ORANGE COUNTY **REGIONAL HISTORY CENTER** CHILLER AND CRAC REPLACEMENT

ORANGE COUNTY MAYOR TERESA JACOBS

DISTRICT 1 COMMISSIONER S. SCOTT BOYD

DISTRICT 2 COMMISSIONER BRYAN NELSON



DISTRICT 3 COMMISSIONER PETE CLARK

DISTRICT 4 COMMISSIONER JENNIFER THOMPSON

DISTRICT 5 COMMISSIONER TED B. EDWARDS

PERMIT AND BID DOCUMENTS MAY 31, 2016

MTKINS

482 SOUTH KELLER ROAD ORLANDO, FLORIDA 32810

Sheet Number	Sheet Name	Scale	Sheet Issued
M-000	COVER SHEET AND SHEET INDEX	No Scale	Yes
M-001	HVAC SYMBOLS LEGEND AND GENERAL NOTES	No Scale	Yes
MD-101	HVAC FIRST AND SECOND LEVEL DEMOLITION PLANS	1/4"=1'-0"	Yes
MD-102	HVAC FIFTH AND ROOF LEVEL DEMOLITION PLANS	1/4"=1'-0"	Yes
M-101	HVAC FIRST, SECOND AND LOW ROOF NEW WORK PLANS	1/4"=1'-0"	Yes
M-102	HVAC FIFTH AND ROOF LEVEL NEW WORK PLANS	1/4"=1'-0"	Yes
M-201	HVAC DETAILS	No Scale	Yes
M-202	HVAC DETAILS	Varies	Yes
M-301	HVAC CONTROLS AND SCHEDULES	No Scale	Yes
E-001	ELECTRICAL SYMBOL, LEGEND, ABBREVIATIONS & GENERAL NOTES	No Scale	Yes
ED-101	ELECTRICAL DEMOLITION PLANS FIRST AND SECOND LEVEL	1/4"=1'-0"	Yes
ED-102	ELECTRICAL DEMOLITION PLANS FIFTH AND ROOF LEVEL	1/4"=1'-0"	Yes
EP-101	ELECTRICAL NEW WORK PLANS FIRST AND SECOND LEVEL	1/4"=1'-0"	Yes
EP-102	ELECTRICAL NEW WORK PLANS FIFTH AND ROOF LEVEL	1/4"=1'-0"	Yes

DISTRICT 6 COMMISSIONER VICTORIA P. SIPLIN



SYMBOL	DESCRIPTION		SYMBOL
Δ	-REVISION REFERENCE		L
(<u>1</u> M-3##)	-DETAIL REFERENCE: TOP-DETAI BOTTOM-DRAWING# SHOWN ON	_#,	1
T	-THERMOSTAT/TEMPERATURE SE	INSOR	L
Ĥ	-HUMIDISTAT/HUMIDITY SENSOR		1
ES	-EMERGENCY SWITCH		
CO 2	-CO2 SENSOR		<u>∤</u> ₩₩₩₩
	-DUCT SMOKE DETECTOR		1
	-CONNECT TO EXISTING		
	-DEMOLISH TO POINT INDICATED		
	-MOTORIZED CONTROL DAMPER		
	-TEMPERATURE SENSOR -PRESSURE SENSOR		<u> </u>
[Р] ВD	-BACKDRAFT DAMPER		
	-SHEET NOTE CALLOUT		8 16/8
	-SHEET NOTE CALLOUT		2 4x12
	-SHEET NOTE CALLOUT		-24
(<u>A_200</u>)	-AIR DISTRIBUTION TAG		
	-CEILING MOUNTED ACCESS DOC		
\bowtie	-CEILING DIFFUSER, ROUND OR F (CEILING DIFFUSERS ARE 4-WAY	RECTANGULAR NECK THROW UNO)	
\bigcirc	-ROUND DIFFUSER		
	-CEILING RETURN		
	-CEILING EXHAUST		
	-CEILING DIFFUSER, RECTANGUL (CEILING DIFFUSERS ARE 4-WAY		
 	-SUPPLY REGISTER OR GRILLE		\bigcirc
1ų ^{−−}	(VERTICAL MOUNT, SIDEWALL) -RETURN/EXHAUST REGISTER OF	R GRILLE	\bigcirc
⋡ <u></u> ┙╵╵	(VERTICAL MOUNT, SIDEWALL)		
	-STEEL BARS AS REQUIRED BY A	R-190-1	
	-FIRE DAMPER (WITH ACCESS PANEL)		
	-FIRE & SMOKE DAMPER		
Ì	(WITH ACCESS PANEL)		
ł	-MANUAL BALANCING DAMPER		\bigcirc
<u> </u>			
i	-DEMOLISHED/REMOVED DUCTW PIPING AND/OR EQUIPMENT	ORK,	
──── ────── →───→ ┟┨→		ORK,	
	PIPING AND/OR EQUIPMENT	ORK,	
	PIPING AND/OR EQUIPMENT -PIPING/DUCTWORK SUPPORT		
	PIPING AND/OR EQUIPMENT	SYMBOL	
- CHWS	PIPING AND/OR EQUIPMENT -PIPING/DUCTWORK SUPPORT DESCRIPTION -CHILLED WATER SUPPLY	SYMBOL	-CONTROL VALVE
— CHWS ———— — CHWR————	PIPING AND/OR EQUIPMENT -PIPING/DUCTWORK SUPPORT DESCRIPTION -CHILLED WATER SUPPLY -CHILLED WATER RETURN	SYMBOL	
— CHWR CD	PIPING AND/OR EQUIPMENT -PIPING/DUCTWORK SUPPORT DESCRIPTION -CHILLED WATER SUPPLY -CHILLED WATER RETURN -CONDENSATE	SYMBOL T	-CONTROL VALVE-CHECK VALVE
— CHWS —	PIPING AND/OR EQUIPMENT -PIPING/DUCTWORK SUPPORT DESCRIPTION -CHILLED WATER SUPPLY -CHILLED WATER RETURN -CONDENSATE -CONDENSATE RETURN -CONDENSATE RETURN	SYMBOL T	 -CONTROL VALVE -CHECK VALVE -CALIBRATING BALANCING -GAS COCK -UNION
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HVAC SYMBOL LEGEND HVAC DESCRIPTION SYMBOL DESCRIPTION SYMBOL DESCRIPTION -OUTSIDE AIR LOUVER AFD -ADJUSTABLE FREQUENCY DRIVE -1" INTERNALLY LINED DUCTWORK AFF -ABOVE FINISHED FLOOR AFR -ABOVE FINISHED ROOF -EXHAUST AIR LOUVER AHU -AIR HANDLING UNIT -HYDRONIC REHEAT COIL AP -ACCESS PANEL BOP -BOTTOM OF PIPE -DUCTWORK SOUND ATTENUATOR -INLINE CENTRIFUGAL FAN BHP -BRAKE HORSEPOWER BHWP -BUILDING HOT WATER PUMP BTU -BRITISH THERMAL UNIT -DOOR GRILLE -CHANGE OF ELEVATION h -CENTER LINE -CFM (CUBIC FEET PER MINUTE) -FLEXIBLE DUCT -UNDERCUT DOOR CD -CEILING DIFFUSER CT -COOLING TOWER -TRANSITION, CONCENTRIC -ACCESS DOORS, VERTICAL OR HORIZONTAL CV -CONSTANT AIR VOLUME -TRANSITION, ECCENTRIC ∠P -CHANGE IN PRESSURE ∠T -CHANGE IN TEMPERATURE -FLAT OVAL DUCT CFM -CUBIC FEET PER MINUTE - 10x8 ______8Ø ____ -TRANSITION, SQUARE TO ROUND CTU -CONSTANT VOLUME TERMINAL U -NEW DUCTWORK, FIRST DIMENSION IS SIDE SHOWN _____ CU -CONDENSING UNIT -SQUARE THROAT ELBOW -24x12 `~___ W/TURNING VANES DDC -DIRECT DIGITAL CONTROLS -DUCT ELBOW, POSITIVE PRESSURE (SUPPLY), FIRST UP W/IN FLOOR DN -DOWN DS -DUCT SOUND ATTENUATOR 11 --RADIUS ELBOW -DUCT ELBOW, EXHAUST EAT -ENTERING AIR TEMPERATURE EDH -ELECTRIC DUCT HEATER -DUCT ELBOW, NEGATIVE PRESSURE, RETURN -----EF -EXHAUST FAN OR ROUND/ROUND CONICAL TAKE-OFF -DUCT ELBOW UP THROUGH ROOF OR SLAB ABOVE ERV -ENERGY RECOVERY VENTILATOR ESP -EXTERNAL STATIC PRESSURE H ------RECTANGULAR DUCT SECTION UP, POSITIVE PRESSURE, -SQUARE THROAT TEE EWT -ENTERING WATER TEMPERATURE SUPPLY OR OUTSIDE AIR . FCU -FAN COIL UNIT -RECTANGULAR DUCT SECTION UP, NEGATIVE PRESSURE, RETURN FD -FIRE DAMPER -RECTANGULAR DUCT SECTION UP, EXHAUST FF -FINAL FILTERS -ROUND DUCT SECTION UP FLA -FULL LOAD AMPS -RADIUS TEE 12x8 FPM -FEET PER MINUTE -FLAT OVAL DUCT SECTION UP GPM -GALLONS PER MINUTE IH -INFRARED GAS-FIRED HEATER -EXHAUST DUCT UP THROUGH SLAB W/FAN -RECTANGLE-TO-ROUND TAKE-OFF ON ROOF ABOVE KW -KILOWATT LAT -LEAVING AIR TEMPERATURE -EXHAUST FAN ON ROOF W/DUCT DOWN THROUGH ROOF LWT -LEAVING WATER TEMPERATURE -STANDARD BRANCH TAKE-OFF LD -LINEAR DIFFUSER -OUTSIDE AIR DUCT UP THROUGH SLAB W/FAN ON ROOF ABOVE -OUTSIDE AIR FAN ON ROOF W/DUCT DOWN -SPIN-IN TAKE-OFF W/VOLUME DAMPER & FLEXIBLE DUCT THROUGH ROOF -TERMINAL UNIT, VARIABLE/CONSTANT AIR VOLUME -SPIN-IN TAKE-OFF W/VOLUME DAMPER & ROUND DUCT -TERMINAL UNIT, VARIABLE/CONSTANT AIR VOLUME WITH HOT WATER HEAT HVAC PIPING SYMBOL LEGEND SYMBOL DESCRIPTION SYMBOL DESCRIPTION SYMBOL DESCRIPTION $\langle A0 \rangle$ BI **BINARY / DIGITAL INPUT** -INLINE PUMP BINARY / DIGITAL OUTPUT (BO) MOTORIZED 2-POSITION, FLO. MODULATING CONTROL VALV NG VALVE -VALVE ON RISER ANALOG INPUT (Al ANALOG OUTPUT (AO) _____ -CONNECTION, BOTTOM -CONNECTION, TOP DIFFERENTIAL PRESSURE SWITCH (DPS) MOTORIZED CONSTANT FLO OR TRANSMITTER (DPT) CONTROL VALVE -COUPLING -ELBOW, 90° STATUS BO--ELBOW, 45° OWN) DAMPER AND ACTUATOR WI START/STOP -ELBOW, TURNED DOWN G_____ SPEED REF (AO)-Σн STARTER DISCONNECT -ELBOW, TURNED UP o_____ SPEED ADJUST (A) -TEE, OUTLET DOWN ____ (AI) -TEE, OUTLET UP AFMS-L VALVE FLOW METER (FM) 888 V - D <u>FM-</u> Ռп AIR FLOW MONITORING STAT FLOW MONITORING STATION -------45° PIPE RISE (R) / DROP (D) 20 VAC -PIPE ANCHORS OR MODULATING MOTORIZE -CONCENTRIC REDUCER -ECCENTRIC REDUCER PRESSURE / TEMPERATURE (PT) PORT <u>ج</u>لو _____ CO2 SENSOR -MODULATING CONTROL VALVE AI AI DIFFERENTIAL PRESSURE <u>TS-</u> WALL-MOUNTED THERMOST TRANSMITTER <u>TS-</u> <u>TS-</u> HUMIDITY SENSOR OR CO2 S <u>CO2-</u> Ť TEMPERATURE SENSOR IN WELL 17-<u>HS-</u> -TEMPERATURE SENSOR EVAPORATIVE COOLER -X-DUCT MOUNTED HUMIDITY SENSOR -ACTUATED TWO-WAY VALVE HIGH / LOW STATIC PRESSUR ЮЮ -PRESSURE/TEMPERATURE POR DUCT MOUNTED TEMPERATURE SENSOR -PRESSURE SENSOR

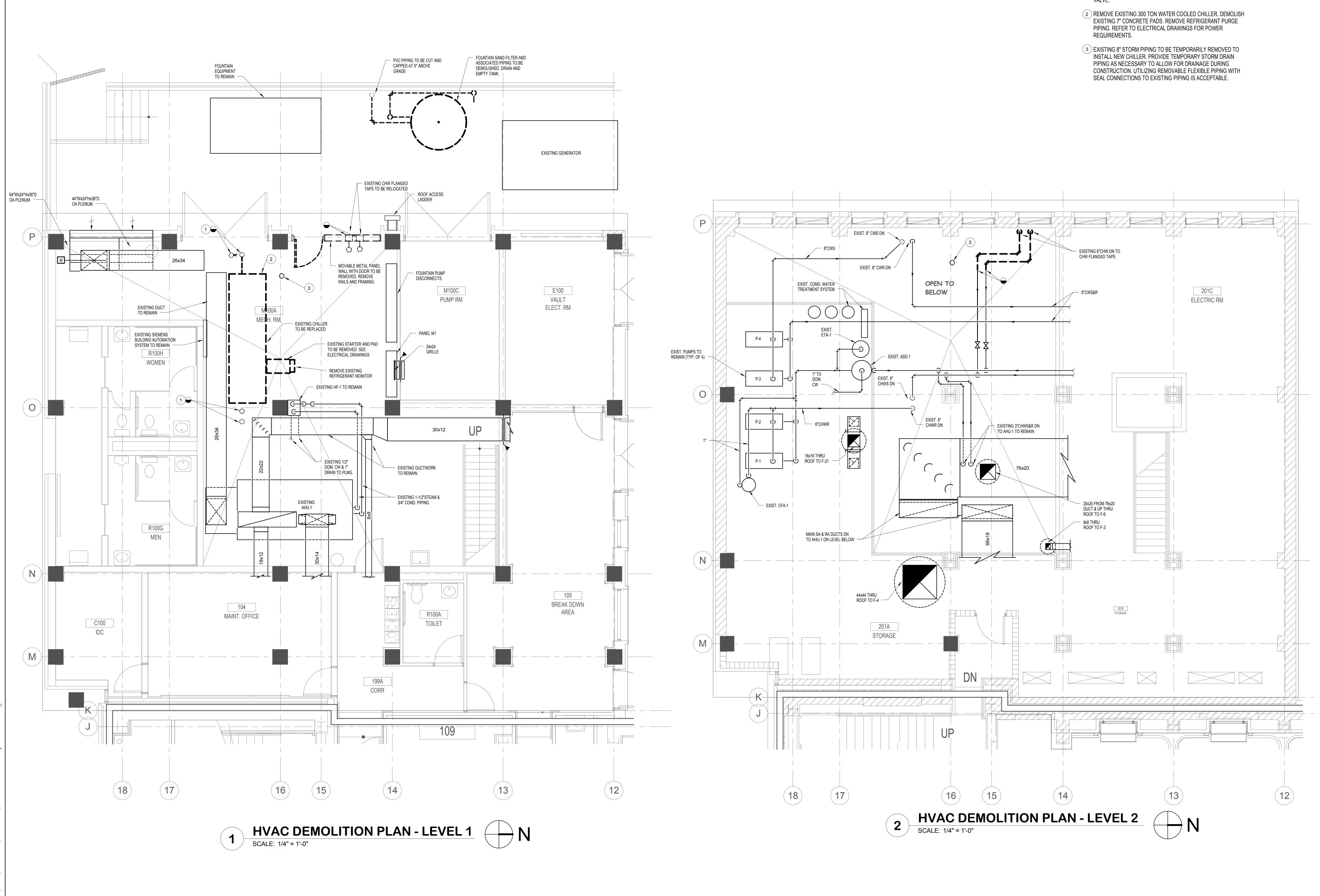
NOTE: SOME SYMBOLS SHOWN ON THIS LEGEND MAY NOT PERTAIN TO THIS PROJECT

CAB	BREVI	ATIONS		HVAC GENERAL NOTES
	SYMBOL	DESCRIPTION	1.	CONNECTION TO EQUIPMENT SHALL BE VERIFIED WITH MANUFACTURER'S CERTIFIED DRAWINGS. TRANSITIONS TO ALL EQUIPMENT SHALL BE VERIFIED AND PROVIDED FOR EQUIPMENT FURNISHED.
E	MAU MBH MCA MOCP	-MAKE-UP AIR UNIT -THOUSAND BTUH PER HOUR -MINIMUM CIRCUIT AMPS	2.	DIMENSIONS SHALL BE FIELD-VERIFIED AND COORDINATED PRIOR TO PROCUREMENT OR FABRICATION. COORDINATE THE WORK WITH OTHER TRADES INVOLVED. FIELD MODIFICATIONS SUCH AS OFFSETS IN PIPING OR DUCTWORK (INCLUDING DIVIDED DUCTWORK) NEEDED DUE TO OBSTRUCTIONS OR INTERFERENCES SHALL BE PROVIDED AT NO ADDITIONAL COST.
	MOD	-MAXIMUM OVER CURRENT PROTECTION -MOTOR OPERATED CONTROL DAMPER (MOD)	3.	DUCT CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE SMACNA HVAC DUCT CONSTRUCTION STANDARD.
	MTHW	-MEDIUM TEMP HOT WATER	4.	SEE SPECIFICATIONS FOR GAUGES, THICKNESS, BRACING, REQUIREMENTS, ETC., OF DUCTWORK.
	NC	-NORMALLY CLOSED	5.	PROVIDE AIR TURNING VANES IN ALL 90 DEGREE RECTANGULAR DUCT ELBOWS.
	NO	-NORMALLY OPEN	6.	DUCT SIZES AND ALL OPENINGS THROUGH BUILDING CONSTRUCTION SHALL SUIT
	NTS	-NOT TO SCALE		EQUIPMENT FURNISHED.
	OA OAL	-OUTSIDE AIR -OUTSIDE AIR LOUVER	7.	ALL EQUIPMENT, DUCTWORK, ETC., SHALL BE SUPPORTED AS DETAILED AND/OR SPECIFIED. PROVIDE ADDITIONAL SUPPORTS AS REQUIRED TO PROVIDE A VIBRATION-FREE, RIGID INSTALLATION.
	PRBP	-PRESSURE REDUCING BACKFLOW PREVENTER	8.	ALL DUCT SIZES SHOWN ARE INSIDE CLEAR DIMENSIONS.
	PRV	-PRESSURE REDUCING VALVE	9.	REFER TO TYPICAL DETAILS FOR PIPING AND INSTALLATION OF EQUIPMENT.
	PRS PSI	-PRESSURE REDUCING STATION -POUNDS PER SQUARE INCH	10.	TRAPPED CONDENSATE DRAINS FROM ALL MECHANICAL EQUIPMENT SHALL BE PROVIDED FOR PROPER DRAINAGE TO SUIT EQUIPMENT FURNISHED.
	PSIG	-PSI GAUGE	11.	ACCESS PANELS IN DUCTWORK SHALL BE PROVIDED WHERE REQUIRED FOR OPERATION, BALANCING OR MAINTENANCE OF ALL MECHANICAL EQUIPMENT.
UNIT	PTAC PVC RA	-PACKAGED TERMINAL AIR CONDITIONER -POLYVINYL CHLORIDE PIPE -RETURN AIR	12.	ALL DUCTWORK AND PIPING IS SHOWN SCHEMATICALLY. PROVIDE ALL TRANSITIONS, TURNING VANES, ELBOWS, FITTINGS, ETC., TO ALLOW SMOOTH FLOWS. ALL SPLIT DUCT FITTINGS SHALL TRANSITION TO FULL SIZE OF THE SUM OF BOTH BRANCHES, UPSTREAM OF SPLIT.
	RHC RHP RPM	-REHEAT COIL -ROOFTOP HEAT PUMP -REVOLUTIONS PER MINUTE	13.	MAINTAIN CLEARANCE OF A MINIMUM OF 6" BETWEEN DUCTWORK, PIPING, EQUIPMENT, ETC., AND ALL FIRE RATED AND FIRE/SMOKE RATED PARTITIONS, TO ALLOW FOR INSPECTIONS OF RATED WALLS.
	RS/L RTU	-REFRIGERANT SUCTION & LIQUID LINES -ROOFTOP AIR HANDLING UNIT	14.	LOCATE ALL OUTSIDE AIR INTAKES A MINIMUM OF 15'-0" CLEAR FROM ALL PLUMBING VENTS AND EXHAUST AIR DISCHARGE LOCATIONS. LOWEST POINT OF EACH OUTSIDE AIR INTAKE ON ROOF SHALL BE A MINIMUM OF 24" ABOVE ROOF.
	SA	-SUPPLY AIR	15.	WATER PRESSURE DROPS THROUGH COIL CONTROL VALVES SHALL NOT EXCEED 5 PSI.
OR	SF	-SUPPLY FAN	16.	UNLESS OTHERWISE NOTED, ALL EQUIPMENT AND VALVE DRAINS SHALL BE INDEPENDENTLY PIPED FULL SIZE TO THE NEAREST PLUMBING DRAIN.
RE	SP SS	-STATIC PRESSURE -STAINLESS STEEL	17.	SLEEVE AND SEAL ALL PIPING PENETRATIONS THROUGH BUILDING. PROVIDE
	TAB	-TEST AND BALANCE	18.	AUTO AIR VENTS AT ALL HIGH POINTS IN CHILLED WATER AND HOT WATER PIPING. THE GENERAL CONTRACTOR SHALL VERIFY AND COORDINATE ALL STRUCTURAL ITEMS
	TAD TSP	-TRANSFER AIR DUCT -TOTAL STATIC PRESSURE		INVOLVING HVAC WITH THE MECHANICAL CONTRACTOR BEFORE STARTING WORK ON OPENINGS, HOUSEKEEPING PADS AND EQUIPMENT SUPPORT.
	uh Uno V/Ph	-UNIT HEATER -UNLESS NOTED OTHERWISE -VOLTS/PHASE	19.	REMOVE EXISTING WATER-COOLED CHILLER AND ASSOCIATED PIPING SHOWN DASHED. REFERENCE NEW CONSTRUCTION AND PHASING PLAN FOR INSTALLATION OF NEW CHILLER AND ASSOCIATED PIPING. COORDINATE ALL SCHEDULING MILESTONES AND DOWNTIMES WITH OWNER, VERIFY ACCEPTANCE OF SCHEDULE FROM OWNER IN WRITING PRIOR TO ANY DEMOLITION WORK.
F	VAV VFD VTU	-VARIABLE AIR VOLUME -VARIABLE FREQUENCY DRIVE -VARIABLE VOLUME TERMINAL UNIT	20.	REMOVE EXISTING CRAC UNIT AND ASSOCIATED CONDENSING UNIT AND PIPING SHOWN DASHED. REFERENCE NEW CONSTRUCTION FOR INSTALLATION OF NEW CRAC UNIT AND ASSOCIATED CONDENSING UNIT AND PIPING. COORDINATE ALL SCHEDULING MILESTONES AND DOWNTIMES WITH OWNER, VERIFY ACCEPTANCE OF SCHEDULE FROM OWNER IN WRITING PRIOR TO ANY DEMOLITION WORK.
E			21.	CONTRACTOR SHALL REPAIR ANY ROOF DAMAGE INCURRED DURING CONSTRUCTION.
			22.	CONTRACTOR SHALL MAINTAIN SPACE CONDITIONS WITHIN THE SPECIFIED TEMPERATURE AND HUMIDITY RANGES LISTED IN THE TABLE BELOW AND DETERMINE THE USE OF TEMPERORARY COOLING AND/OR HEATING EQUIPMENT NECESSARY TO MAINTAIN RANGES. CONTRACTOR SHALL SUBMIT THE METHOD FOR MAINTAINING THE SPACES WITHIN STATED CONDITIONS FOR EACH PIECE OF EQUIPEMENT PRIOR TO STARTING WORK.
			23.	CONTRACTOR SHALL COORDINATE CONSTRUCTION SCHEDULE WITH THE ORANGE COUNTY REGIONAL HISTORY CENTER.
			24.	CONTRACTOR SHALL PROVIDE PIPE SHOP DRAWINGS WITH EXACT PIPING CONNECTIONS TO THE NEW CHILLER PRIOR TO BEGINNING CONSTRUCTION.
				SPACE CONDITIONS

ON	SYMBOL	DESCRIPTION	
LOATING OR ALVE AS INDICATED		PRESSURE SWITCH	
		CENTRIFUGAL FAN OR PUMP	
LOW 3-WAY		THERMOMETER GAUGE	
NITH END SWITCH		PRESSURE GAUGE	
		CLOSED DIAPHRAM TYPE EXPANSION TANK (ET)	
ATION ALONE OR AIR ON WITH 2-POSITION ZED DAMPER		AIR SEPARATOR (AS)	
	s d DV	DRAIN VALVE WITH END PLUG	
STAT / TEMP. SENSOR, 2 SENSOR	S S AVM	MANUAL AIR VENT	
	AAV ج م	AUTOMATIC AIR VENT	
		AUTOMATIC FLOW CONTROL VALVE (AFCV) CIRCUIT SETTER	
SURE SWITCH		PRESSURE INDEPENDENT CONTROL VALVE (PICV)	
		FLEX CONNECTION	

TEMPERATURE AND HUMI	DITY REQU	IREMENTS
AREA/SPACE	TEMP	HUMIDITY
COURTROOM	68-72	40%-50%
4TH FL ARCHIVES	68-72	30%-45%
5TH FL GALLERY	68-72	40%-50%
TRAVELING EXHIBIT HALL	68-72	40%-50%
ALL OTHER SPACES	68-75	45%-55%

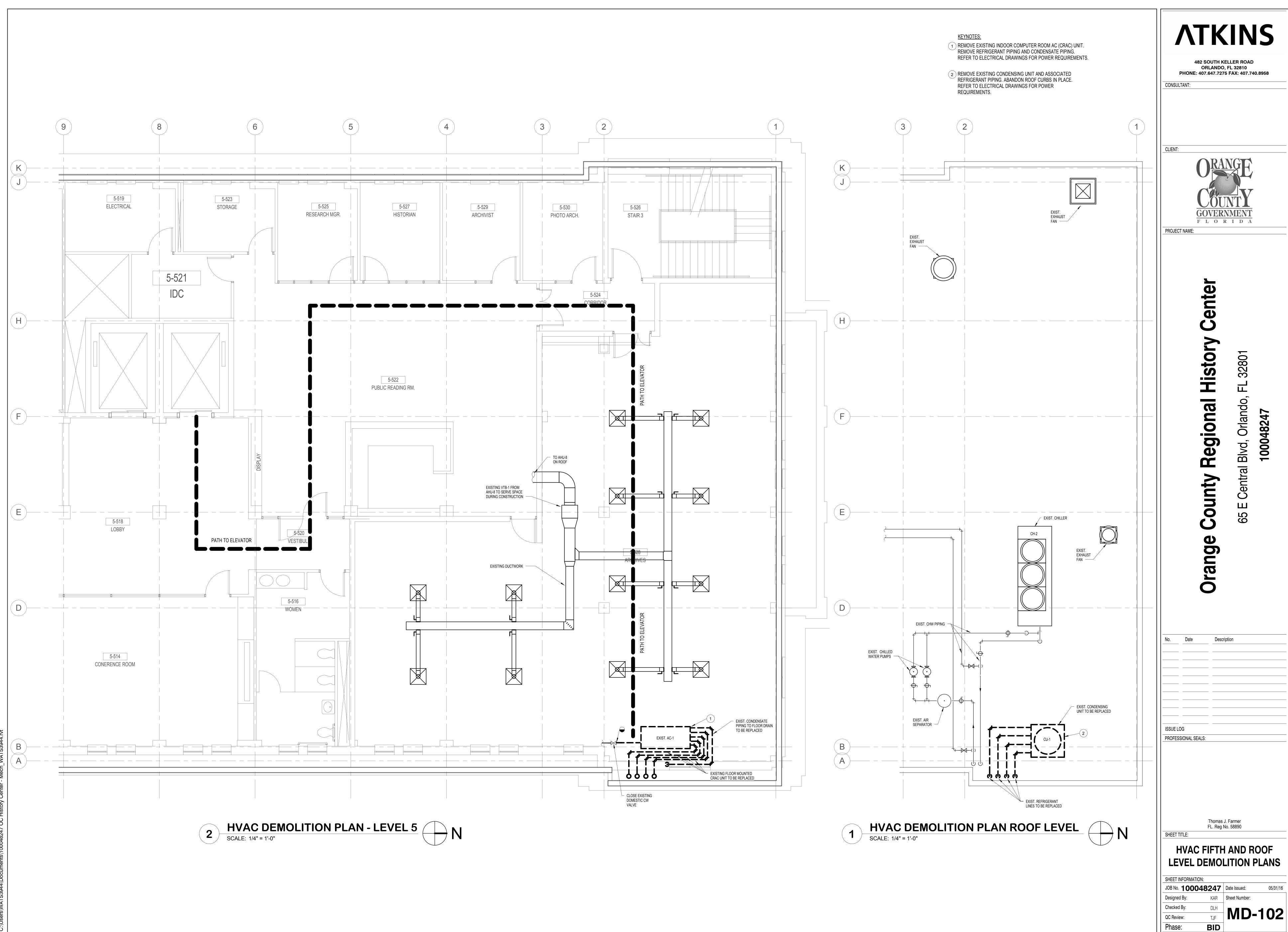


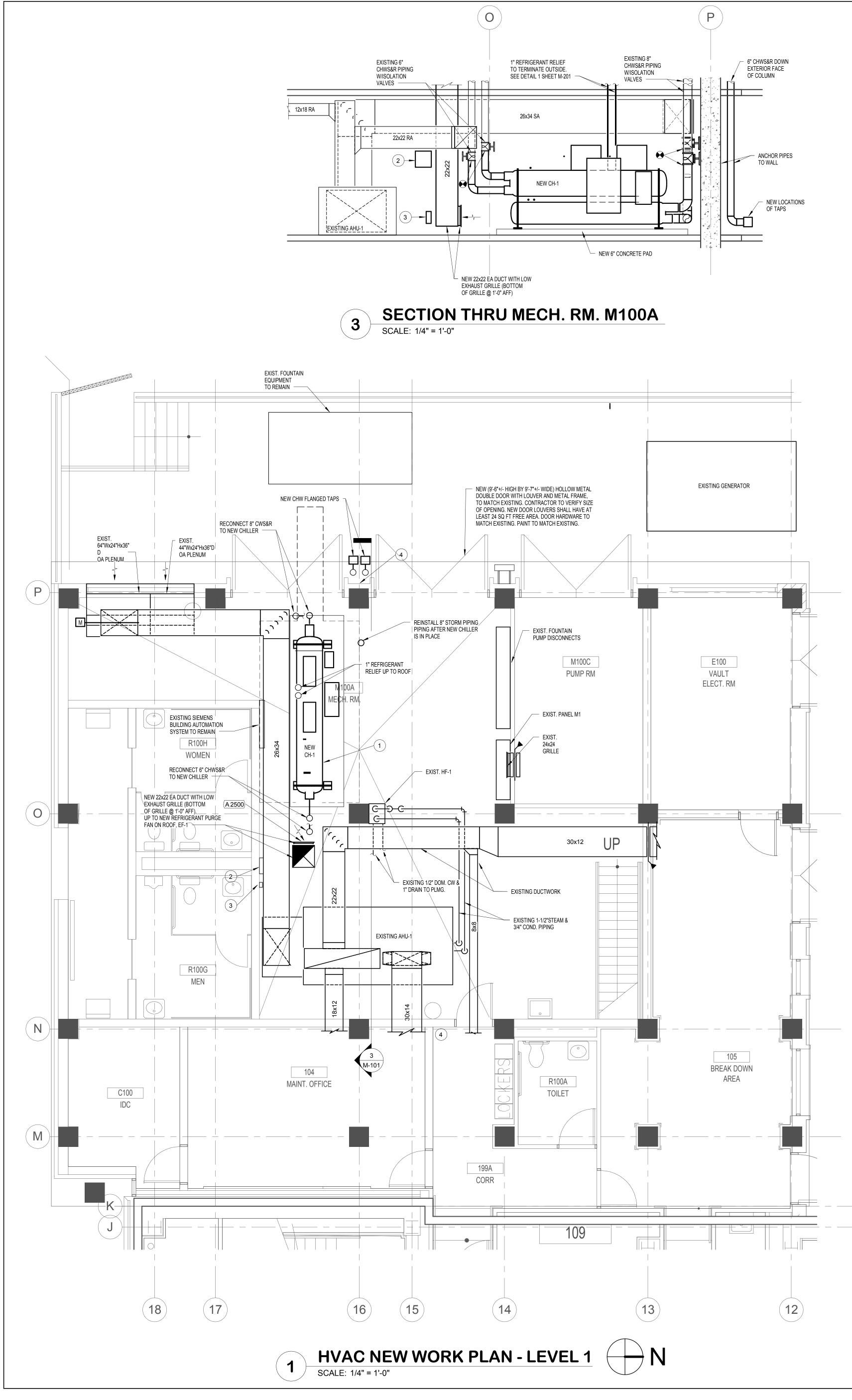


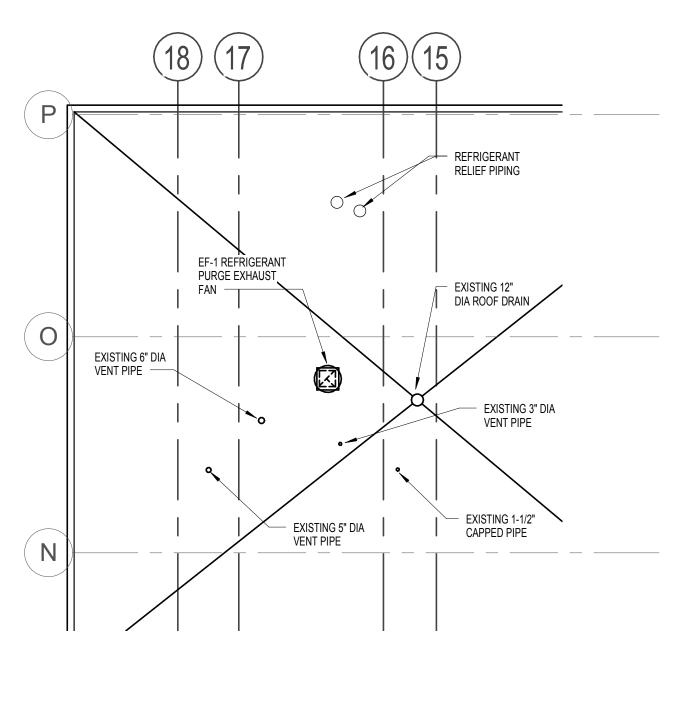
KEYNOTES:

- (1) CLOSE EXISTING ISOLATION VALVES ON CHW AND CW PIPING. VERIFY PROPER OPERATION OF VALVES, REPLACE VALVES IF NEEDED. DETACH EXISTING CHW AND CW PIPING FROM BELOW VALVE.

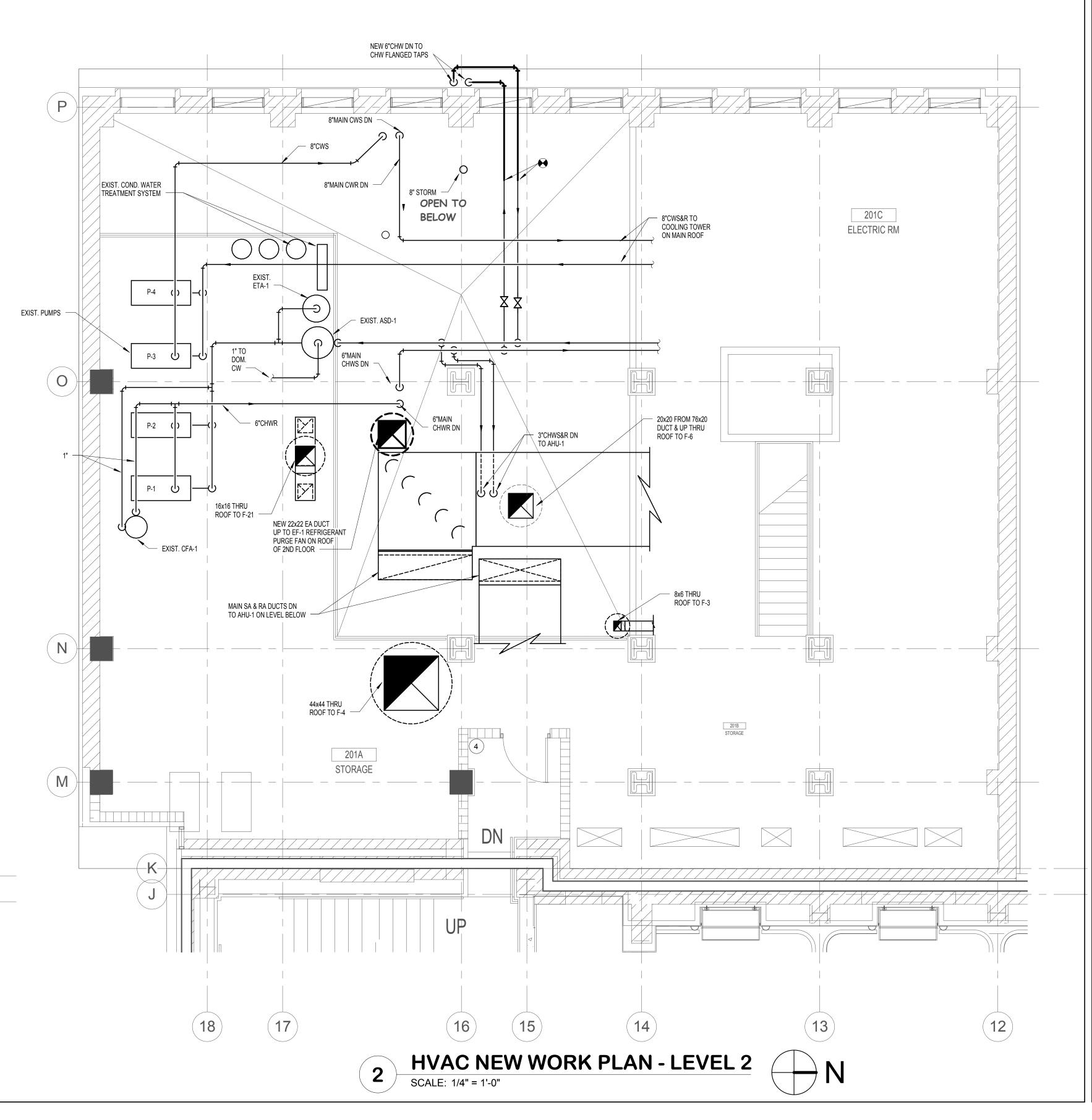






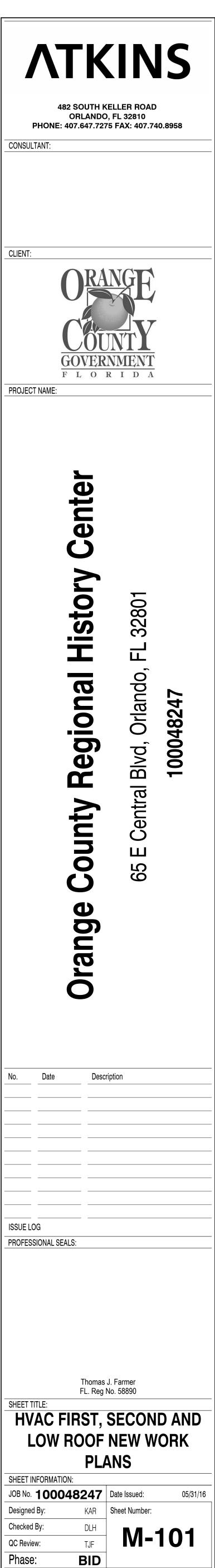


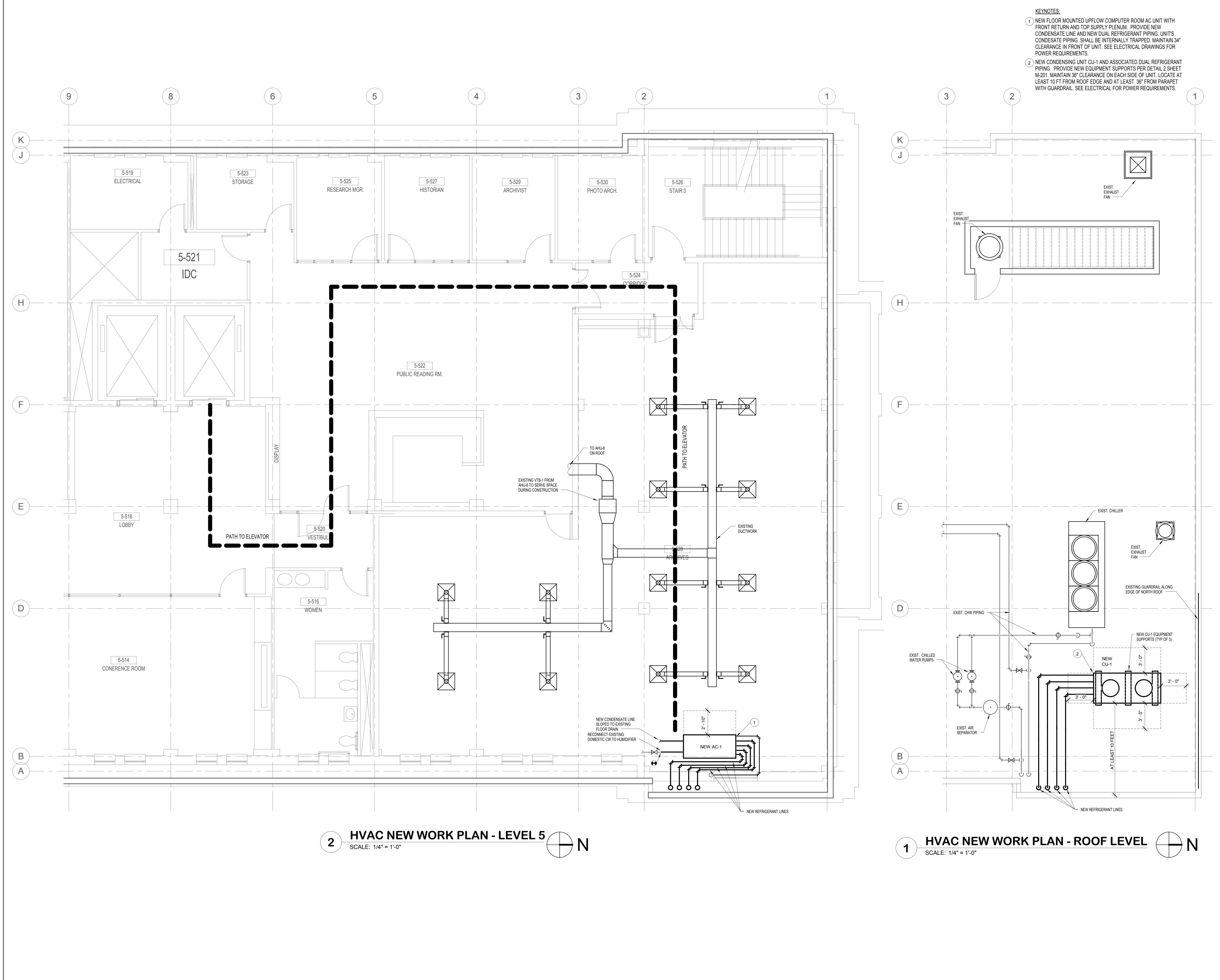
HVAC LOW ROOF PLAN 4 SCALE: 1/8" = 1'-0"

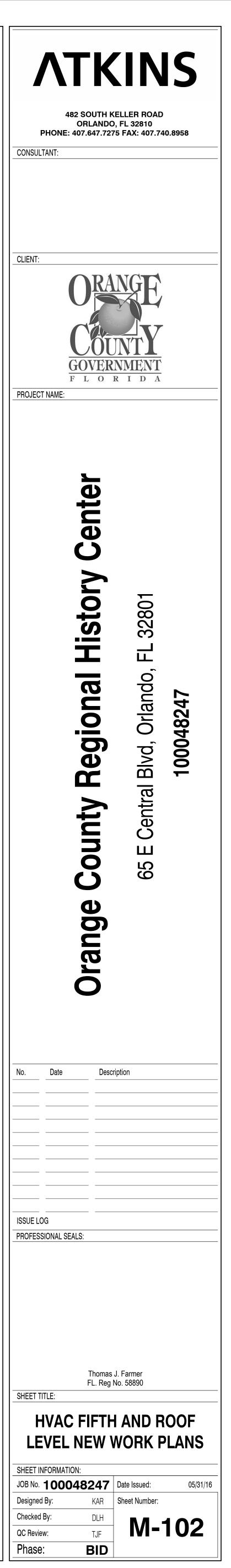


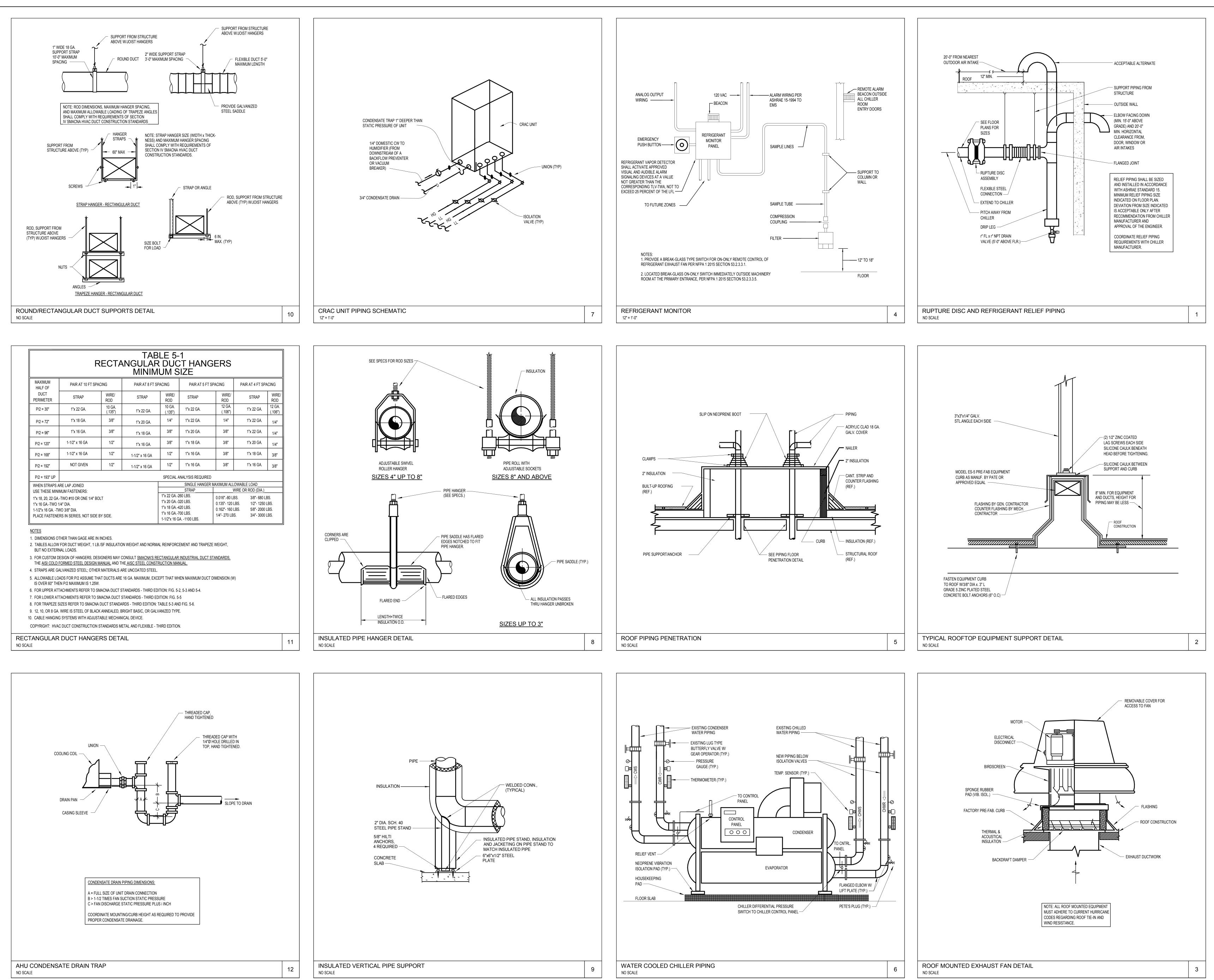
KEYNOTES:

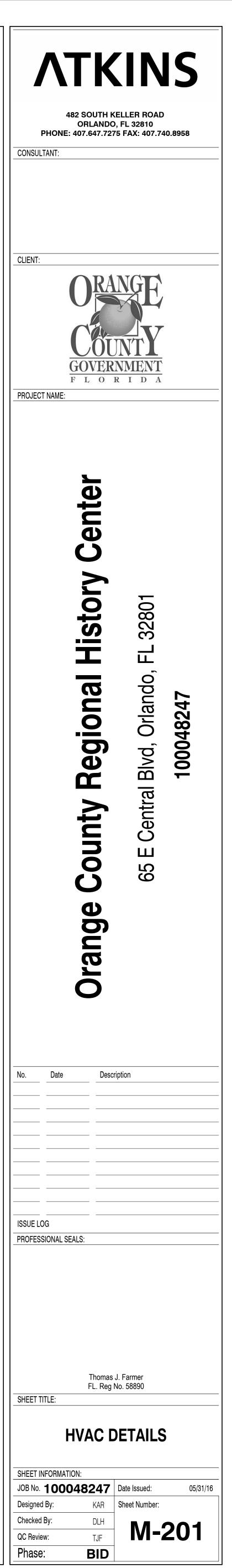
- 1) PROVIDE NEW 300 TON WATER COOLED CHILLER. RECONNECT É EXISTING 6" CHW SUPPLY AND RETURN PIPING TO EVAPORATOR SIDE AND RECONNECT EXISTING 8" CW SUPPLY AND RETURN PIPING TO CONDENSER SIDE. PROVIDE NEW 6" CONCRETE PAD FOR ENTIRE LENGTH AND WIDTH OF NEW CHILLER. REFER TO ELECTRICAL DRAWINGS FOR POWER REQUIREMENTS.
- 2 REFRIGERANT GAS MONITOR CONTROL MODULE AND EMERGENCY
- PUSH BUTTON. (3) INFRARED REFRIGERANT GAS SENSOR FOR R-134A.
- 4 COMBINATION HORN AND STROBE ASSEMBLY AT EACH
- ENTRANCE TO MECHANICAL ROOM.



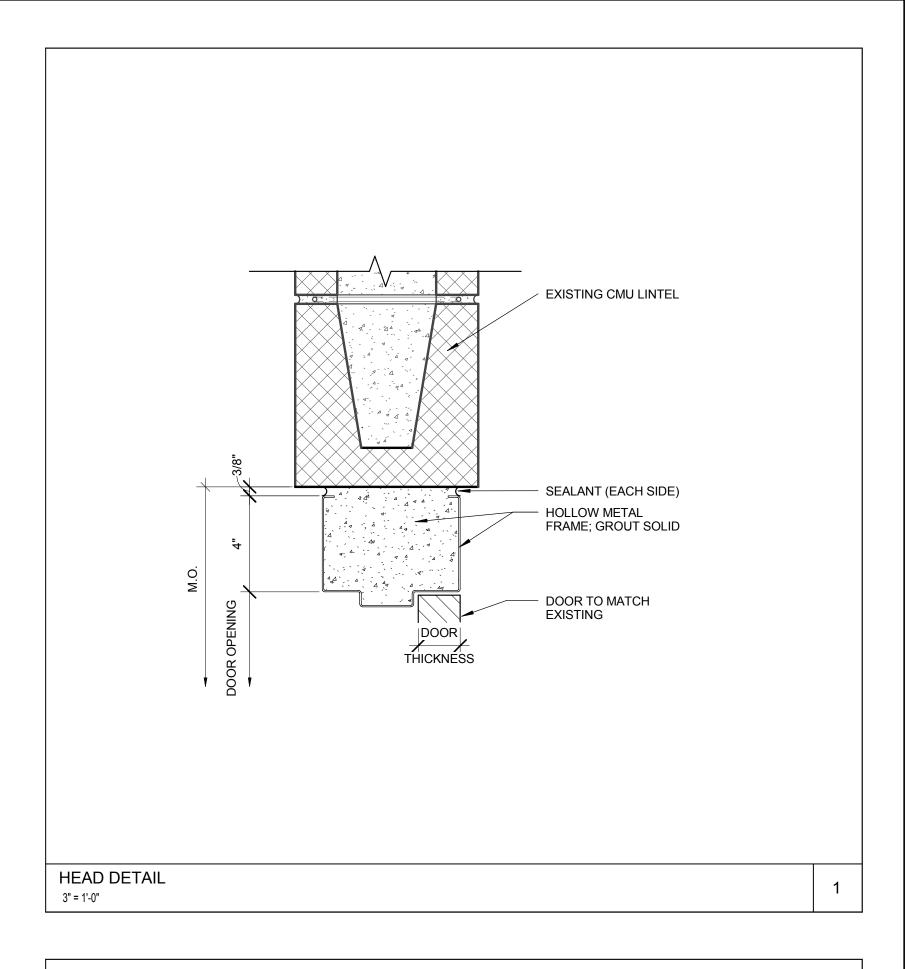


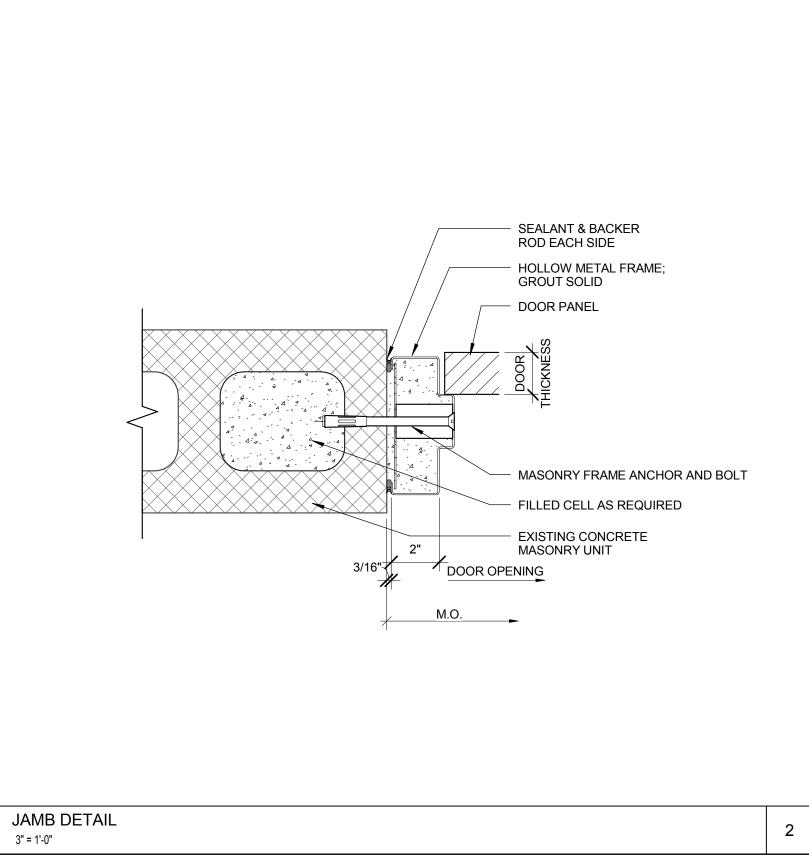


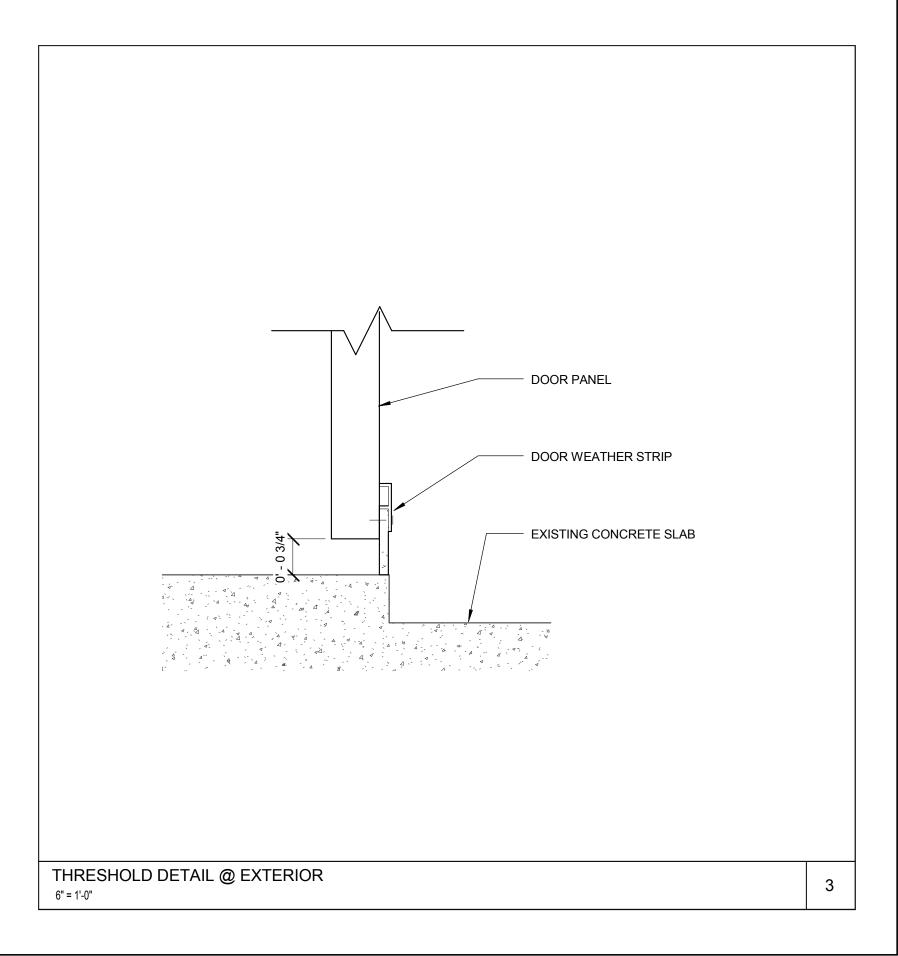


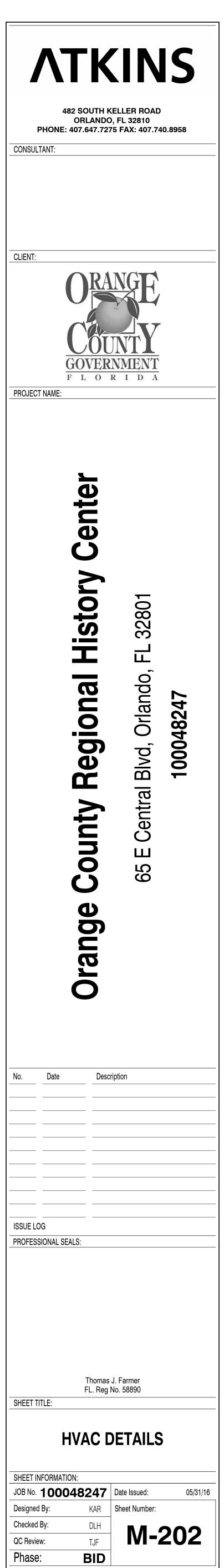


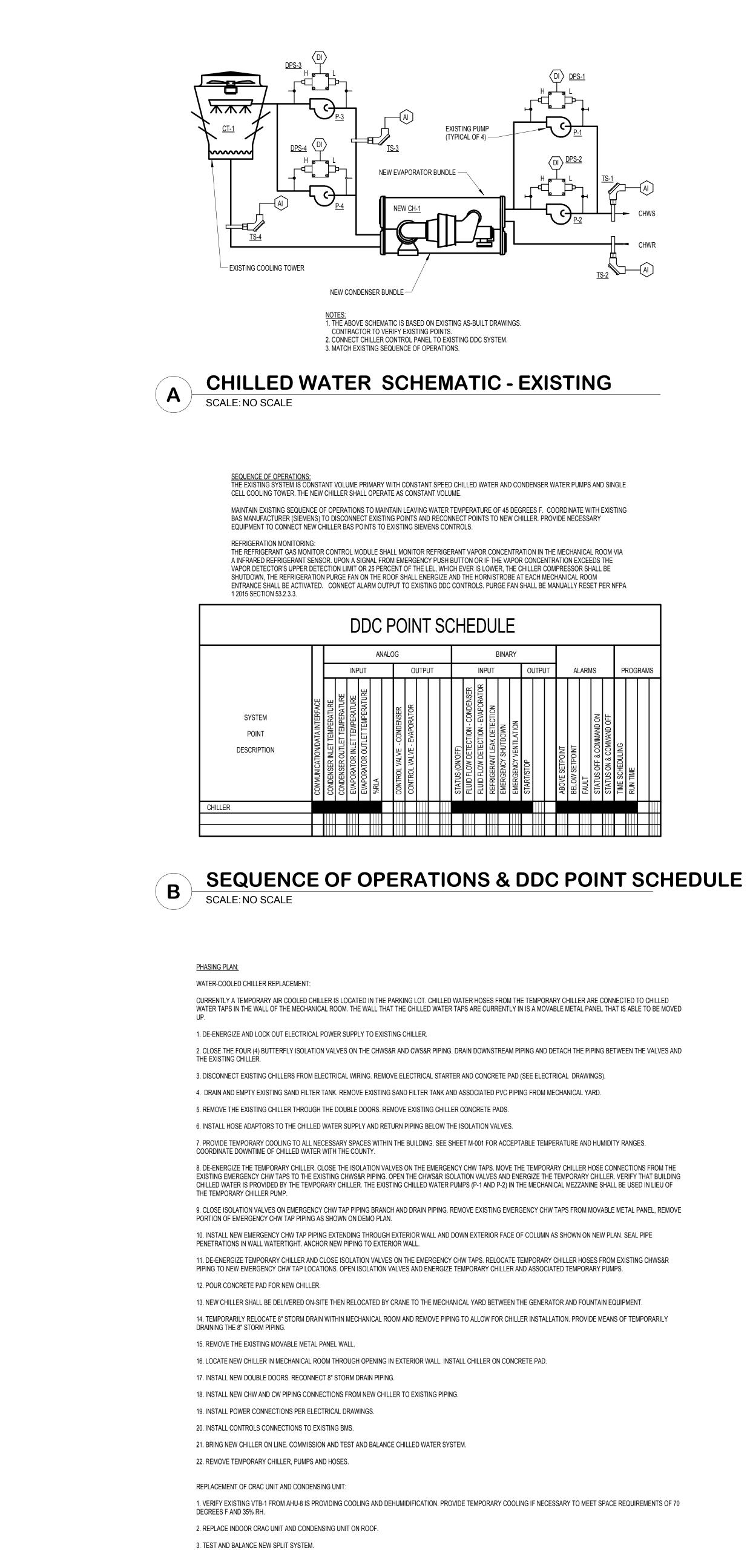
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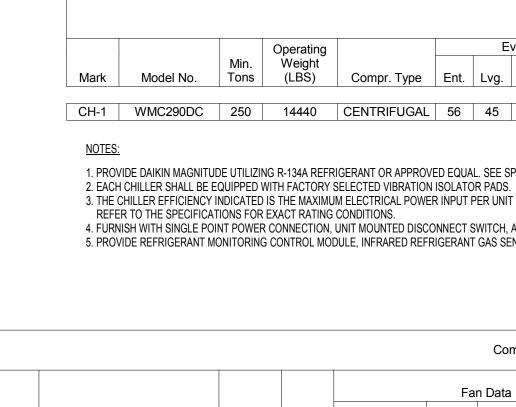


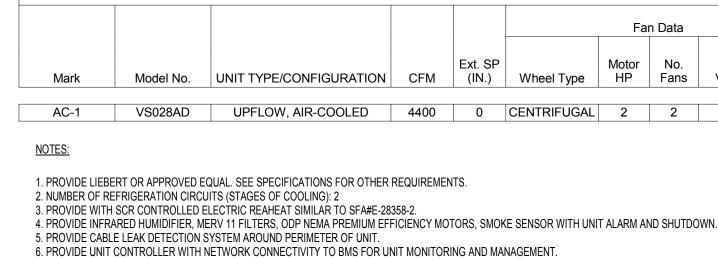


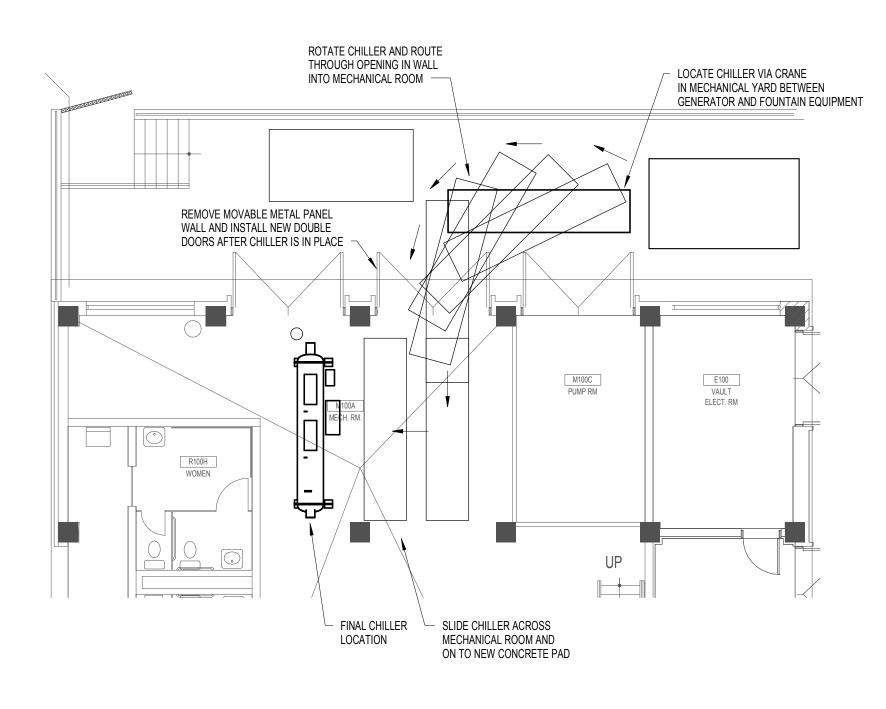




PHASING PLAN С SCALE: NO SCALE











	Operating			E	vaporato	or Data	Wate	r Cool		ller Sche	edule Iser Data						Electr	ic Data		
Min. ons	Weight (LBS)	Compr. Type	Ent.	Lvg.	GPM	# Pass	PD FT.	Ent	Lvg	GPM	# Pass	PD FT.	NPLV KW/Ton	KW/Ton @ 100%	Total KW	RLA	Min. Cir. Amps.	Max. Fuse Size	Volts	Phase
250	14440	CENTRIFUGAL	56	45	546	2	10.6	85	94.3	900	2	14.2	0.309	0.565	141.2	200	225	300	460	3

1. PROVIDE DAIKIN MAGNITUDE UTILIZING R-134A REFRIGERANT OR APPROVED EQUAL. SEE SPECIFICATIONS FOR OTHER REQUIREMENTS.

3. THE CHILLER EFFICIENCY INDICATED IS THE MAXIMUM ELECTRICAL POWER INPUT PER UNIT OF NET REFRIGERATION EFFECT, IN ACCORDANCE WITH THE NON STANDARD PART-LOAD VALUE PERFORMANCE CRITERIA OF ARI STANDARD 550/590-98.

4. FURNISH WITH SINGLE POINT POWER CONNECTION, UNIT MOUNTED DISCONNECT SWITCH, AND STARTER (VFD WITH FILTER). 5. PROVIDE REFRIGERANT MONITORING CONTROL MODULE, INFRARED REFRIGERANT GAS SENSOR, CHILLER SHUTDOWN PUSH BUTTON AND HORN/STROBE AT EACH MECHANICAL ROOM ENTRANCE.

				Comp	uter Room	Unit Sche	dule - Ty	ре В												
																		Humidific		
			Fa	n Data							Cooling	Coil				Electric Re			Electrica	al Data
								Desig	n Conditio	ns		Cap	pacity	Max.		Capacity				
	Ext. SP		Motor	No.			EAT	(°F)		LAT	(°F)	Sen.		Vel.	Min.	Total		CAP.		
CFM	(IN.)	Wheel Type	HP	Fans	Volts	Phase	DB	WB	RH %	DB	WB	MBH	Total MBH	FPM	Rows	MBH	kW	LBS/HR	MCA	FLA
4400	0	CENTRIFUGAL	2	2	460	3	71	55	35	51	46	96.6	96.6	259	3	51.2	15	11	40	31.3

7. PROVIDE UNIT WITH FACTORY INSTALLED CONDENSATE TRAP AND SUPPLY PLENUM WITH FRONT AND SIDE GRILLES.

				Air Cond	lensing U	nit Schedule						
			Cooling Capacit	у		Elec	trical Data	a		F	Piping Da	ita
Mark	Model No.	Min. MBH	Amb. Temp.	Ref. Type	No. Fans	Cond. FLA (EA)	MCA	Volts	Phase	LL O.D.	HG O.D.	No. Circ.
CU-1	MCS056	98	100	R-407C	2	2.8	15	460	3	1/2"	5/8"	2

NOTES:

1. PROVIDE LIEBERT OR APPROVED EQUAL. SEE SPECIFICATIONS FOR OTHER REQUIREMENTS. 2. REFRIGERANT PIPING SIZED BASED ON USING LONG RADIUS ELBOWS EXCEPT FOR SUCTION LINE TRAP AT CONDENSING UNIT.

			Fan	Schedule							
TYPE	Design Air Flow	Sones Inlet/Rad	Static Press.	Fan RPM	RPM	HP	Volts	Phase	Drive Type	Fan Service	Accessories
ROOF MOUNTED	2500	18.5	0.5 IN W.G.	1725	1725	1	460	3	DIRECT	REFRIGERANT PURGE	1, 3, 4, 5

1. PROVIDE GREENHECK OR APPROVED EQUAL.

Mark Model No.

EF-1 G-143-A

NOTE:

ACCESSORIES:

2) THERMOSTAT

3) BIRDSCREEN

4) ROOF CURB

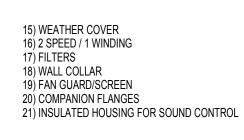
6) DRAIN

1) BACKDRAFT DAMPER

5) DISCONNECT SWITCH

7) EQUIPMENT SUPPORTS

8) INLET SCREEN 9) CURB MOUNT ROOF JACK 10) SPEED CONTROLLER 11) WALL SHUTTER 12) VIBRATION ISOLATORS 13) WALL CAP 14) WALL SHUTTER - MOTORIZED

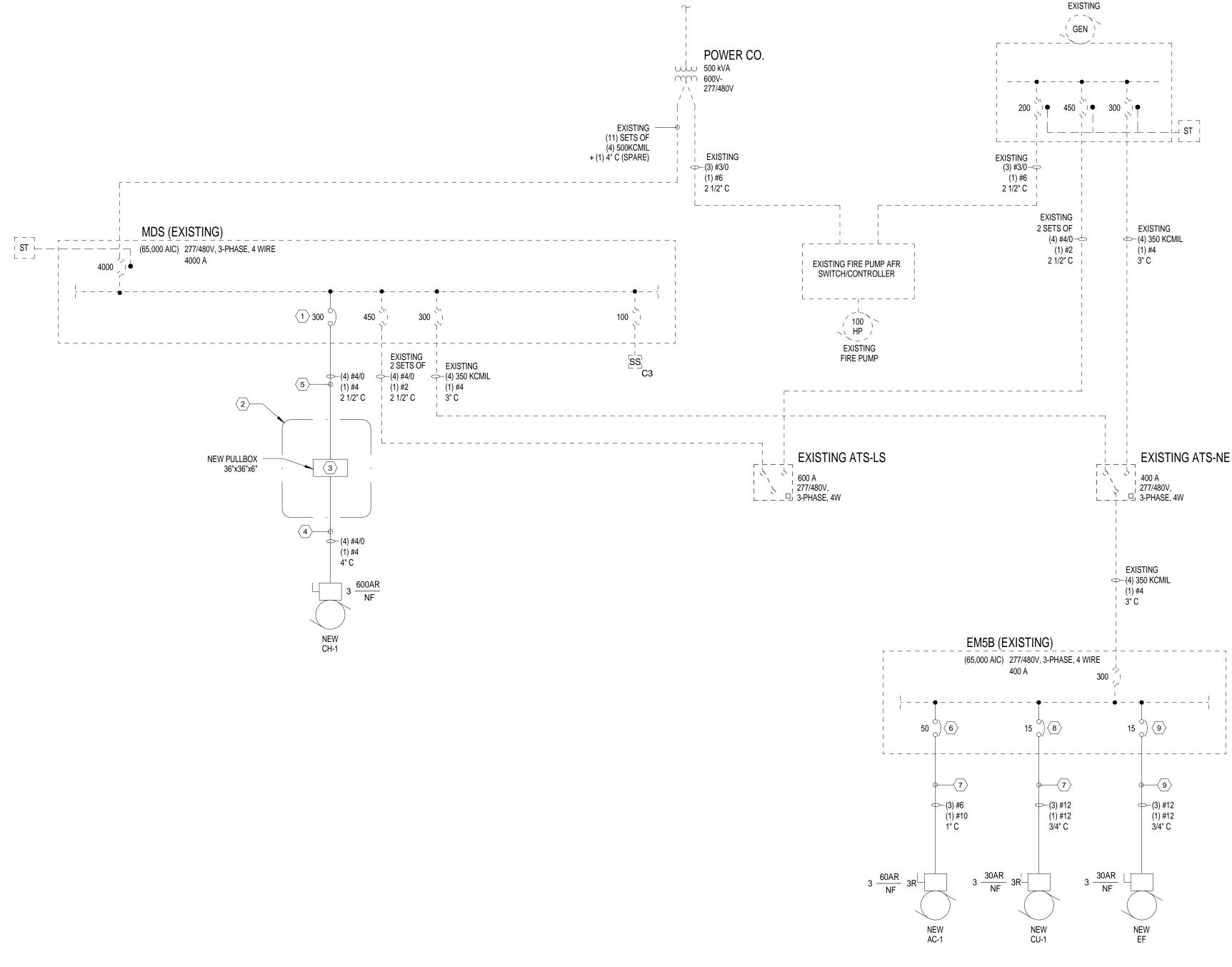


22) HINGED FRAMES 23) SPARK/EXPLOSION PROOF

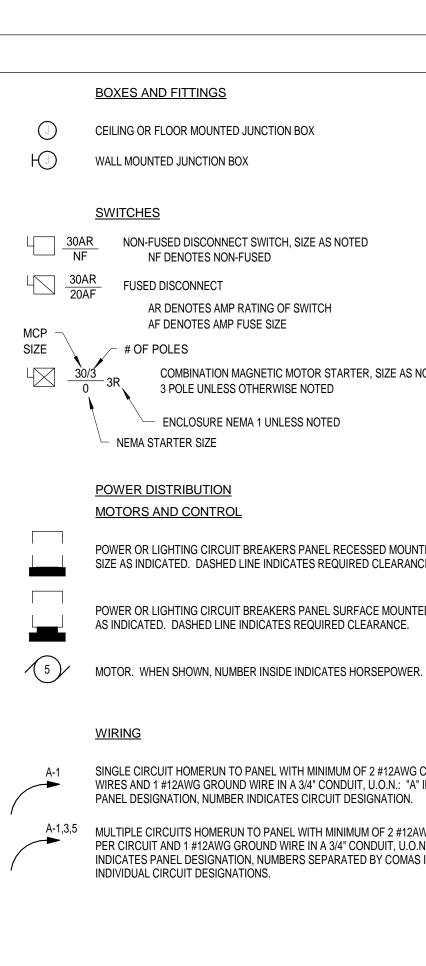
	Air Dlistribution Schedu	ule
CFM Range & Neck Size	Face Size/Length	Description
SEE PLANS FOR CFM & SIZE. SIZE IS EQUAL TO DUCT SIZE	-	BASIS OF DESIGN: TITUS 350ZR OR APPROVED EQUAL, COLOR:WHITE, MATERIAL: ALUMINUM, OPPOSED BLADE DAMPER: NO, SINGLE 0° DEFLECTION, 3/4" SPACING







CONDUIT TO EXISTING MANHOLE



3

PARTIAL ELECTRICAL ONE-LINE DIAGRAM SCALE: N.T.S.

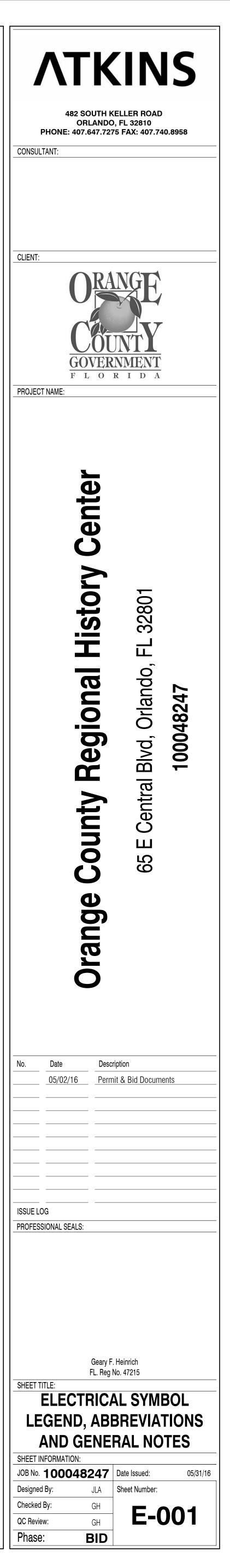
		ELECTRICAL LEGEND	
	ABBREVIAT	IONS	GENERAL NOTES
	A	AMPERES	1. THE WORK PRACTICES EMPLOYED ON THIS PROJECT SHALL AT ALL TIMES COMPLY WITH OR EXCEED THE LATEST ADOPTED EDITION OF THE NEC (NATIONAL ELECTRICAL CODE).
	A.H.J.	AUTHORITY HAVING JURISDICTION	ELECTRICAL CONTRACTOR SHALL PROVIDE OR OBTAIN ALL REQUIRED LABOR, MATERIAL, EQUIPMENT, INSURANCE, TOOLS, PERMITS, INSPECTIONS, ETC. TO PERFORM THE PROJECT
	A.I.C.	AMPERES INTERRUPTING CAPACITY, SYMMETRICAL	ELECTRICAL WORK AS PER NEC, LOCAL AGENCIES, AND OWNER REQUIREMENTS.
	A.T.S.	AUTOMATIC TRANSFER SWITCH	 A COPPER EQUIPMENT GROUNDING CONDUCTOR, SIZED AS PER TABLE 250-22 OF THE 2011 OR LATEST ADOPTED NEC, SHALL BE INSTALLED IN EVERY RACEWAY AND EFFECTIVELY
	C.B.	CIRCUIT BREAKER	TERMINATED AT EACH DEVICE. UNLESS NOTED OTHERWISE, MINIMUM WIRE SIZE FOR PHASE, NEUTRAL AND GROUND SHALL BE #12AWG AND MINIMUM CONDUIT SIZE SHALL BE 3/4".
	CKT.	CIRCUIT	 CONDUCTORS #8AWG AND LARGER SHALL BE STRANDED COPPER, #10AWG AND SMALLER SHALL BE SOLID COPPER TYPE THHN/THWN-2 UNLESS NOTED OTHERWISE.
	COND., C.	CONDUIT	4. FIELD VERIFY LOCATION AND POWER NEEDS OF EQUIPMENT WITH OWNER'S
	CVC	CENTRAL VENTILATION CONTROL	REPRESENTATIVE (REVISE BRANCH CIRCUITS AS REQUIRED), AND COORDINATE POINT OF CONNECTION AND SERVICE SIZE WITH LOCAL UTILITY COMPANIES.
NOTED	DISC.	DISCONNECT	 PROVIDE OUTLET AND JUNCTION BOXES PER NEC REQUIREMENT ACCORDING TO THEIR LOCATION.
	EMERG.	EMERGENCY	6. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ANY CUTTING AND PATCHING
	E.C.	EMPTY CONDUIT	REQUIRED TO PERFORM THE ELECTRICAL WORK. OWNER/GENERAL CONTRACTOR SHALL BE NOTIFIED BEFORE STARTING ANY CUTTING AND PATCHING, AND WORK SHALL BE DONE IN
	ENCL.	ENCLOSURE INDICATES	SUCH A MANNER THAT WILL NOT AFFECT THE BUILDING STRUCTURE. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE AS A RESULT OF THE CUTTING AND
	GFI	GROUND FAULT INTERRUPTER	PATCHING AND SHALL PROVIDE A CODE COMPLIANT SOLUTION TO RESTORE THE AFFECTED SYSTEMS AT NO EXTRA CHARGE.
	GND, G.	GROUND	 COORDINATE FINAL LOCATION OF DEVICES WITH OWNER TO AVOID CONFLICTS WITH CABINETS, BACKSPLASH, MILLWORK, MIRRORS, ETC.
ITED ON WALL, ICE.	GRS	GALVANIZED RIGID STEEL CONDUIT	8. ELECTRICAL CONTRACTOR SHALL FOLLOW OWNER/GENERAL CONTRACTOR, NATIONAL AND
IOL.	HACR	HEATING, AIR CONDITIONING, AND REFRIGERATION	LOCAL AGENCIES, ETC. SAFETY REGULATIONS PROCEDURES. ELECTRICAL CONTRACTOR SHALL PROVIDE ADEQUATE EQUIPMENT AND WORKING AREA PROTECTION TO PREVENT
TED ON WALL, SIZE	HP	HORSE POWER	INJURIES TO PEOPLE AND DAMAGE TO PROPERTY.
	JB	JUNCTION BOX	9. FULLY TEST ALL ELECTRICAL SYSTEMS UPON COMPLETION OF WORK.
R.	KW	KILOWATT	 IT IS THE BIDDER'S RESPONSIBILITY TO INSPECT THE PROJECT SITE AND CONSTRUCTION DOCUMENTS PRIOR TO BIDDING. FAILURE TO DO SO SHALL NOT RELIEVE THE ELECTRICAL CONTRACTOR TO COMPLY AND PERFORM HIS/HER WORK RESPONSIBILITIES UNDER THIS
	NEC	NATIONAL ELECTRICAL CODE	CONTRACT.
	PNL.	PANELBOARD	11. LABEL EACH DISCONNECT SWITCH, AND JUNCTION BOXES WITH SOURCE PANEL AND CIRCUIT NUMBER.
CIRCUIT	SP	SPARE CONDUIT	12. VERIFY PHASE ROTATION ON ALL THREE-PHASE EQUIPMENT (DISCONNECTS, ETC.)
' INDICATES	SW.	SWITCH	
WG WIRES	T.T.B.	TELEPHONE TERMINAL BOARD	13. ALL CIRCUIT BREAKERS SHALL BE BOLT-ON TYPE. CIRCUIT BREAKERS PROTECTING MOTORS SHALL BE 100% RATED.
.N.: "A" S INDICATE	T.T.C.	TELEPHONE TERMINAL CABINET	14. RUN POWER DISTRIBUTION CONDUITS AND HOME RUNS ABOVE THE BOTTOM OF TRUSSES TO AVOID FIRE RATED WALL PENETRATIONS. IF A FIRE WALL PENETRATION IS REQUIRED, THE
	U.O.N.	UNLESS OTHERWISE NOTED	ELECTRICAL CONTRACTOR SHALL USE AND PROVIDE A WALL PENETRATION IS REQUIRED, THE INSTALLATION APPROVED BY THE A.H.J. FOR THE FIRE RATED WALL TO BE PENETRATED.

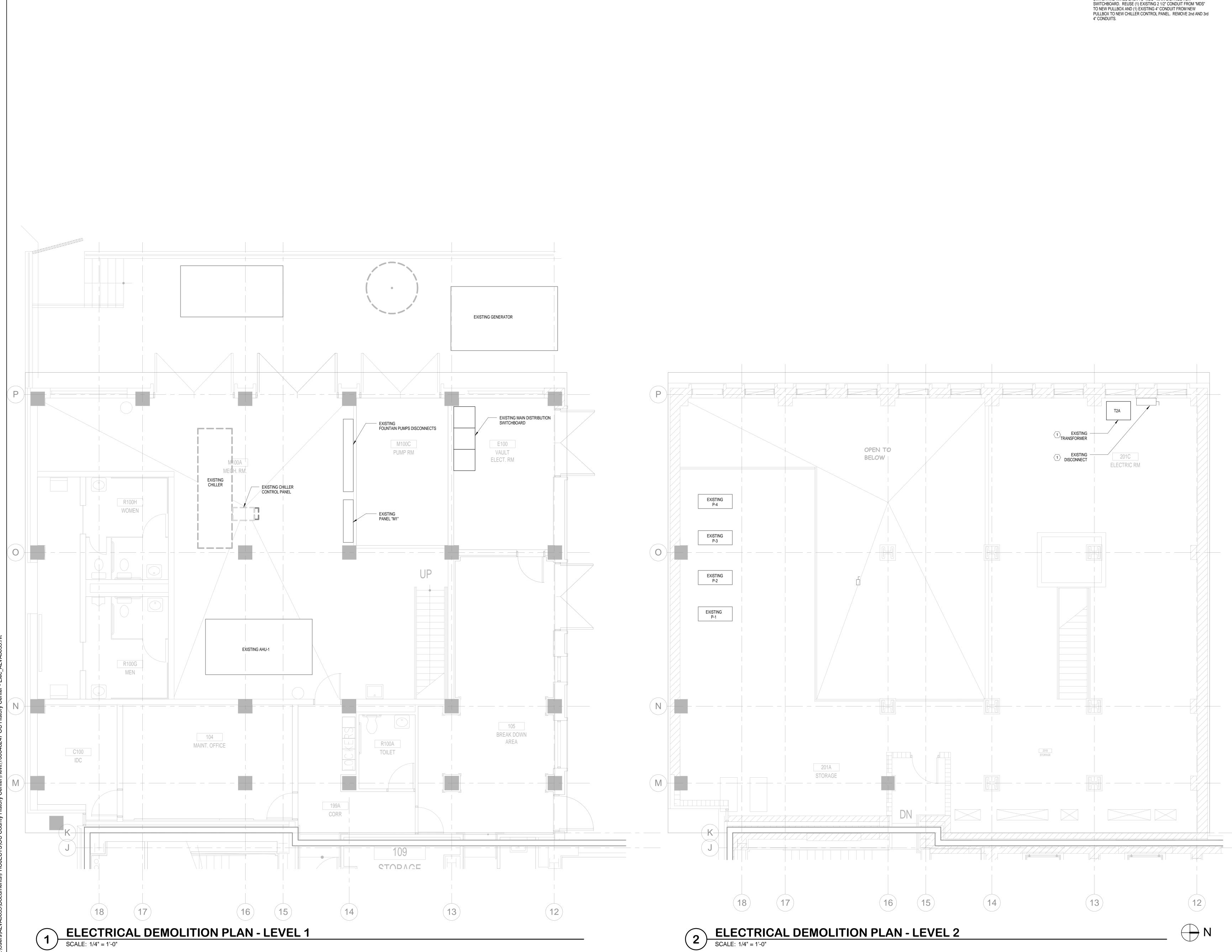
KEYED NOTES

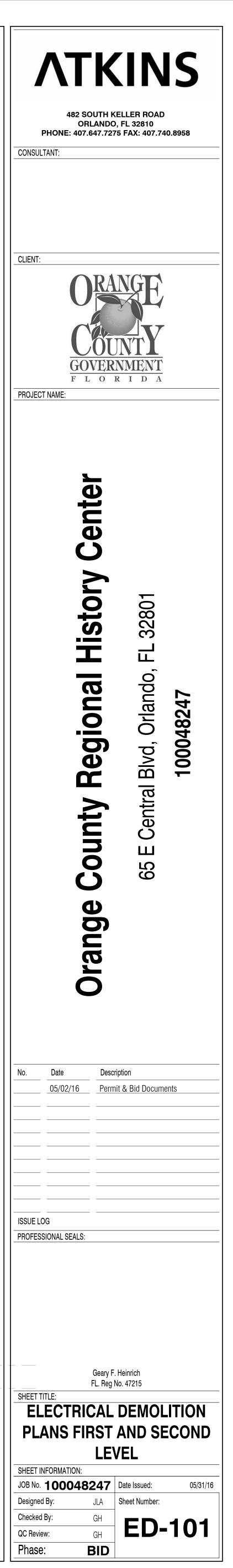
- 1 EXISTING 600A CIRCUIT BREAKER TO REMAIN. REMOVE AND REPLACE EXISTING 450A TRIP PLUG WITH NEW 300A TRIP PLUG. COORDINATE NEW PLUG WITH EXISTING CIRCUIT BREAKER MANUFACTURER: GENERAL ELECTRIC, CATALOG NO. SGLA36AT0600 AND THE EXISTING PLUG TYPE IS SRPQ600A.
- 2 REMOVE EXISTING DISCONNECT AND TRANSFORMER "T2A" LOCATED IN ELECTRICAL ROOM 201C. SEE SHEET ED-101 FOR ADDITIONAL INFORMATION.
- PROVIDE NEW PULLBOX 36"x36"x6". USE AS TRANSITION BOX FROM EXISTING 2 1/2" CONDUITS TO EXISTING 4" CONDUITS.
- REMOVE EXISTING CONDUCTORS. REUSE EXISTING 4" CONDUITS AND PROVIDE NEW CONDUCTORS AS NOTED.
- REMOVE EXISTING CONDUCTORS. REUSE EXISTING 2 1/2" CONDUITS AND
- PROVIDE NEW CONDUCTORS AS NOTED. (6) REPLACE EXISTING 40A, 3-POLE BREAKER WITH NEW BREAKER AS NOTED.
- REMOVE EXISTING CONDUCTORS. REUSE EXISTING 1" CONDUIT AND
- PROVIDE NEW CONDUCTORS AS NOTED.
- $\langle 8 \rangle$ REPLACE EXISTING 15A, 2-POLE BREAKER WITH NEW BREAKER AS NOTED. $\langle 9 \rangle$ PROVIDE NEW 3-POLE BREAKER, CONDUIT AND WIRES AS NOTED.

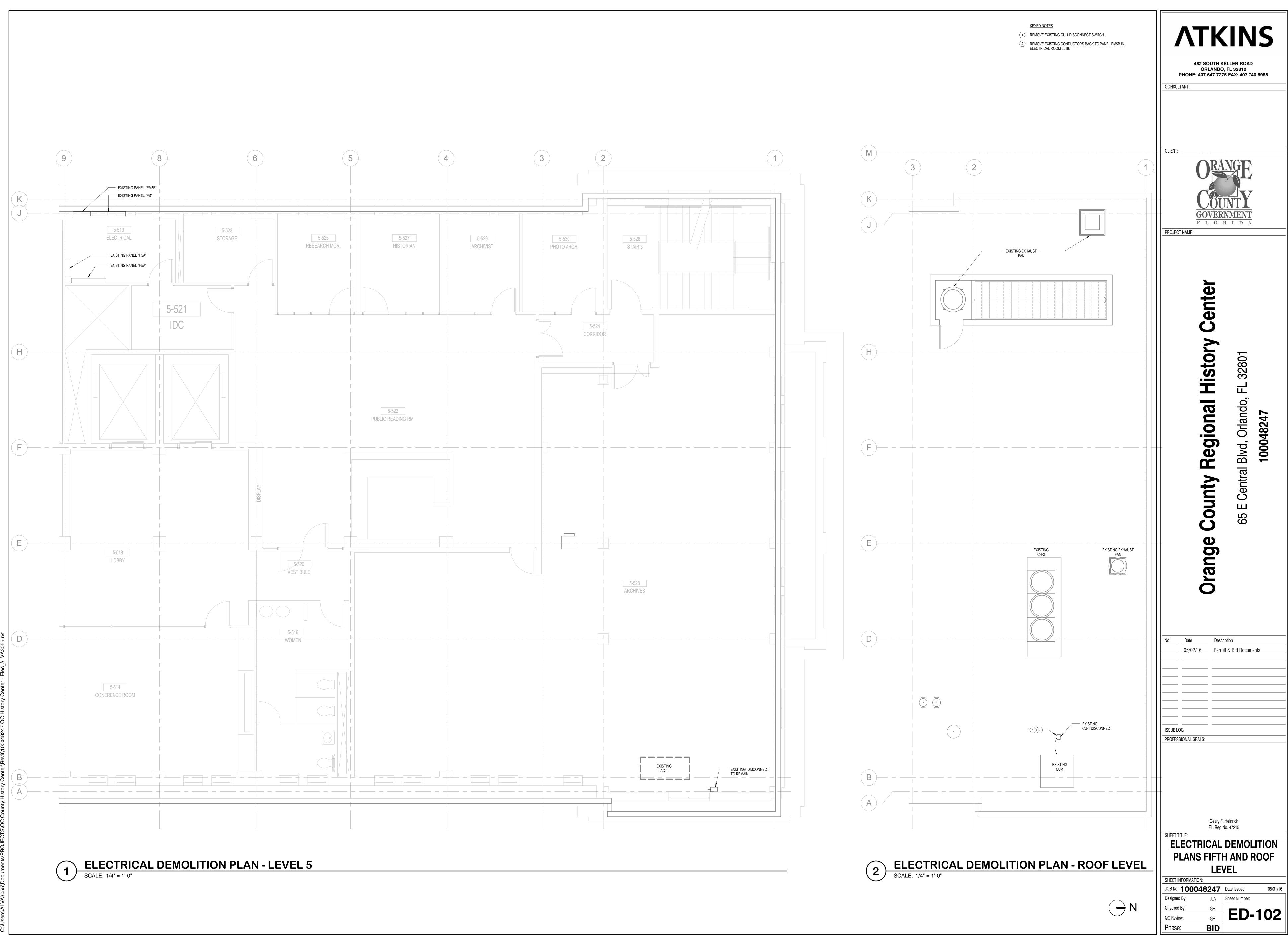
_ EXISTING ATS-NE

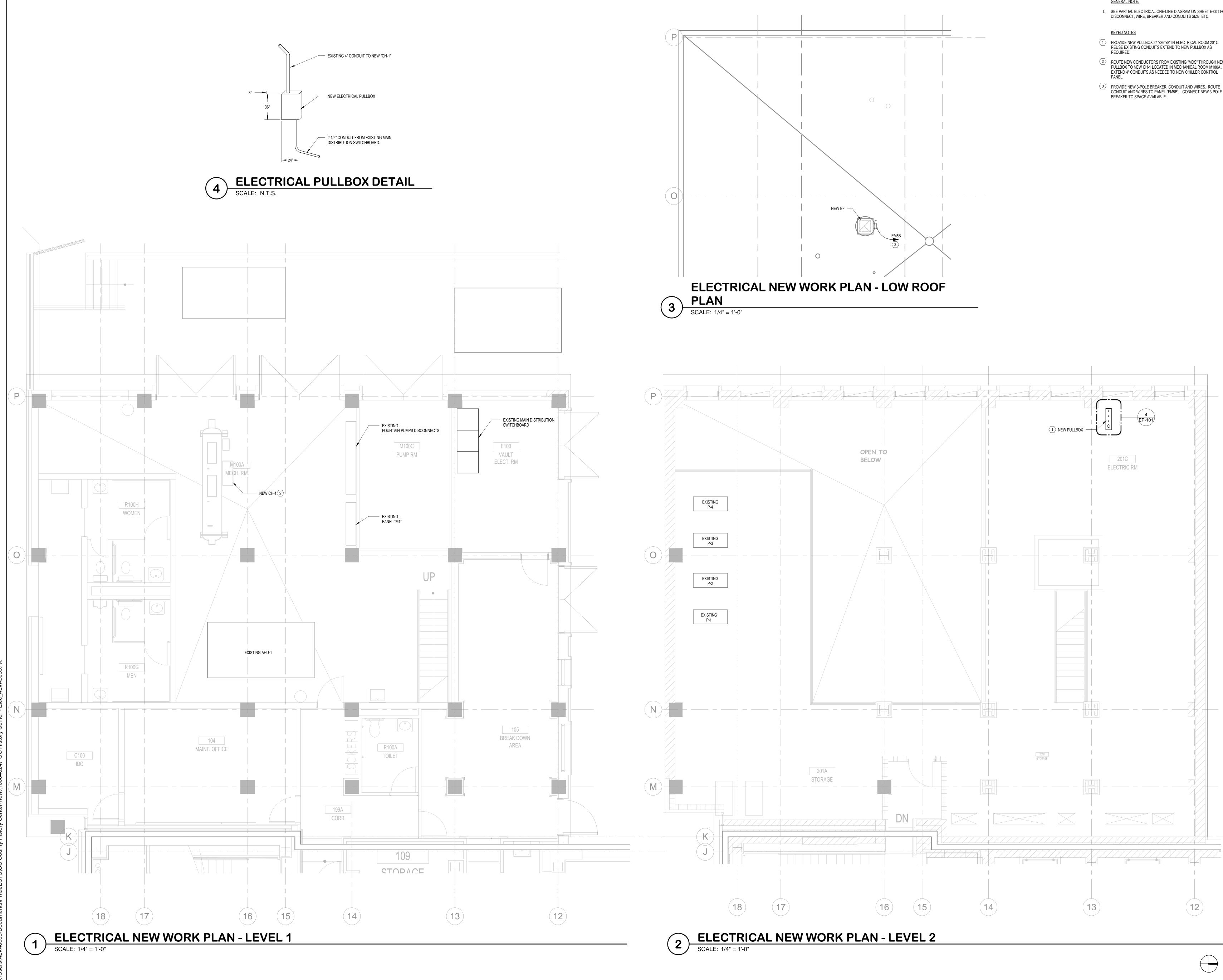
9 <---(3) #12 (1) #12 3/4" C











ROUTE NEW CONDUCTORS FROM EXISTING "MDS" THROUGH NEW PULLBOX TO NEW CH-1 LOCATED IN MECHANICAL ROOM M100A . EXTEND 4" CONDUITS AS NEEDED TO NEW CHILLER CONTROL

- 3 PROVIDE NEW 3-POLE BREAKER, CONDUIT AND WIRES. ROUTE CONDUIT AND WIRES TO PANEL "EM5B". CONNECT NEW 3-POLE
- GENERAL NOTE: 1. SEE PARTIAL ELECTRICAL ONE-LINE DIAGRAM ON SHEET E-001 FOR DISCONNECT, WIRE, BREAKER AND CONDUITS SIZE, ETC.

