

**MECHANICAL DESIGN CRITERIA AND ADDITIONAL PROJECT REQUIREMENTS**

1. General:
  - A. Entire Installation Shall Comply With All Local And State Codes And Other Authorities Having Jurisdiction.
2. Applicable Codes And References:
  - A. International Building Code (IBC), 2012 Edition
  - B. International Mechanical Code (IMC), 2012 Edition
  - C. International Energy Code (IECC), 2009 Edition
  - D. ASHRAE 90.1 - Energy Standards
  - E. NFPA No. 90A - Air Conditioning And Ventilating Systems
  - F. ASHRAE Handbooks - American Society Of Heating, Refrigerating And Air Conditioning Engineers, Inc.
  - G. SMACNA Handbook For Duct Construction.
3. Design Conditions:
  - A. Summer Outdoor Design Conditions      Summer Indoor Design Conditions:
 

Dry Bulb: 95.0 Deg. F.	Dry Bulb: 78.0 Deg. F.
Wet Bulb: 74.5 Deg. F.	Relative Humidity 50%
  - B. Winter Outdoor Design Conditions      Winter Indoor Design Conditions
 

17.2 Deg. F. Dry Bulb	72.0 Deg. F. Dry Bulb
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4. Ventilation:
  - A. Outside Air Ventilation Design Air Quantity Will Be Provided As Required By The Governing Code.
5. Seismic:
  - A. All Support Systems (Supports, Hangers, Anchors, Guides, Bracing, Fasteners, Welds, Etc.) For Equipment And Systems Installed Or Revised As Part Of This Contract Shall Be Designed, Selected And Installed By The Contractor To Resist All Seismic, Wind And Gravity Loads. The Codes Listed Under The "Design Criteria" Section Of These Documents Have Specific Requirements Concerning The Application Of These Loads As Well As Other Design Requirements. Under Certain Conditions, The Applicable Codes Require These Loads, Or A Combination Of These Loads, Be Considered As "Coincidental". The Contractor Shall Also Be Responsible For Confirming That The Component Of The Building Structure Where These Support Systems Are Attached Is Able To Resist The Design Loads Transferred To This Building Component. The Contractor Is To Provide Seismic Design Drawings And Details From A Seismic Engineer. The Drawings Are To Be Signed And Sealed.

**MECHANICAL GENERAL NOTES**

1. General:
  - A. Balance And Certify All Air Systems. Refer To Drawings For Flow Requirements.
  - B. Before Final Adjustment And Balancing, Cheese Cloth Shall Be Placed Over Each Duct Opening For Entraining Particles During The Cleaning Operation. Operate All Systems For A Minimum Of Four (4) Hours. After This Period, Remove All Filters. Clean All Supply Ducts, Grilles And Registers, In All Units, Using A Vacuum Cleaner And Brush. Filters Shall Be Replaced.
  - C. Exact Location Of Diffusers To Be Coordinated With Architectural Plans And Ceiling Mounted Devices.
  - D. Border Type, Color, Finishes And Method Of Attachment For All Diffusers, Grills And Registers Shall Be Coordinated With The Architectural Ceiling Detail And Specifications.
2. Equipment:
  - A. Contractor Shall Change Filters In All Air Handling Units Every 3 Months During Course Of Construction And Prior To Delivery Of System To Owner.
  - B. Contractor Shall Ensure That All Mechanical Devices Will Be Installed In A Location Which Affords Accessibility For Maintenance And Repair. Coordinate Installation Among All Trades To Avoid Interferences, And Locate Equipment To Provide Clearances Which Exceed Those Recommended By The Equipment Manufacturer. Prior To Project Completion, Representatives Of DLB Associates Will Review Each Installation And Will Direct Changes Whenever Access Or Serviceability Is, In Their Opinion, Unacceptable.
3. Controls:
  - A. All Mechanical Controls (Thermostats, Etc.) Shall Be Furnished And Installed As Per Barrier-Free Subcode Of Governing Code.
  - B. Thermostat Wiring Shall Be Run In Concealed Spaces Of Walls Or Chases.
  - C. Coordinate Exact Location Of All Thermostats With Architect Prior To Installation. Mounting Height Shall Be Per ADA Requirements (At 48" AFF Unless Mandated Otherwise).
  - D. Duct Mounted Smoke Detectors Shall Be Provided In All Air Handling Units Supplying Air Quantities Greater Than Or Equal To 2000 CFM. Duct Smoke Detectors Shall Be Installed In Main Return Duct.
  - E. Actuation Of A Duct Smoke Detector Shall Activate A Visible And An Audible Signal In An Approved Location. Duct Smoke Detector Trouble Conditions Shall Activate A Visible Or Audible Signal In An Approved Location And Shall Be Identified As Air Duct Detector Trouble.
4. Air Side - Ductwork:
  - A. Ductwork Shall Be In Accordance With SMACNA Low And Medium Pressure "HVAC Duct Construction Standards - Metal And Flexible".
  - B. Duct Sizes Shown Are Clear Inside Dimensions. Internally Lined Ducts Shall Be Increased In Size To Maintain The Same Internal Size.
 

All Regular Ductwork Within 20' Of Air Handling Units And All Fans Shall Be Fabricated From Sheet Metal 1/2 Gauges Thicker Than SMACNA Standard Gauges. Maximum Duct Section Length Within 20' Of Equipment Shall Be 4'-0".
  - D. Flexible Duct Connections To Registers, Diffusers, Etc. Shall Not Exceed 6'-0" In Length.
  - E. Supply And Return Ductwork Shall Be Insulated With 1-1/2" Thick Fiberglass Duct Wrap.
5. Air Side - Duct Accessories:
  - A. Provide 1/4"x1/4" Woven Wire Mesh On Open End Return Air And Exhaust Air Ducts.
  - B. Provide Double Thickness Turning Vanes In All Square Elbows.
  - C. Provide Volume Damper On Each Branch Take Off From Duct Main, And On Each Diffuser Take Off From Branch Duct Or Main.
  - D. Provide Vibration Isolation On All Duct Connections To Fans And Other Equipment With Rotary Parts.
  - E. Paint All Items Visible Through Return Air Grilles Flat Black.
  - F. Provide All Hangers And Supports And All Steel Framework Required For The Support Of Various Systems. All Piping Shall Be Supported From The Building Structure By Means Of Approved Hangers.

**PARTIAL SYMBOLS & ABBREVIATIONS**

Identifier	Description	Identifier	Description
	Connect To Existing	CFM	Cubic Feet Per Minute
	Disconnect From Existing	EF	Exhaust Fan
	Existing Equipment	EH, EUH	Electric Heater, Electric Unit Heater
	Demo Equipment	MBH	Thousand BTU Per Hour
	New Equipment	SDD	Smoke Duct Detector
	Equipment Type Equipment Number		
	Existing Ductwork To Remain		
	Existing Ductwork To Be Removed		
	New Ductwork		
	New Ductwork With Acoustical Lining		
	Insulated Flexible Duct		
	Volume Damper		
	Fan Damper And Access Door		
	Motorized Damper		
	Diffuser / Register / Grille Number, CFM		
	Supply Air Flow		
	Exhaust Air Flow		
	Undercut Door		
	Louvered Door		
	4 Way Ceiling Diffuser		
	Exhaust Grille / Return Register		
	Supply Duct Up		
	Return / Exhaust Duct Up		
	Thermostat		
	Humidistat		
	Duct Mounted Smoke Detector W/ Addressable Control Relay & Remote Indicator		

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Project Location:  
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