

GENERAL NOTES

GENERAL REQUIREMENTS:

- A. DRAWINGS. THE DRAWINGS ARE INTENDED TO DESCRIBE THE OVERALL SCOPE OF WORK. CONTRACTORS SHALL FIELD VERIFY EXISTING CONDITIONS AND ALERT ARCHITECT TO ANY UNFORESEEN CONSTRUCTION DIFFICULTIES BEFORE BEGINNING WORK. IN-FIELD REVISIONS SHALL NOT OCCUR WITHOUT ARCHITECT'S APPROVAL.
- B. PRE-CONSTRUCTION MEETING. PRIOR TO ANY CONSTRUCTION OR DEVELOPMENT ACTIVITY, THE CONTRACTOR SHALL SCHEDULE, WITH OWNERS APPROVAL, A PRE-CONSTRUCTION MEETING WITH THE LOCAL BUILDING DEPT. OR LOCAL PUBLIC WORKS DEPT. VERIFY WHICH AGENCY WOULD BE INVOLVED. THE CONTRACTOR SHALL PROVIDE LOCAL INSPECTOR WITH 24 HOURS NOTICE PRIOR TO INSPECTION
- C. TYPICAL WALL SECTIONS, FINISHES, AND DETAILS ARE NOT INDICATED EVERYWHERE THEY OCCUR ON PLANS, ELEVATIONS AND SECTIONS. REFER TO DETAILED DRAWINGS. CONTRACTOR TO PROVIDE AS IF DRAWN IN FULL.
- D. CODES / PERMITS / REGULATIONS. ALL EXTERIOR SIGNAGE MUST BE SUBMITTED AND REVIEWED UNDER SEPARATE PERMIT APPLICATION.

CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS NECESSARY OTHER THAN THE BUILDING PERMIT. CONTRACTOR SHALL ALSO PAY FOR ALL OTHER CHARGES, FEES OR COSTS CHARGED BY THE BUILDING AND CONSTRUCTION DEPARTMENTS, UTILITY AGENCIES OR PRIVATE COMPANIES WHICH REQUIRE SUCH COSTS FOR OR PRIOR TO INSTALLATIONS.

NOTHING IN THE DRAWINGS SHALL BE CONSTRUCTED TO PERMIT AN INSTALLATION IN VIOLATION OF APPLICABLE CODES AND/OR RESTRICTIONS. SHOULD ANY CHANGE IN THE DRAWINGS BE NECESSARY IN ORDER TO COMPLY WITH APPLICABLE CODES AND/OR REQUIREMENTS, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT AT ONCE AND CEASE WORK. ALL PARTS PERFORMED UNDER THIS CONTRACT SHALL BE IN FULL ACCORDANCE WITH THE LATEST RULES, REGULATIONS, RESTRICTIONS, REQUIREMENTS AND CODES.

- E. AMENDED BY GOVERNING CITY & ALL JURISDICTION RULES AND REGULATIONS. DIMENSIONS ARE SHOWN TO FACE OF MASONRY OR CENTERLINE OF OPENING, UNLESS DETAILED OTHERWISE ON DRAWINGS.

DO NOT SCALE DRAWINGS. THE CONTRACTOR SHALL USE DIMENSIONS SHOWN ON THE DRAWINGS AND ACTUAL FIELD MEASUREMENTS. NOTIFY THE ARCHITECT IF ANY DISCREPANCIES ARE FOUND.

THE CONTRACTOR SHALL VERIFY ALL ROUGH-IN DIMENSIONS FOR THE EQUIPMENT FURNISHED AND INSTALLED BY HIMSELF/HERSELF OR OTHERS.

THE CONTRACTOR SHALL CONSULT THE PLANS OF ALL TRADES FOR OPENINGS THROUGH SLABS, WALLS, CEILINGS AND ROOFS.

- F. SHOP DRAWINGS REVIEW. PROVIDE SHOP DRAWINGS FOR THE ARCHITECTS/OWNERS AND AS REQUIRED BY THE CITY PRIOR TO CONSTRUCTION.

- G. CONTRACTOR TO FRAME OPENINGS IN WALLS, CEILINGS AND FLOORS FOR H.V.A.C. AND OTHER MECHANICAL OR ELECTRICAL WORK WHERE REQUIRED AND NOT OTHERWISE SHOWN ON THE PLANS.

- H. COMPLY WITH APPLICABLE REGULATIONS FOR BARRIER-FREE FACILITIES INCLUDING:

- 1). MAXIMUM THRESHOLD HEIGHT TO BE ONE HALF INCH (1/2") ALONG ACCESSIBLE ROUTE OF TRAVEL.
- 2). STAIR NOSINGS TO BE FLUSH, SLIP RESISTANT AND ROUNDED TO RADIUS OF ONE HALF INCH (1/2") MAXIMUM.

DOORS/WINDOWS:

- A. GLAZING. PROVIDE GLAZING PER CITY CODES:
INSULATED UNITS SHALL BE CLASS 40 GLAZING WITH LOW ARGON GAS.

GLAZING IN LOCATIONS SUBJECT TO HUMAN IMPACT SUCH AS PANES IN DOORS, GLAZING WITHIN A 24" ARC OF A DOOR OPENING, GLAZING WITHIN 18" OF THE FLOOR (AND IS OVER 9 SQ. FT. PER PANEL) SHALL BE TEMPERED GLASS OR LAMINATED SAFETY GLASS PER CODE.

GLAZING U-VALUE (AMMA TESTED) U-40 MAXIMUM.

FIRE PROTECTION:

- ~~A. GO TO EXTEND THE EXISTING AUTOMATIC FIRE SPRINKLER SYSTEM AS REQUIRED - GET SYSTEM DESIGN APPROVED BY GOVERNING CITY'S BUILDING DEPARTMENT - AND FIRE DEPARTMENT PRIOR TO INSTALLATION (IF APPLICABLE).~~
- ~~NOTE: GO TO PROVIDE LIFE SAFETY MANAGEMENT IN THEIR BIDDING PROCESS~~

- B. PROVIDE FIRE EXTINGUISHERS AS REQUIRED BY INTERNATIONAL BUILDING CODE AND LOCATE PER FIRE MARSHAL'S DIRECTION. 1 FIRE EXTINGUISHER PER 3,000 S.F. OF BUILDING AREA WITHIN 75'-0" TRAVEL DISTANCE BETWEEN EXTINGUISHERS.

- C. MAINTAIN STRUCTURAL AND FIRE RESISTIVE INTEGRITY AT EXTERIOR AND RATED INTERIOR WALL PENETRATIONS FOR ELECTRICAL, MECHANICAL, PLUMBING AND COMMUNICATIONS CONDUITS, PIPED AND SIMILAR SYSTEMS PER CITY'S CODE.

THERMAL/MOISTURE PROTECTION:

- A. OPENINGS. ALL OPENINGS TO BE CAULKED, SEALED OR WEATHER-STRIPPED.
- ALL FLASHING AND ARCHITECTURAL SHEET METAL TO BE 24 GAUGE GALVANIZED STEEL, FACTORY PRIMED AND FIELD PAINTED. 10'-0" LENGTHS, PER SMACNA MANUAL UNLESS OTHERWISE NOTED.
- B. CAULKING AND SEALANTS. USE PRIMERS AS REQUIRED BY MANUFACTURER. BACKING RODS OR TAPE AS RECOMMENDED BY MANUFACTURER. USE POLYURETHANE SEALANTS AT CONCRETE FLOOR AND SIDEWALK JOINTS. ALL OTHER LOCATIONS USE POLYSULFIDE OR SILICONE.
- C. VAPOR BARRIERS. CONTINUOUS APPROVED VAPOR BARRIERS SHALL BE INSTALLED ON THE HEATED SIDE OF ALL THERMAL INSULATION INSTALLED.
- D. INSULATION. PROVIDE INSULATION PER LOCAL CODE, COMPONENT PERFORMANCE APPROACH.

GENERAL CONTRACTOR NOTE:
THE GC MUST SUBMIT SEPARATE DRAWINGS FOR SPRINKLER AND FIRE ALARM WORK AND SHALL BE UNDER SEPARATE PERMIT - WHEN APPLICABLE.

GENERAL NOTES:

1. PRIOR TO DEMOLITION, VERIFY IN FIELD EXISTING WALLS AND IF ANY STRUCTURAL COLUMNS EXIST. IF SO, CONTACT ARCHITECT IMMEDIATELY.
2. CONTRACTOR TO MAINTAIN PROPER LIGHTING, SANITATION AND VENTILATION AT ALL TIMES.
3. ALL WORK MUST BE APPROVED BY BUILDING INSPECTOR PRIOR TO COVERING WORK.
4. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN A WATER AND WEATHER TIGHT BUILDING.
5. ALL WORK TO BE PERFORMED TO CODE BY LICENSE CONTRACTORS PERFORMING WORK IN THEIR SPECIFIC TRADE ONLY.
6. ALL DESIGN, DRAWINGS, AND DETAILS REPRESENT COMPLETE WORK IN PLACE. ARCHITECT SHALL HAVE NO CONTROL OR CHANGE OF AND SHALL NOT BE RESPONSIBLE FOR CONSTRUCTION.
7. INTERIOR PARTITIONS NOTED ON PLANS MAY BE SHOWN AS NOMINAL DIMENSIONS, SUCH AS 5" INTERIOR WALL REFERS TO GYPSUM BOARD EACH OVER 3-5/8" STUDS. STUD SPACING IS 24" O.C.
8. ALL DEBRIS GENERATED FROM CONSTRUCTION MUST BE KEPT ON THE SITE IN EITHER AN ENCLOSED AREA OR HAULED AWAY DAILY, AND DISPOSED OF LEGALLY OFF-SITE.
9. EXTERIOR SIGNAGE IS NOT PART OF THIS CONTRACT OR PERMIT EXCEPT ELECTRICAL ROUGH-IN AND BLOCKING. SIGN CONTRACTOR SHALL MAKE SEPARATE SUBMITTAL TO THE CITY FOR REVIEW AND PERMIT.
10. KEEP ALL PIPING AND CONDUIT AS CLOSE TO WALLS AND ROOF DECK AS POSSIBLE AND ALL DUCTWORK AS CLOSE TO ROOF AS POSSIBLE. WHERE EXPOSED, ALL PIPING CONDUIT AND DUCTWORK SHALL BE PAINTED UNLESS NOTED. ALL PIPING CONDUIT SHALL BE ORGANIZED IN A NEAT MANNER RUNNING PARALLEL OR PERPENDICULAR TO ROOF FRAMING MEMBERS.
11. MAXIMUM FLAME SPREAD CLASSIFICATION OF FINISH MATERIALS USED ON INTERIOR WALLS AND CEILING SHALL NOT EXCEED THAT SET FORTH IN FLAME SPREAD TABLE OF THE BUILDING CODE.
12. VERIFY ALL DIMENSIONS IN THE FIELD PRIOR TO CONSTRUCTION AND COORDINATE WITH ARCHITECT ANY CONFLICTS WITH THE PLANS.
13. PERFORM THE REMOVAL, CUTTING, AND DRILLING WITH THE CARE USE OF THE SMALLEST TOOLS SO AS TO NOT DAMAGE THE STRUCTURAL INTEGRITY OF THE BUILDING.
14. TO SAW CUT AT EXISTING RESTROOM LOCATION, USE SAWS AND COREDRILLS. DO NOT USE JACKHAMMER UNDER ANY CIRCUMSTANCES.
15. GC TO COORDINATE FIRE ALARM INSTALL WITH LANDLORD, IF REQUIRED BY CITY.

SCOPE OF WORK:
INTERIOR TENANT IMPROVEMENT OF A REMODELED VACANT SPACE TO A NEW TROPICAL SMOOTHIE CAFE LOCATED WITHIN A RETAIL CENTER'S SHELL BUILDING. THE TRASH DUMPSTER SHALL BE PROVIDED BY THE LANDLORD.
CONSTRUCTION DUMPSTER PROVIDED BY TENANT'S GC

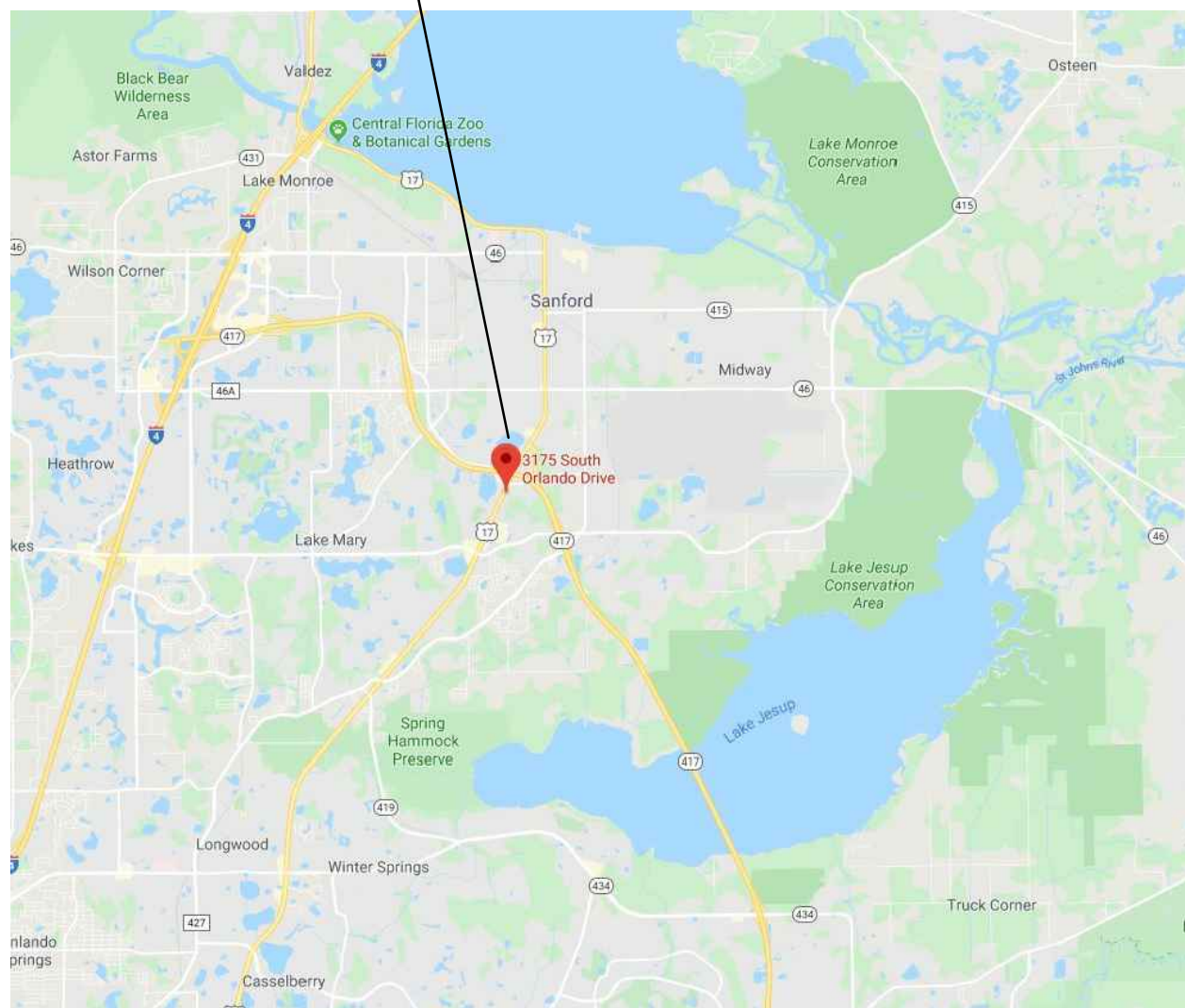
BUILDING CODES ADOPTED:
2017 FLORIDA BUILDING CODE (6th EDITION)
FLORIDA BUILDING CODE EXISTING BUILDING (6th EDITION)
FLORIDA BUILDING CODE ACCESSIBILITY (6th EDITION)
FLORIDA BUILDING CODE ENERGY CONSERVATION (6th EDITION)
FLORIDA BUILDING CODE FUEL GAS (6th EDITION)
FLORIDA BUILDING CODE MECHANICAL (6th EDITION)
FLORIDA BUILDING CODE PLUMBING (6th EDITION)
FLORIDA FIRE PREVENTION CODE (6th EDITION)
NATIONAL ELECTRICAL CODE (2014)
FLORIDA FIRE PREVENTION CODE (5TH EDITION)

NOTE: THIS IS A LEVEL 2 ALTERATION PER THE FLORIDA BUILDING CODE 6TH EDITION (2017 EXISTING)

ARCHITECT'S STATEMENT: TO THE BEST OF MY KNOWLEDGE THIS PROJECT COMPLIES WITH THE 2017 FLORIDA FIRE PREVENTION CODE 6TH EDITION AS STATED WITHIN CODE SUMMARY.

SITE MAP

PROJECT LOCATION



REFERENCE SYMBOLS

DOOR TAG		REFERENCE	
ROOM TAG		WALL SECTION REFERENCE	
DETAIL REFERENCE		EQUIPMENT REFERENCE	
REVISION			

ABBREVIATIONS

ACP	ACOUSTICAL CLG. PANEL	FLASH	FLASHING	PLAM	PLASTIC LAMINATE
ACT	ACOUSTICAL CLG. TILE	FOIC	FURNISHED BY OWNER	PLYW/D	PLYWOOD
AL	ALUMINUM	FO	INSTALLED BY CONTRACTOR	R	RISER, RADIUS
ALUM	ALUMINUM	FRP	FINISH OPENING	REBAR	REINFORCING BAR
ARCH	ARCHITECTURAL		FIBERGLASS REINFORCED	REF	REFERENCE
AVG	AVERAGE	FRT	PANELS	REV	REVISION
BLDG	BUILDING	GA	FIRE RETARDANT TREATED	RM, RMS	ROOM, ROOMS
BLKG	BLOCKING	GALV	GAUGE	RO	ROUGH OPENING
BR	BRICK	GL	GALVANIZED	S & V	SATIN AND VARNISH
CMU	CONCRETE BLOCK	GWB	GLASS	SC	SOLID CORE
CT	CERAMIC TILE	HDWE	GYPSUM WALLBOARD	SCHED	SCHEDULE
CFM	CUBIC FEET PER MINUTE	HM	HARDWARE	SEC	SECTION
CL	CENTER LINE	HOR	HOLLOW METAL	SHT	SHEET
CLG	CEILING	HT	HORIZONTAL	SPECS	SPECIFICATIONS
CONC	CONCRETE	HW	HEIGHT	SF	SQUARE FEET
CONT	CONTINUOUS	HWT	HOT WATER	ST	STEEL
CW	COLD WATER	LAV	HOT WATER HEATER	STOR	STORAGE
DTL	DETAIL	LAVT	HOT WATER TANK	STRUCT	STRUCTURAL
DF	DRINKING FOUNTAIN	LT	LAVATORY	SUSP	SUSPENDED
DIA	DIAMETER	MT'L	LIGHT	SV	SHEET VINYL
DIM	DIMENSION	MAX	MATERIAL	SS	STAINLESS STEEL
DN	DOWN	MTL	MAXIMUM	TB	TELEPHONE MOUNTING BOARD
DR	DOOR	MIN	METAL	TD	TRENCH DRAIN
DS	DOWNSPOUT	MO	MINIMUM	THRESH	THRESHOLD
DWG	DRAWING	MUL	MASONRY OPENING	TYP	TYPICAL
EA	EACH	NIC	MULLION	UNFIN	UNFINISHED
ELEV	ELEVATION	N/A	NOT APPLICABLE	UR	URINAL
EXIST	EXISTING	NIC	NOT IN THIS CONTRACT	VCT	VINYL COMPOSITION TILE
OR EX		NO	NUMBER	VERT	VERTICAL
EXT	EXTERIOR	NOM	NOMINAL	VST	VINYL SAFETY TILE
FDN	FOUNDATION	NTS	NOT TO SCALE	W	WIDTH
FIN	FINISH	OC	ON CENTER	WC	WATER CLOSET
FD	FLOOR DRAIN	OD	OUTSIDE DIMENSION	WD	WOOD
FL	FLOOR	PT	PAINT	WDW	WINDOW
				WP	WATERPROOF

CONTACT INFORMATION

TENANT INFORMATION: R&R TROPICS NO. 2 LLC RICHARD PETTINGILL 710 W CRANES CIRLCE ALTAMONTE SPRINGS, FL 32701 410-430-9732	CORPORATE INFORMATION: TROPICAL SMOOTHIE CAFE 1117 Perimeter Center W W200, Atlanta, GA 30338	BUILDING DEPARTMENT: CITY OF SANFORD 300 N. PARK AVE SANFORD, FL 32771 407-688-5000 ONLINE SUBMITTAL REQUIRED
PROJECT MANAGER: ATTN: CHRIS NEAL 6501 E. Greenway Pkwy #103-707 SCOTTSDALE, AZ 85254 P: 480-297-5577 cneal@neptunedg.com	LANDLORD: RB SEMINOLE LLC C/O RD MANAGEMENT LLC 810 SEVENTH AVE - 10TH FLOOR NEW YORK NY 10019 212-265-6600	HEALTH DEPARTMENT: FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES 3125 CORNER BLVD., STE D TALLAHASSEE, FL 92399 850-245-5595
GRAND RESTAURANT / HOCKENBERGS FOODSERVICE EQUIPMENT & SUPPLY 3650 ANNAPOLIS LANE, N. #107 PLYMOUTH, MN 55447 MARK CDX, CFSP (763) 746-3410 markc@hockenbergs.com	QUALSERV 7400 S. 28th Street Fort Smith, AR 72908 (800) 643-2980 Email: contactus@qualservcorp.com	MICROS/ORACLE (PDS PROVIDER) GARRETT STON (561) 248-9040 garrett.ston@oracle.com RETAIL TECHNOLOGY GROUP 1663 FENTON BUSINESS PARK COURT FENTON, MD 63026 (PDS INSTALLER) Arny.Kubala@rtgpos.com 836-680-8226
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AN INTERIOR TENANT IMPROVEMENT

tropical SMOOTHIE CAFE

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SEMINOLE CENTRE
3175 SOUTH ORLANDO DRIVE #400
SANFORD, FL 32773
STORE (FL-278)

PROJECT DATA

PROJECT NAME:	TROPICAL SMOOTHIE CAFE
PROJECT ADDRESS:	3175 SOUTH ORLANDO DRIVE #400 SANFORD, FL 32773
LOCAL JURISDICTION:	BUILDING & SAFETY - CITY OF SANFORD HEALTH: FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES DIVISION OF FOOD SAFETY
CODES UTILIZED:	2017 FLORIDA BUILDING CODES (6TH EDITION)
PROPOSED USE:	RESTAURANT
CONSTRUCTION TYPE:	IIB- NOT SPRINKLERED
OCCUPANCY GROUP:	M (OCCUPANT LOAD UNDER 50 PERSONS SHALL BE CLASSIFIED AS A GROUP M)
TOTAL S.F.:	1,268 S.F. PER LEASE

DINING AREA 320 S.F. / 15 = 22
KITCHEN/SERVICE AREA 320 S.F. / 200 = 2
HALLWAY/ RESTROOM 140 S.F. / 0 = 0

ACTUAL INTERIOR SEATING: 19 SEATS
TOTAL OCCUPANT LOAD: 24- SEE SHEET A1.1

1 EXIT(S) REQUIRED, 1 EXIT(S) PROVIDED (OCCUPANT LOAD < 50)
2 RESTROOMS REQUIRED, 2 RESTROOMS PROVIDED

NO STRUCTURAL WORK IS TO BE PERFORMED UNDER THIS PERMIT.
NO SITE WORK IS TO BE PERFORMED UNDER THIS PERMIT.

(3) EMPLOYEES MAXIMUM

EXTERIOR SIGN UNDER SEPARATE PERMIT BY SIGN COMPANY - INSTALLED BY SIGN COMPANY

NOTE: NO COOKING ON PREMISES WITH THE EXCEPTION OF ITEMS 25, 27 & 57 SHOWN ON A5.0 - PER MFG HOODS ARE NOT REQUIRED

INDEX OF SHEETS

A1.0	TITLE SHEET
A1.1	EGRESS / EXIT PLAN AND RESPONSIBILITY SCHEDULE
A1.2	ACCESSIBILITY AND SPECIFICATIONS
A1.3	EXISTING SITE PLAN / DEMO PLAN
A2.0	FLOOR PLAN
A2.1	FINISH PLAN
A2.2	LOW VOLTAGE PLAN
A2.3	WALL BACKING PLAN
A3.0	REFLECTED CEILING PLAN
A4.0	ELEVATIONS
A4.1	ELEVATIONS
A5.0	EQUIPMENT / EQUIPMENT PLAN
A6.0	DETAILS
A6.1	DETAILS
A6.2	DETAILS
A7.0	SPECIFICATIONS
A7.1	SPECIFICATIONS

M1	MECHANICAL FLOOR PLAN
M2	MECHANICAL DETAILS
M3	MECHANICAL SPECIFICATIONS
P1	PLUMBING SYMBOLS & SCHEDULES
P2	PLUMBING PLANS
P3	PLUMBING DETAILS
P4	SPECIFICATIONS

E1	ELECTRICAL NOTING
E2	ELECTRICAL LIGHTING- ROOF PLAN
E3	POWER PLAN-SINGLE-LINE DIAGRAM, & PANEL

SET DATED: 1.3.2020

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SANFORD, FL 32773
STORE #FL-278

tropical SMOOTHIE CAFE
eat better. feel better.

TSC: FL-278

REVISION
LANDLORD
1.3.2020

DATE: 12.26.2019

REVIEW SET
NOT FOR
PERMIT

COVER SHEET

A1.0

GENERAL NOTES

1. ALL ROUGH-INS AND CONNECTIONS SHOWN ON THESE PLANS ARE FOR FOOD SERVICE FIXTURES AND EQUIPMENT PROVIDED BY THE EQUIPMENT VENDOR OR BY OUTSIDE PARTIES LISTED AS 'VENDOR' OR 'BY OTHERS'. ALL INFORMATION PROVIDED ON THESE PLANS ARE TO BE VERIFIED BY THE GENERAL CONTRACTOR THRU THE SPECIFICATIONS MANUAL PROVIDED BY THE EQUIPMENT VENDOR OR BY CONSULTING THE APPROPRIATE OUTSIDE PARTIES .
2. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR ADJUSTING ACTUAL ROUGH-IN LOCATIONS AS NEEDED BY FIELD CONDITIONS FOR EQUIPMENT UTILITY CONNECTION(S) PER MANUFACTURER'S CURRENT SPECIFICATION SHEETS.
3. SERVICE ROUGH-INS AND EQUIPMENT CONNECTIONS MUST BE MADE BY APPROPRIATE TRADES.
4. ALL BUILDING PENETRATIONS REQUIRED FOR FOOD SERVICE EQUIPMENT INSTALLATION SHALL BE PROVIDED BY THE GENERAL CONTRACTOR AND SEALED IN ACCORDANCE WITH LOCAL CODE REQUIREMENTS.
5. ALL WALL SUPPORT (BLOCKING) FOR WALL HUNG EQUIPMENT SHALL BE PROVIDED BY GENERAL CONTRACTOR PER PLAN.
6. GENERAL CONTRACTOR IS RESPONSIBLE FOR ENSURING PROPER WORKING CONDITION AND MEETING CURRENT LOCAL CODE REQUIREMENTS FOR ANY / ALL EQUIPMENT LISTED ON THESE PLANS AS 'EXISTING'.
7. GENERAL CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND WALL LOCATIONS. ALL DIMENSIONS ARE TO FINISHED WALL AND/OR CENTER LINES OF COLUMNS.
8. ANY DIMENSIONS LABELED "HOLD" OR "CRITICAL" MUST MAINTAIN THAT FINISHED DIMENSION. ALL CORNERS TO BE 90° OR AS SPECIFIED. ANY DISCREPANCIES WITH SPECIFIED DIMENSIONS REQUIRING TRIM OR EQUIPMENT MODIFICATION IS TO BE FURNISHED AND INSTALLED BY THE GENERAL CONTRACTOR AT THEIR EXPENSE.
9. GENERAL CONTRACTOR / OWNER SHALL BE RESPONSIBLE FOR INSURING THAT ALL ADDENDA AND CHANGES TO BUILDING PLANS WHICH ARE MADE PRIOR TO AND DURING CONSTRUCTION ARE PROVIDED TO TROPICAL SMOOTHIE CAFE.
10. THESE DRAWINGS ARE NOT MEANT TO REPLACE ARCHITECTURAL OR ENGINEERING PLANS. IF DISCREPANCIES EXIST, REFER TO THE ARCHITECTS CONSTRUCTION DOCUMENTS.
11. THE LATEST DATED REVISION SUPERSEDES AND VOIDS ALL PREVIOUS DRAWINGS. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR COLLECTING ALL OLD COPIES OF THE PLAN SET & DISTRIBUTING CURRENT COPIES TO ALL SUBCONTRACTORS.
12. REFER TO THE EQUIPMENT VENDOR WITH ANY CONCERNS OR QUESTIONS REGARDING DELIVERY AND STORAGE OF EQUIPMENT.
13. FOLLOWING FINAL FIXTURES INSTALLATION THE GENERAL CONTRACTOR SHALL CLEAN-UP AND DISPOSE OF ALL TRASH, CARTONS, CREATES, DEBRIS, ETC.
14. GENERAL CONTRACTOR TO REPLACE ALL HVAC FILTERS ONCE CONSTRUCTION IS COMPLETE
15. GC MUST LOCATE THE EXISTING MAIN SEWER WASTE LINE PRIOR TO ISSUANCE OF PERMIT. GC TO INCLUDE CAMERA / X-RAY OF SLAB FOR LOCATION OF WASTE LINE WITHIN BID. GC MUST PROVIDE SKETCH TO PLUMBING ENGINEER PRIOR TO PERMIT ISSUANCE. IF RECEIVED AFTER PERMIT ISSUANCE ANY COST TO REVISE PLANS WILL BE BILLED TO THE GENERAL CONTRACTOR.

ABBREVIATION KEY

ABBR.	ABBREVIATION DESCRIPTION
F	FRANCHISEE
EV	EQUIPMENT VENDOR
GC	GENERAL CONTRACTOR
EC	ELECTRICAL CONTRACTOR
PC	PLUMBING CONTRACTOR
CC	CONTRACTOR'S CHOICE
LJ	LOCAL JURISDICTION
SC	SIGN COMPANY
VLL	VERIFY WITH LANDLORD
V	VENDOR
M	MICROS
RTG	RETAIL TECHNOLOGY GROUP
UMI	ULTERIOR MOTIVES INTERNATIONAL
HL	HERMITAGE LIGHTING
MMM	MUZAK (MOOD MEDIA)
C	CINTAS
UC	UTILITY COMPANY
SFS	SEE FINISH SCHEDULE
SPS	SEE PLUMBING SCHEDULE

RESPONSIBILITY MATRIX

NO.	QTY	EQUIPMENT DESCRIPTION	PROVIDER	VENDOR	INSTALLER
		GENERAL REQUIREMENTS (DIVISION 1)			
*		BUILDING PERMIT	F	LJ	
		PERMIT FEES	F	LJ	
		UTILITIES	F	UC	
		FIELD VERIFY ALL EXISTING CONDITIONS	GC	GC	
		TEMPORARY FACILITIES	GC	CC	GC
		TRASH REMOVAL / CLEAN UP	GC	CC	GC
		CONCRETE (DIVISION 3)			
		NEW PATIO POUR AT EXISTING SIDEWALK	GC	CC	GC
		SLAB - NEW POUR / EXISTING	GC	CC	GC
		FLOOR/SLAB MOISTURE TEST	GC	CC	GC
		METALS, WOOD & PLASTICS (DIVISION 5 & 6)			
		KNEE WALLS	GC	GC	GC
		WALLS / BULKHEADS	GC	CC	GC
		RAILINGS, SUPPORTS, BRACKETS	GC	CC	GC
		STRUCTURAL STEEL, SUPPORTS, BRACES, ETC	GC	CC	GC
		FRAMING / CARPENTRY	GC	CC	GC
		WALL CABINETS	F	EV	EV
		SOLID SURFACE COUNTER TOP	F	EV	EV
		BUTCHER BLOCK COUNTER TOP	F	EV	EV
		MILLWORK SOFFIT	F	EV	EV
		THERMAL & MOISTURE PROTECTION (DIVISION 7)			
		ROOF PENETRATIONS	GC	CC	GC
		EXHAUST FAN CURB ON ROOF	GC	CC	GC
		DOORS & WINDOWS (DIVISION 8)			
		NEW DOORS, FRAMES & HARDWARE	GC	CC	GC
		NEW GLASS STOREFRONT	GC	CC	GC
		FINISHES (DIVISION 9)			
		WALL FINISHES (GYPSUM BOARD & FRP PER PLAN)	GC	CC	GC
		WALL FINISHES (PAINT, TILE, SPECIALTY)	GC	SFS	GC
		CEILING AND SUSPENSION GRID	GC	SFS	GC
		WOOD TRIM / FINISHES	GC	SFS	GC
		FLOORING FINISHES	GC	SFS	GC
		WALL BASE	GC	SFS	GC
		FIRE RATED PENETRATIONS CAULK & SEALANTS	GC	CC	GC
		SPECIALTIES (DIVISION 10)			
		SIGNAGE PERMIT (EXTERIOR) & INSTALL	F	SC	SC
		INTERIOR SIGNS	F	EV	EV
		RESTROOM ACCESSORIES	GC	GC	GC
**		FIRE EXTINGUISHERS	GC	GC	GC
		EQUIPMENT (DIVISION 11)			
		ALL KITCHEN EQUIPMENT (UNLESS NOTED)	F	EV	EV
		POS SYSTEMS AND MONITORS	F	M	RTG
		FURNISHINGS (DIVISION 12)			
		FURNISHINGS (TABLES, CHAIRS, STOOLS)	F	EV	EV
		MARKET PLACE CABINET	F	EV	EV
		MENU BOARDS	F	EV	EV
AG-1		FOOD MONTAGE PHOTO	F	EV	GC
AG-2		DOCK PHOTO	F	EV	GC
AG-3		BEACH HUT PHOTO	F	EV	GC
AG-4		SURF BOARD PHOTO	F	EV	GC
***		WARE WASHING DETERGENT	F	C	C
		SPECIAL CONSTRUCTION (DIVISION 13)			
		SURVEILLANCE SYSTEM	F	VLL	V
		SECURITY SYSTEM	F	VLL	V
***		MUSIC/ENTERTAINMENT	F	MMM	V
		FIRE SPRINKLER	GC	VLL	GC
		FIRE ALARM	GC	VLL	GC
		MECHANICAL (DIVISION 15)			
		PLUMBING ROUGH-IN DWV & H2O DISTRIBUTION	GC	CC	GC
		RESTROOMS TOILETS AND SINKS	GC	SPS	GC
		WATER HEATER	GC	SPS	GC
		WALK-IN COOLER & FREEZER BOX	F	EV	GC
		NEW HVAC IF APPLICABLE	GC	CC	GC
		MECH CONNECTIONS/DUCT/DIFFUSERS/CONTROLS	GC	CC	GC
		TEST & BALANCE	GC	CC	GC
		PLUMBING CERTS & WATER TESTS	GC	CC	GC
		ELECTRICAL (DIVISION 16)			
		ELECTRICAL ROUGH-IN WIRING	GC	CC	GC
		ELECTRICAL PANELS	GC	CC	GC
***		LIGHTING FIXTURES AND CONTROLS	GC	HL	GC
		TELECOMMUNICATIONS	F	UC	UC
		POS WIRING AND INSTALLATION	F	M	RTG

- * PROVIDED BY FRANCHISEE VIA PROJECT COORDINATOR
- ** LOCATION TO BE DETERMINED BY LOCAL FIRE JURISDICTION AUTHORITY
- *** PREFERRED VENDOR

CONSTRUCTION NOTES

ARCHITECT'S DESIGN WITHOUT CONSTRUCTION PHASE SERVICES

SINCE DIRECT CONSTRUCTION OBSERVATIONS AND REVIEW OF THE CONTRACTOR'S PERFORMANCE IS NOT INCLUDED AS PART OF THE ARCHITECTS BASIC SERVICES, IT IS UNDERSTOOD THAT SUCH RESPONSIBILITIES WILL BE ASSUMED BY OTHERS. FM GROUP INC AVAILS ITSELF TO THE CLIENT, THE CONTRACTOR, AND ANY OTHER PARTIES AS NECESSARY (VIA TELEPHONE, FAX, AND EMAIL) IN ORDER TO ASSIST IN PROVIDING CLARIFICATIONS OR RESOLVING ISSUES AND PROBLEMS THAT MAY ARISE. ALTHOUGH MANY ISSUES CAN BE EASILY ADDRESSED WITHOUT THE ARCHITECTS INVOLVEMENT, THERE ARE TIMES WHEN PARTICIPATION IS ADVISABLE. DETERMINATION OF WHEN INVOLVEMENT IS APPROPRIATE IS LEFT TO THE PROFESSIONAL DISCRETION OF THE CONTRACTOR. IT IS UNDERSTOOD THAT THE CLIENT AND/OR THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR INTERPRETATION OF THE DRAWINGS, AND ANY OTHER SUPPLEMENTAL INFORMATION, AND WHEN THE ARCHITECT IS DENIED THE OPPORTUNITY TO PROVIDE CLARIFICATIONS OR PARTICIPATE IN CHANGES TO THE DESIGN OR THE RESOLUTION OF ISSUES OR PROBLEMS, ALL PARTIES WAIVE ANY CLAIMS AGAINST THE ARCHITECT THAT MAY BE IN ANY WAY CONNECTED THERETO. FM GROUP INC IS HELD HARMLESS FROM LOSS, CLAIM, OR COSTS ARISING OR RESULTING FROM MODIFICATIONS OR CHANGES MADE TO THE DESIGN (WITHOUT THE KNOWLEDGE OF THE ARCHITECT) DUE TO CONDITIONS OR CIRCUMSTANCES (ANTICIPATED OR NOT) BEYOND THE ARCHITECT'S CONTROL.

MECHANICAL, PLUMBING AND ELECTRICAL NOTES

1. THE RELATIONSHIP BETWEEN FLOOR SINKS AND NEW WALLS IS CRITICAL TO THE FINAL FIXTURE / EQUIPMENT LAYOUT. FLOOR SINKS AS SHOWN ON THE PLUMBING PLANS ARE DIMENSIONALLY LOCATED OFF OF NEW PARTITIONS, AND THEREFORE THE CONTRACTOR MUST COMPLETE PLAN LAYOUT ON SLAB PRIOR TO FINAL LOCATION OF FLOOR SINKS FOR ACCURATE FINAL PLACEMENT.

G.C. COMPLIANCE:
OWNER'S GENERAL CONTRACTOR SHALL VISIT THE PREMISES AND VERIFY ALL EXISTING CONDITIONS PRIOR TO START OF CONSTRUCTION AND SHALL REPORT ALL DISCREPANCIES TO TENANT'S ARCHITECT. TENANT'S GENERAL CONTRACTOR SHALL CONFORM TO ALL REQUIREMENTS REGARDING CONSTRUCTION PROCEDURES, INSURANCE, ETC., AS SEAT FORTH BY THE LANDLORD.

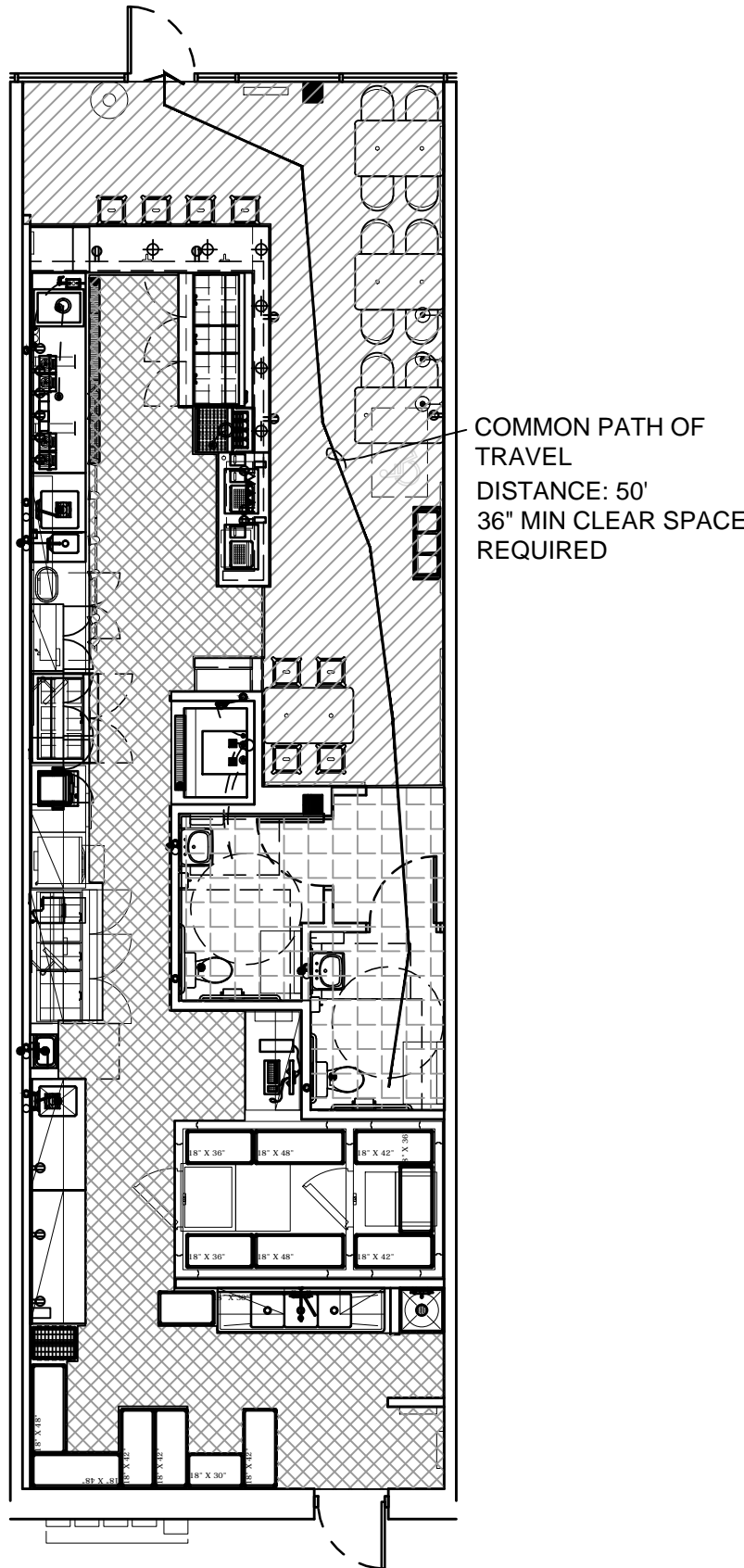
G.C. COMPLIANCE:
OWNER'S SIGNAGE CONTRACTOR SHALL PREPARE SIGNAGE SHOP DRAWINGS AND SUBMIT TO BUILDING DEPT. & LANDLORD FOR APPROVAL. ALL SIGNAGE IS UNDER SEPARATE PERMIT.

- KITCHEN/ SERVICE AREA
TOTAL SF: 320 SF / 200 =
2 OCCUPANTS
- RESTROOM / HALLWAY
AREAS
TOTAL SF: 140 SF / 0 =
0 OCCUPANTS
- DINING AREAS
TOTAL SF: 320 SF / 15 = 22
- TOTAL OCCUPANT LOAD:
24 OCCUPANTS
- LESS THAN 50 = 1 EXIT
REQUIRED.

ACTUAL SEATING: 19
NOTE: ALL NON FIXED
SEATS SHOWN

EGRESS / OCCUPANCY PLAN

SCALE: 1/8" = 1'-0"



ND ENTERPRISES, LLC

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DATE: 12.26.2019

REVIEW SET
NOT FOR
PERMIT

SCHEDULE
EGRESS PLAN

A1.1

GENERAL NEW NOTES:

- PRIOR TO SUBMITTING BID, VISIT THE JOB SITE AND BECOME FULLY ACQUAINTED WITH THE EXISTING CONDITIONS OF THE PROJECT. REVIEW THE GENERAL NOTES, SPECIFICATIONS AND OTHER DRAWINGS FOR ADDITIONAL REQUIREMENTS WHICH MAY NOT BE SPECIFICALLY CALLED OUT IN THIS PORTION OF THE CONSTRUCTION DOCUMENTS. NOTIFY ARCHITECT, ENGINEER AND/OR OWNER OF CONFLICTS OR DISCREPANCIES PRIOR TO SUBMISSION OF BID.
- COORDINATE THE INSTALLATION OF THE MECHANICAL SYSTEMS WITH OTHER TRADES TO ENSURE A SEAMLESS INSTALLATION. INSTALL DUCTWORK AS TIGHT AS POSSIBLE TO STRUCTURE AS POSSIBLE. COORDINATE WITH OTHER TRADES TO AVOID CONFLICTS. COORDINATE INSTALLATION OF DUCTWORK TO AVOID CONFLICTS WITH ELECTRICAL PANELS, LIGHTING FIXTURES, ETC.. ANY MODIFICATIONS REQUIRED DUE TO LACK OF COORDINATION WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AT NO EXTRA COST TO THE OWNER.
- NEW MECHANICAL EQUIPMENT AND DUCTWORK ARE SHOWN AT APPROXIMATE LOCATIONS. FIELD MEASURE FINAL DUCTWORK LOCATIONS PRIOR TO FABRICATION AND MAKE ADJUSTMENTS AS REQUIRED TO FIT THE DUCTWORK AND PIPING WITHIN THE AVAILABLE SPACE. VERIFY THAT FINAL EQUIPMENT LOCATIONS MEET MANUFACTURER'S RECOMMENDATIONS REGARDING SERVICE CLEARANCE AND PROPER AIRFLOW CLEARANCE AROUND EQUIPMENT.
- REFER TO ARCHITECTURAL DRAWINGS FOR RELATED CONSTRUCTION DETAILS AS APPLICABLE TO THE HVAC SYSTEM. VERIFY CHASES AND PENETRATIONS SHOWN ON ARCHITECTURAL DRAWINGS THAT ARE INTENDED FOR DUCTWORK AND PIPING MEET REQUIREMENTS.
- COORDINATE LOCATION OF ROOF MOUNTED HVAC EQUIPMENT AND ROOF PENETRATIONS WITH THE ARCHITECTURAL AND STRUCTURAL DRAWINGS.
- INDOOR AIR QUALITY MEASURES: PROTECT INSIDE OF (INSTALLED AND DELIVERED) DUCTWORK AND HVAC UNITS FROM EXPOSURE TO DUST, DIRT, PAINT AND MOISTURE. REPLACE INSULATION THAT HAS GOTTEN WET AT ANY TIME DURING CONSTRUCTION, DRYING THE INSULATION IS NOT ACCEPTABLE. SEAL ANY TEARS OR JOINTS OF INTERNAL FIBERGLASS INSULATION. REMOVE DEBRIS FROM CEILING/RETURN AIR PLENUM INCLUDING DUST. AN INDEPENDENT, PROFESSIONAL DUCT CLEANING COMPANY SHALL VACUUM CLEAN ANY DUCTWORK CONNECTED TO HVAC UNITS THAT WERE OPERATED DURING THE CONSTRUCTION PERIOD AFTER NEW FILTERS, MINIMUM MERV-8, ARE INSTALLED AND PRIOR TO TURNING SYSTEM OVER TO THE OWNER.
- INSTALL DUCTWORK PARALLEL TO BUILDING COLUMN LINES UNLESS OTHERWISE SHOWN OR NOTED.
- OVERHEAD HANGERS AND SUPPORTS FOR EQUIPMENT, DUCTWORK SHALL BE FASTENED TO BUILDING JOISTS OR BEAMS. DO NOT ATTACH HANGERS AND SUPPORTS TO THE ABOVE FLOOR SLAB OR ROOF EXCEPT WHERE CONCRETE INSERTS IN CONCRETE SLABS ARE ALLOWED BY THE SPECIFICATIONS.
- COORDINATE LOCATION OF EQUIPMENT SUPPORTS WITH LOCATION OF EQUIPMENT ACCESS PANELS/DOORS TO ENABLE SERVICE OF EQUIPMENT AND/OR FILTER REPLACEMENT.
- SEAL PENETRATIONS THROUGH THE BUILDING COMPONENTS IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS. FIREPROOF PENETRATIONS THROUGH FIRE RATED COMPONENTS IN ACCORDANCE WITH U.L. REQUIREMENTS.
- COORDINATE THE EXACT MOUNTING SIZE AND FRAME TYPE OF DIFFUSERS, REGISTERS AND GRILLES WITH THE SUPPLIER TO MEET THE CEILING, WALL AND DUCT INSTALLATION REQUIREMENTS.
- ADJUST LOCATION OF CEILING DIFFUSERS, REGISTERS AND GRILLES AS REQUIRED TO ACCOMMODATE FINAL CEILING GRID AND LIGHTING LOCATIONS.
- LOCATE AND SET THERMOSTATS AND TEMPERATURE SENSORS AT LOCATIONS SHOWN ON PLANS. VERIFY EXACT LOCATIONS WITH ARCHITECT PRIOR TO INSTALLATION. INSTALL THERMOSTATS WITH TOP OF DEVICE AT MAXIMUM 48" AFF TO MEET ADA REQUIREMENTS AND TEMPERATURE SENSORS AT 72" AFF, UNLESS NOTED OTHERWISE ON PLANS. INSTALL WIRING IN CONDUIT PROVIDED BY DIVISION 16.
- PROVIDE A MANUAL BALANCING DAMPER IN EACH BRANCH DUCT TAKEOFF FROM MAIN SUPPLY, RETURN, OUTDOOR AND EXHAUST AIR DUCTS.
- PROVIDE A PREFABRICATED 45 DEGREE, HIGH EFFICIENCY, RECTANGULAR/ROUND BRANCH DUCT TAKEOFF FITTING WITH MANUAL BALANCING DAMPER AND LOCKING QUADRANT FOR BRANCH DUCT CONNECTIONS AND TAKE-OFFS TO INDIVIDUAL DIFFUSERS, REGISTERS AND GRILLES.
- BRANCH DUCTWORK TO AIR OUTLETS SHALL BE SAME SIZE AS OUTLET NECK SIZE UNLESS OTHERWISE NOTED.
- RIGID DUCTWORK INSULATION: PROVIDE 3/4 LB DENSITY, 2" (R-6) THICK, INSULATION WRAP ON RIGID ROUND, CONCEALED, SUPPLY AND RETURN AIR DUCTS. PROVIDE 1-1/2" (R-6) THICK 1-1/2 LB DENSITY INTERIOR DUCT LINER ON RECTANGULAR SUPPLY AND RETURN AIR DUCTS. DUCT SIZES ON MECHANICAL PLANS INDICATE CLEAR INSIDE AIRFLOW DIMENSIONS, INCREASE SHEET METAL SIZES ACCORDINGLY.
- PROVIDE THERMAFLEX TYPE M-KE, FLEXMASTER TYPE 8, OR APPROVED EQUAL FLEXIBLE DUCTWORK. FLEXIBLE DUCTWORK SHALL BE LISTED UNDER UL 181 AS CLASS 1 AIR DUCT AND BE PROVIDED WITH INTEGRAL R-6, 3/4 LB DENSITY FIBERGLASS INSULATION. FLEXIBLE DUCTWORK SHALL NOT EXCEED 3'-0" IN LENGTH AND SHALL BE INSTALLED AND SUPPORTED TO AVOID SHARP BENDS AND SAGGING.

MECHANICAL SYMBOLS

NOTE: THIS IS A MASTER LEGEND AND NOT ALL SYMBOLS, ETC. ARE NECESSARILY USED ON THE DRAWINGS.

HVAC EQUIPMENT & DUCTWORK

- NOTE: ALL DUCT DIMENSIONS SHOWN ON DRAWINGS ARE INSIDE DIMENSIONS. SEE SECTION 15250 OF THE SPECIFICATION FOR DUCTWORK TO RECEIVE INSULATION OR LINER.
- EXISTING DUCTWORK OR EQUIPMENT TO REMAIN
 - EXISTING DUCTWORK OR EQUIPMENT TO BE REMOVED
 - BRANCH DUCT WITH 45° RECTANGLE-ROUND BRANCH FITTING AND MANUAL VOLUME DAMPER
 - ELBOW WITH TURNING VANES
 - RETURN, EXHAUST, OR OUTSIDE AIR DUCT UP
 - RETURN, EXHAUST, OR OUTSIDE AIR DUCT DOWN
 - SUPPLY AIR DUCT UP
 - SUPPLY AIR DUCT DOWN
 - EQUIPMENT WITH FLEXIBLE DUCT CONNECTION
 - 10" CSD-1 300 CFM NECK SIZE, TYPE, CFM OF SUPPLY DIFFUSER OR REGISTER
 - MANUAL VOLUME DAMPER
 - SQUARE TO ROUND TRANSITION
 - DUCT MOUNTED SMOKE DETECTOR (SD=SUPPLY/RD=RETURN)

- FIRE DAMPER
- FIRE SMOKE DAMPER
- SMOKE DAMPER
- VOLUME DAMPER
- MOTORIZED DAMPER
- HUMIDITY SENSOR
- TEMPERATURE SENSOR
- HUMIDISTAT
- THERMOSTAT
- BACKDRAFT DAMPER

ABBREVIATIONS

- | | | | |
|-------|----------------------------|-----|------------------------|
| AFF | ABOVE FINISHED FLOOR | MC | MECHANICAL CONTRACTOR |
| BAS | BUILDING AUTOMATION SYSTEM | MIN | MINIMUM |
| BD | BACKDRAFT DAMPER | NC | NOISE CRITERIA |
| CFM | CUBIC FEET PER MINUTE | OA | OUTSIDE AIR |
| DDC | DIRECT DIGITAL CONTROL | RA | RETURN AIR |
| DX | DIRECT EXPANSION | SA | SUPPLY AIR |
| EA | EXHAUST AIR | SD | SMOKE DUCT DETECTOR |
| FFA | FROM FLOOR ABOVE | TFA | TO FLOOR ABOVE |
| FFB | FROM FLOOR BELOW | TFB | TO FLOOR BELOW |
| GPM | GALLONS PER MINUTE | TYP | TYPICAL |
| IN WC | INCHES OF WATER COLUMN | UNO | UNLESS NOTED OTHERWISE |
| MAX | MAXIMUM | W/ | WITH |
| MBH | 1000 BTU PER HOUR | W/O | WITHOUT |

STANDARD MOUNTING HEIGHTS

- | | |
|--|------------------------------------|
| MECHANICAL | (AFF, AFG, UNLESS NOTED OTHERWISE) |
| THERMOSTATS (USER ADJUSTABLE)(TOP OF DEVICE) | 48" |
| CONTROLS (TOP OF DEVICE) | 48" |

ANNOTATION

- MECHANICAL PLAN CALLOUT
- MECHANICAL EQUIPMENT DESIGNATION (CONTRACTOR FURNISHED AND INSTALLED UNLESS NOTED OTHERWISE)
- CONNECTION POINT OF NEW WORK TO EXISTING
- DETAIL REFERENCE UPPER NUMBER INDICATES DETAIL NUMBER LOWER NUMBER INDICATES SHEET NUMBER
- SECTION CUT DESIGNATION

MECHANICAL PLAN NOTES:

- EXISTING 6 TON ROOF TOP UNIT TO REMAIN- PROVIDED BY LANDLORD. GC MUST CONFIRM EXISTING CONDITIONS AND MFG SPECS PRIOR TO START OF WORK.
- EXHAUST FAN ABOVE CEILING HUNG STRUCTURE TO PROVIDE VENTILATION FOR THE WALK-IN COOLER / FREEZER CONDENSERS ABOVE CEILING. INTERLOCKED WITH WALL THERMOSTAT TO ENERGIZE FAN WHEN THE SPACE TEMPERATURE REACHES 90°F. ROUTE 6" EXHAUST DUCT UP AND PENETRATE ROOF. TERMINATE ON ROOF WITH ROOF CAP. COORDINATE ALL ROOF PENETRATIONS WITH LANDLORD'S APPROVED ROOFER.
- CEILING MOUNTED RESTROOM EXHAUST FAN, INTERLOCKED WITH RESTROOM LIGHT SWITCH. ROUTE 6" EXHAUST DUCT UP AND PENETRATE ROOF. TERMINATE ON ROOF WITH ROOF CAP. COORDINATE LOCATION OF ROOF CAP TO MAINTAIN 10' DISTANCE AWAY FROM AND BUILDING INTAKES.
- WALL MOUNTED RETURN GRILLE ON WALK-IN ENCLOSURE WALL, OPEN TO THE SPACE ABOVE THE WALK-IN COOLER.

HEAT PUMP ROOFTOP UNIT SCHEDULE

MARK	MANUFACTURER	NOMINAL CAPACITY	MODEL	SUPPLY FAN				COOLING CAPACITY						HEAT PUMP HEATING PERFORMANCE				MCA	MOCP	V/PH	WEIGHT LBS	NOTES			
				FAN TYPE	CFM	MIN HP	ESP (IN)	REFR. TYPE	NET TH (MBH)	NET SH (MBH)	EAT		LAT		MIN. EFF.	HEAT PUMP (MBH)	AMBIENT (DB)						MIN. EFF. (AT 47°F)	MIN. LAT DB (°F)	
											DB	WB	DB	WB											
RTU-1	YORK (EXISTING)	6 TON	ZE072C00B2A	FC	2400	0.75	0.5	R-410A	91.0	70.2	80.0	67.0	58.7	57.6	11.2 EER	77.4	39	3.4 COP	85	350	33.2	45	208/3	950	A-H

NOTES:

- PROVIDE WITH DRY-BULB ECONOMIZER AND 100% BAROMETRIC RELIEF.
- PROVIDE LOW AMBIENT CONTROL TO 25°F.
- EQUIPMENT SIZED FOR 95°F AMBIENT TEMPERATURE.
- PROVIDE 2", MERV-8 EFFICIENT PLEATED THROWAWAY AIR FILTERS.
- PROVIDE MANUFACTURER'S STANDARD INSULATED ROOF CURB WITH MINIMUM HEIGHT OF 14".
- PROVIDE WITH 7-DAY PROGRAMMABLE THERMOSTAT WITH REMOTE SENSORS TO BE LOCATED IN COORDINATION WITH TENANT STAGED HEATING AND COOLING CAPABILITY AS REQUIRED FOR OPERATION OF HEATING AND COOLING CONTROLS.
- ELECTRICAL CONTRACTOR TO PROVIDE DUCT SMOKE DETECTOR AND MECHANICAL CONTRACTOR TO INSTALL DETECTOR IN SUPPLY AIR DUCT.
- DISCONNECT SWITCH FURNISHED BY DIVISION 16 CONTRACTOR.

AIR BALANCE SCHEDULE

EXHAUST EQUIPMENT	AREA/EQUIPMENT SERVED		EXHAUST (CFM)	TOTALS (CFM)	
EF-1	RESTROOM		75		
EF-2	RESTROOM		75		
EF-3	WALK-IN		200		
350					
OUTDOOR AIR EQUIPMENT	AREA/EQUIPMENT SERVED	SUPPLY AIR (CFM)	DESIGN OA (CFM)	PERCENT OA/SA	350
RTU-1	ALL ZONES	3,000	350	11.7%	
TOTAL AIRFLOW		0	350	10.3%	
TOTAL POSITIVE AIR FLOW					0
PERCENT POSITIVE AIR FLOW					0.0%

GRILLE, REGISTER AND DIFFUSER SCHEDULE

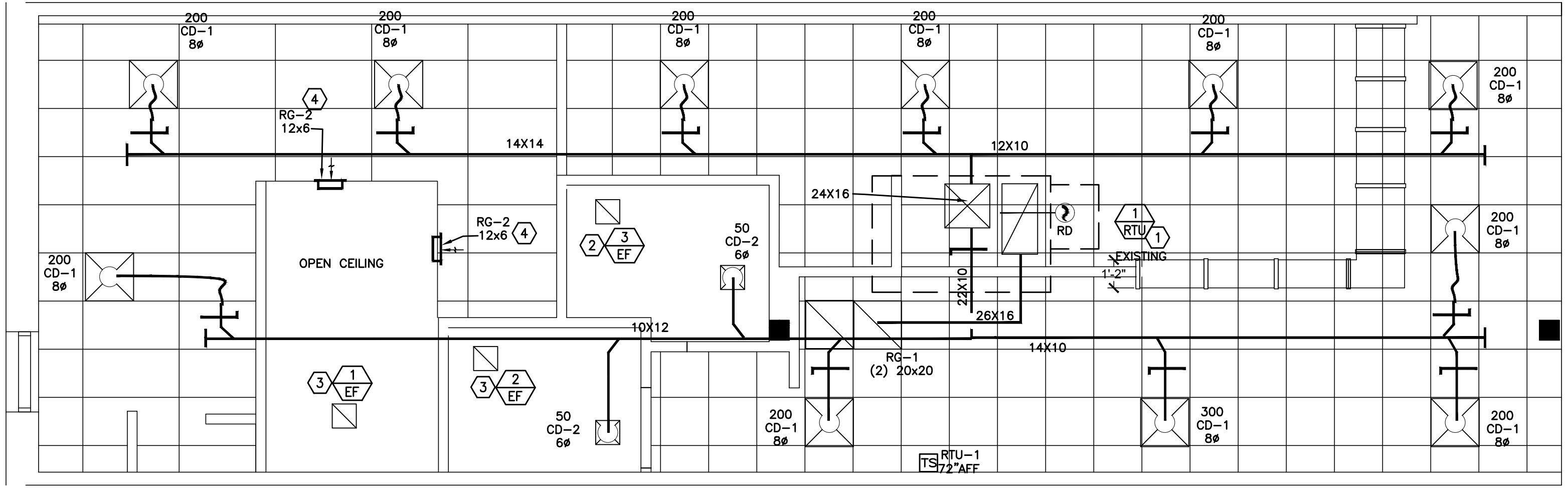
MARK	MANUFACTURER	MODEL	FACE TYPE	MOUNTING LOCATION	FACE SIZE (IN)	MAX NC	MAX PRESS. DROP (IN. W.C.)	NOTES
CD-1	PRICE	AMD	LOUVERED	LAY-IN	24x24	25	0.05	A-E
CD-2	PRICE	AMD	LOUVERED	GYP.	12x12	25	0.05	A-E
RG-1	PRICE	80	EGG CRATE	LAY-IN	24x24	25	0.05	A,D,E
RG-2	PRICE	530	LOUVERED	WALL	NECK + 1-3/4	25	0.05	A,C,D

NOTES:

- NECK SIZE SHOWN ON DRAWINGS. PROVIDE NECK FOR DUCT CONNECTION.
- 4-WAY THROW PATTERN UNLESS OTHERWISE SHOWN ON DRAWINGS.
- BRANCH DUCT SIZE SHALL BE SAME AS NECK SIZE UNLESS OTHERWISE SHOWN ON DRAWINGS.
- BAKED ENAMEL FINISH, WHITE TO MATCH CEILING COLOR.
- FRAME TYPE TO MATCH CEILING CONSTRUCTION, COORDINATE WITH ARCHITECTURAL RCP.

OUTSIDE AIR REQUIREMENTS

AREA PURPOSE	GROSS FLOOR AREA (SQ. FT.)	CODE OUTSIDE AIR REQUIREMENTS				SYSTEM NUMBER	ACTUAL OUTSIDE AIR (CFM PER UNIT)
		CFM PER SQ. FT.	CFM REQD.	CFM PER PERSON	NO. OF PEOPLE		
DINING	530	0.18	95	7.5	31	233	350
SERVICE	337	0.06	20	5.0	2	10	
PREP	320	0.06	19	5.0	2	10	
TOTAL =		135			253		350



1

MECHANICAL FLOOR PLAN
SCALE: 1/4"=1'-0"

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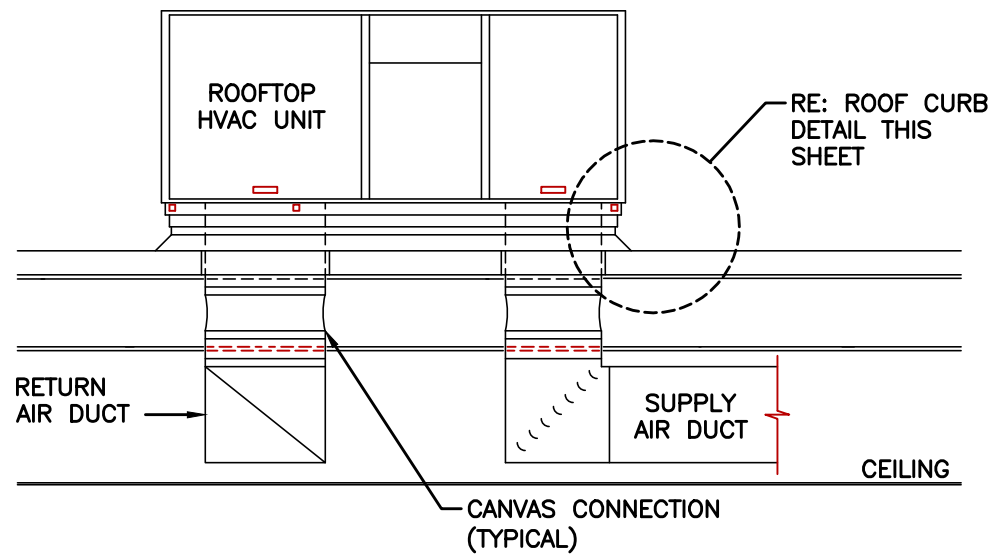
REVISION

LANDLORD
1.3.2020

DATE: 12.26.2019

MECHANICAL
FLOOR PLAN

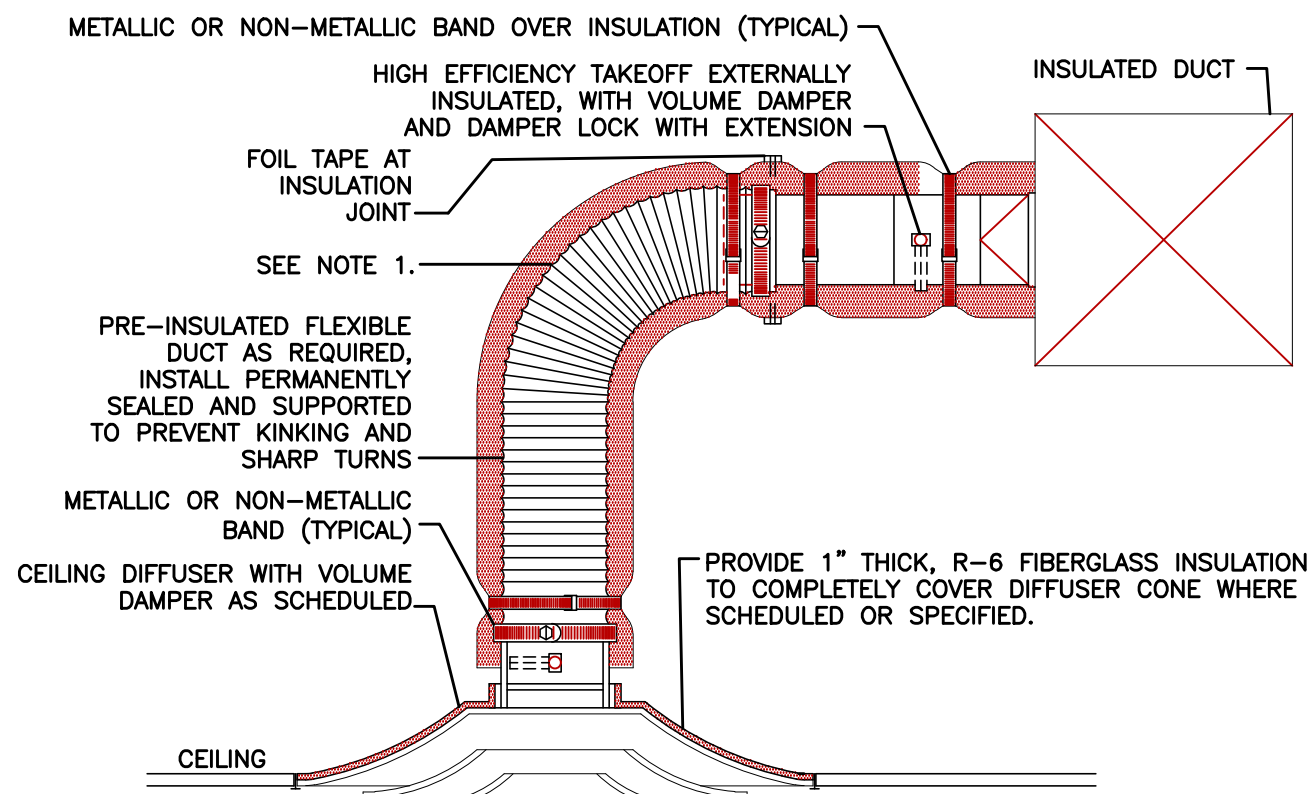
M1



NOTES:

1. PROVIDE OPENING THROUGH ROOF AND ROOF DECK INSULATION NO LARGER THAN REQUIRED TO ALLOW DUCTS TO PASS THROUGH. REFER TO PLANS FOR DUCT SIZES. TRANSITION AS REQUIRED IN ROOF CURB TO RTU SUPPLY AND RETURN OPENINGS.
2. PROVIDE SLOPED ROOF CURB TO INSTALL ROOFTOP UNIT LEVEL TO ENSURE PROPER DRAINAGE. COORDINATE ROOF SLOPE WITH ARCHITECTURAL. FLASH AND COUNTER FLASH ROOF PENETRATIONS, ETC. TO ENSURE WEATHER TIGHT INSTALLATION.

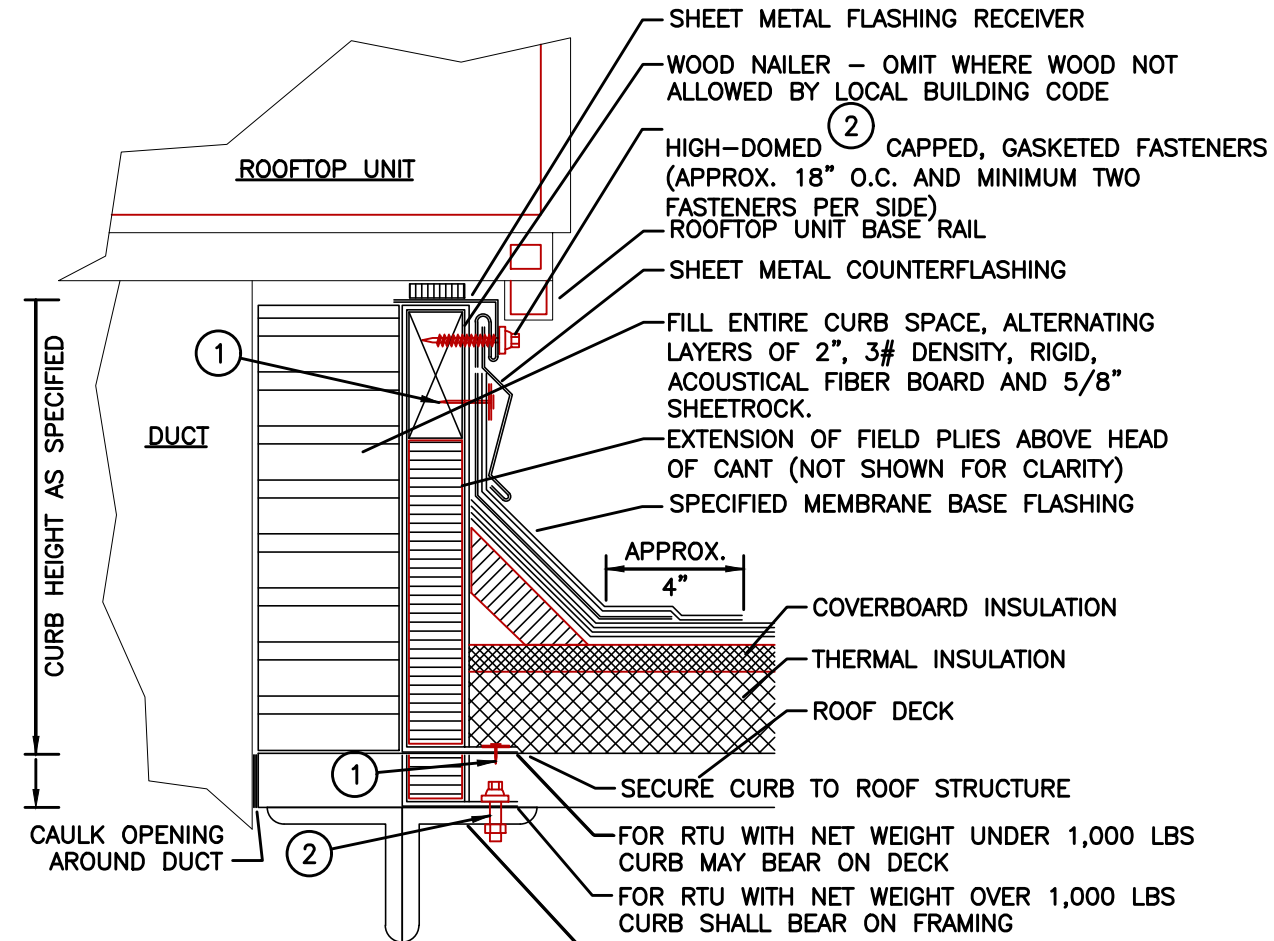
1 ROOFTOP UNIT WITH DUCTWORK DETAIL
NO SCALE



NOTES:

1. EXTEND RIGID METAL DUCT SO THAT MAXIMUM FLEXIBLE DUCT LENGTH DOES NOT EXCEED 5'-0". PROVIDE RIGID 90° ELBOW WHERE REQUIRED TO KEEP FLEXIBLE DUCT WITHIN 5'-0" LENGTH LIMITATION.

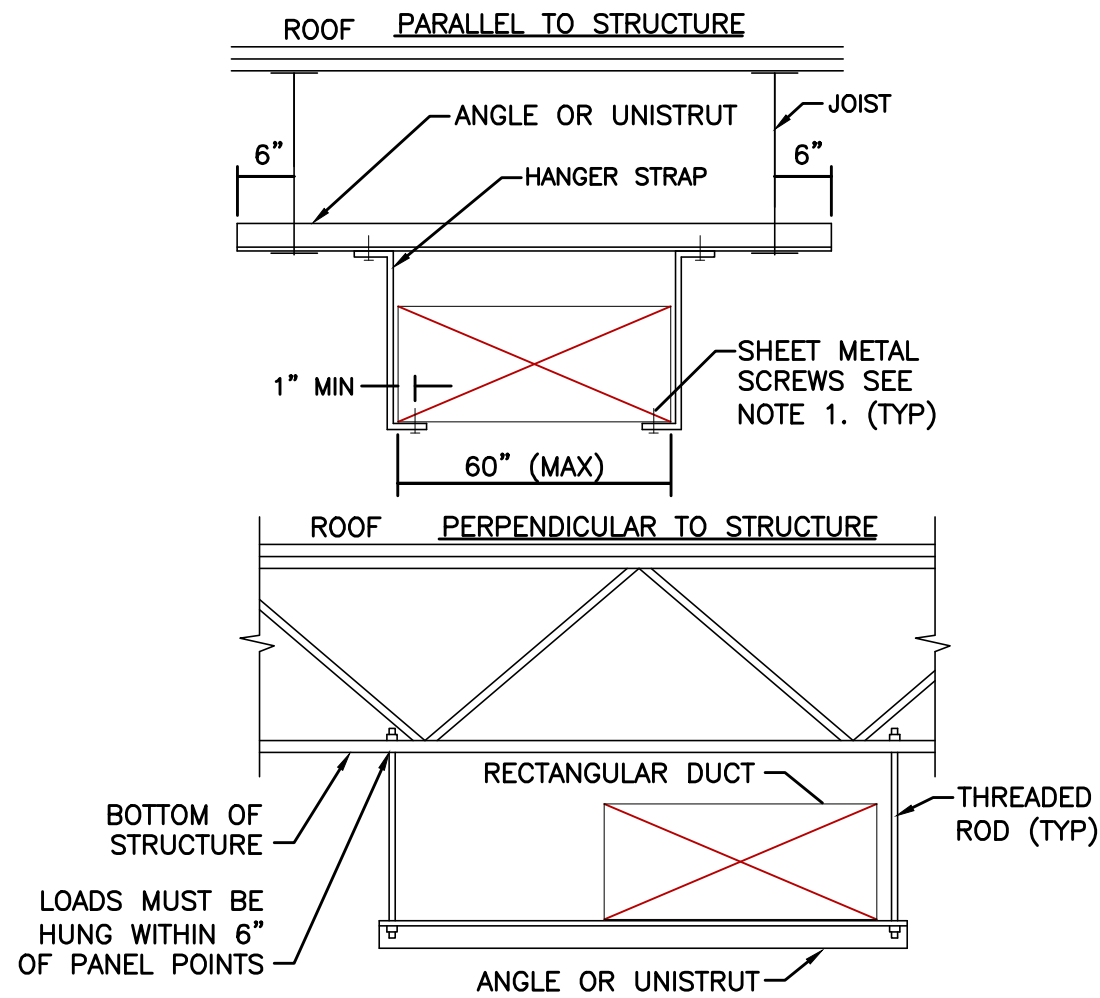
4 LAY-IN TYPE CEILING DIFFUSER DETAIL
NO SCALE



NOTES:

1. CUT METAL DECKING TO ALLOW CURB INSTALLATION ON STEEL FRAMING. AFTER CURB IS SET IN PLACE, TRIM REMAINING METAL DECKING AND INSTALL WITHIN CURB. TACK WELD DECKING TO SUPPORT STEEL. DO NOT WELD INTERIOR DECKING TO ROOF CURB. PROVIDE ADDITIONAL CROSS FRAMING TO SUPPORT INTERIOR DECKING AND FILL MATERIAL AS REQUIRED.

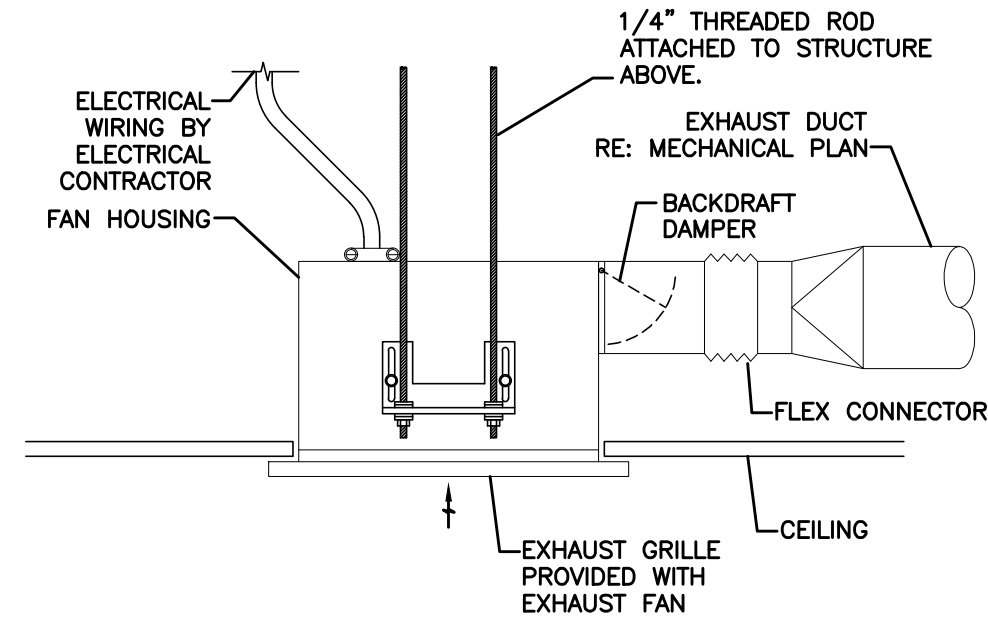
2 ROOF CURB DETAIL
NO SCALE



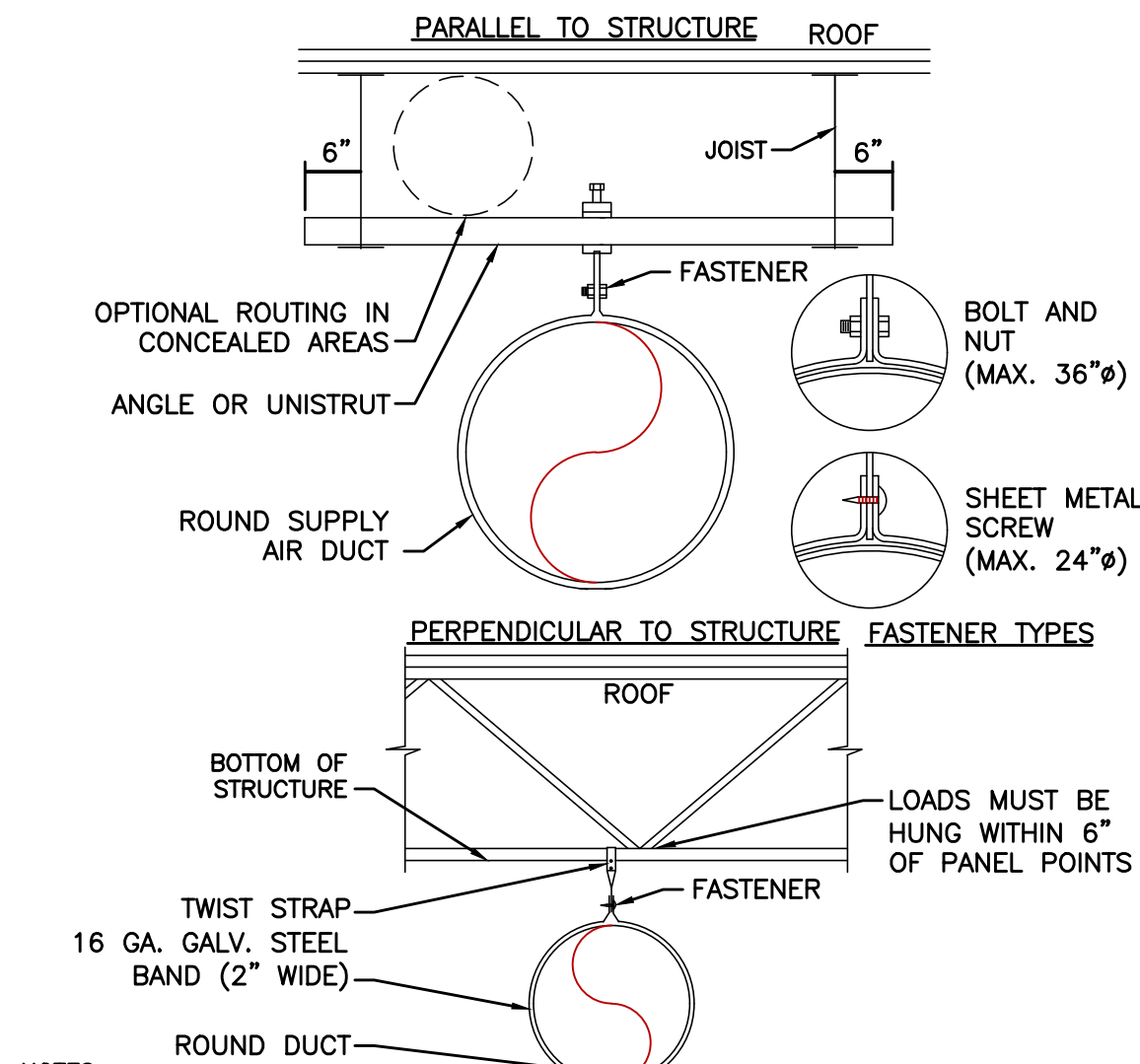
NOTES:

1. SHEET METAL SCREWS MAY BE OMITTED IF HANGER STRAP IS CONTINUOUS AND LOOPS UNDER ENTIRE DUCT.

5 RECTANGULAR DUCT SUPPORT DETAIL
NO SCALE



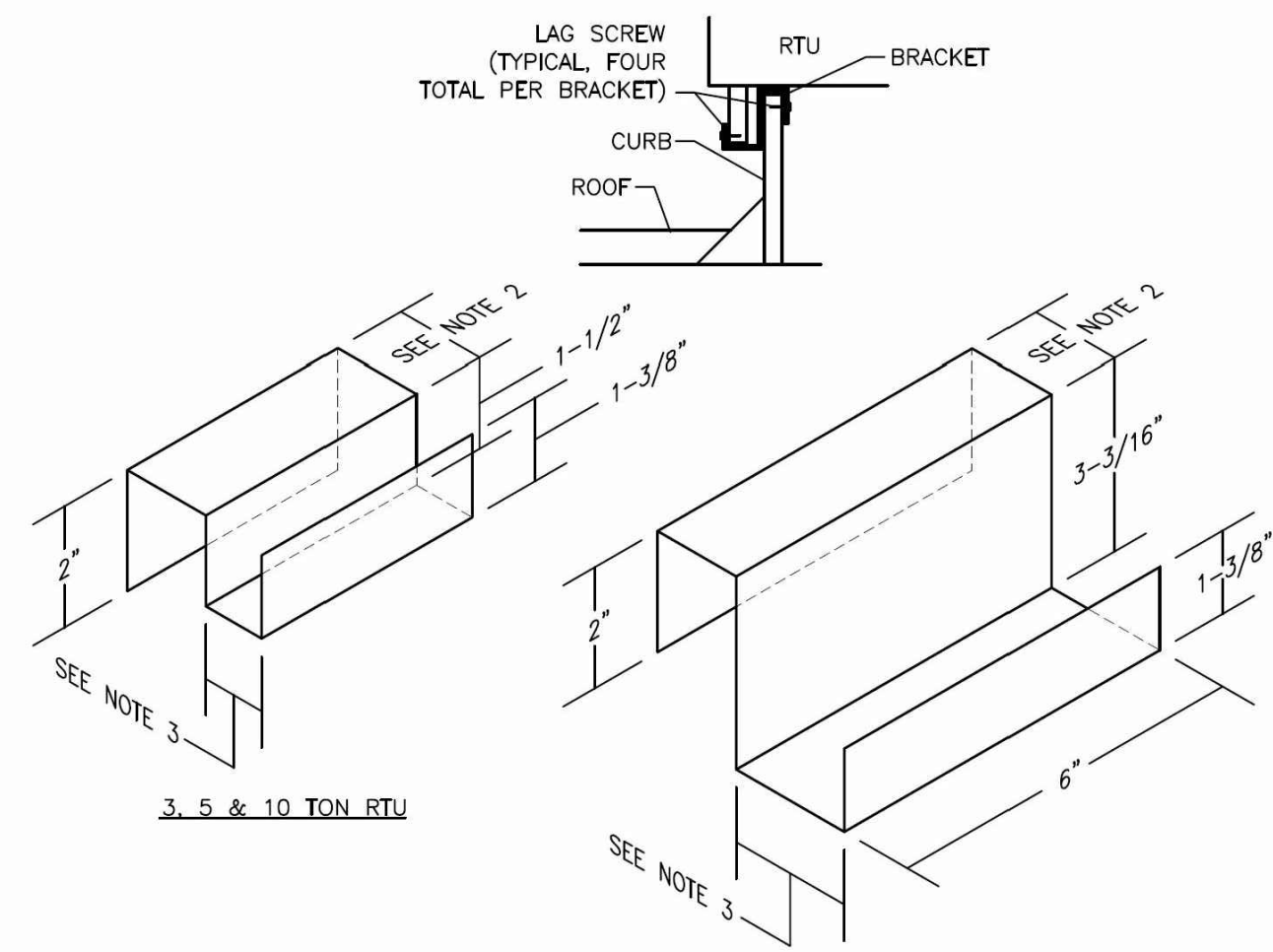
3 SUPPORT DETAIL FOR HUNG EQUIPMENT
NO SCALE



NOTES:

1. FOR DUCTS LARGER THAN 36 inches, USE TWO HANGER RODS, WIRES OR STRAPS TO SUPPORT DUCT FROM EACH SIDE.

6 ROUND DUCT SUPPORT DETAIL
NO SCALE



NOTES:

1. CONSTRUCT BRACKET OF GALVANIZED STEEL OF THICKNESS AS REQUIRED TO WITHSTAND WIND SPEED OF 110 MPH. INSTALL ONE BRACKET PER SIDE OF UNIT AS RECOMMENDED BY RTU MANUFACTURER.
2. COORDINATE WIDTH WITH WIDTH OF ROOF CURB.
3. COORDINATE WIDTH AS REQUIRED TO FIT BELOW RTU SUPPORT BASE AS SHOWN.
4. VERTICAL DIMENSIONS SHOWN FOR BRACKETS ARE MINIMUM REQUIREMENTS. COORDINATE DIMENSIONS WITH EQUIPMENT PROVIDED AND AS REQUIRED TO MEET SPECIFIED WIND LOAD.

7 RTU HOLD DOWN BRACKET DETAIL
NO SCALE

15: Heating, Ventilating, and Air Conditioning:

GENERAL INSTRUCTIONS

GENERAL REQUIREMENTS

REQUIREMENTS UNDER DIVISION ONE AND THE GENERAL AND SUPPLEMENTARY CONDITIONS OF THESE SPECIFICATIONS SHALL BE A PART OF THIS SECTION. CONTRACTOR SHALL BECOME THOROUGHLY ACQUAINTED WITH ITS CONTENTS AS TO REQUIREMENTS THAT AFFECT THIS DIVISION OR SECTION. THE WORK REQUIRED UNDER THIS SECTION INCLUDES MATERIAL, EQUIPMENT, APPLIANCES, TRANSPORTATION, SERVICES, AND LABOR REQUIRED TO COMPLETE THE ENTIRE SYSTEM AS REQUIRED BY THE DRAWINGS AND SPECIFICATIONS.

DEFINITIONS

FURNISH: THE TERM "FURNISH" IS USED TO MEAN "SUPPLY AND DELIVER TO THE PROJECT SITE, READY FOR UNLOADING, UNPACKING, ASSEMBLY, INSTALLATION AND SIMILAR OPERATIONS."

INSTALL: THE TERM "INSTALL" IS USED TO DESCRIBE OPERATIONS AT THE PROJECT SITE INCLUDING THE ACTUAL "UNLOADING, UNPACKING, ASSEMBLY, ERECTION, PLACING, ANCHORING, APPLYING, WORKING TO DIMENSION, FINISHING, CURING, PROTECTING, CLEANING, AND SIMILAR OPERATIONS."

PROVIDE: THE TERM "PROVIDE" MEANS "TO FURNISH AND INSTALL, COMPLETE AND READY FOR THE INTENDED USE."

FURNISHED BY OWNER OR FURNISHED BY OTHERS: THE ITEM WILL BE FURNISHED BY THE OWNER OR OTHERS. IT IS TO BE INSTALLED AND CONNECTED UNDER THE REQUIREMENTS OF THIS DIVISION, COMPLETE AND READY FOR OPERATION, INCLUDING ITEMS INCIDENTAL TO THE WORK INCLUDING THE NECESSARY FOR PROPER INSTALLATION AND OPERATION. THE INSTALLATION SHALL BE INCLUDED UNDER THE GUARANTEE REQUIRED BY THIS DIVISION.

ENGINEER: WHERE REFERENCED IN THIS DIVISION, "ENGINEER" IS THE ENGINEER OF RECORD AND THE DESIGN PROFESSIONAL FOR THE WORK UNDER THIS DIVISION, AND IS A CONSULTANT TO, AND AN AUTHORIZED REPRESENTATIVE OF, THE ARCHITECT, AS DEFINED IN THE GENERAL AND/OR SUPPLEMENTARY CONDITIONS. WHEN USED IN THIS DIVISION, IT MEANS INCREASED INVOLVEMENT BY, AND OBLIGATIONS TO, THE ENGINEER, IN ADDITION TO INVOLVEMENT BY, AND OBLIGATIONS TO, THE "ARCHITECT".

AHJ: THE LOCAL CODE AND/OR INSPECTION AGENCY (AUTHORITY) HAVING JURISDICTION OVER THE WORK.

THE TERMS "APPROVED EQUAL", "EQUIVALENT", OR "EQUAL" ARE USED SYNONYMOUSLY AND SHALL MEAN "ACCEPTED BY OR ACCEPTABLE TO THE ENGINEER AS EQUIVALENT TO THE ITEM OR MANUFACTURER SPECIFIED." THE TERM "APPROVED" SHALL MEAN LABELED, LISTED, OR BOTH, BY A NATIONALLY RECOGNIZED TESTING LABORATORY (E.G. UL, ETL, CSA), AND ACCEPTABLE TO THE AHJ OVER THIS PROJECT.

PREBID SITE VISIT

PRIOR TO SUBMITTING BID, VISIT THE SITE OF THE PROPOSED WORK AND BECOME FULLY INFORMED AS TO THE CONDITIONS UNDER WHICH THE WORK IS TO BE DONE. FAILURE TO DO SO WILL NOT BE CONSIDERED SUFFICIENT JUSTIFICATION TO REQUEST OR OBTAIN EXTRA COMPENSATION OVER AND ABOVE THE CONTRACT PRICE.

MATERIAL AND WORKMANSHIP

PROVIDE NEW MATERIAL, EQUIPMENT, AND APPARATUS UNDER THIS CONTRACT UNLESS OTHERWISE STATED HEREIN, OF BEST QUALITY NORMALLY USED FOR THE PURPOSE IN GOOD COMMERCIAL PRACTICE, AND FREE FROM DEFECTS. MODEL NUMBERS LISTED IN THE SPECIFICATIONS OR SHOWN ON THE DRAWINGS ARE NOT NECESSARILY INTENDED TO DESIGNATE THE REQUIRED TRIM, WRITTEN DESCRIPTIONS OF THE TRIM GOVERN MODEL NUMBERS.

THE COMPLETE INSTALLATION SHALL FUNCTION AS DESIGNED AND INTENDED WITH RESPECT TO EFFICIENCY, CAPACITY, NOISE LEVEL, ETC. ABNORMAL NOISE CAUSED BY RATTLING EQUIPMENT, PIPING, DUCTS, AIR DEVICES, AND SQUEAKS IN ROTATING COMPONENTS WILL NOT BE ACCEPTABLE. IN GENERAL, MATERIALS AND EQUIPMENT SHALL BE OF COMMERCIAL SPECIFICATION GRADE IN QUALITY. LIGHT DUTY AND RESIDENTIAL TYPE EQUIPMENT WILL NOT BE ACCEPTED.

REPAIR OR REPLACE PUBLIC AND PRIVATE PROPERTY DAMAGED AS A RESULT OF WORK PERFORMED UNDER THIS CONTRACT TO THE SATISFACTION OF AUTHORITIES AND REGULATIONS HAVING JURISDICTION.

COORDINATION

COORDINATE WORK WITH THAT OF OTHER TRADES SO THAT THE VARIOUS COMPONENTS OF THE SYSTEMS WILL BE INSTALLED AT THE PROPER TIME, WILL FIT THE AVAILABLE SPACE, AND WILL ALLOW PROPER SERVICE ACCESS TO THOSE ITEMS REQUIRING MAINTENANCE. COMPONENTS WHICH ARE INSTALLED WITHOUT REGARD TO THE ABOVE SHALL BE RELOCATED AT NO ADDITIONAL COST TO THE OWNER.

UNLESS OTHERWISE INDICATED, THE GENERAL CONTRACTOR WILL PROVIDE CHASES AND OPENINGS IN BUILDING CONSTRUCTION REQUIRED FOR INSTALLATION OF THE SYSTEMS SPECIFIED HEREIN. CONTRACTOR SHALL FURNISH THE NECESSARY FOR THE CONTRACTOR WITH INFORMATION WHERE CHASES AND OPENINGS ARE REQUIRED. KEEP INFORMED AS TO THE WORK OF OTHER TRADES ENGAGED IN THE CONSTRUCTION OF THE PROJECT, AND EXECUTE WORK IN A MANNER AS TO NOT INTERFERE WITH OR DELAY THE WORK OF OTHER TRADES.

FIGURED DIMENSIONS SHALL BE TAKEN IN PREFERENCE TO SCALE DIMENSIONS. CONTRACTOR SHALL TAKE HIS OWN MEASUREMENTS AT THE BUILDING, AS VARIATIONS MAY OCCUR. CONTRACTOR WILL BE HELD RESPONSIBLE FOR ERRORS THAT COULD HAVE BEEN AVOIDED BY PROPER CHECKING AND INSPECTION.

PROVIDE MATERIALS WITH TRIM THAT WILL PROPERLY FIT THE TYPES OF CEILING, WALL, OR FLOOR FINISHES ACTUALLY INSTALLED. MODEL NUMBERS LISTED IN THE SPECIFICATIONS OR SHOWN ON THE DRAWINGS ARE NOT INTENDED TO DESIGNATE THE REQUIRED TRIM.

ORDINANCES AND CODES

WORK PERFORMED UNDER THIS CONTRACT SHALL, AT A MINIMUM, BE IN CONFORMANCE WITH APPLICABLE NATIONAL, STATE AND LOCAL CODES HAVING JURISDICTION. EQUIPMENT FURNISHED AND ASSOCIATED INSTALLATION WORK PERFORMED UNDER THIS CONTRACT SHALL BE IN STRICT COMPLIANCE WITH CURRENT APPLICABLE CODES ADOPTED BY THE LOCAL AHJ INCLUDING ANY AMENDMENTS AND STANDARDS AS SET FORTH BY THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA), UNDERWRITERS LABORATORIES (UL), OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA), AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME), AMERICAN SOCIETY OF HEATING, REFRIGERATION, AND AIR CONDITIONING ENGINEERS (ASHRAE), AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI), AMERICAN SOCIETY OF TESTING MATERIALS (ASTM) AND OTHER NATIONAL STANDARDS AND CODES WHERE APPLICABLE. WHERE THE CONTRACT DOCUMENTS EXCEED THE REQUIREMENTS OF THE REFERENCED CODES, STANDARDS, ETC., THE CONTRACT DOCUMENTS SHALL TAKE PRECEDENCE.

PROTECTION OF EQUIPMENT AND MATERIALS

STORE AND PROTECT FROM DAMAGE EQUIPMENT AND MATERIALS DELIVERED TO JOB SITE. COVER WITH WATERPROOF, TEAR-RESISTANT, HEAVY TARP OR POLYETHYLENE PLASTIC AS REQUIRED TO PROTECT FROM PLASTER, DIRT, PAINT, WATER, OR PHYSICAL DAMAGE. EQUIPMENT AND MATERIAL THAT HAS BEEN DAMAGED BY CONSTRUCTION ACTIVITIES WILL BE REJECTED, AND CONTRACTOR IS OBLIGATED TO FURNISH NEW EQUIPMENT AND MATERIAL OF A LIKE KIND.

PLUG OR CAP OPEN ENDS OF DUCTWORK AND PIPING SYSTEMS WHILE STORED AND INSTALLED DURING CONSTRUCTION WHEN NOT IN USE TO PREVENT THE ENTRANCE OF DEBRIS INTO THE SYSTEMS.

SUBSTITUTIONS

THE BASE BID SHALL INCLUDE ONLY THE PRODUCTS FROM MANUFACTURERS SPECIFICALLY NAMED IN THE DRAWINGS AND SPECIFICATIONS. NO SUBSTITUTION WILL BE CONSIDERED PRIOR TO RECEIPT OF BIDS UNLESS WRITTEN REQUEST FOR APPROVAL TO BID HAS BEEN RECEIVED BY THE ENGINEER AT LEAST TEN CALENDAR DAYS PRIOR TO THE DATE FOR RECEIPT OF BIDS. EACH SUCH REQUEST SHALL INCLUDE THE NAME OF THE MATERIAL OR EQUIPMENT FOR WHICH IT IS TO BE SUBSTITUTED AND A COMPLETE DESCRIPTION OF THE PROPOSED SUBSTITUTE INCLUDING DRAWINGS, CUTS, PERFORMANCE AND TEST DATA AND OTHER INFORMATION NECESSARY FOR AN EVALUATION. A STATEMENT SETTING FORTH CHANGES IN OTHER MATERIALS, EQUIPMENT OR OTHER WORK THAT INCORPORATION OF THE SUBSTITUTE WOULD REQUIRE SHALL BE INCLUDED. THE BURDEN OF PROOF OF THE MERIT OF THE PROPOSED SUBSTITUTE IS UPON THE PROPOSER. THE ENGINEER'S DECISION OF APPROVAL OR DISAPPROVAL TO BID OF A PROPOSED SUBSTITUTION SHALL BE FINAL.

THE TERMS "APPROVED", "APPROVED EQUAL", AND "EQUAL" REFER TO APPROVAL BY THE ENGINEER AS AN ACCEPTABLE ALTERNATE BID. NO SUBSTITUTIONS WILL BE CONSIDERED THAT ARE NOT BID AS AN ALTERNATE. NO MATERIAL SUBSTITUTIONS SHALL BE CONSIDERED FOR APPROVAL PRIOR TO AWARD OF CONTRACT.

COORDINATE AND VERIFY WITH OTHER TRADES WHETHER OR NOT THE SUBSTITUTED EQUIPMENT CAN BE INSTALLED AS SHOWN ON THE CONSTRUCTION DRAWINGS WITHOUT MODIFICATION TO ASSOCIATED SYSTEMS OR ARCHITECTURAL OR ENGINEERING DESIGN. INCLUDE ADDITIONAL COSTS FOR ARCHITECTURAL AND ENGINEERING DESIGN FEES IN BID IF DRAWING MODIFICATIONS ARE REQUIRED BECAUSE OF SUBSTITUTED EQUIPMENT.

SHOP DRAWINGS

UPON BEING AWARDED A CONTRACT, SUBMIT TO THE ARCHITECT FOR APPROVAL, SIX (6) COPIES OF MANUFACTURER'S SHOP DRAWINGS FOR EQUIPMENT TO BE FURNISHED UNDER THIS CONTRACT, ITEMS REQUIRING COORDINATION BETWEEN CONTRACTORS AND SHEET METAL DUCTWORK FABRICATION DRAWINGS. BEFORE SUBMITTING SHOP DRAWINGS AND MATERIAL LISTS, VERIFY THAT EQUIPMENT SUBMITTED IS MUTUALLY COMPATIBLE AND SUITABLE FOR THE INTENDED USE, AND WILL FIT THE AVAILABLE SPACE AND ALLOW AMPLE ROOM FOR MAINTENANCE. HIGHLIGHT, MARK, LIST OR INDICATE THE MATERIALS, PERFORMANCE CRITERIA AND ACCESSORIES THAT ARE BEING PROPOSED. SUBMIT SHOP DRAWINGS AS EARLY AS REQUIRED TO SUPPORT THE PROJECT SCHEDULE. ALLOW FOR TWO WEEKS ENGINEER REVIEW TIME PLUS MAILING TIME PLUS A DUPLICATION OF THIS TIME FOR RESUBMITAL IF REQUIRED.

THE ENGINEER'S CHECKING AND SUBSEQUENT APPROVAL OF SUCH SHOP DRAWINGS STILL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ERRORS IN DIMENSIONS, DETAILS, SIZE OF MEMBERS, QUANTITIES, OMISSIONS OF COMPONENTS OR FITTINGS; COORDINATION OF ELECTRICAL REQUIREMENTS; OR FOR COORDINATING ITEMS WITH ACTUAL BUILDING CONDITIONS. PROCEED WITH THE PROCUREMENT AND INSTALLATION OF EQUIPMENT ONLY AFTER RECEIVING APPROVED SHOP DRAWINGS RELATIVE TO EACH ITEM.

CATALOG DATA SHALL BE PROPERLY BOUND, IDENTIFIED, INDEXED AND TABBED IN A 3-RING BINDER. LABEL THE CATALOG DATA WITH THE EQUIPMENT IDENTIFICATION ACRONYM OR NUMBER AS USED ON THE DRAWINGS AND INCLUDE PERFORMANCE CURVES, CAPACITIES, SIZES, WEIGHTS, MATERIALS, FINISHES, WIRING DIAGRAMS, ELECTRICAL REQUIREMENTS AND DEVIATIONS FROM SPECIFIED EQUIPMENT OR OPERATIONAL AND MAINTENANCE INSTRUCTIONS, MANUFACTURER'S CATALOG SHEETS, CIRCUIT CURRENT RATINGS. MARK OUT INAPPLICABLE ITEMS. SHOP DRAWINGS WILL BE RETURNED WITHOUT REVIEW IF THE ABOVE MENTIONED REQUIREMENTS ARE NOT MET.

OPERATION AND MAINTENANCE INSTRUCTIONS

DURING THE COURSE OF CONSTRUCTION, COLLECT AND COMPIL A COMPLETE BROCHURE OF EQUIPMENT FURNISHED AND INSTALLED ON THIS PROJECT. INCLUDE OPERATIONAL AND MAINTENANCE INSTRUCTIONS, MANUFACTURER'S CATALOG SHEETS, WIRING DIAGRAMS, PARTS LISTS, APPROVED SHOP DRAWINGS, AND DESCRIPTIVE LITERATURE AS FURNISHED BY THE EQUIPMENT MANUFACTURER. INCLUDE AN INSIDE COVER SHEET THAT LISTS THE PROJECT NAME, DATE, OWNER, ARCHITECT, CONSULTING ENGINEER, GENERAL CONTRACTOR, SUB-CONTRACTOR, AND AN INDEX OF CONTENTS.

SUBMIT THREE COPIES OF LITERATURE BOUND IN APPROVED BINDERS WITH INDEX AND TABS SEPARATING EQUIPMENT TYPES TO THE ARCHITECT AT THE TERMINATION OF THE WORK. PAPER, CLIP, STAPLES, RUBBER BANDS, AND MAILING ENVELOPES ARE NOT CONSIDERED. APPROVED BINDING IS THE FINAL APPROVAL OF MECHANICAL SYSTEMS INSTALLED UNDER THIS CONTRACT WILL BE WITHHELD UNTIL THIS EQUIPMENT BROCHURE IS RECEIVED AND DEEMED COMPLETE BY THE ARCHITECT AND ENGINEER. INSTRUCT WORKMEN TO SAVE REQUIRED LITERATURE SHIPPED WITH THE EQUIPMENT ITSELF, FOR INCLUSION IN THIS BROCHURE.

WARRANTIES

WARRANT EACH SYSTEM AND EACH ELEMENT THEREOF AGAINST ALL DEFECTS DUE TO FAULTY WORKMANSHIP, DESIGN OR MATERIAL FOR A PERIOD OF 12 MONTHS FROM DATE OF SUBSTANTIAL COMPLETION, UNLESS SPECIFIC ITEMS ARE NOTED TO CARRY A LONGER WARRANTY IN THE CONSTRUCTION DOCUMENTS OR MANUFACTURER'S STANDARD WARRANTY EXCEEDS 12 MONTHS. REMEDY ALL DEFECTS OCCURRING WITHIN THE WARRANTY PERIOD(S), AS STATED IN THE GENERAL CONDITIONS AND DIVISION 1.

WARRANTIES SHALL INCLUDE LABOR AND MATERIAL. MAKE REPAIRS OR REPLACEMENTS WITHOUT ANY ADDITIONAL COSTS TO THE OWNER.

PERFORM THE REMEDIAL WORK PROMPTLY, UPON WRITTEN NOTICE FROM THE ENGINEER OR OWNER.

AT THE TIME OF SUBSTANTIAL COMPLETION, DELIVER TO THE OWNER ALL WARRANTIES, IN WRITING AND PROPERLY EXECUTED, INCLUDING TERM LIMITS FOR WARRANTIES. CONTRACTOR'S FUNDING BEYOND THE ONE YEAR FINAL APPROVAL OF MECHANICAL SYSTEMS ADDRESSED TO THE OWNER AND STATING THE COMMENCEMENT DATE AND TERM.

SPARE PARTS

FURNISH TO OWNER, WITH RECEIPT, THE FOLLOWING SPARE PARTS FOR THE EQUIPMENT FURNISHED FOR THIS PROJECT:

- ONE SET OF SPARE FILTERS OF EACH TYPE REQUIRED FOR EACH UNIT. IN ADDITION TO THE SPARE SET OF FILTERS, INSTALL NEW FILTERS PRIOR TO TESTING, ADJUSTING, AND BALANCING WORK AND BEFORE TURNING SYSTEM OVER TO OWNER.
- FURNISH ONE COMPLETE SET OF BELTS FOR EACH FAN.
- FURNISH THREE OPERATING KEYS FOR EACH TYPE OF AIR OUTLET AND INLET THAT REQUIRE THEM.

CUTTING AND PATCHING

PERFORM CUTTING OF WALLS, FLOORS, CEILINGS, ETC. AS REQUIRED TO INSTALL WORK UNDER THIS SECTION. OBTAIN PERMISSION FROM THE ARCHITECT PRIOR TO CUTTING. DO NOT CUT OR DISTURB STRUCTURAL MEMBERS WITHOUT PRIOR APPROVAL FROM THE ARCHITECT. CUT HOLES AS SMALL AS POSSIBLE. GENERAL CONTRACTOR SHALL PATCH WALLS, FLOORS, CEILING, AND WALL VANEES UNDER THIS SECTION. PATCHING SHALL MATCH THE ORIGINAL MATERIAL AND CONSTRUCTION. REPAIR AND REFINISH AREAS DISTURBED BY WORK TO THE CONDITION OF ADJOINING SURFACES IN A MANNER SATISFACTORY TO THE ARCHITECT.

ACCESS DOORS

PROVIDE ACCESS DOORS IN CEILINGS, WALLS, ETC. WHERE INDICATED OR REQUIRED FOR ACCESS TO INSULATION, FITTINGS AND TRANSVERSE JOINTS. PROVIDE ACCESS UNDER THIS SECTION. PROVIDE CONCEALED HINGES, SCREWDRIVER-TYPE LOCK, ANCHOR STRAPS; MANUFACTURED BY MILCOR, ZURN, TITUS, OR EQUAL. OBTAIN ARCHITECT'S APPROVAL OF TYPE, SIZE, LOCATION AND COLOR BEFORE ORDERING.

PENETRATIONS

PROVIDE PREFABRICATED ROOF CURBS MANUFACTURED BY CUSTOM CURB, INC., PATE COMPANY, THYCURB OR APPROVED EQUAL. PROVIDE ROOF CURB WITH FACTORY INSTALLED WOOD NAILED; WELDED, 18 GAUGE GALVANIZED STEEL SHELL, BASE PLATE AND FLASHING; 1-1/2" THICK, 3 POUND RIGID INSULATION; FULLY MITERED 3-INCH RAISED CANT; COVER OF WEATHER-RESISTANT, WEATHER-PROOF MATERIAL AND PIPE COLLAR OF WEATHER-RESISTANT MATERIAL WITH STAINLESS STEEL PIPE CLAMPS.

SEAL ELEVATED FLOOR, EXTERIOR WALL AND ROOF PENETRATIONS WATERTIGHT AND WEATHERTIGHT WITH NON-SHRINK, NON-HARDENING COMMERCIAL SEALANT. PACK WITH MINERAL WOOL AND SEAL BOTH ENDS WITH MINIMUM 1/2" OF SEALANT. SEAL AROUND PENETRATIONS OF FIRE RATED ASSEMBLIES. COORDINATE FIRE RATINGS AND LOCATIONS WITH THE ARCHITECTURAL DRAWINGS. REFER TO ARCHITECTURAL SPECIFICATIONS FOR FIRE STOPPINGS. PROVIDE A PRODUCT SCHEDULE FOR UL LISTING, LOCATION, WALL OR FLOOR RATING AND INSTALLATION DRAWING FOR EACH PENETRATION FIRE STOP SYSTEM.

PROVIDE BOX FRAMES FOR RECTANGULAR OPENINGS WELDED 12 GAUGE GALVANIZED STEEL ATTACHED TO FORMS AND OF A MAXIMUM DIMENSION ESTABLISHED BY THE ARCHITECT. NOTIFY THE GENERAL CONTRACTOR OR ARCHITECT BEFORE INSTALLING ANY BOX OPENINGS NOT SHOWN ON THE ARCHITECTURAL OR STRUCTURAL DRAWINGS.

AIR FILTERS

PROVIDE FARR 30/30, PLEATED, THROWAWAY TYPE FILTERS, OR SIMILAR AS MANUFACTURED BY AMERICAN AIR FILTER, FLANDERS OR APPROVED EQUAL, UNLESS OTHERWISE INDICATED. AIR UNITS SHALL HAVE NEW FILTERS INSTALLED WHEN THEY ARE OPERATED BEFORE FINAL ACCEPTANCE.

ELECTRICAL WIRING

LINE VOLTAGE WIRING SHALL BE PROVIDED BY DIVISION 16. LINE VOLTAGE CONTROL AND INTERLOCK WIRING FOR MECHANICAL SYSTEMS SHALL ALSO BE PROVIDED BY DIVISION 16 CONTRACTOR. LOW VOLTAGE CONTROL WIRING SHALL BE PROVIDED BY THE DIVISION 15 CONTRACTOR. FURNISH WIRING DIAGRAMS TO THE DIVISION 16 CONTRACTOR AS REQUIRED FOR PROPER EQUIPMENT HOOKUP. COORDINATE WITH THE DIVISION 16 CONTRACTOR THE ACTUAL WIRE SIZING AMPS FOR MECHANICAL EQUIPMENT (FROM THE EQUIPMENT NAMEPLATE) TO ENSURE PROPER INSTALLATION.

REFRIGERANT AND OIL

PROVIDE FULL REFRIGERANT AND OIL CHARGE IN NEW AIR CONDITIONING REFRIGERATION SYSTEMS, AND MAINTAIN IT FOR FULL TERM OF THE GUARANTEE.

FINAL TESTING AND ADJUSTMENTS

FINAL SYSTEM TESTING, BALANCING AND ADJUSTMENTS SHALL BE PERFORMED BY A CONTRACTOR CERTIFIED BY THE NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB) OR ASSOCIATED AIR BALANCE COUNCIL (AABC). PERFORM TEST READINGS ON FANS, UNITS, COILS, ETC. AND ADJUST EQUIPMENT TO DELIVER SPECIFIED AMOUNTS OF AIR. BEFORE TESTING AND BALANCING REPORT LOG SHOWING AIR SUPPLY QUANTITIES, AIR ENTERING AND LEAVING TEMPERATURES AND PRESSURES, FAN UNIT TEST READINGS, MOTOR VOLTAGE AND AMP DRAWS, ETC., AND SUBMIT SIX COPIES OF THE FINAL COMPILATION OF DATA TO THE ARCHITECT FOR EVALUATION AND APPROVAL. BEFORE FINAL INSPECTION OF THE PROJECT, BALANCE AIR SYSTEMS TO WITHIN PLUS OR MINUS 10 PERCENT FOR TERMINAL DEVICES AND BRANCH LINES AND PLUS OR MINUS 5 PERCENT FOR MAIN DUCTS AND AIR HANDLING EQUIPMENT OF THE AMOUNT OF AIR SHOWN ON THE DRAWINGS. FURTHER ADJUSTMENTS SHALL BE MADE TO OBTAIN UNIFORM TEMPERATURE IN SPACES. ADJUST EQUIPMENT TO OPERATE AS INTENDED BY THE SPECIFICATION. ALIGN BEARINGS AND REPLACE BEARINGS THAT HAVE DIRT OR FOREIGN MATERIAL IN THEM WITH NEW BEARINGS WITHOUT ADDITIONAL COST TO THE OWNER. BALANCE CONTRACTOR SHALL INCLUDE IN THE REPORT ANY IMPROPERLY INSTALLED OR MISSING BALANCING DEVICES THAT WOULD NEGATIVELY IMPACT THE SYSTEM OPERATION.

ADJUST THERMOSTATS AND CONTROL DEVICES TO OPERATE AS INTENDED. ADJUST BURNERS, PUMPS, FANS, ETC. FOR PROPER OPERATION. CERTIFY TO ARCHITECT THAT ADJUSTMENTS HAVE BEEN MADE AND THAT SYSTEM IS OPERATING SATISFACTORILY. FURTHER ADJUSTMENTS SHALL BE MADE TO OBTAIN UNIFORM TEMPERATURE IN SPACES. CALIBRATE, SET, AND ADJUST AUTOMATIC TEMPERATURE CONTROL FOR PROPER SEQUENCING OF INTERLOCK SYSTEMS, AND OPERATION OF SAFETY CONTROLS.

BUILDING OPERATION

COMPLY WITH THE SCHEDULE OF OPERATIONS AS OUTLINED IN THE ARCHITECTURAL PORTIONS OF THIS SPECIFICATION. BUILDING SHALL BE IN CONTINUOUS OPERATION. ACCOMPLISH WORK REQUIRING INTERRUPTION OF BUILDING OPERATION AT A TIME WHEN THE BUILDING IS NOT IN OPERATION, AND ONLY WITH WRITTEN APPROVAL OF BUILDING OWNER AND/OR TENANT. COORDINATE INTERRUPTION OF BUILDING OPERATION WITH THE OWNER AND/OR TENANT A MINIMUM OF SEVEN DAYS IN ADVANCE OF WORK.

MECHANICAL IDENTIFICATION

PROVIDE MANUFACTURER'S STANDARD PRE-PRINTED, SEMI-RIGID SNAP-ON OR PERMANENT ADHESIVE, PRESSURE-SENSITIVE VINYL PLAC MARKERS.

PROVIDE MANUFACTURER'S STANDARD LAMINATED PLASTIC, COLOR CODED EQUIPMENT MARKERS. CONFORM TO THE FOLLOWING COLOR CODE: GREEN FOR COOLING; YELLOW FOR HEATING; YELLOW/GREEN FOR COMBINATION COOLING AND HEATING; BROWN FOR ENERGY RECLAIMATION; BLUE FOR OTHER EQUIPMENT TYPES. CONFORM TO ANSI A13.1 FOR HAZARDOUS EQUIPMENT.

PROVIDE STENCILED SIGNS FOR EQUIPMENT IDENTIFICATION AT CONTRACTOR'S OPTION OR WHERE DISTANCE OF REQUIRED IDENTIFICATION REQUIRES LETTERING LARGER THAN 1 INCH HEIGHT. STENCIL PAINT SHALL BE EXTERIOR TYPE OIL-BASED, ENAMEL, MINIMUM 1-1/4 INCH HEIGHT OR GREATER AS REQUIRED FOR LONG DISTANCE IDENTIFICATION, WHITE OR BLACK COLOR FOR BEST CONTRAST.

PROVIDE DUCT MARKERS OR PROVIDE STENCILED SIGNS AND ARROWS INDICATING DUCTWORK SERVICE AND FLOW DIRECTION IN BLACK OR WHITE LETTERING FOR BEST CONTRAST WITH DUCT OR INSULATION COLOR. LOCATE MARKERS MAXIMUM 50 FEET ALONG EACH DUCT SIDE AND WITHIN 5 FEET OF ALL CONTROL AND BALANCING DAMPERS OR BRANCH DUCTS MORE THAN 25 FEET LENGTH AND WITHIN 5 FEET ON EACH SIDE OF WALL, FLOOR, AND CEILING PENETRATIONS. PROVIDE ADDITIONAL MARKERS IN CONGESTED AREAS OR AT MULTIPLE DUCT RUNS AS REQUIRED FOR CLARITY.

DUCT INSULATION, DUCTWORK, ACCESSORIES AND FANS

DUCT INSULATION

PROVIDE DUCT LINER IN RECTANGULAR SUPPLY AND RETURN AIR DUCTWORK. LINER SHALL BE 1-1/2" THICK, 1-1/2 POUND DENSITY FIBERGLASS, MINIMUM R-6.0 CERTAINTEE CORP. "TOUGHGUARD" OR EQUIVALENT OWENS-CORNING OR KNAUF LONG TEXTILE FIBER DUCT LINER. LINER SURFACE SHALL SERVE AS A BARRIER AGAINST INFILTRATION OF DUST AND DIRT. SHALL MEET ASTM C-1338 FOR FLEET, RESISTANCE AND SHALL BE CLEANABLE USING DUCT CLEANING METHODS AND EQUIPMENT OUTLINED BY NORTH AMERICAN INSULATION MANUFACTURERS ASSOCIATION (NAIMA) DUCT CLEANING GUIDE. INSTALL WITH LINER ADHESIVE AND MECHANICAL FASTENERS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS. DUCTWORK SIZES SHOWN ON DRAWINGS ARE INSIDE CLEAR DIMENSIONS. INCREASE SHEET METAL BY LINER THICKNESS IN BOTH DIRECTIONS WHERE LINER IS INSTALLED.

COVER CONCEALED, RIGID DUCTWORK WITH 2" THICK, 3/4 POUND DENSITY, MINIMUM R-6.0 DUCT WRAP, CERTAINTEE OR EQUIVALENT OWENS-CORNING OR KNAUF WITH HEAVY-DUTY FOIL-SCRIM-KRAFT FACING, AND WITH JOINTS TAPED WITH 3" WIDE FOIL TAPE AS FOLLOWS:

- ROUND SUPPLY AND RETURN AIR DUCTWORK.
- ROUND AND RECTANGULAR EXHAUST AND RELIEF AIR DUCTWORK WITHIN 10 FEET OF EXTERIOR DISCHARGE.

INSULATING MATERIALS, ADHESIVES, COATINGS, ETC., SHALL NOT EXCEED FLAME SPREAD RATING OF 25 AND SMOKE DEVELOPED RATING OF 50 PER ASTM E 84. CONTAINERS FOR MASTICS AND ADHESIVES SHALL HAVE U.L. LABEL.

FOR DUCTWORK THAT IS LOCATED EXTERIOR TO THE BUILDING AND INSTALLED WITH SEAMS SEALED WITH SEALANT, PROVIDE 2" (MINIMUM R-8.0) THICK FIBROUS BOARD INSULATION. FOR WELDED DUCTWORK THAT IS EXTERIOR TO THE BUILDING, INSULATE WITH 2" (MINIMUM R-8.0) THICK FIBROUS BOARD INSULATION AND PROVIDE MINIMUM 20 GAUGE ALUMINUM JACKET.

DUCTWORK

PROVIDE GALVANIZED STEEL DUCTWORK AND HOUSINGS AS SHOWN ON DRAWINGS. CONSTRUCT DUCTWORK INCLUDING FITTINGS AND TRANSVERSE VALVES CONFORM WITH CURRENT SMACNA STANDARDS RELATIVE TO GAUGE, BRACING, JOINTS, ETC. MINIMUM THICKNESS OF DUCT SHALL BE 26-GAUGE SHEET METAL. REINFORCE HOUSINGS AND DUCTWORK OVER 30" WITH 1-1/4" ANGLES NOT LESS THAN 5"-8" ON CENTERS, AND CLOSER IF REQUIRED FOR SUFFICIENT RIGIDITY TO PREVENT VIBRATION. SUPPORT HORIZONTAL RUNS OF DUCT FROM STRAP IRON HANGERS ON CENTER. NOT TO EXCEED 8'-0". DO NOT SUPPORT CEILING GRID, CONDUTS, PIPES, EQUIPMENT, ETC. FROM DUCTWORK. COORDINATE ROUTING OF DUCTWORK WITH OTHER CONTRACTORS SUCH THAT PIPING, ELECTRICAL CONDUIT, AND ASSOCIATED SUPPORTS ARE NOT ROUTED THROUGH THE DUCTWORK.

CONSTRUCT SUPPLY DUCTS TO MEET SMACNA POSITIVE PRESSURE OF 2" W.G. CONSTRUCT RETURN, OUTDOOR AND EXHAUST DUCTWORK UPSTREAM OF FANS TO MEET SMACNA NEGATIVE PRESSURE OF 2" W.G. CONSTRUCT EXHAUST DUCTWORK DOWNSTREAM OF FANS TO MEET SMACNA POSITIVE PRESSURE OF 2" W.G.

DUCTWORK ABOVE ROOF OR OTHERWISE EXTERIOR TO BUILDING SHALL BE MINIMUM #18 GAUGE WITH LONGITUDINAL AND TRANSVERSE JOINTS WELDED OR SEALED AIRTIGHT WITH WEATHERPROOF HEAVY LIQUID SEALANT APPLIED ACCORDING TO MANUFACTURER'S INSTRUCTIONS.

SEAL DUCTWORK WITH HEAVY LIQUID SEALANT, HARDCAST IRONGRIP 601, DESIGN POLYMER DP 1010, UNITED MCGILL DUCT SEALER OR APPROVED EQUAL, APPLIED ACCORDING TO SEALANT MANUFACTURER'S INSTRUCTIONS. FOR DUCTS WITH PRESSURE CLASSIFICATION LESS THAN 2" W.G. SEAL TRANSVERSE JOINTS AIRTIGHT TO MEET SMACNA CLASS C. TAPES AND MASTICS SHALL BE LISTED AND LABELED IN ACCORDANCE WITH UL 181A.

PROVIDE RADIUS ELBOWS, TURNS, AND OFFSETS WITH A MINIMUM CENTERLINE RADIUS OF 1-1/2 TIMES THE DUCT WIDTH, WHERE SPACE DOES NOT PERMIT. RADIUS ELBOWS, PROVIDE SHORT RADIUS ELBOWS WITH A MINIMUM OF TWO CONTINUOUS SPLITTER VANES. VANES SHALL BE THE ENTIRE LENGTH OF THE BEND. PROVIDE MITERED ELBOWS WHERE SPACE DOES NOT PERMIT RADIUS ELBOWS, WHERE SHOWN ON THE DRAWINGS, OR AT THE OPTION OF THE CONTRACTOR WITH THE ENGINEER'S APPROVAL. MITERED ELBOWS LESS THAN 45 DEGREES SHALL NOT REQUIRE TURNING VANES. MITERED ELBOWS 45-DEGREES AND GREATER SHALL HAVE SINGLE THICKNESS TURNING VANES OF SAME GAUGE AS DUCTWORK, RIGIDLY FASTENED WITH GUIDE STRIPS IN DUCTWORK. VANES FOR MITERED ELBOWS SHALL BE PROVIDED IN ALL SUPPLY AND EXHAUST DUCTWORK AND IN RETURN AND OUTSIDE AIR DUCTWORK THAT HAS AN AIR VELOCITY EXCEEDING 1000 FPM. DO NOT INSTALL VANES IN GREASE DUCTWORK.

DUCTS SHALL BE CONNECTED TO FANS, FAN CASINGS AND FAN PLENUMS BY MEANS OF FLEXIBLE CONNECTORS. FLEXIBLE CONNECTORS SHALL BE NEOPRENE COATED GLASS CLOTH CANVAS CONNECTIONS, DURO-DYNE, ELGEN, VENTIFABRIC OR EQUAL. FLEXIBLE CONNECTORS SHALL HAVE A FLAME SPREAD OF 25 OR LESS AND SMOKE DEVELOPED RATING NOT HIGHER THAN 50. MAKE AIRTIGHT JOINTS AND INSTALL WITH MINIMUM 1-1/2" SLACK.

PROVIDE BALANCING DAMPERS, MANUFACTURED BY RUSKIN, GREENHECK, NAILOR INDUSTRIES, CESCO, LOUVERS & DAMPERS, POTTORFF OR APPROVED EQUAL, WHERE SHOWN ON DRAWINGS AND WHEREVER NECESSARY FOR COMPLETE CONTROL OF AIR FLOW. SPLITTER DAMPERS SHALL BE CONTROLLED BY LOCKING QUADRANTS; PROVIDE YOUNG REGULATOR OR VENTLOK END BEARINGS FOR THE DAMPER ROD. RECTANGULAR VOLUME DAMPERS SHALL BE OPPOSED BLADE INTERLOCKING TYPE. ROUND VOLUME DAMPERS SHALL BE BUTTERFLY TYPE CONSISTING OF CIRCULAR BLADE MOUNTED TO A SHAFT. DAMPER LEAKAGE FOR OUTSIDE AIR DAMPERS SHALL NOT EXCEED 4.0 CFM SQUARE FOOT IN FULL CLOSED POSITION AT 1" W.G. PRESSURE DIFFERENTIAL ACROSS DAMPER. REFERENCE MANUFACTURER AND MODEL NUMBER FOR OUTSIDE AIR DAMPERS IS RUSKIN MODEL CD-50. PROVIDE FLEXMASTER MODEL STO OR EQUAL 45 DEGREE RECTANGULAR/ROUND SIDE TAKEOFF FITTING WITH MODEL SLBO DOUBLE BEARING DAMPER WITH INSULATION BUILT OUT FOR ROUND DUCTWORK BRANCH TAKEOFFS TO INDIVIDUAL AIR DEVICES. OMIT DAMPER AT TAKEOFF FITTING WHEN DAMPER IS LOCATED DOWNSTREAM OF TAKEOFF.

LOW PRESSURE (DUCT PRESSURE CLASS UP TO AND INCLUDING 2" W.G.) FITTINGS 24" IN DIAMETER AND LESS SHALL BE PREFABRICATED, SPOTWELDED AND INTERNALLY SEALED. SEAL LONGITUDINAL AND TRANSVERSE DUCTWORK JOINTS AIRTIGHT WITH HEAVY LIQUID SEALANT APPLIED ACCORDING TO MANUFACTURER'S INSTRUCTIONS.

FLEXIBLE DUCT

LOW PRESSURE (DUCT PRESSURE CLASS UP TO AND INCLUDING 2" W.G.) FLEXIBLE DUCT SHALL BE FLEXMASTER TYPE 88, THERMAFLEX TYPE G-KM, M-KE, OR EQUAL (FIRE RETARDANT POLYETHYLENE) PROTECTIVE VAPOR BARRIER, UL-181 C, 1" DIA. ACOUSTICAL INSULATED DUCT, R-6.0 FIBERGLASS INSULATION. PROVIDE CPE LINER WITH STEEL WIRE HELIX MECHANICALLY LOCKED OR PERMANENTLY BONDED TO THE LINER.

FLEXIBLE DUCT RUNS SHALL NOT EXCEED 6 FEET IN LENGTH, AND SHALL BE INSTALLED FULLY EXTENDED AND STRAIGHT AS POSSIBLE AVOIDING TIGHT TURNS. INSTALL FLEXIBLE DUCT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. SUPPORT FLEXIBLE DUCT WITH HANGERS OR BRACKETS. MAXIMUM 6 INCHES OF BENDS. BENDS SHALL NOT EXCEED A CENTERLINE RADIUS OF ONE DUCT DIAMETER. DUCT SAG SHALL NOT EXCEED 1/2 INCH, SUPPORTING MATERIAL IN DIRECT CONTACT WITH THE DUCT SHALL NOT BE LESS THAN 1-1/2 INCHES IN WIDTH.

CONNECT FLEXIBLE DUCT TO RIGID METAL DUCT OR AIR DEVICES AS RECOMMENDED BY THE MANUFACTURER. AT A MINIMUM, INSTALL TWO WRAPS OF DUCT TAPE AROUND THE INNER CORE CONNECTION AND A METALLIC OR NON-METALLIC CLAMP OVER THE TAPE AND TWO WRAPS OF DUCT TAPE OR A CLAMP OVER THE DUCT JACKET. DUCT CLAMPS SHALL BE LABELED IN ACCORDANCE WITH UL-181B AND MARKED 181B-C. DUCT TAPE SHALL BE LABELED IN ACCORDANCE WITH UL 181B AND MARKED 181B-FX.

AIR DEVICES

PROVIDE AIR DEVICES AS SCHEDULED ON DRAWINGS, MANUFACTURED BY CARNES, E.H. PRICE, KRUEGER, NAILOR INDUSTRIES, TITUS, OR TUTTLE & BAILEY. SELECT AIR DEVICES TO DRAW FROM LOW LEVEL TO NO HIGHER THAN 10' UNLESS OTHERWISE SPECIFIED. PROVIDE DEVICES WITH A SOFT PLASTIC GASKET TO MAKE AIRTIGHT SEAL AGAINST THE MOUNTING SURFACE. COORDINATE FINAL LOCATION, FRAME, AND MOUNTING TYPE OF AIR DEVICES WITH ARCHITECTURAL REFLECTED CEILING PLANS.

PROVIDE CEILING SUPPLY AIR DIFFUSERS AND RETURN AIR GRILLES OF LAY-IN OR SURFACE MOUNTED TYPE AS REQUIRED TO BE COMPATIBLE WITH CEILING CONSTRUCTION. PROVIDE CEILING DIFFUSERS AND GRILLES WITH WHITE ENAMEL FINISH UNLESS NOTED OTHERWISE.

TEMPERATURE CONTROLS

GENERAL REQUIREMENTS

PROVIDE A SYSTEM OF TEMPERATURE CONTROLS INCLUDING THERMOSTATS, TIME SWITCHES, OVERRIDE TIMERS, DAMPER MOTORS, AND RELAYS REQUIRED TO PROVIDE THE DESIRED SEQUENCE OF OPERATION. PROVIDE INTEGRATED WIRING DIAGRAMS SHOWING INTERCONNECTIONS BETWEEN FIELD INSTALLED EQUIPMENT AND PACKAGE WIRING FURNISHED WITH THE MECHANICAL EQUIPMENT. CONTROL WIRING SHALL BE SIZED TO ACCOMMODATE THE VOLTAGE DROP ASSOCIATED WITH THE DISTANCE BETWEEN THE CONTROL DEVICE AND THE CONTROLLER.

EQUIPMENT

MANUFACTURERS AND MODEL NUMBERS ARE LISTED FOR REFERENCE AS TO QUALITY AND FEATURES REQUIRED FOR THE CONTROL DEVICES. PROVIDE CONTROL DEVICES BY BARBER-COLMAN, HONEYWELL, JOHNSON CONTROLS, TRANE OR WHITE RODGERS WITH QUALITY AND FEATURES AS INDICATED.

SEVEN DAY PROGRAMMABLE, OCCUPIED/UNOCCUPIED THERMOSTATS FOR HEATING, COOLING AND, FOR CONTROLS, ECONOMIZER SHALL BE HONEYWELL SERIES 17351 OR EQUAL WITH INTERMEDIATE SUBBASE W7450A ECONOMIZER MODULE. PROVIDE TR24 REMOTE SENSOR WITH OVERRIDE BUTTON WITHOUT SETPOINT ADJUSTMENT AT REMOTE SENSOR. INSTALL THERMOSTATS AT 48" AFF TO MEET ADA REQUIREMENTS UNLESS OTHERWISE NOTED ON THE PLANS.

PROVIDE DAMPER OPERATOR FOR EACH AUTOMATIC DAMPER WITH SUFFICIENT CAPACITY TO OPERATE THE DAMPER UNDER ALL CONDITIONS AND TO GUARANTEE TIGHT CLOSE-OFF OF DAMPERS AGAINST SYSTEM PRESSURE ENCOUNTERED. EACH OPERATOR SHALL BE PROVIDED WITH SPRING-RETURN FOR NORMALLY CLOSED OR NORMALLY OPEN POSITION FOR FAIL SAFE OPERATION TO ACCOUNT FOR FIRE, LOW TEMPERATURES, OR POWER INTERRUPTION AS REQUIRED BY THE SEQUENCE OF OPERATION. DAMPER OPERATORS SHALL BE MANUFACTURED BY BELIMO, JOHNSON CONTROLS OR APPROVED EQUAL.

SMOKE DETECTORS FURNISHED AND INSTALLED AS SCHEDULED ON THE PLANS SHALL SHUT DOWN EACH ASSOCIATED UNIT SUPPLY FAN UPON ACTIVATION WHERE REQUIRED BY CODE. PROVIDE REMOTE VISUAL AND AUDIBLE ALARM DEVICE IN AN APPROVED LOCATION IF SMOKE DETECTORS ARE NOT CONNECTED TO A FIRE ALARM PANEL AND LABEL DEVICE AS "AIR DUCT DETECTOR TROUBLE".

SEQUENCE OF OPERATION

ROOFTOP UNIT CONTROL (FIXED DRY BULB ECONOMIZER)

DURING UNOCCUPIED HOURS, OPERATE ROOFTOP UNIT SUPPLY FAN CONTINUOUSLY AND OPEN OUTDOOR AIR DAMPER TO MINIMUM POSITION TO MAINTAIN MINIMUM VENTILATION. CYCLE STAGE(S) OF COOLING AND HEATING TO MAINTAIN ROOM THERMOSTAT SET POINT (75 DEGREES FAHRENHEIT COOLING, 72 DEGREES FAHRENHEIT HEATING). ENABLE DRY BULB TYPE OUTDOOR AIR ECONOMIZER FOR FIRST STAGE COOLING TO MAINTAIN DISCHARGE AIR TEMPERATURE SET POINT (55 DEGREES F, ADJUSTABLE) WHEN OUTDOOR AMBIENT TEMPERATURE REACHES 60 DEGREES FAHRENHEIT OR BELOW AND OPERATE MECHANICAL COOLING AS NEEDED TO MAINTAIN SPACE TEMPERATURE.

RETURN THE ECONOMIZER TO MINIMUM POSITION WHEN AMBIENT TEMPERATURE IS ABOVE 60 DEGREES FAHRENHEIT OR WHEN DISCHARGE AIR TEMPERATURE DROPS BELOW 50 DEGREES FAHRENHEIT. IF FREEZESTAT SENSES TEMPERATURE BELOW 40 DEGREES FAHRENHEIT, CLOSE OUTDOOR AIR DAMPER AND STOP SUPPLY FAN. SMOKE DETECTORS SHALL SHUTDOWN UNIT UPON ALARM.

DURING UNOCCUPIED HOURS, CYCLE THE ROOFTOP UNIT SUPPLY FAN AND COOLING OR HEATING SYSTEM TO MAINTAIN UNOCCUPIED SETBACK TEMPERATURE SET POINTS. OUTDOOR AIR DAMPER SHALL BE CLOSED DURING UNOCCUPIED HOURS. PROVIDE FREEZESTAT IN THE SUPPLY AIR DUCT TO SHUT DOWN THE SUPPLY FAN AND CLOSE THE OUTDOOR AIR DAMPER IF TEMPERATURE IN THE SUPPLY DUCT DROPS BELOW 40 DEGREES FAHRENHEIT.

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