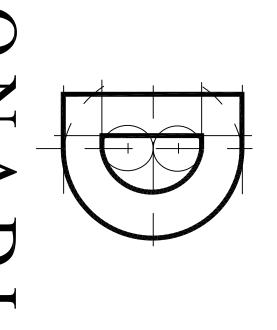
FELLSMERE, FLORIDA

FEBRUARY 13, 2017 BID SET



& Associates, Architects P.A.

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ARCHITECTURAL SYMBOLS

MECHANICAL AND ELECTRICAL ENGINEER

2030 37th Avenue Vero Beach, Florida 32960 Tel.: 772/569-1257 Fax.: 772/569-4041

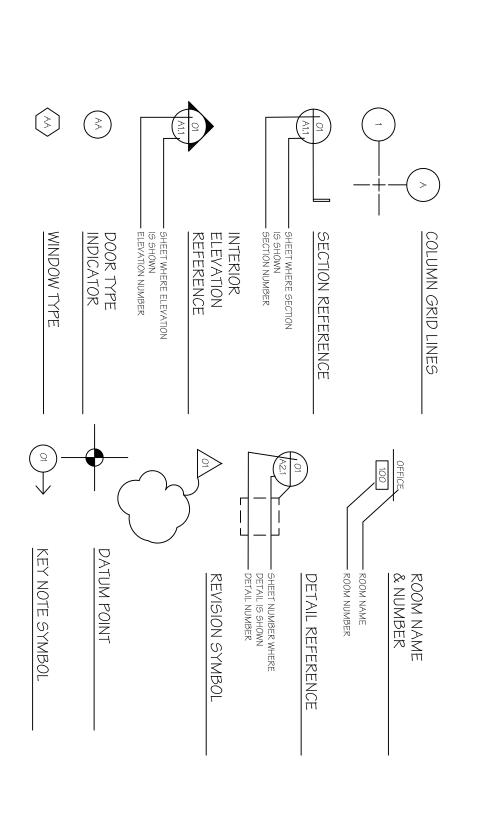
M L ENGINEERING INC.

STRUCTURAL ENGINEER

INGENUITY ENGINEERS, INC.

4798 New Broad Street, Suite 300 Orlando, Florida 32814

Tel.: 407/398-6007 Fax.: 407/398-6003



\boxtimes INDEX OF DRAWINGS ARCHITECTURAL DRAWINGS 1/0 Dwg. No Drawing Name A2.10 A4.20 A0.10 PLANS, ELEVATIONS AND BUILDING SECTION WALL SECTIONS COVER SHEET / INDEX OF DRAWINGS

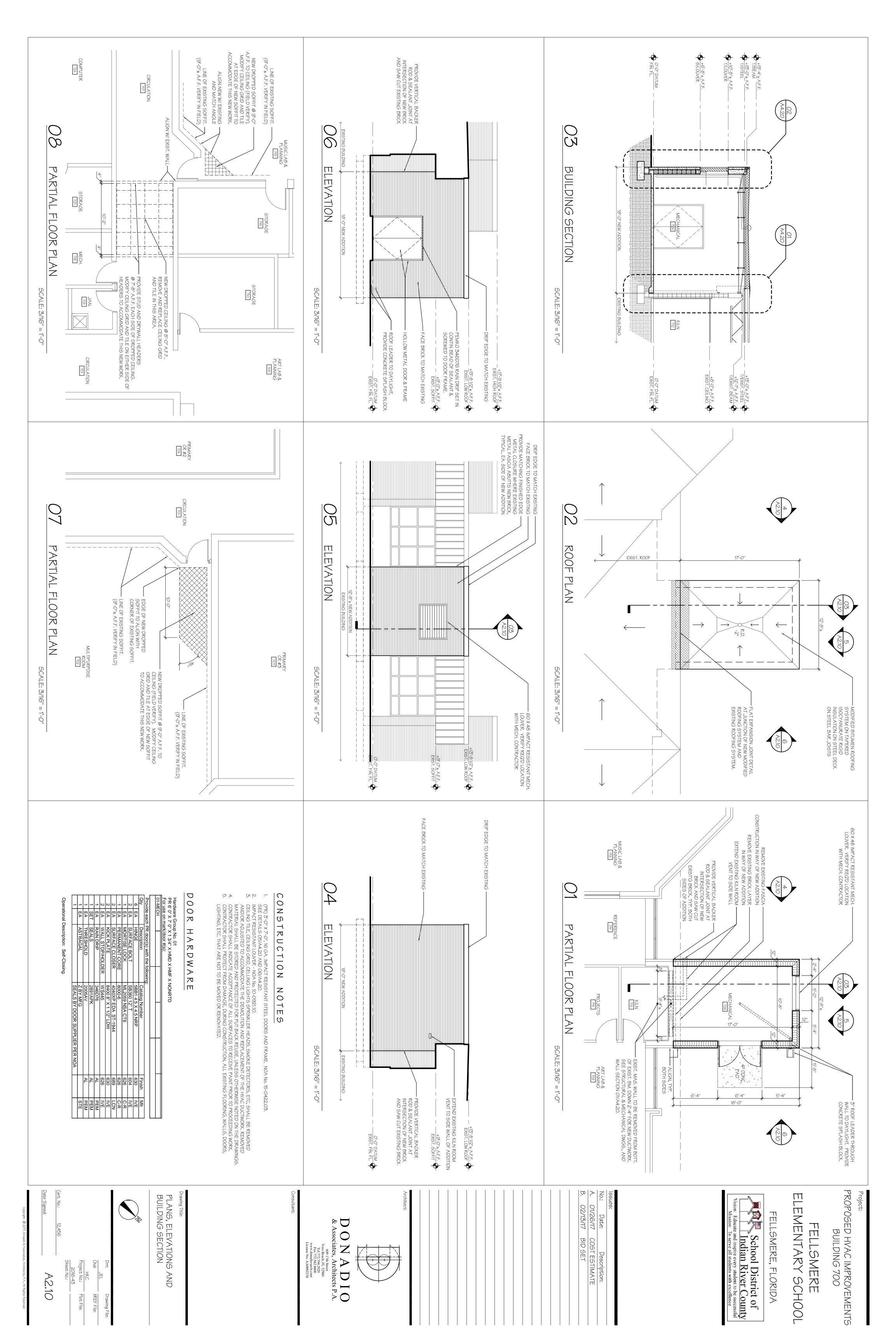
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DRAWIN <i>GS</i>		CTRICAL	ELECTRICAL DRAWINGS
Drawing Name	1/0	Dwg. No	O Dwg. No Drawing Name
PLANS & SPECIFICATIONS		E1.00	ELECTRICAL .
SECTIONS & DETAILS			NOTES & ABI
		E2.00	FLOOR PLAN

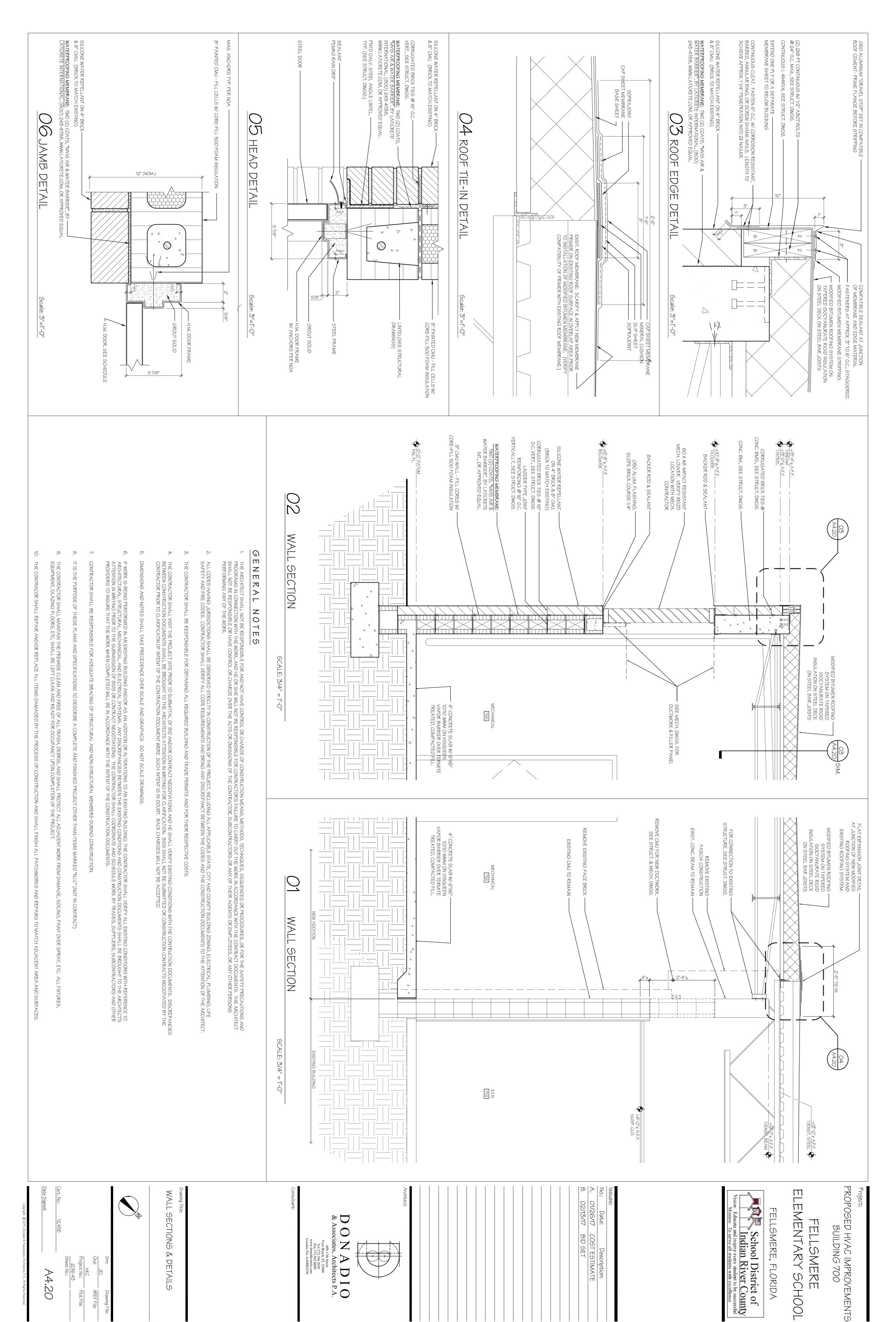
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STRUCTURAL

DRAWINGS

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	P1.00	Dwg. No	PLUMBING DRAWINGS	E2.00		E1.00	Dwg. No	ECTRICAL I	M5.00	M4.00	M3.00	M2.00	M1.00		M0.00	Dwg. No	CHANICAL
NOTES & ABBREVIATIONS	PLUMBING - FLOOR PLAN, LEGEND,	Drawing Name	RAWINGS	FLOOR PLAN - ELECTRICAL	NOTES & ABBREVIATIONS	ELECTRICAL - DEMO, LEGEND,	Drawing Name	ELECTRICAL DRAWINGS	MECHANICAL SEQUENCES	DETAILS - MECHANICAL	DETAILS - MECHANICAL	FLOOR PLAN - MECHANICAL	DEMOLITION PLAN - MECHANICAL	SCHEDULES - MECHANICAL	LEGENDS, ABBREVIATIONS &	Drawing Name	MECHANICAL DRAWINGS



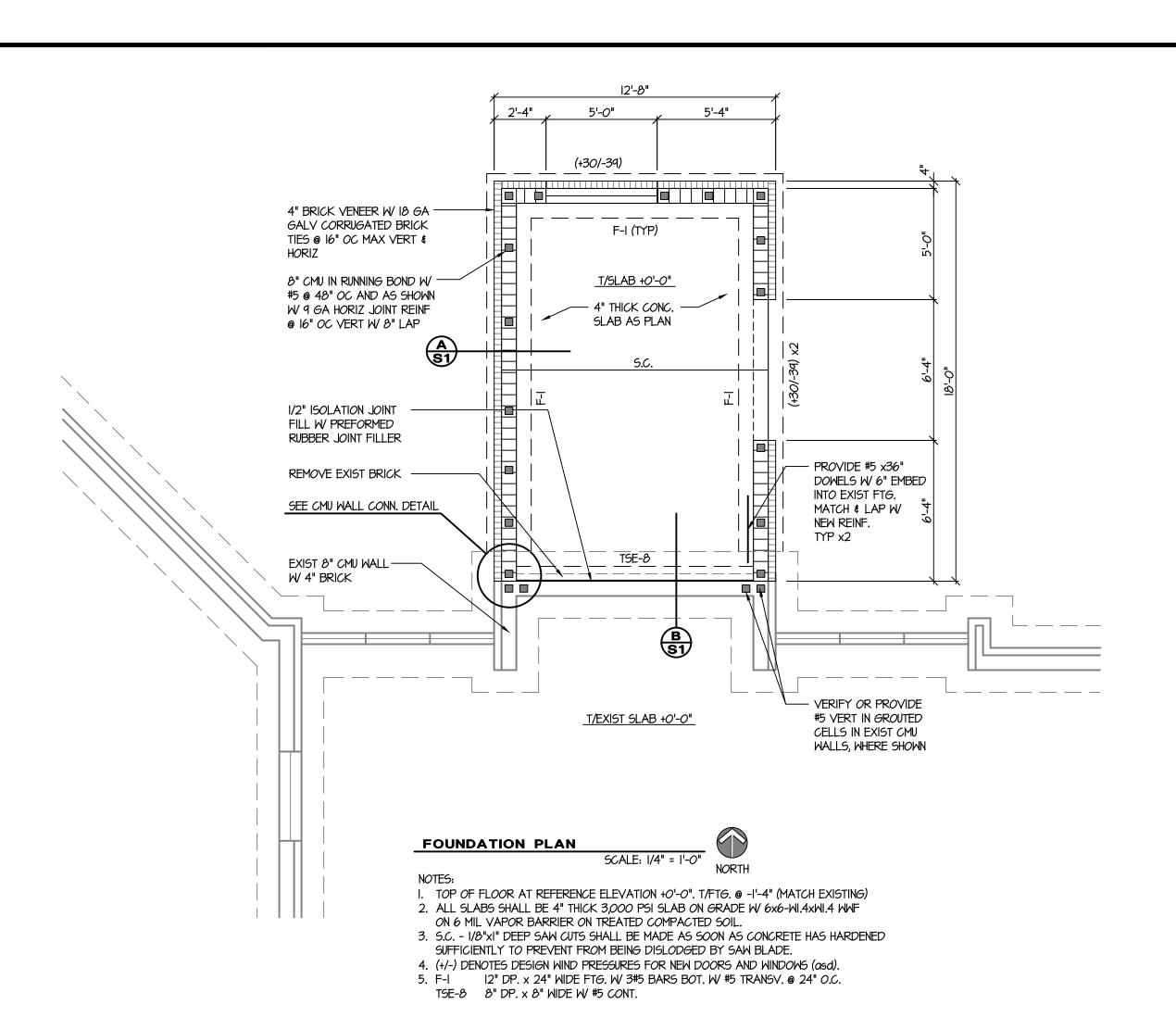


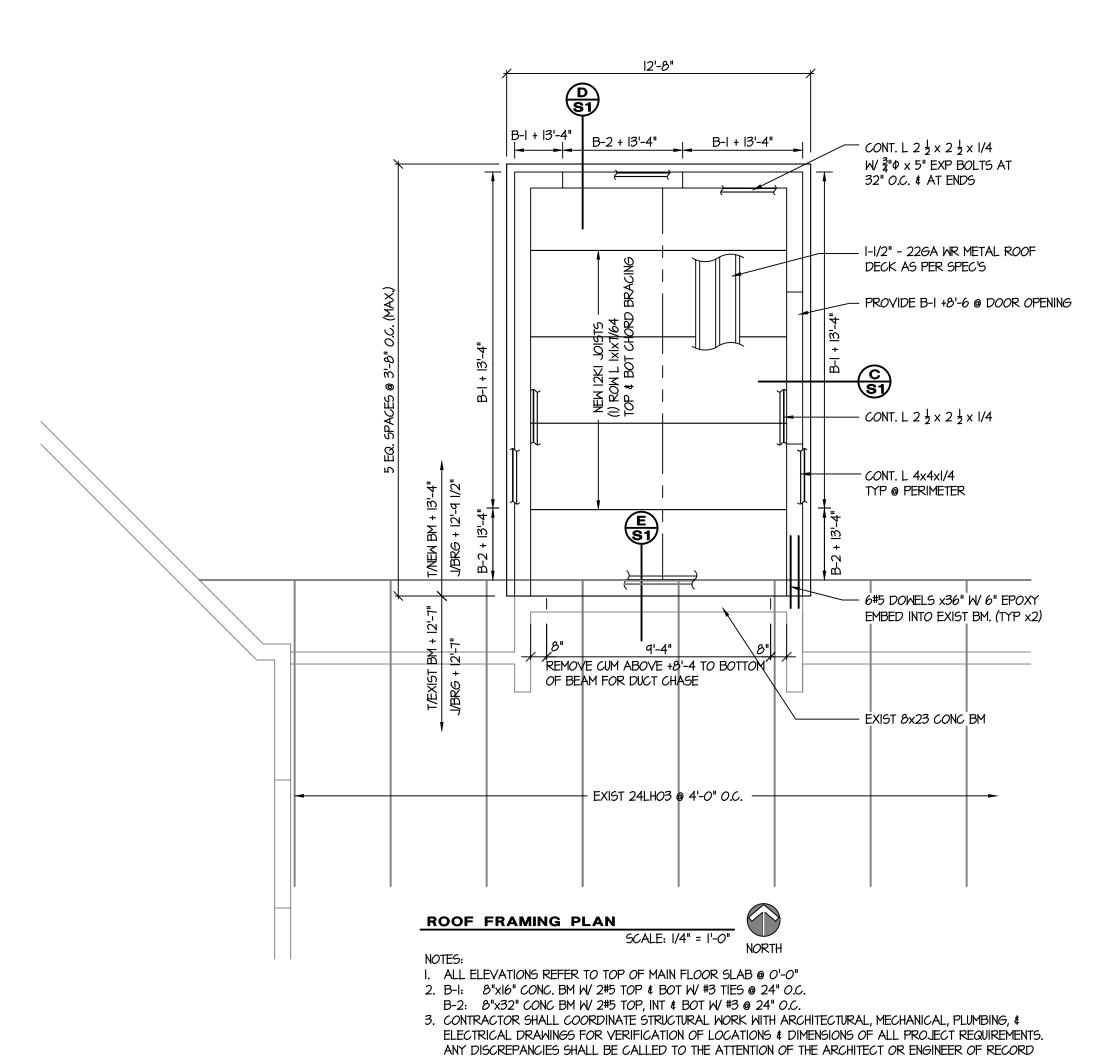
A D I O Architects P.A.

A4.20

Plot File:

XREF File:





BEFORE PROCEEDING WITH WORK.

4. SEE ARCHITECTURAL DRAWINGS FOR ANY DIMENSIONS NOT SHOWN.

DESIGN CRITERIA

FLORIDA BUILDING CODE, 5th EDITION (2014)

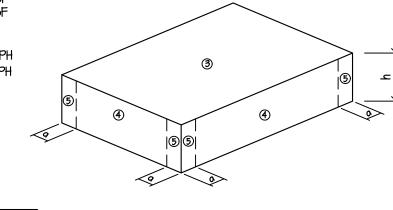
ROOF LOADS

DESIGN CRITERIA PER ASCE 7 ULTIMATE WIND SPEED REGION, V(vit).......

NOMINAL WIND SPEED REGION, V(asd)...... WIND BORNE DEBRIS REGION ENCLOSED STRUCTURE BUILDING HEIGHT FLAT < 7

ROOF PITCH RISK CATEGORY INTERNAL PRESSURE COEFF. ± 0.18 **EXPOSURE**

HEIGHT & EXPOSURE COEFF.



OMINAL	COMP	ONENT	& CL	ADDING	PRES	SURES	PSF	(ASD)	
ZONE			EFFE	CTIVE A	AREA (5Q. FT)	l		
ZONE	0 <	10	<	20	21 <	50	51 •	100	
_	+13	-31	+12	-31	+	-29	+10	-29	
2	+13	-53	+12	-47	+	-40	+10	-34	
3	+13	-79	+12	-66	+	-48	+10	-34	
4	+31	-34	+30	-33	+28	-31	+27	-29	
5	+31	-42	+30	-39	+28	-36	+27	-33	
4	-3	4	-33	3	-31		-29		
5	-4:	2	-39	1	-36	ó	-33		

	ZONES	NET UPLIFT ON ROOF BAR JOISTS (ASD)
	\bigcirc	-17 PSF
	2	-22 PSF
	(3)	-22 PSF
_		

END ZONE 5 IS WITHIN A DISTANCE OF (a) = 6 FT FROM BUILDING CORNERS.

SCOPE OF WORK

I. SCOPE OF WORK IS LIMITED TO THE ADDITION OF MECHANICAL ROOM AS SHOWN IN PLAN.

STRUCTURAL NOTES

I. CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO

CONSTRUCTION. 2. ALL CONSTRUCTION SHALL BE BRACED AND SHORED BY THE CONTRACTOR AS REQUIRED TO SAFELY PERFORM THE WORK.

3. ALL DOORS AND HARDWARE MUST BE DESIGNED AND CERTIFIED TO WITHSTAND THE DESIGN WIND PRESSURES AS NOTED IN THIS DOCUMENT & SHALL BE IMPACT RESISTANT OR PROTECTED WITH IMPACT RESISTANT COVERING MATERIAL AS REQUIRED BY THE FLORIDA BUILDING CODE.

4. THE MINIMUM STRUCTURAL SUBMITTALS SHALL BE AS PER SPEC'S AND AS FOLLOWS:

- a. CONCRETE MIX DESIGNS
- b. MASONRY & ACCESSORIES
- c. REINFORCEMENT d. STRUCTURAL STEEL

e. STEEL JOISTS

- SIGNED & SEALED
- f. METAL ROOF DECK

CONCRETE

- I. CONCRETE WORK SHALL BE IN ACCORDANCE WITH A.C.I. 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS" LATEST EDITION AND A.C.I. 318 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE.
- 2. CONCRETE STRENGTH SHALL BE A MINIMUM OF 3,000 PSI AT 28 DAYS, WITH 3/4" MAXIMUM AGGREGATE SLUMP 5" ± 1".
- 3. REINFORCING STEEL SHALL BE IN ACCORDANCE WITH ASTM A615 GRADE 60. 4. WELDED WIRE FABRIC SHALL BE IN ACCORDANCE WITH ASTM AI85 AND SHALL BE ADEQUATELY SUPPORTED AT 3'-0 O.C.
- EACH WAY. 5. THE MINIMUM CONCRETE COVERAGES SHALL BE AS FOLLOWS:

CAST AGAINST EARTH 3 INS

EXPOSED TO WEATHER I 1/2 INS

6. PROVIDE 90 DEGREE LAP SPLICES AT ALL INTERSECTIONS. 7. REINFORCING SHALL BE LAPPED SPLICED AND TIED WITH THE FOLLOWING MINIMUM:

#4 24 INS

#5 30 INS

#6 36 INS 8. CONCRETE SHALL BE TESTED IN ACCORDANCE WITH ASTM C39. A MINIMUM OF (5) TEST CYLINDERS SHALL BE TAKEN FOR EACH 100 CU YDS OF POUR, WITH ADDITIONAL SETS FOR EVERY 50 CU YDS OF POUR.

CYLINDERS SHALL BE TESTED AS FOLLOWS: l@3DAYS

I @ 7 DAYS 2 @ 28 DAYS

I @ 56 DAYS (IF THE MINIMUM STRENGTH IS NOT MET IN 28 DAYS)

9. CONTRACTOR SHALL PROVIDE SAW CUTS IN SLABS AT A MAXIMUM SPACING OF 20 FT ON CENTER EACH WAY OR 400 SQ. FT. AND AT ALL RE-ENTRANT CORNERS. SAW CUTS SHALL BE 1/4 THE SLAB DEPTH AND SHALL BE PERFORMED AS SOON AS THE CONCRETE HAS HARDENED SUFFICIENTLY TO PREVENT THE AGGREGATE FROM BEING DISLODGED BY THE SAW BLADE. THIS IS AN EFFORT TO CONTROL THE SHRINKAGE STRESSES AN INHERENT PROPERTY OF CONCRETE WHICH SOMETIMES RESULTS IN CRACKS, WHICH IS NOT UNCOMMON.

MASONRY

I. CONCRETE MASONRY WORK SHALL BE IN ACCORDANCE WITH ACI 530.I/ASCE 6/TMS 602, SPECIFICATION FOR CONCRETE

MASONRY STRUCTURES AND ACI 530/ASCE 5/TMS 402, BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES. 2. CONCRETE MASONRY UNITS SHALL BE IN CONFORMANCE WITH ASTM C90, GRADE N, TYPE II. MASONRY UNITS SHALL BE

TESTED IN ACCORDANCE WITH ASTM CI40 AND SHALL HAVE A MINIMUM F'm = 1900 PSI.

3. GROUT SHALL BE IN CONFORMANCE WITH ASTM C476, COARSE TYPE SLUMP 9" TO II".

4. MORTAR SHALL BE IN ACCORDANCE WITH ASTM C270, TYPE S.

5. PROVIDE CLEANOUTS FOR ALL GROUTED CONSTRUCTION AND LIMIT MORTAR PROTRUSIONS TO 1/2" MAXIMUM IN GROUTED

6. ALL MASONRY WALLS SHALL BE CONSTRUCTED IN RUNNING BOND WITH 9 GA. LADDER TYPE JOINT REINFORCING SPACED 16" O.C. VERTICALLY. LAP AT ALL CORNERS AND 8" MINIMUM.

7. PROVIDE GALVANIZED STEEL LINTEL ANGLES TO SUPPORT BRICK VENEER AT ALL MASONRY OPENINGS WITH A MINIMUM OF 4 INCH BEARING BEYOND OPENINGS EACH JAMB.

STRUCTURAL STEEL

I. STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH A.I.S.C. "SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS", LATEST EDITION.

2. STRUCTURAL STEEL GRADES SHALL BE AS FOLLOWS:

PLATES & ANGLES ASTM A36 FY = 36 KSI 3. STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH THE A.I.S.C. "CODE OF STANDARD PRACTICE", LATEST EDITION. 4. WELDING OF STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH A.W.S. DI.I WITH ETOXX ELECTRODES. FILLET WELDS SHALL

BE MIN. &" UNLESS NOTED OTHERWISE. 5. HIGH STRENGTH BOLTS SHALL BE IN ACCORDANCE WITH ASTM A325 AND SHALL BE DESIGNED AS BEARING TYPE CONNECTIONS WITH THREADS EXCLUDED FROM THE SHEAR PLANE.

6. ANCHOR BOLTS SHALL BE IN ACCORDANCE WITH ASTM A307. 7. ALL MEMBERS SHALL BE POWER TOOL CLEANED AND PAINTED WITH A RUST INHIBITIVE SHOP PRIMER WITH A MINIMUM

THICKNESS OF 1.5 MILS. 8. ALL FIELD WELDS SHALL BE WIRE BRUSH CLEANED AND PRIMED WITH A RUST INHIBITOR.

9. STEEL LINTEL ANGLES SHALL BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A185.

STEEL JOISTS

I. STEEL JOISTS SHALL BE DESIGNED FABRICATED AND ERECTED IN ACCORDANCE WITH S.J.I. "STANDARD SPECIFICATIONS FOR OPEN WEB STEEL JOISTS, K-SERIES", LATEST EDITION.

2. STEEL JOISTS SHALL BE DESIGNED BY A FLORIDA REGISTERED ENGINEER, AND SIGNED AND SEALED CALCULATIONS AND SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR APPROVAL.

3. STEEL JOISTS & BRIDGING SHALL BE IN ACCORDANCE WITH THE S.J.I. "RECOMMENDED CODE OF STANDARD PRACTICE FOR STEEL JOISTS AND JOIST GIRDERS", LATEST EDITION.

4. WELDING OF STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH A.W.S. DI.I WITH ETOXX ELECTRODES. FILLET WELDS SHALL

BE MIN. 3/16" UNLESS NOTED OTHERWISE. 5. STEEL JOISTS SHALL BE CLEANED AND PAINTED WITH A GRAY RUST INHIBITIVE PRIMER A MINIMUM OF 1.5 MILS.

METAL DECK

I. METAL FORM DECK SHALL BE I I/2"-22 GA WIDE RIB GALVANIZED PAINTED NON-VENTED DECK AS PER PLAN WITH A MINIMUM OF 3 SPANS CONDITION.

2. WELDING OF METAL ROOF DECK SHALL BE IN ACCORDANCE WITH A.W.S. DI.3 WITH ETOXX ELECTRODES USING A MINIMUM OF

5/8"¢ PUDDLE WELDS. 3. METAL ROOF DECK SHALL BE ATTACHED TO THE SUPPORTING STRUCTURE AS FOLLOWS:

STRUCTURAL STEEL & JOISTS (5) 5/8" PUDDLE WELDS PER SHEET PER SUPPORT & WITH (2) #10 SIDE LAP SCREWS @ 3RD POINTS

PROVIDE 5/8" PUDDLE WELDS @ 12" O.C. (TYP @ PERIMETERS)

4. METAL ROOF SHALL BE IN ACCORDANCE WITH S.D.I. (STEEL DECK INSTITUTE) SPECIFICATIONS AND COMMENTARY FOR STEEL ROOF DECK AS CONTAINED IN THE S.D.I. DESIGN MANUAL FOR COMPOSITE DECKS, FORM DECKS, AND ROOF DECKS, S.D.I. PUBLICATION NO. 25, LATEST EDITION. ATTACHMENT AND DIAPHRAGM DESIGN SHALL BE IN ACCORDANCE WITH S.D.I. DIAPHRAGM DESIGN, LATEST EDITION.

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AC IMPROVEMENTS FOR:
ELEMENTARY SCHOOL
PRESS STREET
FELLSM

PROPOSED HY FELLSMERE 50 NORTH CY

REVISIONS:

1 CONST ESTIMATE 1/13/17 2 BID SET 2/13/17

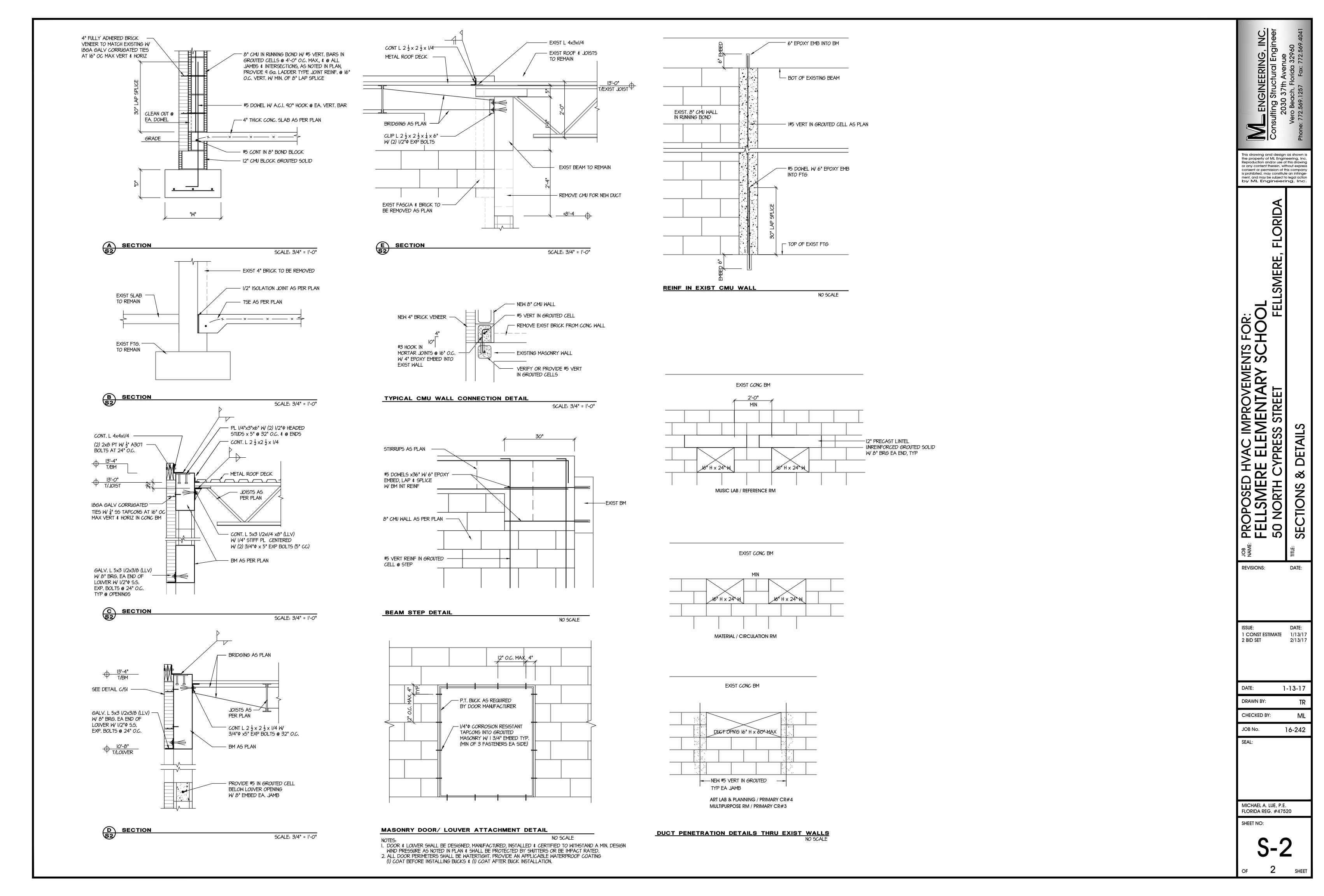
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CHECKED BY: JOB No. 16-242

SEAL:

MICHAEL A. LUE, P.E. FLORIDA REG. #47520

SHEET NO:



		MECHAN	IICAL LEGEND		
	SUPPLY DIFFUSER. (4-WAY)	<u>A–100</u>	AIR DEVICE TAG	 -	TEE (PLAN, UP, DOWN).
			MARK-CFM	_ ~ ~	ELBOW (PLAN, UP, DOWN).
	RETURN OR OUTDOOR AIR GRILLE		SIDEWALL TRANSFER GRILLE	 \text{\rms}	VALVE.
	EXHAUST GRILLE		SIDEWALL SUPPLY REGISTER	7 7	TWO WAY MOTORIZED CONTROL VALVE.
	SUPPLY DUCT UP SECTION (RECTANGULAR)	$\vec{\square}$	SIDEWALL RETURN GRILLE		THREE WAY MOTORIZED CONTROL VALVE.
	RETURN DUCT UP SECTION (RECTANGULAR)		SIDEWALL EXHAUST GRILLE	—————————————————————————————————————	PRESSURE REDUCING VALVE.
	EXHAUST DUCT UP SECTION (RECTANGULAR)		SIDEWALL FRESH AIR INTAKE OR EXHAUST LOUVER		FLOW CONTROL VALVE. BALL VALVE FOR PIPING 2—INCHES AND SMALLER,
	SUPPLY DUCT DOWN SECTION (RECTANGULAR)	(\$)	WALL MOUNTED DDC TEMPERATURE/HUMIDITY SENSOR MOUNT 5'-0" ABOVE FINISHED FLOOR.	─ Ó ─	BUTTERFLY VALVE FOR PIPING 2-1/2 INCHES AND LARGER.
	RETURN DUCT DOWN SECTION (RECTANGULAR)	P	PRESSURE SENSOR MOUNT 5'-O" ABOVE FINISHED FLOOR.	──	CHECK VALVE.
	EXHAUST DUCT DOWN SECTION (RECTANGULAR)	©	WALL MOUNTED CO SENSOR MOUNT 5'-O" ABOVE FINISHED FLOOR.		STRAINER. BALANCE VALVE WITH INTEGRAL TAPS FOR CONNECTION OF DIFFERENTIAL PRESSURE METER. VALVE SHALL
	EXTROST BOOK SECTION (RECTANGUELAR)	<u>@</u>	WALL MOUNTED CO2 SENSOR MOUNT 5'-O" ABOVE FINISHED FLOOR.		OF DIFFERENTIAL PRESSURE METER. VALVE SHALL HAVE NAMEPLATE INDICATING WATER FLOW RATE VERSUS VALVE PRESSURE DROP.
	SUPPLY DUCT UP SECTION (ROUND).	$\langle \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \!$	REFERENCE NOTES	——————————————————————————————————————	AUTOMATIC FLOW CONTROL VALVE WITH INTEGRAL TEMPERATURE AND PRESSURE TEST PORTS.
	SUPPLY DUCT DOWN SECTION (ROUND).	\otimes	REFERENCE NOTE - MULTI-DISCIPLINE SHEETS	——————————————————————————————————————	UNION.
	LINEAR SLOT DIFFUSER	\otimes	DEMOLITION NOTES		VENTURI FLOW METER.
	EXISTING LINEAR SLOT DIFFUSER	•	INDICATES POINT OF CONNECTION BETWEEN NEW AND EXISTING.		PRESSURE AND/OR TEMPERATURE PORT
A/B	RECTANGULAR DUCTWORK WITH TAKE-OFF, BALANCING DAMPER AND INSULATED FLEXIBLE ROUND DUCT. SAME		POINT OF DISCONNECT		THERMOMETER.
	SIZE AS DIFFUSER INLET UNLESS NOTED OTHERWISE. FIRST DIMENSION IS THAT OF SIDE SHOWN.	CWS	CONDENSER WATER SUPPLY PIPING.		PRESSURE GAUGE WITH GAUGE COCK.
† A Ø †	ROUND DUCTWORK. CONICAL FITTING WITH DAMPER ON BRANCH	CWR	CONDENSER WATER RETURN PIPING.		ELEVIDLE CONNECTION
† <u>†</u>	CONNECTION TO RECTANGULAR MAIN (PROVIDE DAMPER IN LOW PRESSURE DUCTWORK ONLY).	——— BCWS———	BUILDING CONDENSER WATER SUPPLY PIPING.	—— ₩	FLEXIBLE CONNECTION. PRESSURE RELIEF VALVE.
	EXISTING DUCTWORK TO REMAIN	BCWR	BUILDING CONDENSER WATER RETURN PIPING.		PRESSURE RELIEF VALVE.
R	DUCT OFFSETS UP (RISE) IN DIRECTION INDICATED.	CHWS	CHILLED WATER SUPPLY PIPING.	M	MOTORIZED ACTUATOR
D D	DUCT OFFSETS DOWN (DROP) IN DIRECTION INDICATED.	CHWR	CHILLED WATER RETURN PIPING.		OPENING IN WALL ABOVE CEILING.
	OPPOSED BLADE VOLUME DAMPER (OBD).	——— HWS ———	HEATING WATER SUPPLY PIPING.	EQUIPMENT TYPE MARK	EQUIPMENT TAG
	BACKDRAFT DAMPER	——————————————————————————————————————	HEATING WATER RETURN PIPING. CONDENSATE DRAIN PIPING.	✓ UC	1" DOOR UNDER CUT. ARROW INDICATES DIRECTION OF FLOW
	FLEXIBLE DUCT CONNECTION.	R	REFRIGERANT PIPING	Τ*Τ	
·	FIRE DAMPER WITH ACCESS PANEL.	FS	FLOW SENSOR.		ELBOW WITH TURNING VANES
	SMOKE DAMPER WITH ACCESS PANEL.	SP	STATIC PRESSURE TRANSMITTER ASSEMBLY.	AB	IDENTIFICATION TARGET. A = DETAIL NUMBER. B = SHEET NUMBER ON WHICH DETAIL IS LOCATED.
V	FIRE/SMOKE DAMPER WITH ACCESS PANEL.		RECTANGULAR BRANCH DUCT CONNECTION.		RADIATION DAMPER INSTALLED IN AIR DEVICE
	EXISTING DUCTWORK TO BE REMOVED	L=1/4W, 45° W			RADIATION DAMPER INSTALLED IN DUCT.
	DUCT MOUNTED SMOKE DETECTOR PROVIDED AND WIRED BY ELECTRICAL CONTRACTOR AND INSTALLED IN DUCT BY MECHANICAL CONTRACTOR. REFER TO SPECIFICATIONS FOR CONTROL REQUIREMENTS.				

ABV	ABOVE	IN. H ₂ 0	INCHES WATER GAUGE
ADJ	ADJUSTABLE	KW	KILOWATTS
AF	AIRFOIL	LAT	LEAVING AIR TEMPERATURE
AFF	ABOVE FINISHED FLOOR	LD	LINEAR DIFFUSER
AC	AIR CONDITIONER	LWT	LEAVING WATER TEMPERATURE
ACU	AIR CONDITIONING UNIT	MAX	MAXIMUM
AHU	AIR HANDLING UNIT	MBH	1000 X BTUH
AP	ACCESS PANEL	MIN	MINIMUM
BAS	BUILDING AUTOMATION SYSTEM	MVD	MANUAL VOLUME DAMPER
BI	BACKWARD INCLINE	MZ	MULTI-ZONE
BLDG	BUILDING	N.T.S.	NOT TO SCALE
		OA	OUTSIDE AIR
BHP	BRAKE HORSEPOWER		
BTUH	BRITISH THERMAL UNIT PER UNIT	OBMVD	OPPOSED BLADE MANUAL VOLUMI DAMPER
CD	CONDENSATE DRAIN	OPD	OPEN DRIP PROOF
CFM	CUBIC FEET PER MINUTE		
CLG	CEILING	PROP	PROPELLER
CWR	CONDENSER WATER RETURN	PCR	PRE-CONDITIONED AIR SYSTEM
CWS	CONDENSER WATER SUPPLY		RETURN WATER
CHWR	CHILLED WATER RETURN	PCS	PERCENT
		PD	PRESSURE DROP
CHWS	CHILLED WATER SUPPLY	PERF. PL.	PERFORATED PLATE
CONC	CONCRETE		
COND	CONDENSATE	PLBG	PLUMBING
CONT	CONTINUOUS	PSIA	POUNDS PER SQUARE INCH
СО	CARBON MONOXIDE		ABSOLUTE
COP	COEFFICIENT OF PERFORMANCE	PSIG	POUNDS PER SQUARE INCH
			GAUGE
CU	CONDENSING UNIT	RA	RETURN AIR
DB	DRYBULB	RD	RADIANT DAMPER
DWDI	DOUBLE WIDTH, DOUBLE INLET	REG	REGISTER
DWGS	DRAWINGS	REQ'D	REQUIRED
DX	DIRECT EXPANSION		
EF	EXHAUST FAN	RG	RETURN AIR GRILLE
EXH	EXHAUST	RH	RELATIVE HUMIDITY
		RPM	REVOLUTIONS PER MINUTE
EA	EACH	RR	RETURN AIR REGISTER
EAT	ENTERING AIR TEMPERATURE	RTU	ROOFTOP UNIT
EER	ENERGY EFFICIENCY RATIO	SA	SUPPLY AIR
ELECT	ELECTRICAL		
ENT	ENTERING	SF	SUPPLY FAN
EQ	EQUAL	SDT	SMOKE DETECTOR
		SD	SUPPLY DIFFUSER
ER	EXHAUST REGISTER	SDMP	SMOKE DAMPER
EWT	ENTERING EATER TEMPERATURE	SQ.FT.	SQUARE FOOT
FC	FORWARD CURVED	SR	SUPPLY REGISTER
FCU	FAN COIL UNIT	STR	STARTER
FD	FIRE DAMPER		
FL	FLOOR	SWSI	SINGLE WIDTH, SINGLE INLET
		SZ	SINGLE ZONE
FLEX	FLEXIBLE CONNECTOR OR DUCT	TEFC	TOTALLY ENCLOSED FAN COOLED
FPM	FEET PER MINUTE	TEMP	TEMPERATURE
F/S	COMBINATION FIRE AND SMOKE DAMPER	TG	TRANSFER GRILLE
FT. HD.	FEET OF HEAD	T/0	TRANSFER OPENING ABOVE CEILIN
• F	DEGREES FAHRENHEIT	•	
	GAUGE	T'STAT	THERMOSTAT
GA		TYP	TYPICAL
GAI	CALLON	VFDC	VARIABLE FREQUENCY DRIVE CONTROLLER
GAL	GALLON		CONTROLLED
GAL GALV	GALVANIZED		CONTROLLER
GAL GALV GPM	GALVANIZED	VAV	VARIABLE AIR VOLUME
GAL GALV	GALVANIZED GALLONS PER MINUTE	VAV VS	VARIABLE AIR VOLUME VARIABLE SPEED
GAL GALV GPM HP HTWR	GALVANIZED GALLONS PER MINUTE HORSEPOWER HIGH TEMPERATURE HOT WATER RETURN	VAV VS W	VARIABLE AIR VOLUME VARIABLE SPEED WATTS
GAL GALV GPM HP HTWR HTWS	GALVANIZED GALLONS PER MINUTE HORSEPOWER HIGH TEMPERATURE HOT WATER RETURN HIGH TEMPERATURE HOT WATER SUPPLY	VAV VS W W/	VARIABLE AIR VOLUME VARIABLE SPEED
GAL GALV GPM HP HTWR HTWS HW	GALVANIZED GALLONS PER MINUTE HORSEPOWER HIGH TEMPERATURE HOT WATER RETURN HIGH TEMPERATURE HOT WATER SUPPLY HOT WATER	VAV VS W	VARIABLE AIR VOLUME VARIABLE SPEED WATTS
GAL GALV GPM HP HTWR HTWS HW	GALVANIZED GALLONS PER MINUTE HORSEPOWER HIGH TEMPERATURE HOT WATER RETURN HIGH TEMPERATURE HOT WATER SUPPLY HOT WATER HOT WATER	VAV VS W W/	VARIABLE AIR VOLUME VARIABLE SPEED WATTS WITH
GAL GALV GPM HP HTWR HTWS HW HWR	GALVANIZED GALLONS PER MINUTE HORSEPOWER HIGH TEMPERATURE HOT WATER RETURN HIGH TEMPERATURE HOT WATER SUPPLY HOT WATER HOT WATER RETURN HOT WATER SUPPLY	VAV VS W W/ W/O	VARIABLE AIR VOLUME VARIABLE SPEED WATTS WITH WITHOUT
GAL GALV GPM HP HTWR HTWS HW	GALVANIZED GALLONS PER MINUTE HORSEPOWER HIGH TEMPERATURE HOT WATER RETURN HIGH TEMPERATURE HOT WATER SUPPLY HOT WATER HOT WATER	VAV VS W W/ W/O WB	VARIABLE AIR VOLUME VARIABLE SPEED WATTS WITH WITHOUT WETBULB

MA MEDIUM ACCESS SECTION

CC COOLING COIL SECTION
FS FAN SECTION
UV ULTRA—VIOLET LIGHT

MB MIXING BOX SECTION WITH TRAQ DAMPER

								VAV	/ BO	x sc	HED	ULE			
			AIR DATA			MAXIMUM	WEIGHT	INLET SIZE		HEATING					
	MARK	SERVICE	DESIGN CFM	MINIMUM CFM	ESP (IN WC)	N.C.	LBS.	DIA. INCHES	HEATING CFM	∆ 'F	KW	V/ø/HZ	MANUFACTURER	MODEL NUMBER	NOTES
1	VAV 1	CLASSROOM	1,000	250	0.75	30	_	10	600	20	4.0	208/1/60	PRICE	SDV	1,2,3,4
	VAV 2	CLASSROOM	1,000	250	0.75	30	_	10	600	20	4.0	208/1/60	PRICE	SDV	1,2,3,4
	VAV 3	CLASSROOM	3,500	500	0.75	30	_	16	2,100	20	6.5	208/3/60	PRICE	SDV	1,2,3,4
	VAV 4	CLASSROOM	1,000	250	0.75	30	_	10	600	20	4.0	208/1/60	PRICE	SDV	1,2,3,4
	VAV 5	CLASSROOM	1,000	250	0.75	30	_	10	600	20	4.0	208/1/60	PRICE	SDV	1,2,3,4
	VAV 6	CLASSROOM	1,400	500	0.75	30	_	12	840	20	5.5	208/3/60	PRICE	SDV	1,2,3,4
	VAV 7	CLASSROOM	2,000	500	0.75	30	_	14	1,200	20	6.5	208/3/60	PRICE	SDV	1,2,3,4
	VAV 8	CLASSROOM	1,200	500	0.75	30	_	10	720	20	4.0	208/1/60	PRICE	SDV	1,2,3,4
	VAV 9	CORRIDOR	1,200	200	0.75	30	_	10	720	20	4.0	208/1/60	PRICE	SDV	1,2,3,4

- 1. PROVIDE ELECTRONIC ROOM THERMOSTAT WITH DIGITAL DISPLAY, ADJUSTABLE SETPOINT AND NIGHT SET-BACK OVERRIDE AND CANCEL BUTTONS.
- 2. PROVIDE FUSED CONTROL POWER TRANSFORMER. 3. PROVIDE PRESSURE INDEPENDENT TYPE.
- 4. PROVIDE ALL NECESSARY EQUIPMENT TO ALLOW COMMUNICATION WITH BUILDING MANAGEMENT SYSTEM (BMS)

				E	XHAUS	ST FAN	SCH	EDULE				
MAF	RK AREA SERVED	TYPE	CFM	DRIVE TYPE	E.S.P.	WATTS/HP	R.P.M.	VOLTS/PH	SONES	MANUFACTURER	MODEL NO.	NOTES
EF-	X KILN ROOM	CEILING	150	DIRECT	0.25	81 WATTS	819	120/1ø	_	COOK	5-10	_
EF-	1 RELIEF FAN	ROOF	2600	DIRECT	0.4	524 WATTS	1650	120/1ø	19.7	COOK	ACRUD-EC	_

NOTES:

1. PROVIDE COMPLETE WITH FUSED DISCONNECT SWITCH, ROOF CURB, CURB SEAL, SPEED CONTROLLER AND ECM. INTERLOCK WITH PRESSURE SENSORS.

							Cł	HILLE	ED W	ATEF	R Al	RH	IAN	IDLIN	IG UNIT	SCH	EDULE					
T40					SUP	PLY FAN (DATA					(COOLIN	IG COIL D	ATA				ELECTRICA	L DATA		
TAG	AREA SERVED	UNIT COMPONENTS	SUPPLY	OUTSIDE	AIR CFM	ר	MC	TOR	TOTAL	SENSIBLE		AIR TE	EMP. °F	•	E.W.T./L.W.T.	G.P.M.	ΔΡ	VOLT/PHASE	MCA	MOCP	BASIS OF DESIGN	NOTES
110.			AIR CFM	MIN.	MAX.	E.S.P.	HP	R.P.M.	MBH	MBH	E.D.B.	E.W.B.	L.D.B	. L.W.B.	E.W.I./ L.W.I.	G.F.M.	(FT. H ₂ 0)	VOLITERASE	MICA	MOCE	MANUFACTURER/MODEL#	
HU-1	BLDG. 700	MB-RF-CC-UV-MA-FS	12,500	1800	3400	2.0	15	1800	651.66	399.03	80.90	68.80	52.00	51.90	44/56	108.23	10	208/3 & 115/1	54.25/1.93	97.65/3.46	TRANE PERFORMANCE CLIMATE CHANGER-25	1-6
NOTES:																						
UNIT COMPONENT LEGEND:																						

1. PROVIDE COMPLETE WITH TRANE TRAQ DAMPER WITH MODULATE WITH CO2 SENSOR. 2. PROVIDE VARIABLE FREQUENCY DRIVE.

3. PROVIDE 6" BASE RAILS.

4. PROVIDE UNIT WITH UV LIGHT. 5. PROVIDE BMS CONTROLLER AND INTERFACE. 6. PROVIDE 4" MERV 14 FILTERS.

	AIR DEVICE SCHEDULE												
MARK	DESCRIPTION	FACE SIZE	NECK	MATERIAL	BASIS OF DESIGN MANUFACTURER/MODEL #	DAMPER	NOTES						
Х	EXISTING DIFFUSER, REGISTER, OR GRILLE	SEE PLANS	SEE PLANS	_	-	_	1						
Α	SUPPLY DIFFUSER	_	_		MATCH EXISTING	Y	2,3,4						
В	RETURN GRILLE	SEE PLANS	SEE PLANS	ALUMINUM	METAL AIRE RH	Y	5,6						
С	SIDEWALL SINGLE DEFLECTION SUPPLY GRILLE	SEE PLANS		ALUMINUM	METAL AIRE H4002	Y	1						

AIR-BALANCE EXISTING AIR DISTRIBUTION DEVICE TO ACHIEVE AIRFLOW CFM WHERE INDICATED ON FLOOR PLANS.

COORDINATE COLOR AND SURFACE FINISHES WITH ARCHITECTURAL DRAWINGS. PROVIDE RAPID MOUNT T-BAR FRAME FOR PLASTER AND SHEET ROCK CEILINGS. SUPPLY COMPLETE WITH FACTORY INSTALLED 1/2" THICK FOIL BACKED INSULATION.

COORDINATE COLOR AND SURFACE FINISHES WITH ARCHITECTURAL DRAWINGS. PROVIDE RAPID MOUNT T-BAR FRAME FOR PLASTER AND SHEET ROCK CEILINGS/WALLS.

PROPOSED HVAC IMPROVEMENTS BUILDING 700

FELLSMERE ELEMENTARY SCHOOL

FELLSMERE, FLORIDA



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No.:	Date:	Description:	
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Consultant:

Architect:

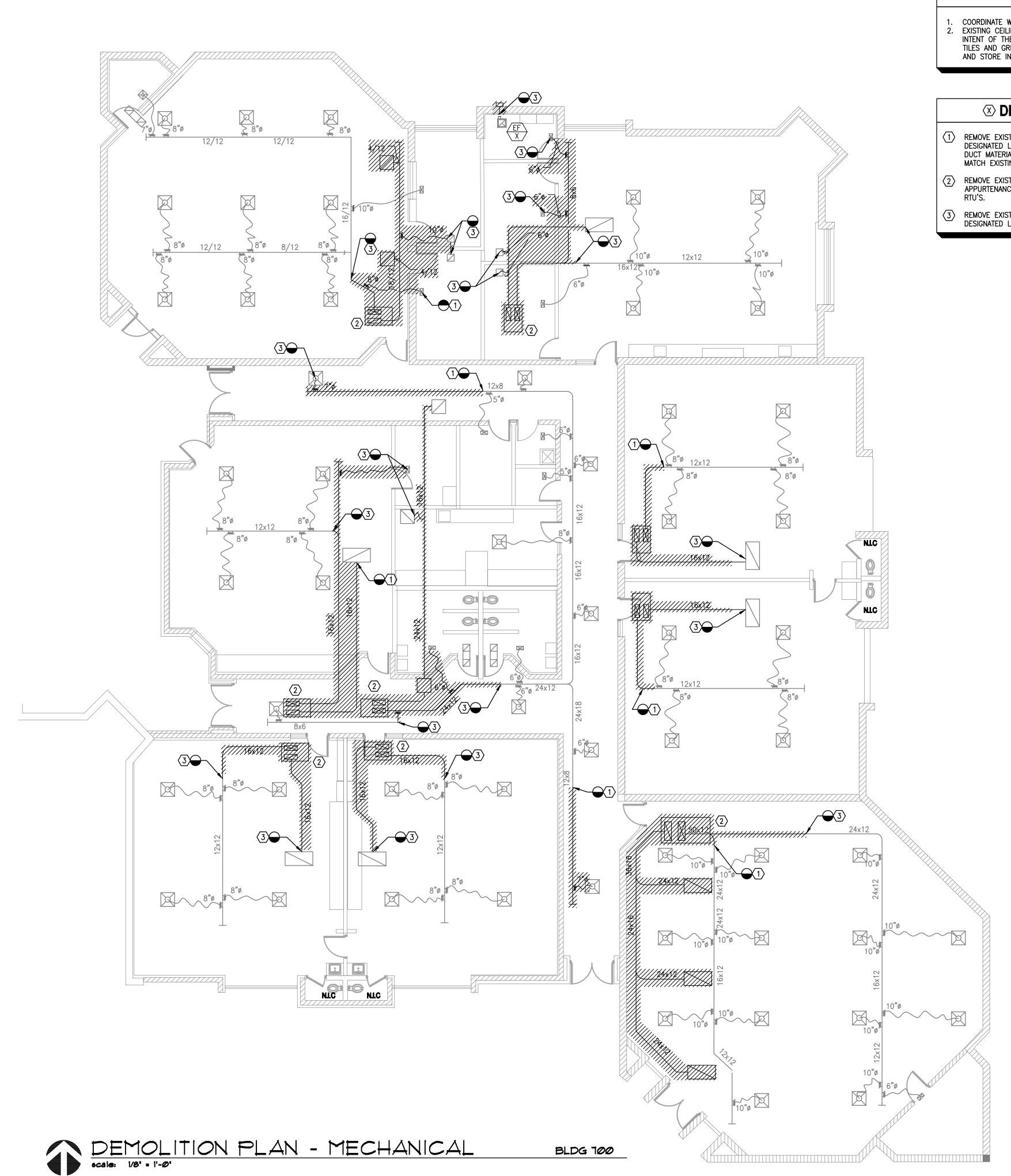


LEGENDS, ABBREVIATIONS & SCHEDULES - MECHANICAL



Drn:	Drawing File:
Chd: CAD	XREF File:
Project No.: BSH	Plot File:

Cert. No.: PE No. 52660 Brian S. Hessinger, PE



GENERAL NOTES

COORDINATE WITH EXISTING SYSTEMS.
 EXISTING CEILING GRID AND ACOUSTICAL CEILING TILES. IT IS THE INTENT OF THE DESIGN TO REUSE EXISTING ACOUSTICAL CEILING TILES AND GRID. USE CAUTION WHEN REMOVING TO AVOID DAMAGE AND STORE IN LOCATION TO AVOID MOISTURE.

SOLUTION NOTES

- REMOVE EXISTING DUCTWORK AND ACCESSORIES BACK TO DESIGNATED LIMIT OF DEMOLITION. CAP DUCTWORK WITH SAME DUCT MATERIALS AS EXISTING, SEAL AIRTIGHT AND INSULATE TO MATCH EXISTING.
- REMOVE EXISTING RTU INCLUDING ALL ASSOCIATED
 APPURTENANCES. PROVIDE INSULATED CURB CAP FOR REMOVED
- REMOVE EXISTING DUCTWORK AND ACCESSORIES BACK TO DESIGNATED LIMIT OF DEMOLITION.

Project:

PROPOSED HVAC IMPROVEMENTS
BUILDING 700

FELLSMERE
ELEMENTARY SCHOOL

FELLSMERE, FLORIDA

School District of Indian River County

Vision: Educate and inspire every student to be successful Mission: To serve all students with excellence

No.:	Date:	Description:	
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Drawing Title

DEMOLITION PLAN MECHANICAL



Drn:

CAD

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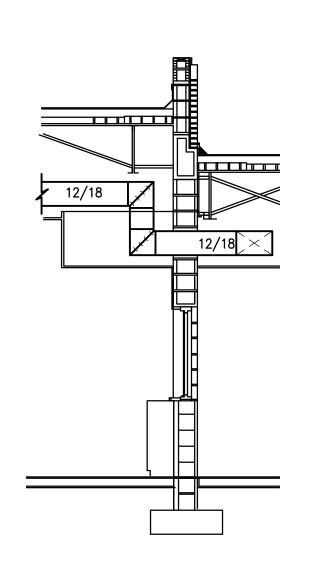
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Brian S. Hessinger, PE
Date Signed:

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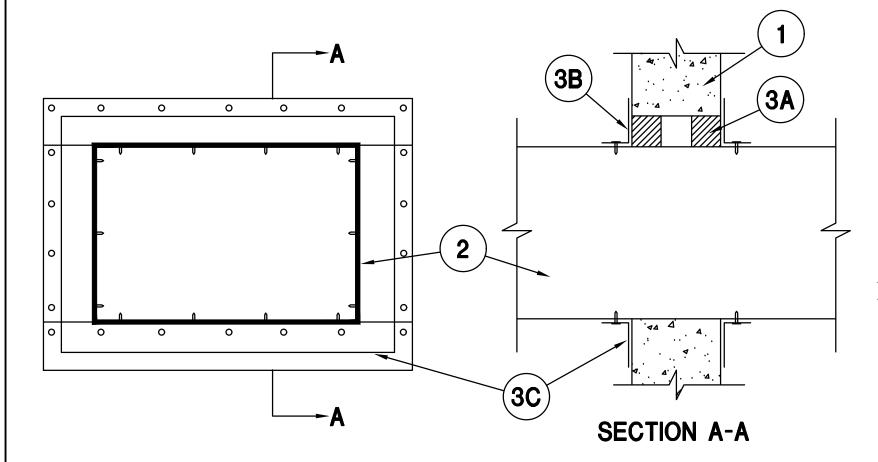
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SECTION - MECHANICAL

Through-penetration Firestop Systems System No. W-J-7006 September 24, 2004

F Rating — 2 Hr T Rating — 0 Hr



1. Wall Assembly — Min 6 in. (152 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete. Wall may also be constructed of any UL Classified Concrete Blocks*. Max area of opening is 322 sq in. (0.21 m2) with max dimensions of 23 in. (584 mm).

See Concrete Blocks (CAZT) category in the Fire Resistance Directory for names of manufacturers.

2. Steel Duct — Max 12 by 20 in. (305 by 508 mm) No. 26 gauge (or heavier) galv steel duct to be installed either concentrically or eccentrically within the firestop system. The annular space between the steel duct and the periphery of the opening shall be min 0 in. (0 mm, point contact) to max 2 in. (51 mm). Steel duct to be rigidly supported on both sides of the wall assembly.

3. Firestop System — The firestop system shall consist of the following:

A. Packing Material — Min 2 in. (51 mm) thickness of min 4 pcf (64 kg/m3) mineral wool batt insulation firmly packed into opening as a permanent form. Packing material to be recessed from both surfaces of wall as required to accommodate the required thickness of fill material.

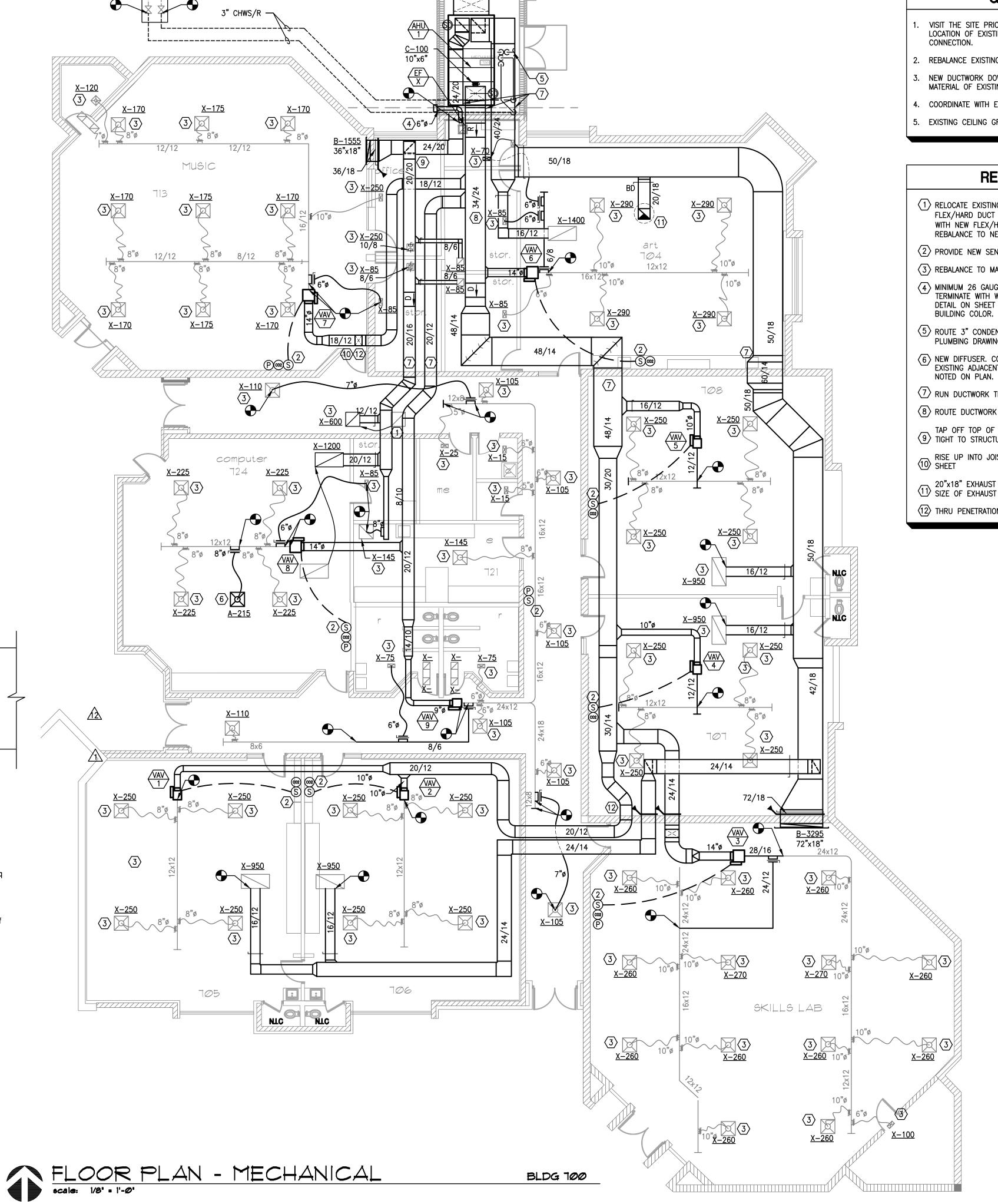
B. Fill, Void or Cavity Material* — Spray — Min 1/8 in. (3.2 mm) wet thickness (min 1/16 in. or 1.6 mm dry thickness) of fill material spray applied within the annulus, flush with both surfaces of wall. Additional 1/8 in. (3.2 mm) wet thickness (min 1/16 in. or 1.6 mm dry thickness) of fill material shall overlap a min of 2 in. (51 mm) onto the steel duct and a min of 1 in. (25 mm) onto the surface of the concrete on both sides of the wall.

SPECIFIED TECHNOLOGIES INC — SpecSeal AS200 Elastomeric Spray

C. Steel Retaining Angles — Min No. 16 gauge galv steel angles sized to lap steel duct a min of 2 in. (51 mm) and to lap wall surfaces a min of 1 in. (25 mm). Angles attached to steel duct on both sides of wall with min No. 8 by 1/2 in. (13 mm) long steel sheet metal screws located a max of 1 in. (25 mm) from each end of the steel duct and spaced a max of 6 in. (152 mm) OC.

*Bearing the UL Classification Mark

THRU PENETRAION DETAIL



60"x48" LOUVER

GENERAL NOTES

- VISIT THE SITE PRIOR TO BIDDING TO DETERMINE EXACT ROUTING AND LOCATION OF EXISTING DUCTWORK. VERIFY DUCT SIZES AT POINTS OF
- 2. REBALANCE EXISTING AIRFLOWS AS INDICATED ON PLAN.
- NEW DUCTWORK DOWNSTREAM OF VAV BOXES TO BE OF SAME MATERIAL OF EXISTING DUCTWORK.
- 4. COORDINATE WITH EXISTING SYSTEMS.
- 5. EXISTING CEILING GRID AND TILES TO REMAIN.

REFERENCE NOTES

- (1) RELOCATE EXISTING DIFFUSER/GRILLE AS SHOWN. IF EXISTING FLEX/HARD DUCT DOES NOT MEET NEW REQUIRED LENGTH, REPLACE WITH NEW FLEX/HARD DUCT WITH LIKE SIZE AND MATERIAL. REBALANCE TO NEW VALUE SHOWN.
- $\langle 2 \rangle$ provide New Sensor and Wire to VAV Box.
- (3) REBALANCE TO MATCH NEW CFM SHOWN.
- 4 MINIMUM 26 GAUGE GALVANIZED EXHAUST DUCT SIZED PER PLAN. TERMINATE WITH WALL CAP AND INTEGRAL BACKDRAFT DAMPER PER
 DETAIL ON SHEET M401. PRIME COAT AND PAINT WALL CAP TO MATCH BUILDING COLOR.
- (5) ROUTE 3" CONDENSATE, TERMINATE INDIRECTLY AT FLOOR DRAIN. SEE PLUMBING DRAWING FOR LOCATION OF FLOOR DRAIN.
- (6) NEW DIFFUSER. CONTRACTOR SHALL MATCH STYLE AND TYPE WITH EXISTING ADJACENT DIFFUSERS AND BALANCE DIFFUSER TO CFM
- $\langle 7 \rangle$ RUN DUCTWORK TIGHT TO BOTTOM OF BEAM.
- 8 ROUTE DUCTWORK BETWEEN JOIST TIGHT TO STRUCTURE.
- TAP OFF TOP OF 24/20 DUCT, ROUTE DUCTWORK BETWEEN JOIST (9) TIGHT TO STRUCTURÉ.
- RISE UP INTO JOIST, RUN TIGHT TO STRUCTURE. SEE DETAIL THIS SHEET
- 20"x18" EXHAUST AIR UP TO $\underline{\text{EF}}-1$ ON ROOF. CONNECT TO FULL SIZE OF EXHAUST FAN CONNECTION.
- (12) THRU PENETRATION PER DETAIL THIS SHEET.

PROPOSED HVAC IMPROVEMENTS BUILDING 700

FELLSMERE ELEMENTARY SCHOOL

FELLSMERE, FLORIDA

School District of Indian River County Vision: Educate and inspire every student to be successful Mission: To serve all students with excellence

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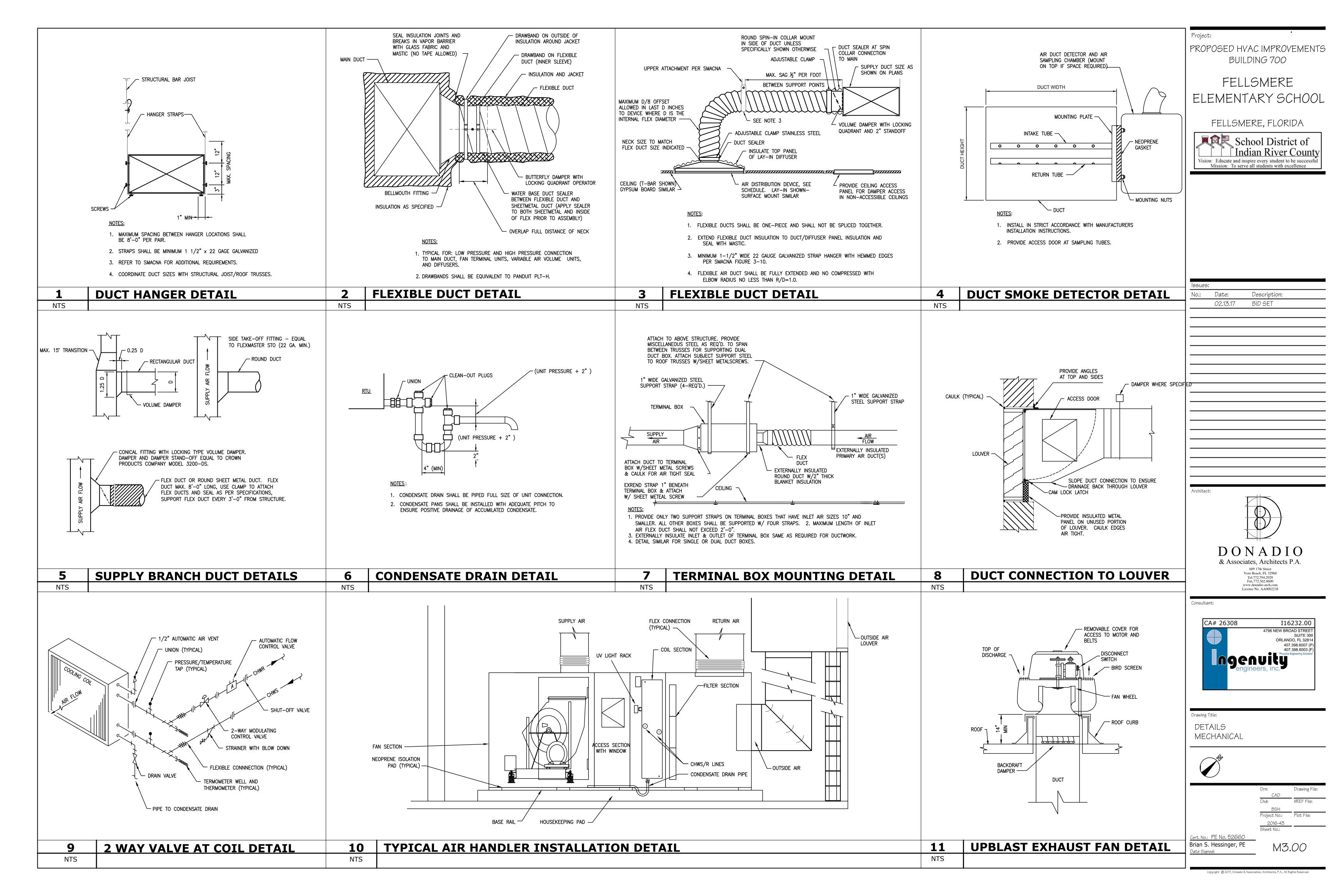
Consultant:

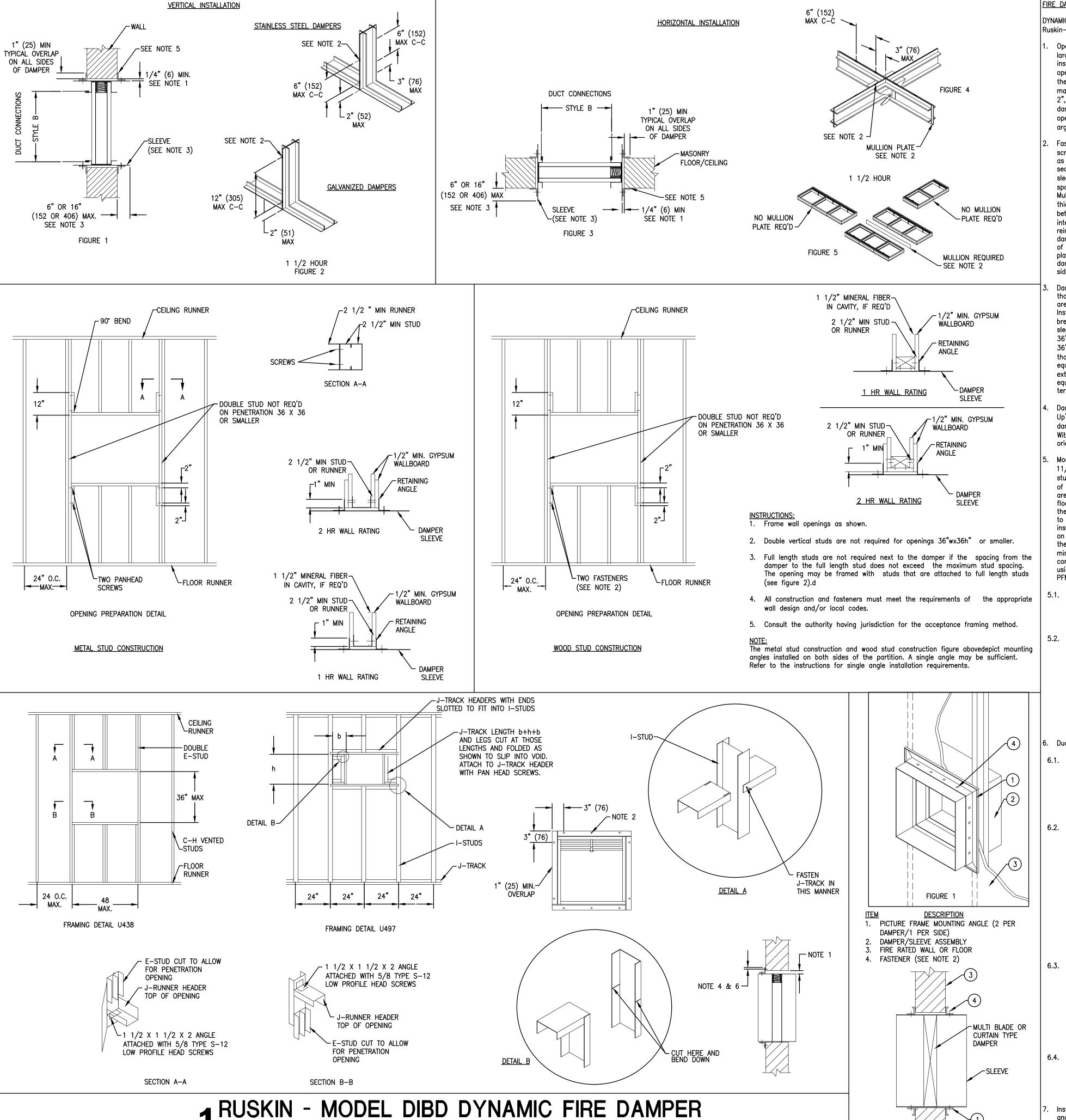


FLOOR PLAN MECHANICAL



Cert. No.: PE No. 52660 Brian S. Hessinger, PE





FIRE DAMPER INSTALLATION REQUIREMENTS:

DYNAMIC FIRE DAMPERS—DIBD models as manufactured by Ruskin—Use in Dynamic (fans on) or Static (fans off) Systems

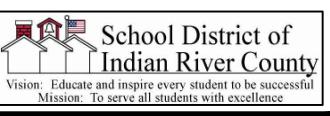
- . Opening Clearance The opening in the wall or floor shall be larger than the damper/sleeve assembly to permit installation or expansion. For two angle installations the opening shall be a minimum of 1/8" per foot larger than the overall size of the damper/sleeve assembly. The maximum opening size shall not exceed 1/8" per foot plus 2", nor shall the opening be less than 1/4" larger than the damper/ sleeve assembly. For one angle installations, the opening shall be a minimum of 1/4" to a maximum of 1" arger than the overall size of the damper/sleeve assembly.
- Fasteners and Multiple Section Assembly Use No. 10 bolts or screws, 3/16" rivets, tack welds or spot welds and spaced as follows when joining individual dampers to make multiple section damper assemblies or when fastening damper to the sleeve: Vertical Mount (In all) Galvanized steel dampers 12" spacing. Horizontal Mount (In floor) All dampers 6" spacing. Multiple section horizontal mount dampers require a 14 gage thick \times 41/2" wide steel reinforcing plate sandwiched between the damper frames with 1/2" long welds staggered intermittently and spaced on maximum 6" centers. The reinforcing plate must be the same material as the dampers. The length must be equal to the damper width of two or more adjoining damper sections. Reinforcing plates are not required for assemblies consisting of two dampers attached end-to-end or three dampers attached side-to-side.
- 5. Damper Sleeve Sleeve thickness must be equal to or thicker than the duct connected to it. Sleeve gage requirements are listed in the SMACNA Fire, Smoke and Radiation Damper Installation Guide for HVAC Systems and in NFPA90A. If a breakaway style duct/sleeve connection is not used, the sleeve shall be a minimum of 16 gage for dampers up to 36" wide by 24" high and 14 gage for dampers exceeding 36" wide by 24" high. Damper sleeve shall not extend more than 6" beyond the fire wall or partition unless damper is equipped with a factory installed access door. Sleeve may extend up to 16" beyond the fire wall or partition on sides equipped with a factory installed access door. Sleeve shall terminate at both sides of wall within dimensions shown.
- Damper Orientation Use "Air Flow" and "Mount with Arrow Up" labels on Dynamic DIBD and DIBDX models for proper damper orientation. For Static IBD models use only "Mount With Arrow Up" label on damper for proper damper orientation.
- Mounting Angles Mounting angles shall be a minimum of 11/2" x 11/2" x 20 gage steel. For openings in metal stud, wood stud walls or concrete/masonry walls and floors of sizes 90" x 49" or 49" x 90" and less mounting angles are only required on one side of the wall or top side of the floor. The angles must be attached to both the sleeve and the wall or floor. Mounting angles may be installed directly to the metal stud under the wall board on metal stud wall installations only. Larger openings require mounting angles on both sides of the partition and must be attached only to the sleeve. Mounting angles must overlap the partition a minimum of 1". Do not weld or fasten angles together at corners of dampers. Ruskin fire dampers may be installed using Ruskin FAST angle for one angle installation or Ruskin PFMA for two angle installations.
- 5.1. Mounting Angle Fasteners Sleeve: #10 bolts or screws, 3/16" steel rivets or 1/2" long welds. Masonry/Wall or Floor: #10 self-tapping concrete screws. Wood/Steel Stud Wall: #10 screws.
- 5.2. Mounting Angle Fastener Spacing For one angle installations the sleeve fasteners shall be spaced at 6" o.c. and the wall or floor fasteners shall be spaced at 12" o.c. with a minimum of 2 fasteners on each side, top and bottom. Screw fasteners used in metal stud must engage the metal stud a minimum of 1/2". Screw fasteners used in wood stud must engage the wood stud a minimum of 3/4". Screw fasteners used in masonry walls or floors must engage the wall a minimum of 11/2". For two angle installations the fasteners shall be paced at 8" o.c.
- 6. Duct/Sleeve Connections:
- 6.1. Break—away Duct/Sleeve Connections A maximum of two #10 sheet metal screws on each side and the bottom, located in the center of the slip pocket and penetrating both sides of the slip pocket may be used. Connections using these slip joints on the top and bottom with flat drive slips up to 20" long on the sides may also be used.
- 6.2. Round and Oval Break—away Connections Round and flat oval break—away connections must use either a 4" wide drawband or #10 sheet metal screws spaced equally around the circumference of the duct as follows: Duct diameters 22" and smaller, maximum 3 screws. Duct diameters over 22" and including 36", maximum 5 screws. Duct diameters over 36" and up to and including 191" total perimeter, maximum 8 screws. For flat oval ducts, the diameter is considered the largest (major) dimension of the duct. Note: When optional sealing of these joints is desired, the following sealants may be applied in accordance with the sealant manufacturer's instructions: Hardcast, Inc. Iron Grip 601, Eco Duct Seal 44— 52, Precision PA2084T, Design Polymerics DP 1010
- 6.3. Flanged Break—away Style Duct Sleeve Connections.
 Flanged connection systems manufactured by Ductmate,
 Nexus or Ward are approved break—away connections
 when installed as shown on the Flanged System
 Breakaway Connections Supplement. TDC and TDF
 roll—formed flanged connections using 3/8" steel bolts
 and nuts, and metal cleats, as tested by SMACNA, are
 approved break—away connections when installed as
 shown on the Flanged System Breakaway Connections
 Supplement.
- 6.4. Non-Break-away Duct/Sleeve Connections. If other duct sleeve connections are used, the sleeve shall be a minimum of 16 gage for dampers up to 36" wide x 24" high and 14 gage for dampers exceeding 36" wide x 24" high.
- Installation and Maintenance To ensure optimum operation and performance, the damper must be installed so it is square and free from racking. Each fire damper should be maintained and tested on a regular basis and in accordance with the latest editions of NFPA 90A and loca codes. Care should be exercised to ensure that such tests are I performed safely and do not cause system damage.

Project:

PROPOSED HVAC IMPROVEMENTS
BUILDING 700

FELLSMERE ELEMENTARY SCHOOL

FELLSMERE, FLORIDA



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Description:

Archit

1991169:

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Consultant:



Drawing Title:

DETAILS

MECHANICAL



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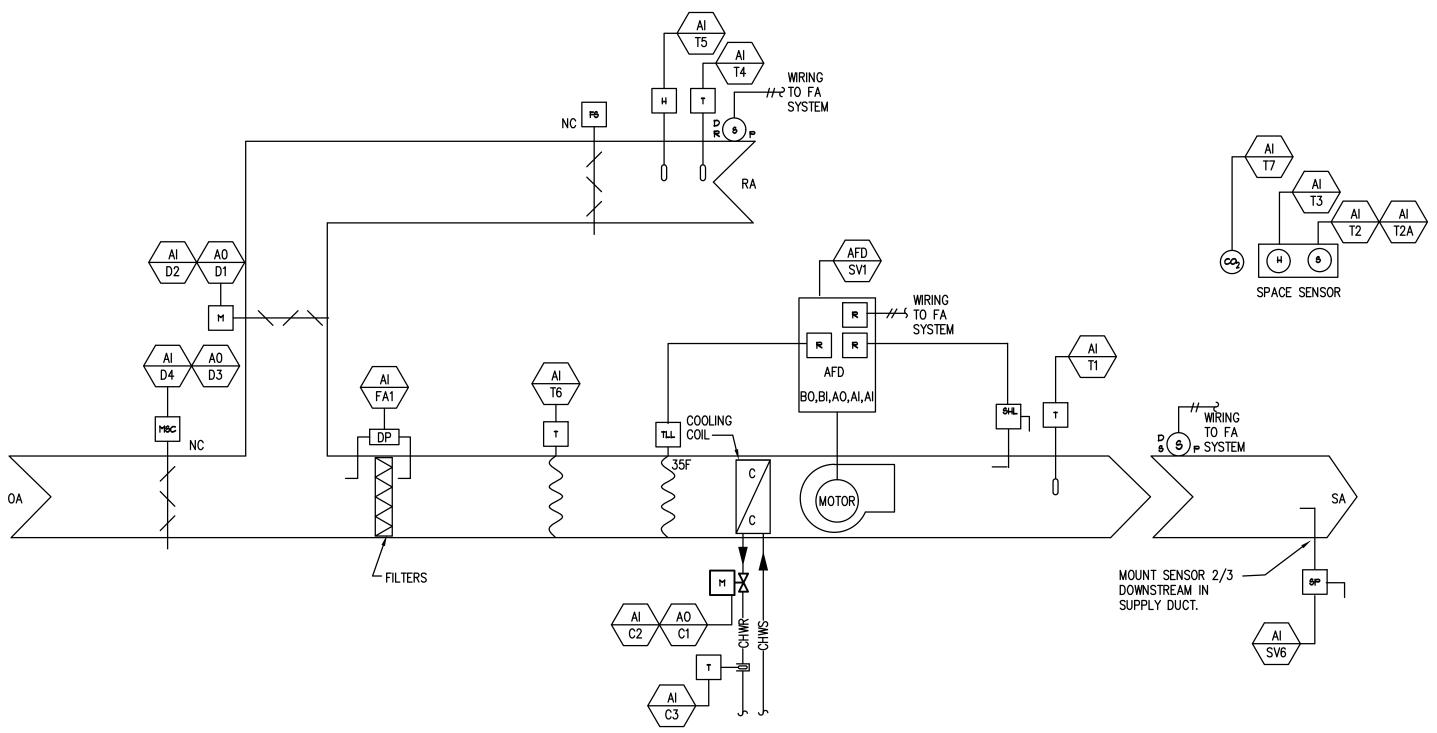
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Cert. No.: PE No. 52660

Brian S. Hessinger, PE
Date Signed:

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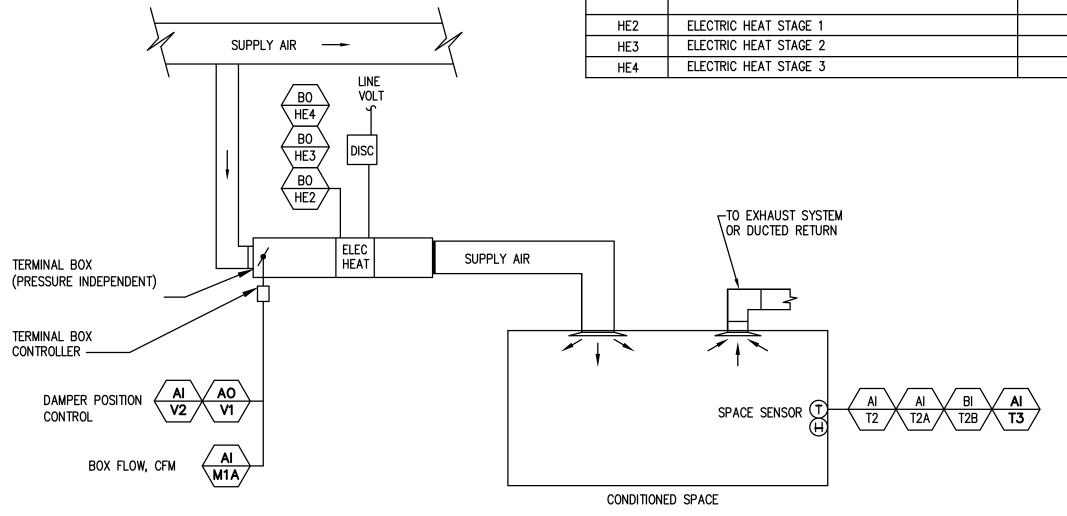


	CONTROL POINT LIST	
POINT DESIGNATION	DEVICE OR POINT DESCRIPTION	CONTROLLEI BY
T1	LEAVING AIR TEMPERATURE	
T2	SPACE THERMOSTAT	
T2A	SPACE THERMOSTAT - USER INPUT	
T3	SPACE HUMIDISTAT	
T4	RETURN DUCT — TEMPERATURE	
T5	RETURN DUCT - HUMIDITY	
T6	MIXED AIR TEMPERATURE	
T7	SPACE CO2 LEVEL	
SV1	SUPPLY FAN AFD - 5 POINTS	SV6
SV6	SUPPLY DUCT STATIC PRESSURE SENSOR	
FA1	FILTER DIFFERENTIAL PRESSURE SENSOR	
D1	RETURN AIR DAMPER POSITION	T7
D2	RETURN AIR DAMPER POSITION FEEDBACK	
D3	OUTSIDE AIR DAMPER POSITION	T7
D4	OUTSIDE AIR DAMPER POSITION FEEDBACK	
C1	COOLING COIL CONTROL VALVE POSITION	T1
C2	COOLING COIL CONTROL VALVE POSITION FEEDBACK	
C3	COOLING COIL LEAVING WATER TEMPERATURE	

AHU-1 MULTI-ZONE VAV CONTROL SCHEMATIC

	CONTROL POINT LIST	
POINT DESIGNATION	DEVICE OR POINT DESCRIPTION	CONTROLLED BY
T2	SPACE THERMOSTAT	
T2A	SPACE THERMOSTAT — USER ADJUSTMENT	
T2B	SPACE THERMOSTAT - OCCUPANT "OVERRIDE"	
Т3	SPACE HUMIDITY	
M1A	TERMINAL UNIT CFM FLOW	
V1	TERMINAL UNIT DAMPER POSITION	T2
V2	TERMINAL UNIT DAMPER POSITION FEEDBACK	
HE2	ELECTRIC HEAT STAGE 1	
HE3	ELECTRIC HEAT STAGE 2	
HE4	ELECTRIC HEAT STAGE 3	

POINT DESIGNATION	DEVICE OR POINT DESCRIPTION	CONTROLLED BY
T2	SPACE THERMOSTAT	
T2A	SPACE THERMOSTAT — USER ADJUSTMENT	
T2B	SPACE THERMOSTAT - OCCUPANT "OVERRIDE"	
T3	SPACE HUMIDITY	
M1A	TERMINAL UNIT CFM FLOW	
V1	TERMINAL UNIT DAMPER POSITION	T2
V2	TERMINAL UNIT DAMPER POSITION FEEDBACK	
HE2	ELECTRIC HEAT STAGE 1	
HE3	ELECTRIC HEAT STAGE 2	
HE4	ELECTRIC HEAT STAGE 3	



VAV TERMINAL UNIT WITH STAGED ELECTRIC REHEAT

SEQUENCE OF OPERATIONS

CONTROL SEQUENCE FOR UNITS AHU-1.

<u>SETPOINTS:</u> ALL SETPOINTS WILL BE ADJUSTABLE THROUGH BAS.

SUPPLY FAN:
THE FAN'S VFD WILL MODULATE TO MAINTAIN DUCT STATIC PRESSURE DISCHARGE AT SETPOINT. SETPOINT WILL BE RESET FROM 0.3"wc-1.2"wc BASED ON HIGHEST VAV ZONE DEMAND.

COOLING MODE: CHILLED WATER VALVE WILL BE MODULATED TO MAINTAIN SUPPLY AIR TEMPERATURE AT SETPOINT 52°F (ADJUSTABLE). IF SPACE RELATIVE HUMIDITY IS WITHIN ACCEPTABLE RANE (LESS THAN 60% RH) AND FAN IS AT MINIMUM AIRFLOW, TEMPERATURE RESET IS INITIATED. RAISE LEAVING AIR TEMPERATURE TO A MAX OF 57°F (ADJ).

OA DAMPER CONTROL (CO2): OA FLOW WILL BE MONITORED WITH SPACE MOUNTED CO2 SENSORS IN EACH CLASSROOM. OA DAMPER WILL BE MODULATED BETWEEN MINIMUM OF 1800 CFM TO MAXIMUM OF 3400 CFM TO MAINTAIN CO2 SETPOINT OF 800 PPM (ADJ) AT ALL CO2 SENSORS.

DEHUMIDIFCATION MODE:

IF AT ANY TIME A CLASSROOM'S RELATIVE HUMIDITY EXCEEDS 60% RH THEN COOLING VALVE WILL MODULATE TO 100% OPEN AND FAN SPEED WILL CONTINUE TO VARY PER TYPICAL COOLING MODE. REHEAT WILL BE ENERGIZED AT VAV BOX IF REQUIRED TO MAINTAIN THE SPACE TEMPERATURE SETPOINT UNTIL SPACE HUMIDISTAT IS AT SETPOINT 55% RH (ADJ).

UNIT SHUTDOWN: FIRE ALARM SHUT DOWN VIA SMOKE DETECTOR SENSING SMOKE THEN THE RTU SHALL SHUT DOWN.

MODE CONROL:
OPERATION SHALL BE VIA BUILDING MANAGEMENT SYSTEM. PROVDIE: OCCUPIED MODE: FAN RUNS WITH OA DAMPER CONTROL. UNOCCUPIED MODE: FAN RUNS WITH OA DAMPER CLOSED ONLY WHEN UNOCCUPIED SETPOINT IS EXCEEDED.

DEHUMIDIFICATION MODE: UNOCCUPIED MODE ONLY — FAN RUNS WITH OA DAMPER CLOSED. SHUTDOWN MODE: FAN REMAINS OFF.

IF ENTERING AIR TEMPERATURE (EAT) FALLS TO 50°F (ADJ) OUTSIDE AIR DAMPER TO MODULATE TO MINIMUM POSITION. IF EAT CONTINUES TO DROP TO 47° (ADJ) CLOSE OUTSIDE AIR DAMPER AND DE-ENERGIZE <u>EF-1</u>. OUTDOOR AIR DAMPER TO REMAIN CLOSED UNTIL EAT INCREASES TO 55°F (ADJ).

VAV TERMINAL UNIT CONTROL: VAV TO MODULATE TO MAINTAIN SPACE AT 74°F (ADJ) SETPOINT. IF AT MINIMUM AIRFLOW POSITION AND SPACE TEMPERATURE FALLS 2° (ADJ) ENERGIZE HEATING MODE. VAV TO GO TO HEATING AIRFLOW CFM AND STAGE HEATER AS REQUIRED TO MAINTAIN SETPOINT.

BUILDING PRESSURIZATION: EXHAUST FAN <u>EF-1</u> TO ENERGIZE BASED ON TIME OF DAY SCHEDULE. FAN SPEED TO MODULATE BETWEEN A MINIMUM OF 1800 CFM AND 2600 CFM TO MAINTAIN AVERAGE SPACE PRESSURE POSITIVE RELATIVE TO THE EXTERIOR.

PROPOSED HVAC IMPROVEMENTS BUILDING 700

FELLSMERE ELEMENTARY SCHOOL

FELLSMERE, FLORIDA



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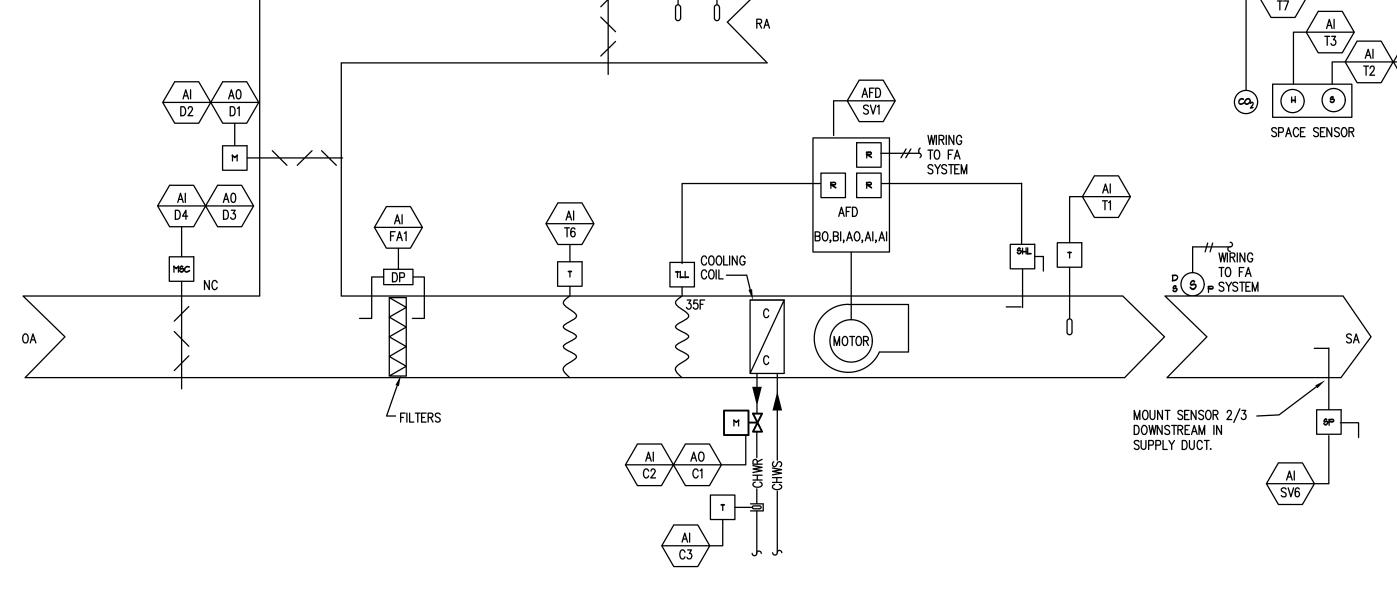


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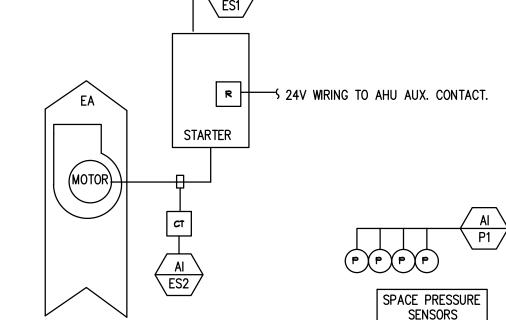
Cert. No.: PE No. 52660 Brian S. Hessinger, PE



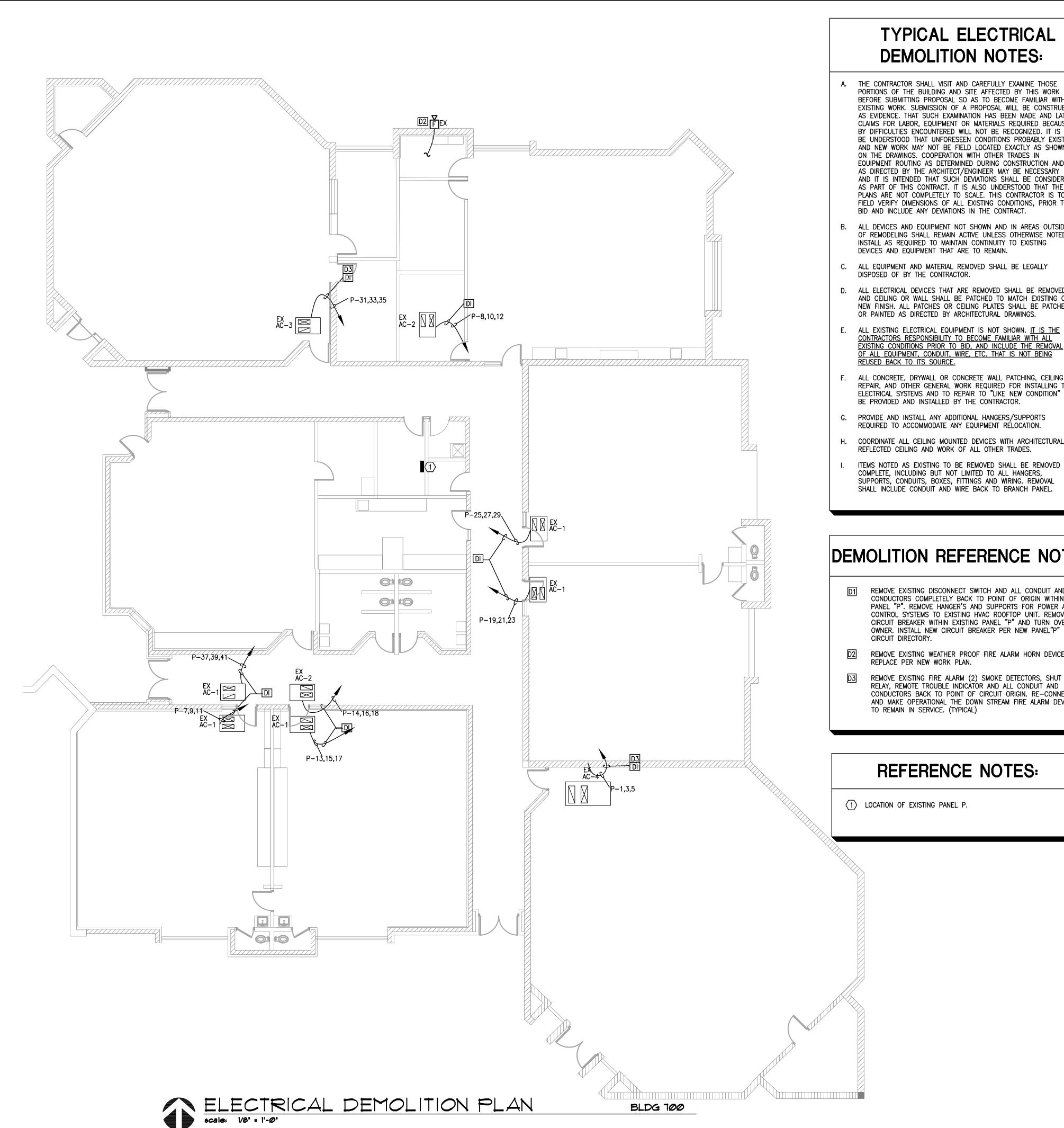


DESIGNATION	DESCRIPTION	CONTROLLED BY
ES1	EXHAUST FAN MODULATION WITH ECM MOTOR	P1
ES2	EXHAUST FAN CURRENT TRANSDUCER	
P1	SPACE MOUNTED PRESSURE SENSORS	
	BO ES1	
	24V MPING TO AHILL	ALLY CONTACT

CONTROL POINT LIST



EXHAUST FAN CONTROL SCHEMATIC



- PORTIONS OF THE BUILDING AND SITE AFFECTED BY THIS WORK BEFORE SUBMITTING PROPOSAL SO AS TO BECOME FAMILIAR WITH EXISTING WORK. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE. THAT SUCH EXAMINATION HAS BEEN MADE AND LATER CLAIMS FOR LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE BY DIFFICULTIES ENCOUNTERED WILL NOT BE RECOGNIZED. IT IS TO BE UNDERSTOOD THAT UNFORESEEN CONDITIONS PROBABLY EXIST AND NEW WORK MAY NOT BE FIELD LOCATED EXACTLY AS SHOWN AND IT IS INTENDED THAT SUCH DEVIATIONS SHALL BE CONSIDERE AS PART OF THIS CONTRACT. IT IS ALSO UNDERSTOOD THAT THE PLANS ARE NOT COMPLETELY TO SCALE. THIS CONTRACTOR IS TO FIELD VERIFY DIMENSIONS OF ALL EXISTING CONDITIONS, PRIOR TO
- B. ALL DEVICES AND EQUIPMENT NOT SHOWN AND IN AREAS OUTSIDE OF REMODELING SHALL REMAIN ACTIVE UNLESS OTHERWISE NOTED.
- D. ALL ELECTRICAL DEVICES THAT ARE REMOVED SHALL BE REMOVED, AND CEILING OR WALL SHALL BE PATCHED TO MATCH EXISTING OR NEW FINISH. ALL PATCHES OR CEILING PLATES SHALL BE PATCHED
- ALL EXISTING ELECTRICAL EQUIPMENT IS NOT SHOWN. IT IS THE EXISTING CONDITIONS PRIOR TO BID, AND INCLUDE THE REMOVAL
- ALL CONCRETE, DRYWALL OR CONCRETE WALL PATCHING, CEILING REPAIR, AND OTHER GENERAL WORK REQUIRED FOR INSTALLING THE ELECTRICAL SYSTEMS AND TO REPAIR TO "LIKE NEW CONDITION" TO
- COORDINATE ALL CEILING MOUNTED DEVICES WITH ARCHITECTURAL

DEMOLITION REFERENCE NOTES

- D1 REMOVE EXISTING DISCONNECT SWITCH AND ALL CONDUIT AND CONDUCTORS COMPLETELY BACK TO POINT OF ORIGIN WITHIN PANEL "P". REMOVE HANGER'S AND SUPPORTS FOR POWER AND CONTROL SYSTEMS TO EXISTING HVAC ROOFTOP UNIT. REMOVE CIRCUIT BREAKER WITHIN EXISTING PANEL "P" AND TURN OVER TO OWNER. INSTALL NEW CIRCUIT BREAKER PER NEW PANEL"P"
- REMOVE EXISTING WEATHER PROOF FIRE ALARM HORN DEVICE AND
- REMOVE EXISTING FIRE ALARM (2) SMOKE DETECTORS, SHUT DOWN RELAY, REMOTE TROUBLE INDICATOR AND ALL CONDUIT AND CONDUCTORS BACK TO POINT OF CIRCUIT ORIGIN. RE-CONNECT AND MAKE OPERATIONAL THE DOWN STREAM FIRE ALARM DEVICES

ABBREVIATIONS

FBC - FLORIDA BUILDING CODE **AMPERES** NEC - NATIONAL ELECTRICAL CODE A/C - AIR CONDITIONING GROUND FAULT INTERRUPTER NF - NON-FUSED NIC - NOT IN CONTRACT NL - NIGHT LIGHT AHU - AIR HANDLING UNIT AMERICAN WIRE GAUGE KILOVOLT—AMPERES PNL – PANELBOARD C – CONDUIT KW – KILOWATT COUNTER HEIGHT LIGHT EMITTING DIODE SPEC - SPECIFICATION CONC - CONCRETE TYP - TYPICAL LIGHTING COND - CONDUIT UON - UNLESS OTHERWISE NOTED NOT APPLICABLE

DISC - DISCONNECT ECB - ENCLOSED CIRCUIT BREAKER

ELEC - ELECTRICAL EM – EMERGENCY

EX – EXISTING

ELECTRICAL SYMBOLS LEGEND

W – WIRE

LIGHTING (SEE LIGHTING FIXTURE SCHEDULE)

1' x 4' EMERGENCY FLUORESCENT LIGHTING FIXTURE WITH

SWITCHES

125 VAC 20 AMP SPECIFICATION GRADE SINGLE POLE SWITCH - TOGGLE TYPE. SEE ELECTRICAL SPECIFICATIONS FOR MOUNTING HEIGHTS.

POWER SEE ELECTRICAL SPECIFICATIONS FOR MOUNTING HEIGHTS.

== WP 125 VAC 20 AMP SPECIFICATION GRADE EXISTING "GFI" DUPLEX RECEPTACLE WITH GROUND FAULT INTERRUPTER AND IN USE WEATHERPROOF COVER

FIRE ALARM

PHOTOELECTRIC DUCT SMOKE DETECTOR R=RETURN S=SUPPLY

- COMBINATION AUDIBLE VOICE/VISUAL SIGNALING UNIT- HORN/ STROBE FLASHING "FIRE" LIGHT WALL MOUNTED 48" AFF UNLESS OTHERWISE NOTED. WP=WEATHER PROOF. C= CEILING, 110 CANDELA UNLESS NOTED OTHERWISE.
- FIRE ALARM SHUTDOWN OR CONTROL RELAY
- DUCT DETECTOR REMOTE TROUBLE INDICATOR. MOUNT ADJACENT TO UNIT.

VOLTAGE DROP

THIS PROJECT IS IN COMPLIANCE WITH 2014 FBC-ENERGY CONSERVATION C405.7.3 AND NEC 210.19 WITH REGARDS TO VOLTAGE DROP FOR BOTH DISTRIBUTION PANELS (2%) AND DOWNSTREAM BRANCH CIRCUITS (3%).

SPECIFICATIONS:

SEE DIVISION 26 PROJECT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

GENERAL NOTE:

THESE PLANS HAVE BEEN DESIGNED IN **ACCORDANCE WITH THE 2011 NATIONAL** ELECTRICAL CODE.

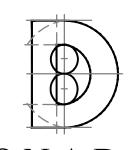
PROPOSED HVAC IMPROVEMENTS BUILDING 700

FELLSMERE ELEMENTARY SCHOOL

FELLSMERE, FLORIDA

School District of Indian River County Vision: Educate and inspire every student to be successful Mission: To serve all students with excellence

legues: Date: Description: 02.13.17 BID SET



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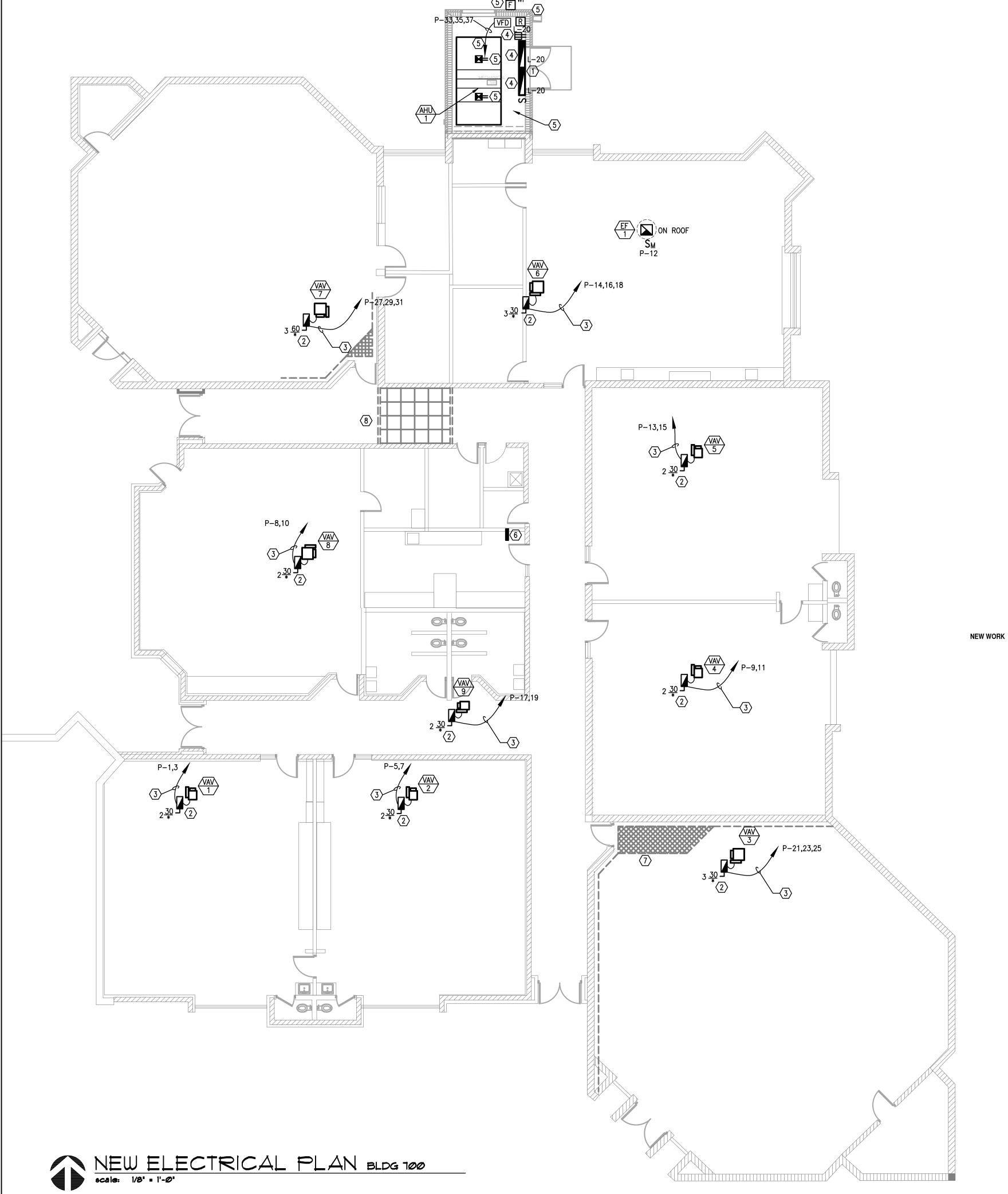
Consultant:



ELECTRICAL - DEMO, LEGEND, NOTES & ABBREVIATIONS



Andrew J. Legro, PE



GENERAL NOTES

- ALL POWER BRANCH CIRCUITS SHALL BE CONNECTED TO PANEL
 "P" UNLESS OTHERWISE NOTED.
- FIRE ALARM DEVICES WHERE REQUIRED SHALL BE INSTALLED IN COMPLIANCE WITH FBC NFPA AND FLORIDA FIRE PREVENTION CODE.
- 3. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS AT THE JOB SITE BEFORE COMMENCING ANY PHASE OF THE WORK. ADJUSTMENTS FOR FIT AND COORDINATION SHALL BE MADE AT NO ADDITIONAL COST TO THE OWNER. NOTIFY ENGINEER OF ANY CONFLICTS, DISCREPANCIES OR OMISSIONS PRIOR TO COMMENCEMENT OF THE CONTRACT WORK.
- 4. SEAL ALL FIRE WALLS, ROOF, AND FLOOR PENETRATIONS WITH UL LISTED FIRE SEALANT.

REFERENCE NOTES:

- MOUNT LIGHTING FIXTURES ABOVE DOORWAY SURFACE MOUNT ON WALL.
- MOUNT FUSED DISCONNECT AT VAV BOX. PROVIDE FLEXIBLE CONDUIT CONNECTION TO UNIT. PROVIDE NEW O.H. FEEDER TO EXISTING PANEL "P". SEE PANEL DIRECTORY.
- (3) INSTALL NEW FEEDER TO NEW VAV BOX ABOVE ACCESSIBLE CEILING. REMOVE EXISTING AND INSTALL NEW PANEL BOARD MATCHING CIRCUIT BREAKER AND UPDATE PANEL TYPE WRITTEN DIRECTORY. SEE PANEL SCHEDULE "P". TURN OVER ALL UN-USED CIRCUIT BREAKER TO OWNER.
- CONNECT NEW W.P. DUPLEX GFCI RECEPTACLE AND NEW LIGHTING FIXTURES TO EXISTING BRANCH CIRCUIT LP-20 (3)#10AWG, 3/4" CONDUIT. LIGHTING FIXTURE SHALL BE: MERCURY LIGHTING L455-4-5000-35K-HTA20-UNI-EM12
- PROVIDE, INSTALL AND CONNECT NEW W.P. FIRE ALARM HORN STROBE DEVICE, SMOKE DETECTORS, SHUT DOWN RELAY AND REMOTE TROUBLE INDICATOR AS INDICATED. CONNECT TO EXISTING FIRE ALARM SYSTEM WITHIN BUILDING.
- 6 LOCATION OF EXISTING PANEL P.
- RELOCATE EXISTING LIGHT FIXTURES FROM NEW SOFFIT AREA BACK TO LINE UP WITH THE FIRST ROW OF LIGHTS OUTSIDE OF THE SOFFIT AREA.
- 8 REMOVE LIGHTS IN EXISTING SOFFIT AREA.

		D	RA	TING:		800	AMP	M.C.B.	-		LUG LOCATION:	TOP	-	AIC :	42KA	IC					
EXISTING PANEL		٢	SER	VICE:	120/2	08V,	3Ø, 4	WIRE			MOUNTING:						I - LI	INE			
CKT EQUIPMENT	-LD		CKT. E		BRAN						EQUIPMENT		-LD	KVA							
NO. SERVED	TYP		POLE	TR	Ø	NEUT	GND	COND	Ø		. SERVED		TYP		POLE	TR	Ø			COND	
1 VAV-1	М	2.00	2	30	10		10	3/4"	Α		EXISTING PANEL C	Р		EX	2	60			TING		
3	M	2.00			10				В					EX				EXIS	TING		- NEW
5 VAV-2	M	2.00	2	30	10		10	3/4"	С		SPACE		M	7.00		10					11211
7	M	2.00			10				Α		VAV-8		M	2.00	2	30	10		10	3/4"	
9 VAV-4	M	2.00	2	30	10		10	3/4"	В				M	2.00		1188			1==		
11	M	2.00			10				С		EF-1		M	0.70	1	20	12	12	12	1/2"	
13 VAV-5	M	2.00	2	30	10		10	3/4"	Α		VAV-6		M	2.00	3	30	10		10	3/4"	
15	M	2.00			10				В				M	2.00						1	
17 VAV-9	M	2.00	2	30	10		10	3/4"	С				M	2.00							
19	M	2.00			10				Α	20	EXISTING PANEL L			EX	3	200		EXIS	TING		
21 VAV-3	M	2.00	3	30	10		10	3/4"	В	22				EX		1==		EXIS	TING		
23	M	2.00			10				C	24				EX				EXIS	TING		
25	M	2.00			10				Α	26	EXISTING			EX	1	20		EXIS	TING		
27 VAV-7	M	2.00	3	40	8		8	1"	В	28	EXISTING			EX	1	20		EXIS	TING		
29	M	2.00			8				С	30	EXISTING			EX	1	20		EXIS	TING		
31	M	2.00			8		-		Α	32	EXISTING			EX	1	20		EXIS	TING		
33 AHU-1 (15 HP)	Α	5.80	3	80	3		6	1 1/2"	В	34	EXISTING			EX	1	20		EXIS	TING		
35	Α	5.80			3				С	36	EXISTING			EX	1	20			TING		
37	Α	5.80			3				Α		EXISTING			EX	1	20		EXIS	TING		
39 SPACE									В	40	EXISTING			EX	1	20		EXIS	TING		
41 SPACE									С	42	EXISTING			EX	1	20		EXIS	TING		
QUIPMENT SERVED	•		CO	NN. LC	DAD	L	F	DF		DES	IGN LOAD (KVA)	REMARKS									
/AV-LOADING				50.5				1.00			50.50	_	PRO	VIDE NE	EW PER	RMANE	ENT PL	LASTIC	;		
IVAC EQUIPMENT				17.4		1.	25				21.75	1		EPLATE						5	
EXSITNG LOAD				0.08		1.	25				100.00]									
				0.0								_									
				0.0				TOTAL			172.25	-									
								IOIAL			11 Z.ZJ	A2 CIDCLUTS								AMDO	

Projec

PROPOSED HVAC IMPROVEMENTS
BUILDING 700

FELLSMERE ELEMENTARY SCHOOL

FELLSMERE, FLORIDA

School District of Indian River County

Vision: Educate and inspire every student to be successful Mission: To serve all students with excellence

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	02.13.17	BID SET

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Drawing T

FLOOR PLAN - ELECTRICAL



Drn:

TG

Chd:

AJL

Project No.:

Plot File:

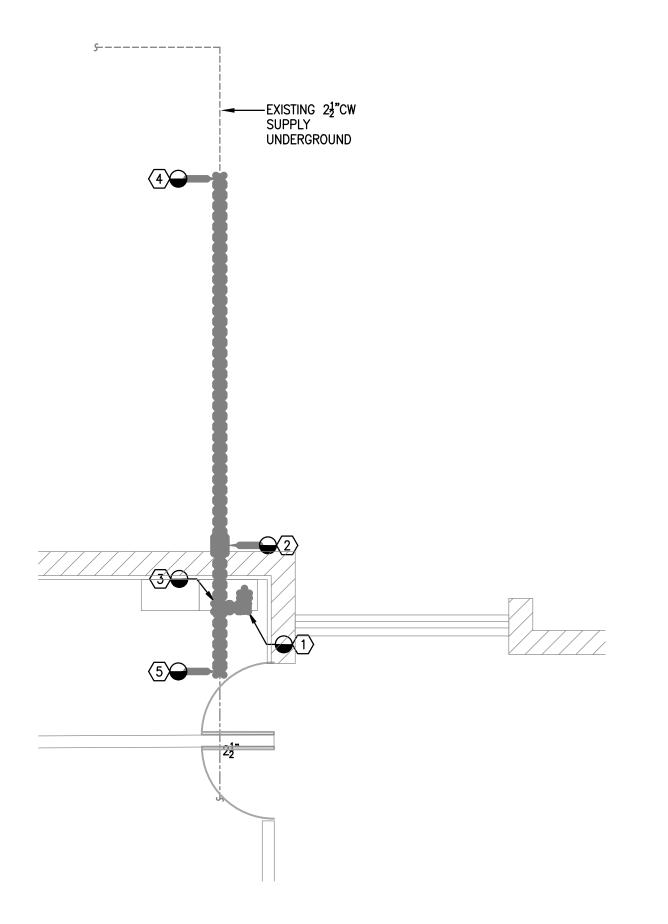
Cert. No.: PE No. 61736

Andrew J. Legro, PE

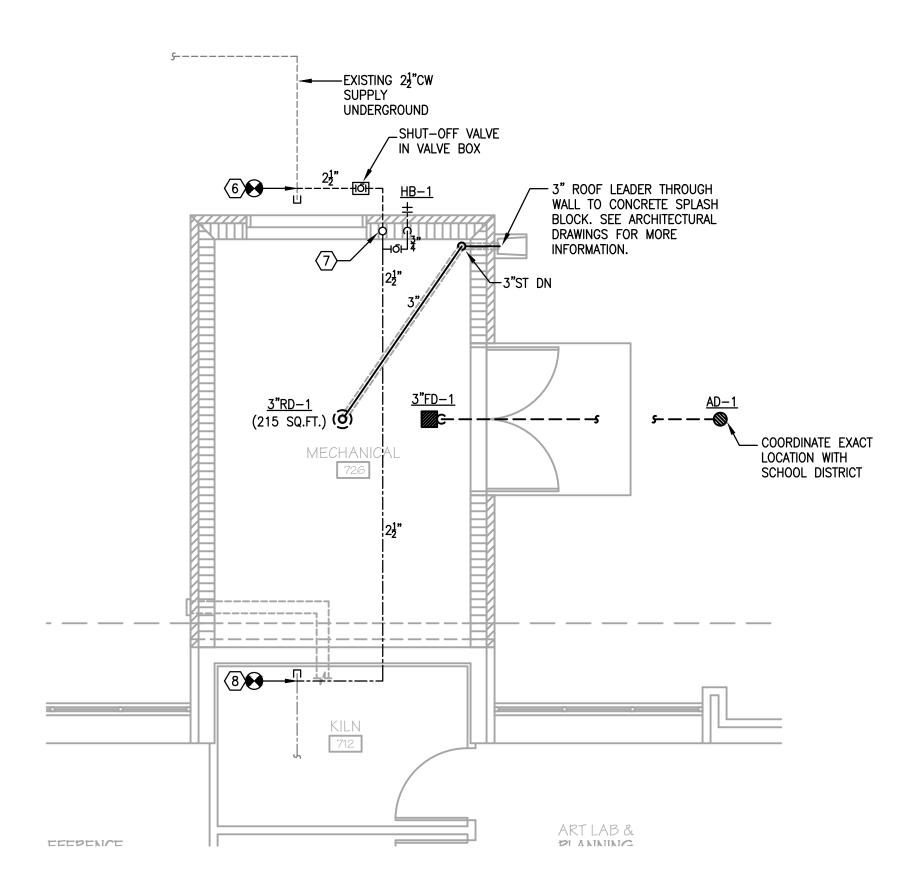
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PLUMBING PLAN

BLDG 700

PLUMBING SPECIALTIES SCHEDULE VENT | C.W. | H.W. | MANUFACTURER TRAP FIXTURE TYPE DESCRIPTION CONN. CONN. CONN. CONN. NO. / MODEL # HOSE BIBB 3/4" WOODFORD HOSE CONNECTION FOR NON-FREEZING AREAS WITH VACUUM BREAKER ENCLOSED IN A FLUSH MOUNTED WALL BOX. B24 RD-1 ROOF DRAIN SEE PLAN -ZURN _ _ 15" DIAMETER ROOF DRAIN. DURA-COATED CAST IRON BODY WITH COMBINATION ZC-100-C-GD MEMBRANE FLASHING CLAMP/GRAVEL GUARD AND LOW SILHOUETTE GALVANIZED CAST IRON DOME, UNDERDECK CLAMP. DURA-COATED CAST IRON BODY WITH BOTTOM OUTLET, COMBINATION INVERTIBLE FD-1 FLOOR DRAIN SEE PLAN 1/2" _ ZN415S-HD-P MEMBRANE CLAMP AND ADJUSTABLE COLLAR WITH SEEPAGE SLOTS AND TYPE 'S' SQUARE HEAVY DUTY POLISHED BRONZE 6"x6" HEAVY DUTY SQUARE STRAINER. 1/2" TRAP PRIMER AD-1 area drain SEE PLAN NDS NDS ROUND POLYOLEFIN GRATE WITH U.V. INHIBITORS. SINGLE 3" DRAIN PIPE _ SPEE-D BASIN CONNECTION AND CATCH BASIN.

PIPING SPECIFICATIONS

WATER PIPING, BELOW GRADE & OUTSIDE BUILDING:

- A. CPVC PIPING & FITTINGS: ASTM D1784 PIPE COMPOUND CELL CLASS
 - 1. JOINTS: ASTM F493 SOCKET TYPE WITH SOLVENT CEMENT ASTM F402 NSF INTERNATIONAL APPROVED MFG. COMPATIBLE.
 - 2. FLOWGUARD GOLD CPVC PIPE AS MFG. BY NOVEON INC.

WATER PIPING, ABOVE GRADE INSIDE BUILDING:

- A. COPPER PIPING: ASTM B88 TYPE 'L' HARD DRAWN.
- 1. FITTINGS: ASME 16.18 CAST BRONZE OR ASME B16.22 WROUGHT COPPER OR BRONZE.
- JOINTS: ASTM B32 SOLDER, ASTM 95-5 TA MINIMUM, FLUX ASTM B813. JOINTS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM B828

PLUMBING LEGEND

	COLD WATER SUPPLY
	COLD WATER SUPPLY EXISTING
	EQUIPMENT
	SANITARY EXISTING
—— ST ——	STORM
ST	STORM UNDERGROUND
	STORM EXISTING
	DIRECTION OF FLOW IN PIPE
	PIPE UP
	PIPE DOWN
——-Ю——	BALL VALVE
<u> </u>	CHECK VALVE, HORIZONTAL SWING
E	CAPPED LINE
$oldsymbol{\Theta}$	NEW POINT OF CONNECTION TO EXISTIN
igorplus	POINT OF REMOVAL FOR DEMOLITION
#	HOSE BIBB
	FLOOR CLEANOUT
 Ø	2-WAY EXTERIOR CLEANOUT
_ ⊣I	WALL CLEANOUT
Į.	SHOCK ABSORBER

REFERENCE NOTES

- REMOVE EXISTING HOSE BIBB AND ALL ASSOCIATED PIPING AND COMPONENTS. FIELD VERIFY EXACT LOCATION OF HOSE BIBB PRIOR TO CONSTRUCTION.
- REMOVE EXISTING SHUT OFF VALVE AND VALVE BOX AND ALL ASSOCIATED PIPING. FIELD VERIFY EXACT SIZE AND LOCATION OF PIPE AND VALVE BOX PRIOR TO CONSTRUCTION.
- REMOVE EXISTING 2½" SUPPLY RISER. FIELD VERIFY EXACT SIZE AND LOCATION OF RISER PRIOR TO CONSTRUCTION.
- REMOVE EXISTING $2\frac{1}{2}$ " UNDERGROUND SUPPLY PIPING AT POINT INDICATED ON DRAWING. FIELD VERIFY EXACT SIZE AND LOCATION OF EXISTING PIPE PRIOR TO CONSTRUCTION.
- REMOVE EXISTING 2½" CW PIPE AT POINT INDICATED ON DRAWING. FIELD VERIFY EXACT SIZE AND LOCATION OF EXISTING PIPE PRIOR TO CONSTRUCTION.
- CONNECT NEW 2½" UNDERGROUND SUPPLY PIPE TO EXISTING 2½" UNDERGROUND SUPPLY PIPE AT POINT INDICATED ON DRAWING. FIELD VERIFY EXACT SIZE AND LOCATION OF EXISTING PIPE PRIOR TO CONSTRUCTION.
- $\overline{7}$ NEW $2\frac{1}{2}$ " CW SUPPLY RISER.
- CONNECT NEW $2\frac{1}{2}$ " CW PIPE TO EXISTING $2\frac{1}{2}$ " CW PIPE AT POINT INDICATED ON DRAWING. FIELD VERIFY EXACT SIZE AND LOCATION OF EXISTING PIPE PRIOR TO CONSTRUCTION.

ABBREVIATIONS

/\DD	
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
APPROX	APPROXIMATELY
ARCH	ARCHITECTURAL
AUTO	AUTOMATIC
BLDG	BUILDING
CD	CONDENSATE DRAIN
CLG	CEILING
CO	CLEAN-OUT
COND	CONDENSATE OR CONDENSER
CONT	CONTINUATION
CMU	CONCRETE MASONRY UNIT
CW	COLD WATER (CITY)
EL	ELEVATION
ELEC	ELECTRIC
• F	DEGREES FAHRENHEIT
ECO	EXTERIOR CLEANOUT
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
GAL	GALLONS
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
HB	HOSE BIBB
HD	HEAD
HW	HOT WATER
HR	HOUR
INV	INVERT ELEVATION
LBS	POUNDS
MIN	MINIMUM
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO NTS	NORMALLY OPEN NOT TO SCALE
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
R	RISE
REQ'D	REQUIRED
RM	ROOM
SAN	SANITARY
SPEC	SPECIFICATION
TEMP	TEMPERATURE
TYP	
	TYPICAL
V VTR	VENT LINE VENT THRU ROOF
W/	WITH
WCO	WALL CLEANOUT
WCO	WALL CLLANOUT

FIRE PROTECTION

THERE ARE SEVERAL AREAS WHERE THE CEILING HEIGHT IS CHANGING FROM 9'0" TO 8'0" AND IT WILL BE NECESSARY TO REVISE THE FIRE SPRINKLER HEADS TO PROVIDE APPROPRIATE COVERAGE. THERE ARE ALSO TWO AREAS WHERE THE NEW SOFFITS ARE BEING ADDED TO THE CLASSROOMS. FIRE SPRINKLER CONTRACTOR TO REVIEW HEAD LAYOUT IN THESE AREAS AND PROVIDE APPROPRIATE COVERAGE.

Project:

PROPOSED HVAC IMPROVEMENTS
BUILDING 700

FELLSMERE
ELEMENTARY SCHOOL

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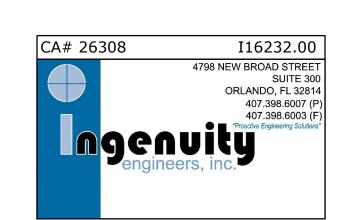
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Consultant:

Architect:



Drawing T

PLUMBING - FLOOR PLAN, LEGEND, NOTES & ABBREVIATIONS



Drn:

CAD

Chd:

BSH

Project No.:

Plot File:

2016-43

Cert. No.: PE No. 52660

Brian S. Hessinger, PE
Date Signed:

P1.00

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