# ELECTRICAL SYMBOL LEGEND (NOT ALL SYMBOLS ARE USED)

ж	<i>,</i>	_		
$\Rightarrow$	QUADRUPLE (DOUBLE DUPLEX)	В	DOOR BELL	GFCI GROUN
$\Rightarrow$	DUPLEX OUTLET		DOOR BELL PUSH BUTTON	AFCI ARC-F
-	ISOLATED GROUND DUPLEX OUTLET	12 <u>0</u> V	120V SMOKE ALARM (EQUAL TO KIDDE MODEL	WP WEATH
-	ISOLATED GROUND QUADRUPLE OUTLET	SD	PI2000) CONNECTED TO LINE SIDE OF LOCAL	U/C INSTALI
-	HALF SWITCHABLE DUPLEX OULET	γ	ALL SMOKE ALARMS SHALL BE INTERCONNECTED.	I/C INSTALI SCR MINIMUI
$\rightarrow$	SINGLE OUTLET (GROUNDING)	120 V	120V COMBINATION CARBON MONOXIDE / SMOKE	
	SPECIAL PURPOSE (120/240: L,L,N, & GND)		CONNECTED TO LINE SIDE OF LOCAL CIRCUIT,	INSTALLATION NOTE
$\textcircled{\bullet}$	FLOOR BOX AS MANUFACTURED BY STEEL CITY OR EQUAL, UNLESS NOTED.		AND SHALL BE INTERCONNECTED WITH SMOKE ALARMS.	A) MOUNT WIRI
J	JUNCTION BOX		ELECTRICAL PANEL	ABOVE FINIS
$\neq$	G.F.I. DUPLEX OUTLET	www	FLEXIBLE CONDUIT	A) RECEPTA
₩	ABOVE-COUNTER DUPLEX RECEPTACLE		CONDUIT RUN EXPOSED	B) LIGHT S' C) TELEPHC
Þ	ABOVE-COUNTER G.F.I. DUPLEX RECEPTACLE	<i>#</i> /	CONDUIT CONCEALED IN WALLS OR OVERHEAD (SHOWN WITH TWO HOT & NEUTRAL)	D) THERMOS B) BATHROOM V
	TV OUTLET	<i>יון</i> ב	CONDUIT IN OR UNDER THE SLAB	MIRROR OR
▼	TELEPHONE OUTLET		(SHOWN WITH HOT, NEUTRAL & GROUND)	IN THE ARCH
$\mathbf{V}$	COMMUNICATION & DATA STRUCTURAL OUTLET		1x4 FLUORESCENT LIGHT FIXTURE	NOT PROTUL OR AISLES.
S	SINGLE POLE SWITCH		2x4 FLUORESCENT LIGHT FIXTURE	COMP
S3	THREE WAY SWITCH			
S4	FOUR WAY SWITCH		2x2 FLUORESCENT LIGHT FIXTURE	1. AS-BUILT DR
■ or S <sup>B</sup>	SERVICE BREAKER (FACTORY INSTALLED)		4' FLUORESCENT LIGHT STRIP	BY THE ELEC COMPLETION
5	CEILING FAN CONTROL SWITCH COMBINATION		SURFACE MTD. FLUORESCENT LIGHT FIXTURE	
Sd	DIMMER SWITCH		SURFACE FLUORESCENT. UNLESS NOTED	OWNER, WITH
Sd	DOOR SWITCH	Ŷ		A REPRODUC A SINGLE-LII
Sos	NEW OCCUPANCY SENSOR ONE WAY SWITCH	$\rightarrow P$	PENDANT LIGHT FIXTURE	SYSTEM AND FOR ALL DIS
{ м	MOTION/OCCUPANCY SENSOR FOR LIGHTING CON		RECESS HI-HAT LIGHT FUXTURE	3. THE ELECTRI
FF	EXHAUST FAN	$\cdots$	WALL WASH LIGHT FIXTURE	AND SELECT
	MOTOR	нÒ	WALL MOUNTED LIGHT FIXTURE	MAINTENANCI
	STARTER OR CONTROL PANEL	$\mathbf{x}$	EXIT SIGN WITH BATTERY PACK	REQUIRED RO
$\bowtie$	COMBINATION STARTER	N — E —	NEW EXISTING A	
마	DISCONNECT SWITCH - WP INDICATES WEATHERPROOF (TYP.)	Re-	RELOCATED	$\uparrow$
3 <u>60</u>	DISCONNECT SIZE (3 DENOTES NO. POLES,		TWO-HEADS EMERGENCY LIGHT FIXTURE WITH BATTERY PACI	$\langle \rangle$
~ 40	60 DENOTES DISCONNECT RATED AMPERAGE, 40 DENOTES FUSE SIZE [NF DENOTES NON-FUSED]		EXIT SIGN WITH TWO-HEADS EMERGENCY LIGHT FIXTURE AND BATTERY PACK	
		$-$ t $\dots$		

# GENERAL NOTES

- 1. GENERAL.
- A. The installation of the electrical system shown on these drawings, shall conform to the regulations of Local Codes and Ordinances, the N.E.C.(2017), FBC-2020(7th Edition), FBC Energy Code 2020-7th Edition-Section C405 or R404 and Local Utility Company.
- B. Drawings: Refer to all Architectural, Civil, Structural, Plumbing, Mechanical and other discipline drawings for the coordination of the electrical work. C. Arrange and pay for all permits, licenses, inspections,
- and tests. Obtain the required certificates and present to the owner. D. Guarantee: The completed installation shall be fully
- augranteed against defective materials and/or improper workmanship for a minimum of one year for material and labor
- 2. CONTRACTOR needs to establish a field liaison with project
- supervisor, prior to commencing work. 3. CONTRACTOR SHALL visit site prior to submission of bid to familiarize himself with existing site conditions. No extras will be allowed for omissions.
- 4. ALL MATERIALS SHALL be UL approved.
- 5. ELECTRICAL CONTRACTOR SHALL provide all electrical permits. 6. ELECTRICAL CONTRACTOR SHALL provide temporary service for use
- of all trades as required for construction. 7. ELECTRICAL CONTRACTOR SHALL verify requirements, exact location
- and type of outlet for all electrical fixtures, appliances, and equipment. 8. ALL CONDUCTORS SHALL be copper. The minimum size shall be #12
- THWN. Conductors #6 and larger shall be THWN. THE CONTRACTOR shall verify the voltage drop, as per the actual routing of the service and the branch circuits, for the sizing of the wiring prior to rough—in to comply with the requirements of the F.B.C. ENERGY CODE 2020-7TH EDITION (C405.5.3 Voltage Drop).
- 9. ELECTRICAL CONTRACTOR to coordinate telephone and cable/tv services, and provide all the necessary conduits and devices for the installation not been provided by the telephone and cable/tv companies as per their approved shop drawings.
- 10. ELECTRICAL CONTRACTOR to run control wires for HVAC system. 11. ELECTRICAL CONTRACTOR SHALL assure that all features of service comply with power company requirements and shall have all
- necessary arrangements with power company for service. All equipment not furnished and/or installed by the power company is to be furnished and installed by the electrical contractor. 12. FLUSH PANELS SHALL not protrude. The depth of the wall shall
- be checked prior to ordering. 13. ALL CONDUIT SHALL be galvanized rigid except as follows:
- A. EMT may be used indoors. Out of soil and where not subject to physical abuse.
- B. Flexible conduit shall be used for equipment connections not to exceed 6 ft.
- C. PVC may be used outdoors as allowed by code.
- 14. PROVIDE all switches for HVAC equipment, except when integral with HVAC equipment. 15. NO CONDUITS to be run in ductwork. 16. ALL TEMPORARY WIRING to be removed by contractor when room
- service is available.
- 17. WIRE rated at 150 centigrade if required for all incandescent lighting fixtures.
- 18. ALL CONDUITS through roof shall penetrate roof using proper approved roof flashing

- 19. ALL ELECTRICAL WIRING must be in conduit (No Romex, BX, etc. is permitted)
- 20. ELECTRICAL EQUIPMENT exposed to weather must be weatherproof. 21. CONDUIT EXPOSED TO WEATHER must be heavy wall galvanized steel. 22. ALL WORK SHALL be coordinated with other trades to avoid
- interference with the progress of construction and all necessary electrical equipment connections.
- 23. COORDINATE A.I.C. rating with the POWER CO.
- 24. PROVIDE pull line in all empty conduit.
- 25. THE CONTRACTOR SHALL satisfactorily repair/replace equipment or part of structure damage as a result of his work, surfaces and damaged areas shall be restored to match adjacent areas.
- 26. APPROVAL SHALL be obtained from the engineer prior to cutting or drilling any structural support member.
- 27. ALL DEVICE BOXES SHALL be installed flush and conduits run concealed in finished areas except as specifically shown/noted otherwise.
- 28. INSTALL POWER AND CONTROL WIRING and required control components for air conditioning systems as shown/noted on these drawings and per other applicable drawings/instructions see A/C drawings.
- 29. ALL MATERIALS REMOVED SHALL be disposed of as directed by the
- owner. 30. ALL CONDUCTORS SHALL be run in conduit.
- 31. TYPEWRITTEN PANEL TALLEY shall be furnished after job is
- completed reflecting all changes and additions. 32. ALL BRANCH CIRCUITS SHALL be properly phase balanced.
- 33. CONTRACTOR SHALL seal all floor openings with a fire seal similar to chase technology, inc.
- 34. ALL NON-POWER RELATED EXPOSED WIRING in ceiling air conditioning plenum shall be teflon coated classified for use in plenums without conduit
- 35. WHERE MORE THAN ONE DEVICE is indicated at any location, these shall be ganged under one common cover limiting equal to Busman.
- 36. PROVIDE fuse recommended by equipment manufacturer. 37. ALL RECESSED FIXTURES SHALL be installed, to provide a non-
- combustible assembly. 38. EXACT LOCATIONS AND LENGTHS of feeders and house loads should
- be verified in the field.
- 39. AS-BUILT DRAWINGS IN AUTOCAD FILES SHALL be furnished to the owner and the architect/engineer upon completion of work and prior to final CO. 40.- GROUNDING:
- THE ELECTRICAL SYSTEM SHALL BE COMPLETELY AND EFFECTIVELY GROUNDED, PROVIDE ELECTRICAL GROUNDING AS PER THE N.E.C.
- 41.- GENERAL:
- THE ELECTRICAL CONTRACTOR IS EXPECTED TO FURNISH ALL LABOR, MATERIAL ITEMS AND EQUIPMENT SHOWN OR INDICATED FOR A COMPLETE ELECTRICAL SYSTEM IN ACCORDANCE WITH THESE PLANS. THIS CONTRACTOR SHALL PROVIDE ALL THE REQUIREMENTS NECESSARY
- FOR THE EQUIPMENT TO BE PLACED IN PROPER WORKING ORDER. IT IS NOT THE INTENT OF THESE PLANS TO SHOW EVERY MINOR DETAIL OF CONSTRUCTION. CODES IN EFFECT ARE NEC-2017 & FBC-2020, 7TH EDITION. 42.- ELECTRICAL CONNECTIOINS:

TERMINATION PROVISIONS FOR ALL EQUIPMENT IN THIS PROJECT MUST BE 75 DEGREE CELSIUS.

F.B.C. ENERGY CODE (2020-7TH EDITION): ELECTRICAL DESIGN AND INSTALLATION SHALL COMPLY WITH SECTION C405 OR R404, AS APPLICABLE TO THIS PROJECT, TO INCLUDE LIGHTING CONTROLS. LIGHTING ABBREVATIONS POWER ALLOWANCES AND ANY OTHER REQUIREMENTS. ND-FAULT CIRCUIT-INTERRUPTER R404.1 NOT LESS THAN 90 PERCENT OF THE LAMPS IN PERMANENTLY FAULT CIRCUIT INTERRUPTER INSTALLED LUMINAIRES SHALL HAVE AN EFFICACY OF AT LEAST 45 FINISH FLOOR LUMENS-PER-WATT OR SHALL UTILIZE LAMPS WITH AN EFFICACY OF NOT IER PROOF | VP — VAPOR PROOF | WR — WATER RESISTANCE | LESS THAN 65 LUMENS-PER-WATT. LED UNDER COUNTER LED IN ATTIC SPACE JM AIC OF BREAKER IN PANEL AND GENERAL NOTES BRAZING ES (REACH RANGE SHALL COMPLY WITH FBC-2020-7th EDITION GENERAL CONDITIONS: THE GENERAL CONDITIONS FORM A PART ACCESIBILITY-CHAPTER 3-308). OF THE SPECIFICATIONS FOR THIS TRADE. EACH SUB-CONTRACTOR MUST READ GENERAL CONDITIONS, AS WELL AS THE SPECIFICATIONS ING DEVICES CENTER LINE @ HEIGHT FOR WORK OF OTHER TRADES AND TO ASCERTAIN WHAT WORK AND ISHED FLOOR INDICATED BELLOW, IN MATERIALS HE MUST SUPPLY TO THE OTHER CONTRACTORS. SITE INVESTIGATION: IT SHALL BE THE RESPONSIBILITY OF BIDDERS ACLES: @ 18"; KITCHEN COUNTER @ 42" TO VISIT THE SITE AND TO ACQUAINT THEMSELVES WITH ALL INFORMATION SWITCHES: @ 48" REGARDING THE NEW BUILDING. ONE JACKS: KITCHEN @ 42", ALL OTHRES @ 18" - DESIGN: THE INSTALLATION OF THE WIRING SYSTEM SHOWN ON )STATS: @ 46" THESE DWGS. SHALL CONFORM TO THE REGULATIONS OF THE FBC 2020 (7TH EDITION) AND ORDINANCES, N.E.C. AND LOCAL UTILITY COMPANIES. WALL MOUNTED FIXTURES: 6" OVER THE CENTER LINE OF THE AS SHOWN IN THE ARCHITECTURAL DRAWINGS. 4- MINIMUM STANDARDS: THE MATERIAL, INSTALLATIONS AND WORKMANSHIP ICES TO BE MOUNTED @ 6'-6" A.F.F. OR AS SHOWN IN FURNISHED UNDER THIS SECTION SHALL CONFORM TO THE REQUIREMENTS CHITECTURAL DRAWINGS. SCONCES MOUNTED BELOW 6'-6" SHALL OF LOCAL CODES AND N.E.C.(2017), FBC-2020(7th Edition), FBC Energy JDE NOT MORE THAT 4" INTO WALKWAYS, HALLS, CORRIDORS, Code 2020-7th Edition-Section C405 AND LOCAL UTILITY COMPANY. COORDINATE WITH ARCHITECTURAL ELEVATIONS. ALL MATERIALS USED SHALL BE LISTED OR BEAR U.L. APPROVAL. GUARANTEE: THIS SUB-CONTRACTOR SHALL FURNISH A WRITTEN PLETION REQIREMENTS NOTES: GUARANTEE THAT ALL WORK EXECUTED UNDER THIS CONTRACT, SHALL BE FREE FROM DEFECTS OR WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE YEAR, AT CONTRACTOR'S EXPENSE, REPAIR AND REPLACE ALL WORK WHICH BECOMES DEFECTIVE DURING THE TIME OF THE GUARANTEE. RAWINGS IN AUTOCAD FORMAT FILES SHALL BE FURNISHED CTRICAL CONTRACTOR TO THE ARCHITECT/ENGINEER UPON 5- RACEWAYS AND FITTING RIGID GALVANIZED : 1-1/2" OR LARGER , AND IN SLAB ABOVE GRADE. I OF WORK AND PRIOR TO THE FINAL CO. b) PVC : IN OR UNDER GND FLOOR SLAB c) EMT : ALL OTHER LOCATION. ICAL CONTRACTOR SHALL PROVIDE TO THE BUILDING d) ARMORED CABLE, MC: ABOVE SLAB, BRANCH CIRCUITS ONLY. HIN 30 DAYS AFTER THE DATE OF SYSTEM ACCEPTANCE. e) FITTINGS: TO MATCH APPROVED RACEWAY CIBLE RECORD DRAWINGS OF THE ACTUAL INSTALLATION, INCLUDING INE DIAGRAM OF THE BUILDING ELECTRICAL DISTRIBUTION 7- CONDUCTORS: THE MINIMUM CONDUCTOR NO.12 SOLID CU. TYPE "THW" FLOOR PLANS INDICATING LOCATION AND AREA SERVED INSULATION. ALUMINUM CONDUCTOR ALLOWED ONLY WHERE INDICATED ON STRIBUTION. FBC EC 405.5.4.1 DRAWINGS. ICAL CONTRACTOR SHALL PROVIDE TO THE BUILDING LUDING SUIBMITTAL DATA STATING EQUIPMENT RATING 8- ALL EQUIPMENT LISTED ON DWGS. BY CATALOG NO. SHALL BE TED OPTIONS FOR EACH PIECE OF EQUIPMENT REQUIRING LIMITED TO THE KIND AND MANUFACTURE LISTED. NO SUBSTITUTION E, OPERATION AND MAINTENANCE MANUALS FOR EACH ····· SHALL BE ALLOWED UNLESS APPROVED BY THE ENGINEER. A WRITTEN QUIPMENT REQUIRING MAINTENANCE WITH CLEARLY IDENTIFIED GUARANTEE OF THREE YEARS AND CREDIT FROM BASIC BID SHALL BE OUTINE MAINTENANCE ACTIONS, AND NAMES AND ADDRESSES SUBMITTED WITH SHOP DRAWINGS. T ONE QUALIFIED SERVICE AGENCY. FBC EC 405.5.4.2. ELECTRICAL 9- CONTRACTOR TO INSTALL AND/OR CONNECT ALL EQUIPMENTS AND CONTROLS SUPPLIED BY OWNER, OR ANY OTHER TRADE. SEE E-1.0 LEGEND AND NOTES OTHER TRADES DRAWINGS AND SPECIFICATIONS. E-2.0 GENERAL LAYOUT AND LIGHTS 10- ALL FEEDERS AND BREAKERS SHALL BE COORDINATED WITH EQUIPMENT'S PLATE AT SITE.

# 43.- PLANS AND SPECIFICATIONS:

THE ELECTRIC CONTRACTOR SHALL OBTAIN A COMPLETE SET OF CONSTRUCTION DOCUMENTS SO THAT THE ARCHITECTURAL, STRUCTURAL, MECHANICAL AND PLUMBING REQUIREMENTS EFFECTING THIS WORK CAN BE FULLY REVIEWED AND INCLUDED, ANY DISCREPANCY IN DRAWINGS SHALL BE ADDRESSED TO THE ENGINEER ON RECORD IMMEDIATELY BEFORE CONTINUE CONSTRUCTION.

## 44- BIDDING:

THE ELECTRIC CONTRACTOR BIDDING SHALL INCLUDE: A COPY OF THE CONTRACTOR'S CERTIFICATION AND/OR LICENSE, PROOF OF INSURANCE, A LIST OF ALL ELECTRICAL COMPONENTS AND FIXTURES INCLUDED OR EXCLUDED, AND TOTAL COST OF THIS WORK.

## 45- INSURANCE:

- THE CONTRACTOR SHALL PROVIDE ALL REQUIRED INSURANCE FOR PROTECTION AGAINST PUBLIC LIABILITY AND PROPERTY DAMAGE FOR THE DURATION OF THE WORK. PROOF OF INSURANCE SHALL BE SUBMITTED TO THE OWNER PRIOR TO COMMENCEMENT OF WORK.
- 46– FEES:
- THE CONTRACTOR SHALL PAY FOR ALL FEES, PERMITS, TESTING AND INSPECTIONS.
- 47- COORDINATION:

THE CONTRACTOR SHALL COORDINATE HIS WORK WITH ALL TRADES IN ORDER TO AVOID INTERFERENCE WITH THE PROGRESS OF THE CONSTRUCTION OR CONFLICTS. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH CORRESPONDING UTILITY COMPANIES IN ORDER TO VERIFY THE POINTS OF CONNECTION, METER LOCATION,

## 48- GUARANTEE:

ETC.

THE CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP FREE OF DEFECTS FOR A PERIOD OF NO LESS THAN ONE YEAR FROM THE DATE OF ACCEPTANCE. CORRECTION OF DEFECTS SHALL BE COMPLETED WITHOUT ADDITIONAL CHARGE AND SHALL INCLUDE REPLACEMENTS OR REPAIR OF ANY OTHER PHASE OF INSTALLATION THAT MAY HAVE BEEN DAMAGED.

49.- EQUIPMENT:

CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL EQUIPMENT PRIOR TO ROUGH-IN. DO NOT SCALE ELECTRICAL DRAWINGS. SEE MANUFACTURER'S REPRESENTATIVE FOR ALL EQUIPMENT SPECIFICATIONS, REQUIREMENTS, TEMPLATES AND SYMBOLS NOT NOTED OR SCHEDULED ON THE PLANS.

## 50.- CIRCUITS AND LOADS:

THE CIRCUIT NUMBERS SHOWN ON THE PLANS ARE USED TO CALCULATED CIRCUIT LOADING, BREAKERS AND PANEL SIZE. THE CONTRACTOR MAY MODIFY CIRCUIT NUMBERING AND PROVIDE CIRCUIT ROUTINGS TO SUIT THE JOB CONDITIONS. LOAD DATA IS BASED UPON INFORMATION SUPPLIED BY THE OWNER AT THE TIME OF DESIGN. ALL EQUIPMENT AND PANEL SIZES SHALL BE VERIFIED BEFORE ORDERING. LOADS ON ALL PANELS SHALL BE BALANCED BETWEEN PHASES. WHEN REQUIRED THE CONTRACTOR SHALL ADJUST PANEL SCHEDULE TO OBTAIN PROPER BALANCING OF ALL PHASES.

# 51.- DRIVEN GROUNDS:

GROUNDING ELECTRODE RODS SHALL BE 5/8" GALVANIZED STEEL 10'-0" LONG DRIVEN A MINIMUM OF 8'-0" INTO EARTH. THE GROUNDING ELECTRODES SHALL BE SPACED A MINIMUM OF 6'-0" APART.

52.- CIRCUIT IDENTIFICATION: BRANCH CIRCUIT IDENTIFICATION SHALL BE PROVIDED ON A TYPEWRITTEN DIRECTORY PERMANENTLY AFFIXED TO THE INSIDE SURFACE OF THE ELECTRIC PANEL(S), DOOR(S).

## 53.- CODES AND STANDARDS:

ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE "NATIONAL ELECTRIC CODE", COMPLY WITH ALL LOCAL CODES, RULES AND ORDINANCES; MEET ALL STANDARD REQUIREMENTS OF THE ELECTRIC UTILITY AND TELEPHONE COMPANY; BE PERFORMED BY A LICENSED ELECTRICAL CONTRACTOR AND IN FIRST CLASS WORKMAN-LIKE MANNER. MATERIAL SHALL BE NEW AND SHALL BEAR UNDERWRITERS LABELS WHERE APPLICABLE. THE COMPLETE SYSTEM SHALL BE FULLY OPERATIVE.

# 54.- RACEWAYS:

RACEWAYS PLACED IN OR THROUGH CONCRETE SLABS OR UNDERGROUND SHALL BE SCHEDULE 40 PVC OR BITUMEN COATED GALVANIZED RIGID STEEL (GRS).

# 55.- EMPTY CONDUITS:

INSTALL A NYLON PULL CORD OF ADEQUATE STRENGTH IN ALL EMPTY CONDUITS OR CONDUITS TO BE USED IN THE FUTURE.

# 56.- OUTLET BOXES:

OUTLET BOXES SHALL BE METALLIC OR PVC AND SHALL CONFORM TO N.E.M.A. STANDARDS.

57.- DISCONNECTS DISCONNECT SWITCHES SHALL BE HORSEPOWER RATED, HEAVY DUTY, QUICK-MAKE, QUICK-BREAK AND

N.E.M.A. 1 OR 3R ENCLOSURE. 58.- RECEPTACLES AND SWITCHES: LIGHT SWITCHES AND RECEPTACLES SHALL BE RESIDENTIAL GRADE WITH A MINIMUM 15 AMPERE SERVICE RATING. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF SPECIALTY RECEPTACLES WITH THE CORRESPONDING EQUIPMENT MANUFACTURER'S REPRESENTATIVE. 15A Circuit rating must have a receptacle rating not over 15A. 59.- RECEPTACLES MOUNTING:

ELECTRICAL RECEPTACLES SHALL BE MOUNTED AT 18" TO CENTERLINE ABOVE FINISHED FLOOR UNLESS SPECIFIED OTHERWISE. SEE FLOOR PLAN OR ELECTRIC PLAN FOR ALTERNATE MOUNTING HEIGHTS. SEE OWNER OR EQUIPMENT SUPPLIER FOR ALL EQUIPMENT MH AND LOCATIONS WHEN UNSPECIFIED ON ELECTRICAL PLANS.

## 60.- SWITCH MOUNTING:

SWITCHES SHALL BE INSTALLED WITH CENTERLINE OF PLATE AT 48" ABOVE FINISHED FLOOR AND 6" FROM EDGE OF ADJACENT DOOR CASING OR END OF WALL.

# 61.– FIXTURES:

THE CONTRACTOR SHALL FURNISH AND INSTALL ALL FIXTURE AND LAMPS AS CALLED FOR ON THE PLANS OR AS SELECTED BY OTHERS.

# 62.- EQUIPMENT IDENTIFICATION:

EACH PANEL, DISCONNECT, GUTTER, OR OTHER ELECTRICALLY OPERATED EQUIPMENT SHALL BE IDENTIFIED BY A PERMANENTLY ATTACHED LABEL WITH A MINIMUM LETTERING HEIGHT OF 1/2".

## 63.- COLD WATER GROUND:

406.3(E)

THE ELECTRICAL SYSTEM SHALL HAVE A MINIMUM 3/4" COLD WATER GROUND PIPE BONDED TO THE DRIVEN GROUNDING ELECTRODES.

# 64.- H.V.A.C. SYSTEMS: POWER AND CONTROL WIRING FOR THE H.V.A.C. WORK SHALL BE INSTALLED UNDER THE SUPERVISION OF THE H.V.A.C. CONTRACTOR. WIRING DIAGRAMS, MOTOR STARTERS, THERMOSTATS SHALL BE PROVIDED BY THE H.V.A.C. CONTRACTOR.

65.- CONTROLLED RECEPTACLE BY AUTOMATIC CONTROL DEVICES: CONTRACTOR FIELD VERIFY AND SELECT AT LEAST 50% OF ALL 120V 15 AND 20 Amps CIRCUITS TO COMPLY WITH ASHRAE 90.1. CONTRACTOR MAY CHOSE TO EITHER ADD A PERMANENT MARKING DURING CONSTRUCTION OR INSTALL PRE-MARKED RECEPTACLES AVAILABLE. THE MARK SHOULD BE THE ONE SPECIFIED ON NEC

66.- SWITCH CONNECTIONS TO COMPLY WITH ALL SECTIONS OF NEC 404.2 67.- GENERAL CONTRACTOR SHALL VERIFY ALL EXISTING EQUIPMENT, BREAKERS, CONDUITS AND CONDUCTORS BEFORE COMMENCING WORK. ANY VIOLATIONS FOUND SHOULD BE ADDRESSED IN WRITTEN TO THE OWNER FOR PROPER RE-DESIGN AND OR REPAIRS.

E-3.0 POWER - FLOOR PLAN AND ROOF PLAN E-4.0 PANEL SCHEDULES AND RISERS

DRAWING INDEX

ELECTRICAL INSTALLATION AND EMERGENCY LIGHTS FOR WAREHOUSE NEW ADDITION

SCOPE OF WORK



they were prepared is executed or not. They are not to be used in any manner on other projects or extensions to the project except by agreement in writing and with

specifications without the written consent of V3 Architectural Group, Inc. is prohibited

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M.E.P. ENGINEER: Genesis Fortune, LLC

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ELECTRICAL RISER DIAGRAMS NTS

Type: NEMA 1 SERVICE: 240 V. 1 Phase, 3 Wires MOUNTING: SURFACE POLE: 32			e, 3 Wires	Existing Panel "B"						MLO 150 AMPS NEUTRAL: FULL A.I.C. 22K			
V.A.	POLE	TRIP	COND	WIRE	REMARKS	СКТ.	CKT.	REMARKS	WIRE	COND	TRIP	POLE	V.A.
8,000	2	60	1	#4	SPECIAL PURPOSE OUTLET (240 V)	1	2	GENERAL LIGHTING	#12	1/2	20	1	[*]
						3	4	GENERAL LIGHTING	#12	1/2	20	1	[*] (1
5,000	2	30	1/2	#10	WAREHOUSE GENERAL LOAD	5	6	WAREHOUSE GENERAL LOAD	#4	1	60	2	8,000
						7	8						
4,000	2	20	1/2	#12	WAREHOUSE GENERAL LOAD	9	10	GENERAL LIGHTING	#12	1/2	20	1	[*] [1
						11	12	WAREHOUSE GENERAL LOAD	#10	1/2	30	1	3,000
[*]	1	15	1/2	#14	GENERAL LIGHTING	13	14	WAREHOUSE GENERAL LOAD	#10	1/2	30	1	3,000
1,080	1	15	1/2	#14	GENERAL LIGHTING-OUTLET	15	16	GENERAL LIGHTING	#12	1/2	20	1	[*] (1
	Sq.	 Ft.=	5,654		11,308	V.A.		Subtotal (non-continuous load at 100%) =					32,080
								First 10,000 VA at 100%					10,000
								Over 10K at 50%					11,040
								Subtotal (continuous load) =					11,308
								Continuous load at 125%					14,135
								A/C LOAD 100%					
								Total					35,175
								Number of amps	146.56				
								Feeder Conductor	3-#2/0 THV	VN CU IN 2'	' COND	UIT	L

5,654 SFx2VA= 11,308 VA

② VERIFY M.C.A. AND M.O.C.P. WITH EQUIPMENT NAME PLATE PRIOR TO ORDERING IN AND ROUGH-IN. (5) NON CONCURRENT LOAD

HOFFMAN GARDENS BUILDING PANELS LOAD			
AS PER NEC 220.83			
DESCRIPTION		LOAD W/O A/C (VA)	100% A/C LOAD (LARGEST) (VA)
BUILDING MAIN PANEL(WITHOUT PANEL "C" LOADS)		23,000	45,000
PANEL "C" (WITH 100% LIGHTING LOAD)		30,000	30,000
TOTAL LOADS		53,000	75,000
Subtotal (non-continuous load at 100%) =		23.000	
First 10,000 VA at 100%		10,000	
Over 10K at 50%		6,500	
Subtotal (continuous load) =		30,000	
Continuous load at 125%		37,500	
A/C LOAD 100%		22,000	
TOTAL LOADS		76,000	
NUMBER OF AMPS	183		
FEEDER:	4# 3/0 1	HWN CU IN 2" COND	

OFFMAN GARDENS BUILDING MAIN SERVICE	
S PER NEC 220 83	

AS PER NEC 220.83			
DESCRIPTION		LOAD W/O A/C (VA)	100% A/C LOAD (LARGEST) (VA)
BUILDING MAIN PANEL(INCLUDING PANEL "C" LOADS)		53,000	75,000
PANEL "D" (LOCATED IN EXISTING WAREHOUSE)		0	45,328
TOTAL LOADS		53,000	120,328
Subtotal (non-continuous load at 100%) =		23,000	
First 10,000 VA at 100%		10,000	
Over 10K at 50%		6,500	
Subtotal (continuous load) =		30,000	
Continuous load at 125%		37,500	
A/C LOADS 100%			
A/C LOAD OF HOFFMAN BUILDING		22,000	
A/C LOAD OF WAREHOUSE		45,328	
TOTAL LOADS		121,328	
NUMBER OF AMPS	292		
FEEDER:	4# 350 k	cmil THWN CU IN 3" (	CONDUIT

	Type: NEMA 3R SERVICE: 240 V. 3 Phase, 4 Wires MOUNTING: SURFACE POLE: 16				New Panel "D"						MCB 125 AMPS NEUTRAL: FULL A.I.C. 22K				
	V.A.	POLE	TRIP	COND	WIRE	REMARKS	СКТ.	СКТ.	REMARKS	WIRE	COND	TRIP	POLE	V.A.	
25	3,360	3	20	1/2	#12	EXISTING AIR HANDLER	1	2	EXISTING COMPRESSOR UNIT	#1	1-1/2	100	3	17,328	25
							3	4							
_							5	6							
25	28,000	3	80	1-1/4	#3	NEW ROOFTOP PACKAGE UNIT	7	8							
							9	10							
							11	12							
		Sq.	Ft.=			0	V.A.		Subtotal (non-continuous load at 100%) =					0	
									First 10,000 VA at 100%					0	
									Over 10K at 50%						
									Subtotal (continuous load) =					0	
									Continuous load at 125%					0	
									A/C LOAD 100%						
									EXISTING COMPRESSOR UNIT					17,328	
									ROOFTOP PACKAGE UNIT					28,000	
									Total					45,328	
									Number of amps	109.17					_
									Feeder Conductor	4-#1 THWI	N CU IN 1-1,	2" CON	DUIT		

0 SFx2VA= 0 VA

VERIFY M.C.A. AND M.O.C.P. WITH EQUIPMENT NAME PLATE PRIOR TO ORDERING IN AND ROUGH-IN.

5 NON CONCURRENT LOAD



NEW ADDITION TO EXISTING WAREHOUSE

EXISTING WAREHOUSE



3#1/0 THWN CU IN 1-1/2" CONDUIT

OUTSIDE LOCATION (ON EXISTING WAREHOUSE) \_\_\_NEW PANEL "D" MCB 125 AMPS 22K AIC NEMA 3R 120/240/3ø/4W

MAIN FEEDER CALCULATION			
AS PER NEC 220.83			
DESCRIPTION		LOAD W/O A/C (VA)	100% A/C LOAD (LARGEST) (VA)
PANEL "A" (WITH 100% LIGHTING LOAD)		37,500	44,500
PANEL "B" (WITH 100% LIGHTING LOAD)		43,388	43,388
TOTAL LOADS		80,888	87,888
Subtotal (non-continuous load at 100%) =		66,980	
First 10,000 VA at 100%		10,000	
Over 10K at 50%		28,490	
Subtotal (continuous load) =		13,908	
Continuous load at 125%		17,385	
A/C LOAD 100%		7,000	
TOTAL LOADS		62,875	
NUMBER OF AMPS	262		
FEEDER:	3# 300 k	 cmil THWN CU IN 2-1	/2" CONDUIT

HOFFMAN GARDENS BUILDING

**ENGINEER:** is Fortune, LLC . Т. Ċ Ś

7342 305.778. Igenesisf CA# 32





# 8.1 - APPENDIX 1 - WATER SAVINGS CALCULATION TABLE

Indoor Features	Standard Water-Use Including Kitchen Faucet	Water Sense Standard Use Including Miami- Dade Flow for Kitchen Faucet (gal/day/capita)	Water Sense Flows Plus Miami-Dade Criteria for Kitchen Faucet and Showerheads	Miami-Dade Expected Use Including Showerhead and Kitchen Faucet (gal/day/capita)	Miami-Dade Expected Water Savings Including Showerhead and Kitchen Faucet (gal/day/capita)
Toilets	1.6 gpf	8.16 <sup>24</sup>	1.28 gpf	6.53	1.63 (20%)
Bathroom faucets	2.2 gpm	11.21 <sup>25</sup>	1.5 gpm <sup>26</sup>	10.64	0.57 (5%)
Kitchen faucets	2.5 gpm	7.36 *	1.5 gpm (Miami- Dade) <sup>37</sup>	4.2 <sup>36</sup>	2.8 (40%)
Showerheads	2.5 gpm	10.33 <sup>27</sup>	1.5 gpm (Miami- Dade) <sup>37</sup>	7.27 <sup>38</sup>	4.85 (40%) <sup>39</sup>
Hot water delivery systems	~10 gallons per day per household wasted <sup>28</sup>	3.85 <sup>29</sup>	Assume 10% water savings for insulation and between 15-20% water savings for improved design <sup>30</sup>	2.89	0.96 (25%)
Dishwashers	8.6 gallons per load <sup>31</sup> (6 gallons per cycle) <sup>32</sup>	1.04	5.8 gallons per load (4 gallons per cycle) <sup>33</sup>	0.69	0.35 (33%)
Clothes washers	39.6 gallons per load <sup>34</sup> (12 gallons per cycle per cubic foot)	15.35	24 gallons per load (6 gallons per cycle per cubic foot) <sup>35</sup>	8.44	6.91 (45%)
Total Indoor		57.30		40.66	18.07 (31% savings)
2 <sup>8</sup> Assumes flow of 1.2 gpl <sup>27</sup> Assumes flow of 2.13 gpl <sup>28</sup> Assumes flow of 2.13 gpl <sup>28</sup> Klein, Gary. Hot Water I <sup>29</sup> Assumes 2.6 persons pr <sup>30</sup> Acker, L., Klein, G. <i>Bene</i> <sup>31</sup> Assumes 8.64 gallons/l <sup>32</sup> ENERGY STAR Frequent created>accessed 2, <sup>33</sup> Ibid. <sup>34</sup> Assumes 39.36 gallons/ <sup>35</sup> Assumes 24.15 gallons/	m and average use of 9.34 m and average use of 10.9 pm, average use of 8.36 mi Distribution Considerations er household per U.S. Dep <i>efits of Demand-Controlled</i> bad and .12 loads/person p tly Asked Questions on Dis /15/08. load and .39 loads/person load and .35 loads/person	7 minutes/person/day per 7 minutes/person/day per n/shower/person, and s for BMPs. Presentatic artment of Housing and ( <i>Pumping</i> . Home Energ yer Mayer, P., DeOreo, V shwashers. <energysta per Mayer, P., DeOreo, per Mayer, P., DeOreo,</energysta 	er Mayer, P., Deoreo, W. et 58 showers/person/day per in made on August 21, 2006 Urban Development 2005. y. September/October 2006. V. et al 2000, 2003, and 2004. r.custhelp.com/cgi-bin/ener W. et al 2000, 2003, and 2004 W. et al 2000, 2003, and 2004	al 2000 and 2003. Mayer P., DeOreo W. et a to the Californa Urban Wa gystar.cfg/php/enduser/s 4.	al 2000 and 2003. ater Conservation Council. td_adp.php?p_faqid=2539&o_
WaterSense savings fo faucets at the water sa	r a new home is 21%, Mian ving rate of 1.5 gallon per i	mi-Dade savings for a m minute respectively. Wa	ew home are calculated at aterSense has not yet certif	31%, this is possible by ir ied showerheads or kitch	icluding showerheads and kitchen en faucets.
From the Environmenta	I Protection Agency's "Wa	ter Efficiency Single-Fa	amily New Home Specificat	ion Supporting Statement	" May 14, 2008, p.14.
<sup>36</sup> Mayer, Peter, private cc <sup>37</sup> Flow based on Miami-D <sup>38</sup> Assumes flow of 1.58 Pl a standard flow of 2.58 <sup>39</sup> Assumes flow of 1.58 Pl	ommunication, 2005. Derive Dade County Criteria. M based on Miami-Dade C PM M based on Miami-Dade C	ed by the subtraction of County criteria and aver County criteria and an a	lavatory faucets (3.4 gpcd) age use of 2.8 min/person/c	and seldom-used utility s lay based on standard us 85 min/nerson/day based	ink faucets. e per capita of 7 gal/person/day and on data in footnote 27



12

F—rating = 2 Hr.

3A)

(2) A) STEEL PIPE – 6" DIAM. (OR SMALLER) SCH. 40 (OR

(3) TREMstopWBM - FILL MAX 3/4" ANNULUS AT A THICKNESS

OF 1-1/4" (2 Hr. F-RATING) OR 3/4" (1 Hr. F-RATING).

FIRE RATED PIPE PENETRATION DETAIL

NOT TO SCALE

B) CONDUIT - 4" DIAM. (OR SMALLER) E.M.T. OF RIGID STEEL.

HEAVIER) STEEL.

T—rating = 0 Hr.

NOT TO SCALE

				S SCHED	UIF				
						ΙΔΤΙΟΝ		: .	
SERVICE	SIZE	MATERIAL	SCHEDU	ile/type	TYPE	THICKNESS	REMARKS	1.	Contrac Building
COLD WATER	ALL	COPPER	T) T	PEL	FG	1"	SEE NOTE 2	2.	ALL SAN
SANITARY	ALL	C.I. OR P.V.C.	SERVI	CE WEIGHT	NONE	-	NO HUB		2-1/2" LARGER
VENT	ALL	C.I. OR P.V.C.	S	CH. 40	NONE	_	see note 1	3.	VALVES
ST BELOW GRADE	ALL	c.i. or p.v.c.	SERVI	CE WEIGHT	NONE	-	NO HUB	4.	INSTALL
ST ABOVE GRADE	ALL	C.I. OR P.V.C.	SERVI	CE WEIGHT	FG	1" 1"	NO HUB		Requirei And Dr/
NOTES:	ALL	Γ.Ψ.Ο.	J	JI. <del>1</del> 0	10		JEL NUIL J	5.	SIOUX C
1. WASTES AN	id vent pipi	NG IN PLENUM SPA	CE SHALL BE	E SERVICE WEIGHT	CAST IRO	N, NO HUB.		c	PIPING A
Z. FIBERGLASS BOARD MA ASTM C 61	5 PIPE INSUL TERIAL WITH 2. NOMINAI	ation: mineral of Factory—Applied Density is 2.5 1 b/	CULASS FIBE ASJ COMPLY (CUL FT. OR	rs bonded with ING with Astm C More, thermal	a Thermo : 1393, OR : CONDUCTIVI	WITH PROPERTIE TY (K VALUF) A	semirigid S SIMILAR TO T 100'F	0.	CHANGES
(55°C) IS O Kraft–Paf	.29 btu X II Per, fibergl	N./H X SQ.FT. X DE ASS-REINFORCED S	G. F (0.042 CRIM WITH A	W/M X K) OR LI LUMINUM-FOIL B/	ESS. ALL SI Acking; Co	ERVICE JACKET ( MPLYING WITH A	(ASJ): WHITE, STM C 1136,	7.	CONTRAC
IYPE MANU 3. HEAT TRAC	if acturers; E freeze li	A. CERTAINEED CO NE. COORDINATE WI	rp., B. Johr Th Kitchen	is manville, c. Equipment prov	knauf insi Ider and f	ULATION, D. OWE	ns corning. Ements.	0.	FITTINGS
									a vertio Connec
	<u> </u>	ATER HAMI	MER AR	RESTOR S	CHEDU	JLE.		9.	Contrac Work in
٩	INSTALLED	ARRESTORS SHALL	BE APPROV	ED DEVICE BY FL	ORIDA PLU	MBING CODE. AL	L SUPPLY	10.	ALL DRA
L =	PIPING SHA P.D.I. SIZE	"C" FOR 1" OR L Y AND P	ARGER WATE	E SIZE AS CONN ER SUPPLY TO F I 7 F "A"	IXTURES, I F O R	P.D.I. SIZE "B" 1 / 2 " S U	FOR 3/4"	11.	WHERE S
	+	-			000005				with thi side of
	* P.D.I. SIZ	L II)				/10N SIZE		12.	all flo
	B (12–32 F	.U.)			3,	/4"		13.	THE PLU
	C (33-60 F	F.U.)				1"			MADE W
	*	P.D.I.= PLUMBING A	ND DRAINAG	e institute stat	NDARD WH-	-201		14.	ROUTE A SLOPED
		VALVE TAC	à & SCH	EDULE NO	DTES:			15.	SLEEVE
4 \/A1\/F T	100 CTAU								ACCORD/ SPECIFIC
1. VALVE I ABBREVIA	AGS: STAMH TION AND 1,	2 INCH NUMBERS,	WITH NUMBE	ag with 1/4 i Ring Scheme.	NCH LETTE	RS FOR PIPING	5 SYSIEM	16.	ALL WAT Insulati
2. VALVE S NUMBER,	Chedules: Piping syst	FOR EACH PIPING Em, system abbre	SYSTEM OF	N STANDARD SIZ Shown on Valv	ZE BOND   VE TAG), LO	PAPER, TABULA OCATION OF VAL	TE VALVE VE (ROOM	17.	see rise
or spa Identific,	CE), NORM/ ATION. MARK	AL-OPEATING POS VALVES FOR EMER	ition (open Gency Shut	I, CLOSED, MO OFF AND SIMILAR	DULATING), SPECIAL IS	and variati Ssues.	ons for	18.	cold an Wrough
A. VALV Each	e schedule 1 page of v	FRAMES: GLASS DI ALVES SCHEDULE.	SPLAY FRAM INCLUDE MOL	e for removabl Inting screws.	e mountin	g on walls fo	R		(ANSI—A (WITH CH
B. FRAM	e: extrudei	) Aluminum.						19.	SOIL, WA P.V.C. D
								20	PIPING L
			NOTE	<u>=S</u>				20.	RUNS AN
1. ALL WAS	ite piping jo	Dints shall be so	LDERED, OR	Solvent Cement	ed so as	TO FORM A SOL	ID	21.	Provide To Arch
2. A WATEF	IION PER F.B R-HAMMER A	.c. 405.9 Criteria Rrestors shall e	, IF NO ACCE RE INSTALLED	SS IS PROVIDED WHERE QUICK-C	FOR SUCH LOSING VA	PIPE CONNECTIC LVES ARE UTILIZ	ins. Ed, unless	22.	Meterin Shown
otherwi Providei	se approve d to water:	d. Water—Hammer -Hammer Arresto	ARRESTORS RS.	SHALL CONFORM	TO ASSE	1010. ACCESS SH	HALL BE	23	DRAWING
3. ALL STO SHALL B	rm drainagi e retained	RUN OFF FROM R WITHIN THE PROPER	oof and ie Rty. see ar	RRACES SHALL II CHITECTURE PLAN	ERMINATE <i>i</i>	AT GRASSY AREA	a, and		PROVIDE
4. AL AIR / 5. SEE ARC	ADMITTANCE HITECTURAL	Valves location : Plans for all o	shall be pe CCUPANCY LO	r f.b.c. 918.3.1. DADS OF COMMON	I AREAS.			24.	see arc Heights
6. ALL PLU 7. PLUMBIN	mbing water G fixtures	r device provide : Shall comply with	Shutt-off H reference	/ALVE. Ed standards a:	s per f.b.(	C. 2020 7th EDI	Tion	25.	contrac Be conn
Plumbin 8. All The	G CHAPTER: 4 CIRCULATING	4. G Piping Insulatio	n shall con	<i>I</i> PLY BY F.B.C. E	NERGY CON	ISERVATION 2020	) 7th	26.	CONTRAC
edition. 9. No Pipin	ig or condu	JIT SHALL RUNS TH	ROUGH ANY	stair or exit e	NCLOSURE	PER F.F.P.C. 201	17	27.	CONTRAC MANUFAC
7.1.3.2(9 10. ALL POT	) ABLE WATER	PIPING SHALL BE	sized per f.	B.C. Plumbing s	ection 604	4.1		28.	PROVIDE
11. ALL GRE	ase and oil	. Separators sha	ll be appro	oved by the Ah	J, F.B.C. 10	03.2		20	
				<b></b>				] 29.	PLASTIC
				AS PEF	R FBC R - VENT CON	- P3104.3: INECTING TO A		30.	CONTRAC ANY) LO
				DRAIN CENTER	Shall Coi Rline of T	NNECT ABOVE THE HORIZONTA	ihe L Drain Pipe.	31.	PRESSUR
								32.	COORDIN
								33	CONDENS
								1	DISCIPLIN
Class	ifier	1 OR 2 HO	UR FIRE RAT	ED THROUGH PEN	IETRATION	M		34.	IF THE II INTERPRE
	У У	WALLS USIN	IG TREMstop	WBM.	5011 <u>01830</u>	<u>m</u>			EXPLANA
۲۶ ۱۸/۱ ۱/	າຍ <sup>າາ.</sup> ງ <b>51</b>	F—ratina =	1 and 2 Hr			]	1	35.	PLANS A ALL ITEN
¥¥ L_ IV	501	T-rating =	0 and 1/2	Hr.					ACQUAIN TO SUBN
		_			$\square$			36	Failure
		3	2)	3					THE MAN IS SPECI
/				*					THE TIME
	( f )		Ŵ				X	37.	THE CON
	$\bigcirc$	リ)			<u> </u>		( )		SUBMISS
		RATED CVDCINA WA	יין דטע יטע	חוז	┝┽┐			38.	DO NOT FOOTING
	HUUN TIKE	ייייייייייייייייייייייייייייייייייייי		50				11	

- PLUMBING GENERAL NOTES ACTOR SHALL COMPLY WITH ALL APPLICABLE CODES AND GOVERNING AUTHORITIES. I.E.: FLORIDA G CODE 2020, 7TH EDITION. anitary piping 2—1/2" or less shall have a 1/4" per foot slope. All sanitary piping 3" NGER SHALL HAVE A 1/8" PER FOOT SLOPE UNLESS OTHERWISE NOTED. ALL STORM WATER PIPING SHALL HAVE 1/4" PER FOOT MINIMUM HORIZONTAL SLOPE. ALL STORM WATER PIPING 3" OR r shall have 1/8" per foot minimum slope unless otherwise indicated. S AND FITTINGS SHALL BE OF SAME SIZE OF LINE ON WHICH THEY ARE LOCATED, UNLESS VISE INDICATED ON DRAWINGS. L WATER HAMMER SHOCK ARRESTORS AT EACH FIXTURE OR BATTERY OF FIXTURES WHERE ). ARRESTORS SHALL BE FACTORY FABRICATED. INSTALL ARRESTORS AND SIZE PER PLUMBING RAINAGE INSTITUTE STANDARD P.D.I. WH-201. ACCEPTABLE MANUFACTURERS: JOSAM, WATTS AND CHIEF. AIR CHAMBERS SHALL NOT BE CONSIDERED AN EQUAL TO WATER ARRESTORS AS SPECIFIED. Inctor is responsible for maintaining fire rating and weatherproofing integrity of all and penetrations. ATER SUPPLY AND SANITARY LINES SHALL RUN AS CLOSE TO PLANS AS POSSIBLE WITH NO SI7ING. ACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL NECESSARY SUPPORTING DEVICES FOR FIXTURES. es in the direction of sanitary and storm drainage piping shall not be made with WHICH WILL CAUSE EXCESSIVE REDUCTION IN THE VELOCITY OF FLOW OR CREATE ANY OTHER E EFFECT. I.E.: USE SANITARY TEE IN HORIZONTAL CONNECTION, USE OF DOUBLE SANITARY TEE IN TICAL STACK, USE OF SHORT RADIUS FITTINGS FOR BRANCH TO HOUSE DRAIN OR STACK ACTOR SHALL GIVE 24 HOURS NOTICE TO APPLICABLE UTILITY COMPANY PRIOR TO PERFORMING Involving utilities. AINAGE PIPING SHALL BE MARKED WITH THE SEAL OF APPROVAL OF NATIONAL SANITATION SANITARY SEWER LINES CROSS UNDERGROUND WATER SUPPLY LINES INSTALLATION SHALL COMPLY E 2020 FLORIDA PLUMBING CODE, ARTICLE 603.2 CONSTRUCTED OF DUCTILE IRON PIPE (10' EACH F WATER MAIN) OR THE WATER LINES SHOULD BE MODIFIED TO PROVIDE 8" MINIMUM CLEARANCE. DOR DRAINS SHALL BE PROVIDED WITH A TRAP PRIMER VALVE AND FITTINGS UNLESS NOTED umbing contractor may be required to drop pipe outside of the building to required to provide connection to area development utility stub. All drops in depth shall be with use of 45° fittings. ALL PIPING CONCEALED ABOVE CEILINGS, WITHIN WALLS, OR IN CHASES. EXPOSED PIPING SHALL BE AND PAINTED TO MATCH ARCHITECTURAL FINISHES. PIPING IN MECHANICAL ROOMS MAY BE E AND FIRE STOP ALL PENETRATIONS (IF ANY) OF RATED WALLS, FLOORS, CEILINGS, ETC., IN DANCE WITH APPLICABLE U.L. STANDARDS AND LOCAL CODES TO MAINTAIN RATINGS. REFER TO CATIONS AND ARCHITECTURAL DRAWINGS FOR RATED WALLS, CEILINGS AND FLOOR INFORMATION. ATER PIPING INSTALLED IN EXTERIOR WALLS BE PLACED ON THE INTERIOR SIDE WALL. THE WALL TION SHALL BE PLACED ON THE EXTERIOR SIDE OF THE PIPE. SER DIAGRAMS FOR BRANCH PIPING DETAILS AND SIZES NOT SHOWN ON PLANS. and hot water piping shall be copper water tube (astm b88) type "L" with T-COPPER (ANSI 16.22), OR CAST BRASS (ANSI B16.18). PRESSURE FITTINGS AND ALLOY GRADE ASTM B32) 95TA LEAD-FREE SOLDER JOINTS. DISINFECT WATER PIPING AFTER PRESSURE TEST CHLORINE SOLUTION 50 MG-L) FOR 24 HOURS. FLUSH LINES CLEAN AFTER COMPLETION. WASTE AND VENT PIPING SHALL BE P.V.C. OR C.P.V.C. : ASTM D2665 SCHEDULE 40. FITTINGS: DWV, JOINTS: ASTM WELD. PROVIDE CAST IRON PIPE AND FITTINGS FOR SOIL, WASTE AND VENT Located in Ceiling Plenums. E CLEANOUTS AT BASE OF EACH VERTICAL STACK, AT EACH CHANGE OF DIRECTION OF HORIZONTAL and at 100 foot intervals of horizontal runs for sanitary and storm piping. ACCESS PANELS TO ALL VALVES WITHIN CHASES OR ABOVE NON-ACCESSIBLE CEILINGS. REFER CHITECTURAL DRAWINGS FOR CEILINGS TYPES. G AND SITE UTILITY CONNECTIONS SHALL BE PROVIDED ON SITE UTILITY DRAWINGS. ALL SERVICES ON THIS SET OF PLANS TERMINATE 5'-0" FROM BUILDING, UNLESS SHOWN OTHERWISE ON GS. PLUMBING CONTRACTOR SHALL MAKE FINAL CONNECTIONS TO SITE UTILITIES. H AND INSTALL HOSE BIBBS AND/OR WALL HYDRANTS 24" ABOVE FINISH GRADE/FLOOR AND E VACUUM BREAKERS. CHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF ROOF DRAINS, PLUMBING FIXTURE MOUNTING 's and dimensions. ACTOR SHALL VERIFY INVERT ELEVATIONS OF EXISTING SEWERS IN WHICH NEW SEWER LINES ARE TO NNECTED PRIOR TO INSTALLATION. ACTOR SHALL INSTALL DIELECTRIC UNIONS AT CONNECTIONS OF DISSIMILAR METALS. ACTOR SHALL ROUGH-IN ALL WASTE AND SUPPLIES TO SPECIAL EQUIPMENT ACCORDING TO ACTURERS SHOP DRAWINGS AND MAKE FINAL CONNECTIONS. ALL SUPPLIES SHALL BE VALVED. L VACUUM BREAKERS WHERE REQUIRED BY CODE. e reduced pressure backflow preventers for domestic water supply connections as red by code. LOW GRADE/SLAB COPPER PIPE SHALL BE PLACED WITHIN COPPER SLEEVE (10 MIL) POLYETHYLENE C SLEEVING. EXTEND SLEEVING ABOVE GRADE/SLAB. ACTOR SHALL REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF FLOOR DRAINS (IF OCATED WITHIN TOILET ROOMS. IRE REDUCING VALVES SHALL BE INSTALLED ON BRANCH LINES SERVING FIXTURES AND/OR IENT WHEN THE PRESSURE IN THE LINE DISCHARGE INTO SANITARY SYSTEM. INATE EXACT LOCATION OF FLOOR DRAINS FOR HVAC EQUIPMENT WITH MECHANICAL CONTRACTOR. NSATE PIPING SHALL NOT DISCHARGE INTO SANITARY SYSTEM. WATER LINES TIGHT TO STRUCTURE. COORDINATE ROUTING TO AVOID CONFLICTS WITH OTHERS INTENT OF THE DRAWINGS AND/OR SPECIFICATIONS IS UNCLEAR OR HAS MORE THAN ONE RETATION, IT SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER IN WRITING THE SUBMISSION OF BIDS. THE ARCHITEC/ENGINEER SHALL MAKE CORRECTIONS AND/OR PROVIDE NATION IN WRITING. AND SPECIFICATIONS ARE INTENDED AS A GENERAL DESCRIPTION OF THE WORK TO BE PERFORMED. MS NOT SPECIFICALLY MENTIONED OR SHOWN, BUT NO NECESSARY FOR THE COMPLETION OF THE ATION, SHALL BE FURNISHED AND INSTALLED BY THIS CONTRACTOR. THE CONTRACTOR SHALL NT HIMSELF WITH THE MECHANICAL, ARCHITECTURAL, STRUCTURAL AND ELECTRICAL PLANS PRIOR BMITTING HIS FINAL BID. NO ADDITIONAL COMPENSATION WILL BE ALLOWED DUE TO CONTRACTORS E TO FAMILIARIZE HIMSELF WITH THE PLANS. NTRACTOR SHALL BASE HIS PROPOSAL UPON THE EQUIPMENT AS SCHEDULED OR SPECIFIED, USING ANUFACTURERS AND EQUIPMENT SPECIFIED ON THE DRAWINGS. IF MORE THAN ONE MANUFACTURER IFIED FOR ONE ITEM, ANY ONE OF THE MANUFACTURERS LISTED MAY BY USED IN THIS ICTOR'S PROPOSAL. IF THIS CONTRACTOR WISHES TO USE EQUIPMENT NOT SPECIFIED, HE MUST AT E OF BIDDING SUBMIT SEPARATELY ON LETTERHEAD STATIONARY OF THE BIDDER. THE EQUIPMENT JLD SUBSTITUTE AND THE COST TO BE ADDED OR TO BE DEDUCTED FROM HIS PROPOSAL. NTRACTOR IS EXPECTED TO ORDER ALL MATERIALS IN SUFFICIENT TIME TO AVOID DELAYING THE ETION OF THE PROJECT. DELAY IN DELIVERY WILL NOT BE CONSIDERED A JUSTIFIABLE REASON FOR SION OF SUBSTITUTE MATERIALS. PENETRATE WALL FOOTINGS WITH PIPING. COORDINATE WITH GENERAL CONTRACTOR TO DROP 3 AS REQUIRED TO CLEAR PLUMBING SERVICES WHERE ABSOLUTELY NECESSARY. ALL PIPING ATING A BEARING WALL OR FOOTING MUST BE SLEEVED AND LOCATION APPROVED BY STRUCTURAL 39. REFER TO PLANS FOR VENT THRU ROOF (V.T.R.) PIPES SIZES AND LOCATIONS. LOCATE V.T.R. A MIN. 10'
  - HORIZONTAL FROM ANY BUILDING OPENING OR FRESH AIR INTAKE. EXTEND V.T.R. 12" ABOVE ROOF SURFACE. IF 10' DISTANCE CANNOT BE ACHIEVED LOCATE V.T.R. 2' ABOVE ADJACENT TOP OF FRESH AIR INTAKE OR BUILDING OPENINGS. PROVIDE 1" FIBERGLASS INSULATION WITH ALL-SERVICE JACKET ON VENT PIPE INSIDE BUILDING WITHIN 6' OF V.T.R. LOCATION. VERIFY FLASHING AND COUNTERFLASHING AND COORDINATE INSTALLATION WITH ROOFING CONTRACTOR. ALL SHOWERS SHALL BE LOW FLOW SHOWER HEADS (MAXIMUM FLOW RATE = 2.5 Gallons/min AT 80 PSI
  - WATER PRESSURE). ONLY ONE SHOWER HEAD SHALL BE ALLOWED PER SHOWER SPACE. PLUMBING INSPECTOR ON SITE SHALL VERIFY THE LATTER AT FINAL INSPECTION.

ADDITION

AFF

BV

CB

CD

CDU

CW

DN

DS

FRP

FS

GPH

GR

HB

HW

IF

KW

LBS

MH

NIC

NHC

NO

NTS

OD

PSI

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	Roof Section 1	Roof Section 2
Sq. Ft 1/4" per foot slope	1080	485
GPM	56.16	25.22
Pipe size	3"	2"

EW SE BOOE	
- 1/4" SLOF - PER FOC	DPE 1/4" SLOPE OT PER FOOT
SECTION 1	ROOF SECTION 2
Image: Second state	DPE 1/4" SLOPE OT PER FOOT
ROOF PLAN - DRAINAGE       SCALE: 1/4"=1'-0"	

	SCOPE OF WOR
	JUUL UN WUIN
	STORM WATER DRAINAGE SYSTEM ONLY
$\left  \right\rangle$	NEW-ADDITION ROOF AS PER ROOF
$\left  \right\rangle$	CONFIGURATION AND SLOPES. THE
	DRAINAGE SYSTEM PERTAINING TO THE E
	PART OF THE BUILDING IS EXISTING TO



# M.E.P. ENGINEER: Genesis Fortune, LLC

ů. 305.778.7342 ©genesisfortune CA# 32749





RATION:

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A A

		UNITS SCI	HEDULE			
	UNIT DESIGNATION					
	SEER		13.2		1	
	OPERATION WEIGHT		1190	ITEM	MANUF./CAT NO.	
		DESIGN MANUFACTURER	LENNOX			
		MODEL NO	LCH120H4B			
	CONFIGURATION		HORIZONTAL			
	DIMENSION (WXDXH)		60"X101"X47"			
⊢		TOTAL CFM	3800			
INN		EXT STATIC PRESSURE	0.8	A	TITUS SUPPLY WALL GRILL	
NDLE	FAN	FAN MOTOR HP	3			
R HAI		FAN FLA	10.6	В	MODEL 355R	
AIF		ELECTRICAL SERVICE	208/3/60			
	Ъ	TOTAL CAPACITY (BTU/H)	114,000			
	000	SENSIBLE CAPACITY	112,000			
	COOLING	ENTERING TEMP °F DB/WB	75/ 50			
		LEAVING AIR TEMP	55			
	HEATER	HEAT CAPACITY (KW)	22		$\bigotimes$ CG = CEILING G	
		NO OF HEAT STEP	2		RCG = RETURN	
		MCA/MOP	72/80		WG = SUPPLY	
	UNIT DESIGNATION		CU-1		₩G = RETURN	
LIN	OPERATING WEIGHT (LBS)		-		NOTES:	
ы С	DESIGN MANUFACTURER		LENNOX		1. PROVIDE CEILING DE	
NISN	MODEL		BUILT-IN	A	BY ARCHITECT. 2. DEVICES SHALL BE F	
NDEI	DIMENSION (WXDXH)		N/A	P	3. AIR DEVICES SHALL	
AIR COOLER CON	TYPE OF FAN		PROPELLER		4. IF NECESSARY, PROV	
	FAN-AMP		4.80		5. PROVIDE EQUALIZI PROVIDE OPPOSED BLA	
	NO OF COMPRESSOR		2		<ol> <li>WHERE 3-WAY THRO</li> <li>PROVIDE OPPOSED E</li> </ol>	
	COMPRESSOR RLA-LRA		32-47.4			
	MCA/MOP		17.8 /30		BATHROOM EXHA	
	ELECTRICAL SERVICE AVAILABLE		230/1/60	E	EF-1: "NUTONE" MODEL	
		REFRIGERANT	R410A	DE	LIVERY @ 1/10" SP, 115 1P. CEILING MOUNTED W	
		REFRIGERANT PIPES	L-3/8 G-3/4		······································	
	_			EF	-2: "NUTONE" MODEL Q	

# **DUCTWORK INSULATION (FBC 2020)**

	LOCATION	SUPPLY DUCT R	LY DUCT RETURN DUCT			
	EXTERIOR OF BUILDING	R-6	R-4.2			
	VENTILATED ATTIC	R-6	R-4.2			
	UNVENTED ATTIC ABOVE INSULATED CEILING	R-6	R-4.2			
	UNVENTED ATTIC WITH ROOF INSULATION	R-4.2	NONE			
	UNCONDITIONED SPACES	R-4.2	R-4.2			
	INDIRECTLY CONDITIONED SPACES	NONE	NONE			
×	CONDITIONED SPACES	NONE	NONE			
	BURIED	R-4.2	NONE			
* <u>APPLY FOR THIS PROJECT,</u> NOTE: DRYER EXHAUST DUCT SHALL BE INSULATE WITH R-6						

1 1 - 1 - 1 - 1	······································			
A	TITUS SUPPLY WALL GRILLE MODEL 250 (3 AND 2 WAY)			
В	TITUS RETURN WALL GRILLE MODEL 355R			
	L DEVICE TYPE LEGEND:			
	$\mathbf{\nabla} = \mathbf{C} \mathbf{G} = \mathbf{C} \mathbf{F} \mathbf{I} \mathbf{I} \mathbf{N} \mathbf{G} \mathbf{G} \mathbf{R} \mathbf{I} \mathbf{I} \mathbf{F}$			
	RCG = RETURN AIR G			
	$\frac{1}{4}$ WG = SUPPLY WALL			
5	$\overrightarrow{\mathbf{RWG}} = \operatorname{RETURN} \operatorname{WALL}$			
AB	<ol> <li>PROVIDE CEILING DEVICES BY ARCHITECT.</li> <li>DEVICES SHALL BE PROVI</li> <li>AIR DEVICES SHALL BE 4 ARROW(S).</li> <li>IF NECESSARY, PROVIDE</li> <li>PROVIDE EQUALIZING GRIE</li> <li>PROVIDE OPPOSED BLADE DAM</li> <li>WHERE 3-WAY THROW IS</li> <li>PROVIDE OPPOSED BLADE</li> </ol>			
BATHROOM EXHAUS				
Ef DEI AM	F—1: "NUTONE" MODEL QTXE LIVERY @ 1/10" SP, 115 VOI P. CEILING MOUNTED W/B.D.			
EF- DEI AM	-2: "NUTONE" MODEL QTXEN LIVERY @ 1/10" SP, 115 VOI P. CEILING MOUNTED W/B.D.			
U.C.	UNDERCUT D			
CE RF	CONDENSAT			
NO <sup>-</sup> USE IN 52'	TE: E LONG LINE APPLICATION R DISTANCES WITH 75' OR MOI OR MORE IN HEIGHT.			
(	SCOPE OF WO			
NEW NEW	V HVAC UNITS FOR WAREHOUSE			

	–							
AIR DEVICE SCHEDULE								
	TYPE	NECK		FRAME	FI	NISH		
		0 - 125 CF 130 - 150 CF 160 - 275 CF 280 - 390 CI 400 - 500 CI	$FM = 6"\phi$ $FM = 6"\phi$ $FM = 8"\phi$ $FM = 10"\phi$ $FM = 12"\phi$	SEE PLANS	BAK. W	HT. ENAMEL	-	
Y)	WG	SEE P	LANS	SEE PLANS	BAK.	WHT. ENAM	EL	
LE	WG	SEE F	PLANS	SEE PLANS	BAK.	WHT. ENAM	<i>I</i> EL	
<u>IND</u>	: -					DEVICE	TYPE	
IR (	L Grille (e	GG CRATE FACE	TYPE)	CFM —	300			
ALL	GRILLE							
'ALL	GRILLE			THERM	IOSTAT (	)		
ICE	S WITH F	ROPER FRAME ST	YLE TO MATCH CE	EILING OR WALL	TYPE AS	CALLED FO	R	
RON BE 4	/IDED WIT 4-WAY T	TH FACTORY FINIS THROW UNLESS NO	H. )TED OTHERWISE O	R SHOWN ON PL	ANS WITH	I DIRECTION	IAL	
DE TOP HAT FOR GRILLES AND DIFFUSERS. GRID (PRICE MODEL EG.) FOR DIFFUSERS TAPPED DIRECTLY FROM BOTTOM OF DUCT. DAMPER (PRICE MODEL D-57) W IS NOTED, INSTALL BAFFLES IN THE NECK OF DIFFUSERS. ADE DAMPER FOR REGISTERS.								
JS	t fai	N SPECS	HVAC		I SC	HEDU	JLE	
TXEN-50, 50 CFM AIR		HVAC DESIGN F	REQUIRES:	YES	NO	RE	EMARKS	
VOLTS, 60 Hz, 0.3 B.D.D. BUILT-IN.			DUCT SMOKE D	DUCT SMOKE DETECTOR(S)		NO		
			FIRE DAMPER(S	)		NO		
			SMOKE DAMPER	SMOKE DAMPER(S)		NO		
			FIRE RATED EN	FIRE RATED ENCLOSURE		NO		
IT DOOR 1" A.F.F. URN AIR. ISATION LINE ERATION PIPE		FIRE RATED RO CEILING ASSEM	FIRE RATED ROOF/FLOOR CEILING ASSEMBLY		NO			
		FIRE STOPPING	FIRE STOPPING		NO			
		E	SMOKE CONTROL			NO		
N F MC	REFRIGERANT PIPES MORE IN LENGTH AND MORE IN LENGTH AND MORE IN LENGTH AND MORE IN LENGTH AND					<sup>-</sup> ALLED PER		
N	VORK DRAWING INDEX							

M-1.0 HVAC NOTES AND SCHEDULES M-2.0 HVAC FLOOR PLAN M-3.0 HVAC DETAILS M-4.0 BORA COMPLIANCE

# H.V.A.C. NOTES

1. ALL WORK SHALL BE AS PER 2020 7TH EDITION F.B.C. AND NFPA

2. ALL HEATING AND AIR CONDITIONING DUCT WORK SHALL BE FIBERGLASS, ENDURA GOLD TYPE, AS MANUFACTURED BY OWENS-CORNING, W/BACTERIAL / FUNGAL GROWTH RESISTANCE, TYPE 800 (1.5" THICK R-6). ALL BATHROOM AND DRYER EXHAUST DUCTS SHALL BE 30 GA. GALV. METAL WITHOUT INSULATION. HOOD EXHAUST DUCT SHALL BE 26 GA. GALV. METAL WITHOUT INSULATION AND W/WIRE MESH. PROVIDE A UV LIGHT IN EACH AIR HANDLING UNIT. SUPPLY AND RETURN DUCTS IN ATTICS SHALL BE INSULATED TO A MINIMUM OF R-8 WHERE 3 INCHES (76 MM) IN DIAMETER AND GREATER AND R-6 WHERE LESS THAN 3 INCHES (76 MM) IN DIAMETER. SUPPLY AND RETURN DUCTS IN OTHER PORTIONS OF THE BUILDING SHALL BE INSULATED TO A MINIMUM OF R-6 WHERE 3 INCHES (76 MM) IN DIAMETER OR GREATER AND R-4.2 WHERE LESS THAN 3 INCHES (76 MM) IN DIAMETER. EXCEPTION: DUCTS OR PORTIONS THEREOF LOCATED COMPLETELY INSIDE THE BUILDING THERMAL ENVELOPE.

3. DUCT WORK SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS & ACCORDING TO ASHRAE & SMACNA STANDARDS AND IN COMPLIANCE WITH UL 181.

4. DUCT DIMENSIONS ARE IN INCHES AND CORRESPOND TO INSIDE DIMENSIONS WIDTH x HEIGHT. DUCT SYSTEM SHALL COMPLY WITH NFPA STD. NO. 90A AND/OR 90B. DUCTWORK AND MATERIALS SHALL BE CLASS 1 MATERIALS IN ACCORDANCE WITH U.L. 181 TESTS.

5. COORDINATE LOCATIONS, SIZES & OPENINGS W/OTHER TRADES ON THE JOB. A/C CONTRACTOR SHALL PROVIDE THE COMPLETE DUCT SYSTEM W/TURNING VANES AT ALL ELBOWS. SPLITTERS AND DAMPERS AS REQUIRED. A/C CONTRACTOR SHALL USE THE BEST PRACTICES OF THE TRADE IN THE FABRICATION AND INSTALLATION OF THE SYSTEM.

6. ALL SUPPLY AIR AND RETURN AIR GRILLES/DIFFUSERS SHALL BE NEW, AND SHALL BE LOCATED AND BALANCED IN ORDER THAT THEY DELIVER THE REQUIRED CFM TO THE ENTIRE ROOM EVENLY & DRAFT FREE TO MAINTAIN THE FOLLOWING DESIGN CONDITIONS:

INSIDE	OUTSIDE	RELATIVE HUMIDITY
COOLING – 76 DB HEATING – 72 DB	90 DB — 79 WB 45 — DB	50% TO 60%

7. ALL TEMPERATURE CONTROLS SHALL BE DIGITAL PROGRAMMABLE THERMOSTAT MOUNTED WHERE SHOWN ON PLANS, AT 5'-0" A.F.F.

8. ALL NEW GRILLES AND DIFFUSERS TO BE ALUMINUM CONSTRUCTION. DIFFUSERS SHALL HAVE HIDDEN OPPOSED BLADE DAMPERS. PROVIDE GASKETS ON ALL GRILLES & DIFFUSERS.

9. PROJECT ARCH. SHALL REVIEW AND APPROVE ALL DIFFUSER TYPES & FINISHES PRIOR TO PURCHASE AND INSTALLATION.

10. CONTRACTOR SHALL FIELD VERIFY/COORDINATE ALL CONDITIONS AND PARAMETERS W/OTHER TRADES INVOLVED W/THE PROJECT.

11. REFRIGERANT PIPING (SUCTION) SHALL BE INSULATED WITH MINIMUM 3/4" THICK ARMAFLEX INSULATION.

12. ALL AIR HANDLING UNITS SHALL BE INSTALLED WITH 4" CLEARANCE ALL AROUND INSIDE MECHANICAL CLOSET.

13. PLACE ALL GRILLS MIN. 12" AWAY FROM WALLS TO ACCOMMODATE FOR DRYWALL AND MOLDINGS.

14. HVAC SYSTEMS SPECIFIED ON THIS PLAN AND INSTALLED AT THE PROJECT SITE WILL NOT BE USED AND IN OPERATION DURING WOOD FLOOR SANDING PROCESS.

15. UPON COMPLETION OF CONSTRUCTION, PRIOR TO THE DELIVERY OF THE HVAC SYSTEMS, ALL AIR HANDLING UNITS (COILS AND FAN SECTION) WILL BE CLEANED.

- 16. AT THE TIME OF INITIAL HVAC SYSTEM START-UP, THE FOLLOWING STEPS WILL BE FOLLOWED:
- A. COMPLETE HVAC SYSTEM WILL BE BALANCED AT EACH ZONE, WITHIN 5% OF
- SPECIFIED VALUES. B. FAN SPEED SETTING AT EACH AIR HANDLING UNIT WILL BE VERIFIED AGAINST THE TOTAL AIR FLOW AND SUPPLY AIR TEMP. AT AHU DISCHARGE.
- C. SUPPLY AIR TEMPERATURE READINGS WILL BE RECORDED AT AHU DISCHARGE AND AT THE REMOTEST SUPPLY AIR DIFFUSER / GRILLE.
- D. RETURN AIR TEMPERATURE READINGS WILL BE RECORDED AT EACH AHU ZONE.
- E. SUPPLY AND RETURN AIR DIFFERENTIAL IN THE RANGE OF 15 -20 DEG. WILL BE OBSERVED; OTHERWISE, FAN SPEED SETTINGS WILL BE MODIFIED INORDER TO ACHIEVE SUCH READINGS.
- F. SUPPLY AIR TEMPERATURE READING AT EACH AHU DISCHARGE POINT, (RECORDED BY PROBE TYPE INSTRUMENT INSERTED DIRECTLY INTO THE AIR STREAM) WILL NOT BE LOWER THAN 53 DEG. F. OR HIGHER THAN 58 DEG. F.; OTHERWISE FAN SPEED SETTINGS WILL BE CHANGED.
- G. ALL OF THE START-UP TESTS NOTED ABOVE WILL BE CARRIED OUT, AFTER THE SYSTEMS HAVE BEEN RUNNING FOR A PERIOD OF 24 HOURS.
- H. AT THE CONCLUSION OF THE START UP TESTING, ALL DUCT WORK WITHIN THE ATTIC SPACE WILL BE OBSERVED FOR SIGN OF CONDENSATION ON DUCT SURFACE, DAILY, FOR A PERIOD OF ONE WEEK.
- I. IN THE EVENT THAT TEMPERATURE READINGS AND / OR AIR FLOW QUANTITIES, ARE FOUND TO DIFFER FROM THE PARAMETERS NOTED ABOVE, AND / OR CONDENSATION IS OBSERVED ON THE DUCT SURFACE WITHIN THE ATTIC SPACE, PROJECT ARCHITECT AND ENGINEER WILL BE NOTIFIED FOR FURTHER EVALUATION AND IMPLEMENTATION OF CORRECTIVE MEASURES.

17. REFRIGERANT CIRCUIT ACCESS PORTS LOCATED OUTDOORS SHALL BE FITTED WITH LOCKING-TYPE TAMPER RESISTANT CAPS OR SHALL BE OTHERWISE SECURED TO PREVENT UNAUTHORIZED ACCESS. FBC M-1101.10

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