Sealed proposals will be received by the Lincoln ESD #27 School district for the 2022 Chiller Replacement at Lincoln Junior High School, 208 Broadway Street, Lincoln, Illinois 62656

Proposals must be submitted prior to **10:00 AM, Central Daylight time, June 14, 2022 to the Reception Desk Lincoln Elementary School District #27 District Office, 304 8th Street, Lincoln, IL 62656-2658.**

Sealed proposals shall be delivered to the above location prior to the time of opening, shall be clearly identified as to contents on the outside of the envelope. Proposals will be opened publicly following the due time listed.

Terms of the proposal include 5% Bid Security. Owner protective bonds, Illinois Prevailing Wage Act P.A. 86-799 and Illinois Certified payroll reporting P.A. 094-0515 apply, Applicable Revised ILCS Statutes and the Illinois School Code apply. No faxed proposals or modifications can be considered.

The Board of Education has the right to reject or accept any or all parts of proposals submitted, to waive irregularities in the bidding and to accept the lowest responsible bid.

For full requirements and specifications of the proposal, contact the Architect:
Middleton Associates Incorporated, 1702 W. College Avenue, Suite E, Normal, Illinois 61761-2793, Phone 309/452-1271, FAX 309/454-8049. Plans and specifications may be reviewed without deposit at the office of the Architect and will be available without charge electronically at www.middletonassociates.net . Provide contact information including contact email to receive addendums, updates and notifications as may apply to the bid.

PROJECT: **2022 Chiller Replacement Lincoln Junior High School**

DATE OF PROPOSAL **Tuesday, June14, 2022** TIME: **10:00 AM C.D.T.**

DELIVER TO: SUPERINTENDENT'S OFFICE
Lincoln Elementary School District #27
304 Eighth Street.
Lincoln, IL 62656

NAME OF FIRM _____

PROPOSAL FOR: All work single contract

Middleton Associates project NO. 26040022

THE BID ACKNOWLEDGES THE FOLLOWING ADDENDA:
Failure to acknowledge issued addenda may be cause for bid rejection

NO. 1 _____, NO. 2 _____ , NO. 3_____ ,

BID SHALL INCLUDE:

A. The bid forms and certifications completed and signed, (*this form may be copied.)*
B. Bid security (*standard industry forms may be employed)*

BASE BIDS: 2022 Chiller replacement Lincoln Junior High School

1. The bidder agrees to perform all work, single contract, inclusive of all trades for the sum entered.
2. The bidder recognizes the bids are listed by manufacturer and projected delivery date
3. The bidder may bid **any or all** manufacturers or offer a substitution.
4. The projected delivery date will be a consideration in the award as equipment is in current need of replacement. May list as date, or weeks after the award.

Carrier

_____**Dollars**
WRITTEN AMOUNT

$_____

Projected delivery for **Carrier** equipment _____

Trane

_____**Dollars**
WRITTEN AMOUNT

$_____

Projected delivery for **Trane** equipment _____

Dakin

_____**Dollars**
WRITTEN AMOUNT

$_____

Projected delivery for **Dakin** equipment _____

York

_____**Dollars**
WRITTEN AMOUNT

$_____

Projected delivery for **York** equipment _____

Voluntary Alternate_____*(provide selection data with proposal)*

_____**Dollars**
WRITTEN AMOUNT

$_____

Projected delivery for proposed equipment _____

Voluntary alternates will be considered at the discretion of the owner and may be accepted or declined without further explanation.

VOLUNTARY ALTERNATES OR SUBSTITUTIONS ABOVE

Did you offer or include any voluntary alternates or product substitution on form provided.

YES _____ **NO** _____

Attach description.

THE BIDDER AGREES TO:

1. Hold this bid open for twenty (20) calendar days after bid opening date.
2. Enter into and execute a contract with Lincoln ESD #27 if awarded this contract.
3. Comply with the contract and bidding documents with respect to bid security, all bonds, insurance, work requirements, schedule and **proposed delivery schedule. If equipment is not delivered in a timely manner as offered in this proposal, this contractor will endeavor to assist the owner and provide service to keep the existing equipment functional and refrigerant charged until the equipment is delivered. This is only that period of time between the proposed equipment delivery and the actual delivery dates.**
4. Comply with the Contract Documents with respect to scheduling as described in the documents, noted on drawings.
5. Follow the schedule proposed in/on this proposal.

THE BIDDER MAKES THE FOLLOWING REPRESENTATIONS AND CERTIFICATIONS:

A. A surety company has agreed to issue payment and performance bonds to fulfill the contracting requirements as required in the specification.

B. The Bidder is not barred from contracting with any unit of state or local government as a result of violating the bid rigging or bid rotating provisions contained in 720 ILCS 5/33E.

C. The Bidder is not barred from contracting with the State of Illinois as a result of a bribery conviction per 30 ILCS 505/10.2.

D. All on site labor and wage compensation provided by this contractor or his subcontractors will comply with the Illinois Prevailing Wage Act (820 ILCS 130E).

E. This proposal is made without any connection with any person making another bid for the same contract, that the bid is in all respects fair and without collusion or fraud, that no member of the Lincoln Elementary School Board, other officer or any person in the employment of Macomb CUSD No. 185 is directly or indirectly interested in the bid or any portion of the profit there from, except as allowed by the Illinois Law or the Illinois School Code.

F. I agree to provide a drug-free workplace as required by the Illinois Drug-free Workplace Act.

H. I do hereby certify that I am either the bidder or duly authorized agent of the referenced bidder, and I am authorized to execute the certifications hereon.

G. I certify that by submission of this proposal the bidder confirms that he is familiar with the site, existing conditions, the Bid Documents, requirements and the project schedule.

CONTRACTOR:

Firm Name: _____

Address: _____

_____

Telephone: _____

FAX: _____

Email: _____

Date: _____

Signature:

_____

Title: _____

ACCEPTANCE BY LINCOLN ESD #27

Proposal for:
Select as applicable:
Carrier/York/Daikin/Trane _____
List if other

All work for the sum of

$_____

Proposed equipment delivery date or before

_____

By Board motion on

_____
date

_____
signature

_____
title

END 00 4000

MIDDLETON ASSOCIATES · INC ARCHITECTS
1702 W. College Ave. Suite E
Normal, IL 61761-2793
p: 309.452.1271
f: 309.454.8049
www.middletonassociates.net

CENTRAL SCHOOL CHILLER REPLACEMENT
LINCOLN ELEMENTARY SCHOOL DISTRICT #27
304 8TH ST., LINCOLN, IL 62656
PROPOSAL DUE 10:00 AM - Tuesday, June 14, 2022

Proposals will be publically opened and read at that time and location.

Contractor shall submit with proposal basic descriptive information on included work and excluded work attached to his proposal to describe the design build proposal offered.

Contractor is in charge of directing the work, safety, barricades and all aspects of the means and methods of construction.

BID SECURITY – 5% as Bid Bond or certified or non-cancelable bank check payable to Lincoln ESD #27.

OWNER'S PROTECTIVE BONDS – Labor and Materials and Performance - Not required if proposal is less than $100,000; required if proposal is over $100,000.

INSURANCE –Upon award, Contractor shall provide insurance listing the Owner, Lincoln ESD #27 and the A/E Middleton Associates as named insureds or additional insureds.

A. Workman's Comp, statutory
B. General Liability, personal injury not less than $1,000,000/occurrence $2,000,000 aggregate.
C. Property damage, Broad Form $1,000,000 occurrence/ $2,000,000 aggregate.
D. Business and completed operations one year and $1,000,000
E. Auto rented and owned, $1,000,000 occurrence / $1,000,000 per person bodily injury.
F. Limits can be met with umbrella coverage.

PROPOSALS

A. All proposals shall be signed (live signatures, no copies of signatures accepted) by persons fully and duly authorized to sign same. See attached Bid Form.

B. Any bid signed by a person other than set forth above shall enclose with his bid proposal evidence of Power of Attorney.

C. No faxed proposals or modifications.

D. By submitting a proposal as design build the contractor recognizes that each proposal will be considered on the merits of its schedule, content as well as cost. While the intent is to accept the lowest bid meeting the criteria, voluntary alternates may be considered or award if found to be advantageous and in the best interest to the District. Time to deliver the project may govern the award as the equipment replacement is necessary to keep facility functional.

AWARD OR REJECTION

A. Although it is the intention of the Owner to accept the lowest qualified bid the Owner specifically reserves the right to waive all formalities and/or informalities, to reject any and all bids and/or accept the bid that, is determined to be in the best interest of Lincoln ESD #27,

    1. Best interest will be determined by the content of the proposal to the Owner in the event of an award, after reviewing schedule to complete, included and excluded work.

COMMENCEMENT AND COMPLETION OF CONSTRUCTION

A. Contractor shall not commence work until the agreement has been executed by both the Owner and Contractor and Insurance Certificate and Owner's Protective Bonds have been issued and accepted by the Owner and Architect.

    1. On site work may commence as soon as school is out for summer and Purchase Order Bonds are in order.
    2. It is desired that all work for completion prior to August 2022, but we are aware of limited resources and ability to timely receive materials to produce the new equipment. Blanks are provided on the bid form to indicate the schedule applicable to the bid equipment.
    3. Once started, work continuously through construction.
    4. Work not completed prior to start of school shall be completed after hours or weekends in coordination with the Owner's building occupancy schedule.
        a. The Owner will be flexible to accommodate regular work hours for work not occurring in student occupied areas of the facility.

EXAMINATION OF SITE AND CONTRACT DOCUMENTS

A. Bidder shall carefully examine bidding documents and inspect on site to obtain first-hand knowledge of existing conditions.

B. Each Bidder, by submitting his bid, represents over his or her signature, that he has so examined the bidding documents and inspected the site premises, that he understands the provisions of the bidding documents, and that he has familiarized himself with the local conditions under which the work is to be performed. Bidders will not be given extra payment or contract time for conditions, which could have been determined by such examination.

BIDDER QUALIFICATIONS

A. Competency and responsibility of the Bidder, and of their proposed subcontractors, will be considered in making awards. Owner may require of the Bidder, prior to awarding the Contract, a detailed statement regarding the business, technical organization and plant facilities for the work that is contemplated. Information pertaining to the financial resources, experience of personnel and previously completed construction projects may also be required. The Owner may use this information in considering proposal.

B. The Owner may reject a Bidder, if an updated financial statement prepared by a CPA not on the Contractor's payroll (bearing the CPA's live signature) shows the net worth of a Contractor to be less than 30% of the Contractor's bid including elected alternates for this work. Said statement, if required by the Owner, shall be furnished and paid for by the Bidder.

C. The Owner reserves the right to reject any subcontractor to a prime contractor that cannot produce a favorable recommendation from a minimum or three (3) school districts or commercial owners involving a like size project or from said school district's Architect of record.

PROGRESS PAYMENTS

A. Payment will be made for satisfactorily in place labor and on site materials

    a. Prepare a CSV for prior approval, and billings shall be made according to progress values listed.
    b. No payment for offsite stored materials.
    c. No payment for materials and equipment on site if site not manned and ongoing progress is not occurring.
    d. If partial down payment is necessary to secure a manufacturing date the Owner will negotiate and may agree to make such down payment or portion thereof, if determined to be necessary for timely completion of the work.

B. Ten percent (10%) withholding through project completion, if Performance and Payment Bonds are in place, of each pay request may be withheld pending final inspection. This retainage will be paid when the project is completed and the Contractor provides lien waivers and affidavit showing all material suppliers, subcontractors and labor as paid.

EQUAL OPPORTUNITY EMPLOYMENT: The following clause is applicable unless this Contract is exempt under the rules and regulations of the Secretary of Labor of the State of Illinois.

"During the Performance of the Contract, the Contractor agrees as follows:

The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, age or national origin. The Contractor will take

affirmative action to ensure that applicants are considered and tat employees are treated, during employment, without regard to their race, color, religion, sex, age or national origin."

PREVAILING WAGE

A. The Contractor shall pay and shall require his subcontractors to pay the prevailing hourly wages for the type of work performed in the job locality as is determined by the Illinois Department of Labor pursuant to the Illinois Prevailing Wage (280 ILCS 130/.01 et. seq.), see IDLR website for rates.

B. Comply with HB188; enter payroll records on the state of Illinois IDLR wage portal..

SALES TAX

A. Materials supplied to a public school district are exempt from state sales taxes.

B. The Contractor shall determine the extent of exemption and shall comply with the regulations established by the Illinois Department of Revenue and allow for this in his proposal.

TOBACCO PRODUCTS

A. Smoking, chewing, etc. shall not be permitted anywhere on school property by State Statute.

SEXUAL HARASSMENT POLICY

A. The Owner will not tolerate sexual harassment in any form. Sexual harassment is defined, for the purpose of the policy, as "unsolicited, deliberate or repeated sexually derogatory statements, gestures or physical contact which cause discomfort or humiliation. Sexual harassment may involve pressure from a person of either sex against a person of the opposite sex or same sex…"

   Should evidence be discovered that a Contractor, or a Contractor's employee, has harassed a student or other individuals, the harasser shall be removed from the job site pending resolution of the claim.

EMPLOYEE-STAFF/STUDENT RELATIONSHIPS

A. Except in an emergency situation involving safety, intermingling of the Contractor's employees and the school facility, staff and students is to be avoided. Contractor or Subcontractor personnel violating this requirement shall be removed from employment at this site. The Contractor Superintendent shall monitor this to the best of his ability. Contractor employees experiencing problems with students or faculty shall report same

to their Project Superintendent, who shall promptly report the problem to an authorized representative of the Owner.

Avoid profanity and inappropriate subject matter in conversation as students and staff may be within audible range and walls or ceiling spaces may allow sound transmission.

Verbal or physical action interpreted as sexual in nature or as sexual harassment will be grounds for removal of the employee. Further legal action remains the option of the persons affected.

In all aspects of this provision the Contractor shall be dealt with by the school, the Contractor's employees as adults have the greater responsibility and should not respond to inappropriate student behavior.

B. Employees working on site may be subject to background check per the Illinois School Code, and upon request of the Owner or the Regional Office of Education.

BUILDING PERMITS

A. The building permit will be required by the Owner through the Regional Office of Education and comply with local regulations and requirements.

B. Provide all necessary permit related information to local city authorities.

TERMINATION OF CONTRACT

Termination of the agreement can be instituted with seven (7) days notice by the Owner for failure to perform in accordance with the agreement, schedules, non-payment of goods or services or other evidence of failure to perform to the intent of the agreement. Cost of said termination will be subject to the project completion by the Owner with the Contractor paying any shortfall in cost to complete. If the project is completed for less than the outstanding contract balance, then the Contractor will receive the remainder after all claims are satisfied.

BACKGROUND INVESTIGATION AND SEX OFFENDERS ON SCHOOL GROUNDS

A. Illinois Criminal Background checks may be applicable to this Contract. per 105 ILCS 5/10-21.9 and 105 ILCS 5/14-7.02.

1. According to current interpretation a background check is only required of persons working in direct contact with students.
2. This standard in no way reduces or eliminates restriction in the law for certain convictions and proximity to school grounds.
3. At any time, unannounced, the Owner or the Regional Office of Education may request fingerprint background check of any or all employees.
4. Be aware of this stipulation and make sure your on site employees will pass such a background review.

B. The Contractor shall:

1. Maintain a list available to the Owner of all the employees who will be or are anticipated will be employed on site. This list shall be updated when new persons not originally listed will be working on site. This list shall also include names of personnel employed by subcontractors.
2. Persons temporarily on site such as truck drivers or employees making deliveries do not need to be listed, but the Owner reserves the right to request a background check if deemed in their interest.
3. Copies of employee lists shall be promptly provided to the Owner, or the ROE upon request and employees on site shall agree to submit to a background check if requested.
4. Persons failing or refusing such check shall be removed from working on this site.

C. The Contractor shall not knowingly employ on school grounds any person who has not signed or will not sign an authorization for a fingerprint criminal background check.

D. The Owner reserves the right to run fingerprint background checks on any or all employees on site, randomly or specifically, and the cost of this check will be borne by the Owner. Upon request, provide information, which will not be shared, as needed to complete checks. This may include SSN, home addresses, fingerprint, address, etc. and any alias or former names used.

E. The Contractor shall assume the responsibility to notify all on site employees or potential employees of this provision, and of the consequences of this provision.

EXPIRATION OF PROPOSAL – I/We agree that this proposal shall be binding for a period of not less than twenty (20) days following the bid due date set forth in the advertisement for bids.

WORK INCLUDED – DESIGN BUILD PROPOSAL

A. All work necessary to remove and properly dispose of the existing chiller and adapt piping and controls to accommodate the proposed replacement chiller.

   1. Verify all details of the existing installation and configuration for demolition and reconfiguration to fit new equipment

      a. Particularly be aware of available space, dimensions, fencing, service access, location of door and stoop
      b. Existing fence to remain or be replaces with commensurate chain link fence. If new or addiction gates are required for proper service access same shall be provided at no additional cost.

   2. Existing chiller is nominal 360 tons in paired split configuration Carrier 30GTN360A and 30GTN360B
   3. Properly prepare for removal including removal of refrigerant, disconnect power, controls and piping.
   4. Promptly remove the existing equipment from site during the process of installation of new equipment.

B. Proposed chiller to be paired configuration two units at 150 tons each, 300 tons total. *The existing chiller is oversized for a school of 54,000 square feet, thus the smaller*

selection.

1. Approved manufacturers

    a. Carrier
    b. Trane
    c. Daikin
    d. York

2. Package chillers shall be, two (2) at 150 tons each, 300 tons nominal total or the manufacturers size configuration -2% to +6% as they would use to meet the nominal requirement of 150 tons.

    a. Scroll compressor contractor option: multiple scroll compressors, not less than four total, programed for staged operation to meet building demand with lag lead controls to approximately equal run time on compressors over years of service.
    b. Screw compressor contractor option, with variable frequency drives coordinated to provide approximately equal run time on compressors and balanced to meet building load.

3. Refrigerant R410A

4. Minimum load control 10%

5. Suction service valves.

6. Isolation valves to allow either compressor to be run while the other is serviced.

7. Isolation valves to allow either chiller to be run while the other is serviced.

8. Nitrogen holding charge – standard cooler pass.

9. Electrical verify existing available power, revise and replace as need to properly feed new downsized equipment.

    a. Weather tight disconnect if not part of on board equipment control package
    b. Fused disconnect or resize breakers for equipment as applicable
    c. Reconfigure power feed and conduits, match exisiting conduit type and fittings
    d. Pull new wire (copper THWN) if size changes or over sized for new breaker amps.
    e. All exterior electrical to raintight, NEMA 4X corrosion resistant or stainless steel.

10. Internal controls with compatible enable and monitoring by the delta style Entec BAS. Contractor to verify the existing BAS system and accommodate and program accordingly.

    a. The Owner does not currently have a working relationship with Entec.
    b. Control service work is being done by nathan clay ixcontrols@gmail.com

11. Basic unit Information

    a. Tag Name: ..... 150 Ton AC
    b. Condenser Type:..... Condenserless

c. Compressor Type: scroll or Screw contractor option
d. Nameplate Voltage: ..... 460V-3Ph-60Hz Always verify voltage conditions and provide any controls, transformers or protection discovered to be required by the power delivered on site to be within the running range of the unit selected.
e. Quantity: 2
f. Refrigerant: R410A
g. Independent Refrigerant Circuits:.....(2)/machine/(2) machines
h. Capacity Control Steps: .....multiple per machine and per combined machines and system as needed to maintain 45 degree loop water
i. Minimum Capacity unloading operation: ..... **10.0** %

12. Provide Low voltage control side phase control to protect against operation during phase low voltage, or loss of phase with auto reset after voltage returns to normal.

C. Piping

1. Verify existing piping and modify and replace as needed for proper function, serviceability and operation. The piping shall be run in neat configuration and overhead where convenient such that is is not in the way of service work.

2. Insulate as existing

3. Schematic layout and operation:

   a. Revise piping as needed to properly fit to new equipment, piping to match existing in materials, insulation and general installation configuration
   b. Valve loops such that each machine can be manually placed into or out of service while the other machine continues operation.

4. Provide piping supports such that piping is supported against sway, movement and/or vibration.

D. Chemical Treatment

1. Loop treatment prior to start of work verify anti-freeze condition

   a. Provide lab report on the loop water condition and glycol concentration.
   b. Provide Ph report
   c. Verify the current water treatment program with the district and rebalance after make-up water is added.

2. to be 30% propylene glycol.

3. Treat water to be as recommended for the coils and piping included in the system, nominal Ph of 7, verify locally what the water has been being maintained at.

E. Controls

1. Existing controls are Delta type installed by Entec of Peoria. Currently serviced by nathan clay ixcontrols@gmail.com
2. Controls enable the chiller and monitor performance
3. Chiller internal controls to control chiller operation
   a. Chiller internal controls shall be integrated to operate as one system based on building load.
   b.

4. Verify how the multiple VFD loop pumps are controlled, verify and coordinate through BAS for pump operation when chiller(s) are operating.

F. Start up: by contractor, to include instructions and maintenance instruction.
   1. Quarterly for the first year of operation provide service visit, and additional instructions on operation as determined to be need for proper operation.

G. Warranty

   1. One (1) year 100% labor and materials on the entire installation
   2. Five (5) year manufacturer on refrigeration components and compressors of the new equipment.
   3. Provide to the Owner the description cost of any additional extended warranties as might be available from the manufacturer.

VOLUNTARY ALTERNATES, OPTIONS OR SUBSTITUTIONS

A. The Contractor may offer options which they believe will improve the result, be more serviceable, lower initial cost, lower operating costs, time factors for lowest down time and maintenance. This might include:

   a. Other manufacturers.
   b. compressor/condenser options.
   c. Plate and Frame design.
   d. Because cost is a consideration we may consider such options as determined to offer comparable and suitable results.

ATTACHMENTS PROVIDED

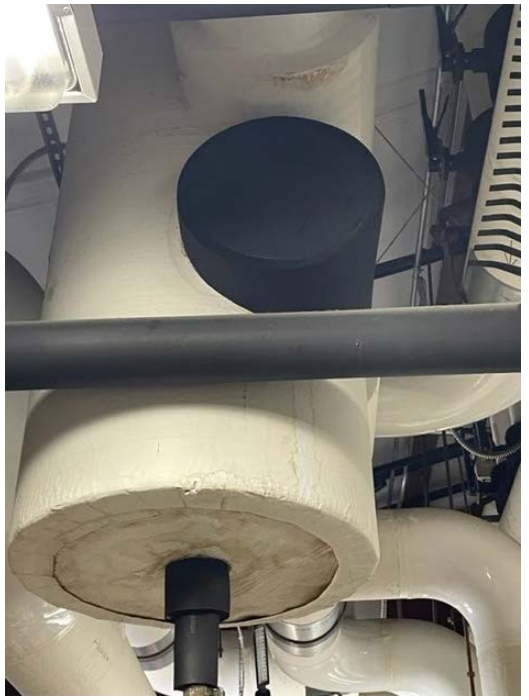
A. Original drawings sheets heating and Ventilation.

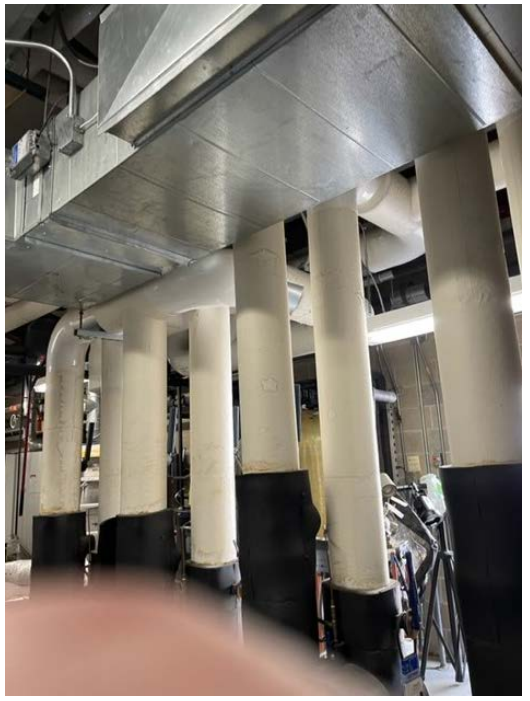
   a. Provided for information only, always verify conditions on site.

B. Photo gallery of conditions.

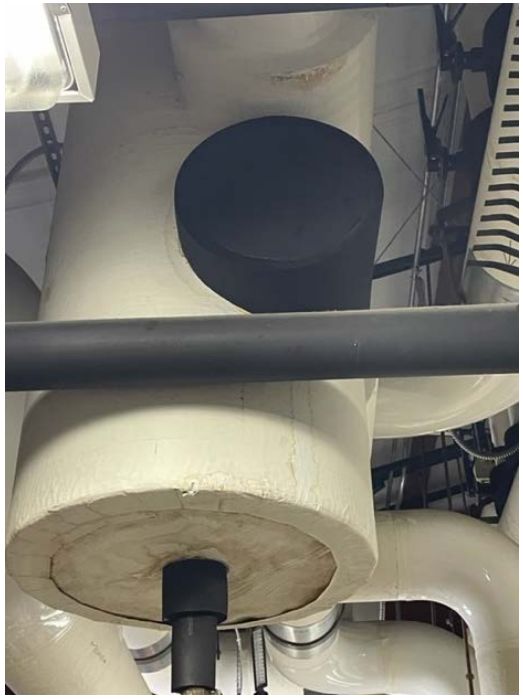
C. Satellite view

LINCOLN JUNIOR HIGH EXISTING CHILLERS – PHOTO GALLERY






Primary Loop CHWS
Decoupler




Chillers
Lincoln Jr High School
Broadway St
Broadway St
Broadway St
317

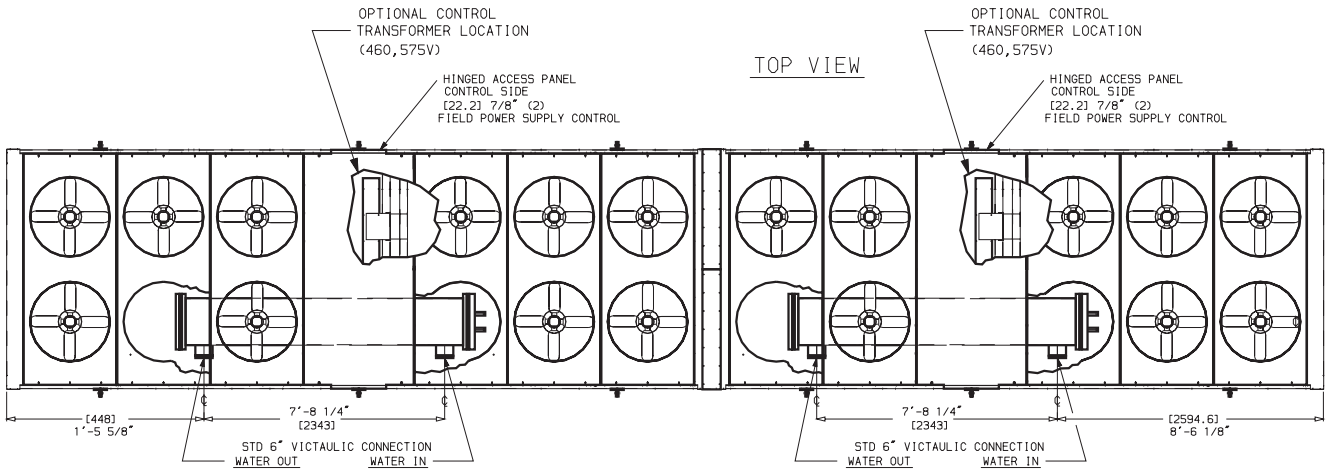
CUT ALONG DOTTED LINE CUT ALONG DOTTED LINE

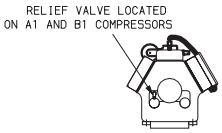
CERTIFIED DIMENSION PRINT

UNITED TECHNOLOGIES CARRIER — P O BOX 4808 SYRACUSE N. Y. 13221

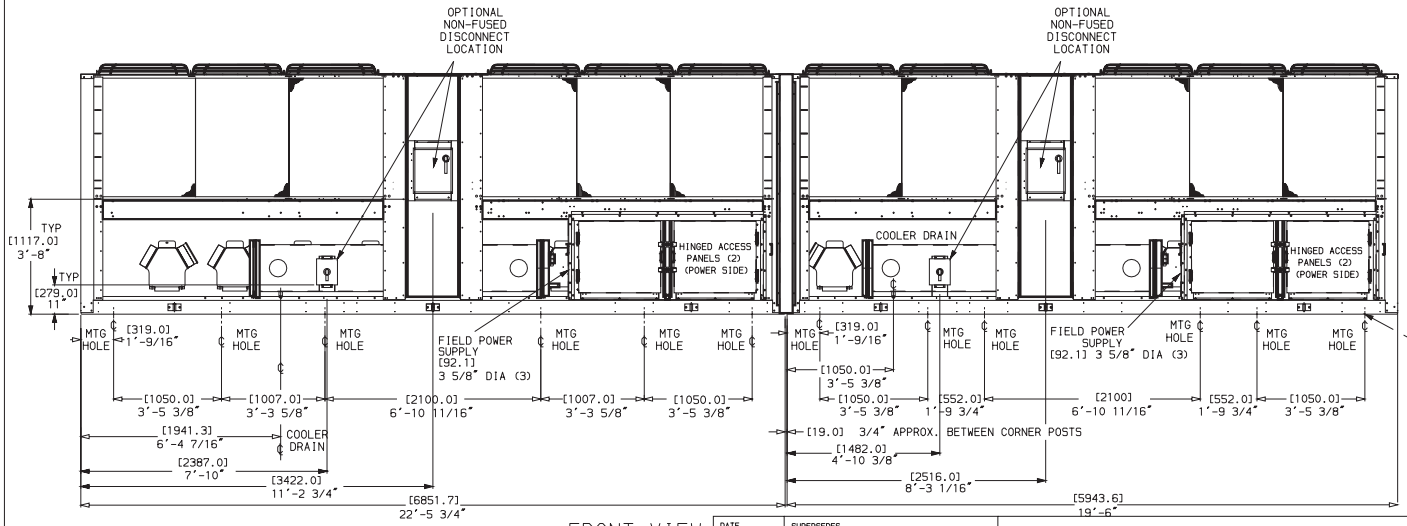
Existing chiller that is split into A and B sections

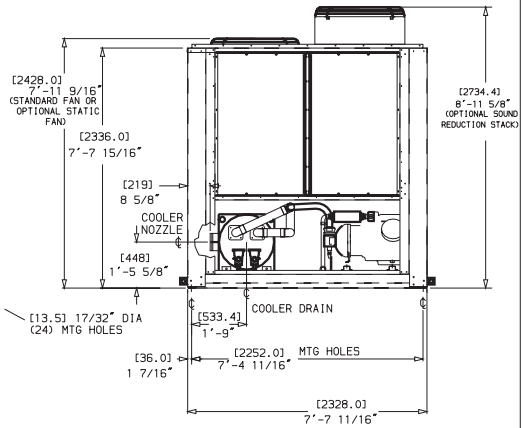
NOTES:
1. The approximate operating weight of the unit is:
   30GTN/R, GUN/R360 — 24,349 lb [11 045 kg]
   30GTN/R, GUN/R360C — 27,140 lb [11 311 kg]
2. Unit must have clearances for airflow as follows:
   Top — Do not restrict in any way
   Ends — [1524 mm] 5 ft
   Sides — [1829 mm] 6 ft
3. Mounting holes may be used to mount unit to concrete pad. They are not recommended for spring isolator location.
4. If spring isolators are used, a perimeter support channel between the unit and the isolators is recommended.
5. Unit shipped in 2 pieces.
6. Dimensions in [ ] are in millimeters.





RELIEF VALVES ARE EQUIPPED WITH A 3/8" SAE FLARE FOR FIELD CONNECTION





END VIEW

FRONT VIEW

DATE	SUPERSEDES		REV
02/17/99	NEW	30GTN/R, GUN/R360 50HZ AIR COOLED CHILLER	30GT515307 –

MECHANICAL ABBREVIATIONS

ABBREVIATIONS USED ON DRAWINGS IN GENERAL ARE LISTED BELOW. REFER TO CSI DOCUMENT TO 2-4 DATED NOVEMBER 1986 FOR ANY ABBREVIATION USED ON THE DRAWINGS BUT ARE NOT LISTED BELOW.

ABV	ABOVE
AC	AIR CONDITIONING
ACCU	AIR COOLED CONDENSING UNIT
ACU	AIR CONDITIONING UNIT
AFF	ABOVE FINISHED FLOOR
AFMS	AIR FLOW MEASURING STATION
AHU	AIR HANDLING UNIT
AL	ALUMINUM
ALT	ALTERNATIVE
AMB	AMBIENT
AP	ACCESS PANEL
APPROX	APPROXIMATE
AR	ACID RESISTANT
ARCH	ARCHITECT(URAL)
ARV	AIR RELIEF VALVE
AT	AIR TRANSFER
ATR	AIR TEMPERATURE RISE
ATV	AIR TURNING VANES
AUTO	AUTOMATIC
AVE	AIR VOLUME EXTRACTOR
BD	BAROMETRIC DAMPER
BDD	BACKDRAFT DAMPER
BHP	BREAK HORSEPOWER
BLDG	BUILDING
BOD	BOTTOM OF DUCT
BOT	BOTTOM
C	CONVECTOR
CA	COLD AIR
CAB	CABINET
CD	CEILING DIFFUSER
CDL	CONDENSATE DRAIN LINE
CFM	CUBIC FEET PER MINUTE
CH	AIR COOLED CHILLER
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CHWP	CHILLED WATER PUMP
CL	CENTERLINE
CLG	CEILING
CMP	CORRUGATED METAL PIPE
CO	CLEANOUT
COL	COLUMN
CONC	CONCRETE
COND	CONDENSER(ATE)
CONN	CONNECT/CONNECTION
CONSTR	CONSTRUCTION
CONTR	CONTRACTOR
CPD	CONDENSATE PUMP DISCHARGE
CPRSR	COMPRESSOR
CW	COLD WATER (DOMESTIC)
CWP	CONDENSER WATER PUMP
CWR	CONDENSER WATER RETURN
CWS	CONDENSER WATER SUPPLY
D	DEPTH/DEEP
DB	DRY BULB TEMPERATURE
DIA/ø	DIAMETER
DIFF	DIFFUSER
DISCH	DISCHARGE
DLR	DOUBLE LOUVER REGISTER
DWG	DRAWING
DUC	DOOR UNDER CUT
EA	EXHAUST AIR
EF	EXHAUST FAN
EFF	EFFICIENCY
EG	EXHAUST GRILLE
EL	ELEVATION
ELEC	ELECTRIC(AL)
ELEV	ELEVATOR
EMD	END OF MAIN DRIP
EMER	EMERGENCY
EP	ELECTRIC/PNEUMATIC
EQUIP	EQUIPMENT
EXH	EXHAUST
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
EXTN	EXTENSION
F&TT	FLOAT AND THERMOSTATIC TRAP
FC	FLEXIBLE DUCT CONNECTION
FCU	FAN COIL UNIT
F/SD	COMBINATION FIRE/SMOKE DAMPER
FD	FLOOR DRAIN
FD1	FIRE DAMPER TYPE
FIN FL/FF	FINISH FLOOR
FLR	FLOOR
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
FOV	FUEL OIL VENT
FP	FIRE PROTECTION
FPM	FEET PER MINUTE
FT	FEET
FUR	FURNACE
G	GAS (NATURAL)
GA	GAUGE
GAL	GALLON
GALV	GALVANIZE(D)
GPM	GALLONS PER MINUTE
H	HEIGHT/HIGH
HDG	HEAVY DUTY GRILLE
HDWE	HARDWARE
HHR	HEATING HOT WATER RETURN
HHS	HEATING HOT WATER SUPPLY
HHWP	HEATING HOT WATER PUMP
HP	HORSEPOWER
HPR	HIGH PRESSURE STEAM RETURN
HPS	HIGH PRESSURE STEAM SUPPLY
HTR	HEATER
HVAC	HEATING/VENTILATING/AIR CONDITIONING
HW	HOT WATER (DOMESTIC)
ID	INSIDE DIAMETER
IH	INTAKE HOOD
INCIN	INCINERATOR
INSUL	INSULATION/INSULATE
INTR	INTERIOR
INV	INVERT
KIT	KITCHEN
KW	KILOWATT
L	LENGTH/LONG
LAV	LAVATORY
LF	LINEAR FEET
LP	LIQUID PETROLEUM
LPR	LOW PRESSURE STEAM RETURN
LPS	LOW PRESSURE STEAM SUPPLY
LVR	LOUVER
MAX	MAXIMUM
MECH	MECHANICAL
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MOD	MOTOR OPERATED DAMPER
MPR	MEDIUM PRESSURE STEAM RETURN
MPS	MEDIUM PRESSURE STEAM SUPPLY
MTD	MOUNTED
NIC	NOT IN CONTRACT
NO/#	NUMBER
NOM	NOMINAL
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OC	ON CENTER
OD	OUTSIDE DIAMETER
OPNG	OPENING
OR	OIL RETURN
OS	OIL SUPPLY
OSD	OPEN SITE DRAIN
P	PUMP
PCHWS	PRIMARY CHILLED WATER SUPPLY
PCHWR	PRIMARY CHILLED WATER RETURN
PE	PNEUMATIC/ELECTRIC
PREFAB	PREFABRICATED
PRV	PRESSURE REDUCING VALVE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PTAC	PACKAGE TERMINAL AIR CONDITIONING UNIT
PVC	POLYVINYL CHLORIDE
R/RAD	RADIUS
RA	RETURN AIR
RACU	ROOM AIR CONDITIONING UNIT
RADN	RADIATION
RAG	RETURN AIR GRILLE
RCP	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN
REG	REGISTER
REQ'D	REQUIRED
RH	RELIEF HOOD
RHW	RECIRCULATED HOT WATER (DOMESTIC)
RL	REFRIGERANT LIQUID
RL48	RETURN LINEAR SLOT DIFFUSER (48" LONG)
RM	ROOM
RP	RADIANT PANEL
RPM	REVOLUTIONS PER MINUTE
RS	REFRIGERANT SUCTION
RSD	ROUND SUPPLY DIFFUSER
SA	SUPPLY AIR
SCHED	SCHEDULE
SD	SUPPLY DIFFUSER
SAG	SUPPLY AIR GRILLE
SHT	SHEET
SIM	SIMILAR
SL48	SUPPLY LINEAR SLOT DIFFUSER (48" LONG)
SP	STATIC PRESSURE
SPEC(S)	SPECIFICATION(S)
STD	STANDARD
TC	TEMPERATURE CONTROL
TCV	TEMPERATURE CONTROL VALVE
TD	TEMPERATURE DIFFERENCE
TEMP	TEMPERATURE
TXV	THERMAL EXPANSION VALVE
TYP	TYPICAL
UH	UNIT HEATER
UON	UNLESS OTHERWISE NOTED
UV	UNIT VENTILATOR
V	VENT
VA	VALVE
VAC	VACUUM
VAV	VARIABLE AIR VOLUME
VB	VACUUM BREAKER
VD	VOLUME DAMPER
VEL	VELOCITY
VIF	VERIFY IN FIELD
VVF	VARIABLE VOLUME-FAN POWERED
VVR	VARIABLE VOLUME-REHEAT
VFD	VARIABLE FREQUENCY DRIVE
W	WIDE/WIDTH
W/	WITH
W/O	WITHOUT
WB	WET BULB TEMPERATURE
WCO	WALL CLEANOUT

MECHANICAL SYMBOLS

PIPE TURNED UP

PIPE TURNED DOWN

PIPE OUT TOP

PIPE OUT BOTTOM

INDICATES DIRECTION OF DOWNWARD PITCH

INDICATES EXPANSION LOOP

PIPE ANCHOR

PIPE ALIGNMENT GUIDE

PIPE EXPANSION JOINT

STRAINER

UNION

GATE (SHUT-OFF) VALVE

BALL VALVE

CHECK VALVE (ARROW TOWARD DIRECTION OF FREE FLOW)

BALANCING VALVE

MOTOR OPERATED VALVE

PNEUMATIC OPERATED VALVE

SOLENOID OPERATED VALVE

2-WAY TEMPERATURE CONTROL VALVE

3-WAY TEMPERATURE CONTROL VALVE

BUTTERFLY VALVE

NEEDLE VALVE

WATER PRESSURE REDUCING/ REGULATING VALVE

WATER PRESSURE RELIEF VALVE

AIR RELIEF VENT

CONNECT NEW TO EXISTING, VERIFY SIZE AND LOCATION OF EXISTING ON SITE

THERMOSTAT

THERMOSTAT WITH GUARD

PILOT THERMOSTAT

STATIC PRESSURE SENSOR

PLAN NOTES

EQUIPMENT SCHEDULE NUMBER

EQUIPMENT NOTES

DETAIL REFERENCE

SECTION REFERENCE

ECCENTRIC REDUCER

FLOW CONTROL VALVE

THERMOMETER

PRESSURE GAUGE

GAS SHUT-OFF COCK

LUBRICATED PLUG VALVE

SAFETY PRESSURE RELIEF VALVE

GAS PRESSURE REDUCING/ REGULATING VALVE

CHAIN OPERATED VALVE

DOUBLE CHECK VALVE ASSEMBLY

REDUCED PRESSURE BACKFLOW PREVENTER

ATMOSPHERIC VACUUM BREAKER

PRESSURE VACUUM BREAKER

SENSOR

GRISWOLD FLOW CONTROL VALVE

HHS — HEATING HOT WATER SUPPLY

HHR — HEATING HOT WATER RETURN

CHWS — CHILLED WATER SUPPLY

CHWR — CHILLED WATER RETURN

CS — CONDENSER WATER SUPPLY

CR — CONDENSER WATER RETURN

RL — REFRIGERANT LIQUID

RS — REFRIGERANT SUCTION

CDL — CONDENSATE DRAIN LINE

SUPPLY AIR ELBOW UP
DIMENSION DESCRIPTION:
1ST FIGURE = SIDE SHOWN
2ND FIGURE = SIDE NOT SHOWN

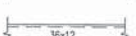
SUPPLY AIR ELBOW DOWN

EXHAUST/RETURN AIR ELBOW UP

EXHAUST/RETURN AIR ELBOW DOWN

DOUBLE SIDE TRANSITION
TRANSITION SLOPE SPECIFICATION:
MINIMUM SLOPE = 15°
MAXIMUM SLOPE = 45°
ALL SIZES IN INCHES

SINGLE SIDE TRANSITION



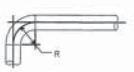
INTERNALLY LINED DUCTWORK

TOP TRANSITION (SLOPE ON TOP)

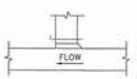
BOTTOM TRANSITION (SLOPE ON BOTTOM)

ELBOW UP
DIMENSION DESCRIPTION:
14"ø = ROUND DUCT
24/12 FO = FLAT OVAL DUCT

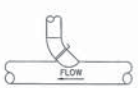
ELBOW DOWN



ELBOW – RADIUS (R) =
1.5 TIMES DIAMETER OF DUCT



SQUARE OR RECTANGULAR DUCT TAKE-OFF FROM MAIN. PROVIDE BALANCING DAMPER AT TAKE-OFF IF BRANCH DUCT SERVES A SINGLE AIR TERMINAL DEVICE.



ROUND OR FLAT OVAL DUCT TAKE-OFF FROM MAIN. PROVIDE BALANCING DAMPER AT TAKE-OFF IF BRANCH DUCT SERVES A SINGLE AIR TERMINAL DEVICE.

CONNECTION TO FAN POWERED TERMINAL UNITS. FLEXIBLE CONNECTIONS ON INLET AND DISCHARGE OF UNIT. PROVIDE VIBRATION ISOLATING HANGERS ON ALL FAN POWERED TERMINAL UNITS.

CONNECTION TO INLINE FAN. FLEXIBLE CONNECTION ON INLET AND OUTLET OF FAN. PROVIDE FLEXIBLE CONNECTIONS ON ALL SUSPENDED FANS.

MAXIMUM LENGTH OF FLEXIBLE DUCT TO AIR TERMINAL DEVICE SHALL NOT EXCEED 7'-0" IN LENGTH. CONNECTIONS TO TERMINAL DEVICES SHALL BE BANDED AND TAPED.

NOTE: ALL SYMBOLS MAY NOT BE USED ON THIS PROJECT

NEW 6-8 SCHOOL
LINCOLN JUNIOR HIGH
LINCOLN ELEMENTARY SCHOOL DIST. NO. 27
LINCOLN, ILLINOIS

STRUCTURAL

MECHANICAL/ELECTRICAL/PLUMBING

MELOTTE-MORSE-LEONATTI
FANNING/HOWEY
Associated Architects and Engineers

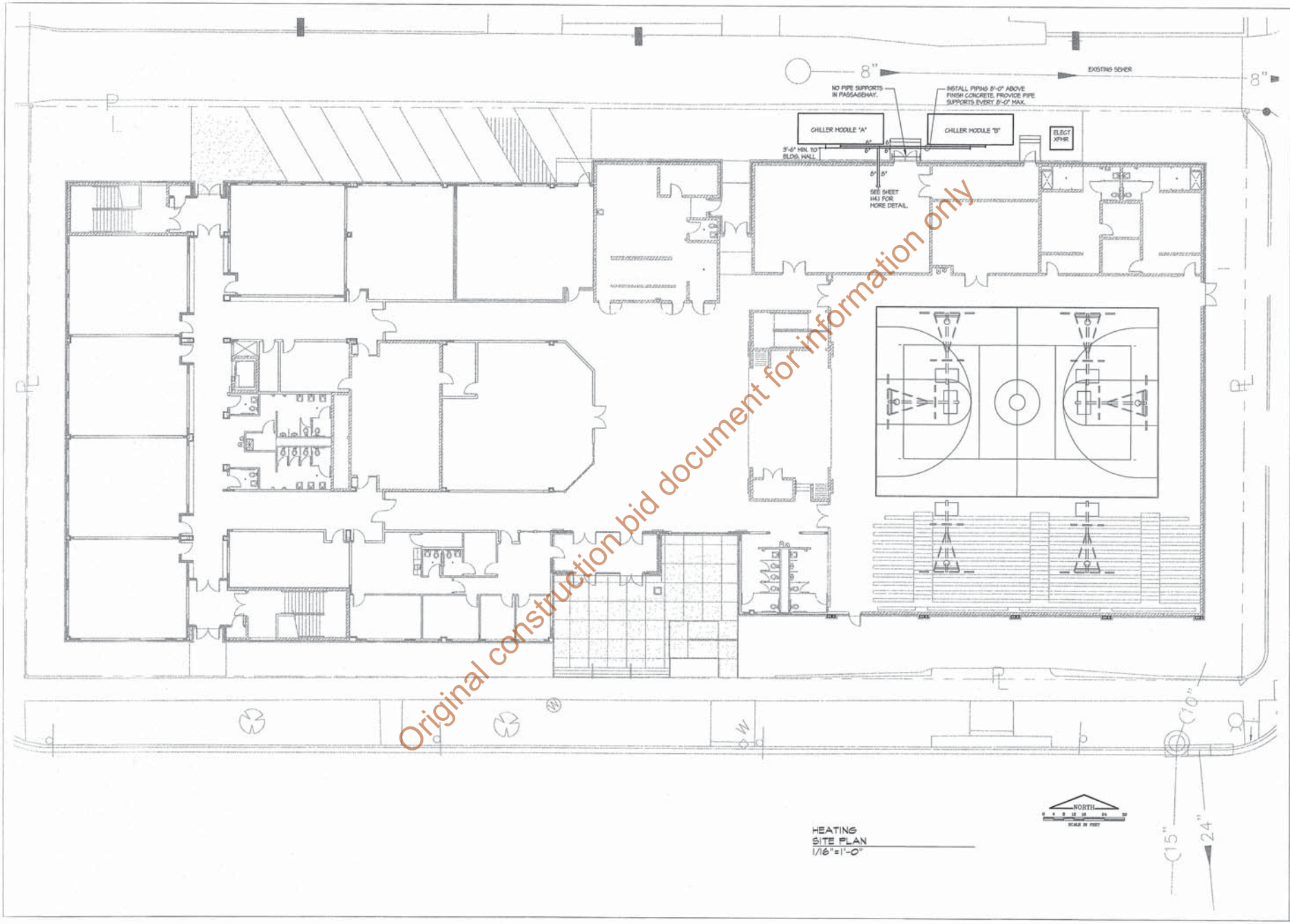
HEATING LEGEND

DRAWN BY: KBS/MDH
CHECKED BY: MH
COMM. NO.: XXXXXXXX
DATE: SEPTEMBER 15, 2003

REVISIONS NO. DATE

H0.1

LINCOLN JUNIOR HIGH SCHOOL
Proj# XXXXXXX – SHEET 12056



HEATING
SITE PLAN
1/16"=1'-0"

NEW 6-8 SCHOOL
LINCOLN JUNIOR HIGH
LINCOLN ELEMENTARY SCHOOL DIST. NO. 27
LINCOLN, ILLINOIS

STRUCTURAL

MECHANICAL, ELECTRICAL, PLUMBING

MELOTTE-MORSE-LEONATTI
FANNING / HOWEY
Associated Architects and Engineers

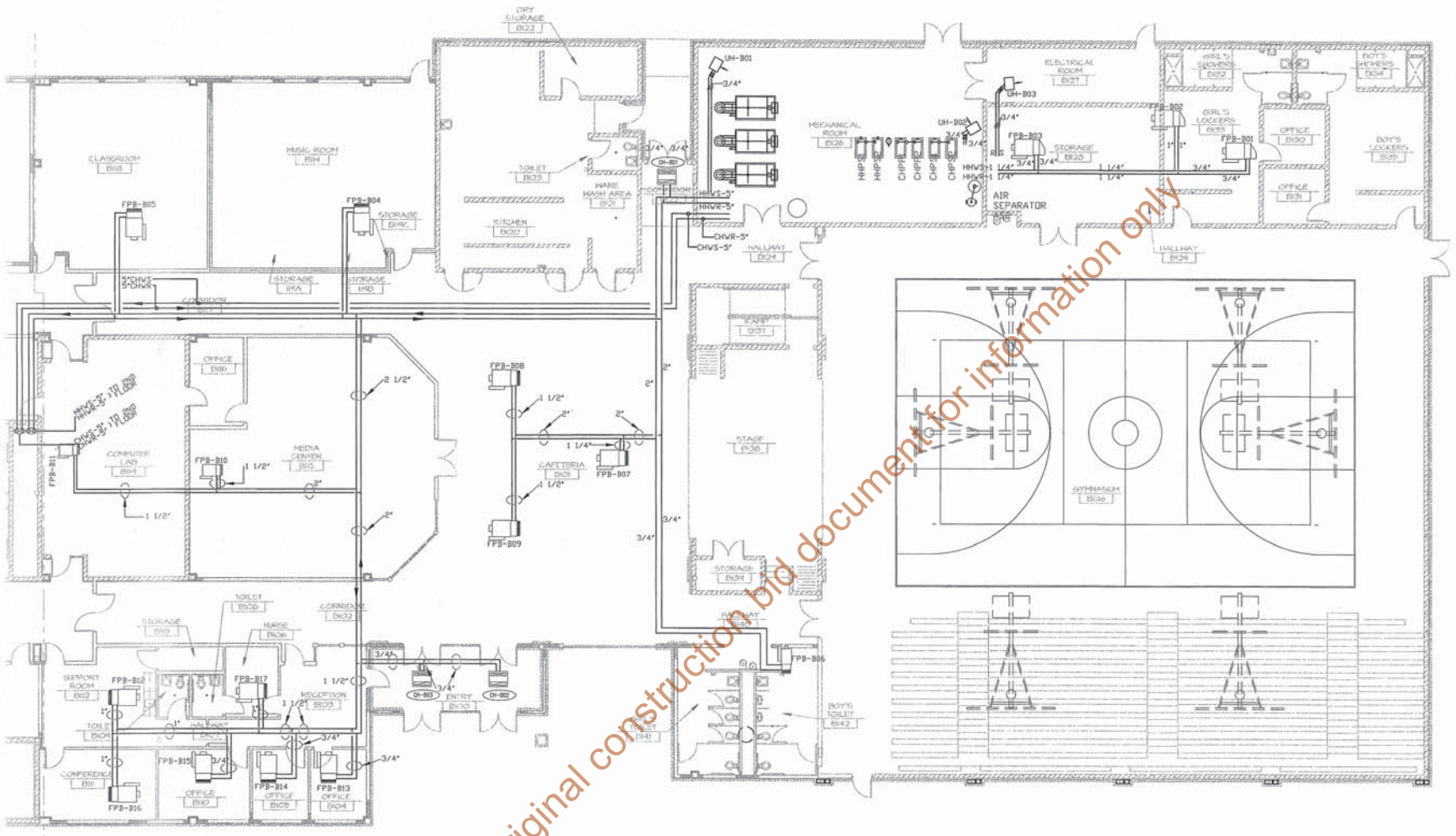
HEATING
SITE PLAN

DRAWN BY: KEH/AGH
CHECKED BY: ABM
COMM. NO.: XXXXXXXX
DATE: SEPTEMBER 19, 2005

REVISIONS NO. DATE

H1.1

LINCOLN JUNIOR HIGH SCHOOL
Proj XXXXXXX – MMJ# 12006



HEATING PLAN-UNIT "B"
SCALE: 1/8"=1'-0"

NEW 6-8 SCHOOL
LINCOLN JUNIOR HIGH
LINCOLN ELEMENTARY SCHOOL DIST. NO. 27
LINCOLN, ILLINOIS

MELOTTE-MORSE-LEONATTI
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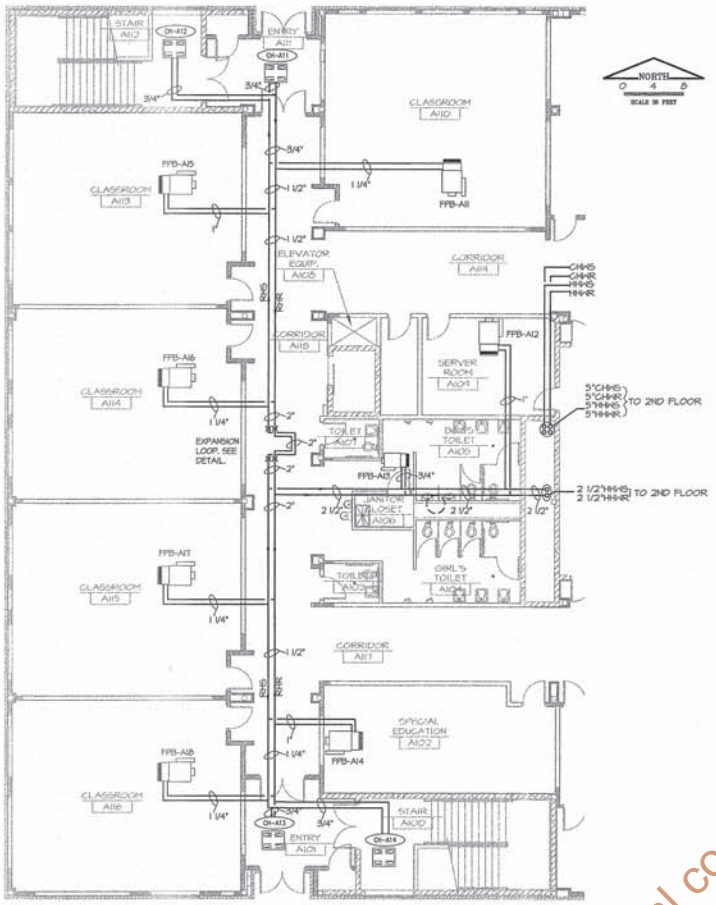
Associated Architects and Engineers

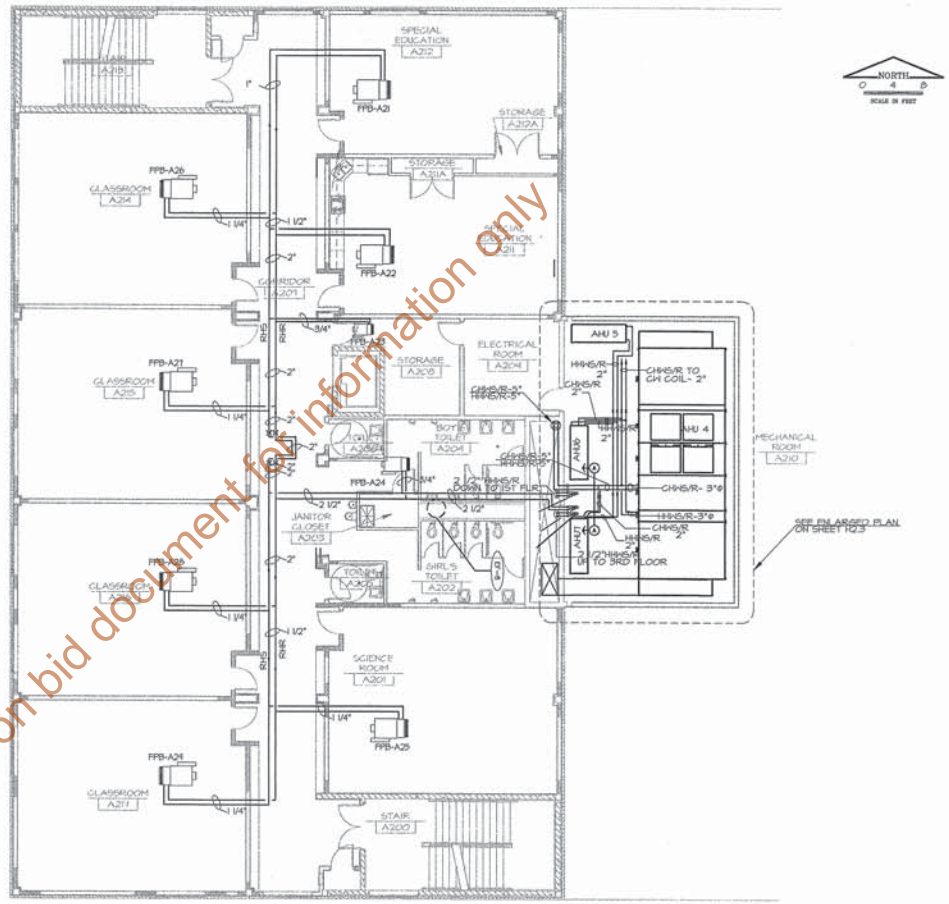
HEATING PLAN UNIT "B"
DRAWN BY: KEH/ASH
CHECKED BY: ABH
CONTR. NO.: XXXXXXXX
DATE: SEPTEMBER 16, 2003
REVISIONS NO. DATE

H2.1

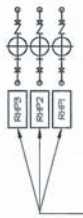
LINCOLN JUNIOR HIGH SCHOOL
File XXXXXXX – MMJ# 12056



FIRST FLOOR HEATING-
PLAN UNIT "A"
1/8"=1'-0"



SECOND FLOOR HEATING
PLAN UNIT "A"
1/8"=1'-0"



ELEVATION "A-A"
3/8"=1'-0"

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LINCOLN JUNIOR HIGH
LINCOLN ELEMENTARY SCHOOL DIST. NO. 27
LINCOLN, ILLINOIS

MELOTTE-MORSE-LEONATTI
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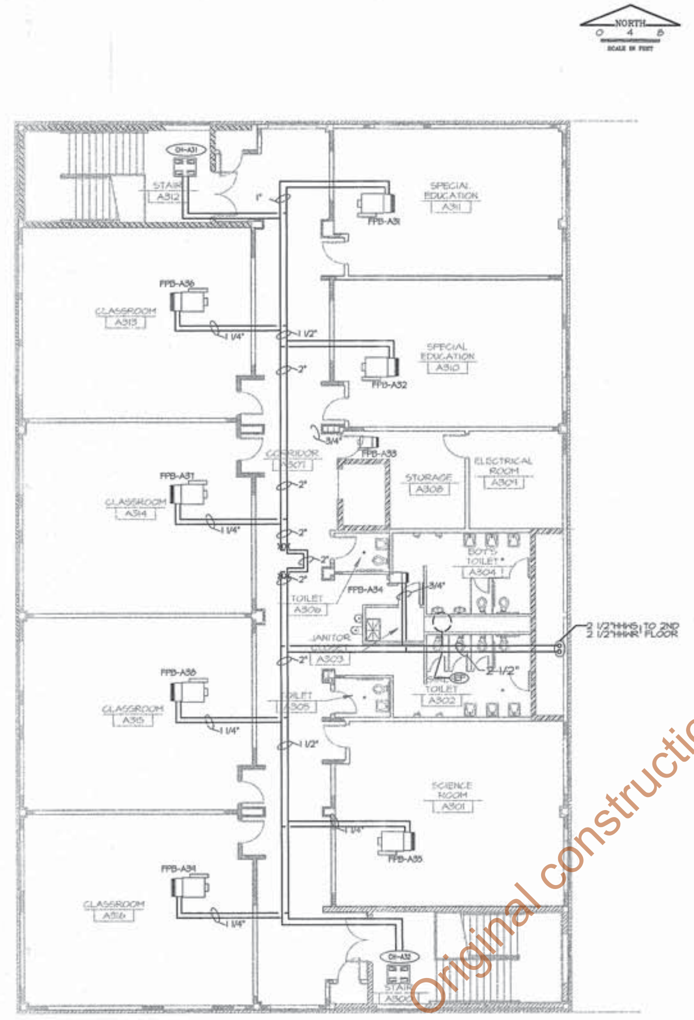
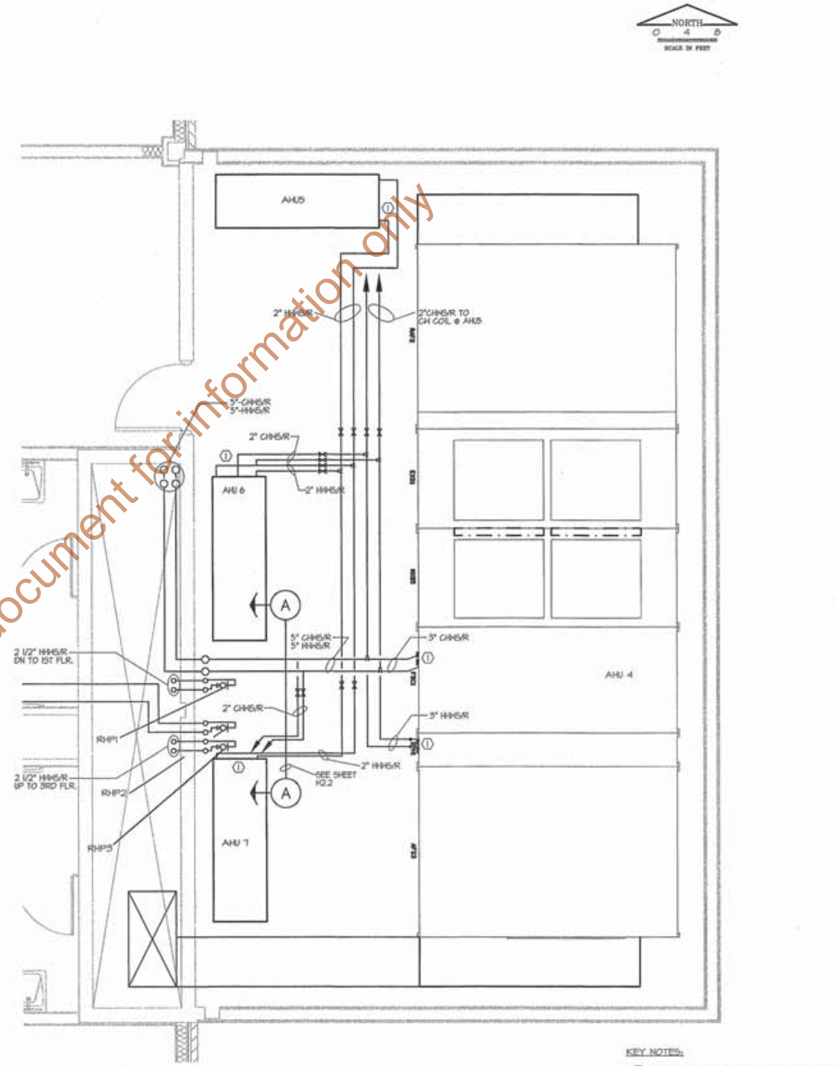
HEATING PLAN
UNIT "A"-1st & 2nd Floor
DRAWN BY: KSH/KDH
CHECKED BY: ABH
ORIGINAL ISSUE: XXXXXXXX
DATE: SEPTEMBER 16, 2003
REVISIONS NO: DATE

H2.2

LINCOLN JUNIOR HIGH SCHOOL
FM# XXXXXXX - MMLF 12006



THIRD FLOOR HEATING-PLAN UNIT "A"
1/8"=1'-0"



ENLARGED SECOND FLOOR MECHANICAL ROOM-UNIT "A"
3/8"=1'-0"

KEY NOTES:
(1) SEE SHEETS H4.2 AND H4.3 FOR PIPING DETAILS.

NEW 6-8 SCHOOL
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LINCOLN ELEMENTARY SCHOOL DIST. NO. 27
LINCOLN, ILLINOIS

MELOTTE-MORSE-LEONATTI
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Associated Architects and Engineers

HEATING PLAN
UNIT "A"-3rd FLOOR

H2.3

LINCOLN JUNIOR HIGH SCHOOL

AIR COOLED CHILLER WITH EVAPORATOR SCHEDULE

MARK	EXAMPLE MANUFACTURER MODEL NO.	NET * TONS	AMB. TEMP. °F	REF. TYPE	REMOTE EVAPORATOR DATA								CONDENSER FAN DATA					COMPRESSOR MOTOR DATA			ELECTRICAL DATA				REMARKS
					FLUID	EER	POWER	FOULING	EWT	LWT	GPM	WPD	QTY.	FANS KW	VOLTS	PHASE	FLA EA	QTY.	LRA	RLA	VOLT	PH	MCA	MAX. FUSE	
CH-1	CARRIER 30GT360-6	341.2	95	R22	WATER*	9.45	396	.0001	55	45	846.1	18.9FT	12	.746	480	3	2.1	12	631.4(#1) 631.4(#2)	368.2(#1) 368.2(#2)	480	3	2@368.2 EACH	2@400 EACH	120V/1/60 CONNECTION REQUIRED FOR CONTROLS

- CHILLER IS DUAL CIRCUIT (COMPREESOR) TYPE – CIRCUIT#1–221.8T/CIRCUIT#2–221.8T
- CHILLER #1, BECAUSE OF ITS PHYSICAL SIZE, IS COMPRISED OF TWO MODULES. THESE ARE LABELED MODULE 'A' AND MODULE 'B' ON THESE PLANS.

* CHILLED WATER WITH PROPYLENE GLYCOL. VERIFY MIX IS RATED TO –40°F. MINIMUM CONCENTRATION TO BE 25% PROPYLENE GLYCOL/ 75% WATER.

PUMP SCHEDULE

MARK	LOCATION	TYPE	FLUID	GPM	HEAD FT.	EFF. MIN %	MOTOR				MANUFACTURER MODEL NO.	REMARKS
							RPM	HP	VOLT	PH		
CHPS1	BOILER ROOM	BASE MTD. END SUCTION	CHILLED WATER	850	80	76	1750	25	480	3	BELL & GOSSETT SERIES MODEL 1510–3E	(WITH VFD)
CHPS2	BOILER ROOM	BASE MTD. END SUCTION	CHILLED WATER	850	80	76	1750	25	480	3	BELL & GOSSETT SERIES MODEL 1510–3E	(WITH VFD)(STANDBY)
CHPP1	BOILER ROOM	BASE MTD. END SUCTION	CHILLED WATER	850	25	77	1750	10	480	3	BELL & GOSSETT SERIES MODEL 1510–4C	(WITH VFD)
CHPP2	BOILER ROOM	BASE MTD. END SUCTION	CHILLED WATER	850	25	77	1750	10	480	3	BELL & GOSSETT SERIES MODEL 1510–4C	(WITH VFD)(STANDBY)
HHPS1	BOILER ROOM	BASE MTD. END SUCTION	HEATING WATER	676	80	70	1750	25	480	3	BELL & GOSSETT SERIES MODEL 1510–2BC	(WITH VFD)
HHPS2	BOILER ROOM	BASE MTD. END SUCTION	HEATING WATER	676	80	70	1750	25	480	3	BELL & GOSSETT SERIES MODEL 1510–2BC	(WITH VFD)(STANDBY)
CPB1	BOILER ROOM	IN–LINE CIRCULATING	BOILER FEED WATER	225	30	54	1750	5	480	3	BELL & GOSSETT SERIES SERIES –2.5x2.5x7	W/ATL STARTER *
CPB2	BOILER ROOM	IN–LINE CIRCULATING	BOILER FEED WATER	225	30	54	1750	5	480	3	BELL & GOSSETT SERIES SERIES –2.5x2.5x7	W/ATL STARTER *
CPB3	BOILER ROOM	IN–LINE CIRCULATING	BOILER FEED WATER	225	30	54	1750	5	480	3	BELL & GOSSETT SERIES SERIES –2.5x2.5x7	W/ATL STARTER *
RHP1	A209	IN–LINE CIRCULATING	REHEAT WATER	75	50	54	1750	2	480	3	BELL & GOSSETT SERIES SERIES –2.5x2.5x7	W/ATL STARTER *
RHP2	A209	IN–LINE CIRCULATING	REHEAT WATER	75	50	54	1750	2	480	3	BELL & GOSSETT SERIES SERIES –2.5x2.5x7	W/ATL STARTER *
RHP3	A209	IN–LINE CIRCULATING	REHEAT WATER	75	50	54	1750	2	480	3	BELL & GOSSETT SERIES SERIES –2.5x2.5x7	W/ATL STARTER *

ACCESSORIES:
1. COUPLING GUARDS.
2. SPRING VIBRATION ISOLATORS.

* ATL STARTER – ACROSS THE LINE NEMA SIZE 1 IN NEMA 12 ENCLOSURE W/RED RUN LIGHT, GREEN OFF LIGHT, S–S PB's, 3 OL'S, H–O–A SW., RESET PB.

GAS FIRED BOILER SCHEDULE

MARK	MANUFACTURER MODEL NO.	GROSS INPUT MBH	GROSS OUTPUT MBH	ENT. WTR °F	LVG. WTR °F	GPM	GAS BURNER DATA		ELECTRIC DATA			REMARKS
							INLET PRESS. IN W.C.	GAS TRAIN TYPE	I AMPS	VOLTS	PHASE	
B–1	LES SERIES VW–220 BRYAN SERIES AB200–W	2000	1675	160	180	225	28"	UL	4	120	1	–
B–2	LES SERIES VW–220 BRYAN SERIES AB200–W	2000	1675	160	180	225	28"	UL	4	120	1	–
B–3	LES SERIES VW–220 BRYAN SERIES AB200–W	2000	1675	160	180	225	28"	UL	4	120	1	–

EXPANSION TANK SCHEDULE

MARK NO.	LOCATION	APPLICATION	CAPACITY GALLONS	CODE	DIAMETER INCHES	HEIGHT INCHES	MOUNTING	MANUFACTURER MODEL NUMBER	REMARKS
T–1	BOILER ROOM	EXPANSION TANK CHILLED WATER	132	ASME	24	80.25	FLOOR	BELL & GOSSETT B–500	BLADDER TYPE CHILLED WATER
T–2	BOILER ROOM	EXPANSION TANK HEATING WATER	264	ASME	36	73.5	FLOOR	BELL & GOSSETT B–1000	BLADDER TYPE HEATING HOT WATER

NEW 6–8 SCHOOL
LINCOLN JUNIOR HIGH
LINCOLN ELEMENTARY SCHOOL DIST. NO. 27
LINCOLN, ILLINOIS

STRUCTURAL

MECHANICAL, ELECTRICAL, PLUMBING
Rymans Engineering, Inc.

MELOTTE-MORSE-LEONATTI
FANNING/HOWEY
Associated Architects and Engineers

HEATING
EQUIPMENT SCHEDULES–1
DRAWN BY: KEH/AEH COMM. NO.: XXXXXXXX
CHECKED BY: AMH DATE: SEPTEMBER 10, 2003
REVISIONS NO. DATE

H3.1

LINCOLN JUNIOR HIGH SCHOOL
FH# XXXXXXX – MML# 12056

TERMINAL HEATING UNIT SCHEDULE

MARK	UNIT NAME	MANUFACTURER AND MODEL NO.	EQUIPMENT ARRANGEMENT	CAPACITY (MBH)	CFM	EWT / LWT	EAT	GPM	MOTOR DATA			WEIGHT LBS	REMARKS
									HP	VOLTS	PHASE		
CH-B01	CABINET UNIT HEATER	MODINE CW58-06	CEILING RECESSED	16.3	370	180 / 160	65	1.6	1/20	115	1ø	130	–
CH-B02	CABINET UNIT HEATER	MODINE CW58-06	CEILING RECESSED	16.3	370	180 / 160	65	1.6	1/20	115	1ø	130	–
CH-B03	CABINET UNIT HEATER	MODINE CW58-06	CEILING RECESSED	16.3	370	180 / 160	65	1.6	1/20	115	1ø	130	–
CH-A11	CABINET UNIT HEATER	MODINE CW58-06	CEILING RECESSED	16.3	370	180 / 160	65	1.6	1/20	115	1ø	130	–
CH-A12	CABINET UNIT HEATER	MODINE CW58-06	CEILING RECESSED	16.3	370	180 / 160	65	1.6	1/20	115	1ø	130	–
CH-A13	CABINET UNIT HEATER	MODINE CW58-06	CEILING RECESSED	16.3	370	180 / 160	65	1.6	1/20	115	1ø	130	–
CH-A14	CABINET UNIT HEATER	MODINE CW58-06	CEILING RECESSED	16.3	370	180 / 160	65	1.6	1/20	115	1ø	130	–
CH-A31	CABINET UNIT HEATER	MODINE CW58-06	CEILING RECESSED	16.3	370	180 / 160	65	1.6	1/20	115	1ø	130	–
CH-A32	CABINET UNIT HEATER	MODINE CW58-06	CEILING RECESSED	16.3	370	180 / 160	65	1.6	1/20	115	1ø	130	–
UH-B01	UNIT HEATER	MODINE HS-33L	SUSPENDED FROM STRUCTURE	33.0	630	180 / 160	65	3.3	1/25	115	1ø	45	–
UH-B02	UNIT HEATER	MODINE HS-33L	SUSPENDED FROM STRUCTURE	33.0	630	180 / 160	65	3.3	1/25	115	1ø	45	–
UH-B03	UNIT HEATER	MODINE HS-33L	SUSPENDED FROM STRUCTURE	33.0	630	180 / 160	65	3.3	1/25	115	1ø	45	–

NEW 6-8 SCHOOL
LINCOLN JUNIOR HIGH
LINCOLN ELEMENTARY SCHOOL DIST. NO. 27
LINCOLN, ILLINOIS

STRUCTURAL

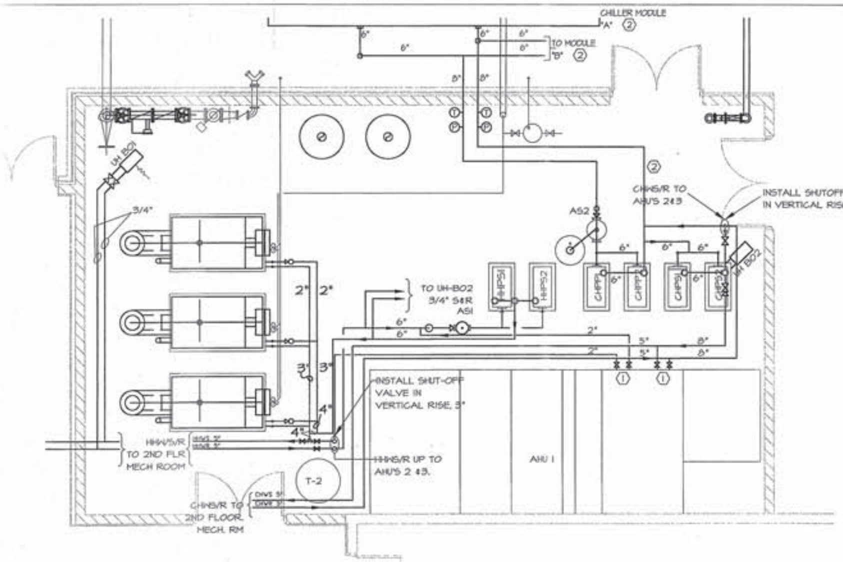
MECHANICAL, ELECTRICAL, PLUMBING
Hymans Engineering, Inc.

MELOTTE-MORSE-LEONATTI
FANNING / HOWEY
Associated Architects and Engineers

HEATING
EQUIPMENT SCHEDULES-2
DRAWN BY: KEH/AEH
CHECKED BY: AMH
COMM. NO.: XXXXXXXX
DATE: SEPTEMBER 16, 2003
REVISIONS NO. DATE

H3.2

LINCOLN JUNIOR HIGH SCHOOL
FH# XXXXXXX – MML# 12056



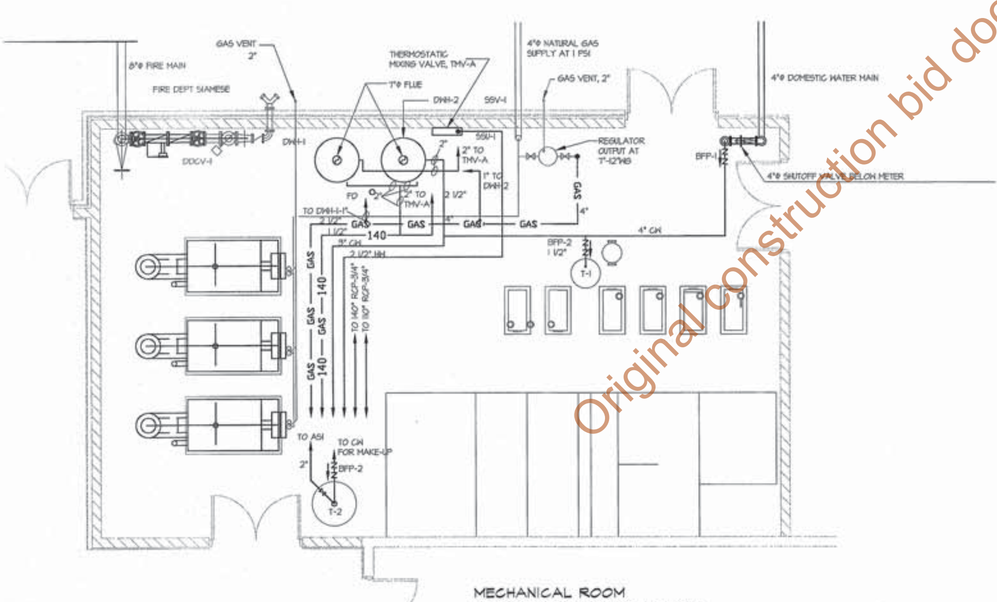
MECHANICAL ROOM
HEATING EQUIPMENT LAYOUT
1/4"=1'-0"

GAS TRAIN - TYPICAL BOILER

KEY NOTES:

① SEE SHEET H4.2 FOR COIL PIPING ARRANGEMENTS.

② SEE SHEET H3 FOR CHILLER LOCATION.



MECHANICAL ROOM
PLUMBING EQUIPMENT LAYOUT
1/4"=1'-0"

NEW 6-8 SCHOOL
LINCOLN JUNIOR HIGH
LINCOLN ELEMENTARY SCHOOL DIST. NO. 27
LINCOLN, ILLINOIS

MELOTTE-MORSE-LEONATTI
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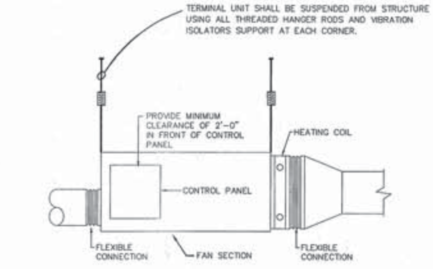
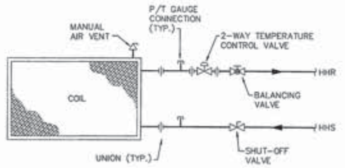
ENLARGED MECHANICAL ROOM

DRAWN BY: KEV/AEH COMM. NO.: XXXXXXXX
CHECKED BY: AMH DATE: SEPTEMBER 10, 2003

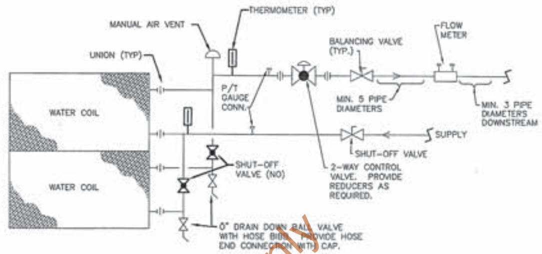
H4.1



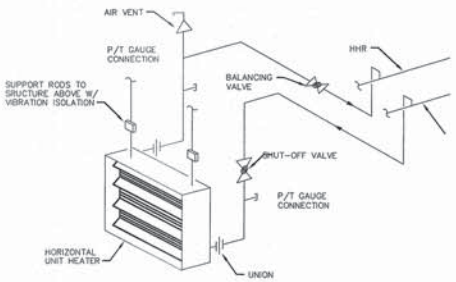
1 SERIES FAN POWERED TERMINAL UNIT DETAIL
NO SCALE



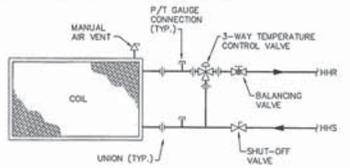
2 CABINET HEATER AND TERMINAL UNIT 2-WAY VALVE PIPING DETAIL
NO SCALE



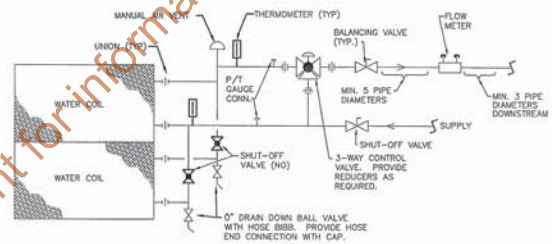
3 AIR HANDLING UNIT WITH 2-WAY VALVE PIPING DETAIL
NO SCALE



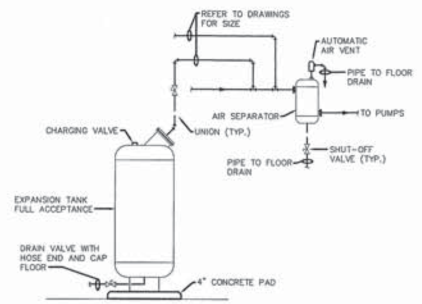
4 UNIT HEATER PIPING DETAIL
NO SCALE



5 CABINET HEATER, REHEAT COIL AND TERMINAL UNIT 3-WAY VALVE PIPING DETAIL
NO SCALE



6 AIR HANDLING UNIT WITH 3-WAY VALVE PIPING DETAIL
NO SCALE



7 TYPICAL EXPANSION TANK AND AIR SEPARATOR PIPING DETAIL
NO SCALE

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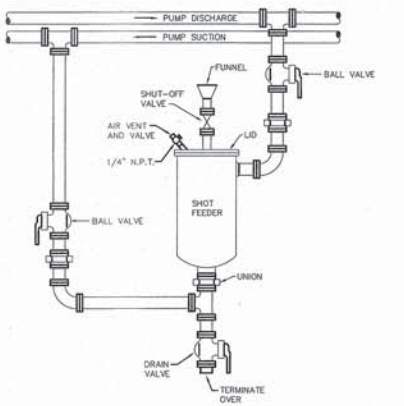
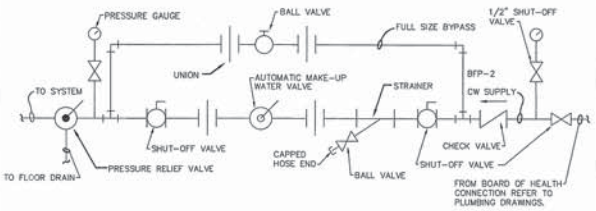
HEATING DETAILS-1

H4.2

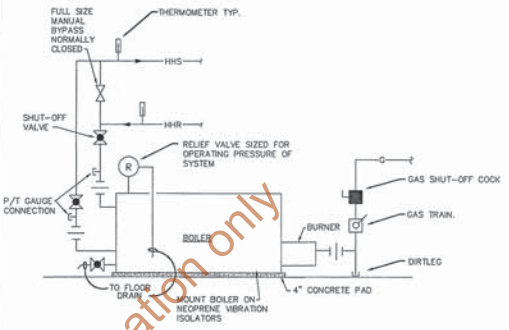
LINCOLN JUNIOR HIGH SCHOOL



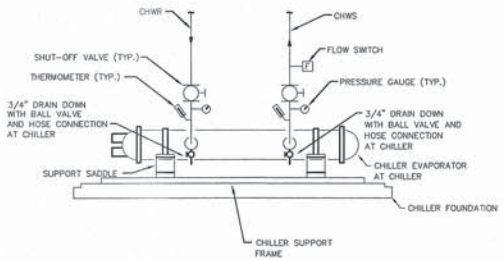
1 CHEMICAL SHOT FEEDER DETAIL
NO SCALE



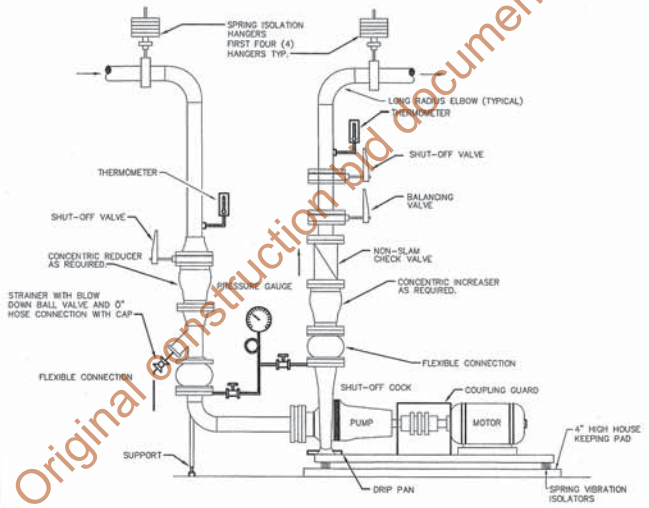
2 TYPICAL COLD WATER MAKE-UP DETAIL
NO SCALE



3 BOILER PIPING DETAIL
NO SCALE



4 CHILLER EVAPORATOR BUNDLE PIPING DETAIL-TYPICAL BOTH MODULES
NO SCALE



5 TYPICAL END SUCTION PUMP DETAIL
NO SCALE

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STRUCTURAL

MECHANICAL ELECTRICAL PLUMBING
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HEATING DETAILS-2

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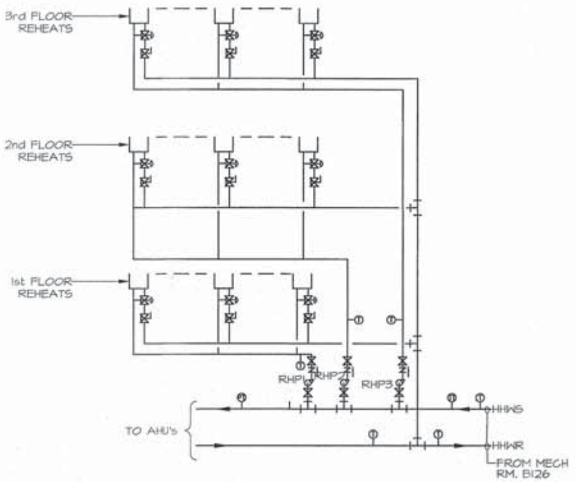
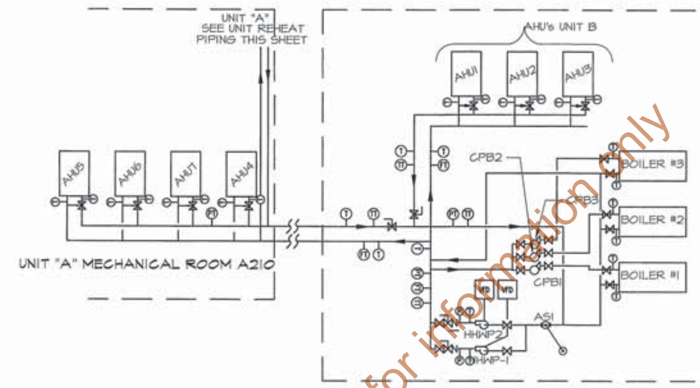
CONS. NO.: XXXXXXXX
DATE: SEPTEMBER 16, 2003
REVISIONS NO. DATE

H4.3

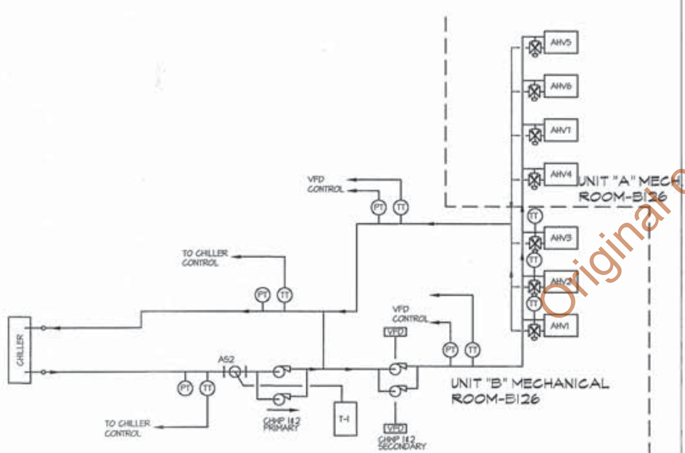
LINCOLN JUNIOR HIGH SCHOOL
Proj XXXXXXX – MMLF 13056



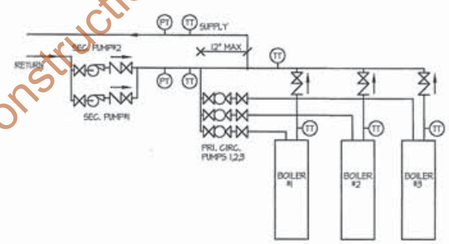
UNIT "A"- REHEAT PIPING - RM A210
NOT TO SCALE



MECHANICAL ROOM B126
HEATING SYSTEM SCHEMATIC
NOT TO SCALE



CHILLED WATER SYSTEM SCHEMATIC
N.T.S.



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HEATING AND CHILLED WATER SYSTEMS SCHEMATICS

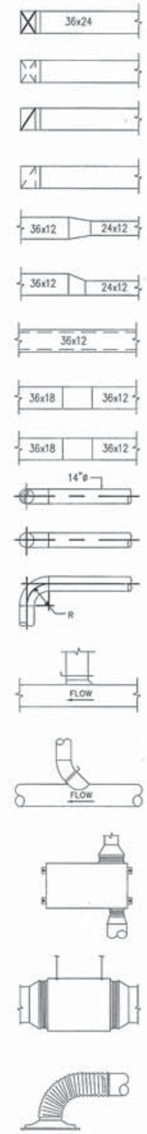
H5.1

VENTILATION ABBREVIATIONS

ABBREVIATIONS USED ON DRAWINGS IN GENERAL ARE LISTED BELOW. REFER TO CSI DOCUMENT TD 2-4 DATED NOVEMBER 1986 FOR ANY ABBREVIATION USED ON THE DRAWINGS BUT ARE NOT LISTED BELOW.

ABV	ABOVE
AC	AIR CONDITIONING
ACCU	AIR COOLED CONDENSING UNIT
ACU	AIR CONDITIONING UNIT
AFF	ABOVE FINISHED FLOOR
AFMS	AIR FLOW MEASURING STATION
AHU	AIR HANDLING UNIT
AL	ALUMINUM
ALT	ALTERNATIVE
AMB	AMBIENT
AP	ACCESS PANEL
APPROX	APPROXIMATE
AR	ACID RESISTANT
ARCH	ARCHITECT(URAL)
ARV	AIR RELIEF VALVE
AT	AIR TRANSFER
ATR	AIR TEMPERATURE RISE
ATV	AIR TURNING VANES
AUTO	AUTOMATIC
AVE	AIR VOLUME EXTRACTOR
BD	BAROMETRIC DAMPER
BDD	BACKDRAFT DAMPER
BHP	BREAK HORSEPOWER
BLDG	BUILDING
BOD	BOTTOM OF DUCT
BOT	BOTTOM
C	CONVECTOR
CA	COLD AIR
CAB	CABINET
CD	CEILING DIFFUSER
CDL	CONDENSATE DRAIN LINE
CFM	CUBIC FEET PER MINUTE
CH	AIR COOLED CHILLER
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CHWP	CHILLED WATER PUMP
CL	CENTERLINE
CLG	CEILING
CMP	CORRUGATED METAL PIPE
CO	CLEANOUT
COL	COLUMN
CONC	CONCRETE
COND	CONDENSER(ATE)
CONN	CONNECT/CONNECTION
CONSTR	CONSTRUCTION
CONTR	CONTRACTOR
CPD	CONDENSATE PUMP DISCHARGE
CPRSR	COMPRESSOR
CW	COLD WATER (DOMESTIC)
CWP	CONDENSER WATER PUMP
CWR	CONDENSER WATER RETURN
CWS	CONDENSER WATER SUPPLY
D	DEPTH/DEEP
DB	DRY BULB TEMPERATURE
DIA/ø	DIAMETER
DIFF	DIFFUSER
DISCH	DISCHARGE
DLR	DOUBLE LOUVER REGISTER
DWG	DRAWING
DUC	DOOR UNDER CUT
EA	EXHAUST AIR
EF	EXHAUST FAN
EFF	EFFICIENCY
EG	EXHAUST GRILLE
EL	ELEVATION
ELEC	ELECTRIC(AL)
ELEV	ELEVATOR
EMD	END OF MAIN DRIP
EMER	EMERGENCY
EP	ELECTRIC/PNEUMATIC
EQUIP	EQUIPMENT
EXH	EXHAUST
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
EXTN	EXTENSION
F&TT	FLOAT AND THERMOSTATIC TRAP
FC	FLEXIBLE DUCT CONNECTION
FCU	FAN COIL UNIT
F/SD	COMBINATION FIRE/SMOKE DAMPER
FD	FLOOR DRAIN
FD1	FIRE DAMPER TYPE
FIN FL/FF	FINISH FLOOR
FLR	FLOOR
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
FOV	FUEL OIL VENT
FP	FIRE PROTECTION
FPM	FEET PER MINUTE
FT	FEET
FUR	FURNACE
G	GAS (NATURAL)
GA	GAUGE
GAL	GALLON
GALV	GALVANIZE(D)
GPM	GALLONS PER MINUTE
H	HEIGHT/HIGH
HDG	HEAVY DUTY GRILLE
HDWE	HARDWARE
HHR	HEATING HOT WATER RETURN
HHS	HEATING HOT WATER SUPPLY
HHWP	HEATING HOT WATER PUMP
HP	HORSEPOWER
HPR	HIGH PRESSURE STEAM RETURN
HPS	HIGH PRESSURE STEAM SUPPLY
HTR	HEATER
HVAC	HEATING/VENTILATING/AIR CONDITIONING
HW	HOT WATER (DOMESTIC)
ID	INSIDE DIAMETER
IH	INTAKE HOOD
INCIN	INCINERATOR
INSUL	INSULATION/INSULATE
INTR	INTERIOR
INV	INVERT
KIT	KITCHEN
KW	KILOWATT
L	LENGTH/LONG
LAV	LAVATORY
LF	LINEAR FEET
LP	LIQUID PETROLEUM
LPR	LOW PRESSURE STEAM RETURN
LPS	LOW PRESSURE STEAM SUPPLY
LVR	LOUVER
MAX	MAXIMUM
MECH	MECHANICAL
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MOD	MOTOR OPERATED DAMPER
MPR	MEDIUM PRESSURE STEAM RETURN
MPS	MEDIUM PRESSURE STEAM SUPPLY
MTD	MOUNTED
NIC	NOT IN CONTRACT
NO/#	NUMBER
NOM	NOMINAL
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OC	ON CENTER
OD	OUTSIDE DIAMETER
OPNG	OPENING
OR	OIL RETURN
OS	OIL SUPPLY
OSD	OPEN SITE DRAIN
P	PUMP
PCHWS	PRIMARY CHILLED WATER SUPPLY
PCHWR	PRIMARY CHILLED WATER RETURN
PE	PNEUMATIC/ELECTRIC
PREFAB	PREFABRICATED
PRV	PRESSURE REDUCING VALVE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	PRESSURE TRANSMITTER
PTAC	PACKAGE TERMINAL AIR CONDITIONING UNIT
PVC	POLYVINYL CHLORIDE
R/RAD	RADIUS
RA	RETURN AIR
RACU	ROOM AIR CONDITIONING UNIT
RADN	RADIATION
RAG	RETURN AIR GRILLE
RCP	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN
REG	REGISTER
REQ'D	REQUIRED
RH	RELIEF HOOD
RHW	RECIRCULATED HOT WATER (DOMESTIC)
RL	REFRIGERANT LIQUID
RL48	RETURN LINEAR SLOT DIFFUSER (48" LONG)
RM	ROOM
RP	RADIANT PANEL
RPM	REVOLUTIONS PER MINUTE
RS	REFRIGERANT SUCTION
RSD	ROUND SUPPLY DIFFUSER
SA	SUPPLY AIR
SCHED	SCHEDULE
SD	SUPPLY DIFFUSER
SAG	SUPPLY AIR GRILLE
SHT	SHEET
SIM	SIMILAR
SL48	SUPPLY LINEAR SLOT DIFFUSER (48" LONG)
SP	STATIC PRESSURE
SPEC(S)	SPECIFICATION(S)
STD	STANDARD
TC	TEMPERATURE CONTROL
TCV	TEMPERATURE CONTROL VALVE
TD	TEMPERATURE DIFFERENCE
TEMP	TEMPERATURE
TXV	THERMAL EXPANSION VALVE
TYP	TYPICAL
UH	UNIT HEATER
UON	UNLESS OTHERWISE NOTED
UV	UNIT VENTILATOR
V	VENT
VA	VALVE
VAC	VACUUM
VAV	VARIABLE AIR VOLUME
VB	VACUUM BREAKER
VD	VOLUME DAMPER
VEL	VELOCITY
VIF	VERIFY IN FIELD
VVF	VARIABLE VOLUME-FAN POWERED
VVR	VARIABLE VOLUME-REHEAT
VFD	VARIABLE FREQUENCY DRIVE
W	WIDE/WIDTH
W/	WITH
W/O	WITHOUT
WB	WET BULB TEMPERATURE
WCO	WALL CLEANOUT

VENTILATION SYMBOLS



SUPPLY AIR ELBOW UP
DIMENSION DESCRIPTION:
1ST FIGURE = SIDE SHOWN
2ND FIGURE = SIDE NOT SHOWN

SUPPLY AIR ELBOW DOWN

EXHAUST/RETURN AIR ELBOW UP

EXHAUST/RETURN AIR ELBOW DOWN

DOUBLE SIDE TRANSITION
TRANSITION SLOPE SPECIFICATION:
MINIMUM SLOPE = 15°
MAXIMUM SLOPE = 45°
ALL SIZES IN INCHES

SINGLE SIDE TRANSITION

INTERNALLY LINED DUCTWORK

TOP TRANSITION (SLOPE ON TOP)

BOTTOM TRANSITION (SLOPE ON BOTTOM)

ELBOW UP
DIMENSION DESCRIPTION:
14"ø = ROUND DUCT
24/12 FO = FLAT OVAL DUCT

ELBOW DOWN

ELBOW - RADIUS (R) = 1.5 TIMES DIAMETER OF DUCT

SQUARE OR RECTANGULAR DUCT TAKE-OFF FROM MAIN. PROVIDE BALANCING DAMPER AT TAKE-OFF IF BRANCH DUCT SERVES A SINGLE AIR TERMINAL DEVICE.

ROUND OR FLAT OVAL DUCT TAKE-OFF FROM MAIN. PROVIDE BALANCING DAMPER AT TAKE-OFF IF BRANCH DUCT SERVES A SINGLE AIR TERMINAL DEVICE.

CONNECTION TO FAN POWERED TERMINAL UNITS. FLEXIBLE CONNECTIONS ON INLET AND DISCHARGE OF UNIT. PROVIDE VIBRATION ISOLATING HANGERS ON ALL FAN POWERED TERMINAL UNITS.

CONNECTION TO INLINE FAN. FLEXIBLE CONNECTION ON INLET AND OUTLET OF FAN. PROVIDE FLEXIBLE CONNECTIONS ON ALL SUSPENDED FANS.

MAXIMUM LENGTH OF FLEXIBLE DUCT TO AIR TERMINAL DEVICE SHALL NOT EXCEED 7'-0" IN LENGTH. CONNECTIONS TO TERMINAL DEVICES SHALL BE BANDED AND TAPED.

NOTE: ALL SYMBOLS MAY NOT BE USED ON THIS PROJECT

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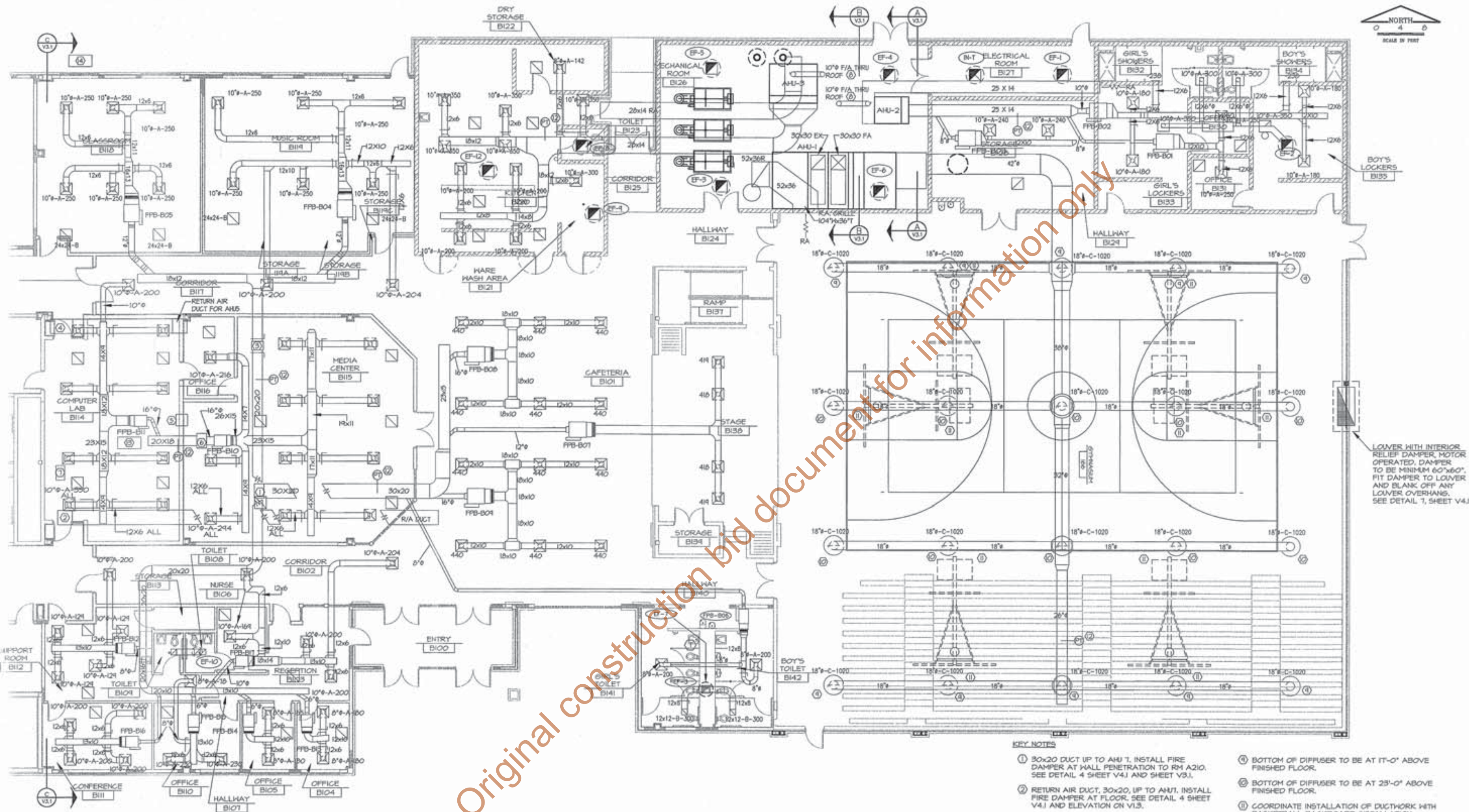
VENTILATION LEGEND
DRAWN BY: KEV/ABH
CHECKED BY: AMH
DATE: SEPTEMBER 10, 2002

V0.1



VENTILATION PLAN-UNIT "B"
SCALE: 1/8"=1'-0"

KEY NOTES

1. 30x20 DUCT UP TO AHU 7. INSTALL FIRE DAMPER AT WALL PENETRATION TO RM A210. SEE DETAIL 4 SHEET V4.I AND SHEET V3.I.
2. RETURN AIR DUCT, 30x20, UP TO AHU7. INSTALL FIRE DAMPER AT FLOOR. SEE DETAIL 4 SHEET V4.I AND ELEVATION ON V1.3.
3. 30x20 DUCT UP TO AHU5. INSTALL FIRE DAMPER AT WALL PENETRATION TO RM A210. SEE DETAIL 4 SHEET V4.I AND SHEET V3.I.
4. RETURN AIR DUCT, 30x20, UP TO AHU5. INSTALL FIRE DAMPER AT FLOOR. SEE DETAIL 4 SHEET V4.I AND ELEVATION ON V1.3.
5. TRANSFER DUCT. DETAIL 8, SHEET V4.I.
6. 30x20 DUCT UP TO AHU6. INSTALL FIRE DAMPER AT WALL PENETRATION TO RM A210. SEE DETAIL 4 SHEET V4.I AND SHEET V3.I.
7. 30x20 RETURN AIR DUCT UP TO AHU6. INSTALL FIRE DAMPER AT FLOOR. SEE DETAIL 4 SHEET V4.I AND ELEVATION ON V1.3.
8. ADJUST FOR 10% FRESH AIR, 90% RETURN, USE MANUAL DAMPER WITH LOCK.
9. BOTTOM OF DIFFUSER TO BE AT 17'-0" ABOVE FINISHED FLOOR.
10. BOTTOM OF DIFFUSER TO BE AT 23'-0" ABOVE FINISHED FLOOR.
11. COORDINATE INSTALLATION OF DUCTWORK WITH BASKETBALL BACKBOARD INSTALLATION.
12. DUCT PRESSURE TRANSMITTER
13. COMPUTER ROOM AIR CONDITIONER EQUAL TO LIEBERT MINI-MATE 2 MODEL MMD18A-D0000, 17,000 TOTAL BTUH, 13,400 SENSIBLE BTUH, 600 CFM, 208/1/60. SUPPORT UNIT FROM STRUCTURE ABOVE WITH VIBRATION ISOLATING HANGARS AS REQUIRED. COORDINATE INSTALLATION WITH REFLECTED CEILING PLAN.
14. ACCU FOR 13. OVERSIZE REFRIGERANT LINES TO COMPENSATE FOR DISTANCE. RUN REFRIGERANT LINES ABOVE CEILING. ACCU TO OPERATE AT 208/1/60.

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LINCOLN ELEMENTARY SCHOOL DIST. NO. 27
LINCOLN, ILLINOIS

STRUCTURAL

MECHANICAL, ELECTRICAL, PLUMBING
Hymans Engineering, Inc.

MELOTTE-MORSE-LEONATTI
FANNING/HOWEY
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VENTILATION PLAN UNIT "B"
DRAWN BY: KEH/ADH COMM. NO.: XXXXXXXX
CHECKED BY: AMH DATE: SEPTEMBER 10, 2003
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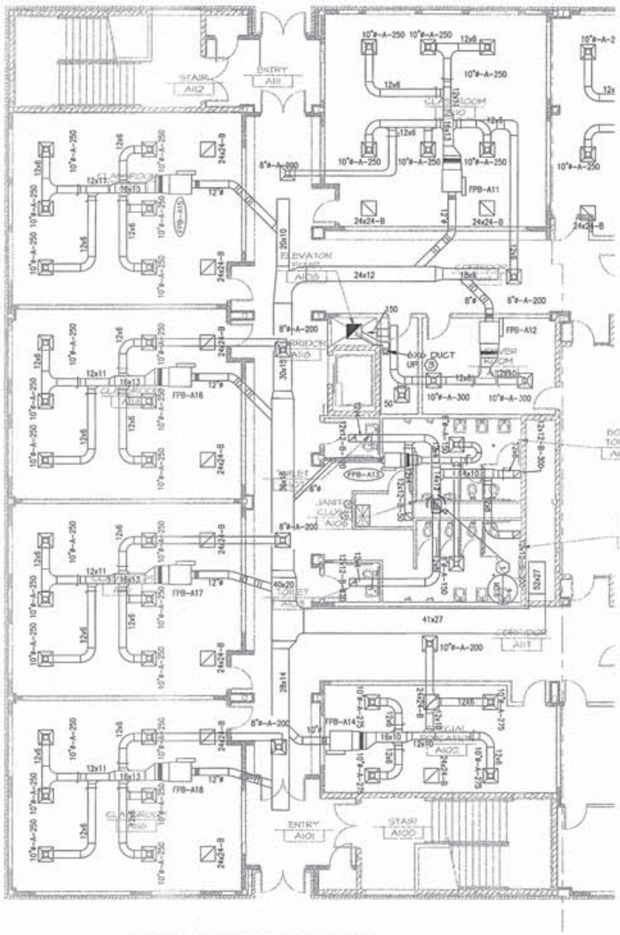
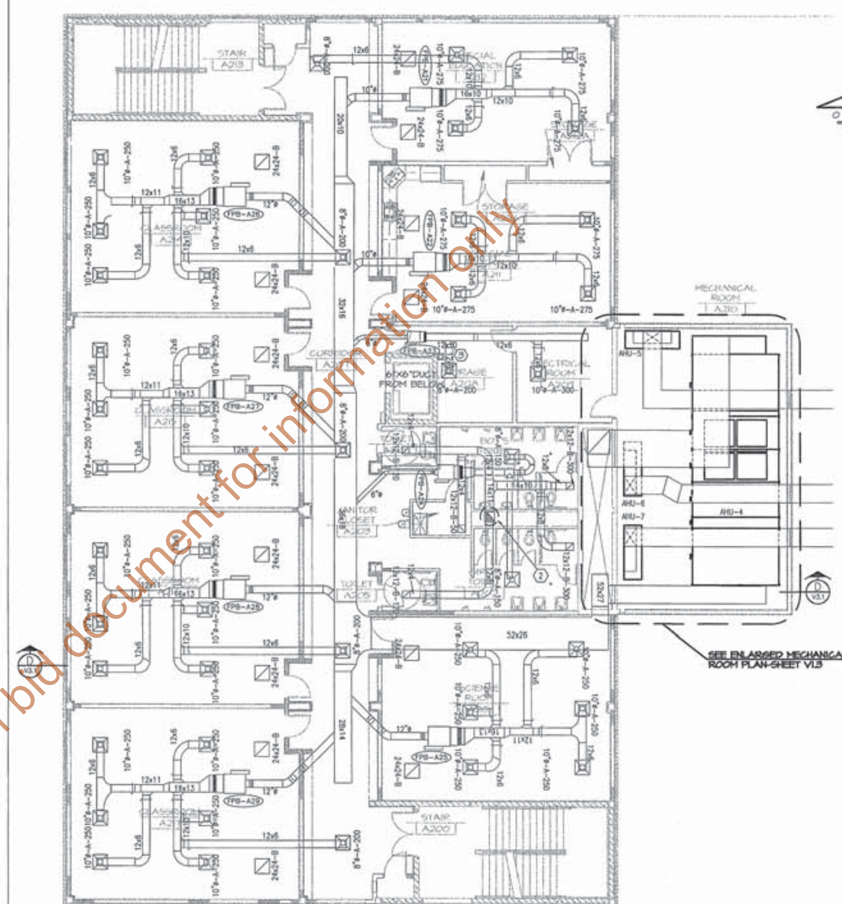
V1.1

LINCOLN JUNIOR HIGH SCHOOL
FH# XXXXXXX – MML# 12056



VENTILATION PLAN-1ST FLOOR
1/8"=1'-0"



VENTILATION PLAN-2ND FLOOR
1/8"=1'-0"

KEY NOTES:

1. 14x11 DUCT UP TO SECOND FLOOR
2. 16x13 DUCT UP TO THIRD FLOOR
3. INSTALL FIRE DAMPER AT FLOOR PENETRATION

NEW 6–8 SCHOOL
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VENTILATION PLAN
UNIT "A" – 1st & 2nd FLOORS
DRAWN BY: KEH/AEH COMM. NO.: XXXXXXXX
CHECKED BY: AMH DATE: SEPTEMBER 10, 2003
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V1.2

LINCOLN JUNIOR HIGH SCHOOL
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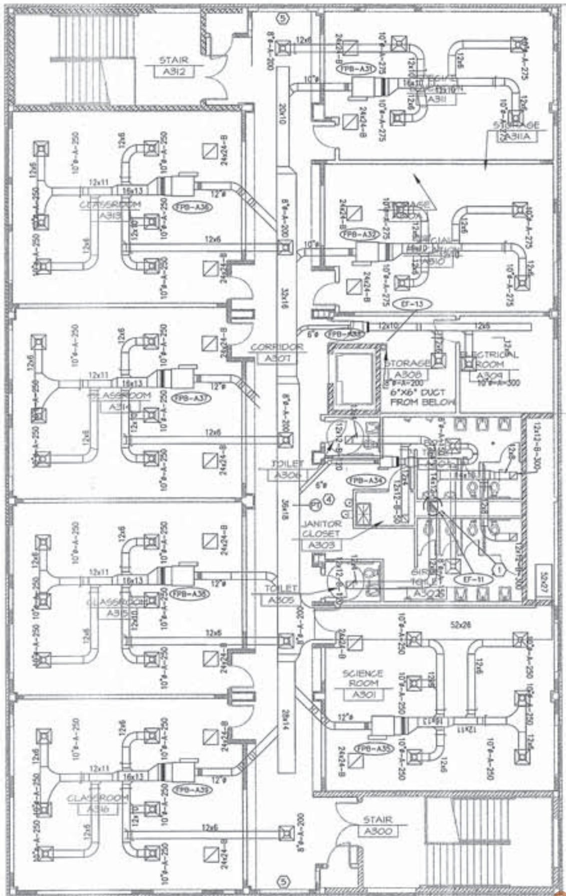
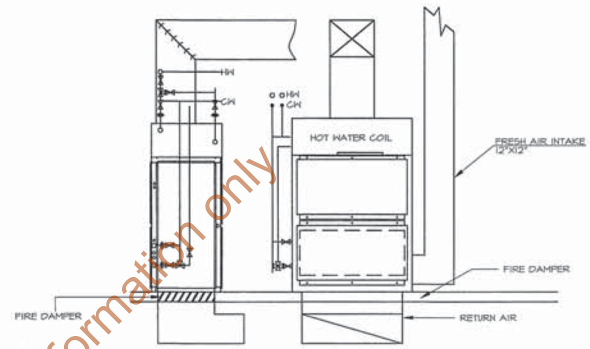


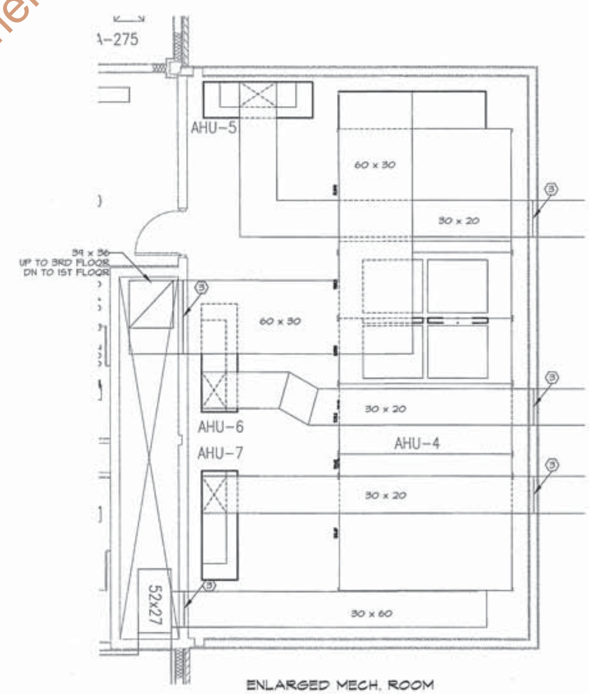
VENTILATION PLAN-3RD FLOOR
1/8"=1'-0"

KEY NOTES:

① 17" SQ. DUCT UP TO EXHAUST FAN ON ROOF
② INSTALL FIRE DAMPER AT FLOOR PENETRATION
③ INSTALL FIRE DAMPER AT WALL PENETRATION
④ DUCT PRESSURE TRANSMITTER
⑤ INSTALL RELIEF DAMPERS IN ATTIC SPACE AT GABLE LOUVERS. SEE DETAIL 7, SHEET V4.1.



AHU 5, 6, 7- TYPICAL
ADJUST DUCT AND PIPING TO SUIT AHU LOCATION



ENLARGED MECH. ROOM
VENTILATION PLAN
1/8"=1'-0"

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VENTILATION PLAN
UNIT "A" - 3rd FLOOR

DRAWN BY: KDV/ADH COMM. NO.: XXXXXXXX
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