

2012 North Carolina Energy Conservation Code

Commercial Energy Efficiency – Mechanical Summary

THIS SECTION REQUIRED FOR ALL PROJECTS THAT INCLUDE MECHANICAL DESIGN

501.1 METHOD OF COMPLIANCE NC SPECIFIC COMCHECK PROVIDED

X 2012 NCECC CHAPTER 5 901.-2007 20% IMPROVEMENT OVER ASHRAE

501.2 APPLICATION COMPLIANCE

506.2.1 EFFICIENT MECH EQUIPMENT 506.2.4 HI EFFICIENCY DOMESTIC HW

X 506.2.2 REDUCED LTG DENSITY ENERGY 506.2.5 ONSITE RENEWABLE ENERGY

506.2.3 ENERGY RECOVERY SYSTEMS CONTROLS 506.2.6 DAYLIGHTING CONTROLS

301.1 CLIMATE ZONE

3A ONSLOW COUNTY, NORTH CAROLINA

DESIGN CONDITIONS

EXTERIOR (ASHRAE 90.1 – 2007 TABLE D – 1)

winter dry bulb 27° F.

summer dry bulb 94° F.

summer wet bulb 76° F.

INTERIOR (2012 NCECC SECTION 302.1)

winter dry bulb 75° F.

summer dry bulb 75° F.

503.2 HEATING & COOLING LOADS AND EQUIPMENT & SYSTEM SIZING

BUILDING HEATING LOAD IN BTUHS: 22,077 BTU

BUILDING COOLING LOAD IN BTUHS: 33,120 BTU

INSTALLED HEATING CAPACITY IN BTUHS: 48,000 BTU

INSTALLED COOLING CAPACITY: 48,000 BTU

503.2.3 HVAC EQUIPMENT REQUIREMENTS

SYSTEM DESCRIPTION: SPLIT SYSTEM HEAT PUMP

COOLING EQUIPMENT EFFICIENCY COMPLIANCE Per Tables 503.2.3 (1 – 7):

X SYSTEM AHU 1 TYPE: HEAT PUMP

EQUIP TYPE	SIZE CATEGORY	MINIMUM EFF.	INSTALLED
EFFICIENCY			
AIR COOLED	<65,000 BTU	13.0 SEER	13.0 SEER
COOLING MODE			

HEATING EQUIPMENT EFFICIENCY COMPLIANCE Per Tables 503.2.3 (1 – 7):

X SYSTEM AHU 1 TYPE: HEAT PUMP

EQUIP TYPE	SIZE CATEGORY	MINIMUM EFF.	INSTALLED
EFFICIENCY			
AIR COOLED	<65,000 BTU	7.7 HSPF	7.7 HSPF
HEATING MODE			

E_c = COMBUSTION EFFICIENCY
E_t = THERMAL EFFICIENCY

503.2.4 THROUGH 503.2.9

HVAC SYSTEMS ARE FULLY COMPLIANT WITH THE REQUIREMENTS FOR HVAC

X SYSTEM CONTROL, VENTILATION, ENERGY RECOVERY, DUCT AND PLENUM INSULATION AND SEALING, PIPING INSULATION, AND SYSTEM COMPLETION.

503.2.10 – AIR SYSTEM DESIGN AND CONTROL

X AIR FANS INSTALLED ON THE PROJECT ARE BELOW 5 HP AND ARE EXEMPT FROM THESE REQUIREMENTS.

503.3 – SIMPLE HVAC SYSTEMS AND EQUIPMENT (PRESCRIPTIVE)

X PROJECT CONSISTS OF ONLY DX SINGLE ZONE SYSTEMS FULLY COMPLIANT WITH THE SIMPLE PRESCRIPTIVE REQUIREMENTS OF 503.3.

503.4 – COMPLEX HVAC SYSTEMS AND EQUIPMENT (PRESCRIPTIVE)

N/A SIMPLEX HVAC SYSTEMS

PROJECT CONSISTS OF HVAC SYSTEMS FULLY COMPLIANT WITH THE COMPLEX PRESCRIPTIVE REQUIREMENTS OF 503.4.

506.2.1 – EFFICIENT MECHANICAL EQUIPMENT

X INSTALLED COOLING EFFICIENCY MEETS APPLICATION REQUIREMENTS OF 506.2.1

SIGNED:

NAME: Chris S. Locklear

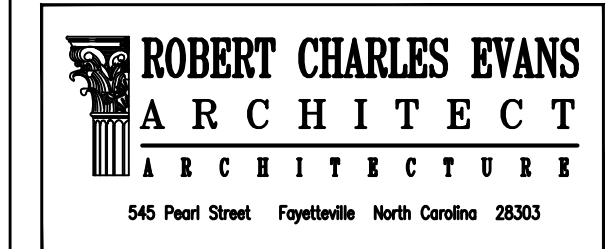
TITLE: Engineer

MARK ON PLANS	CFM	AIR PATTERN	NECK SIZE	RUNOUT SIZE	REMARKS
(A)	50-125	4 WAY	4 X 10	6"	PRICE SERIES 610 OFF WHITE, ALUM.,
(B)	150-275	4 WAY	12 X 6	8"	PRICE SERIES 610 OFF WHITE, ALUM.,
(C)		N/A	8 X 6	SEE PLAN	PRICE SERIES 610Z OFF WHITE, ALUM., RETURN
(D)		N/A	12 X 12	SEE PLAN	PRICE SERIES 610Z OFF WHITE, ALUM., RETURN

MARK	LOCATION	SERVICE	CFM	S.P.	WATTS	RPM	VOLT	PHASE	DRIVE	REMARKS
EF1	CEILING	TOILETS	70	0.1"	15.6	790	120	1	DIRECT	CEILING MOUNTED FAN. PROVIDE W/B.D.D. AND WALL CAP GREENNECK SPA70 OR EQ. 6" TO ROOF/WALL CAP CLASS 0 OR 1 FLEX ONLY NO RESIDENTIAL TYPE FLEX PERMITTED
EF2	WALL	STORAGE	511	0.1"	15.6	860	120	1	DIRECT	WALL MOUNTED FAN. PROVIDE W/B.D.D. GREENNECK S1-12-432-08 OR EQ.

UNIT NO.	OUTDOOR UNIT							CAPACITIES			MFG & MODEL	REMARKS		
	COMPRESSOR AMPS	NO. OF COMPR.	FAN AMPS	NO. OF FANS	UNIT VOLT	UNIT PHASE	MOCP	MCA	WIRE SIZE (CU. 75 C)	TOTAL COOLING			MIN. SEER	HEATING
HP-1	23.1	1	1.3	1	208	1	50	30	8	48,000	13.00	46,500	TRANE 4TW3048A1	4 TON HEAT PUMP UNIT

UNIT NO.	CFM	OA CFM	ESP IN WG	FAN MOTOR						MFG. & MODEL	REMARKS	
				HP	VOLTS	PHASE	CYCLE	FLA	MCA			MOCP
AHU-1	1600	260	0.75	3/4	240	1	60	6.0	58	60	TRANE GAM5A0A48	4 TON AIR HANDLER W/ 9.60 KW STRIPS



Mohler Homes, Inc. Office Building

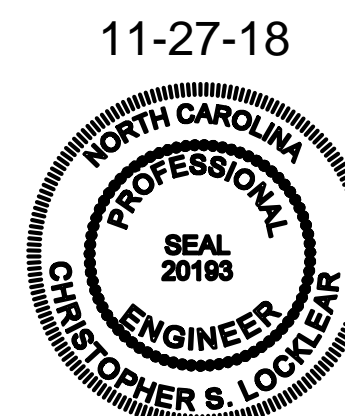
Drawing Name:
MECHANICAL PLANS

Project Name:
An Office Building for
Mohler Homes, Inc.

Project Location:
Lot 5, Comm Park Lane
Angier
North Carolina

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PROJECT NO: 18-128	SHEET NO:
DRAWN BY: SLI	M2
DATE: 10.XX.18	
REVISIONS:	