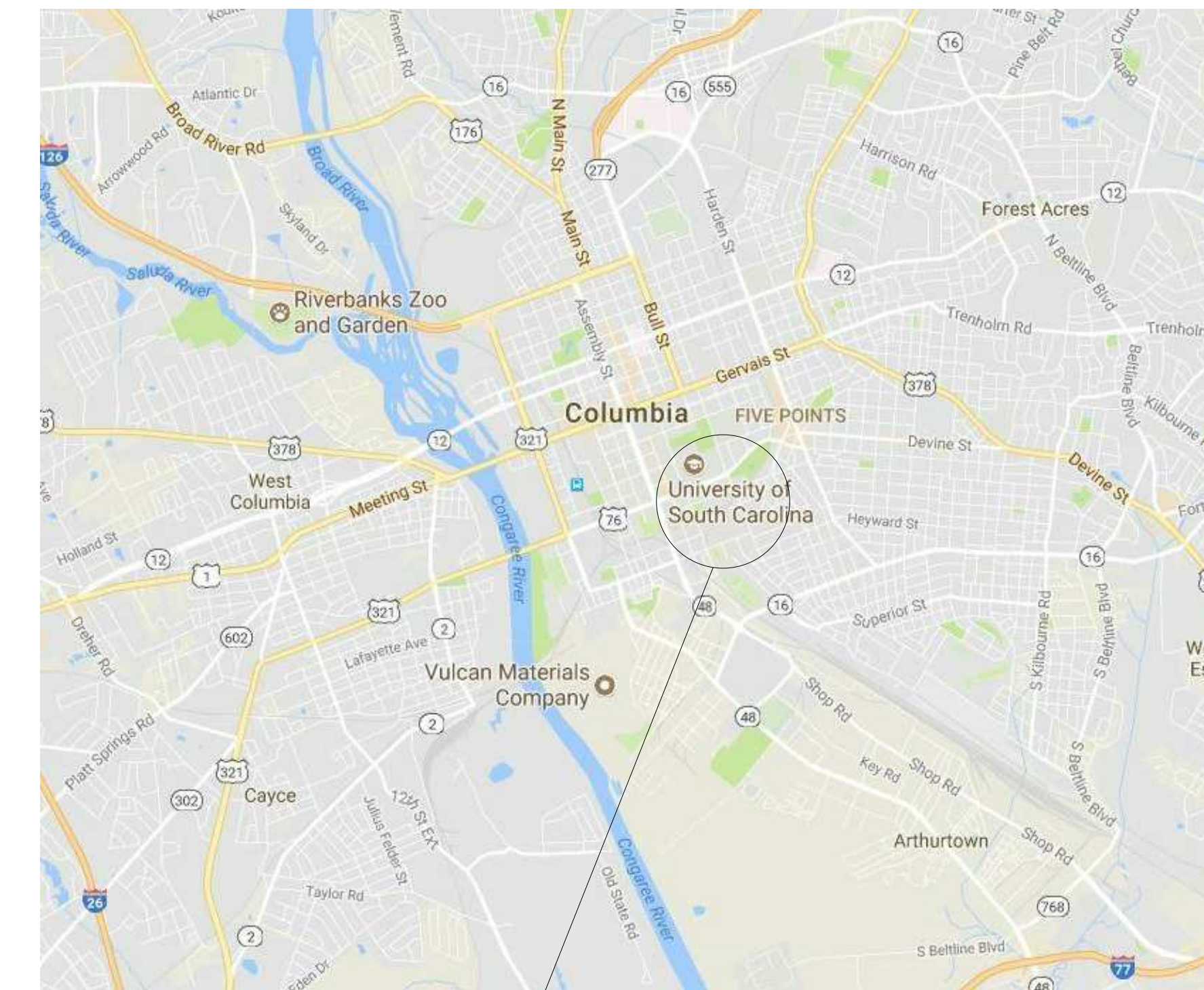


UNIVERSITY OF SOUTH CAROLINA

BLATT PE POOL CHILLER SYSTEM PROJECT NO.: FY19000727

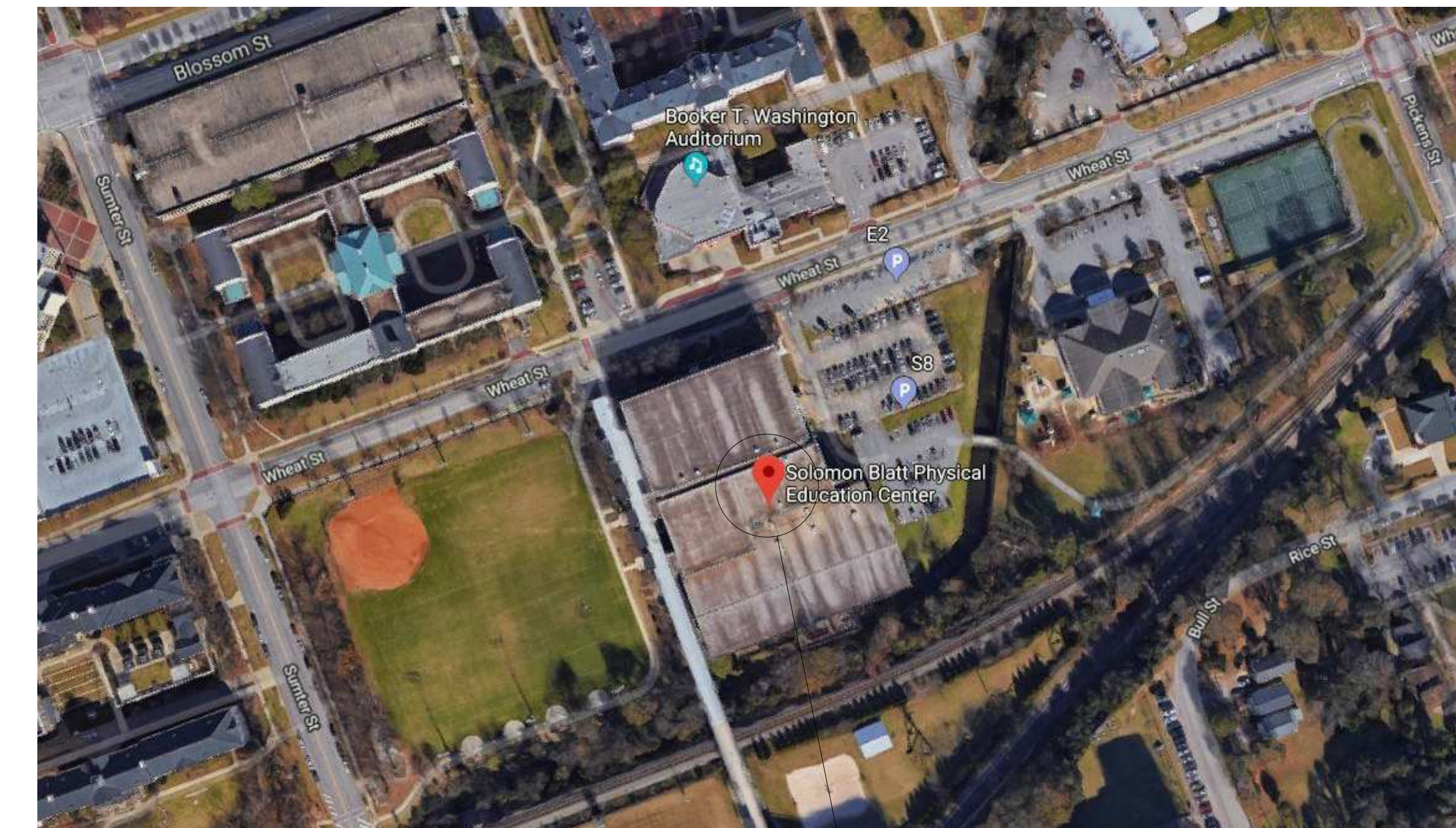
ISSUE FOR CONSTRUCTION
JANUARY 17, 2020

WORK MUST BE PERFORMED BY A CONTRACTOR ISSUED A PUBLIC SWIMMING POOL SPECIALTY LICENSE IN ACCORDANCE WITH SOUTH CAROLINA DEPARTMENT OF LABOR, LICENSING AND REGULATION.



UNIVERSITY OF SOUTH CAROLINA

VICINITY MAP



BLATT POOL

DRAWING INDEX

G001	COVER SHEET
M001	MECHANICAL LEGEND, ABBREVIATIONS, AND GENERAL NOTES
M101	MECHANICAL PLAN
M201	MECHANICAL DETAILS AND SCHEDULES
E101	POWER PLAN
xE101	OVERALL POWER PLAN

CODE INFORMATION

- PROJECT DESIGNED IN ACCORDANCE WITH:
- INTERNATIONAL BUILDING CODE (IBC), 2015 EDITION
 - INTERNATIONAL EXISTING BUILDING CODE (IEBC), 2015 EDITION
 - INTERNATIONAL FIRE CODE (IFC), 2015 EDITION
 - INTERNATIONAL ENERGY CONSERVATION CODE, 2009 EDITION
 - INTERNATIONAL MECHANICAL CODE (IMC), 2015 EDITION
 - INTERNATIONAL PLUMBING CODE, 2015 EDITION
 - NATIONAL ELECTRIC CODE (NEC), 2014 EDITION

LOCATION MAP



BLATT PE POOL CHILLER SYSTEM
UNIVERSITY OF SOUTH CAROLINA
1300 WHEAT STREET
COLUMBIA, SOUTH CAROLINA 29201



Project Number: FY19000727
Date: 1/17/20
Approved By: RD
Designed By: NAR

Revisions:

#	Name	Date
1	Construction Documents	1/17/20

COVER SHEET

G001

MECHANICAL LEGEND

SYMBOL	EQUIPMENT DESIGNATIONS	DESCRIPTION
PC-X	EQUIPMENT DESIGNATIONS	POOL COOLER DESIGNATION

SYMBOL	DESCRIPTION
—HWR—	HEATING WATER RETURN
—HWS—	HEATING WATER SUPPLY
-- PR --	POOL RETURN (TO POOL)
—PS—	POOL SUPPLY (FROM POOL)
-- PCR --	POOL COOLER RETURN (TO POOL COOLER)
—PCS—	POOL COOLER SUPPLY (TO POOL)

DESIGNATION	DESCRIPTION
—	EXISTING WORK
—	NEW WORK

PIPING COMPONENTS AND SPECIALTIES

SYMBOL	DESCRIPTION
	BASKET STRAINER
	PUMP
	CHECK VALVE
	MANUAL BUTTERFLY VALVE
	TRIPLE DUTY VALVE
	PRESSURE GAUGE
	REDUCER
	TEMPERATURE GAUGE
	SHUTOFF VALVE (REFER TO SPECIFICATIONS)
	DOUBLE CHECK REDUCED PRESSURE BACKFLOW PREVENTER
	FLEXIBLE PIPE CONNECTION
	STRAINER WITH BLOWDOWN
	UNION
	FLOW DIRECTION INDICATOR
	BALL VALVE
	BALANCING VALVE

GENERAL SYMBOLS

SYMBOL	DESCRIPTION
	REVISION NUMBER
	DRAWING NOTE NUMBER
	POINT OF CONNECTION
	POINT OF DISCONNECTION
	NORTH ARROW

MECHANICAL ABBREVIATIONS

NOTE: THESE ARE IN ADDITION TO THOSE IN THE LEGEND. SOME ABBREVIATIONS MAY NOT APPEAR ON THE ACCOMPANYING DRAWINGS.

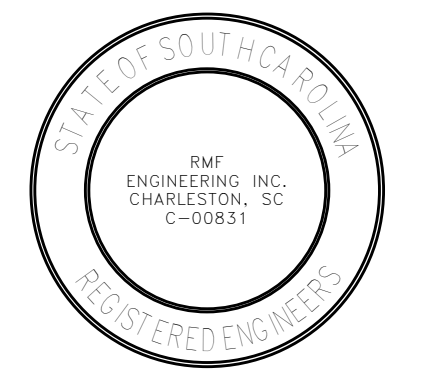
#	#	NUMBER, POUND			
#	\$	DOLLAR	H	HP	HORSEPOWER
#	%	PERCENT	H	HZ	HERTZ
#	&	AND			
#	+	PLUS	I	IMC	INTERNATIONAL MECHANICAL CODE
#	-	MINUS	I	IN	INCHES
#	/	DIVIDE BY, PER	I	INV EL	INVERT ELEVATION
#	<	LESS THAN			
#	=	EQUALS, EQUAL TO	K	KW	KILOWATTS
#	>	GREATER THAN			
#	x	MULTIPLY BY, BY	L	L	LENGTH
#	x"	INCHES, INCH	L	LAT	LEAVING AIR TEMPERATURE
#	x'	FEET, FOOT	L	LBS	POUNDS
#	±	PLUS OR MINUS	L	LBS/HR	POUNDS PER HOUR
#	≤	LESS THAN OR EQUAL TO	L	LWT	LEAVING WATER TEMPERATURE
#	≥	GREATER THAN OR EQUAL TO			
A	@	AT	M	MAV	MANUAL AIR VENT
A	AAV	AUTOMATIC AIR VENT	M	MAX	MAXIMUM
A	ACV	AUTOMATIC CONTROL VALVE	M	MBH	THOUSAND BRITISH THERMAL UNITS PER HOUR
A	AFB	ABOVE FINISHED FLOOR	M	MEQ	MECHANICAL EQUIPMENT
A	ATC	AUTOMATIC TEMPERATURE CONTROL	M	MIN	MINIMUM
			M	MISC	MISCELLANEOUS
B	BAS	BUILDING AUTOMATION SYSTEM	N	N/A	NOT APPLICABLE
B	BHP	BRAKE HORSEPOWER	N	NC	NOISE CRITERIA, NORMALLY CLOSED
B	BTU	BRITISH THERMAL UNIT PER HOUR	N	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
B	BV	BALANCING VALVE	N	No	NUMBER
C	°C	DEGREE(S) CELSIUS	N	NOM	NOMINAL
D	DB	DECIBEL, DRY BULB	O	OS&Y	OUTSIDE STEM AND YOKE
D	DESIG	DESIGNATION	P	PH	PHASE
D	DIA, Ø	DIAMETER	P	PRV	PRESSURE REDUCING VALVE, PRESSURE REGULATING VALVE
D	DN	DOWN	P	PSI	POUNDS PER SQUARE INCH GAUGE
E	EAT	ENTERING AIR TEMPERATURE	R	RPM	REVOLUTIONS PER MINUTE
E	ELEV	ELEVATION	S	SF	SQUARE FOOT
E	ESP	EXTERNAL STATIC PRESSURE	S	SP	STATIC PRESSURE
E	ETC	ETCETERA			
E	EX	EXISTING			
F	FIN/FT	FINS PER FOOT	T	TYP	TYPICAL
F	FIN/IN	FINS PER INCH			
F	FM	FLOWMETER	U	UL	UNDERWRITERS LABORATORIES
F	FPM	FEET PER MINUTE			
F	FPS	FEET PER SECOND	V	V	VOLTS
F	FS	FLOW SWITCH	V	VFD	VARIABLE FREQUENCY DRIVE
F	FT	FEET			
F	°F	DEGREE(S) FAHRENHEIT	W	W	WATTS, WIDE
			W	WC	WATER COLUMN
G	GPM	GALLONS PER MINUTE			

MECHANICAL DEMOLITION NOTES

1. NOTIFY THE OWNER, IN WRITING, AT LEAST SEVEN (7) DAYS IN ADVANCE OF ALL REQUIRED SHUTDOWNS OF POOL CIRCULATION, DOMESTIC WATER, FIRE, SEWER, GAS, ELECTRICAL SERVICE, OR OTHER UTILITIES. UPON WRITTEN RECEIPT OF APPROVAL FROM OWNER, SHUTDOWN SHALL BE PERFORMED BETWEEN THE HOURS OF SIX (6) P.M. AND SIX (6) A.M. OR AS DIRECTED OTHERWISE BY THE OWNER AND SHALL BE ACCOMPLISHED AT NO ADDITIONAL CONTRACT COST. AT THE END OF EACH SHUTDOWN ALL SERVICES SHALL BE RESTORED SO THAT NORMAL USE OF THE UTILITIES CAN CONTINUE.
2. WHEN WORKING IN AND AROUND THE EXISTING BUILDING, EXTREME CARE SHALL BE EXERCISED WITH REGARD TO PROTECTION OF THE EXISTING STRUCTURE AND MECHANICAL AND ELECTRICAL SERVICES WHICH WILL REMAIN, REPAIR, REPLACE, OR RESTORE TO THE SATISFACTION OF THE ENGINEER ALL EXISTING WORK DAMAGED IN THE PERFORMANCE OF DEMOLITION AND/OR NEW WORK.
3. EXISTING CONDITIONS, I.E., PRESENCE, SIZE, AND LOCATION OF DUCTWORK, PIPING, EQUIPMENT, AND MATERIALS INDICATED ARE BASED ON INFORMATION OBTAINED FROM AVAILABLE RECORD DRAWINGS AND FIELD SURVEYS AND ARE NOT WARRANTED TO BE COMPLETE OR CORRECT. CONTRACTOR SHALL FIELD VERIFY EXACT CONDITIONS AS THEY AFFECT WORK PRIOR TO BEGINNING WORK.
4. EXISTING MECHANICAL AND ELECTRICAL EQUIPMENT, PIPING, DUCTWORK, AND MATERIALS AFFECTED BY DEMOLITION OR NEW WORK INSTALLATION AND REQUIRED TO REMAIN IN SERVICE SHALL BE RE-INSTALLED OR SUPPORTED AS REQUIRED IN ACCORDANCE WITH NEW WORK SPECIFICATION. ALL WORK SHALL BE COMPLETED TO THE SATISFACTION OF THE ENGINEER AND AT NO ADDITIONAL CONTRACT COST.
5. PATCH ALL DISTURBED SURFACES, INCLUDING WALLS, CEILINGS, ROOF, AND FLOOR. PATCHING SHALL MATCH EXISTING ADJACENT SURFACES AS TO THICKNESS, TEXTURE, MATERIALS, AND COLOR. ALL PATCHING SHALL BE PERFORMED TO THE SATISFACTION OF THE OWNER/ENGINEER AND AT NO ADDITIONAL CONTRACT COST.
6. ALL WORK SHALL BE PERFORMED IN A SEQUENCE AND DURING HOURS TO MINIMIZE DISRUPTION TO THE BUILDING WHICH WILL REMAIN OCCUPIED DURING CONSTRUCTION.
7. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE SOUTH CAROLINA CODES, CITY OF COLUMBIA, AND THE LOCAL FIRE MARSHALL'S REQUIREMENTS.
8. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL STAIRWELLS AND EGRESS CORRIDORS DURING CONSTRUCTION.
9. ALL PENETRATIONS THROUGH FIRE/SMOKE RATED WALLS MUST BE SEALED WITH UL LISTED MATERIALS AFTER SERVICES ARE RUN THROUGH. ALL PENETRATIONS THROUGH EXTERIOR WALLS ABOVE AND BELOW GRADE OR SLAB ON GRADE MUST BE WATERPROOFED.

MECHANICAL NEW WORK NOTES

1. COMPLY WITH ALL APPLICABLE INTERNATIONAL CODES FOR ALL WORK UNDER THIS CONTRACT.
2. COORDINATE FINAL EQUIPMENT LOCATIONS WITH THE GENERAL CONTRACTOR. THE LOCATION AS INDICATED ON THE DRAWINGS IS APPROXIMATE. INSTALL ALL MECHANICAL EQUIPMENT SUCH THAT MANUFACTURER'S MAINTENANCE AREA IS CLEAR.
3. ALL VALVES AND DEVICES SHALL BE LOCATED AND INSTALLED SUCH THAT THEY ARE UNOBSTRUCTED BY OTHER PIPING OR EQUIPMENT.
4. PROVIDE DRAIN VALVES WITH CAPPED HOSE CONNECTIONS AT ALL LOW POINTS OF PIPING SYSTEMS.
5. PROVIDE FLEXIBLE PIPING CONNECTIONS AS INDICATED IN DETAILS.
6. REGARDLESS OF HOW PIPING IS PRESENTED ON THE DRAWINGS, PROVIDE ECCENTRIC (FLAT ON TOP) REDUCERS IN HYDRONIC PIPING.
7. EXISTING PIPING INSULATION CONTAINS ASBESTOS (MARKED ACM). DO NOT DISTURB EXISTING PIPING.
8. POOL COOLER SHALL BE PROVIDED BY THE OWNER. PIPING SHALL BE PROVIDED BY DIVISION 23. CONTRACTOR SHALL COORDINATE WORK BETWEEN THE MANUFACTURER INSTALLATION REQUIREMENTS, DIVISION 23, AND ALL OTHER TRADES.



BLATT PE POOL CHILLER SYSTEM
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 1300 WHEAT STREET
 COLUMBIA, SOUTH CAROLINA 29201

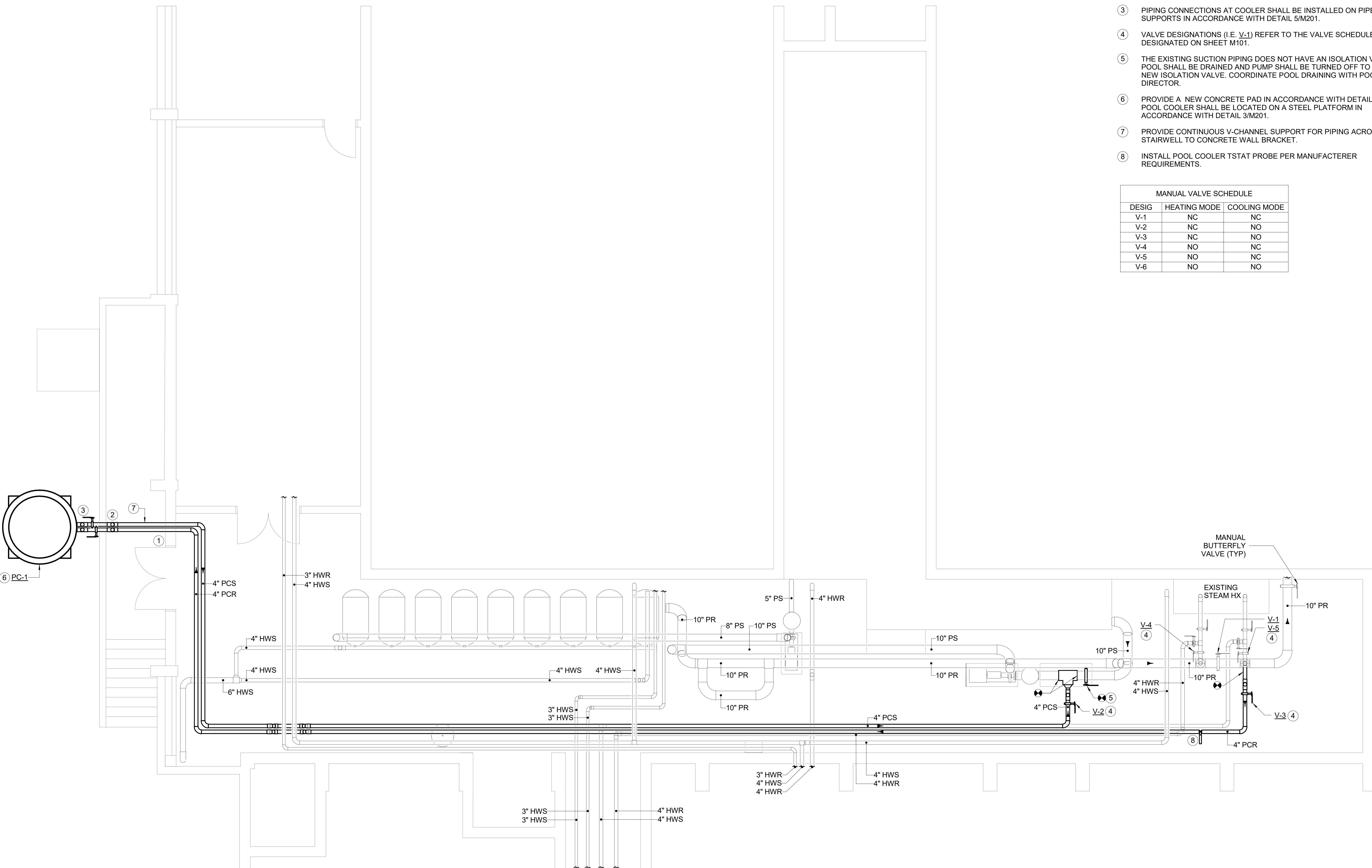


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**MECHANICAL
LEGEND,
ABBREVIATIONS,
AND GENERAL
NOTES**

M001



GENERAL NOTES

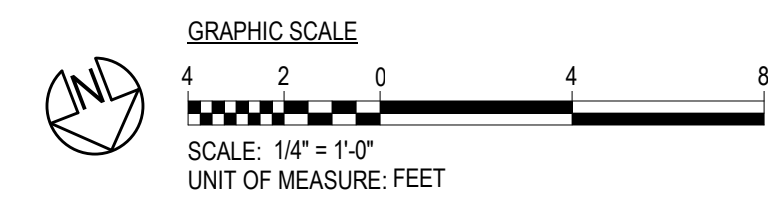
1. THE EXTERIOR PIPING SHALL BE DRAINED DURING THE WINTER MONTHS.
2. EXISTING PIPING IS CPVC. ALL NEW POOL PIPING SHALL MATCH EXISTING CPVC.

DRAWING NOTES

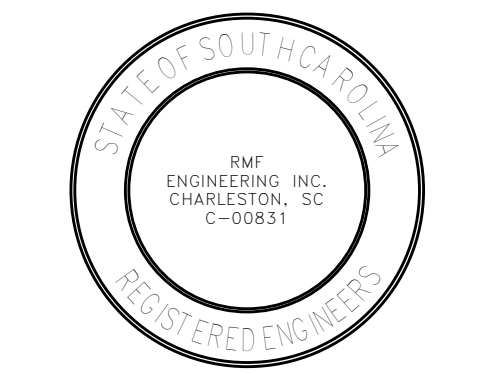
- ① PIPES SHALL PENETRATE EXISTING LOUVER AT APPROXIMATELY 9' AFF (MECHANICAL ROOM FLOOR ELEVATION) IN ACCORDANCE WITH DETAIL 1/M201.
- ② PIPES SHALL RISE OVER CONCRETE WALL.
- ③ PIPING CONNECTIONS AT COOLER SHALL BE INSTALLED ON PIPE SUPPORTS IN ACCORDANCE WITH DETAIL 5/M201.
- ④ VALVE DESIGNATIONS (I.E. V-1) REFER TO THE VALVE SCHEDULE AS DESIGNATED ON SHEET M101.
- ⑤ THE EXISTING SUCTION PIPING DOES NOT HAVE AN ISOLATION VALVE. POOL SHALL BE DRAINED AND PUMP SHALL BE TURNED OFF TO INSTALL NEW ISOLATION VALVE. COORDINATE POOL DRAINING WITH POOL DIRECTOR.
- ⑥ PROVIDE A NEW CONCRETE PAD IN ACCORDANCE WITH DETAIL 2/M201. POOL COOLER SHALL BE LOCATED ON A STEEL PLATFORM IN ACCORDANCE WITH DETAIL 3/M201.
- ⑦ PROVIDE CONTINUOUS V-CHANNEL SUPPORT FOR PIPING ACROSS STAIRWELL TO CONCRETE WALL BRACKET.
- ⑧ INSTALL POOL COOLER TSTAT PROBE PER MANUFACTURER REQUIREMENTS.

MANUAL VALVE SCHEDULE		
DESIG	HEATING MODE	COOLING MODE
V-1	NC	NC
V-2	NC	NO
V-3	NC	NO
V-4	NO	NC
V-5	NO	NC
V-6	NO	NO

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



RMF ENGINEERING, INC.
194 Seven Farms Drive, Suite G
Charleston, SC 29402



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UNIVERSITY OF SOUTH CAROLINA
1300 WHEAT STREET
COLUMBIA, SOUTH CAROLINA 29201



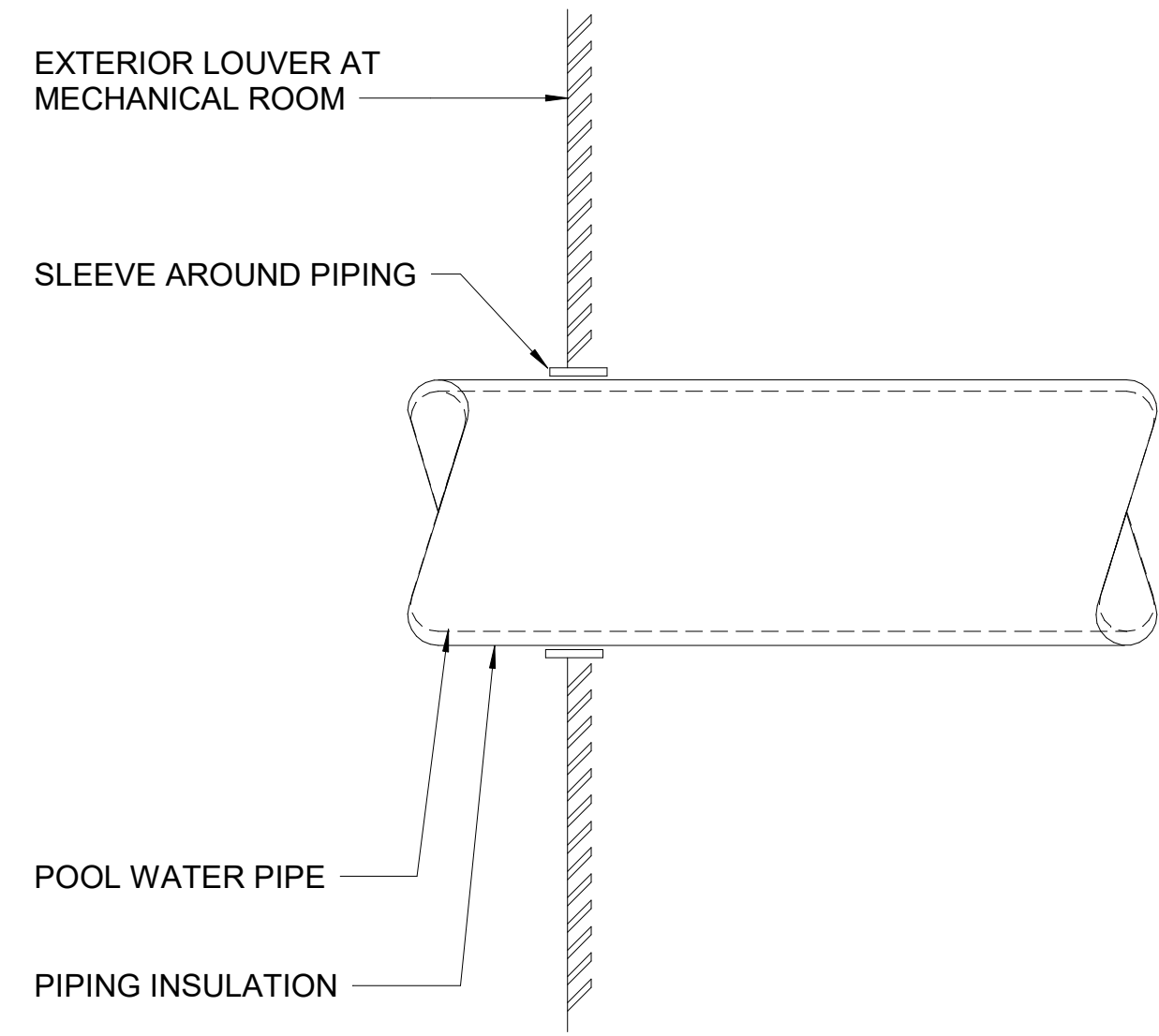
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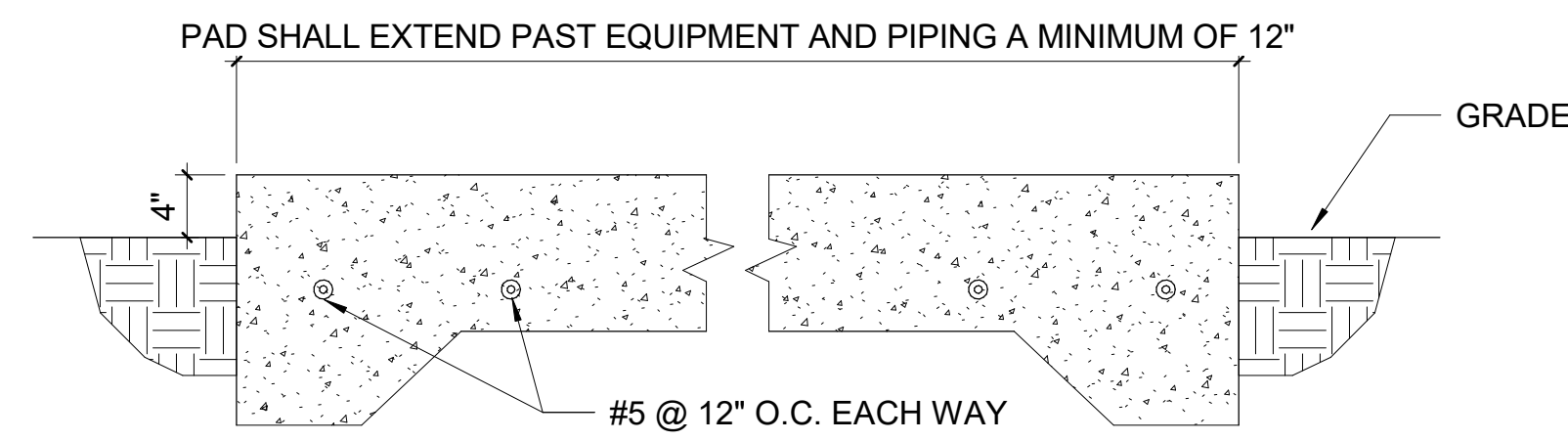
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1	Construction Documents	1/17/20

MECHANICAL PLAN

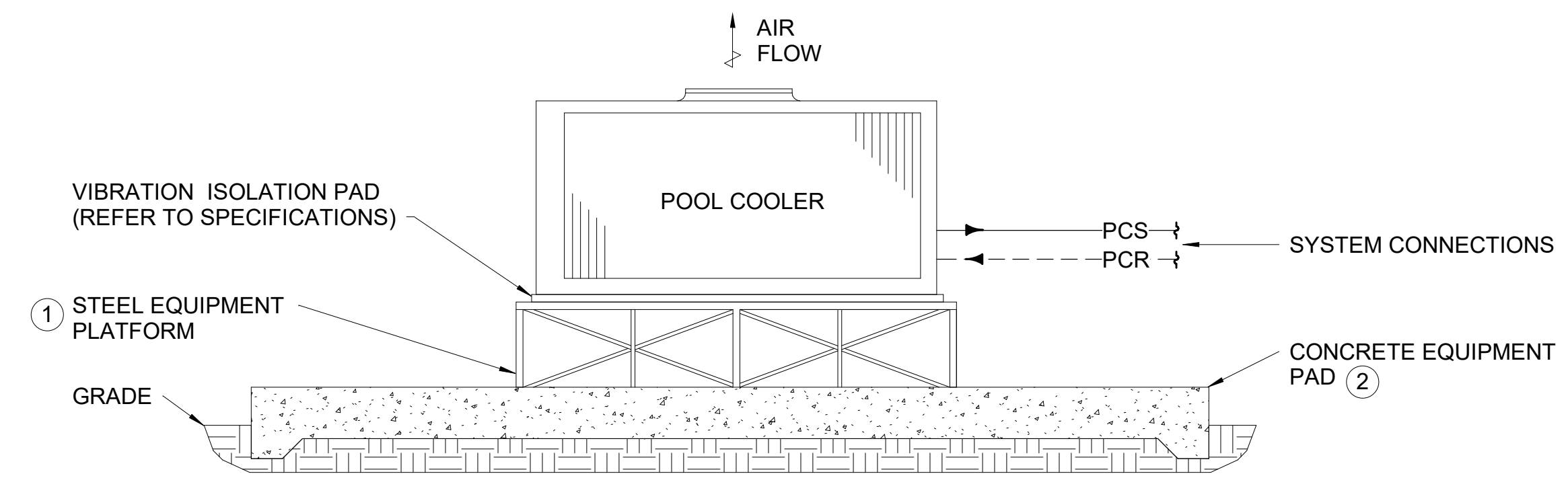
M101



1 DETAIL - LOUVER PENETRATION
SCALE: N.T.S.

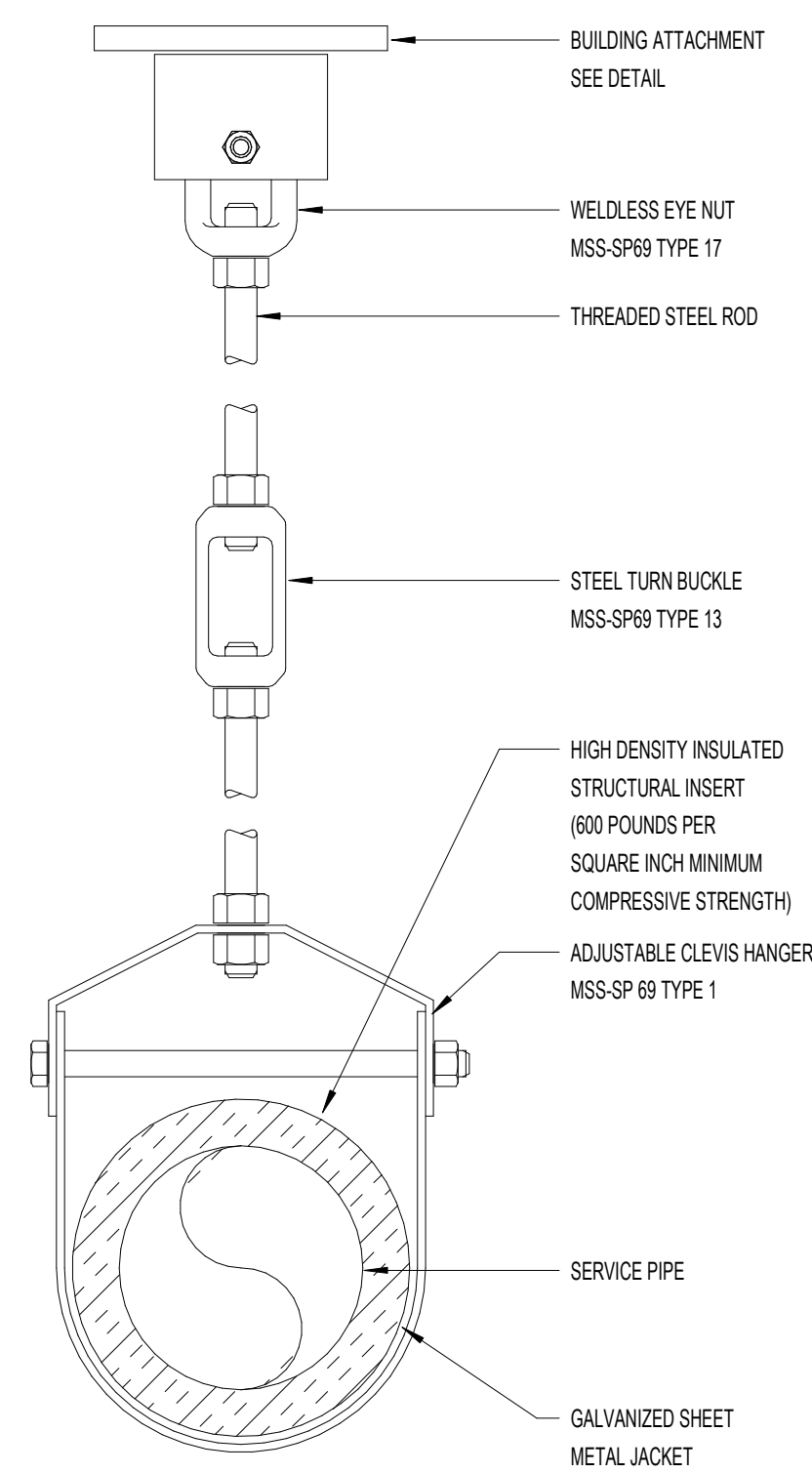


2 DETAIL - EXTERIOR CONCRETE PAD ON GRADE
SCALE: N.T.S.

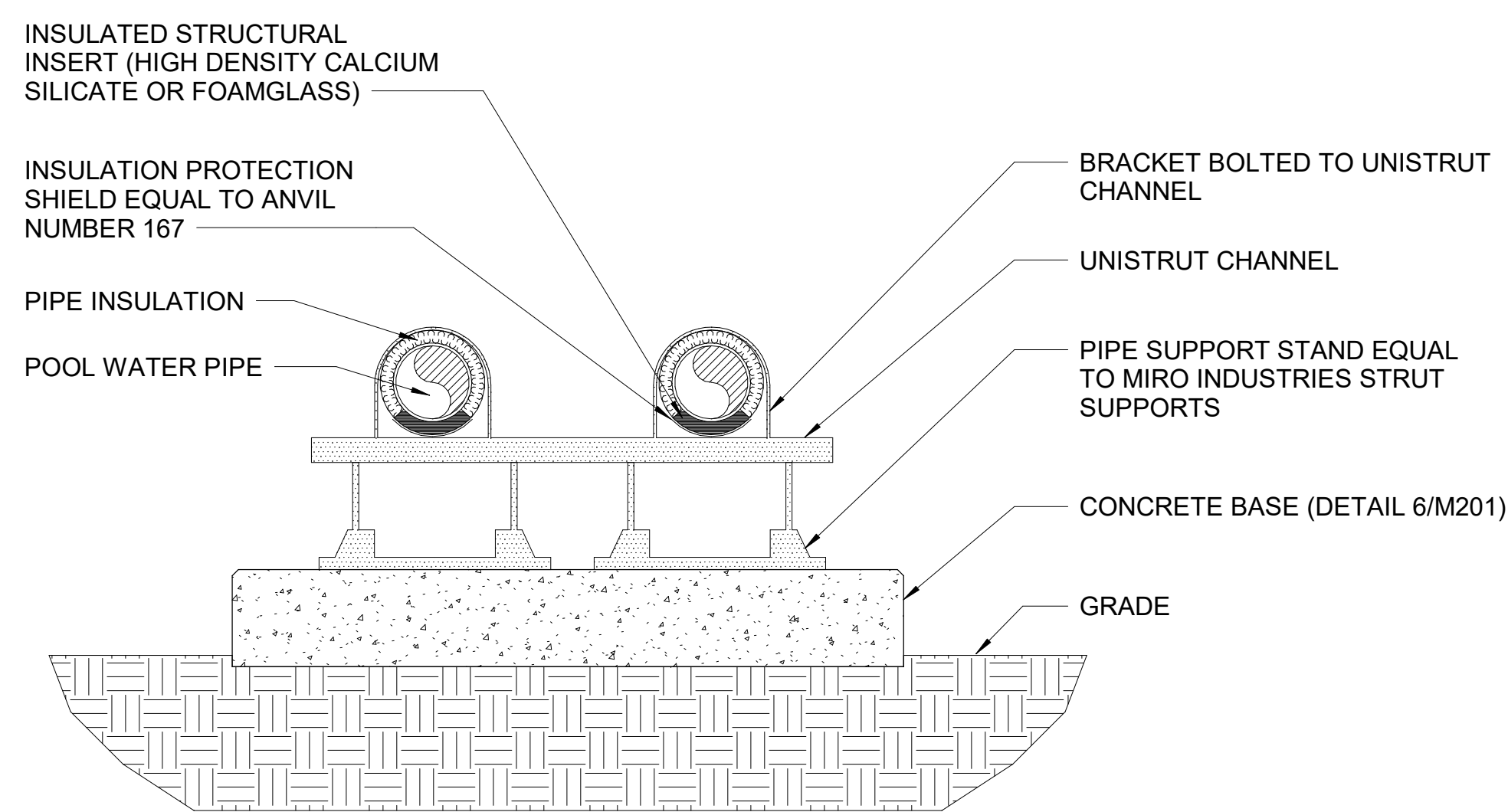


- DRAWING NOTES:**
- SEISMIC ENGINEER OF RECORD SHALL DESIGN A 2' HIGH STEEL EQUIPMENT PLATFORM FOR THE POOL COOLER. EQUIPMENT SHALL NOT EXCEED 30" HIGH OFF GRADE.
 - PROVIDE CONCRETE EQUIPMENT PAD IN ACCORDANCE WITH DETAIL 2/M201. PAD SHALL EXTEND 2' BEYOND THE EQUIPMENT PLATFORM ON ALL SIDES.

3 DETAIL - POOL COOLER PLATFORM
SCALE: N.T.S.



4 DETAIL - PIPE HANGER SUPPORT
SCALE: N.T.S.



5 DETAIL - EXTERIOR PIPE SUPPORT
SCALE: N.T.S.

POOL COOLER SCHEDULE- PROVIDED BY CONTRACTOR									
DESIGNATION	AMBIENT TEMP (*F DB / WB)	EVAPORATOR		ELECTRICAL			DRY WEIGHT (LBS)	BASIS OF DESIGN	REMARKS
		EWT (*F)	FLOW RATE (GPM)	V/Ø/HZ	FAN MOTOR (HP)	SUMP PUMP QUANTITY			
PC-1	81.7 / 77.1	81	237	208/3/60	2	2	1.5	940	GLACIER / GPC-280

- GLACIER POOL CONTACT IS RICK ARGOVITZ. RICK@glacierpoolcoolers.com
- POOL COOLER SHALL BE INTERLOCKED TO THE OPERATION OF THE EXISTING POOL PUMP. PROVIDE REQUIRED CONTROL WIRING.

DESIGN COMMISSIONING DATA	
1. OUTSIDE DESIGN CONDITIONS: (DATA FROM 2017 ASHRAE FUNDAMENTALS FOR COLUMBIA, SC)	
COOLING (0.4%):	97.3°F DB / 75.6°F WB
DEHUMIDIFICATION (0.4%):	81.7°F DB / 77.1°F WB
HEATING (99.6%):	25.2°F
2. SEISMIC DESIGN CRITERIA:	
Sds:	0.336
Sd1:	0.158
RISK CATEGORY:	II
SITE CLASS:	C
3. CODES:	
REFER TO PROJECT TITLE PAGE	

BLATT PE POOL CHILLER SYSTEM
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MECHANICAL
DETAILS AND
SCHEDULES

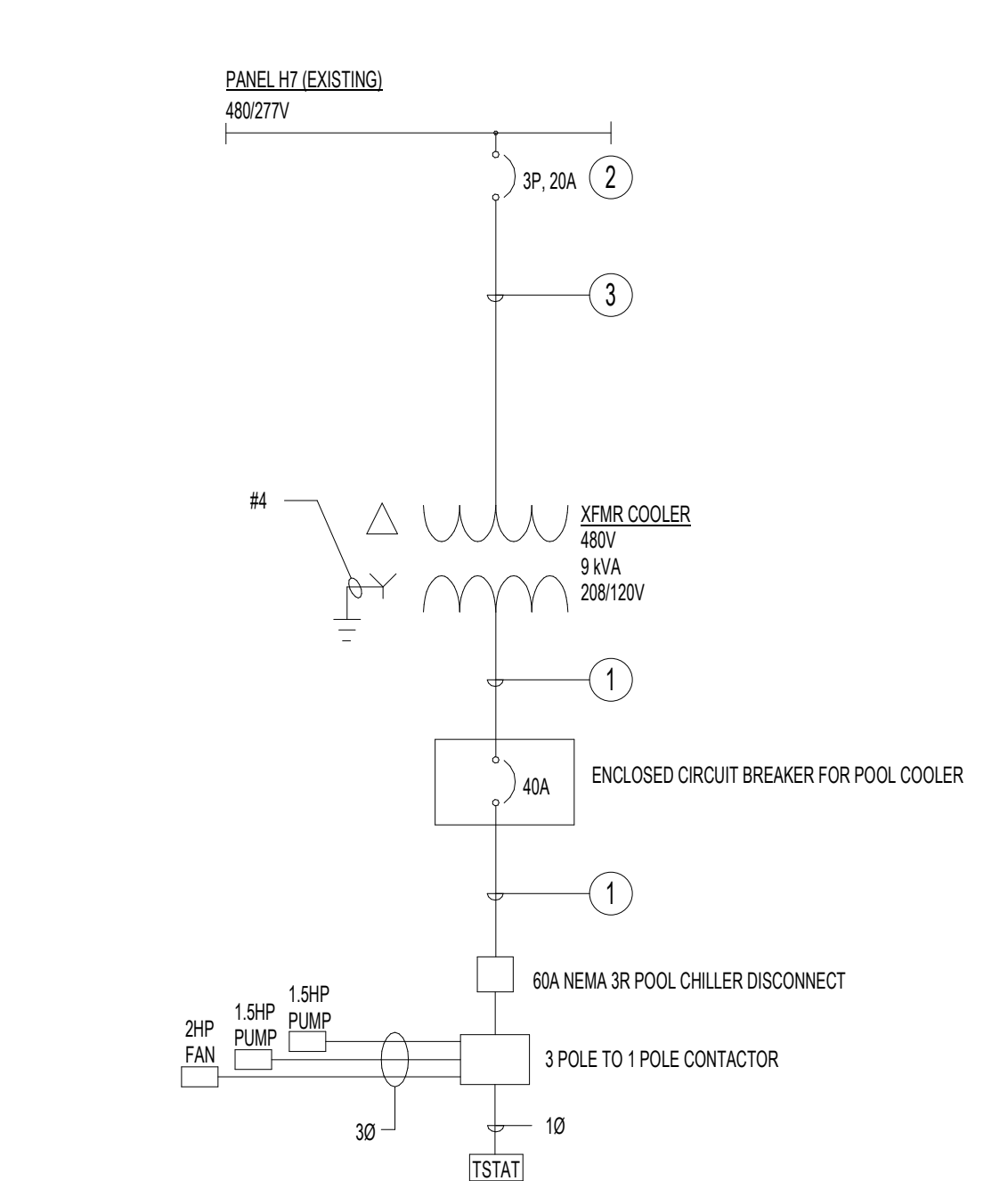
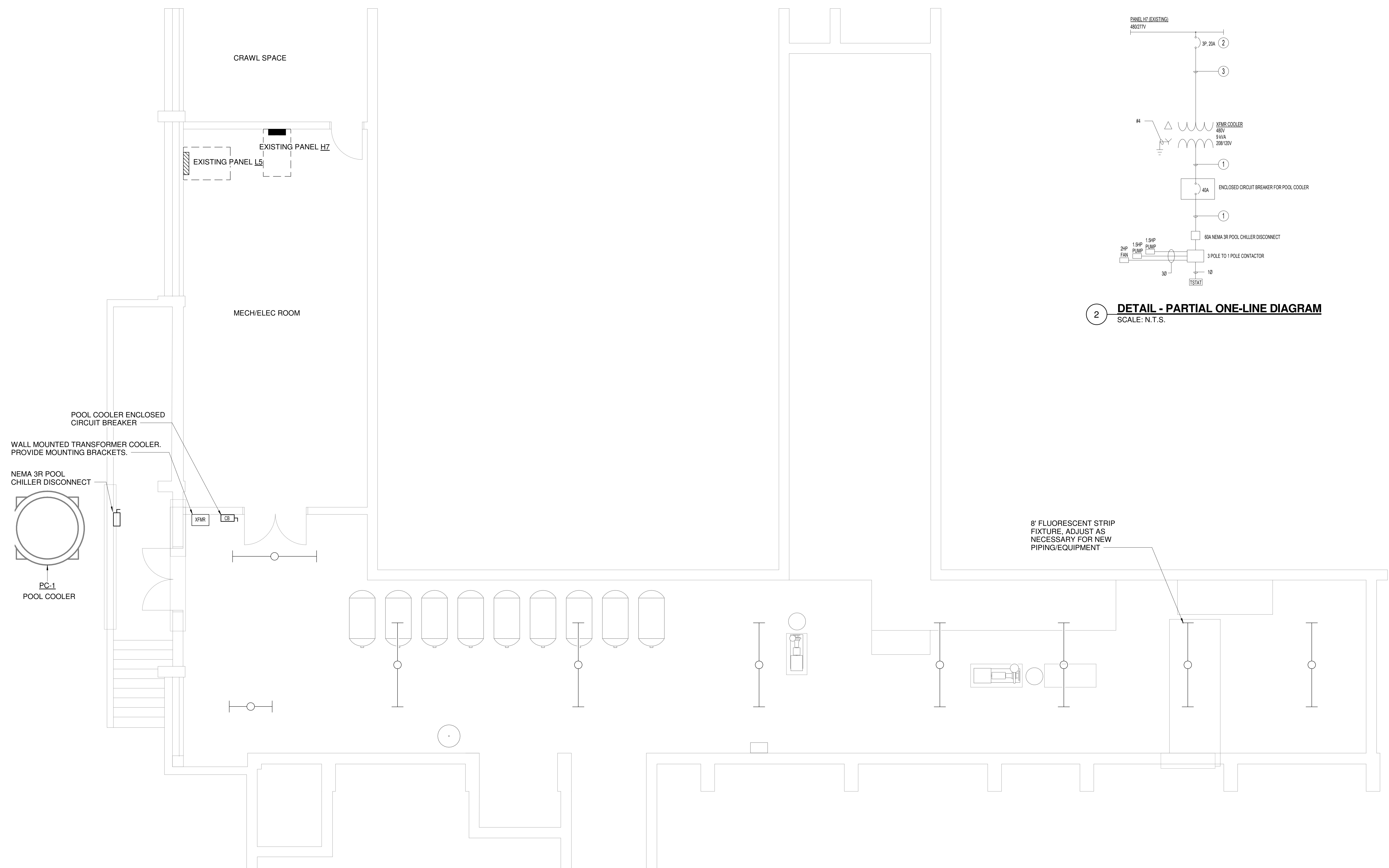
M201

GENERAL NOTES

1. FLOOR PLAN DIMENSIONS ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY ROUTING AND LENGTHS BEFORE BID.
2. COORDINATE FINAL CONNECTIONS WITH AWARDED POOL COOLER MANUFACTURER. BASIS OF DESIGN AS LISTED ON MECHANICAL DRAWINGS.

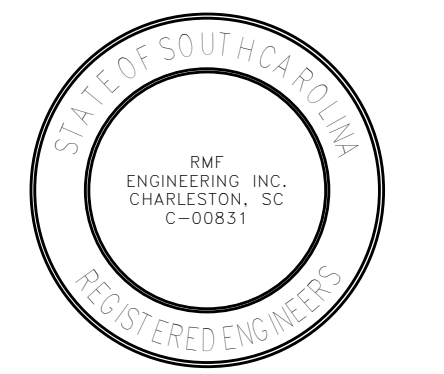
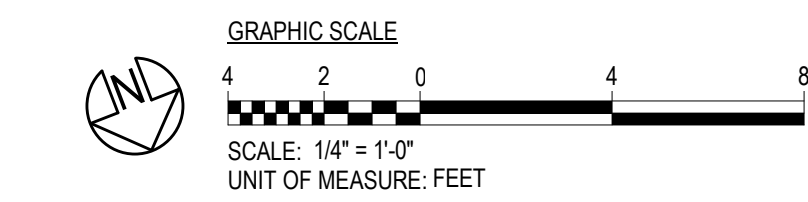
DRAWING NOTES

1. 4#8 AND 1#10G. IN 1" CONDUIT.
2. PROVIDE 3P, 20A CIRCUIT BREAKER IN EXISTING SPACES IN EXISTING WESTINGHOUSE TYPE WEHB PANEL.
3. 3#10 AND 1#10 GND IN 3/4" CND.



2 **DETAIL - PARTIAL ONE-LINE DIAGRAM**
SCALE: N.T.S.

1 **ELECTRICAL PLAN**
SCALE: 1/4" = 1'-0"



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 Designed By: **DLC**

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POWER PLAN

E101