SPECIFICATIONS

SECTION 230100 - GENERAL:

A. GENERAL

1. CONTRACTOR SHALL PROVIDE ALL MATERIALS, EQUIPMENT, TOOLS AND LABOR NECESSARY TO PROVIDE A COMPLETE MECHANICAL SYSTEM COMPLIANT WITH ALL REQUIRED CODES & STANDARDS.
2. DRAWINGS ARE SCHEMATIC IN NATURE AND SHALL NOT BE SCALED.
3. ALL REQUIRED PERMITS & INSPECTIONS SHALL BE SECURED & PAID FOR UNDER THIS CONTRACT. INSPECTION CERTIFICATIONS SHALL BE PROVIDED TO THE OWNER.
4. CONTRACTOR SHALL VISIT THE SITE TO THOROUGHLY EXAMINE EXISTING CONDITIONS PRIOR TO SUBMITTING BID. IF EXISTING CONDITIONS DIFFER FROM DESIGN DOCUMENTS IN SUCH A MANNER THAT AFFECTS PRICING, THE CONTRACTOR SHALL ADJUST THE BID ACCORDINGLY AND NOTIFY THE OWNER & ENGINEER PRIOR TO SUBMITTING THE BID. NO ALLOWANCES WILL BE MADE FOR LACK OF KNOWLEDGE REGARDING THE EXISTING CONDITIONS.

B. VIBRATION ISOLATION

1. VIBRATION ISOLATION SHALL BE PROVIDED FOR ALL MOTOR DRIVEN EQUIPMENT SUSPENDED FROM STRUCTURE OR MOUNTED ON FLOOR. VIBRATION ISOLATORS SHALL BE SIZED PER EQUIPMENT MANUFACTURER'S REQUIREMENTS.

C. IDENTIFICATION

1. PERMANENT BAKELITE TAGS WITH 1" TALL LETTERS SHALL BE PROVIDED FOR ALL EQUIPMENT. EQUIPMENT NUMBERING SHALL MATCH BUILDING STANDARDS.

D. STARTERS

1. ALL MOTORS SHALL BE PROVIDED WITH MAGNETIC MOTOR STARTERS WITH OVERLOAD PROTECTION.
2. STARTERS SHALL BE PROVIDED WITH HAND-OFF-AUTO SWITCHES.
3. INDOOR MOTOR STARTERS SHALL BE FURNISHED WITHIN A NEMA 1 ENCLOSURE.
4. OUTDOOR MOTOR STARTERS SHALL BE FURNISHED WITHIN A NEMA 3R ENCLOSURE.

E. SUBMITTALS & SHOP DRAWINGS

1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS & PRODUCT DATA FOR ALL MECHANICAL EQUIPMENT & SYSTEMS TO BE PROVIDED AND/OR INSTALLED.

F. SUBSTITUTE MANUFACTURERS

1. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION & COST OF ALL CHANGES REQUIRED FOR INSTALLATION OF EQUIPMENT & PRODUCTS MANUFACTURED BY THOSE OTHER THAN WHAT IS SPECIFIED IN THE CONTRACT DOCUMENTS.
2. CAREFULLY COORDINATE SUBSTITUTE MANUFACTURER'S INSTALLATION REQUIREMENTS WITH ALL OTHER TRADES INCLUDING BUT NOT LIMITED TO STRUCTURE, ELECTRICAL, PLUMBING AND ARCHITECTURAL. ALL INSTALLATION COSTS ASSOCIATED WITH INSTALLATION OF SUBSTITUTE MANUFACTURER SHALL BE INCLUDED IN BID. NO ALLOWANCES SHALL BE GIVEN FOR CHANGES ASSOCIATED WITH INSTALLATION OF SUBSTITUTE EQUIPMENT & SYSTEMS.
3. LISTING OF A MANUFACTURER AS AN "EQUAL" DOES NOT RELIEVE CONTRACTOR'S RESPONSIBILITY OF COORDINATION & COST ASSOCIATED WITH CHANGES REQUIRED TO OTHER TRADES.

G. WARRANTY

1. CONTRACTOR SHALL WARRANT ALL EQUIPMENT, MATERIALS AND WORKMANSHIP FOR A PERIOD OF NOT LESS THAN ONE (1) YEAR.
2. ALL HVAC COMPRESSORS SHALL BE WARRANTED FOR A PERIOD OF NOT LESS THAN 5 YEARS.

H. AS-BUILT DRAWINGS

1. CONTRACTOR SHALL KEEP REDLINE SET OF DRAWINGS ON SITE DURING CONSTRUCTION TO UPDATE LOCATION OF ALL EQUIPMENT AND SYSTEMS AS THE CONSTRUCTION PROGRESSES. REDLINE SET OF DRAWINGS SHALL BE TURNED OVER TO OWNER AT COMPLETION OF CONSTRUCTION.

I. OPERATION & MAINTENANCE MANUALS

1. CONTRACTOR SHALL PROVIDE AN ELECTRONIC SET AND ONE (1) SET OF HARD COPIES OF INSTALLATION AND MAINTENANCE MANUALS FOR ALL EQUIPMENT & SYSTEMS PROVIDED UNDER THIS CONTRACT.

J. INSTRUCTION

1. CONTRACTOR SHALL THOROUGHLY INSTRUCT OWNER ON OPERATION AND RECOMMENDED MAINTENANCE PROCEDURES OF ALL INSTALLED EQUIPMENT & SYSTEMS.

SECTION 231810 INSULATION

A. RETURN AIR AND TRANSFER AIR DUCTS SHALL BE LINED WITH 1" THICK DUCT LINER.

B. SUPPLY & OUTSIDE AIR DUCTWORK SHALL BE WRAPPED WITH 2" THICK, 3/4 LB DENSITY, R-8 FOIL BACKED INSULATION. JOINTS SHALL BE LAPPED A MINIMUM OF 2" AND SECURED WITH FLARE TYPE STAPLES.

C. REFRIGERANT PIPING SHALL BE INSULATED WITH 1/2" THICK, CLOSED CELL, NEOPRENE INSULATION. INSULATION SHALL BE SLIP ON TYPE. ALL JOINTS SHALL BE SEALED WITH AN ADHESIVE APPROVED BY THE INSULATION MANUFACTURER.

D. ALL REFRIGERANT PIPING INSULATION INSTALLED OUTDOORS SHALL BE COATED WITH TWO (2) COATS OF UV RESISTANT COATING.

E. CONDENSATE PIPING SHALL BE INSULATED WITH 1/2" THICK FIBERGLASS INSULATION WITH WHITE ALL SERVICE JACKET AND MITERED ELBOWS. ALL JOINTS SHALL BE SEALED WITH SELF ADHESIVE OVERLAP.

SECTION 238000 - DUCTWORK

A. ALL DUCTWORK SHALL BE FABRICATED WITH GALVANIZED SHEET METAL .

B. MEDIUM PRESSURE DUCTWORK, INSTALLED BETWEEN BUILDING AIR HANDLER & TERMINAL UNITS, SHALL BE SPIRAL, FLAT OVAL OR RECTANGULAR DUCT CONSTRUCTED FOR 4" PRESSURE SERVICE WITH CLASS A SEALS.

C. LOW PRESSURE DUCTWORK, INSTALLED DOWN STREAM OF TERMINAL UNITS, SHALL BE CONSTRUCTED FOR 2" PRESSURE SERVICE WITH CLASS C SEALS.

D. DUCTWORK CONSTRUCTION AND INSTALLATION SHALL CONFORM TO THE LATEST VERSION OF SMACNA DUCT STANDARDS.

E. ALL ELBOWS SHALL BE FULL RADIUS TYPE OR MITERED WITH TURNING VANES. MITERED ELBOWS ARE NOT ALLOWED FOR USE IN MEDIUM PRESSURE DUCTWORK.

F. PROVIDE BELL MOUTH FITTINGS AT ALL MEDIUM PRESSURE BRANCH DUCT TAPS INTO MEDIUM PRESSURE MAIN DUCT.

G. PROVIDE SPIN IN FITTING WITH SCOOP & LOCKING DAMPER AT ALL LOW PRESSURE BRANCH DUCT CONNECTIONS TO MAIN DUCT.

H. DUCTWORK SHALL BE INSPECTED & SEALED AIR TIGHT TO BE FREE OF LEAKS PRIOR TO INSULATING OR COVERING OF THE DUCTWORK.

I. FIRE DAMPERS SHALL BE TYPE 'B' UL LISTED DAMPERS WITH FIRE CURTAIN LOCATED OUTSIDE OF THE AIR STREAM. FIRE DAMPERS SHALL BE LISTED FOR USE IN THE WALL BEING WITHIN WHICH THE DAMPER IS INSTALLED.

J. SMOKE DAMPERS SHALL BE UL LISTED. DAMPERS SHALL CLOSE UPON DETECTION OF SMOKE OR UPON POWER FAILURE UNLESS NOTED OTHERWISE. SMOKE DAMPERS SHALL BE AUTOMATIC RESET TYPE.

K. SMOKE DETECTORS SHALL BE PROVIDED BY DIVISION 26 FOR INSTALLATION UNDER SECTION 23.

L. SMOKE DETECTORS SHALL CLOSE ALL ASSOCIATED SMOKE DAMPERS AND SHUT DOWN THE ASSOCIATED AIR MOVING DEVICE.

SECTION 239500 - TEST & BALANCE

A. TEST & BALANCE AGENCY SHALL BE NEBB OR AABC CERTIFIED.

B. TEST & BALANCE AGENCY SHALL BE HIRED DIRECTLY BY THE GENERAL CONTRACTOR.

C. ALL EQUIPMENT SHALL BE FABRICATED, TESTED, ADJUSTED AND BALANCED TO MEET DESIGN, MANUFACTURER'S OPERATING & INSTALLATION GUIDELINES.

D. AIR TERMINALS SHALL BE BALANCED TO CFM INDICATED ON PLAN.

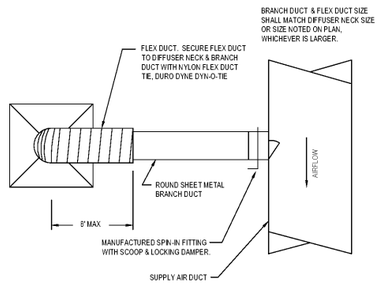
E. TERMINAL UNITS SHALL BE BALANCED TO THE SUM OF THE CONNECTED AIR DISTRIBUTION DEVICES.

F. ALL DEFICIENCIES SHALL BE RECORDED AND SENT TO THE MECHANICAL CONTRACTOR FOR RESOLUTION.

G. ONCE ALL DEFICIENCIES HAVE BEEN CORRECTED, TWO (2) HARD COPIES OF THE FINAL REPORT SHALL BE DELIVERED TO THE OWNER. AN ELECTRONIC COPY IN PDF FORMAT SHALL BE SUBMITTED IN ADDITION TO THE HARD COPIES.

LEGEND

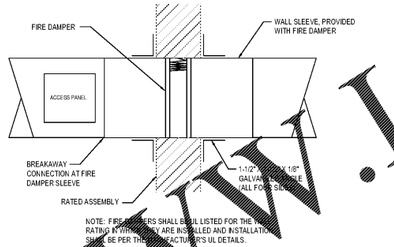
TAG	SYMBOL	DESCRIPTION
A/C		ABOVE CEILING
AHU		AIR HANDLER
BDD		BACKDRAFT DAMPER
B/F		BELOW FLOOR
CD	⊠	CEILING DIFFUSER
CWS&R		CONDENSER WATER SUPPLY & RETURN
CFM		CUBIC FOOT PER MIN.
DB		DRY BULB
	———	NEW DUCT WORK
EXIST.	- - - - -	EXISTING DUCT / PIPE
EAT		ENTERING AIR TEMPERATURE
EWT		ENTERING WATER TEMPERATURE
EF		EXHAUST FAN
ER	⊠	EXHAUST REGISTER
ESP		EXTERNAL STATIC PRESSURE
FD	—▼—	FIRE DAMPER
F/SD	—▼—	COMBINATION FIRE & SMOKE DAMPER
	—◆—	VERTICAL FIRE DAMPER
	—◆—	VERTICAL COMBINATION FIRE & SMOKE DAMPER
HP		HORSEPOWER
LAT		LEAVING AIR TEMPERATURE
LWT		LEAVING WATER TEMPERATURE
MD		MANUAL DAMPER
	M	MOTOR OPERATED DAMPER
OA		OUTSIDE AIR
RA		RETURN AIR
RAG	⊠	RETURN AIR GRILLE
SA		SUPPLY AIR
SR		SUPPLY REGISTER
	T	THERMOSTAT
	⋈	BALL VALVE
WSHP		WATER SOURCE HEAT PUMP



2 M0.01 DIFFUSER CONNECTION DETAIL
SCALE: N.T.S.

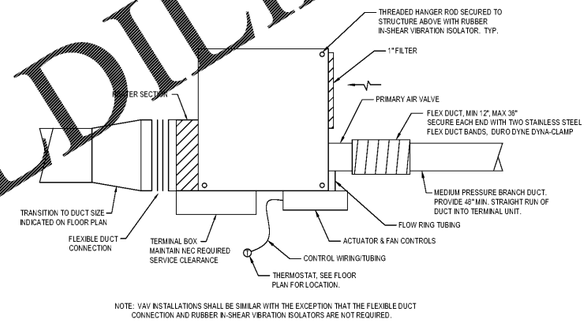
GENERAL NOTES:

8. ALL RETURN AIR GRILLES, EXISTING AND NEW, SHALL HAVE RETURN AIR BOOTS INSTALLED PER DETAIL 1/M0.1.
7. TEST AND BALANCE ALL MECHANICAL EQUIPMENT, AIR DISTRIBUTION DEVICES, ETC. TO THE CONDITIONS INDICATED ON THE FLOOR PLANS AND SCHEDULES. A COPY OF THE REPORT SHALL BE SUBMITTED TO THE OWNER. TEST AND BALANCE AGENCY SHALL BE NEBB OR AABC CERTIFIED.
8. ALL CONTROL WORK SHALL BE COMPLETED BY BUILDING CONTROLS SOLUTIONS AND SHALL TIE INTO THE BASE BUILDING NIAGRA 4.2 ENERGY MANAGEMENT SYSTEM. CONTACT JEFF COFFEE, 706-829-4634. ALL CONTROL COMPONENTS SHALL BE OF THE SAME MANUFACTURER AS THE EXISTING BUILDING SYSTEM, NO EXCEPTIONS. GRAPHICS SHALL BE UPDATED TO REFLECT ALL RELOCATED & NEW EQUIPMENT. ALL MATERIAL, LABOR AND PROGRAMMING SHALL BE INCLUDED AS A PART OF THIS CONTRACT.
9. ALL LOW VOLTAGE CONTROL WIRING SHALL BE INSTALLED AND WIRED TO EQUIPMENT AS A PART OF THIS CONTRACT.
10. MATERIALS EXPOSED IN RETURN AIR PLENUMS SHALL BE NON COMBUSTIBLE WITH A FLAME SPREAD INDEX NOT MORE THAN 25 AND A SMOKE DEVELOPED INDEX OF NOT MORE THAN 50.



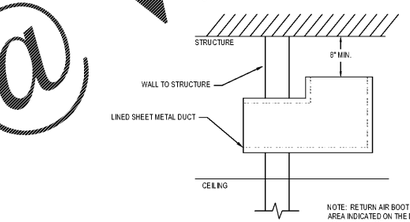
NOTE: FIRE DAMPERS SHALL BE UL LISTED FOR THE RATING IN WHICH THEY ARE INSTALLED AND INSTALLATION SHALL BE PER THE MANUFACTURER'S UL DETAILS.

3 M001 FIRE DAMPER DETAIL
SCALE: N.T.S.



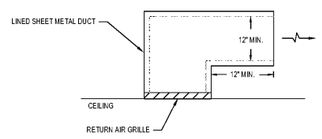
NOTE: VAV INSTALLATIONS SHALL BE SIMILAR WITH THE EXCEPTION THAT THE FLEXIBLE DUCT CONNECTION AND RUBBER IN-SHEAR VIBRATION ISOLATORS ARE NOT REQUIRED.

4 M0.01 TERMINAL UNIT DETAIL
SCALE: N.T.S.



NOTE: RETURN AIR BOOT SHALL BE SIZED WITH THE FREE AREA INDICATED ON THE DRAWING. WHERE SPACE DOES NOT PERMIT INSTALLATION OF A SINGLE LARGE BOOT, MULTIPLE BOOTS MAY BE USED TO ACHIEVE THE TOTAL SPECIFIED FREE AREA.

5 M0.01 RETURN AIR BOOT DETAIL
SCALE: N.T.S.



1 M0.01 RETURN AIR GRILLE DETAIL
SCALE: N.T.S.

TERMINAL UNIT SCHEDULE

TAG	TYPE	VALVE SIZE	MIN. VALVE CFM	MAX. VALVE CFM	FAN CFM	FAN ESP	HEATER KW	VOLTS / PHASE	NOTES
PIU-3-1	PARALLEL	12"	240	1,200	720	0.35	8	480/3	1
PIU-3-2	PARALLEL	12"	240	1,700	1120	0.35	10	480/3	1
PIU-3-3	PARALLEL	12"	240	1,440	915	0.35	10	480/3	1
PIU-3-4	SERIES	8"	105	625	585	0.35	4.5	277/1	1
PIU-3-5	SERIES	10"	165	825	745	0.35	6	480/3	1
PIU-3-6	PARALLEL	10"	165	1,140	695	0.35	7	480/3	1
V-3-1	VAV	14"	320	1,950	--	--	--	--	1
V-3-2	VAV	12"	240	1,200	--	--	--	--	1
V-3-3	VAV	8"	105	720	--	--	--	--	1
V-3-4	VAV	8"	105	720	--	--	--	--	1
V-3-5	VAV	12"	240	1,600	--	--	--	--	1
V-3-6	VAV	6"	40	270	--	--	--	--	1

NOTES: 1. TERMINAL UNIT SHALL BE RENUMBERED IN THE FIELD TO MATCH BUILDING NUMBERING SCHEME.

AIR DISTRIBUTION SCHEDULE

TAG	DESCRIPTION	BASIS OF DESIGN
CD	CEILING SUPPLY DIFFUSERS (CD) SHALL BE ALUMINUM, STAMPED DIFFUSER WITH 3 ADJUSTABLE CONES. FACE AREA SHALL BE SUITABLE FOR 24"X24" LAY-IN CEILING GRID. PROVIDE WITH BAKED ENAMEL FINISH IN A COLOR MATCHING THE CEILING GRID.	TITUS TMS-AA
SR	SUPPLY REGISTERS (SR) SHALL BE DOUBLE DEFLECTION TYPE PROVIDED WITH OPPOSED BLADE DAMPER AND OUTER MOST SET OF DEFLECTORS PARALLEL TO THE SHORT DIMENSION. PROVIDE WITH WHITE, BAKED ENAMEL FINISH.	TITUS 300RS
LSD	LINEAR SLOT DIFFUSERS (LSD) SHALL BE CONTINUOUSE ALUMINUM DIFFUSER WITH LENGTH AND SLOTS AS INDICATED ON DRAWINGS. DIFFUSER SHALL HAVE TYPE 22, TAPE & SPACKLE BORDER, 180° ADJUSTABLE PATERN CONTROLLERS AND LINED PLENUM. PLENUM SHALL HAVE NECK SIZE AS INDICATED ON PLAN. DIFFUSER FINISH SHALL BE READY FOR FIELD APPLIED PAINT.	TITUS ML-39
LSR	LINEAR SLOT RETURNS (LSR) SHALL BE SIMILAR TO THE LSD WITH THE EXCEPTION THAT PATERN CONTROLLERS SHALL NOT BE PROVIDED AND LIGHT SHEILDS SHALL BE PROVIDED.	TITUS MLR-39
ER	SURFACE MOUNT EXHAUST REGISTERS (ER) SHALL BE ALUMINUM WITH FIXED 35° DEFLECTION, BLADES PARALLEL TO THE LONG DIMENSION AND 3/4" BLADE SPACING. PROVIDE WITH OPPOSED BLADE BALANCING DAMPER AND WHITE, BAKED ENAMEL FINISH.	TITUS 350FL
RG	SURFACE MOUNT RETURN GRILLE (RG) SHALL BE STEEL WITH FIXED 35° DEFLECTION, BLADES PARALLEL TO THE LONG DIMENSION AND 3/4" BLADE SPACING. PROVIDE WITH FACTORY APPLIED, WHITE, BAKED ENAMEL FINISH AND OPPOSED BLADE DAMPER.	TITUS 350RL
RAG	CEILING RETURN GRILLES (RAG) SHALL BE ALUMINUM, PERFORATED. FACE AREA SHALL BE SUITABLE FOR 24"X24" LAY-IN CEILING GRID. PROVIDE WITH BAKED ENAMEL FINISH IN A COLOR MATCHING THE CEILING GRID.	TITUS 8F

NOTES: 1. ALL SURFACE MOUNTED AIR DISTRIBUTION DEVICES SHALL BE PREPPED AND READY FOR PAINT.

www.LDILine.com
Order Plans @ W

seiberdesign
architecture | interior design
675 Drewry St. NE
Studio 10
Atlanta GA 30306
404.875.6765
www.seiberdesign.com

© Copyright (12/2019)
This drawing and all reproductions thereof are the property of Seiber Design, Inc. (SDI). It is intended for the sole use of the project named hereon. Reproduction without the written consent of SDI is unlawful. All copies are to be returned to SDI upon project completion.

Seal

GEORGIA REGISTERED PROFESSIONAL ENGINEER JAMES DANIEL WISHART

Consultant

WESTSIDE ENGINEERING
5525 Interstate North Pkwy
Suite 200
Atlanta, GA 30328
404-965-1287 tel
404-601-9859 fax
cnsalinger@westside-engineering.com

EDGAR'S ABOVE BROAD
699 BROAD ST.
AUGUSTA, GEORGIA 30901

Project Number
1817

Revisions

Revision History

Number	Date	Description
1	08/30/19	ISSUED FOR CONSTRUCTION
2		
3		
4		
5		
6		

Drawing Title
MECHANICAL SCHEDULES, NOTES, & DETAILS

Drawing Status
ISSUED FOR CONSTRUCTION

Drawing Number
M001