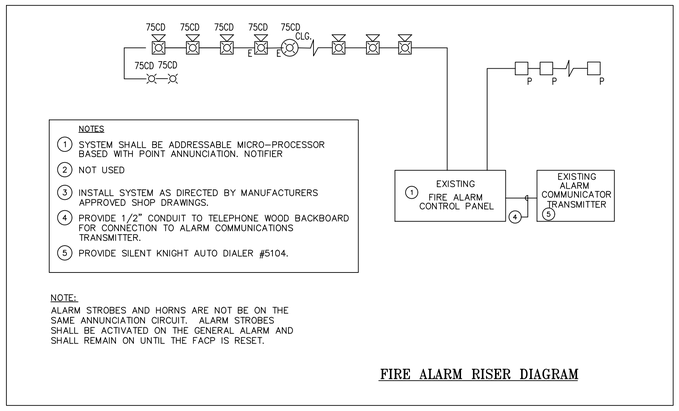


FIRE ALARM RISER DIAGRAM

FIRE ALARM LEGEND

P	FIRE ALARM MANUAL PULL STATION
WP	WEATHERPROOF FIRE ALARM HORN/STROBE COMBINATION
	FIRE ALARM HORN / STROBE COMBINATION
	FIRE ALARM HORN / STROBE COMBINATION CEILING MOUNTING
	FIRE ALARM STROBE
	FIRE ALARM HORN
$②_{P}$	PHOTOELECTRIC SMOKE DETECTOR, ADDRESSABLE
$②_{DD}$	DUCT SMOKE DETECTOR, ADDRESSABLE,
$①_{A/T}$	HEAT DETECTOR, FIXED TEMPERATURE (135°).
FS	FIRE ALARM FLOW SWITCH
TS	FIRE ALARM TAMPER SWITCH
R	CONTROL RELAY
FACP	FIRE ALARM CONTROL PANEL. ADDRESSABLE
FAAP	FIRE ALARM ENUNCIATOR PANEL

FIRE ALARM SYSTEM NOTES

1 CONTRACTOR SHALL PRODUCE SHOP DRAWINGS AND SUBMIT SIX COPIES TO THE ENGINEER PRIOR BEGINNING ANY WORK. SHOP DRAWINGS SHALL SHOW A UNIQUE DEVICE NUMBER AT FLOOR PLAN THAT MATCHES WITH THE RISER DIAGRAM FOR ALL DEVICES. SHOP DRAWING SHALL ALSO SHOW WIRES, CONDUCTOR TYPES, RACEWAY LOCATIONS AND SIZES, EQUIPMENT CATALOG NUMBERS, BATTERY CALCS., AND DESCRIPTIONS CLEARLY HIGH-LIGHTED TO SPECIFICALLY INDICATE WHICH PRODUCTS ARE PROPOSED FOR USE. AFTER SATISFACTORY REVIEW BY THE ENGINEER, THE CONTRACTOR SHALL SEEK APPROVAL BY THE FIRE MARSHALL. AFTER SATISFACTORY REVIEW BY THE FIRE MARSHALL WORK SHALL COMMENCE.

2 ALL COMPONENTS SHALL BEAR THE U. L. LABEL FOR FIRE SERVICE USE AND SHALL BE COMPATIBLE FOR USE WITH ALL INTERCONNECTING EQUIPMENT.

3. THE COMPLETE SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, N.E.C., N.F.P.A., A.D.A., ANSI, F.B.C., AND ALL LOCAL CODES.

4. HORNS AND SPEAKERS SHALL BE OF SUCH CHARACTER AND SO LOCATED, AS TO BE CLEARLY HEARD THROUGHOUT AND ABOVE AMBIENT NOISE LEVELS, db LEVELS SHALL BE SET PER NFPA 72.

5. MINIMUM CONDUIT SIZE SHALL BE 1/2" FOR ALL RUNS. CONDUIT SHALL LOOP ALL DEVICES AND RETURN TO F.A.C.P.

6. ALL CONDUCTORS SHALL BE COPPER AND SHALL BE SIZED FOR NO MORE THAN 1 dB LOSS. MINIMUM #18 AWG AND #14 AWG FOR HORN AND/OR STROBE CIRCUITS.

7. CONDUCTOR INSULATION FOR CABLES SHALL BE TYPE TFN. IF CABLES PENETRATE INTO OR THROUGH PLENUM AREAS USED FOR TRANSFER OF ENVIRONMENTAL AIR, THEY SHALL BE TYPE FPLP, TEFLON INSULATED TYPE.

8. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL EQUIPMENT, CONDUIT SYSTEM, CON- DUCTORS, DEVICES, ETC., AND ALL OTHER ACCESSORIES REQUIRED FOR AN ACCEPTABLE AND FULLY FUNCTIONAL SYSTEM.

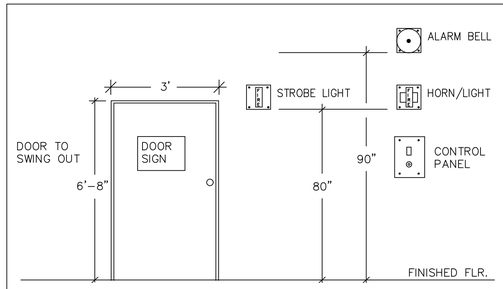
9. FINAL CONNECTIONS BETWEEN EQUIPMENT AND WIRING SYSTEM SHALL BE MADE UNDER DIRECT SUPERVISION OF A QUALIFIED TECHNICAL REPRESENTATIVE OF THE EQUIPMENT MANU- FACTURER, WHO SHALL TEST THE SYSTEM COMPLETELY AND PROVIDE A CERTIFICATE IN WRITING AS TO THE PROPER INSTALLATION AND OPERATION OF THE FIRE ALARM SYSTEM PRIOR TO FINAL ACCEPTANCE OF THE SYSTEM BY THE OWNER.

10. AS-BUILT DRAWINGS SHOWING POINT BY POINT CONNECTIONS OF ALL DEVICES AND FINAL EQUIPMENT LOCATIONS SHALL BE GIVEN TO THE OWNER UPON ACCEPTANCE OF INSTALLATION BY THE OWNER.

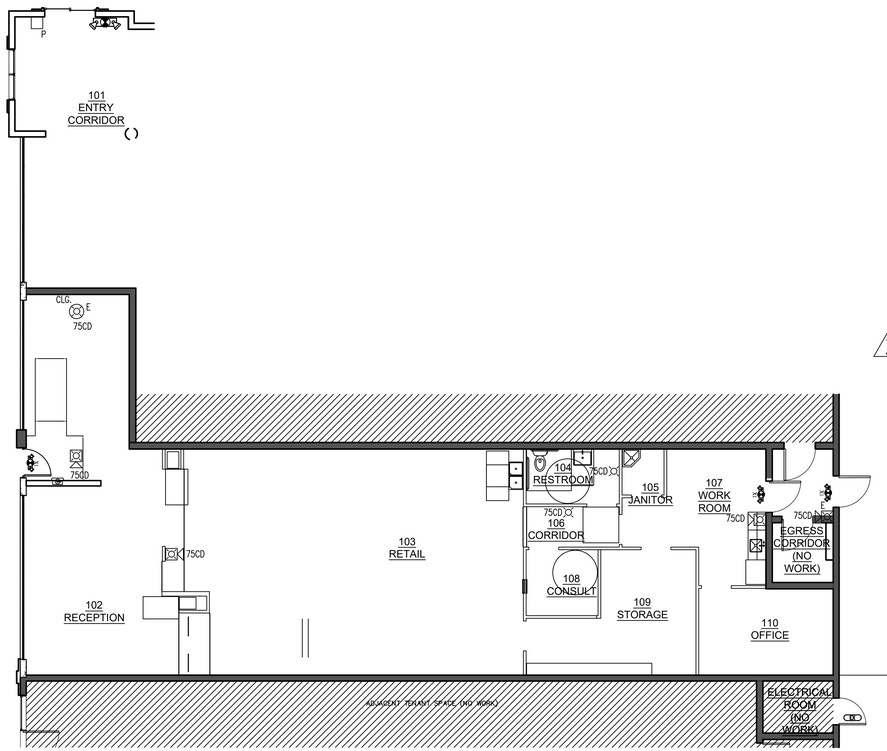
11. ALL EQUIPMENT SHALL MATCH EXISTING

12. CONTRACTOR SHALL SUBMIT FIRE ALARM SYSTEM SHOP DRAWINGS, INCLUDE TECHNICAL DATA SHEETS TO BUILDING DEPARTMENT THAT COMPLY WITH FIRE MARSHAL'S OFFICE FIRE ALARM SYSTEM INSTALLATION REQUIREMENTS. FOR APPROVAL PRIOR TO INSTALLATION.

13. ALL DUCT SMOKE DETECTORS SHALL INITIATE A TROUBLE/SUPERVISORY SIGNAL IN THE FIRE ALARM SYSTEM NOT A FULL ALARM.



TYPICAL WALL ELEVATION
N.T.S.



FIRE ALARM FLOOR PLAN
1/8" = 1'-0"

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Project Titles:
Address:

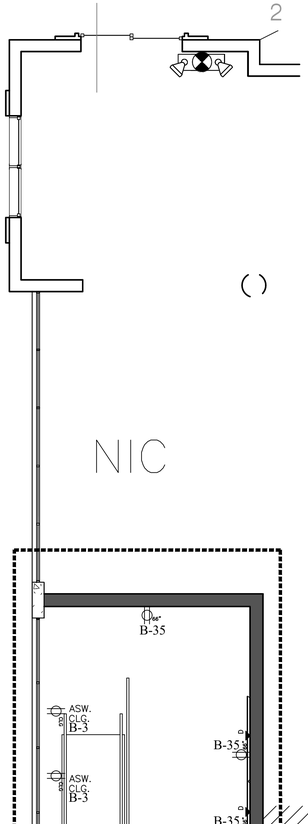
This Sheet: FIRE ALARM FLOOR PLAN

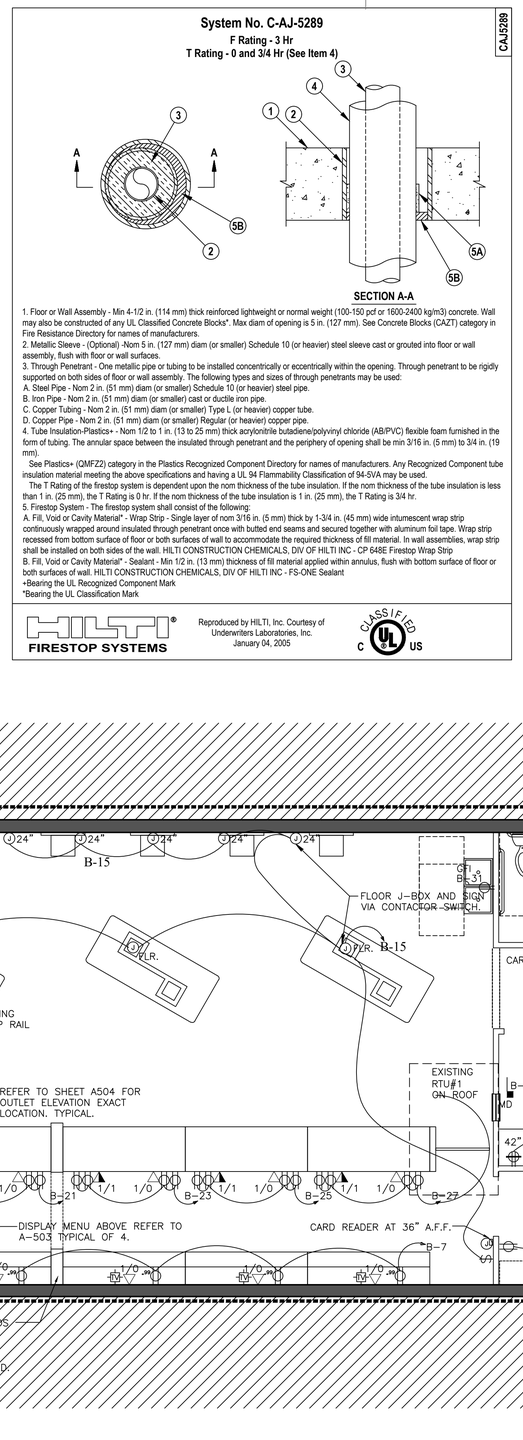
REVISIONS
3 PZ-4-13-19

DESCRIPTION
Project No.
18034-MUV
Date:
4-29-19
Drawn By:
RAFAELLOX
Approved By:
MVF
SEAL

MARIANO V. FERNANDEZ
LIC. No. 40115

SHEET NO.
FA-1
1 OF 10





FACADE WORK FILED UNDER SEPARATE PERMIT NO. BC1809230 AND NOT PART OF THIS SCOPE OF WORK

LEGEND
▽ DATA
▼ TELEPHONE
▼/▽ DATA/TELEPHONE
X/X # OF DATA / # OF TELEPHONE

SCOPE OF WORK:
INTERIOR RENOVATION TO EXISTING TENANT SPACE.
NIC – NOT IN CONTRACT

SCOPE OF WORK

B-35 · ASW. CLG. B-3 · B-35 · ASW. CLG. B-3 · B-35 · B-33 · ASW. CLG. B-1 · ASW. CLG. B-1 · B-13 · B-15 · B-33 · B-19 · B-1 · B-9 · B-21 · B-23 · B-25 · B-27 · B-7 · B-29 · B-17 · B-10 · B-32 · B-2 · B-22 · B-24 · B-26 · B-38 · B-30 · B-12 · 2-60 A NEMA1 · A-19,21 · A-26 TBB · GFI B-8 44 · PANEL A · PANEL B · 2/1 · 1/1 · 1/0 · 0/1 · 42" · 24" · 44"

FLOOR J-BOX AND SIGN VIA CONTACTOR SWITCH.
CARD READER AT 36" A.F.F.
PROVIDE BLOCKING IN CEILING FOR FRAMELESS GLASS TOP RAIL AT THIS AREA
PROVIDE BACK BOX FOR EXIT SWITCH AT 36" A.F.F.
REFER TO SHEET A504 FOR OUTLET ELEVATION EXACT LOCATION. TYPICAL.
EXISTING RTU#1 ON ROOF
SERVER THIS AREA
DISPLAY MENU ABOVE REFER TO A-503 TYPICAL OF 4.
ALL POWER AND DATA FOR POS STATIONS TO BE ROUTED THROUGH RETAIL FIXTURE (PANEL - 2 SHEET A201). NO FLOOR PENETRATIONS REQUIRED.
NOTE: ELECTRICAL ROOM EXISTING TO REMAIN, NOT PART OF THIS PERMIT.
EXISTING METER
EXISTING MAIN DISCONNECT
EX

POWER FLOOR PLAN
1/4" = 1'-0"
1

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This Sheet: POWER DISTRIBUTION & DATA FLOOR PLAN

REVISIONS
1-ST-12-4-18
2-EL-1-9-19
3-PZ-4-13-19

DESCRIPTION
Project No.
18034-MUV
Date:
4-29-19
Drawn By:
RAFAELLOX
Approved By:
MVF
SEAL

MARIANO V. FERNANDEZ
LIC. No. 40115

SHEET NO.
E-1
2 OF 10

MVF CONSULTING GROUP May 06, 2019 - 2:32pm C:\X-Workspace\Konstruction\18005-CVS\MVF\MEP-F CAD files\MH-rev-3\E-1-rev-3.dwg

ELECTRICAL CONSTRUCTION NOTES:

1. TO SWITCH BANK.
2. CONTRACTOR SHALL COORDINATE WITH ARCHITECT/OWNER SWITCH BANK EXACT LOCATION.
3. OVERRIDE SWITCH TO GENERAL LIGHTING TIMER, MAXIMUM OF 2 HOURS.

E–EXISTING.
NIC – NOT IN CONTRACT

EM–DENOTE LIGHT FIXTURE WITH EMERGENCY BATTERY BACK UP 90 MINUTES MINIMUM BATTERY.

NOTE: EM TO BE CONNECTED AHEAD OF LIGHTING SWITCHES AND TIMER TO LOCAL AREA GENERAL LIGHT CIRCUIT.

ALL GENERAL LIGHTING TO BE CONTROLLED VIA TIME SWITCH AS SHOWN ON PANEL SCHEDULE. TIMER SHALL BE SET TO TURN OFF ALL LIGHTS 30 MINUTES AFTER HOURS OF OPERATION. CONTRACTOR SHALL PROVIDE AT ENTRY DOOR OVERRIDE SWITCH TO GENERAL LIGHTING TIMER, MAXIMUM OF 2 HOURS.

DESIGN COMPLIES WITH C405 REQUIREMENTS FOR LIGHTING CONTROL.

EGRESS ILLUMINATION COMPLIES WITH FBC 1008.1 1FC MINIMUM.

TX LOW VOLTAGE LIGHTING TRANSFORMER WEATHER RESISTANCE.

MuV

LIGHTING FIXTURE SCHEDULE

TYPE	LOCATION	MANUFACTURER	DESCRIPTION	LAMP/WATTS	MOUNTING	REMARKS
P3	POS PENDANT	SONNEMAN	KABU 1742.16 LARGE LED 3000K TRIARC DIM	20WLED	PENDANT	90" OFF FINISH FLOOR TO BOTTOM OF FIXTURE
P4	NOT USED					
SUSP1	WAITING/MERCHANDISE AREA	FINELITE E1 LED 4' X 8' WITH MITRED CORNERS	E1-C-6'X11'-S-940-TG-120V-SC-C4	124W LED	SUSPEND	96" FIN FLOOR TO BOTTOM OF FIXTURE EC VERIFY
T1	TRACK SPOTS	CONTECH LIGHTING	CTL84C3M-4K-D-B MEDIUM	20WLED	SURFACE	WHITE SINGLE CIRCUIT TRACK AS NEEDED
XEM	EXITS	BEGHELLI LC1-ECCO	LC1-E-SA-LX-1-AL-AL	1.1W LED	RECESS	VERIFY # FACES,ALUM HOUSING/FACE, MOUNT
EMBU	EMBU	BEGHELLI	PEH-1	(2) 1.5W LED	SURFACE	
L1	2X2	WILLIAMS	LT22-L39/840-AF-DIM-120	33WLED	RECESS	VERIFY CEILING TYPE
L2	2X4	WILLIAMS	LT24-L52/840-AF-DIM-120	37W LED	RECESS	VERIFY CEILING TYPE
L3	2X4	WILLIAMS	LT24-L52/840-AF-DIM-120	37W LED	RECESS	WITH 2x4 SURFACE MOUNT KIT
R1	4" RECESSED CAN	LITON CH428 SERIES	CH428-UE-D10/CR4L17SW-T40	28W LED	RECESS	

LIGHTING SCHEDULE NOTES:

1. Contact SESCO Lighting (Mike Haley) @ (239-222-0035)

SCOPE OF WORK

EM- EMERGENCY WALL PACK LIGHTING TO COMPLY WITH NEW 700.12 (F) (TYPICAL)

102 RECEPTION
103 RETAIL
104 RESTROOM
105 JANITOR
106 CORRIDOR
107 WORK ROOM
108 CONSULT
109 STORAGE
110 OFFICE
EGRESS CORRIDOR (NO WORK)
ELECTRICAL ROOM (NO WORK)
ADJACENT TENANT SPACE (NO WORK)

REMOVED ELECTRICAL RECEPTACLE FROM LIGHTING PLAN

LIGHTING FLOOR PLAN
1/4" = 1'–0"

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Project Title:
Address:

ELECTRICAL LIGHTING FLOOR PLAN

This Sheet:

REVISIONS
1-EL-11-30-18
2-EL-1-9-19
3-PZ-4-13-19

DESCRIPTION
Project No.
18034-MUV
Date:
4-29-19
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MVF
SEAL

MARIANO V. FERNANDEZ
LIC. No. 40115

SHEET NO.
E-2
3 OF 10

ELECTRICAL LEGEND

- LIGHT FIXTURE DESIGNATION, FLOODLIGHT, SEE LIGHTING FIXTURE
- A — LIGHT FIXTURE DESIGNATION, SEE LIGHTING FIXTURE SCHEDULE
- LIGHTING FIXTURE, SURFACE MOUNTED
- LIGHTING FIXTURE, RECESSED MOUNTED
- LIGHTING FIXTURE, WALL MOUNTED
- LED EXIT LIGHT SEE LIGHTING FIXTURE SCHEDULE.
- 2 X 2 FLUORESCENT LIGHT FIXTURE, SEE LIGHTING FIXTURE SCHEDULE FOR DETAILS
- 2 X 4 FLUORESCENT LIGHT FIXTURE, SEE LIGHTING FIXTURE SCHEDULE FOR DETAILS
- 2 X 4 FLUORESCENT LIGHT FIXTURE, W/ EMERG. BATTERY PACK. SEE LIGHTING FIXTURE SCHEDULE FOR DETAILS
- 1 X 4 FLUORESCENT LIGHT FIXTURE, SEE LTG. FIX. SCHED.
- 1 X 4 FLUORESCENT LIGHT FIXTURE, W/ EMERG. BATTERY PACK.
- EMERGENCY WALL PACK, SEE LIGHTING FIXTURE SCHEDULE
- EXIT EMERGENCY LIGHT COMBO, @ 10' AFF MAX.
- $ — TOGGLE SWITCH 120/277V. 20 AMP. ,(M.H. = 48" A.F.F.), 3-WAY
- $3 — TOGGLE SWITCH 120/277V. 20 AMP. ,(M.H. = 48" A.F.F.), 4-WAY
- $4 — TOGGLE SWITCH 120/277V. 20 AMP. ,(M.H. = 48" A.F.F.)
- $K — TOGGLE SWITCH 120/277V. 20 AMP. KEYSWITCH,(M.H. = 48" A.F.F.)
- $F — FAN SWITCH 120/277V. 20 AMP, (HORSEPOWER RATED),(M.H. = 48" A.F.F.)
- $T — TOGGLE SWITCH 120/277V. 20 AMP., WITH ,(M.H. = 48" A.F.F.) 10 MIN. TIME DELAY, RELAY BY MECH. CONT. INSTALLED BY E.C.
- $L/F — FAN AND LIGHTING SWITCH 120/277V. 20 AMP ,(M.H. = 48" A.F.F.), 3-WAY
- $P — TOGGLE SWITCH 120/277V. 20 AMP. , WITH PILOT LIGHT ,(M.H.=48"A.F.F.)
- $EX — TOGGLE SWITCH 120/277V. 20 AMP. EXPLOSION-PROOF
- $S — SPEED SWITCH 120/277V. 20 AMP. U.O.N. ,(M.H. = 48" A.F.F.)
- $M — SINGLE PHASE MANUAL MOTOR STARTER, (M.H. = 48" A.F.F.)
- $D — DIMMER SWITCH 120/277V. 20 AMP., (M.H. = 48" A.F.F.)
- $MS — MOTION SENSOR SWITCH 120/277V. 20 AMP., (M.H. = 48" A.F.F.)
- DUPLEX RECEPTACLE, 20 AMP., 125V., (M.H. = 18" A.F.F.)
- DUPLEX RECEPTACLE, 20 AMP., 125V., RECESS FLOOR MOUNTED
- DUPLEX RECEPTACLE, 20 AMP., 125V., RECESS CEILING MOUNTED
- M.H. = 18" A.F.F. UNLESS OTHERWISE NOTED
- DUPLEX RECEPTACLE, 20 AMP., 125V., ISOLATED GND. AND SURGE PROTECTED, (M.H. = 18" A.F.F.)
- SINGLE RECEPTACLE, 20 AMP., 125V., COORDINATE M.H. WITH EQUIPMENT
- FOUR-PLEX RECEPTACLE, 20A., 125V., (M.H. = 18" A.F.F.)
- SPECIAL PURPOSE OUTLET e.g. RANGE OUTLET, COORD. W/ EQUIPT.
- DUPLEX RECEPTACLE, 20 AMP., 125V., MOUNT ABOVE COUNTER
- 30 AMP., 125V., TWIST LOCK RECEPTACLE FOR FLOOR POLISHING MACHINE
- J — JUNCTION BOX, MOUNTING AS SHOWN
- 5 — ELECTRIC MOTOR, NUMBER INDICATES HORSEPOWER
- MOTOR STARTER
- COMBINATION MOTOR STARTER, TYPE AS DESIGNATED
- 3 60/40 — DISCONNECT SWITCH, 3-POLE, 60 AMP FRAME W/ 40A. FUSES
- ELECTRICAL PANEL, SEE PANEL SCHEDULE SHEET(S) FOR DETAILS
- — — — EXISTING EQUIPMENT TO REMAIN
- NEW EQUIPMENT OR WORK OF THIS PROJECT
- CALL BACK PUSH BUTTON
- CIRCUIT BREAKER, TYPE AND SIZE AS PER DRAWINGS.
- KP — SECURITY SYSTEM KEYPAD
- C — CLOCK
- B — BELL
- R — SHUT DOWN RELAY
- R — POWER ON INDICATOR WITH KEYED RESET
- P — FIRE ALARM MANUAL PULL STATION 48" A.F.F. MOUNT AT 80" A.F.F. OR 6" BELOW CEILING WHICHEVER IS LOWER.
- WP — WEATHERPROOF FIRE ALARM HORN/STROBE COMBINATION MOUNT AT 80" A.F.F. OR 6" BELOW CEILING WHICHEVER IS LOWER.
- 110 CD — FIRE ALARM HORN / STROBE COMBINATION MOUNT AT 80" A.F.F. OR 6" BELOW CEILING WHICHEVER IS LOWER.
- 15/75 CD — FIRE ALARM STROBE
- P — PHOTOELECTRIC SMOKE DETECTOR, ADDRESSABLE
- DUCT SMOKE DETECTOR, ADDRESSABLE, HOUSING
- DD — DUCT DETECTOR, SAMPLE TUBE, REMOTE TEST AND HEAVY DUTY CONTROL RELAY
- F — HEAT DETECTOR, FIXED TEMPERATURE (135°).
- FIRE ALARM FLOW SWITCH (FURNISHED BY SPRINKLER CONTRACTOR)
- FIRE ALARM TAMPER SWITCH (FURNISHED BY SPRINKLER CONTRACTOR)
- MD — MOTION SENSOR - CEILING MOUNTED
- M — MONITOR MODULE
- FACP — FIRE ALARM CONTROL PANEL - ADDRESSABLE
- RAP — REMOTE ANNUNCIATOR PANEL.
- C — COMPUTER/DATA/TELEPHONE J-BOX WITH 1"C, STUBBED INTO CEILING.
- S — INTERCOM SYSTEM SPEAKER
- POLYGON AUDION CONFERENCING SYSTEM
- TELEPHONE PORT FLOOR MOUNTED
- CALL BACK PUSH BUTTON
- DUAL DATA OUTLET MOUNTED AT 18" A.F.F. USE CAT-6 W/1" STUB UP 6" ABOVE CEILING.
- DUAL TELEPHONE OUTLET MOUNTED AT 18" A.F.F. USE CAT-6 W/1" STUB UP 6" ABOVE CEILING.
- COMPUTER/DATA/TELEPHONE OUTLET MOUNTED AT 18" A.F.F. USE CAT-6. W/1" STUB UP 6" ABOVE CEILING.
- TV — TELEVISION OUTLET (M.H. = 18" A.F.F.)
- MOT — MOTORIZED DAMPER REFER TO MECHANICAL DRAWING
- OS — OCCUPANCY SENSOR

ELECTRICAL GENERAL NOTES

1. 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.
2. ENTIRE INSTALLATION SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, LATEST EDITION NEC 2014 AND THE LATEST EDITIONS OF ALL LOCAL CODES, RULES 2017, AND ORDINANCES HAVING JURISDICTION FBC 2017. , 6TH EDITION.
3. IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO PROVIDE ALL LABOR, MATERIALS, AND SUPERVISION NECESSARY TO ACCOMPLISH THE WORK SHOWN AND/OR NOTED ON THE DRAWINGS AND SPECIFICATIONS.
4. ALL REQUIRED INSURANCE SHALL BE PROVIDED FOR PROTECTION AGAINST PUBLIC LIABILITY AND PROPERTY DAMAGE FOR THE DURATION OF THE WORK.
5. ELECTRICAL CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO BID AND VERIFY ALL CONDITIONS, LOCATIONS, DIMENSIONS AND COUNTS AS SHOWN AND/OR NOTED ON THE DRAWINGS. THIS SHALL INCLUDE ANY AND ALL FABRICATIONS REQUIRED PRIOR TO INSTALLATION.
6. IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR FOR THE ADVANCED ORDERING OF LONG LEAD ITEMS SO AS NOT TO INTERFERE WITH THE PRODUCTION OF OTHER TRADES RESULTING IN ANY DOWN OR LAG TIME.
7. CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP FREE FROM DEFECTS FOR A PERIOD OF NOT LESS THAN (1) YEAR FROM DATE OF ACCEPTANCE, UNLESS INDICATED OR SPECIFIED OTHERWISE.
8. CORRECTION OF ANY DEFECTS SHALL BE COMPLETED WITHOUT ADDITIONAL CHARGE AND SHALL INCLUDE REPLACEMENT OR REPAIR OF ANY OTHER PHASE OF THE INSTALLATION WHICH MAY HAVE BEEN DAMAGED THEREBY.
9. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO REPAIR TO ORIGINAL CONDITIONS ANY AND ALL DAMAGES TO BUILDING SURFACES, EQUIPMENT AND FURNISHINGS CAUSED DURING PERFORMANCE OF WORK.
10. ALL ELECTRICAL EQUIPMENT, DEVICES, WIRE, ETC., SHALL BE LISTED FOR THE INTENDED USE, WITH UNDERWRITER'S LABORATORIES, INC. (UL) WHERE STANDARDS HAVE BEEN ESTABLISHED BY UL. AS A MINIMUM, ALL EQUIPMENT SHALL MEET APPLICABLE STANDARDS FOR THE 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 MANUFACTURER'S ASSOCIATION (NEMA).

    NOTE:
    THESE STANDARDS ARE SUBORDINATE TO CODES AND STANDARDS SET BY UL.
11. 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 ORDER.
12. ALL CONDUIT RUNS ARE SHOWN DIAGRAMMATICALLY. EXACT ROUTING SHALL BE DETERMINED IN THE FIELD, UNLESS OTHERWISE NOTED. THE ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL THE PROPER NUMBER OF CONDUCTORS IN ALL RACEWAYS AS REQUIRED TO ACCOMPLISH THE PROPER FUNCTIONING OF THE DEVICE OR EQUIPMENT AS SHOWN.
13. ELECTRICAL CONTRACTOR SHALL NOT SCALE DRAWINGS. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT LOCATIONS OF ALL EQUIPMENT UNLESS NOTED OTHERWISE.
14. THE ELECTRICAL CONTRACTOR SHALL KEEP ALL AREAS IN WHICH WORK IS BEING PER-FORMED, FREE FROM DEBRIS AT ALL TIMES AND SAID AREAS SHALL BE LEFT BROOM CLEAN AT THE END OF EACH WORKING DAY.
15. CONTRACTOR SHALL PAY FOR ALL PERMITS, FEES, INSPECTIONS, AND TESTING.
16. ARCHITECTURAL AND/OR ENGINEERING EXPENSES THAT ARE INCURRED DUE TO REVISIONS OR SUBSTITUTIONS REQUESTED BY THE CONTRACTOR SHALL BE PAID FOR BY THAT CONTRACTOR.
17. COORDINATE ALL ELECTRICAL SITE WORK WITH GENERAL CONTRACTOR PRIOR TO INSTALLATION.
18. FOR ELECTRIC POWER SYSTEM.
    A. COORDINATE POWER SERVICE WITH POWER COMPANY.
    B. VERIFY LOCATION OF POWER SERVICE TERMINATION WITH POWER COMPANY PRIOR TO SUBMITTING BID.
19. FOR TELEPHONE SYSTEM:
    A. PROVIDE GROUNDING FOR ALL TELEPHONE OUTLETS AND EQUIPMENT PER REQUIREMENTS OF TELEPHONE COMPANY.
    B. TELEPHONE CONDUITS SHALL NOT BE INSTALLED IN THE SAME TRENCH WITH POWER AND LIGHTING CONDUITS.
    C. MARK TERMINATIONS OF TELEPHONE CONDUIT AS DIRECTED BY TELEPHONE COMPANY.
    D. VERIFY LOCATION OF TELEPHONE SERVICE WITH TELEPHONE COMPANY, PRIOR TO SUBMITTING BID.
    E. USE EXTERIOR GRADE 3/4" PLYWOOD BACKBOARDS FOR MOUNTING TELEPHONE EQUIPMENT AND TERMINAL STRIPS. PAINT BOARD ON ALL SIDES AND EDGES WITH TWO COATS OF FLAT BLACK ASPHALT PAINT.
20. ALL CONDUCTORS SHALL BE IN CONDUITS. 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 ECHANICAL DAMAGE, DAMP OR CORROSIVE CONDITIONS, (C) LIQUID TIGHT FLEXIBLE CONDUIT WHERE REQUIRED, (D) FLEXIBLE METALLIC CONDUIT (MC CABLE W/GROUNDING CONDUCTOR), WHERE REQUIRED IN DRY LOCATIONS ONLY. ALL CONDUITS IN HAZARDOUS AREAS (PER NEC) SHALL MEET THE REQUIREMENTS OF NEC CHAPTER 5. CONTRACTOR MAY USE ROMEX (R) INDOOR IN DWELLING UNITS.
21. FOR UNDERGROUND ELECTRICAL CONDUITS, PROVIDE PULL BOXES, SUCH THAT NO SINGLE CONDUIT RUN HAS BENDS IN EXCESS OF 360. PULL BOXES SHALL BE SUITABLE AND APPROVED FOR THE INTENDED USE. WHERE CONDUITS PASS UNDERNEATH PAVED AREAS THEY SHALL BE RGS. WHERE UNDERGROUND CONDUITS ARE NOT EXPOSED TO MECHANICAL DAMAGE OR ARE NOT UNDER PAVED AREAS, THEY MAY BE SCHEDULE 40 PVC, BUT ALL CONDUIT RISERS SHALL BE RGS. RGS CONDUITS SHALL EXTEND A MINIMUM OF 18" BELOW GRADE.
22. APPLY BITUMASTIC COATING TO ALL METALLIC CONDUITS IN SLABS OR UNDERGROUND.
23. ALL CONDUCTORS SHALL BE COPPER U.O.N., TYPE THHN OR THWN INSULATION, RATED 75°C WET/DRY EXCEPT WHERE OTHERWISE REQUIRED BY U.L. OR CODES UNLESS OTHERWISE NOTED. MINIMUM WIRE SIZE SHALL BE #12 AWG EXCLUDING CONTROL WIRING.
24. WIRE WAYS SHALL BE SIZED AS REQUIRED, PER NEC, UNLESS OTHERWISE NOTED.
25. ALL ELECTRICAL EQUIPMENT SHALL BE RAINTIGHT (NEMA 3R) WHERE EXPOSED TO THE WEATHER. ALL FLEX CONDUITS CONNECTED TO SUCH EQUIPMENT SHALL BE LIQUID-TIGHT.
26. OUTLET BOXES SHALL BE PRESSED STEEL IN DRY LOCATIONS, CAST ALLOY WITH THREADED HUBS IN WET OR DAMP LOCATIONS AND SPECIAL ENCLOSURE FOR OTHER CLASSIFIED AREAS. PROPER PLASTER RINGS SHALL BE USED WITH OUTLET BOXES. PROPER COORDINATION BETWEEN ELECTRICAL SUBCONTRACTOR AND GENERAL CONTRACTOR FOR PLASTER RING INITIATION WILL BE REQUIRED. NO "GOOF" RINGS SHALL BE ALLOWED. ALL OUTLET BOXES SHALL BE SECURELY FASTENED.
27. ALL FACE PLATES SHALL BE WHITE DECORA UNLESS OTHER WISE INDICATED IN THE DRAWING.
28. MOTOR STARTERS SHALL BE MANUAL OR MAGNETIC, AS INDICATED OR REQUIRED, WITH OVERLOAD PROTECTION FOR EACH PHASE. ALL MOTOR SHALL BE EQUIPED WITH DISCONNECT MOTOR STARTER COMBINATION.
29. FURNISH AND INSTALL DISCONNECT SWITCHES AND WIRING FOR AIR CONDITIONING EQUIPMENT PER MANUFACTURER RECOMMENDATIONS. CONTROLS SHALL BE PROVIDED BY DIVISION 15. ELECTRICAL CONTRACTOR SHALL VERIFY CIRCUIT PROTECTIVE DEVICE RATING FOR EQUIPMENT PROVIDED PRIOR TO INSTALLATION.
30. DISCONNECT SWITCHES SHALL BE SIZED PER NEC TO ACCOMMODATE EQUIPMENT SERVED, INCLUDING REQUIRED FUSES, U.O.N. DISCONNECT SWITCHES SHALL BE HORSEPOWER RATED, HEAVY-DUTY TYPE.
31. FUSES SHALL BE CURRENT LIMITING, PER U.L., RATED 600 VOLTS, UNLESS OTHERWISE NOTED.
    A. NONTIME DELAY FUSES IN MAIN SWITCHES AND SWITCHES FEEDING PANELS.
    B. TIME DELAY FUSES FOR MOTOR AND A/C CIRCUITS.
32. CIRCUIT BREAKERS SHALL BE BOLT-ON U.O.I., INVERSE TIME-TYPE (THERMAL-MAGNETIC). TWO AND THREE-POLE CIRCUIT BREAKERS SHALL HAVE COMMON TRIP. ALL PANELBOARDS SHALL HAVE COPPER BUS.
33. UNLESS NOTED AS EXISTING, ALL EQUIPMENT, WIRING, DEVICES, ETC. SHALL BE NEW.
34. WHERE CORE DRILLING OF FLOOR/WALLS IS REQUIRED, CONTRACTOR SHALL SEAL OPENINGS WATERTIGHT AFTER UTILITIES HAVE BEEN INSTALLED. LOCATION OF CORED HOLES SHALL BE COORDINATED WITH LOCATION OF EQUIPMENT IN A MANNER TO BE CLEAN AND FUNCTIONAL. THE CONTRACTOR SHALL INSTALL ONLY ONE CONDUIT PER HOLE AND SEAL THE OPENING AROUND THE CONDUIT AS SPECIFIED.
35. PROVIDE FIRE RETARDANT U.L. APPROVED SEALANT ON ALL PENETRATIONS OF FIRE RATED PARTITIONS, WALLS AND STRUCTURAL SLABS. IT SHALL BE THE RESPON-SIBILITY OF THE ELECTRICAL CONTRACTOR TO VERIFY, PRIOR TO SUBMITTING BID, LOCATIONS OF ALL SUCH FIRE RATED PARTITIONS, WALLS, AND STRUCTURAL SLABS.
36. BALLASTS SHALL HAVE MIN. POWER FACTOR OF 0.90. BALLASTS FOR METAL HALIDE AND HIGH PRESSURE SODIUM FIXTURES SHALL BE CONSTANT WATTAGE TYPE WITH 5% LAMP WATTS FOR 10% NOMINAL LINE VOLTAGE VARIATION.
37. THE EQUIPMENT GROUNDING TERMINAL BARS OF THE NORMAL AND EMERGENCY ELECTRICAL SYSTEM PANELBOARDS SERVING THE SAME BUILDING SHALL BE BONDED TOGETHER WITH AN INSULATED, CONTINUOUS, COPPER CONDUCTOR NOT SMALLER THAN NUMBER 6.
38. PROVIDE LAMPS WITH FIXTURES, SEE LUMINAIRE SCHEDULE FOR LAMP TYPE. CONTRACTOR SHALL VERIFY EACH FIXTURE VOLTAGE PRIOR TO ORDERING.
39. ALL CONNECTIONS TO GROUND RODS & BUILDING STEEL 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.
40. PROVIDE MOUNTING BACKBOARDS FOR ELECTRICAL AND COMMUNICATION EQUIPMENT. BACKBOARDS SHALL BE OF TYPE "AC" PLYWOOD, PAINTED ON BOTH SIDES AND EDGES WITH TWO COATS OF LIGHT GREY PAINT.
41. PROVIDE A FUSE HOLDER AND FUSE IN THE PRIMARY SIDE OF EACH UNGROUNDED CONDUCTOR FOR EACH BALLAST (BUSSMAN HEB AND FNQ OR EQUAL), AT THE HAND HOLE OF EACH EXTERIOR POLE MOUNTED LIGHTING FIXTURE OR J-BOX FOR WALL OR GROUND MOUNTED EXTERIOR FIXTURES.
42. PROVIDE TEMPORARY ELECTRICAL SERVICE FOR USE BY ALL TRADES DURING CON-STRUCTION AND REMOVE SAME AT COMPLETION OF PROJECT,
43. THE ELECTRICAL CONTRACTOR SHALL FURNISH A COMPLETE SET OF AS-BUILT DRAWINGS, SHOWING ALL CHANGES AND DEVIATIONS TO THE ARCHITECT/ENGINEER PRIOR TO COMPLETION OF THE PROJECT.
44. PREPARE AND AFFIX A TYPEWRITTEN DIRECTORY TO THE INSIDE COVER OF EACH PANELBOARD INDICATING LOADS SERVED BY EACH CIRCUIT AND PANEL FEEDING THE BOARD. 1
45. PROVIDE U.L. LISTED COMPOUND APPLIED TO BACK OF "BACK TO BACK" BOXES IN RATED WALLS WHERE THE BOXES ARE LESS THAN 24 INCHES APART MEASURED HORIZONTALLY.
46. PROVIDE WIND LOAD RATED LIGHT POLES WITH WIND SPEED RATINGS IN ACCORDANCE WITH THE FLORIDA BUILDING CODE, AND PROVIDE POINT-TO-POINT CALCULATIONS WITH ALL FIXTURE SUBMITTALS. CONTRACTOR TO VERIFY VOLTAGES OF ALL LIGHT FIXTURES PRIOR TO BIDDING.
47. METER CANS, HUBS, & LUGS FOR SAME ARE TO BE FURNISHED & INSTALLED BY CONTRACTOR. CONTRACTOR TO VERIFY SPECIFIC TYPE OF METER CAN TO BE USED WITH F.P.L. PRIOR TO BID. ALL THREE PHASE METER AND COMMERCIAL USE SHALL HAVE LEVELER BY PASS AS PER FPL REQUIREMENTS
    A. PROVIDE A PERMANENT SIGN ON THE MAIN ELECTRICAL ROOM DOOR TO THE BLDG. STATING THAT THE SERVICE DISCONNECTS ARE LOCATED INSIDE.
    B. SIGNS SHALL BE PLACED AT THE MAIN DISCONNECT EQUIPMENT INDICATING TYPE AND LOCATION OF ON-SITE EMERGENCY POWER SOURCES.
    C. VOLTAGE AND SERVICE NUMBER SHALL BE INDICATED AT EACH DISCONNECT.
48. FOR EMERGENCY EXIT SIGNS AND EMERGENCY LIGHTS, MAKE CONNECTIONS TO BATTERY PACKS, AHEAD OF ALL SWITCHES AND TIMERS. PROVIDE SELF TEST DEVICES. ALL EMERGENCY EXIT SIGNS AND EMERGENCY LIGHTS TO BE EQUIPPED WITH BATTERY BACK UP 90 MINUTES MINIMUM.
49. THE CONTRACTOR SHALL SUBMIT 6 COPIES OF EQUIPMENT SHOP DRAWINGS FOR ELECTRICAL EQUIPMENT TO THE ENGINEER FOR REVIEW, PRIOR TO ORDERING SUCH EQUIPMENT.
50. ELECTRICAL SYSTEM COMPLIANCE WITH FBC ENERGY CONSERVATION CODE
    A. CONTRACTOR SHALL WITHIN 30 DAYS OF SYSTEM ACCEPTANCE PROVIDE RECORD DRAWINGS TO THE OWNER.
    B. CONTRACTOR SHALL PROVIDE TO THE BUILDING OWNER OPERATION MANUAL AS PART OF THE SYSTEM ACCEPTANCE.
    C. THE MAXIMUM VOLTAGE DROP FOR FEEDER SHALL NOT EXCEED 2%.
    D. THE MAXIMUM VOLTAGE DROP FOR BRANCH CIRCUITS SHALL NOT EXCEED 3%.
    E. CONTRACTOR SHALL PROVIDE A MEANS OF SPACE LIGHTING CONTROL FOR ALL SPACES ENCLOSED BY CEILING HEIGHT PARTITIONS VIA MOTION SENSOR SET TO A MAXIMUM OF 30MIN. OF ALL OCCUPANTS LEAVING THE SPACE.
    F. CONTRACTOR SHALL PROVIDE FOR ALL OTHER SPACES, EACH CONTROL DEVICES SHALL BE ACTIVATED EITHER MANUALLY BY AN OCCUPANT OR AUTOMATICALLY AN OCCUPANT. EACH CONTROL DEVICE SHALL CONTROL A MAXIMUM OF 2500 SF AREA AND BE CAPABLE OF OVERRIDING ANY TIME OF DAY SCHEDULE SHUT OFF CONTROL FOR MORE THAN 4 HOURS.
51. ALL EMPTY CONDUITS SHALL BE PROVIDED WITH PULL STRING MARKED AT BOTH ENDS.
52. CONTRACTOR SHALL PROVIDE NEUTRAL TO ALL EQUIPMENT UON.
53. DOORS AND GATES CONTROL SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR.
54. PROVIDE MEANS OF DISCONNECT TO ALL FLURESCENT LIGHTING AT FIXTURE.
55. ALL OUTDOOR ILLUMINATION SHALL BE CONTROLLED VIA TIME SWITCH AND PHOTOCELL U.O.N. PROVIDE ASTRONOMICAL TIME SWITCH CAPABLE OF RETAINING PROGRAMMING AND THE TIME SETTING DURING LOSS OF POWER FOR A PERID OF AT LEAST 10 HOURS. AS PER FLORIDA BUILDING CODE EC C405.2.4. EXTERIOR LIGHTING CONTROL.
56. ELECTRICAL CONTRACTOR IS RESPONSIBLE TO VERIFY AVAILABLE FAULT CURRENT WITH UTILITY COMPANY PRIOR TO EQUIPMENT ORDERING.
57. CONTRACTOR SHALL PROVIDE J-BOX AHEAD OF EACH FIXTURE TO COMPLY WITH NEC 410.21 UNLESS FIXTURE IS RATED FOR FEED THRU.
58. ALL ELECTRICAL EQUIPMENT TO BE INSTALLED 1FT. ABOVE BASE FLOOD ELEVATION.
59. ALL PANEL TO BE FULLY RATED TO MATCH KAIC AS LISTED ON PANELS. SYSTEM NOT DESING AS SERIES RATED PANELS.
60.. PROVIDE ARC FLASH HAZARD SIGNAGE ON ALL ELECTRICAL EQUIPMENT PER NEC 11.6
61. ALL LIGHTING ON THERMAL ENVELOPE SHALL BE IC RATED AND MEETING ASTM E 283 FOR LEAKAGE LABELED AIR TIGHT AND HOUSING SHALL BE SEALED WITH A GASKET OR CAULK TO CEILING OR WALL.

ABBREVIATIONS

A.C.	ABOVE COUNTER	E	EXISTING DEVICE TO REMAIN
A.F.	ARC FAULT	RL	EXISTING RELOCATED
A.F.F.	ABOVE FINISHED FLOOR	G.F.I.	GROUND FAULT INTERRUPTER
A.S.W.	ABOVE SHOW WINDOW RCPT.	L.C.	LOCKABLE COVER
B.F.C.	BELOW FINISHED CEILING	M.H.	MOUNTING HEIGHT
		M.E.R.	MAIN ELECTRICAL ROOM
B.F.G.	BELOW FINISHED GRADE	N	NEW DEVICE
C.B.	CIRCUIT BREAKER	N.F.	NON FUSED
CL	CENTER LINE	NL	NIGHT LIGHT
D	DEDICATED FOR COMPUTER, PROVIDE DEDICATED GROUND AND NEUTRAL	T.C.	TERMINAL CABINET
		T.S.	TIME SWITCH
		U.O.N.	UNLESS OTHERWISE NOTED
EM	PROVIDE EMERGENCY BATTERY PACK W/FIXTURE, CONNECT AHEAD OF ALL SWITCHES.	WP.	WEATHER PROOF
		TX.	TRANSFORMER.
		M.S.	MOTION SENSOR
CLG.	CEILING	ATS.	AUTOMATIC TRANSFER SWITCH
		FLR.	FLOOR

PANEL: A

FEED FROM:

CIRCUITS 42 — MAIN BREAKER: 200 AMPS — LUGS: 250 AMPS — K.A.I.C. : E KA — MOUNTED FLUSH ___ SURFACE X — 3 PHASE — 4 WIRE — X 120/208V

TYPE	CKT NO	IDENTIFICATION	WIRE	GND.	COND	BREAKER TRIP	BREAKER POLES	LOAD A		LOAD B		LOAD C		BREAKER POLES	BREAKER TRIP	WIRE	GND.	COND	IDENTIFICATION	CKT NO	TYPE
TS	1	RECEPTION LTS	12	12	1/2"	20	1	0.8						1	20	12	12	½"	[redacted]TX, POS & CONSULT LIGHTING	2	[redacted] TS
TS	3	RETAIL LTS	12	12	1/2"	20	1			1.1				1	20				SPARE	4	MD
TS	5	[redacted]STORAGE/AREA LTS	12	12	1/2"	20	1					0.6		1	20				SPARE	6	MD
TS	7	CORRIDOR/WOR ROOM/OFFICE	12	12	1/2"	20	1	0.5						1	20				SPARE	8	MD
MD	9	SPARE				20	1							1	20				SPARE	10	MD
MD	11	SPARE				20	1							1	20				SPARE	12	MD
MD	13	SPARE				20	1							1	20				SPARE	14	MD
MD	15	SPARE				20	1							1	20				SPARE	16	MD
MD	17	SPARE				20	1							1	20				SPARE	18	MD
MD	19	TWH	8	10	3/4"	50	2	4.5						3	80				SPARE	20	MD
	21									4.5										22	
MD	23	SPARE				20	1					4.5								24	
MD	25	SPARE				20	1	4.5	0.2					1	20	12	12	1/2"	TBB	26	MD
MD	27	SPARE				20	1							1	20				SPARE	28	MD
MD	29	SPARE				20	1							1	20				SPARE	30	MD
MD	31	SPARE				20	1							1	20				SPARE	32	MD
MD	33	SPARE				20	1							1	20				SPARE	34	MD
MD	35	SPARE				20	1							1	20				SPARE	36	MD
MD	37	SPARE				20	1							1	20				SPARE	38	MD
MD	39	SPARE				20	1							1	20				SPARE	40	MD
MD	41	SPARE				20	1							1	20				SPARE	42	MD
								10.3	0.2	5.6	0.0	5.1	0.0								

	A	B	C	
TOTAL CONNECTED LOAD PER PHASE	10.5	5.6	5.1	KVA
TOTAL CONNECTED	21.2			KVA
TOTAL CONNECTED AMP	58.9			AMP

TS-TIME SWITCH.
GF - GFCI GROUND FAULT PROTECTED C.B.
NC - NO CONCURRENT LOAD
E-EXISTING
MD-MODIFIED CIRCUIT UNDER THIS PERMIT.

PANEL: B

FEED FROM:

CIRCUITS 42 — MAIN BREAKER: 150 AMPS — LUGS: 250 AMPS — K.A.I.C. : E KA — MOUNTED FLUSH ___ SURFACE X — 3 PHASE — 4 WIRE — X 120/208V

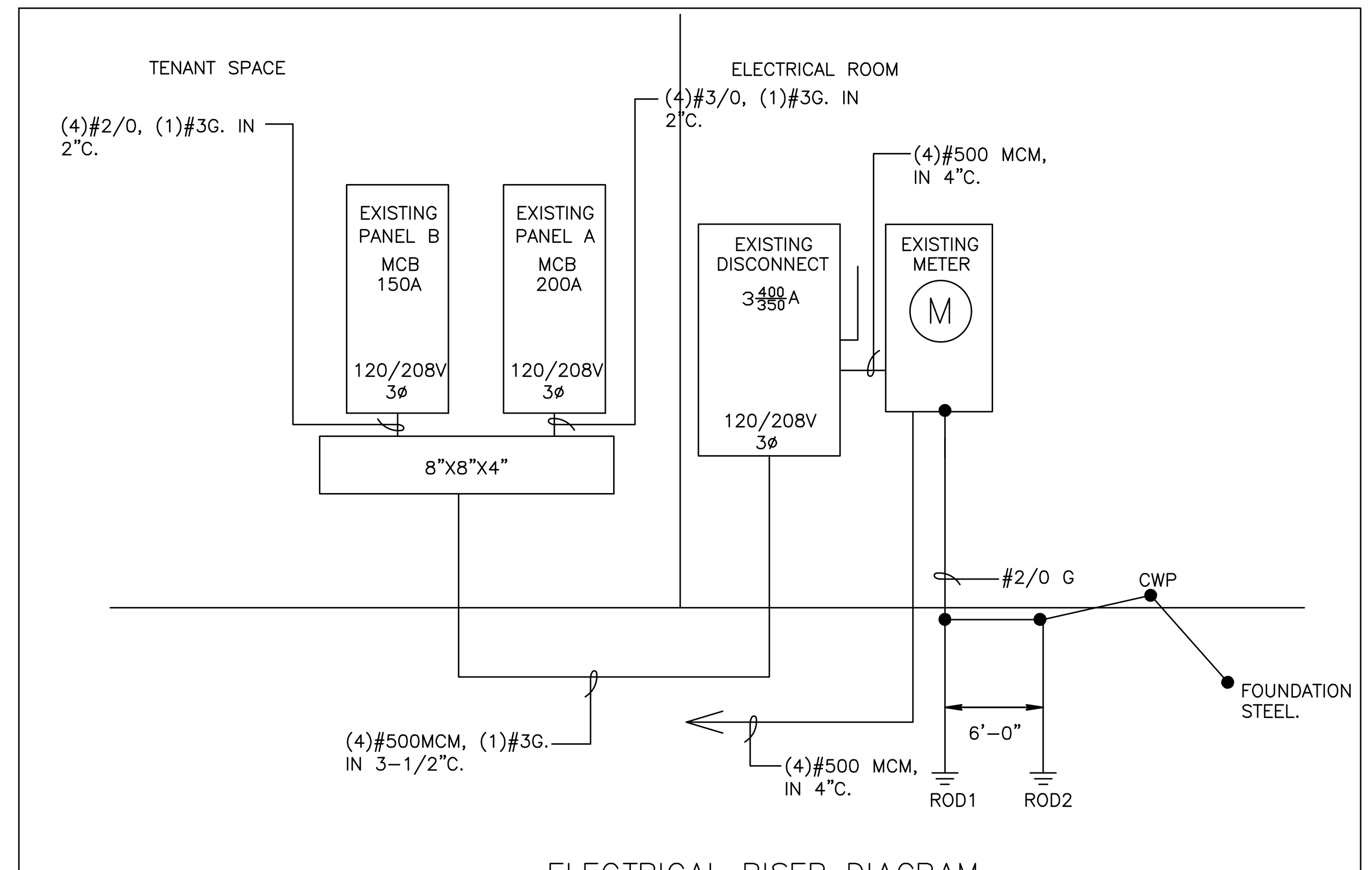
TYPE	CKT NO	IDENTIFICATION	WIRE	GND.	COND	BREAKER TRIP	BREAKER POLES	LOAD A		LOAD B		LOAD C		BREAKER POLES	BREAKER TRIP	WIRE	GND.	COND	IDENTIFICATION	CKT NO	TYPE
	1	ASW.	12	12	1/2"	20	1	0.9	0.7					1	20	12	12	1/2"	GENERAL RCPTS	2	TS
	3	ASW.	12	12	1/2"	20	1			0.8	0.5			1	20	E	E	E	GENERAL LTS	4	E
TS	5	TV RCPTS	12	12	1/2"	20	1					0.7		1	20	12	12	1/2"	CONV. OUTLET	6	TS
E	7	GENERAL LTS	E	E	E	20	1	0.7						1	20	12	12	1/2"	REFRIGERATOR	8	
TS	9	RCPTS POS AREA	12	12	1/2"	20	1			0.5	0.5			1	20	12	12	1/2"	WORK ROOM RCPTS	10	TS
	11	ATM RCPTS	12	12	1/2"	20	1					1.0		1	20	12	12	1/2"	OFFICE RCPT	12	
	13	ATM RCPTS	12	12	1/2"	20	1	1.0	6.5					3	80	E	E	E	AC2	14	E
TS	15	FLOOR OUTLET (GF)	12	12	1/2"	20	1			0.5	6.5									16	
TS	17	JANITO R RCPTS	12	12	1/2"	20	1					0.3	6.5							18	
TS	19	RECEPTION RCPTS	12	12	1/2"	20	1		0.2					1	20	E	E	E	FIRE ALARM PANEL	20	E
TS	21	POS	12	12	1/2"	20	1			0.7	1.0			1	20	12	12	1/2"	SERVER RCPTS	22	
TS	23	POS	12	12	1/2"	20	1					0.7	1.0	1	20	12	12	1/2"	SERVER RCPTS	24	
TS	25	POS	12	12	1/2"	20	1	0.7	0.5					1	20	12	12	1/2"	CONSULT RCPTS	26	TS
TS	27	POS	12	12	1/2"	20	1			0.7	1.2			1	20	E	E	E	SIGN	28	E
	29	RESTROOM RCPTS	12	12	1/2"	20	1					0.5	0.5	1	20	12	12	1/2"	STORAGE RCPTS	30	TS
GF	31	DRINKING FOUNTAIN	12	12	1/2"	20	1	0.6						1	20	12	12	1/2"	CAR READER	32	
TS	33	RECEPTION SIGN	12	12	1/2"	20	1			1.2	0.2			1	20	12	12	1/2"	TIME RCPTS	34	
TS [redacted]	35	[redacted] ADA RAMP	12	12	½"	20	1						0.2	1	20	12	12	1/2"	CONTACTOR SIGN AND FLOOR OUTLES	36	MD
MD	37	SPARE				20	1	1.2	0.2					1	20	12	12	1/2"	MOTORIZED DAMPER	38	MD
E	39	EMS	E	E	E	20	1			0.2				1	20				SPARE	40	MD
	41	SPARE				20	1							1	20				SPARE	42	MD
								5.1	8.1	4.6	9.9	3.2	8.2								

	A	B	C	
TOTAL CONNECTED LOAD PER PHASE	13.2	14.5	11.4	KVA
TOTAL CONNECTED	39.1			KVA
TOTAL CONNECTED AMP	108.6			AMP

TS-TIME SWITCH.
GF - GFCI GROUND FAULT PROTECTED C.B.
NC - NO CONCURRENT LOAD
E-EXISTING
MD-MODIFIED CIRCUIT UNDER THIS PERMIT.

NOTE: CONTRACTOR SHALL IDENTIFY ALL CICUIT AND LABEL PANEL.

(*1)CONTRACTOR SHALL FIELD VERIFY EQUIPMENT NAME PLATE PRIOR TO C.B ORDERING AND INSTALLATION MATCH MANUFACTURE RECOMMENDED OCPD.



ELECTRICAL RISER DIAGRAM
N.T.S.

ELECTRICAL NOTES AND DETAIL (1)
N.T.S

MVF CONSULTING GROUP, INC.
P.O. BOX 431780
MIAMI, FL 33243
PH: (786) 412-6201
CA 32651

Project Title: Muv
Address: 607 5TH STREET MIAMI BEACH, FL 33139

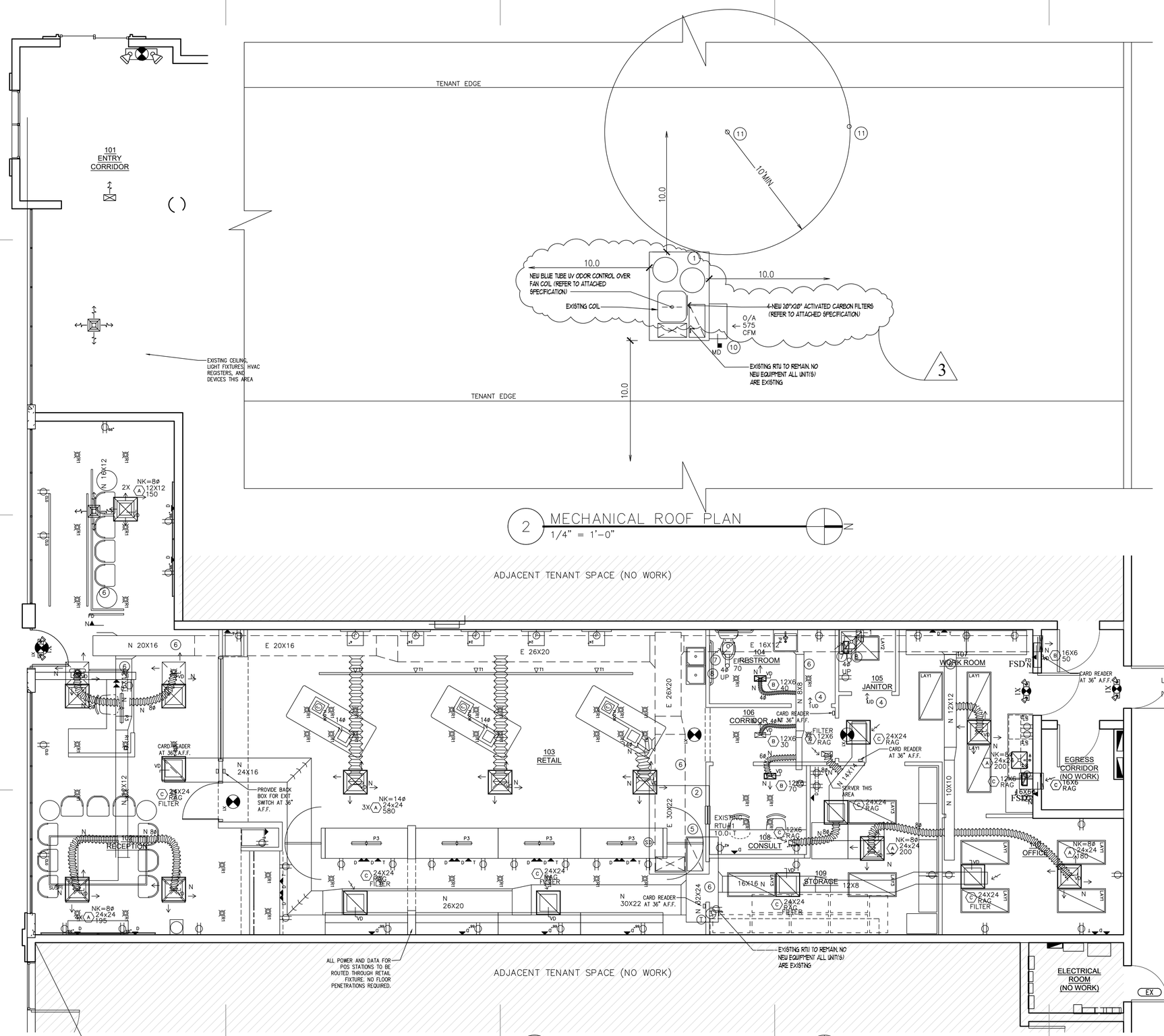
This Sheet: ELECTRICAL NOTES AND DETAIL

REVISIONS
1-EL-11-30-18
3-PZ-4-13-19
DESCRIPTION

Project No. 18Ø34-MUV
Date: 4-29-19
Drawn By: RAFAELLOX
Approved By: MVF
SEAL
MARIANO V. FERNANDEZ
LIC. No. 40115

SHEET NO. E-3
4 OF 10

MVF CONSULTING GROUP May 06, 2019 - 2:28pm C:\X-Workspace\Konstruction\18005-CVS\MVF\MEP-F CAD files\MH-rev-3\E-3-rev-3.dwg



2 MECHANICAL ROOF PLAN
1/4" = 1'-0"

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

1. EXISTING ROOF TOP PACKAGE UNIT (RTU) AT ROOF. TIE DOWN SHALL BE MIAMI-DADE APPROVED. RTU TO BE MINIMUM 10' AWAY FROM ROOF EDGE OR 42" PARAPET SHALL BE USED.
2. OUTLINE OF RTU AT ROOF.
3. NEW WALL MOUNT PROGRAMMABLE THERMOSTAT AT 50" A.F.F.
4. 1" DOOR UNDER CUT. TYPICAL.
5. FULL SIZE SUPPLY AIR/RETURN AIR PLENUM.
6. HVAC DUCTWORK TO BE FIBER GLASS, INSTALLED AS PER SMACNA STANDARDS WITH 1.5" THICK (R-6) INSULATION, UNLESS NOTED OTHERWISE.
7. CEILING MOUNT BATHROOM EXHAUST FAN INTERLOCK W/ AC UNITS & GRILLE W/BACKDRAFT DAMPER AS SIZED ON PLAN.
8. EXHAUST DUCT; AS SIZED ON PLAN TERMINATING WITH ROOF CAP. PROVIDE CORROSION RESISTANT SCREEN.
9. DUCT MOUNT SMOKE DETECTOR WITH REMOTE AUDIBLE & VISUAL ALARMS. TYPICAL.
10. BUILT-IN RTU O/A INTAKE TO BE 10FT AWAY FROM ANY EXHAUST OR VENT AT ROOF. PROVIDE MOTORIZED DAMPER CLOSED WHEN SPACE IS NOT IN USED.
11. EXHAUST DUCT FROM BELOW TERMINATING WITH ROOF CAP. PROVIDE CORROSION RESISTANT SCREEN.

SCOPE OF WORK:

NEW RETAIL SPACE IN EXISTING BUILDING VACANT SPACE.

ENERGY CONSERVATION NOTES:

ALL HVAC EQUIPMENT SHALL BE EQUIPPED WITH PROGRAMMABLE THERMOSTAT TO ALLOW SYSTEM SHUT DOWN AFTER HOURS OF OPERATION. ALL LIGHTING HAS AFTER HOURS SHUT DOWN. ALL AC EQUIPMENT PROVIDE WITH OUTSIDE AIR MOTORIZED DAMPERS TO SHUT DOWN WHEN SPACE IS NOT USED.

RAMP WORK FILED UNDERSEPARATE PERMIT NO. BC18092030 AND NOT PART OF THIS SCOPE OF WORK

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Project Title:
Address:

MECHANICAL FLOOR PLAN

REVISIONS
1-MH-11-30-18
2-MH-1-10-19
3-PZ-4-13-19

DESCRIPTION
Project No.
18034-MUV
Date:
4-29-19
Drawn By:
RAFAELLOX
Approved By:
MVF
SEAL

MARIANO V. FERNANDEZ
LIC. No. 40115

SHEET NO.
M-1
5 OF 10

HVAC NOTES:

GENERAL NOTES:

1. ALL MECHANICAL SYSTEMS ARE TO BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE SECTIONS OF THE NFPA STANDARDS, ANSI STANDARDS, THE LOCAL 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 CONDITION.
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 70 DDB.
   B. OUTDOOR DESIGN: SUMMER 95 DDB/79 DWB, WINTER 46 DDB.
   C. BUILDING CONDITIONS:

GLASS U VALUE	1.25
GLASS S.C.	0.82
WALL U VALUE	0.2
ROOF U VALUE	0.05

8. ALL STORAGE ROOMS, TOILETS, ETC. , WILL HAVE UNDERCUT DOORS TO PROVIDE VENTILATION REQUIRED WHEN DOOR OR TRANSFER GRILLES ARE NOT SHOWN. IF APPLICABLE.
9. PROVIDE THERMOSTAT CONTROL OF ALL FANS THAT EXHAUST MECHANICAL AND ELECTRICAL ROOMS. IF APPLICABLE.
10. PROVIDE FLEXIBLE DUCT CONNECTORS, RATED AS REQUIRED, TO ALL FANS, A/C UNITS, OR MECHANICAL EQUIPMENT.
11. 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.
12. 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.

MECHANICAL EQUIPMENT NOTES:

1. 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 WITH ACCESS DOORS IN ALL SUPPLY AIR DUCTS FOR FAN AND AHD's SERVING A COMMON PLENUM OF 2000 CFM OR ABOVE. ALL SMOKE DETECTORS SHALL BE BY ONE MANUFACTURE. COORDINATE VOLTAGE ETC. WITH ELECTRICAL CONTRACTOR AND FIRE ALARM SYSTEM BEFORE ORDERING. UPON DETECTION, SMOKE DETECTORS SHALL SHUT DOWN ASSOCIATED AIR MOVING EQUIPMENT AND ALL AIR MOVING EQUIPMENT SERVING THAT COMMON PLENUM.
3. PROVIDE TYPE "B" FIRE DAMPERS IN ALL DUCTS OR OPENINGS PENETRATING FIRE RATED WALLS, MECHANICAL AND ELECTRICAL EQUIPMENT ROOMS. TENANT SEPARATION, PARTITIONS, FLOORS OR ROOF SLABS AND AT FRESH AIR INTAKES (SEE ARCHITECTS PLANS FOR RATINGS). PROVIDE RADIATION DAMPERS IN RATED CEILINGS FOR ALL CEILINGS OPENINGS, CEILING FANS, DIFFUSERS OR GRILLES RATED FOR USE IN THE CEILING ASSEMBLY AS SPECIFIED BY ARCHITECT. IF APPLICABLE.
4. PROVIDE BACK DRAFTS DAMPERS ON ALL EXHAUST FANS AND/OR IN-LINE FANS.
5. 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).
6. PROVIDE A MIN. OF 10' CLEARANCE BETWEEN O/A INTAKES AND VTR OR EXHAUST OPENINGS.
7. THERMOSTAT LOCATION SHALL BE APPROVED BY OWNER, ENGINEER AND ARCHITECT/INTERIOR DESIGNER BEFORE INSTALLATION.
8. RUN INSULATED FIRE RATED CONDENSATE DRAINS AS PER MECHANICAL DRAWINGS. IF APPLICABLE.
9. MOUNT ALL ROOFTOP EQUIPMENT FOR WIND LOADS AND MOUNTING HEIGHTS AS REQUIRED BY LOCAL CODES. ALL CURBS SHALL EXTEND 8" MIN. ABOVE FINISHED ROOF.
10. PROVIDE STRANDED COPPER CONTROL WIRING.
11. 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.
12. ALL INSULATION WILL HAVE FIRE/SMOKE RATING LESS THAN 25/50.
13. PROVIDE A MIN. OF 3' CLEARANCE IN FRONT OF ALL 120-240 VOLT PANELS AND 4' CLEARANCE IN FRONT OF 480 VOLT PANEL. PROVIDE ADEQUATE SIDE CLEARANCE PER NEC.
14. PROVIDE MOTOR STARTERS AS FOLLOWS (UNLESS OTHERWISE RECOMMENDED BY MOTOR / EQUIPMENT MANUFACTURER):
    A: PROVIDE OVERLOAD PROTECTION - 1/3 HP AND ABOVE (ALL PHASES).
    B: PROVIDE REDUCED VOLTAGE STARTING 25 HP AND ABOVE.
    C: PROVIDE ACROSS THE LINE VOLTAGE STARTING BELOW 25 HP.
15. ALL OUTDOOR EQUIPMENT SHALL COMPLY WITH LOCAL ZONING NOISE ORDINANCES OR NOT EXCEED A NOISE LEVEL OF 65 DB AS MEASURED RADIALLY 30 FEET FROM THE EQUIPMENT IN ALL DIRECTIONS.
16. FOR ALL BELT DRIVEN AHU'S PROVIDE ONE SET OF ADJUSTABLE PULLEY'S FOR PRELIMINARY BALANCE, AND REPLACE WITH FIXED PULLEYS AFTER FINAL FAN RPM BEEN SET.
17. VERIFY WITH ARCHITECT ALL LOCATIONS OF LOUVERS, GRILLES, SWITCHES, ACCESS PANELS ETC... BEFORE INSTALLATION.

AIR DISTRIBUTION / DUCTWORK NOTES :

1. REFER TO ARCHITECTURAL PLANS FOR CEILING TYPE.
2. PROVIDE OFF WHITE FINISH (SUBJECT TO ARCHITECT'S APPROVAL).
3. USE SPIN IN COLLAR WITH VOLUME DAMPER AT TRUNK TO FLEX DUCT CONNECTION. (SEE DETAIL)
4. ALL DUCTWORK WHERE ALLOWED BY LOCAL CODES AND CEILING RATING SHALL BE AS FOLLOWS:
   A. SUPPLY AIR - RIGID FIBER GLASS DUCT BOARD 1-1/2" THICK (R-6) INSULATION. OPERATING STATIC PRESSURE ±2 IN. WG. (500 PA)
   A1. SUPPLY AIR - SPIRAL, 22 GA. GALV. METAL WITHOUT INSULATION OPERATING STATIC PRESSURE ±2 IN. WG. (500 PA)
   B. RETURN AIR - SAME AS SUPPLY AIR DUCT WORK.
   C. EXHAUST AIR - MINIMUM 28 GAGE, GALVANIZED METAL OR MINIMUM 26 GAGE ALUMINUM.
   D. OUT SIDE AIR - NOT LIGHTER THAN 30 GAGE, GALVANIZED METAL OR 26 GAGE MINIMUM ALUMINUM INSULATED (R-6).
   E. DRYER DUCTWORK: 26 GA. MIN. GALVINIZED STEEL, HAVING A SMOOTH INTERIOR SURFACE WITH JOINTS RUNNING IN THE DIRECTION OF AIRFLOW AND WITHOUT SHEET METAL SCREWS OR OTHER FASTNERS IN THE AIR STREAM. MAXIMUM LENGTH SHALL NOT EXCEED 25 FEET. WALL CAPS SHALL BE PROVIDED WITH BACKDRAFT DAMPER. NO SCREEN. IF APPLICABLE.
5. ALL DUCTWORK AND DIFFUSERS SHALL BE RATED FOR THE USE, PRESSURE AND TEMPERATURE SPECIFIED AND AS REQUIRED BY THE CEILING SYSTEM RATING.
6. ALL DUCTWORK SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH "SMACNA" STANDARDS AND LOCAL BUILDING CODES.
7. ALL DUCT SIZES ARE CLEAR INSIDE DIMENSIONS.
8. SEAL ALL DUCTS, JOINTS AND SEAMS IN AN APPROVED MANNER AND INSURE AGAINST LEAKAGE.
9. 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.
10. PROVIDE VANED ELBOWS IN ALL CASES, SPLITTER DAMPERS WHERE INDICATED ON DRAWINGS AND VOLUME CONTROL DAMPERS IN ALL BRANCH DUCTS OR DIFFUSER CONNECTIONS.
11. TERMINAL AIR DISTRIBUTION DEVICES SHALL BE AS FOLLOWS: CEILING DIFFUSER: EQUIV. TO TITUS AS SPECIFIED IN AIR DISTRIBUTION SCHEDULE; RETURN REGISTER: EQUIV. TO TITUS AS SPECIFIED IN AIR DISTRIBUTION SCHEDULE (NEW AC DIFF/GRILLES SHALL MATCH EXISTING; IF APPLICABLE).
12. 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. IF APPLICABLE.
13. AIR QUALITY SHOULD BE TESTED BEFORE OCCUPANCY AND SHOULD BE INSTRUMENTED AND MONITORED THEREAFTER, OR AT LEAST AT REGULAR INTERVALS
14. TEST AND ADJUST SUPPLY AND RETURN AIR TEMPERATURES TO BE WITHIN 5% OF DESIGN REQUIREMENTS.
15. 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, SIGNED AND SEALED BY A REGISTERED FLORIDA ENGINEER. 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.

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. WALL, 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 OWNER.
7. THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS PRIOR TO BIDDING, ORDERING, FABRICATION OR INSTALLATION OF MATERIALS OR EQUIPMENT.

CONTROLS / EQUIPMENT SEQUENCE OF OPERATION:

1. ALL THERMOSTATS SHALL BE INSTALLED 42" TO 55" A.F.F. VERIFY EXACT LOCATION WITH ARCHITECT / INTERIOR DESIGNER.
2. UPON DETECTION OF SMOKE. SMOKE DETECTORS SHALL SHUT DOWN REQUIRED ASSOCIATED AIR MOVING EQUIPMENT AND ALL AIR MOVING EQUIPMENT SERVING THAT COMMON PLENUM.

HVAC SYMBOL LEGEND

SYMBOL	DESCRIPTION
	SUPPLY DUCT
	RETURN/EXHAUST DUCT
	FLEXIBLE DUCT
	ELBOW W/ TURNING VALVES
REF. S&R	REFRIGERANT SUCTION & LIQUID LINES
CD	CONDENSATE LINE
EF-1 #	CEILING EXHAUST FAN #: CFM
	EXHAUST REGISTER
T	COOLING/HEATING THERMOSTAT
SD	DUCT MOUNT SMOKE DETECTOR WITH REMOTE AUDIBLE & VISUAL ALARMS.
X AXB #	X: AIR DEVICE TYPE AXB: SIZE #: CFM
SA	SUPPLY AIR
RA	RETURN AIR
CFM	CUBIC FEET PER MINUTE
AHU	AIR HANDLER UNIT
CU	CONDENSER UNIT
RTU	ROOF TOP PACKAGE UNIT
VD	VOLUME DAMPER
MOT	MOTORIZED DAMPER

AIR DISTRIBUTION SCHEDULE

SYMBOL	USE	TYPE	ACCESORIES	DESIGN MANUFACTURER & MODEL Mo.
A	SUPPLY AIR	CEILING DIFFUSER SQUARE	O.B.D.	TITUS TMS-AA SURFACE MOUNT
B	SUPPLY AIR	CEILING DIFFUSER ADJUSTABLE	O.B.D.	TITUS 250-AA
C	RETURN AIR/ TRANSFER	CEILING/WALL RETURN/EXH.	O.B.D.	TITUS 350 FL

NOTE:
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.
4. PROVIDE SELECTION BASED ON A MAXIMUM RADIATED NOISE OF NC-22 MAXIMUM.

EXHAUST FAN SCHEDULE

MARK	SERVICE	TYPE	CFM	ZONES	STATIC PRESS.	ELECTRICAL	AMPS.	WATTS	RPM	UNIT SIZE HXWXD	WEIGHT (LBS)	MODEL	INTERLOCK WITH
EF-1	RESTROOM	CEILING	70	0.8	.125"	115/1/60	0.27	20.2	850	12X14X11	12	GREENHECK SP-A90	WALL SWITCH

NOTES :
1. ALL FANS WITH BACKDRAFT DAMPER.
2. ALL FANS PROVIDE WITH SPEED CONTROLER.

IAQ - VENTILATION DESIGN CRITERIA

AC UNIT	SERVING AREA	OCCUPANCY / AREA	VENTILATION RATE CFM/SQFT	VENTILATION RATE CFM/PERSON	VENTILATION REQUIRED CFM	VENTILATION PROVIDED CFM
EXISTING RTU#1	CORRIDOR	-/400SF	0.06	--	24	575
	RECEPTION	19P/380SF	0.06	5	118	
	RETAIL	26P/1020SF	0.12	7.5	318	
	OFFICES	3P/1020SF	0.06	5	27	
	STORAGE	--/200SF	0.12	-	24	
	WORKROOM	4/180SF	0.18	7.5	63	

NOTES:
1. DESIGN BASED ON THE VENTILATION RATE PROCEDURE PER F.B.C.MECH. (TABLE 403.3).
2. THE DESIGN WILL NEED TO BE RE-EVALUATED IF, AT A LATER TIME, CHANGES OCCUR IN THE USAGE OF THE SPACE, OR IF UNUSUALLY STRONG SOURCES OF SPECIFIC CONTAMINANTS ARE INTRODUCED INTO THE SPACE.

HVAC DESIGN REQUIRES	YES	NO
DUCT SMOKE DETECTOR	X	-
FIRE DAMPER(S)	X	-
SMOKE DAMPER(S)	-	X
FIRE RATED ENCLOSURE	-	X
FIRE RATED ROOF/ FLOOR CEILING ASSEMBLY	-	X
FIRE STOPPING	-	X
SMOKE CONTROL	-	X

EXISTING PACKAGED ROOFTOP AIR CONDITIONING EQUIPMENT SCHEDULE

CARRIER

MARK RTU	MODEL NUMBER	CFM		HEATER		INDOOR FAN			COMPRESSOR			COND. FAN		TOTAL	MAX	ELECTRICAL	CAPACITY					SEER/ EER	UNIT SIZE (H X W X L)	WT LBS	REF TYPE CHARGE LBS	SERVICE
		TOTAL	OA	KW	STEP	ESP	HP	FLA	NO.	RLA	LRA	NO.	FLA/HP	MCA	FUSE	VOLTS-PH-HZ	T.MBH	S.MBH	TONS	Db/Wb	Ambient					
#1	50TC-D12 A2B5A0A0A0	4000	SEE CALS.	7.8	1	1.0	3.7	10.6	2 SCROLL	15.9	110.0	2	1.5-1/4	50	60	208-3-60	124.1	96.2	5.0	80/67	95	--/11.3	50 X 60 X 88	865	R-410A --	

ROOFTOP AC NOTES:

1. OUTSIDE AIR DESIGN CONDITIONS: 92.3°DB - 46.6°DB.
2. PROVIDE A/C UNITS WITH HEATING AND COOLING THERMOSTAT WITH ON-OFF SWITCH SUB-BASE.
3. PROVIDE 2-POSITION MOTORIZED OUTSIDE AIR INTAKE DAMPER WITH WMS AND RAINHOOD.
4. PROVIDE 14" FACTORY FABRICATED ROOFCURB WITH PROPER VIBRATION ISOLATORS.
5. PROVIDE SINGLE POINT KIT FOR ELECTRICAL HOOK-UP.
   RETARDANT ARMAFLEX.
6. PROVIDE DISCONNECT SWITCH WITH ALL ROOFTOP PACKAGE UNITS.
4. FACTORY CONDENSER COIL PRE-COAT FOR CORROSION RESISTANCE
5. PROVIDE OVERFLOW DISCONNECT SWITCH ON CONDENSATE DRAIN.
7. PROVIDE FLOAT SWITCH IN CONDENSATE DRAIN WIRED TO SHUT DOWN AC UNIT IN CASE OF CONDENSATE STOPPAGE. AS PER FBC 307.2.3. SENS OR OPTIONS L.

BUILDING AIR BALANCE CALCULATION

BUILDING

EQUIPMENT	SUPPLY	EXHAUST
RESTROOMS	--	140 CFM
TOTAL AC OUTSIDE AIR	575 CFM	--
TOTAL	575 CFM	140 CFM

BUILDING MAINTAINS POSITIVE PRESSURE +435 CFM

1 MECHANICAL SCHEDULES PLAN
N.T.S.

MVF CONSULTING GROUP, INC.
P.O. BOX 431780
MIAMI, FL 33243
PH: (786) 412-6201
CA 32651

Muv
607 5TH STREET
MIAMI BEACH, FL 33139

Project Title:
Address:

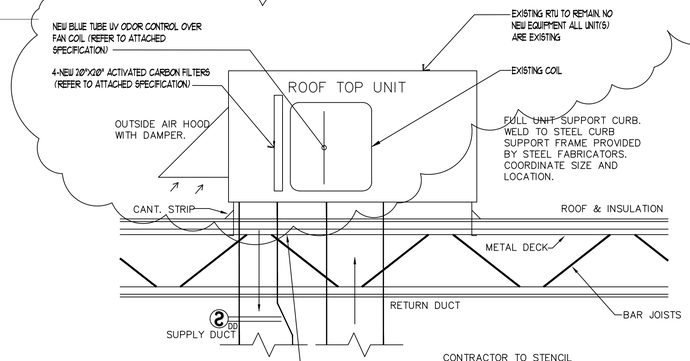
This Sheet: MECHANICAL, NOTES, LEGEND & SCHEDULES

REVISIONS
3 PZ-4-13-19

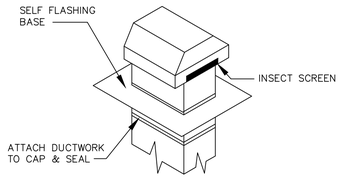
DESCRIPTION
Project No.
18034-MUV
Date:
4-29-19
Drawn By:
RAFAELLOX
Approved By:
MVF
SEAL

MARIANO V. FERNANDEZ
LIC. No. 40115

SHEET NO.
M-2
6 OF 10



ROOF TOP UNIT DUCT DETAIL
N.T.S.



ROOF CAP DETAIL
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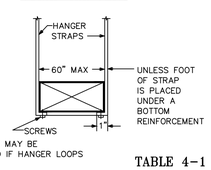
HVAC DUCT DETAILS
NTS

STRAP HANGERS



TRAPEZE HANGERS

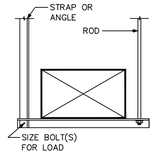
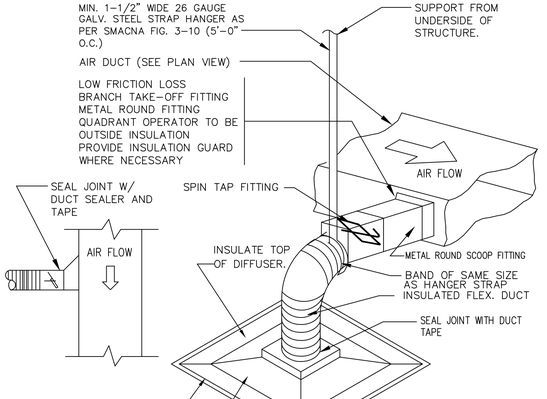


TABLE 4-1

RECTANGULAR DUCT HANGERS
MINIMUM SIZE

MAXIMUM HALF OF DUCT PERIMETER	PAIR AT 10 FT SPACING		PAIR AT 8 FT SPACING		PAIR AT 5 FT SPACING		PAIR AT 4 FT SPACING	
	STRAP	WIRE/ ROD	STRAP	WIRE/ ROD	STRAP	WIRE/ ROD	STRAP	WIRE/ ROD
P/2 = 30"	1"x22 GA.	10 GA. (.135")	1"x22 GA.	10 GA. (.135")	1"x22 GA.	12 GA. (.106")	1"x22 GA.	12 GA. (.106")
P/2 = 72"	1"x18 GA.	3/8"	1"x20 GA.	1/4'	1"x22 GA.	1/4"	1"x22 GA.	1/4"
P/2 = 96"	1"x16 GA.	3/8"	1"x18 GA.	3/8"	1"x20 GA.	3/8"	1"x22 GA.	1/4"
P/2 = 120"	1.5"x16 GA.	1/2"	1"x16 GA.	3/8"	1"x18 GA.	3/8'	1"x20 GA.	1/4"
P/2 = 168"	1.5"x16 GA.	1/2"	1.5"x16 GA.	1/2"	1"x16 GA.	1/2"	1"x18 GA.	3/8"
P/2 = 192"	–	1/2"	1.5"x16 GA.	1/2"	1"x16 GA.	1/2"	1"x16 GA.	3/8"
P/2 = 193" UP	SPECIAL ANALYSIS REQUIRED							

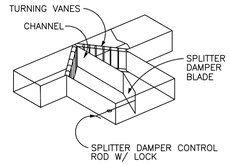
AS PER SMACNA TABLE 4-1 & FIG. 4-4

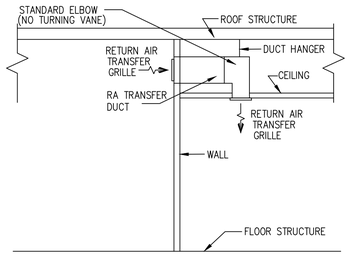


NOTE:
1. FLEXIBLE DUCT INSTALLATION SHALL MEET FBC. MECH. 603.5.6.6

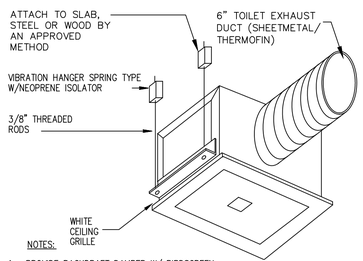
FLEXIBLE DUCT CONNECTION DETAIL
N.T.S.

TEE





TRANSFER AIR DUCT DETAIL
NTS

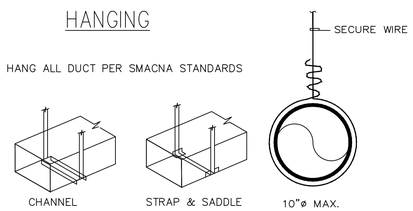


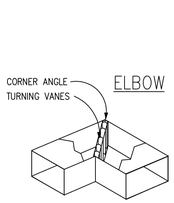
NOTES:
1.- PROVIDE BACKDRAFT DAMPER W/ BIRDSCREEN
2.- FLASH & SEAL WALL AND ROOF CAP
3.- PROVIDE INTERNAL ISOLATION AND SOUND INSULATION
4.- SUPPORT FAN FROM STRUCTURE

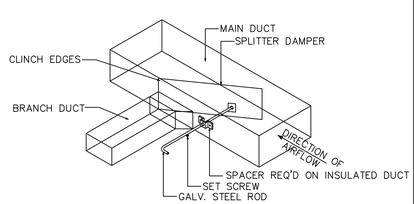
CABINET EXHAUST FAN DETAIL
N.T.S.

HANGING

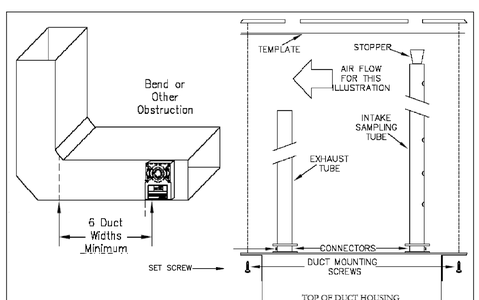
HANG ALL DUCT PER SMACNA STANDARDS





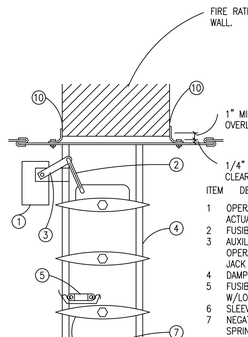


TYPICAL DUCT TAP-OFF
NOT TO SCALE



DUCT SMOKE DETECTOR LOCATION REQUIREMENTS: TO PREVENT FALSE ALARMS THE DETECTORS SHOULD NOT BE MOUNTED IN AREAS OF EXTREME HIGH OR LOW TEMPERTURES, IN AREAS WHERE HIGH HUMIDITY EXIST, OR IN AREAS WHERE DUCT AIR MAY CONTAIN GASES OR EXCESS DUST. THE DUCT DETECTOR SHOULD, WHEN POSSIBLE, BE LOCATED A MINIMUM OF SIX DUCT WIDTHS DOWNSTREAM FROM A SOURCE OF TURBULENCE (BENDS, INLETS, OR DEFLECTION PLATES). AT THESE LOCATIONS, AIR FLOW IS LESS TURBULENT AND THE AIR/SMOKE MIXTURE SHOULD BE MORE HOMOGENOUS. REFER TO NFPA 90A, 72, AND 101 FOR MORE INFORMATION

DUCT DETECTOR UPON INITIATION, SHALL SEND A SUPERVISORY SIGNAL TO THE BUILDING FIRE ALARM SYSTEM.



INSTALLATION NOTES

1 COMBINATION FIRE AND LEAKAGE RATED SMOKE DAMPERS ARE DESIGNED TO OPERATE WITH BLADES RUNNING HORIZONTALLY AND SHALL BE INSTALLED WITHIN THE FIRE WALL OR SLAB DUCT OPENING. VERTICAL INSTALLATION IS DEPICTED. HORIZONTAL INSTALLATION IS SIMILAR.

2 THE FIRE WALL OPENING SHALL BE A MINIMUM OF 1/8" PER FOOT LARGER THAN THE OVERALL SIZE OF THE DAMPER AND SLEEVE ASSEMBLY

3 THE SLEEVE GAGE SHALL BE EQUAL TO OR HEAVIER THAN THE GAGE OF THE DUCT

4 MOUNTING ANGLES SHALL BE 1 1/2" X 1 1/2" X 14 GAGE MINIMUM AND FASTENED WITH NO. 10 BOLTS OR SCREWS, 3/16" DIAMETER STEEL RIVETS OR 1/2" LONG TACK WELDS. SPACE FASTENERS 8" ON CENTER PROVIDE A CONTINUOUS 1/8" BEAD OF SEALANT. WHEN FASTENING THE DAMPERS TO THE SLEEVE, DAMPERS SHALL BE FASTENED WITH 1/4" -20 BOLTS, NO. 10 SCREWS, OR 1/2" LONG WELDS STAGGERED INTERMITTENTLY ON BOTH SIDES. SPACE FASTENERS 6" ON CENTER AND A MAXIMUM OF 2' FROM THE ENDS OF THE JOINING SECTIONS OR FROM EACH CORNER. A CONTINUOUS 1/8" BEAD OF SEALANT SHALL BE APPLIED ON THE MULLION JOINT. PRESS THE SURFACE OF THE SEALANT IN PLACE TO DISPEL ANY AIR. ANOTHER BEAD OF THE SAME SEALANT SHALL BE APPLIED BETWEEN THE DAMPER AND SLEEVE IN THE SAME MANNER

5 SEALANT TO BE APPLIED SHALL BE DOW-CORNING 732, OR GE RTV 180

6 DAMPER SLEEVE SHALL NOT EXTEND MORE THAN 6" BEYOND THE FIRE WALL OR PARTITION AND NOT MORE THAN 9" ON THE OPERATOR/ACTUATOR SIDE

7 THE DAMPER SHALL BE INSTALLED IN A WORKMANLIKE FASHION AS INTENDED BY THE ORDER OF DESIGN, IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS

8 THE DAMPER CONSTRUCTION AND INSTALLATION SHALL COMPLY WITH UNDERWRITERS LABORATORIES SAFETY STANDARDS 555, 555S AND NFPA 90A

COMBINATION FIRE/SMOKE DAMPER DETAIL.
N.T.S.

1 MECHANICAL DETAILS PLAN
N.T.S.

MVF CONSULTING GROUP, INC.
P.O. BOX 431780
MIAMI, FL 33243
PH: (786) 412-6201 CA 32651

Muv
607 5TH STREET
MIAMI BEACH, FL 33139

Project Title:
Address:

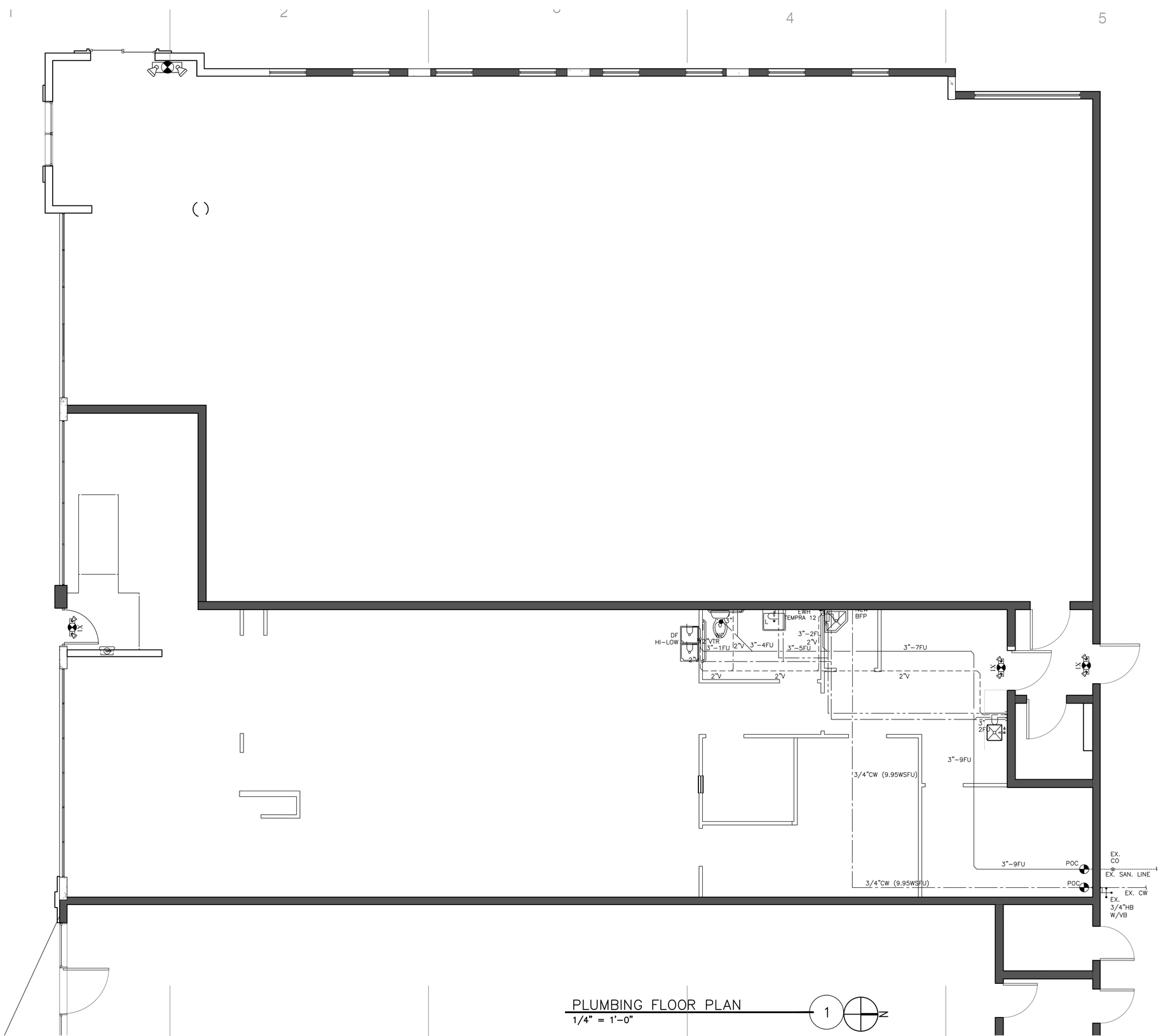
this Sheet: MECHANICAL DETAILS

REVISIONS
1-MH-11-30-18
2-MH-1-10-19
3-PZ-4-13-19

DESCRIPTION
Project No.
18034-MUV
Date:
4-29-19
Drawn By:
RAFAELLOX
Approved By:
MVF
SEAL

MARIANO V. FERNANDEZ
LIC. No. 40115

SHEET NO.
M-3
7 OF 10



PLUMBING FLOOR PLAN
1/4" = 1'-0"

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MIAMI BEACH, FL 33139

Project Title:
Address:

This Sheet: PLUMBING WATER & SANITARY FLOOR PLAN

REVISIONS
1-ST-12-4-18
3-PZ-4-13-19

DESCRIPTION
Project No.
18034-MUV
Date:
4-29-19
Drawn By:
RAFAELLOX
Approved By:
MVF
SEAL

MARIANO V. FERNANDEZ
LIC. No. 40115

SHEET NO.
P-1
8 OF 10