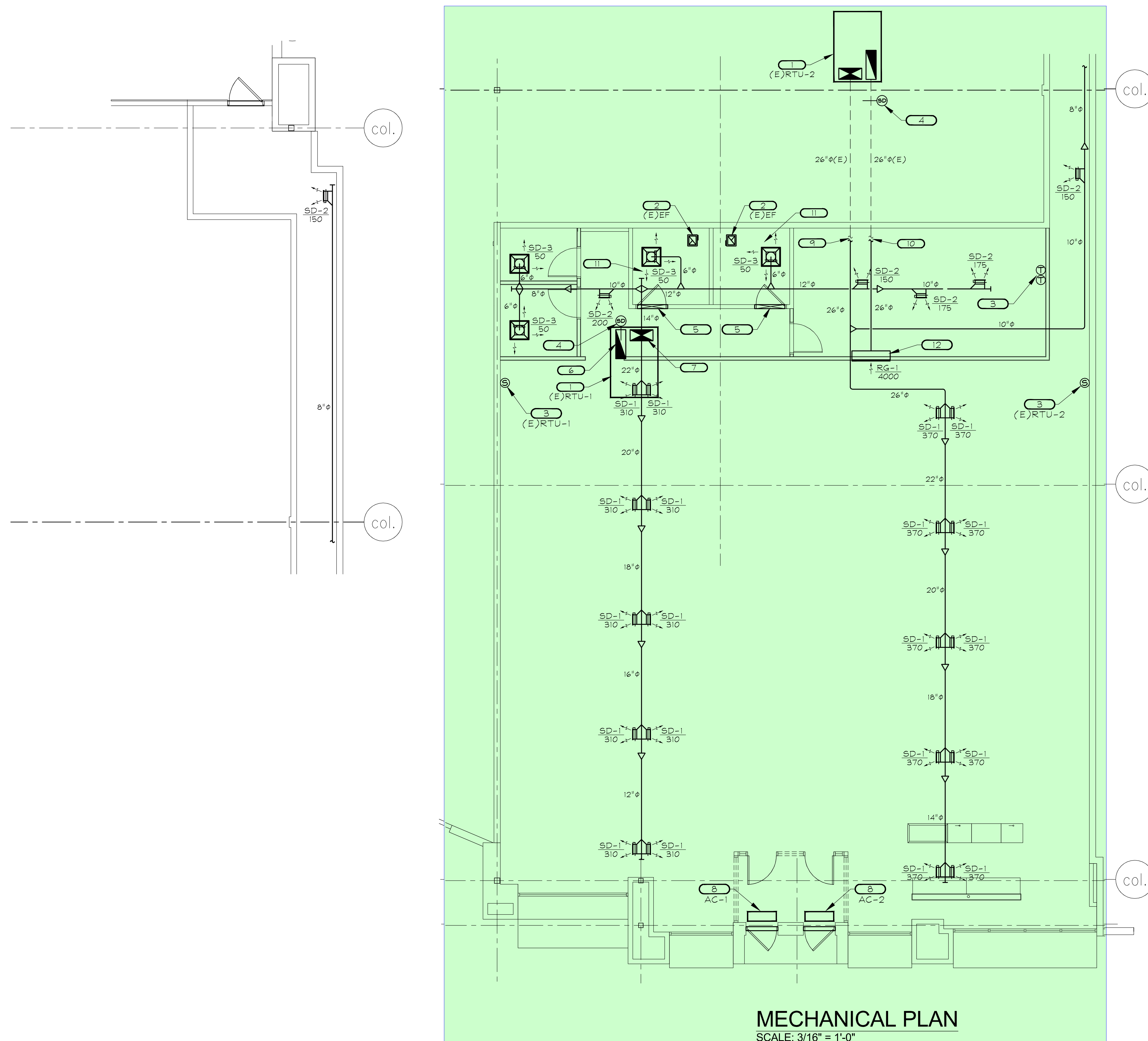


MECHANICAL GENERAL NOTES

- ALL OUTDOOR AIR INTAKES BY MECHANICAL EQUIPMENT SHALL HAVE A MINIMUM 10'-0" HORIZONTAL CLEARANCE FROM THE DISCHARGE OF ANY EXHAUST FAN, COMBUSTION EXHAUST OR PLUMBING VENT.
- PROVIDE VIBRATION ISOLATION DEVICES AND FLEXIBLE DUCT/ PIPING CONNECTIONS TO ALL MOVING MACHINERY NOT INTERNALLY ISOLATED.
- ALL DUCT DIMENSIONS SHOWN ON DRAWINGS ARE CLEAR INSIDE DIMENSIONS.
- THE MECHANICAL CONTRACTOR SHALL COORDINATE ALL DUCT AND DIFFUSER LOCATIONS WITH LIGHT FIXTURES AS WELL AS SPRINKLER PIPING AND HEADS (WHERE INCLUDED IN THE PROJECT) FOR A COMPLETE INSTALLATION.
- LOCATIONS FOR THERMOSTATS AND REMOTE SENSORS SHALL BE FIELD COORDINATED TO AVOID INTERFERENCE WITH WALL-MOUNTED DECOR OR PROXIMITY TO HEAT PRODUCING EQUIPMENT.
- ALL HVAC AND RESTROOM EXHAUST DUCTWORK SHALL BE INSTALLED AS HIGH AS POSSIBLE UNDER THE ROOF STRUCTURE.
- ALL RECTANGULAR, ROUND, AND FLEXIBLE DUCTWORK SHALL BE SIZED AS SHOWN ON THESE DRAWINGS, AND SHALL BE FABRICATED AND INSTALLED ACCORDING TO THE MOST RECENTLY PUBLISHED SMACNA STANDARDS. ALL JOINTS, SEAMS, AND CONNECTIONS MUST BE SECURELY FASTENED & SEALED BY APPROVED METHODS.
- ANY FLEXIBLE DUCTS SHALL BE INSTALLED IN CONCEALED SPACES ONLY. THE MAXIMUM ALLOWABLE LENGTH OF FLEXIBLE DUCT SHALL BE 5'-0". ALL FLEXIBLE DUCTS SHALL BE CONNECTED TO BRANCH RUNS AND FITTINGS WITH A PANDUIT-TYPE BAND, AND SHALL NOT BE ATTACHED DIRECTLY TO THE AIR DEVICE COLLAR.
- SUPPLY, RETURN, RESTROOM EXHAUST DUCT CONSTRUCTION SHALL BE GALVANIZED STEEL, GAUGES, SWAY BRACING AND SUSPENSION SHALL CONFORM TO SMACNA STANDARDS. SEAL ALL SEAMS AND JOINTS AIR AND WATER TIGHT. FLEXIBLE ALUMINUM DUCTWORK OR FIBERGLASS DUCTBOARD IS NOT ALLOWED (N/A).
- THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING THE AIR FILTERS AT THE HVAC UNITS WITH PLEATED MERV 8 THROW AWAY TYPE AIR FILTERS AT THE COMPLETION OF CONSTRUCTION AND PRIOR TO AIR BALANCE AND STORE TURNOVER.
- AT THE START OF CONSTRUCTION, THE MECHANICAL CONTRACTOR SHALL FIELD VERIFY THE VERTICAL CLEARANCE REQUIRED FOR INSTALLATION OF EQUIPMENT AND DUCTWORK IN COORDINATION WITH EXISTING CONDITIONS, INCLUDING ROOF STRUCTURE, AND PROVIDE DIRECTION TO THE GENERAL CONTRACTOR FOR FINISHED CEILING HEIGHTS AND ROOF OPENINGS. ANY REQUIRED DEVIATION FROM THE HEIGHTS SHOWN IN THE ARCHITECTURAL CEILING PLAN SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND TENANT'S CONSTRUCTION MANAGER.
- NO ATTACHMENTS SHALL BE MADE TO THE BUILDING STRUCTURE UNLESS REVIEWED BY THE LANDLORD'S BUILDING STRUCTURAL ENGINEER FIRST. AN APPROVAL LETTER SHALL BE REQUIRED. ALL REVIEW FEES SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
- ALL ROOF PENETRATIONS, ETC. SHALL BE DONE BY THE LANDLORD'S APPROVED ROOFING CONTRACTOR ONLY AT THE TENANT GENERAL CONTRACTOR'S EXPENSE.
- CONTRACTOR SHALL SITE VISIT & FIELD COORDINATE ALL EXISTING CONDITIONS PRIOR TO SUBMITTING A BID.
- REMOVE ALL UN-USED DUCT WORK, DO NOT ABANDON IN-PLACE. CAP & SEAL ANY UN-USED TAPS, FIELD COORDINATE REQUIREMENTS PRIOR TO BID.

MECHANICAL CODED NOTES

- (E)RTU-1 AND (E)RTU-2 EXISTING ROOFTOP UNITS TO REMAIN AND BE REUSED (SEE SCHEDULE ON M2.0). CLEAN AND ADJUST EXISTING R.T.U. TO ENSURE PROPER OPERATION AND INSTALL A NEW SET OF FILTERS (DURING CONSTRUCTION AND PROJECT COMPLETION) AND MAKE SURE ALL EQUIPMENT IS IN PROPER OPERATING CONDITION. REPLACE ANY DEFECTIVE PARTS OR EQUIPMENT.
- EXISTING EXHAUST FAN / EXHAUST AIR GRILLE TO REMAIN AND BE REUSED. MECHANICAL CONTRACTOR SHALL REFURBISH TO PROPER WORKING CONDITIONS. ENSURE EXHAUST FAN / GRILLE IS SET TO SUPPLY A MINIMUM 70 CFM EXHAUST AIR. RE-BALANCE AS REQUIRED.
- WALL MOUNTED THERMOSTAT SHALL BE MOUNTED AT 48" ABOVE FINISHED FLOOR IN STOCK ROOM ADJACENT TO MANAGERS DESK TO CONTROL THERMOSTAT AS NOTED. INSTALL REMOTE SENSOR IN SALES AREA AS SHOWN. COORDINATE PLACEMENT WITH WALL FIXTURES AND EQUIPMENT. THERMOSTAT & SENSORS TO BE INSTALLED BETWEEN FIXTURES AND NOT ON ANY GRAPHICS. FIELD VERIFY WITH THE OWNER'S REPRESENTATIVE FOR THE FINAL LOCATION PRIOR TO INSTALLATION.
- IF NO EXISTING SMOKE DETECTOR IS PRESENT, PROVIDE AND INSTALL NEW SMOKE DETECTOR IN RETURN AIR PATH. UPON DETECTION OF SMOKE, DETECTOR SHALL SHUT DOWN ROOFTOP UNIT.
- MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR FOR 1" UNDERCUT DOOR.
- SIZE RETURN AIR MAIN DUCT DROP DOWN THROUGH ROOF FROM EXISTING ROOFTOP UNIT. RETURN AIR OPENING TO BE COVERED WITH 1/4"x1/4" WIRE MESH SCREEN AND BE PAINTED BLACK ON THE INSIDE FOR LINE-OF-SIGHT.
- EXTEND SUPPLY AIR DUCTWORK FROM RTU TO FEED SPACE AS SHOWN. MOUNT DUCTWORK HIGH ENOUGH TO CLEAR ALL GRAPHICS. BOTTOM OF DUCT MUST BE A MINIMUM OF 13'-0".
- AC-1 & AC-2 (SEE SCHEDULE ON M2.0). AIR CURTAIN TO BE INSTALLED ABOVE DOOR PER MANUFACTURER.
- EXTEND AND CONNECT NEW 26" SUPPLY AIR DUCT INTO EXISTING 26" SUPPLY AIR DUCT. VERIFY EXACT SIZE AND LOCATION IN FIELD.
- EXTEND AND CONNECT NEW 26" RETURN AIR DUCT INTO EXISTING 26" RETURN AIR DUCT. VERIFY EXACT SIZE AND LOCATION IN FIELD.
- EXISTING PLUMBING FIXTURES IN RESTROOM ARE TO REMAIN AND BE REUSED.
- MC TO PROVIDE 12" DEEP PLENUM BOX BEHIND RETURN GRILLE.



MECHANICAL PLAN
SCALE: 3/16" = 1'-0"



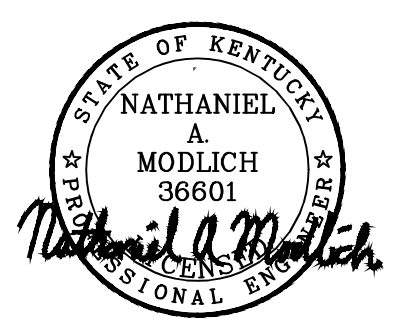
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2304 SIR BARTON WAY, SUITE 130
LEXINGTON, KY 40509

REVISIONS	
FINALS:	12.06.2022
DELTA 1: BLDG. COMM.	04.07.2022

MECHANICAL PLAN
SHEET NUMBER
M1.0



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MECHANICAL SCHEDULES

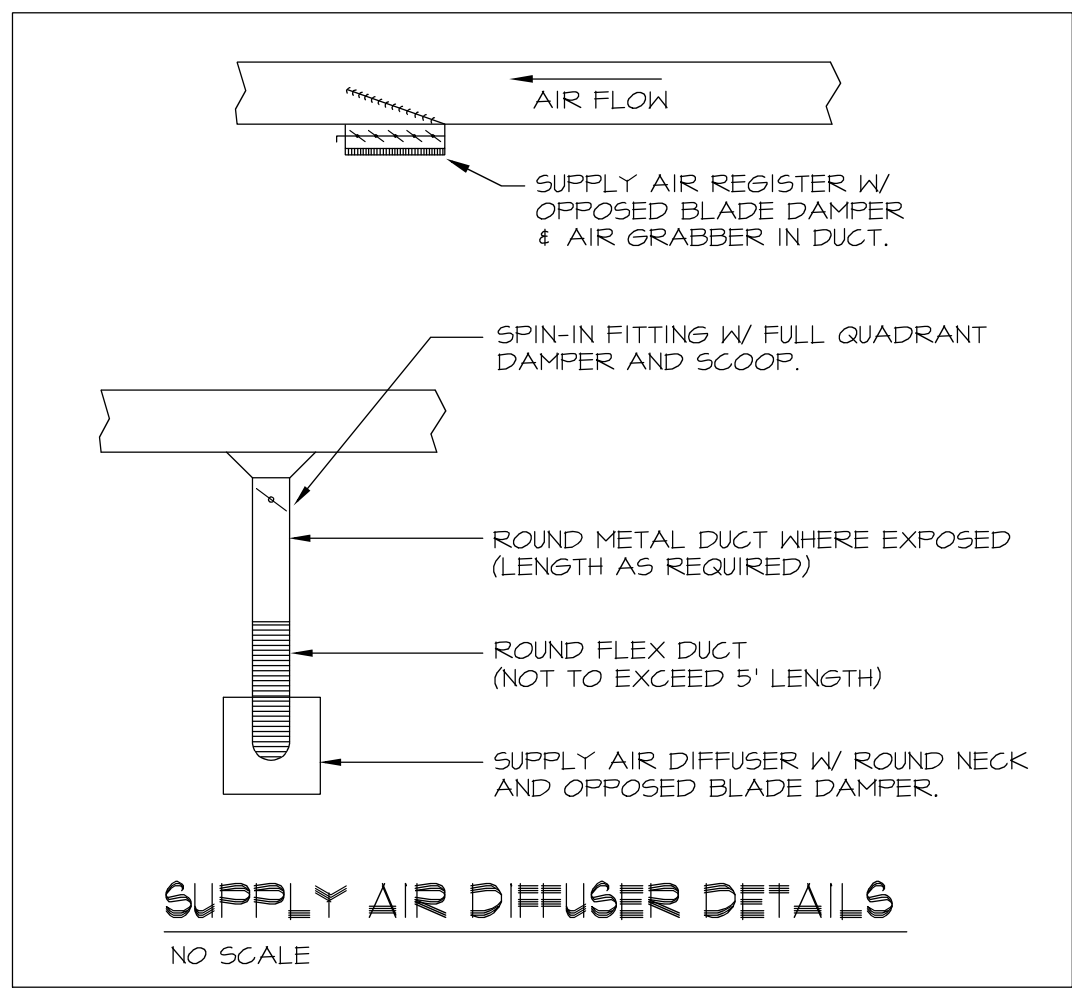
SHEET NUMBER

M2.0

AIR DEVICE SCHEDULE									
MARK	NECK SIZE	TYPE	MOUNTING TYPE	MAXIMUM N.C.	DIRECTION	MANUFACTURER	MODEL	NOTES	
SD-1	14"x6"	SUPPLY	DUCT MOUNTED	20	DOUBLE DEFLECTION	TITUS	300RS	2,4	
SD-2	8"x6"	SUPPLY	DUCT MOUNTED	20	DOUBLE DEFLECTION	TITUS	300RS	2,4	
SD-3	24X24	SUPPLY	LAY-IN CLG	20	AS SHOWN	TITUS	TDC	1,2,3	
RG-1	48"x24"	RETURN	WALL MTD	20	RETURN	TITUS	350RL	2,4	

NOTES:

- AIR DEVICES IN THE BACK OF HOUSE SHALL BE INSTALLED WITH FACTORY WHITE FINISH. THE DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC AND ALTHOUGH SIZES AND LOCATIONS OF EQUIPMENT ARE DRAWN TO SCALE WHEREVER POSSIBLE, THE CONTRACTOR SHALL MAKE USE OF ALL DATA THROUGHOUT THE CONTRACT DOCUMENTS AND VERIFY THIS INFORMATION PRIOR TO ORDERING, FABRICATING OR INSTALLING ANY MATERIALS.
- THE MECHANICAL CONTRACTOR SHALL PROVIDE COMPLETE INFORMATION AND COOPERATE WITH THE OTHER CONTRACTORS AND TRADES AS REQUIRED FOR THE COMPLETION AND COORDINATION OF THE COMPLETE PROJECT.
- THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ADMINISTERING ALL WARRANTIES ON EQUIPMENT WHICH THEY FURNISH AND INSTALL. PROVIDE WRITTEN WARRANTY TO REPLACE ALL FAULTY MATERIALS AND FOR LABOR, AT NO COST TO TENANT, FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE BY THE OWNER. WARRANTIES SHALL BEGIN ON THE DATE OF SUBSTANTIAL COMPLETION.
- THE MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR AND OTHER TRADES ALL REQUIRED OPENINGS AND PENETRATIONS. ALL REQUIRED OPENINGS IN FOUNDATIONS, FLOORS, WALLS AND ROOF SHALL BE CONSTRUCTED INTO THE STRUCTURE WITH THE USE OF SLEEVES, CURBS, ETC., CUTTING AND PATCHING SHALL BE HELD TO A MINIMUM.
- THE MECHANICAL CONTRACTOR SHALL COORDINATE ALL DUCT AND DIFFUSER LOCATIONS WITH SPRINKLER PIPING, SPRINKLER HEADS AND LIGHT FIXTURES AS REQUIRED FOR A COMPLETE INSTALLATION.
- PROVIDE VIBRATION ISOLATION DEVICES AND FLEXIBLE DUCT/PIPING CONNECTIONS TO ALL MOVING MACHINERY NOT INTERNALLY ISOLATED.
- ALL ITEMS PROJECTING THROUGH THE ROOF SHALL BE FLASHED THROUGH CURBS OR PIPE SEALS A MINIMUM OF 12" ABOVE THE ROOF. THE PIPE CURBS AND SEALS SHALL BE INSTALLED BY THE ROOFING CONTRACTOR. ENSURE THAT AMPLE BOOT OPENINGS ARE PROVIDED TO ACCOMMODATE ANY ELECTRICAL CONDUIT PENETRATIONS REQUIRED FOR POWER.
- ALL OUTDOOR AIR INTAKES BY MECHANICAL EQUIPMENT SHALL HAVE A MINIMUM 10'-0" HORIZONTAL CLEARANCE FROM THE DISCHARGE OF ANY EXHAUST FAN, COMBUSTION EXHAUST OR PLUMBING VENT.
- HVAC UNITS SHALL BE SET TO RUN IN "FAN CONTINUOUS" MODE DURING OCCUPIED HOURS. DURING NIGHT SET-BACK HOURS, THE HVAC UNITS SHALL RUN IN "FAN AUTO" MODE.
- MECHANICAL CONTRACTOR SHALL FURNISH AND INSTALL 4" HIGH BLANK OVER WHITE LAMINATE NAMEPLATE WITH 2" LETTERS VISIBLE ADJACENT TO DISCONNECT SWITCH FOR HVAC UNITS AND FANS.
- ANY FLEXIBLE DUCTS SHALL BE INSTALLED IN CONCEALED SPACES ONLY. THE MAXIMUM ALLOWABLE LENGTH OF FLEXIBLE DUCT SHALL BE 5'-0". ALL FLEXIBLE DUCTS SHALL BE CONNECTED TO BRANCH RUNS AND FITTINGS WITH A HANGJUT-TYPE BAND, AND SHALL NOT BE ATTACHED DIRECTLY TO THE AIR DEVICE COLLAR.
- SUPPLY, RETURN, RESTROOM EXHAUST DUCT CONSTRUCTION SHALL BE GALVANIZED STEEL (NO.) GAUGES, SWAY BRACING AND SUSPENSION SHALL CONFORM TO SMAGNA STANDARDS. SEAL ALL SEAMS AND JOINTS AIR AND WATERTIGHT. FLEXIBLE ALUMINUM DUCTWORK OR FIBERGLASS DUCTBOARD IS NOT ALLOWED.
- ALL HVAC SUPPLY AND RETURN EXPOSED SPIRAL DUCTWORK SHALL BE INTERNALLY LINED AND FINISHED WITH MINIMUM R-8, 1-1/2" INSULATION WITH VAPOR BARRIER PER THE 2012 INTERNATIONAL MECHANICAL CODE INSULATION SHALL HAVE MAXIMUM RATINGS OF 25 FLAME SPREAD, 50 SMOKE DEVELOPED. DUCT SHALL BE APPLIED WITH PAINT-GRIP FOR FINAL PAINTING BY GC. REFER TO ARCHITECTURAL DRAWINGS FOR DUCT PAINT OR COLOR SPECIFICATION.
- ALL HVAC SUPPLY AND RETURN CONCEALED RIGID DUCTWORK TO BE EXTERNALLY WRAPPED AND SECURED WITH MINIMUM R-8, 2" INSULATION WITH VAPOR BARRIER PER THE 2012 INTERNATIONAL MECHANICAL CODE. INSULATION SHALL HAVE MAXIMUM RATINGS OF 25 FLAME SPREAD, 50 SMOKE DEVELOPED.
- ALL PENETRATIONS IN FIRE RATED WALL ASSEMBLIES SHALL BE SEALED WITH UL LISTED FIRE STOPPING MATERIAL.
- ALL DUCT DIMENSIONS SHOWN ON DRAWINGS ARE CLEAR INSIDE DIMENSIONS.
- ALL RECTANGULAR, ROUND, AND FLEXIBLE DUCTWORK SHALL BE SIZED AS SHOWN ON THESE DRAWINGS, AND SHALL BE FABRICATED AND INSTALLED ACCORDING TO THE MOST RECENTLY PUBLISHED SMAGNA STANDARDS. ALL JOINTS, SEAMS, AND CONNECTIONS MUST BE SECURELY FASTENED & SEALED BY APPROVED METHODS.
- THERMOSTAT(S) SHALL BE LOCATED AT 48" A.F.F. LOCATIONS SHALL BE FIELD COORDINATED TO AVOID INTERFERENCE WITH WALL-MOUNTED WORK OR PROXIMITY TO HEAT PRODUCING EQUIPMENT.
- ROOF CURBS FOR EXHAUST FAN(S) SHALL BE FACTORY FABRICATED OF FULL WELDED STEEL CONSTRUCTION WITH WOOD NAILER, AND FURNISHED WITH THE HOOD AND FAN PACKAGE. VERIFY REQUIREMENTS FOR THE ROOF CURBS WITH THE EQUIPMENT SUPPLIER. THE GENERAL CONTRACTOR SHALL FLASH ROOF CURBS AND SHIM DEAD LEVEL. COORDINATE EXACT SIZE AND LOCATION OF ROOF OPENINGS WITH THE STRUCTURAL FRAMING. CUTTING OF STRUCTURAL MEMBERS IS NOT PERMITTED.
- A FULL CERTIFIED MECHANICAL AIR TEST AND BALANCE REPORT SHALL BE PERFORMED BY A CONTRACTOR APPROVED BY CLIENT AT THE GC'S EXPENSE. PROVIDE A COPY TO THE LANDLORD AND MECHANICAL INSPECTOR AT TIME OF INSPECTION.
- PER THE 2012 INTERNATIONAL MECHANICAL CODE WHEN REQUIRED, EACH SINGLE SYSTEM PROVIDING HEATING OR COOLING AIR IN EXCESS OF 2000 CUBIC FEET PER MINUTE SHALL BE EQUIPPED WITH AN AUTOMATIC SHUTOFF. AUTOMATIC SHUTOFF SHALL BE ACCOMPLISHED BY INTERRUPTING THE POWER SOURCE OF THE AIR MOVING EQUIPMENT DEVICES WHICH WILL DETECT PRODUCTS OF COMBUSTION OTHER THAN HEAT, AND WHICH COMPLY WITH THE BUILDING CODE. SHALL BE LABELED BY AN APPROVED AGENCY FOR AIR DUCT INSTALLATION AND SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. SMOKE DETECTORS TO BE INSTALLED SHALL BE SEPARATE FROM AND NOT CONNECTED TO THE LANDLORD'S FIRE SPRINKLER AND ALARM SYSTEM.
- THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING THE AIR FILTERS AT THE HVAC UNITS WITH PLEATED MERV 8 THROW AWAY TYPE AIR FILTERS AT THE COMPLETION OF CONSTRUCTION AND PRIOR TO AIR BALANCE AND STORE TURNOVER.
- MECHANICAL CONTRACTOR SHALL BE ON SITE AND PRESENT AT THE DATE OF STORE TURNOVER.



MECHANICAL WORK

- THE MECHANICAL CONTRACTOR SHALL BECOME FAMILIAR WITH THE PROJECT PRIOR TO SUBMITTING A BID. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE PROJECT MANAGER PRIOR TO BIDDING.
- M.C. SHALL PROVIDE A COMPLETE MAINTENANCE CHECK ON THE EXISTING ROOFTOP UNITS. CHECK ALL BELTS, LUBRICANTS, REFRIGERANT CHARGES, FILTERS, ETC. AND PROVIDE NEW ONES AS REQUIRED.
- M.C. SHALL PROVIDE A TYPED WRITTEN REPORT ON THE CONDITION OF THE A/C SYSTEM AND ALL COMPONENTS.
- M.C. SHALL CHECK THE EXISTING SUPPLY, RETURN AND EXHAUST DUCT FOR ANY LEAKS AND SHALL REPAIR SAME. RE-USE EXISTING DUCT AND TAPS WHERE POSSIBLE.
- PROVIDE A TEST & BALANCE REPORT AFTER ALL CONTRACTOR WORK IS COMPLETE BY AN INDEPENDENT CERTIFIED TEST & BALANCE CONTRACTOR APPROVED BY LL.
- M.C. SHALL PROVIDE NEW AIR DEVICES, BOTH SUPPLY & RETURN AS SCHEDULED. CLEAN ALL EXISTING AIR DEVICES.
- AT THE COMPLETION OF THE PROJECT THE MECHANICAL CONTRACTOR SHALL INSTALL A NEW, CLEAN SET OF FILTERS.
- G.C. SHALL VERIFY THE EXISTING FIRE/ SMOKE ALARM SYSTEM IS IN GOOD WORKING CONDITION AND MEETS ALL CURRENT LANDLORD AND LOCAL CODE REQUIREMENTS OR SHALL MODIFY AS REQUIRED.
- M.C. SHALL LOCATE THERMOSTAT AS SHOWN ON THE PLANS AND MOUNT AT 48" A.F.F.
- M.C. SHALL VERIFY THE EXISTING TOILET EXHAUST SYSTEM IS IN GOOD WORKING ORDER AND IS CLEAN IN A LIKE-NEW CONDITION OR SHALL REPAIR TO SAME.

AIR CURTAIN SCHEDULE (SUSPENDED ABOVE DOORWAY)													
TAG	MANUFACTURER & MODEL NUMBER	NOZZLE WIDTH	MAX VEL. AT NOZZLE	AIR OUTLET VELOCITY	CFM	HEATING CAPACITY	HEATING WATTS	VOLTAGE	MCA	BREAKER SIZE	NO. MOTOR HP	WEIGHT (LBS)	REMARKS
AC-1	BEENER AHX10-1036E	36"	6611 FPM	271 FPM	1385	20.4 MBH	6 KW	208V, 3 PH	20.1	30	(1) 1/2 HP	71	SEE NOTES BELOW
AC-2	BEENER AHX10-1036E	36"	6611 FPM	271 FPM	1385	20.4 MBH	6 KW	208V, 3 PH	20.1	30	(1) 1/2 HP	71	SEE NOTES BELOW

NOTE: PROVIDE COMPLETE WITH STANDARD CONSTRUCTION - 12.25" HIGH x 21.25" DEEP, 3 - SPEED MOTOR, FACTORY INSTALLED FAN SPEED/HEAT SWITCH, COLOR SELECTED BY ARCHITECT, ALUMINUM EXTERIOR COVER, WALL MOUNTED, THERMAL OVERLOAD PROTECTION.

EXISTING ROOFTOP UNIT SCHEDULE			
MARK	(E)RTU-1	(E)RTU-2	
MANUFACTURER	CARRIER	CARRIER	
MODEL #	48FCDM12	48FCDM12	
NOMINAL TONNAGE	10.0	10.0	
SUPPLY AIR FLOW (CFM)	4000	4000	
OUTSIDE AIR FLOW (CFM)	800	800	
AMBIENT OAT ("FDB)	96	96	
EXT. S.P. (IN. W.C.)	0.5	0.5	
DX COOLING COIL			
EAT ("FDB/MB)	80.0 / 67.0	80.0 / 67.0	
TOTAL (MBH)	125.75	125.75	
SENSIBLE (MBH)	96.22	96.22	
HEAT			
GAS INPUT (MBH)	120 / 180	120 / 180	
GAS OUTPUT (MBH)	98.0 / 148.0	98.0 / 148.0	
ELECTRIC HEAT (KW)	-	-	
ELECTRICAL			
VOLTS/PH/Hz	208-230/3/60	208-230/3/60	
MCA	49.0	49.0	
MCCP	60.0	60.0	
MAX. WEIGHT (LBS.)	EXISTING	EXISTING	
NOTES:	A	A	

NOTES:
A. MECHANICAL CONTRACTOR SHALL REFURBISH EXISTING ROOFTOP UNITS TO PROPER WORKING CONDITION COMPLETE BUT NOT LIMITED TO CLEANING INSIDE AND OUTSIDE OF UNITS, CHANGE BELTS, CHANGE FILTERS, LUBRICATE MOTORS, LUBRICATE ECONOMIZER DAMPERS, CLEAN DRAIN PAN, BLOW OUT CONDENSATE PIPING TO ENSURE PROPER FLOW, CHECK CONTROLS, CLEAN EVAPORATOR AND CONDENSING COILS, ETC., PERFORM A FULL TEST AND ANALYSIS TO SERVICE UNITS TO PROPER WORKING CONDITION, PROVIDE DOCUMENTATION CONCERNING THE CONDITION, PRESSURE READINGS AND AMP READINGS AND REPAIR/ REPLACE ANY PARTS THAT MAY BE OPERATING BUT WILL SOON NEED REPLACEMENT.

GENERAL MECHANICAL NOTES

- FOR THE PURPOSE OF CLEARNESS AND LEGIBILITY, THE DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC AND ALTHOUGH SIZES AND LOCATIONS OF EQUIPMENT ARE DRAWN TO SCALE WHEREVER POSSIBLE, THE CONTRACTOR SHALL MAKE USE OF ALL DATA THROUGHOUT THE CONTRACT DOCUMENTS AND VERIFY THIS INFORMATION PRIOR TO ORDERING, FABRICATING OR INSTALLING ANY MATERIALS.
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- THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ADMINISTERING ALL WARRANTIES ON EQUIPMENT WHICH THEY FURNISH AND INSTALL. PROVIDE WRITTEN WARRANTY TO REPLACE ALL FAULTY MATERIALS AND FOR LABOR, AT NO COST TO TENANT, FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE BY THE OWNER. WARRANTIES SHALL BEGIN ON THE DATE OF SUBSTANTIAL COMPLETION.
- THE MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR AND OTHER TRADES ALL REQUIRED OPENINGS AND PENETRATIONS. ALL REQUIRED OPENINGS IN FOUNDATIONS, FLOORS, WALLS AND ROOF SHALL BE CONSTRUCTED INTO THE STRUCTURE WITH THE USE OF SLEEVES, CURBS, ETC., CUTTING AND PATCHING SHALL BE HELD TO A MINIMUM.
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- ALL ITEMS PROJECTING THROUGH THE ROOF SHALL BE FLASHED THROUGH CURBS OR PIPE SEALS A MINIMUM OF 12" ABOVE THE ROOF. THE PIPE CURBS AND SEALS SHALL BE INSTALLED BY THE ROOFING CONTRACTOR. ENSURE THAT AMPLE BOOT OPENINGS ARE PROVIDED TO ACCOMMODATE ANY ELECTRICAL CONDUIT PENETRATIONS REQUIRED FOR POWER.
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- SUPPLY, RETURN, RESTROOM EXHAUST DUCT CONSTRUCTION SHALL BE GALVANIZED STEEL (NO.) GAUGES, SWAY BRACING AND SUSPENSION SHALL CONFORM TO SMAGNA STANDARDS. SEAL ALL SEAMS AND JOINTS AIR AND WATERTIGHT. FLEXIBLE ALUMINUM DUCTWORK OR FIBERGLASS DUCTBOARD IS NOT ALLOWED.
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- ALL HVAC SUPPLY AND RETURN CONCEALED RIGID DUCTWORK TO BE EXTERNALLY WRAPPED AND SECURED WITH MINIMUM R-8, 2" INSULATION WITH VAPOR BARRIER PER THE 2012 INTERNATIONAL MECHANICAL CODE. INSULATION SHALL HAVE MAXIMUM RATINGS OF 25 FLAME SPREAD, 50 SMOKE DEVELOPED.
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- THERMOSTAT(S) SHALL BE LOCATED AT 48" A.F.F. LOCATIONS SHALL BE FIELD COORDINATED TO AVOID INTERFERENCE WITH WALL-MOUNTED WORK OR PROXIMITY TO HEAT PRODUCING EQUIPMENT.
- ROOF CURBS FOR EXHAUST FAN(S) SHALL BE FACTORY FABRICATED OF FULL WELDED STEEL CONSTRUCTION WITH WOOD NAILER, AND FURNISHED WITH THE HOOD AND FAN PACKAGE. VERIFY REQUIREMENTS FOR THE ROOF CURBS WITH THE EQUIPMENT SUPPLIER. THE GENERAL CONTRACTOR SHALL FLASH ROOF CURBS AND SHIM DEAD LEVEL. COORDINATE EXACT SIZE AND LOCATION OF ROOF OPENINGS WITH THE STRUCTURAL FRAMING. CUTTING OF STRUCTURAL MEMBERS IS NOT PERMITTED.
- A FULL CERTIFIED MECHANICAL AIR TEST AND BALANCE REPORT SHALL BE PERFORMED BY A CONTRACTOR APPROVED BY CLIENT AT THE GC'S EXPENSE. PROVIDE A COPY TO THE LANDLORD AND MECHANICAL INSPECTOR AT TIME OF INSPECTION.
- PER THE 2012 INTERNATIONAL MECHANICAL CODE WHEN REQUIRED, EACH SINGLE SYSTEM PROVIDING HEATING OR COOLING AIR IN EXCESS OF 2000 CUBIC FEET PER MINUTE SHALL BE EQUIPPED WITH AN AUTOMATIC SHUTOFF. AUTOMATIC SHUTOFF SHALL BE ACCOMPLISHED BY INTERRUPTING THE POWER SOURCE OF THE AIR MOVING EQUIPMENT DEVICES WHICH WILL DETECT PRODUCTS OF COMBUSTION OTHER THAN HEAT, AND WHICH COMPLY WITH THE BUILDING CODE. SHALL BE LABELED BY AN APPROVED AGENCY FOR AIR DUCT INSTALLATION AND SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. SMOKE DETECTORS TO BE INSTALLED SHALL BE SEPARATE FROM AND NOT CONNECTED TO THE LANDLORD'S FIRE SPRINKLER AND ALARM SYSTEM.
- THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING THE AIR FILTERS AT THE HVAC UNITS WITH PLEATED MERV 8 THROW AWAY TYPE AIR FILTERS AT THE COMPLETION OF CONSTRUCTION AND PRIOR TO AIR BALANCE AND STORE TURNOVER.
- MECHANICAL CONTRACTOR SHALL BE ON SITE AND PRESENT AT THE DATE OF STORE TURNOVER.

OUTSIDE AIR REQUIREMENTS					
ROOM PURPOSE	FLOOR AREA SQ. FT.	OUTSIDE AIR REQUIREMENTS		SYSTEM NUMBER	ACTUAL OUTSIDE AIR CFM PER UNIT
		CFM	CFM REQUIRED		
SALES	3590	((3590*.12)+7.5*(3590*.015)) * 1.25	1044	(E)RTU-1&(E)RTU-2	1360
STOCKROOM	353	(353*.12) * 1.25	53	(E)RTU-1	100
ADA FITTING ROOM #1	60	((60*.06)+5*(60*.015)) * 1.25	10	(E)RTU-1	10
FITTING ROOM #2	44	((44*.06)+5*(44*.015)) * 1.25	8	(E)RTU-1	10
HALLWAY 1	151	(151*.06) * 1.25	12	(E)RTU-1	40
HALLWAY 2	395	(395*.06) * 1.25	30	(E)RTU-2	60
(E) RESTROOM	64	70 CFM EXH PER WC	70 EXH	EF(E)	70 EXH / 10 OA
(E) RESTROOM	64	70 CFM EXH PER WC	70 EXH	EF(E)	70 EXH / 10 OA
TOTALS	4147		1157		1600

NOTE FOR TENANT GENERAL CONTRACTOR
IT IS THE RESPONSIBILITY OF THE TENANT'S GENERAL CONTRACTOR TO MAKE USE OF APPLICABLE NOTES AND SPECIFICATIONS LISTED ON THIS SHEET AS THEY MAY PERTAIN TO THE SPECIFIC JOB.

GENERAL

- A. THE GENERAL CONDITIONS OF THE GENERAL SPECIFICATIONS, ALONG WITH ALL APPLICABLE INSTRUCTIONS TO BIDDERS SHALL FORM A PART OF THIS SECTION OF THE SPECIFICATIONS.
- B. REFERENCE IS MADE TO REQUISITES FOR BIDDERS AND CONTRACTORS UNDER OTHER SECTIONS OF THESE SPECIFICATIONS, WHICH SHALL BE CONSIDERED BINDING, UNLESS OTHERWISE NOTED UNDER THIS SECTION.

SCOPE

EACH CONTRACTOR SHALL THOROUGHLY ACQUAINT HIMSELF WITH THE CONSTRUCTION DETAILS, BOTH AS ON TENANT CONSTRUCTION DRAWINGS AND LANDLORD'S AS REFERRED TO, BEFORE SUBMITTING HIS BID AS NO ALLOWANCES WILL BE MADE BECAUSE OF THE CONTRACTOR'S UNFAMILIARITY WITH THESE DETAILS. ALL PERFORMANCE OF CONSTRUCTION SHALL BE AS REQUIRED BY THE PAGE OF THE GENERAL CONSTRUCTION.

INSPECTION OF SITE

ALL PROPOSALS SHALL PRECLUDE THAT CONTRACTOR IS FAMILIAR WITH JOBSITE CONDITIONS AND UTILITY LOCATIONS AND THE LACK OF SPECIFIC INFORMATION ON THE DRAWINGS SHALL NOT RELIEVE THE CONTRACTOR OF ANY RESPONSIBILITY.

PERMITS

ALL PERMITS AND LICENSES NECESSARY FOR THE PROPER EXECUTION OF THE WORK SHALL BE SECURED AND PAID FOR BY THE SUBCONTRACTOR INVOLVED.

CODE REQUIREMENTS

ALL WORK UNDER THIS CONTRACT SHALL COMPLY WITH THE PROVISIONS OF THE SPECIFICATIONS, DRAWINGS OR AS DIRECTED BY THE TENANT, AND SHALL SATISFY ALL APPLICABLE CODES, ORDINANCES, OR REGULATIONS OF THE GOVERNING BODIES, WHETHER SO SHOWN OR NOT, AND ALL MODIFICATIONS REQUIRED BY SUCH AUTHORITIES SHALL BE MADE BY THE CONTRACTOR WITHOUT ANY ADDITIONAL COST TO THE TENANT.

MATERIALS AND WORKMANSHIP

- A. ALL MANUFACTURED ARTICLES, MATERIALS, AND EQUIPMENT SHALL BE APPLIED AS RECOMMENDED BY THE MANUFACTURERS, AND UNLESS OTHERWISE SPECIFIED SHALL BE NEW AND FREE FROM ANY DEFECTS. ALL LIKE MATERIALS USED SHALL BE OF THE SAME MANUFACTURE AND QUALITY UNLESS OTHERWISE SPECIFIED.
- B. ALL WORK UNDER THIS CONTRACT SHALL BE PERFORMED BY COMPETENT WORKMEN AND EXECUTED IN A NEAT AND WORKMANLIKE MANNER. WORK SHALL BE PROPERLY PROTECTED DURING CONSTRUCTION, AND ON COMPLETION, THE INSTALLATION SHALL BE THOROUGHLY CLEANED AND ALL DEBRIS PRESENT AS A RESULT OF THIS CONTRACT SHALL BE REMOVED FROM THE PREMISES.

CODES AND REGULATIONS

EACH SUBCONTRACTOR SHALL COMPLY WITH ALL LAWS, ORDINANCES, RULES AND REGULATIONS BEARING ON THE CONDUCT OF THE WORK AS DRAWN OR SPECIFIED. IF A SUBCONTRACTOR OBSERVES THAT THE DRAWINGS AND SPECIFICATIONS ARE AT A VARIANCE, HE SHALL PROMPTLY NOTIFY THE GENERAL CONTRACTOR AND THE TENANT IN WRITING. IF ANY SUBCONTRACTOR PERFORMS ANY WORK KNOWING IT TO BE CONTRARY TO LAWS, ORDINANCES, RULES AND REGULATIONS AND WITHOUT GIVING SUCH NOTICE, THE SUBCONTRACTOR SHALL BEAR ALL COSTS ARISING THEREFROM.

PROTECTION OF WORK AND PROPERTY

- A. EACH SUBCONTRACTOR SHALL CONTINUOUSLY MAINTAIN ADEQUATE PROTECTION OF ALL HIS WORK FROM DAMAGE AND SHALL PROTECT THE TENANT'S PROPERTY FROM INJURY OR LOSS ARISING FROM HIS WORK. HE SHALL MAKE GOOD ANY SUCH DAMAGE, INJURY, OR LOSS, EXCEPT SUCH AS MAY BE DIRECTLY DUE TO CAUSES BEYOND HIS CONTROL AND NOT TO HIS FAULT OR NEGLIGENCE. HE SHALL ADEQUATELY PROTECT ADJACENT PROPERTY AS WELL.
- B. EACH SUBCONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS FOR THE SAFETY OF THEIR EMPLOYEES ON THE WORK AND SHALL COMPLY WITH ALL PROVISIONS OF FEDERAL, STATE AND LOCAL BUILDING CODES AND SAFETY LAWS TO PREVENT ACCIDENTS OR INJURY TO PERSONA ON OR ADJACENT TO THE PREMISES WHERE THE WORK IS BEING PERFORMED. EACH SUBCONTRACTOR SHALL MAINTAIN ALL INSURANCE REQUIRED TO PROTECT HIMSELF, TENANT AND TENANT FOR THE DURATION OF THE WORK AGAINST PROPERTY DAMAGE AND PUBLIC LIABILITY.

CHANGES IN THE WORK

THE TENANT, WITHOUT INVALIDATING THE CONTRACT, MAY ORDER EXTRA WORK OR MAKE CHANGES BY ALTERING, ADDING TO OR DEDUCTING FROM THE WORK, THE CONTRACT SUM BEING ADJUSTED ACCORDINGLY.

COOPERATION

ALL WORK UNDER THESE SPECIFICATIONS SHALL BE ACCOMPLISHED IN CONJUNCTION WITH OTHER CONTRACTORS AND TRADES OF THIS PROJECT IN A MANNER WHICH WILL ALLOW EACH CONTRACTOR AND TRADE ADEQUATE TIME AT THE PROPER STAGE OF CONSTRUCTION TO FULFILL HIS CONTRACTS. REFERENCE SHALL BE MADE TO THE TENANT FOR INSTRUCTIONS SHOULD ANY QUESTIONS ARISE BETWEEN TRADES AS TO THE PLACING OF LINES, DUCTS, CONDUITS, FIXTURES, OR EQUIPMENT, OR SHOULD IT APPEAR DESIRABLE TO REMOVE ANY GENERAL CONSTRUCTION WHICH WOULD AFFECT THE APPEARANCE OF STRENGTH OF THE STRUCTURE.

SUBSTITUTION OF MATERIALS

MANUFACTURER'S NAMES ARE LISTED HEREIN TO ESTABLISH A STANDARD. THE PRODUCTS OF OTHER MANUFACTURERS WILL BE ACCEPTABLE, IF IN THE OPINION OF THE TENANT, THE SUBSTITUTE MATERIAL IS OF A QUALITY AS GOOD OR BETTER THAN THE MATERIAL SPECIFIED, AND WILL SERVE WITH EQUAL EFFICIENCY AND DEPENDABILITY, THE PURPOSE FOR WHICH THE ITEMS SPECIFIED WERE INTENDED.

SHOP DRAWINGS

SHOP DRAWINGS AND CATALOGUE DATA ON ALL MAJOR ITEMS OF EQUIPMENT AND SYSTEMS, AND SUCH OTHER ILLUSTRATIVE MATERIAL AS MAY BE CONSIDERED NECESSARY BY THE TENANT, SHALL BE SUBMITTED BY THIS CONTRACTOR IN ADEQUATE TIME TO PREVENT DELAY AND CHANGES DURING CONSTRUCTION.

DRAWINGS AND SPECIFICATIONS

- A. THE DRAWINGS SHOW DIAGRAMMATICALLY THE LOCATIONS OF THE VARIOUS LINES, DUCTS, CONDUITS, FIXTURES, AND EQUIPMENT AND THE METHOD OF CONNECTING AND CONTROLLING THEM. IT IS NOT INTENDED TO SHOW EVERY CONNECTION IN DETAIL AND ALL FITTINGS REQUIRED FOR A COMPLETE SYSTEM.
- B. SHOULD ANY CHANGES BE DEEMED NECESSARY BY THE CONTRACTOR IN ITEMS SHOWN ON CONTRACT DRAWINGS, THE SHOP DRAWINGS, DESCRIPTIONS, AND THE REASON FOR THE PROPOSED CHANGES SHALL BE SUBMITTED TO THE TENANT FOR APPROVAL.

RESPONSIBILITY

- A. THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR THE SATISFACTORY AND COMPLETE EXECUTION OF ALL WORK INCLUDED IN HIS CONTRACT. HE SHALL PRODUCE COMPLETE FINISHED OPERATING SYSTEMS AND PROVIDE ALL INCIDENTAL ITEMS REQUIRED AS PART OF HIS WORK, REGARDLESS OF WHETHER SUCH ITEM IS PARTICULARLY SPECIFIED OR INDICATED.

- B. CONTRACTOR SHALL SUPPLY TO LANDLORD AND TENANT A CERTIFIED BALANCE REPORT AT COMPLETION OF PROJECT. THIS IS REQUIRED FOR BOTH REMODELED AND NEW STORES.

HEATING, VENTILATING AND AIR CONDITIONING GENERAL

- A. THE WORK COVERED BY THIS SECTION OF THESE SPECIFICATIONS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE RESPECTIVE DRAWINGS, INFORMATION, OR INSTRUCTIONS TO BIDDERS, AND THE GENERAL CONDITIONS, APPENDIX, OR DIRECTIONS WHICH MAY BE ISSUED BY THE TENANT, HEREAFTER, OR OTHERWISE, SHALL BE COMPLIED WITH IN EVERY RESPECT.
- B. THE LISTING HEREIN OF AN ARTICLE OR MATERIAL, OPERATION OR METHOD, REQUIRES THAT THE CONTRACTOR SHALL FURNISH AND INSTALL EACH ITEM LISTED, UNLESS SPECIFICALLY NOTED TO THE CONTRARY. THE CONTRACTOR SHALL PERFORM EACH OPERATION PRESCRIBED OR LISTED ACCORDING TO THE CONDITIONS STATED.

EXAMINATION OF SITE

ALL CONTRACTORS SUBMITTING PROPOSALS FOR THIS WORK SHALL FIRST EXAMINE THE SITE AND ALL CONDITIONS THEREON AND/OR THEREIN. ALL PROPOSALS SHALL TAKE INTO CONSIDERATION ALL SUCH CONDITIONS AS MAY AFFECT THE WORK UNDER THIS CONTRACT.

SCOPE

FURNISH ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY FOR A COMPLETE FULLY OPERATIVE HEATING, VENTILATING, AND AIR CONDITIONING SYSTEM EXCEPT AS SPECIFICALLY EXCLUDED BY THE DRAWINGS, AND/OR TENANT'S DIRECTIONS.

EQUIPMENT

- A. AIR CONDITIONING UNITS - UNITS SHALL BE FACTORY ASSEMBLED AND PRE-TESTED INCLUDING FANS, MOTORS, COILS, FILTERS, VARIABLES, PITCH DRIVES, ETC. ALL UNITS SHALL BE EQUIPPED WITH AN ECONOMIZER PACKAGE AND RELIEF DAMPER. UNITS SHALL HAVE NET CAPACITY RATINGS DETERMINED AT THE SPECIFIED DESIGN CONDITIONS. THESE NET CAPACITY RATINGS SHALL BE DETERMINED BY DEDUCTING FOR MOTOR HEAT. THE AIR CONDITIONING UNITS SUPPLIED SHALL HAVE A TOTAL SYSTEM ENERGY RATIO (ESR) AS PER CITY CODE. THIS ESR SHALL BE DETERMINED BY DIVIDING THE NET CAPACITY AS DEFINED ABOVE BY THE TOTAL INPUT WATTAGE. THE TOTAL INPUT WATTAGE IS TO INCLUDE THE WATTAGE OF ALL FAN MOTORS AND ASSOCIATED EQUIPMENT. CONTRACTOR WILL FURNISH VIBRATION ISOLATION AS REQUIRED AND RECOMMENDED BY EQUIPMENT MANUFACTURER.
- B. AIR COOLED CONDENSING UNITS - UNITS SHALL BE FACTORY ASSEMBLED AND PRE-TESTED, AND WILL INCLUDE HEAVY GALVANIZED STEEL HOUSING FINISHED WITH BAKED ENAMEL. AIR COOLED CONDENSERS WITH COPPER TUBES AND ALUMINUM FINS, CONTROL PANEL, COMPRESSOR HIGH AND LOW PRESSURE CUTOUPS, MUFFLERS, CRANKCASE HEATERS, LIQUID RECEIVE, ETC. COMPRESSORS SHALL BE OF THE HERMETICALLY SEALED OR SEMI-HERMETICALLY SEALED TYPE. (LOW AMBIENT CONTROL STD.)
- C. CENTRAL STATION AIR HANDLING EQUIPMENT - (IF SCHEDULED ON DRAWINGS) SHALL BE LOW TO MEDIUM PRESSURE SINGLE ZONE DRAUGHT UNITS EQUAL TO TRANE OR CARRIER. THEY SHALL BE COMPLETE WITH COOLING AND/OR HEATING COILS AND ACCESSORIES AS SPECIFIED ON THE PLANS.
- RELIEF AIR FANS
1. GRAVITY RELIEF - EQUAL TO BREIDERT TYPE "RLO" WITH INTEGRAL BACKDRAFT DAMPER AND INSECT SCREEN.
2. POWER RELIEF - EQUAL TO BREIDERT TYPE "LO-SET" SET WITH MOTORIZED DAMPER AND INTEGRAL BACKDRAFT DAMPER AND INSECT SCREEN.
- D. ELECTRIC STRIP HEATER - EACH STRIP HEATER SHALL BE CONSTRUCTED TO SLIP INTO THE DUCT THROUGH A RECTANGULAR OPENING IN THE SIDE. EACH STRIP HEATER SHALL BE FURNISHED COMPLETE WITH BUILT-IN MAGNETIC CONTACTORS, AIR FLOW SWITCH, AND FACTORY PREWIRED TO TERMINAL STRIPS FOR LINE AND CONTROL CONNECTIONS IN THE FIELD. A THERMAL CUTOFF SHALL BE FURNISHED WITH EACH STRIP HEATER TO PROTECT THE HEATER AGAINST AIR FAILURE. THE COMPLETE HEATING UNIT SHALL BE LISTED BY UNDERWRITER'S LABORATORIES, INC. COILS SHALL BE ARRANGED FOR MINIMUM TWO-STAGE CONTROL. LOOK AND ABOVE.
- E. FILTERS - FILTERS SHALL BE OF THE THROW AWAY TYPE WHEREVER POSSIBLE. IF FILTERS ARE OF NECESSITY THE PERMANENT TYPE, THEN THEY MUST BE OF THE CLEANABLE, HIGH VELOCITY TYPE AND SHALL BE AMERICAN AIR FILTERS, AIR MAYS, EVANS, OR APPROVED EQUAL. FILTERS SHALL BE OF THE OPTIMUM THICKNESS AND DESIGN FACE VELOCITY SHALL NOT EXCEED 550 FPM. INSTALLATION OF THE AIR CONDITIONING UNIT SHALL BE SUCH SO AS TO NOT IMPEDE ACCESS TO THE FILTERS. IF THE FILTERS ARE IN FRAME HOLDERS, THEN SUCH HOLDERS SHALL BE PROVIDED WITH A LEFT HANDLE.
- G. ALL SINGLE STAGE UNITS WILL BE EQUIPPED WITH MULTI-STAGE THERMOSTAT. A DUAL STAGE UNIT WILL BE EQUIPPED WITH A DAY/NIGHT THERMOSTAT ARRANGEMENT. DESIGN AND STANDARD CONDITIONS FOR THERMOSTAT OPERATION WILL BE AS FOLLOWS:

COOLING: 72 F MINIMUM OCCUPIED COOLING TEMPERATURE
85 F COOLING NIGHT SETBACK.

HEATING: 65 F MAXIMUM OCCUPIED HEATING TEMPERATURE
58 F HEATING NIGHT SETBACK.

- H. THE HVAC SUBCONTRACTOR SHALL IDENTIFY ALL ROOF MOUNTED HVAC EQUIPMENT AND APPARATUS WITH 2" HIGH PAINTED STENCILED STORE NAME ON ALL SIDES OF EQUIPMENT.

DUCTWORK

- A. SQUARE AND RECTANGULAR DUCTWORK SHALL BE CONSTRUCTED OF NEW GALVANIZED PRIME GRADE SHEET STEEL OF THE FOLLOWING GAUGES:

DUCT SIZE	GAUGE
12" AND LESS	NO. 26 U.S. GAUGE
13" TO 30"	NO. 24 U.S. GAUGE
31" TO 54"	NO. 22 U.S. GAUGE
55" TO 84"	NO. 20 U.S. GAUGE
85" AND OVER	NO. 18 U.S. GAUGE

- B. SQUARE AND RECTANGULAR DUCTWORK SHALL BE CONSTRUCTED AS FOLLOWS:

SIZE	METHOD
12" AND LESS	"S" AND DRIVE CLEATS
13" TO 30"	"L" STANDING SYSTEMS AND 3'-0" CENTERS
31" TO 54"	1-1/4" STANDING SEAMS ON 3'-0" CENTERS

ROUND DUCTWORK SHALL BE CONSTRUCTED OF NEW GALVANIZED PRIME GRADE SHEET STEEL OF THE FOLLOWING GAUGES:

DUCT SIZE (DIAMETER)	DUCTS	FITTINGS
8" AND LESS	24	22
9" TO 18"	22	20
19" TO 30"	20	18

ALL 90 DEGREE ELBOWS FOR ROUND DUCTWORK SHALL BE FIVE (5) PIECE. ALL LONGITUDINAL SEAMS SHALL BE FORMED BY PITTSBURGH LOCK JOINTS SHALL BE SWAGGED WITH ONE-HALF INCH (1/2") OVERLAP.

- C. ALL SUPPLY AIR DUCTS (HEATING AND COOLING) AND RETURN AIR DUCTS AND OUTSIDE AIR DUCTS SHALL BE GALVANIZED STEEL WITH MINIMUM 1-1/2" THICK ACOUSTICAL AND THERMAL INSULATION WITH AN R-VALUE OF 5.0 ALL EXHAUST AND RELIEF AIR DUCTS SHALL BE GALVANIZED STEEL. NO INSULATION REQUIRED ON EXPOSED DUCTWORK.
- D. CONTRACTOR WILL INSTALL INSECT SCREENS ON ALL DUCT OPENINGS WHICH LEAD TO OR ARE OUTDOORS. INSECT SCREENS SHALL BE 10 GAUGE, ONE-HALF INCH (1/2") MESH IN REMOVABLE GALVANIZED STEEL FRAMES.
- E. ALL DUCTWORK SHALL BE DESIGNED IN ACCORDANCE WITH THE PROCEDURES DESCRIBED IN THE AMERICAN SOCIETY OF HEATING REFRIGERATION AND AIR CONDITIONING ENGINEERS GUIDE (ASHRAE) AND FABRICATED AND INSTALLED IN ACCORDANCE WITH THE LATEST METHODS RECOMMENDED IN THE SHEETMETAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION (SMACNA) LOW VELOCITY DUCT MANUAL, LATEST EDITION.

HANGERS AND SUPPORTS

- A. ALL HORIZONTAL DUCTS HAVING A DIMENSION OF 40 INCHES AND LESS SHALL BE SUPPORTED BY MEANS OF BAND IRON HANGERS OF NO. 18 U.S. GAUGE ATTACHED TO THE DUCT BY MEANS OF RIVETS, SCREWS, OR CLAMPS, AND FASTENED TO STRUCTURE ABOVE BY TOGGLE BOLTS OR OTHER MEANS. EACH SECTION OF DUCTWORK SHALL HAVE AT LEAST ONE PAIR OF SUPPORTS. VERTICAL DUCTS SHALL BE SUPPORTED WITH 1/4" x 1-1/4" x 1-1/4" ANGLES WHERE THEY PASS THROUGH THE FLOOR LINES.
- B. ALL HORIZONTAL DUCTS HAVING A DIMENSION OF 40 INCHES AND MORE SHALL BE SUPPORTED BY MEANS OF ANGLE IRON TRAPEZE HANGERS. EACH SECTION OF DUCTWORK SHALL HAVE AT LEAST ONE PAIR OF SUPPORTS.
- C. EXPOSED DUCT SHALL BE HUNG WITH AIRLINE CABLE.

FLASHING

- A. CONTRACTOR WILL PROVIDE WATER TIGHT 24 GA. SHEET METAL FLASHINGS AT ALL EXTERIOR WALLS AND ROOF PENETRATIONS.
- B. ALL CUTTING OF ROOF OPENINGS, SUPPORTS FOR ROOF OPENINGS, PITCH PANS, ROOF CURBS, FLASHINGS, COUNTER FLASHINGS, REPAIR TO ROOF, ETC. ASSOCIATED WITH HVAC SUBCONTRACTOR SHALL BE THE RESPONSIBILITY AND PART OF THE CONTRACTOR'S ROOFERS FOR THIS WORK SO AS TO MAINTAIN THE ROOF BOND.

DAMPERS

- A. SPLITTER DAMPERS SHALL BE FABRICATED OF SHEET STEEL NOT LESS THAN NO. 16 U.S. GAUGE WITH THE LEADING EDGE HEMMED. EACH DAMPER SHALL BE LARGE ENOUGH TO COVER THE SMALLER OF THE TWO OPENINGS IT CONTROLS. DAMPERS SHALL BE CONTROLLED AS FOLLOWS:
- EXPOSED OR ACCESSIBLE DUCTWORK - LOCKING QUADRANTS EQUAL TO YOUNG REGULATOR NO. 1 WITH DAMPER ROD END BEARINGS ON OPPOSITE END.

CONCEALED DUCTWORK - LOCKING QUADRANT EQUAL TO YOUNG REGULATOR NO. 315 (CHROMIUM PLATED WITH DAMPER ROD END BEARINGS ON BOTH ENDS).

- B. VOLUME DAMPERS SHALL BE OF THE OPPOSED INTERLOCKING TYPE AS MANUFACTURED BY AMERICAN FOUNDRY AND FURNACES CO. (AFFCO) OR EQUAL. BLADES SHALL BE OF NO. 16 GAUGE SHEET METAL AND SHALL NOT EXCEED 48" IN LENGTH OR 12" IN WIDTH. BLADES SHALL BE ON ONE-HALF INCH (1/2") DIAMETER RUSTPROOF AXLE. BEARINGS SHALL BE OF THE SELF-LUBRICATING FERRULE TYPE.
- C. JOB FABRICATED TURNING VANES SHALL BE ACCEPTABLE IN SQUARE ELBOWS. PROVIDE AND INSTALL BARBER-COLMAN AIRTURNS OR EQUAL. TURNING VANES SHALL BE OF THE SAME GAUGE METAL AS THE DUCT IN WHICH THEY ARE INSTALLED. RADIUS ELBOWS SHALL HAVE A CENTER-LINE RADIUS OF ONE AND ONE-HALF (1-1/2) TIMES THE DUCT WIDTH.

FIBROUS GLASS DUCT SYSTEMS OPTION

AT HIS OPTION, THE CONTRACTOR MAY FURNISH OWENS-CORNING BOOFR OR BOOFK OR EQUAL FOR ALL SUPPLY AND RETURN DUCTWORK WHERE THE AIR VELOCITY IS UNDER 2400 FPM, STATIC PRESSURE IS 2" OR LESS AND THE AIR TEMPERATURE IS 250 F OR LESS. SYSTEM SHALL BE FABRICATED, REINFORCED AND INSTALLED ACCORDING TO THE "SMACNA" PUBLICATION - FIBROUS GLASS DUCT CONSTRUCTION STANDARDS, FOURTH EDITION, 1975.

ALL JOINTS ARE TO BE SEALED WITH 2-1/2" "SMACNA" APPROVED PRESSURE SENSITIVE ALUMINUM TAPE MEETING AFTS 100-73 STANDARDS AND THE REQUIREMENTS OF U.L. 181. APPLICATION SHALL BE IN ACCORDANCE WITH AFTS 101-73. (REFER TO MANUFACTURER'S INSTRUCTION SHEET FOR SPECIFIC DETAILS FOR U.L. 181 REQUIREMENTS.) RECOMMEND FASSON 0805. DO NOT APPLY AT TEMPERATURE BELOW 32 F.

DUCTWORK - EXCEPTIONS
DUCTWORK FOR EXHAUSTING AIR OR OUTSIDE SUPPLY AIR SHALL BE ALL METAL AND CONSTRUCTED ACCORDING TO RECOMMENDED PRACTICES AS FOUND IN THE LATEST ISSUE OF ASHRAE.

SUPPORT OF DUCT SYSTEM
DUCTWORK SHALL BE SUPPORTED AT ALL TURNS AND TRANSITIONS AND NOT MORE THAN 8' O.C. FOR STRAIGHT DUCTS UP TO 35" TO 54" MAXIMUM DIMENSION, 6' O.C. AND DUCTS OVER 60" MAXIMUM DIMENSION, 4' O.C.

HANGER DESIGN SHALL BE AS DESCRIBED IN THE LATEST EDITION OF THE "SMACNA" MANUAL. REINFORCEMENT MEMBERS MAY BE USED TO SUPPORT THE DUCT SYSTEM PROVIDED DETAILS OUTLINED IN THE AFOREMENTIONED DOCUMENTS ARE ADHERED TO.

REINFORCEMENT
ALL DUCTS REQUIRING REINFORCEMENT SHALL BE REINFORCED ACCORDING TO THE LATEST EDITION OF "SMACNA" MANUAL.

MATERIALS FOR REINFORCEMENT MEMBERS SHALL BE GALVANIZED STEEL. ALL SCREWS AND WASHERS SHALL BE PLATED OR GALVANIZED.

ACCESSORY ITEMS

ALL MANUAL DAMPERS, FIRE DAMPERS, TURNING VANES, REGISTER CONNECTIONS, ACCESS DOORS OR OTHER ASSOCIATED ACCESSORIES SHALL BE INSTALLED ACCORDING TO THE LATEST PUBLICATION OF "SMACNA" MANUAL.

PIPING

- A. PIPING AND FITTINGS SHALL BE OF THE HEIGHTS AND TYPES SHOWN ON THE DRAWINGS. SIZES SHOWN ON THE DRAWINGS ARE NOMINAL PIPE SIZES.

- B. ALL PIPING SHALL BE INSTALLED PARALLEL TO, OR AT RIGHT ANGLES WITH THE BUILDING WALLS AND PARTITIONS AND SHALL BE INSTALLED WITH THE PROPER PITCH.

- C. ALL PIPING SHALL BE UPENDED AND ROUNDED TO REMOVE ANY FOREIGN MATTER PRESENT AND SHALL BE SWABBED IF NECESSARY.

PLUMBING MATERIALS

- A. SANITARY SEWER - CAST IRON OR SCH. 40 PVC MAY BE USED UNLESS LANDLORD OR CITY REQUIREMENTS DIFFER. VENTS SHALL BE SCH. 40 PVC UNLESS LANDLORD OR CITY REQUIREMENTS REQUIRE CAST IRON. 40
- B. DOMESTIC WATER AND HOT WATER PIPING SHALL BE COPPER TYPE "L" INSULATED WITH ARMAFLEX OR EQUIVALENT INSULATING TO A THICKNESS OF 1".
- C. GAS PIPING SHALL BE BLACK STEEL SCHEDULED 40 WITH SCREWED FITTINGS.
- D. CHILLED WATER SUPPLY AND RETURN PIPING SHALL BE GALVANIZED STEEL PIPE (STANDARD WALL) OR TYPE "M" HARD COPPER TUBING. ALL PIPING SHALL BE INSULATED WITH 1" THICK OWENS CORNING FIBERGLASS 25 AS/J55L OR EQUAL.

MAKING UP PIPE

- A. SCREWED PIPE SHALL BE MADE UP WITH PIPE COMPOUND APPLIED TO THE MALE THREAD WITH NOT MORE THAN TWO THREADS LEFT EXPOSED. PIPE SHALL BE REAMED AFTER THREADING.
- B. BELOW GRADE SANITARY PIPING SHALL BE CAST IRON PIPE AND SHALL BE MADE UP WITH ONE THIRD OF THE HUB CAULKED WITH FIRST QUALITY OAKUM, AND THE REMAINDER FILLED WITH FIRST QUALITY CAULKING AT ONE POURING AND CAULKED TIGHT. ABOVE GRADE TGC SHALL HAVE OPTION OF USING PVC AS CODE PERMITS.
- C. COPPER JOINTS SHALL BE MADE UP WITH 95-5 SOLDER.

HANGERS AND SUPPORTS

HORIZONTAL PIPING SHALL BE SUPPORTED AT INTERVALS NOT TO EXCEED 10'-0" WITH SHIMVEL SPLIT PIPE HANGERS EQUAL TO CRANE NO. 194F OR GRINNELL NO. 104. VERTICAL PIPING SHALL BE SUPPORTED BY MEANS OF WROUGHT IRON CLAMPS SUSPENDED FROM THE UNDERSIDE OF STRUCTURE WITH HANGER RODS.

CLEANOUTS

CLEANOUTS SHALL BE AS MANUFACTURED BY JOSAM, ZURN MFG. CO. OR EQUAL AND SHALL BE INSTALLED AT ALL BENDS, ANGLES, AND ENDS OF ALL WASTE AND SEWER LINES, AS CALLED FOR ON THE DRAWINGS, AND AS REQUIRED BY LOCAL CODES. ALL CLEANOUTS SHALL BE BROUGHT TO GRADE, AND IN ALL CASES, SHALL BE PROVIDED WITH SUFFICIENT SPACE FOR RODDING.

VALVES

ALL VALVES SHALL BE BRASS AND MANUFACTURED BY CRANE, NIBCO, STOCKHAM, LUNKENHEIMER, NORDSTROM, GRINNELL OR EQUAL.

SPRINKLER SYSTEM

- A. SHOP DRAWINGS - THE SPRINKLER CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE TENANT'S LANDLORD AND TO THE APPROPRIATE RATING BUREAU FOR THEIR APPROVAL. A COPY OF THE APPROVAL LETTER FROM THE RATING BUREAU SHALL BE FORWARDED TO THE TENANT AND TENANT'S LANDLORD.
- B. SPRINKLER HEADS - SHOW WINDOWS - HIGH TEMPERATURE, CHROME PLATED, COMPLETELY RECESSED TYPE. SALES AREA - CHROME PLATED, SEMI-RECESSED TYPE. STORAGE, TOILET AND WORK AREAS WITH CEILINGS - BRASS, PENDANT TYPE. STORAGE AND WORK AREAS WITHOUT CEILINGS - BRASS UPRIGHT TYPE. (REFER TO DWG. M1)

ROUGH-INS

FOR SECOND LEVEL STORES, THE TENANT'S GENERAL CONTRACTOR SHALL RUN ALL LINES REQUIRED FOR PLUMBING ROUGH-INS TIGHT AGAINST THE UNDERSIDE OF THE SECOND FLOOR LEVEL. THE SECOND FLOOR STRUCTURAL SLAB SHALL BE CORED AS REQUIRED TO INSTALL THESE ITEMS AT THE LOCATIONS SHOWN ON THE PLANS.

TESTING AND ADJUSTING

CONTRACTOR WILL DEMONSTRATE OPERATION OF SYSTEM TO FULL SATISFACTION OF TENANT, WILL BALANCE AIR FLOW IN ACCORDANCE WITH AIR QUANTITIES ON DRAWINGS AND WILL RECORD VOLUME READINGS IN ACCORDANCE WITH ASHRAE AND PROVIDE SAME TO TENANT. GAS PIPING SHALL WITHSTAND AIR PRESSURE TESTING PER UNIFORM PLUMBING CODE.

GUARANTEE

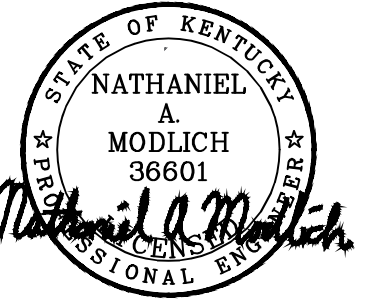
ALL MATERIALS, EQUIPMENT, AND WORKMANSHIP SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR AFTER DATE OF ACCEPTANCE. THE COMPLETED SYSTEM SHALL BE FULLY OPERATIVE AND ACCEPTANCE BY TENANT SHALL BE A CONDITION OF THIS CONTRACT. ALL WORK FOUND TO BE DEFECTIVE SHALL BE REPAIRED OR REPLACED BY THIS SUBCONTRACTOR WITHOUT ADDITIONAL CHARGE TO THE TENANT.

MECHANICAL

TEMPORARY SERVICES
THE CONTRACTOR SHALL PROVIDE THE FOLLOWING SPECIFIC ITEMS OF TEMPORARY SERVICES:

- A. TELEPHONE - THE TENANT'S GENERAL CONTRACTOR SHALL INSTALL A JOB SITE TELEPHONE AND NOTIFY TENANT OF THE TELEPHONE NUMBER AND THE NAME OF THE SUPERINTENDENT.
- B. TEMPORARY WATER - WATER REQUIRED IN THE PERFORMANCE OF THE CONTRACT SHALL BE PROVIDED AND PAID FOR BY THE CONTRACTOR. WATER USED FOR HUMAN CONSUMPTION SHALL CONFORM TO REQUIREMENTS OF STATE AND LOCAL AUTHORITIES FOR POTABLE WATER.
- C. TEMPORARY ELECTRICITY - TEMPORARY ELECTRIC SERVICE REQUIRED IN THE PERFORMANCE OF THE CONTRACT SHALL BE FURNISHED AND PAID FOR BY THE CONTRACTOR WHO SHALL FURNISH, INSTALL, AND MAINTAIN ALL TEMPORARY OVERHEAD CONSTRUCTION, METERS, DROPS, AND OTHER WIRING AND FITTINGS FOR BOTH LIGHT AND POWER AT LOCATIONS REQUIRED IN THE WORK AND SHALL BEAR THE COST OF MAKING THE SERVICE CONNECTIONS. BEFORE FINAL ACCEPTANCE, TEMPORARY ELECTRICAL SERVICE FACILITIES INSTALLED BY THE CONTRACTOR SHALL BE REMOVED AND THE SERVICE CONNECTIONS SEVERED IN ACCEPTABLE MANNER.
- D. TEMPORARY HEAT - WHEN REQUIRED FOR PROPER INSTALLATION OR PROTECTION OF ANY PORTION OF THE WORK, THE CONTRACTOR SHALL FURNISH AND INSTALL TEMPORARY HEATING UNITS AS APPROVED BY THE LANDLORD OR LOCAL AUTHORITY.
- E. COST OF LANDLORD PROVIDED UTILITY SERVICES - IF THE LANDLORD ELECTS TO PROVIDE TEMPORARY SERVICES, THE CONTRACTOR WILL BE SO INFORMED BY THE TENANT. THE CONTRACTOR SHALL MAKE PROVISIONS OR COORDINATE WITH LANDLORD'S GENERAL CONTRACTOR TO PAY THE COST OF SAID TEMPORARY CONSTRUCTION AND UTILITY SERVICES.

JOB#: 22-1897
STORE#:



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REVISIONS

FINALS: 12.06.2022
DELTA 1: BLDG. COMM. 04.07.2022

MECHANICAL
SPECIFICATIONS

SHEET NUMBER

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