GENERAL NOTES

ALL NOTES INCLUDED HEREIN ARE MADE PART OF EACH AND ALL MECHANICAL, ELECTRICAL AND PLUMBING SECTIONS OF WORK.

1. REFER TO LANDLORD'S SPECIFICATIONS AND TENANT DESIGN CRITERIA FOR NECESSARY INFORMATION AND COORDINATION WITH OTHER TRADES.
2. THE ABBREVIATION LSD&C WHEREVER IT APPEARS IN THE DRAWINGS, SHALL REFER TO "LIMITED STORE DESIGN AND CONSTRUCTION". ANY REFERENCE TO TENANT, BRAND SPECIFIC (EXPRESS, ETC.) OR FURNISHED BY ANY OF THE ABOVE REFERS TO LSD&C.
3. ANY DISCREPANCY BETWEEN LSD&C DRAWINGS AND TENANT CRITERIA, LSD&C DRAWINGS SHALL TAKE PRECEDENCE.
4. THE DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC TO THE EXTENT THAT ALL INSTALLED ITEMS AND LOCATIONS ARE NOT EXACTLY PLACED AND ARE NOT TO BE SCALED.
5. EACH CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RELATED PERMITS AND INSPECTION FEES.
6. BEFORE COMMENCING ANY WORK, CONTRACTORS SHALL REVIEW THE LATEST NATIONAL, STATE AND LOCAL CODE REQUIREMENTS INCLUDING LANDLORD CRITERIA AND PERFORM THE WORK IN STRICT ACCORDANCE WITH THESE. IN CASE OF CONFLICT THE STRICTER REQUIREMENTS WILL PREVAIL.
7. NO ADDITIONAL COMPENSATION SHALL BE MADE FOR ANY CHANGE ORDERS DUE TO CONTRACTOR'S FAILURE TO VISIT THE JOBSITE AND/OR PREDETERMINE ALL EXISTING CONDITIONS BEFORE SUBMITTING HIS BID.
   A. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF ALL EXISTING CONDITIONS PRIOR TO SUBMITTING A BID. FOR THE PURPOSE OF SURVEYING EXISTING CONDITIONS, WHICH MAY AFFECT THE WORK TO BE DONE UNDER THIS SECTION, ANY DISCREPANCIES SHALL BE IMMEDIATELY REPORTED TO THE GENERAL CONTRACTOR, LSD&C OR THE LANDLORD'S FIELD REPRESENTATIVE FOR CLARIFICATION.
   B. AFTER BID, ANY QUESTIONS RELATING TO SPECIFIC M, E, OR P ISSUES ARE TO BE DIRECTED AS RFI'S THROUGH THE LSD&C PROJECT MANAGER.
   C. SHOULD THE SPACE HAVE BEEN INACCESSIBLE FOR INSPECTION CONTRACTOR MUST INDICATE SO ON HIS BID.
8. THE GENERAL CONTRACTOR'S FIRE SPRINKLER SUBCONTRACTOR SHALL DESIGN AND INSTALL FIRE SPRINKLER SYSTEM CONFORMING TO LANDLORD'S CRITERIA, TENANT'S REQUIREMENTS AND PER LOCAL CODES AND NFPA STANDARDS.
9. THE CONTRACTOR, WITHIN FIFTEEN (15) DAYS OF THE AWARD OF THE CONTRACT, SHALL SUBMIT TO THE OWNER, SIX (6) COPIES OF A COMPLETE LIST OF MATERIALS AND EQUIPMENT PROPOSED FOR THE JOB INCLUDING ALL DATA, PART NUMBERS, RATING CAPACITY, SIZE, DIMENSIONS, ELECTRICAL DATA, GRADE, MANUFACTURER, AND ANY OTHER DESCRIPTIVE DATA FOR ALL EQUIPMENT OR SYSTEMS THAT DEVIATE FROM SPECIFIED ITEMS. ANY DELAYS OR COSTS DUE TO THESE DEVIATIONS, WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR THE DISPOSAL OF ALL UNUSED OR ABANDONED MATERIALS AND EQUIPMENT, AND ITS REMOVAL OFF THE LANDLORD'S PREMISES.
11. OWNER RESERVES THE RIGHT TO HAVE CONSTRUCTION REVIEWED BY AN OUTSIDE CONSULTANT PRIOR TO ACCEPTANCE OF THE PROJECT.
12. EACH CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP RELATED TO HIS WORK FOR A MINIMUM PERIOD OF ONE YEAR FROM THE DATE WHICH THE OWNER ACCEPTS THE PROJECT. THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER OR TENANT SHALL CORRECT ANY DEFECTS IN MATERIALS OR WORKMANSHIP DURING THIS GUARANTEE PERIOD.
13. EACH CONTRACTOR SHALL BE RESPONSIBLE AND ENSURE A CLEAN INSTALLATION ESPECIALLY IN EXPOSED CEILING AREAS. THE FINAL APPROVAL OF THIS WORK WILL BE ISSUED BY LSD&C PROJECT MANAGER.
14. PROVIDE ONE SETS OF "AS-BUILT" DRAWINGS INTO PLAN TUBE AND ONE BOUND SETS OF ALL OPERATIONS MANUALS, DIAGRAMS, SERVICE CONTRACTS AND GUARANTEES IN BINDER TO STORE MANAGER. A REPORT PREPARED IN ACCORDANCE WITH MECHANICAL SPECIFICATIONS BY AN INDEPENDENT AIR BALANCE CONTRACTOR, HIRED BY GC, MUST BE INCLUDED IN THE CLOSE-OUT PACKAGE.

HVAC GENERAL NOTES

1. THESE PLANS MAY BE USED FOR CONSTRUCTION ONLY AFTER APPROVAL IS OBTAINED FROM THE BUILDING DEPARTMENT MECHANICAL PLAN CHECK DIVISION AND THAT DIVISION'S STAMPED APPROVAL AND AUTHORIZED SIGNATURE APPEAR ON THE PLANS.
2. COORDINATE ALL WORK WITH ALL TRADES INCLUDED BUT NOT LIMITED TO ELECTRICAL, PLUMBING, FIRE PROTECTION AND STRUCTURAL CONTRACTORS. INSTALL ALL WORK TO CLEAR NEW AND EXISTING ARCHITECTURAL AND STRUCTURAL MEMBERS. NO ITEM SUCH AS PIPE, DUCT, ETC. IS TO COME IN CONTACT WITH ANY EQUIPMENT.
3. REFER TO ARCHITECTURAL DRAWINGS FOR DEMOLITION WORK.
4. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT FIXTURE LOCATION.
5. CONTRACTOR SHALL PROVIDE CUT SHEETS TO LSD&C FOR ALL EQUIPMENT AND DEVICES FURNISHED BY THE CONTRACTOR THAT DEVIATE FROM SPECIFIED ITEM FOR REVIEW AND APPROVAL PRIOR TO THE PURCHASE OF ANY SUCH EQUIPMENT OR DEVICES.
6. HVAC CONTRACTOR IS RESPONSIBLE TO INQUIRE WITH THE LANDLORD'S REPRESENTATIVE ON ANY SMOKE EVACUATION SYSTEM IN USE AT THE MALL AT THE TIME OF THE BID. IF THE SAID SYSTEM IS NOT ADEQUATELY DESCRIBED ON THE DRAWINGS, THE MECHANICAL CONTRACTOR IS RESPONSIBLE TO INFORM THE GENERAL CONTRACTOR AND INCLUDE THE COST AS A SEPARATE LINE ITEM IN THE BID. NO ADDITIONAL MONEYS SHALL BE AWARDED FOR TIE-IN REQUIREMENTS TO A LANDLORD'S SMOKE EVACUATION SYSTEM THAT IS IN EXISTENCE AT THE TIME OF THE BID, WITHOUT HAVING IDENTIFIED A SEPARATE LINE ITEM FOR THE SMOKE EVACUATION SYSTEM AT THE TIME OF THE BID.
7. ACCESS TO ALL COMPONENTS AND EQUIPMENT MUST BE PROVIDED TO MEET CODE AND SERVICE/MAINTENANCE EASE.
8. PRIOR TO STARTUP OF HVAC EQUIPMENT, MECHANICAL CONTRACTOR WILL CONFIRM WITH ONE OF THE LISTED HVAC MANUFACTURER REPRESENTATIVES THAT CORRECT POWER FOR EQUIPMENT HAS BEEN PROVIDED TO LSD&C PROVIDED HVAC UNITS AND HAS BEEN TURNED ON FOR A MINIMUM OF 24 HOURS. LSD&C RESERVES THE RIGHT TO CHECK CONSTRUCTION COMPLIANCE WITH PLANS AND SPECIFICATIONS. SHOULD THE OWNER FIND CORRECTIVE WORK TO BE NECESSARY, HE WILL NOTIFY CONTRACTOR OF SUCH WORK IN WRITING AND EXPECT COMPLIANCE PERFORMED WITH DUE DILIGENCE. IF ANY CORRECTIVE WORK IS DEEMED TO BE NECESSARY, THE COST OF REINSPECTIONS WILL BE BORNE BY THE CONTRACTOR. THE MECHANICAL CONTRACTOR WILL THEN ENSURE THAT THE EQUIPMENT IS POWERED FOR A MINIMUM OF 24 HRS BEFORE START-UP.
9. IF WORK IS REQUIRED BY LSD&C IN ORDER TO IMPROVE, CHANGE OR CORRECT AIR CONDITIONING OPERATIONAL CONDITIONS DUE TO: PART MALFUNCTION, WARRANTY OR OTHER INABILITY TO PROVIDE THE COMFORT CONDITIONS REQUIRED BY THE STORE, CONTRACTOR SHALL BE DIRECTED BY LSD&C TO ADDRESS THIS WORK IN A TIMELY MANNER. IF IT BECOMES EVIDENT THAT THE CONTRACTOR CANNOT ACCOMPLISH THE TASK, THEN AFTER 72 HOURS OF WRITTEN NOTICE THE OWNER MAY, AT HIS DISCRETION, TAKE OVER SUCH WORK AND BACK CHARGE THE CONTRACTOR FOR ANY CORRECTIVE WORK THAT WAS REQUIRED DUE TO LACK OF PERFORMANCE, WORKMANSHIP AND/OR ADHERENCE TO PLANS AND SPECIFICATIONS.
10. UPON COMPLETION OF THE WORK, CONTRACTOR SHALL VERIFY THE PROPER WORKING ORDER OF THE SYSTEM(S) AND MAKE ANY ADJUSTMENTS AS REQUIRED.
11. PROVIDE FILTER CHANGES THROUGHOUT CONSTRUCTION AS REQUIRED FOR ALL HVAC EQUIPMENT. PROVIDE FILTER CHANGES AT LEAST TWICE MONTHLY ONCE STARTED, PRIOR TO TEST AND BALANCE, AND LASTLY, PRIOR TO MERCHANDISING. ANY EQUIPMENT OR DUCTWORK THAT BECOMES SOILED DUE TO A LACK OF FILTER CHANGES, AS DETERMINED SOLELY BY THE LSD&C PROJECT MANAGER, SHALL BE CORRECTED ON BEHALF OF THE CONTRACTOR AND CHANGES BILLED TO THE CONTRACTOR.
12. NOTES TO EQUIPMENT SCHEDULES USE THE WORDS "FURNISH" AND "PROVIDE". WHERE THE WORD "FURNISH" IS USED, SOME FIELD INSTALLATION IS REQUIRED BY THE CONTRACTOR. WHERE THE WORD "PROVIDE" IS USED, NO FIELD INSTALLATION IS REQUIRED AS THE DEVICES OR ACCESSORIES ARE FURNISHED AND INSTALLED BY THE MANUFACTURER AS PART OF THE EQUIPMENT WHEN SHIPPED.
13. UNLESS OTHERWISE SPECIFIED, CONTRACTOR SHALL PROVIDE ALL EQUIPMENT, MATERIAL, LABOR AND SUPERVISION NECESSARY TO COMPLETE THE HEATING, VENTILATING AND AIR CONDITIONING WORK IN ACCORDANCE WITH THE SPECIFICATIONS AND STANDARDS AS OUTLINED HEREIN. SEE RESPONSIBILITY SCHEDULE ON SHEET M04.01.
14. MECHANICAL CONTRACTOR SHALL FIELD MEASURE EXISTING ROOF CURB(S) FOR CURB ADAPTER(S), WHERE APPLICABLE, AND SHALL SUPPLY DIMENSIONS TO LSD&C HVAC SUPPLIER PRIOR TO START OF CONSTRUCTION.
15. ALL HEATING VENTILATING AND AIR CONDITIONING EQUIPMENT SHALL BE CLEARLY IDENTIFIED WITH TENANT'S NAME, SPACE NUMBER AND UNIT DESIGNATION AND SHALL BE STENCILED IN 4" HIGH BLACK LETTERS.
16. FURNISH AND INSTALL ALL NEW DUCTWORK INCLUDING INSTALLATION OF OWNER SUPPLIED PLENUM BOOTS, SUPPLY AIR DIFFUSERS, AND RETURN AIR GRILLES. (SEE AIR DEVICE SCHEDULE ON THIS SHEET).
   A. ALL MATERIAL SHALL BE NEW AND OF COMMERCIAL GRADE AND BEAR UNDERWRITER'S LABORATORY AND UNION LABELS WHERE SUCH LABELING APPLIES.
   B. ALL PLENUMS SHALL BE FABRICATED FROM GALVANIZED SHEET METAL OF THE APPROPRIATE GAUGE AND BE INSULATED WITH A MINIMUM OF 1" THICK, 0.75 LB/CU.FT. DENSITY FIBERGLASS INSULATION WITH ALUMINUM FOIL BACKED VAPOR BARRIER.
   C. WHERE DESIGNATED, BRANCHES FROM MAIN LOW VELOCITY TRUNK DUCTWORK SHALL BE FURNISHED WITH SPLITTERS, DAMPERS OR SIMILAR BALANCING DEVICES IN ACCORDANCE WITH THE STANDARDS OF SMACNA.
   D. ALL DUCTS FOR FINAL CONNECTION TO DIFFUSERS SHALL BE CLASS 1. UL LISTED (SL 181) FLEXIBLE AIR DUCT NOT TO EXCEED 4'-0" IN LENGTH (THERMAFLEX, GLASFLEX, OR APPROVED EQUAL).
   E. SUPPLY AND RETURN DUCTWORK SHALL BE LINED AND WITH CODE COMPLYING BLANKET INSULATION. ACOUSTICAL LINER MAY BE PROVIDED. ALL MATERIALS SHALL COMPLY WITH N.F.P.A. 90A AND 90B. SEE SPECIFICATIONS ON SHEET M01.01.
   F. HANGER WIRES, DUCT STRAPS, FASTENING DEVICES, ETC. SHALL BE FASTENED TO THE STEEL JOISTS AND/OR BEAMS ABOVE. DO NOT ATTACH ANY SUCH ITEMS DIRECTLY TO FLOOR SLABS, PIPING, OTHER DUCTWORK, ELECTRICAL CONDUITS OR THE ROOF DECK ABOVE.
   G. ADDITIONAL FIRE DAMPERS SHOULD BE INSTALLED AS REQUIRED BY ANY APPLICABLE CODES AND/OR JURISDICTIONAL AUTHORITIES.
17. SEAL AROUND PIPES AND DUCTS PENETRATING FIRE SEPARATIONS WITH LISTED AND APPROVED FIRE SEAL MATERIAL. ONLY LISTED AND APPROVED SEALANTS AND METHODS FOR THE SPECIFIC USE WILL BE PERMITTED.
18. MECHANICAL CONTRACTOR SHALL INSTALL TEMPERATURE SENSORS AND AS SHOWN ON THE PLAN (VERIFY LOCAL CODES. IF PLAN LOCATION IS NOT ACCEPTABLE, IMMEDIATELY CONTACT LSD&C PROJECT MANAGER FOR DIRECTION.)
19. UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL FULLY PRESSURE CHECK AND CHARGE ALL REFRIGERANT SYSTEMS (IF REQUIRED).
20. THE CONTRACTOR SHALL ENGAGE THE SERVICES OF AN INDEPENDENT, AIR/WATER BALANCING COMPANY THAT IS A NEBB CERTIFIED CONTRACTOR OR HAS AN AABC CERTIFIED TEST & BALANCE ENGINEER. THIS COMPANY SHALL PERFORM THE BALANCING OF AIR/WATER SYSTEM(S) AND MAKE ANY REQUIRED ADJUSTMENTS TO ENSURE PROPER WORKING ORDER. UPON COMPLETION, THE BALANCING COMPANY SHALL PROVIDE A COMPLETE SYSTEM REPORT.

GRAINGER NATIONAL ACCOUNT INFORMATION

COORDINATE WITH LSD&C PROJECT MANAGER FOR MORE INFORMATION.

HVAC EQUIPMENT COMMISSIONING

DETAILED HVAC COMMISSIONING INFORMATION IS INCLUDED IN THE LSD&C SITE MANUAL PROVIDED TO THE CONTRACTOR AT THE START OF THE PROJECT.

MANUFACTURER WILL CONTACT THE CONTRACTOR EARLY IN THE PROJECT TO SET PRELIMINARY DATES FOR HVAC INSPECTION, COMMISSIONING AND HVAC CONTROLS COMMISSIONING.

PRIOR TO HVAC INSPECTION / COMMISSIONING (TO BE COMPLETED BY MECHANICAL SUBCONTRACTOR)

1. CONNECT AND BLEED CONDENSATE, DUCTWORK, NATURAL GAS, CHILLED WATER PIPING, AND/OR CONDENSER WATER PIPING.
2. CHARGE HVAC SYSTEMS WITH REFRIGERANT FOLLOWING MANUFACTURERS' GUIDELINES AND INSTRUCTIONS. COLD WEATHER CONDITIONS REQUIRE SPECIFIC PROCESSES, CONTACT MANUFACTURER FOR TECHNICAL SUPPORT.
3. CONNECT POWER TO THE HVAC EQUIPMENT FOR A MINIMUM OF 24 HOURS. NOTE: IN COLD WEATHER SITUATIONS, DO NOT OPERATE THE UNITS PRIOR TO COMMISSIONING!

HVAC EQUIPMENT SHOULD BE STARTED UP EARLY IN THE PROJECT. COORDINATE EARLY START UP OF EQUIPMENT WITH MANUFACTURER.

NOTE: THE GC MAY BE BACK CHARGED FOR ADDITIONAL AC SITE VISITS BEYOND THE FIRST THREE (3) NECESSARY TO DOCUMENT THE RESOLUTION OF THE HVAC PUNCHLIST ITEMS.

HVAC COMMISSIONING PROCESS

VISIT 1: HVAC EQUIPMENT START UP

1. CONTRACTOR SHALL HAVE THE MECHANICAL AND ELECTRICAL SUBCONTRACTOR ON SITE DURING THE HVAC INSPECTION AND COMMISSIONING. BUDGET 5 HOURS FOR THE HVAC INSPECTION AND COMMISSIONING. (NOTE: THESE HOURS ARE TO BE USED FOR THE COMPLETION OF THE COMMISSIONING PROCESS ONLY. ADDITIONAL HOURS WILL NOT BE APPROVED FOR WORK THAT WAS IN SCOPE AND NOT COMPLETED PRIOR TO THE COMMISSIONING PROCESS.)
2. CONTRACTOR TO COMPLETE AND EMAIL, OR FAX, THE HVAC EQUIPMENT START UP SURVEY TO MANUFACTURER PRIOR TO THE HVAC STARTUP.
3. MANUFACTURER COORDINATES THE HVAC EQUIPMENT COMMISSIONING. CONTRACTOR IS RESPONSIBLE FOR COMMUNICATING SCHEDULE DATE CHANGES TO MANUFACTURER AND SUBCONTRACTORS.
4. PROVIDED THERE ARE NO HVAC INSTALLATION ISSUES. SYSTEMS SHALL BE STARTED FOR TEMPORARY OPERATION ON LOCAL CONTROL.
5. IF THERE ARE HVAC INSTALLATION PUNCHLIST ITEMS, THE GC MUST CORRECT THEM AND RESCHEDULE COMMISSIONING WITH MANUFACTURER.

VISIT 2: HVAC CONTROLS COMMISSIONING

THE CONTROLS COMMISSIONING IS PERFORMED BY THE MANUFACTURER IN CONJUNCTION WITH THE GENERAL CONTRACTOR AND THE MECHANICAL AND ELECTRICAL SUBCONTRACTORS. ALLOW FOR 4 HOURS TO COMPLETE THE CONTROLS COMMISSIONING. (NOTE: THESE HOURS ARE TO BE USED FOR THE COMPLETION OF THE COMMISSIONING PROCESS ONLY. ADDITIONAL HOURS WILL NOT BE APPROVED FOR WORK THAT WAS IN SCOPE AND NOT COMPLETED PRIOR TO THE COMMISSIONING PROCESS.)

FOLLOW THE CONSTRUCTION DRAWINGS AND MANUFACTURER'S DETAILS AND DRAWINGS DURING THE INSTALLATION OF THE HVAC CONTROL EQUIPMENT.

1. CONTRACTOR TO COMPLETE AND EMAIL, OR FAX, THE CONTROLS COMMISSIONING SURVEY TO MANUFACTURER PRIOR TO THE CONTROL COMMISSIONING.
2. CONNECT THE HVAC CONTROLS TO AN OPERATIONAL ANALOG PHONE LINE OR ETHERNET CONNECTION TO ALLOW COMMUNICATION. IF NECESSARY, UTILIZE SITE FAX LINE TO CONNECT TO THE CONTROLS MODEM IN THE IFS PANEL.
3. CONTACT MANUFACTURER AT THE SCHEDULED TIME FOR THE CONTROLS COMMISSIONING.
4. PROVIDED THERE ARE NO OPEN ISSUES, VISIT 2 IS COMPLETE. IN THE EVENT THERE ARE OPEN ITEMS, THE GC MUST CORRECT THEM AND RESCHEDULE THE CONTROLS COMMISSIONING.

VISIT 3: FINAL HVAC INSPECTION

THIS VISIT IS TO DO A FINAL INSPECTION OF THE HVAC EQUIPMENT AND CONTROL INSTALLATION. THIS VISIT MUST TAKE PLACE PRIOR TO CONSTRUCTION COMPLETION.

THE FOLLOWING ITEMS MUST BE COMPLETED PRIOR TO THE INSPECTION:

1. HVAC SYSTEM INSTALLATION IS COMPLETE – NO OPEN PUNCHLIST ITEMS EXCEPT FOR POSSIBLY THE PERMANENT PHONE LINE.
2. AIR BALANCE IS COMPLETE. NOTE: AIR BALANCE IS IN THE CONTRACTOR'S SCOPE OF WORK.

THE GC MUST COMPLETE TRANE'S SITE VISIT #3 SURVEY PRIOR TO THE VISIT BEING SCHEDULED.

THE CONTRACTOR IS RESPONSIBLE FOR HAVING THE MECHANICAL SUBCONTRACTOR AND THE ELECTRICAL SUBCONTRACTOR ON SITE DURING THE FINAL INSPECTION. BUDGET 4 HOURS FOR THE FINAL INSPECTION.

1. THE CONTRACTOR IS RESPONSIBLE FOR COMMUNICATING SCHEDULE DATE CHANGES FOR THE FINAL INSPECTION
2. FILTERS ARE TO BE REPLACED DURING THIS VISIT. FILTERS ARE TO BE PROVIDED BY THE CONTRACTOR AND SHALL BE ON SITE WHEN THE TRANE TECHNICIAN ARRIVES.
3. WHEN COMPLETE AND ALL OPEN CONTRACTOR HVAC ISSUES ARE RESOLVED A CONTROL NUMBER IS ISSUED BY THE MANUFACTURER. IT IS RECORDED INSIDE THE CONTROL PANEL DOOR IN THE IFS ELECTRICAL PANEL AND ON THE FINAL VISIT CHECK LIST.
4. IN THE EVENT THERE ARE OPEN ITEMS, THE CONTRACTOR MUST CORRECT THEM AND RESCHEDULE THE FINAL INSPECTION WITH MANUFACTURER. GC IS RESPONSIBLE FOR REPLACEMENT OF SHEAVES, PULLEYS, AND BELTS, IF NEEDED.
5. THE HVAC CONTROL NUMBER WILL BE ISSUED AT THE END OF THE VISIT PROVIDED THERE ARE NO UNRESOLVED HVAC PUNCHLIST ITEMS.

THE TRANE TECHNICIAN WILL WRITE THE HVAC CONTROL NUMBER ON THE STICKER INSIDE THE WR CONTROLS PANEL (IFS PANEL) AND ON THE FINAL VISIT CHECK LIST.

NATIONAL ACCOUNTS HVAC SUPPLIER GENERAL NOTES

HVAC EQUIPMENT NOTED HAS BEEN PREPURCHASED BY LIMITED STORE DESIGN & CONSTRUCTION. WITHIN THE FIRST WEEK OF CONSTRUCTION, THE GENERAL CONTRACTOR OR THEIR MECHANICAL SUBCONTRACTOR SHALL NOTIFY SUPPLIER VIA EMAIL.

THE EMAIL SHALL STATE THE PHONE NUMBER, EMAIL ADDRESS AND DELIVERY ADDRESS OF THE CONTACT PERSON RESPONSIBLE FOR SCHEDULING AND RECEIVING THE HVAC EQUIPMENT AND ACCESSORIES. EQUIPMENT AND ACCESSORIES ARE TO BE SHIPPED BY ANY SPECIAL SHIPPING INSTRUCTIONS REQUIRED OR REQUESTED. ALLOW A MINIMUM OF TWO WEEKS AFTER CONSTRUCTION STARTS FOR DELIVERY UNLESS SPECIAL ARRANGEMENTS ARE MADE PRIOR TO THE START OF CONSTRUCTION.

GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ADDITIONAL SHIPPING COST INCURRED IF DELIVERY IS REQUIRED PRIOR TO THE STANDARD TWO WEEKS SCHEDULED.

IF THIS INFORMATION IS NOT SENT TO NATIONAL ACCOUNT SUPPLIER, THEN THE EQUIPMENT AND ACCESSORIES WILL BE SHIPPED IN ACCORDANCE WITH THE PURCHASE ORDER DATE AND INSTRUCTIONS ISSUED BY LSD&C AND THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR UNLOADING AND STORAGE OF EQUIPMENT UNTIL SUCH TIME AS REQUIRED FOR INSTALLATION ON PROJECT.

IF OWNER'S REPRESENTATIVE IS PERFORMING START UP, THEN GC AND/OR MECHANICAL CONTRACTOR MUST COORDINATE WITH MANUFACTURER REP. 2 WEEKS PRIOR TO CONSTRUCTION END DATE.

TRANE CONTACT INFORMATION

JODY SOWERS TRANE TECHNICAL SUPPORT, PRIMARY EMAIL: JSOWERS@TRANE.COM PHONE NO: 866.415.2499	ROLLAND SCOTT TRANE TECHNICAL SUPPORT, SECONDARY EMAIL: ROLLAND.SCOTT@TRANE.COM PHONE NO: 866.415.2499	JOHN D'AGOSTINO EQUIPMENT SUPPORT EMAIL: JOHN.DAGOSTINO@TRANE.COM PHONE NO: 866.415.2499	SCOTT DAVIS PROJECT MANAGER AND HVAC COMMISSIONING EMAIL: SCOTT.DAVIS@TRANE.COM PHONE NO: 866.415.2499

ABBREVIATIONS – MECHANICAL

AABC	AMERICAN AIR BALANCE COUNCIL	EQUIV	EQUIVALENT	OBD	OPPOSED BLADE DAMPER
A/C	AIR CONDITIONING UNIT	ESP	EXTERNAL STATIC PRESSURE	OD	OUTSIDE DIMENSION OR DIAMETER
ABV	ABOVE	EWC	ELECTRIC WATER COOLER	OPNG	OPENING
AD	ACCESS DOOR	EXH	EXHAUST	OA	OUTDOOR AIR
AFD	APPROVED FIRE DAMPER				
AFF	ABOVE FINISH FLOOR	F	FAHRENHEIT	P	PUMP
AHU	AIR HANDLING UNIT	FCU	FAN COIL UNIT	PD	PRESSURE DROP
AP	ACCESS PANEL	FLA	FULL LOAD AMPS	PLBG	PLUMBING
ASHRAE	AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR CONDITIONING ENGINEERS	FLEX	FLEXIBLE	PRV	PRESSURE REDUCING VALVE
		FLR	FLOOR	PSI	POUNDS PER SQUARE INCH
		FPM	FEET PER MINUTE		
		FPS	FEET PER SECOND	RA	RETURN AIR
BDD	BACK DRAFT DAMPERS			RAG	RETURN AIR GRILLE
BEL	BELOW	G	GAS	RAR	RETURN AIR REGISTER
BHP	BRAKE HORSEPOWER	GAL	GALLONS	RG	RETURN GRILLE
BLDG	BUILDING	GALV	GALVANIZED	RH	RELATIVE HUMIDITY
BOD	BOTTOM OF DUCT	GC	GENERAL CONTRACTOR	RPM	REVOLUTIONS PER MINUTE
BOP	BOTTOM OF PIPE	GPM	GALLONS PER MINUTE		
BTUH	BRITISH THERMAL UNIT PER HOUR			SA	SUPPLY AIR
		HD	HEAD	SAG	SUPPLY AIR GRILLE
CAP	CAPACITY	HP	HORSEPOWER	SAR	SUPPLY AIR REGISTER
CD	CEILING DIFFUSER OR CONDENSATE DRAIN	HTR	HEATER	SCH	SCHEDULE
		HVAC	HEATING VENTILATING AND AIR CONDITIONING	SENS	SENSIBLE
CFM	CUBIC FEET PER MINUTE			SF	SUPPLY FAN, SQUARE FOOT
CHWR	CHILLED WATER RETURN	HWR	HOT WATER RETURN	SMACNA	SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION
CHWS	CHILLED WATER SUPPLY	HWS	HOT WATER SUPPLY		
CLG	CEILING, COOLING				
CO2	CARBON DIOXIDE	ID	INSIDE DIAMETER	SOV	SHUT-OFF VALVE
CONN	CONNECTION OR CONNECTOR	IN	INCH	SP	STATIC PRESSURE
CONT	CONTINUOUS			SQ	SQUARE
CONTR	CONTRACTOR	KW	KILOWATT	SQ FT	SQUARE FEET
COP	COEFFICIENT OF PERFORMANCE			SS	STAINLESS STEEL
CWR	CONDENSER WATER RETURN	LL	LANDLORD		
CWS	CONDENSER WATER SUPPLY	L	LONG	TEMP	TEMPERATURE
		LB	POUND	TG	TRANSFER GRILLE
DB	DRY BULB, DECIBEL	LF	LINEAR FEET	TSP	TOTAL STATIC PRESSURE
DEG	DEGREE	LIN DIFF	LINEAR DIFFUSER	TSTAT	THERMOSTAT
DET	DETAIL			TYP	TYPICAL
DIA	DIAMETER	MAX	MAXIMUM		
DIM	DIMENSION	MBH	THOUSAND BTU PER HOUR	UC	UNDERCUT
DISCH	DISCHARGE	MCA	MINIMUM CIRCUIT AMPACITY	UH	UNIT HEATER
DL	DOOR LOUVER	MD	MOTORIZED DAMPER	UON	UNLESS OTHERWISE NOTED
DN	DOWN	MECH	MECHANICAL	UTR	UP THRU ROOF
DTR	DOWN THRU ROOF	MFR	MANUFACTURER		
DWG	DRAWING	MOCP	MAXIMUM OVER CURRENT PROTECTION	VAV	VARIABLE AIR VOLUME
		MTD	MOUNTED	VENT	VENTILATION, VENTILATOR
EA	EXHAUST AIR	MTR	MOTOR	VFD	VARIABLE FREQUENCY DRIVE
EAG	EXHAUST AIR GRILLE			VTR	VENT THRU ROOF
EAR	EXHAUST AIR REGISTER				
EAT	ENTERING AIR TEMPERATURE	NEBB	NATIONAL ENVIRONMENTAL BALANCING BUREAU	W	WATT
EC	ELECTRICAL CONTRACTOR			WB	WET BULB
EER	ENERGY EFFICIENCY RATIO	N.C.	NORMALLY CLOSED	WCO	WALL CLEANOUT
EF	EXHAUST FAN	N.I.C.	NOT IN CONTRACT	WG	WATER GAUGE
EFF	EFFICIENCY	N.O.	NORMALLY OPEN	WT	WEIGHT
EG	EXHAUST GRILLE	N/A	NOT APPLICABLE		
ELEC	ELECTRIC	NTS	NOT TO SCALE		
ELV	ELEVATION				
ENCL	ENCLOSURE				

MECHANICAL GENERAL NOTES AND ABBREVIATIONS | NTS | 00N-M0101-J00-NOTE | J | 12/11/13

WATER SOURCE HEAT PUMP SCHEDULE

MARK (WSHP-#)	1	2		
TRANE PACKAGE NUMBER	E8	E8		
MODEL	GEHE120			
AIR FLOW (CFM)	4,000			
OA FLOW (CFM) / MIN OA FLOW	1,075 / 505			
EXT. S.P. (IN. W.C.)	0.8			
COOLING PERFORMANCE				
EAT (°FDB/WB)	74.0 / 63.4			
EWT (°F)	86.0			
LWT (°F)	95.9			
FLOW (GPM)	28.9			
FLUID PD (FT)	21.8			
TOTAL (BTU/ HR)	118,900			
SENSIBLE (BTU/ HR)	84,440			
EER	12.4			
HEATING PERFORMANCE				
EAT (°FDB)	57.1			
EWT (°F)	68			
TOTAL (BTU/ HR)	135,140			
COP	4.4			
ELECTRICAL				
VOLTS/Ø/HZ	460/3/60			
MOTOR (HP)	3			
MCA (AMPS)	25.7			
MOCP (AMPS)	35			
APPROX. WEIGHT (LBS)	900			
ACCESSORIES:	1-7,9,10			
NOTES:	1,2			

ACCESSORIES ("S" INDICATES STANDARD; "O" INDICATES OPTIONAL):
1. S-HOSE KIT WITH CIRCUIT SETTER & STRAINER.
2. S-FACTORY PROVIDED FAN PROOVING SWITCH.
3. S-FACTORY FURNISHED WATER FLOW SWITCH FOR FIELD INSTALLATION.
4. S-FACTORY PROVIDED CONDENSATE PAN OVERFLOW SWITCH.
5. S-FACTORY PROVIDED LEAVING WATER TEMPERATURE SENSOR.
6. S-FACTORY FURNISHED CONDENSER WATER LOOP TEMPERATURE SENSOR (ONE PER PROJECT, INSTALL ON MAIN NEAR FIRST SYSTEM ON LOOP).
7. S-MINIMUM OUTSIDE AIR DAMPER AND ACTUATOR.
8. ~~S-FACTORY FURNISHED SECONDARY CONDENSATE PAN OVERFLOW SWITCH.~~
9. O-FACTORY PROVIDED COASTAL EVAPORATOR COIL COATING.
10. O-FACTORY PROVIDED HOT GAS REHEAT.

NOTES:
1. REFER TO CONTROL WIRING SCHEMATICS FOR ANY FIELD INSTALLED CONTROL DEVICES NOT FACTORY INSTALLED.
2. COORDINATE WITH ELECTRICAL CONTRACTOR TO PROVIDE FIELD INSTALLED DISCONNECT SWITCH FOR EACH UNIT.

FAN TERMINAL UNIT SCHEDULE

MARK (FPVAV-#)	1	2		
TRANE PACKAGE NUMBER	NS	NS		
MODEL	VSCF	VSEF		
FAN SIZE	03SQ	02SQ		
INLET SIZE	12"	8"		
MAXIMUM PRIMARY AIR FLOW (CFM)	680	230		
MINIMUM AIR FLOW (CFM)	240	105		
FAN PERFORMANCE				
MAXIMUM AIR FLOW (CFM)	680	230		
EXTERNAL STATIC (IN W.C.)	0.5	0.5		
FAN MOTOR HP	1/3	1/8		
ELECTRIC HEAT				
POWER INPUT (WATTS)	--	2,000		
HEAT OUTPUT (BTU/HR)	--	6,830		
STAGES	--	1		
ELECTRICAL				
VOLTS/Ø/HZ	120/1/60	277/1/60		
FAN MOTOR AMPS	4.3	0.7		
ELECTRIC HEATER AMPS	--	7.22		
MCA (AMPS)	5.38	9.90