ENERGY CONSERVATION MEASURES
FOR
METROPOLITAN SCHOOL DISTRICT
OF
LAWRENCE TOWNSHIP

BOARD OF EDUCATION

Cdr. A. David Schaaf, President
Leslie D. Anderson
Ronald Frieden
Lloyd Milliken Jr.
Patricia A. Sheets

ADMINISTRATION

Dr. Bernard K. McKenzie ,Supt.
John E. Newkirk, Admin. Asst.
W.C. Apple, Purchasing Direc.
Jack Okey, Facilities Engr.

INDEX

ARCHITECTS

WRIGHT/PORTEOUS & LOWE INC.

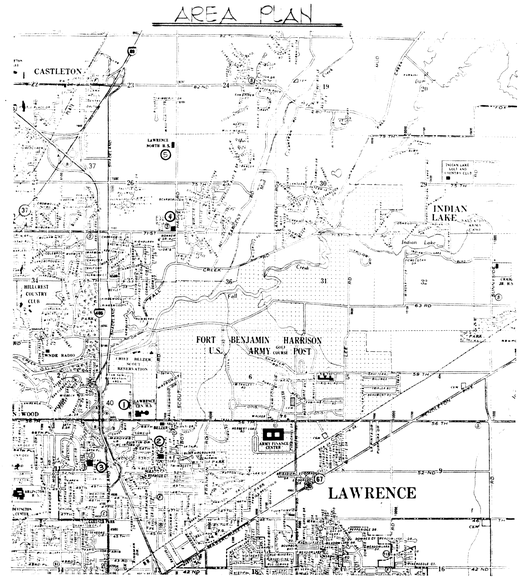
ENGINEERS

COGHILL/OBERLIES & ASSOC. INC.

MECHANICAL LEGEND

NAME	SYMBOL	ABBREVIATION
HEATING SYSTEM SUPPLY		S
HEATING SYSTEM RETURN		R
HEATING SYSTEM DRAIN LINE		DTM
HEATING SYSTEM CONDENSATE RETURN		CR
GATE VALVE		
GLOBE VALVE		
TWO WAY MOTORIZED VALVE		
CHECK VALVE		
STRAINER		
UNION		
FLOW VALVE OR BALANCING COCK		
PIPING FLOW WITH NO REDUCT TO FLOW		
PIPING FLOW WITH REDUCT TO FLOW		G
PIPING TEE OUT TOP		
PIPING TEE OUT BOTTOM		
THERMOSTAT		GT CONCEALED, RAN NUT
SUPPLY AIR OUTLET		18 X 8 OUTLET 8 DIG
RETURN & EXHAUST AIR INLET		18 X 8 INLET 8 DIG
DUCT FLOW WITH REDUCT TO FLOW		
DUCT FLOW WITH NO REDUCT TO FLOW		
BALANCING DAMPER		
DUCT TEE FLOW WITH DAMPER		
EMPTY DUCT SECTION		
EXHAUST OR RETURN AIR DUCT SECTION		
COLD WATER (CITY OR FILTERED)		CW
120° HOT WATER		HW
180° HOT WATER		180 HW
COMPUTED HOT WATER RETURN		HWR
GAS LINE	G	G
FUEL OIL SUPPLY	FOS	FOS
FUEL OIL RETURN	FOR	FOR
CONDENSATE RETURN PUMP DISCHARGE	PD	PD

AREA PLAN



PROJECT SITES:
1. LAWRENCE CENTRAL HIGH SCHOOL
2. HARRISON HILL ELEMENTARY SCHOOL
3. BROOK PARK ELEMENTARY SCHOOL
4. CRESTVIEW ELEMENTARY SCHOOL
5. LAWRENCE NORTH HIGH SCHOOL

NORTH

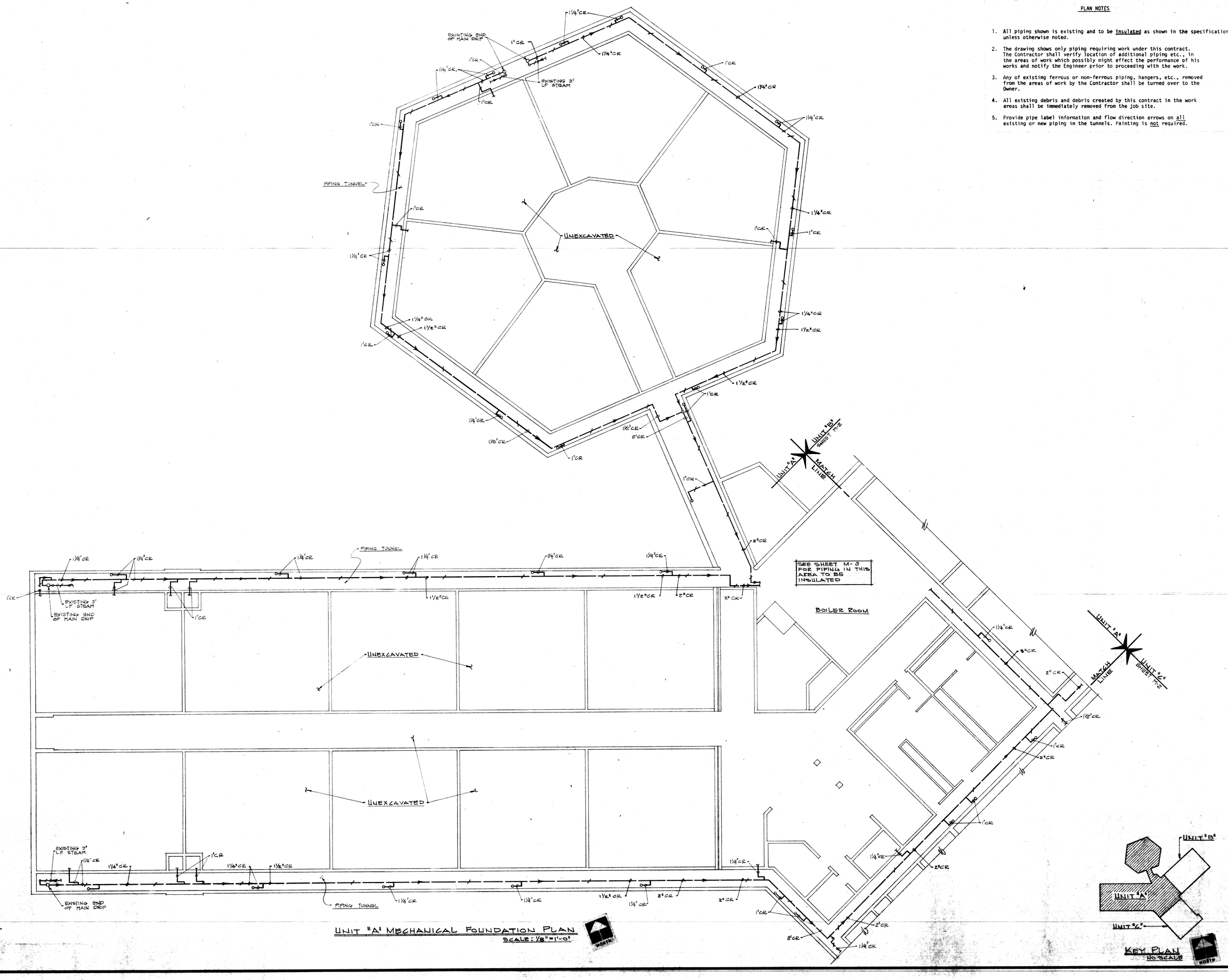
WRIGHT PORTEOUS & LOWE INC.
ARCHITECTS : ENGINEERS
INDIANAPOLIS INDIANA

NO.	DATE	REVISIONS DESCRIPTION

COMM. NO. 8180
DATE 11-30-81
DRAWN BY TM
CHECKED BY JWB

M. OBERLIES, JR. REGISTERED No. 13968 STATE OF INDIANA PROFESSIONAL ENGINEER
CERTIFIED BY

SHEET 1 OF



UNIT "A" MECHANICAL FOUNDATION PLAN
SCALE: 1/8"=1'-0"

PLAN NOTES

1. All piping shown is existing and to be insulated as shown in the specifications unless otherwise noted.
2. The drawing shows only piping requiring work under this contract. The Contractor shall verify location of additional piping etc., in the areas of work which possibly might effect the performance of his works and notify the Engineer prior to proceeding with the work.
3. Any of existing ferrous or non-ferrous piping, hangers, etc., removed from the areas of work by the Contractor shall be turned over to the Owner.
4. All existing debris and debris created by this contract in the work areas shall be immediately removed from the job site.
5. Provide pipe label information and flow direction arrows on all existing or new piping in the tunnels. Painting is not required.

WRIGHT PORTEOUS & LOWE INC.
ARCHITECTS : ENGINEERS
INDIANAPOLIS, INDIANA

COGHILL/OBERLIES & ASSOCIATES
Consulting Engineers
INDIANAPOLIS, INDIANA

UNIT A - TUNNEL PLAN

METROPOLITAN SCHOOL DISTRICT
OF LAWRENCE TOWNSHIP
CRESTVIEW ELEMENTARY SCHOOL

REVISIONS		
NO.	DATE	DESCRIPTION

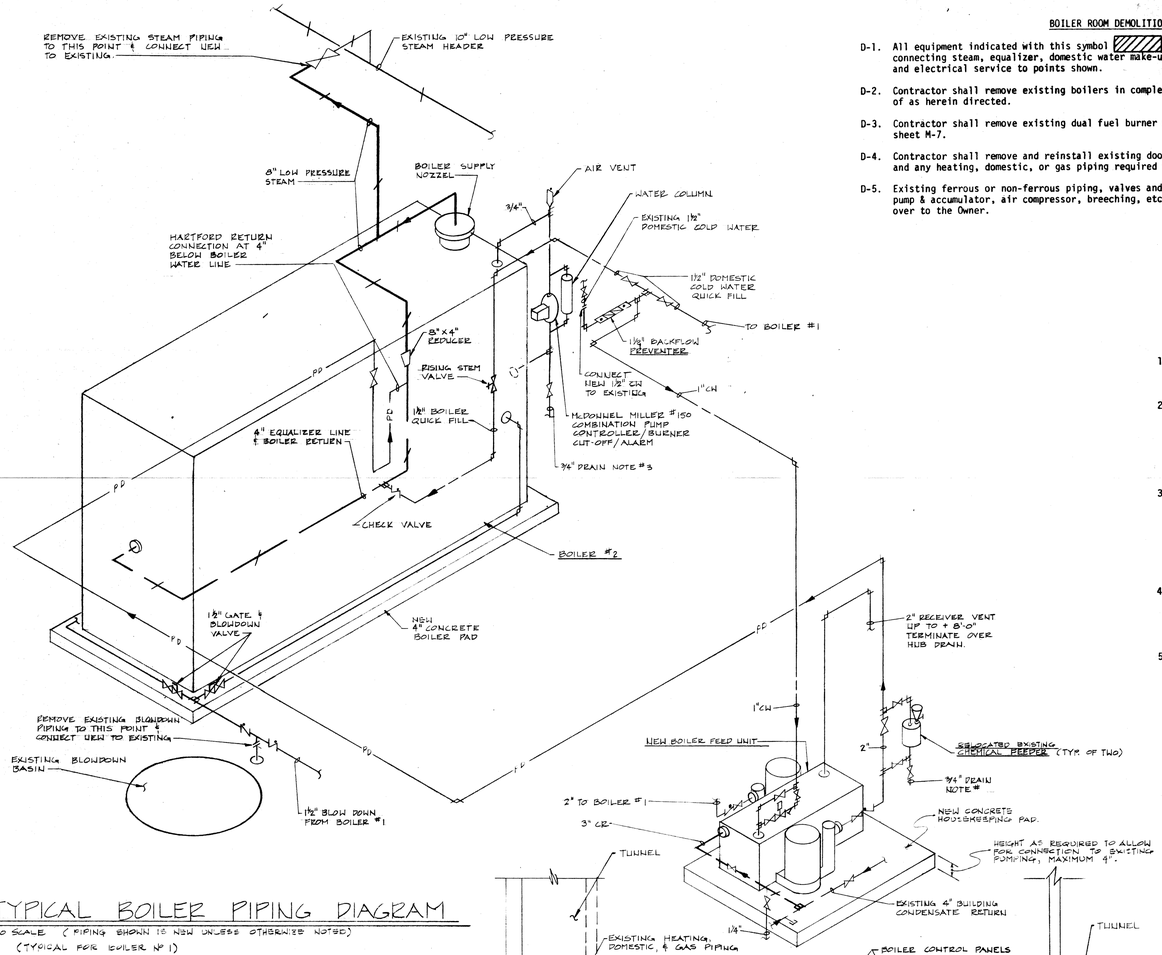
COMM. NO.	81201
DATE	11-30-81
DRAWN BY	SWR
CHECKED BY	ZES

JOHN W. OBERLIES, JR. REGISTERED PROFESSIONAL ENGINEER No. 13968 STATE OF INDIANA

CERTIFIED BY

SHEET
M-1
OF 13

10M-17-0253



TYPICAL BOILER PIPING DIAGRAM

NO SCALE (PIPING SHOWN IS NEW UNLESS OTHERWISE NOTED)
(TYPICAL FOR BOILER Nº 1)

BOILER ROOM DEMOLITION NOTES

D-1. All equipment indicated with this symbol ▨ shall be completely removed including all connecting steam, equalizer, domestic water make-up, vacuum pump discharge, blow down piping and electrical service to points shown.

D-2. Contractor shall remove existing boilers in complete sections (Boiler #2 first) and dispose of as herein directed.

D-3. Contractor shall remove existing dual fuel burner and fuel train and reinstall as shown on sheet M-7.

D-4. Contractor shall remove and reinstall existing door, transom and frame, steel stair and railing, and any heating, domestic, or gas piping required to facilitate ingress of new boilers.

D-5. Existing ferrous or non-ferrous piping, valves and fittings, cast iron boiler sections, vacuum pump & accumulator, air compressor, breeching, etc. removed from boiler room shall be turned over to the Owner.

BOILER ROOM MECHANICAL EQUIPMENT SCHEDULE

1. New Heating System Boiler #1 & 2:
Bryan Model L-64-S, or an approved equal. Gross output rating 3440 MBH., 102 boiler horsepower, water tube, 520 square feet heating surface.

2. New Heating System Burner #1 & 2:
Industrial Combustion Model GLG, or an approved equal, combination gas-oil burner, gas capacity, 4200 cubic feet per hour of 0.6 specific gravity, 1000 BTU cubic foot natural gas at a maximum manifold pressure of 6" water column. Oil capacity: 30 gallons per hour with a heat content of 140,000 BTU per gallon. Burner Motor Data: 2 HP, 208 volts, 3 phase, 60 hertz.

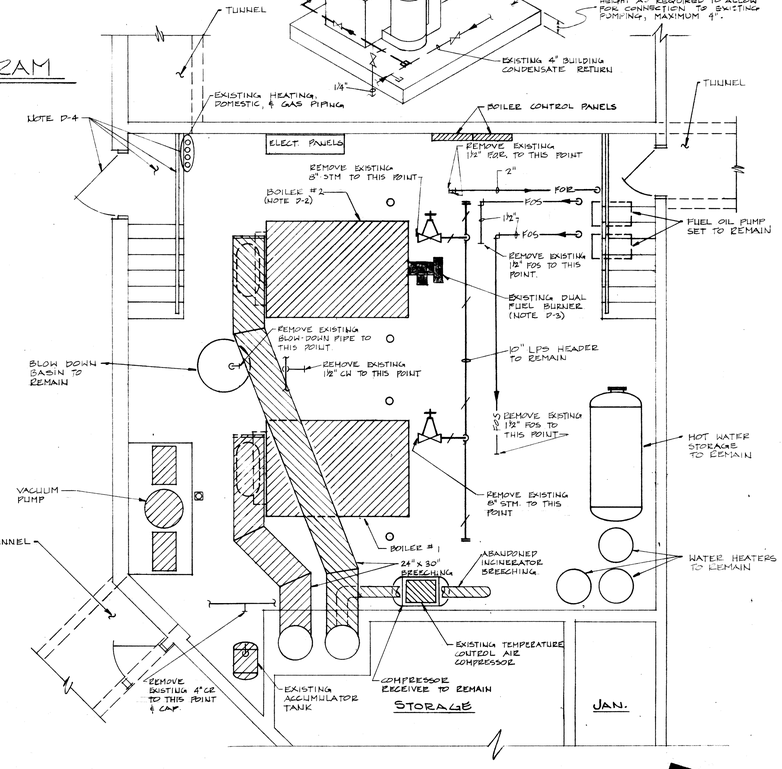
3. New Boiler Feed Unit:
Domestic Model 152CM duplex unit or an approved equal. The unit shall be rated 15,000 square feet EDR 22.5 GPM, 20 PSI discharge pressure, maximum inlet height: 14 inches to centerline. Motor data: (2) 1/2 HP, 3500 RPM, 208 volts, 3 phase, 60 hertz; receiver capacity 52 gallons. Provide unit with factory mounted control panel, make up water solenoid valve with 3 valve bypass, and inlet basket strainer.

4. New Temperature Control Air Compressor and Aftercooler:
(Reuse existing receiver) Compressor motor: 2 horsepower (minimum), 208 volts, 3 phase, 60 hertz. Aftercooler motor: 1/5 HP, 115 volts, 1 phase, 60 hertz. Compressor and aftercooler sized by Johnson Controls, furnished and installed by the Contractor.

5. New Backflow Preventer
Hersey, Watts, or an approved equal - see specifications.

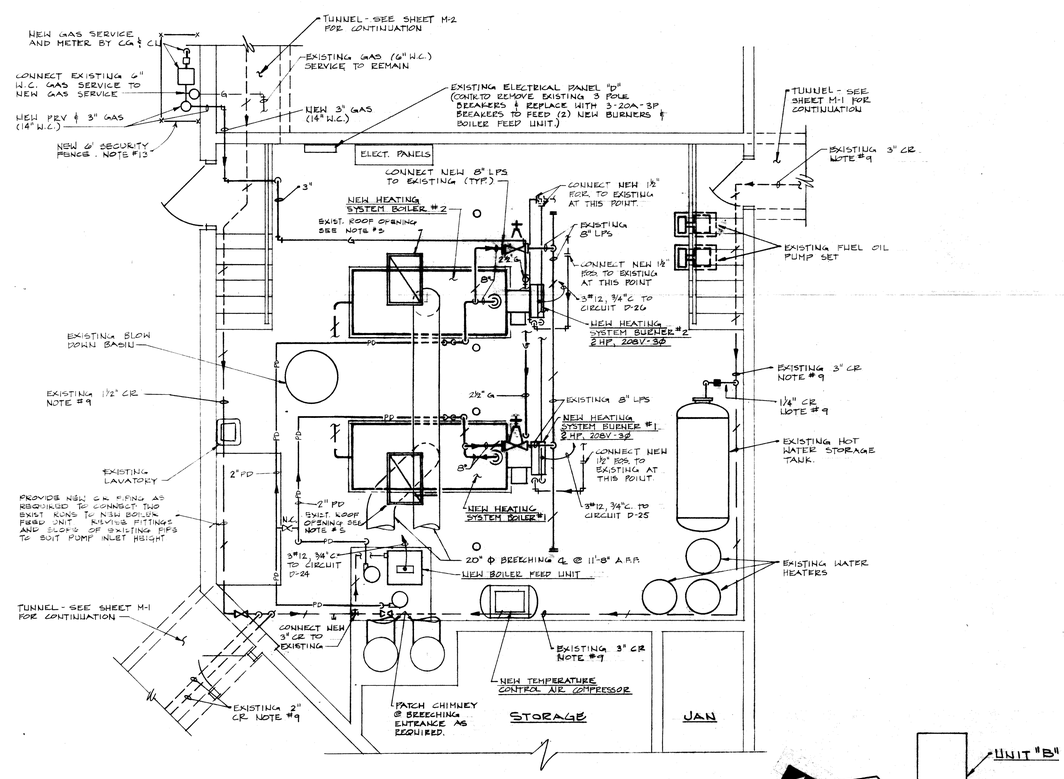
PLAN NOTES

1. All work shown is new and by the Contractor unless otherwise noted.
2. Contractor shall verify all existing conditions at the job site.
3. All pressure relief valves, blowdown valves, drain valves, etc. shall have a drain line, full size of outlet, run to nearest floor drain or sump pit.
4. The Contractor shall assume all costs not borne by the local gas utility to provide a complete gas service for the boilers.
5. 24" x 30" opposed blade motorized combustion air damper by Temperature Control Contractor. Damper shall be controlled by a relay furnished by the burner supplier in the Heating System Burner control cabinet. Contractor shall furnish remote wall switch to override relay for summer ventilation.
6. All valves, thermometers, gauges, feeders, fittings, etc., noted on boilers, and pumps, are typical for all boilers and pumps.
7. All existing and new overhead gate valves on supply heating mains, 4" and larger, and over 8'-0" above finished floor shall be chain operated. All heating system and domestic cold water valves 4" and larger shall be completely reconditioned per specifications or replaced at the Contractor's option.
8. All horizontal piping within the boiler room shall be suspended on rubber-in-shear hangers (see specifications).
9. All condensate return piping (CR) shown is existing and shall be insulated as shown in the specifications unless otherwise noted.
10. All existing steam, domestic hot and cold water piping within the boiler room where insulation is missing, loose, or damaged shall be reinsulated as per specifications unless otherwise noted. Insulate all new piping.
11. Contractor shall paint all wall and ceiling surfaces in the boiler room including doors and steel stairs. Colors to be as selected by Owner. Paint all new and existing piping, pipe hangers, supports, tanks, receivers, fuel oil pumps, etc. Piping, tanks and pumps shall be color coded and piping identified as per specifications. Electrical conduit and temperature control tubing shall be painted to match walls. Electrical panels and new equipment shall not be painted.
12. Contractor shall patch and repair existing chimney masonry within the Boiler Room as required and directed by the Engineer.
13. Provide new 6 foot woven wire chain link fence, No. 9 gauge with 4 foot wide gate with locking hasp and approved lock. Provide with all accessories as required by Gas Utility. Provide minimum 24" clearance around meter and piping.



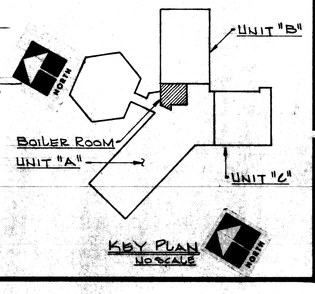
MECHANICAL BOILER ROOM DEMOLITION LAYOUT

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



MECHANICAL BOILER ROOM LAYOUT

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



WRIGHT PORTEOUS & LOWE INC.
ARCHITECTS : ENGINEERS
INDIANAPOLIS, INDIANA

COGHILL/OBERLIES & ASSOCIATES
Consulting Engineers
INDIANAPOLIS, INDIANA

BOILER ROOM LAYOUTS, DETAILS & SCHEDULES

METROPOLITAN SCHOOL DISTRICT OF LAWRENCE TOWNSHIP
CRESTVIEW ELEMENTARY SCHOOL

NO.	DATE	REVISIONS DESCRIPTION

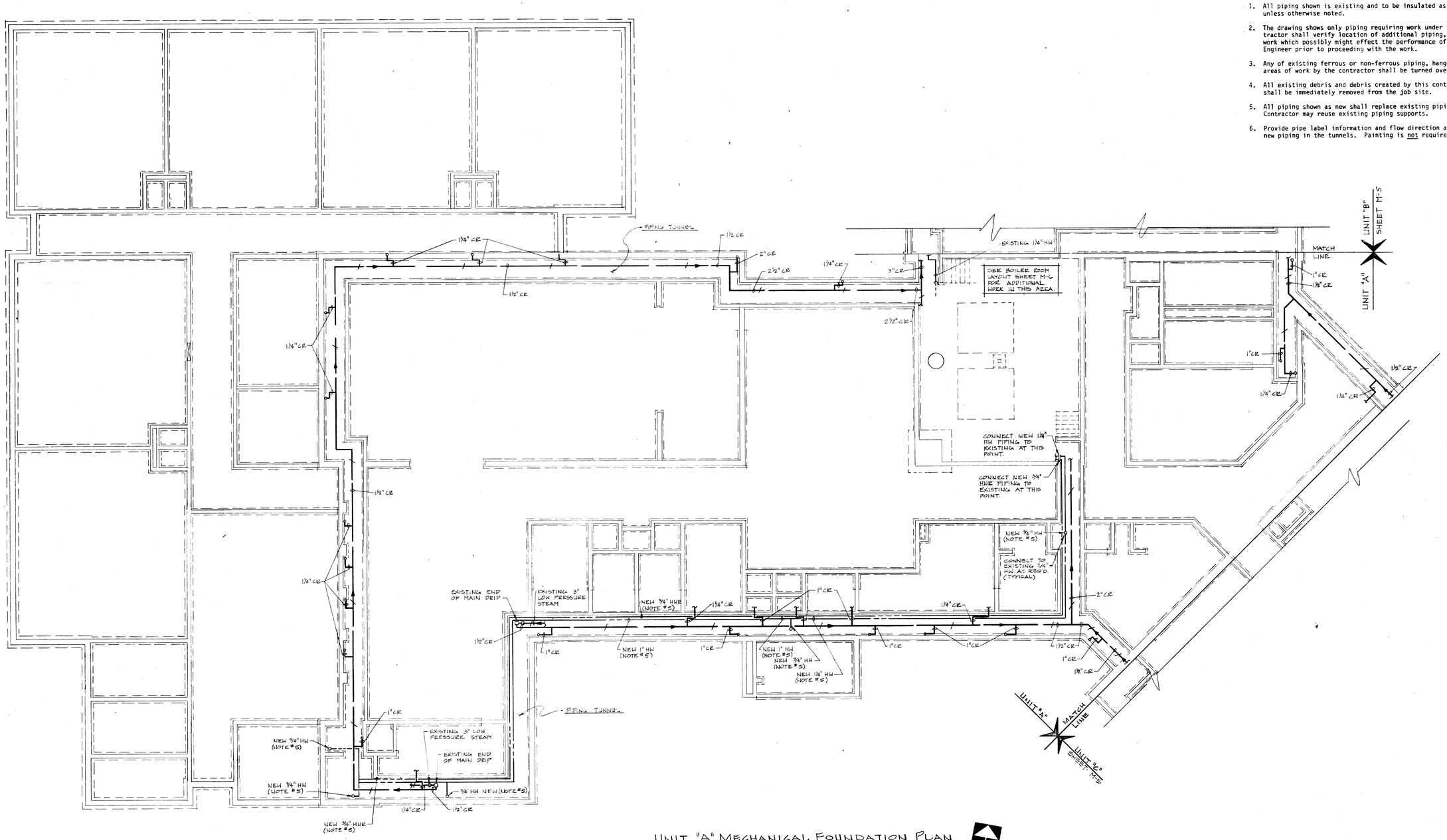
COMM. NO.	8121
DATE	11-30-81
DRAWN BY	SJOE
CHECKED BY	EES

JOHN N. OBERLIES JR. ENGINEER No. 13968 STATE OF INDIANA PROFESSIONAL ENGINEER
CERTIFIED BY

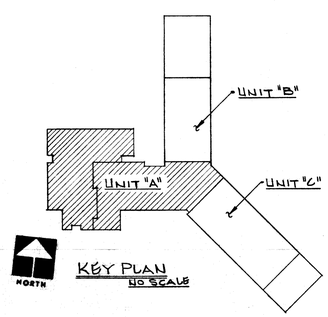
SHEET
M-3
OF 13

PLAN NOTES

1. All piping shown is existing and to be insulated as shown in the specifications unless otherwise noted.
2. The drawing shows only piping requiring work under this contract. The Contractor shall verify location of additional piping, etc., in the areas of work which possibly might effect the performance of his works and notify the Engineer prior to proceeding with the work.
3. Any of existing ferrous or non-ferrous piping, hangers, etc. removed from the areas of work by the contractor shall be turned over to the Owner.
4. All existing debris and debris created by this contract in the work areas shall be immediately removed from the job site.
5. All piping shown as new shall replace existing piping in the same location. Contractor may reuse existing piping supports.
6. Provide pipe label information and flow direction arrows on all existing or new piping in the tunnels. Painting is not required.



UNIT "A" MECHANICAL FOUNDATION PLAN
SCALE: 1/8"=1'-0"



KEY PLAN
NO SCALE

WRIGHT PORTEOUS & LOWE INC.
INDIANAPOLIS INDIANA
ARCHITECTS : ENGINEERS

COGHILL/OBERLIES & ASSOCIATES
Consulting Engineers
INDIANAPOLIS, INDIANA

UNIT A - TUNNEL PLAN

METROPOLITAN SCHOOL DISTRICT
OF LAWRENCE TOWNSHIP
HARRISON HILL ELEMENTARY SCHOOL

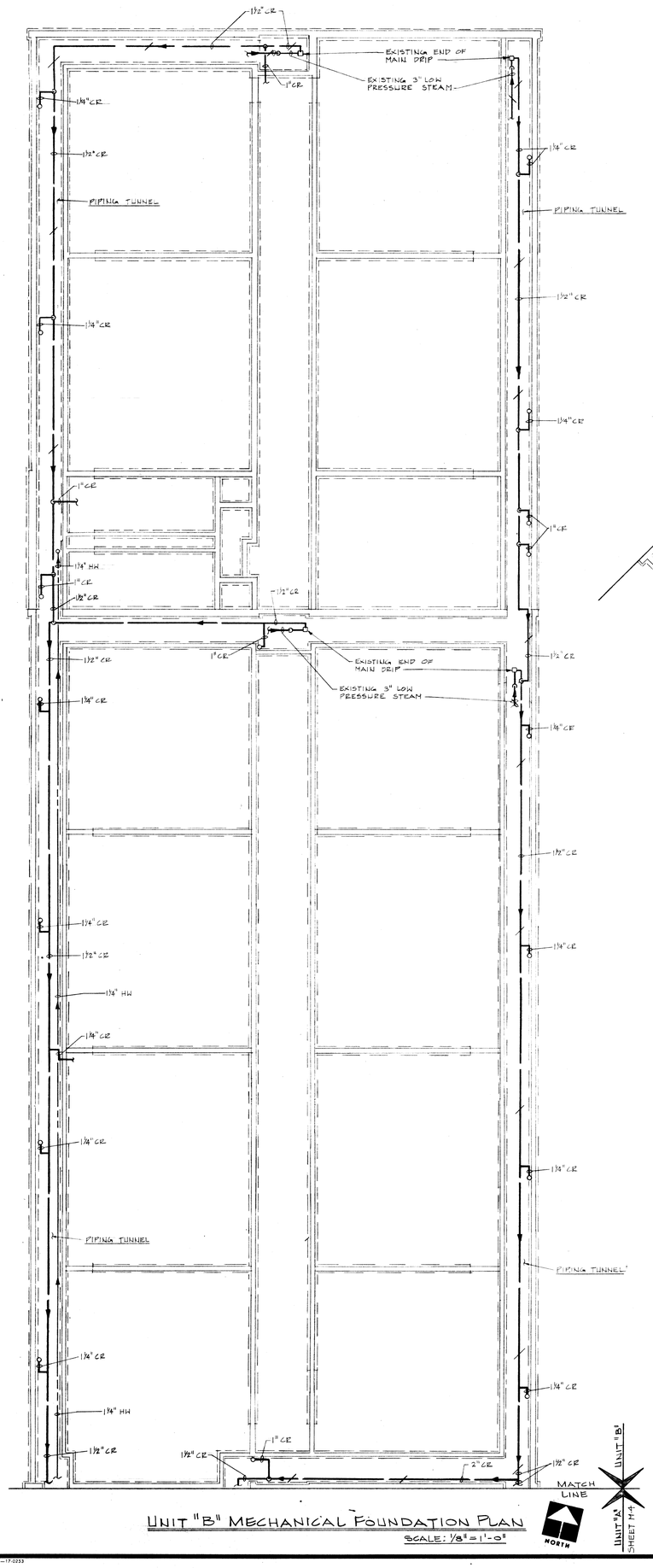
REVISIONS		
NO.	DATE	DESCRIPTION

COMM. NO.	8120
DATE	11-30-81
DRAWN BY	SLR
CHECKED BY	ZEE

REGISTERED JOHN M. OBERLIES, JR. No. 13968 STATE OF INDIANA PROFESSIONAL ENGINEER
CERTIFIED BY

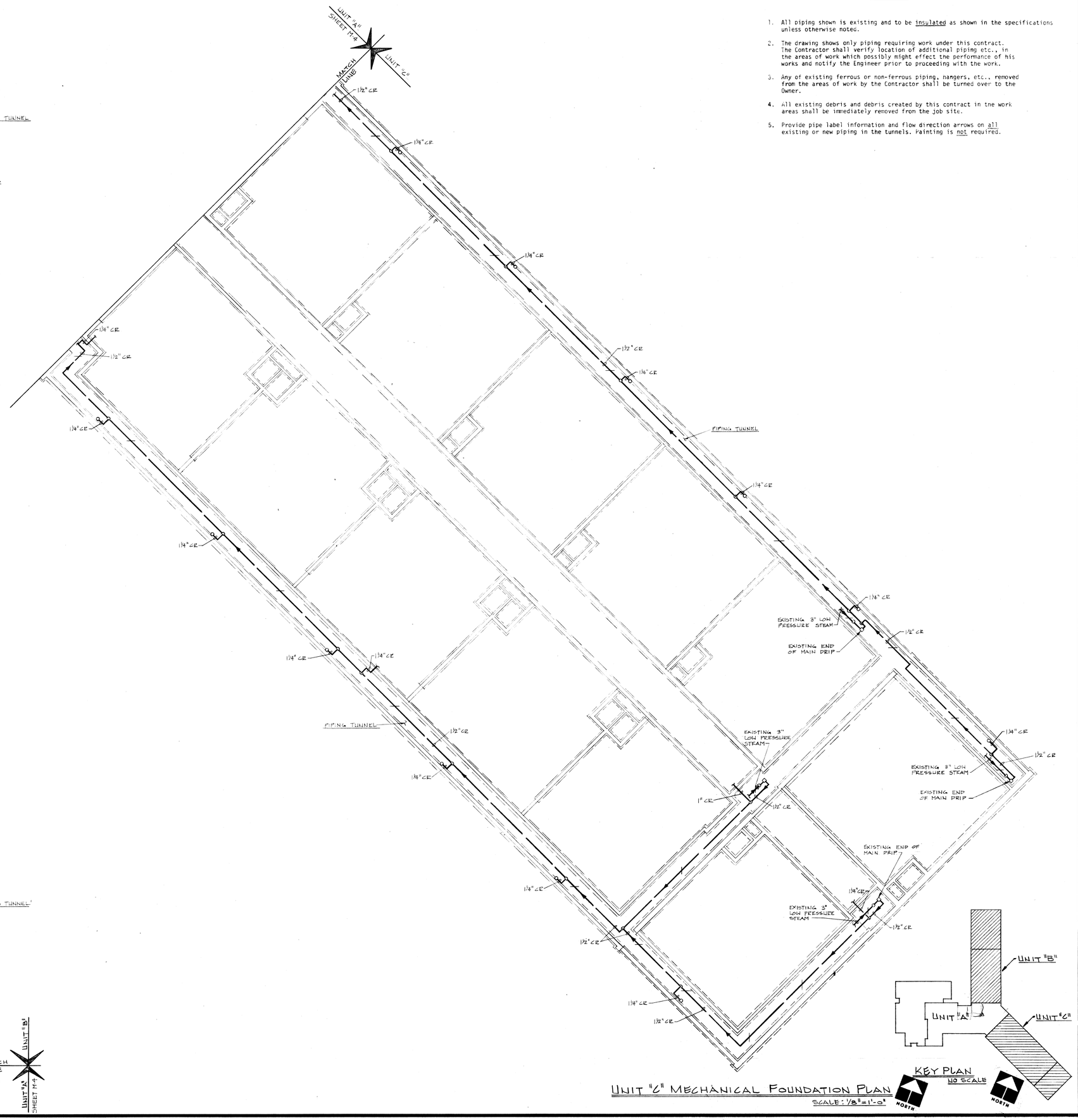
SHEET
M-4
OF 13

SH-17-0233



UNIT "B" MECHANICAL FOUNDATION PLAN

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



UNIT "C" MECHANICAL FOUNDATION PLAN

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

KEY PLAN

NO SCALE

PLAN NOTES

1. All piping shown is existing and to be insulated as shown in the specifications unless otherwise noted.
2. The drawing shows only piping requiring work under this contract. The Contractor shall verify location of additional piping etc., in the areas of work which possibly might effect the performance of his works and notify the Engineer prior to proceeding with the work.
3. Any of existing ferrous or non-ferrous piping, hangers, etc., removed from the areas of work by the Contractor shall be turned over to the Owner.
4. All existing debris and debris created by this contract in the work areas shall be immediately removed from the job site.
5. Provide pipe label information and flow direction arrows on all existing or new piping in the tunnels. Painting is not required.

WRIGHT PORTEOUS & LOWE INC.
ARCHITECTS : ENGINEERS
INDIANAPOLIS INDIANA

COGHILL/OBERLIES & ASSOCIATES
Consulting Engineers
INDIANAPOLIS, INDIANA

UNIT B & C - TUNNEL PLANS

METROPOLITAN SCHOOL DISTRICT
OF LAWRENCE TOWNSHIP
HARRISON HILL ELEMENTARY SCHOOL

REVISIONS		
NO.	DATE	DESCRIPTION

COMM. NO.	8180
DATE	11-30-81
DRAWN BY	SGR
CHECKED BY	EGS

JOHN W. OBERLIES JR. ENGINEER No. 13968 STATE OF INDIANA PROFESSIONAL ENGINEER

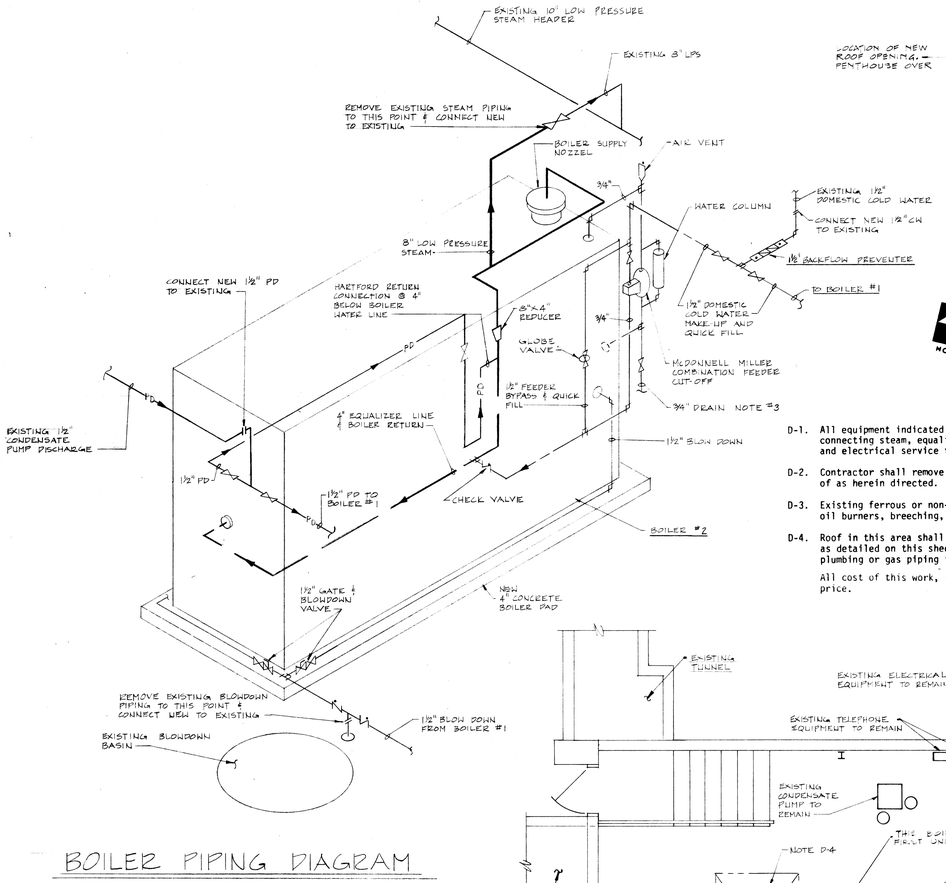
CERTIFIED BY

SHEET

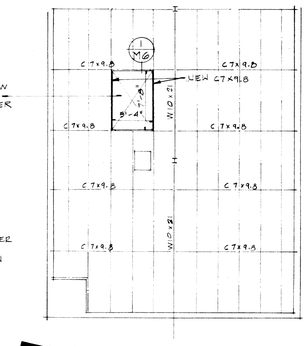
M-5

OF 13

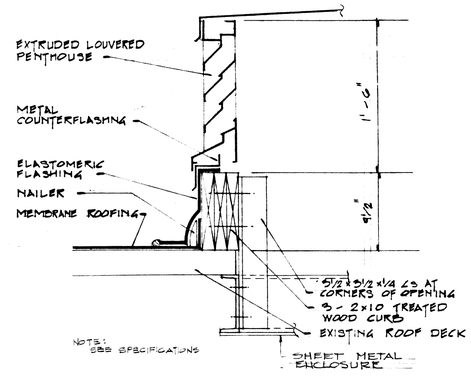
JOB-17-0233



BOILER PIPING DIAGRAM
(TYP. FOR BOILER NO. 1)
NO SCALE (PIPING SHOWN IS NEW UNLESS OTHERWISE NOTED)



BOILER ROOM
EXISTING FRAMING PLAN
1/8" = 1'-0"



PENTHOUSE DETAIL 1 M6
1½" = 1'-0"

BOILER ROOM DEMOLITION NOTES

D-1. All equipment indicated with this symbol ▨ shall be completely removed including all connecting steam, equalizer, domestic water make-up, vacuum pump discharge, blow down piping and electrical service to points shown.

D-2. Contractor shall remove existing boilers in complete sections (Boiler #1 first) and dispose of as herein directed.

D-3. Existing ferrous or non-ferrous piping, valves and fittings, cast iron boiler sections, fuel oil burners, breeching, etc. removed from boiler room shall be turned over to the Owner.

D-4. Roof in this area shall be removed and louvered penthouse installed by Anning-Johnson Company as detailed on this sheet. The contractor shall remove and reinstall any heating, domestic plumbing or gas piping in this area as required to facilitate ingress of new boilers.

All cost of this work, including Anning-Johnson Co., shall be included in this Contractor's price.

BOILER ROOM MECHANICAL EQUIPMENT SCHEDULE

1. New Heating System Boiler #1 & 2:
Bryan Model L-64-S, or an approved equal. Gross output rating 3440 MBH., 102 boiler horsepower, water tube, 520 square feet heating surface.

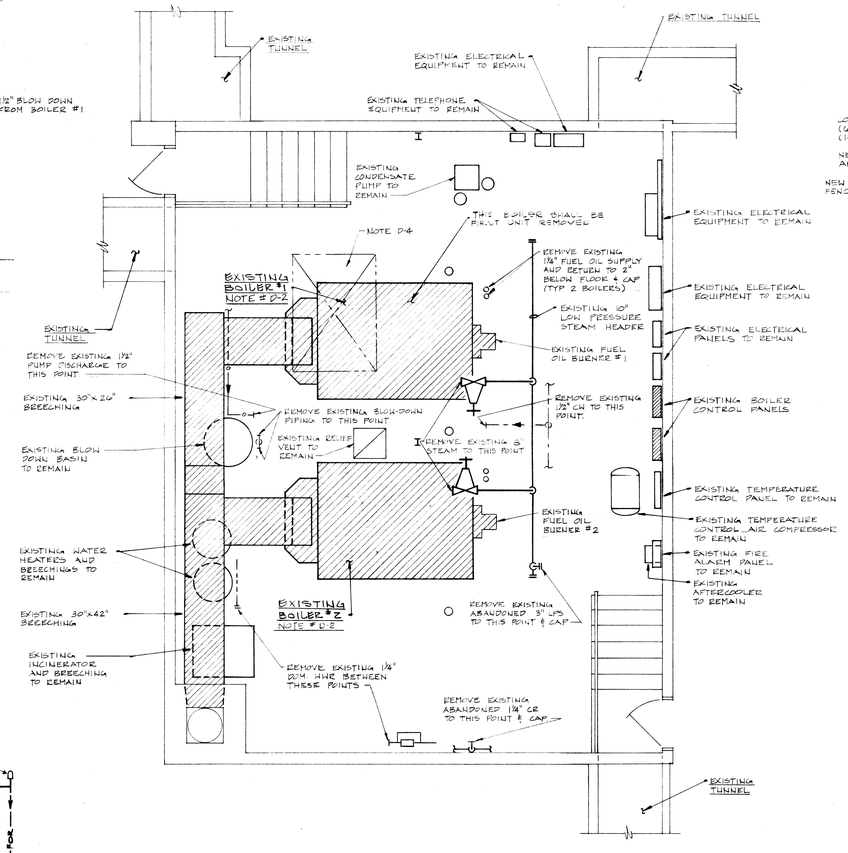
2. New Heating System Burner #1 & 2:
Industrial Combustion Model GLE or an approved equal, combination gas-oil burner, gas capacity, 4200 cubic feet per hour of 0.6 specific gravity, 1000 BTU cubic foot natural gas at a maximum manifold pressure of 6" water column. Oil capacity: 30 gallons per hour with a heat content of 140,000 BTU per gallon. Burner Motor Data: 2 HP, 208 volts, 3 phase, 60 hertz.

3. New Backflow Preventer
Hersey, Watts, or an approved equal - see specifications.

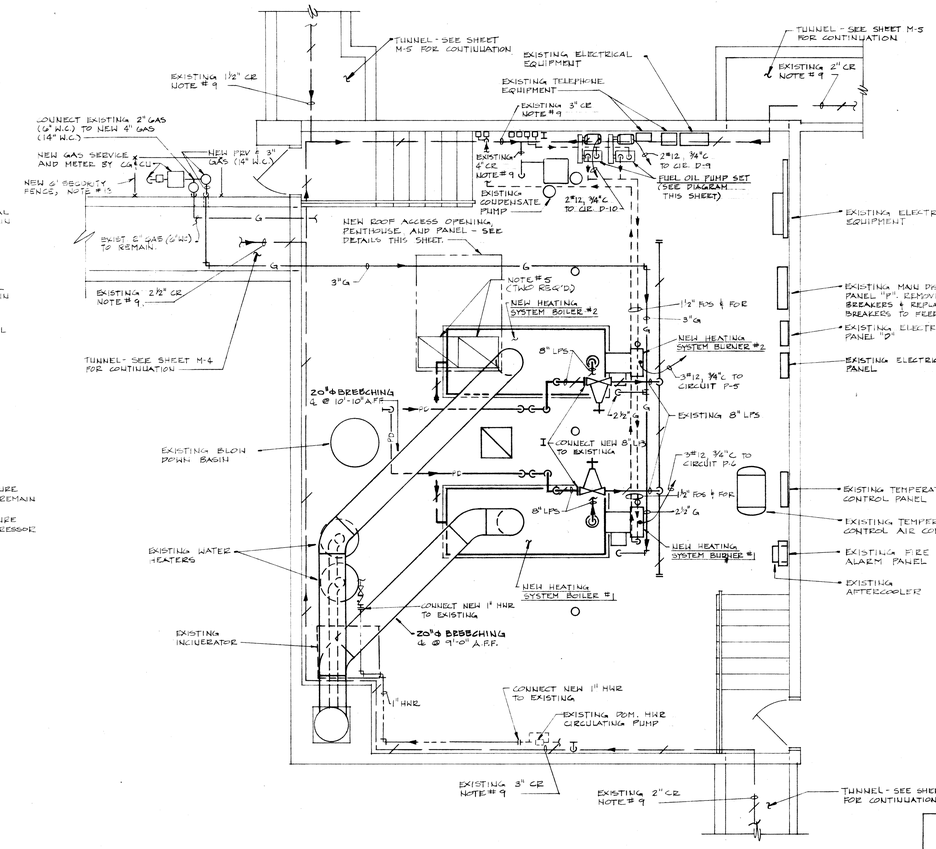
4. Fuel Oil Pump Set:
Ace pump set number 2B, pump number 2CS or an approved equal. Capacity will be 130 GPH measured at 5" HG vacuum and 50 PSIG head with #2 fuel oil. Pump motors: (2) 1/2 HP, 120 volt, 1 phase, 1750 RPM.

PLAN NOTES

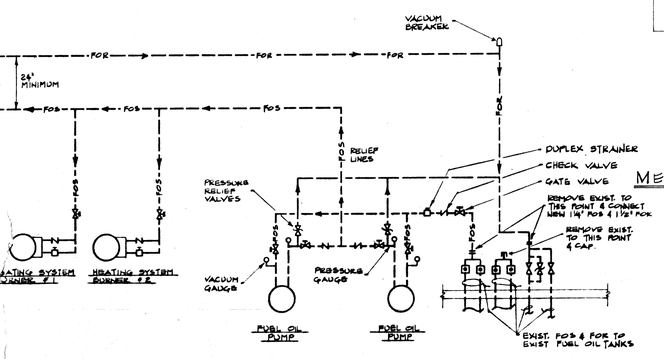
1. All work shown is new and by the Contractor unless otherwise noted.
2. Contractor shall verify all existing conditions at the job site.
3. All pressure relief valves, blowdown valves, drain valves, etc. shall have a drain line, full size of outlet, run to nearest floor drain or sump pit.
4. The Contractor shall assume all costs not borne by the local gas utility to provide a complete gas service for the boilers.
5. 24" x 30" opposed blade motorized combustion air damper by Temperature Control Contractor. Damper shall be controlled by a relay furnished by the burner supplier in the Heating System Burner control cabinet. Contractor shall furnish remote wall switch to override relay for summer ventilation.
6. All valves, thermometers, gauges, feeders, fittings, etc., noted on boilers, and pumps, are typical for all boilers and pumps.
7. All existing and new overhead gate valves on supply heating mains, 4" and larger, and over 8'-0" above finished floor shall be chain operated. All heating system and domestic cold water valves 4" and larger shall be completely reconditioned per specifications or replaced at the Contractor's option.
8. All horizontal piping within the boiler room shall be suspended on rubber-in-shear hangers (see specifications).
9. All condensate return piping (CR) shown is existing and shall be insulated as shown in the specifications unless otherwise noted.
10. All existing steam, domestic hot and cold water piping within the boiler room where insulation is missing, loose, or damaged shall be reinsulated as per specifications unless otherwise noted.
11. Contractor shall paint all wall and ceiling surfaces in the boiler room including doors and steel stairs. Colors to be as selected by Owner. Paint all new and existing piping, pipe hangers, supports, tanks, receivers, fuel oil pumps, etc. Piping, tanks and pumps shall be color coded and piping identified as per specifications. Electrical conduit and temperature control tubing shall be painted to match walls. Electrical panels and new equipment shall not be painted.
12. Contractor shall patch and repair existing chimney masonry within the Boiler Room as required and directed by the Engineer.
13. Provide new 6 foot woven wire chain link fence, No.9 gauge. With 4 foot wide gate with locking hasp and approved lock. Provide with all accessories as required by gas utility. Provide minimum 24" clearance around meter and piping.



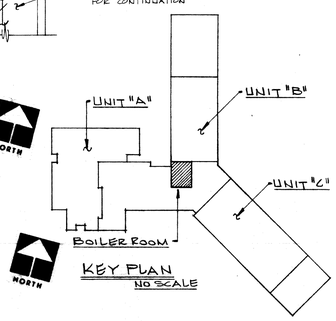
MECHANICAL BOILER ROOM DEMOLITION PLAN
SCALE: 1/4" = 1'-0"



MECHANICAL BOILER ROOM LAYOUT
SCALE: 1/4" = 1'-0"



FLOODED LOOP OIL PIPING DIAGRAM
NO SCALE



KEY PLAN
NO SCALE

WRIGHT
ARCHITECTS : ENGINEERS
INDIANAPOLIS, INDIANA

COGHILL/OBERLIES & ASSOCIATES
Consulting Engineers
INDIANAPOLIS, INDIANA

BOILER ROOM LAYOUTS, DETAILS & SCHEDULES

METROPOLITAN SCHOOL DISTRICT OF LAWRENCE TOWNSHIP
HARRISON HILL ELEMENTARY SCHOOL

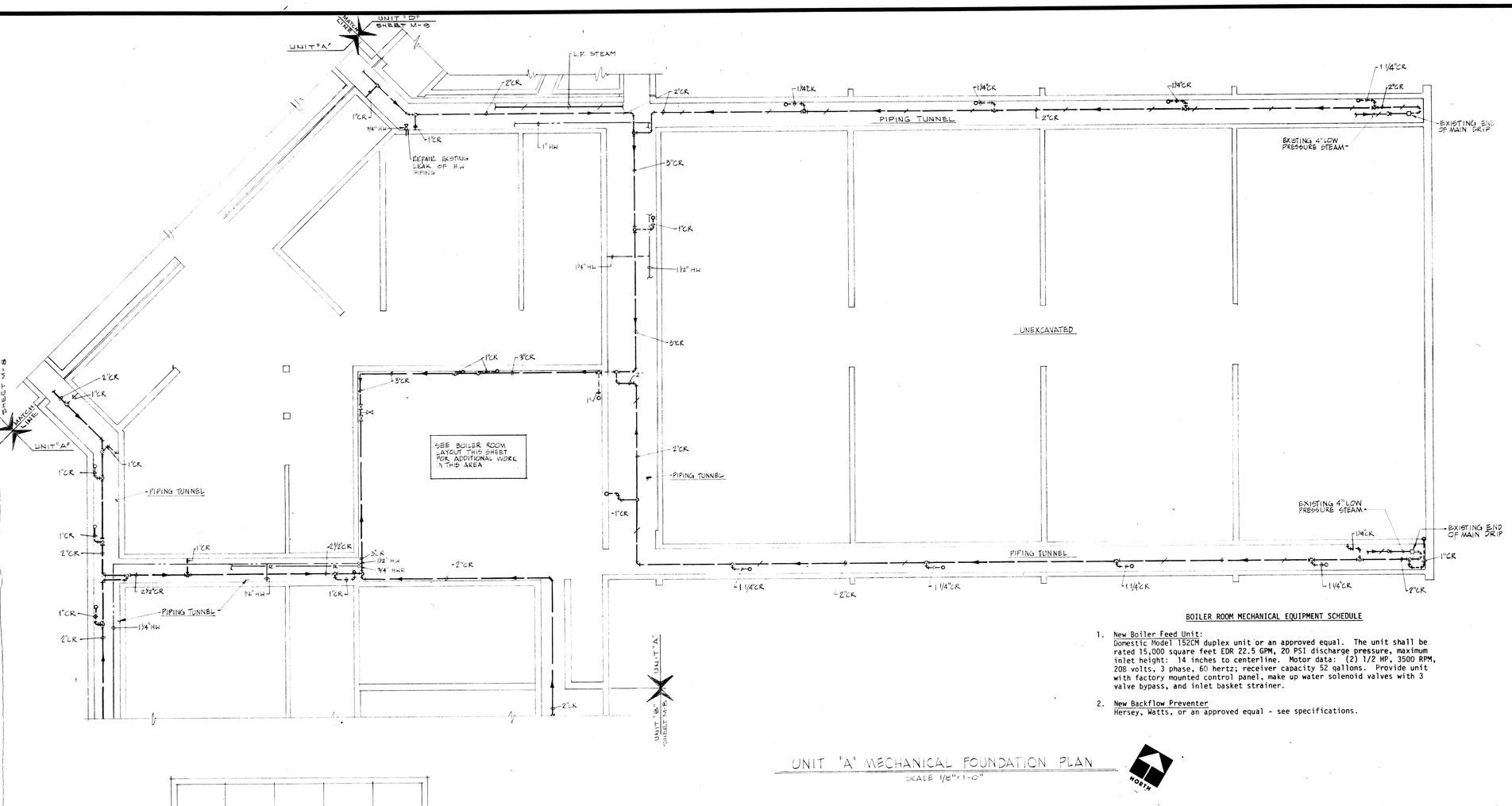
REVISIONS		
NO.	DATE	DESCRIPTION

COMM. NO.	8180
DATE	11-30-81
DRAWN BY	S.J.L.
CHECKED BY	E.E.S.

OBERLIES, JR. E. ENGINEER — No. 13968 — STATE OF INDIANA — REGISTERED PROFESSIONAL ENGINEER — CERTIFIED BY

SHEET
M-6
of 13

GR-17-0233



UNIT "A" MECHANICAL FOUNDATION PLAN

SCALE 1/8"=1'-0"

PLAN NOTES

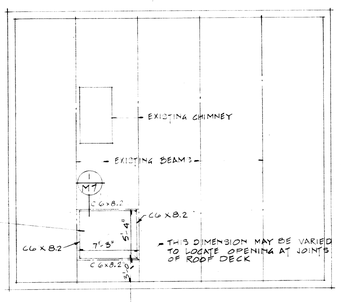
1. All piping shown is existing and to be insulated as shown in the specifications unless otherwise noted.
2. The drawing shows only piping requiring work under this contract. The Contractor shall verify location of additional piping etc., in the areas of work which possibly might effect the performance of his works and notify the Engineer prior to proceeding with the work.
3. Any of existing ferrous or non-ferrous piping, hangers, etc., removed from the areas of work by the Contractor shall be turned over to the Owner.
4. All existing debris and debris created by this contract in the work areas shall be immediately removed from the job site.
5. Provide pipe label information and flow direction arrows on all existing or new piping in the tunnels. Painting is not required.
6. Refasten all existing loose insulation on steam mains in piping tunnels.

BOILER ROOM NOTES

1. All work shown is new and by the Contractor unless otherwise noted.
2. Contractor shall verify all existing conditions at the job site.
3. 24" x 30" opposed blade motorized combustion air damper by Temperature Control Contractor. Damper shall be controlled by a relay furnished by the burner supplier in the Heating System Burner control cabinet. Contractor shall furnish remote wall switch to override relay for summer ventilation.
4. All valves, thermometers, gauges, feeders, fittings, etc., noted on boilers, and pumps, are typical for all boilers and pumps.
5. All existing and new overhead gate valves on supply heating mains, 4" and larger, and over 8'-0" above finished floor shall be chain operated.
6. All horizontal piping within the boiler room shall be suspended on rubber-in-shear hangers (see specifications).
7. All existing steam, domestic hot and cold water piping, and domestic hot water storage tank within the boiler room where insulation is missing, loose, or damaged shall be reinsulated as per specifications unless otherwise noted.
8. Contractor shall paint all wall and ceiling surfaces in the boiler room including doors and steel stairs. Colors to be as selected by Owner. Paint all new and existing piping, pipe hangers, supports, tanks, receivers, fuel oil pumps, etc. Piping, tanks and pumps shall be color coded and piping identified as per specifications. Electrical conduit and temperature control tubing shall be painted to match walls. Electrical panels and new equipment shall not be painted.
9. Roof in this area shall be removed, opening framed, and louvered penthouse and curb installed by Hinshaw Roofing as detailed on this sheet and specified.
10. Roof in this area shall be installed, chimney flashed and counterflashed by Hinshaw Roofing as specified.
11. 30" x 48" opposed blade relief air damper by Temperature Control Contractor. Damper to be controlled by wall mounted switch.
12. Existing ferrous and non-ferrous piping, valves and fittings, vacuum pump and accumulator, etc. removed from boiler room shall be turned over to the Owner.
13. Install existing Iron Fireman dual fuel burner, control panel and gas train removed from Crestview Elementary School on Boiler #1 combustion chamber. Coordinate mounting with boiler manufacturer. Modify existing or provide new front plate, refractory, etc. as required for complete installation. Reconnect fuel oil gas and electric services.
14. Contractor shall patch and repair existing chimney masonry within the Boiler Room as required and directed by the Engineer.
15. All cost of this work, including that of Hinshaw Roofing, shall be included in this Contractor's price.

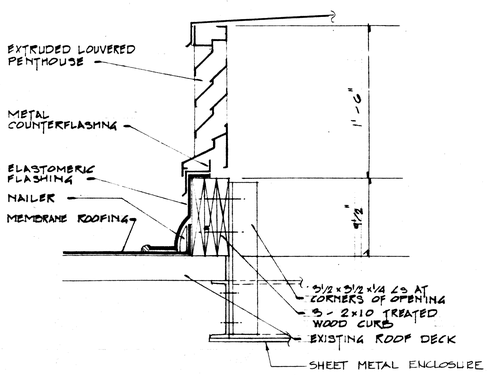
BOILER ROOM MECHANICAL EQUIPMENT SCHEDULE

1. New Boiler Feed Unit:
   Domestic Model 152CM duplex unit or an approved equal. The unit shall be rated 15,000 square feet EDR 22.5 GPM, 20 PSI discharge pressure, maximum inlet height: 14 inches to centerline. Motor data: (2) 1/2 HP, 3500 RPM, 208 volts, 3 phase, 60 hertz; receiver capacity 52 gallons. Provide unit with factory mounted control panel, make up water solenoid valves with 3 valve bypass, and inlet basket strainer.
2. New Backflow Preventer
   Hersey, Watts, or an approved equal - see specifications.



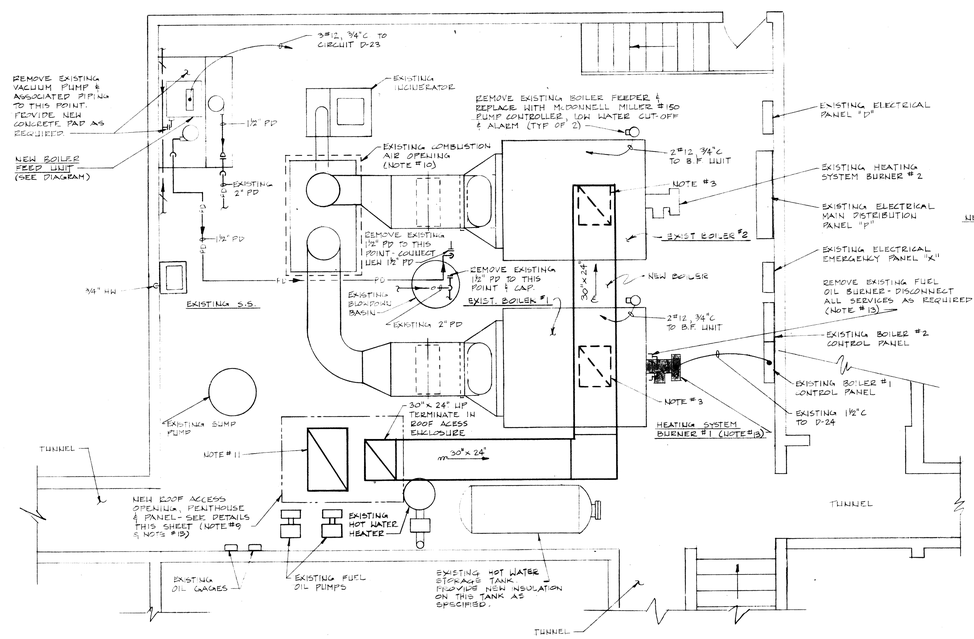
BOILER ROOM EXISTING FRAMING PLAN

1/8" = 1'-0"



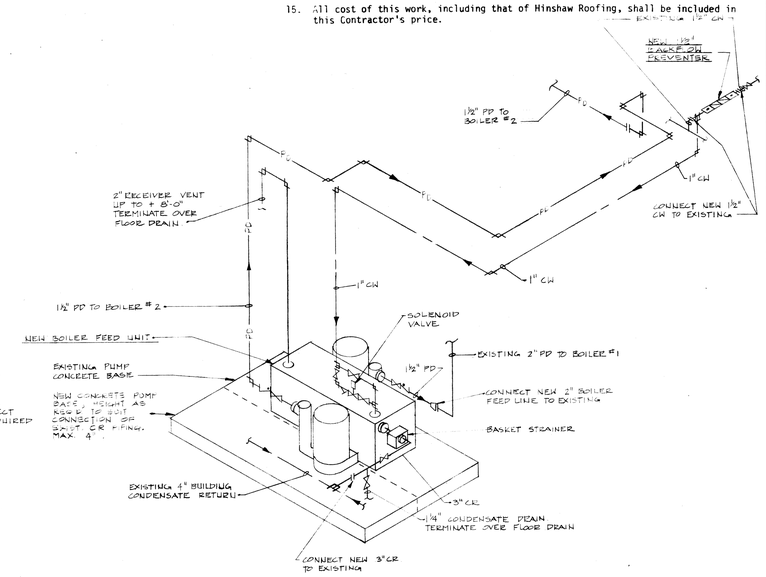
PENTHOUSE DETAIL 1/M7

1 1/2" = 1'-0"



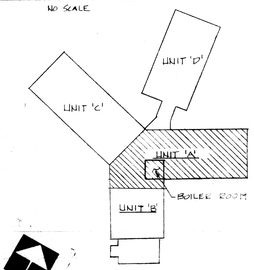
MECHANICAL BOILER ROOM LAYOUT

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



BOILER FEED UNIT PIPING DIAGRAM

NO SCALE



KEY PLAN

WRIGHT PORTEOUS & LOWE INC.
ARCHITECTS : ENGINEERS
INDIANAPOLIS, INDIANA

COGHILL/OBERLIES & ASSOCIATES
Consulting Engineers
INDIANAPOLIS, INDIANA

UNIT A - TUNNEL PLAN - BOILER ROOM

METROPOLITAN SCHOOL DISTRICT OF LAWRENCE TOWNSHIP
BROOK PARK ELEMENTARY SCHOOL

REVISIONS		
NO.	DATE	DESCRIPTION

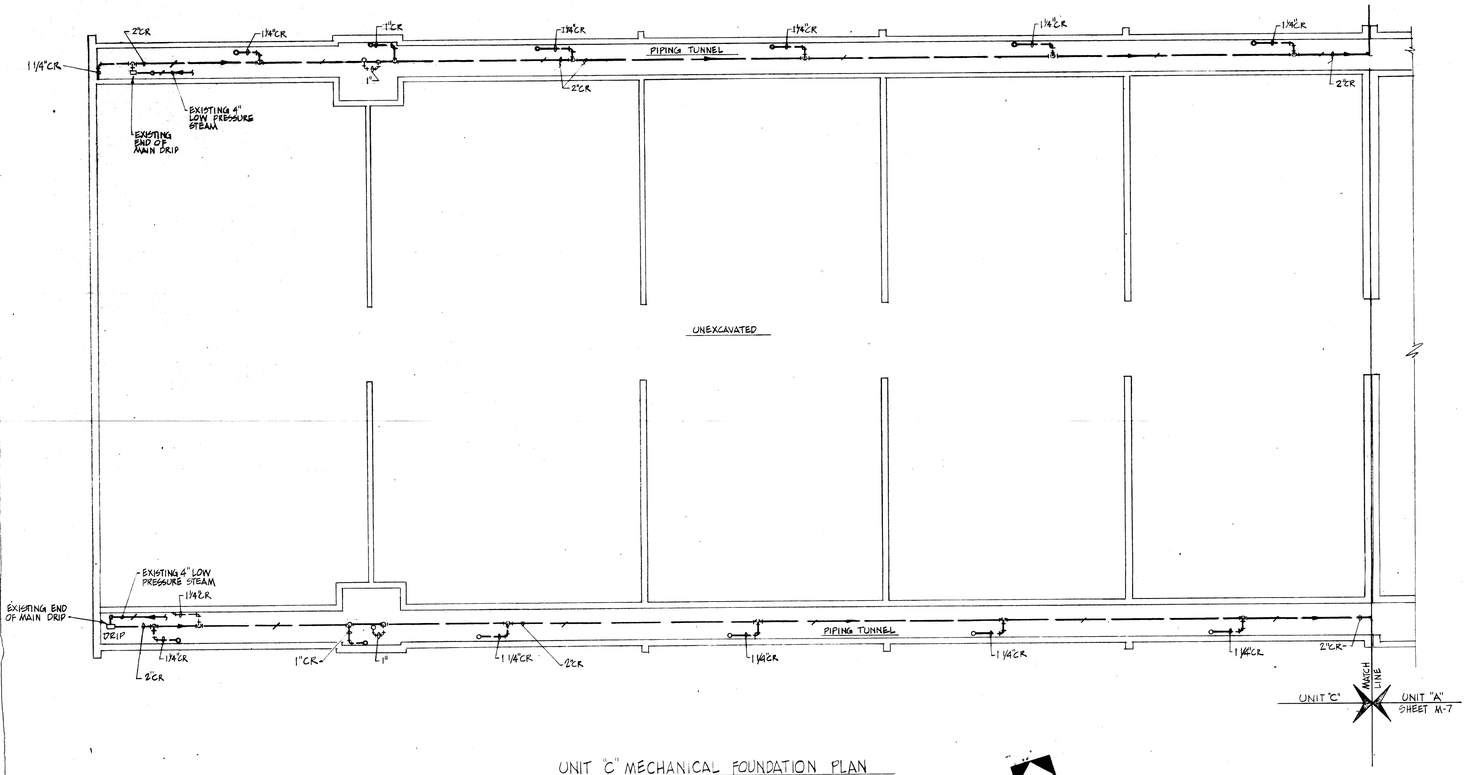
COMM. NO.	8101
DATE	11-30-81
DRAWN BY	GLAE
CHECKED BY	ZSB

REGISTERED JOHN W. OBERLIES, JR. No. 13968 STATE OF INDIANA PROFESSIONAL ENGINEER

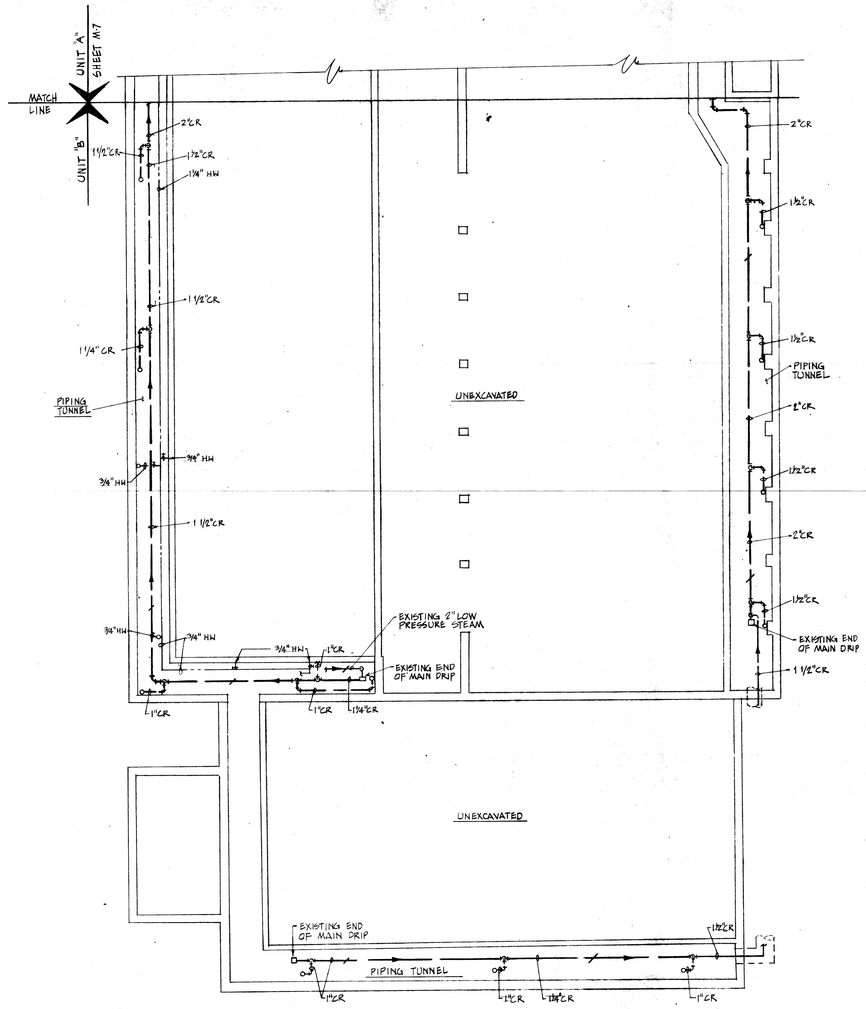
CERTIFIED BY

SHEET M-7 OF 13

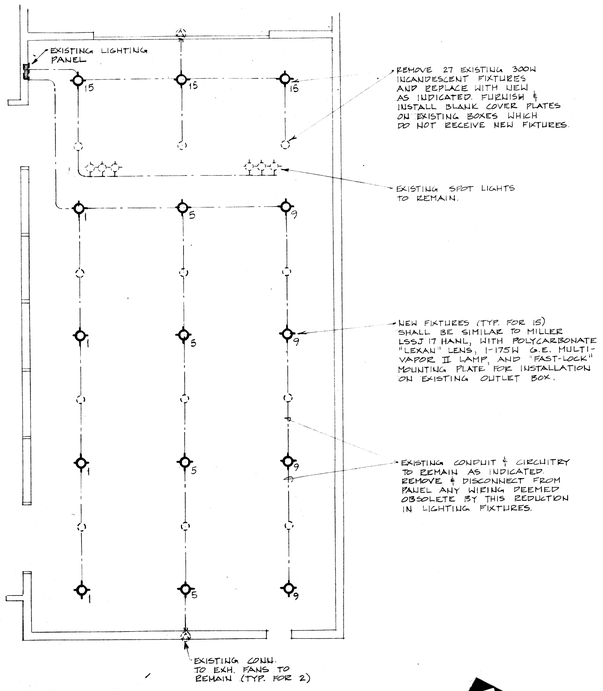
KJSH-17-0233



UNIT "C" MECHANICAL FOUNDATION PLAN
SCALE 1/8"=1'-0"



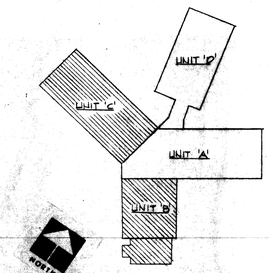
UNIT "B" MECHANICAL FOUNDATION PLAN
SCALE: 1/8"=1'-0"



MULTI-PURPOSE ROOM - LIGHTING PLAN - UNIT 'B'
SCALE: 1/8"=1'-0"

PLAN NOTES

1. All piping shown is existing and to be insulated as shown in the specifications unless otherwise noted.
2. The drawing shows only piping requiring work under this contract. The Contractor shall verify location of additional piping etc., in the areas of work which possibly might effect the performance of his works and notify the Engineer prior to proceeding with the work.
3. Any of existing ferrous or non-ferrous piping, hangers, etc., removed from the areas of work by the Contractor shall be turned over to the Owner.
4. All existing debris and debris created by this contract in the work areas shall be immediately removed from the job site.
5. Provide pipe label information and flow direction arrows on all existing or new piping in the tunnels. Painting is not required.
6. Refasten all existing loose insulation on steam mains in piping tunnels.



KEY PLAN

WRIGHT PORTEOUS & LOWE INC.
ARCHITECTS · ENGINEERS
INDIANAPOLIS INDIANA

COGHILL/OBERLIES & ASSOCIATES
Consulting Engineers
INDIANAPOLIS, INDIANA

UNIT B & C - TUNNEL PLAN - GYMNASIUM

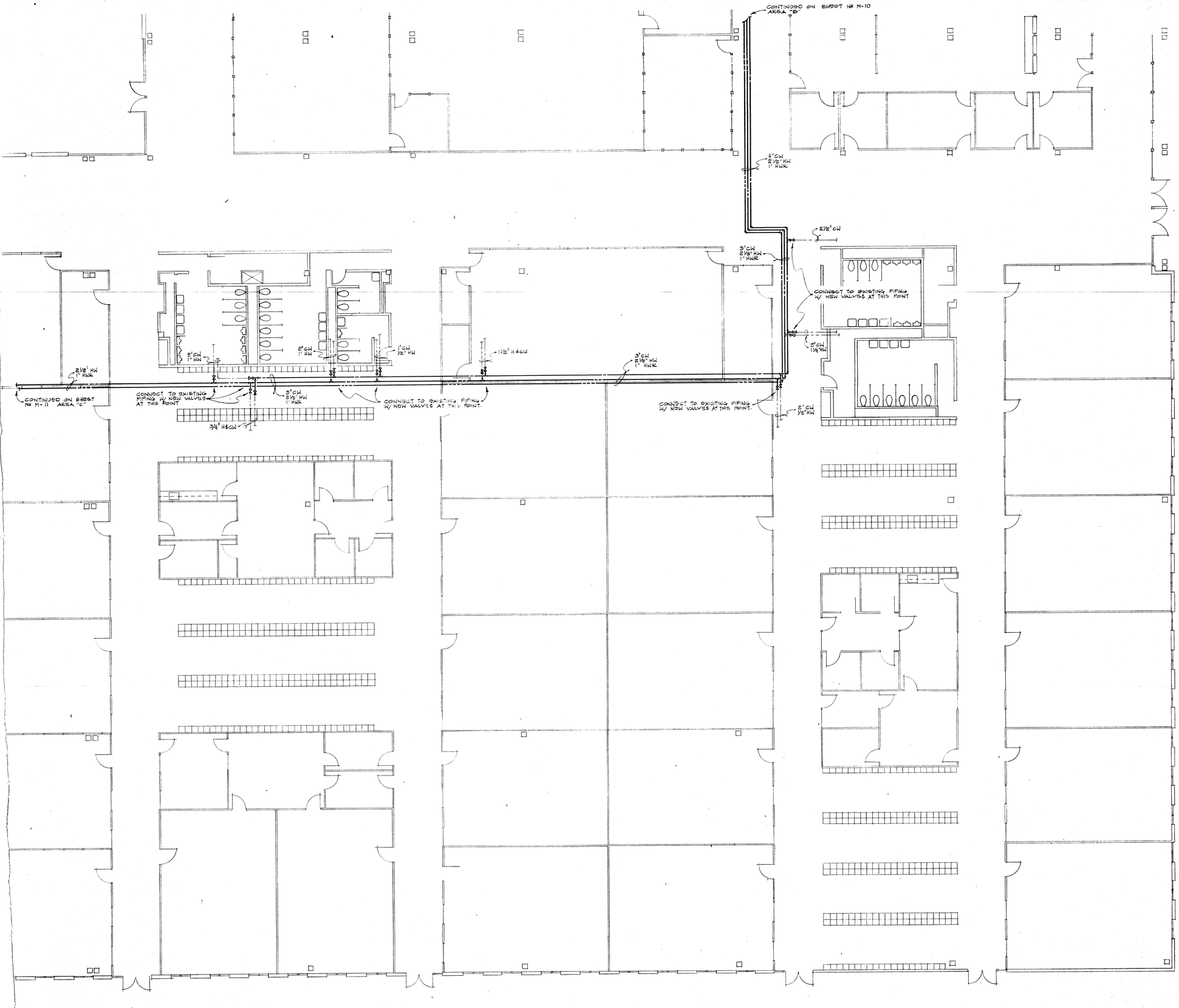
METROPOLITAN SCHOOL DISTRICT
OF LAWRENCE TOWNSHIP
BROOK PARK ELEMENTARY SCHOOL

REVISIONS		
NO	DATE	DESCRIPTION

COMM. NO.	8120/
DATE	11-30-81
DRAWN BY	JOR.
CHECKED BY	EES

JOHN W. OBERLIES JR. REGISTERED No. 13968 STATE OF INDIANA PROFESSIONAL ENGINEER
CERTIFIED BY

SHEET
M·S
OF 13

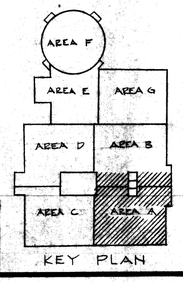


AREA "A" - MECHANICAL FLOOR PLAN

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

PLAN NOTES

1. All heavily drawn piping on this sheet is new and replaces existing in same location. This Contractor shall remove existing piping and replace with new including connections to branch lines as shown. Insulate all new pipe as specified.
2. This Contractor shall be responsible for the removal and replacement of the existing ceiling tiles in like or better condition than existing.
3. This Contractor shall be advised that no work on this sheet shall begin before May 28, 1982.
4. The layout of the existing piping shown is illustrative only. No attempt has been made to show the piping exactly as it exists. The Contractor shall be responsible for determining the exact layout and size of the piping and equipment before he submits his bid and shall take the same in account in pricing his bid. He shall accept the piping and equipment as he finds it and shall provide all the material, equipment and labor necessary to complete the work in the manner intended.
5. All new piping shown shall be insulated as indicated in the specifications unless otherwise noted.
6. Any of existing ferrous or non-ferrous piping, hangers, etc. removed from the areas of work by the contractor shall be turned over to the Owner.
7. All existing debris and debris created by this contract in the work areas shall be immediately removed from the job site.



KEY PLAN

WRIGHT PORTEOUS & LOWE INC.
INDIANAPOLIS INDIANA
ARCHITECTS : ENGINEERS

COGHILL/OBERLIES & ASSOCIATES
Consulting Engineers
INDIANAPOLIS, INDIANA

UNIT A - FLOOR PLAN

METROPOLITAN SCHOOL DISTRICT
OF LAWRENCE TOWNSHIP
LAWRENCE CENTRAL HIGH SCHOOL

REVISIONS		
NO.	DATE	DESCRIPTION

COMM. NO.	8180
DATE	11-20-81
DRAWN BY	TC
CHECKED BY	REE

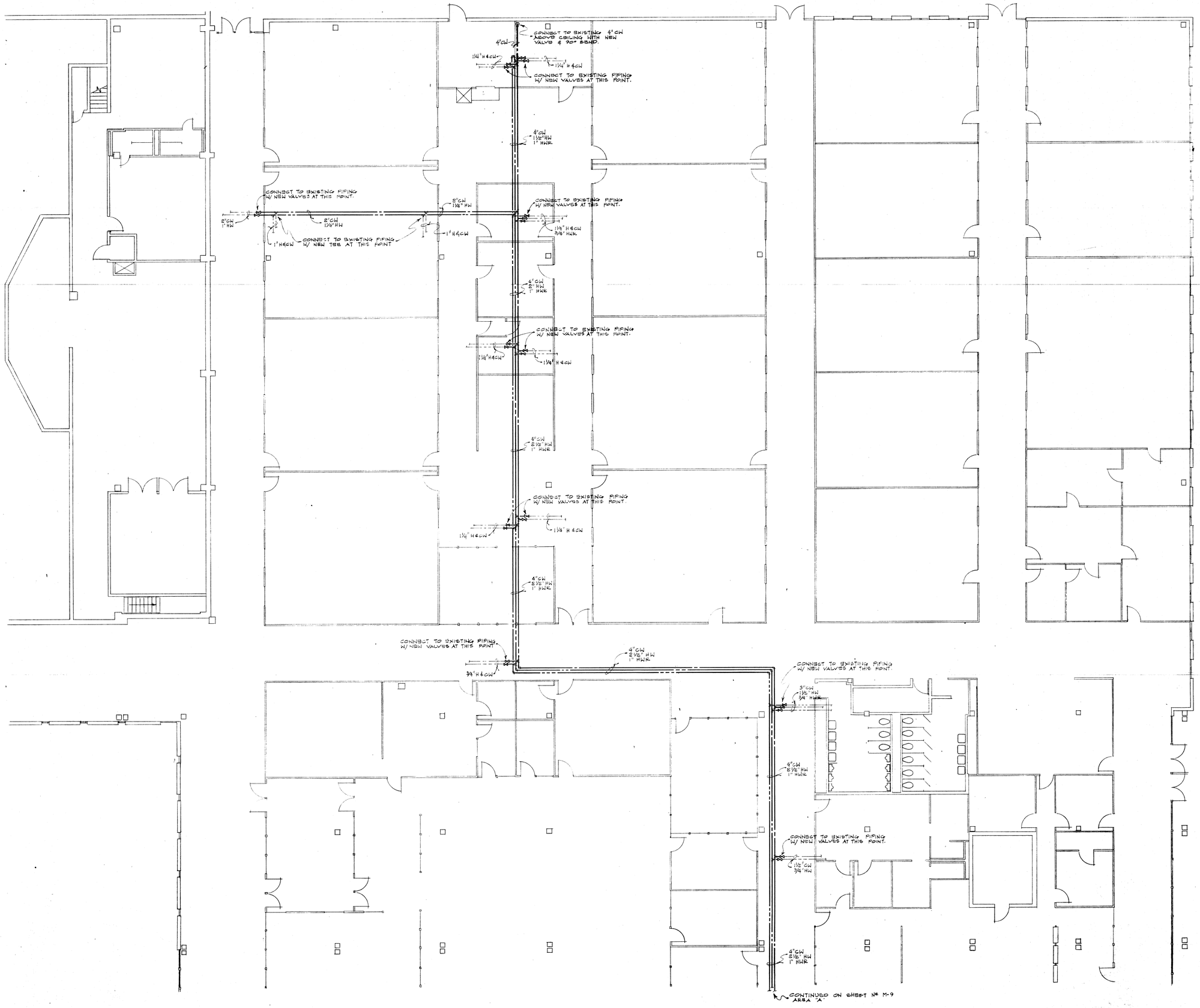
JOHN W. OBERLIES, JR. REGISTERED PROFESSIONAL ENGINEER No. 13968 INDIANA

CERTIFIED BY

SHEET

M-9

OF 13

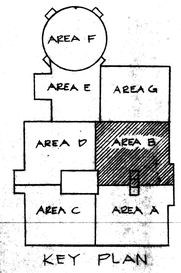


AREA "B" - MECHANICAL FLOOR PLAN

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

PLAN NOTES

1. All heavily drawn piping on this sheet is new and replaces existing in same location. This Contractor shall remove existing piping and replace with new including connections to branch lines as shown. Insulate all new pipe as specified.
2. This Contractor shall be responsible for the removal and replacement of the existing ceiling tiles in like or better condition than existing.
3. This Contractor shall be advised that no work on this sheet shall begin before May 28, 1982.
4. The layout of the existing piping shown is illustrative only. No attempt has been made to show the piping exactly as it exists. The Contractor shall be responsible for determining the exact layout and size of the piping and equipment before he submits his bid and shall take the same in account in pricing his bid. He shall accept the piping and equipment as he finds it and shall provide all the material, equipment and labor necessary to complete the work in the manner intended.
5. All new piping shown shall be insulated as indicated in the specifications unless otherwise noted.
6. Any of existing ferrous or non-ferrous piping, hangers, etc. removed from the areas of work by the contractor shall be turned over to the Owner.
7. All existing debris and debris created by this contract in the work areas shall be immediately removed from the job site.



KEY PLAN

WRIGHT PORTEOUS & LOWE INC.
ARCHITECTS : ENGINEERS
INDIANAPOLIS, INDIANA

COGHILL/OBERLIES & ASSOCIATES
Consulting Engineers
INDIANAPOLIS, INDIANA

UNIT B - FLOOR PLAN

METROPOLITAN SCHOOL DISTRICT
OF LAWRENCE TOWNSHIP
LAWRENCE CENTRAL HIGH SCHOOL

REVISIONS		
NO.	DATE	DESCRIPTION

COMM. NO.	8201
DATE	11-30-81
DRAWN BY	TG
CHECKED BY	RGC

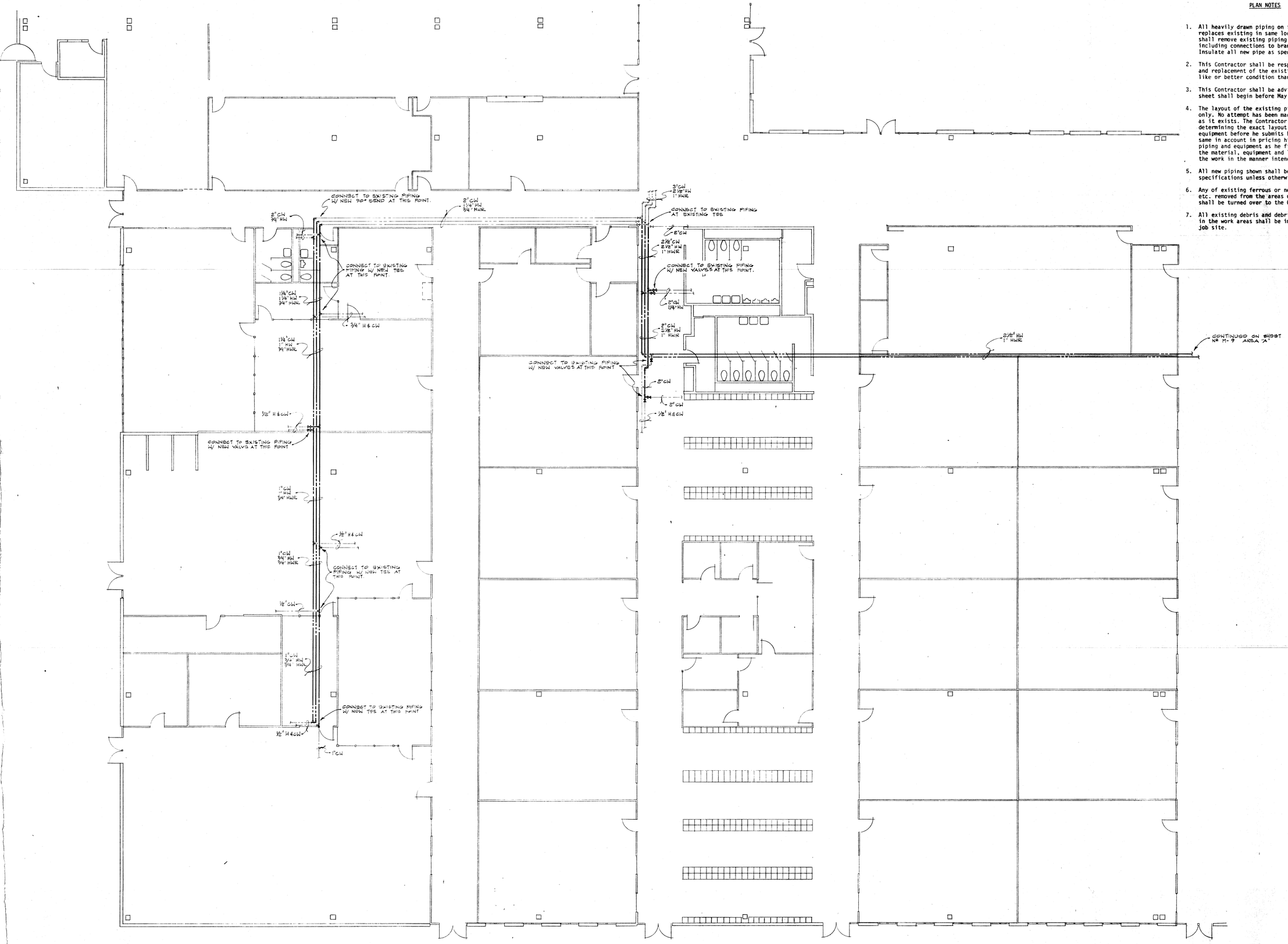
JOHN R. OBERLIES, JR. REGISTERED PROFESSIONAL ENGINEER No. 13968 STATE OF INDIANA

CERTIFIED BY

SHEET

M-10

OF 13



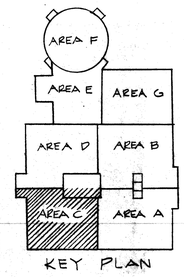
AREA "C" - MECHANICAL FLOOR PLAN

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

NORTH

PLAN NOTES

1. All heavily drawn piping on this sheet is new and replaces existing in same location. This Contractor shall remove existing piping and replace with new including connections to branch lines as shown. Insulate all new pipe as specified.
2. This Contractor shall be responsible for the removal and replacement of the existing ceiling tiles in like or better condition than existing.
3. This Contractor shall be advised that no work on this sheet shall begin before May 28, 1982.
4. The layout of the existing piping shown is illustrative only. No attempt has been made to show the piping exactly as it exists. The Contractor shall be responsible for determining the exact layout and size of the piping and equipment before he submits his bid and shall take the same in account in pricing his bid. He shall accept the piping and equipment as he finds it and shall provide all the material, equipment and labor necessary to complete the work in the manner intended.
5. All new piping shown shall be insulated as indicated in the specifications unless otherwise noted.
6. Any of existing ferrous or non-ferrous piping, hangers, etc. removed from the areas of work by the contractor shall be turned over to the Owner.
7. All existing debris and debris created by this contract in the work areas shall be immediately removed from the job site.



KEY PLAN

WRIGHT PORTEOUS & LOVE INC.
ARCHITECTS : ENGINEERS
INDIANAPOLIS INDIANA

COGHILL/OBERLIES & ASSOCIATES
Consulting Engineers
INDIANAPOLIS, INDIANA

UNIT C - FLOOR PLAN

METROPOLITAN SCHOOL DISTRICT
OF LAWRENCE TOWNSHIP
LAWRENCE CENTRAL HIGH SCHOOL

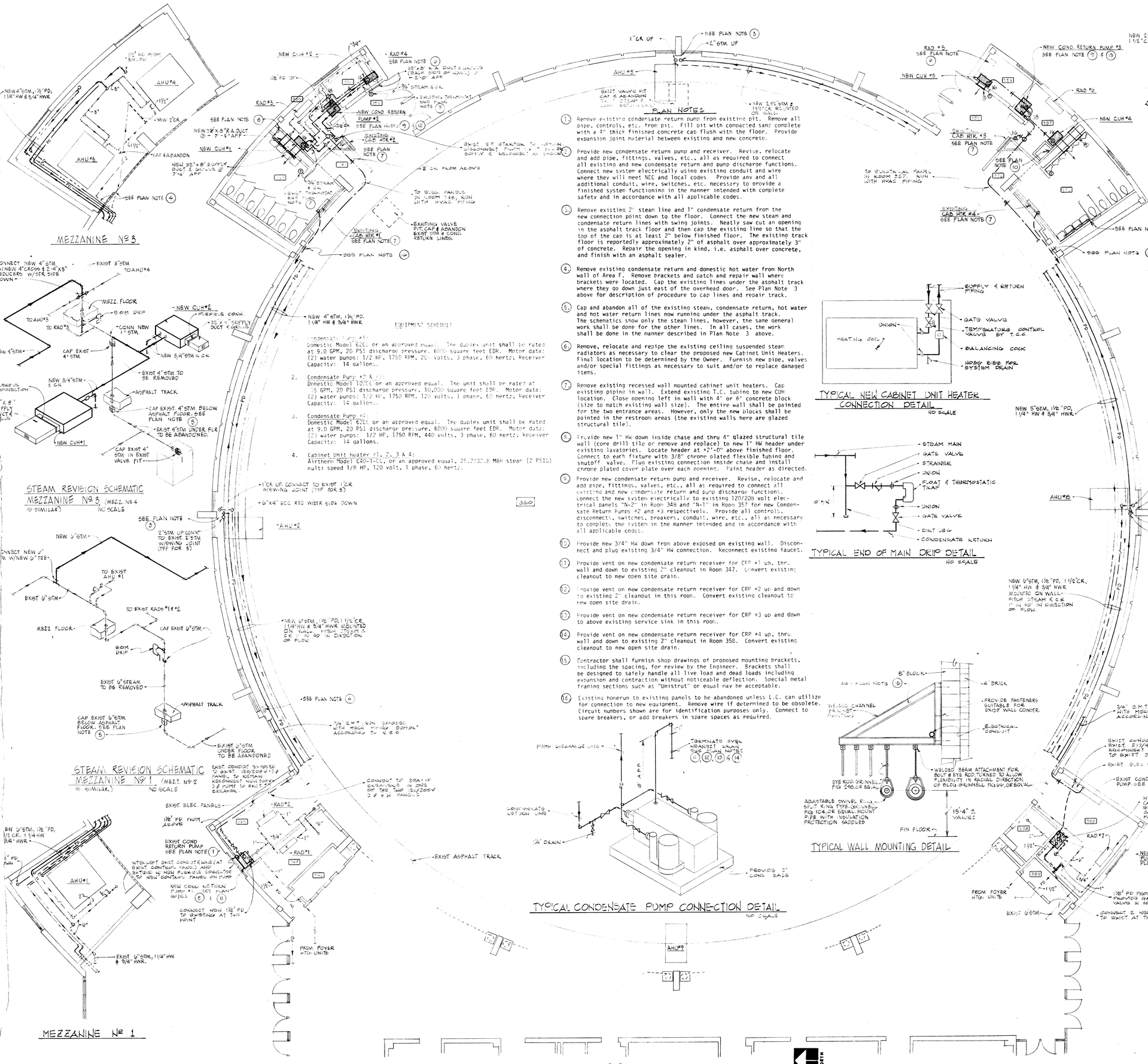
REVISIONS		
NO.	DATE	DESCRIPTION

COMM. NO.	8/20/
DATE	1/30-81
DRAWN BY	TH
CHECKED BY	KEC

JOHN W. OBERLIES JR. REGISTERED No. 13968 STATE OF INDIANA PROFESSIONAL ENGINEER

CERTIFIED BY

SHEET
M-11
OF 13



PLAN NOTES

1. Remove existing condensate return pump from existing pit. Remove all pipe, controls, etc. from pit. Fill pit with compacted sand complete with a 4" thick finished concrete cap flush with the floor. Provide expansion joint material between existing and new concrete.

2. Provide new condensate return pump and receiver. Revise, relocate and add pipe, fittings, valves, etc., all as required to connect all existing and new condensate return and pump discharge functions. Connect new system electrically using existing conduit and wire where they will meet NEC and local codes. Provide any and all additional conduit, wire, switches, etc. necessary to provide a finished system functioning in the manner intended with complete safety and in accordance with all applicable codes.

3. Remove existing 2" steam line and 1" condensate return from the new connection point down to the floor. Connect the new steam and condensate return lines with swing joints. Neatly saw cut an opening in the asphalt track floor and then cap the existing line so that the top of the cap is at least 2" below finished floor. The existing track floor is reportedly approximately 2" of asphalt over approximately 3" of concrete. Repair the opening in kind, i.e. asphalt over concrete, and finish with an asphalt sealer.

4. Remove existing condensate return and domestic hot water from North wall of Area F. Remove brackets and patch and repair wall where brackets were located. Cap the existing lines under the asphalt track where they go down just east of the overhead door. See Plan Note 3 above for description of procedure to cap lines and repair track.

5. Cap and abandon all of the existing steam, condensate return, hot water and hot water return lines now running under the asphalt track. The schematics show only the steam lines, however, the same general work shall be done for the other lines. In all cases, the work shall be done in the manner described in Plan Note 3 above.

6. Remove, relocate and repipe the existing ceiling suspended steam radiators as necessary to clear the proposed new Cabinet Unit Heaters. Final location to be determined by the Owner. Furnish new pipe, valves and/or special fittings as necessary to suit and/or to replace damaged items.

7. Remove existing recessed wall mounted cabinet unit heaters. Cap existing piping in wall. Extend existing T.C. tubing to new CUH location. Close opening left in wall with 4" or 6" concrete block (size to match existing wall size). The entire wall shall be painted for the two entrance areas. However, only the new blocks shall be painted in the restroom areas (the existing walls here are glazed structural tile).

8. Provide new 1" HW down inside chase and thru 4" glazed structural tile wall (core drill tile or remove and replace) to new 1" HW header under existing lavatories. Locate header at +2'-0" above finished floor. Connect to each fixture with 3/8" chrome plated flexible tubing and shutoff valve. Plug existing connection inside chase and install chrome plated cover plate over each opening. Paint header as directed.

9. Provide new condensate return pump and receiver. Revise, relocate and add pipe, fittings, valves, etc., all as required to connect all existing and new condensate return and pump discharge functions. Connect the new system electrically to existing 120/208 volt electrical panels "N-2" in Room 348 and "N-1" in Room 357 for new Condensate Return Pumps #2 and #3 respectively. Provide all controls, disconnects, switches, breakers, conduit, wire, etc., all as necessary to complete the system in the manner intended and in accordance with all applicable codes.

10. Provide new 3/4" HW down from above exposed on existing wall. Disconnect and plug existing 3/4" HW connection. Reconnect existing faucet.

11. Provide vent on new condensate return receiver for CRP #1 up, thru wall and down to existing 2" cleanout in Room 347. Convert existing cleanout to new open site drain.

12. Provide vent on new condensate return receiver for CRP #2 up and down to existing 2" cleanout in this room. Convert existing cleanout to new open site drain.

13. Provide vent on new condensate return receiver for CRP #3 up and down to above existing service sink in this room.

14. Provide vent on new condensate return receiver for CRP #4 up, thru wall and down to existing 2" cleanout in Room 358. Convert existing cleanout to new open site drain.

15. Contractor shall furnish shop drawings of proposed mounting brackets, including the spacing, for review by the Engineer. Brackets shall be designed to safely handle all live load and dead loads including expansion and contraction without noticeable deflection. Special metal framing sections such as "Unistrut" or equal may be acceptable.

16. Existing homerun to existing panels to be abandoned unless E.C. can utilize for connection to new equipment. Remove wire if determined to be obsolete. Circuit numbers shown are for identification purposes only. Connect to spare breakers, or add breakers in spare spaces as required.

EQUIPMENT SCHEDULE

1. Condensate Pump #1:
Domestic Model 620C or an approved equal. The duplex unit shall be rated at 9.0 GPM, 20 PSI discharge pressure, 6000 square feet EDR. Motor data: (2) water pumps: 1/2 HP, 1750 RPM, 120 volts, 3 phase, 60 hertz; Receiver Capacity: 14 gallons.

2. Condensate Pump #2 & #3:
Domestic Model 1020C or an approved equal. The unit shall be rated at 15 GPM, 20 PSI discharge pressure, 10,000 square feet EDR. Motor data: (2) water pumps: 1/2 HP, 1750 RPM, 120 volts, 1 phase, 60 hertz; Receiver Capacity: 14 gallons.

3. Condensate Pump #4:
Domestic Model 620C or an approved equal. The duplex unit shall be rated at 9.0 GPM, 20 PSI discharge pressure, 6000 square feet EDR. Motor data: (2) water pumps: 1/2 HP, 1750 RPM, 440 volts, 3 phase, 60 hertz; Receiver Capacity: 14 gallons.

4. Cabinet Unit Heater #1, 2, 3 & 4:
Airtherm Model C40-1-CG, or an approved equal, 25.2/32.8 MBH steam (2 PSIG) multi speed 1/8 HP, 120 volts, 1 phase, 60 hertz.

GENERAL NOTES

1. The general purpose of the work shown on this sheet is to provide a means to abandon the existing steam, condensate return, condensate return pump discharge, domestic hot water and hot water return piping under the existing asphalt track. A run of existing piping mounted on the wall shall also be abandoned and removed.

2. The layout of the existing piping shown is illustrative only. No attempt has been made to show the piping exactly as it exists. The Contractor shall be responsible for determining the exact layout and size of the piping and equipment before he submits his bid and shall take the same in account in pricing his bid. He shall accept the piping and equipment as he finds it and shall provide all the material, equipment and labor necessary to complete the work in the manner intended.

3. All new piping shown shall be insulated as indicated in the specifications unless otherwise noted.

4. Any of existing ferrous or non-ferrous piping, hangers, etc. removed from the areas of work by the contractor shall be turned over to the Owner.

5. All existing debris and debris created by this contract in the work areas shall be immediately removed from the job site.

6. All new piping shall be painted and identified as specified.

7. **This Contractor shall be advised that no work on this sheet shall begin before May 28, 1982.**

WRIGHT PORTEOUS & LOWE INC.
ARCHITECTS : ENGINEERS
INDIANAPOLIS, INDIANA

COGHILL/OBERLIES & ASSOCIATES
Consulting Engineers
INDIANAPOLIS, INDIANA

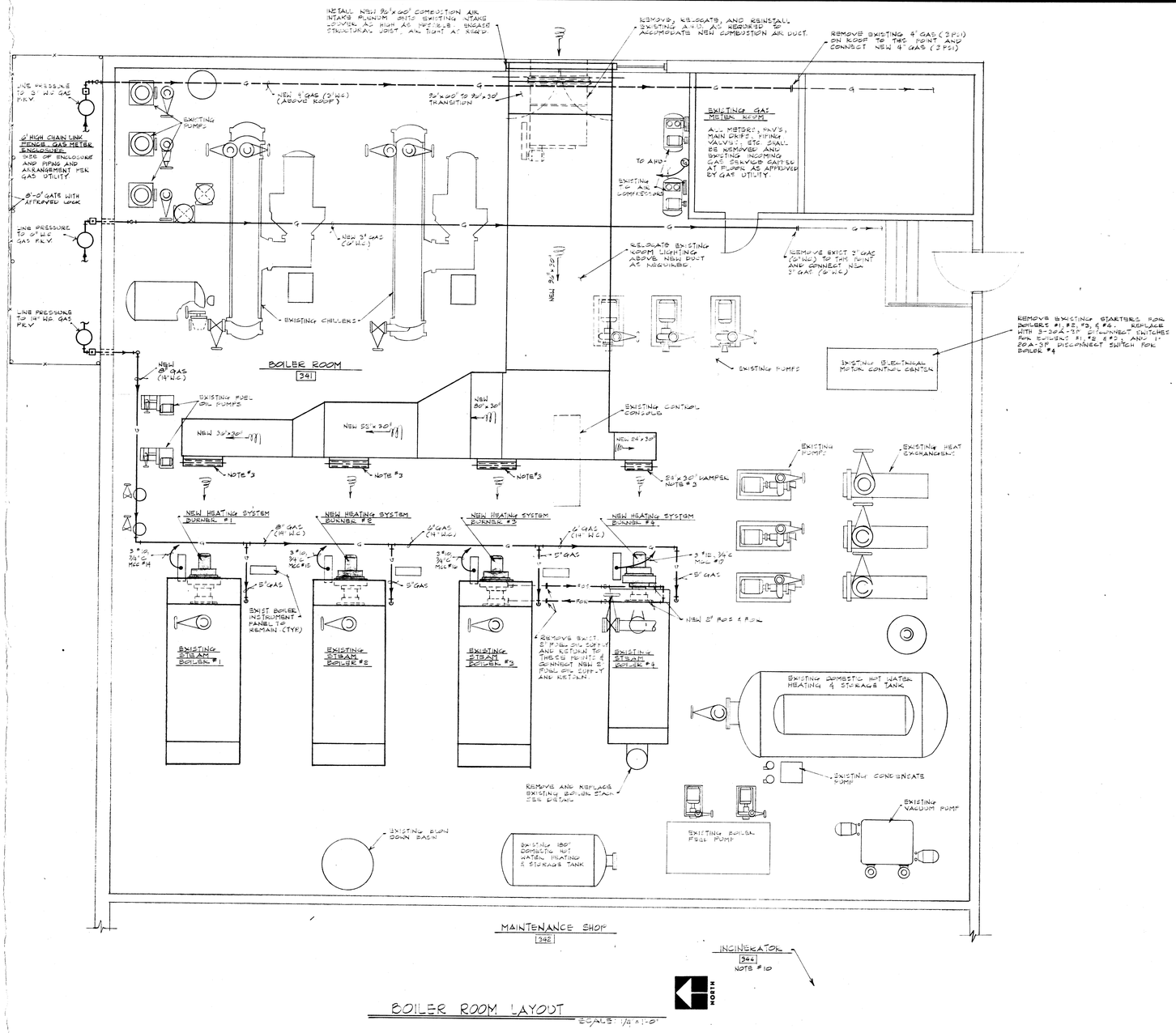
METROPOLITAN SCHOOL DISTRICT OF LAWRENCE TOWNSHIP
LAWRENCE CENTRAL HIGH SCHOOL

UNIT F - FLOOR PLAN

NO.	DATE	REVISIONS DESCRIPTION	COMM. NO. 8101
			DATE 11-30-81
			DRAWN BY JWO
			CHECKED BY JWO

CERTIFIED BY JOHN W. OBERLIES, JR. REGISTERED No. 13968 STATE OF INDIANA PROFESSIONAL ENGINEER

SHEET Nº 12 OF 13



BOILER ROOM LAYOUT
SCALE: 1/4"=1'-0"

BOILER ROOM NOTES

1. All work shown is new and by the Contractor unless otherwise noted.
2. Contractor shall verify all existing conditions at the job site.
3. 36" x 30" opposed blade motorized combustion air damper by Temperature Control Contractor. Damper shall be controlled by a relay furnished by the burner supplier in the Heating System Burner control cabinet. Contractor shall furnish remote wall switch to override relay for summer ventilation.
4. All valves, thermometers, gauges, feeders, fittings, etc., noted on burners, are typical for all burners.
5. All existing and new overhead gate valves on supply heating mains, 4" and larger, and over 8'-0" above finished floor shall be chain operated. All heating system chilled and condenser water piping, and domestic cold water valves 4" and larger shall be completely reconditioned per specifications or replaced at the Contractor's option.
6. All horizontal piping within the boiler room shall be suspended on rubber-in-shear hangers (see specifications).
7. All existing steam, chilled water, domestic hot and cold water piping within the boiler room where insulation is missing, loose, or damaged shall be reinsulated as per specifications unless otherwise noted.
8. Contractor shall paint all wall and ceiling surfaces in the boiler room including doors and steel stairs. Colors to be as selected by Owner. Paint all new and existing piping, pipe hangers, supports, tanks, receivers, fuel oil pumps, etc. Piping, tanks and pumps shall be color coded and piping identified as per specifications. Electrical conduit and temperature control tubing shall be painted to match walls. Electrical panels and new equipment shall not be painted.
9. Existing ferrous and non-ferrous piping, valves and fittings and burners removed from boiler room shall be turned over to the Owner.
10. See specifications for required work on existing incinerator flue above roof of this area.

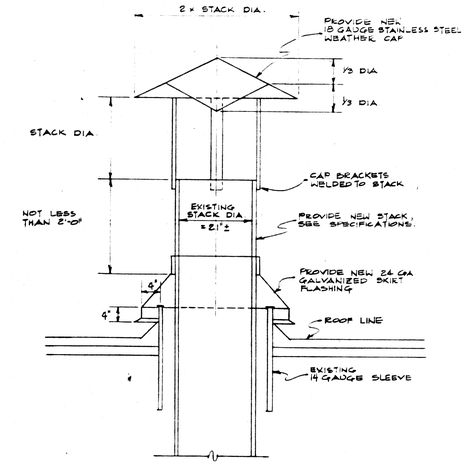
BOILER ROOM MECHANICAL EQUIPMENT SCHEDULE

1. New Heating System Burner #1,2, & 3

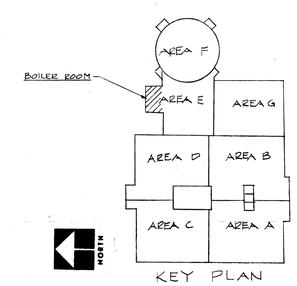
   Industrial Combustion Model DLG-105, or an approved equal, combination gas-oil burner, gas capacity, 10,500 cubic feet per hour of 0.6 specific gravity, 1000 BTU cubic foot natural gas at a maximum manifold pressure of 6" water column. Oil capacity: 73 gallons per hour with a heat content of 140,000 BTU per gallon. Burner Motor Data: 7½ HP, 440 volts, 3 phase, 60 hertz. Air oil pump motor data: 2 HP, 440 volts, 3 phase, 60 hertz.

2. New Heating System Burner #4

   Industrial Combustion Model DLG-84 or an approved equal, combination gas-oil burner, gas capacity, 8400 cubic feet per hour of 0.6 specific gravity, 1000 BTU cubic foot natural gas at a maximum manifold pressure of 6" water column. Oil capacity: 60 gallons per hour with a heat content of 140,000 BTU per gallon. Burner Motor Data: 5 HP, 440 volts, 3 phase, 60 hertz. Air oil pump motor data: 1 HP, 440 volts, 3 phase 60 hertz.



BOILER STACK REPLACEMENT DETAIL
NO SCALE



KEY PLAN

WRIGHT & LOWE INC.
INDIANAPOLIS INDIANA
ARCHITECTS : ENGINEERS

COGHILL/OBERLIES & ASSOCIATES
Consulting Engineers
INDIANAPOLIS, INDIANA

METROPOLITAN SCHOOL DISTRICT OF LAWRENCE TOWNSHIP
LAWRENCE CENTRAL HIGH SCHOOL

BOILER ROOM LAYOUT, DETAILS & SCHEDULES, INCINERATOR

REVISIONS		
NO.	DATE	DESCRIPTION

COMM. NO.	8120
DATE	11-30-81
DRAWN BY	S.A.R.
CHECKED BY	E.E.S.

OBERLIES, JR. REGISTERED No. 13968 STATE OF INDIANA PROFESSIONAL ENGINEER
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