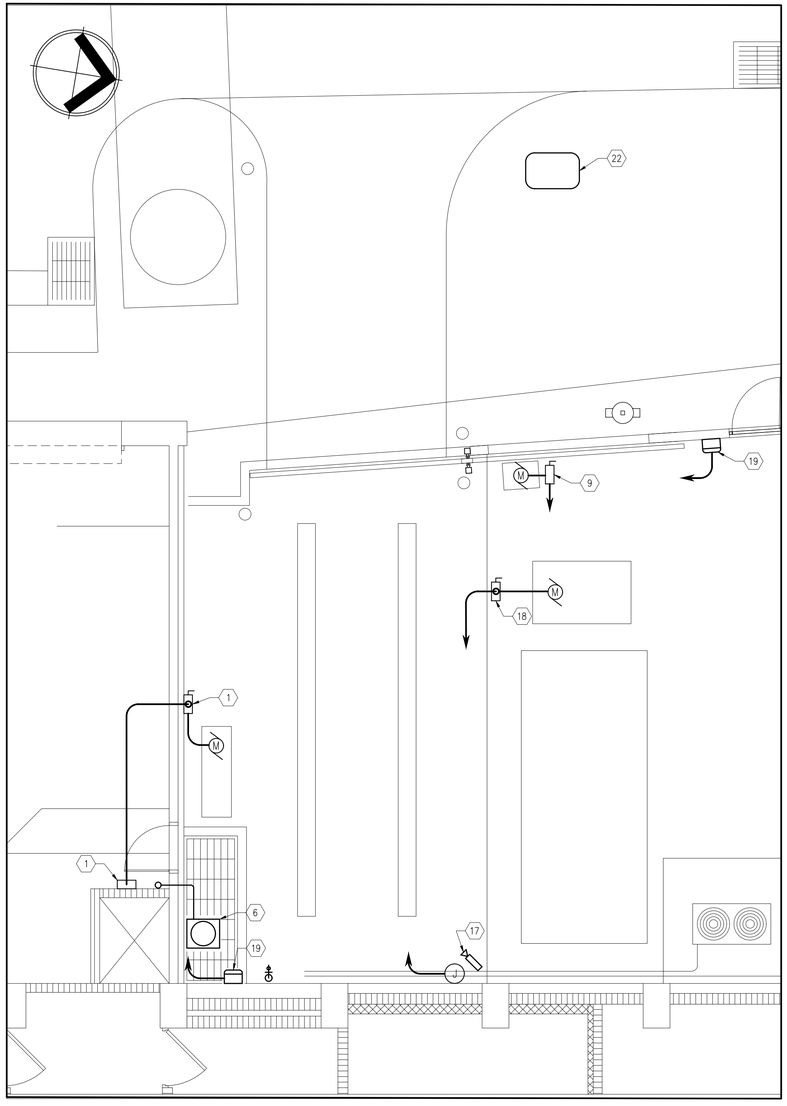
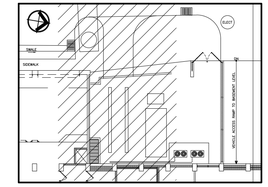


ELECTRICAL PLAN

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

GENERAL NOTES:

1. THE CONTRACTOR SHALL VISIT THE JOB SITE AND BECOME ACQUAINTED WITH THE EXISTING FIELD CONDITIONS. IT SHALL BE THE DIRECT RESPONSIBILITY OF THE CONTRACTOR TO BRING PROMPTLY TO THE ATTENTION OF THE ENGINEER ANY DISCREPANCIES BETWEEN THE EXISTING FIELD CONDITIONS AND THOSE THAT WERE USED FOR DESIGN PURPOSES. THIS SHALL BE DONE BEFORE THE CONTRACTOR SUBMITS HIS BID, SO THAT THE ENGINEER CAN RENDER A DECISION ON THE MATTER BEFORE THE BIDS ARE RECEIVED.
2. THE SUBMITTAL OF THE BID BY THE CONTRACTOR WILL BE HELD AS PROOF OF THE CONTRACTOR'S THROUGH UNDERSTANDING OF THE SCOPE OF WORK , THAT IS FAMILIARIZED WITH THE EXISTING FIELD CONDITIONS, AND HAS INCLUDED IN HIS BID ALL THE ITEMS NECESSARY TO PERFORM THE ELECTRICAL WORK. NO ALLOWANCE WILL BE PERMITTED ON THIS MATTER AFTER THE BIDS ARE RECEIVED.
3. ALL THE ELECTRICAL INSTALLATION SHALL BE DONE IN A NEAT & WORKMANLIKE MANNER, ACCORDING TO THE LAST EDITION OF THE NATIONAL ELECTRICAL CODE, LUMA LATEST STANDARD & THE TELEPHONE CO. LATEST PRACTICES.
4. UNLESS OTHERWISE INDICATED, ALL WIRES AND CABLES SHALL BE #12-AWG. UP TO #10-AWG USE WIRE, ALL LARGES SIZES SHALL BE CABLE. CONTROL CABLES TO BE #14 AWG MIN. SIZES.
5. ALL WIRES AND CABLES SHALL BE THWN/THHN-600V. INSULATION, EXCEPT CONDUCTORS INSTALLED INSIDE UNDERGROUND CONDUITS WHICH SHALL BE RHW-XLP-90°C-CU.
6. UNLESS OTHERWISE INDICATED ALL WIRES AND CABLES SHALL BE COPPER.
7. PROVIDE GROUND WIRE IN ALL THE CONDUITS.
8. PROVIDE #12-AWG GREEN JUMPER BETWEEN RECEPTACLE GROUNDING SCREW AND OUTLET BOX GROUNDING SCREW.
9. UNLESS OTHERWISE INDICATED ALL CONDUITS SHALL BE 3/4" DIAMETER MINIMUM.
10. ALL UNDERGROUND CONDUIT COUPLING SHALL BE WATERTIGHT.
11. PROVIDE AN EXPANSION JOINT COUPLING OF THE REQUIRED TYPE AND SIZE WHENEVER A CONDUIT CROSSES AN EXPANSION JOINT.
12. PROVIDE PLASTIC CONDUIT DIVIDERS IN ALL UNDERGROUND CONDUIT RUNS. MAXIMUM DISTANCE BETWEEN DIVIDERS TO BE 4'-0'.
13. CONTRACTOR MUST MAKE SURE THAT THE ENTIRE ELECTRICAL SYSTEM HAS GROUND CONTINUITY.
14. ALL INDICATED HEIGHTS ARE FROM CENTER OF BOX TO FINISHED FLOOR.
15. CONTRACTOR SHALL BALANCE ALL LOADS.
16. ROUTE OF CONDUITS SHOWN IN THE LAYOUT IS SCHEMATIC AND INTENDED ONLY TO INDICATE INTERCONNECTIONS BETWEEN OUTLETS. EXACT CONDUIT ROUTING SHALL BE DETERMINED AT THE JOB SITE TO CONFORM WITH THE STRUCTURAL CONDITIONS AND SHALL BE SUBJECT TO THE FINAL APPROVAL OF THE ARCHITECT/ENGINEER.
17. LEAVE A #12-AWG-TW FISHWIRE IN ALL EMPTY CONDUITS.
18. ALL PANELBOARDS AND LOAD CENTERS SHALL BE PROVIDED WITH A FACTORY INSTALLED GROUND BUS FOR CONNECTING TO GROUND ALL THE GROUND WIRES OR CABLES ENTERING OR LEAVING THE PANELBOARD. THE GROUND BUS SHALL BE SIMILAR IN SIZE AND CHARACTERISTICS TO THE NEUTRAL BUS. ALL PANELBOARDS SHALL HAVE A MONOFLAT FRONT AND KEY LOCK.
19. WHEN TWO OR MORE WIRING DEVICES ARE SHOWN TOGETHER IN ADJACENT POSITIONS AND AT THE SAME HEIGHT, THEY SHALL BE INSTALLED IN A MULTIPLE GANG OUTLET BOX OF THE PROPER SIZE SO THAT ONLY ONE RAISED COVER PLATE OF THE REQUIRED TYPE AND SIZE ARE USED. 120V AND 277V OUTLETS MUST BE INSTALLED ON SEPARATE BOXES.
20. UNLESS OTHERWISE INDICATED, ALL WIRING DEVICES SHALL BE WHITE COLORED WITH MATCHING PLASTIC COVER PLATES, EXCEPT THE WEATHERPROOF OUTLETS WHICH SHALL HAVE THEIR STANDARD GRAY COVER PLATES.
21. WHEN TWO OR MORE PANELBOARDS OR CABINETS ARE SHOWN TOGETHER IN ADJACENT LOCATIONS, THE TOP OF ALL PANELBOARDS OR CABINETS SHALL BE ALIGNED WITH THE TOP OF THE BIGGEST ONE SO THAT ALL THE TOPS ARE AT EXACTLY THE SAME HEIGHT FROM THE FINISHED FLOOR.
22. IN CONDUIT RUNS, THE NUMBER OF ARROWS DESIGNATE THE NUMBER OF CIRCUITS IN THE CONDUIT (ONE POLE IN THE PANELBOARD PER EACH CIRCUIT), THE NUMBER OF LINES DESIGNATE THE NUMBER OF CONDUCTORS IN THE CONDUIT , THE LONGER LINE BEING A NEUTRAL CONDUCTOR AND "Y" BEING THE GROUND CONDUCTOR.
23. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE VOLTAGE CHARACTERISTICS AT THE SITE WITH THE UTILITY COMPANY AT THE TIME OF INSTALLATION BEFORE ORDERING ANY PRIMARY EQUIPMENT.
24. ALL WIRING DEVICES SHALL BE SPECIFICATION GRADE.
25. ALL THE SELF-STANDING AND SURFACE MOUNTED ELECTRICAL EQUIPMENT AS WELL AS THE LUMINARIES SHALL ALL BE BRACED FOR SEISMIC SHOCK ACCORDING TO THE SEISMIC RESTRAINT MANUAL GUIDELINES FOR MECHANICAL SYSTEMS. THE SAME APPLIES TO ALL THE CONDUIT WORK. THE DETAILS AND INSTALLATION METHODS IN SAID MANUAL SHALL BE MODIFIED AS REQUIRED TO FIT THE ELECTRICAL INSTALLATION OF THE PROJECT.
26. CONDUIT WORK:
    - A. ALL CONDUITS INSTALLED UNDERGROUND SHALL BE PVC SCH-40.
    - B. ALL CONDUITS INSTALLED EMBEDED IN FLOOR SLABS WHICH ARE IN DIRECT CONTACT WITH THE EARTH SHALL BE PVC SCH-40.
    - C. ALL CONDUITS INSTALLED EXPOSED IN INDOOR AREAS SHALL BE ELECTRCAL MATALLIC CONDUIT (EMT).
    - D. ALL CONDUITS INSTALLED EXPOSED IN OUTDOOR AREAS SHALL BE PVC SCH-80.
    - E. ALL CONDUITS INSTALLED OBOVE HUNG CEILING IN INDOORS AREAS SHALL BE ELECTRIC METALLIC CONDUIT (EMT).
    - F. FINAL CONNECTIONS TO ALL MOTORS AND ELECTRICAL EQUIPMENT SHALL BE DONE WITH LIQUIDTIGHT FLEXIBLE STEEL CONDUIT.
26. ALL WIRES AND CABLES SHALL BE #12-AWG, EXCEPT WHEN OTHERWISE INDICATED IN THE DRAWINGS OR AS INDICATED BELOW FOR 20 AMPS. CKTS. WIRE SIZING.
27. ALL 20 AMP. 120VOLT CIRCUIT RUNS SHALL BE AS FOLLOWS:
    - A. 5' TO 50' IN LENGTH, #12-AWG.
    - B. 50' TO 100' IN LENGTH, #10-AWG.
    - C. 100' TO 150' IN LENGTH, #8-AWG.
    - D. 150' TO 200' IN LENGTH, #6-AWG.
28. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL THE POWER AND CONTROL INTERCONNECTIONS AMONG ALL THE DIFFERENT PARTS OF THE AIR CONDITIONING SYSTEMS (FAN COILS/AHU'S, CONDENSING UNITS, THERMOSTATS, ETC.). THE CONTRACTOR SHALL ALSO PROVIDE ALL THE STARTING AND DISCONNECT EQUIPMENT FOR SAID SYSTEMS.
29. ALL ELEVATIONS SHOWN ARE FOR REFERENCE ONLY, THEY MUST BE VERIFIED WITH THE LATEST ARCHITECTURAL DRAWINGS.
30. ELECTRICAL CONTRACTOR MUST COORDINATE WITH OTHER TRADES THEIR EXCAVATION AND CONDUITS INSTALLATIONS TO COMPLY WILL THE PROPER CLEARENCES.
31. THE ELECTRICAL CONTRACTOR MUST INFORM THE ENGINEER OF ANY DEVIATION TO THESE DRAWINGS.
32. THE ELECTRICAL CONTRACTOR MUST KEEP A SET OF DRAWINGS WITH ALL THE DEVIATIONS MADE DURING CONSTRUCTION TO ENSURE AN ACCURATE AS BUILT SET.
33. IF ANY EXISTING FINISHES ARE DISTURBED BECAUSE OF WORK UNDER THIS CONTRACT , THEY MUST BE RESTORED TO THEIR ORIGINAL CONDITION AFTER ALL WORKS ARE PERFORMED.ALL EXISTING EQUIPMENT AND MATERIAL BEING DEMOLISHED AND REMOVED DURING THE CONSTRUCTION SHALL BE DISPOSED OF AS DIRECTED BY THE OWNER.
34. IT IS THE INTENT OF THE CONTRACT DRAWINGS TO CALL FOR A COMPLETE, TESTED AND OPERATIONAL ELECTRICAL SYSTEM. ANY MINOR DETAILS NOT SHOWN BUT REQUIRED FOR THE PROPER FUNCTION AND OPERATION OF THE SYSTEM SHALL BE PROVIDED BY THE CONTRACTOR AT NO ADDITIONAL COST.
35. HE CONTRACTOR SHALL NOTIFY THE OWNER IN ADVANCE OF ANY IMPAIRMENTS TO THE BUILDING'S FUNCTIONS RESULTING FROM THE WORK UNDER THIS CONTRACT.
36. ALL ROOF OPENINGS, WALL OPENINGS, SUPPORTS, SPACE ARRANGEMENTS, FLOOR PADS, ANCHORING, CONNECTIONS AND ELECTRICAL PROVISIONS ARE BASED ON PRELIMINARY INFORMATION FROM THE SPECIFIED MANUFACTURER. THE CONTRACTOR SHALL VERIFY ALL THE ABOVE INFORMATION USING THE MANUFACTURERS CERTIFIED DRAWINGS OF THE EQUIPMENT TO BE INSTALLED AND MAKE MODIFICATIONS AS REQUIRED WITH THE APPROVAL OF THE OWNER AND THE ENGINEERS.
37. MAKE ALL PROVISIONS NECESSARY TO PREVENT CORROSION RESULTING FROM CONTACT BETWEEN DISSIMILAR METALS
38. ALL NEW EQUIPMENT MUST BE GROUNDED AS PER THE LATEST N.E.C. PROVISIONS.



KEY PLAN

NOT TO SCALE

LEGEND – PLUMBING AND ELECTRICAL

1. RELOCATE HYDRAULIC PUMP POWER FEEDER AND INSTALL NEW NEMA 3R DISCONNECT SWITCH. COORDINATE WITH OWNER FOR FINAL CONNECTION TO PUMP CONTROL PANEL.
2. .
3. DIVIDING WALL; MASONRY OR LOUVER; TBA.
4. .
5. .
6. RELOCATE AC CONDENSING UNIT AND INSTALL ON WALL-HUNG PLATFORM; EXTEND POWER FEEDER TO NEW LOCATION.
7. RELOCATE AC REFRIGERANT PIPING; INSTALL NEW INSULATION WITH WEATHER RESISTANT MASTIC.
8. .
9. POWER FEEDER FOR GATE MOTOR THROUGH NEMA-3R DISCONNECT SWITCH; ALLOW 100 LF OF CONDUIT AND WIRE TO POWER PANEL.
10. .
11. .
12. RELOCATED FIRE HYDRANT; COORDINATE WITH FIRE DEPARTMENT.
13. .
14. FUEL GAS PIPING RELOCATED 24" UNDERGROUND; INSTALL SUITABLE PIPING PROTECTION AND WARNING RIBBON.
15. .
16. .
17. INSTALL CONDUIT AND RAIN TIGHT JUNCTION BOX. ALLOW 100 LF OF CONDUIT AND FISH WIRE; COORDINATE WITH OWNER.
18. NEMA-3R DISCONNECT SWITCH FOR FUTURE FUEL PUMP (BY OWNER) COORDINATE WITH OWNER FOR FEEDER SIZE. ALLOW 100 LF OF CONDUIT AND WIRING.
19. WALL PACK LUMINARIES; RE-PURPOSE FEEDERS FROM EXISTING REMOVED LUMINARIES.
20. .
21. EXISTING REFRIGERANT PIPING AND POWER CONDUITS TO REMAIN; PROVIDE PROTECTION DURING CONSTRUCTION.
22. RELOCATE CATV PULL BOX.
23. .
24. .
25. ½" DOMESTIC WATER; COPPER TYPE-K WITH FLARED FITTINGS. BURY PIPE 12" BELOW SLAB BOTTOM. PROVIDE SAND BEDDING AND COVERAGE 6" ALL AROUND PIPE.
26. .
27. .
28. .
29. .
30. .

MANUEL GARCIA ANGELI

MECHANICAL ENGINEERING

THE HATO REY CENTER
SUITE 405
268 PONCE DE LEON AVE.
HATO REY

PO BOX 270421
SAN JUAN, PR 00928

787 373 9460
MGARCIA.PE@GMAIL.COM

THIS DRAWING OR PRINT DEPICTS THE DESIGN EFFORT OF MGA CONSULTING ENGINEER, AND IS ISSUED FOR REVIEW SOLELY AS AN INSTRUMENT OF THE SERVICES BEING RENDERED. IT REMAINS THE PROPERTY OF THIS OFFICE, SHALL BE USED ONLY BY AUTHORIZED PERSONS, AND SHALL NOT BE COPIED, REPRODUCED OR EXHIBITED UNLESS PERMISSION IN WRITING IS GRANTED. IT SHALL BE RETURNED UPON REQUEST.

PROFESSIONAL SEAL:

PROJECT

WORLD PLAZA - RELOCALIZACIÓN COMPACTADORA DE BASURA

SAN JUAN
Puerto Rico

REVISIONS

Rev	Date	Description
0	15 NOV 23	NEW DRAWING
1	15 FEB 24	GENERAL REVISION

File Name: .

Scale: AS SHOWN Date: FEB 2023

DRAWING TITLE

ELECTRICAL

DRAWING NO.

E-1