

Mechanical Systems, Service Systems and Equipment
Method of Compliance
Prescriptive (X) Energy Cost Budget ()

Project Name
Cary Tennis Center

Thermal Zone
Thermal Zone III - Wake County

Exterior Design Conditions
Winter Dry Bulb - 16 Deg. F.
Summer Dry Bulb - 92 Deg. F.

Interior Design Conditions
Winter Dry Bulb - 68 Deg. F.
Summer Dry Bulb - 78 Deg. F.
Relative Humidity - 50 %

First Floor Heating Load
60,635 Btuh

First Floor Cooling Load
148,682 Btuh

Basement Heating Load
50,743 Btuh

Basement Cooling Load
85,205 Btuh

Mechanical Space Conditioning System
The first floor is served with split-system heatpumps. The basement floor is served with electric wall heaters and a package A/C unit.

Boiler - Not applicable to this project.
Chiller - Not applicable to this project.

Equipment Efficiencies

Split-System Heatpump Unit:

Mark	Qty.	SEER	KW Heat	ARI Cooling (Btuh)	ARI Heating (Btuh)
(A)	1	10.0	3.8	22,600	22,800
(B)	1	10.0	3.8	34,200	35,000
(C)	1	10.0	3.8	34,200	35,000

Electric/Electric Package A/C Unit:

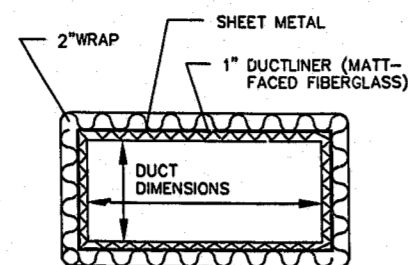
Mark	Qty.	EER	KW Heat	ARI Cooling (Btuh)
(D)	1	10.6	45.1	168,300

Electric Unit Heaters:

Mark	Qty.	KW Heat
(E)	3	.75
(F)	1	1.5
(G)	3	5

Equipment Schedules With Motors
Multispeed motors are used on this project and are included in the efficiency rating of the unit. See drawings for unit efficiencies.

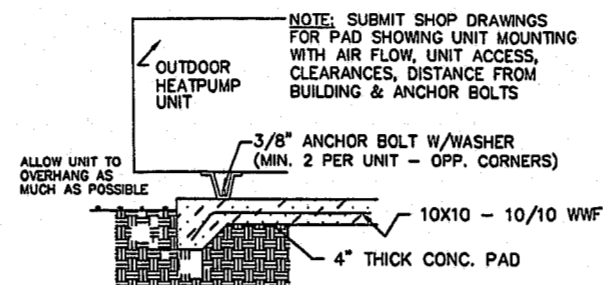
Designer Statement:
To the best of my knowledge and belief, the design of this building complies with the mechanical systems, service systems and equipment requirements of the North Carolina State Building Code, Volume X - Energy.



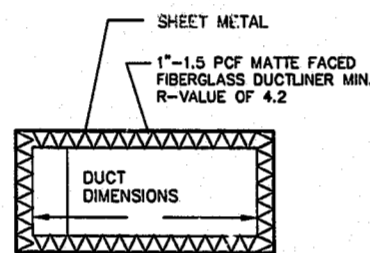
NOTE: ALL DUCT DIMENSIONS SHOWN ON THESE DRAWINGS ARE INSIDE CLEAR. DUCT FABRICATOR MUST MAKE ALLOWANCE FOR DUCTLINER IN SHEET METAL SIZE.

DETAIL SPECIFIED FOR ALL DUCT EXPOSED TO OUTDOOR CONDITIONS.

1 DUCT FABRICATION DETAIL
M3.01 SCALE: NONE

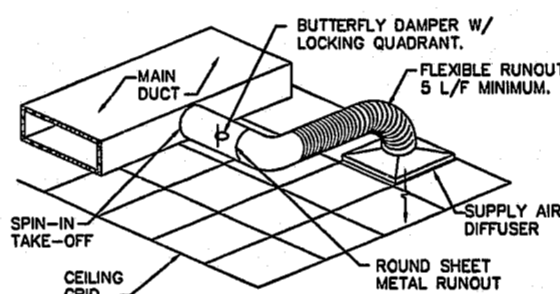


3 OUTDOOR HEATPUMP MOUNTING DETAIL
M3.01 SCALE: NONE

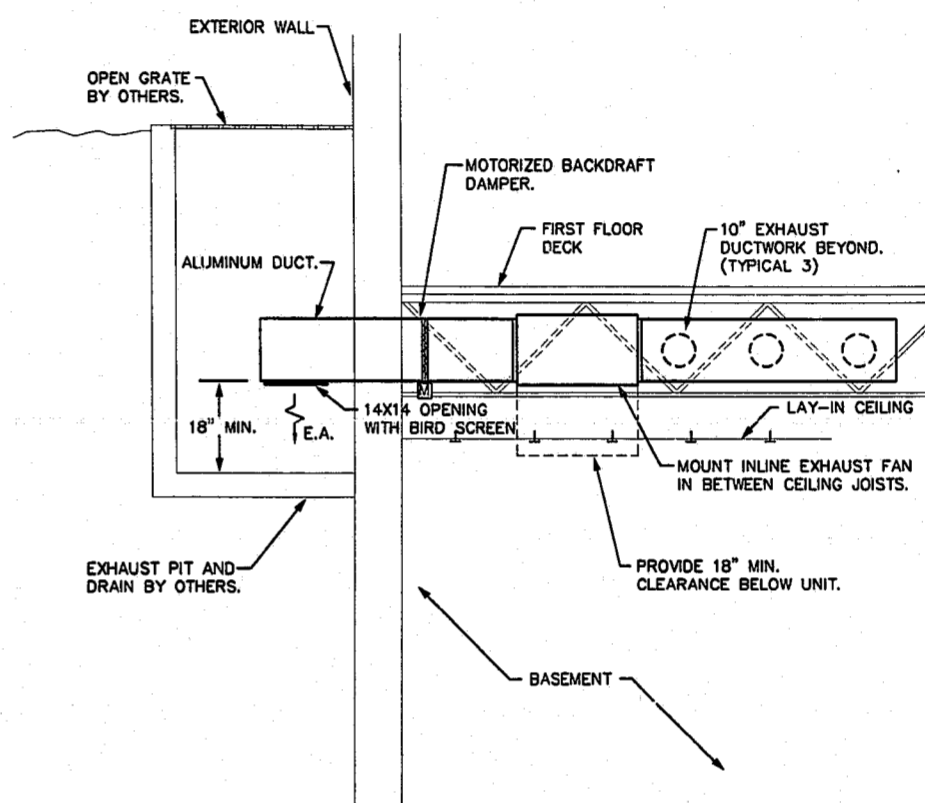


NOTE: ALL DUCT DIMENSIONS SHOWN ON THESE DRAWINGS ARE INSIDE CLEAR. DUCT FABRICATOR MUST MAKE ALLOWANCE FOR DUCTLINER IN SHEET METAL SIZE.

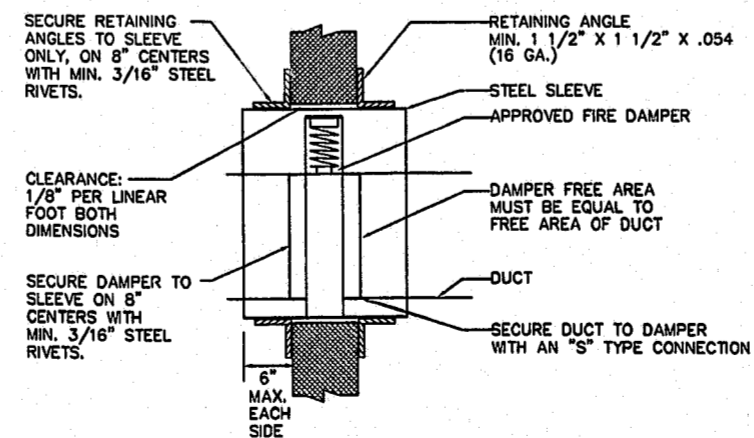
2 DUCT FABRICATION DETAIL
M3.01 SCALE: NONE



4 SUPPLY DIFFUSER INSTALLATION DETAIL
M3.01 SCALE: NONE

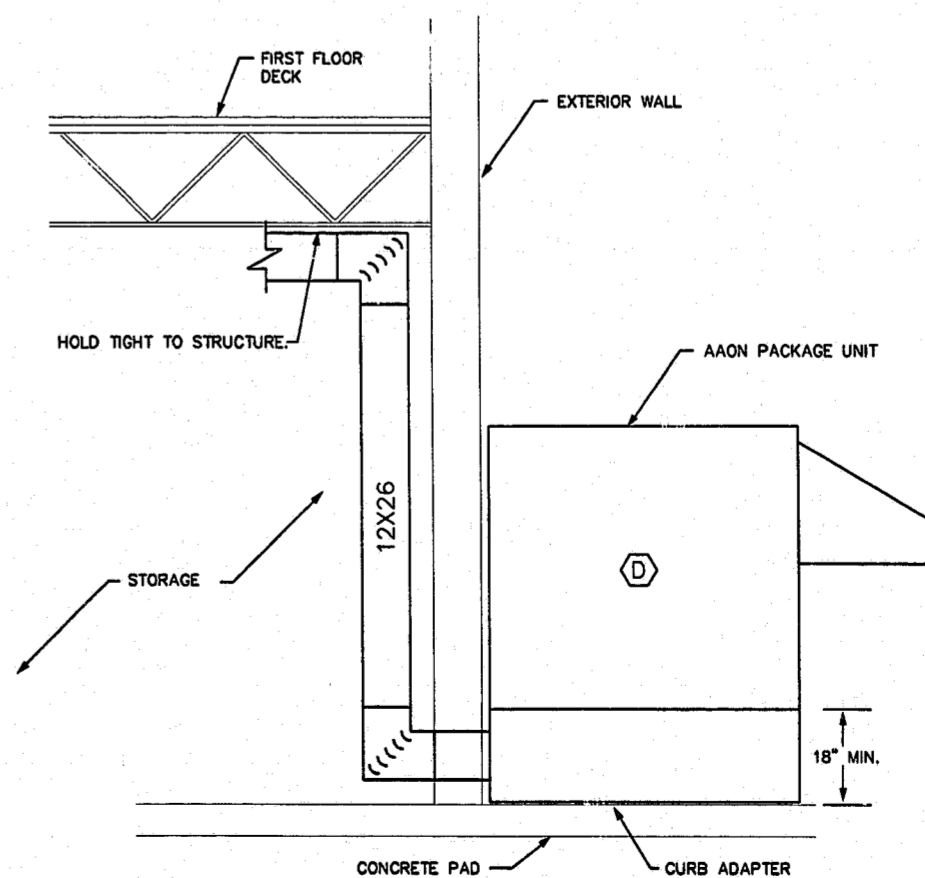


7 EXHAUST PIT MECHANICAL DETAIL
M3.01 SCALE: NONE



5 FIRE DAMPER DETAIL
M3.01 SCALE: NONE

NOTE: THERE ARE NO NEW PENETRATIONS OF RATED WALLS ON THIS PROJECT.

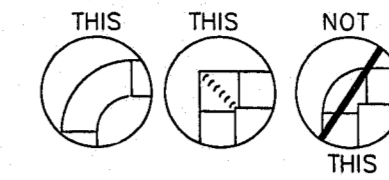


8 PACKAGE UNIT DETAIL
M3.01 SCALE: NONE

MECHANICAL LEGEND

- NEW SLOT DIFFUSER. SEE SCHEDULE
- ⊗ NEW 2'X2' CEILING DIFFUSER. SEE SCHEDULE
- ⊠ CEILING RETURN GRILLE
- ° NEW FLEX DUCT (SEE DETAIL.)
- 12X26 NEW SHEET METAL DUCTWORK
- ⊠ FIRE DAMPER (SEE DETAIL)
- (D) REMOTE WALL MOUNTED SWITCH FOR EMERGENCY UNIT OFF.
- (T) WALL MOUNTED THERMOSTAT
- INDICATES 1 HOUR RATED PARTITION

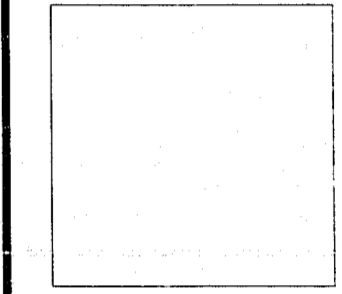
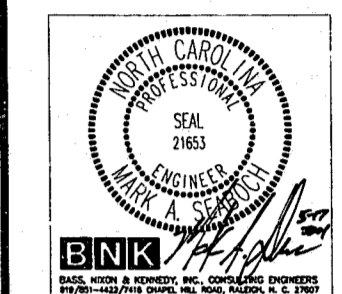
- GENERAL NOTES:
- ALL DUCT SIZES SHOWN ARE FREE AREA SIZES.
 - MAX. LENGTH OF FLEXIBLE DUCT 8'-0"
 - ALL FLEXIBLE DUCT CONNECTIONS TO HAVE MANUFACTURED SPIN-IN FITTINGS WITH DAMPER, EXTRACTOR, AND MANUAL LOCKING QUADRANT.
 - THE MECHANICAL CONTRACTOR SHALL COORDINATE HIS WORK WITH THAT OF THE OTHER TRADES PRIOR TO THE INSTALLATION OF ANY OF HIS EQUIPMENT, DUCTWORK OR PIPING.
 - ALL WORK SHALL CONFORM TO ALL LOCAL, STATE, AND NATIONAL CODES.
 - THE MECHANICAL CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, FEES, AND INSPECTIONS REQUIRED FOR HIS WORK.
 - REFER TO ARCHITECTURAL PLANS FOR FLOOR PLAN DIMENSIONS, DO NOT SCALE THESE DRAWINGS.
 - THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONTROL WIRING FOR HIS EQUIPMENT.
 - DUCTWORK AS SHOWN ON THE DRAWINGS IS STRICTLY DIAGRAMMATIC. COORDINATE EXACT LOCATION WITH THE BUILDING STRUCTURE.
 - PRIOR TO BIDDING, MECHANICAL CONTRACTOR IS TO VISIT SITE TO FAMILIARIZE HIMSELF WITH EXISTING CONDITIONS.
 - THE MECHANICAL CONTRACTOR SHALL MAKE A COMPLETE REVIEW OF THE MECHANICAL PLANS, INCLUDING THE SCHEDULES AND DETAILS PRIOR TO INSTALLATION OF ANY MECHANICAL SYSTEMS AND SHALL RESOLVE ANY CONFLICTS WITH THE ENGINEER.
 - IT WILL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO ENSURE THAT ITEMS TO BE FURNISHED UNDER HIS CONTRACT WILL FIT IN THE SPACE AVAILABLE. HE SHALL MAKE NECESSARY FIELD MEASUREMENTS TO ASCERTAIN SPACE REQUIREMENTS.
 - FLEXIBLE DUCT SHALL BE INSULATED, SOUND ATTENUATING, LOW VELOCITY TYPE AND SHALL COMPLY WITH NFPA 90A AND 90B. FLEXIBLE DUCT SHALL BE UL LISTED, CLASS 1 INSULATED TYPE, RATED FOR A MINIMUM OF 4" POSITIVE OR 1" NEGATIVE STATIC PRESSURE. FLEXIBLE DUCT SHALL BE FACTORY-FORMED, COMPOSED OF A SPIRAL WOUND, CORROSION RESISTANT WIRE BONDED TO AN INNER FABRIC LINER, COVERED WITH 1 1/2" THICK INSULATION WITH A VAPOR BARRIER.
 - ALL DUCT TO BE CONSTRUCTED OF GALVANIZED STEEL SHEETS, UNLESS OTHERWISE NOTED, IN ACCORDANCE WITH SMACNA GAGES AND STANDARDS. SUPPLY DUCT JOINTS SHALL BE SEALED AIR TIGHT. ALL SQUARE BENDS OR ELBOW FITTINGS SHALL HAVE TURNING VANES. PROVIDE SPLITTER DAMPERS AT SUPPLY TEES AND EXTRACTORS AT ALL SUPPLY AIR BRANCHES. PROVIDE BALANCING DAMPERS IN ALL DUCTS WHERE REQUIRED FOR SYSTEM BALANCING AS SHOWN ON PLANS OR AS REQUIRED.
 - COORDINATE EXACT LOCATION OF DIFFUSERS WITH LIGHTS.



6 ELBOW FABRICATION DETAIL
M3.01 SCALE: NONE



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CARY TENNIS CENTER
Cary, North Carolina
Construction Documents

Project
Date JAN 19, 2001
Revisions 1
CHANGES PER REVIEW 5/17/01
Drawn By MECH
Checked By MAS
Content
MECHANICAL
DETAILS
PLAN
Sheet M3.01

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