Electrical Requirements.

Provide all necessary electrical to properly complete this work.

1. Best Commercial installation practices
2. Matching existing work in this facility
3. Comply with the national electric code.
4. Verify the Equipment has internal disconnects or provide weathertight disconnect at connection location.

Materials:

1. Copper wire THWN
2. Conduit IMC
3. Exterior conduit to be water tight, threaded or PVC
   a. Extend exterior through the curb and L Box to feed
   b. NEMA 4 enclosure
4. Run conduit above ceiling where possible, may run on wall through multipurpose room/Cafeteria.
5. Pull boxes at (least 2 but verify your selected run) will be required, coordinate with the Owner for most servicable/accessible locations.
6. Branch panel.
   a. Main electrical entrance room add a branch panel 225 main/3 phase tapped off MDP
   b. Square D or ITT, match existing hardware and breaker types in this building.

Sizing circuits:

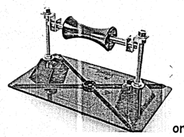
1. sizing on drawing is based on 70 amp circuits at 350' run, verify conditions and adjust sizing accordingly
2. If longer than 350' check voltage drop for 1.25%

Fire Alarm

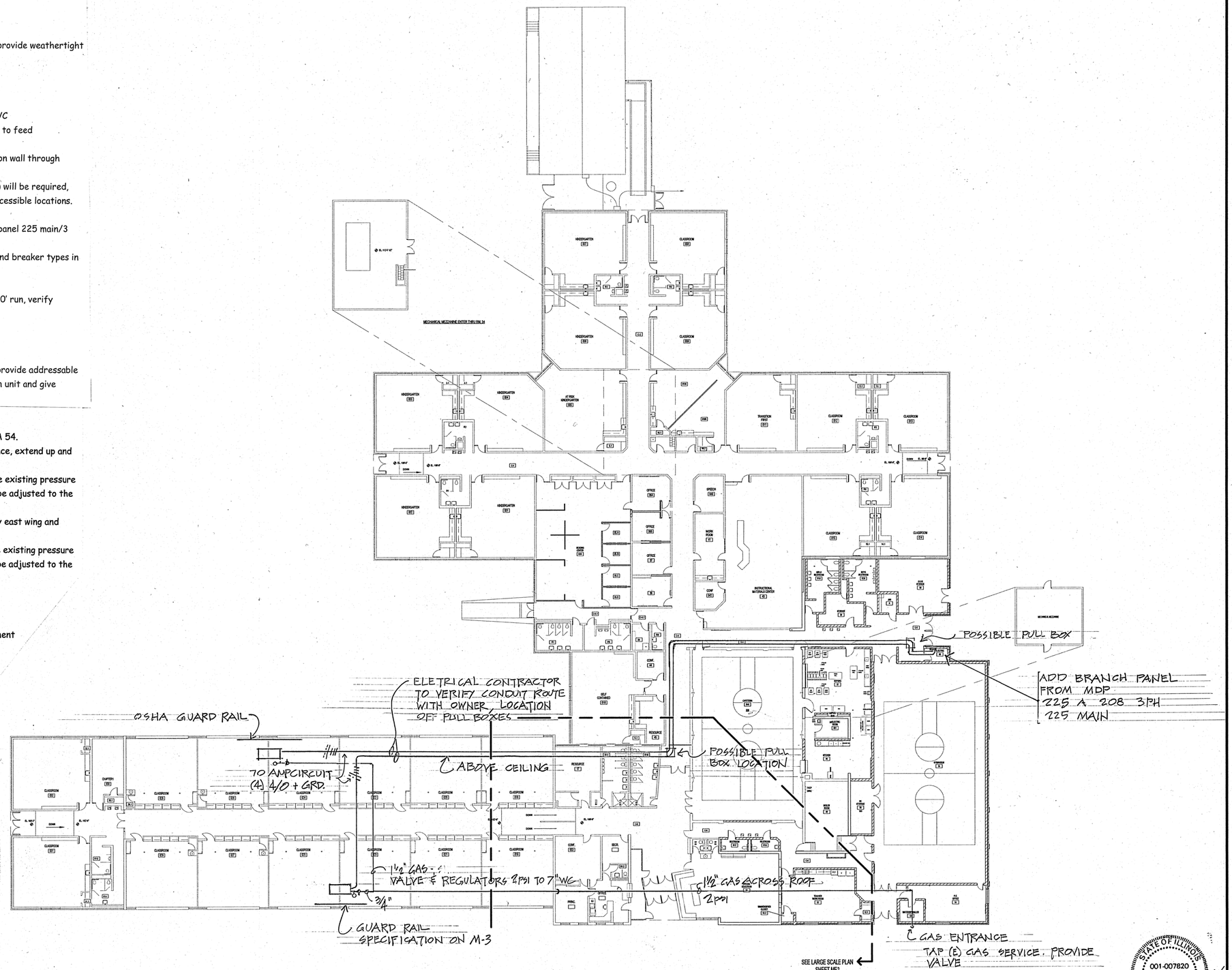
1. All DOAS units, Lincoln and Edison (3 units total) provide addressable smoke detection in supply plenum side to shut down unit and give trouble signal at Simplex fire alarm panel.

Gas Piping Requirements

1. All gas piping to be completed and tested per NFPA 54.
2. **Lincoln**, tap at the meter south of the front entrance, extend up and across roof
   a. Piping is sized for 2 psi gas, verify that is the existing pressure available before proceeding, pipe sizing may be adjusted to the available pressure.
3. **Edison**, tap at the Existing DOAS on the two-story east wing and extend across roof.
   a. Piping is sized for 1 psi gas, verify that is the existing pressure available before proceeding, pipe sizing may be adjusted to the available pressure.
4. General requirements
   a. Black iron pipe, schedule 40
   b. Provide expansion 'U' or offset every 100'
   c. Piping to sit on roller supports to allow movement



   or similar
   d. Set piping roller support on EPDM walkpad material
   e. Support as required to avoid sagging in Pipe, not more than 10' spacing for 1" or larger pipe, 8' for smaller pipe.
   f. Provide valve at point of branch connection and at the piece of equipment.
   g. Provide appropriate Regulator at each piece of equipment, vent at least 10' away from fresh air intake.



N OVERALL FIRST FLOOR PLAN
1" = 20'-0"

MIDDLETON ASSOCIATES, INC ARCHITECTS
1702 W. COLLEGE AVE., SUITE E, NORMAL, IL 61761-2793, P: 309-452-1271

LINCOLN ELEMENTARY SCHOOL DOAS

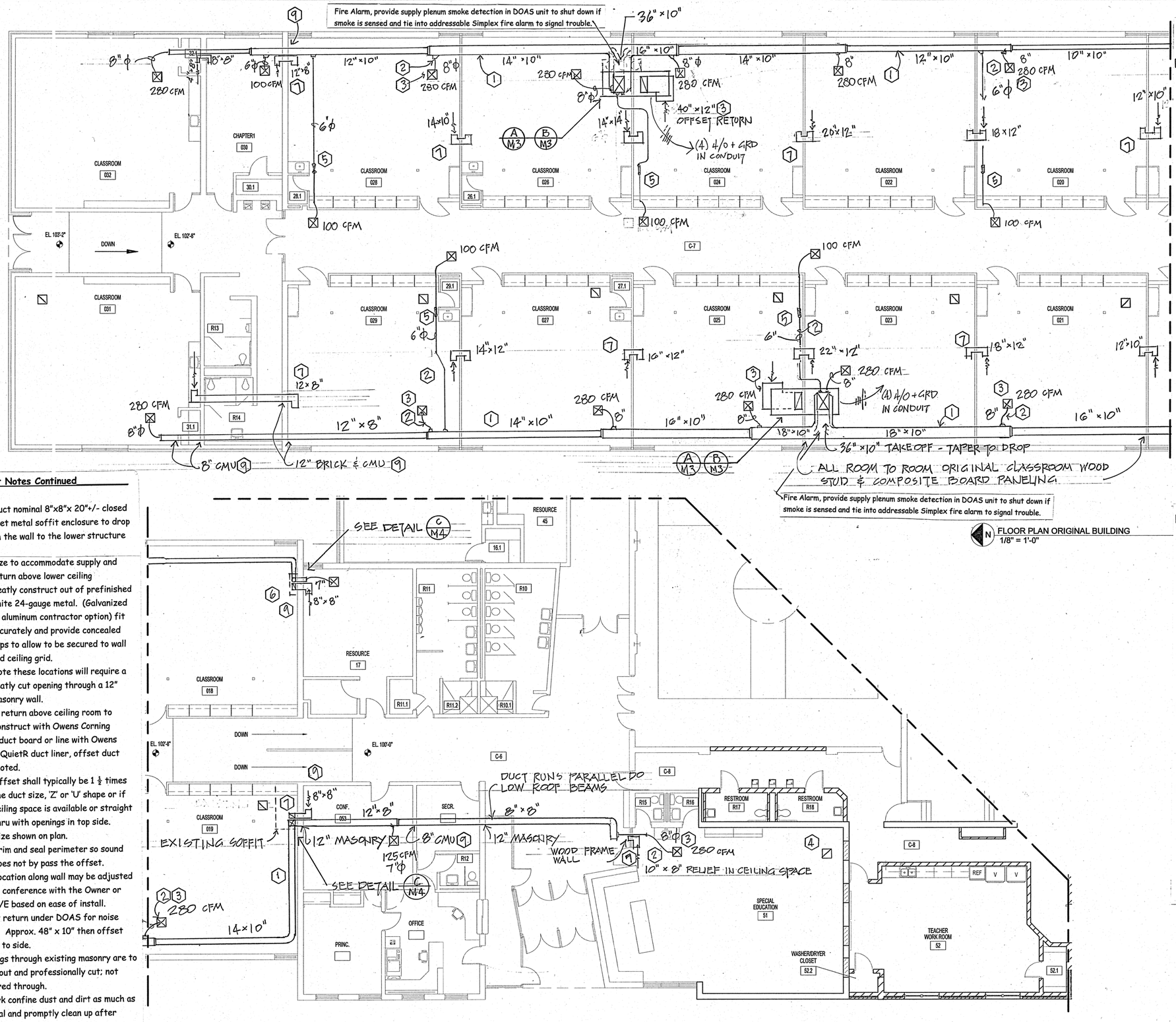
315 N BONHAM STREET
MACOMB, IL 61455

MACOMB CUSD #185
30 W. WASHINGTON STREET
MACOMB IL 61455

REVISIONS		
#	DATE	DESCRIPTION

PROJECT # 27350025
ISSUED DATE MAY 22, 2025
SHEET
ME 1
1 OF 5 SHEETS

STATE OF ILLINOIS
001-007820
RUSSELL W. MIDDLETON
REGISTERED ARCHITECT
Expires 11/30/2026



Project Notes

1. All primary supply duct work to be galvanized sheet metal, fabricate and support in accordance with SMACNA standards
   a. Tapered transitions
   b. All elbows (except round duct) to be vaned for smooth flow
   c. Wrap with not less than ½" plenum rated vapor tight insulation installed taped vapor tight seams
   d. Provide duct support saddles to prevent insulation damage.
   e. Support duct work from structure in accordance with SMACNA standards. Do not drill beam flanges, use clamps
   f. All branch duct take offs to be tapered boot connection with balancing damper.
   g. Where ducts penetrate a wall assembly, seal tight around so sound does not leak past from adjacent rooms
2. Secondary supply branches typically round duct, insulated, properly supported
   a. Tapered take off with balancing damper for each branch
   b. Last 6' +/- may be insulated plenum rated flex duct properly supported, band connected and without kinks
   c. Connection to diffuser to be tight elbow to allow a straight connection to flex duct.
3. Diffusers to be sized to branch supply size
   a. Nominal 2'x2', steel, connection size to match duct size, steel, 4 way white, Titus, Hart and Cooley or similar commercial products.

   b. Provide additional ceiling 'T' grid along unsupported side in 2'x4' grid ceilings.
4. Return grilles, open to ceiling circulating plenum. *(100% exhaust air so not a return plenum terms of combustibles).*
   a. Nominal 2' x 2' Perforated steel, white
   b. Titus, Hart and Cooley or equal
5. Construct nominal 8"x8"x 20" closed end sheet metal soffit enclosure to drop 6" down under beam and back up into ceiling space to extend duct to corridor. Neatly construct out of prefinished white 24-gauge metal. (Galvanized or aluminum contractor option) fit accurately and provide concealed clips to allow to be secured to wall and ceiling grid.

Project Notes Continued

6. Construct nominal 8"x8"x 20"+/- closed end sheet metal soffit enclosure to drop through the wall to the lower structure area.
   a. Size to accommodate supply and return above lower ceiling
   b. Neatly construct out of prefinished white 24-gauge metal. (Galvanized or aluminum contractor option) fit accurately and provide concealed clips to allow to be secured to wall and ceiling grid.
   c. Note these locations will require a neatly cut opening through a 12" masonry wall.
7. Offset return above ceiling room to room, construct with Owens Corning QuietR duct board or line with Owens Corning QuietR duct liner, offset duct size is noted.
   a. Offset shall typically be 1 ½ times the duct size, 'Z' or 'U' shape or if ceiling space is available or straight thru with openings in top side.
   b. Size shown on plan.
   c. Trim and seal perimeter so sound does not by pass the offset.
   d. Location along wall may be adjusted in conference with the Owner or A/E based on ease of install.
8. Offset return under DOAS for noise control. Approx. 48" x 10" then offset opening to side.
9. Openings through existing masonry are to be laid out and professionally cut; not hammered through.
10. All work confine dust and dirt as much as practical and promptly clean up after operations are completed.

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LINCOLN ELEMENTARY SCHOOL DOAS

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MACOMB CUSD #185
30 W. WASHINGTON STREET
MACOMB IL 61455

REVISIONS		
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PROJECT # 27350025

ISSUED DATE MAY 22, 2025

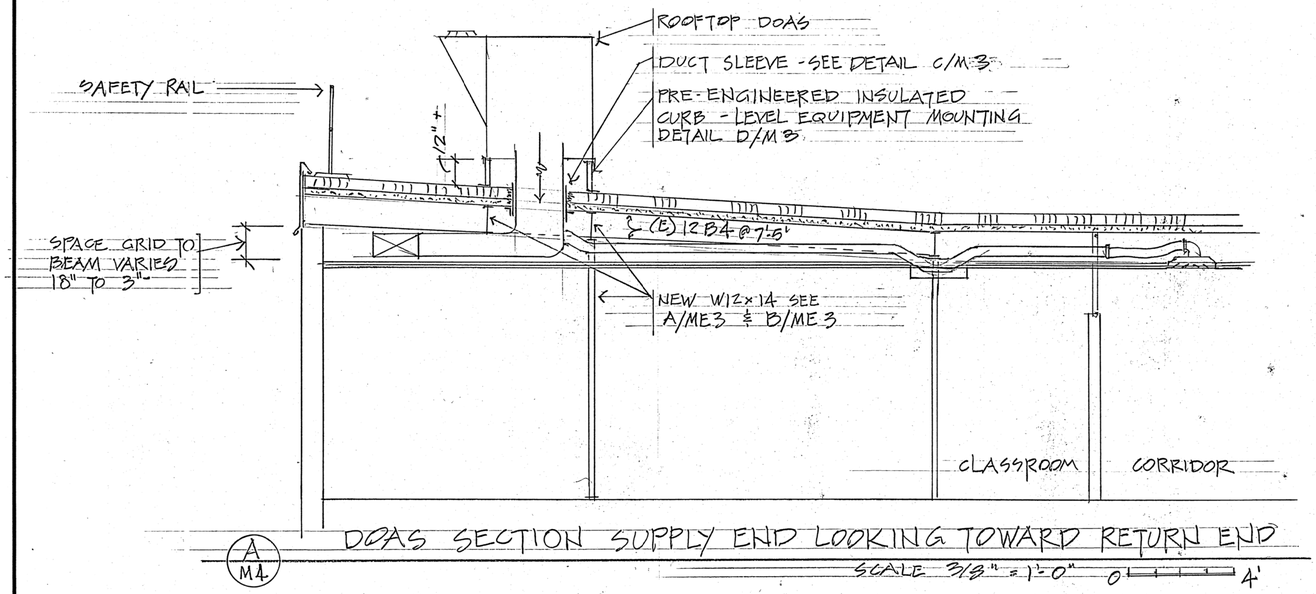
SHEET

ME 2

2 OF 5 SHEETS

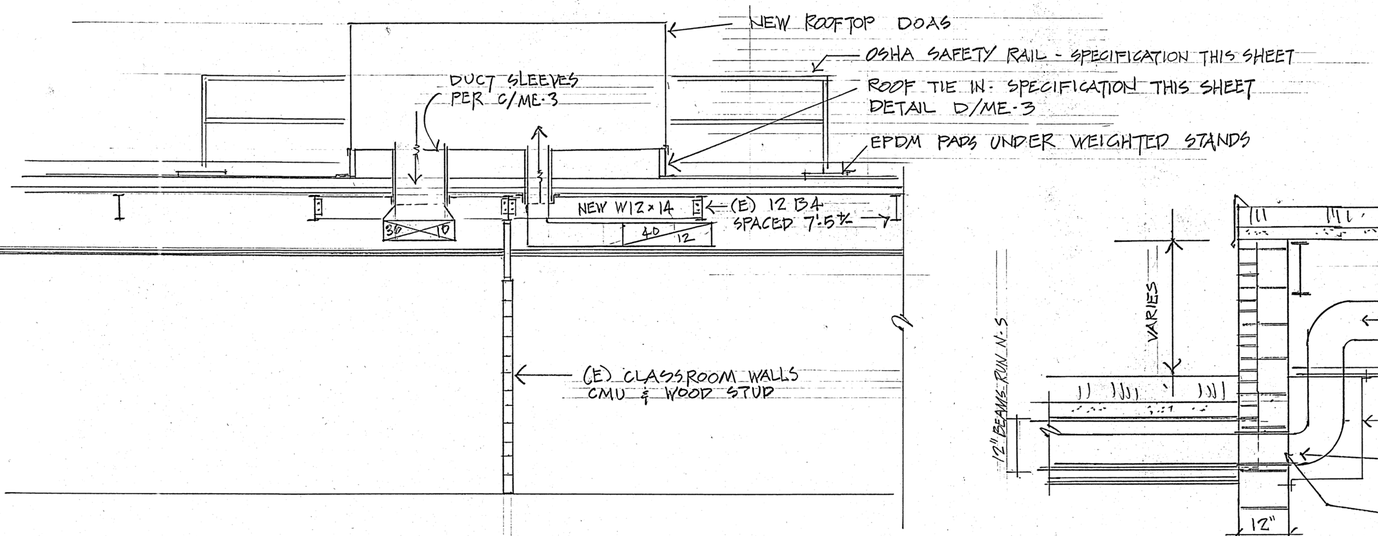
STATE OF ILLINOIS
001-007820
RUSSELL W. MIDDLETON
LICENSED ARCHITECT

Expires 11·30·2025



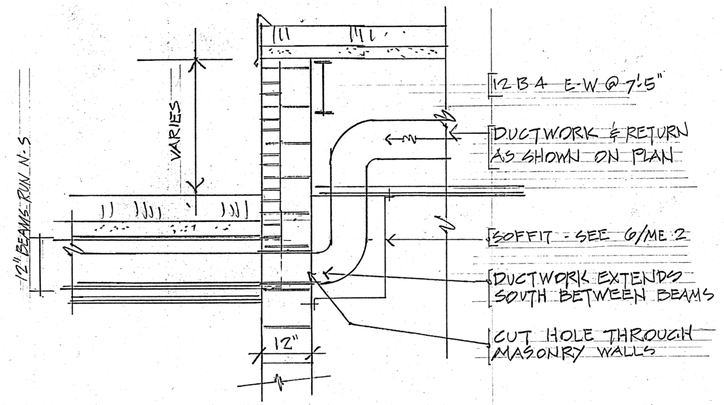
A/M4 DOAS SECTION SUPPLY END LOOKING TOWARD RETURN END

SCALE 3/8" = 1'-0" 0 4'



B/M4 DOAS SECTION LOOKING TOWARD EXTERIOR WALL

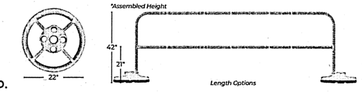
SCALE 3/8" = 1'-0" 0 4'



C/M4 DETAIL AT ROOF STEP

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

Safety rail specification

1. Provide safety rail in compliance with OSHA for roof fall protection
   a. **Two (2) assemblies required** x 24' length
2. Steel pipe rail in weighted bases
   a. **Provide EPDM roof walkway pad** under each base
   b. 

3. Railing to be in four (4) sections x 6' long = 24' total length
   a. 1 ½" pipe construction
   b. Top rail at 42"
   c. Intermediate rail at 21"
   d. Lower rail not required
4. Color to be Gray or black
   a. Powder coated
   b. Gray preferred
5. Manufactured rail system such as
   a. Safety Rail Company, SRC 360 Mobile Rail with weighted bases 888-903-2387
   b. Edge Fall Protection,844-314-1374
   c. Global Industries Guardian Series with 21 ½" base system 888-978-7759

Roofing Specification

Existing Roof is under Warranty, all tie in work, flashing and walk pads per roofing membrane manufacturer requirements, by a manufacturer certified applicator

1. Carlisle serial number 10083082
2. Comply with all requirement for warranted tie in
3. Adhere walk way pads along the Service side of each unit x 12'

STATE OF ILLINOIS
001-007820
RUSSELL W. MIDDLETON
LICENSED ARCHITECT

Expires 11/30/2026

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1702 W. COLLEGE AVE., SUITE E, NORMAL, IL 61761-2793, P: 309-452-1271

LINCOLN ELEMENTARY SCHOOL DOAS

315 N BONHAM STREET
MACOMB, IL 61455

MACOMB CUSD #185
30 W. WASHINGTON STREET

REVISIONS		
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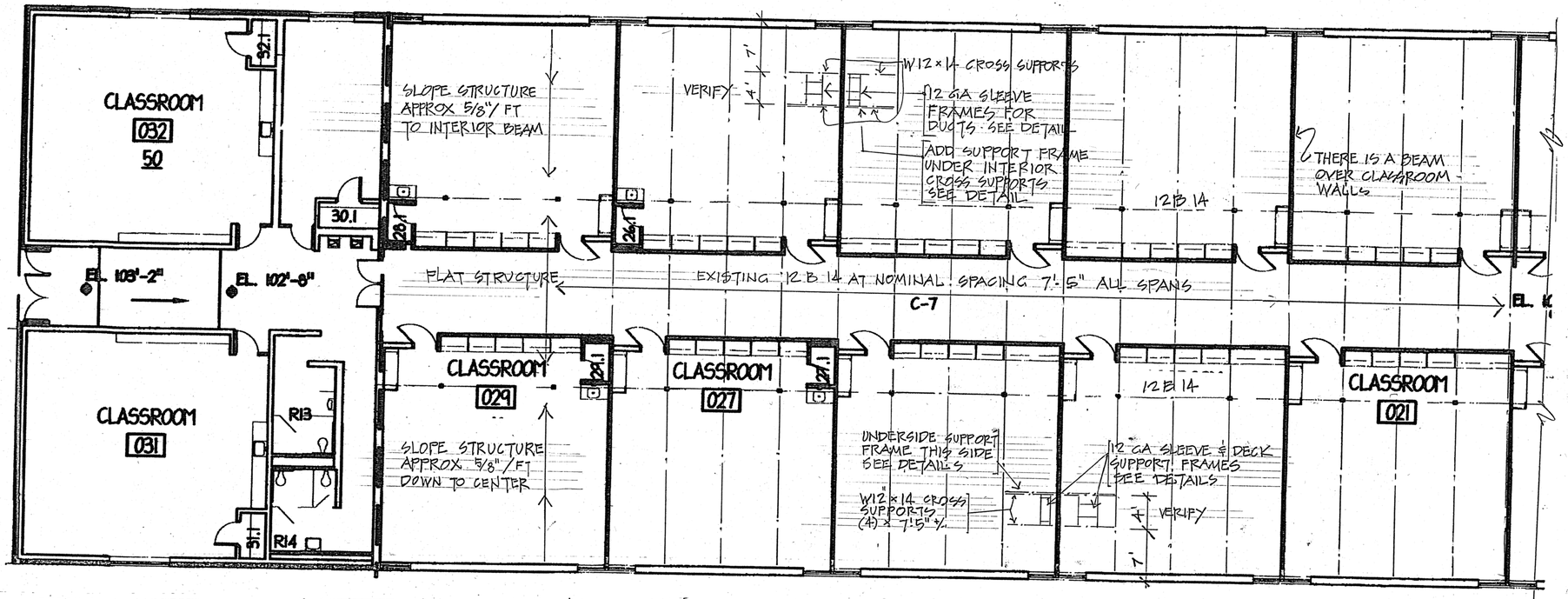
PROJECT # 27350025

ISSUED DATE MAY 22 2025

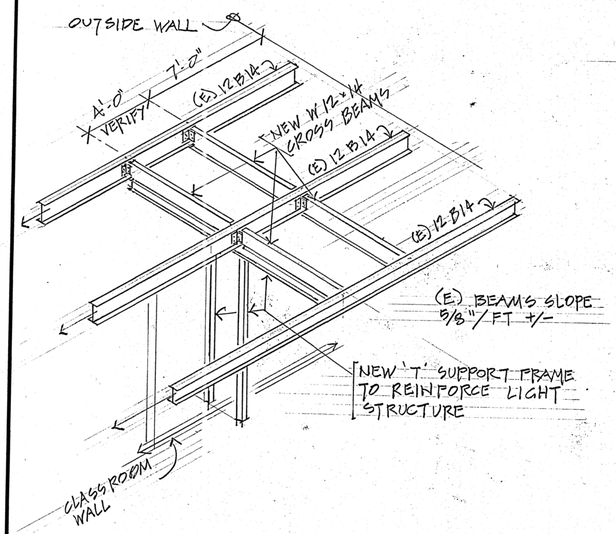
SHEET M 3

3 OF 5 SHEETS



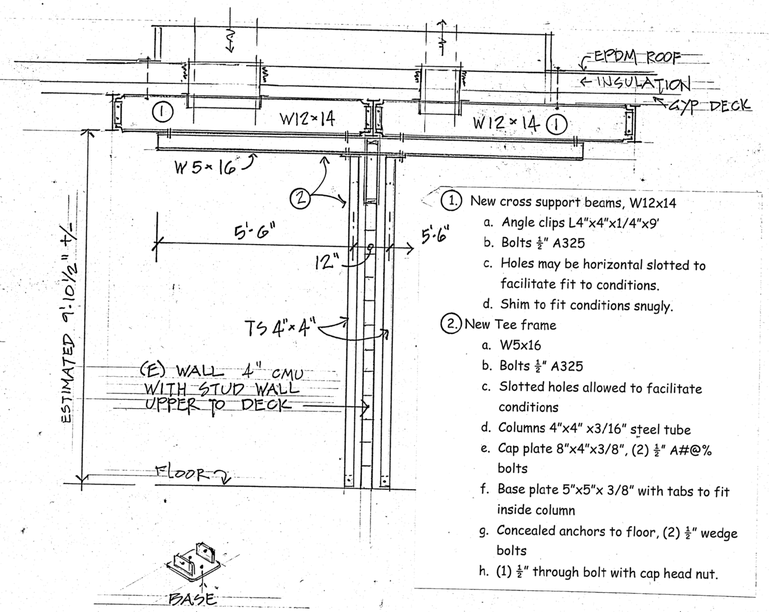
STRUCTURAL PLAN - DETAILS BELOW

SCALE 1/8" = 1'-0" 0 16'



A ME3 STRUCTURAL ISOMETRIC

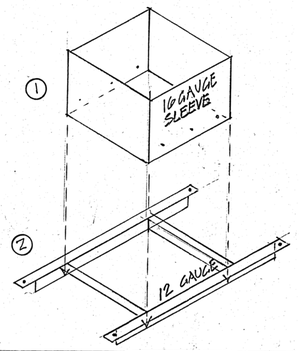
NO SCALE



1. New cross support beams, W12x14
   a. Angle clips L4"x4"x1/4"x9'
   b. Bolts ¾" A325
   c. Holes may be horizontal slotted to facilitate fit to conditions.
   d. Shim to fit conditions snugly.
2. New Tee frame
   a. W5x16
   b. Bolts ¾" A325
   c. Slotted holes allowed to facilitate conditions
   d. Columns 4"x4" x3/16" steel tube
   e. Cap plate 8"x4"x3/8", (2) ½" A##@% bolts
   f. Base plate 5"x5"x 3/8" with tabs to fit inside column
   g. Concealed anchors to floor, (2) ½" wedge bolts
   h. (1) ½" through bolt with cap head nut.

B ME3 STRUCTURAL DETAIL

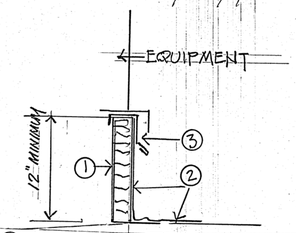
1/2" = 1'-0" 0 4'



1. Duct sleeve to extend through gyp deck and insulation
   a. 16 gauge galvanized
   b. Secure to support angles
   c. Foam fill around where installed through existing deck and insulation.
2. Support angle coped ends to fit over beams
   a. Secure with self-drill/self-tap #14 screws from top or underside.

C ME3 DUCT SLEEVE THROUGH DECK

NO SCALE



1. Insulated pre-engineered mechanical equipment curb
   a. Sloped installation condition, manufacture for level equipment install.
      i. 12" minimum clear height above existing roof
   b. Through bolt curb to new beams below, do not drill or anchor to existing beam flanges.
2. EPDM Roof to wrap up and over
   a. Roof is under warranty, curb to be flashed by qualified Carlisle roofer
   b. Carlisle warranty Serial # 10083082, expires 09/17/2032
3. Provide 0.040" aluminum cap flashing to facilitate future reroofing. Leave adequate space (1/2" minimum) so a future new membrane can be pushed up under without equipment removal.

D ME3 EQUIPMENT CURB

STATE OF ILLINOIS
001-007820
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REGISTERED ARCHITECT
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1702 W. COLLEGE AVE., SUITE E, NORMAL, IL 61761-2793, P: 309-452-1271

LINCOLN ELEMENTARY SCHOOL DOAS
315 N BONHAM STREET
MACOMB, IL 61455

MACOMB CUSD #185
30 W. WASHINGTON STREET

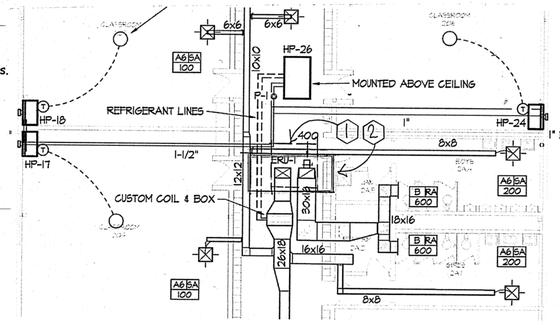
REVISIONS

#	DATE	DESCRIPTION

PROJECT # 27350025
ISSUED DATE MAY 22 2025
SHEET M 4
4 OF 5 SHEETS

Notes this sheet

1. Remove and dispose of the existing ERU
   a. Disconnect ductwork
   b. Disconnect and remove back to panel the existing disconnect, wiring and raceways
   c. Remove the existing curb, repair deck and prep for new openings through the deck.
2. Provide new DOAS unit as specified
   a. Provide new insulated mechanical curb to finish 12" above the existing roof.
      i. Flash into existing EPDM roof
      ii. Firestone warranted system warranty number RO031946/FBPCO GB8673
   b. Provide deck opening frames as detailed for Lincoln as appropriate to deck conditions
      i. This project has bar joists so it will need accommodation on frame ends to be supported at joists. May need to spot weld or provide self drill screwed tabs into joists to support frames.
   c. Rework duct connections to fit the new DOAS unit
      i. Distribution duct work is to remain the same, CFM volumes are similar.
      ii. All new supply ductwork to be wrapped with vapor tight insulation
3. Electrical see basic requirements on sheet ME1.
4. Fire Alarm, provide supply plenum smoke detection in DOAS unit to shut down if smoke is sensed and tie into addressable Simplex fire alarm to signal trouble.

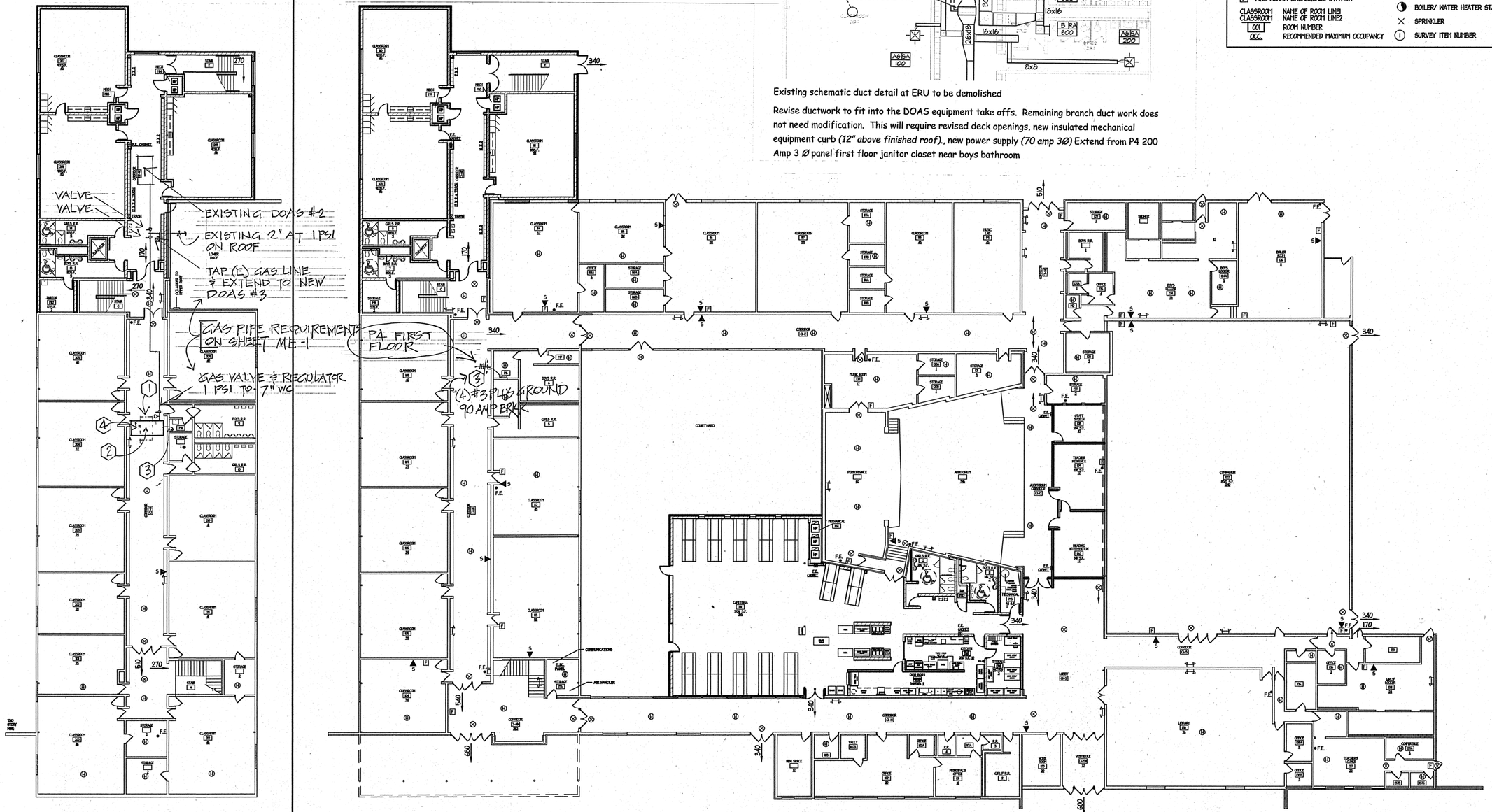


Existing schematic duct detail at ERU to be demolished

Revise ductwork to fit into the DOAS equipment take offs. Remaining branch duct work does not need modification. This will require revised deck openings, new insulated mechanical equipment curb *(12" above finished roof).*, new power supply *(70 amp 3Ø)* Extend from P4 200 Amp 3 Ø panel first floor janitor closet near boys bathroom

LIFE SAFETY LEGEND

TV TELEVISION	STROBE
BELL	S FIRE HORN & STROBE
GAS SHUT OFF VALVE	F.H. FIRE HORN LOCATION
M MOTION DETECTOR	8 SHEET REFERENCE NOTE
I INTERCOM	EXISTING EXIT-LIGHT
B I INTERCOM SPEAKER W/ CALL BUTTON	EXISTING SMOKE DETECTOR
P I INTERCOM SPEAKER W/ PULL CHORD	EXISTING HEAT DETECTOR
F FIRE ALARM BREAKGLASS / HORN / STROBE	F.E. EXISTING FIRE EXTINGUISHER
F FIRE ALARM BREAKGLASS / HORN LOCATION	EXISTING FIRE EXTINGUISHER CABINET
F FIRE ALARM BREAKGLASS STATION	EMERGENCY LIGHT
CLASSROOM NAME OF ROOM LINE1 CLASSROOM NAME OF ROOM LINE2	BOILER/ WATER HEATER STACK
001 ROOM NUMBER	SPRINKLER
OCC. RECOMMENDED MAXIMUM OCCUPANCY	1 SURVEY ITEM NUMBER



SAFETY REFERENCE SECOND FLOOR PLAN
SCALE: 1/16" = 1'-0" ED_SNDFLRPLN.dwg
0 4' 8' 16' 24' 48'

SAFETY REFERENCE FIRST FLOOR PLAN
SCALE: 1/16" = 1'-0" ED_FSTFLRPLN.dwg
0 4' 8' 16' 24' 48'

STATE OF ILLINOIS
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EDISON SCHOOL ERU TO DOAS REPLACEMENT

521 South Pearl Street
Macomb, Illinois 61455

MACOMB CUSD #185
30 W. WASHINGTON STREET

REVISIONS		
#	DATE	DESCRIPTION

PROJECT # 27350025
ISSUED DATE MAY 28, 2025
SHEET ME 5
5 OF 5 SHEETS