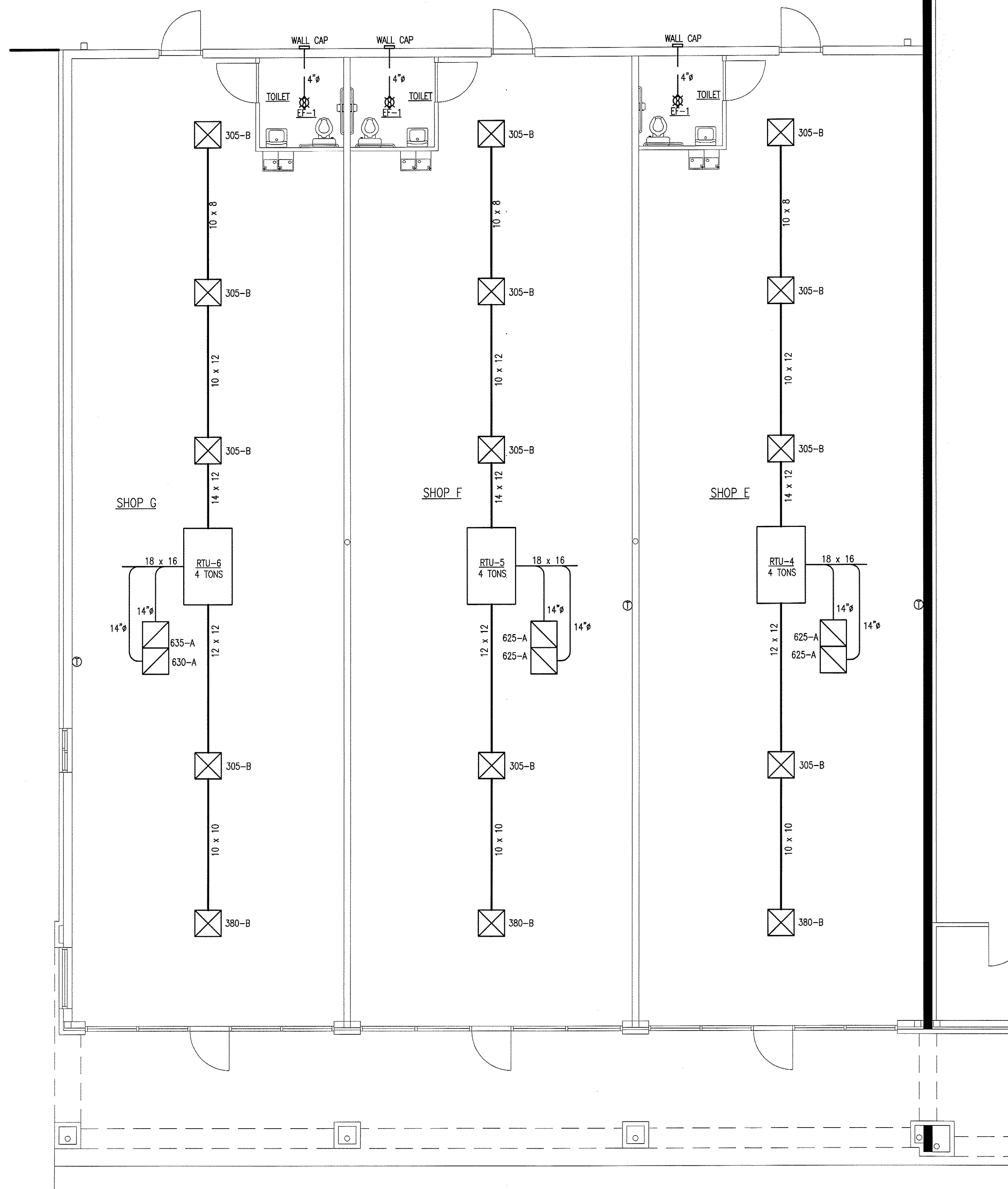
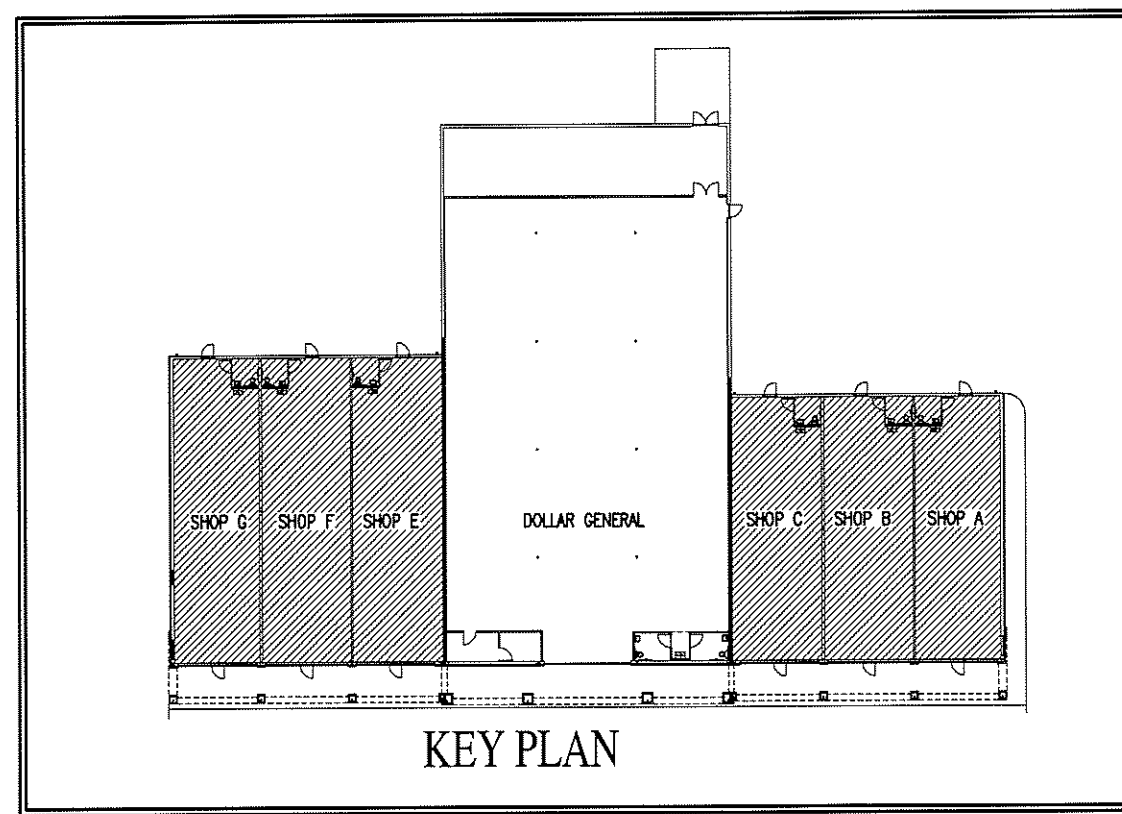


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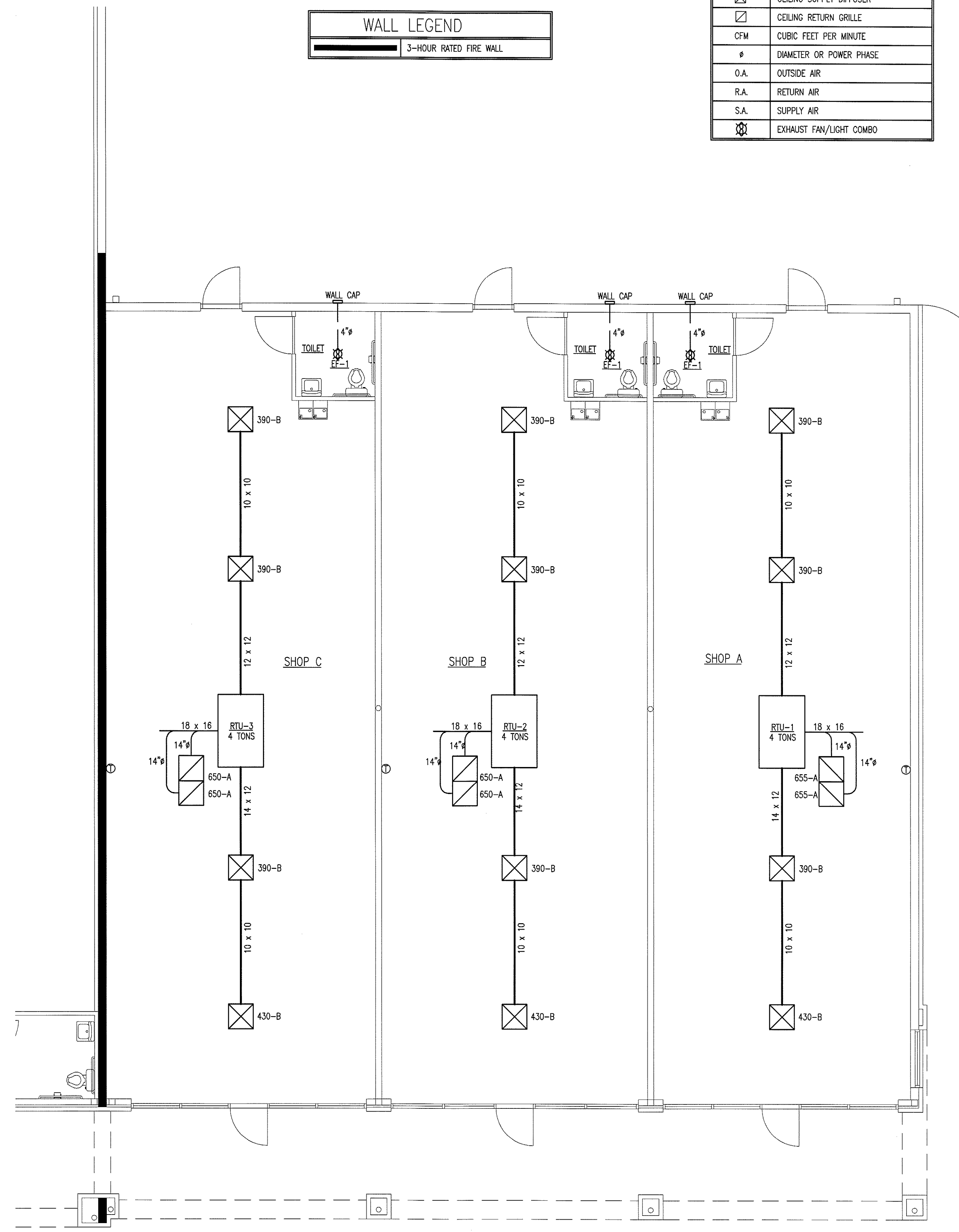
961-F Burlington Avenue
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Phone: (336) 449-4558
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SYMBOLS & ABBREVIATIONS LEGEND	
SYMBOL	DESCRIPTION
⊖	THERMOSTAT
⊗	CEILING SUPPLY DIFFUSER
⊘	CEILING RETURN GRILLE
CFM	CUBIC FEET PER MINUTE
∅	DIAMETER OR POWER PHASE
O.A.	OUTSIDE AIR
R.A.	RETURN AIR
S.A.	SUPPLY AIR
⊗	EXHAUST FAN/LIGHT COMBO

WALL LEGEND	
	3-HOUR RATED FIRE WALL



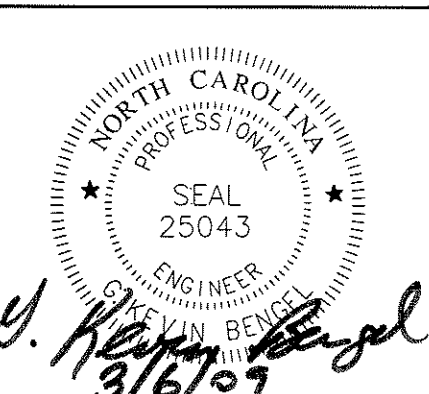
2 SHOPS E-G
MECHANICAL PLAN
SCALE: 3/16" = 1'-0"
M-1



1 SHOPS A-C
MECHANICAL PLAN
SCALE: 3/16" = 1'-0"
M-1

SOUTHRIDGE MARKET
5416 ROCK QUARRY ROAD
RALEIGH, NORTH CAROLINA
ASHLAND CONSTRUCTION COMPANY

issue date:
4 MAR 2009 - FOR PERMITS



ACE Job # 9018
project 102100
dwg. by EDM
ckd. by [Signature]

content
RETAIL SHOPS
MECHANICAL
PLAN

FOR CONSTRUCTION
sheet

M-1
1 of 2

MECHANICAL NOTES:

- ALL HVAC EQUIPMENT AND DUCTWORK TO BE INSTALLED IN ACCORDANCE WITH STATE AND LOCAL CODES.
- THE CONTRACTOR SHALL COORDINATE THE LOCATION OF ALL DUCTWORK, PIPING, AND ELECTRICAL REQUIREMENTS WITH ALL OTHER TRADES PRIOR TO BEGINNING INSTALLATION TO AVOID CONFLICTS AND INTERFERENCE WITH OTHER TRADES.
- ALL EQUIPMENT TO BE INSTALLED AS SUGGESTED BY MANUFACTURER.
- INSULATE SUPPLY AND RETURN DUCTWORK LOCATED IN UNCONDITIONED SPACES BY WRAPPING WITH INSULATION WITH A MINIMUM INSTALLED R-VALUE OF 5.0. DIMENSIONS SHOWN ARE INSIDE CLEAR AREA DIMENSIONS.
- EQUIP RETURN AIR GRILLES WITH FILTERS. INSTALL WASHABLE SCREEN FILTER ON OUTSIDE AIR INTAKE OF ROOF TOP UNITS.
- MECHANICAL SYSTEM TO BE BALANCED AND TESTED AFTER INSTALLATION TO ASSURE PROPER OPERATION.
- COORDINATE EXACT LOCATION OF THERMOSTATS WITH OWNER.
- BATHROOM EXHAUST FANS ARE TO BE FURNISHED, INSTALLED AND DUCTED TO OUTDOORS BY THE MECHANICAL CONTRACTOR. EXHAUST FAN TO BE WIRED BY THE ELECTRICAL CONTRACTOR.
- EXHAUST FAN DISCHARGE TO BE AT LEAST TEN FEET AWAY FROM HVAC FRESH AIR IN-TAKE.
- FINAL UTILITY CONNECTIONS (GAS, ELECTRIC, ETC.) TO EQUIPMENT SHALL BE MADE BY THE CONTRACTOR INSTALLING THE EQUIPMENT REQUIRING THE UTILITIES.
- DUCT DRAWINGS ARE DIAGRAMMATIC AND ARE INTENDED TO SHOW THE INTENT OF THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ANY ADDITIONAL TRANSITIONS, OFFSETS, OR TURNS, IN THE DUCTWORK AND/OR PIPING, NOT SHOWN BUT REQUIRED FOR A COMPLETE AND OPERATING SYSTEM.
- ALL DUCTWORK SHALL BE INSTALLED TIGHT AGAINST THE STRUCTURE UNLESS OTHERWISE NOTED OR SHOWN.
- AIR DISTRIBUTION LOCATIONS SHOWN ON MECHANICAL PLANS ARE APPROXIMATE. SEE ARCHITECTURAL REFLECTED CEILING PLANS FOR ACTUAL LOCATIONS.
- REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONED LOCATIONS OF WALLS AND PARTITIONS AND FOR PARTITION THICKNESS AND CONSTRUCTION MATERIALS.
- ELECTRICAL POWER REQUIREMENTS ARE BASED ON MANUFACTURER'S PUBLISHED DATA. IF ACTUAL UNIT IS A DIFFERENT MANUFACTURER OR THE ACTUAL PURCHASED UNITS OTHERWISE HAVE DIFFERENT ELECTRICAL LOAD (MCA) OR CIRCUIT BREAKER (MCB) REQUIREMENTS THAN WHAT IS PUBLISHED ON THE DRAWING SCHEDULE, THE MECHANICAL CONTRACTOR MUST SUBMIT THE CORRECT DATA IN WRITING TO THE GENERAL CONTRACTOR AND ELECTRICAL CONTRACTOR (IF KNOWN). IT IS THE MECHANICAL CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THE GC AND ELECTRICAL CONTRACTOR ARE NOTIFIED OF CHANGES IN THE MECHANICAL EQUIPMENT, WHICH WILL CHANGE THE ELECTRICAL WIRING, BREAKER SIZES OR QUANTITY OF CIRCUITS.

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT METHOD OF COMPLIANCE

PRESCRIPTIVE ENERGY COST BUDGET

THERMAL ZONE 7A

EXTERIOR DESIGN CONDITIONS
 WINTER DRY BULB 16 °F
 SUMMER DRY BULB 80 °F

INTERIOR DESIGN CONDITIONS
 WINTER DRY BULB 68 °F
 SUMMER DRY BULB 78 °F
 RELATIVE HUMIDITY 50 %

BUILDING HEATING LOAD 184,800 BTU/HR
 BUILDING COOLING LOAD 19,25 TONS

MECHANICAL SPACING CONDITIONING SYSTEM
 UNITARY
 DESCRIPTION OF UNIT ROOF TOP HEAT PUMPS

HEATING EFFICIENCY 7.8 HSPF
 COOLING EFFICIENCY 13 SEER
 HEATING OUTPUT OF UNIT 266,400 BTU/HR
 COOLING OUTPUT OF UNIT 24 TONS

LIST EQUIPMENT EFFICIENCIES
 EQUIPMENT SCHEDULES WITH MOTORS (MECHANICAL SYSTEM)
 MOTOR HORSEPOWER HP
 NUMBER OF PHASES 3
 MINIMUM EFFICIENCY %
 MOTOR TYPE
 # OF POLES

DESIGNER STATEMENT:
 TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE DESIGN OF THIS BUILDING COMPLIES WITH THE MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT REQUIREMENTS OF NORTH CAROLINA STATE BUILDING CODES.

PACKAGED HEAT PUMP SCHEDULE

MARK	MANUFACTURER	MODEL NO.	TONS	STRIP HEAT	POWER	MCA	MCB	FAN DATA				COOLING CAPACITY			HEATING CAPACITY AT 47 °F	MINIMUM ELECTRIC HEAT CAPACITY	MINIMUM HEATING EFFICIENCY	
								AIR FLOW	R.A. FLOW	O.A. FLOW	E.S.P.	MOTOR SIZE	SENSIBLE	TOTAL				MIN. EFF.
RTU-1	TRANE	*WSC048E3	4	9 KW	208V/3Ø	58.8	60	1,600	1,310	290	0.5	0.4 HP	38,000	50,800	13 SEER	44,400	7.1 KW	7.8 HSPF
RTU-2	TRANE	*WSC048E3	4	9 KW	208V/3Ø	58.8	60	1,600	1,300	300	0.5	0.4 HP	38,000	50,800	13 SEER	44,400	7.3 KW	7.8 HSPF
RTU-3	TRANE	*WSC048E3	4	9 KW	208V/3Ø	58.8	60	1,600	1,300	300	0.5	0.4 HP	38,000	50,800	13 SEER	44,400	7.3 KW	7.8 HSPF
RTU-4	TRANE	*WSC048E3	4	9 KW	208V/3Ø	58.8	60	1,600	1,250	350	0.5	0.4 HP	38,000	50,800	13 SEER	44,400	8.2 KW	7.8 HSPF
RTU-5	TRANE	*WSC048E3	4	9 KW	208V/3Ø	58.8	60	1,600	1,250	350	0.5	0.4 HP	38,000	50,800	13 SEER	44,400	8.2 KW	7.8 HSPF
RTU-6	TRANE	*WSC048E3	4	9 KW	208V/3Ø	58.8	60	1,600	1,265	335	0.5	0.4 HP	38,000	50,800	13 SEER	44,400	7.9 KW	7.8 HSPF

* UNITS TO BE EQUIPPED WITH FACTORY ROOF CURBS, ON-BOARD BREAKERS, AND ON-BOARD CONVENIENCE RECEPTACLES

OUTSIDE AIR CALCULATIONS (SHOP A)

OCCUPANCY CLASSIFICATION (PER TABLE 403.3)	NET (GROSS) SQUARE FOOTAGE	OCCUPANCY LOAD PERSONS PER 1,000 S.F.	CALCULATED # OF PEOPLE	OUTSIDE AIR REQUIRED PER PERSON (CFM)	OUTSIDE AIR REQUIRED PER S.F. (CFM)	OUTSIDE AIR REQUIRED (CFM)	OUTSIDE AIR PROVIDED (CFM)
RETAIL SALES	955	-	-	-	.3	287	290
TOTAL OUTSIDE AIR						287	290

OUTSIDE AIR CALCULATIONS (SHOP B)

OCCUPANCY CLASSIFICATION (PER TABLE 403.3)	NET (GROSS) SQUARE FOOTAGE	OCCUPANCY LOAD PERSONS PER 1,000 S.F.	CALCULATED # OF PEOPLE	OUTSIDE AIR REQUIRED PER PERSON (CFM)	OUTSIDE AIR REQUIRED PER S.F. (CFM)	OUTSIDE AIR REQUIRED (CFM)	OUTSIDE AIR PROVIDED (CFM)
RETAIL SALES	991	-	-	-	.3	297	300
TOTAL OUTSIDE AIR						297	300

OUTSIDE AIR CALCULATIONS (SHOP C)

OCCUPANCY CLASSIFICATION (PER TABLE 403.3)	NET (GROSS) SQUARE FOOTAGE	OCCUPANCY LOAD PERSONS PER 1,000 S.F.	CALCULATED # OF PEOPLE	OUTSIDE AIR REQUIRED PER PERSON (CFM)	OUTSIDE AIR REQUIRED PER S.F. (CFM)	OUTSIDE AIR REQUIRED (CFM)	OUTSIDE AIR PROVIDED (CFM)
RETAIL SALES	1,003	-	-	-	.3	300	300
TOTAL OUTSIDE AIR						300	300

OUTSIDE AIR CALCULATIONS (SHOP E)

OCCUPANCY CLASSIFICATION (PER TABLE 403.3)	NET (GROSS) SQUARE FOOTAGE	OCCUPANCY LOAD PERSONS PER 1,000 S.F.	CALCULATED # OF PEOPLE	OUTSIDE AIR REQUIRED PER PERSON (CFM)	OUTSIDE AIR REQUIRED PER S.F. (CFM)	OUTSIDE AIR REQUIRED (CFM)	OUTSIDE AIR PROVIDED (CFM)
RETAIL SALES	1,166	-	-	-	.3	350	350
TOTAL OUTSIDE AIR						350	350

OUTSIDE AIR CALCULATIONS (SHOP F)

OCCUPANCY CLASSIFICATION (PER TABLE 403.3)	NET (GROSS) SQUARE FOOTAGE	OCCUPANCY LOAD PERSONS PER 1,000 S.F.	CALCULATED # OF PEOPLE	OUTSIDE AIR REQUIRED PER PERSON (CFM)	OUTSIDE AIR REQUIRED PER S.F. (CFM)	OUTSIDE AIR REQUIRED (CFM)	OUTSIDE AIR PROVIDED (CFM)
RETAIL SALES	1,152	-	-	-	.3	346	350
TOTAL OUTSIDE AIR						346	350

OUTSIDE AIR CALCULATIONS (SHOP G)

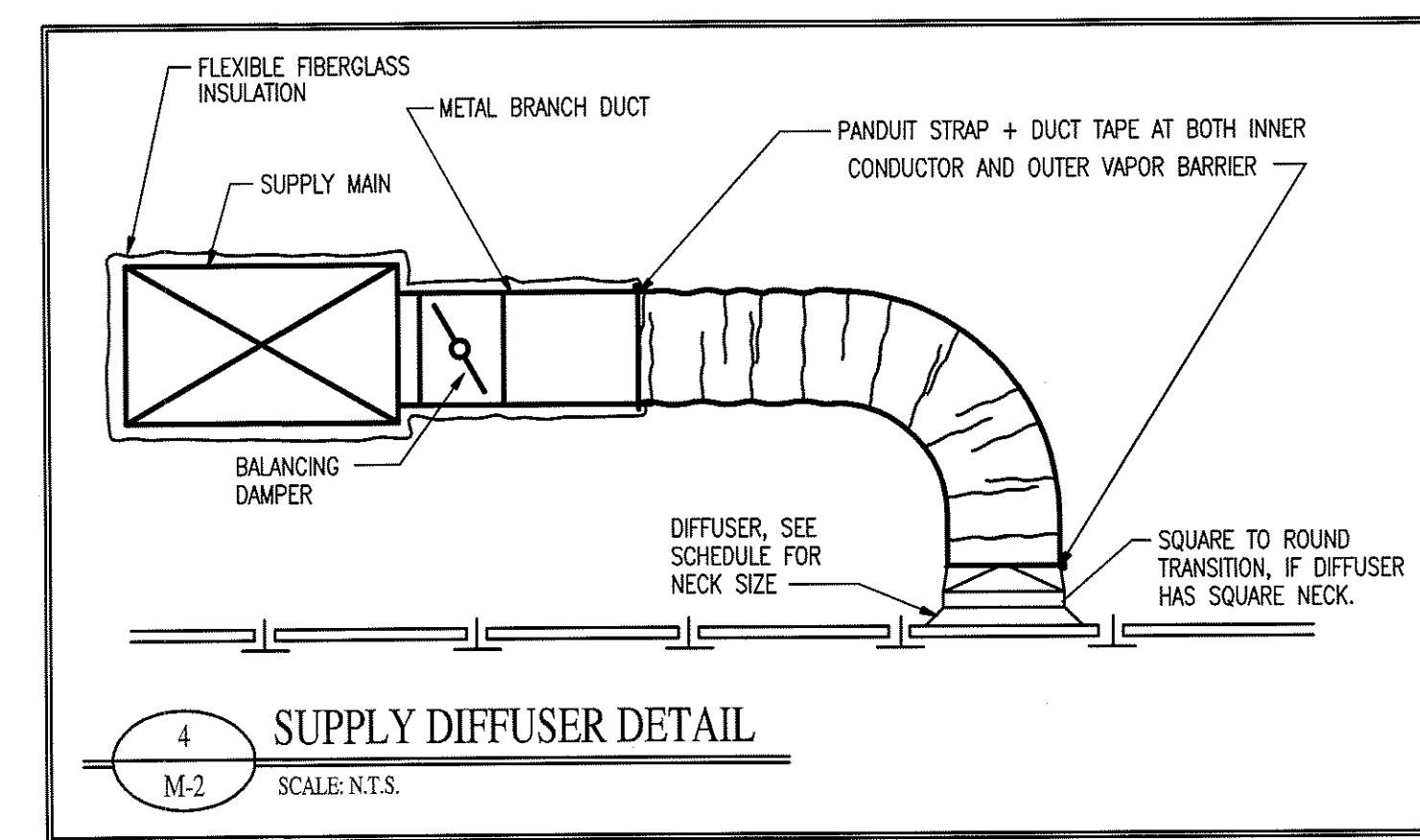
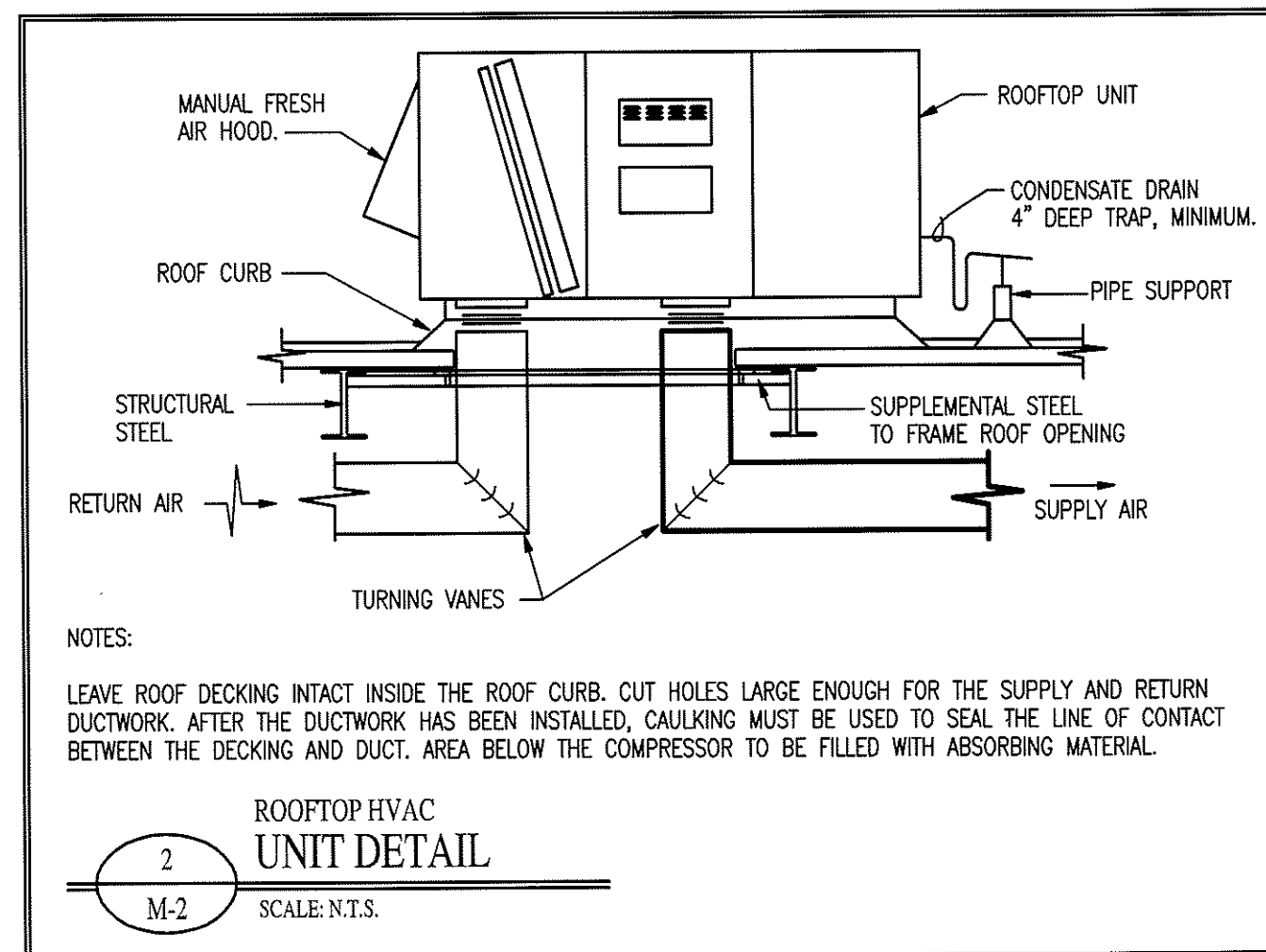
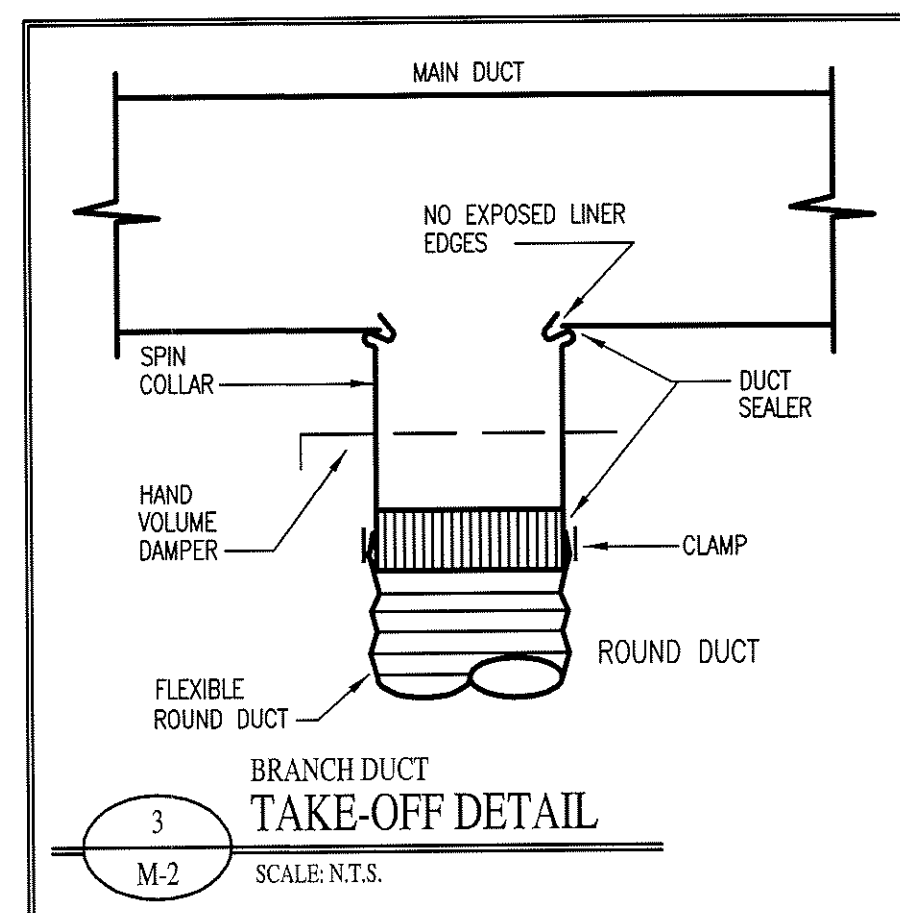
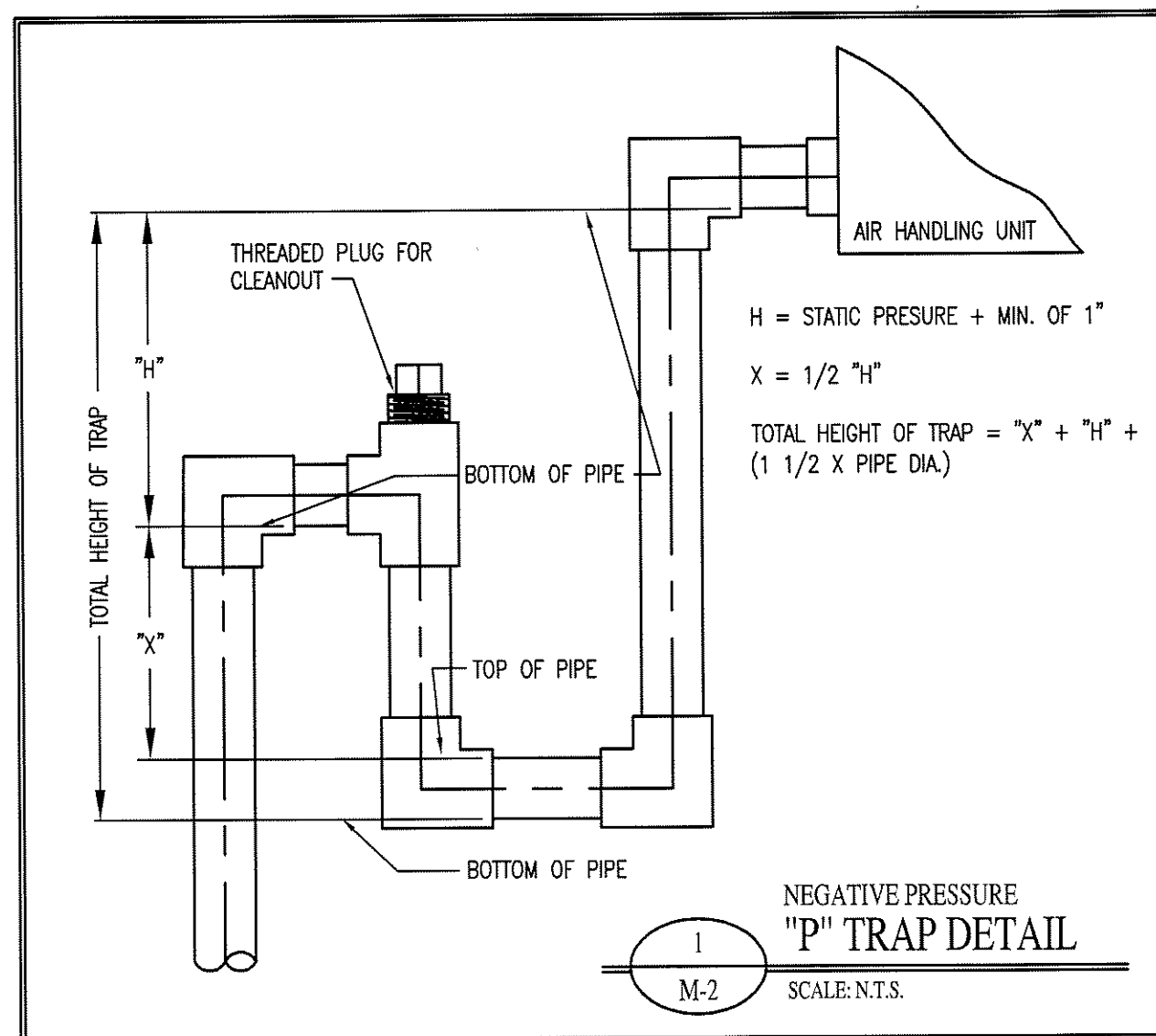
OCCUPANCY CLASSIFICATION (PER TABLE 403.3)	NET (GROSS) SQUARE FOOTAGE	OCCUPANCY LOAD PERSONS PER 1,000 S.F.	CALCULATED # OF PEOPLE	OUTSIDE AIR REQUIRED PER PERSON (CFM)	OUTSIDE AIR REQUIRED PER S.F. (CFM)	OUTSIDE AIR REQUIRED (CFM)	OUTSIDE AIR PROVIDED (CFM)
RETAIL SALES	1,111	-	-	-	.3	333	335
TOTAL OUTSIDE AIR						333	335

EXHAUST FAN SCHEDULE

MARK	MANUFACTURER	MODEL	TYPE	CFM	SP	MOTOR	POWER	SONES	WATTS	CONTROL
EF-1	GREENHECK	SP-90L	FAN/LIGHT	75	0.125" W.G.	FHP	115/1Ø	1.4	129	SWITCH

AIR DISTRIBUTION SCHEDULE

MARK	MANUFACTURER	NECK SIZE	PANEL SIZE	CFM RANGE	USE	TYPE	MODEL	MATERIAL	FILTER SIZE
A	METALAIR	22X22	24X24	0-800	RETURN	RETURN FILTER GRILLE	SRHF	STEEL	20x20
B	METALAIR	10"Ø	24X24	0-460	SUPPLY	STAMPED LOCKER FACE	5700-6	STEEL	-



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 ASHLAND CONSTRUCTION COMPANY

issue date:
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NORTH CAROLINA PROFESSIONAL ENGINEER
 SEAL 25043
 3/16/09

ACE Job # 9018
 project 1082100
 dwg. by EDM
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 MECHANICAL
 NOTES & DETAILS

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