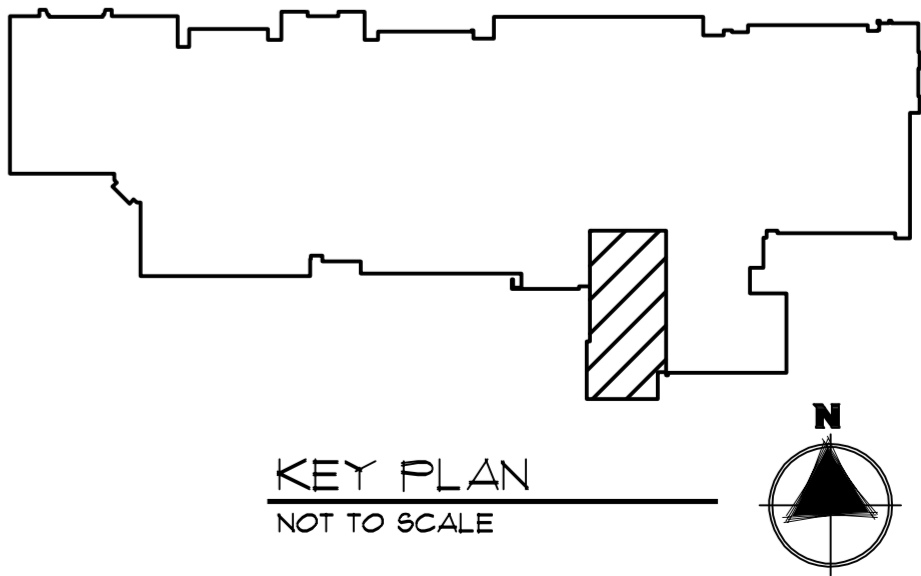
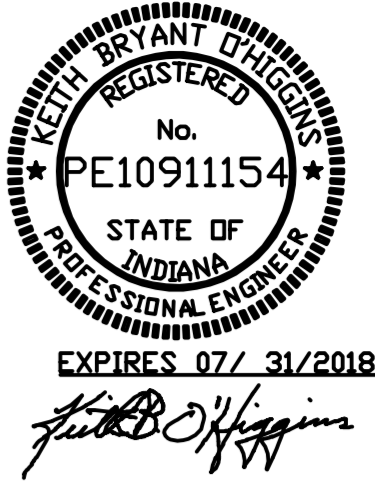


1 EXISTING FIRST FLOOR PLAN - MECHANICAL  
 1/8" = 1'-0"

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 DUCTWORK.
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 SEALANT.
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 24" CONCRETE UNDER FLOOR DUCT IN TUNNEL ROOM. SEAL AIR TIGHT.



KEY PLAN  
 NOT TO SCALE



**TRIA**  
ARCHITECTURE

NEEPP COMPLIANCE

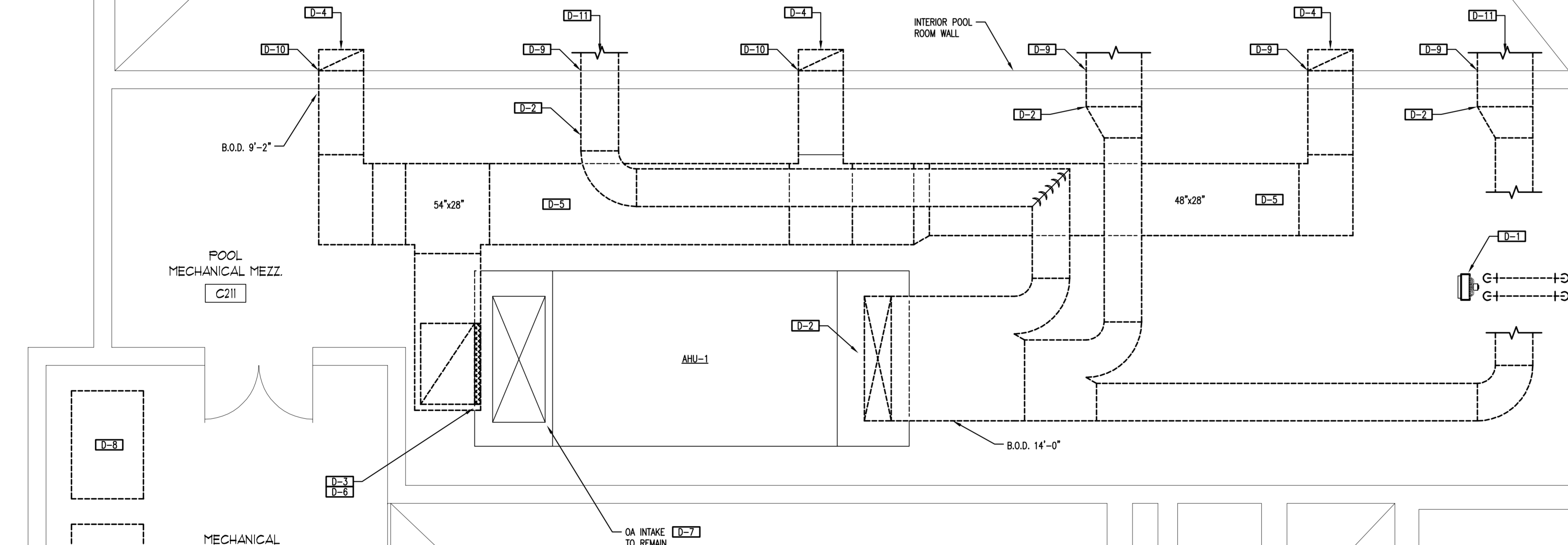
OAS, LLC  
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10000 N. 100th Ave., Suite 1000  
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Structural Consultant:  
Larsen Engineering, Inc.  
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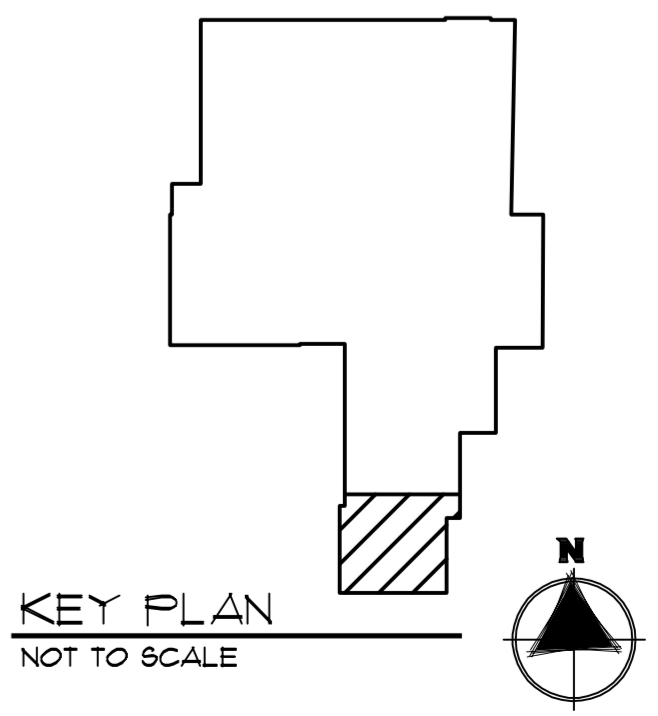
**DUNELAND SCHOOL CORPORATION**  
2017 RENOVATIONS AT:  
CHESTERTON MIDDLE SCHOOL  
651 W. MORGAN AVENUE, CHESTERTON, INDIANA 46304

PROJECT NUMBER: 11-009	REVISIONS:
PROJECT MANAGER: LSC	
DRAWN BY: CLC	
BASED FOR BID AND PERMIT: 06/09/2017	
EXISTING FIRST FLOOR PLAN - MECHANICAL	

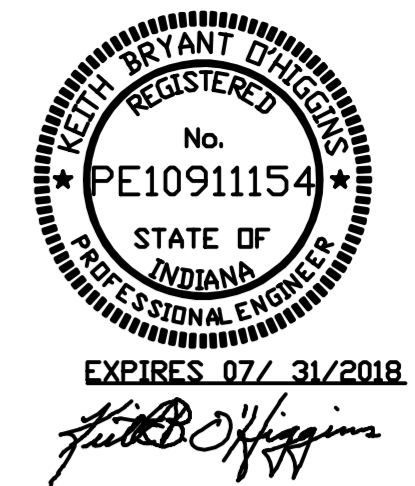
PLOTTED BY: CAMERON COX      DATE PLOTTED: 3/8/2017 1:58 PM      FILE PATH AND NAME: P:\139-A-2 Chesterton Middle School Proj\A139A2 - M020



- DEMO NOTES**
- D-1** SUH TO BE REMOVED. REMOVE PIPING BACK TO MAIN AT WALL AND CAP.
  - D-2** REMOVE ALL HORIZONTAL SUPPLY DUCT WORK FROM SA OUTLET OF AHU-1 BACK TO THE POOL WALL. CLEAN OUTLET AND PREPARE FOR INSTALLATION OF NEW DUCTWORK.
  - D-3** REMOVE EXISTING RETURN AIR DAMPERS AT O.A. INTAKE DUCT.
  - D-4** REMOVE 36"x12" RETURN DUCT DROP ON POOL ROOM WALL. PAINT AREAS TO MATCH EXISTING POOL ROOM WALL, AS REQUIRED.
  - D-5** REMOVE RETURN DUCT.
  - D-6** REMOVE RETURN DUCT UP TO WHERE IT TIES INTO THE BACK OF AHU-1 AND THE OUTDOOR AIR INTAKE.
  - D-7** REMOVE EXISTING INTAKE O.A. DAMPERS AT ROOF.
  - 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 ROOM.
  - D-10** EXISTING OPENINGS MAY BE REUSED AND RECONFIGURED FOR NEW DUCT INSTALLATION. REFER TO SHEET M2.1. CONTRACTOR TO COORDINATE EXACT SIZING AND LOCATION IN FIELD.
  - D-11** SUPPLY DUCTING ABOVE POOL CEILING TO REMAIN AND BE ABANDONED IN PLACE.



**1** EXISTING SECOND FLOOR PLAN - MECHANICAL  
 1/4" = 1'-0"

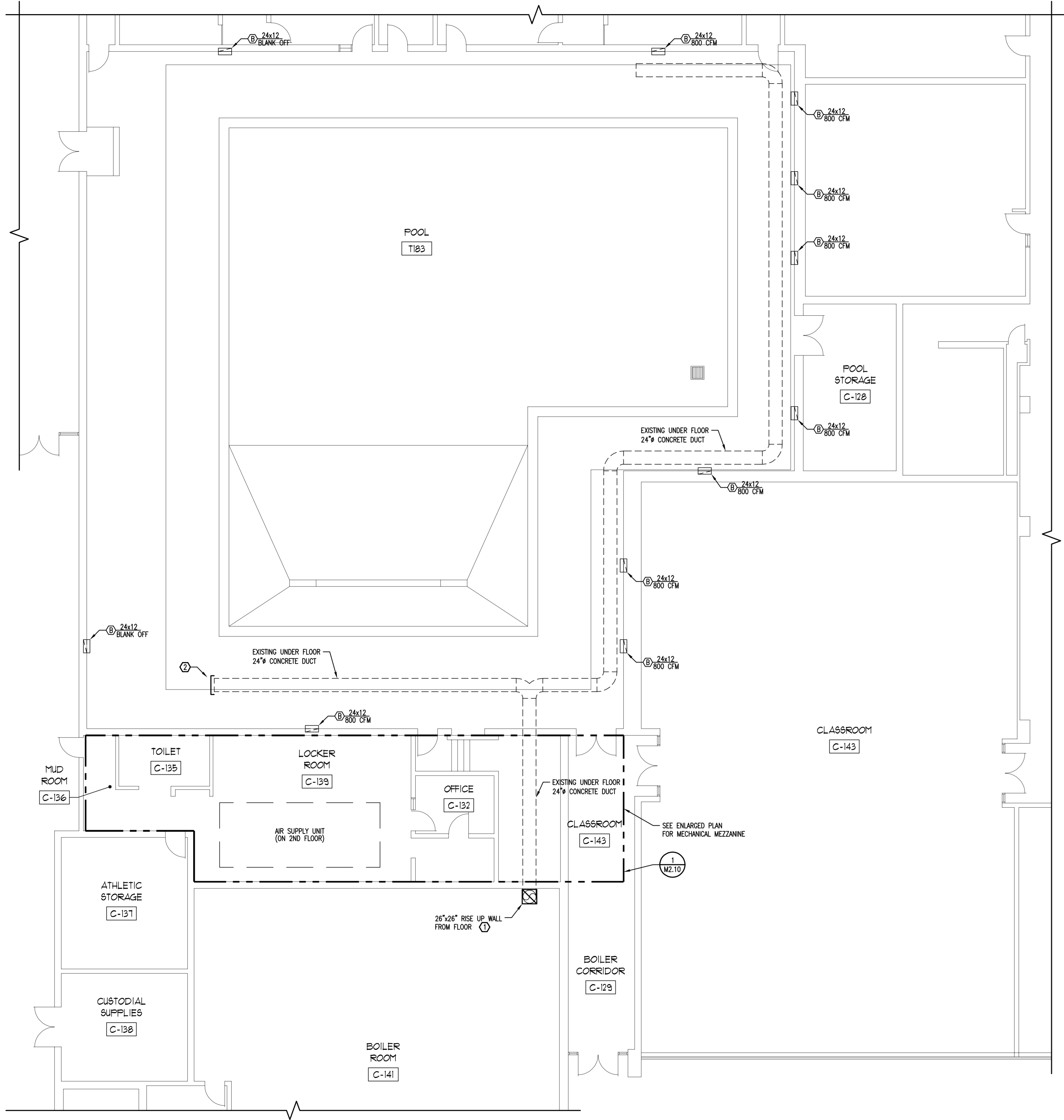


NEPPF COMPLIANT  
 OAS, LLC  
 DESIGN AND ARCHITECTURAL SUSTAINABILITY, LLC  
 1000 W. 10TH AVE., SUITE 200  
 CHESTERTON, IN 46304  
 (765) 395-1000

STRUCTURAL CONSULTANT:  
**E** Larson Engineering, Inc.  
 1000 W. 10TH AVE., SUITE 200  
 CHESTERTON, IN 46304  
 (765) 395-1000

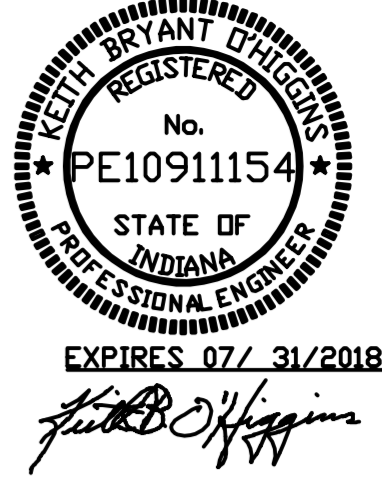
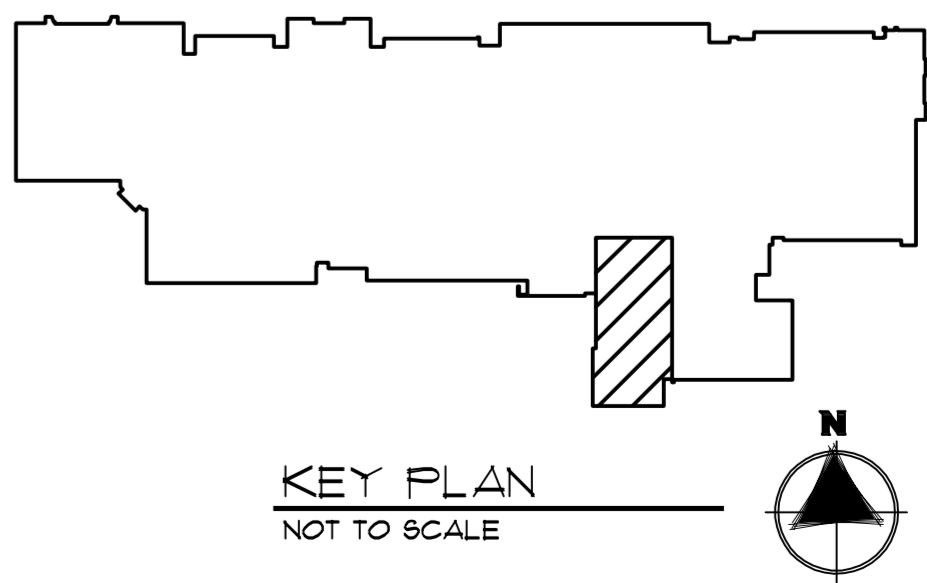
**DUNELAND SCHOOL CORPORATION**  
**2017 RENOVATIONS AT:**  
**CHESTERTON MIDDLE SCHOOL**  
**651 W. MORGAN AVENUE, CHESTERTON, INDIANA 46304**

PROJECT NUMBER:	11-005	REVISIONS:	
PROJECT MANAGER:	LEO		
DRAWN BY:	CC		
BASED FOR BID AND PERMIT:	06/09/2017		
EXISTING SECOND FLOOR PLAN - MECHANICAL			



1 EXHAUST AIR FIRST FLOOR PLAN - MECHANICAL  
 1/8" = 1'-0"

- KEYED NOTES**
- 1 CONNECT NEW 26"x26" RETURN DUCT OVER UNDER FLOOR DUCT OPENING. PROVIDE 2"x3"x3" (ANGLE BRACKET) BASE ALL AROUND BOLTED TO FLOOR AND DUCT. SEAL 2" (ANGLE BRACKET) AT FLOOR AND SEAL DUCT TO 2" (ANGLE BRACKET). SEE DETAIL 8 - M4.1.
  - 2 PROVIDE AIR TIGHT-SEALED CAP AT EXPOSED OPEN END OF 24" CONCRETE DUCT IN LOWER MECHANICAL ROOM/TUNNEL.

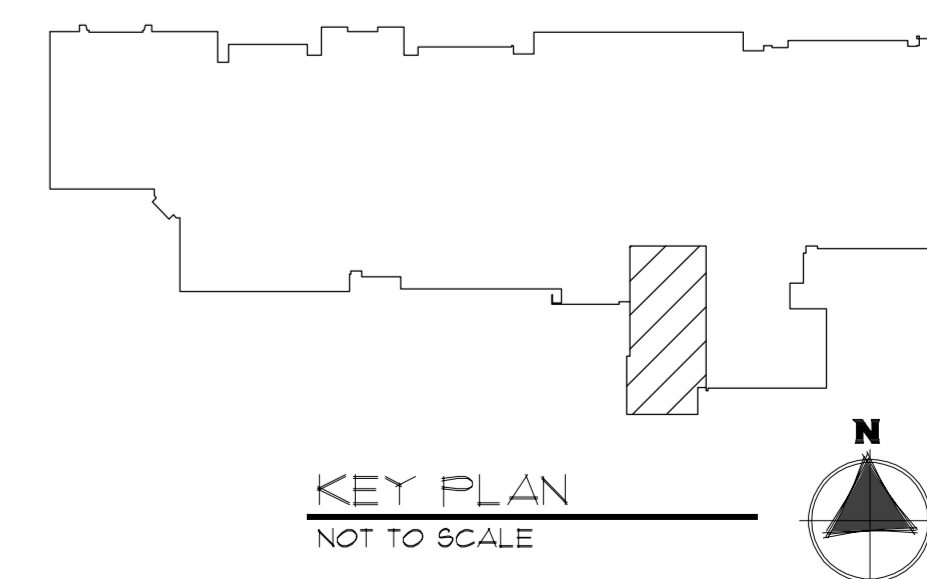


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NEPPF CONSULTING  
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**DUNELAND SCHOOL CORPORATION**  
**2017 RENOVATIONS AT:**  
**CHESTERTON MIDDLE SCHOOL**  
**651 W. MORGAN AVENUE, CHESTERTON, INDIANA 46304**

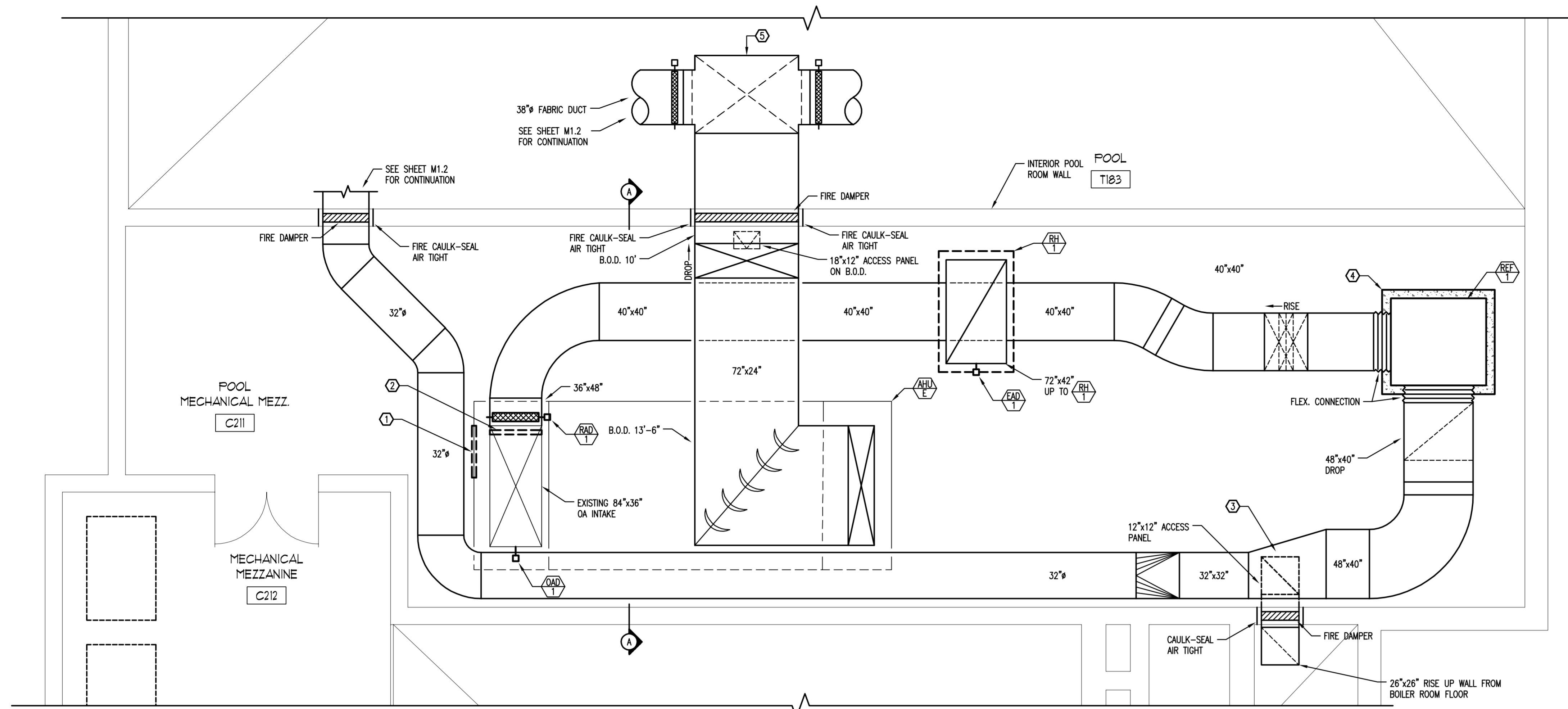
PROJECT NUMBER: 11-009	REVISIONS:
PROJECT CHAIRMAN: CJC	
DRAWN BY:	
DATE FOR BID AND PERMIT: 06/01/2017	
EXHAUST AIR FIRST FLOOR PLAN - MECHANICAL	



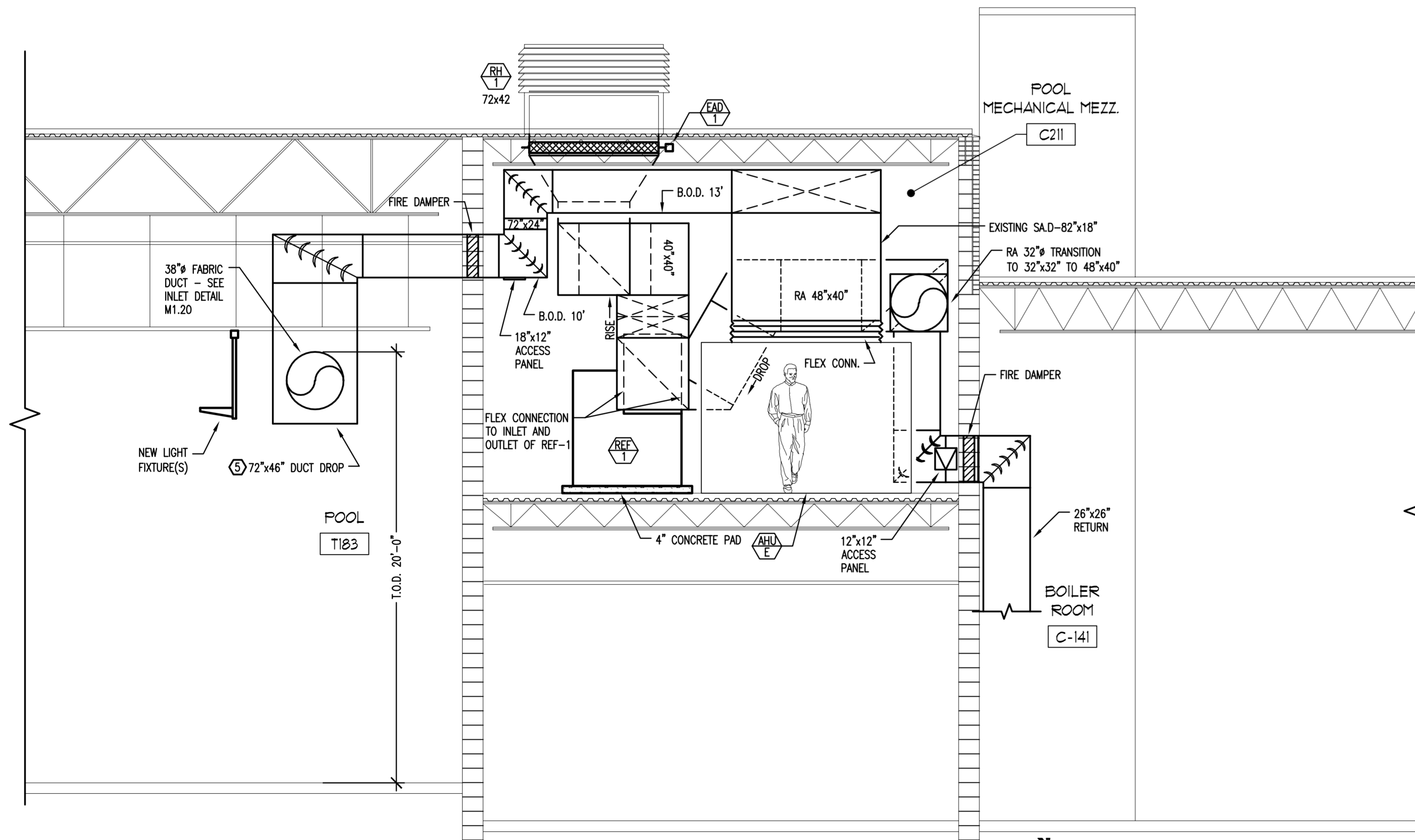
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DATE PLOTTED: 3/8/2017 1:56 PM

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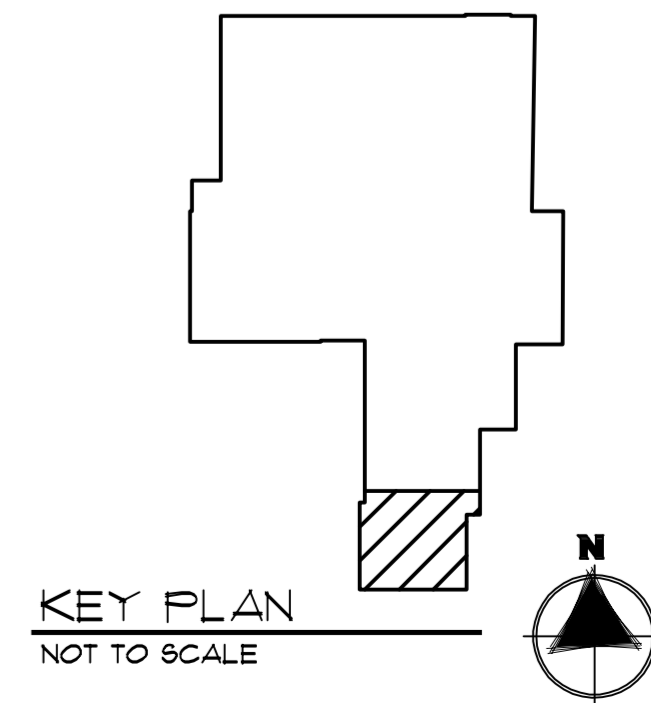
1 POOL MECHANICAL MEZZ. EQUIPMENT ROOM - NEW WORK - MECHANICAL  
1/4" = 1'-0"



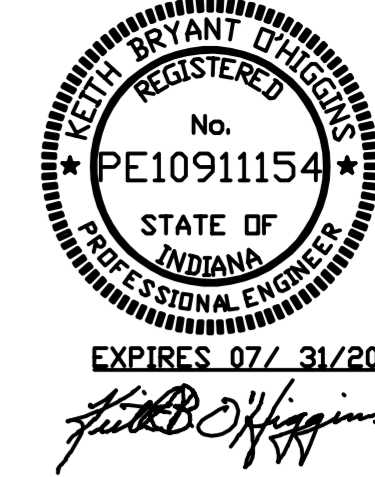
2 POOL MECHANICAL MEZZ. EQUIPMENT ROOM SECTION A-A  
1/4" = 1'-0"



KEYED NOTES	
1	CONTRACTOR TO PATCH APPROXIMATE 36"x36" OPENING O.A.D.
2	CONTRACTOR TO PATCH APPROXIMATE 36"x36" OPENING IN AHU CASING WALL.
3	DUCT TO RISE UP THRU FLOOR AND TIE INTO BOTTOM OF RETURN DUCT TRANSITION.
4	PROVIDE NEW 4" CONCRETE PAD WITH 45° CHAMFERED EDGES. PAD TO BE 6" LARGER, IN ALL DIRECTIONS, THAN NEW FAN.
5	CONTRACTOR TO PROVIDE ADDITIONAL INTERIOR STRUCTURAL SUPPORT ON 72" x 46" DUCT DROP TO PREVENT "OIL CANNING" AND VIBRATION NOISE.



KEY PLAN  
NOT TO SCALE



TRIA  
ARCHITECTURE

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Larson Engineering, Inc.  
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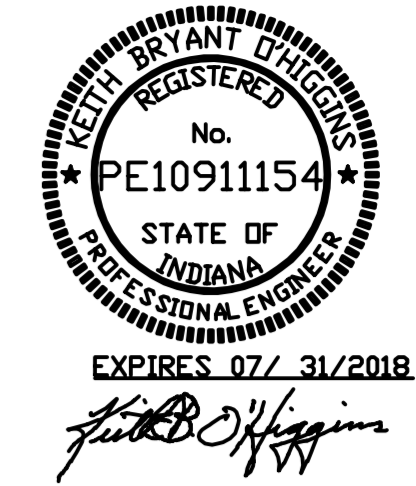
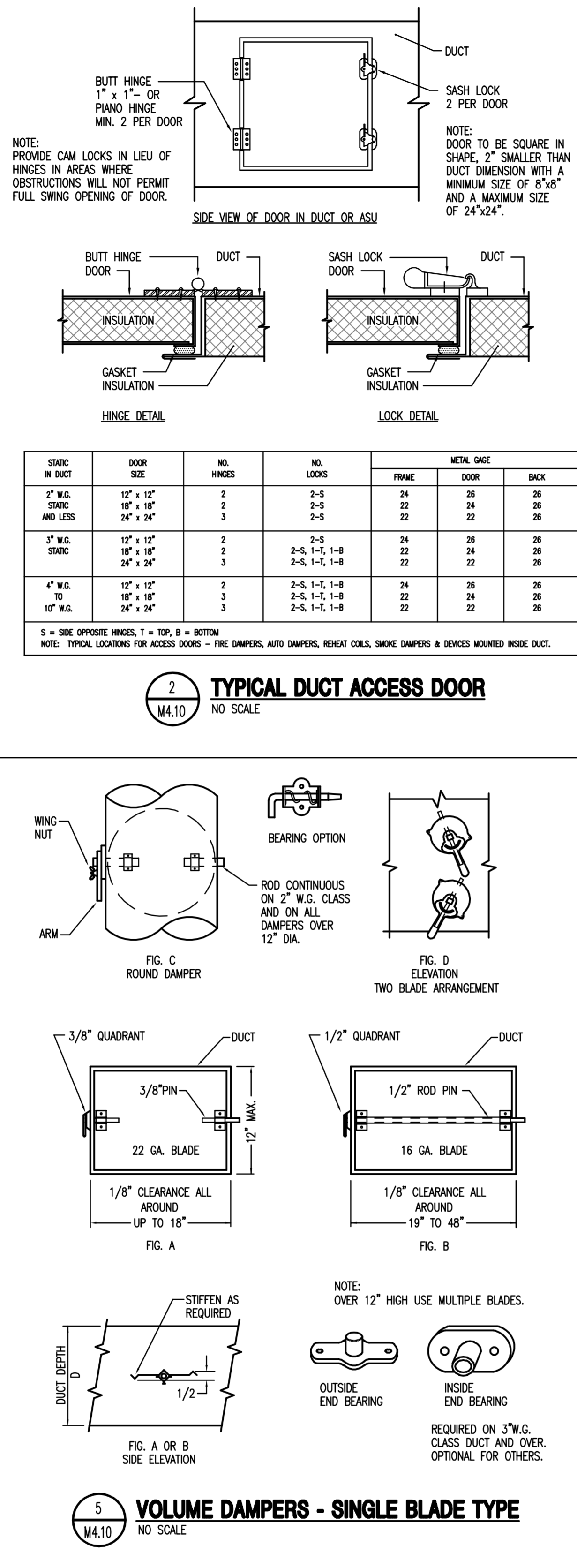
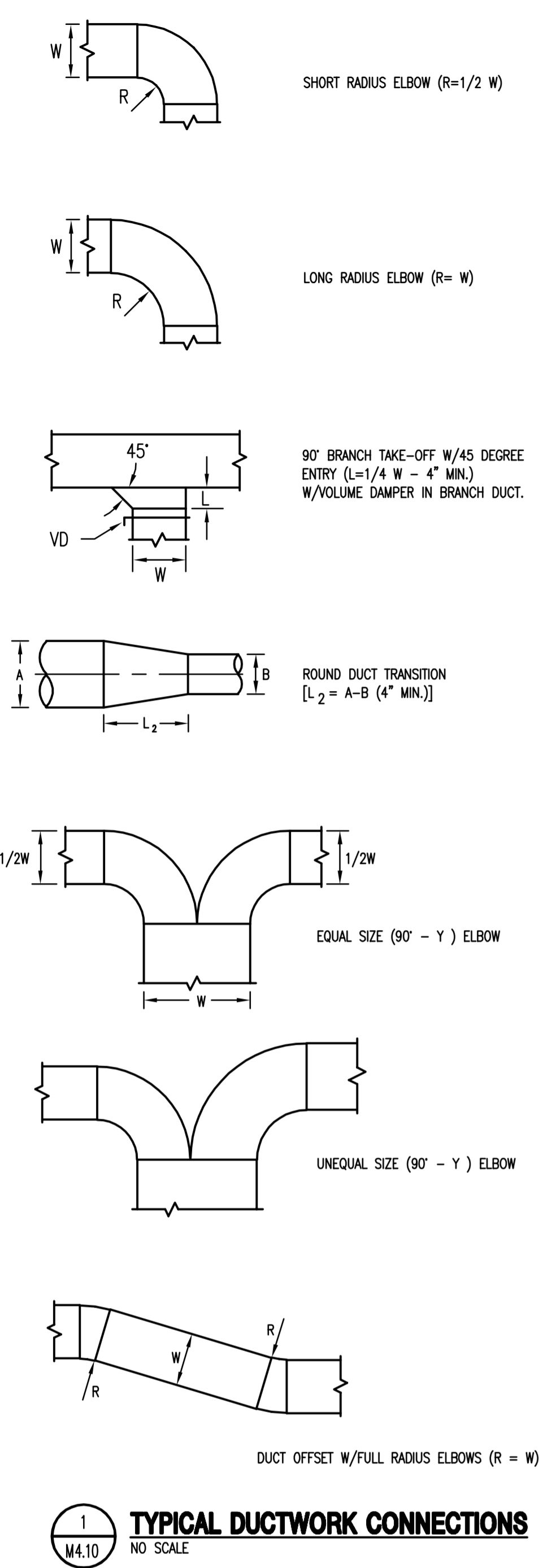
DUNELAND SCHOOL CORPORATION  
2017 RENOVATIONS AT:  
CHESTERTON MIDDLE SCHOOL  
651 W. MORGAN AVENUE, CHESTERTON, INDIANA 46304

REVISIONS	PROJECT NUMBER	DATE	BY	DESCRIPTION
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M2.10

POOL MECHANICAL MEZZ EQUIPMENT ROOM  
SECTION VIEW A-A -  
MECHANICAL





**TRIA**  
ARCHITECTURE

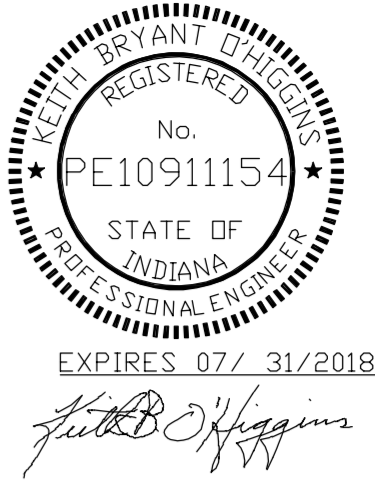
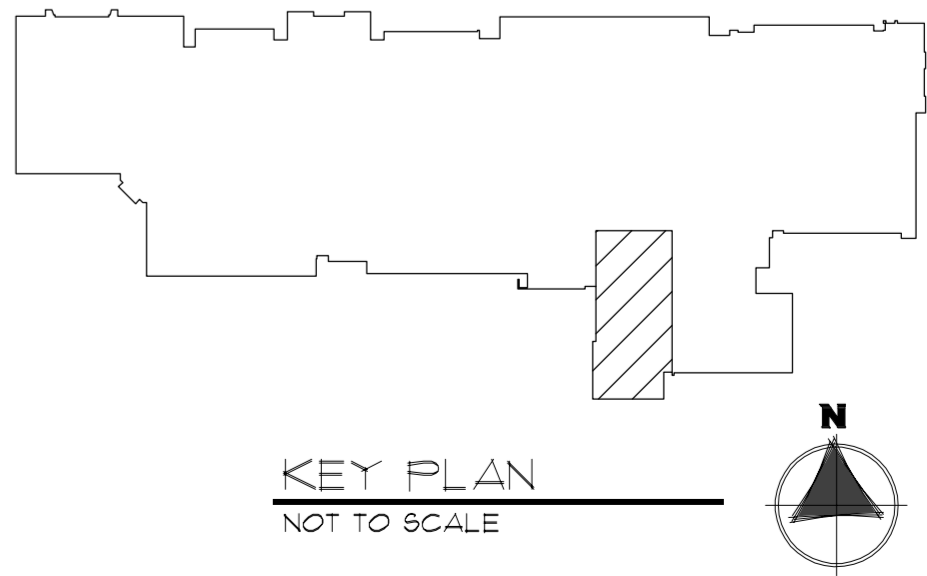
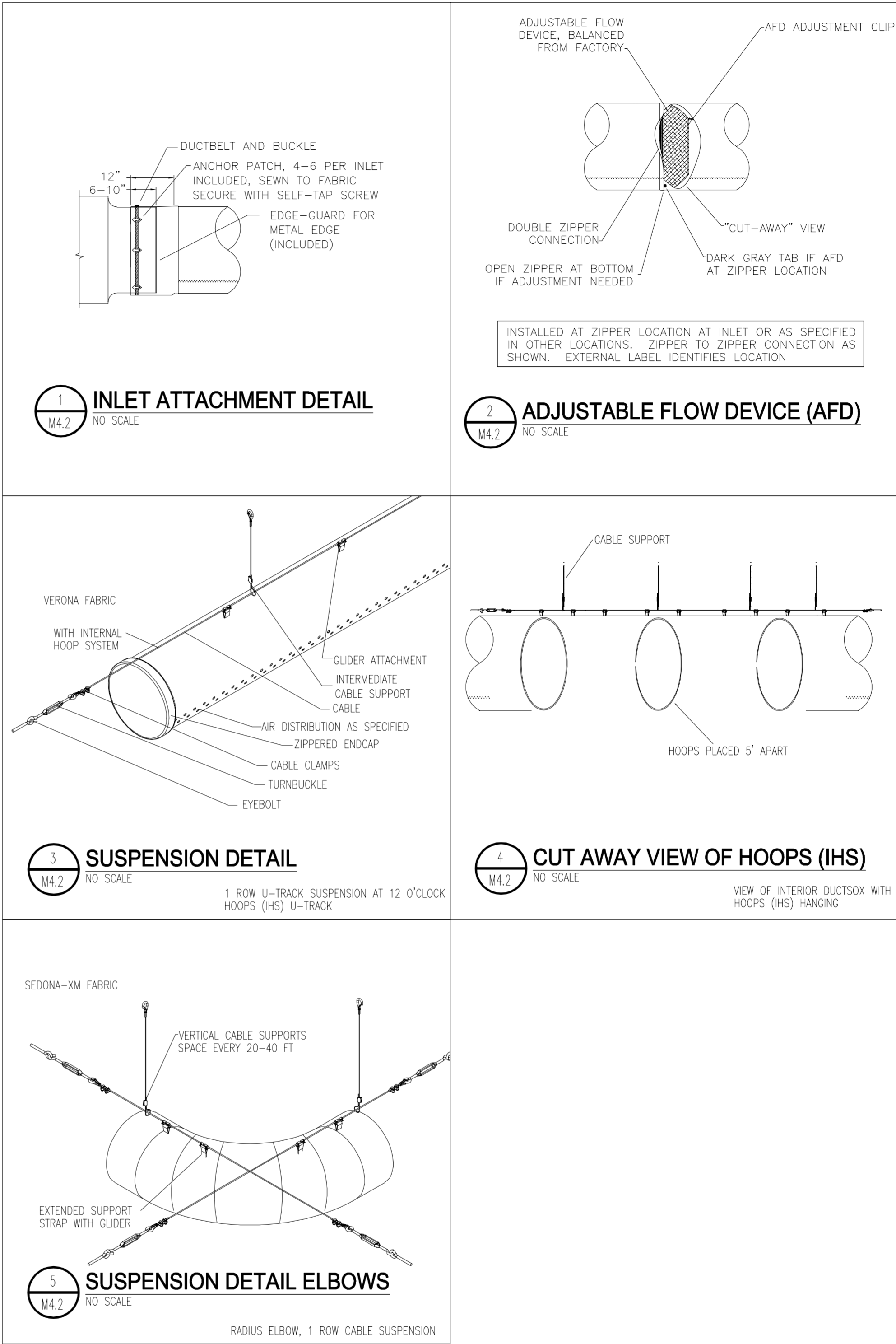
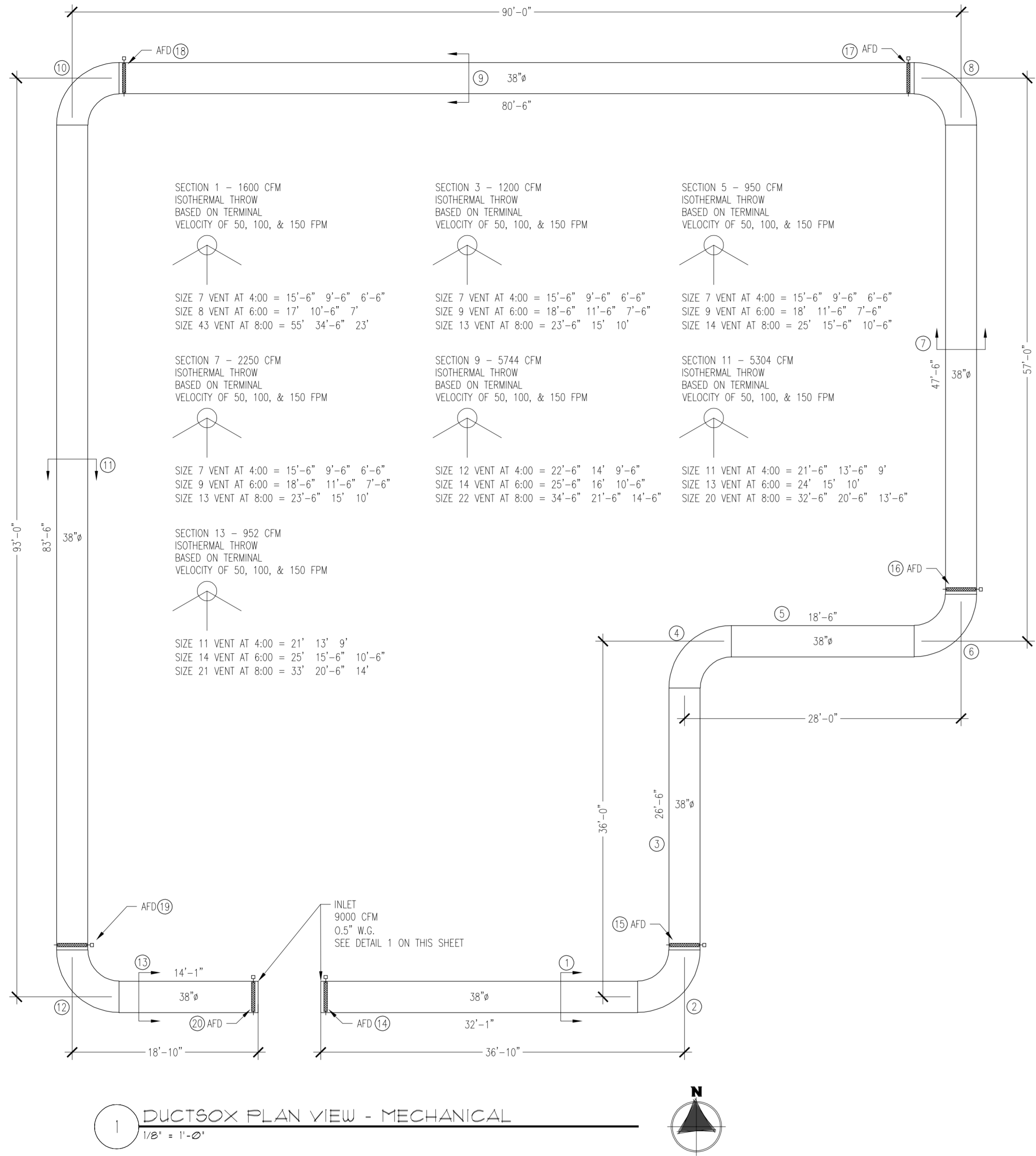
MEP/PE CONSULTANT:  
OAS, LLC  
OWNER AND PROVIDER SUSTAINABILITY, LLC  
10000 N. W. 10th Ave., Suite 1000, Miami, FL 33150  
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STRUCTURAL CONSULTANT:  
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**DUNELAND SCHOOL CORPORATION**  
2017 RENOVATIONS AT:  
CHESTERTON MIDDLE SCHOOL  
651 W. MORGAN AVENUE, CHESTERTON, INDIANA 46304

PROJECT NUMBER:	11-009
PROJECT NAME:	1380
DRAWN BY:	CLC
DATE FOR BID AND PERMIT:	03/09/2017
DETAILS	MECHANICAL

**M4.10**



MEP/FE CONSULTANT  
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 CHESTERLAND AND ADRIANO SUSTAINABILITY, LLC  
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5 Laron Engineering, Inc.  
 5150 LARON BL. SUITE 100  
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**DUNELAND SCHOOL CORPORATION**  
**2017 RENOVATIONS AT:**  
**CHESTERTON MIDDLE SCHOOL**  
**651 W. MORGAN AVENUE, CHESTERTON, INDIANA 46304**

PROJECT NUMBER:	11-009	REVISIONS:	
PROJECT MANAGER:	KEO		
DRAWN BY:	CJC		
BASED FOR BID AND PERMIT:	08/09/2017		
DUCTSOX PLAN VIEW AND DETAILS			
MECHANICAL			

M4.20

	NEW PIPING
	EXISTING TO REMAIN PIPING
	EXISTING TO BE REMOVED PIPING
	MAKE-UP WATER
	NATURAL GAS
	REFRIGERANT DISCHARGE
	REFRIGERANT SUCTION
	REFRIGERANT LIQUID
	HOT/CHILLED WATER SUPPLY
	HOT/CHILLED WATER RETURN
	HOT WATER SUPPLY
	HOT WATER RETURN
	DRAIN LINE
	LINE ARROW INDICATES DIRECTION OF FLOW OR PITCH
	PIPE ELBOW (TURNED UP)
	PIPE ELBOW (TURNED DOWN)
	PIPE TEE DOWN (DROP)
	PIPE TEE UP
	PIPE TEE UP OR ANGLE
	PIPE TEE DOWN OR ANGLE
	PIPE TEE HORIZONTAL
	90° ELBOW IN HORIZONTAL PIPE RUN
	ANGLE ELBOW IN HORIZONTAL PIPE RUN
	NEW CONNECTION
	GATE VALVE
	CHECK VALVE
	BUTTERFLY VALVE
	BALL VALVE
	3 WAY CONTROL VALVE
	2 WAY CONTROL VALVE
	TRIPLE DUTY VALVE
	CIRCUIT BALANCING VALVE W/BALANCING PORTS
	AUTOMATIC FLOW DEVICE
	SQUARE HEAD COCK
	SOLENOID VALVE
	PRESSURE REDUCING VALVE
	DRAIN VALVE WITH 3/4" HOSE THREADED OUTLET
	PRESSURE RELIEF VALVE (PIPE TO FLOOR DRAIN)
	BACKFLOW PREVENTER
	NEEDLE VALVE
	STRAINER
	AUTOMATIC BUTTERFLY VALVE
	PIPE EXPANSION JOINT
	PIPE ANCHOR
	PIPE FLEXIBLE CONNECTION
	PIPE ALIGNMENT GUIDE
	PIPE SLEEVE
	PIPE UNION (OR FLANGES IF 2 1/2" OR LARGER PIPE)
	PRESSURE SWITCH (WITH THREAD OR WELD-O-LET)
	PRESSURE GAUGE AND NEEDLE VALVE
	FLOW SWITCH (WITH THREAD OR WELD-O-LET)
	THERMOMETER (WITH PIPE WELL)
	SENSOR WELL

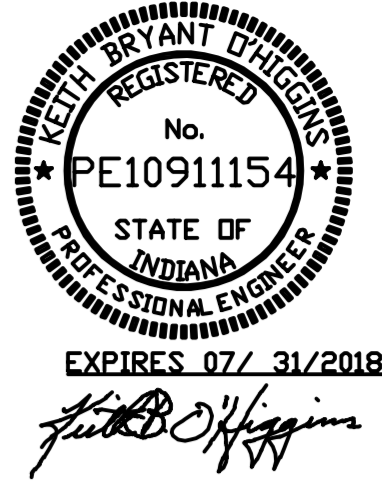
	HUMIDISTAT
	WALL MOUNTED THERMOSTAT/SENSOR
	REVERSE ACTING THERMOSTAT/SENSOR
	SWITCH
	NEW DUCTWORK
	EXISTING TO REMAIN DUCTWORK
	EXISTING TO BE REMOVED DUCTWORK
	FLEXIBLE DUCT CONNECTION
	ACCESS DOOR ON TOP, BOTTOM OR SIDE OF DUCT
	SINGLE BLADE OR OPPOSED BLADE MANUAL VOLUME DAMPER.
	AUTOMATIC CONTROL DAMPER
	EXHAUST DUCT UP TO ROOF MOUNTED EXHAUST FAN OR VENTILATOR.
	SQUARE NECK DROP TO SQUARE DIFFUSER (ARROW SHOWS DIRECTION OF THROW)
	ROUND NECK DROP TO ROUND DIFFUSER (ARROW SHOWS DIRECTION OF THROW)
	ROUND NECK DROP TO SQUARE DIFFUSER (ARROW SHOWS DIRECTION OF THROW)
	VERTICAL FIRE DAMPER OR SMOKE DAMPER (IN HORIZONTAL DUCT AT WALL) WITH ACCESS DOOR.
	AIR SUPPLY FLOW
	EXHAUST OR RETURN AIR FLOW
	WALL OR DUCT MOUNTED SUPPLY REGISTER OR GRILLE (TOP NO. = SIZE OF FACE OR NECK, BOTTOM NO. = AMOUNT OF AIR, LETTER INDICATES TYPE).
	BOTTOM MOUNTED REGISTER OR GRILLE.
	DUCT SIZE FREE AREA (1ST NUMBER IS DUCT WIDTH ON PLAN VIEW, 2ND NUMBER IS DUCT DEPTH IN PLAN VIEW.)
	SUPPLY OR FRESH AIR DUCT UP
	RETURN OR EXHAUST AIR DUCT UP
	SUPPLY OR FRESH AIR DUCT DOWN
	RETURN OR EXHAUST AIR DUCT DOWN

MECHANICAL SYSTEM (HVAC) SYMBOLS

	RISE OR DROP IN SUPPLY DUCT (TOP VIEW) ARROW DIRECTION OF FLOW
	INCLINED RISE (R) OR DROP (D), ARROW IN DIRECTION OF AIR FLOW
	90° ELBOW WITH TURNING VANES
	SHORT RADIUS ELBOW (R=1/2 W)
	LONG RADIUS ELBOW (R= W)
	90° BRANCH TAKE-OFF W/45 DEGREE ENTRY (L=1/4 W - 4" MIN.) W/VOLUME DAMPER IN BRANCH DUCT.
	HEATING COIL WITH ACCESS DOOR IN DUCT
	ROUND FLEXIBLE DUCT
	ROUND OR OVAL DUCT ( ——— INDICATES CENTER LINE OF DUCT)
	ROUND DUCT TRANSITION [L <sub>2</sub> = A-B (4" MIN.)]
	ROUND DUCT UP
	ROUND DUCT DOWN
	CROSS-SECTION OF ROUND DUCT
	UNEQUAL SIZE (90° - Y ) ELBOW
	EQUAL SIZE (90° - Y ) ELBOW
	90° BRANCH TAKE-OFF FROM MAIN
	SQUARE OR RECTANGLE DUCT TRANSITION
	UNEQUAL SIZE (90° - T) ELBOW

	SQUARE OR RECTANGLE TO ROUND DUCT TRANSITION
	DUCT OFFSET W/FULL RADIUS ELBOWS (R = W)
	EQUIPMENT TYPE EQUIPMENT #      EQUIPMENT TAG
	DEMOLITION NOTE TAG REFERENCE NUMBER
	PLAN NOTE TAG REFERENCE NUMBER

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



DUNELAND SCHOOL CORPORATION

2017 RENOVATIONS AT:

CHESTERTON MIDDLE SCHOOL

651 W. MORGAN AVENUE, CHESTERTON, INDIANA 46304



PROJECT NUMBER	11-089
PROJECT NAME	1380
DRAWN BY	CLC
DATE FOR BID AND PERMIT	08/02/2017
SYMBOLS & ABBREVIATIONS	
MECHANICAL	

M5.10

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