

OAS, LLC
O'HIGGINS AND ARNOLD SUSTA
789 FEMTIND DR. UNT A SIGHT GONE, LIND
THREE DONN STREET, SUITE 100
WHERMILE, ILLINDS 60563-650

DEMO NOTES

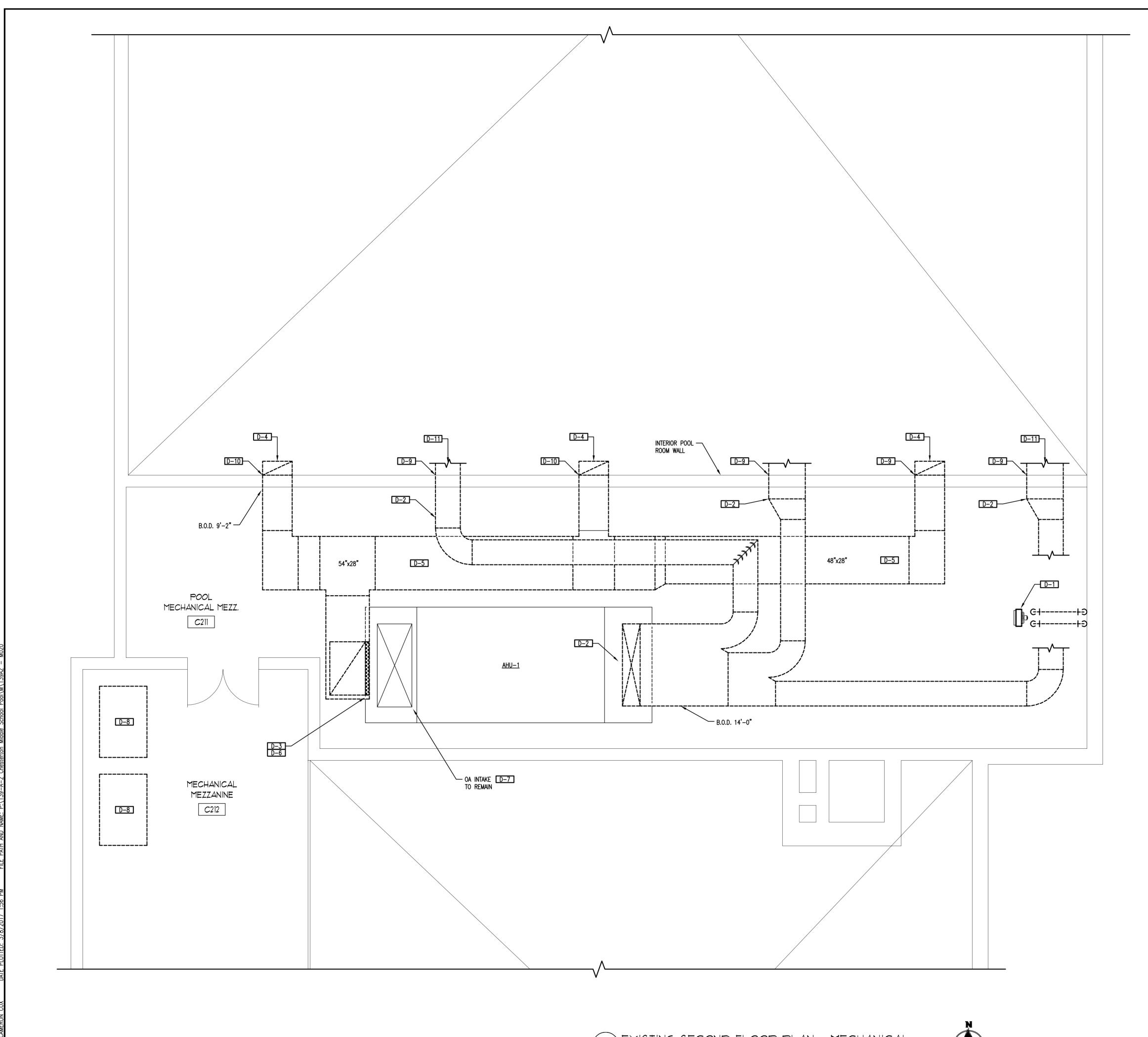
- D-1 EA GRILLE TO BE REMOVED AND SEAL UP OPENING IN EXISTING CEILING WITH SHEET METAL COVERING, SEALED TO CEILING..
- D-2 REMOVE SUPPLY DIFFUSER AND BLANK OFF OPENING WITH SHEET METAL, SEALED AIR TIGHT TO CEILING. SEAL AIR TIGHT.
- D-3 24" CONCRETE DUCT TO REMAIN AND BE REUSED. CLEAN INSIDE OF DUCT OF ALL DEBRIS TO ALLOW FOR COATING OF WALLS.
- D-4 REMOVE POURED CONCRETE FLOOR PATCH TO ALLOW PENETRATION OF NEW DUCTWORK. TIE NEW DUCTWORK INTO EXISTING 24" CONCRETE
- D-5 EXISTING EXHAUST DUCT TO BE ABANDONED IN PLACE ABOVE EXISTING CEILING.
- D-6 REMOVE EXISTING EXHAUST FAN AND FURNISH AND INSTALL 3 INCH INSULATED CURB CAP. SEAL ALL AROUND CAP WITH EXTERIOR PLIABLE
- D-7 LOW RA GRILLE TO BE REMOVED CLEANED AND REINSTALLED. REMOVE BLANK-OFF MATERIAL DUCT DROP TO 24" CONCRETE DUCT BELOW FLOOR TO BE CLEANED.
- D-8 HIGH RA GRILLE AND DUCTWORK TO BE REMOVED BACK TO MECHANICAL ROOM.
- D-9 CAP END OF 240 CONCRETE UNDER FLOOR DUCT IN TUNNEL ROOM. SEAL AIR TIGHT.

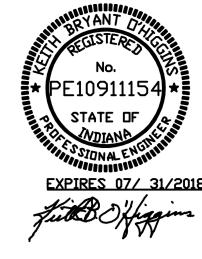


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CORPORATION

KEY PLAN NOT TO SCALE





DEMO NOTES

D-2 REMOVE ALL HORIZONTAL SUPPLY DUCT WORK FROM SA OUTLET OF AHU-1 BACK TO THE POOL WALL. CLEAN OUTLET AND PREPARE FOR

D-4 REMOVE 36"x12" RETURN DUCT DROP ON POOL ROOM WALL. PAINT AREAS TO MATCH EXISTING POOL ROOM WALL, AS REQUIRED.

D-6 REMOVE RETURN DUCT UP TO WHERE IT TIES INTO THE BACK OF AHU-1 AND THE OUTDOOR AIR INTAKE.

D-8 UNDER ALTERNATE BID NO.1 REMOVE EXISTING AIR COMPRESSORS IN THEIR ENTIRETY. COMPRESSED AIR PIPING TO BE ABANDONED IN PLACE.

D-9 PATCH AND REPAIR CONCRETE BLOCK WALL IN BOILER ROOM AND POOL ROOM AFTER DUCT REMOVAL. PAINT TO MATCH EXISTING COLOR IN POOL

D-10 EXISTING OPENINGS MAY BE REUSED AND RECONFIGURED FOR NEW DUCT INSTALLATION. REFER TO SHEET M2.1. CONTRACTOR TO

D-11 SUPPLY DUCTING ABOVE POOL CEILING TO REMAIN AND BE ABANDONED IN PLACE.

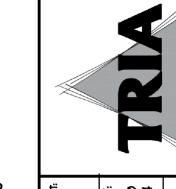
COORDINATE EXACT SIZING AND LOCATION IN FIELD.

D-3 REMOVE EXISTING RETURN AIR DAMPERS AT O.A. INTAKE DUCT.

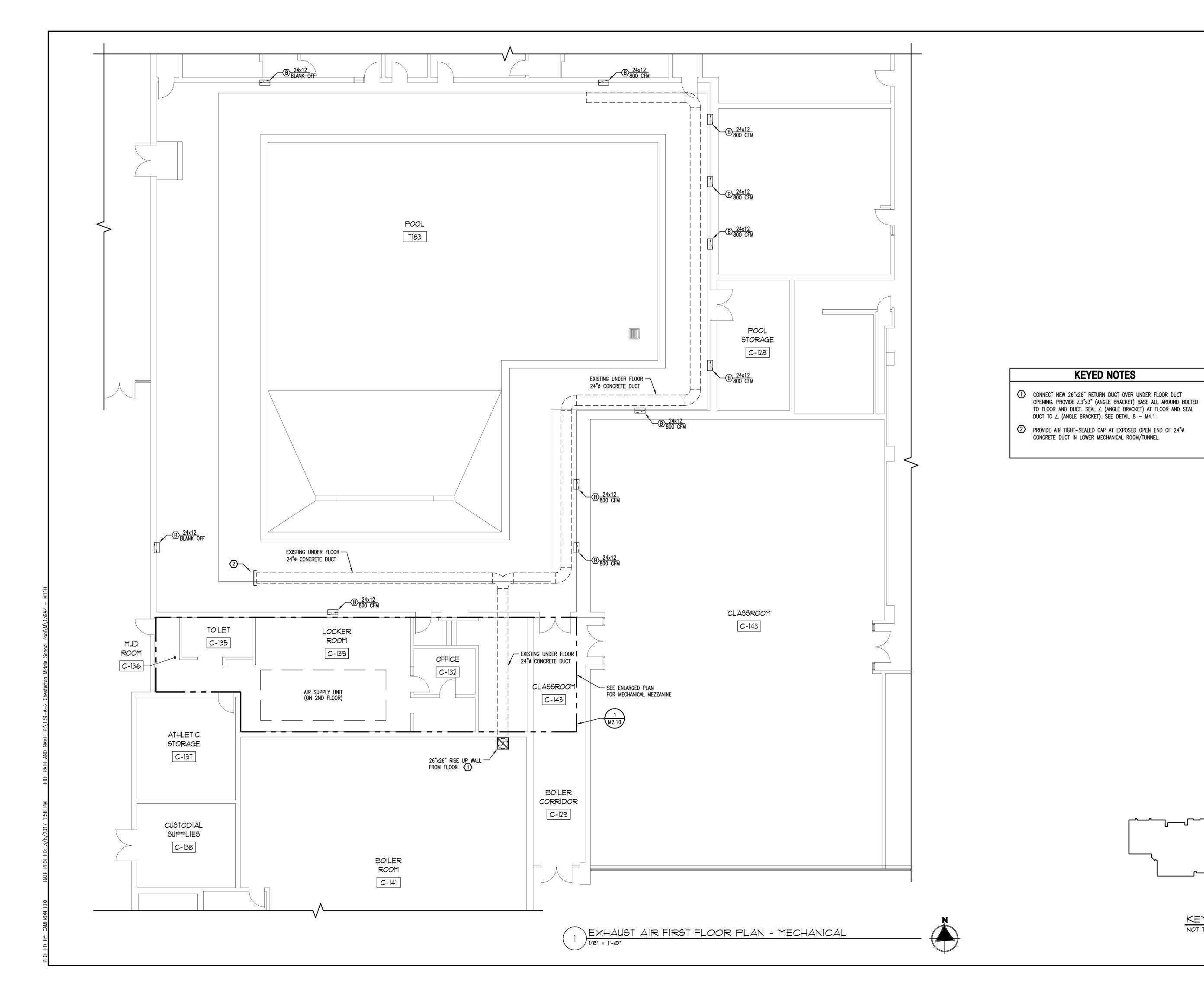
INSTALLATION OF NEW DUCTWORK.

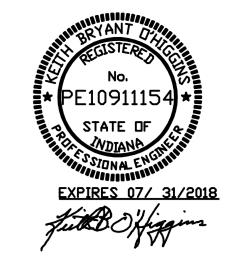
D-7 REMOVE EXISTING INTAKE O.A. DAMPERS AT ROOF.

D-5 REMOVE RETURN DUCT.



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KEYED NOTES

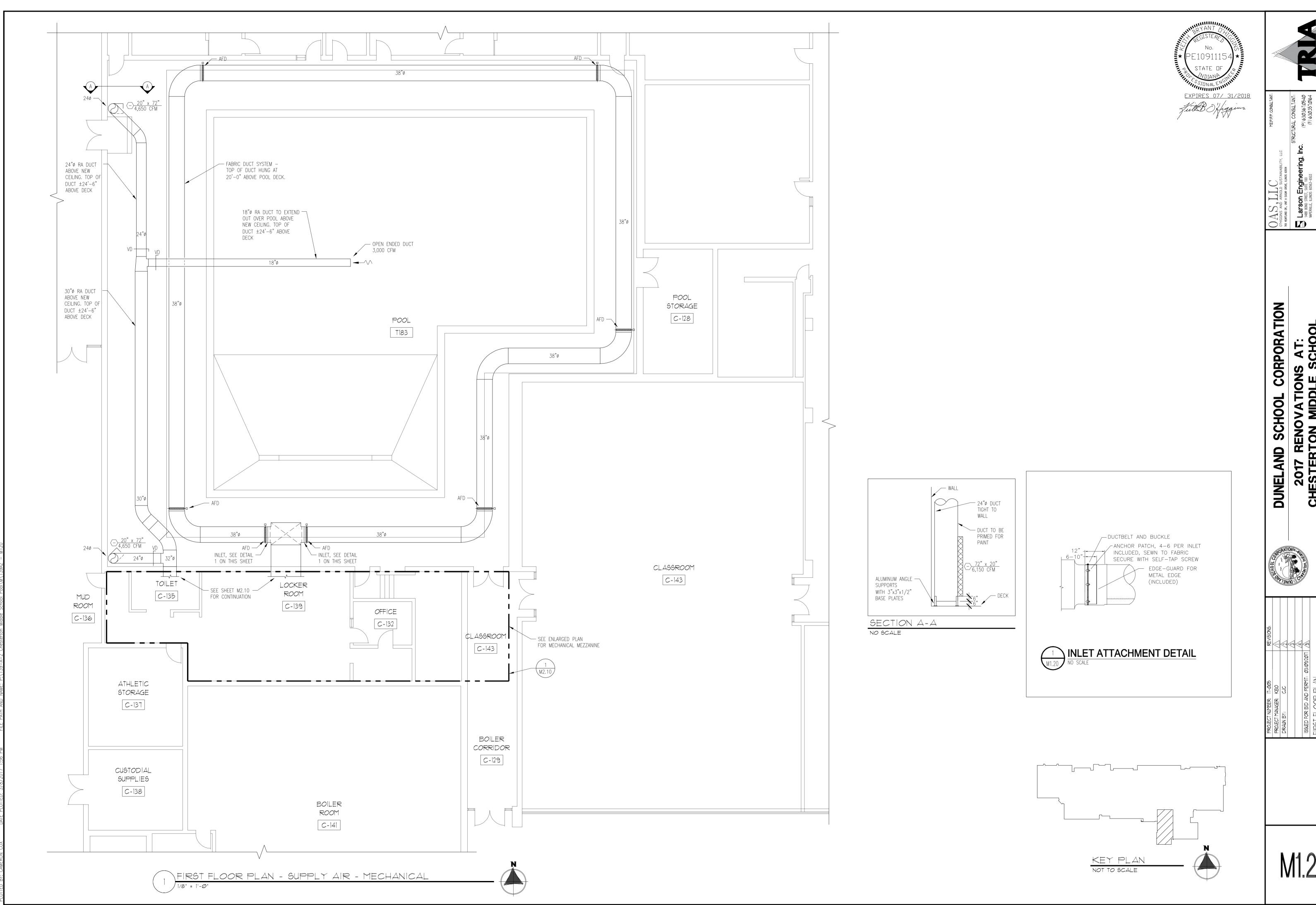


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O'HIGGINS AND ARNOLD SUSTAINABILI
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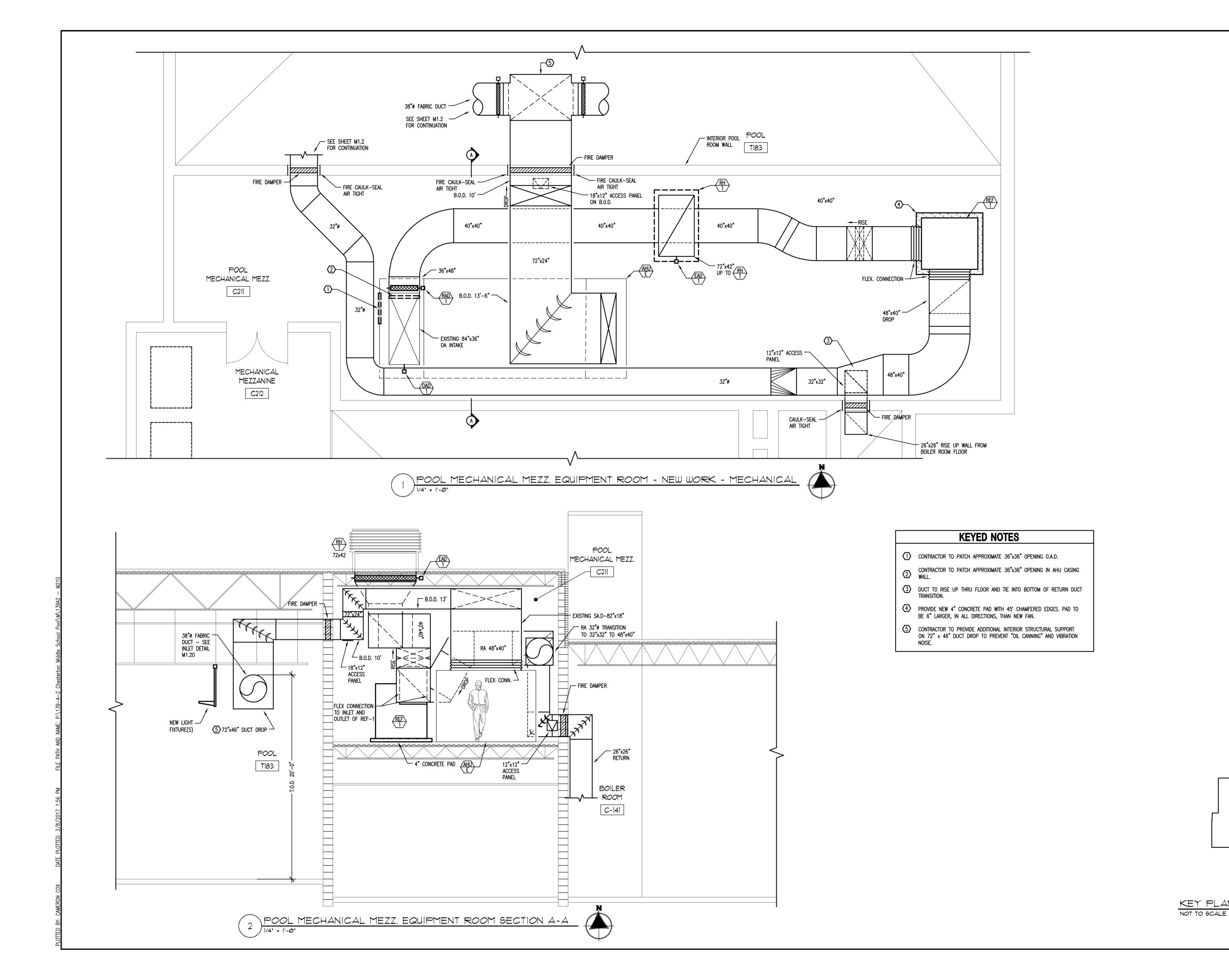
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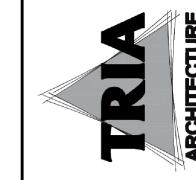
KEY PLAN NOT TO SCALE



2017 RENOVATIONS AT: CHESTERTON MIDDLE SCHOOL MORGAN AVENUE, CHESTERTON, INDIANA CORPORATION







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O'HIGGINS AND ARNOLD SUSTAINABILIT
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CORPORATION LAND SCHOOL



NOTES:

PROVIDE NEW RETURN FAN AS SCHEDULED ABOVE. MOTOR TO BE PROVIDED WITH JOHNSON OR ABB VFD'S WITH SEPARATE DISCONNECT FOR SUPPLY AND RETURN/EXHAUST

FANS. SEE SECTION 17150 FOR VFD MANUFACTURER REQUIREMENTS. DRIVE/DISCONNECT TO BE INSTALLED ON UNIT BY ELECTRICAL CONTRACTOR.

2. Contractor to Breakdown and reassembly units as required by field conditions to get units into building.

	EXISTING AIR HANDLING UNIT SCHEDULE															
GENERAL INFORMATION							ELECTRICA	ELECTRICAL DATA SUPPLY FAN DATA								
TAG	LOCATION	MANUFACTURER	AREA SERVED	unit type	DIMENSIONS LxWxH (IN.)	WEIGHT LBS	MOTOR VOLT	MOTOR PH	CFM	MTR HP	ВНР	MIN. ODA	FAN RPM	ESP (IN.)	MIN. DIA. (IN.)	MAX. OUTLET VEL. (FPM)
ÁHÚ E	MEZZANINE MECHANICAL	NYLE SYSTEMS	POOL	DE-HUMIDIFIER	-	-	-	-	18,000	-	-	3,800	-	_	-	-

. EXISTING AIR SUPPLY UNIT CASING, FAN AND FAN HOUSING TO REMAIN.

2. FIELD VERY EXACT SIZES OF FAN MOTOR, COIL(S,) DAMPERS, ETC. PRIOR TO CONSTRUCTION.

3. PROVIDE NEW RETURN FAN AS SCHEDULED ABOVE. MOTOR TO BE PROVIDED WITH FRANKLIN OR ABB VFD'S WITH SEPARATE DISCONNECT FOR SUPPLY AND RETURN/EXHAUST FANS. SEE SECTION 17150 FOR VFD MANUFACTURER REQUIREMENTS. DRIVE/DISCONNECT TO BE INSTALLED ON UNIT BY ELECTRICAL CONTRACTOR.

4. EXISTING AHU TO BE BALANCED TO PROVIDE 18,000 CFM AFTER NEW DUCT WORK CONFIGURATION.

5. NEW OAD DAMPERS TO BE BALANCED TO MINIMUM 3,800 CFM.

MECHANICAL/ELECTRICAL COORDINATION SCHEDULE

NOTES: 1. DEVICES TO BE FURNISHED BY THE ELECTRICAL CONTRACTOR (MARKED "E"), OR MECHANICAL CONTRACTOR (MARKED "M").

- 2. ALL CONDUIT AND WIRING FOR TEMPERATURE CONTROL AND EQUIPMENT INTERLOCK SHALL BE BY BAS CONTRACTOR. OTHER CONTROLS AND CONTROLCONDUIT/WIRING BY TRADE FURNISHING RESPECTIVE
- 3. IT IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO COORDINATE AND REVIEW THE ELECTRICAL CHARACTERISTICS, AMPACITY, AND OTHER REQUIREMENTS OF COMPONENTS BEFORE INSTALLATION OF WORK. ALL OTHER CONTRACTORS SHALL ADVISE ELECTRICAL CONTRACTOR OF ANY MOTOR/DEVICE CHANGES.
- 4. ALL LOOSE STARTERS SHALL INCLUDE HOA SWITCH, CONTROL TRANSFORMER, AND ONE N.O. AND ONE N.C. AUXILIARY CONTACTS. ALL SINGLE PHASE EXHAUST FAN CONTROL SWITCHES SHALL HAVE IDENTIFICATION NAMEPLATE AND PILOT LIGHT.
- 5. SEE SPECIFICATIONS AND DRAWINGS FOR TYPES AND LOCATIONS OF DEVICES SCHEDULED BELOW.

EQUIP.	EQUIPMENT	UNIT MOUNTED DEVICES				REMOTE OR LOOSE DEVICES					
TAG	DESCRIPTION	STARTER	DISCONNECT	OVERCURRENT PROTECTION	SINGLE POINT CONNECTION	STARTER	DISCONNECT	OVERCURRENT PROTECTION	REMARKS		
REF 1	return exhaust fan unit	1	М	1	YES	E	E		REFER TO EXHAUST REF SCHEDULE ON MECHANICAL DRAWINGS FOR CONTROL REQUIREMENTS, M.O.D. POWER WIRING BY BAS CONTRACTOR.		

NOTES: 1. VERIFY FINAL LOADS AND REQUIREMENTS OF ALL EQUIPMENT WITH FINAL MECHANICAL DRAWINGS.

INTAKE HOOD AND RELIEF HOOD SCHEDULE (H) (RH)											
				GENERAL	DATA						
TAG	LOCATION	AREA SERVED	MANUFACTURER	MODEL	TYPE	CFM	S.P. (IN.)	TIERS	THROAT AREA (FT2)	THROAT VEL. (FPM)	NOTES
RH 1	ROOF	MECHANICAL ROOM	COOK	TRE	Tiered Louver	19,500	0.375	7	72x42 (21.0)	928	

GALVANIZED BIRD SCREEN.

2. PREFABRICATED ALUMINUM ROOF CURB MINIMUM 18" HIGH. 3. 1" THICK THERMAL LINER.

I. PROVIDE LOW LEAK MOTORIZED DAMPER W/END SWITCH INTERLOCKED WITH AHU. SEE SECTION 17100 FOR REQUIREMENTS. 5. PROVIDE LOW LEAK MOTORIZED DAMPER W/END SWITCH INTERLOCKED WITH REF. EF AND REF. PURGE SYSTEM. SEE SECTION 17100 FOR REQUIREMENTS.

- AUTOMATIC CONTROL DAMPER (-CD) MANUFACTURER | MODEL NUMBER | AREA/EQUIPMENT TAG LOCATION SERVICE SERVED OAD 1 MECHANICAL Ruskin CD40X2 **BELIMO** ROOM/AHU-ROOM MECHANICAL Ruskin CD40X2 48x36 BELIMO ROOM/AHU-ROOM **MECHANICAL** Ruskin CD40X2 BELIMO 72x40 ROOM/RH-1 ROOM

 - ALL DAMPERS TO BE LOW LEAK WITH BLADE AND FRAME SEALS. CONTRACTOR TO VERIFY SIZES ONCE SHEET METAL SHOP DRAWINGS ARE COORDINATED.

GENERAL NOTES FOR MECHANICAL WORK

- A. DRAWINGS ARE GENERALLY DIAGRAMMATIC. ROUTING OF PIPING AND DUCTWORK AS SHOWN. DOES NOT INTEND TO SHOW EVERY RISE, DROP, OFFSET, FITTING NOR EVERY STRUCTURAL ELEMENT THAT MAY BE ENCOUNTERED DURING THE INSTALLATION OF THIS WORK. EACH CONTRACTOR SHALL MAKE ANY REQUIRED CHANGES FROM THE GENERAL ROUTING SHOWN ON THESE DRAWINGS, SUCH AS OFFSETS, BENDS OR CHANGES IN ELEVATION DUE TO COORDINATION WITH THE WORK OF OTHER TRADES AND BUILDING CONSTRUCTION. ALL CHANGES SHALL BE MADE WITHOUT ADDITIONAL COST TO THE OWNER OR DELAY IN COMPLETION DATE OF THE PROJECT.
- B. IT IS INTENDED THAT EQUIPMENT SHALL BE LOCATED SYMMETRICALLY WITH THE ARCHITECTURAL ELEMENTS OF THE BUILDING, NOTWITHSTANDING THE FACT THAT LOCATIONS INDICATED BY THESE DRAWINGS MAY BE DISTORTED FOR CLEARNESS OF PRESENTATION.
- C. CONTRACTOR SHALL CHECK DRAWINGS OF OTHER TRADES TO VERIFY THAT SPACES IN WHICH THEIR WORK WILL BE INSTALLED ARE CLEAR OF OBSTRUCTIONS. WORK SHALL BE INSTALLED TO MAINTAIN MAXIMUM HEADROOM AND SPACE CONDITION AT ALL POINTS IN THE BUILDING. WHERE HEADROOM OR SPACE CONDITIONS APPEAR INADEQUATE, CONTRACTOR SHALL NOTIFY ARCHITECT/ENGINEER BEFORE PROCEEDING WITH THE INSTALLATION OF THEIR WORK.
- D. CONTRACTOR SHALL FURNISH OTHER TRADES ADVANCE INFORMATION AND/OR SHOP DRAWINGS ON LOCATIONS AND SIZES OF PIPING, DUCTWORK, EQUIPMENT, SLEEVES AND OPENINGS, ETC. NEEDED FOR THEIR WORK TO PERMIT OTHER TRADES AFFECTED TO INSTALL THEIR WORK PROPERLY AND WITHOUT DELAY.
- E. WHERE THERE IS EVIDENCE THAT WORK OF ONE TRADE WILL INTERFERE WITH WORK OF OTHER TRADES. ALL TRADES SHALL MEET ON JOB SITE TO WORK OUT SPACE CONDITIONS AND MAKE SATISFACTORY ADJUSTMENTS TO INSTALLATION OF THE NEW WORK. CONTRACTOR SHALL BE RESPONSIBLE, AT THEIR OWN EXPENSE, FOR THE REMOVAL AND REINSTALLATION OF ANY PART OF THEIR WORK IF SAME WAS INSTALLED WITHOUT CONSULTING WITH OTHER TRADES BEFORE INSTALLING THEIR WORK.
- F. CONTRACTOR SHALL PROVIDE SLEEVES IN FLOORS AND WALLS AS SHOWN ON THE DRAWINGS, AS REQUIRED BY JOB SITE CONDITIONS, AND/OR AS SPECIFIED, WHEN INSTALLING THEIR
- G. THE SEQUENCE FOR THE INSTALLATION OF ALL WORK SHALL BE COORDINATED BETWEEN ALL CONTRACTORS ON THE PROJECT AND IN STRICT ACCORDANCE WITH ENGINEER AND OWNERS STIPULATION AS CALLED FOR IN THE SPECIFICATION AND/OR AS DIRECTED.
- H. CONTRACTOR SHALL REFER TO THE ARCHITECTURAL AND STRUCTURAL CONTRACT DRAWINGS (BEFORE SUBMITTING THEIR BIDS) TO FAMILIARIZE THEMSELVES WITH THE EXTENT OF THE OTHER TRADES CONTRACTORS WORK, CEILING HEIGHTS AND CLEARANCE FOR INSTALLING THEIR
- I. CONTRACTOR SHALL BE RESPONSIBLE AND PAY FOR ALL CORING, CUTTING, PATCHING, REPAIRING AND REFINISHING OF BUILDING CONSTRUCTION REQUIRED TO ACCOMMODATE THE INSTALLATION OF THEIR WORK. (NOTE: FLOOR CUTTING AND PATCHING FOR NEW DUCTWORK AND ALL ROOF CUTTING AND PATCHING TO BE BY GENERAL CONTRACTOR.) ALL PATCHING, REPAIRING AND REFINISHING WORK SHALL BE PERFORMED BY THOSE REGULARLY INVOLVED IN THAT TRADE AND SHALL MATCH THE NEW CONSTRUCTION AS CLOSELY AS POSSIBLE. CARE SHALL BE TAKEN SO AS NOT TO DAMAGE ANY EXISTING BUILDING CONSTRUCTION OR ITEMS THAT ARE TO REMAIN. ANY EXISTING FINISHES THAT ARE DAMAGED DURING THE INSTALLATION OF NEW WORK SHALL BE REPAIRED. REPLACED AND PAID FOR BY THE INSTALLING CONTRACTOR. TO THE SATISFACTION OF THE ARCHITECT AND OWNER. REFER TO ARCHITECTURAL DRAWINGS FOR EXISTING BUILDING CONSTRUCTION THAT IS TO REMAIN AND. THEREFORE, SUBJECT TO PATCHING, REPAIRING, AND REFINISHING.
- J. CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR OWN CLEAN-UP DURING CONSTRUCTION.
- K. CONTRACTOR SHALL INSTALL ALL AUXILIARY SUPPORTING STEEL AS REQUIRED FOR THE SUPPORTING OF THEIR DUCTWORK, AND CONDUIT. ALL SUPPORTING STEEL FOR ITEMS ABOVE A SUSPENDED CEILING SHALL BE FROM BUILDING STRUCTURAL MEMBERS ONLY.
- L. ALL PIPING SHALL BE SUSPENDED WITH CLEVIS AND/OR TRAPEZE PIPE HANGERS. INSULATED PIPING SHALL REST ON STEEL PIPE COVERING PROTECTION SADDLES OR SHEET METAL INSULATION SHIELDS AS CALLED FOR IN THE SPECIFICATIONS AND/OR DETAILED ON THE
- M. INSTALL A MANUAL SHUT OFF COCK AND DIRT LEG ON EACH BRANCH GAS LINE CONNECTED TO GAS FIRED EQUIPMENT. ALL VENT LINES FROM EACH GAS REGULATOR SHALL BE GROUPED INTO A COMMON HEADER AND RUN UP THRU ROOF TO A TURNED DOWN ELBOW WITH GALVANIZED INSECT SCREEN OVER OPENING.
- N. ALL DUCTWORK SIZES SHOWN ON THE DRAWINGS ARE INSIDE DIMENSIONS. WHERE DUCT LINING IS CALLED FOR CONTRACTOR SHALL INCREASE THE SIZE OF THE DUCT TO MAINTAIN THE MINIMUM INSIDE DIMENSIONS CALLED FOR ON THE DRAWINGS.
- O. ALL DUCTWORK CONNECTIONS TO AIR MOVING EQUIPMENT SHALL BE MADE WITH FLEXIBLE DUCT CONNECTIONS ON THE INLET AND DISCHARGE OF ALL SUPPLY, RETURN AND EXHAUST
- P. ALL BUILT UP UNITS SHALL HAVE INTERNAL SPRING VIBRATION ISOLATORS. ALL SUSPENDED EXHAUST FANS SHALL BE HUNG WITH OR SET ON SPRING VIBRATION

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- Q. INSTALL TURNING VANES IN ALL SQUARE DUCT ELBOWS. INSTALL MANUAL VOLUME DAMPERS IN EACH BRANCH DUCT AT CONNECTION TO MAIN DUCT AND IN EACH DUCT AFTER A BRANCH DUCT SPLIT.
- THE LEOCATIONS SHOWN FOR ALL DIFFUSERS, REGISTERS AND GRILLES, ETC. ARE DIAGRAMMATIC. EXACT LOCATION SHALL BE DETERMINED FROM THE REFLECTED CEILING PLANS AND/OR ON THE JOB SITE BY THE ARCHITECT/ENGINEER REPRESENTATIVES.

- S. UNLESS INDICATED OTHERWISE, THE ARCHITECT/ENGINEER MAKES NO REPRESENTATION AS TO WHETHER OR NOT ANY HAZARDOUS OR CONTAMINATED MATERIALS (INCLUDING BUT NOT LIMITED TO ASBESTOS, PCB'S, CONTAMINATED SOILS, ETC.) ARE PRESENT WITHIN THE EXISTING BUILDING OR ON THE SITE. WORK SHOWN ON THE DRAWINGS AND/OR INDICATED IN THE SPECIFICATIONS SHALL NOT BE CONSTRUED TO CALL FOR CONTACT WITH ANY OF THESE MATERIALS. IF THESE MATERIALS ARE ENCOUNTERED OR SUSPECTED. THE CONTRACTOR SHALL NOT DISTURB THEM AND SHALL CONTACT THE ENGINEER IMMEDIATELY.
- T. CONTRACTOR SHALL STORE ALL MATERIALS AND EQUIPMENT SHIPPED TO THE SITE IN A PROTECTED AREA. IF MATERIAL IS STORED OUTSIDE OF THE BUILDING, IT MUST BE STORED OFF THE GROUND A MINIMUM OF SIX INCHES (6") SET ON 6 X 6 PLANKS AND/ OR WOOD PALLETS. ALL MATERIAL AND EQUIPMENT MUST BE COMPLETELY COVERED WITH WATERPROOF TARPS OR VISQUIN. ALL PIPING AND DUCTWORK WILL HAVE THE ENDS CLOSED TO KEEP OUT DIRT AND OTHER DEBRIS. NO EQUIPMENT WILL BE ALLOWED TO BE STORED ON THE SITE UNLESS IT IS SITTING ON WOOD PLANKS AND COMPLETELY PROTECTED WITH WEATHERPROOF COVERS.
- U. MECHANICAL CONTRACTOR SHALL PROVIDE ON SITE SCHOOLING OF OWNERS OPERATING PERSONNEL FOR ALL SYSTEMS AND EQUIPMENT INSTALLED UNDER HIS CONTRACT.
- V. BEFORE STARTING ANY SYSTEM INSTALLING CONTRACTOR SHALL CONTACT EQUIPMENT MANUFACTURER TO VERIFY THAT EACH PIECE OF EQUIPMENT OR SYSTEM HAS BEEN CHECKED FOR PROPER LUBRICATION, DRIVE ROTATION, BELT TENSION, CONTROL SEQUENCE OR OTHER CONDITIONS WHICH MAY CAUSE DAMAGE TO THE EQUIPMENT OR SYSTEM.
- W. THE MECHANICAL CONTRACTOR TO PROVIDE 1/4 INCH SCALE DUCTWORK DRAWINGS FOR COORDINATION WITH OTHER TRADES. DRAWINGS TO INDICATE DIMENSIONS AND ELEVATIONS OF ALL PIPING AND DUCTWORK. DRAWINGS TO ALSO INCLUDE ALL WALL/FLOOR/ROOF OPENINGS.
- X. MECHANICAL CONTRACTOR TO PROVIDE SCHEDULE OF CURB INSTALLATION/REMOVAL ON EXISTING ROOF AREAS TO CONTRACTOR FIVE (5) WORKING DAYS IN ADVANCE. ANY REVISIONS TO THIS SCHEDULE RESULTING IN UNPATCHED ROOF TIE-INS AND DAMAGE TO EXISTING CONDITIONS SHALL BE REPAIRED BY MECHANICAL CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
- Y. INSTALL A SHEET METAL SLEEVE AROUND ANY DUCTWORK WHICH GOES THROUGH WALL CONSTRUCTION, PACK FIBERGLAS INSULATION AROUND SLEEVE AND DUCT AND CAULK WITH FIRE SEAL CAULKING.
- Z. WHEN INSTALLING EXPANSION JOINTS, CONTRACTOR SHALL INSTALL A PIPE ANCHOR AT EACH END OF RUN AND PIPE GUIDES A MINIMUM OF EVERY TWENTY—FIVE (25) FEET OR AS CALLED FOR ON THE DRAWINGS. MOUNT THE FIRST PIPE GUIDE LOCATED ON EACH SIDE OF THE EXPANSION JOINT A MINIMUM OF FOUR (4) PIPE DIAMETERS FROM THE EXPANSION
- AA. THE DRAWINGS, SCHEDULES AND SPECIFICATIONS HAVE BEEN PREPARED USING ONE MANUFACTURER FOR EACH PIECE OF EQUIPMENT AS THE BASIS FOR DIMENSIONAL DESIGN. IF THE CONTRACTOR PURCHASES EQUIPMENT LISTED AS A SPECIFIED ACCEPTABLE MANUFACTURER BUT IS NOT THE SCHEDULED MANUFACTURER USED FOR THE BASE DESIGN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING ALL THE DIMENSIONS OF THE EQUIPMENT TO VERIFY THAT IT WILL FIT IN THE SPACE SHOWN ON THE DRAWINGS. MINOR DEVIATIONS IN DIMENSIONS WILL BE PERMITTED, PROVIDED THE RATINGS MEET THOSE SHOWN ON THE DRAWINGS AND EQUIPMENT WILL PHYSICALLY FIT INTO THE SPACE ALLOCATED WITH SUITABLE ACCESS AROUND EQUIPMENT FOR OPERATION AND MAINTENANCE ON THE EQUIPMENT.
- BB. CONTRACTOR AND/OR MANUFACTURER SHALL VERIFY THAT THE CHARACTERISTICS OF THE EQUIPMENT HE SUBMITS FOR REVIEW MEETS THE CAPACITY AND DUTY SPECIFIED.
- CC. WHEN EQUIPMENT IS SUBMITTED FOR REVIEW AND DOES NOT MEET THE PHYSICAL SIZE OR ARRANGEMENT OF THAT SCHEDULED AND SPECIFIED. CONTRACTOR SHALL PAY FOR ALL ALTERATIONS REQUIRED TO ACCOMMODATE SUCH EQUIPMENT AT NO ADDITIONAL COST TO OWNER. CONTRACTOR WILL ALSO PAY ALL COSTS FOR ADDITIONAL WORK REQUIRED BY OTHER CONTRACTORS, OWNER, ARCHITECT OR ENGINEER TO MAKE CHANGES WHICH WOULD ALLOW THE EQUIPMENT TO FIT IN THE SPACE AND FUNCTION AS INTENDED.
- DD. ALL TEMPERATURE AND PRESSURE SENSORS SHALL BE INSTALLED IN LOCATIONS SUCH THAT THEY DO NOT MAKE FALSE READINGS. BAS CONTRACTOR/ENGINEER SHALL REVIEW THE PLANS AND IDENTIFY ANY SUCH POTENTIAL CAUSES FOR FALSE READINGS AND NOTIFY THE ENGINEER IN WRITING THAT THESE SHOULD BE RELOCATED PRIOR TO ROUGH IN AND CONTROLS INSTALLATION. THE BAS CONTROLS CONTRACTOR SHALL RELOCATE ANY SENSORS INSTALLED IN IMPROPER LOCATIONS AND GIVING FALSE READINGS AT HIS OWN EXPENSE. CONDITIONS TO BE AWARE OF SHALL INCLUDE BUT ARE NOT LIMITED TO LOCATIONS OF THERMOSTATS BEHIND DOORS, OUTDOOR AIR SENSORS NEAR EXHAUST OPENINGS, STATIC PRESSURE SENSORS IN TURBULENT LOCATIONS, THERMOSTATS INSTALLED ADJACENT TO HEAT SOURCES SUCH AS COFFEE POTS, COMPUTERS, VENDING MACHINES AND OTHER APPLIANCES, ETC.
- EE. ALL GAS PIPING SHALL BE AIR TESTED TO A MIN OF 30 PSI PER IF&G CODE AND AHJ.

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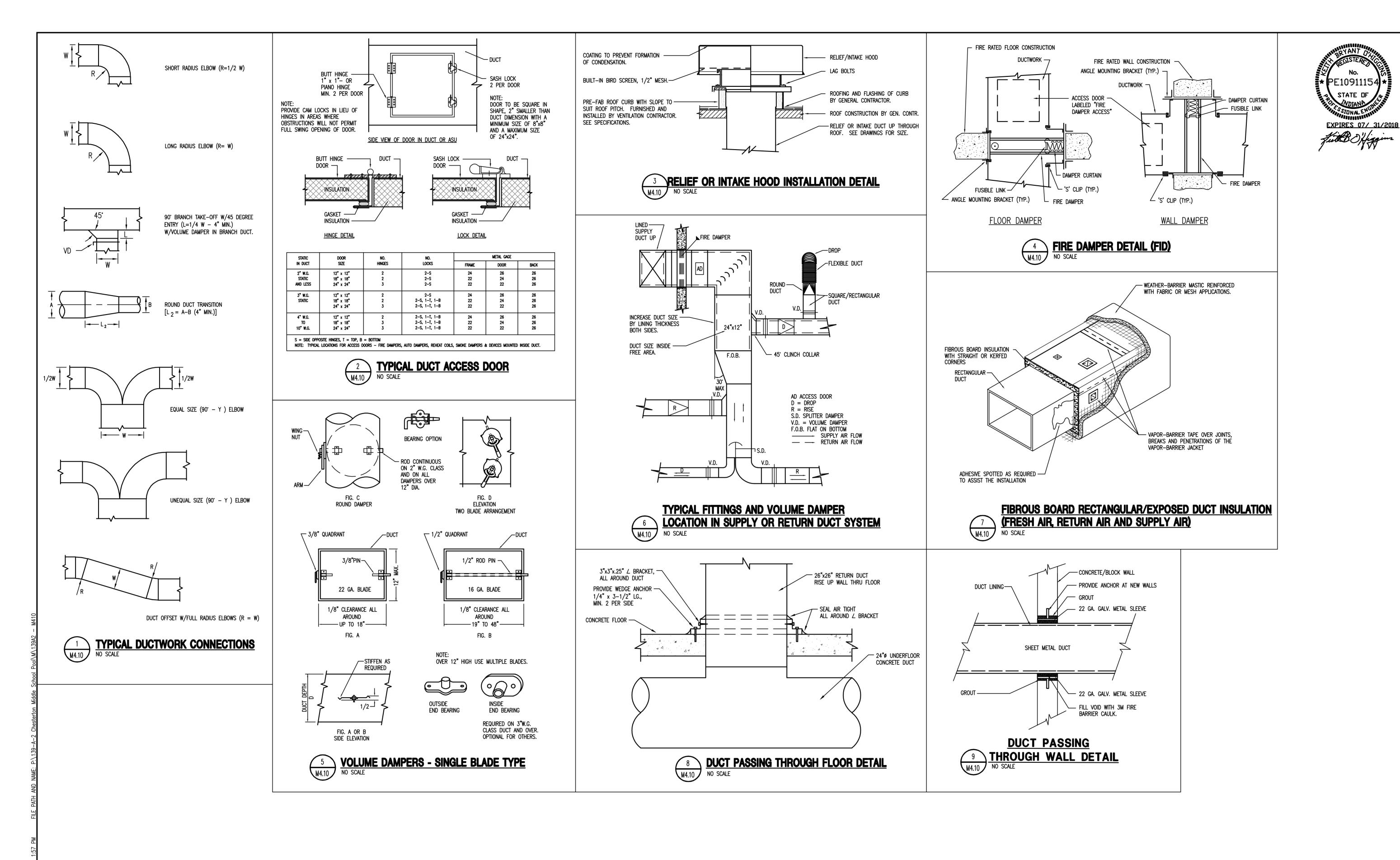


OAS, LLC
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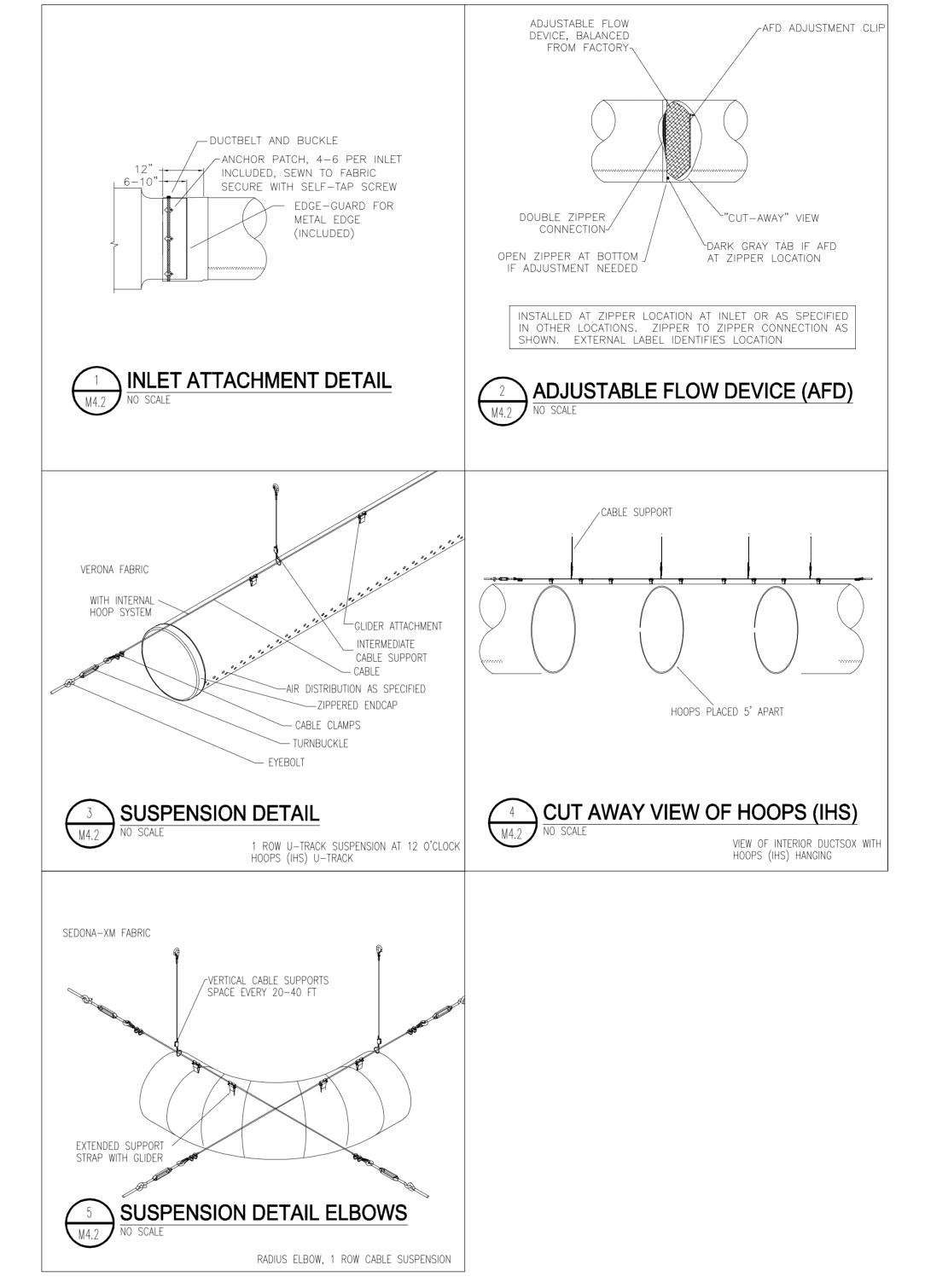
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WHETRILLE, LUNOS 60563-6503

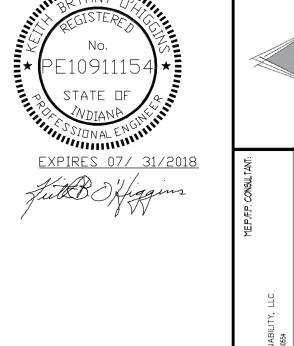
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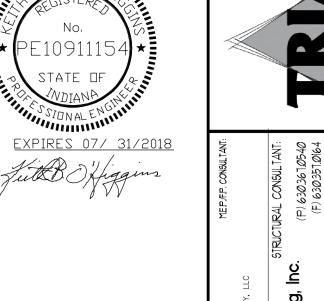
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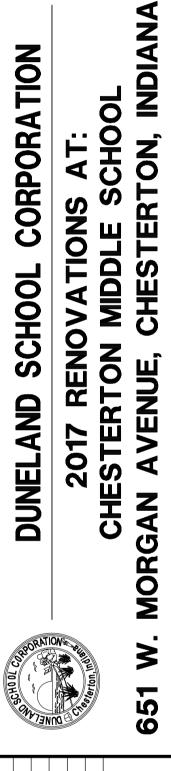




0AS, LLC o'HIGGINS AND ARNOLD SUST

CORPORATION

Larson Engin
1488 BOND STREET, SUITE 100
NAPERVILE, ILLNOIS 60563-66



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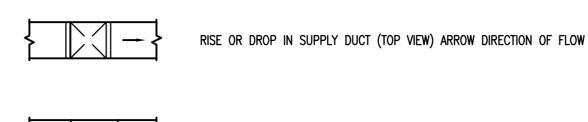
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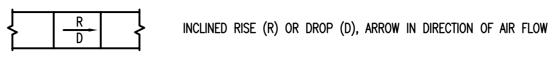
RETURN OR EXHAUST AIR DUCT UP

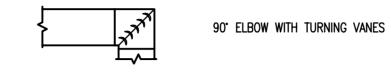
SUPPLY OR FRESH AIR DUCT DOWN

RETURN OR EXHAUST AIR DUCT DOWN

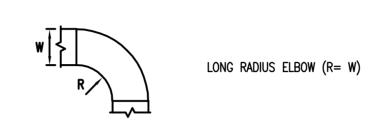
MECHANICAL SYSTEM (HVAC) SYMBOLS

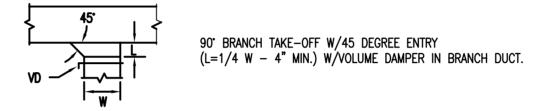
















- - - -	ROUND OR OVAL DUCT (CENTER LINE OF DUCT)	INDICATES

↑ D D D D D D D D D D D D D D D D D D D	ROUND DUCT TRANSITION [L $_2$ = A-B (4" MIN.)]
	

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ROUND DUCT UP

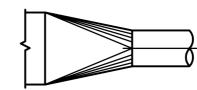
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) <u>V</u>	UNEQUAL SIZE (90° - Y) ELBOW
w	

EQUAL SIZE (90° - Y) ELBOW	

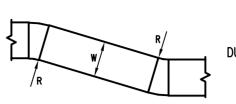
SD	90° BRANCH TAKE-OFF FROM MAIN
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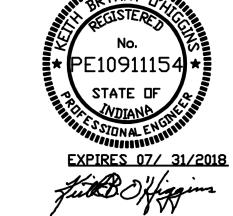
30' MAX.————————————————————————————————————
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UNEQUAL SIZE (90° - T) ELBOW



SQUARE OR RECTANGLE TO ROUND DUCT TRANSITION



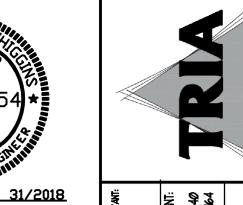


R/ R	DUCT OFFSET W/FULL RADIUS ELBOWS (R = W)
EQUIPMENT TYPE EQUIPMENT #	EQUIPMENT TAG

D-#	DEMOLITION NOTE TAG
DEMOLITION NOTE REFERENCE NUMBER	

#	 PLAN NOTE TAG

	MEC	HANIC	AL ABBREVIATIONS	LIST	
ACV	AUTOMATIC CONTROL VALVE	EUH	ELECTRIC UNIT HEATER	NK	NECK
AFD	AUTOMATIC FLOW DEVICE	EWT	ENTERING WATER TEMPERATURE	N.C.	NORMALLY CLOSED
AHU	AIR HANDLING UNIT	EXD	EXHAUST DUCT	N.I.C.	NOT IN CONTRACT
AS	AIR SEPARATOR	F	FAHRENHEIT	N.O.	NORMALLY OPEN
BCP	BOILER CIRCULATING PUMP	FC	FLEXIBLE CONNECTION	OAD	OUTDOOR AIR DAMPER
BWP	BUILDING WATER PUMP	FCU	FAN COIL UNIT	OUD	OUTSIDE AIR DUCT
BHP	BRAKE HORSE POWER	FID	FIRE DAMPER	PD	PRESSURE DROP
BTU	BRITISH THERMAL UNIT	FPF	FINS PER FOOT	PG	PIPE GUIDE
BTUH	BRITISH THERMAL UNIT PER HOUR	FPM	FEET PER MINUTE	PH	PHASE
BV	BALL VALVE	FTR	FINNED TUBE RADIATION	PS	PIPE SLEEVE
CBP	COIL BOOSTER PUMP	FV	FACE VELOCITY	PSI	POUNDS PER SQUARE INCH
CC	COOLING COIL	G	GAS PIPING	RAD	RETURN AIR DAMPER
CFM	CUBIC FEET PER MINUTE	GPM	GALLONS PER MINUTE	RED	RETURN AIR DUCT
CH	CHILLER	GV	GATE VALVE	RF	RETURN AIR FAN
CKV	CHECK VALVE	HC	HEATING COIL	RH	RELIEF HOOD
CU	CONDENSING UNIT	HCWP	HOT/CHILLED WATER PUMP	RPM	REVOLUTIONS PER MINUTE
CUH	CABINET UNIT HEATER	HCWR	HOT/CHILLED WATER RETURN	RTU	ROOF TOP UNIT
CUV	CLASSROOM UNIT VENTILATOR	HCWS	HOT/CHILLED WATER SUPPLY	SF	SUPPLY FAN
CWP	CHILLED WATER PUMP	HP	HORSEPOWER	SP	STATIC PRESSURE
CHWR	CHILLED WATER RETURN	HWB	HOT WATER BOILER	STR	STRAINER
CHWS	CHILLED WATER SUPPLY	HWP	HOT WATER CIRCULATING PUMP	SUD	SUPPLY DUCT
D	DRAIN LINE	HWR	HOT WATER RETURN	SUH	SUSPENDED UNIT HEATER
DB	DRY BULB	HWS	HOT WATER SUPPLY	TSP	TOTAL STATIC PRESSURE
EAD	EXHAUST AIR DAMPER	IH	INTAKE HOOD	WB	WET BULB
EAT	ENTERING AIR TEMPERATURE	LAT	LEAVING AIR TEMPERATURE	WC	WATER COLUMN
EF	EXHAUST FAN	LWT	LEAVING WATER TEMPERTURE	WG	WATER GAUGE
EH	EXHAUST HOOD	MOD	MOTOR OPERATED DAMPER	WLS	WALL LOUVER AND SCREEN
ET	EXPANSION TANK	NC	NEW CONNECTION		



	$0AS, \underline{LLC}$ O'HIGGINS AND ARNOLD SUSTAINABILITY, LLC 789 FEMTIAND DR., UNIT A SUSPE GROVE, LLINGS 00554	MEP.FP. CONSULTA
	Larson Engineering, Inc. 1488 BOND STREET, SUITE 100 WPERMILE, ILLINONS 605653-6503	STRUCTURAL CONSULTANT (P) 630361054 (F) 630351016
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