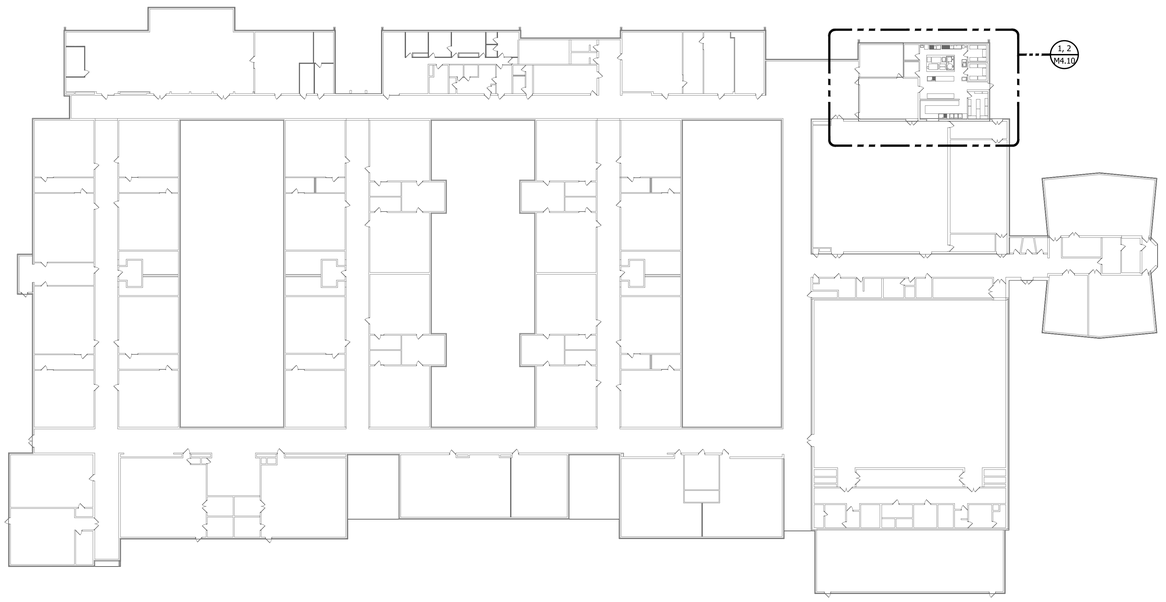
OWNER JOB NO.

SHEET TITLE

MECHANICAL GENERAL INFORMATION

SHEET NO.

M0.00



COMPOSITE MECHANICAL FIRST FLOOR PLAN
SCALE: 1/32" = 1'-0"

GENERAL DEMOLITION NOTES

A	THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL EXTENT OF WORK TO BE PERFORMED. THE EXACT EXTENT OF DEMOLITION SHALL BE DETERMINED BY THE NEW WORK.
B	ANY INTERRUPTIONS OF EXISTING SERVICES AND/OR EQUIPMENT SHALL BE PERFORMED AT A TIME APPROVED IN ADVANCE BY OWNER'S REPRESENTATIVE SO AS NOT TO INTERFERE WITH THE PRESENT BUILDING'S OPERATION.
C	PRIOR TO COMMENCEMENT OF WORK, CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH EXISTING SITE CONDITIONS, SYSTEMS, AND UTILITIES. NOTIFY DESIGN PROFESSIONAL OF ANY INTERFERENCES OR DISCREPANCIES.
D	ALL ITEMS INDICATED WITH CROSS-HATCHING SHALL BE REMOVED COMPLETELY WITH ALL RELATED ITEMS INCLUDING HANGERS, SUPPORTS, INSULATION, CONTROLS, ETC. CAP ALL OPEN-ENDED PIPES AND DUCTS.
E	THE OWNER SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL EQUIPMENT BEING REMOVED. ALL ITEMS REMOVED SHALL BE LEGALLY DISPOSED OF. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXISTING RELOCATED AND OWNER-PROVIDED EQUIPMENT.
F	VERIFY DEPTH, SIZE, LOCATIONS, AND CONDITIONS OF EXISTING UTILITIES IN THE FIELD, INCLUDING POINTS OF CONNECTION, PRIOR TO STARTING WORK.
G	ALL ITEMS ON DEMOLITION PLAN SHALL BE CONSIDERED EXISTING UNLESS OTHERWISE NOTED. ALL WORK INDICATED ON PLANS HAS BEEN LOCATED PER EXISTING DRAWINGS AND/OR FIELD OBSERVATION AND REQUIRES FIELD VERIFICATION.
H	ALL EXISTING WORK TO REMAIN SHALL BE PROTECTED FROM DAMAGE. WHERE DUCT WORK PIPE INSULATION HAS BEEN DAMAGED DURING DEMOLITION, THE CONTRACTOR SHALL REPAIR INSULATION AS REQUIRED TO MATCH EXISTING.

HVAC GENERAL NOTES

A	THESE DRAWINGS ARE DIAGRAMMATIC AND REPRESENT THE GENERAL EXTENT OF THE WORK TO BE PERFORMED, PROVIDE AND EXECUTE ALL HVAC SYSTEMS PER ENGINEER'S SPECIFICATION, AND LOCAL APPLICABLE CODES INCLUDING AMENDMENTS, BULLETINS, ETC. AS WELL AS THE STANDARDS OF INSTALLATION AND EQUIPMENT ESTABLISHED FOR THE BUILDINGS, AND REQUIREMENTS OF THE OWNER.
B	EXCEPT FOR CHANGES AS MAY BE SPECIFICALLY APPROVED BY THE ENGINEER OF RECORD. IN ACCORDANCE WITH ALTERNATES OF OPTIONS AS STATED HEREINAFTER, ALL WORK MUST BE IN FULL ACCORDANCE WITH THE INTENT OF THE PLANS AND SPECIFICATIONS. SYSTEMS ARE TO BE COMPLETE, EFFICIENT, AND SATISFACTORY OPERATION WHEN PROJECT IS DELIVERED TO THE OWNER.
C	THE CONTRACTOR AND EACH SUBCONTRACTOR COVENANTS AND AGREES TO INDEMNIFY, DEFEND, AND HOLD HARMLESS THE CONSULTING ENGINEER, ARCHITECT, AND OWNER FROM AND AGAINST ANY LIABILITY, LOSS, DAMAGE, OR EXPENSE INCLUDING ATTORNEY'S ARISING FROM A FAILURE OR ALLEGED FAILURE ON THE PART OF THE CONTRACTOR, SUBCONTRACTORS, AND THEIR AGENTS/EMPLOYEES PROPERLY TO DISCHARGE THE OBLIGATIONS ASSUMED BY HIM/HER IN THE PERFORMANCE OF THE WORK, INCLUDING ANY ACT OR OMISSION ALLEGEDLY RESULTING IN DEATH, PERSONAL INJURY, PROPERTY DAMAGE, OR IMPROPER CONSTRUCTION PROTOCOL.
D	CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND APPROVAL FROM GOVERNING AUTHORITIES AND FILE NECESSARY FORMS, PAY ALL INSPECTION FEES.
E	CONTRACTOR TO EXAMINE ALL ADJOINING WORK BEFORE COMMENCEMENT OF HIS/HER SCOPE OF WORK. REPORT ANY DISCREPANCIES TO THE CONSTRUCTION MANAGER FOR REVIEW AND APPROVAL. COORDINATE ALL WORK WITH OTHER TRADES TO ENSURE THAT INSTALLATION IS MADE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
F	PROVIDE REQUIRED CLEARANCE IN FRONT OF ELECTRICAL EQUIPMENT, DUCTWORK/PIPING SHALL NOT INTERFERE WITH ELECTRICAL EQUIPMENT CLEARANCE.
G	CONNECTION TO EQUIPMENT SHALL BE VERIFIED WITH MANUFACTURER'S CERTIFIED DRAWINGS. ALL PIPING CONNECTIONS SHALL BE MINIMUM 3/4" UNLESS NOTED OTHERWISE.
H	FURNISH ADEQUATE LIABILITY INSURANCE AND BONDING DOCUMENTS AS REQUIRED BY THE OWNER.
J	SUPPORT ALL ANCHORS SECURED TO THE BOTTOM OF FLOOR SLABS SHALL BE DROP-IN OR SLEEVE ANCHOR TYPE. ALL SUPPORTING STEEL SHALL BE PROVIDED BY THE CONTRACTOR.
K	DUCTWORK/PIPING SHALL NOT BE INSTALLED IN A LOCATION THAT RESTRICTS THE ACCESS TO MECHANICAL DEVICES REQUIRING ACCESS.
L	THE CONTRACTOR SHALL PROVIDE ALL MISCELLANNEOUS SUPPORTING STEEL FOR THE PROPER INSTALLATION OF MECHANICAL SYSTEMS.
M	BRANCH DUCTWORK TO GRILLES, REGISTERS, AND DIFFUSERS SHALL BE THE SAME SIZE AS THE TERMINAL DEVICE NECK SIZE WHERE NO DUCT SIZE IS INDICATED.

THE COLLABORATIVE

UNIFIED BUILDING SYSTEMS ENGINEERING
69 S. GRATIOT AVE.
MT. CLEMENS, MI 48043
UBS PROJECT : 047.26.11

STATE OF MICHIGAN
MICHAEL PAUL HARRIS, II
ENGINEER
No. 6201067299
LICENSED PROFESSIONAL ENGINEER

PROJECT TITLE

Van Buren Public Schools

Owen Intermediate

- HVAC Upgrades

45201 Owen Street,
Belleville, MI 48111

11.02.2026	BID & PERMIT

TC JOB NO. 107509

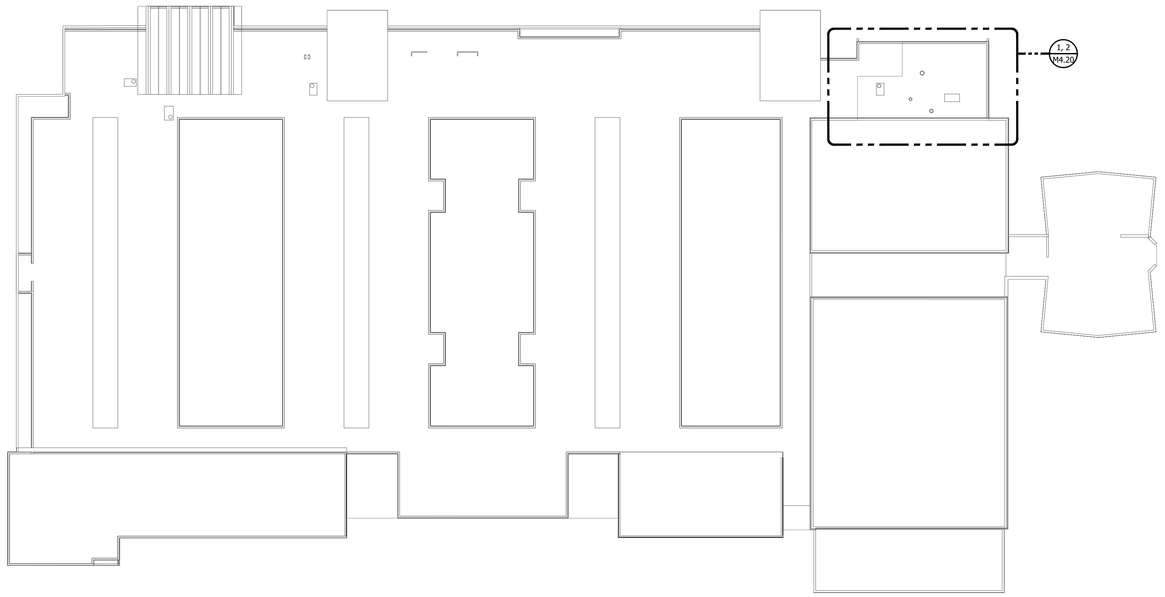
OWNER JOB NO.

SHEET TITLE

COMPOSITE MECHANICAL FIRST FLOOR PLAN

SHEET NO.

M1.00



COMPOSITE MECHANICAL ROOF PLAN
SCALE: 1/32" = 1'-0"

GENERAL DEMOLITION NOTES

A	THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL EXTENT OF WORK TO BE PERFORMED. THE EXACT EXTENT OF DEMOLITION SHALL BE DETERMINED BY THE NEW WORK.
B	ANY INTERRUPTIONS OF EXISTING SERVICES AND/OR EQUIPMENT SHALL BE PERFORMED AT A TIME APPROVED IN ADVANCE BY OWNER'S REPRESENTATIVE SO AS NOT TO INTERFERE WITH THE PRESENT BUILDING'S OPERATION.
C	PRIOR TO COMMENCEMENT OF WORK, CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH EXISTING SITE CONDITIONS, SYSTEMS, AND UTILITIES. NOTIFY DESIGN PROFESSIONAL OF ANY INTERFERENCES OR DISCREPANCIES.
D	ALL ITEMS INDICATED WITH CROSS-HATCHING SHALL BE REMOVED COMPLETELY WITH ALL RELATED ITEMS INCLUDING HANGERS, SUPPORTS, INSULATION, CONTROLS, ETC. CAP ALL OPEN-ENDED PIPES AND DUCTS.
E	THE OWNER SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL EQUIPMENT BEING REMOVED. ALL ITEMS REMOVED SHALL BE LEGALLY DISPOSED OF. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXISTING RELOCATED AND OWNER-PROVIDED EQUIPMENT.
F	VERIFY DEPTH, SIZE, LOCATIONS, AND CONDITIONS OF EXISTING UTILITIES IN THE FIELD, INCLUDING POINTS OF CONNECTION, PRIOR TO STARTING WORK.
G	ALL ITEMS ON DEMOLITION PLAN SHALL BE CONSIDERED EXISTING UNLESS OTHERWISE NOTED. ALL WORK INDICATED ON PLANS HAS BEEN LOCATED PER EXISTING DRAWINGS AND/OR FIELD OBSERVATION AND REQUIRES FIELD VERIFICATION.
H	ALL EXISTING WORK TO REMAIN SHALL BE PROTECTED FROM DAMAGE. WHERE DUCT WORK PIPE INSULATION HAS BEEN DAMAGED DURING DEMOLITION, THE CONTRACTOR SHALL REPAIR INSULATION AS REQUIRED TO MATCH EXISTING.

HVAC GENERAL NOTES

A	THESE DRAWINGS ARE DIAGRAMMATIC AND REPRESENT THE GENERAL EXTENT OF THE WORK TO BE PERFORMED, PROVIDE AND EXECUTE ALL HVAC SYSTEMS PER ENGINEER'S SPECIFICATION, AND LOCAL APPLICABLE CODES INCLUDING AMENDMENTS, BULLETINS, ETC. AS WELL AS THE STANDARDS OF INSTALLATION AND EQUIPMENT ESTABLISHED FOR THE BUILDINGS, AND REQUIREMENTS OF THE OWNER.
B	EXCEPT FOR CHANGES AS MAY BE SPECIFICALLY APPROVED BY THE ENGINEER OF RECORD. IN ACCORDANCE WITH ALTERNATES OF OPTIONS AS STATED HEREINAFTER, ALL WORK MUST BE IN FULL ACCORDANCE WITH THE INTENT OF THE PLANS AND SPECIFICATIONS. SYSTEMS ARE TO BE COMPLETE, EFFICIENT, AND SATISFACTORY OPERATION WHEN PROJECT IS DELIVERED TO THE OWNER.
C	THE CONTRACTOR AND EACH SUBCONTRACTOR COVENANTS AND AGREES TO INDEMNIFY, DEFEND, AND HOLD HARMLESS THE CONSULTING ENGINEER, ARCHITECT, AND OWNER FROM AND AGAINST ANY LIABILITY, LOSS, DAMAGE, OR EXPENSE INCLUDING ATTORNEY'S ARISING FROM A FAILURE OR ALLEGED FAILURE ON THE PART OF THE CONTRACTOR, SUBCONTRACTORS, AND THEIR AGENTS/EMPLOYEES PROPERLY TO DISCHARGE THE OBLIGATIONS ASSUMED BY HIM/HER IN THE PERFORMANCE OF THE WORK, INCLUDING ANY ACT OR OMISSION ALLEGEDLY RESULTING IN DEATH, PERSONAL INJURY, PROPERTY DAMAGE, OR IMPROPER CONSTRUCTION PROTOCOL.
D	CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND APPROVAL FROM GOVERNING AUTHORITIES AND FILE NECESSARY FORMS, PAY ALL INSPECTION FEES.
E	CONTRACTOR TO EXAMINE ALL ADJOINING WORK BEFORE COMMENCEMENT OF HIS/HER SCOPE OF WORK. REPORT ANY DISCREPANCIES TO THE CONSTRUCTION MANAGER FOR REVIEW AND APPROVAL. COORDINATE ALL WORK WITH OTHER TRADES TO ENSURE THAT INSTALLATION IS MADE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
F	PROVIDE REQUIRED CLEARANCE IN FRONT OF ELECTRICAL EQUIPMENT, DUCTWORK/PIPING SHALL NOT INTERFERE WITH ELECTRICAL EQUIPMENT CLEARANCE.
G	CONNECTION TO EQUIPMENT SHALL BE VERIFIED WITH MANUFACTURER'S CERTIFIED DRAWINGS. ALL PIPING CONNECTIONS SHALL BE MINIMUM 3/4" UNLESS NOTED OTHERWISE.
H	FURNISH ADEQUATE LIABILITY INSURANCE AND BONDING DOCUMENTS AS REQUIRED BY THE OWNER.
J	SUPPORT ALL ANCHORS SECURED TO THE BOTTOM OF FLOOR SLABS SHALL BE DROP-IN OR SLEEVE ANCHOR TYPE. ALL SUPPORTING STEEL SHALL BE PROVIDED BY THE CONTRACTOR.
K	DUCTWORK/PIPING SHALL NOT BE INSTALLED IN A LOCATION THAT RESTRICTS THE ACCESS TO MECHANICAL DEVICES REQUIRING ACCESS.
L	THE CONTRACTOR SHALL PROVIDE ALL MISCELLANNEOUS SUPPORTING STEEL FOR THE PROPER INSTALLATION OF MECHANICAL SYSTEMS.
M	BRANCH DUCTWORK TO GRILLES, REGISTERS, AND DIFFUSERS SHALL BE THE SAME SIZE AS THE TERMINAL DEVICE NECK SIZE WHERE NO DUCT SIZE IS INDICATED.

THE COLLABORATIVE

UNIFIED BUILDING SYSTEMS ENGINEERING
69 S. GRATIOT AVE.
MT. CLEMENS, MI 48043
UBS PROJECT : 047.26.11

STATE OF MICHIGAN
MICHAEL PAUL HARRIS, II
ENGINEER
No. 6201067299
LICENSED PROFESSIONAL ENGINEER

PROJECT TITLE

Van Buren Public Schools

Owen Intermediate

- HVAC Upgrades

45201 Owen Street,
Belleville, MI 48111

11.02.2026	BID & PERMIT

TC JOB NO. 107509

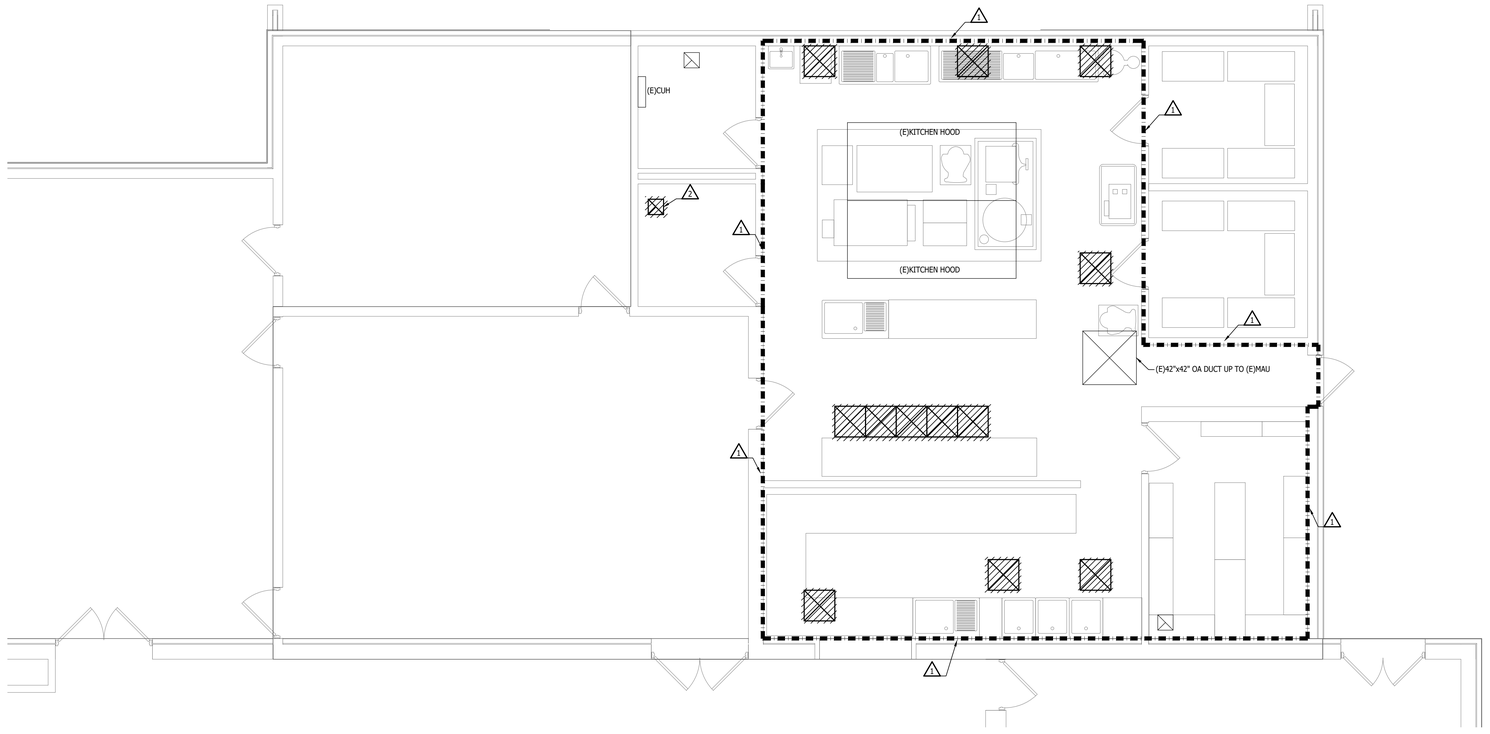
OWNER JOB NO.

SHEET TITLE

COMPOSITE MECHANICAL ROOF PLAN

SHEET NO.

M2.00



1 M1.00 ENLARGED MECHANICAL DEMOLITON PLAN - KITCHEN

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

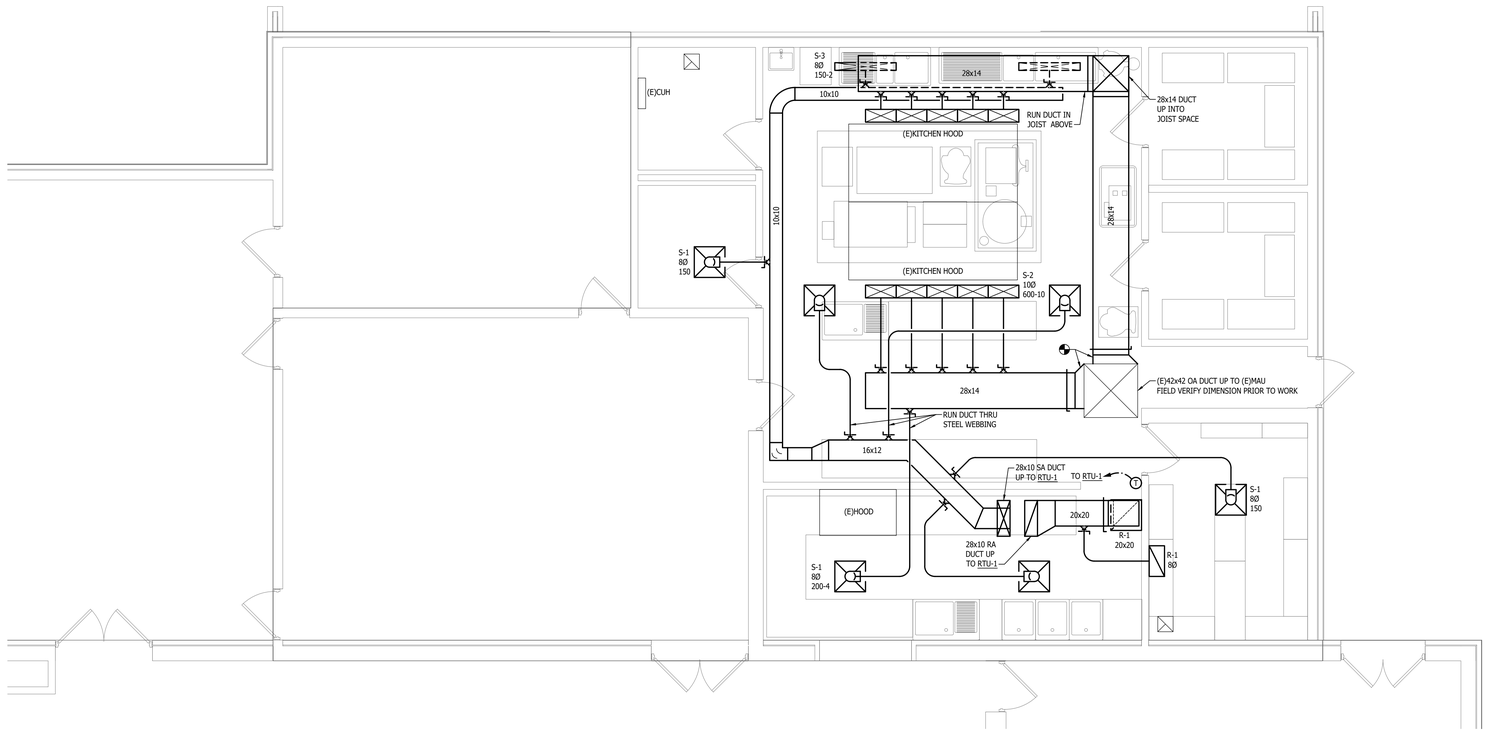
DEMOLITION KEYED NOTES	
1	DEMO DIFFUSERS AND DUCTWORK BACK TO DROP DOWN.
2	DEMO EXHAUST GRILL AND CAP DUCTWORK

GENERAL DEMOLITION NOTES	
A	THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL EXTENT OF WORK TO BE PERFORMED. THE EXACT EXTENT OF DEMOLITION SHALL BE DETERMINED BY THE NEW WORK.
B	ANY INTERRUPTIONS OF EXISTING SERVICES AND/OR EQUIPMENT SHALL BE PERFORMED AT A TIME APPROVED IN ADVANCE BY OWNER'S REPRESENTATIVE SO AS NOT TO INTERFERE WITH THE PRESENT BUILDING'S OPERATION.
C	PRIOR TO COMMENCEMENT OF WORK, CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH EXISTING SITE CONDITIONS, SYSTEMS, AND UTILITIES. NOTIFY DESIGN PROFESSIONAL OF ANY INTERFERENCES OR DISCREPANCIES.
D	ALL ITEMS INDICATED WITH CROSS-HATCHING SHALL BE REMOVED COMPLETELY WITH ALL RELATED ITEMS INCLUDING HANGERS, SUPPORTS, INSULATION, CONTROLS, ETC. CAP ALL OPEN-ENDED PIPES AND DUCTS.
E	THE OWNER SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL EQUIPMENT BEING REMOVED. ALL ITEMS REMOVED SHALL BE LEGALLY DISPOSED OF. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXISTING RELOCATED AND OWNER-PROVIDED EQUIPMENT.
F	VERIFY DEPTH, SIZE, LOCATIONS, AND CONDITIONS OF EXISTING UTILITIES IN THE FIELD, INCLUDING POINTS OF CONNECTION, PRIOR TO STARTING WORK.
G	ALL ITEMS ON DEMOLITION PLAN SHALL BE CONSIDERED EXISTING UNLESS OTHERWISE NOTED. ALL WORK INDICATED ON PLANS HAS BEEN LOCATED PER EXISTING DRAWINGS AND/OR FIELD OBSERVATION AND REQUIRES FIELD VERIFICATION.
H	ALL EXISTING WORK TO REMAIN SHALL BE PROTECTED FROM DAMAGE. WHERE DUCT WORK PIPE INSULATION HAS BEEN DAMAGED DURING DEMOLITION, THE CONTRACTOR SHALL REPAIR INSULATION AS REQUIRED TO MATCH EXISTING.

THE COLLABORATIVE

UNIFIED BUILDING SYSTEMS ENGINEERING
69 S. GRATIOT AVE.
MT. CLEMENS, MI 48043
UBS PROJECT : 047.26.11

STATE OF MICHIGAN
MICHAEL PAUL HARRIS, II
ENGINEER
No. 6201067299
LICENSED PROFESSIONAL ENGINEER



2 M1.00 ENLARGED MECHANICAL NEW WORK PLAN - KITCHEN

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

HVAC GENERAL NOTES	
A	THESE DRAWINGS ARE DIAGRAMMATIC AND REPRESENT THE GENERAL EXTENT OF THE WORK TO BE PERFORMED. PROVIDE AND EXECUTE ALL HVAC SYSTEMS PER ENGINEER'S SPECIFICATION, AND LOCAL APPLICABLE CODES INCLUDING AMENDMENTS, BULLETINS, ETC. AS WELL AS THE STANDARDS OF INSTALLATION AND EQUIPMENT ESTABLISHED FOR THE BUILDINGS, AND REQUIREMENTS OF THE OWNER.
B	EXCEPT FOR CHANGES AS MAY BE SPECIFICALLY APPROVED BY THE ENGINEER OF RECORD, IN ACCORDANCE WITH ALTERNATES OF OPTIONS AS STATED HEREINAFTER, ALL WORK MUST BE IN FULL ACCORDANCE WITH THE INTENT OF THE PLANS AND SPECIFICATIONS. SYSTEMS ARE TO BE COMPLETE, EFFICIENT, AND SATISFACTORY OPERATION WHEN PROJECT IS DELIVERED TO THE OWNER.
C	THE CONTRACTOR AND EACH SUBCONTRACTOR COVENANTS AND AGREES TO INDEMNIFY, DEFEND, AND HOLD HARMLESS THE CONSULTING ENGINEER, ARCHITECT, AND OWNER FROM AND AGAINST ANY LIABILITY, LOSS, DAMAGE, OR EXPENSE INCLUDING ATTORNEYS ARISING FROM A FAILURE OR ALLEGED FAILURE ON THE PART OF THE CONTRACTOR, SUBCONTRACTORS, AND THEIR AGENTS/EMPLOYEES PROPERLY TO DISCHARGE THE OBLIGATIONS ASSUMED BY HIM/HER IN THE PERFORMANCE OF THE WORK, INCLUDING ANY ACT OR OMISSION ALLEGEDLY RESULTING IN DEATH, PERSONAL INJURY, PROPERTY DAMAGE, OR IMPROPER CONSTRUCTION PROTOCOL.
D	CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND APPROVAL FROM GOVERNING AUTHORITIES AND FILE NECESSARY FORMS, PAY ALL INSPECTION FEES.
E	CONTRACTOR TO EXAMINE ALL ADJOINING WORK BEFORE COMMENCEMENT OF HIS/HER SCOPE OF WORK. REPORT ANY DISCREPANCIES TO THE CONSTRUCTION MANAGER FOR REVIEW AND APPROVAL. COORDINATE ALL WORK WITH OTHER TRADES TO ENSURE THAT INSTALLATION IS MADE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
F	PROVIDE REQUIRED CLEARANCE IN FRONT OF ELECTRICAL EQUIPMENT, DUCTWORK/PIPING SHALL NOT INTERFERE WITH ELECTRICAL EQUIPMENT CLEARANCE.
G	CONNECTION TO EQUIPMENT SHALL BE VERIFIED WITH MANUFACTURER'S CERTIFIED DRAWINGS. ALL PIPING CONNECTIONS SHALL BE MINIMUM 3/4" UNLESS NOTED OTHERWISE.
H	FURNISH ADEQUATE LIABILITY INSURANCE AND BONDING DOCUMENTS AS REQUIRED BY THE OWNER.
J	SUPPORT ALL ANCHORS SECURED TO THE BOTTOM OF FLOOR SLABS SHALL BE DROP-IN OR SLEEVE ANCHOR TYPE. ALL SUPPORTING STEEL SHALL BE PROVIDED BY THE CONTRACTOR.
K	DUCTWORK/PIPING SHALL NOT BE INSTALLED IN A LOCATION THAT RESTRICTS THE ACCESS TO MECHANICAL DEVICES REQUIRING ACCESS.
L	THE CONTRACTOR SHALL PROVIDE ALL MISCELLANNEOUS SUPPORTING STEEL FOR THE PROPER INSTALLATION OF MECHANICAL SYSTEMS.
M	BRANCH DUCTWORK TO GRILLES, REGISTERS, AND DIFFUSERS SHALL BE THE SAME SIZE AS THE TERMINAL DEVICE NECK SIZE WHERE NO DUCT SIZE IS INDICATED.

PROJECT TITLE

Van Buren Public Schools

Owen Intermediate

- HVAC Upgrades

45201 Owen Street,
Belleville, MI 48111

11.02.2026	BID & PERMIT

TC JOB NO. 107509

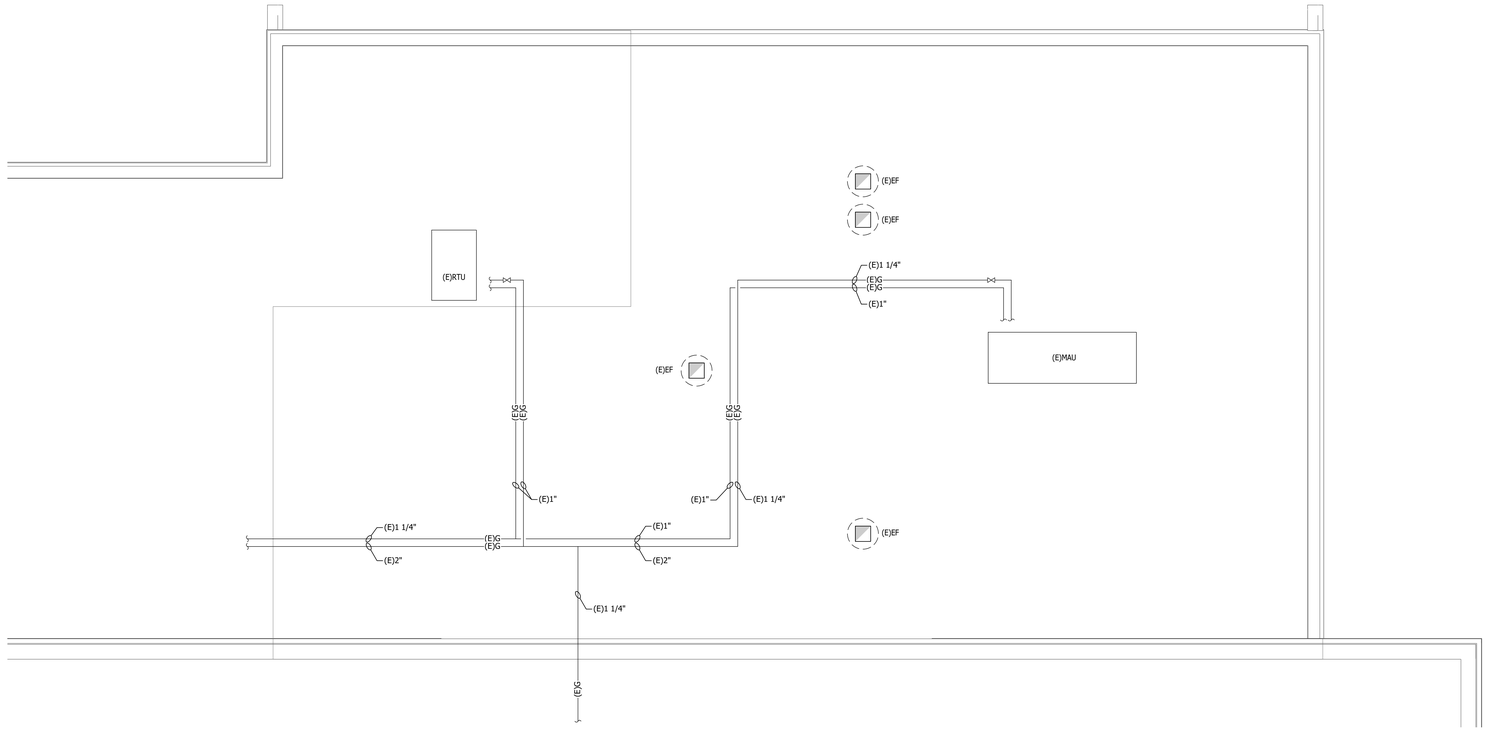
OWNER JOB NO.

SHEET TITLE

ENLARGED MECHANICAL DEMOLITION AND NEW WORK PLAN - KITCHEN

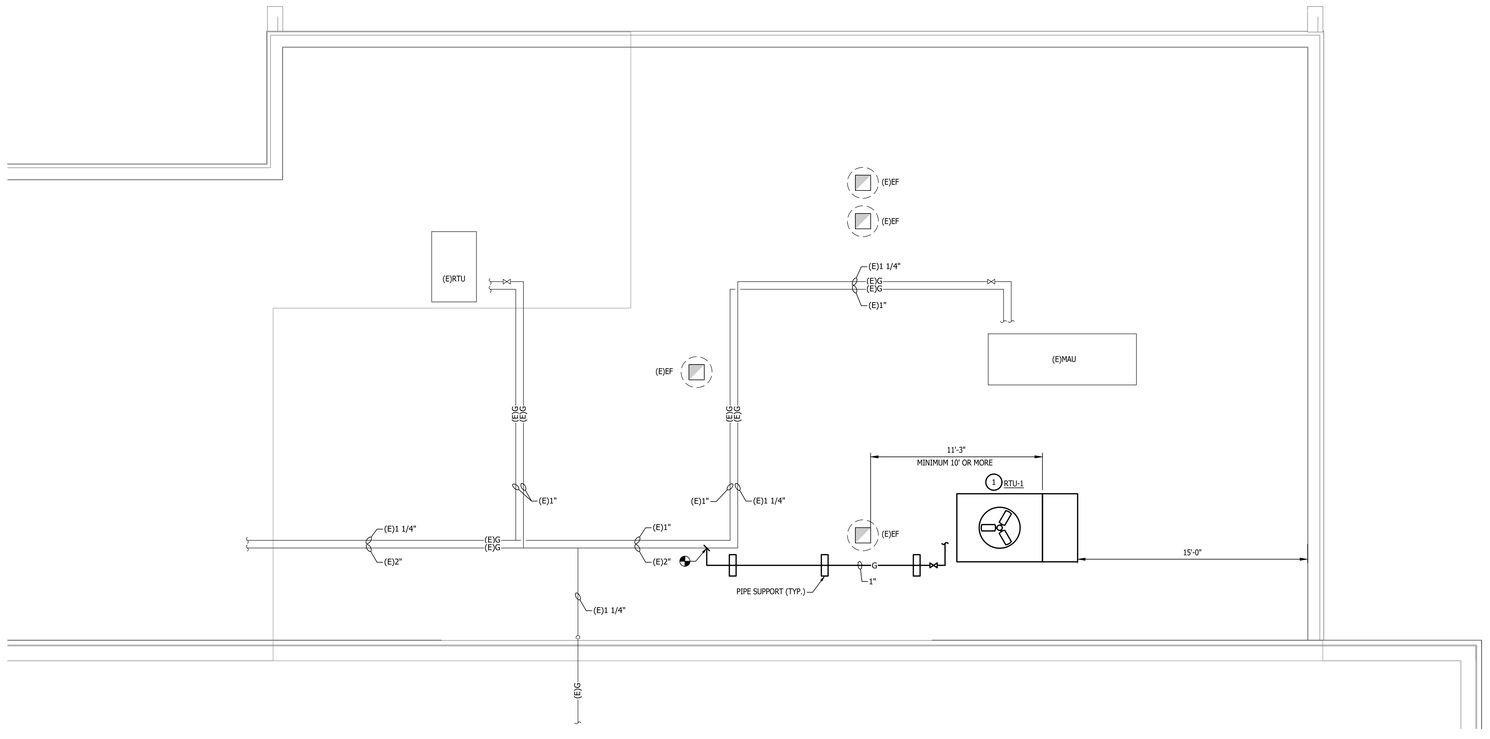
SHEET NO.

M4.10



1 M2.00 ENLARGED MECHANICAL DEMOLITON PLAN - ROOF

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



2 M2.00 ENLARGED MECHANICAL NEW WORK PLAN - ROOF

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

GENERAL DEMOLITION NOTES

A	THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL EXTENT OF WORK TO BE PERFORMED. THE EXACT EXTENT OF DEMOLITION SHALL BE DETERMINED BY THE NEW WORK.
B	ANY INTERRUPTIONS OF EXISTING SERVICES AND/OR EQUIPMENT SHALL BE PERFORMED AT A TIME APPROVED IN ADVANCE BY OWNER'S REPRESENTATIVE SO AS NOT TO INTERFERE WITH THE PRESENT BUILDING'S OPERATION.
C	PRIOR TO COMMENCEMENT OF WORK, CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH EXISTING SITE CONDITIONS, SYSTEMS, AND UTILITIES. NOTIFY DESIGN PROFESSIONAL OF ANY INTERFERENCES OR DISCREPANCIES.
D	ALL ITEMS INDICATED WITH CROSS-HATCHING SHALL BE REMOVED COMPLETELY WITH ALL RELATED ITEMS INCLUDING HANGERS, SUPPORTS, INSULATION, CONTROLS, ETC. CAP ALL OPEN-ENDED PIPES AND DUCTS.
E	THE OWNER SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL EQUIPMENT BEING REMOVED. ALL ITEMS REMOVED SHALL BE LEGALLY DISPOSED OF. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXISTING RELOCATED AND OWNER-PROVIDED EQUIPMENT.
F	VERIFY DEPTH, SIZE, LOCATIONS, AND CONDITIONS OF EXISTING UTILITIES IN THE FIELD, INCLUDING POINTS OF CONNECTION, PRIOR TO STARTING WORK.
G	ALL ITEMS ON DEMOLITION PLAN SHALL BE CONSIDERED EXISTING UNLESS OTHERWISE NOTED. ALL WORK INDICATED ON PLANS HAS BEEN LOCATED PER EXISTING DRAWINGS AND/OR FIELD OBSERVATION AND REQUIRES FIELD VERIFICATION.
H	ALL EXISTING WORK TO REMAIN SHALL BE PROTECTED FROM DAMAGE. WHERE DUCT WORK PIPE INSULATION HAS BEEN DAMAGED DURING DEMOLITION, THE CONTRACTOR SHALL REPAIR INSULATION AS REQUIRED TO MATCH EXISTING.

(X) NEW WORK KEYED NOTES

1	INSTALL PACKAGED ROOFTOP UNIT ON NEW CURB ASSEMBLY AND FLASH INTO EXISTING ROOFING SYSTEM. COORDINATION WITH ARCHITECTURAL TRADES AS REQUIRED. EXTEND GAS PIPING AND CONNECT TO EQUIPMENT. TERMINATE WITH ISOLATION VALVE AND DRIP LEG. CONTRACTOR TO VERIFY INCOMING PRESSURE PRIOR TO CONSTRUCTION AND PROVIDE REGULATOR AS REQUIRED.

HVAC GENERAL NOTES

A	THESE DRAWINGS ARE DIAGRAMMATIC AND REPRESENT THE GENERAL EXTENT OF THE WORK TO BE PERFORMED. PROVIDE AND EXECUTE ALL HVAC SYSTEMS PER ENGINEER'S SPECIFICATION, AND LOCAL APPLICABLE CODES INCLUDING AMENDMENTS, BULLETINS, ETC. AS WELL AS THE STANDARDS OF INSTALLATION AND EQUIPMENT ESTABLISHED FOR THE BUILDINGS, AND REQUIREMENTS OF THE OWNER.
B	EXCEPT FOR CHANGES AS MAY BE SPECIFICALLY APPROVED BY THE ENGINEER OF RECORD, IN ACCORDANCE WITH ALTERNATES OF OPTIONS AS STATED HEREINAFTER, ALL WORK MUST BE IN FULL ACCORDANCE WITH THE INTENT OF THE PLANS AND SPECIFICATIONS. SYSTEMS ARE TO BE COMPLETE, EFFICIENT, AND SATISFACTORY OPERATION WHEN PROJECT IS DELIVERED TO THE OWNER.
C	THE CONTRACTOR AND EACH SUBCONTRACTOR COVENANTS AND AGREES TO INDEMNIFY, DEFEND, AND HOLD HARMLESS THE CONSULTING ENGINEER, ARCHITECT, AND OWNER FROM AND AGAINST ANY LIABILITY, LOSS, DAMAGE, OR EXPENSE INCLUDING ATTORNEYS ARISING FROM A FAILURE OR ALLEGED FAILURE ON THE PART OF THE CONTRACTOR, SUBCONTRACTORS, AND THEIR AGENTS/EMPLOYEES PROPERLY TO DISCHARGE THE OBLIGATIONS ASSUMED BY HIM/HER IN THE PERFORMANCE OF THE WORK, INCLUDING ANY ACT OR OMISSION ALLEGEDLY RESULTING IN DEATH, PERSONAL INJURY, PROPERTY DAMAGE, OR IMPROPER CONSTRUCTION PROTOCOL.
D	CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND APPROVAL FROM GOVERNING AUTHORITIES AND FILE NECESSARY FORMS, PAY ALL INSPECTION FEES.
E	CONTRACTOR TO EXAMINE ALL ADJOINING WORK BEFORE COMMENCEMENT OF HIS/HER SCOPE OF WORK. REPORT ANY DISCREPANCIES TO THE CONSTRUCTION MANAGER FOR REVIEW AND APPROVAL. COORDINATE ALL WORK WITH OTHER TRADES TO ENSURE THAT INSTALLATION IS MADE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
F	PROVIDE REQUIRED CLEARANCE IN FRONT OF ELECTRICAL EQUIPMENT, DUCTWORK/PIPING SHALL NOT INTERFERE WITH ELECTRICAL EQUIPMENT CLEARANCE.
G	CONNECTION TO EQUIPMENT SHALL BE VERIFIED WITH MANUFACTURER'S CERTIFIED DRAWINGS. ALL PIPING CONNECTIONS SHALL BE MINIMUM 3/4" UNLESS NOTED OTHERWISE.
H	FURNISH ADEQUATE LIABILITY INSURANCE AND BONDING DOCUMENTS AS REQUIRED BY THE OWNER.
J	SUPPORT ALL ANCHORS SECURED TO THE BOTTOM OF FLOOR SLABS SHALL BE DROP-IN OR SLEEVE ANCHOR TYPE. ALL SUPPORTING STEEL SHALL BE PROVIDED BY THE CONTRACTOR.
K	DUCTWORK/PIPING SHALL NOT BE INSTALLED IN A LOCATION THAT RESTRICTS THE ACCESS TO MECHANICAL DEVICES REQUIRING ACCESS.
L	THE CONTRACTOR SHALL PROVIDE ALL MISCELLANNEOUS SUPPORTING STEEL FOR THE PROPER INSTALLATION OF MECHANICAL SYSTEMS.
M	BRANCH DUCTWORK TO GRILLES, REGISTERS, AND DIFFUSERS SHALL BE THE SAME SIZE AS THE TERMINAL DEVICE NECK SIZE WHERE NO DUCT SIZE IS INDICATED.

THE COLLABORATIVE

UNIFIED BUILDING SYSTEMS ENGINEERING
69 S. GRATIOT AVE.
MT. CLEMENS, MI 48043
UBS PROJECT : 047.26.11

STATE OF MICHIGAN
MICHAEL PAUL HARRIS, II
ENGINEER
No. 6201067299
LICENSED PROFESSIONAL ENGINEER

PROJECT TITLE

Van Buren Public Schools

Owen Intermediate

- HVAC Upgrades

45201 Owen Street,
Belleville, MI 48111

11.02.2026	BID & PERMIT

TC JOB NO. 107509

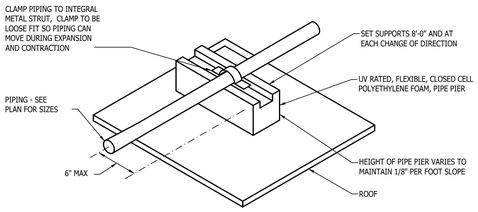
OWNER JOB NO.

SHEET TITLE

ENLARGED MECHANICAL DEMOLITION AND NEW WORK PLAN - ROOF

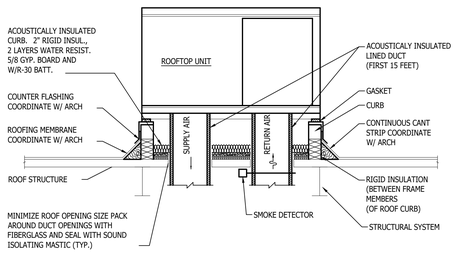
SHEET NO.

M4.20



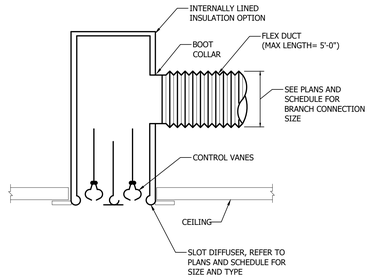
ROOF GAS PIPE SUPPORT DETAIL

NO SCALE



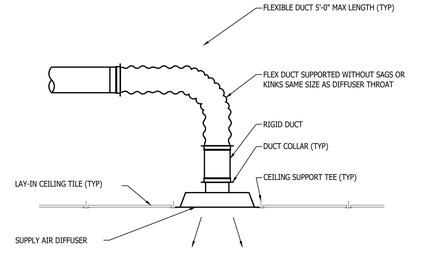
ROOFTOP UNIT - CURB MOUNTING DETAIL

NO SCALE



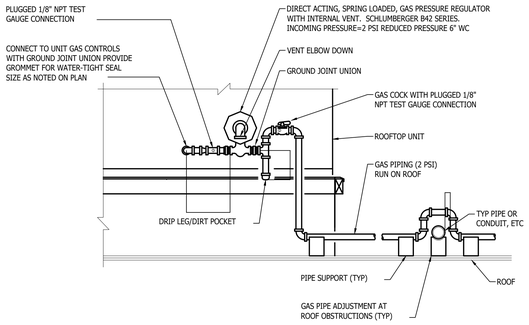
PLENUM SLOT DIFFUSER DETAIL

NO SCALE



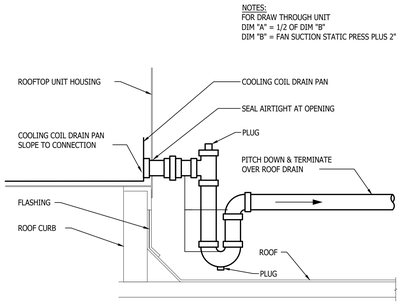
SUPPLY AIR DIFFUSER DETAIL

NO SCALE



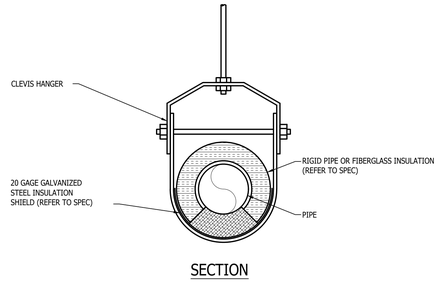
TYPICAL GAS PIPING CONNECTION DETAIL

NO SCALE



ROOFTOP UNIT COOLING COIL DRAIN PAN TRAP DETAIL

NO SCALE



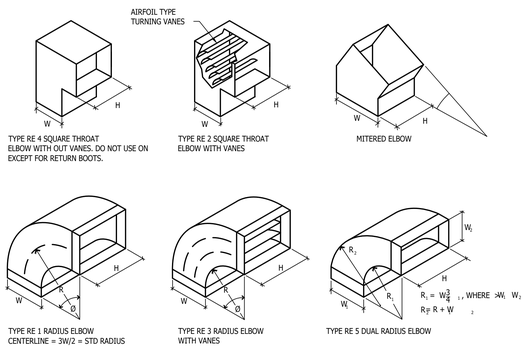
SECTION

NOTES:

PRE-INSULATED PIPE SUPPORTS SHALL BE USED TO ALLOW PROPER ALIGNMENT OF PIPING DURING INSTALLATION. PRE-INSULATED HANGERS SHALL BE PIPE SHIELDS INCORPORATED OR APPROVED EQUAL, REFER TO SPECIFICATIONS.

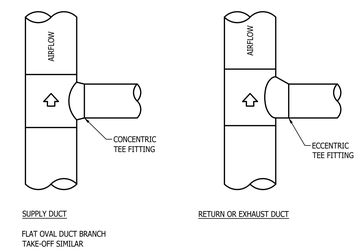
INSULATED PIPE HANGER DETAIL

NO SCALE



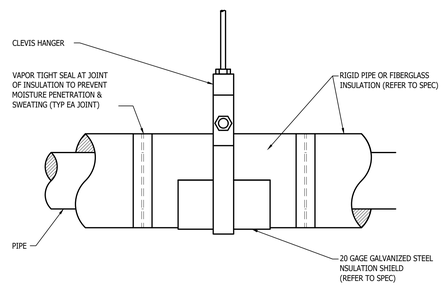
RECTANGULAR SHEET-METAL ELBOWS

NO SCALE



ROUND DUCT BRANCH TAKE-OFF DETAILS

NO SCALE



ELEVATION

THE COLLABORATIVE

UNIFIED BUILDING SYSTEMS ENGINEERING
69 S. GRATIOT AVE.
MT. CLEMENS, MI 48043
UBS PROJECT : 047.26.11

STATE OF MICHIGAN
MICHAEL PAUL HARRIS, II
ENGINEER
No. 6201057299
LICENSED PROFESSIONAL ENGINEER

PROJECT TITLE

Van Buren Public Schools

Owen Intermediate

- HVAC Upgrades

45201 Owen Street,
Belleville, MI 48111

11.02.2026	BID & PERMIT

TC JOB NO. 107509

OWNER JOB NO.

SHEET TITLE

MECHANICAL DETAILS

SHEET NO.

M5.00

ROOFTOP UNIT SCHEDULE - (DX - GAS - HGR)

UNIT ID	TOTAL SUPPLY (CFM)	MINIMUM OA (CFM)	SUPPLY FAN					DX COOLING COIL								NATURAL GAS HEATING SECTION							HOT GAS RE-HEAT COIL			FILTER TYPE	ELECTRICAL					DISCONNECT		CURB HEIGHT (IN)	MANUFACTURER/ MODEL NO.	REMARKS
			ESP (IN WG)	FAN TYPE	DRIVE TYPE	BHP	HP	TOTAL CAPACITY (MBH)	SENSIBLE CAPACITY (MBH)	AIR					MIN. EFFICIENCY (EER/IEER)	REFRIGERANT TYPE	INPUT (MBH)	OUTPUT (MBH)	GAS PRESS. MIN.- MAX. (IN WG)	STAGES OR MODULATION TURNDOWN	BURNER TYPE	EAT (°F)	LAT (°F)	RE-HEAT (MBH)	AIR			MOCP	MCA	FLA	VOLTS	PHASE	FURN. BY	INST. BY			
										EDB (°F)	EWB (°F)	LDB (°F)	LWB (°F)	APD (IN WG)																							
RTU-1	1200	150	0.5	SWSI	DIRECT	0.25	1.7	52.2	35.07	80	67	51.9	51.9	0.12	12.5	R-32	80	64.8	5-14	5:1	DIRECT	60	109.8	23.57	51.9	70	MERV 8	25	16.9	14.6	460	3	MC	MC	24	DAIKIN / DPSC05B	

NOTES:

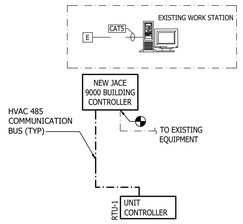
1. DUAL INPUT ENTHALPY CONTROL ECONOMIZER.
2. PROVIDE WITH BACNET MSTP INTERFACE.
3. 2" PLEATED MEDIA FILTERS.
4. PROVIDE WITH FACTORY MOUNTED DISCONNECT SWITCH.
5. REFRIGERATION COMPRESSORS SHALL BE VARIABLE SPEED SCROLL.
6. 115V SERVICE RECEPTACLE

GRILLE, REGISTER AND DIFFUSER SCHEDULE

UNIT ID	FACE SIZE	NECK SIZE	MOUNTING	FINISH	MATERIAL	PRICE/ MODEL NO.	REMARKS
S-1	24"x24"	SEE PLANS	CEILING	WHITE	STEEL	SPD	
S-2	24"x10"	SEE PLANS	CEILING	WHITE	STEEL	TBD4150	
S-3	48"x6"	SEE PLANS	CEILING	WHITE	STEEL	TBD410	
R-1	24"x24"	22x24	CEILING	WHITE	STEEL	PDDR or 80	DUCTED RETURN

NOTES:

1. REFER TO ARCHITECTURAL CEILING PLAN AND COORDINATE FRAME TYPE ACCORDINGLY.



BUILDING AUTOMATION SYSTEM RISER DIAGRAM

NO SCALE

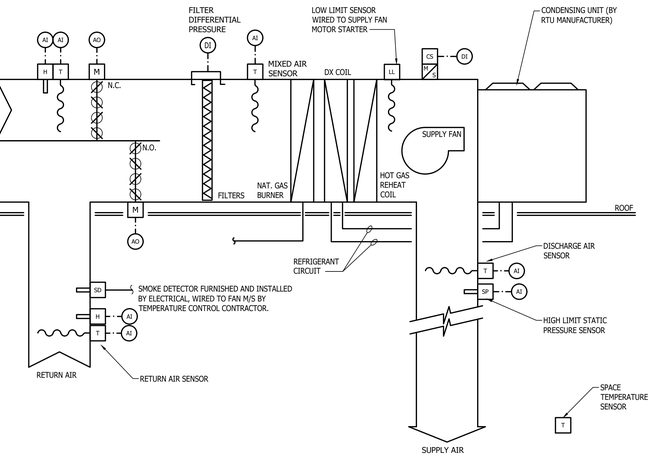
BUILDING AUTOMATION SYSTEM NOTES:

1. CONFIGURATION AND ORDER OF CONTROLLER CONNECTION IS FOR REPRESENTATION PURPOSES ONLY. UPDATE CONTROL SYSTEM DRAWINGS TO REFLECT ACTUAL AS-BUILT CONDITIONS, INCLUDING ORDER IN WHICH CONTROLLERS ARE CONNECTED WITHIN THE NETWORK.

BUILDING AUTOMATION SYSTEM FRONT END SYSTEM REQUIREMENTS

1. INTEGRATE MECHANICAL EQUIPMENT INTO THE NEW DISTRICT SUPERVISORY SYSTEM, INCLUDING GRAPHICS. EACH UNIT SHALL DISPLAY PERTINENT INFORMATION FOR CONTROL AND TROUBLE SHOOTING, INCLUDING:

   A) SPACE TEMPERATURE
   B) SPACE TEMPERATURE SETPOINT
   C) UNIT STATUS
   D) HIGH AND LOW REFRIGERANT PRESSURE ALARMS
   E) HEATING HOT WATER VALVE COMMAND
   F) OCCUPIED/UNOCCUPIED COMMAND
   G) MODE OF OPERATION



CONSTANT VOLUME ROOFTOP UNIT CONTROL DIAGRAM

NO SCALE

CONSTANT VOLUME ROOFTOP UNIT SEQUENCE OF OPERATIONS:
NOTE: FACTORY CONTROLS BY MANUFACTURER.

1. WITH THE SUPPLY FAN'S HAND/OFF/AUTO SWITCH IN THE "AUTO" POSITION, THE SUPPLY FAN SHALL BE AUTOMATICALLY STARTED AND STOPPED WITH THE DDC SYSTEM OCCUPANCY SCHEDULE.
2. OCCUPIED MODE: WHEN THE DDC SYSTEM ENERGIZES THE SUPPLY FAN IT SHALL RUN CONTINUOUSLY. THE RETURN, RELIEF AND RETURN DAMPERS WILL MODULATE TO MAINTAIN MINIMUM OUTSIDE AIRFLOW.
3. THE SUPPLY FAN WILL PROVE FLOW TO THE DDC SYSTEM WITH ITS CURRENT SENSING SWITCH. IF THE FAN FAILS, THE SYSTEM WILL BE DE-ENERGIZED AND AN ALARM WILL BE SENT TO THE DDC SYSTEM.
4. THE DISCHARGE AIR TEMPERATURE SENSOR SHALL MODULATE THE DX STAGES OF COOLING, MIXED AIR DAMPERS (D-1, D-2, D-3), AND THE STAGES OF GAS HEAT TO MAINTAIN THE SPACE TEMPERATURE SENSOR SETPOINT.
5. ECONOMIZER MODE: WHEN THE OUTSIDE AIR TEMPERATURE IS LESS THAN THE RETURN AIR TEMPERATURE, DDC SHALL MODULATE THE MIXED AIR DAMPERS (D-1, D-2, D-3) AND DX STAGES OF COOLING TO MAINTAIN THE DISCHARGE AIR TEMPERATURE WHILE MAINTAINING THE MINIMUM OUTSIDE AIRFLOW. WHEN THE OUTSIDE AIR TEMPERATURE IS GREATER THAN THE RETURN AIR TEMPERATURE, DDC SHALL MODULATE THE MIXED AIR DAMPERS TO MAINTAIN THE MINIMUM OUTSIDE AIRFLOW.
6. UNOCCUPIED MODE: IF THE SPACE TEMPERATURE SENSORS DROPS BELOW 60°F, THE SUPPLY FAN SHALL BE ENERGIZED, THE OUTSIDE AND RELIEF DAMPERS SHALL REMAIN CLOSED, THE RETURN DAMPER SHALL BE FULLY OPENED AND THE STAGES OF GAS HEATING SHALL FIRE. THE EXHAUST FAN SHALL BE DE-ENERGIZED DURING UNOCCUPIED OPERATION. AFTER ALL OF THE SPACES HAVE REACHED 63°F (ADJ), THE UNIT SHALL BE DE-ENERGIZED.
7. IF THE FREEZE-STAT SETPOINT IS REACHED (35°F OR BELOW), THEN THE SUPPLY FAN SHALL BE DE-ENERGIZED. IF THE DUCT MOUNTED SMOKE DETECTORS DETECT SMOKE, THEN THE SUPPLY FAN SHALL BE DE-ENERGIZED.
8. WHEN THE SUPPLY FAN IS DE-ENERGIZED, THE OUTSIDE AND RELIEF DAMPERS SHALL BE CLOSED. THE RETURN AIR DAMPER SHALL BE OPEN.
9. HOT GAS REHEAT MODE: WHEN COOLING IS REQUIRED AND THE SPACE/RETURN AIR HUMIDITY OR DEWPOINT RISES ABOVE THE ADJUSTABLE HUMIDITY SETPOINT, THE DDC SHALL ENABLE HOT GAS REHEAT. THE DX COOLING SYSTEM SHALL CONTINUE TO OPERATE TO REMOVE MOISTURE FROM THE AIR. THE MODULATING HOT GAS REHEAT VALVE SHALL MODULATE TO MAINTAIN THE DISCHARGE AIR TEMPERATURE SETPOINT WITHOUT RE-HEATING THE SPACE ABOVE THE SPACE TEMPERATURE SETPOINT.
   9.1. HOT GAS REHEAT SHALL ONLY BE ENABLED WHEN AT LEAST ONE DX COMPRESSOR/COOLING CIRCUIT IS OPERATING. THE HOT GAS REHEAT COIL SHALL REHEAT THE DEHUMIDIFIED AIR DOWNSTREAM OF THE COOLING COIL.
   9.2. DURING HOT GAS REHEAT, THE DDC SYSTEM SHALL MODULATE THE HOT GAS REHEAT VALVE FROM CLOSED TO OPEN AS REQUIRED TO MAINTAIN THE DISCHARGE AIR TEMPERATURE SETPOINT. THE COOLING STAGES SHALL BE MODULATED/STAGED AS REQUIRED TO MAINTAIN THE REQUIRED DEHUMIDIFICATION AND SPACE CONDITIONS.
   9.3. WHEN THE SPACE HUMIDITY/DEWPOINT FALLS BELOW THE ADJUSTABLE HUMIDITY SETPOINT, THE DDC SYSTEM SHALL DISABLE HOT GAS REHEAT AND THE HOT GAS REHEAT VALVE SHALL RETURN TO THE CLOSED POSITION.

THE COLLABORATIVE

UNIFIED BUILDING SYSTEMS ENGINEERING
69 S. GRATIOT AVE.
MT. CLEMENS, MI 48043
UBS PROJECT : 047.26.11

STATE OF MICHIGAN
MICHAEL PAUL HARRIS, II
ENGINEER
No. 6201057299
LICENSED PROFESSIONAL ENGINEER

PROJECT TITLE

Van Buren Public Schools

Owen Intermediate

- HVAC Upgrades

45201 Owen Street,
Belleville, MI 48111

11.02.2026	BID & PERMIT

TC JOB NO. 107509

OWNER JOB NO.

SHEET TITLE

MECHANICAL SCHEDULES & TEMPERATURE CONTROLS

SHEET NO.

M6.00

LUMINAIRE SCHEDULE

FIXTURE SYMBOL	FIXTURE TAG	DESCRIPTION	MANUFACTURER(S)	LAMP SOURCE	WATTS
	A	2'x4' LOW PROFILE BACK LIT FLAT PANEL LED LUMINAIRE. A FULLY LUMINOUS APPEARANCE GLARE FREE. SUITTABLE FOR RECESS MOUNTING IN LAY-IN TYPE GRID CEILING, ALUMINUM FRAME WITH SATIN WHITE LENS, 4000 LUMENS, ELECTRONIC DRIVER, 4000K. 0-10V 10% DIMMING, UNIVERSAL VOLTAGE.	1. LITHONIA CPX CPX 2X4 4000LM 80CRI 40K SWL MIN10 MVOLT 2. COOPER LIGHTING 3. CURRENT LIGHTING	LED 80CRI 4000 LUMENS	40.0
	X1	DOUBLE FACE EXIT LIGHT EMERGENCY LIGHT SHALL BE UNIVERSAL MOUNT, DIECAST ALUMINUM, HIGH OUTPUT LED DIFFUSE LIGHT PANEL, RED LETTERS WITH MAINTENANCE-FREE NICKEL CADMIUM BATTERY CAPABLE OF PROVIDING 90 MINUTE FULL LIGHT OPERATION.	1. LITEALARMS GALAXY SERIES 2. SURE-LITES CX SERIES	120-277V	2.3
	#E	SAME AS TYPE # EXCEPT THIS FIXTURE WILL BE CONNECTED THROUGH BUILT-IN BATTERY PACK, WIRE SUCH THAT IT OPERATES NORMAL WITH SWITCH AND ACT AS EMERGENCY FIXTURE UPON LOSS OF NORMAL POWER.			

POWER SYMBOL LIST

SYMBOL	DESCRIPTION
●	CONDUIT DOWN
○	CONDUIT UP
C	CONTACTOR
	DISCONNECT SWITCH - NON FUSED
	DISCONNECT SWITCH - FUSED
	DISCONNECT SWITCH - COMB. MOTOR STARTER
	ELECTRICAL PANEL - 208/240/480 VOLTS
	GROUNDING ROD
	GROUND
	GROUNDING BAR
J	JUNCTION BOX
J	JUNCTION BOX WITH HARDWIRED CONNECTION
M	METER
	MOTOR - SINGLE PHASE
	MOTOR - THREE PHASE
$_{M}	MOTOR RATED SWITCH
	POWER RECEPTACLE - SIMPLEX TYPE
	POWER RECEPTACLE - DUPLEX TYPE
$_{C}	POWER RECEPTACLE - CEILING DUPLEX
	POWER RECEPTACLE - DUPLEX TYPE CONTROLLED
	POWER RECEPTACLE - DUPLEX TYPE EMERGENCY
	POWER RECEPTACLE - DUPLEX 6" ABOVE COUNTER
$_{USB}	POWER RECEPTACLE - USB/DUPLEX COMBO. DEVICE
	POWER RECEPTACLE - QUADRUPLEX TYPE
	POWER RECEPTACLE - QUADRUPLEX CONTROLLED
FB	FLOOR BOX - RECESSED FLOOR TYPE
PT	FLOOR BOX - POKE THRU TYPE
	POWER RECEPTACLE - SPECIALTY TYPE
SPD	SURGE PROTECTION DEVICE
TC	TIME CLOCK
T	TRANSFORMER (REFER TO SCHEDULES FOR INFO)
VSD	VARIABLE SPEED DRIVE
	IT SLEEVE 1 1/4" TYPICAL UNLESS NOTED OTHERWISE

NOTES:
1. ALL DEVICE RATINGS/SIZES SHALL BE COORDINATED WITH PLANS AND SCHEDULES.

ELECTRICAL ABBREVIATIONS

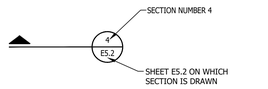
ABBREV.	DESCRIPTION
AFF	ABOVE FINISHED FLOOR
A	AMPERE
AF	AMPERE FUSE/AMPERE FRAME
AWG	AMERICAN WIRE GAUGE
AT	AMPERE TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AIC	AVAILABLE INTERRUPTING CURRENT (AMPS)
C	CONDUIT OR CEILING MOUNTED
CB	CIRCUIT BREAKER
CU	COPPER
CT	CURRENT TRANSFORMER
DIA	DIAMETER
DISC	DISCONNECT
EMT	ELECTRICAL METALLIC TUBING
EWC	ELECTRIC WATER COOLER
EPO	EMERGENCY POWER OFF
(E)	EXISTING ELECTRICAL EQUIPMENT OR WORK
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FLA	FULL LOAD AMPS
F	FUSE
G/GRD	GROUND
GFCI/GFI	GROUND FAULT CIRCUIT INTERRUPTER
HOA	HAND-OFF-AUTO
HP	HORSEPOWER
IG	ISOLATED GROUND
KV	KILOVOLT
KVA	KILOVOLT AMPERE
KW	KILOWATT
KWH	KILOWATT HOUR
LP	LIGHTING PANEL
MCB	MAIN CIRCUIT BREAKER
MDP	MAIN DISTRIBUTION PANEL
MLO	MAIN LUG ONLY
MAX	MAXIMUM
MIN	MINIMUM
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
N/NEU	NEUTRAL
NF	NON-FUSIBLE
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NIC	NOT IN CONTRACT
OF/CI	OWNER FURNISHED / CONTRACTOR INSTALLED
OF/OI	OWNER FURNISHED / OWNER INSTALLED
PH. OR Ø	PHASE
P	POLE
PF	POWER FACTOR
PVC	POLYVINYL CHOLRIDE (PLASTIC)
(R)	RELOCATED EXISTING ELECTRICAL EQUIPMENT
(RR)	REMOVE AND REINSTALL
RMC	RIGID METALLIC CONDUIT
RP	RECEPTACLE PANEL
SPEC/SPECS	SPECIFICATIONS
TBB	TELEPHONE BACKBOARD
TYP.	TYPICAL
UC	UNDER COUNTER
UL	UNDERWRITERS LABORATORIES
UPS	UNINTERRUPTIBLE POWER SUPPLY
USB	UNIVERSAL SERIAL BUS
V	VOLT
VA	VOLT AMPERE
W	WATT
WG	WIRE GUARD
WP	WEATHERPROOF
XFMR	TRANSFORMER

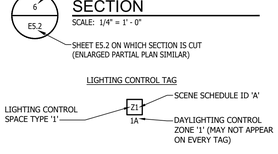
DRAWING INDEX

SHT. NO.	DESCRIPTION
E0.00	ELECTRICAL GENERAL INFORMATION
E1.00	COMPOSITE ELECTRICAL FIRST FLOOR PLAN
E2.00	COMPOSITE ELECTRICAL ROOF PLAN
E4.10	ENLARGED LIGHTING DEMOLITION AND NEW WORK PLAN - KITCHEN
E4.20	ENLARGED POWER DEMOLITION AND NEW WORK PLAN - ROOF
E5.00	ELECTRICAL DETAILS & ONE LINE DIAGRAM

DRAWING NOTATION

SYMBOL	DESCRIPTION
LA	LIGHTING FIXTURE TAG
1	CONSTRUCTION KEY NOTE NUMBER 1
1	DEMOLITION KEY NOTE NUMBER 1
1	FEEDER SIZE TAG (REFER TO FEEDER SCHEDULE ON THIS SHEET)
EF-1	NEW EQUIPMENT DESIGNATION, (I.E. EXHAUST FAN NUMBER 1)
(E)EF	EXISTING EQUIPMENT DESIGNATION, (I.E. EXISTING EXHAUST FAN)
	EXISTING DEVICES OR EQUIPMENT
	NEW OR MODIFIED DEVICES OR EQUIPMENT
	NEW OR MODIFIED UNDERGROUND WIRING
	EXISTING SYSTEM COMPONENT TO BE REMOVED





LIGHTING CONTROL TAG

APPLICABLE CODES AND REGULATIONS

YEAR	CODE
2021	MICHIGAN BUILDING CODE
2021	MICHIGAN ENERGY CODE
2021	MICHIGAN REHABILITATION CODE FOR EXISTING BUILDINGS
2023	MICHIGAN ELECTRICAL CODE RULES, PART 8
2023	NATIONAL ELECTRICAL CODE (NFPA 70)
2013	NATIONAL FIRE ALARM AND SIGNALING CODE, NFPA 72
2012	LIFE SAFETY CODE, NFPA 101
2013	STANDARD FOR EMERGENCY AND STANDBY POWER SYSTEMS, NFPA 110
2009	ICC A117.1 ACCESSIBLE AND USABLE BUILDINGS & FACILITIES

FIRE ALARM SYMBOL LIST

SYMBOL	DESCRIPTION
S	DETECTION DEVICE - DUCT MOUNTED
S	DETECTION DEVICE
PS	DETECTION DEVICE - FLOW SWITCH
TS	DETECTION DEVICE - TAMPER SWITCH
FAA	FIRE ALARM ANNUNCIATOR PANEL
FACP	FIRE ALARM CONTROL PANEL
FD	FIRE DEPARTMENT COMMUNICATION OUTLET
F	MANUAL DEVICE - PULL STATION
F	AUDIO/VISUAL NOTIFICATION DEVICE - WALL MOUNTED
F	VISUAL NOTIFICATION DEVICE - WALL MOUNTED
F	AUDIO/VISUAL NOTIFICATION DEVICE - CEILING MOUNTED
F	VISUAL NOTIFICATION DEVICE - CEILING MOUNTED

NOTES:
1. DRAWINGS INDICATE DESIGN INTENT ONLY, FINAL LOCATIONS AND DEVICE SPECIFICATIONS SHALL BE PROVIDED BY FIRE ALARM MANUFACTURER. REFER TO PROJECT SPECIFICATIONS FOR APPROVED MANUFACTURERS.

AUXILIARY SYST. SYMBOL LIST

SYMBOL	DESCRIPTION
	CAMERA
CR	CARD READER
DO	DOOR OPERATOR
VI	VIDEO INTERFACE
	COMMUNICATIONS DEVICE - 6" ABOVE COUNTER
	COMMUNICATIONS DEVICE - FLOOR
	COMMUNICATIONS DEVICE - WALL
DH	MAGNETIC DOOR HOLDER
	PUSH BUTTON
S	SPEAKER
	WALL CLOCK - SINGLE FACE
	WALL CLOCK - DOUBLE FACE
S	WALL CLOCK AND SPEAKER UNIT

NOTES:
1. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR BOX AND CONDUIT FOR ALL DEVICES INDICATED.
2. LOW VOLTAGE CONTRACTOR SHALL PROVIDE EXACT SPECIFICATIONS AND LOCATIONS OF ALL DEVICES.

THE COLLABORATIVE

UNIFIED BUILDING SYSTEMS ENGINEERING
69 S. GRATIOT AVE.
MT. CLEMENS, MI 48043
UBS PROJECT : 047.26.11

STATE OF MICHIGAN
MICHAEL PAUL HARRIS, II
ENGINEER
No. 6201067299
LICENSED PROFESSIONAL ENGINEER

PROJECT TITLE

Van Buren Public Schools

Owen Intermediate

- HVAC Upgrades

45201 Owen Street,
Belleville, MI 48111

11.02.2026	BID & PERMIT

TC JOB NO. 107509

OWNER JOB NO.

SHEET TITLE

ELECTRICAL GENERAL INFORMATION

SHEET NO.

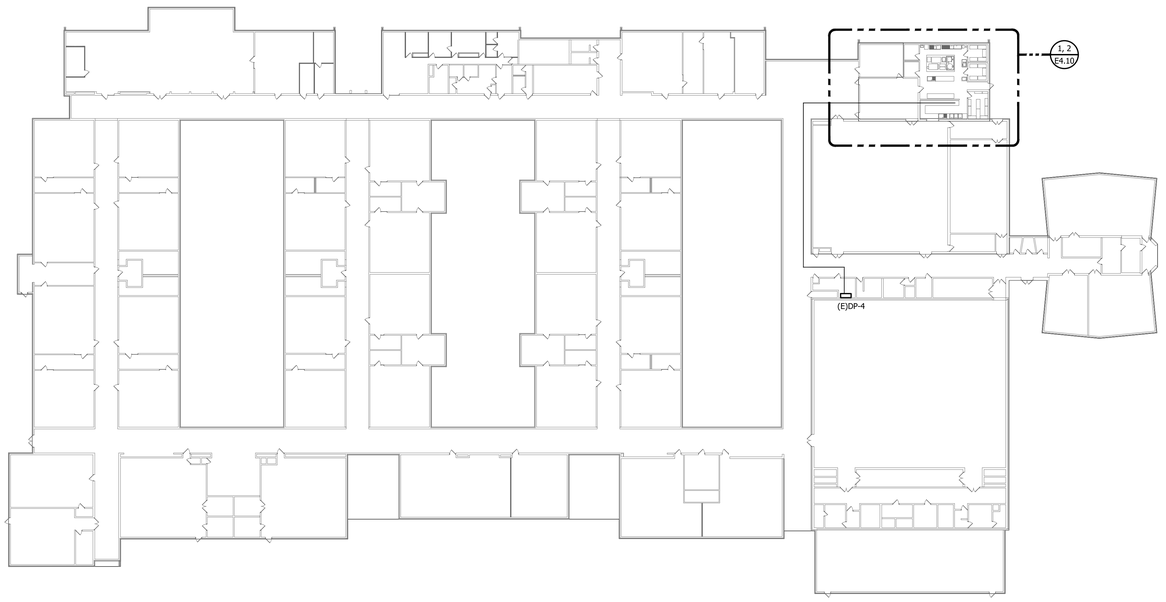
E0.00

GENERAL DEMOLITION NOTES

A	THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL EXTENT OF WORK TO BE PERFORMED. THE EXACT EXTENT OF DEMOLITION SHALL BE DETERMINED BY THE NEW WORK.
B	ANY INTERRUPTIONS OF EXISTING SERVICES AND/OR EQUIPMENT SHALL BE PERFORMED AT A TIME APPROVED IN ADVANCE BY OWNER'S REPRESENTATIVE SO AS NOT TO INTERFERE WITH THE PRESENT BUILDING'S OPERATION.
C	PRIOR TO COMMENCEMENT OF WORK, CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH EXISTING SITE CONDITIONS, SYSTEMS, AND UTILITIES. NOTIFY DESIGN PROFESSIONAL OF ANY INTERFERENCES OR DISCREPANCIES.
D	ALL ITEMS INDICATED WITH CROSS-HATCHING SHALL BE REMOVED COMPLETELY WITH ALL RELATED ITEMS INCLUDING HANGERS, SUPPORTS, INSULATION, CONTROLS, ETC. CAP ALL OPEN-ENDED PIPES AND DUCTS.
E	THE OWNER SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL EQUIPMENT BEING REMOVED. ALL ITEMS REMOVED SHALL BE LEGALLY DISPOSED OF. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXISTING RELOCATED AND OWNER-PROVIDED EQUIPMENT.
F	VERIFY DEPTH, SIZE, LOCATIONS, AND CONDITIONS OF EXISTING UTILITIES IN THE FIELD, INCLUDING POINTS OF CONNECTION, PRIOR TO STARTING WORK.
G	ALL ITEMS ON DEMOLITION PLAN SHALL BE CONSIDERED EXISTING UNLESS OTHERWISE NOTED. ALL WORK INDICATED ON PLANS HAS BEEN LOCATED PER EXISTING DRAWINGS AND/OR FIELD OBSERVATION AND REQUIRES FIELD VERIFICATION.
H	ALL EXISTING WORK TO REMAIN SHALL BE PROTECTED FROM DAMAGE. WHERE DUCT WORK PIPE INSULATION HAS BEEN DAMAGED DURING DEMOLITION, THE CONTRACTOR SHALL REPAIR INSULATION AS REQUIRED TO MATCH EXISTING.

POWER GENERAL NOTES

A	THESE DRAWINGS ARE DIAGRAMMATIC AND REPRESENT THE GENERAL EXTENT OF THE WORK TO BE PERFORMED. PROVIDE AND EXECUTE ALL POWER SYSTEMS PER ENGINEER'S SPECIFICATION, AND LOCAL APPLICABLE CODES INCLUDING AMENDMENTS, BULLETINS, ETC. AS WELL AS THE STANDARDS OF INSTALLATION AND EQUIPMENT ESTABLISHED FOR THE BUILDINGS, AND REQUIREMENTS OF THE OWNER.
B	EXCEPT FOR CHANGES AS MAY BE SPECIFICALLY APPROVED BY THE ENGINEER OF RECORD. IN ACCORDANCE WITH ALTERNATES OF OPTIONS AS STATED HEREINAFTER, ALL WORK MUST BE IN FULL ACCORDANCE WITH THE INTENT OF THE PLANS AND SPECIFICATIONS. SYSTEMS ARE TO BE COMPLETE, EFFICIENT, AND SATISFACTORY OPERATION WHEN PROJECT IS DELIVERED TO THE OWNER.
D	CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND APPROVAL FROM GOVERNING AUTHORITIES AND FILE NECESSARY FORMS, PAY ALL INSPECTION FEES.
E	ELECTRICAL CONTRACTOR SHALL COMPLY WITH THE LATEST NATIONAL ELECTRICAL CODE, LIFE SAFETY CODE AND APPLICABLE STATE AND LOCAL CODES AND ORDINANCES.
F	ELECTRICAL EQUIPMENT AND WIRING SHALL BE NEW AND SHALL BE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR, UNLESS OTHERWISE NOTED.
G	WIRING SHALL BE IN CONDUIT. CONDUIT SHALL BE 3/4" CONDUIT MINIMUM. CONDUITS IN FINISHED AREAS SHALL BE CONCEALED
H	NEW WIRES SHALL BE TYPE THHN. MINIMUM SIZE SHALL BE #12 AWG, UNLESS OTHERWISE NOTED. FINAL CONNECTIONS TO EQUIPMENT, FURNISHED AND INSTALLED BY OTHERS, SHALL BE PROVIDED BY THIS CONTRACTOR.



COMPOSITE ELECTRICAL FIRST FLOOR PLAN
SCALE: 1/32" = 1'-0"

THE COL LAB ORAT IVE

UNIFIED BUILDING SYSTEMS ENGINEERING
69 S. GRATIOT AVE.
MT. CLEMENS, MI 48043
UBS PROJECT : 047.26.11

STATE OF MICHIGAN
MICHAEL PAUL HARRIS, II
ENGINEER
No. 6201067299
LICENSED PROFESSIONAL ENGINEER

PROJECT TITLE

Van Buren Public Schools

Owen Intermediate

- HVAC Upgrades

45201 Owen Street,
Belleville, MI 48111

11.02.2026	BID & PERMIT

TC JOB NO. 107509

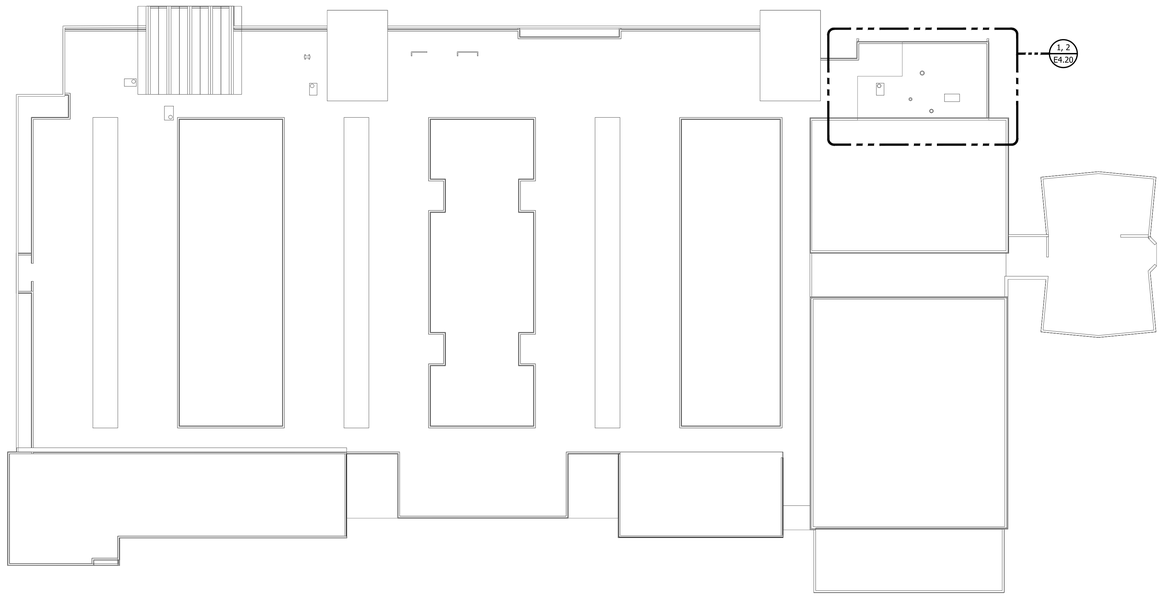
OWNER JOB NO.

SHEET TITLE

COMPOSITE ELECTRICAL FIRST FLOOR PLAN

SHEET NO.

E1.00



COMPOSITE ELECTRICAL ROOF PLAN
SCALE: 1/32" = 1'-0"

GENERAL DEMOLITION NOTES

A	THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL EXTENT OF WORK TO BE PERFORMED. THE EXACT EXTENT OF DEMOLITION SHALL BE DETERMINED BY THE NEW WORK.
B	ANY INTERRUPTIONS OF EXISTING SERVICES AND/OR EQUIPMENT SHALL BE PERFORMED AT A TIME APPROVED IN ADVANCE BY OWNER'S REPRESENTATIVE SO AS NOT TO INTERFERE WITH THE PRESENT BUILDING'S OPERATION.
C	PRIOR TO COMMENCEMENT OF WORK, CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH EXISTING SITE CONDITIONS, SYSTEMS, AND UTILITIES. NOTIFY DESIGN PROFESSIONAL OF ANY INTERFERENCES OR DISCREPANCIES.
D	ALL ITEMS INDICATED WITH CROSS-HATCHING SHALL BE REMOVED COMPLETELY WITH ALL RELATED ITEMS INCLUDING HANGERS, SUPPORTS, INSULATION, CONTROLS, ETC. CAP ALL OPEN-ENDED PIPES AND DUCTS.
E	THE OWNER SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL EQUIPMENT BEING REMOVED. ALL ITEMS REMOVED SHALL BE LEGALLY DISPOSED OF. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXISTING RELOCATED AND OWNER-PROVIDED EQUIPMENT.
F	VERIFY DEPTH, SIZE, LOCATIONS, AND CONDITIONS OF EXISTING UTILITIES IN THE FIELD, INCLUDING POINTS OF CONNECTION, PRIOR TO STARTING WORK.
G	ALL ITEMS ON DEMOLITION PLAN SHALL BE CONSIDERED EXISTING UNLESS OTHERWISE NOTED. ALL WORK INDICATED ON PLANS HAS BEEN LOCATED PER EXISTING DRAWINGS AND/OR FIELD OBSERVATION AND REQUIRES FIELD VERIFICATION.
H	ALL EXISTING WORK TO REMAIN SHALL BE PROTECTED FROM DAMAGE. WHERE DUCT WORK PIPE INSULATION HAS BEEN DAMAGED DURING DEMOLITION, THE CONTRACTOR SHALL REPAIR INSULATION AS REQUIRED TO MATCH EXISTING.

POWER GENERAL NOTES

A	THESE DRAWINGS ARE DIAGRAMMATIC AND REPRESENT THE GENERAL EXTENT OF THE WORK TO BE PERFORMED. PROVIDE AND EXECUTE ALL POWER SYSTEMS PER ENGINEER'S SPECIFICATION, AND LOCAL APPLICABLE CODES INCLUDING AMENDMENTS, BULLETINS, ETC. AS WELL AS THE STANDARDS OF INSTALLATION AND EQUIPMENT ESTABLISHED FOR THE BUILDINGS, AND REQUIREMENTS OF THE OWNER.
B	EXCEPT FOR CHANGES AS MAY BE SPECIFICALLY APPROVED BY THE ENGINEER OF RECORD. IN ACCORDANCE WITH ALTERNATES OF OPTIONS AS STATED HEREINAFTER, ALL WORK MUST BE IN FULL ACCORDANCE WITH THE INTENT OF THE PLANS AND SPECIFICATIONS. SYSTEMS ARE TO BE COMPLETE, EFFICIENT, AND SATISFACTORY OPERATION WHEN PROJECT IS DELIVERED TO THE OWNER.
D	CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND APPROVAL FROM GOVERNING AUTHORITIES AND FILE NECESSARY FORMS, PAY ALL INSPECTION FEES.
E	ELECTRICAL CONTRACTOR SHALL COMPLY WITH THE LATEST NATIONAL ELECTRICAL CODE, LIFE SAFETY CODE AND APPLICABLE STATE AND LOCAL CODES AND ORDINANCES.
F	ELECTRICAL EQUIPMENT AND WIRING SHALL BE NEW AND SHALL BE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR, UNLESS OTHERWISE NOTED.
G	WIRING SHALL BE IN CONDUIT. CONDUIT SHALL BE 3/4" CONDUIT MINIMUM. CONDUITS IN FINISHED AREAS SHALL BE CONCEALED
H	NEW WIRES SHALL BE TYPE THHN. MINIMUM SIZE SHALL BE #12 AWG, UNLESS OTHERWISE NOTED. FINAL CONNECTIONS TO EQUIPMENT, FURNISHED AND INSTALLED BY OTHERS, SHALL BE PROVIDED BY THIS CONTRACTOR.

THE COL LAB ORAT IVE

UNIFIED BUILDING SYSTEMS ENGINEERING
69 S. GRATIOT AVE.
MT. CLEMENS, MI 48043
UBS PROJECT : 047.26.11

STATE OF MICHIGAN
MICHAEL PAUL HARRIS, II
ENGINEER
No. 6201067299
LICENSED PROFESSIONAL ENGINEER

PROJECT TITLE

Van Buren Public Schools

Owen Intermediate

- HVAC Upgrades

45201 Owen Street,
Belleville, MI 48111

11.02.2026	BID & PERMIT

TC JOB NO. 107509

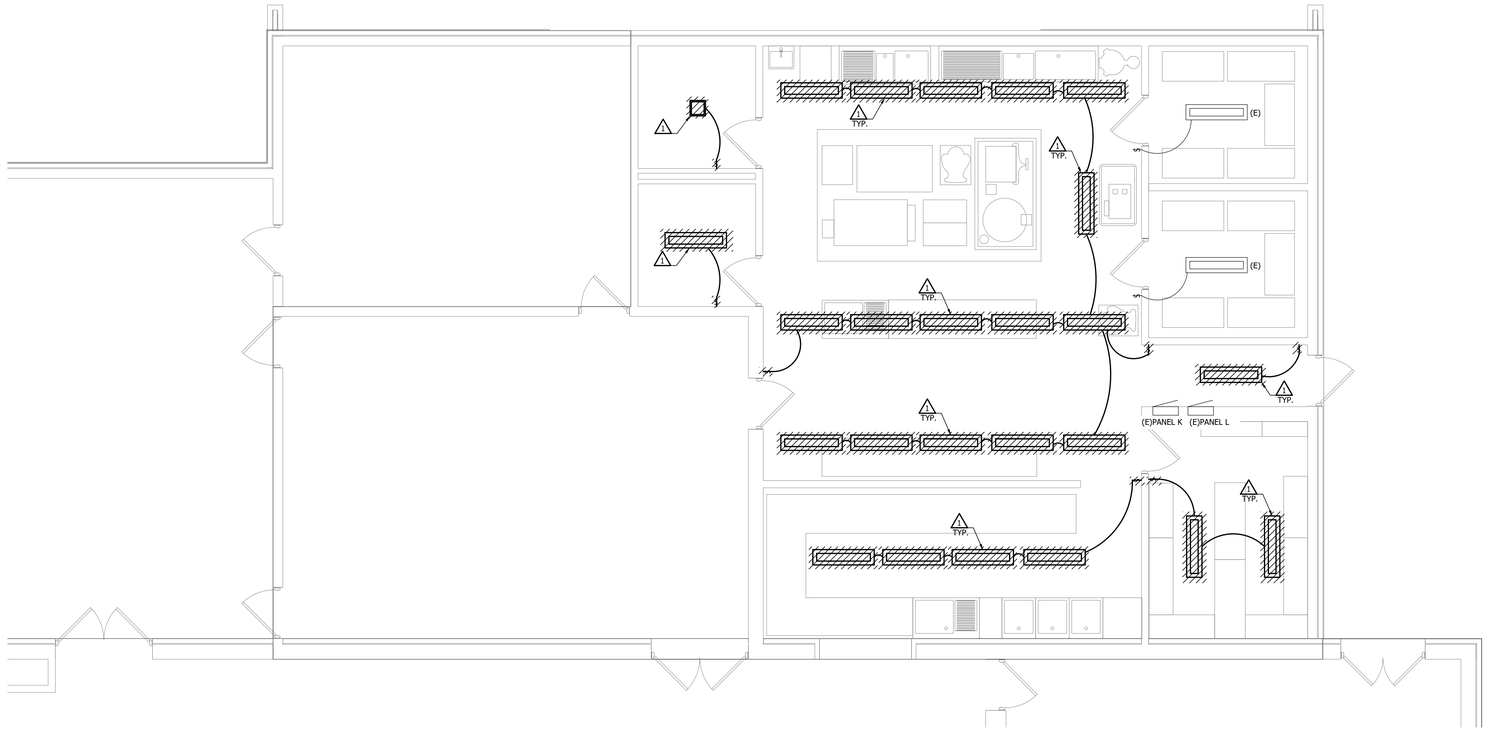
OWNER JOB NO.

SHEET TITLE

COMPOSITE ELECTRICAL ROOF PLAN

SHEET NO.

E2.00



1 E1.00 ENLARGED ELECTRICAL DEMOLITON FLOOR PLAN - KITCHEN

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

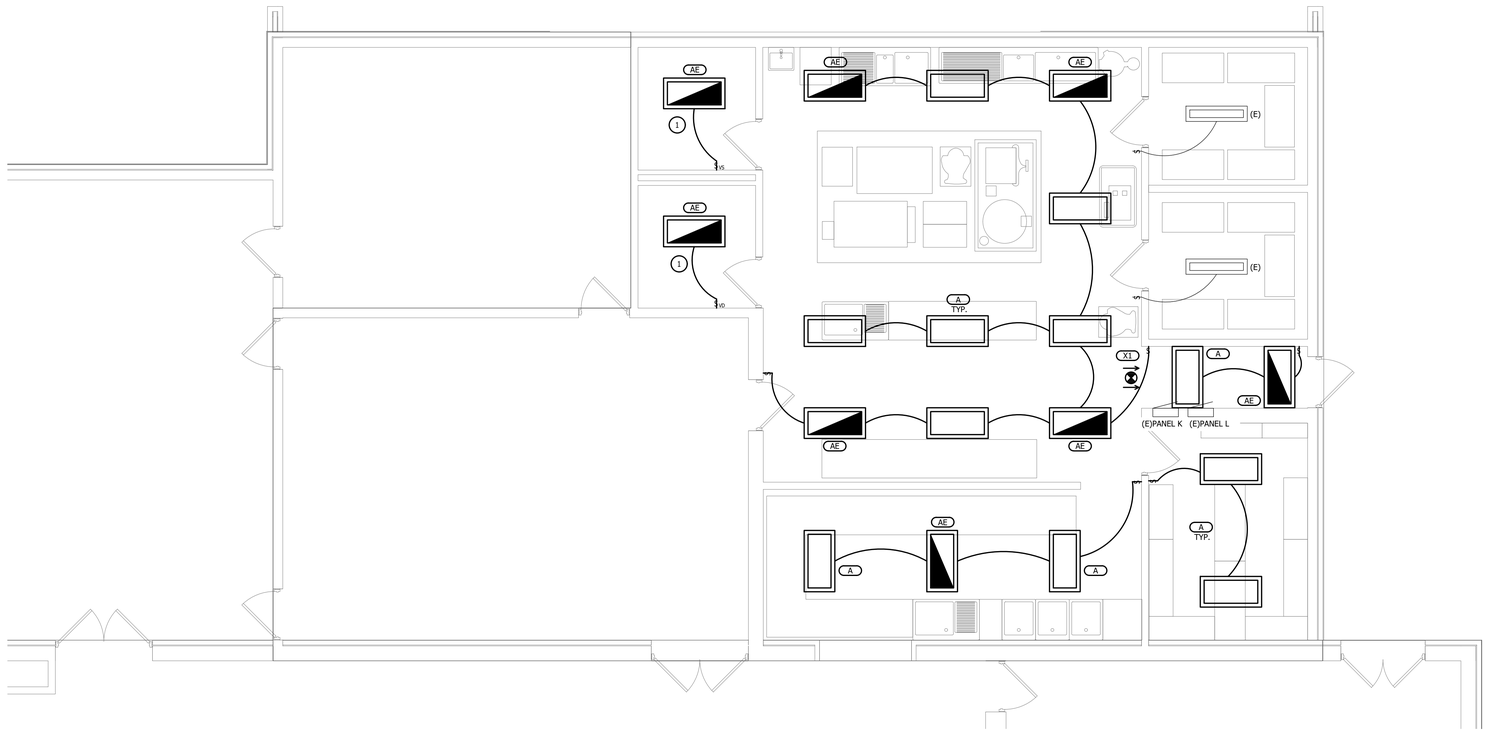
DEMOLITION KEYED NOTES	
1	LIGHT FIXTURES TO BE REMOVED COMPLETE. REMOVE CONDUIT AND WIRING COMPLETE BACK TO JUNCTION BOX FEEDING THIS AREA. PREPARE FOR CONNECTION TO NEW LIGHTING FROM JUNCTION BOX AS INDICATED ON NEW WORK PLANS.

GENERAL DEMOLITION NOTES	
A	THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL EXTENT OF WORK TO BE PERFORMED. THE EXACT EXTENT OF DEMOLITION SHALL BE DETERMINED BY THE NEW WORK.
B	ANY INTERRUPTIONS OF EXISTING SERVICES AND/OR EQUIPMENT SHALL BE PERFORMED AT A TIME APPROVED IN ADVANCE BY OWNER'S REPRESENTATIVE SO AS NOT TO INTERFERE WITH THE PRESENT BUILDING'S OPERATION.
C	PRIOR TO COMMENCEMENT OF WORK, CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH EXISTING SITE CONDITIONS, SYSTEMS, AND UTILITIES. NOTIFY DESIGN PROFESSIONAL OF ANY INTERFERENCES OR DISCREPANCIES.
D	ALL ITEMS INDICATED WITH CROSS-HATCHING SHALL BE REMOVED COMPLETELY WITH ALL RELATED ITEMS INCLUDING HANGERS, SUPPORTS, INSULATION, CONTROLS, ETC. CAP ALL OPEN-ENDED PIPES AND DUCTS.
E	THE OWNER SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL EQUIPMENT BEING REMOVED. ALL ITEMS REMOVED SHALL BE LEGALLY DISPOSED OF. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXISTING RELOCATED AND OWNER-PROVIDED EQUIPMENT.
F	VERIFY DEPTH, SIZE, LOCATIONS, AND CONDITIONS OF EXISTING UTILITIES IN THE FIELD, INCLUDING POINTS OF CONNECTION, PRIOR TO STARTING WORK.
G	ALL ITEMS ON DEMOLITION PLAN SHALL BE CONSIDERED EXISTING UNLESS OTHERWISE NOTED. ALL WORK INDICATED ON PLANS HAS BEEN LOCATED PER EXISTING DRAWINGS AND/OR FIELD OBSERVATION AND REQUIRES FIELD VERIFICATION.
H	ALL EXISTING WORK TO REMAIN SHALL BE PROTECTED FROM DAMAGE. WHERE DUCT WORK PIPE INSULATION HAS BEEN DAMAGED DURING DEMOLITION, THE CONTRACTOR SHALL REPAIR INSULATION AS REQUIRED TO MATCH EXISTING.

THE COLLABORATIVE

UNIFIED BUILDING SYSTEMS ENGINEERING
69 S. GRATIOT AVE.
MT. CLEMENS, MI 48043
UBS PROJECT : 047.26.11

STATE OF MICHIGAN
MICHAEL PAUL HARRIS, II
ENGINEER
No. 6201057299
LICENSED PROFESSIONAL ENGINEER



2 E1.00 ENLARGED ELECTRICAL POWER NEW WORK FLOOR PLAN - KITCHEN

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

NEW WORK KEYED NOTES	
1	NEW LED FIXTURES TO REPLACE EXISTING FIXTURES. PROVIDE NEW CONTROL SENSORS AND SWITCHING AS SHOWN, CONNECT TO EXISTING CIRCUIT AVAILABLE AS A RESULT OF DEMOLITION IN THIS AREA. ALL WIRING AND CONDUIT SHALL BE NEW. RE-USE EXISTING SWITCH LOCATIONS FOR NEW SWITCHES. PROVIDE NEW LIGHTING CONTROL SYSTEM. PROVIDE ALL PROGRAMMING AS REQUIRED FOR A COMPLETE SYSTEM.

POWER GENERAL NOTES	
A	THESE DRAWINGS ARE DIAGRAMMATIC AND REPRESENT THE GENERAL EXTENT OF THE WORK TO BE PERFORMED. PROVIDE AND EXECUTE ALL POWER SYSTEMS PER ENGINEER'S SPECIFICATION, AND LOCAL APPLICABLE CODES INCLUDING AMENDMENTS, BULLETINS, ETC. AS WELL AS THE STANDARDS OF INSTALLATION AND EQUIPMENT ESTABLISHED FOR THE BUILDINGS, AND REQUIREMENTS OF THE OWNER.
B	EXCEPT FOR CHANGES AS MAY BE SPECIFICALLY APPROVED BY THE ENGINEER OF RECORD, IN ACCORDANCE WITH ALTERNATES OF OPTIONS AS STATED HEREINAFTER, ALL WORK MUST BE IN FULL ACCORDANCE WITH THE INTENT OF THE PLANS AND SPECIFICATIONS. SYSTEMS ARE TO BE COMPLETE, EFFICIENT, AND SATISFACTORY OPERATION WHEN PROJECT IS DELIVERED TO THE OWNER.
D	CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND APPROVAL FROM GOVERNING AUTHORITIES AND FILE NECESSARY FORMS, PAY ALL INSPECTION FEES.
E	ELECTRICAL CONTRACTOR SHALL COMPLY WITH THE LATEST NATIONAL ELECTRICAL CODE, LIFE SAFETY CODE AND APPLICABLE STATE AND LOCAL CODES AND ORDINANCES.
F	ELECTRICAL EQUIPMENT AND WIRING SHALL BE NEW AND SHALL BE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR, UNLESS OTHERWISE NOTED.
G	WIRING SHALL BE IN CONDUIT. CONDUIT SHALL BE 3/4" CONDUIT MINIMUM. CONDUITS IN FINISHED AREAS SHALL BE CONCEALED
H	NEW WIRES SHALL BE TYPE THHN. MINIMUM SIZE SHALL BE #12 AWG, UNLESS OTHERWISE NOTED. FINAL CONNECTIONS TO EQUIPMENT, FURNISHED AND INSTALLED BY OTHERS, SHALL BE PROVIDED BY THIS CONTRACTOR.

PROJECT TITLE

Van Buren Public Schools

Owen Intermediate

- HVAC Upgrades

45201 Owen Street,
Belleville, MI 48111

11.02.2026	BID & PERMIT

TC JOB NO. 107509

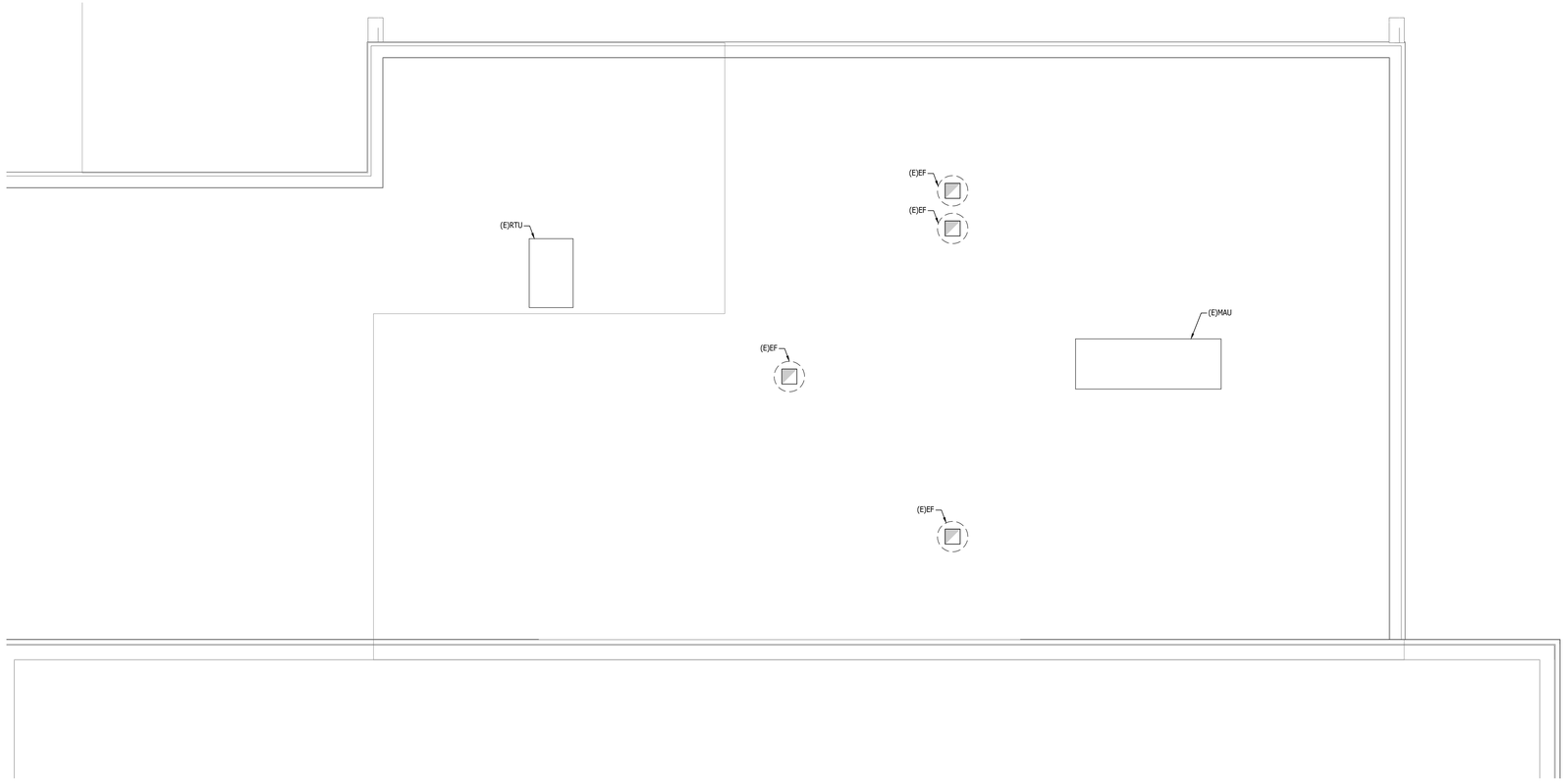
OWNER JOB NO.

SHEET TITLE

ENLARGED LIGHTING DEMOLITION AND NEW WORK PLAN - KITCHEN

SHEET NO.

E4.10



1 / E2.00 ENLARGED ELECTRICAL POWER DEMOLITON PLAN - ROOF

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

GENERAL DEMOLITION NOTES

A	THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL EXTENT OF WORK TO BE PERFORMED. THE EXACT EXTENT OF DEMOLITION SHALL BE DETERMINED BY THE NEW WORK.
B	ANY INTERRUPTIONS OF EXISTING SERVICES AND/OR EQUIPMENT SHALL BE PERFORMED AT A TIME APPROVED IN ADVANCE BY OWNER'S REPRESENTATIVE SO AS NOT TO INTERFERE WITH THE PRESENT BUILDING'S OPERATION.
C	PRIOR TO COMMENCEMENT OF WORK, CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH EXISTING SITE CONDITIONS, SYSTEMS, AND UTILITIES. NOTIFY DESIGN PROFESSIONAL OF ANY INTERFERENCES OR DISCREPANCIES.
D	ALL ITEMS INDICATED WITH CROSS-HATCHING SHALL BE REMOVED COMPLETELY WITH ALL RELATED ITEMS INCLUDING HANGERS, SUPPORTS, INSULATION, CONTROLS, ETC. CAP ALL OPEN-ENDED PIPES AND DUCTS.
E	THE OWNER SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL EQUIPMENT BEING REMOVED. ALL ITEMS REMOVED SHALL BE LEGALLY DISPOSED OF. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXISTING RELOCATED AND OWNER-PROVIDED EQUIPMENT.
F	VERIFY DEPTH, SIZE, LOCATIONS, AND CONDITIONS OF EXISTING UTILITIES IN THE FIELD, INCLUDING POINTS OF CONNECTION, PRIOR TO STARTING WORK.
G	ALL ITEMS ON DEMOLITION PLAN SHALL BE CONSIDERED EXISTING UNLESS OTHERWISE NOTED. ALL WORK INDICATED ON PLANS HAS BEEN LOCATED PER EXISTING DRAWINGS AND/OR FIELD OBSERVATION AND REQUIRES FIELD VERIFICATION.
H	ALL EXISTING WORK TO REMAIN SHALL BE PROTECTED FROM DAMAGE. WHERE DUCT WORK PIPE INSULATION HAS BEEN DAMAGED DURING DEMOLITION, THE CONTRACTOR SHALL REPAIR INSULATION AS REQUIRED TO MATCH EXISTING.

THE COLLABORATIVE

UNIFIED BUILDING SYSTEMS ENGINEERING
69 S. GRATIOT AVE.
MT. CLEMENS, MI 48043
UBS PROJECT : 047.26.11

STATE OF MICHIGAN
MICHAEL PAUL HARRIS, II
ENGINEER
No. 6201057299
LICENSED PROFESSIONAL ENGINEER

PROJECT TITLE

Van Buren Public Schools

Owen Intermediate

- HVAC Upgrades

45201 Owen Street,
Belleville, MI 48111

11.02.2026	BID & PERMIT

TC JOB NO. 107509

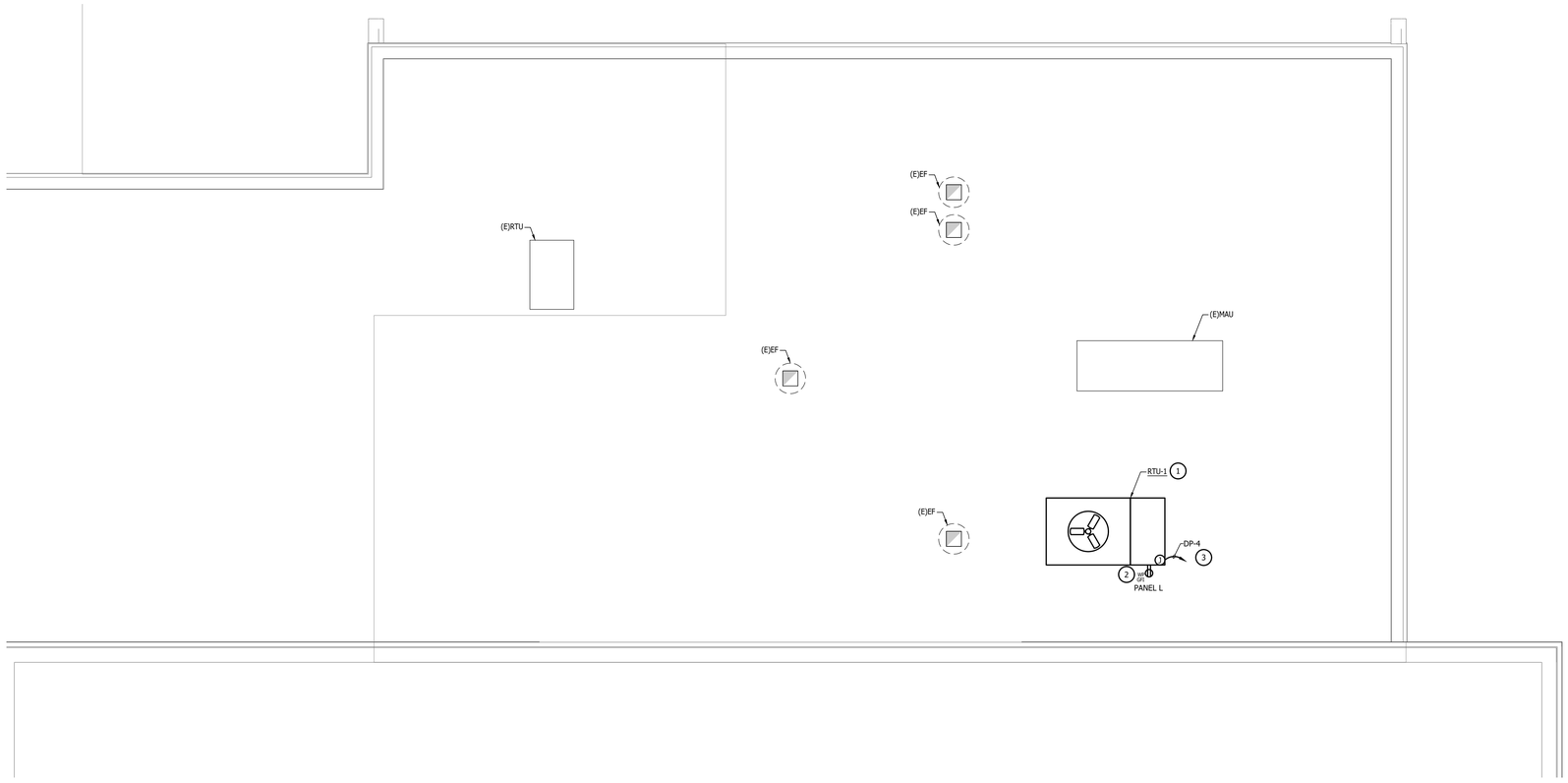
OWNER JOB NO.

SHEET TITLE

ENLARGED POWER DEMOLITION AND NEW WORK PLAN - ROOF

SHEET NO.

E4.20



2 / E2.00 ENLARGED ELECTRICAL POWER NEW WORK PLAN - ROOF

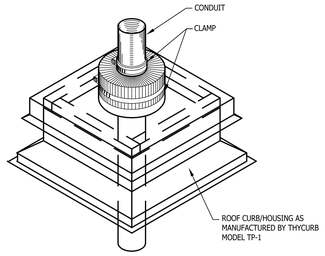
SCALE: 1/4" = 1'-0"

NEW WORK KEYED NOTES

1	NEW PACKAGED ROOFTOP UNIT INSTALLED BY MECHANICAL TRADES. ELECTRICAL CONTRACTOR SHALL PROVIDE FINAL ELECTRICAL CONNECTIONS USING NEW CONDUIT AND WIRING. REFER TO ELECTRICAL ONE-LINE DIAGRAM FOR SIZING INFORMATION.
2	PROVIDE GFCI CONVENIENCE RECEPTACLE WITH WHILE IN USE COVER. CIRCUIT AS INDICATED ON PLAN.
3	ALL FEEDERS TO MECHANICAL EQUIPMENT ON ROOF SHALL BE RUN ABOVE CEILING AND STUB UP TO DISCONNECT. NO CONDUIT TO BE RUN EXPOSED ON THE ROOF.

POWER GENERAL NOTES

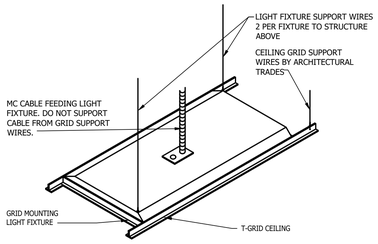
A	THESE DRAWINGS ARE DIAGRAMMATIC AND REPRESENT THE GENERAL EXTENT OF THE WORK TO BE PERFORMED. PROVIDE AND EXECUTE ALL POWER SYSTEMS PER ENGINEER'S SPECIFICATION, AND LOCAL APPLICABLE CODES INCLUDING AMENDMENTS, BULLETINS, ETC. AS WELL AS THE STANDARDS OF INSTALLATION AND EQUIPMENT ESTABLISHED FOR THE BUILDINGS, AND REQUIREMENTS OF THE OWNER.
B	EXCEPT FOR CHANGES AS MAY BE SPECIFICALLY APPROVED BY THE ENGINEER OF RECORD. IN ACCORDANCE WITH ALTERNATES OF OPTIONS AS STATED HEREINAFTER, ALL WORK MUST BE IN FULL ACCORDANCE WITH THE INTENT OF THE PLANS AND SPECIFICATIONS. SYSTEMS ARE TO BE COMPLETE, EFFICIENT, AND SATISFACTORY OPERATION WHEN PROJECT IS DELIVERED TO THE OWNER.
D	CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND APPROVAL FROM GOVERNING AUTHORITIES AND FILE NECESSARY FORMS, PAY ALL INSPECTION FEES.
E	ELECTRICAL CONTRACTOR SHALL COMPLY WITH THE LATEST NATIONAL ELECTRICAL CODE, LIFE SAFETY CODE AND APPLICABLE STATE AND LOCAL CODES AND ORDINANCES.
F	ELECTRICAL EQUIPMENT AND WIRING SHALL BE NEW AND SHALL BE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR, UNLESS OTHERWISE NOTED.
G	WIRING SHALL BE IN CONDUIT. CONDUIT SHALL BE 3/4" CONDUIT MINIMUM. CONDUITS IN FINISHED AREAS SHALL BE CONCEALED
H	NEW WIRES SHALL BE TYPE THHN. MINIMUM SIZE SHALL BE #12 AWG, UNLESS OTHERWISE NOTED. FINAL CONNECTIONS TO EQUIPMENT, FURNISHED AND INSTALLED BY OTHERS, SHALL BE PROVIDED BY THIS CONTRACTOR.



CONDUIT PENETRATION AT ROOF DETAIL

NOT TO SCALE

COORDINATE WITH MECHANICAL TRADES. ROOF FLASHING SHALL BE PER THE OWNERS SPECIFICATIONS.

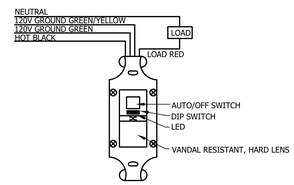


T-GRID FIXTURE MOUNTING DETAIL

NO SCALE

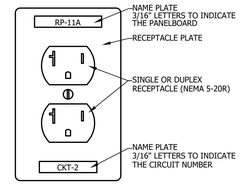
ELECTRICAL FIXTURES

1. PENDANT MOUNTED FIXTURES SHALL BE DIRECTLY SUPPORTED FROM THE STRUCTURE ABOVE USING A 9 GAUGE WIRE OR AN APPROVED ALTERNATE SUPPORT WITHOUT USING THE CEILING SUSPENSION SYSTEM FOR DIRECT SUPPORT.
2. TANDEM FIXTURES MAY UTILIZE COMMON WIRES.



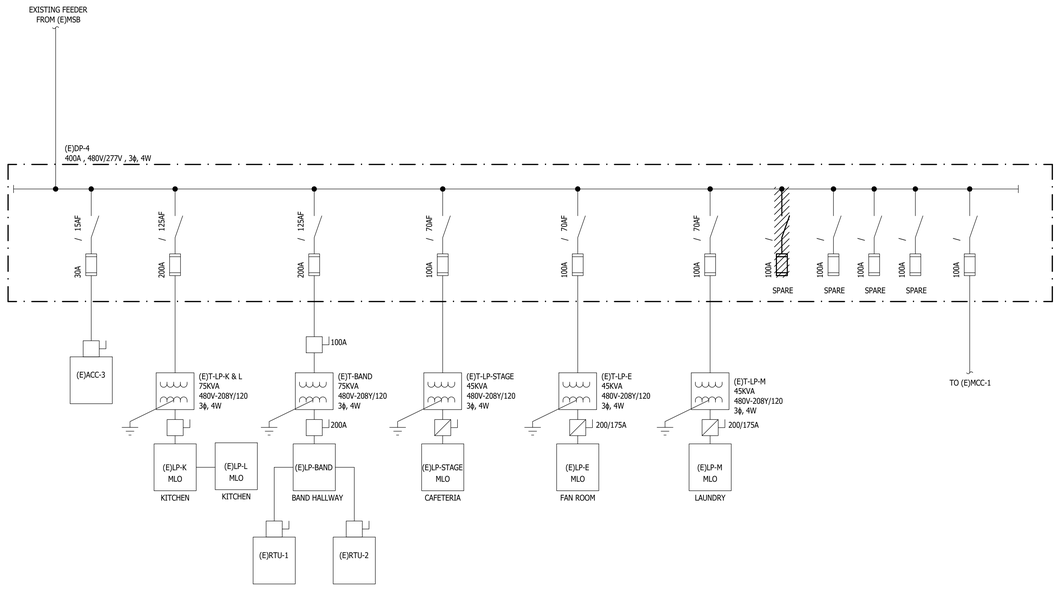
OFFICE VACANCY SENSOR SCHEMATIC

NO SCALE



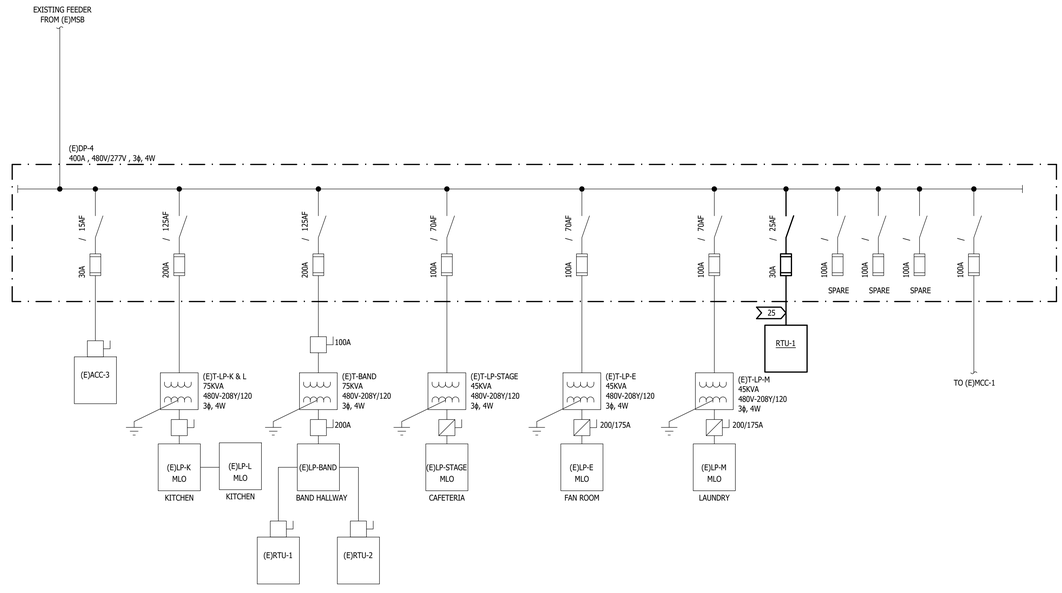
DETAIL OF BRANCH CIRCUIT NUMBER ON RECEPTACLE PLATE

NO SCALE



PARTIAL ONE-LINE DIAGRAM DEMOLITION WORK

NO SCALE



PARTIAL ONE-LINE DIAGRAM NEW WORK

NO SCALE

FEEDER (AMPS)	COND. SIZE	COPPER FEEDER AND CONDUIT SIZES	
		3 WIRE WITH GROUND	4 WIRE WITH GROUND
25	10	3#10, 1#10 GND IN 3/4"C	4#10, 1#10 GND IN 3/4"C

LOAD SUMMARY

(E)DP-4 400A 480/277V-3Ø-4W

ITEM SERVED	LOAD @480V 3Ø		REMARKS
	KVA	AMPS	
EXISTING LOAD	175.0	211.0	EXISTING LOAD IS BASED ON EXISTING DRAWINGS
ADDED LOAD RTU-1	14.1	16.9	
TOTAL LOAD	189.1	227.5	TOTAL AMPS CALCULATIONS IS BASED ON 3Ø LOAD

THE COLLABORATIVE

UNIFIED BUILDING SYSTEMS ENGINEERING
69 S. GRATIOT AVE.
MT. CLEMENS, MI 48043
UBS PROJECT : 047.26.11

STATE OF MICHIGAN
MICHAEL PAUL HARRIS, II
ENGINEER
No. 6201067299
LICENSED PROFESSIONAL ENGINEER

PROJECT TITLE

Van Buren Public Schools

Owen Intermediate

- HVAC Upgrades

45201 Owen Street,
Belleville, MI 48111

11.02.2026	BID & PERMIT

TC JOB NO. 107509

OWNER JOB NO.

SHEET TITLE

ELECTRICAL DETAILS & ONE LINE DIAGRAM

SHEET NO.

E5.00