## ELECTRICAL SYMBOL LEGEND BASIC MATERIALS <u>SYMBOL</u> <u>DESCRIPTION</u> DUPLEX RECEPTACLE, 20 AMP., 125V., (M.H.=18"A.F.F.)SIMPLEX RECEPTACLE (16" A.F.F.) (EWC DENOTES ELECTRIC WATER COOLER. COORDINATE WITH EWC INSTALLER FOR MOUNTING HEIGHT) TWO DUPLEX RECEPTACLES WITH COMMON COVER 20A., 125V.,(18" SPECIÁL PURPOSE OUTLET, COORD. W/ EQUIPT. DUPLEX RECEPTACLE, 20 AMP., 125V., MOUNT ABOVE COUNTER GFCI DUPLEX RECEPTACLE, 20 AMP., 125V., GFCI DUPLEX RECEPTACLE, 20 AMP., 125V., MTD. ABOVE COUNTER FLOOR OUTLET BOX AND DUPLEX RECEPT. 20 AMP., 125V., WITH APPROPRIATE FLANGE. JUNCTION BOX, MOUNTING AS SHOWN ELECTRIC MOTOR, NUMBER INDICATES HORSEPOWER # OF POLES — AMP RATING/FRAME FUSE SIZE ( \* DENOTES AS PER MANUFACTURER) LIGHTING CONTROL TIME CLOCK PLUG-IN STRIP WITH RECEPTACLES, 18" O.C. U.O.N. CABLE TRAY <del>----</del> LIGHTING <u>SYMBOL</u> <u>DESCRIPTION</u> LIGHT FIXTURE DESIGNATION. FACE(S) OF FIXTURE) 2 X 2 FLUORESCENT LIGHT FIXTURE A.F.F.) OCCUPANCY SENSORS SYMBOL DESCRIPTION MANUFACTURER. SYMBOL DESCRIPTION SURFACE ELECTRICAL PANEL. ---- EXISTING EQUIPMENT TO REMAIN DRAWINGS. SYMBOL DESCRIPTION

GROUND OR GROUND ROD AS NOTED CONDUIT TURNING UP CONDUIT TURNING DOWN

LIGHTING FIXTURE, SURFACE MOUNTED LIGHTING FIXTURE (HID, FLUORESCENT OR INCANDESCENT), RECESSED LIGHTING FIXTURE, WALL MOUNTED

EXIT LIGHT FIXTURE. DIRECTION ARROWS AS SHOWN WALL MOUNTED EXIT LIGHT FIXTURE (SHADED QUADRANT INDICATES

**ENCLOSURE TYPE:** 

EXTERIOR NEMA 1-

CONDUIT STUB

CONDUIT CONTINUED

NEMA 3R- FOR

FOR INTERIOR

COMBINATION OF EXIT SIGN & EMERGENCY BATTERY WALL PACK WITH TWIN HEADS (REFER TO LTG. FIXTURE SCHEDULE FOR SPECS.) EMERGENCY BATTERY WALL PACK WITH TWIN HEADS

TOGGLE SWITCH 120/277V. 20 AMP., (M.H. = 48" TOGGLE SWITCH 120/277V. 20 AMP. ,(M.H. = 48" A.F.F.) , 3-WAY SINGLE PHASE MANUAL MOTOR STARTER, (M.H.=48"

WALL MOUNTED - OCCUPANCY SENSOR SWITCH, (M.H.=48"A.F.F.) la,b INDICATES SWITCHING

CEILING MOUNTED OCCUPANCY SENSOR - LIGHTING CIRCUIT CONTROLLER.

1. COORDINATE AND VERIFY EXACT PLACEMENT OF ALL OCCUPANCY SENSORS WITH MANUFACTURER PRIOR TO COMMENCEMENT OF

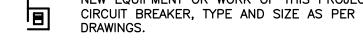
2.OCCUPANCY SENSORS: ANY LOAD OVER 800W @120V AND 1200W @277V CONTRACTOR SHALL UTILIZE LOW VOLTAGE OCCUPANCY SENSORS WITH REMOTE POWER PACKS AS REQUIRED BY

3. CONTRACTOR SHALL PROVIDE ALL SWITCHPACKS AND CONDUCTORS AS REQUIRED FOR LAYOUTS AND CONTROLS SHOWN ON PLANS.

### SERVICE AND DISTRIBUTION

ELECTRICAL BRANCH CIRCUIT PANELBOARD, SURFACE (SEE PANEL SCHEDULE FOR DETAILS)

NEW EQUIPMENT OR WORK OF THIS PROJECT



### TELEPHONE/COMPUTER RACEWAY SYSTEM

TELEPHONE/COMPUTER TERMINAL BOARD "TTB" INTERCOM SYSTEM SPEAKER COMPUTER/TELEPHONE OUTLET WITH (2)

8-CONDUCTOR RJ-45 JACKS IN A SINGLE-GANG BOX MOUNTED AT 18" A.F.F. C = ABOVE THE COUNTERP = PUBLIC PAY (48" A.F.F.)

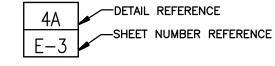
W = WALL MOUNTED (18" A.F.F.) COMPUTER/TELEPHONE OUTLET FLOOR MOUNTED TELEPHONE PORT FLOOR MOUNTED

### FIRE ALARM/DETECTION SYSTEM

### SYMBOL DESCRIPTION

DUCT MOUNTED SMOKE DETECTOR, WITH SAMPLE TUBE, REMOTE TEST AND HEAVY DUTY CONTROL RELAY.

CONTRACTOR TO VERIFY MOUNTING HEIGHT OF ALL DEVICES WITH ARCHITECT PRIOR TO DEVICE INSTALLATION.



SOME SYMBOLS SHOWN ON THIS LEGEND MAY NOT PERTAIN TO THIS PROJECT.

## GENERAL ELECTRICAL NOTES

- THE ENTIRE INSTALLATION SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITION OF THE W/FBC 2010, NEC 2008 AND OF ALL LOCAL CODES, RULES AND ORDINANCES
- 2. AS A MINIMUM, ALL EQUIPMENT SHALL MEET APPLICABLE STANDARDS, FOR TYPE OF EQUIPMENT AND INTENDED USE. OF THE FOLLOWING: a. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI).
- b. ILLUMINATING ENGINEERS SOCIETY (IES). c. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM).
- d. NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA). NOTE: THESE STANDARDS ARE SUBORDINATE TO CODES AND STANDARDS SET BY U.L
- 3. IT SHALL BE UNDERSTOOD THAT ALL WORK PERFORMED SHALL BE BY A LICENSED ELECTRICAL CONTRACTOR IN A FIRST CLASS WORKMANLIKE MANNER. SAID CONTRACTOR SHALL MEET ALL REQUIREMENTS SET FORTH BY ANY LOCAL ORDINANCE AND GOVERNING AUTHORITIES.
- 4. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED INSURANCE FOR PROTECTION AGAINST PUBLIC LIABILITY AND PROPERTY DAMAGE FOR THE DURATION OF THE WORK.
- THE CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP FREE FROM DEFECTS FOR A PERIOD OF NOT LESS THAN (1) YEAR FROM DATE OF ACCEPTANCE,
- IT SHALL NOT BE THE INTENT OF THESE PLANS AND/OR SPECIFICATIONS TO SHOW EVERY MINOR DETAIL OF CONSTRUCTION. THE CONTRACTOR SHALL BE EXPECTED TO FURNISH AND INSTALL ALL ITEMS FOR A COMPLETE ELECTRICAL SYSTEM AND PROVIDE ALL REQUIREMENTS NECESSARY FOR EQUIPMENT TO BE PLACED IN PROPER WORKING
- 7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING TO ORIGINAL CONDITIONS, ANY AND ALL DAMAGES TO BUILDING SURFACES, EQUIPMENT, ETC. CAUSED DURING THE PERFORMANCE OF WORK.
- 3. CORRECTION OF ANY DEFECTS SHALL BE COMPLETED WITHOUT ADDITIONAL CHARGE OR DELAYS AND SHALL INCLUDE REPLACEMENT OR REPAIR OF ANY OTHER PHASE OF THE INSTALLATION WHICH MAY HAVE BEEN DAMAGED THEREBY.
- THE CONTRACTOR SHALL VISIT THE JOB SITE AND VERIFY ALL CONDITIONS, LOCATIONS, DIMENSIONS AND COUNTS AS SHOWN OR NOTED ON THE DRAWINGS, PRIOR TO SUBMITTING BID.
- 10. THE CONTRACTOR SHALL NOT SCALE THE ELECTRICAL DRAWINGS, REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT LOCATIONS OF ALL EQUIPMENT UNLESS NOTED OTHERWISE.
- 11. IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO PROVIDE ALL LABOR, MATERIALS AND SUPERVISION NECESSARY TO ACCOMPLISH THE WORK AS SHOWN AND/OR NOTED ON THE PLANS.
- 12. IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR FOR THE ADVANCE ORDERING OF LONG LEAD ITEMS, AS TO NOT INTEFERE WITH THE PRODUCTION OF OTHER TRADES RESULTING IN ANY DOWN OR LAG TIME. THE CONTRACTOR SHALL
- 13. THE CONTRACTOR SHALL KEEP ALL AREAS WHERE WORK IS BEING PERFORMED FREE FROM DEBRIS AT ALL TIMES AND SAID AREAS SHALL BE LEFT BROOM CLEAN AT THE END OF EACH WORKING DAY.

NOT ORDER ANY ITEMS UNTIL APPROVED SHOP DRAWINGS ARE RETURNED TO HIM.

- 14. ALL CONDUCTORS SHALL BE COPPER, TYPE THHN/THWN EXCEPT WHERE OTHERWISE REQUIRED BY U.L. OR CODES. MINIMUM WIRE SIZE SHALL BE #12 AWG EXCLUDING CONTROL WIRING.
- 15. ALUMINUM CONDUCTORS ARE NOT PERMITTED ANYWHERE.
- 16. ALL CONDUCTORS SHALL BE IN **1/2" MIN** CONDUITS (U.O.N.). ALL CONDUITS SHALL BE GALVANIZED RIGID STEEL (GRS) EXCEPT THAT: (a) PVC CONDUITS MAY BE USED UNDERGROUND PROVIDED ELBOWS AND RISERS ARE GRS, WHERE SUBJECT TO PHYSICAL DAMAGE (b) ELECTRICAL METALLIC TUBING (EMT) MAY BE USED IN OR ON WALLS OR CEILINGS WHERE NOT SUBJECT TO MECHANICAL DAMAGE, DAMP OR CORROSIVE CONDITIONS,
- (c) LIQUID TIGHT FLEXIBLE CONDUIT WHERE REQUIRED. (d) FLEXIBLE METALLIC CONDUIT WHERE REQUIRED IN DRY LOCATIONS ONLY. ALL CONDUITS IN HAZARDOUS AREAS (PER NEC) SHALL MEET THE REQUIREMENTS OF
- 17. ALL CONDUIT RUNS ARE SHOWN DIAGRAMATICALLY. THE EXACT ROUTING SHALL BE DETERMINED IN THE FIELD. UNLESS NOTED OTHERWISE.
- 18. WHERE CORE DRILLING OF FLOORS/WALLS IS REQUIRED, THE CONTRACTOR SHALL SEAL OPENINGS WATERTIGHT AFTER UTILITIES HAVE BEEN INSTALLED. LOCATION OF CORED HOLES SHALL COORDINATE WITH LOCATION OF EQUIPMENT IN A MANNER THAT IS CLEAN AND FUNCTIONAL. THE CONTRACTOR SHALL INSTALL ONLY ONE CONDUIT PER HOLE AND SEAL THE OPENING AROUND THE CONDUIT.
- 19. PROVIDE FIRE RETARDANT U.L. APPROVED SEALANT ON ALL PENETRATIONS, WALLS AND STRUCTURAL SLABS. IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO VERIFY PRIOR TO SUBMITTING BID, THE LOCATIONS OF ALL SUCH FIRE RATED PARTITIONS, WALLS, AND STRUCTURAL SLABS.
- 20. UNLESS NOTED AS EXISTING, ALL EQUIPMENT, WIRING, DEVICES, ETC. SHALL BE NEW.
- 21. ALL DISCONNECT SWITCHES SHALL BE SIZED BY NEC REQUIREMENTS TO ACCOMODATE EQUIPMENT SERVED, INCLUDING REQUIRED FUSES U.O.N. SWITCHES SHALL BE HORSEPOWER RATED FOR MAX. HORSEPOWER. HEAVY DUTY TYPE.
- 22. THE CONTRACTOR SHALL VERIFY CIRCUIT PROTECTIVE DEVICE RATINGS FOR EQUIPMENT PRIOR TO INSTALLATION.
- 23. ALL FUSES SHALL BE CURRENT LIMITING, PER U.L., RATED 600V. OR 250V. AS REQUIRED, WITH: (a) NON TIME DELAY FUSES IN MAIN SWITCHES AND SWITCHES FEEDING PANELS. (b) TIME DELAY FUSES FOR MOTOR AND HVAC CIRCUITS.
- 24. WIREWAYS SHALL BE SIZED AS REQUIRED, PER NEC, U.O.N.
- 25. ALL CIRCUIT BREAKERS SHALL BE INVERSE TIME TYPE (THERMAL-MAGNETIC). TWO AND THREE POLE CIRCUIT BREAKERS SHALL BE COMMON TRIP. TIE HANDLES ARE NOT
- 26. ALL ELECTRICAL EQUIPMENT SHALL BE RAINTIGHT (NEMA 3R) WHERE EXPOSED TO THE WEATHER. ALL FLEX CONDUITS CONNECTED TO SUCH EQUIPMENT SHALL BE
- 27. OUTLET BOXES SHALL BE PRESSED STEEL IN DRY LOCATIONS, CAST ALLOY WITH THREADED HUBS IN WET OR DAMP LOCATIONS AND SPECIAL ENCLOSURES AS REQUIRED FOR OTHER CLASSIFIED AREAS. U.O.N.
- 28. ALL CONNECTIONS TO GROUND RODS SHALL BE MADE WITH U.L. APPROVED WELDED CONNECTIONS, UNLESS NOTED OTHERWISE. THE CONTRACTOR SHALL FORM A GROUNDING ELECTRODE SYSTEM AS PER NEC 250-50.
- 29. THE CONTRACTOR SHALL SUBMIT 6 COPIES OF EQUIPMENT SHOP DRAWINGS FOR ELECTRICAL EQUIPMENT TO THE ENGINEER FOR REVIEW, PRIOR TO ORDERING SUCH
- 30. PROPER PLASTER RINGS SHALL BE USED WITH OUTLET BOXES. PLASTER RINGS SHALL BE A MAXIMUM OF 1/8" FROM THE FINISHED SURFACE OF THE DRYWALL AFTER THE DRYWALL IS INSTALLED. PROPER COORDINATION BETWEEN THE ELECTRICAL CONTRACTOR AND THE GENERAL CONTRACTOR FOR RING INSTALLATION IS REQUIRED. NO "GOOF" RINGS WILL BE ALLOWED. ALL OUTLET BOXES SHALL BE SECURELY FASTENED. ANY AND ALL IMPROPERLY INSTALLED PLASTER RINGS OR OUTLET BOXES SHALL BE REMOVED AND A NEW RING OR OUTLET INSTALLED AT THE CONTRACTOR'S
- EXPENSE.
  31. FOR EMERGENCY EXIT SIGNS AND EMERGENCY BATTERY PACKS MAKE CONNECTION AHEAD OF ALL SWITCHES.

### EXISTING CONDITIONS NOTES

- PRIOR TO SUBMITTING BIDS, THE ELECTRICAL CONTRACTOR SHALL VISIT THE SITE TO VERIFY EXISTING ELECTRICAL EQUIPMENT CONDITIONS AND DIFFICULTIES THAT WILL AFFECT EXECUTION OF THE WORK. FEILD VERIFY QUANTITIES OF EXISTING LIGHT FIXTURES, ELECTRICAL DEVICES, COMMUNICATION DEVICES, FIRE ALARM DEVICES, AND ELECTRICAL EQUIPMENT AS APPLICABLE. NOTIFY THE ARCHITECT AND ENGINEER OF ANY EXISTING CONDITIONS, WHICH WILL EFFECT THE SCOPE OF WORK AS SHOWN ON THE CONSTRUCTION DOCUMENTS. SUBMISSION OF A BID PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE AND LATER CLAIMS FOR MOBILIZATION, LABOR, EQUIPMENT, AND/OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WILL NOT BE RECOGNIZED.
- PROVIDE FIRE RETARDANT U.L. APPROVED SEALANT ON ALL PENETRATIONS, WALLS AND STRUCTURAL SLABS. IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO VERIFY PRIOR TO SUBMITTING BID, THE LOCATIONS OF ALL SUCH FIRE RATED PARTITIONS, WALLS, AND STRUCTURAL

## ELECTRICAL DRAWING INDEX

	LLLC INICAL DIAWING INDLA										
		DRAWING DESCRIPTION									
1	E0.1	ELECTRICAL GENERAL NOTES, SYMBOL LEGEND, DETAILS, RISER AND PANEL SCHEDULES									
2	E1.1	POWER/COMMUNICATION AND LIGHTING PLAN SECOND FLOOR									

### SCOPE OF WORK

SCOPE IS LIMITED TO THE SECOND FLOOR REMODELING. FIRST FLOOR IS EXISTING TO REMAIN.



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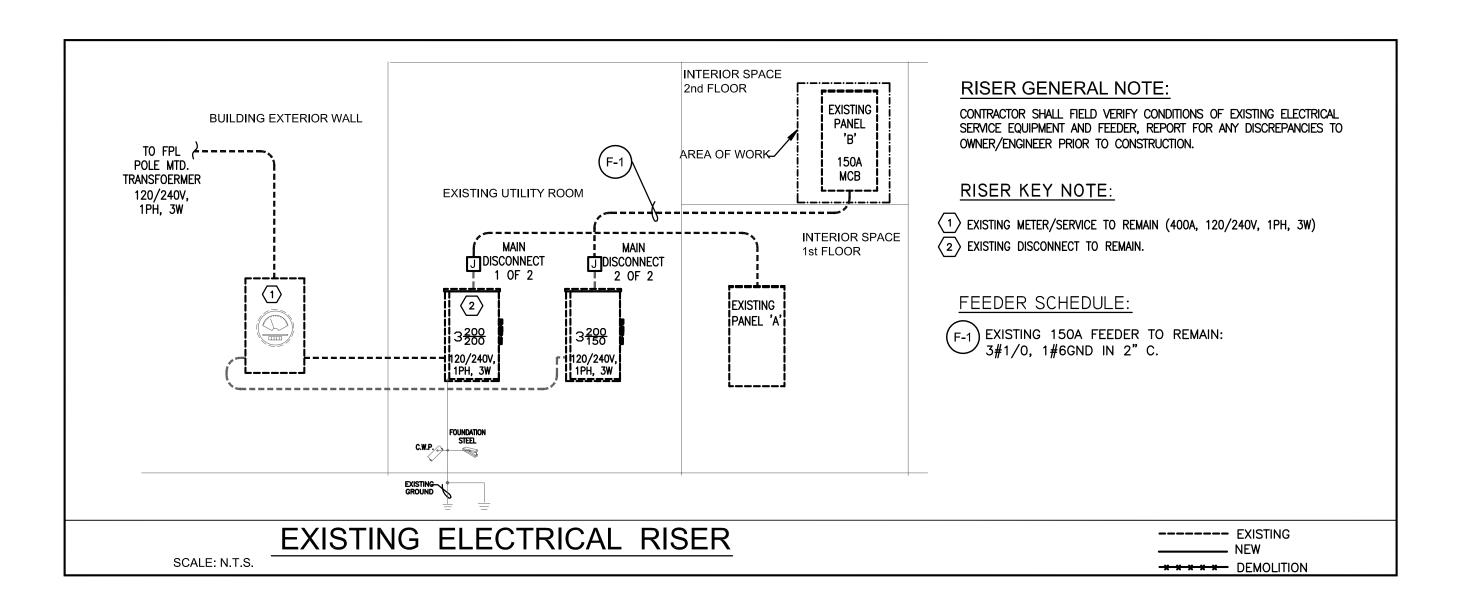
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FAX: 954-653-4170

MANUFACTURER: EX  MAIN BREAKER: 150 AMPS 2 POLE  MAIN LUGS: EX AMPS						Panel N	SECOND FL	OOR					1 3 120/240V	- <u>7</u>	Project #: 140809  PHASE WIRE VOLTAGE					
N O T E NC				BRANCH FEEDER		CIRCUIT	BREAKER		LOAD/	PHASE		CIRCUIT	BREAKER		BRANCH FEEDER		0 D	IDENTIFICATION	CKT NO.	N O T E
s		E	WIRE	GRD,	CONDUIT	TRIP	POLES	KVA	А	С	KVA	TRIP	POLES	WIRE	GRD,	CONDUIT	Е		1,10.	S
	MAIN BREAKER				•	150	2		А	С								NOT USED		
,2, 1 3 3	AHU-3 NORTH (CU-3)	M	EX	EX	EX	40	2	3.00	А	С	3.00	40	2	EX	EX	EX	M M	AHU-4 SOUTH (CU-4)	2	1,2,
. 5		0					_	3.25	Α		1.00	20	1	1/2"	1/2"	1/2"	R	LIGHTING	6	Н
1,2 7	WATER HEATER	0	10	10	3/4'	30	2	3.25		С	1.50	20	1	1/2"	1/2"	1/2"	R	KITCHEN SMALL APPL. GFI	8	Н
1 9	ROOF GFI REC.	R	EX	EX	EX	20	1		А		1.00	20	1	1/2"	1/2"	1/2"	R	IT ROOM/SERVER	10	П
11	CONFERENCE RM REC.	R	12	12	1/2"	20	1	1.08		С	1.00	15	1	1/2"	1/2"	1/2"	L	LIGHTING	12	
13	CONFERENCE RM REC.	R	12	12	1/2"	20	1	0.72	А		1.50	20	1	1/2"	1/2"	1/2"	R	KITCHEN SMALL APPL. GFI	14	
15	LOUNGE AREA RECEPTACL	R	12	12	1/2"	20	1	0.90		С	1.00	15	1	EX	EX	EX	L	LIGHTING	16	
17	PRODUCT. OFFICE REC.	R	12	12	1/2"	20	1	1.08	А		1.08	20	1	1/2"	1/2"	1/2"	R	PRODUCT. OFFICE REC.	18	
19	PRODUCT. OFFICE REC.	R	12	12	1/2"	20	1	1.08		С	1.44	20	1	1/2"	1/2"	1/2"		PRODUCT. OFFICE REC.	20	
21	BATHROOM GFI RECEPT.	R	12	12	1/2"	20	1	0.36	А		1.00	20	1				S	SPARE	22	
23	MANAGER OFFICE REC.	R	12	12	1/2"	20	1	0.72		С	1.00	20	1				S	SPARE	24	
NOTES: EX - EXISTING  1. HACR Type Circuit Breaker  2. Verify CB Size With Equipment Name Plate  3. Non-Concurrent Load (CU)  RECEPTACLES (per NEC) [R]  MOTOR @100%(M)  LARGEST MOTOR @125%(LM)  KITCHEN @65%(K)  SPARES (S)  OTHER LOAD (O)  NON-CONCURRENT LOAD (N)				13.5 12.0 0.0 0.0 2.0 6.5	2.5 11.73 12.0 0.0 0.0 2.0 6.5		TOTAL	CONNE	EMAN	<b>D</b> :	36.0 34.7 145	ΚV	A							

EXISTING BUILDING LOAD SUMMARY (VIA WREWAY)								
Description	SERVICE	Load (KVA)	LOAD (Amp)	EXIST. FEEDER	SERVICE DISCONNECT			
<b>PANEL 'A'</b> 120/240v, 1PH,3W		28.9 <b>120</b>		200A (To Panel 'A')	MAIN 1 OF 2 (200A FUSED)			
PANEL 'B'	120/240v, 1PH,3W	34.7	145	150A (To Panel 'B')	MAIN 2 OF 3 (150A FUSED)			
TOTAL LOA	VD:	63.6	265	400A - M	ETER (Existing)			



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project: MUE12060701 08-14-14 revision

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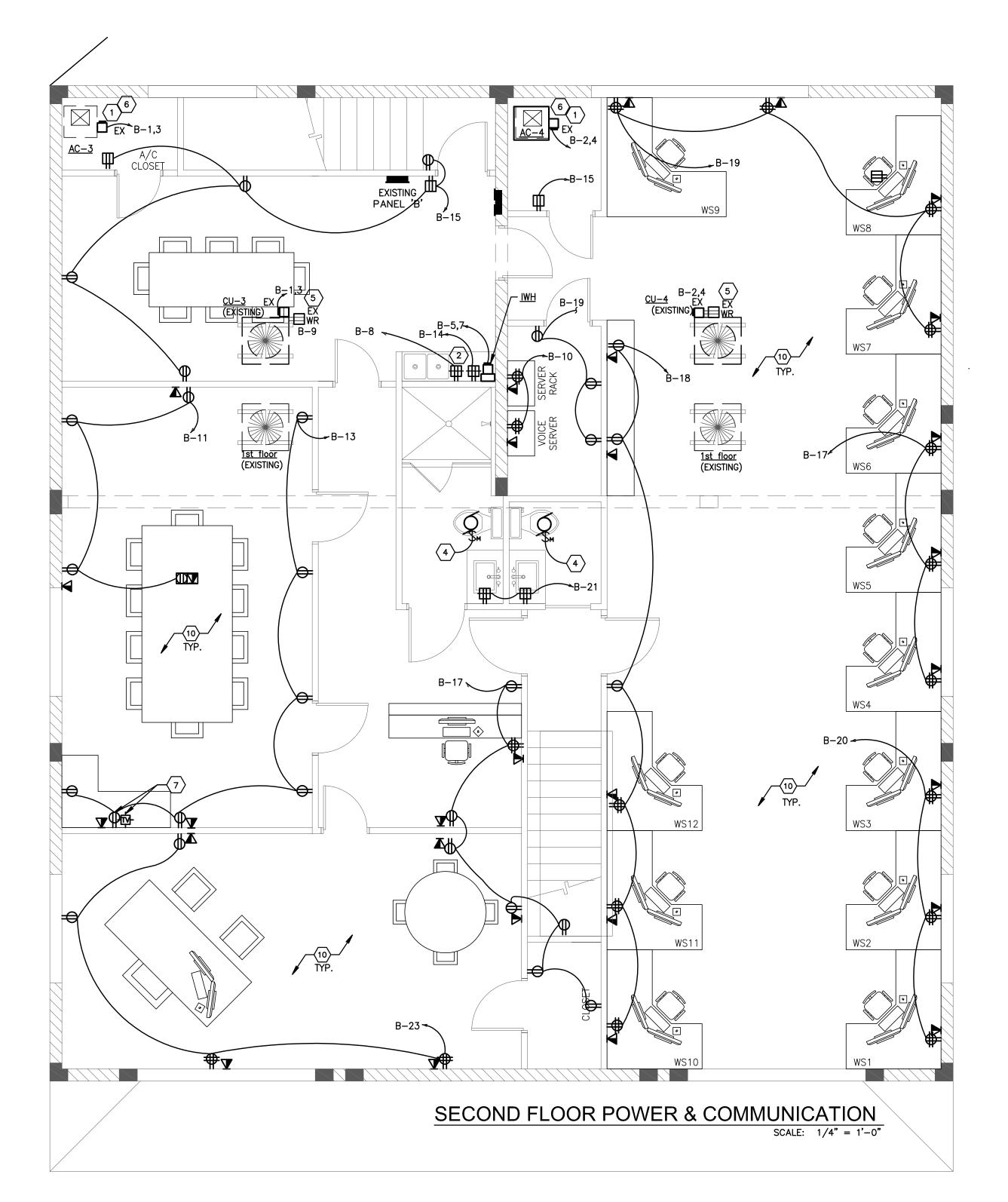
General Revisions

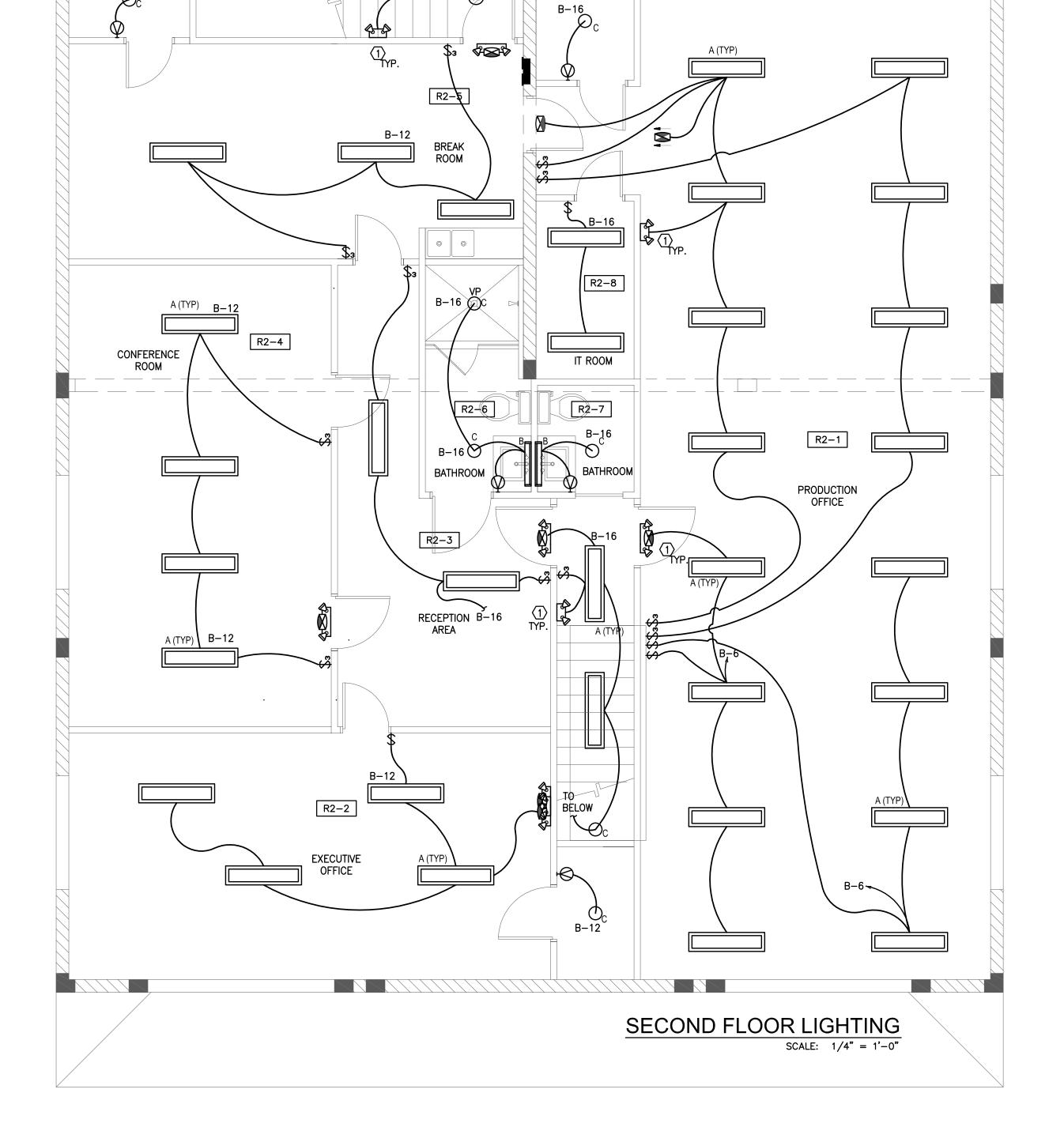
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2nd Floor Electrical General Notes, Symbols,

Details and Risers





### POWER KEY NOTES:

- VERIFY ELECTRICAL REQUIREMENTS WITH EQUIPMENT NAMEPLATE. REPORT TO ENGINEER FOR ANY DISCREPANCIES. REFER TO MECHANICAL PLAN FOR FAN CONTROL AND THERMOSTAT LOCATION..
- 2 ALL 125V RECEPTACLES IN KITCHEN AREA SHALL BE GFCI PROTECTED (NEC2008 210.8(A)(6))
- 3 COORDINATE EXACT LOCATION OF ALL OUTLETS WITH OWNER
- 4 EXHAUST FAN IN CEILING TO BE INTERLOCKED WITH LOCAL LIGHTING SWITCH.
- CONTRACTOR TO VERIFY EXISTING WR/GFI SERVICE RECEPTACLE WITHIN 25FT. FOR MECHANICAL EQUIPMENT ON ROOF. PROVIDE NEW AS REQUIRED.
- 6 CONTRACTOR SHALL ASSURE PROPER WORKING CLEARANCE FOR ELECTRICAL EQUIPMENT/DISCONNECTS. COORDINATE WITH MECHANICAL DRAWING PRIOR TO INSTALLATION.
- (7) COORDINATE EXACT MOUNTING HEIGHT AND REQUIREMENTS WITH OWNER PRIOR TO INSTALLATION.

## NOTE TO CONTRACTOR

ALL CONDUCTORS 1/2" OR 3/4" SHALL BE GALVANIZED RIGID STEEL (GRS) CONDUITS.

## LIGHTING KEY NOTES:

A/C-3 CLOSET

CONNECT ALL EXIT SIGNS AND EMERGENCY LIGHTS TO LOCAL LIGHT CIRCUIT AHEAD OF ANY SWITCHING DEVICES USING 3#12AWG IN 1/2" EMT

	LIGHTING FIXTURE SCHEDULE										
TYPE SYMBOL DESCRIPTION MANUFACTURER CATALOG NUM					LAIT			TOTAL WATT	VOLT	MOUNTING	REMARKS
A		1' X 4' FLUORESCENT INDIRECT LIGHT <b>W/ PERFORATED BASKET</b>	BY OWNER	BY OWNER	2	TYPE T8	28	56	120	PENDANT	11277711110
В			BY OWNER	BY OWNER							
С	0	6ø DOWNLIGHT	BY OWNER	BY OWNER						PENDANT	
	4	TWO HEAD EMERGENCY LIGHT WITH 90 MIN. BATTERY	BY OWNER		2				120	WALL	
	<b>\$</b> ₩\$	COMBO 2 HEAD EMERG. LIGHT WITH 90 MIN. BATTERY	BY OWNER		2				120	SURFACE	
		EXIT SIGN DOUBLE SIDED OR ONE SIDE	BY OWNER		2				120		

NOTES:

1. CONTRACTOR TO ENSURE THAT MOUNTING DEVICES AND ACCESSORIES ARE CORRECT FOR CEILING AND WALL IN WHICH THE FIXTURES ARE TO BE INSTALLED.

2. REFER TO ARCHITECTURAL CEILING PLANS FOR EXACT LOCATION OF LIGHT FIXTURES

ADDRESS OF THE PROPERTY OF TH 3. ALL LIGHT FIXTURES SHALL BE REVIEWED AND APPROVED BY ARCHITECT / OWNER PRIOR TO FORWARDING TO ENGINEER FOR REVIEW. 4. ALL LIGHT FIXTURES AND LAMPS WILL BE FURNISHED AND INSTALLED BY TENANT'S CONTRACTOR, UNLESS OTHERWISE NOTED. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR ORDERING, RECEIVING, STORING, AND

PROTECTING FROM THEFT, BREAKAGE, ETC. AFTER SIGNING FOR RECEIPT.

. ALL FLUORESCENT LIGHT FIXTURES THAT UTILIZE DOUBLE—ENDED LAMPS AND CONTAIN BALLASTS

THAT CAN BE SERVICED IN PLACE SHALL BE EQUIPPED WITH DISCONNECTING MEANS AS PER NEC-2008 (410.130(G)). 6. ALL LUMINARES SHALL BEAR THE UL LISTING NUMBER FROM NATIONAL RECOGNIZED TESTING LABORATORY.

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7

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**General Revisions** 

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Electrical Plan 2nd Floor

### GENERAL MECHANICAL NOTES

- 1. ALL MECHANICAL SYSTEMS ARE TO BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE SECTIONS OF THE FLORIDA STATE BUILDING CODE, NOISE & HEIGHT ORDINANCES, PLANS AND SPECIFICATIONS.
- 2. ALL MATERIALS SHALL BE NEW AND ALL WORKMANSHIP AND MATERIALS SHALL BE IN STRICT ACCORDANCE WITH APPLICABLE LOCAL CODES, PRODUCT APPROVAL, RULES AND ORDINANCES, ANY DAMAGED EQUIPMENT SHALL BE REPLACED OR RESTORED TO ORIGINAL
- 3. THE CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, ACCESS PANELS, CONTROL SYSTEMS, DEVICES, PERMITS AND SERVICES NECESSARY FOR FURNISHING AND INSTALLING A COMPLETE OPERABLE MECHANICAL SYSTEM.
- 4. ALL LOUVERS, GRILLES, PIPING, ETC. SHALL BE PAINTED TO MATCH SURROUNDING COLOR AND TEXTURES AS REQUIRED BY ARCHITECT. VERIFY COLOR AND TEXTURE WITH ARCHITECT. PAINT ALL EXPOSED MECHANICAL EQUIPMENT WITH BENJAMIN MOORE EPOXY ENAMEL 182.
- 5. ALL CUTTING, PATCHING, STRUCTURAL STEEL, WEATHER PROOFING, PAINTING, AND WALL OPENINGS SHALL BE BY THE GENERAL CONTRACTOR.
- 6. ALL OPENINGS IN BUILDING STRUCTURE, FOR DUCTWORK, PIPING, ETC. TO BE 1/2" LARGER (ON ALL SIDES) THEN THE OUTSIDE DIMENSIONS. FILL VOIDS WITH FIRE RETARDANT SILICONE FOAM (I.E. CHASE-FOAM CTC PR-855 BY CHASE TECHNOLOGY CORP.).
- 7. BUILDING HVAC CALCULATIONS ARE BASED ON THE FOLLOWING: A. INDOOR DESIGN: SUMMER 75 DDB/50% RH, WINTER 72 DDB. B. OUTDOOR DESIGN: SUMMER 91 DB/75 DWB, WINTER 45 DB.
- 8. PROVIDE FLEXIBLE DUCT CONNECTORS, RATED AS REQUIRED, TO ALL FANS, A/C UNITS, OR MECHANICAL EQUIPMENT.
- 9. PROVIDE MAINTENANCE AND OPERATION MANUAL ON ALL MECHANICAL EQUIPMENT OR SYSTEMS. PROVIDE 5 SETS OF SUBMITTALS ON ALL HVAC EQUIPMENT. SUBMITTALS SHALL HAVE A SUMMARY SHEET SHOWING ALL SCHEDULED INFORMATION.
- 10. HVAC CONTRACTOR WILL WARRANTY ALL MECHANICAL SYSTEMS, DUCTWORK, THERMOSTATS. AND ALL OTHER EQUIPMENT, PARTS AND LABOR UNDER THESE DRAWINGS AND SPECIFICATIONS FOR A PERIOD OF ONE (1) YEAR AFTER C.O. OF BUILDING. ANY REPAIRS REQUIRING SYSTEM SHUT DOWN WILL BE DONE DURING NON-OPERATIONAL PERIODS. HVAC CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES PRIOR TO BIDDING AND PURCHASING ANY EQUIPMENT.
- 11. AIR QUALITY SHOULD BE TESTED BEFORE OCCUPANCY AND SHOULD BE INSTRUMENTED AND MONITORED THEREAFTER. OR AT LEAST AT REGULAR INTERVALS
- 12. ELECTRICAL CONTROLS AND POWER WIRING: UNDER ELECTRICAL CONTRACT.
- 13. EQUIPMENT SPECIFIED BY MANUFACTURER'S NUMBER SHALL INCLUDE ALL ACCESSORIES, CONTROLS, ETC., LISTED IN THE CATALOG AS STANDARD WITH THE EQUIPMENT. OPTIONAL OR ADDITIONAL ACCESSORIES SHALL BE FURNISHED AS SPECIFIED. 14. MATERIALS:
- A. REFRIGERANT PIPING: SHALL BE TYPE L SOFT DRAWN, COPPER TUBING, DEHYDRATED FOR REFRIGERANT USE. SIZED AS SHOWN ON DRAWINGS OR AS PER AIR CONDITIONING
- EQUIPMENT MANUFACTURER'S RECOMMENDATIONS. B. INSULATION: REFRIGERANT SUCTION PIPING AND CONDENSATE PIPES SHALL BE INSULATED WITH 3/4" THICK FOAMED PLASTIC INSULATION, FIRE RETARDANT TYPE. INSULATION SHALL BE INSTALLED IN PIPING BEFORE ASSEMBLY. NO SPLIT INSULATION WILL BE ACCEPTABLE. SEAL JOINTS WITH MANUFACTURER'S APPROVED ADHESIVE AND GRAY TAPE.
- 15. CONTROLS: AIR CONDITIONING UNITS SHALL BE STARTED AND STOPPED THRU INDIVIDUAL PROGRAMMABLE THERMOSTAT. INDIVIDUAL THERMOSTATS SHALL START/STOP FANS AND ACTIVATE COOLING/HEATING SYSTEMS AS SELECTED.
- 16. TEST AND BALANCE: INDEPEND CONTRACTOR SHALL TEST AND BALANCE ALL VENTILATION AND AIR CONDITIONING SYSTEMS. SUBMIT FOUR COPIES OF TEST AND BALANCE REPORT, TO OWNER
- 17. ALL WORK SHALL BE COORDINATED WITH OTHER TRADES TO AVOID ANY INTERFERENCE THAT MAY DELAY PROGRESS OF CONSTRUCTION. CONTRACTOR SHALL INSTALL ALL NECESSARY OFFSETS, BENDS, AND TRANSITIONS REQUIRED TO PROVIDE A COMPLETE SYSTEM AT NO ADDITIONAL COST

### MECHANICAL EQUIPMENT NOTES

- ALL MECHANICAL EQUIPMENT SHALL BE ARI & U.L. LISTED WHERE APPLICABLE AND RATED FOR THE REQUIRED SERVICE, PRESSURES, TEMPERATURES, AND SHALL BE PROVIDED WITH ALL NECESSARY TRANSFORMERS, SEALS, VALVES, CONNECTIONS, ETC. TO FUNCTION PROPERLY.
- 2. PROVIDE SMOKE DETECTORS IN COMPLIANCE WITH NFPA 90A AND IMC (INTERNATIONAL MECHANICAL CODE), ALL SMOKE DETECTORS SHALL BE BY ONE MANUFACTURER: COORDINATE VOLTAGE ETC. WITH ELECTRICAL CONTRACTOR AND FIRE ALARM SYSTEM BEFORE ORDERING. UPON DETECTION. SMOKE DETECTORS SHALL SHUT DOWN ASSOCIATED AIR EQUIPMENT. PROVIDE ACCESS DOOR FOR ALL SMOKE DETECTORS.
- 3. PROVIDE BACKDRAFT DAMPERS ON ALL EXHAUST FANS AND/OR INLINE FANS.
- 4. PROVIDE VIBRATION ISOLATORS ON ALL MECHANICAL EQUIPMENT AS CALLED FOR IN THE SPECIFICATIONS. IF NOT SPECIFIED, AS RECOMMENDED BY MANUFACTURER FOR QUIET OPERATION (WITH 99% ISOLATION EFFICIENCY).
- 5. PROVIDE A MIN. OF 10' CLEARANCE BETWEEN O/A INTAKES AND VTR OR ANY EXHAUST OPENING.
- 6. INDEPENDENT CONTRACTOR SHALL TEST AND BALANCE ALL MECHANICAL EQUIPMENT AIR DEVICES, EXTRACTORS, DAMPERS, AHU'S & FAN RATES, ETC. TO PROVIDE THE DESIGN QUANTITIES AS SHOWN ON THE PLANS OR SCHEDULES. PROVIDE T & B REPORT IN ACCORDANCE WITH THE AIR BALANCE COUNCIL STANDARDS. PROVIDE FINAL BALANCING FOR ALL SYSTEMS TO SATISFACTION OF OWNER AND ENGINEER. T&B CONTRACTOR SHALL VISIT JOB SITE DURING CONSTRUCTION TO ENSURE THAT ALL DUCTS, DAMPERS, ETC. ARE INSTALLED FOR PROPER AND QUIET AIR DELIVERY.
- 7. THERMOSTAT LOCATION SHALL BE APPROVED BY OWNER AND ENGINEER BEFORE INSTALLATION.
- 8. RUN INSULATED CONDENSATE DRAINS AS PER PLUMBING DRAWINGS.
- 9. ALL PIPING AND DUCTWORK SHALL BE SLEEVED THRU WALLS, BEAMS, SLABS, ETC, AS REQUIRED AND COORDINATED WITH THE STRUCTURAL ENGINEER. REWORK BAR JOIST CROSS BRACING AND PROVIDE NECESSARY TRANSITIONS AS REQUIRED FOR DUCTWORK INSTALLATION.
- 10. ALL INSULATION WILL HAVE FIRE/SMOKE RATING LESS THAN 25/50.
- 11. PROVIDE MOTOR STARTERS AS FOLLOWS (UNLESS OTHERWISE RECOMMENDED BY MOTOR MANUFACTURER): A: PROVIDE OVERLOAD PROTECTION - 1/3 HP AND ABOVE (ALL PHASES). B: PROVIDE ACROSS THE LINE VOLTAGE STARTING BELOW 25 HP.
- 12. ALL OUTDOOR EQUIPMENT SHALL COMPLY WITH LOCAL ZONING NOISE ORDINANCES. MIN. REQUIREMENT SHALL NOT EXCEED A NOISE LEVEL OF 65 DB AS MEASURED RADIALLY 30 FT FROM THE EQUIPMENT IN ALL DIRECTIONS.
- 13. ALL KITCHEN FAN EQUIPMENT SHALL BE WEATHER PROOF RESISTANT & SEACOAST
- 14. PROVIDE ACCESS PANEL FOR FUTURE MAINTENANCE AND UNIT REPLACEMENT PROVIDE
- 3'-0" MIN. CLEARANCE IN FRONT OF UNIT REFER TO ARCH DWG. FOR PANEL INFORMATION. 15. FILTERS SHALL BE IN PLACE DURING CONSTRUCTION, PROVIDE A NEW SET PRIOR TO TEST
- AND BALANCE AND A FINAL SET AT THE END OF ONE YEAR SERVICE PERIOD.

### AIR DISTRIBUTION DUCTWORK NOTES

- 1. REFER TO ARCHITECTURAL PLANS FOR CEILING TYPE.
- PROVIDE OFF WHITE FINISH (SUBJECT TO ARCHITECT'S APPROVAL). 3. ALL DUCTWORK WHERE ALLOWED BY LOCAL CODES AND AND CEILING RATING SHALL BE 1"
- LOW PRESSURE DUCT, SEAL CLASS "C" AND AS FOLLOWS: A. S/A & R/A — INSULATED G-90 SHEETMETAL (R-6 MIN.). FABRICATED AND INSTALLED AS PER LATEST SMACNA "FIBROUSGLASS MANUAL". 1-1/2 THICK R-6.0 MIN.
- B. EXHAUST AIR GALVANIZED SHEETMETAL, 26 GA. MIN. C. FLEXIBLE DUCTWORK SHALL BE INSULATED WITH 1-1/2 THICK R-6.0 MIN. FIBERGLASS
- 4. ALL DUCTWORK AND DIFFUSERS SHALL BE RATED FOR THE USE, PRESSURE AND TEMPERATURE SPECIFIED AND AS REQUIRED BY THE CEILING SYSTEM RATING.
- 5. ALL DUCTWORK SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH "SMACNA" STANDARDS AND LOCAL BUILDING CODES.
- 6. ALL DUCT SIZES ARE CLEAR INSIDE DIMENSIONS. 7. SEAL ALL DUCTS, JOINTS AND SEAMS IN AN APPROVED MANNER AND INSURE AGAINST
- 8. PROVIDE ACCESS DOORS AS REQUIRED FOR ALL MECHANICAL EQUIPMENT TO SERVICE AND VISUALLY CHECK ROTATION OF FANS AND MOTORS, POSITION OF DAMPERS, REPLACE FIRE DAMPER LINKS, ADJUST OR REPLACE CONTROLS, ETC.
- 9. PROVIDE VANED ELBOWS IN ALL CASES, SPLITTER DAMPERS WHERE INDICATED ON DRAWINGS AND VOLUME CONTROL DAMPERS IN ALL BRANCH DUCTS OR DIFFUSER
- 10. REFER TO DIFFUSER SCHEDULE FOR TERMINAL AIR DISTRIBUTION DEVICES

### **COORDINATION NOTES**

- 1. A/C CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE HIS WORK FOR SIZE, LOCATION, CLEARANCE, ACCESS AND ELECTRICAL CHARACTERISTICS WITH ALL OTHER TRADES AND TO PROVIDE SHOP DRAWINGS TO THE ENGINEER FOR REVIEW BEFORE INSTALLATION OF DUCTWORK OR EQUIPMENT. SHOP DRAWING WILL INCLUDE BEAM OR STRUCTURE ELEVATION & REQUIRED EQUIPMENT ACCESS AREAS.
- 2. ROOF, AND CEILING OPENINGS INDICATED ON CONTRACTOR DRAWINGS ARE NOMINAL DIMENSIONS ONLY AND ALL DUCT, PIPE OR EQUIPMENT PENETRATIONS SHALL BE SLEEVED AND FIRE RATED AS REQUIRED, ADJUST OPENINGS
- 3. COORDINATE LOCATION OF CEILING DIFFUSERS, GRILLES AND REGISTERS IN THE FIELD WITH LIGHTS, SPRINKLERS AND ARCHITECTURAL ELEMENTS.
- 4. COORDINATE LOCATION OF A/C UNITS, THERMOSTATS, FANS AND DUCTWORK WITH
- BUILDING STRUCTURE AND OTHER TRADES SO THAT NO INTERFERENCES OCCUR.
- 5. IN GENERAL, DUCT OFFSETS HAVE NOT BEEN SHOWN. A/C CONTRACTOR TO COORDINATE THESE AS REQUIRED.
- 6. MECHANICAL PLANS IN GENERAL, ARE DIAGRAMMATIC IN NATURE, AND ARE TO BE READ IN CONJUNCTION WITH ARCH. PLUMBING, ELECTRICAL AND STRUCTURAL PLANS AND SHALL BE CONSIDERED AS ONE SET OF DOCUMENTS. DUCT AND PIPING OFFSETS, BENDS AND TRANSITIONS WILL BE REQUIRED TO PROVIDE AND INSTALL A COMPLETE FUNCTIONAL SYSTEM AND SHALL BE PROVIDED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE
- 7. THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS PRIOR TO BIDDING, ORDERING, FABRICATION OR INSTALLATION OF MATERIALS OR EQUIPMENT.

### **OUTSIDE AIR CALCULATIONS** (AS PER FBC-10' TABLE 403.3) CFM PROVIDED CFM **APPLICATION** CFM/P USE SQ. FT. REQUIRED SQ. FT. PEOPLE PROVIDED 1000 SQFT 1322 20 AHU-3 SECOND FL. 179 0.06 200 AHU-3 (200 CFM) 1150 SECOND FL. 0.06 125 AHU-4 (125 CFM)

Alf	AIR DISTRIBUTION SCHEDULE									
SYMBOL	USE	TYPE	ACCESSORIES	DESIGN MANUFACTURER & MODEL Mo.						
A	SUPPLY AIR	WALL GRILLE	0.B.D.	TITUS 300-RL						
B	RETURN AIR	WALL GRILLE		TITUS 300-FL						
NOTES	AllX	3EE		300 12						

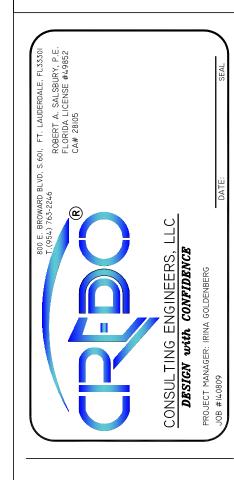
### <u>NOTES:</u>

- 1. ALL AIR DISTRIBUTION DEVICES SHALL BE ALL ALUMINUM CONSTRUCTION. 2. COORDINATE COLOR FINISH WITH ARCHITECT, WHITE BAKED ENAMEL STANDARD.
- 3. ARROWS INDICATE DIRECTION OF AIR DISTRIBUTION.

HVAC DESIGN REQUIREMENTS		
	YES	NO
DUCT SMOKE DETECTOR	_	Х
FIRE DAMPER(S)	_	Х
SMOKE DAMPER(S)	_	Х
FIRE RATED ENCLOSURE	_	Х
FIRE RATED ROOF/FLOOR CEILING ASSEMBLY	_	Х
FIRE STOPPING	_	Х
SMOKE CONTROL	_	Х

	DRAWING DESCRIPTION
1	M-0.1 B GENERAL MECHANICAL NOTES, SCHEDULES - HVAC
2	M-1.1 B SECOND FLOOR CEILING PLAN - HVAC & DETAILS

# MECHANICAL INDEX



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revision	date
no.	
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General Mechanical Notes, Symbols, Schedules &

Calculations

2011

sheet number

## SHOP DRAWING REQUIREMENTS

- SHOP DRAWINGS, SHALL BE SUBMITTED COMPLETE, TOGETHER AT ONE TIME AND MUST COME THROUGH THE ARCHITECT. ALL SUBMITTALS SHALL BE MADE WITHIN 30 DAYS OF NOTICE TO
- ALL SUBMITTALS MUST CLEARLY INDICATE EXACTLY WHICH ITEMS ARE BEING PROPOSED FOR USE. IF NOT, THE SUBMITTAL SHALL BE REJECTED.
- SUBSTITUTIONS SHALL BE LIMITED TO ONE OF THE ALTERNATES LISTED IN THE CONSTRUCTION DOCUMENTS. PRODUCTS CONSIDERED TO BE EQUAL SHALL BE REVIEWED AND ACCEPTED BY THE ENGINEER, ARCHITECT AND OWNER (10) DAYS PRIOR TO BID DATE.
- THE CONTRACTOR ASSUMES ALL DESIGN RESPONSIBILITY AND ALL FINANCIAL RISKS FOR PROCEEDING PRIOR TO SHOP DRAWINGS PROCESSING, AND ON ANY ITEM OR WORK THAT IS AT VARIANCE TO THE CONSTRUCTION DOCUMENTS.
- SHOP DRAWINGS AND SUBMITTALS FOR EACH ITEM SHALL BE REVIEWED NO MORE THAN TWICE. A THIRD SUBMITTAL ON AN ITEM MUST BE ACCOMPANIED BY A PURCHASE ORDER FROM THE CONTRACTOR OR IT SHALL BE REJECTED.
- CIRCUMSTANCES NECESSITATING A REVISION TO THE PERMITTED DOCUMENTS NOT PROCESSED PRIOR TO INSTALLATION MAY NOT BE ACCEPTED. IF ACCEPTED IT MUST BE LEGIBLE, ACCURATE AND ACCOMPANIED BY A PURCHASE ORDER ORDER FROM THE CONTRACTOR. THE REVISION SHALL BE CHARGED TO THE CONTRACTOR AND DELIVERED TO HIM ON A C.O.D. BASIS.
- SUBSTITUTIONS FROM THE BASE DESIGN OR VARIATIONS TO THE PERMITTED CONTRACT DOCUMENTS, WHETHER RESULTING FROM PROCESSED SHOP DRAWINGS OR NOT, THAT RESULT IN REQUIREMENTS IN LETTERS OF AUTHORIZATION AND/OR PERMIT CONTRACT DOCUMENT CHANGES MANDATED BY THE AUTHORITY HAVING JURISDICTION WILL NOT BE MADE BY THIS OFFICE UNLESS ACCOMPANIED BY A PURCHASE ORDER FROM THE CONTRACTOR, AND RELEASED ON A C.O.D. BASIS.
- 8. CONTRACTOR SHALL SUBMIT 5 COPIES OF SHOP DRAWINGS.

### HVAC ABBREVIATION LEGEND

AFF ABOVE FINISH FLOOR

AIR HANDLING UNIT CONDENSATE DRAIN

CEILING DIFFUSER CONDENSING UNIT EWT ENTERING WATER TEMPERATURE

EXHAUST AIR GRILLE

EXHAUST FAN EF

FXHAUST

FD FIRE DAMPER

U/G UNDER GROUND

FIRE SMOKE DAMPER ACCESS DOOR

F/A FRESH AIR GPM GALLONS PER MINUTE

GR GRILLE MCA MINIMUM CIRCUIT AMPS (FOR WIRE SIZING) MOCP MAXIMUM OVERCURRENT PROTECTION DEVICE AMPS LWT LEAVING WATER TEMPERATURE

R/A RETURN AIR REG REGISTER

SAFE PAN VCD VOLUME CONTROL DAMPER

RAG RETURN AIR GRILLE SAR SUPPLY AIR REGISTER O/A OUTSIDE AIR

RAFD RETURN AIR FIRE DAMPER

## SYMBOL LEGEND

→ NEW WORK

---- EXISTING TO REMAIN —— – EXISTING TO REMOVE



CEILING DIFFUSER



RETURN GRILLE

X: AIR DEVICE TYPE

SUPPLY DIFFUSER



AxB; NECK SIZE

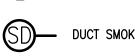
#: CFM



(DIRECTION OF THROW) RETURN /INTAKE AIR

EXHAUST FAN

**THERMOSTAT** 



NEW

SUPPLY AIR DUCT

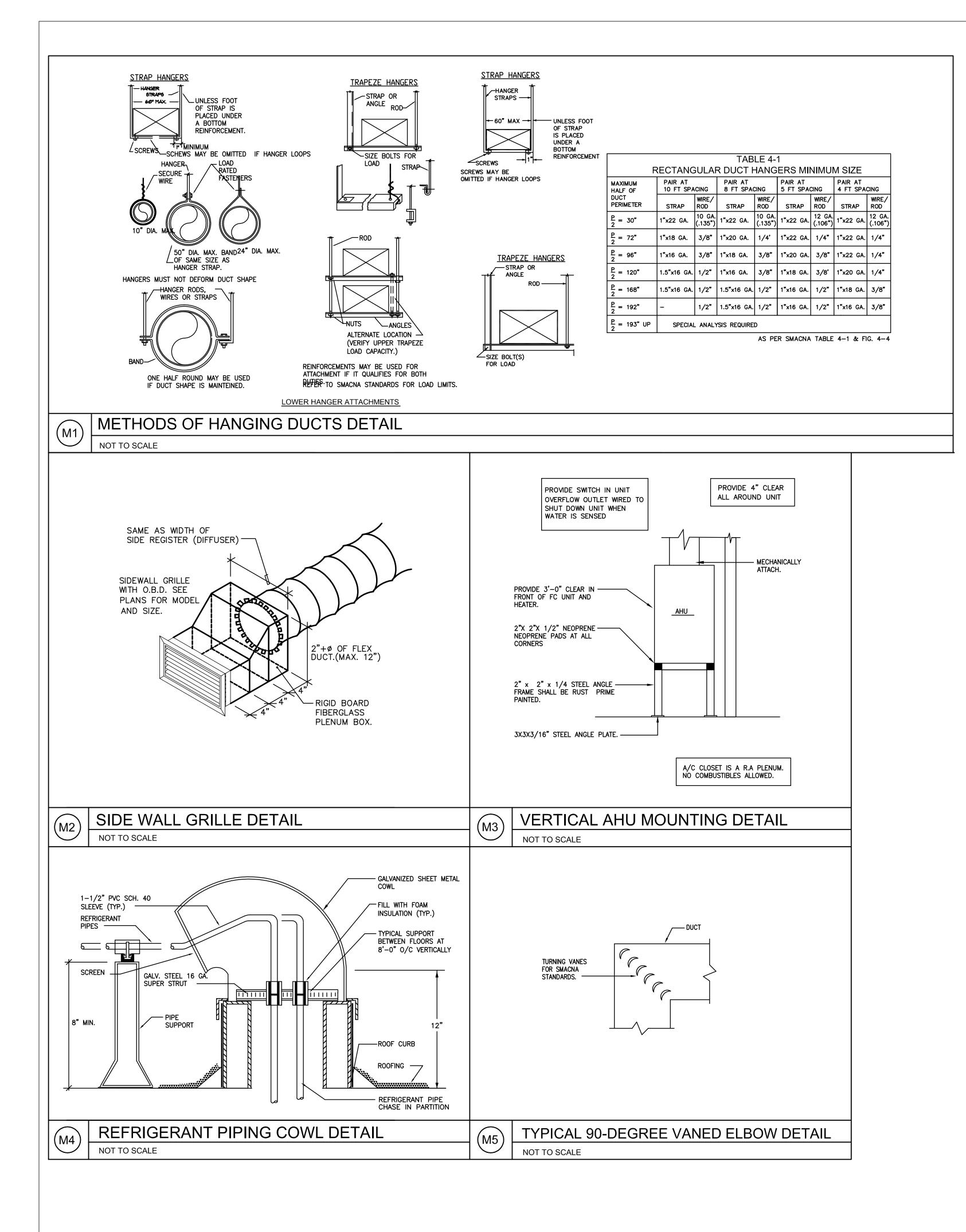
RETURN AIR DUCT

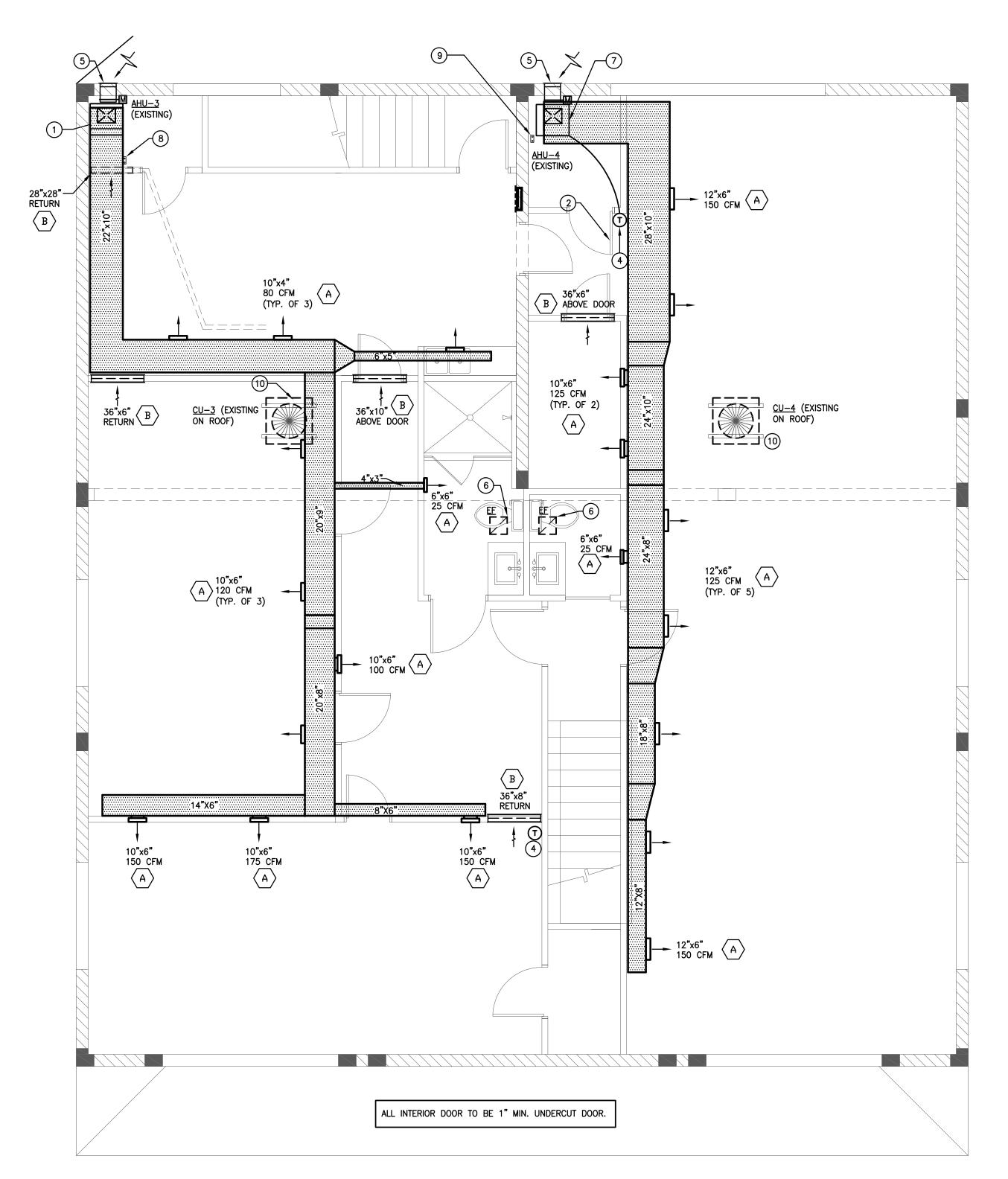
DUCT TRANSITION

CONNECT TO EXISTING

(SU) DUCT SMOKE DETECTOR FLEXIBLE DUCTWORK RETURN GRILLE CEILING DIFFUSER FIRE DAMPER EXISTING

REMOVED





# CEILING PLAN - HVAC SCALE: 1/4" = 1'-0"

### **KEY NOTES - HVAC:**

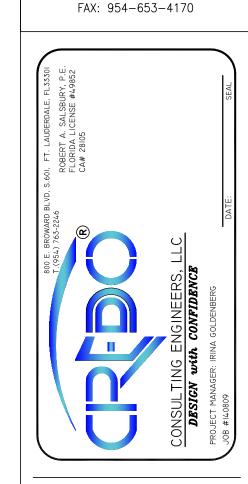
- EXISTING UNIT 3.0 TON NOMINAL CAPACITY UNIT RHEEM MANUFACTURER, MODEL REQAB-1410BHS, 1200 CFM, 208/230-1PH-60Hz, 1/3 HP MOTOR FAN, 7.2 KW HEATER TO REMAIN. CONTRACTOR TO VAPOR CLEAN COIL, REPLACE FILTERS, CHECK REFRIGERANT CHARGE AND REPLACE ANY DAMAGED PART TO GUARANTY UNIT PROPER OPERATION. A/C CLOSET IS A RETURN AIR PLENUM. NO COMBUSTIBLES MATERIALS ALLOWED.
- 2 FULLY LOVERED DOOR.
- (3) EXISTING 24"x24" WALL MOUNTED RETURN AIR GRILLE TO REMAIN.
- (4) PROGRAMMABLE THERMOSTAT IN A PLASTIC TAMPER COVER.
- 5 10"x8" INTAKE AIR HURRICANE RESISTANT LOUVER, PROVIDE ANTI-CORROSIVE MATERIAL BIRD SCREEN, SEPARATE 10'-0" MIN. FROM ANY EXHAUST VENT OPENING. LOUVER POTTORFF MANUFACTURER NOA No. 11-0429.03 (OR EQUAL). PROVIDE MOTORIZED DAMPER, NORMALLY CLOSED, INTERLOCKED WITH UNIT OPERATION, TURN TO OPEN WHEN UNIT START.
- 6 EXISTING TOILET EXHAUST FAN AND ASSOCIATED EXHAUST DUCTWORK TO REMAIN.
- (7) EXISTING 3 TON NOMINAL CAPACITY INTERNATIONAL COMFORT PRODUCT CORP. MANUFACTURER, MODEL NFCP3600CI, 1,200 CFM, 208/230V-1PH-60HZ, 1/3 HP MOTOR FAN, 7.2 KW HEATER, MCA/MOCP: 40/60 TO REMAIN. CONTRACTOR TO VAPOR CLEAN COIL, REPLACE FILTERS, CHECK REFRIGERANT CHARGE AND REPLACE ANY DAMAGED PART TO GUARANTY UNIT PROPER OPERATION. CONTRACTOR TO RELOCATE EXISTING AHU TO NEW A/C CLOSET.

8 REFRIGERANT PIPE THROUGH EXISTING ROOF PENETRATION. CONTRACTOR TO REPAIR EXISTING ROOF PENETRATION COWL AND REPLACE REFRIGERANT PIPE WITH EXISTING SIZES. CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF PENETRATION AND REPORT ANY DISCREPENCY TO ENGINEER PRIOR TO CONSTRUCTION.

- 9 REFRIGERANT PIPE THROUGH NEW ROOF PENETRATION. CONTRACTOR TO REPLACE REFRIGERANT PIPE WITH EXISTING SIZES. CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF PENETRATION.
- EXISTING CONDENSING UNIT TO REMAIN. CONTRACTOR TO FIELD VERIFT EXACT LOCATION OF EXISTING CONDENSING UNITS ON ROOF. CONTRACTOR TO RECONDITION EXISTING CONDENSING UNIT, CHECK REFRIGERANT CHARGE, CLEAN COIL, REPLACE ANY DAMAGED PART OF REQUIRED TO ENSURE PROPER OPERATION.



PH: 954-324-4730



2nd Floor Renovations 3440 NE 12th Avenue

date: 08-14-14
revision date
no.

Issued for Permit - 08.28.14

project: MUE12060701

General Revisions

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drawing

J.P.

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Mechanical Plan & Notes

M1.1

### **GENERAL PLUMBING NOTES**

- THE ENTIRE INSTALLATION, INCLUDING BUT NOT LIMITED TO WORKMANSHIP & MATERIAL, SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE FLORIDA BUILDING CODE (2010) & FLORIDA PLUMBING CODE ( 2010), AND THE LATEST EDITIONS OF ALL LOCAL CODES, RULES, & AUTHORITIES HAVING JURISDICTION.
- CONTRACTOR SHALL PROVIDE WRITTEN GUARANTEE OF ALL MATERIALS & WORKMANSHIP FREE FROM DEFECTS FOR A PERIOD OF NOT LESS THAN ONE (1) YEAR FROM DATE OF ACCEPTANCE BY OWNER. CORRECTION OF ANY DEFECTS SHALL BE COMPLETED WITHOUT ADDITIONAL CHARGE & SHALL INCLUDE REPLACEMENT OR REPAIR PARTS OR EQUIPMENT.
- CONTRACTOR SHALL VISIT THE JOB SITE & THOROUGHLY FAMILIARIZE HIMSELF WITH ALL EXISTING CONDITIONS PRIOR TO BIDDING/BEGINNING ANY WORK & SHALL ADVISE ARCHITECT/ENGINEER OF ANY CONDITIONS WHICH MODIFY THE SCOPE OF WORK AS SHOWN ON THE DOCUMENTS. SUBMISSION OF A BID PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE & LATER CLAIMS FOR MOBILIZATION, LABOR, EQUIPMENT, AND/OR MATERIALS REQ'D BECAUSE OF DIFFICULTIES ENCOUNTERED WILL NOT BE RECOGNIZED.
- ALL MATERIALS SHALL BE NEW & BEAR UNDERWRITER'S LABEL (UL) WHERE APPLICABLE.
- ALL WORK SHALL BE PERFORMED BY A LICENSED PLUMBING CONTRACTOR IN A FIRST CLASS WORKMANLIKE MANNER. THE COMPLETED SYSTEM SHALL BE FULLY OPERATIVE & ACCEPTANCE BY THE ARCHITECT/ENGINEER MUST BE A CONDITION OF THIS CONTRACT.
- ALL EXCAVATION & BACKFILL AS REQ'D FOR THIS PHASE OF CONSTRUCTION SHALL BE A PART OF THIS CONTRACT.
- REQUIRED INSURANCE SHALL BE PROVIDED BY THE CONTRACTOR FOR PROTECTION AGAINST PUBLIC LIABILITY & PROPERTY DAMAGE FOR THE DURATION OF WORK.
- CONTRACTOR SHALL SECURE & PAY FOR ALL PERMITS, FEES, SERVICE REQUESTS, INSPECTIONS, &
- CONTRACTOR SHALL INCLUDE BID FOR GROUND PENETRATING RADAR (GPR) OR X-RAY TO SLAB IN ORDER TO LOCATE EXISTING UTILITIES IN REINFORCED CONCRETE (POST TENSION CABLES, ELECTRIC CABLES, PLUMBING, FIBER OPTICS). IN CONCRETE REBAR, VOIDS, SLABS THICKNESS, CONDUITS EMBEDDED IN CONCRETE (SLABS, WALLS, BALCONIES, AND COLUMNS).
- 10. ALL WORK SHALL BE COORDINATED WITH OTHER TRADES TO AVOID INTERFERENCE WITH THE PROGRESS OF CONSTRUCTION. ADVISE ARCHITECT OF DISCREPANCIES PRIOR TO BEGINNING
- 11. VERIFY LOCATION, SIZE, & INVERTS OF ALL EXISTING UTILITIES PRIOR TO BIDDING/BEGINNING CONSTRUCTION. ADVISE ARCHITECT/ENGINEER OF ANY DISCREPANCIES.
- 12. PIPING MATERIALS:

TYPE "L" COPPER FOR 2" AND UNDER (ALL LEAD-FREE SOLDER) WATER:

TYPE "K" COPPER FOR 2-1/2" AND ABOVE

ALL UNDERGROUND WATER PIPING SHALL BE TYPE "K" COPPER SLEEVED IN PVC

DRAIN, WASTE, & VENT: SCHEDULE 40 DWV PVC,

CONDENSATE: SCHEDULE 40 DWV PVC. VALVES: BRONZE RATED AT 125 PSI.

- 13. ISOLATE COPPER PIPE FROM HANGER OR SUPPORTS WITH ISOLATOR PAD (HAIR FELT LINING). 14. DIELECTRIC COUPLINGS ARE REQUIRED BETWEEN ALL DISSIMILAR METAL IN PIPING & EQUIPMENT CONNECTIONS.
- 15. ALL METALLIC PIPING, FITTINGS, & HANGERS EXPOSED TO CORROSIVE CONDITIONS SHALL HAVE A PROTECTIVE COATING THAT APPROPRIATELY RESISTS CORROSION.
- 16. FURNISH & INSTALL APPROVED WATER HAMMER ARRESTORS WHERE QUICK-CLOSING VALVES ARE UTILIZED, UNLESS OTHERWISE APPROVED. WATER HAMMER ARRESTORS SHALL CONFORM TO ASSE 1010 & SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.
- 17. ALL FIXTURES MUST BE PROVIDED WITH READILY ACCESSIBLE STOPS & APPROPRIATELY MARKED ACCESS PANELS. COORDINATE LOCATIONS WITH GC PRIOR TO INSTALLATION.
- 18. PROVIDE ACCESS PANELS FOR ALL CONCEALED VALVES.
- 19. CLEANOUTS SHALL BE OF SAME MATERIALS AS PIPING. WALL CLEANOUTS SHALL BE PLACED AT THE BOTTOM OF EACH STACK. FLOOR CLEANOUTS SHALL BE PLACED AT EVERY 90° CHANGE. PROVIDE HEAVY DUTY BRONZE COVER CLEANOUTS IN TRAFFIC AREAS & EVERY 100 FEET. PROVIDE PVC PLUG IN LANDSCAPE AREAS.
- 20. ALL PIPING SHALL BE SECURED USING METHODS OF STRAPPING & HANGING APPROVED BY CODE.
- 21. ALL PIPING THROUGH FOUNDATION WALLS SHALL BE ENCASED IN PROTECTIVE SLEEVES.
- 22. ALL PIPING THROUGH FIRE RATED FLOORS & WALLS SHALL BE FIRE STOPPED USING UL LISTED METHOD ACHIEVING EQUAL RATING AS PENETRATED FLOOR OR WALL.
- $\mid$  23. ALL INSTALLATIONS SHALL MEET THE STANDARDS OF THE LOCAL AHJ & HEALTH DEPARTMENT.
- 24. NO COMBUSTIBLE MATERIAL SHALL BE USED IN MECHANICAL ROOMS OR IN CEILING SPACES WHERE USED AS RETURN AIR PLENUMS.
- 25. CONTRACTOR SHALL KEEP & MAINTAIN AS-BUILT DRAWINGS ON JOB SITE AT ALL TIMES & DELIVER A SET OF UP TO DATE AS-BUILTS TO THE ENGINEER & OWNER AT THE COMPLETION OF THE
- 26. SAW OR CUT CORE DRILL SLAB AS REQUIRED TO INSTALL NEW PLUMBING WORK. PATCH SLAB TO MATCH EXISTING.

## NOTICE TO CONTRACTORS:

ALL CONTRACTORS PRIOR TO BID SUBMISSION PROCESS SHALL VISIT PROPOSED WORK SITE AND FIELD VERIFY ALL EXISTING CONDITIONS, ANY CONDITIONS THAT DIFFERS FROM THAT SHOWN ON THIS PLAN, SHALL BE REPORTED TO ARCHITECT/ENGINEER SO THAT NEW AND REVISED BID DRAWINGS OR INFORMATION MAY BE ISSUED. MODIFICATIONS TO SCOPE OF WORK WHICH RESULTS FROM CONTRACTORS NEGLECT TO VISIT THE SITE PRIOR TO SUBMITTING BID, SHALL BE CONTRACTORS SOLE RESPONSIBILITY.

### PLUMBING SYMBOL LEGEND

<u>SYMBOL</u>	DESCRIPTION	<u>SYMBOL</u>	DESCRIPTION
	SANITARY LINE	FC0	FLUSH CLEAN OUT
	VENT LINE	FD	FLOOR DRAIN
<del></del>	SAFEWASTE LINE	FS	FLOOR SINK
CD	CONDENSATE LINE	CO	CLEAN OUT
	COLD WATER LINE	WCO	WALL CLEANOUT
	HOT WATER LINE	COOG	CLEANOUT ON GRADE
<b>→</b>	GATE VALVE FLOOR PENETRATION		WATER HAMMER ARRESTOR
<u> </u>		VTR	VENT THRU ROOF
AAV	AIR ADMITTANCE VALVE	+ нв	HOSE BIBB W/VB

CONTRACTOR TO VERIFY MOUNTING HEIGHT OF ALL FIXTURES WITH INTERIOR DESIGNER & ARCHITECT PRIOR TO DEVICE INSTALLATION. REFER TO FLOOR PLAN FOR ADDITIONAL SPECIFICATIONS. 2. SOME SYMBOLS SHOWN ON THIS LEGEND MAY NOT PERTAIN TO THIS PROJECT.

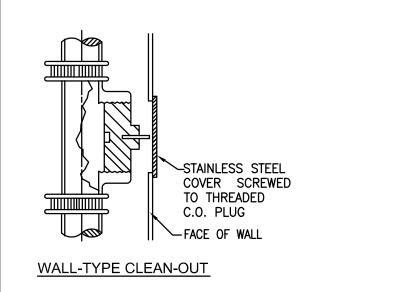
### SLOPE OF HORIZONTAL DRAINAGE PIPE

SIZE (inches)	MINIMUM SLOPE (inch per foot)	
2-1/2 or less	1/4	
3 to 6	1/8	
8 or larger	1/16	
TABLE 704.1 OF THE FLORIDA PL	LUMBING CODE 2010	

WATER HAMMER ARRESTOR SCHEDULE

ACCESS DOOR REQUIRED. CONFORMS TO ANSI/ASSE 1010 STANDARDS.

P.D.I. DESIGNATION	MAKE/MODEL	FIXTURE UNITS	CONNECTION			
Α	SIOUX CHIEF 652-A	1–11	1/2"			
В	SIOUX CHIEF 653-B	12-32	3/4"			
С	SIOUX CHIEF 654-C	33-60	1"			
SIOUX CHIEF SHOCK ARRESTORS ARE APPROVED FOR INSTALLATION WITH NO						



### TYPICAL CLEAN-OUT DETAILS

# PLUMBING FIXTURE SCHEDULE

	MARK	DESCRIPTION	WASTE	COLD WATER	HOT WATER	FLOW RATES	REMARKS
·	wc	ADA WATER CLOSET TANK TYPE	3"	1/2"		0.28 GPM	BY OWNER
	LAV	ADA LAVATORY WALL HUNG	1-1/4"	1/2"	1/2	0.5 GPM	BY OWNER
	SK	SINK	1-1/2"	1/2"	1/2	1.5 GPM	BY OWNER
,	SH	SHOWER	2"	1/2"	1/2	1.5 GPM	BY OWNER

1.ALL FIXTURES SHALL COMPLY WITH FPC WATER CONSERVATION REGULATION TABLE 604.4 2.ALL SHOWER VALVES SHALL BE ANTI-SCALD/ PRESSURE BALANCING.

3. ALL WALL HUNG PLUMBING FIXTURES SHALL COMPLY WITH FBC 2318.15 OR 2510.5.1.1

2 Hour Fire Rated Through

Penetration Firestop for Plastic

Pipe through Gypsum Walls using

intumescent devices

SYSTEM NO. W-L-2063 DECEMBER 09, 2004 F RATINGS - I AND 2 HR (SEE ITEM I)

T RATINGS - 0, I AND I-3/4 HR (SEE ITEM 2)

① 2-Hour Fire Rated gypsum wallboard/stud assembly.

(2) Plastic Pipe - 4" dia. (or smaller) sch. 40 PVC pipe for

(3) A) TREMstop WS - wrap strips, tightly wrapped 6 times

B) TREMstop MCR - steel restricting collar.

The products used in the above assembly have been tested in accordance with the following:

PENETRATION FIRESTOP FOR NON-METALLIC PIPE THROUGH GYPSUM WALL

ASSEMBLIES USING TREMSTOP-WS, TREMSTOP-D, TREMSTOP ACRYLIC,

TREMSTOP INTUMESCENT ACRYLIC OR FYRE-SIL

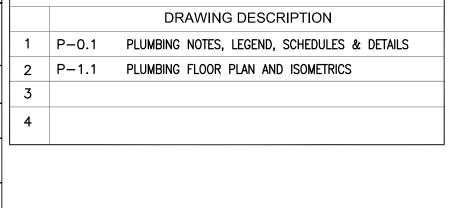
ASTM E814 (UL1479) Standard Test Method for Through Penetration Firestopping.

C) FYRE-SIL - Min. 1/4" thick sealant applied to

use in closed or vented piping systems,

wall/collar and collar/pipe interfaces.

with a nom. annular space of 1/8".



PLUMBING INDEX

WL2063



TREMCO

Beachwood, DH, 44122

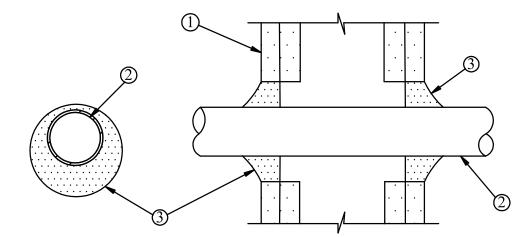
Drawing not to scale

3735 Green Rd.

1 or 2 Hour Fire Rated Through Penetration Firestop for Single Metallic Pipe through Gypsum

Walls using TREMstop IA.

F-Rating = 1 and 2 Hr. T-Rating = 0 Hr.



## (1)Pre-Rated Gypsum Wallboard/Stud Wall Assembly

- (2) Metallic Pipe: A) Steel Pipe - 4" diam. (or smaller) Sch. 40 (or heavier) steel pipe.
- B) Iron Pipe 4" diam. (or smaller) cast or ductile iron pipe.
- C) Conduit 4" diam. (or smaller) EMT or rigid steel conduit.
- D) Copper Tubing 4" diam. (or smaller) Type L (or heavier) copper tubing. E) Copper Pipe - 4" diam. (or smaller) Regular (or heavier) copper pipe.
- The annular space shall be min. 1/4" to max. 5/8" within the firestop system. (3)TREMstop IA - Min. 1/2" thickness of sealant applied within opening. Additional sealant

to be installed such that a min. 1/4" crown is formed around the penetrating item.

The products used in the above assembly have been tested in accordance with the following:

ASTM E814 (UL1479) Standard Test Method for Through Penetration Firestopping. PENETRATION FIRESTOP FOR NON-METALLIC PIPE THROUGH GYPSUM WALL ASSEMBLIES USING TREMSTOP-WS, TREMSTOP-D, TREMSTOP ACRYLIC, TREMSTOP INTUMESCENT ACRYLIC OR FYRE-SIL



Beachwood, OH, 44122 Drawing not to scale

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CONSULTING STRUCTURAL

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project: MUE12060701 08-14-14 date revision

no. **Issued for Permit - 08.28.14** 

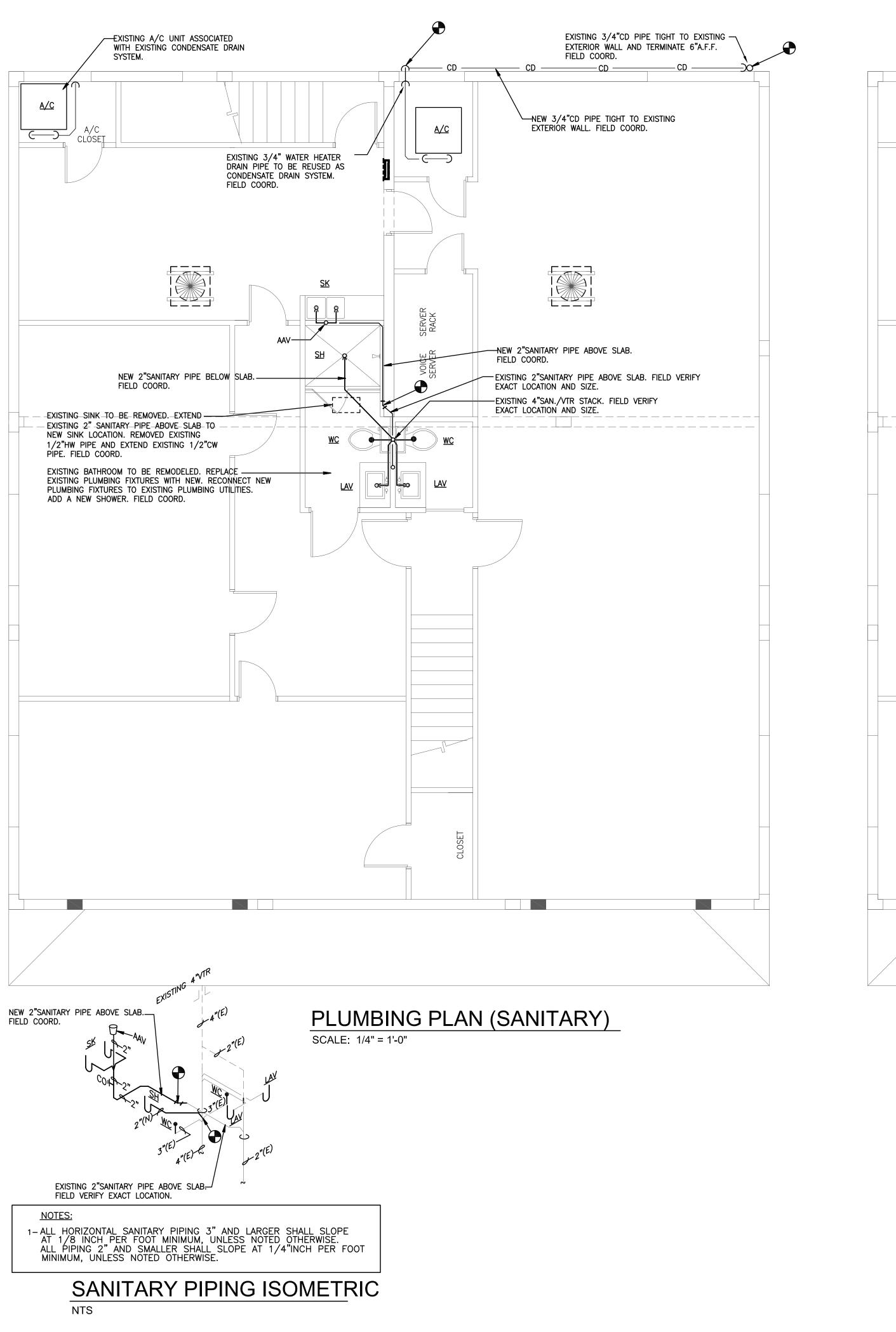
General Revisions

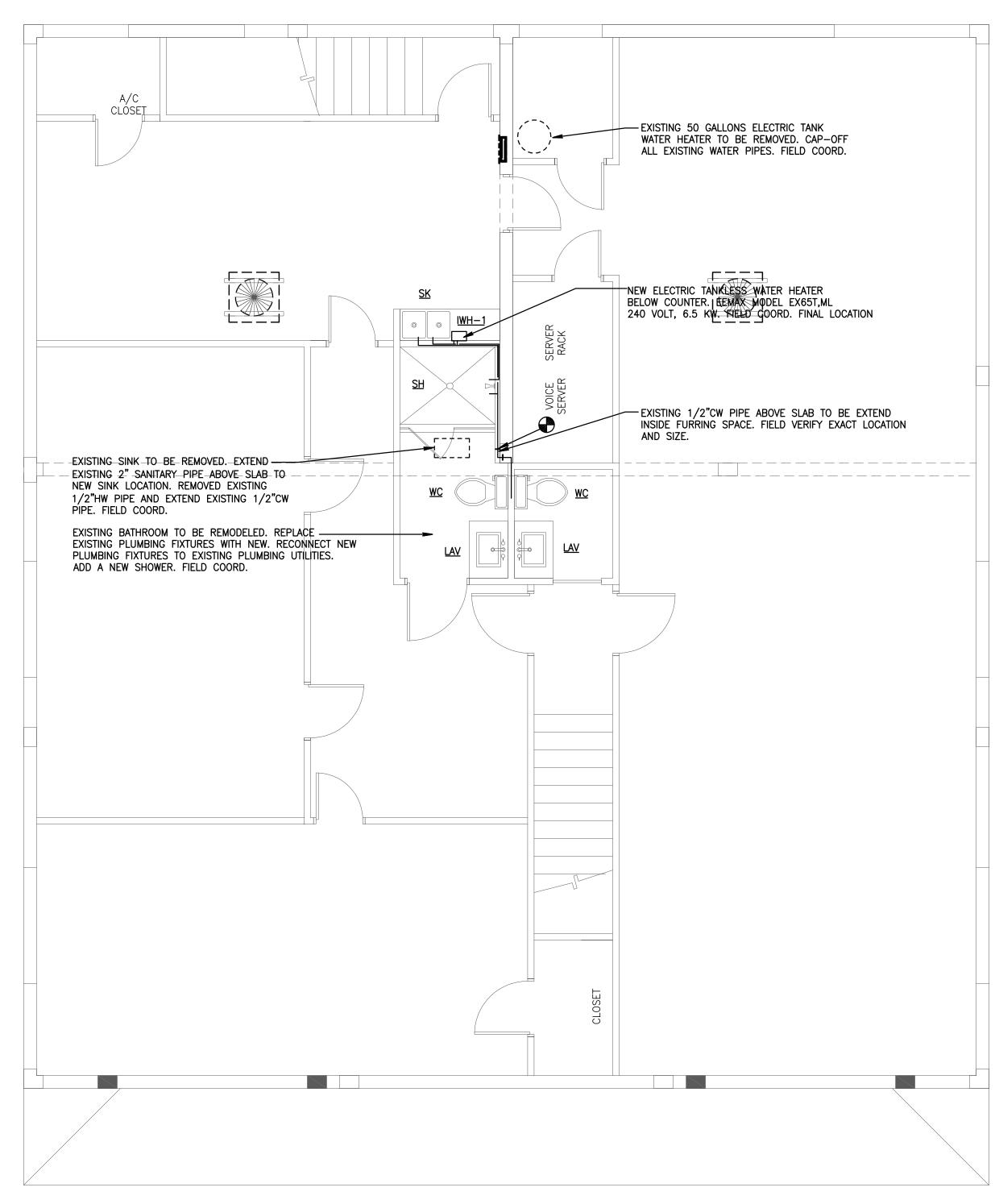
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Plumbing Plan & Notes

2011





# PLUMBING PLAN (WATER)

SCALE: 1/4" = 1'-0"

WATER EX65T, ML OCATION
WATER EX65T, ML OCATION
TANKLESS MODEL
FINAL

NEW ELECTRIC TANKLESS MODEL
FINAL

NEW WATER EX65T, ML OCATION
WATER HAMMMER ARRESTOR
(TYPICAL)

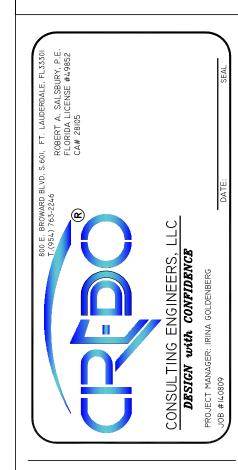
WATER HAMMMER ARRESTOR
(TYPICAL)

WATER HAMMMER ARRESTOR
(TYPICAL)

WATER PIPING ISOMETRIC

NTS





2nd Floor Renovations 3440 NE 12th Avenue

project: MUE12060701
date: 08-14-14
revision date

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General Revisions

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Plumbing Plan & Notes

P1.1