

Section VI. Specifications

Notes on Specifications

A set of precise and clear specifications is a prerequisite for Bidders to respond realistically and competitively to the requirements of the Procuring Entity without qualifying or conditioning their Bids. In the context of international competitive bidding, the specifications must be drafted to permit the widest possible competition and, at the same time, present a clear statement of the required standards of workmanship, materials, and performance of the goods and services to be procured. Only if this is done will the objectives of economy, efficiency, and fairness in procurement be realized, responsiveness of Bids be ensured, and the subsequent task of bid evaluation facilitated. The specifications should require that all goods and materials to be incorporated in the Works be new, unused, of the most recent or current models, and incorporate all recent improvements in design and materials unless provided otherwise in the Contract.

Samples of specifications from previous similar projects are useful in this respect. The use of metric units is mandatory. Most specifications are normally written specially by the Procuring Entity or its representative to suit the Works at hand. There is no standard set of Specifications for universal application in all sectors in all regions, but there are established principles and practices, which are reflected in these PBDs.

There are considerable advantages in standardizing General Specifications for repetitive Works in recognized public sectors, such as highways, ports, railways, urban housing, irrigation, and water supply, in the same country or region where similar conditions prevail. The General Specifications should cover all classes of workmanship, materials, and equipment commonly involved in construction, although not necessarily to be used in a particular Works Contract. Deletions or addenda should then adapt the General Specifications to the particular Works.

Care must be taken in drafting specifications to ensure that they are not restrictive. In the specification of standards for goods, materials, and workmanship, recognized international standards should be used as much as possible. Where other particular standards are used, whether national standards or other standards, the specifications should state that goods, materials, and workmanship that meet other authoritative standards, and which ensure substantially equal or higher quality than the standards mentioned, will also be acceptable. The following clause may be inserted in the SCC.

Sample Clause: Equivalency of Standards and Codes

Wherever reference is made in the Contract to specific standards and codes to be met by the goods and materials to be furnished, and work performed or tested, the provisions of the latest current edition or revision of the relevant standards and codes in effect shall apply, unless otherwise expressly stated in the Contract. Where such standards and codes are national, or relate to a particular country or region, other authoritative standards that ensure a substantially equal or higher quality than the standards and codes specified will be accepted

subject to the Procuring Entity's Representative's prior review and written consent. Differences between the standards specified and the proposed alternative standards shall be fully described in writing by the Contractor and submitted to the Procuring Entity's Representative at least twenty-eight (28) days prior to the date when the Contractor desires the Procuring Entity's Representative's consent. In the event the Procuring Entity's Representative determines that such proposed deviations do not ensure substantially equal or higher quality, the Contractor shall comply with the standards specified in the documents.

These notes are intended only as information for the Procuring Entity or the person drafting the Bidding Documents. They should not be included in the final Bidding Documents.



CITY ENGINEERING DEPARTMENT

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TECHNICAL SPECIFICATIONS **QUEZON CITY INFRASTRUCTURE PROJECT**

PROJECT TITLE : PROPOSED IMPROVEMENT OF NOVALICHES DISTRICT HOSPITAL (PHASE 3) /
LOCATION : BARANGAY SAN BARTOLOME, DISTRICT , QUEZON CITY /

I. GENERAL REQUIREMENTS

- a. Comply with the current and existing laws, ordinances and applicable codes, rules and regulations and standards. Any works perform contrary to the existing laws, rules and regulations, ordinances and standards without notice shall bear all cost arising therefrom.
- b. Drawings, specifications, codes and standards are minimum requirements. Where requirements differ, the more stringent apply.
- c. Should there be any change(s) in drawings or specifications, it is required to comply with the governing regulations, notify the implementing agency.
- d. Photographs shall be taken as, when and where directed at intervals of not more than one month. The photographs shall be sufficient in number and location to record the exact progress of the works. The photographs shall be retained and will become the property of the Government.
- e. Site verification / inspection shall be conducted to validate the scope of works. No extra compensation and extension of time shall be given due to negligence or inadvertence.
- f. The quality of materials shall be of the best grade of their respective kinds for the purpose. The work shall also be performed in the best and most capable manner in strict accordance with requirements of the plans and details. All materials not conforming to the requirements of these specifications shall be considered as defective.
- g. All equipment and installations shall meet or exceed minimum requirements of the standards and codes.
- h. Mobilization and Demobilization (if applicable)
 - i. Mobilization shall include all activities and related costs for transportation of personnel, equipment, and operating supplies to the site; establishment of offices, buildings, and other necessary general facilities for the operations at the site.
 - ii. Demobilization shall include all activities and costs for transportation of personnel, equipment, and supplies not anymore required within the construction site including the disassembly, removal and site clean-up of offices and other facilities assembled on the site specifically for this contract.
- i. Execute work in strict accordance with the best practices of the trades in a thorough, substantial, workmanlike manner by competent workmen. Provide a competent, experienced, full-time supervisor who is authorized to make decisions on behalf of the Contractor.
- j. Temporary Facilities and Utilities
 - i. All facilities shall be near the job site, where necessary and shall conform to the best standard for the required types.

- ii. Temporary facilities shall be provided and maintained including sanitary facilities and first aid stations.
 - iii. Temporary utilities shall be sufficiently provided until the completion of the project such as water, power and communication.
 - iv. Temporary enclosure shall be provided within the construction site with adequate guard lights, railings and proper signages.
 - v. Temporary roadways shall be constructed and maintained to sustain loads to be carried on them during the entire construction period.
 - vi. Upon completion of the work, the temporary facilities shall be demolished, hauled-out and disposed properly.
- k. Adequate construction safety and health protection shall be provided at all times during the execution of work to both workers and property.
- i. A fully trained Medical Aide shall be employed permanently on the site who shall be engaged solely from medical duties.
 - ii. The medical room shall be provided in waterproof; it could be a building or room designated and used exclusively for the purpose and have a floor area of at least 15 square meters and a glazed window area of at least 2 square meters.
 - iii. The location of the medical room and any other arrangements shall be made known to all employees by posting on prominent locations suitable notices in the site.
 - iv. Additional safety precautions shall be provided in the observance of pandemic. Protocols set-forth by the government shall be strictly followed.
- l. Necessary protections to the adjacent property shall be provided to avoid untoward incidents / accidents.
- m. Final cleaning of the work shall be employed prior to the final inspection for certification of final acceptance. Final cleaning shall be applied on each surface or unit of work and shall be of condition expected for a building cleaning and maintenance program.

II. SITE WORKS

- A. All grades, lines, levels and dimensions shall be verified as indicated on the plans and details. Any discrepancies or inconsistencies shall be reported before commencing to work.
- B. Removal / demolition of existing structures shall be done in accordance to safety procedures.
- C. All excavations shall be made to grade as indicated in the plans. Whenever water is encountered in the excavation process, it shall be removed by pumping, care being taken that the surrounding soil particles are not disturbed or removed.
- D. All backfills shall be placed in layers not exceeding to 150mm in thickness and each layer shall be thoroughly compacted wetting, tamping and rolling.

III. CIVIL / STRUCTURAL WORKS

A. CONCRETE WORK

- a. Delivery, Storage, and Handling: All materials shall be so delivered, stored, and handled as to prevent the inclusion of foreign materials and the damage of materials by water or breakage. Package materials shall be delivered and stored in original packages until ready to be used. Packages or materials showing evidence of water or other damage shall be rejected.
- b. Unless otherwise specified herein, concrete works shall conform to the requirements of the ACI Building Code. Full cooperation shall be given on trades to install embedded

items. Provisions shall be made for setting items not placed in the forms. Before concrete is placed, embedded items shall have been inspected and tested for concrete aggregates and other materials shall have been done.

c. Materials

- i. Cement for concrete shall conform to the requirements of specifications for Portland Cement (ASTM C – 150).
- ii. Water used in mixing concrete shall be clean and free from other injurious amounts of oils, acids, alkaline, organic materials or other substances that may be deleterious to concrete or steel.
- iii. Fine aggregates shall be beach or river sand conforming to ASTM C33, "Specification for Concrete Aggregates". Sand particle shall be coarse, sharp, clean free from salt, dust, loam, dirt and all foreign matters.
- iv. Coarse aggregates shall be either natural gravel or crushed rock conforming to the "Specifications for Concrete Aggregates (ASTM C33). The minimum size of aggregates shall be larger than one fifth (1/5) of the narrowest dimensions between sides of the forms within which the concrete is to be cast nor larger than three fourths (3/4) of the minimum clear spacing between reinforcing bars or between reinforcing bars and forms.

d. Proportioning and Mixing

- i. Proportioning and mixing of concrete shall conform to the requirements for Item 405 of the standard specification with the following proportions:

Cement : Sand : Gravel

- Class "A" - 1 : 2 : 3
- Class "B" - 1 : 2 : 4
- Class "C" - 1 : 2 ½

- ii. Concrete mixture to be used for concrete shall conform with the structural requirements.
- iii. Mixing – concrete shall be machine mixed. Mixing shall begin within 30 minutes after the cement has been added to the aggregates.

e. Forms

- i. General – Forms shall be used whatever necessary to confine the concrete and shape it to the required lines, or to insure the concrete of contamination with materials caving from adjacent, excavated surfaces. Forms shall have sufficient strength to withstand the pressure resulting from placement and vibration of the concrete, and shall be maintained rigidly in correct position. Forms shall be sufficiently tight to prevent loss or mortar from the concrete. Forms shall be ¼" waterproof plywood and form lumber.
- ii. Cleaning of Forms – before placing the concrete, the contact surfaces of the formed hall be cleaned of encrustations of mortar, the grout or other foreign material.
- iii. Removal of Forms – forms shall be removed in a manner which will prevent damage to the concrete. Forms shall not be removed without approval. Any repairs of surface imperfections shall be formed at once and airing shall be started as soon as the surface is sufficiently hard to permit it without further damage.

f. Placing Reinforcement:

Steel reinforcement shall be provided as indicated, together with all necessary wire tires, chairs, spacer supported and other devices necessary to install and secure the reinforcement properly. All reinforcement, when placed, shall be free from loose, flaky rust and scale, oil grease, clay and other coating and foreign substances that would reduce or destroy its bond with concrete. Reinforcement shall be placed accurately

and secured in place by use of metal or concrete supports, spacers and ties. Such supports shall be used in such manner that they will not be exposed or contribute in any way, to the discoloration or deterioration of the concrete.

g. Conveying and Placing Concrete:

- i. Conveying – concrete shall be conveyed from mixer to forms as rapidly as applicable, by methods which will prevent segregation, or loss of ingredients. There will be no vertical drop greater than 1.5 meters except where suitable equipment is provided to prevent segregation and where specifically authorized.
- ii. Placing – concrete shall be worked readily into the corners and angles of the forms and around all reinforcement and imbedded items without permitting the material to segregate, concrete shall be deposited as close as possible to its final position in the forms so that flow within the mass does not exceed two (2) meters and consequently segregation is reduced to a minimum near forms or embedded items, or elsewhere as directed, the discharge shall be so controlled that the concrete may be effectively compacted into horizontal layers not exceeding 30 centimeters in depth within the maximum lateral movement specified.
- iii. Time interval between mixing and placing. Concrete shall be placed before initial set has occurred and before it has contained its water content for more than 45 minutes. No concrete mix shall be placed before 60 complete revolution of the machine mixer.
- iv. Consolidation of Concrete – concrete shall be consolidated with the aid of mechanical vibrating equipment and supplemented by the hand spading and tamping. Vibrators shall not be inserted into lower cured that have commenced initial set; and reinforcement embedded in concrete beginning to set or already set shall not be disturbed by vibrators. Consolidation around major embedded parts shall by hand spading and tamping and vibrators shall not be used.
- v. Placing Concrete through reinforcement – In placing concrete through reinforcement, care shall be taken that no segregation of the coarse aggregate occurs. On the bottom of beams and slabs, where the congestion of steel near the forms makes placing difficult, a layer of mortar of the same cement-sand ratios as used in concrete shall be first deposited to cover the surfaces.

h. Curing

- i. General – All concrete shall be moist cured for a period not less than seven (7) consecutive days by an approved method or combination applicable to local conditions.
- ii. Moist Curing – The surface of the concrete shall be kept continuously wet by covering with burlap plastic or other approved materials thoroughly saturated with water and keeping the covering spraying or intermittent hosing.

i. Finishing

- i. Concrete surfaces shall not be plastered unless otherwise indicated. Exposed concrete surfaces shall be formed with plywood, and after removal of forms, the surfaces shall be smooth, true to line and shall present or finished appearance except for minor defects which can be easily repaired with patching with cement mortar, or can be ground to a smooth surface to remove all joint marks of the form works.
- ii. Concrete Slabs on Fill. The concrete slabs on fill shall be laid on a prepared foundation consisting of sub grade and granular fill with thickness equal to the thickness of the overlaying slab except when indicated.

B. MASONRY

- a. **Masonry Units (CHB):**
100mm thick for all interior walls and 125mm thick for all exterior walls unless otherwise indicated.

Use 400 psi for non-load bearing blocks and 700 psi for load bearing blocks where required.

Where full height walls are constructed with concrete hollow blocks, these shall extend up to the bottom of beam or slab unless otherwise indicated on plans. Provide stiffener columns & lintel beams as specified in the structural drawings or as specified or as deemed required to assure a stabilized wall due to height & other considerations.

- b. **Sand:**

S-1, washed, clean and greenish in color.

- c. **Mortar:**

One part "Portland" cement and two parts sand and water but not more than three parts sand and water.

- d. **Plaster bond:**

Apply plaster bond to all wall area.

C. METAL WORK

- a. **Description**

Metal works shall conform to the approved plans and to the Standard Specifications.

- b. **Reference Standards**

Comply with the latest edition of the following as applicable, unless otherwise specified or modified.

1. **AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), 1978:** Specification for the Design, Fabrication and Erection of Structural Steel for Buildings. Code of Standard Practice for Steel Buildings and Bridges; Specification for Architecturally Exposed Structural Steel.
2. **AMERICAN WELDING SOCIETY (AWS):** Standard Welding Symbols A2.068; Standard Welding Code D1 1-1973 (Rev 1-73 & 2-74) (To govern if in conflict with AISC)
3. **RESEARCH COUNCIL ON RIVETED AND BOLTED JOINTS OF THE ENGINEERING FOUNDATION (RCRBJ):** Specification for Structural Joists using ASTM A-325-76s Bolts.
4. **STRUCTURAL STEEL PAINTING COUNCIL (SSPC):** Painting Manual, Vol. 1; Good Painting Practice, Painting Manual, Vol. 2; Systems and Specifications.

- c. **Source Quality Control**

Errors of Shop Drawings, fabrication, correct fitting and alignment of the various metal items or component members shall be the responsibility of the Contractor. However, the Contractor shall permit the Architect or an independent inspection agency, if engaged by the Owner, to inspect work in progress in his shop. Such inspections shall not relieve the Contractor of his responsibility to furnish materials and workmanship in accordance with the Contract Documents.

d. Product Delivery, Handling and Storage

Handle and store in such manner as to prevent damage or disfigurement. Store finished items or components above ground on platforms, pallets or other supports and protect from harmful elements.

e. Protection

The Contractor shall protect any existing work subject to damage during the installation of the specified work and shall adequately protect specified work during installation.

f. Field Quality Control

Facilities shall be provided by the Contractor as needed for the proper inspection of the specified work, including temporary platforms, hoists, protective devices, electric current, etc. Improper workmanship, as determined by the Architect shall be corrected and replaced, at no additional cost to the Owner.

g. Materials

Products shall conform to the respective reference specifications and standards and to the requirements specified herein:

1. STEEL AND IRON: If not specified otherwise, use standard mill-finished structural steel shapes or bar iron in compliance with AISC Specifications for Design, Fabrication and Erection of Structural Steel for Buildings.
2. BOLTS, NUTS, STUDS AND RIVETS: ASTM A 307 & A 325
3. SCREWS: Fed. Spec. FF-S-85, Fed. Spec. FF-S-92, and Fed. Spec. FF-S-111

h. Fabrication

By mechanics skilled in the trade and in accordance with the manufacturer's directions, Metalwork shall be fabricated to allow for expansion and contraction of materials. Provide welding and bracing of adequate strength and durability, with tight, flush joints, dressed smooth and clean. Complete with bolts and nuts.

i. Measurements

Before fabrication, provide necessary field measurements and verify all measurements.

j. Metal Surfaces

Shall be clean and free from all scale, flake, rust, and rust pitting; well-formed and finished to shape and size, with sharp lines, angles and smooth surface. Shearing and punching shall leave clean true lines and surfaces. Weld or rivet permanent connections. Weld and flush rivets shall be used and finished flush smooth on surfaces that will be exposed after installation. Do not use screws or bolts where they can be avoided: when used, heads shall be countersunk, screwed up tight and threads nicked to prevent loosening.

k. Construction

Thickness of metals and details of assembly and supports shall give ample strength and stiffness for the minimum loads specified or indicated. Joints exposed to weather shall be formed to exclude water.

l. Shop Fabrication

Fabrication and assembly shall be done in the shop to the greatest extent possible.

m. Submittals

Shop Drawings. Submit along with catalogue, cuts, templates and erection and installation details, indicating thickness, type, grade, type of metal and dimensions. Show construction details, reinforcement, anchorage, and installation with relation to the construction.

n. Qualification of Welders

In accordance with AWS D1.1 with procedures, materials and equipment of the type required for the work.

o. Delivery and Storage

Protect from corrosion, deformation and other types of damage. Store items in an enclosed area free from contact with soil and weather. Contractor shall replace and removed damage items with new items.

p. Welding

Use welding electrode E70xx and perform welding, welding inspection and corrective welding in accordance with AWS D1.1. Weld in a manner to prevent permanent distortion of the connected parts. Weld continuously along the entire area of contact (except where lack welding is permitted. Do not lack weld exposed to connections.) Grind smooth visible weld in finished installation.

q. Metal Purlins

Metal purlins shall be of high grade galvanized steel with minimum tensile strength of 275 MPA, 1.4mm in thickness.

D. ROOFING WORKS

- a.** The roof shall be covered with Ga. 24 pre-painted G.I. rib-type roofing sheets as shown on the plans. The roofing shall be secured to the purlins with min. 2 ½" max. 3" long Tek screws. Ridge rolls, hip rolls and valleys to be used shall be those compatible with the Ga. 24 pre-painted G.I. rib-type roofing sheets. They shall lap the roofing sheets at least 250mm. The ridge rolls, hip rolls and valleys shall be riveted to the roofing sheets.
- b.** The roof shall be covered with 6mm thick Rib-type polycarbonate sheets as shown on the plans. The roofing shall be secured to the purlins with min. 2 ½" max. 3" long Tek screws. Ridge rolls, hip rolls and valleys to be used shall be those compatible with the 6mm thick solid polycarbonate sheets. They shall lap the roofing sheets at least 250mm. The ridge rolls, hip rolls and valleys shall be riveted to the roofing sheets.
- c.** All roofing sheets adjacent to concrete hollow block and other masonry walls such as property line firewalls, shall be provided with Gauge 26 pre-painted plain G.I. Flashing to extend to the top and over to the other side of the wall. All fasteners shall be placed at the top of the corrugations of the roofing sheets to prevent water from standing around the fasteners.

E. WATERPROOFING

a. Waterproofing:

Furnish all labor, materials, equipment, plant and other facilities required to complete all waterproofing work as shown on the drawings and herein specified. All applications shall be strictly performed by an approved waterproofing Contractor.

F. Testing:

Test waterproofed area by seventy-two (72) hours and check for any seepages.

Note: Thickness should be as per Manufacturers Specifications and Installation depending on the Areas to be applied with.

IV. ARCHITECTURAL WORKS

A. WALLS AND FLOOR FINISHES

- a. 300mm x 300mm Unglazed Ceramic Tiles including tile adhesive
- b. 50mm Concrete Topping for Tiles
- c. 300mm x 300mm Ceramic Wall Tiles

B. CEILING FINISHES

- a. 12mm thk gypsum board on metal furring
- b. 12mm thk moisture resistant gypsum board on metal furring

C. DOORS & WINDOWS

- a. Follow as per approved plan and specifications

D. PAINTING WORKS

- a. All primers, thinners and putty, also waterproofing for internal and external application shall be the same brand as the specified material.
- b. Application shall be as per paint Manufacturer's specification and recommendation.
- c. Provide all drop cloth and other covering requisite for protection of floors, walls, aluminum, glass, finishes and other works.
- d. All applications and methods used shall strictly follow the Manufacturer's Instructions and Specifications.
- e. All surfaces including masonry wall shall be thoroughly cleaned, puttied, sandpapered, rubbed and polished; masonry wall shall be treated with Neutralizer.
- f. All exposed finish hardware, lighting fixtures and accessories, glass and the like shall be adequately protected so that these are not stained with paint and other painting materials prior to painting works.
- g. All other surfaces endangered by stains and paint marks should be taped and covered with craft paper.

V. SANITARY / PLUMBING WORKS

- A. Comply with the current applicable codes, ordinances, and regulations of the authority or authorities having jurisdiction, the rules, regulations and requirements of the utility companies (as applicable).
- B. Supply, installation and testing of the following:

- B.1 Potable water supply system complete in all respects including but not limited to submittals, shop drawings, piping, water meters, valves, bibbs, insulation, all accessories required for complete and operational of the system.
- B.2 Water service connections including but not limited to water meters, float valves. Any and all other works involve in providing the complete operation of the water supply system.
- B.3 Soil waste and vent system complete in all respect including but not limited to connection to existing sewer, submittals, shop drawings, pipes, fittings, valves, cleanout, drains, etc. Complete and operational.
- B.4 Storm drainage system complete in all respect including but not limited to connection to existing storm drainage, submittals, shop drawings, pipes, fittings, valves, cleanout, drains, etc. Complete and operational.
- C. Workmanship and installation methods shall conform to the best modern practice. Employ skilled tradesmen to perform work under the direct supervision of fully qualified personnel.
- D. All equipment and installations shall meet or exceed minimum requirements of the Standards and Codes as specified in plans and program of work.
- E. Install equipment in strict accordance with manufacturers written recommendations.
- F. Physical sizes of all plant and equipment are to be suitable for the space allocated for the accommodation of such plant and equipment, taking into account the requirement of access for maintenance purposes.
- G. In selecting makes and types of equipment, the Contractor shall ascertain that facilities for proper maintenance, repair and replacement are provided.
- H. Where the Contractor proposes to use an item of equipment other than that specified or detailed in the drawing, which requires any redesign of the system, drawings showing the layout of the equipment and such redesign as required therefore shall be prepared by the Contractor at his own expenses. Where such approved deviation necessitates a different quantity and arrangement of materials and equipment's from that originally specified or indicated in the drawings, the Contractor shall furnish and install any such additional materials and equipment's required by the system at no additional cost.
- I. Equipment catalogue and manufacturer's specifications must be submitted for examination and details shall be submitted for approval before any equipment is to be ordered.
- J. This shall include all information necessary to ascertain the equipment comply with this specification and drawings. Data and sales catalogue of a general nature will not be accepted.
- K. All materials, equipment, components and accessories shall be delivered to the Site in a new condition, properly packed and protected against damage or contamination or distortion, breakage or structural weakening due to handling, adverse weather or other circumstances and, as far as practicable, they shall be kept in the packing cases or under approved protective coverings until required for use.
- L. Any items suffering from damage during manufacture, or in transit, or on site whilst in storage or during erection shall be rejected and replaced without extra cost.
- M. All sanitary fittings and pipework shall be cleaned after installation and keep them in a new condition.
- N. All installed pipelines shall be flushed through with water, rodded when necessary to ensure clearance of debris.
- O. Cleaning and flushing shall be carried out in sections as the installation becomes completed.
- P. The Contractor shall carry out hydraulic test on the complete plumbing systems and the drainage system to show that it is functioning satisfactorily within the requirements of this Specification and local regulations.

- Q. The Contractor shall provide suitable test pumps and arrange for a supply of water required in connection with testing of pipework. The test pump shall be fitted with pressure gauges which shall be of suitable range for the pressure being applied.
- R. Hydraulic tests shall be carried out as the pipework is installed and shall be completed before chases in walls and ducts are closed. Also test shall be carried out prior to false ceilings and other finishes are installed.
- S. Testing apparatus shall be provided by the Contractor. Where any section of pipework or equipment is unable to withstand the maximum pipework test pressure, it shall be isolated during the pipework test then that section of pipework or equipment shall be re-tested at the appropriate test pressure.
- T. The Sanitary Contractor must carry out any additional tests required by the end-user and/or approving agency.
- U. Drainage pipe shall be tested by filling the pipe with 3m. of water higher than the test section and wait for 15 min, then check for leakage at every joints.
- V. Testing of drainage systems shall be carried out in sections by dividing the system horizontally. Each section shall comprise pipework and fitting for three floors/storeys required for testing.
- W. Drainage pressure pipe shall be hydraulic tested at minimum pressure 50 psi.
- X. Hangers and supports for plumbing piping and equipment shall withstand the effects of gravity loads and stresses within limits and under conditions indicated according to ASCE/SEI 7.
- Y. Install hangers and supports to allow controlled thermal and seismic movement of piping systems, to permit freedom of movement between pipe anchors, and to facilitate action of expansion joints, expansion loops, expansion bends, and similar units.
- Z. Install lateral bracing with pipe hangers and supports to prevent swaying.
- AA. Install building attachments within concrete slabs or attach to structural steel. Install additional attachments at concentrated loads, including valves, flanges, and strainers, NPS 2-1/2 (DN 65) and larger and at changes in direction of piping. Install concrete inserts before concrete is placed; fasten inserts to forms and install reinforcing bars through openings at top of inserts.
- BB. Install hangers and supports so that piping live and dead loads and stresses from movement will not be transmitted to connected equipment.
- CC. Install hangers and supports to provide indicated pipe slopes and to not exceed maximum pipe deflections allowed by ASME B31.9 for building services piping.

VI. ELECTRICAL WORKS

- A. Comply with the current applicable codes, ordinances, and regulations of the authority or authorities having jurisdiction, the rules, regulations and requirements of the utility companies (as applicable).
- B. Drawings, specifications, codes and standards are minimum requirements. Where requirements differ, the more stringent apply.
- C. All equipment and installations shall meet or exceed minimum requirements of the Standards and Codes.
- D. Execute work in strict accordance with the best practices of the trades in a thorough, substantial, workmanlike manner by competent workmen.
- E. When the tests and inspections have been completed, a label shall be attached to all devices tested. The label shall provide the name of the testing company, the date the tests were completed, and the initials of the person who performed the tests.

F. PANELBOARDS

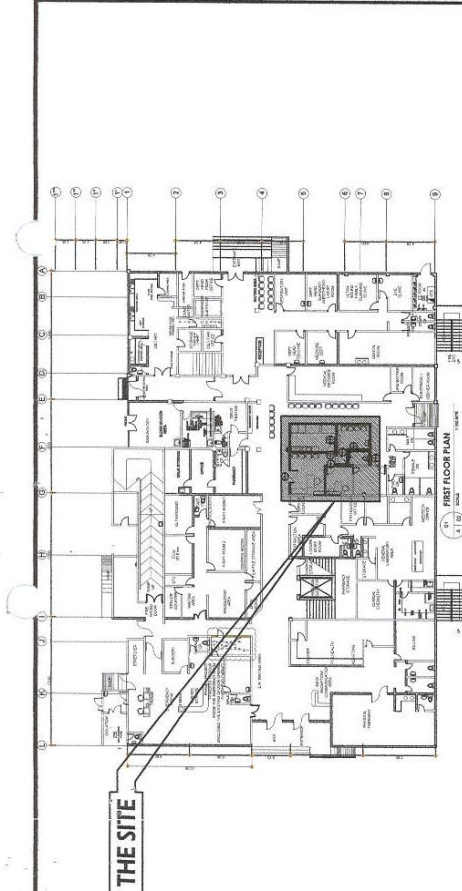
- F.1 Fabricate and test panelboards according to IEEE 344 to withstand seismic forces defined in Division 16 Sections 16073 and 16074 "Hangers and Supports for Electrical Systems and Vibration and Seismic controls for Electrical Systems" respectively.
- F.2 Enclosures: Flush, Surface, Flush- and surface-mounted cabinets.
- F.2.1 Rated for environmental conditions at installed location.
- i. Indoor Dry and Clean Locations: NEMA 250, Type 1.
 - ii. Outdoor Locations: NEMA 250, Type 3R.
 - iii. Kitchen and Wash-Down Areas: NEMA 250, Type 4X, stainless steel.
 - iv. Other Wet or Damp Indoor Locations: NEMA 250, Type 4.
 - v. Indoor Locations Subject to Dust, Falling Dirt, and Dripping Noncorrosive Liquids: NEMA 250, Type 5 or Type 12.
- F.2.2 Front: Secured to box with concealed trim clamps. For surface-mounted fronts, match box dimensions; for flush-mounted fronts, overlap box.
- F.2.3 Hinged Front Cover: Entire front trim hinged to box and with standard door within hinged trim cover.
- F.2.4 Skirt for Surface-Mounted Panelboards: Same gage and finish as panelboard front with flanges for attachment to panelboard, wall, and ceiling or floor.
- F.2.5 Gutter Extension and Barrier: Same gage and finish as panelboard enclosure; integral with enclosure body. Arrange to isolate individual panel sections.
- F.2.6 Finishes:
- i. Panels and Trim: Steel and galvanized steel, factory finished immediately after cleaning and pretreating with manufacturer's standard two-coat, baked-on finish consisting of prime coat and thermosetting topcoat.
 - ii. Back Boxes: Galvanized steel Same finish as panels and trim.
 - iii. Fungus Proofing: Permanent fungicidal treatment for overcurrent protective devices and other components.
- F.2.7 Directory Card: Inside panelboard door, mounted in transparent card holder metal frame with transparent protective cover.
- F.3 Incoming Mains Location: Top or Bottom.
- F.4 Phase, Neutral, and Ground Buses:
- F.4.1 Material: Hard-drawn copper, 98 percent conductivity.
- F.4.2 Equipment Ground Bus: Adequate for feeder and branch-circuit equipment grounding conductors; bonded to box.
- F.4.3 Neutral Bus: 100 percent of phase bus 4. Extra-Capacity Neutral Bus: Neutral bus rated 200 percent of phase bus and UL listed as suitable for nonlinear loads.


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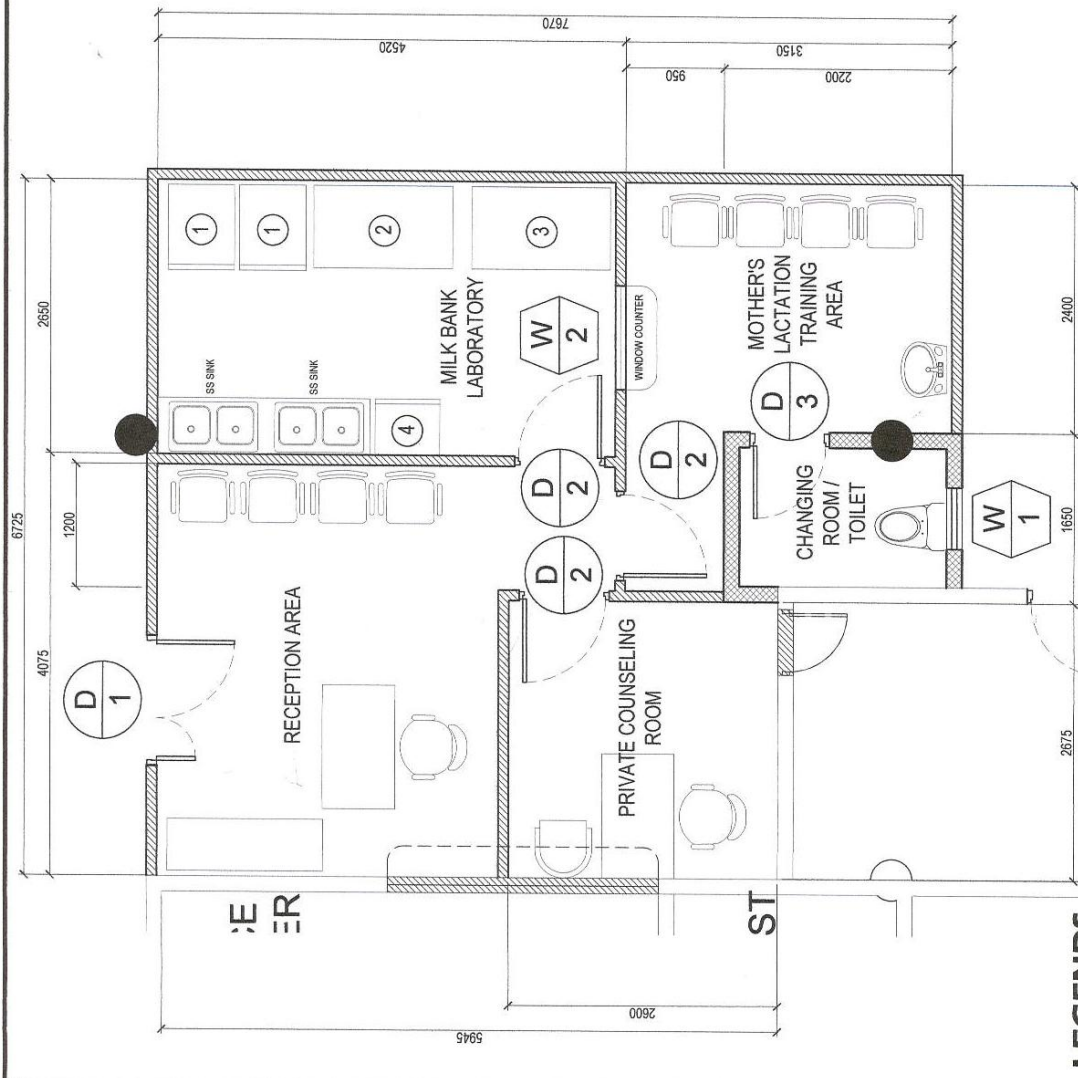
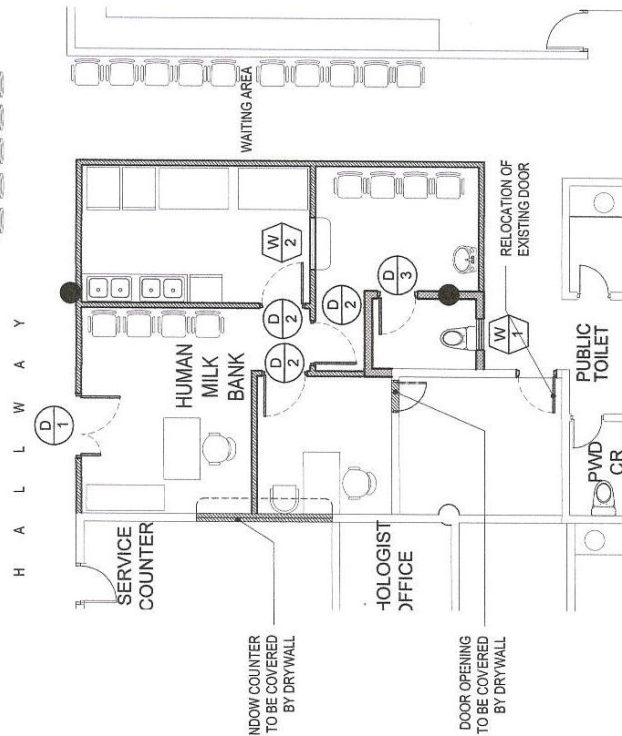
Section VII. Drawings

[Insert here a list of Drawings. The actual Drawings, including site plans, should be attached to this section, or annexed in a separate folder.]



KEY PLAN

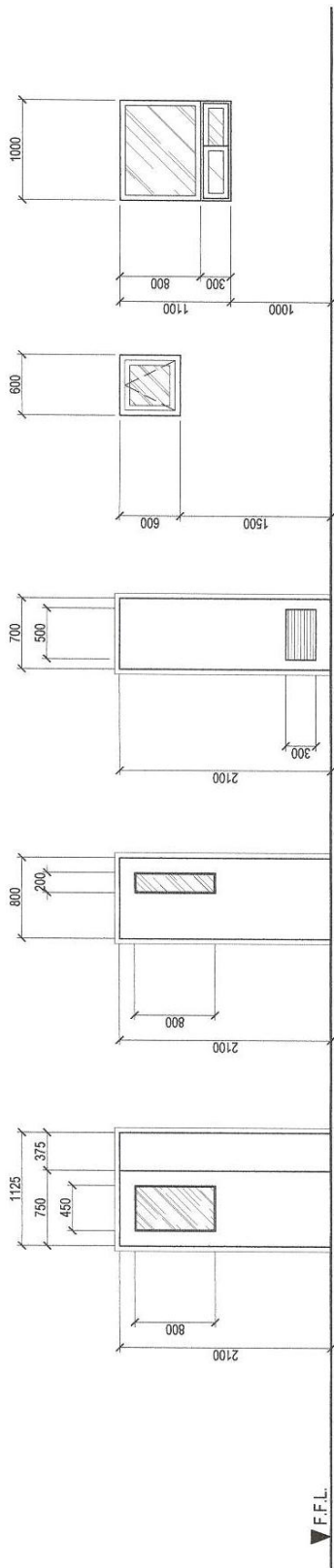
PART OF WAITING AREA



LEGENDS

1	PHARMACEUTICAL REFRIGERATOR	EXISTING WALL PARTITION
2	WORKING AREA	NEW CONCRETE WALL PARTITION
3	LAMINAR FLOW CABINET	NEW DRYWALL PARTITION
4	HUMAN MILK PASTEURIZER	

FLOOR PLAN		3 BLOW UP PLAN OF HUMAN MILK BANK		SCALE 1:50 METERS	
PROVIDES: ARCHITECT H. CHUA, RAJAPALAYAM, COIMBATORE ENGR. CAGAN R. VERZOSA, JR., CITY ENGINEER		APPROVED BY: HON. MA. JOSEFINA G. BELMONTÉ, U.C.		PROJECT TITLE: PROPOSED IMPROVEMENT OF NOVALICHES DISTRICT HOSPITAL PHASE 3	
RECOMMENDING APPROVAL ARCHITECT H. CHUA, RAJAPALAYAM, COIMBATORE		SHEET CONTENTS: FLOOR PLAN BLOW-UP PLAN OF HUMAN MILK BANK		PROJECT NO.: HMB AR-01	
CITY ARCHITECT DEPARTMENT ST. CECILIA'S DISTRICT HOSPITAL COIMBATORE		DATE: JULY 2021		CHECKED BY: AR. R.G. RAO	



▼ F.F.L.

(D1) (D2) (D3) (W1) (W2)

DESIGNATION	LOCATION	TYPE & DESCRIPTION	FINISH	HARDWARE & ACCESSORIES	QUANTITY	REMARKS
(D1)	HUMAN MILK BANK MAIN DOOR	SWING TYPE FLUSH HOLLOW CORE DOUBLE DOOR WITH 12mm THK. MARINE PLYWOOD ON BOTH SIDE. PROVIDE GLASS VIEW PANEL	PAINTED FINISH	COMPLETE	1 SET	
(D2)	PRIVATE COUNSELING ROOM MILK BANK LABORATORY MOTHER'S LACTATION TRAINING AREA	SWING TYPE FLUSH HOLLOW CORE DOOR WITH 12mm THK. ORDINARY PLYWOOD ON BOTH SIDES. PROVIDE GLASS VIEW PANEL	PAINTED FINISH	COMPLETE	3 SETS	
(D3)	CHANGING ROOM / TOILET	SWING TYPE FLUSH HOLLOW CORE DOOR WITH 12mm THK. MARINE PLYWOOD ON BOTH SIDE. PROVIDE LOUVERS	PAINTED FINISH	COMPLETE	1 SETS	

DESIGNATION	LOCATION	TYPE & DESCRIPTION	FINISH	HARDWARE & ACCESSORIES	QUANTITY	REMARKS
(W1)	CHANGING ROOM / TOILET	ALUMINUM POWDER COATED AWNING WINDOW	PAINTED FINISH	COMPLETE	1 SET	
(W2)	MILK BANK LABORATORY / MOTHER'S LACTATION TRAINING AREA	TEMPERED FIXED GLASS W/ SLIDING WINDOW	PAINTED FINISH	COMPLETE	1 SET	

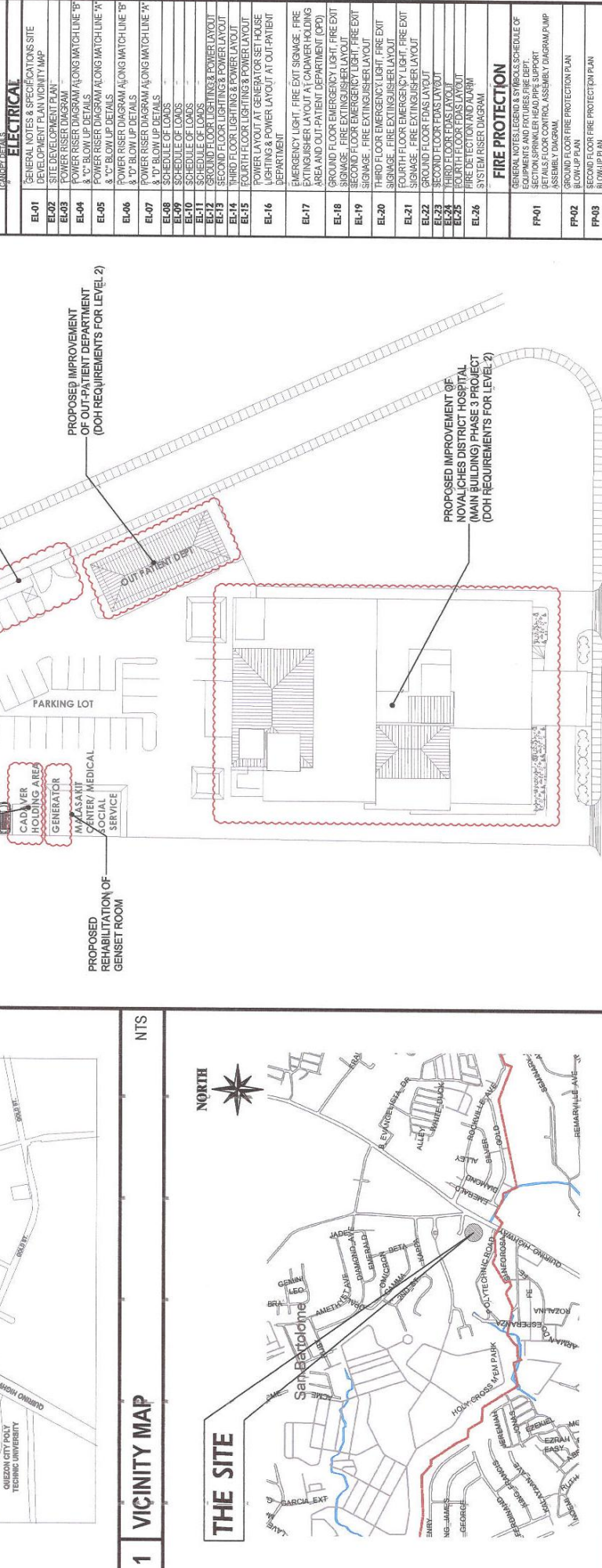
NOTES:

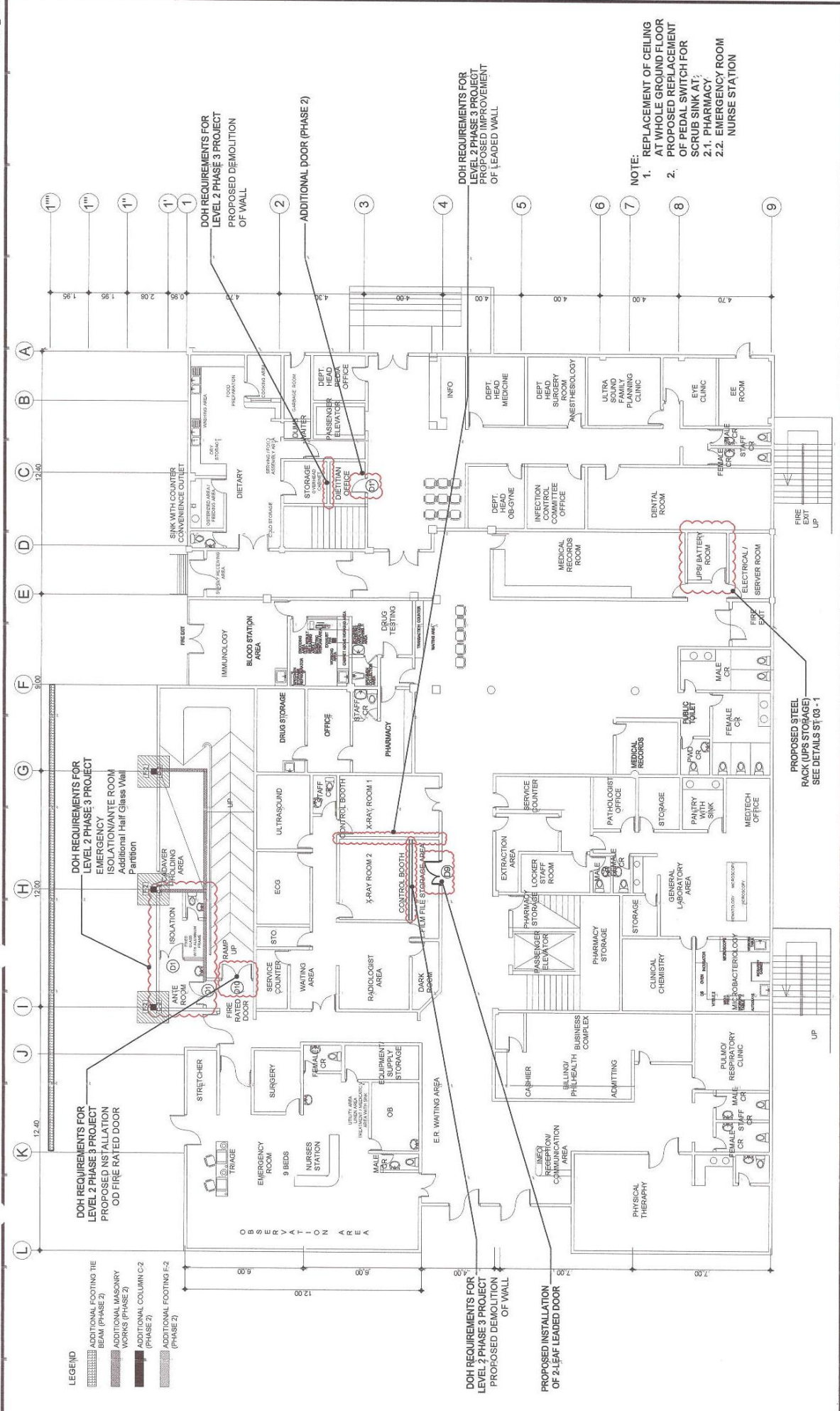
1. VERIFY ALL DIMENSIONS AT THE PROJECT SITE PRIOR TO FABRICATION AND INSTALLATION.
2. REFER TO ARCHITECT'S SPECIFICATIONS FOR ALL MATERIALS AND FINISHES.
3. ALL WOOD MEMBERS (JAMBS, PLATES, SILLS, ETC.) THAT SHALL BE IN CONTACT WITH CONCRETE SHALL BE APPLIED WITH COALTAR PRIOR TO INSTALLATION.
4. SUBMIT SHOP DRAWING AND SAMPLES OF ITEMS REQUIRED BY THE ARCHITECT FOR APPROVAL BEFORE FABRICATION AND IMPLEMENTATION.
5. NOTIFY THE ARCHITECT AS SOON AS POSSIBLE FOR ANY DISCREPANCY OR PROBLEMS ON THE PROJECT FOR HIS DECISION AND RECOMMENDATION.

SCHEDULE OF DOORS AND WINDOWS

SCALE 1:50 METERS

CITY ARCHITECT DEPARTMENT REPUBLIC OF PHILIPPINES LINGGAT NG QUAPO 3F CIVIC CENTER - 3RD BLDG. QUEZON CITY HALL COMPOUND QUEZON CITY, PHILIPPINES		PROVIDOR: ARCH. LUCILLE H. CHUA, Insp. Insp CITY PROJECT	RECOMMENDING APPROVAL ENGR. JOSEFINA G. BELMONTÉ, JR. CITY ENGINEER	APPROVED BY: HON. MA. JOSEFINA G. BELMONTÉ, JR. MAJOR	PROJECT TITLE: PROPOSED IMPROVEMENT OF NOVALICHES DISTRICT HOSPITAL PHASE 3 LOCATION: BEST SAN BARDOQUE QUERON CITY	SHEET CONTENTS: DOORS & WINDOWS SCHEDULE	PROJECT NO.: PROJECT NO.:	SHEET NO.: HMB AR-02
---	--	---	--	--	--	--	---	------------------------------------

THE SITE  1 VICINITY MAP	THE SITE  3 SITE DEVELOPMENT PLAN	2 LOCATION MAP PROJECT TITLE : PROPOSED IMPROVEMENT OF NOVALICHES DISTRICT HOSPITAL (PHASE 3) LOCATION : SAN BARTOLOME, DISTRICT 5, QUEZON CITY REPUBLIC OF THE PHILIPPINES Lungsod ng Quezon CITY ENGINEERING DEPARTMENT DRAWN BY: RYM DATE: 09/25/2021 CHECKED BY: JAY REVISION NO.: SUBMITTED BY: ENGR. LEO S. DEL ROSARIO HEAD, PLANNING & PROGRAMMING DIVISION RECOMMENDING APPROVAL: ENGR. ISAGANI R. VERZOSA, JR. QC CITY ENGINEERING DEPARTMENT APPROVED BY: HON. MA. JOSEFINA G. BELMONTE CITY MAJOR, QUEZON CITY SHEET NO. AR-01 142
TABLE OF CONTENTS ARCHITECTURAL AR-01 VICINITY MAP LOCATION MAP AR-02 SITE DEVELOPMENT PLAN AR-03 GROUND FLOOR PLAN AR-04 SECOND FLOOR PLAN AR-05 THIRD FLOOR PLAN AR-06 FOURTH FLOOR PLAN AR-07 CADAVER HOLDING AREA FLOOR PLAN AR-08 OUTPATIENT DEPARTMENT (OPD) FLOOR PLAN AR-09 SCHEDULE OF DOORS AND WINDOWS AR-10 GROUND FLOOR, SECOND AND PROPOSED PLAN STRUCTURAL ST-01 GENERAL NOTES ST-02 COLUMN DETAILS ST-03 WALL FOOTING DETAILS ST-04 WALL DETAIL ST-05 BEAM DETAILS ST-06 UPS STEEL RACK STEEL CABINET (AT EQUIPMENT STORAGE) ST-07 WINDOW COUNTER DETAILS ST-08 WIDE FLANGE & STEEL JOCKET FOR BEAM DETAILS ST-09 JOIST DETAILS ST-10 FLOOR SLAB DETAIL ST-11 ROOF SLAB DETAIL ST-12 ROOF RIGID JOINT DETAIL ST-13 ROOF RIGID JOINT DETAIL ST-14 ROOF RIGID JOINT DETAIL ST-15 ROOF RIGID JOINT DETAIL ST-16 ROOF RIGID JOINT DETAIL ST-17 ROOF RIGID JOINT DETAIL ST-18 ROOF RIGID JOINT DETAIL ST-19 ROOF RIGID JOINT DETAIL ST-20 ROOF RIGID JOINT DETAIL ST-21 ROOF RIGID JOINT DETAIL ST-22 ROOF RIGID JOINT DETAIL ST-23 ROOF RIGID JOINT DETAIL ST-24 ROOF RIGID JOINT DETAIL ST-25 ROOF RIGID JOINT DETAIL ST-26 ROOF RIGID JOINT DETAIL ELECTRICAL EL-01 GENERAL NOTES & SPECIFICATIONS SITE DEVELOPMENT PLAN VICINITY MAP EL-02 SITE DEVELOPMENT PLAN EL-03 POWER RISER DIAGRAM EL-04 POWER RISER DIAGRAM ALONG MATCH LINE "B" & "C" BLOW UP DETAILS EL-05 POWER RISER DIAGRAM ALONG MATCH LINE "A" & "C" BLOW UP DETAILS EL-06 POWER RISER DIAGRAM ALONG MATCH LINE "B" & "C" BLOW UP DETAILS EL-07 POWER RISER DIAGRAM ALONG MATCH LINE "A" & "C" BLOW UP DETAILS EL-08 POWER RISER DIAGRAM ALONG MATCH LINE "A" & "C" BLOW UP DETAILS EL-09 SCHEDULE OF LOADS EL-10 SCHEDULE OF LOADS EL-11 SCHEDULE OF LOADS EL-12 GROUND FLOOR LIGHTING & POWER LAYOUT EL-13 SECOND FLOOR LIGHTING & POWER LAYOUT EL-14 THIRD FLOOR LIGHTING & POWER LAYOUT EL-15 FOURTH FLOOR LIGHTING & POWER LAYOUT EL-16 WORK LAYOUT AT GENSER FOR SET HOUSE LIGHTING & POWER LAYOUT AT OUTPATIENT DEPARTMENT EL-17 EMERGENCY LIGHT, FIRE EXIT SIGNAGE, FIRE RISER DIAGRAM ALONG MATCH LINE "A" AND OUTPATIENT DEPARTMENT (OPD) EL-18 GROUND FLOOR EMERGENCY LIGHT, FIRE EXIT SIGNAGE, FIRE EXTINGUISHER LAYOUT EL-19 SECOND FLOOR EMERGENCY LIGHT, FIRE EXIT SIGNAGE, FIRE EXTINGUISHER LAYOUT EL-20 THIRD FLOOR EMERGENCY LIGHT, FIRE EXIT SIGNAGE, FIRE EXTINGUISHER LAYOUT EL-21 FOURTH FLOOR EMERGENCY LIGHT, FIRE EXIT SIGNAGE, FIRE EXTINGUISHER LAYOUT EL-22 SECOND FLOOR FAS LAYOUT EL-23 THIRD FLOOR FAS LAYOUT EL-24 FOURTH FLOOR FAS LAYOUT EL-25 FIRE EXTINGUISHER LAYOUT EL-26 SYSTEM RISER DIAGRAM FIRE PROTECTION FP-01 GENERAL NOTES, LEGEND & SYMBOLS, SCHEDULE OF EQUIPMENTS AND FIXTURES, FIRE DEPT. SECTION SPRINKLER HEAD FIRE SUPPORT, FIRE EXTINGUISHER, FIRE EXTINGUISHER ASSEMBLY DIAGRAM FP-02 GROUND FLOOR FIRE PROTECTION PLAN FP-03 SECOND FLOOR FIRE PROTECTION PLAN FP-04 THIRD FLOOR FIRE PROTECTION PLAN FP-05 FOURTH FLOOR FIRE PROTECTION PLAN	NTS NTS	NTS NTS



1 GROUND FLOOR PLAN		NTS	
PROJECT TITLE:		SUBMITTED BY:	
DRAWN BY: RYBN		DATE: 06/25/2021	
CHECKED BY: JN		REVISION NO.:	
PROPOSED IMPROVEMENT OF NOVALICHES DISTRICT HOSPITAL (PHASE 3)		RECOMMENDING APPROVAL:	
LOCATION: BARANGAY SAN BARTOLOME, DISTRICT 5, QUEZON CITY		APPROVED BY:	
REPUBLICA NG PILIPINAS Lungsod ng Quezon CITY ENGINEERING DEPARTMENT		SHEET NO.	
SHEET CONTENT		GROUND FLOOR PLAN	
HON. MA. JOSEFINA G. BELMONTE CITY MAYOR, QUEZON CITY		AR-02 2/42	

LEGEND

ADDITIONAL BEAM
(PHASE 2)

ADDITIONAL COLUMN C-2
(PHASE 2)
ADDITIONAL COLUMN PC
(PHASE 2)

ADDITIONAL WIDE FLANGE
BEAM AND STEEL JACKET
SEE DETAILS ST 03 - 4

DOH REQUIREMENTS FOR
LEVEL 2 PHASE 3 PROJECT
PROPOSED INSTALLATION
OF FIRE RATED DOOR

GOING TO THIRD FLOOR LEVEL

GOING TO 2ND FLOOR

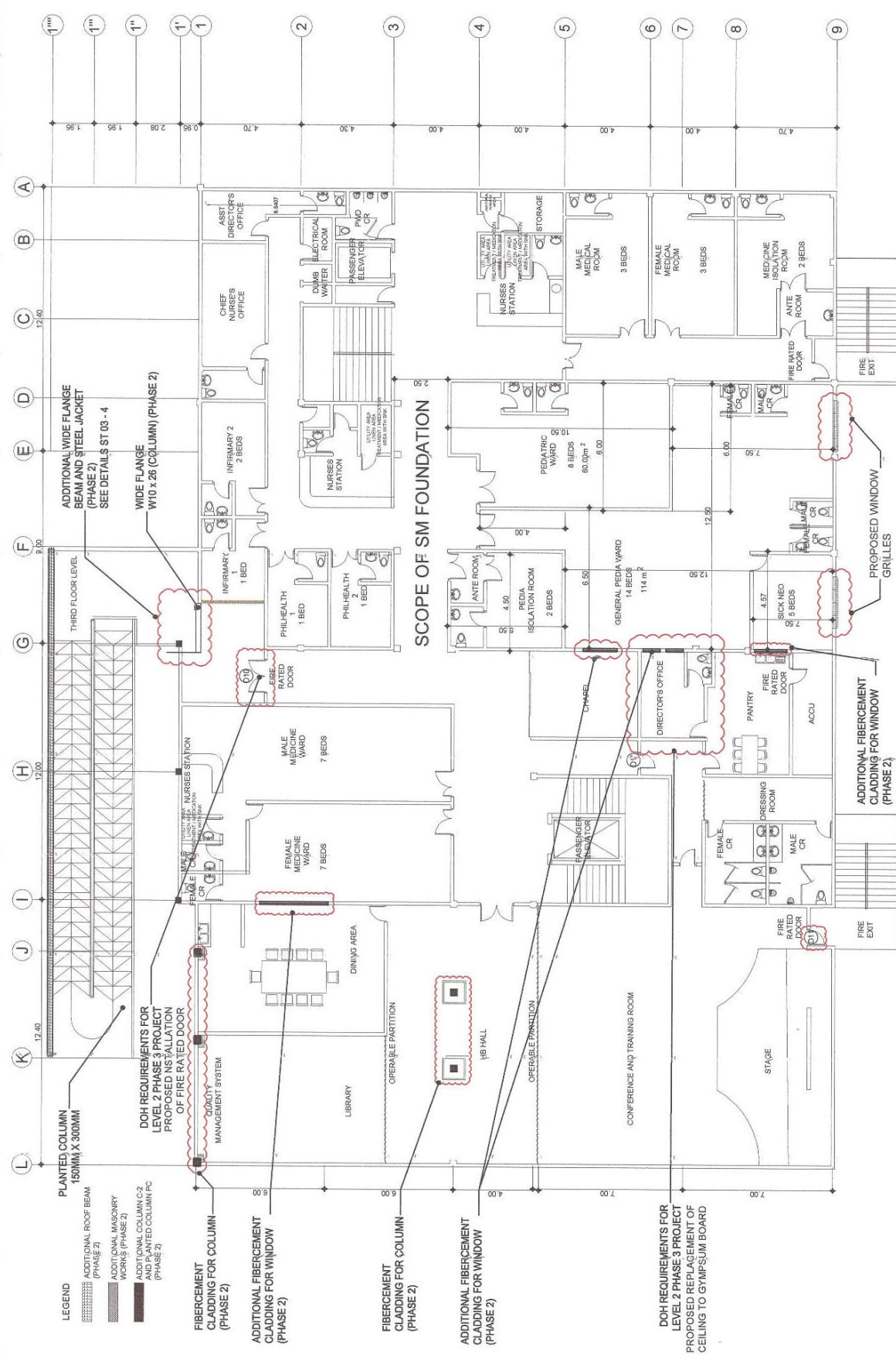
NOTE:

1. PROPOSED REPLACEMENT
OF PEDAL SWITCH FOR
SCRUB SINK AT:
1.1. OPERATING ROOM
1.2. DELIVERY ROOM

1 SECOND FLOOR PLAN

NTS

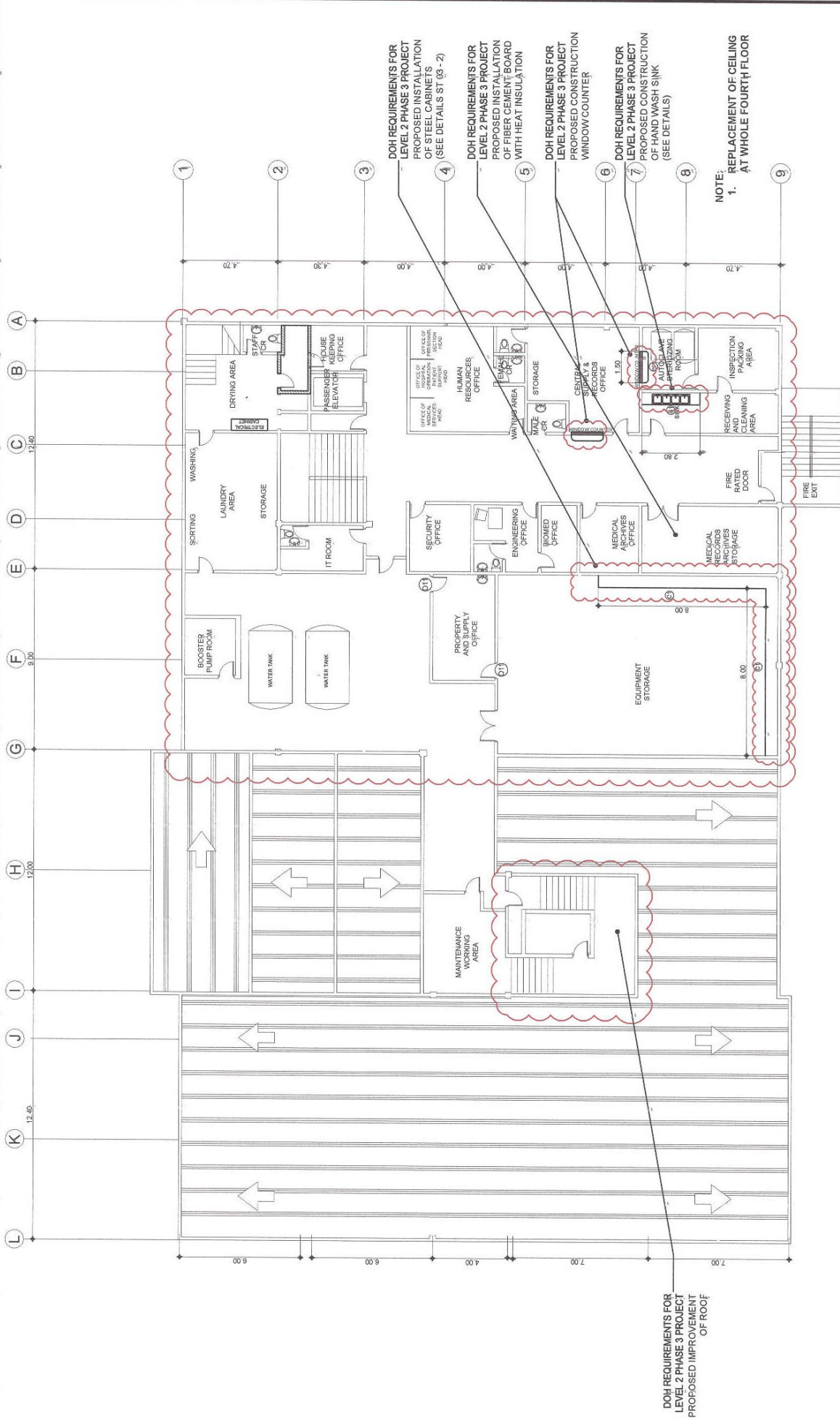
 Republika ng Pilipinas Lungsod ng Quezon CITY ENGINEERING DEPARTMENT	PROJECT TITLE: PROPOSED IMPROVEMENT OF NOVALICHES DISTRICT HOSPITAL (PHASE 3)	DRAWN BY: RYBN	SUBMITTED BY: 	RECOMMENDING APPROVAL:  ENGR. SAGAMI R. VERZOSA, JR. DCC OF ENGINEERING DEPARTMENT	APPROVED BY:  HON. MA. JOSEFINA G. BELMONTE CITY MAYOR, QUEZON CITY	SHEET CONTENT SECOND FLOOR PLAN	 AR-03 342
		LOCATION: BARANGAY SAN BARTOLOME, DISTRICT 5, QUEZON CITY	DATE: 06/25/2021	CHECKED BY: JAY	REVISION NO.:		



1 THIRD FLOOR PLAN

NTS

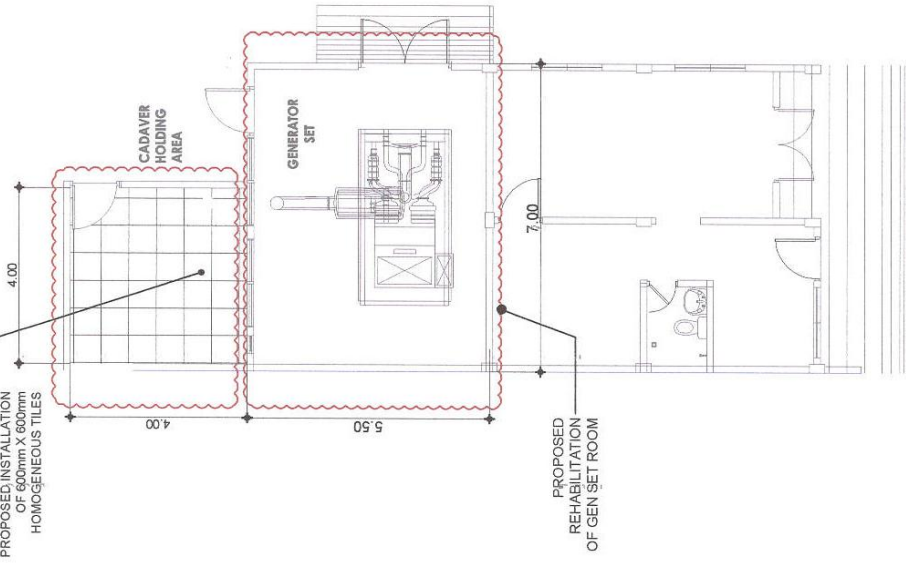
 Republika ng Pilipinas Lungsod ng Quezon CITY ENGINEERING DEPARTMENT	PROJECT TITLE : PROPOSED IMPROVEMENT OF NOVALICHES DISTRICT HOSPITAL (PHASE 3)		SUBMITTED BY:  ENGR. LEOS S. DEL ROSARIO HEAD, PLANNING & PROGRAMMING DIVISION	RECOMMENDING APPROVAL:  ENGR. SAGAMI R. VERZOSA, JR. OIC, CIVIL ENGINEERING DEPARTMENT	APPROVED BY: HON. MA. JOSEFINA G. BELMONT CITY MAYOR, QUEZON CITY	SHEET CONTENT THIRD FLOOR PLAN	SHEET NO. 
	LOCATION : BARANGAY SAN BARTOLOME, DISTRICT 5, QUEZON CITY		DATE: 06/25/2021	CHECKED BY : 			
			REVISION NO. :				



1 FOURTH FLOOR PLAN

 Republica ng Pilipinas Lungsod ng Quezon CITY ENGINEERING DEPARTMENT	PROJECT TITLE: PROPOSED IMPROVEMENT OF NOVALICHES DISTRICT HOSPITAL (PHASE 3)		DRAWN BY: RYBN DATE: 06/20/2021	SUBMITTED BY:  ENGR. LEO S. DEL ROSARIO HEAD, PLANNING & PROGRAMMING GROUP	RECOMMENDING APPROVAL:  ENGR. ISAGANI R. VERZOSA, JR. OC, CIVIL ENGINEERING DEPARTMENT	APPROVED BY: HON. MA. JOSEFINA G. BELMONTE CITY MAYOR, QUEZON CITY	SHEET CONTENT: FOURTH FLOOR PLAN	SHEET NO. 
	LOCATION: BARANGAY SAN BARTOLOME, DISTRICT 5, QUEZON CITY		CHECKED BY: JMF REVISION NO.:					

DOH REQUIREMENTS FOR
LEVEL 2 PHASE 3 PROJECT
PROPOSED INSTALLATION
OF 600mm X 600mm
HOMOGENEOUS TILES

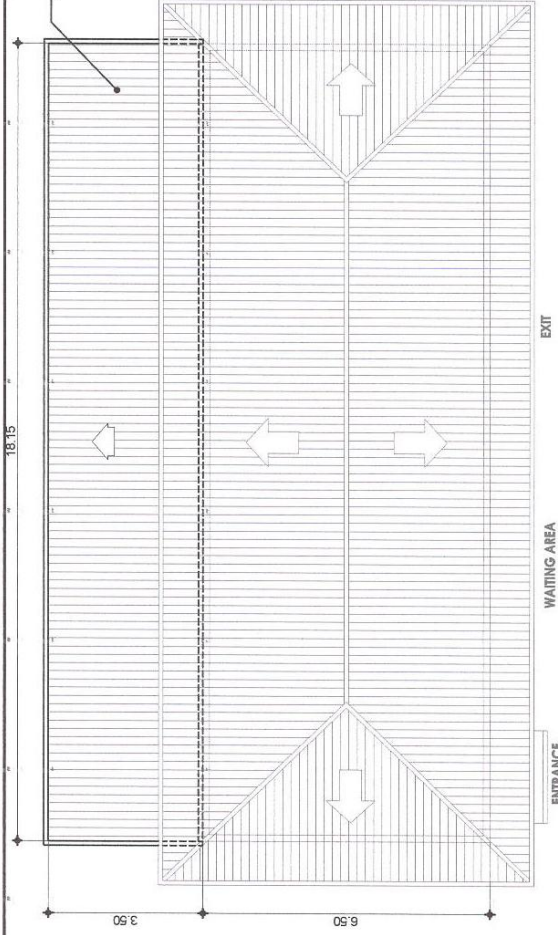


NOTE:
1. REPAINTING OF INTERIOR
AND EXTERIOR WALLS

2 OUT-PATIENT DEPARTMENT (OPD) FLOOR PLAN

NTS

PROPOSED REPLACEMENT
OF G.I. ROOFING



3 OUT-PATIENT DEPARTMENT (OPD) ROOF PLAN

NTS

WAITING AREA

ENTRANCE

EXIT

PROJECT TITLE :

PROPOSED IMPROVEMENT
OF NOVALICHES DISTRICT HOSPITAL
(PHASE 3).

LOCATION :
BARANGAY SAN BARTOLOME, DISTRICT 5, QUEZON CITY

DRAWN BY: RBN

DATE: 06/25/2021

CHECKED BY: JEN

REVISION NO.:

SUBMITTED BY:

ENGR. LEO S. DEL ROSARIO
HEAD, PLANNING & PROGRAMMING DIVISION

RECOMMENDING APPROVAL:

ENGR. ISAGAN R. VERZOSA, JR.
OIC, CIVIL ENGINEERING DEPARTMENT

APPROVED BY:

HON. MA. JOSEFINA G. BELMONTE
CITY MAYOR, QUEZON CITY

SHEET CONTENT

CADAVER HOLDING AREA
FLOOR PLAN & ROOF PLAN
OUT-PATIENT DEPARTMENT
(OPD) FLOOR PLAN

SHEET NO.

AR-06
642

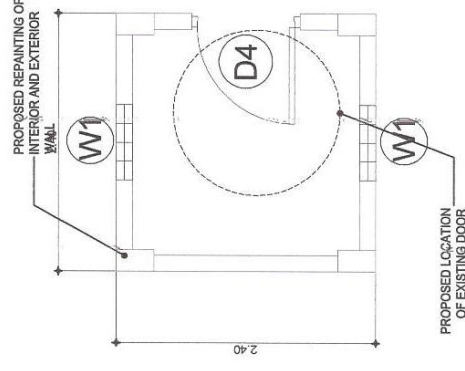
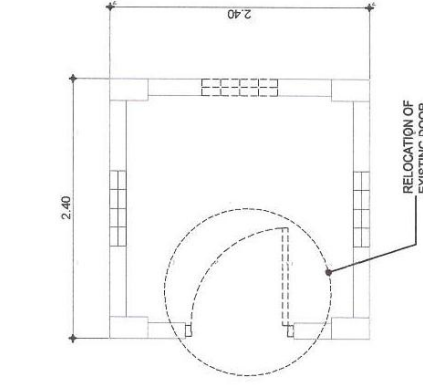
DESCRIPTION :	D1	D2	D3	D4	D9	D10	D11	D11*	D12	W3
Flush Door with Kick Plate										
UNITS : 2 UNITS	UNITS : 1 UNIT	UNITS : 3 UNITS	UNITS : 1 UNIT	UNITS : 1 UNIT	UNITS : 1 UNIT	UNITS : 3 UNITS	UNITS : 1 UNIT	UNITS : 4 UNITS	UNITS : 1 UNIT	UNITS : 1 UNIT
LOCATION : ANTE & ISOLATION ROOM (GF)	LOCATION : ENTRY DOOR (OPD)	LOCATION : TOILETS (OPD)	LOCATION : GUARDHOUSE	LOCATION : FILM FILE STORAGE (GF)	LOCATION : FIRE EXIT DOORS	LOCATION : FIRE EXIT DOORS	LOCATION : THIRD FLOOR	LOCATION : CADAVER (GF), PANTRY (2/F), SUPPLY (4/F)	LOCATION : GET SET ROOM	LOCATION : GET SET ROOM
DESCRIPTION :	DESCRIPTION :	DESCRIPTION :	DESCRIPTION :	DESCRIPTION :	DESCRIPTION :	DESCRIPTION :	DESCRIPTION :	DESCRIPTION :	DESCRIPTION :	DESCRIPTION :
Flush Door with Kick Plate	Flush Door with Viewing Panel	PVC Door with Louver	Flush Door	Flush Door	Flush Door	Fire Exit Door with Panic Hardware	Fire Exit Door with Panic Hardware	Panel Door	Metal Door with Louver	Metal Window with Louver

SCHEDULE OF DOORS AND WINDOWS (GUARD HOUSE)

NTS



WINDOW GRILLES
DESCRIPTION : 10mm SQUARE BAR SPACED @ 0.10 M.
UNITS: 2 UNITS
LOCATION : EXTERIOR WINDOW GRILLES (THIRD FLOOR)



PROPOSED WINDOW GRILLES

NTS

PROJECT TITLE:

Republika ng Pilipinas
Lungsod ng Quezon
CITY ENGINEERING DEPARTMENT

**PROPOSED IMPROVEMENT
OF NOVALICHES DISTRICT HOSPITAL
(PHASE 3)**

LOCATION :
BARANGAY SAN BARTOLOME, DISTRICT 5, QUEZON CITY

SUBMITTED BY:

DATE: 08/25/2021

CHECKED BY: JAN

REVISION NO.:

—


ENGR. LEO S. DEL ROSARIO
HEAD, PLANNING & PROGRAMMING DIVISION

RECOMMENDING APPROVAL:

ENGR. ISAGANI R. VERZOSA, JR.
OIC, CITY ENGINEERING DEPARTMENT

SHEET CONTENT

SCHEDULE OF DOORS AND
WINDOWS
PROPOSED WINDOW
GRILLES
EXTG. PLAN GUARD HOUSE
PROP. PLAN GUARD HOUSE
SCHEDULE OF DOORS &
WINDOWS

SHEET NO.



GENERAL NOTES

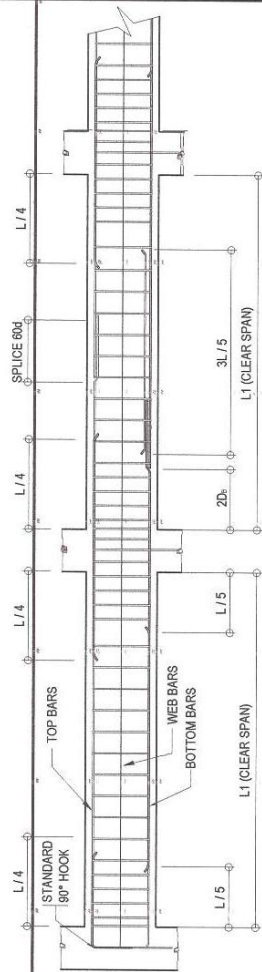
1. CONSTRUCTION NOTES AND TYPICAL DETAILS APPLY TO ALL DRAWINGS UNLESS OTHERWISE SPECIFIED.
2. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM WITH THE LATEST BUILDING CODE OF THE PHILIPPINES.
3. ALL CONCRETE SHALL BE DEVELOPED TO A MINIMUM COMPRESSIVE STRENGTH AT THE END OF TWENTY EIGHT (28) DAYS WITH CORRESPONDING MAXIMUM SIZE AGGREGATE AND SLUMPS AS FOLLOWS:
a. SLAB ON GRADE, CURBS, PARAPETS, WALLS, FOOTING
3000 PSI (20.685 MPa) 1 in. (25mm) 4 in. (100mm)
b. BEAMS, COLUMNS, SUPERELEVATED SLAB
3000 PSI (20.685 MPa) 3/4 in. (19mm) 4 in. (100mm)
c. LEAN CONCRETE
2500 PSI (17.24 MPa) 1 in. (25mm) 4 in. (100mm)
3. ALL REINFORCING BARS SHALL CONFORM TO PSAR GRADE 275 FOR 12mm Ø AND SMALLER BARS AND GRADE 415 FOR 16mm Ø AND LARGER BARS.
4. REINFORCING BARS SHALL BE PROVIDED WITH STANDARD PRACTICE DETAILS UNLESS OTHERWISE SPECIFIED OR NOTED.
5. IN CASE OF QUESTION ARISING FROM THE INTERPRETATION OF CONFLICT WITH OTHER DOCUMENTS, THE ATTENTION OF THE OWNER/ENGINEER SHALL BE CALLED TO WRITING.

CONCRETE & REINFORCEMENT

1. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM WITH THE LATEST BUILDING CODE OF THE PHILIPPINES.
2. ALL CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH AT THE END OF TWENTY EIGHT (28) DAYS WITH CORRESPONDING MAXIMUM SIZE AGGREGATE AND SLUMPS AS FOLLOWS:
a. SLAB ON GRADE, CURBS, PARAPETS, WALLS, FOOTING
3000 PSI (20.685 MPa) 1 in. (25mm) 4 in. (100mm)
b. BEAMS, COLUMNS, SUPERELEVATED SLAB
3000 PSI (20.685 MPa) 3/4 in. (19mm) 4 in. (100mm)
c. LEAN CONCRETE
2500 PSI (17.24 MPa) 1 in. (25mm) 4 in. (100mm)
3. ALL REINFORCING BARS SHALL CONFORM TO PSAR GRADE 275 FOR 12mm Ø AND SMALLER BARS AND GRADE 415 FOR 16mm Ø AND LARGER BARS.
4. REINFORCING BARS SHALL BE PROVIDED WITH STANDARD PRACTICE DETAILS UNLESS OTHERWISE SPECIFIED OR NOTED.
5. MAINTAIN MINIMUM CONCRETE COVER FOR REINFORCING STEEL AS FOLLOWS:
CONCRETE DEPOSITED DIRECTLY AGAINST GROUND 75 mm
CONCRETE DEPOSITED AGAINST FORMWORK 25 mm
WALLS ABOVE GROUND 25 mm
BEAMS & COLUMNS 40 mm
6. SPICES SHALL BE SECURELY WELDED TOGETHER AND SHALL LAP OR EXTEND IN ACCORDANCE WITH THE LATEST BUILDING CODE OF THE PHILIPPINES. SPICES SHALL BE STAGGERED WHENEVER POSSIBLE.
7. ALL ANCHORS, BOLTS, DOMES, AND OTHER INSERTS SHALL BE PROPERLY POSITIONED AND SECURED IN PLACE PRIOR TO PLACING OF CONCRETE.

CHB REINFORCEMENTS

BLOCK THICKNESS (mm)	REINFORCEMENT		NOTES
	HORIZONTAL	VERTICAL	
100	10mm Ø BARS @ EVERY 10mm Ø @ 100 mm O.C.	10mm Ø @ 100 mm O.C.	A. MIN. LAP SPICE = 30mm LONG
125	10mm Ø BARS @ EVERY 10mm Ø @ 100 mm O.C.	10mm Ø @ 100 mm O.C.	B. PROVIDE RIGHT ANGLE REINFORCEMENT @ CORNERS



BEAM MARK	DIMENSION		BAR Ø	TOP BAR			BOTTOM BAR			STIRRUPS 10mmØ
	B	H		LEFT SUPPORT	MID SPAN	RIGHT SUPPORT	LEFT SUPPORT	MID SPAN	RIGHT SUPPORT	
FTB	250	450	16mm Ø	5	3	5	3	5	3	1 @ 50, 4 @ 100, Rest @ 200
B-1	250	450	16mm Ø	5	3	5	3	5	3	1 @ 50, 4 @ 100, Rest @ 200
B-2	150	300	16mm Ø	2	2	2	2	2	2	1 @ 50, 4 @ 100, Rest @ 200
RB-1'	250	450	16mm Ø	5	3	5	3	5	3	1 @ 50, 4 @ 100, Rest @ 200

1 BEAM DETAILS

NTS



Republika ng Pilipinas
Lungsod ng Quezon
CITY ENGINEERING DEPARTMENT

PROJECT TITLE:
**PROPOSED IMPROVEMENT
OF NOVALICHES DISTRICT HOSPITAL
(PHASE 3)**

LOCATION:
BARANGAY SAN BARTOLOME, DISTRICT 5, QUEZON CITY

DRAWN BY: RBN

DATE: 06/25/2021

CHECKED BY: JAT

REVISION NO.:

SUBMITTED BY:



ENGR. LEO S. DEL ROSARIO
HEAD, PLANNING & PROGRAMS DIVISION

RECOMMENDING APPROVAL:



ENGR. ISAGANI R. VERZOSA, JR.
CH. CITY ENGINEERING DEPARTMENT

APPROVED BY:



HON. MA. JOSEFINA G. BELMONTE
CITY MAYOR, QUEZON CITY

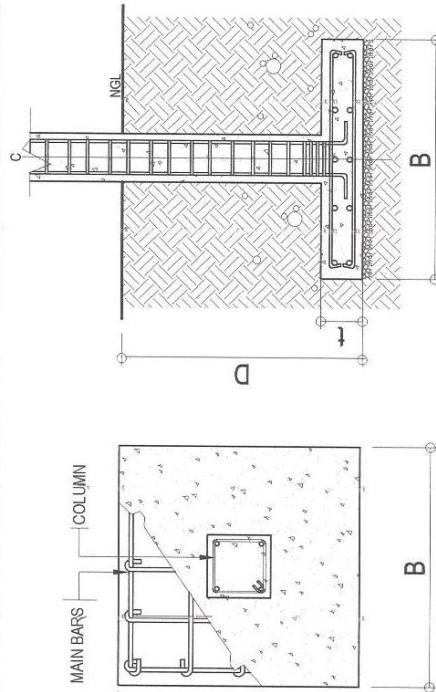
SHEET NO.

GENERAL NOTES
COLUMN DETAILS
COLUMN FOOTING DETAILS

ST-01
8 42

C-1	C-2	C-3	PLANTED COLUMN	C-3
4 - 16mmØ	8 - 16mmØ	4 - 16mmØ	4 - 16mmØ	4 - 16mmØ
1 - 10mmØ, @ 150 O.C.	2 - 10mmØ, @ 150 O.C.	1 - 10mmØ, @ 150 O.C.	1 - 10mmØ, @ 150 O.C.	1 - 10mmØ, @ 150 O.C.
1 - 10mmØ, @ 100 O.C.	2 - 10mmØ, @ 100 O.C.	1 - 10mmØ, @ 100 O.C.	1 - 10mmØ, @ 100 O.C.	1 - 10mmØ, @ 100 O.C.
1 - 10mmØ, @ 100 O.C.	2 - 10mmØ, @ 100 O.C.	1 - 10mmØ, @ 100 O.C.	1 - 10mmØ, @ 100 O.C.	1 - 10mmØ, @ 100 O.C.

2 COLUMN FOOTING DETAILS



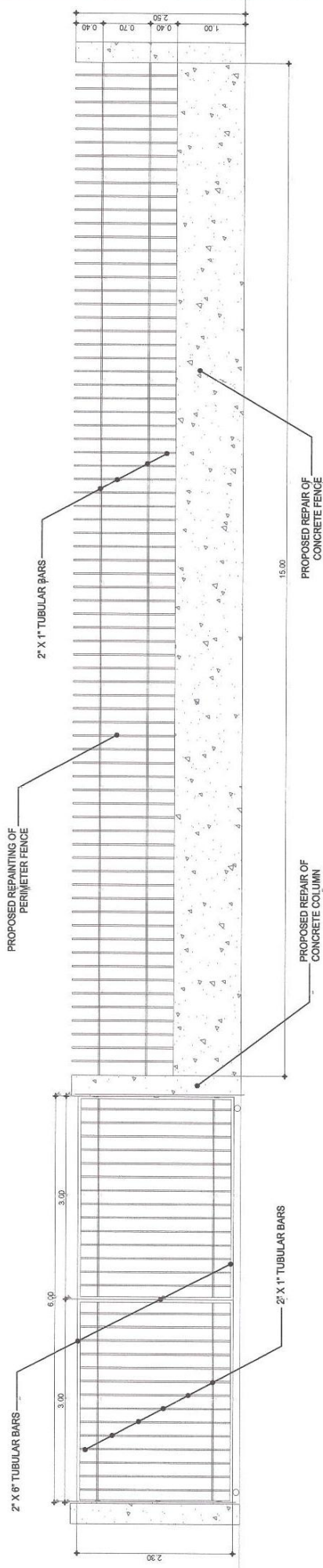
PLAN

SECTION

MARK	DIMENSION (mm)		MAIN REINFORCEMENT		TOP BARS		REMARKS
	B	L	ALONG B	ALONG L	ALONG B	ALONG L	
FOOTING (F-1)	800	800	6-16mmØ	6-16mmØ	6-16mmØ	6-16mmØ	SQUARE FOOTING
FOOTING (F-2)	1600	1600	10-16mmØ	10-16mmØ	10-16mmØ	10-16mmØ	SQUARE FOOTING

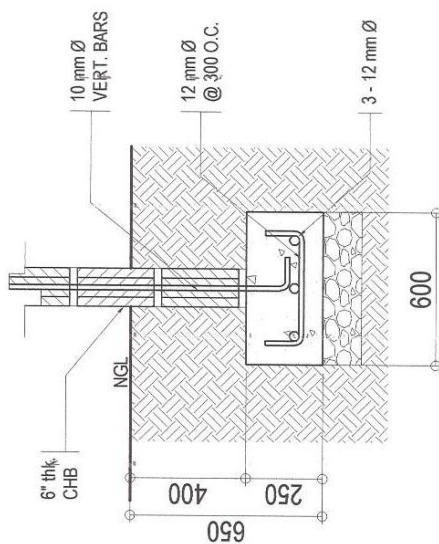
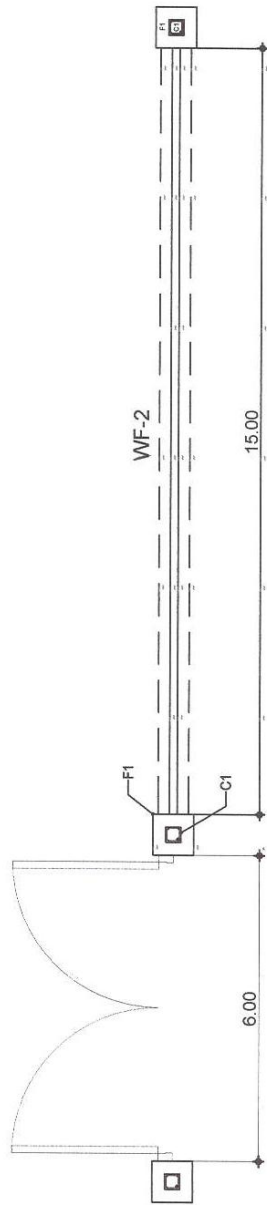
3 COLUMN DETAILS

NTS



1 PERIMETER FENCE AND GATE DETAILS

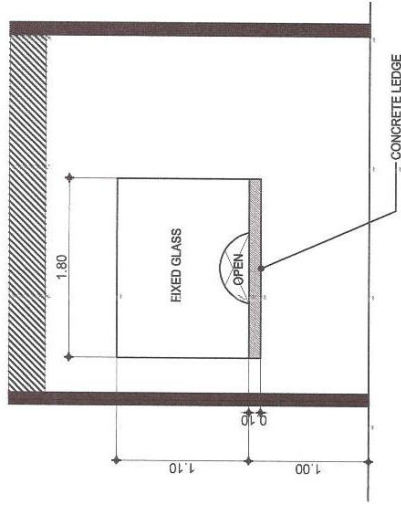
NTS



2 FOUNDATION PLAN OF PERIMETER FENCE

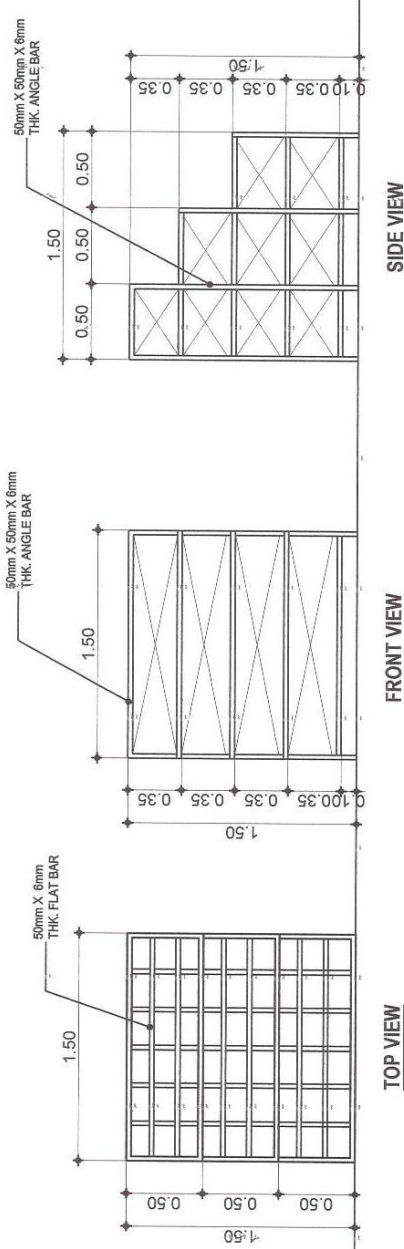
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 Republika ng Pilipinas Lungsod ng Quezon CITY ENGINEERING DEPARTMENT	PROJECT TITLE :	DRAWN BY: RYBN	SUBMITTED BY:	RECOMMENDING APPROVAL:	APPROVED BY:	SHEET CONTENT	SHEET NO.
	PROPOSED IMPROVEMENT OF NOVALICHES DISTRICT HOSPITAL (PHASE 3)	DATE: 06/23/2021	 ENGR. LEO S. DEL ROSARIO HESD, Planning & Programming Division CITY ENGINEERING DEPARTMENT	 ENGR. ISAGANI VERZOSA, JR. CC, CITY ENGINEERING DEPARTMENT	HON. MA. JOSEFINA G. BELMONTTE CITY MAYOR, QUEZON CITY	PERIMETER FENCE AND WALL FOOTING DETAILS BEAM DETAILS	
		CHECKED BY: JMN					
LOCATION :	BARANGAY SAN BARTOLOME, DISTRICT 5, QUEZON CITY						



3 WINDOW COUNTER DETAILS

NTS



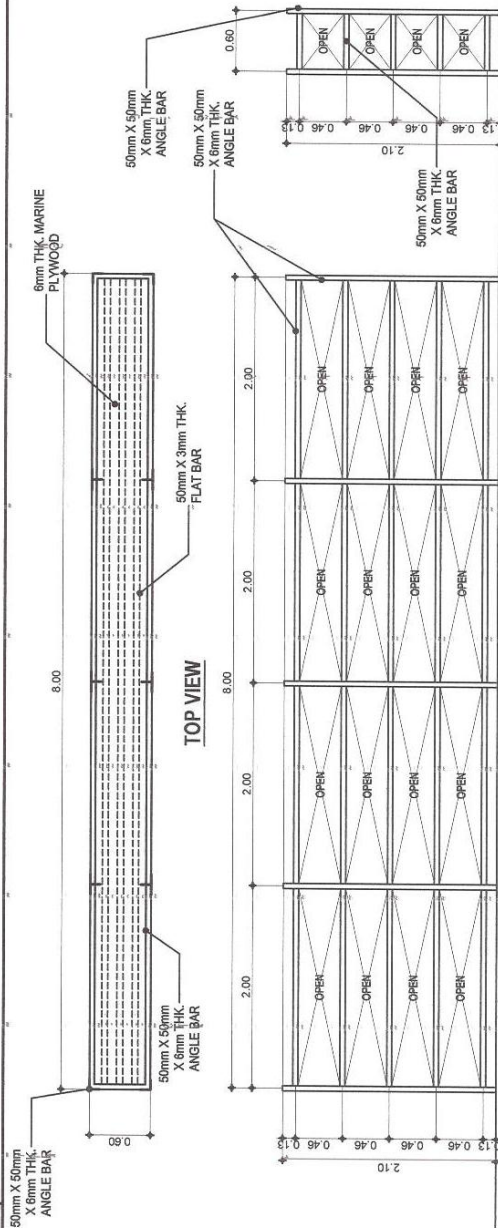
SIDE VIEW

FRONT VIEW

TOP VIEW

1 STEEL RACK (UPS STORAGE)

NTS



FRONT VIEW

SIDE VIEW

2 STEEL CABINET AT EQUIPMENT STORAGE

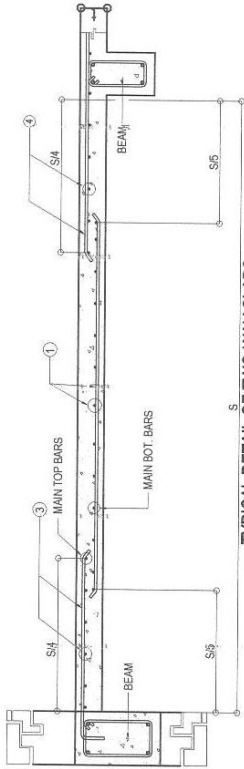
NTS

4 WIDE FLANGE & STEEL JACKET FOR BEAM

NTS

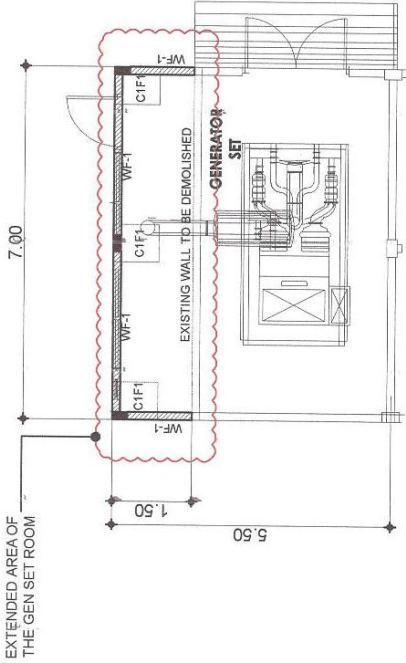
PROJECT TITLE:		PROPOSED IMPROVEMENT OF NOVALICHES DISTRICT HOSPITAL (PHASE 3)	DRAWN BY: RBN	SUBMITTED BY:	RECOMMENDING APPROVAL:	APPROVED BY:	SHEET CONTENT	SHEET NO.
LOCATION:		BARANGAY SAN BARTOLOME, DISTRICT 5, QUEZON CITY	DATE: 06/25/2021	ENGR. LEO S. DEL ROSARIO HEAD, PLANNING & PROGRAMMING DIVISION	ENGR. ISAGANI R. VERZOSA, JR. CITY ENGINEERING DEPARTMENT	HON. MA. JOSEFINA G. BELMONTE CITY MAYOR, QUEZON CITY	UPS STEEL RACK STEEL CABINET AT EQUIPMENT STORAGE WINDOW COUNTER DETAILS WIDE FLANGE & STEEL JACKET FOR BEAM	ST-03 1042
REVISION NO.:			CHECKED BY: JRT					





TYPICAL DETAIL OF TWO-WAY SLABS

MARK	t	REINFORCEMENT		SHORT SPAN		LONG SPAN		REMARKS
		MAIN BARS	TEMP	TOP BARS	BOT. BARS	TOP BARS	BOT. BARS	
S1	100	12	12	4	3	1	2	ONE WAY SLAB

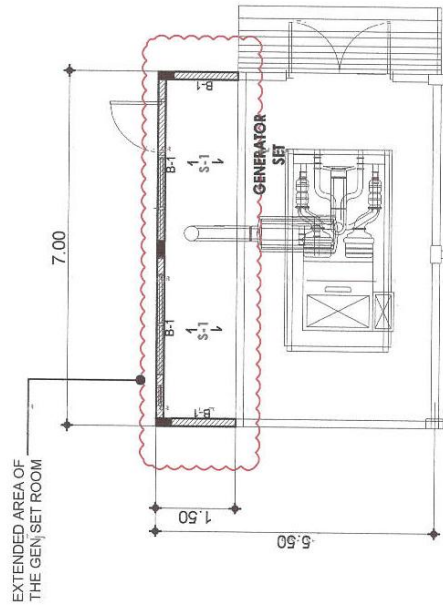


1 SLAB DETAILS

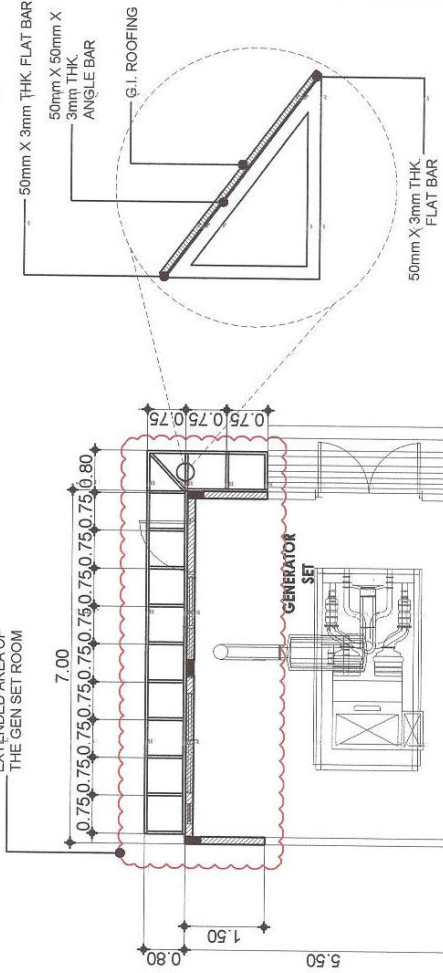
NTS

2 GEN SET ROOM FOUNDATION PLAN

NTS



EXTENDED AREA OF THE GEN SET ROOM



EXTENDED AREA OF THE GEN SET ROOM

SECTION SPOT DETAILS

3 GEN SET ROOM CEILING FRAMING SLAB

NTS

4 CANOPY DETAILS

NTS

PROJECT TITLE:		SUBMITTED BY:		RECOMMENDING APPROVAL:		APPROVED BY:		SHEET CONTENT		SHEET NO.	
Republika ng Pilipinas Lungsod ng Quezon CITY ENGINEERING DEPARTMENT		DRAWN BY: RYEN DATE: 06/25/2021 CHECKED BY: JAY REVISION NO.:		PROPOSED IMPROVEMENT OF NOVALICHES DISTRICT HOSPITAL (PHASE 3)		ENGR. LEO S. DEL ROSARIO HEAD, PLANNING & PROGRAMMING DIVISION		ENGR. ISAGANI R. VERZOSA, JR. CITY ENGINEERING DEPARTMENT		SLAB DETAILS GEN SET ROOM FOUNDATION GEN SET ROOM CEILING FRAMING SLAB CANOPY DETAILS	
LOCATION: BARANGAY SAN BARTOLOME, DISTRICT 5, QUEZON CITY		HON. MA. JOSEFINA G. BELMONTE CITY MAYOR, QUEZON CITY		ST-04 1142							

1. ALL ELECTRICAL WORKS SHALL BE DONE IN ACCORDANCE WITH THE PROVISIONS OF THE LATEST EDITION OF THE PHILIPPINE ELECTRICAL CODE, THE LAWS AND ORDINANCES OF THE LOCAL CODE ENFORCING AUTHORITIES AND THE REQUIREMENTS OF THE LOCAL POWER AND TELEPHONE UTILITY COMPANY.
2. 700 MILLIMETERS
3. PULL BOXES SHALL BE PROVIDED BY THE CONTRACTOR WHENEVER NECESSARY TO FACILITATE WIRE PULLING EVEN IF THESE ARE NOT INDICATED ON THE PLANS. SIZING OF ALL PULLBOXES SHALL BE COMPUTED BASED ON THE CODE REQUIREMENTS. SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO FABRICATION. LOCATION OF PULLBOXES SHALL BE APPROVED BY THE ARCHITECT/ENGINEER AND MUST BE REFLECTED ON THE "AS-BUILT" PLAN.
4. ALL POWER OUTLETS AND SWITCHES SHALL BE GROUNDING TYPE WITH PARALLEL SLOTS FOR 230 V.
5. PROVIDE GROUND FAULT CURRENT INTERRUPTER (CIRCUIT BREAKER FOR LOADS MARKED "GFCI" ON THE PLAN.
6. ALL METALLIC CONDUITS, CABINETS AND EQUIPMENT SHALL BE PROPERLY GROUNDING AND BONDED.
7. UNLESS OTHERWISE NOTED, MOUNTING HEIGHT FOR WALL MOUNTED DEVICES SHALL BE AS FOLLOWS:
RECEPTACLE OUTLET - 300 MM AFF, 150MM ABOVE WORKING COUINTER
TELEPHONE OUTLET - 300 MM AFF
CATV OUTLET - 300 MM AFF
LIGHTING SWITCH - 1400 MM AFF
PANELBOARD - 1600 MM AFF
8. REFER TO MECHANICAL, PLUMBING AND FIRE PROTECTION DRAWINGS FOR RATINGS AND LOCATIONS OF EQUIPMENT AS WELL AS THEIR CONTROL SEQUENCES AS SPECIFIED AND OR SHOWN UNDER THEIR RESPECTIVE SECTIONS
9. ALL MATERIALS TO BE USED SHALL BE OF THE BEST QUALITY, BRAND NEW AS SPECIFIED.
10. THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO PRESENT GENERAL LAYOUT AND BROAD OUTLINE DESCRIPTION OF THE PROJECT BUT DO NOT NECESSARILY INDICATE DESCRIBED ACTUAL LOCATION, LEVEL AND DISTANCES OF THE EQUIPMENT. THE CONTRACTOR IS HEREBY REQUIRED TO MAKE SUCH ADJUSTMENT AT THE JOBSITE AS LOCATION, DISTANCES AND LEVELS ARE GOVERNED BY ACTUAL FIELD CONDITIONS.
11. ANY DISCREPANCY BETWEEN THE PLANS AND SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR CLARIFICATION DECISION.
12. ALL LIGHTING AND CONVENIENCE OUTLET CIRCUITS SHALL BE 3.5 SQ. MM. THWN-2 COPPER WIRE UNLESS OTHERWISE NOTED. MINIMUM SIZE OF WIRE SHALL BE 3.5 SQ. MM. COPPER WIRE. ALL WIRES AND CABLES SHALL BE COLOR CODED AS FOLLOWS:
PHASE A - RED
PHASE B - YELLOW
PHASE C - BLACK
NEUTRAL - WHITE
GROUND - GREEN
13. BOXES, WIRE, GUTTERS, ENCLOSURE SHALL BE FABRICATED FROM STEEL WITH THICKNESS AS FOLLOWS:
MAXIMUM WIDTH OF THE WIDEST SURFACE STEEL
GA
GA 16 PAINTED WITH METAL PRIMER EPOXY AND TOPOCOAT
OVER 152.40 MM BUT NOT OVER 457.30
GA 14 PAINTED WITH METAL PRIMER EPOXY AND TOPOCOAT
OVER 457.30 MM BUT NOT OVER 762 MM
GA 12 PAINTED WITH METAL PRIMER EPOXY AND TOPOCOAT
OVER 762 MM
GA 10 PAINTED WITH METAL PRIMER EPOXY AND TOPOCOAT
14. ALL ELECTRICAL WORKS HEREIN SHALL BE EXECUTED BY EXPERIENCED MEN UNDER THE DIRECT SUPERVISION OF A FULL-TIME LICENSED ELECTRICAL ENGINEER AND A DULY ACCREDITED ELECTRICAL CONTRACTOR BY PCB. WORKS SHALL BE NEATLY PLACED, SECURELY FASTENED AND PROPERLY FINISHED.
15. TYPE OF SERVICE ENTRANCE SHALL BE THREE-PHASE, THREE-WIRE PLUS GROUND, 60 HERTZ, 230V AC NOMINAL.
16. CONDUITS IN NO CASE SHALL THERE BE MORE THAN THE EQUIVALENT OF FOUR QUARTER BENDS IN ANY ONE RUN. ALL CONDUIT BENDS SHALL BE FIELD MADE BY USING HYDRAULIC BENDERS. MINIMUM BENDING RADIUS MUST BE IN ACCORDANCE TO THE CODE REQUIREMENTS.
17. UPON COMPLETION OF ELECTRICAL CONSTRUCTION WORK, INSULATION RESISTANCE TEST AND FUNCTIONALITY TEST SHALL BE PERFORMED BY THE CONTRACTOR INCLUSIVE OF THE INSTALLATION TO BE REPORTED IN DETAILS ON FORMS APPROVED BY THE QUEZON CITY ENGINEERING DEPARTMENT REPRESENTATIVE. THE GROUND RESISTANCE FOR ELECTRICAL SYSTEMS SHALL NOT BE MORE THAN 5 OHMS. COMMUNICATION GROUNDING RESISTANCE SHALL NOT EXCEED 2 OHMS.

1 GENERAL NOTES & SPECIFICATIONS

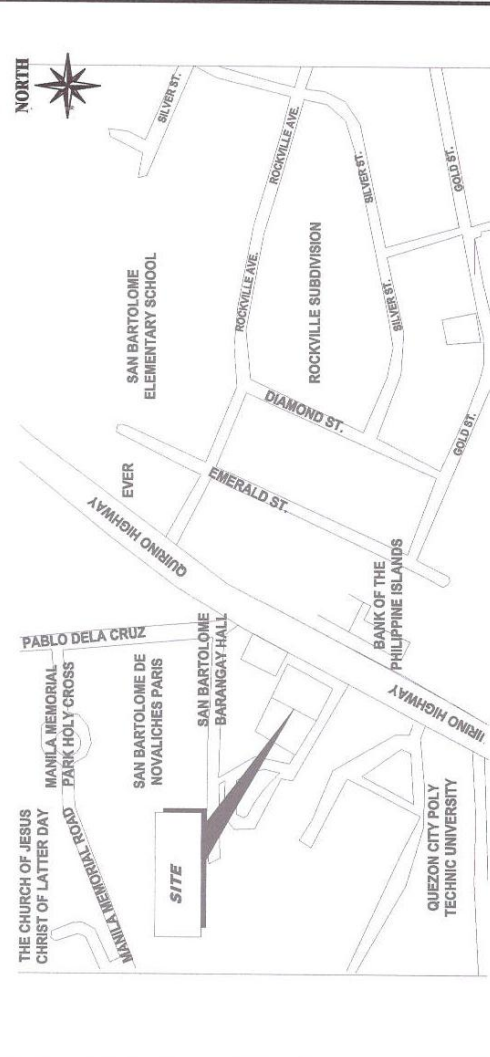
NOT TO SCALE

 Republika ng Pilipinas Lungsod ng Quezon CITY ENGINEERING DEPARTMENT	PROJECT TITLE: PROPOSED IMPROVEMENT OF NOVALICHES DISTRICT HOSPITAL (PHASE 3)	
	LOCATION: BARANGAY SAN BARTOLOME, DISTRICT 5, QUEZON CITY	REVISION NO.:
	DRAWN BY:  DATE: 06/25/2021 CHECKED BY:  REVISION NO.:	

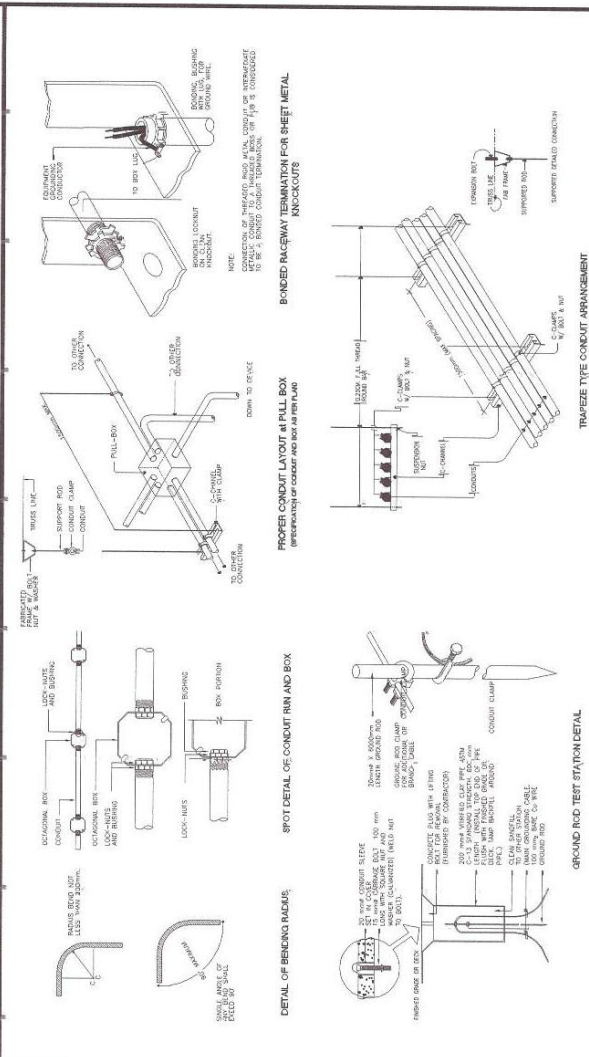
3 SITE DEVELOPMENT PLAN

NOT TO SCALE

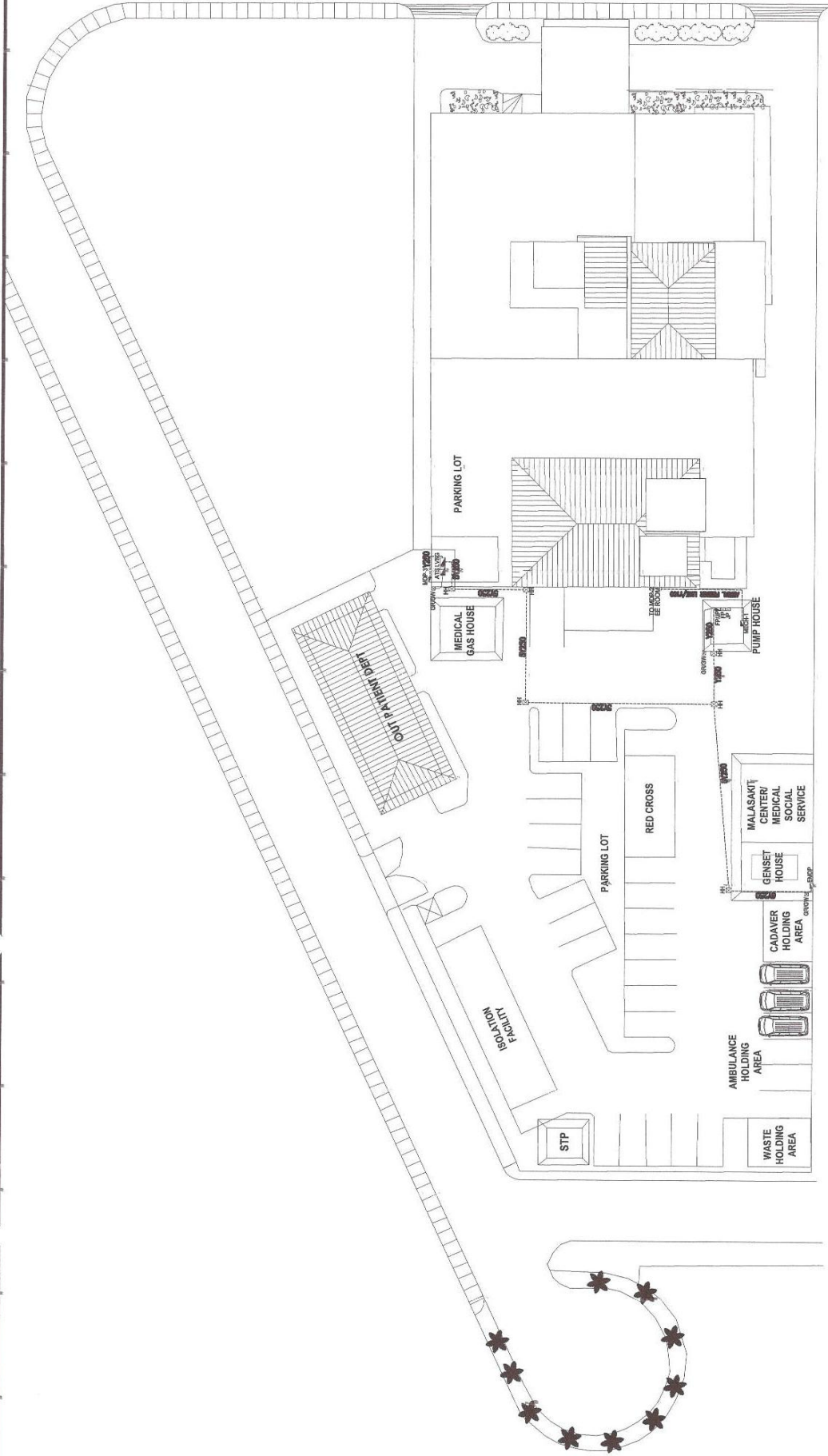
SUBMITTED BY:  ENGR. LEOS DEL ROSARIO HEAD, PLANNING & PROGRAMMING DIVISION	RECOMMENDING APPROVAL:  ENGR. ISAGANI R. VERZOSA, JR. CHIEF, CITY ENGINEERING DEPARTMENT	APPROVED BY: HON. MA. JOSEFINA G. BELMONTÉ CITY MAYOR, QUEZON CITY	SHEET CONTENT GENERAL NOTES & SPECIFICATIONS SITE DEVELOPMENT PLAN VICINITY MAP	SHEET NO. EL-01 12/42
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2 VICINITY MAP



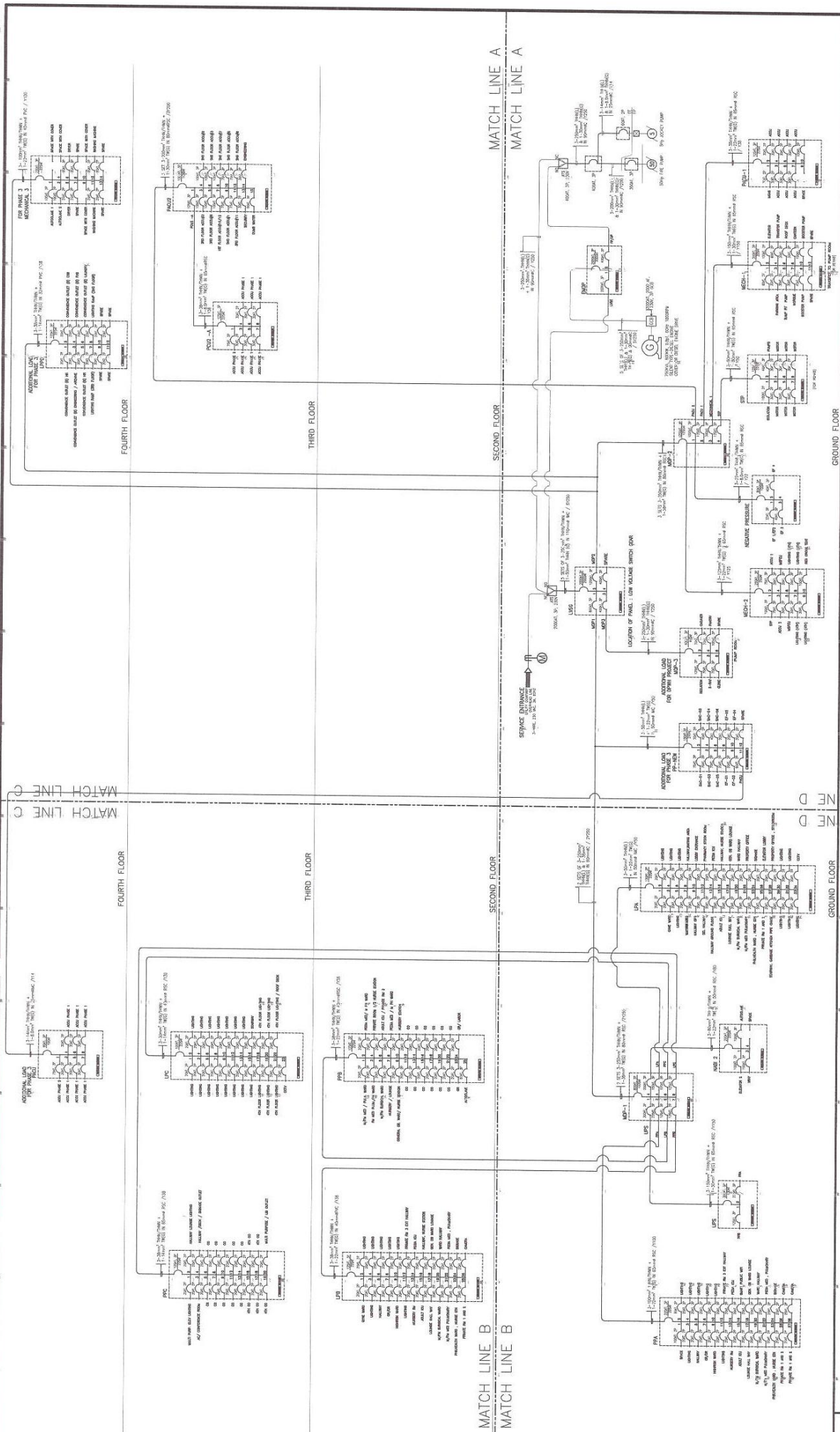
QUIRINO HIGHWAY



1 SITE DEVELOPMENT FEEDER LAYOUT

NOT TO SCALE

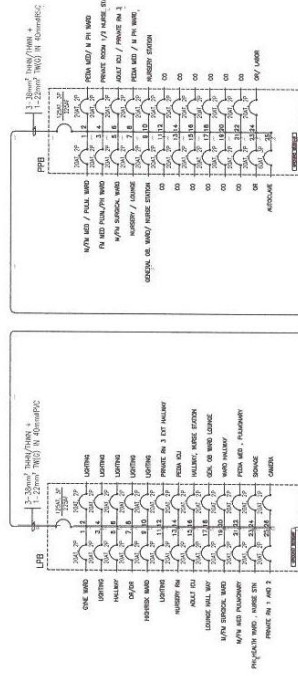
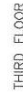
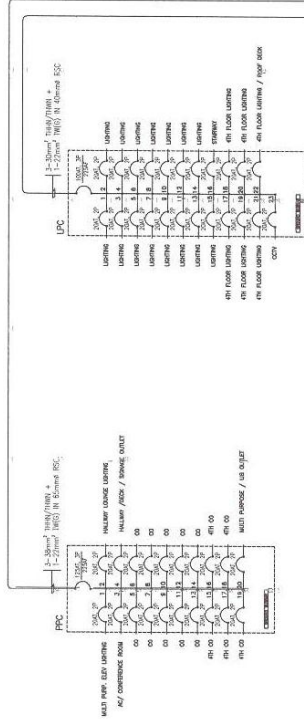
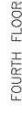
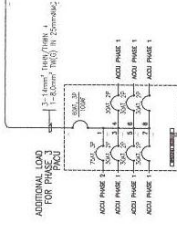
PROJECT TITLE:		PROJECT TITLE:	PROPOSED IMPROVEMENT OF NOVALICHES DISTRICT HOSPITAL (PHASE 3)	RECOMMENDING APPROVAL:	ENGR/ISAGANI R. VERZOSA, JR. CITY ENGINEERING DEPARTMENT	APPROVED BY:	HON. MA. JOSEFINA G. BELMONTE CITY MAYOR, QUEZON CITY	SHEET NO.	EL-02 13 42
LOCATION:		LOCATION:	BARANGAY SAN BARTOLOME, DISTRICT 5, QUEZON CITY						
DRAWN BY:		DRAWN BY:	SD						
DATE:		DATE:	00250201						
CHECKED BY:		CHECKED BY:	JM						
REVISION NO.:		REVISION NO.:							
SUBMITTED BY:		SUBMITTED BY:	ENGR. LEQ.S. DEL ROSARIO HEAD, PLANNING & PROGRAMMING DIVISION						
SHEET CONTENT:		SHEET CONTENT:	SITE DEVELOPMENT FEEDER LAYOUT						



POWER RISER DIAGRAM

NOT TO SCALE

 Republika ng Pilipinas Lungsod ng Quezon CITY ENGINEERING DEPARTMENT	PROJECT TITLE: PROPOSED IMPROVEMENT OF NOVALICHES DISTRICT HOSPITAL (PHASE 3) LOCATION: BARANGAY SAN BARTOLOME, DISTRICT 5, QUEZON CITY	DRAWN BY: 	SUBMITTED BY: 	RECOMMENDING APPROVAL:  ENGR. ISAGANI R. VERZOSA, JR. O.C. CIVIL ENGINEERING DEPARTMENT	APPROVED BY: HON. MA. JOSEFINA G. BELMONTTE CITY MAYOR, QUEZON CITY	SHEET CONTENT: POWER RISER DIAGRAM	SHEET NO. EL-03 1442
		DATE: 04/25/2021 CHECKED BY:  REVISION NO.:					



MATCH LINE B

MATCH LINE B

POWER RISER DIAGRAM ALONG MATCH LINE "B" & "C" BLOW UP DETAILS

NOT TO SCALE

PROJECT TITLE:

Republika ng Pilipinas
Lungsod ng Quezon

CITY ENGINEERING DEPARTMENT

LOCATION : BARANGAY SAN BARTOLOME, DISTRICT 5, QUEZON CITY

SUBMITTED BY:

DRAWN BY: 500

DATE: 06/25/2021

CHECKED BY:

REVISION NO.:

RECOMMENDING APPROVAL •

ENGR. ISAGANI R. VERZOSA, JR.

OIC, CITY ENGINEERING DEPARTMENT

APPROVED BY:

HON. MA. JOSEFINA G. BELMONTE

CITY MAYOR, QUEZON CITY

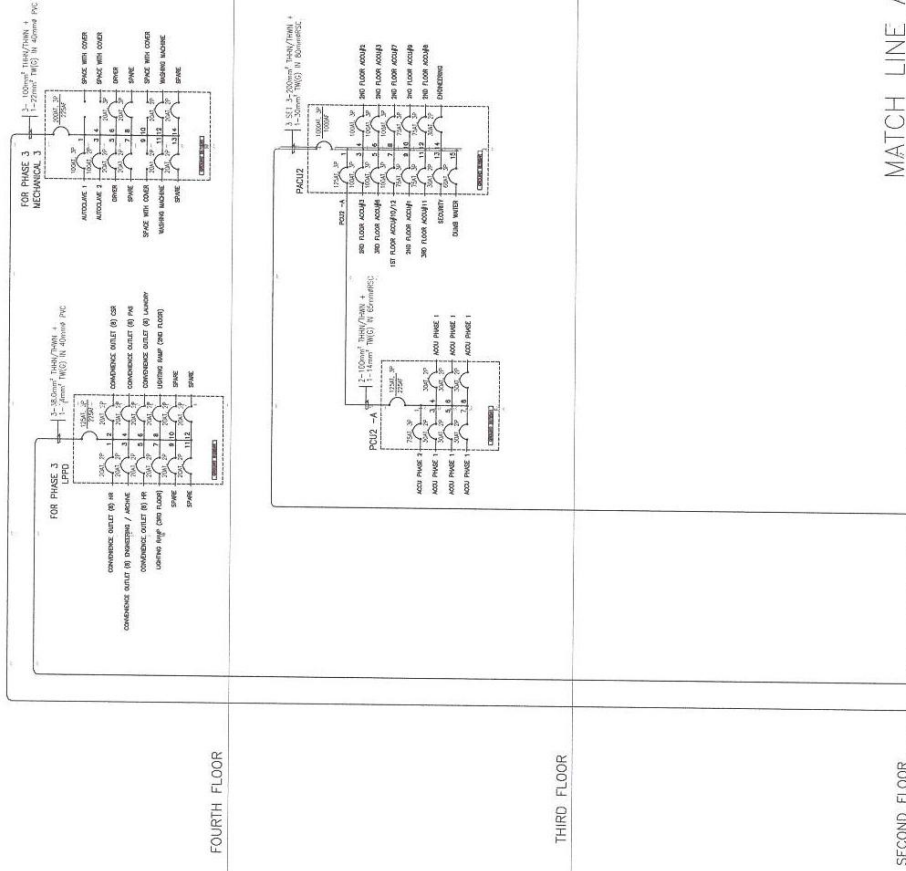
SHEET CONTENT

POWER RISER DIAGRAM
ALONG MATCH LINE "B" &
"C" BLOW UP DETAILS

EL-04
1542

MATCH LINE C

MATCH LINE C



1 POWER RISER DIAGRAM ALONG MATCH LINE "A" & "C" BLOW UP DETAILS

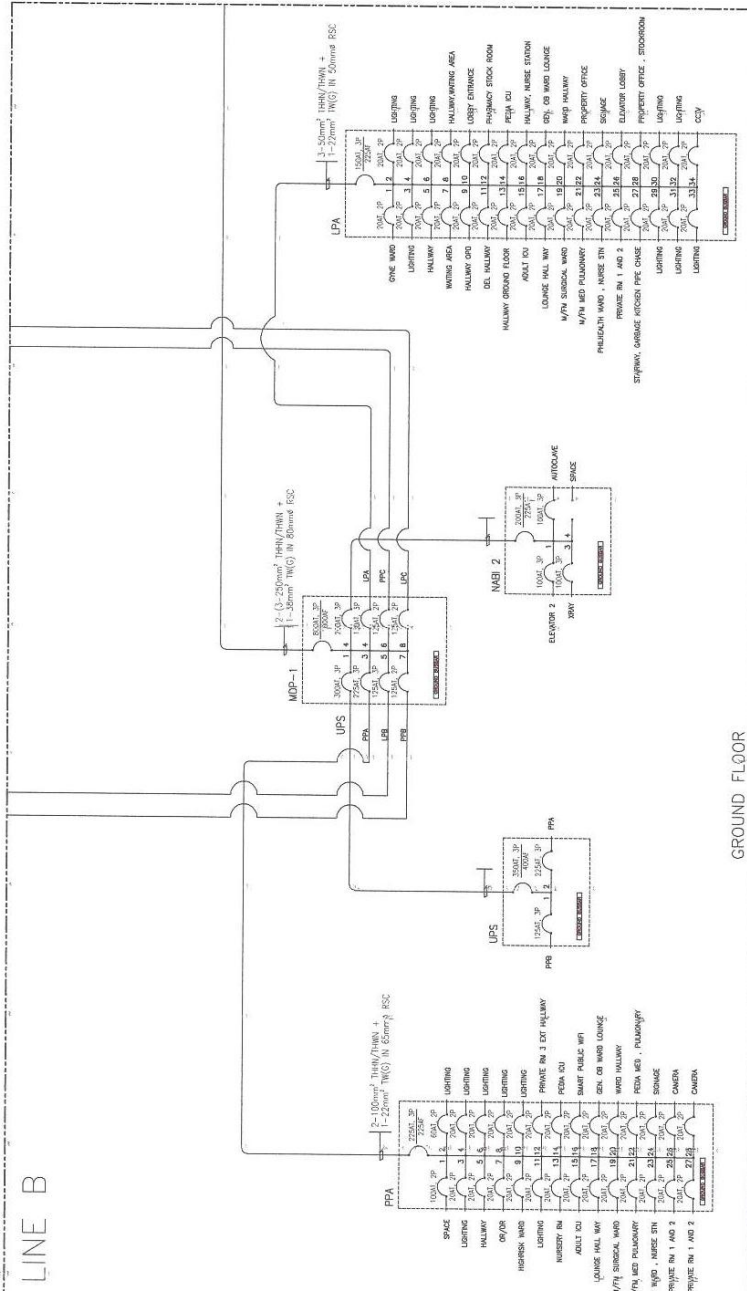
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PROJECT TITLE: PROPOSED IMPROVEMENT OF NOVALICHES DISTRICT HOSPITAL (PHASE 3)	DRAWN BY: DATE: 06/25/2021 CHECKED BY: JMT REVISION NO.:	SUBMITTED BY: ENGR. LEO S. DEL ROSARIO HEAD, PLANNING & PROGRAMMING DIVISION	RECOMMENDING APPROVAL: ENGR. ISAGANI R. VERZOSA, JR. OCC. CITY ENGINEERING DEPARTMENT	APPROVED BY: HON. MA. JOSEFINA G. BELMONTE CITY MAYOR, QUEZON CITY	SHEET CONTENT POWER RISER DIAGRAM ALONG MATCH LINE "A" & "C" BLOW UP DETAILS	SHEET NO. EL-05 1642

Republika ng Pilipinas
Lungsod ng Quezon

CITY ENGINEERING DEPARTMENT





GROUND FLOOR

MATCH LINE D

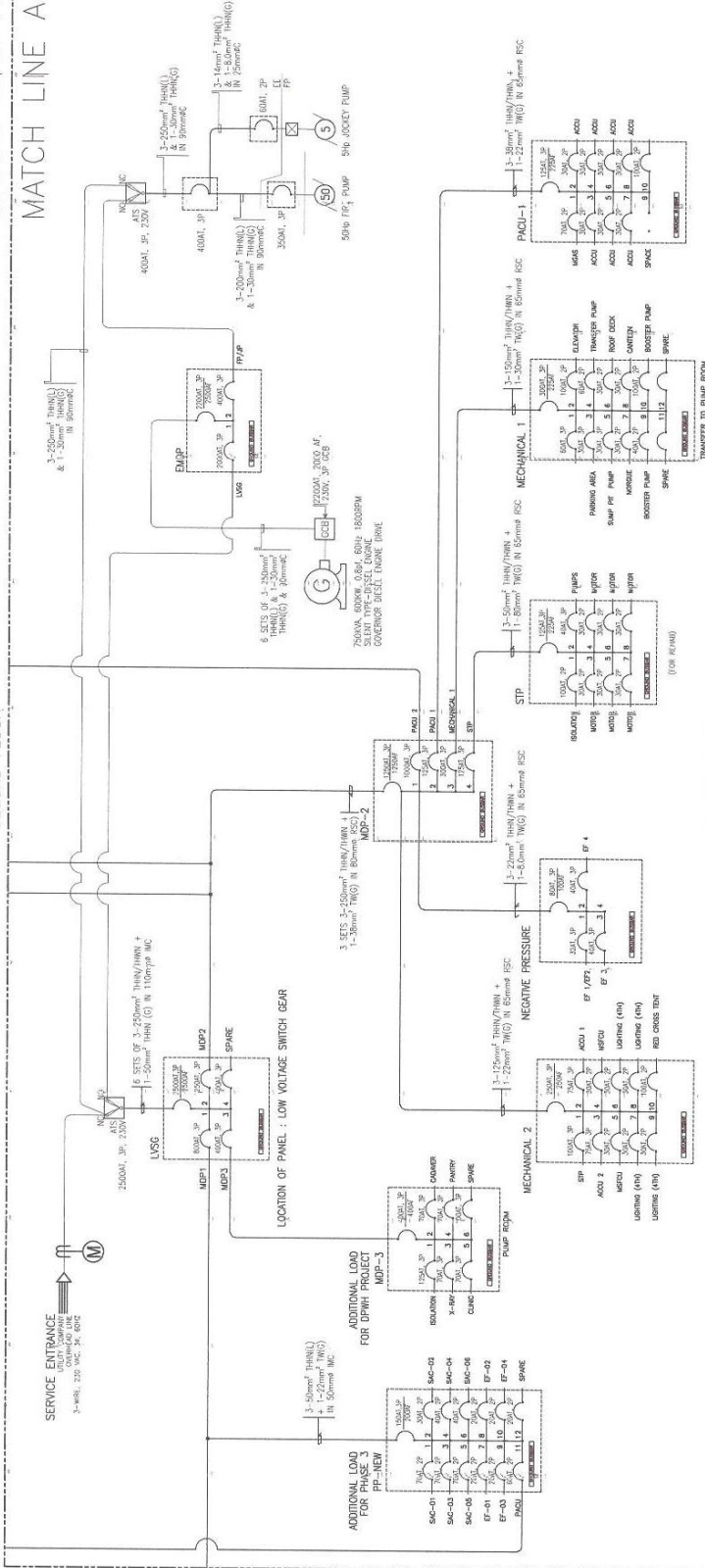
POWER RISER DIAGRAM ALONG MATCH LINE "B" & "D" BLOW UP DETAILS

NOT TO SCALE

[illegible]

MATCH LINE A
MATCH LINE A

SECOND FLOOR



GROUND FLOOR

MATCH LINE D
MATCH LINE D

1 POWER RISER DIAGRAM ALONG MATCH LINE "A" & "D" BLOW UP DETAILS

NOT TO SCALE

PROJECT TITLE:		SUBMITTED BY:		RECOMMENDING APPROVAL:		APPROVED BY:		SHEET CONTENT		SHEET NO.	
PROPOSED IMPROVEMENT OF NOVALICHES DISTRICT HOSPITAL (PHASE 3)		DRAWN BY: SDO		DATE: 00252021		CHECKED BY: JN		REVISION NO.:		POWER RISER DIAGRAM ALONG MATCH LINE "A" & "D" BLOW UP DETAILS	
LOCATION: BARANGAY SAN BARTOLOME, DISTRICT 5, QUEZON CITY		ENGR. LEO S. DEL ROSARIO HEAD, PLANNING & PROGRAMMING DIVISION		ENGR. ISAGANFR. VERZOSA, JR. OIC, CIVIL ENGINEERING DEPARTMENT		HON. MA. JOSEFINA G. BELMONTTE CITY MAYOR, QUEZON CITY		EL-07 1842			

PROPOSED LOAD SCHEDULE

LOW VOLTAGE SWITCH GEAR (LVSG)									
OKT NO.	VOLTS	LOAD DESCRIPTION	AMPERE LOAD			VOLT	CIRCUIT BREAKER	SIZE OF WIRE & CONDUIT	
			AB	BC	CA	3 ϕ	AMPERE		
1	230	MGP-1	91.25	89.75	86.35	181.50	600 AT 3 ϕ MCCB	3-250mm ² THHN + 2 sets of 1-35mm ² THHN	TY(0) 30mm ² SSC
2	230	MGP-2	357.89	443.54	344.50	398.00	1250 AT 3 ϕ MCCB	3-250mm ² THHN + 2 sets of 1-35mm ² THHN	TY(0) 30mm ² SSC
3	230	MGP-3	160.95	114.22	125.96	91.432	400 AT 3 ϕ MCCB	3-250mm ² THHN, 1-35mm ² THHN	TY(0) 30mm ² SSC
4	230	SPACE	—	—	—	—	400 AT 3 ϕ MCCB	3-250mm ² THHN, 1-35mm ² THHN	TY(0) 30mm ² SSC
TOTAL CONNECTED LOAD			613.08	677.51	565.61	569.50	529.637		
TOTAL DEMAND LOAD CURRENT									
IT = [1.732 x (677.51) + (60.0 x 0.25)] = 1188.48 A									
IT = 1188.48 + 889.50 = 1,777.98 A									
MAIN CIRCUIT BREAKER									
USE: 2000 AT 3 ϕ 65 kVAC @600 V MCCB									
AUTOMATIC TRANSFER SWITCH									
USE: 2000 AT 3 ϕ 230V 60 Hz									
GENERATOR SET									
500 KVA STANDBY GENERATOR SET SILENT TYPE 230V 60 Hz									
GOVERNOR DIESEL ENGINE DRIVE									
USE : 5 SETS OF 3-250mm ² THHN + 1-35mm ² THN(G) IN 110 mm ² PVC									
SERVICE ENTRANCE CONDUCTOR									

MAIN DISTRIBUTION PANEL-1 (MDP-1)

OKT NO.	VOLTS	LOAD DESCRIPTION	AMPERE LOAD	VOLT	CIRCUIT BREAKER	SIZE OF WIRE & CONDUIT
1	230	LPA (LIGHTING PANEL)	91.25	99.75	150 AT 3P MCB	3-20mm ² THHN, 1-14mm ² THHN(G) 40mm ² PVC
2	230	PPA (POWER PANEL)	357.89	343.50	1250 AT 3P MCB	3-25mm ² THHN, 1-5.0mm ² THHN(G) 32mm ² PVC
3	230	LPB (LIGHTING PANEL)	160.95	114.22	400 AT 3P MCB	3-25mm ² THHN, 1-5.0mm ² THHN(G) 32mm ² PVC
4	230	PPB (POWER PANEL)	357.89	343.50	1250 AT 3P MCB	3-25mm ² THHN, 1-5.0mm ² THHN(G) 32mm ² PVC
5	230	LPC (LIGHTING PANEL)	160.95	114.22	400 AT 3P MCB	3-25mm ² THHN, 1-5.0mm ² THHN(G) 32mm ² PVC
6	230	PPC (POWER PANEL)	357.89	343.50	1250 AT 3P MCB	3-25mm ² THHN, 1-5.0mm ² THHN(G) 32mm ² PVC
TOTAL CONNECTED LOAD						
TOTAL DEMAND LOAD CURRENT			91.25	99.75	94.35	181.50
MAIN CIRCUIT BREAKER						
USE: 800 AT 3P C.B. LUGS ONLY						
FEDER LINE						
USE: TWO SETS OF 3-25mm ² THHN/THWN + 1-35mm ² THHN(G) IN 90mm ² PVC						
IT = $[1.732 \times (463.54) + (60.9 \times 0.25)] = 817.87$						
IT = 817.87 + 93.20 = 911.07						

MAIN DISTRIBUTION PANEL-2 (MDP-2)

OKT NO.	VOLTS	LOAD DESCRIPTION	AMPERE LOAD	VOLT	CIRCUIT BREAKER	SIZE OF WIRE & CONDUIT
1	230	PAU 1	241.0	230.0	1000 AT 3P MCB	3-25mm ² THHN, 1-5.0mm ² THHN(G) 32mm ² PVC
2	230	PAU 2	91.0	28.70	125 AT 3P MCB	3-25mm ² THHN, 1-5.0mm ² THHN(G) 32mm ² PVC
3	230	MECHANICAL POWER PANEL 1	91.0	9.8	125 AT 3P MCB	3-25mm ² THHN, 1-5.0mm ² THHN(G) 32mm ² PVC
4	230	SEWAGE TREATMENT PLANT	41.0	60.17	125 AT 3P MCB	3-25mm ² THHN, 1-5.0mm ² THHN(G) 32mm ² PVC
5	230	MECHANICAL POWER PANEL 2	77.19	134.87	125 AT 3P MCB	3-25mm ² THHN, 1-5.0mm ² THHN(G) 32mm ² PVC
TOTAL CONNECTED LOAD						
TOTAL DEMAND LOAD CURRENT			357.89	463.54	398	313.193.20
MAIN CIRCUIT BREAKER						
USE: 1200 AT 3P C.B. LUGS ONLY						
FEDER LINE						
USE: 9 SETS OF 3-25mm ² THHN/THWN + 1-35mm ² THHN(G) IN 80mm ² PVC						
IT = $[1.732 \times (463.54) + (60.9 \times 0.25)] = 817.87$						
IT = 817.87 + 398 = 1215.87						

MECHANICAL 1 POWER PANEL

OKT NO.	VOLTS	OUTLET		OTHER LOAD SERVE	AMPERE LOAD			VOLT AMPERE	CIRCUIT BREAKER	SIZE OF WIRE & CONDUIT
		LO	LO		AB	BC	CA			
1	230			10 HP ELEV MOTOR			28	11,154.40	100 AT 3ø C.B	3-22mm ² THHN, 1-8.0mm ² THHN(G) 32mm ² PVC
2	230			PARKING LIGHTS	8.7			2,000	30 AT 3ø C.B	3-22mm ² THHN, 1-8.0mm ² THHN(G) 32mm ² PVC
3	230			1/2 HP ELEV PIT MOTOR				1,127	30 AT 3ø C.B	3-14mm ² THHN, 1-5.5mm ² THHN(G) 25mm ² PVC
4	230			5 HP TRANSFER MOTOR	4			1,127	30 AT 3ø C.B	2-3.5mm ² THHN, 1-5.5mm ² THHN(G) 20mm ² PVC
5	230			5 HP TRANSFER MOTOR				15.2	30 AT 3ø C.B	2-3.5mm ² THHN, 1-5.5mm ² THHN(G) 20mm ² PVC
6	230			5 HP TRANSFER MOTOR				15.2	30 AT 3ø C.B	3-14mm ² THHN, 1-5.5mm ² THHN(G) 25mm ² PVC
7	230			5 HP TRANSFER MOTOR				15.2	30 AT 3ø C.B	3-14mm ² THHN, 1-5.5mm ² THHN(G) 25mm ² PVC
8	230			3 HP BOOSTER MOTOR				9.8	30 AT 3ø C.B	3-14mm ² THHN, 1-5.5mm ² THHN(G) 25mm ² PVC
9	230			3 HP BOOSTER MOTOR				9.8	30 AT 3ø C.B	3-14mm ² THHN, 1-5.5mm ² THHN(G) 25mm ² PVC
10	230			SPARE				9.8	40 AT 3ø C.B	3-5.5mm ² THHN, 1-3.5mm ² THHN(G) 25mm ² PVC
11	230			SPARE					40 AT 3ø C.B	
12	230			SPARE						
TOTAL CONNECTED LOAD										
TOTAL DEMAND LOAD CURRENT					8.7	9.8	-	93.2	56,432.54	
MAIN FEEDER										
USE : 3-100mm ² THHN/THWN + 1-22mm ² TW(G) IN 85mm ² PVC										

1 SCHEDULE OF LOADS



Republika ng Pilipinas
Lungsod ng Quezon

CITY ENGINEERING DEPARTMENT

PROJECT TITLE:

PROPOSED IMPROVEMENT OF
NOVALICHES DISTRICT HOSPITAL
(PHASE 3)

LOCATION: BARANGAY SAN BARTOLOME, DISTRICT 5, QUEZON CITY

SUBMITTED BY:

DATE: 09/25/2021

CHECKED BY: *[Signature]*

REVISION (NO.):

EXISTING LOAD SCHEDULE

POWER AIR CONDITIONING UNIT (PACU-1)												
CCT NO.	VOLTS	OUTLET LG	CD	OTHER LOAD SERVE			AMPERE LOAD			VOLT AMPERE	CIRCUIT BREAKER	SIZE OF WIRE & CONDUIT
				AS	BS	CA	BE	CA	3P			
1	230	1	10	10 HP ACQU	50.0				11,500	70 AT 3P C.B	2-14mm ² THHN 1-5.5mm ² THHN(G) 32mm ² PVC	
2	230	2	230	1.5 HP ACQU	10.0				2,300	30 AT 2P C.B	2-3.5mm ² THHN 1-2.0mm ² THHN(G) 20mm ² PVC	
3	230	3	230	1.5 HP ACQU				10.0	2,300	30 AT 2P C.B	2-3.5mm ² THHN 1-2.0mm ² THHN(G) 20mm ² PVC	
4	230	4	230	0.5 HP ACQU				4.30	1,127	30 AT 2P C.B	2-3.5mm ² THHN 1-2.0mm ² THHN(G) 20mm ² PVC	
5	230	5	230	0.75 HP ACQU					1,587	30 AT 2P C.B	2-3.5mm ² THHN 1-2.0mm ² THHN(G) 20mm ² PVC	
6	230	6	230	0.75 HP ACQU					1,587	30 AT 2P C.B	2-3.5mm ² THHN 1-2.0mm ² THHN(G) 20mm ² PVC	
7	230	7	230	0.75 HP ACQU				6.90	1,587	30 AT 2P C.B	2-3.5mm ² THHN 1-2.0mm ² THHN(G) 20mm ² PVC	
8	230	8	230	0.75 HP ACQU				6.90	1,587	30 AT 2P C.B	2-3.5mm ² THHN 1-2.0mm ² THHN(G) 20mm ² PVC	
9	230	9	230	0.75 HP ACQU					1,587	30 AT 2P C.B	2-3.5mm ² THHN 1-2.0mm ² THHN(G) 20mm ² PVC	
10	230	10	230	0.75 HP ACQU					1,587	30 AT 2P C.B	2-3.5mm ² THHN 1-2.0mm ² THHN(G) 20mm ² PVC	
TOTAL CONNECTED LOAD					60.0	28.70		27.60	26,749			
TOTAL DEMAND LOAD CURRENT												
MAIN CIRCUIT BREAKER												
USE : 125 AT 3P 25 KAC @240 V MCCB												
MAIN FEEDER												
USE: 3-35mm ² THHN/THWN + 1-8.0mm ² TW(G) IN 40mm ² RSC												

POWER AIR CONDITIONING UNIT-2 (PACU-2)

CCT NO.	VOLTS	OUTLET LG	CD	OTHER LOAD SERVE	AMPERE LOAD			VOLT AMPERE	CIRCUIT BREAKER	SIZE OF WIRE & CONDUIT
					AB	BC	CA			
1	230			8 HP ACQU	40.0			9,200	70 AT 3P CB	2-14mm ² THHN 1-5.5mm ² THHN(G) 32mm ² PVC
2	230			12 HP ACQU	60.0			13,800	100 AT 3P CB	2-30mm ² THHN 1-8.0mm ² THHN(G) 32mm ² PVC
3	230			8 HP ACQU	40.0			9,200	70 AT 3P CB	2-14mm ² THHN 1-5.5mm ² THHN(G) 32mm ² PVC
4	230			12 HP ACQU	60.0			13,800	100 AT 3P CB	2-30mm ² THHN 1-8.0mm ² THHN(G) 32mm ² PVC
5	230			10 HP ACQU		50.0		11,500	70 AT 3P CB	2-14mm ² THHN 1-5.5mm ² THHN(G) 32mm ² PVC
6	230			10 HP ACQU			50.0	11,500	70 AT 3P CB	2-14mm ² THHN 1-5.5mm ² THHN(G) 32mm ² PVC
7	230			12 HP ACQU	60.0			14,950	100 AT 3P CB	2-30mm ² THHN 1-8.0mm ² THHN(G) 32mm ² PVC
8	230			14 HP ACQU		85.0		14,950	100 AT 3P CB	2-30mm ² THHN 1-8.0mm ² THHN(G) 32mm ² PVC
9	230			14 HP ACQU			85.0	14,950	100 AT 3P CB	2-30mm ² THHN 1-8.0mm ² THHN(G) 32mm ² PVC
10	230			POU2-A/1B HP ACQU				18,780	125 AT 3P CB	2-38mm ² THHN 1-8.0mm ² THHN(G) 40mm ² PVC
11	230			4 KWT ACQU				3,910	60 AT 2P CB	2-14mm ² THHN 1-8.0mm ² THHN(G) 20mm ² PVC
12	230			1 HP ACQU	8.0			1,840	20 AT 2P CB	2-3.5mm ² THHN 1-8.0mm ² THHN(G) 20mm ² PVC
13	230			1 HP ACQU		8.0		1,840	20 AT 2P CB	2-3.5mm ² THHN 1-8.0mm ² THHN(G) 20mm ² PVC
14	230							155,020		
TOTAL CONNECTED LOAD					241.0	230.0	304.8			
TOTAL DEMAND LOAD CURRENT										
MAIN CIRCUIT BREAKER										
USE : 1000 AT 3P 25 KAC @240 V MCB										
MAIN FEEDER:										
USE : 3 sets of 3-500mm ² THHN/THWN + 1-22mm ² TW(G) IN 80mm ² RSC										

MECHANICAL 2 POWER PANEL

OKT NO.	VOLTS	OUTLET	OTHER LOAD SERVE	AMPERE LOAD	VOLT	CIRCUIT BREAKER	SIZE OF WIRE & CONDUIT
1	230	100 AT 3P C.B.	SFP	41.0	17,280	125 AT 3P C.B.	3-35mm ² THHN, 1-8.0mm ² THHN(G) 32mm ² PVC
2	230	25	MSFCU	4.9	1,127	30 AT 3P C.B.	2-3.5mm ² THHN, 1-5.5mm ² THHN(G) 25mm ² PVC
3	230	25	MSFCU	4.9	1,127	30 AT 3P C.B.	2-3.5mm ² THHN, 1-5.5mm ² THHN(G) 25mm ² PVC
4	230	25	MSFCU	4.9	1,127	30 AT 3P C.B.	2-3.5mm ² THHN, 1-5.5mm ² THHN(G) 25mm ² PVC
5	230	25	MSFCU	4.9	1,127	30 AT 3P C.B.	2-3.5mm ² THHN, 1-5.5mm ² THHN(G) 25mm ² PVC
6	230	25	MSFCU	4.9	1,127	30 AT 3P C.B.	2-3.5mm ² THHN, 1-5.5mm

LIGHTING - PANEL (LPB)										SIZE OF WIRE & CONDUIT			
CIRCUIT NO.	VOLTS	CONDUCTOR		OTHER LOAD SERVE			VOLT AMPERE	CIRCUIT BREAKER	SIZE OF WIRE & CONDUIT				
		LO	GD	2-EXHAUST FAN	2-EXHAUST FAN	1-EXHAUST FAN							
1	230	10						20 AT 2P C.B	3-3.5 mm THHN, 20 mm Ø PVC				
2	230	7						20 AT 2P C.B	3-3.5 mm THHN, 20 mm Ø PVC				
3	230	15						20 AT 2P C.B	3-3.5 mm THHN, 20 mm Ø PVC				
4	230	8						20 AT 2P C.B	3-3.5 mm THHN, 20 mm Ø PVC				
5	230	12						20 AT 2P C.B	3-3.5 mm THHN, 20 mm Ø PVC				
6	230	11						20 AT 2P C.B	3-3.5 mm THHN, 20 mm Ø PVC				
7	230	10						20 AT 2P C.B	3-3.5 mm THHN, 20 mm Ø PVC				
8	230	12						20 AT 2P C.B	3-3.5 mm THHN, 20 mm Ø PVC				
9	230	9						20 AT 2P C.B	3-3.5 mm THHN, 20 mm Ø PVC				
10	230	11						20 AT 2P C.B	3-3.5 mm THHN, 20 mm Ø PVC				
11	230	8						20 AT 2P C.B	3-3.5 mm THHN, 20 mm Ø PVC				
12	230	9						20 AT 2P C.B	3-3.5 mm THHN, 20 mm Ø PVC				
13	230	10						20 AT 2P C.B	3-3.5 mm THHN, 20 mm Ø PVC				
14	230	13						20 AT 2P C.B	3-3.5 mm THHN, 20 mm Ø PVC				
15	230	7						20 AT 2P C.B	3-3.5 mm THHN, 20 mm Ø PVC				
16	230	8						20 AT 2P C.B	3-3.5 mm THHN, 20 mm Ø PVC				
17	230	13						20 AT 2P C.B	3-3.5 mm THHN, 20 mm Ø PVC				
18	230	7						20 AT 2P C.B	3-3.5 mm THHN, 20 mm Ø PVC				
19	230	10						20 AT 2P C.B	3-3.5 mm THHN, 20 mm Ø PVC				
20	230	8						20 AT 2P C.B	3-3.5 mm THHN, 20 mm Ø PVC				
21	230	7						20 AT 2P C.B	3-3.5 mm THHN, 20 mm Ø PVC				
22	230	7						20 AT 2P C.B	3-3.5 mm THHN, 20 mm Ø PVC				
23	230	12						20 AT 2P C.B	3-3.5 mm THHN, 20 mm Ø PVC				
24	230	8						20 AT 2P C.B	3-3.5 mm THHN, 20 mm Ø PVC				
25	230	10						20 AT 2P C.B	3-3.5 mm THHN, 20 mm Ø PVC				
26	230	12						20 AT 2P C.B	3-3.5 mm THHN, 20 mm Ø PVC				
TOTAL CONNECTED LOAD													
TOTAL DEMAND LOAD CURRENT													
MAIN CIRCUIT BREAKER													
USE : 1/2 AT 3P 25 MVA Ø240 V MCB													
MAIN FEEDER:													
USE : 3-35mm ² THHN/THWN + 1-22mm ² PVC (In 40mm ² PVC)													

LIGHTING - PANEL (PC)			OUTLET		OTHER LOAD SERVICE			AMPERE LOAD			VOLT		CIRCUIT BREAKER		SIZE OF WIRE & CONDUIT	
CIRCUIT	PART	VOLTS	LO	CO			AB	BC	CA	3Ø	AMPERE					
1	1	230	11			3-EXHAUST FAN						20 AT 2P C.B			3-3.5 mm THHN, 20 mm Ø PVC	
2	2	230	11			3-EXHAUST FAN						20 AT 2P C.B			3-3.5 mm THHN, 20 mm Ø PVC	
3	3	230	7			3-EXHAUST FAN						20 AT 2P C.B			3-3.5 mm THHN, 20 mm Ø PVC	
4	4	230	12			3-EXHAUST FAN						20 AT 2P C.B			3-3.5 mm THHN, 20 mm Ø PVC	
5	5	230	6			3-EXHAUST FAN						20 AT 2P C.B			3-3.5 mm THHN, 20 mm Ø PVC	
6	6	230	7			3-EXHAUST FAN						20 AT 2P C.B			3-3.5 mm THHN, 20 mm Ø PVC	
7	7	230	10			3-EXHAUST FAN						20 AT 2P C.B			3-3.5 mm THHN, 20 mm Ø PVC	
8	8	230	8			3-EXHAUST FAN						20 AT 2P C.B			3-3.5 mm THHN, 20 mm Ø PVC	
9	9	230	12			3-EXHAUST FAN						20 AT 2P C.B			3-3.5 mm THHN, 20 mm Ø PVC	
10	10	230	9			3-EXHAUST FAN						20 AT 2P C.B			3-3.5 mm THHN, 20 mm Ø PVC	
11	11	230	7			3-EXHAUST FAN						20 AT 2P C.B			3-3.5 mm THHN, 20 mm Ø PVC	
12	12	230	10			3-EXHAUST FAN						20 AT 2P C.B			3-3.5 mm THHN, 20 mm Ø PVC	
13	13	230	6			3-EXHAUST FAN						20 AT 2P C.B			3-3.5 mm THHN, 20 mm Ø PVC	
14	14	230	9			3-EXHAUST FAN						20 AT 2P C.B			3-3.5 mm THHN, 20 mm Ø PVC	
15	15	230	8			3-EXHAUST FAN						20 AT 2P C.B			3-3.5 mm THHN, 20 mm Ø PVC	
16	16	230	10			3-EXHAUST FAN						20 AT 2P C.B			3-3.5 mm THHN, 20 mm Ø PVC	
17	17	230	8			3-EXHAUST FAN						20 AT 2P C.B			3-3.5 mm THHN, 20 mm Ø PVC	
18	18	230	8			3-EXHAUST FAN						20 AT 2P C.B			3-3.5 mm THHN, 20 mm Ø PVC	
19	19	230	15			3-EXHAUST FAN						20 AT 2P C.B			3-3.5 mm THHN, 20 mm Ø PVC	
20	20	230	20			3-EXHAUST FAN						20 AT 2P C.B			3-3.5 mm THHN, 20 mm Ø PVC	
21	21	230	6			3-EXHAUST FAN						20 AT 2P C.B			3-3.5 mm THHN, 20 mm Ø PVC	
22	22	230	8			3-EXHAUST FAN						20 AT 2P C.B			3-3.5 mm THHN, 20 mm Ø PVC	
23	23	230	8			3-EXHAUST FAN						20 AT 2P C.B			3-3.5 mm THHN, 20 mm Ø PVC	
TOTAL DEVIAND LOAD CURRENT																
TOTAL CONNECTED LOAD																
TOTAL CIRCUIT BREAKER																
USE : 1Ø at 3Ø 25 WAC Ø240 V MCB																
MAIN FEEDER:																
USE : 3-30mm ² THHN/PMN + 1-22mm ² TN(G) IN 40mmØPVC																

EXISTING LOAD SCHEDULE										
PANEL NO.	CIRCUIT NO.	VOLTS	OTHER LOAD SERVE		AMPERE LOAD			VOLT AMPERE	CIRCUIT BREAKER	SIZE OF WIRE & CONDUIT
			LO	CO	AB	BC	CA			
	1	230						20 AT 2P C.B	3-3.5 mm THHN, 20 mm ø PVC	
	9	1						20 AT 2P C.B	3-3.5 mm THHN, 20 mm ø PVC	
	2	230						20 AT 2P C.B	3-3.5 mm THHN, 20 mm ø PVC	
	3	230						20 AT 2P C.B	3-3.5 mm THHN, 20 mm ø PVC	
	4	230						20 AT 2P C.B	3-3.5 mm THHN, 20 mm ø PVC	
	5	230						20 AT 2P C.B	3-3.5 mm THHN, 20 mm ø PVC	
	6	230						20 AT 2P C.B	3-3.5 mm THHN, 20 mm ø PVC	
	7	230						20 AT 2P C.B	3-3.5 mm THHN, 20 mm ø PVC	
	8	230						20 AT 2P C.B	3-3.5 mm THHN, 20 mm ø PVC	
	9	230						20 AT 2P C.B	3-3.5 mm THHN, 20 mm ø PVC	
	10	230						20 AT 2P C.B	3-3.5 mm THHN, 20 mm ø PVC	
	11	230						20 AT 2P C.B	3-3.5 mm THHN, 20 mm ø PVC	
	12	230						20 AT 2P C.B	3-3.5 mm THHN, 20 mm ø PVC	
	13	230						20 AT 2P C.B	3-3.5 mm THHN, 20 mm ø PVC	
	14	230						20 AT 2P C.B	3-3.5 mm THHN, 20 mm ø PVC	
	15	230						20 AT 2P C.B	3-3.5 mm THHN, 20 mm ø PVC	
	16	230						20 AT 2P C.B	3-3.5 mm THHN, 20 mm ø PVC	
	17	230						20 AT 2P C.B	3-3.5 mm THHN, 20 mm ø PVC	
	18	230						20 AT 2P C.B	3-3.5 mm THHN, 20 mm ø PVC	
	19	230						20 AT 2P C.B	3-3.5 mm THHN, 20 mm ø PVC	
	20	230						20 AT 2P C.B	3-3.5 mm THHN, 20 mm ø PVC	
	21	230						20 AT 2P C.B	3-3.5 mm THHN, 20 mm ø PVC	
	22	230						20 AT 2P C.B	3-3.5 mm THHN, 20 mm ø PVC	
	23	230						20 AT 2P C.B	3-3.5 mm THHN, 20 mm ø PVC	
	24	230						60 AT 2P C.B	3-3.5 mm THHN, 20 mm ø PVC	
	25	230						60 AT 2P C.B	3-8.0 mm THHN & 1-5.5 mm THHN(Ø.52mm) PVC	
	26	230						20 AT 2P C.B	3-3.5 mm THHN, 20 mm ø PVC	
TOTAL CONNECTED LOAD										
TOTAL DEMAND LOAD CURRENT										
MAIN CIRCUIT BREAKER										
USE : 125 AT 3ø 25 MVA @240 V MCCB										
MAIN FEEDER:										
USE : 3-35mm ² THHN/THWN + 1-22mm ² TW(Ø) IN 40mmPVC										

[illegible]

SCHEDULE OF LOADS

NOT TO SCALE



Republika ng Pilipinas
Lunasod na Quezon

CITY ENGINEERING DEPARTMENT

PROJECT TITLE:

IMPROVEMENT OF DISTRICT HOSPITAL (PHASE 3)

LOCATION: BARANGAY SAN BARTOLOME DISTRICT 5 QUEZON CITY

DRAWN BY: SDO

DATE: 08/25/2021

CHECKED BY: JAN

REVISION NO.:

SUBMITTED BY:

10/01/2019

ENGR. LEQ S. DEL ROSARIO
HEAD, PLANNING & PROGRAMMING DIVISION

RECOMMENDING APPROVAL:

ENGR. ISAGANI R. VERZOSA, JR.

ODIC, CITY ENGINEERING DEPARTMENT

APPROVED BY:

HON. MA. JOSEFINA G. BELMONTE

CITY MAYOR, QUEZON CITY

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EL-09 2042

PROPOSED ADDITIONAL LOAD (DPWH PROJECT)

MAIN DISTRIBUTION PANEL-3 (MDP-3)

CIRCUIT NO.	VOLTS	LOAD DESCRIPTION	AMPERE LOAD			CIRCUIT BREAKER	SIZE OF WIRE & CONDUIT
			AB	BC	CA		
1	230	LPFB-EQUIPMENT	51.05	42.50	54.33	1/2 AT 3P MCCB	3-35mm ² THHN 1-2.0mm ² THW(G) 20mm ² PVC
2	230	LPFB-EQUIPMENT	34.978	21.82	21.82	70 AT 3P MCCB	3-14mm ² THHN 1-2.0mm ² THW(G) 25mm ² PVC
3	230	LPFB-EQUIPMENT	17.280	10.91	10.91	70 AT 3P MCCB	3-14mm ² THHN 1-2.0mm ² THW(G) 25mm ² PVC
4	230	LPFB-EQUIPMENT	22.45	13.72	14.50	70 AT 3P MCCB	3-14mm ² THHN 1-2.0mm ² THW(G) 25mm ² PVC
5	230	LPFB-EQUIPMENT	26.91	20.00	20.00	70 AT 3P MCCB	3-14mm ² THHN 1-2.0mm ² THW(G) 25mm ² PVC
6	230	LPFB-EQUIPMENT	25.09	18.00	20.00	70 AT 3P MCCB	3-14mm ² THHN 1-2.0mm ² THW(G) 25mm ² PVC
7	230	LPFB-EQUIPMENT	160.95	114.22	125.96	1/2 AT 3P MCCB	3-35mm ² THHN 1-2.0mm ² THW(G) 20mm ² PVC
TOTAL CONNECTED LOAD			160.95			MAIN CIRCUIT BREAKER	
TOTAL DEMAND LOAD CURRENT			160.95			FEEDER LINE	
IT = 1.732 x (160.95) + (10.00 x 0.25) = 281.27 A						USE : 70 AT, 100 AF, 3P 18 KAC Ø240 V Bolt-On	
						MAIN FEEDER:	
						USE : 3-14mm ² THHN + 1-8.0mm ² THW (G) 20mm ² IMC/Y14	

PROPOSED ADDITIONAL LOAD (DPWH PROJECT)

LPFB-EQUIPMENT

CIRCUIT NO.	VOLTS	LOAD DESCRIPTION	AMPERE LOAD			CIRCUIT BREAKER	SIZE OF WIRE & CONDUIT
			AB	BC	CA		
1	230	LPFB-EQUIPMENT	7.27	7.27	7.27	20 AT 2P C.B.	2-3.5mm ² THHN, 1-2.0mm ² THW(G) 20mm ² PVC
2	230	LPFB-EQUIPMENT	1.600	1.600	1.600	20 AT 2P C.B.	2-3.5mm ² THHN, 1-2.0mm ² THW(G) 20mm ² PVC
3	230	LPFB-EQUIPMENT	1.440	1.440	1.440	20 AT 2P C.B.	2-3.5mm ² THHN, 1-2.0mm ² THW(G) 20mm ² PVC
4	230	LPFB-EQUIPMENT	1.440	1.440	1.440	20 AT 2P C.B.	2-3.5mm ² THHN, 1-2.0mm ² THW(G) 20mm ² PVC
5	230	LPFB-EQUIPMENT	1.587	1.587	1.587	20 AT 2P C.B.	2-3.5mm ² THHN, 1-2.0mm ² THW(G) 20mm ² PVC
6	230	LPFB-EQUIPMENT	1.587	1.587	1.587	20 AT 2P C.B.	2-3.5mm ² THHN, 1-2.0mm ² THW(G) 20mm ² PVC
7	230	LPFB-EQUIPMENT	1.587	1.587	1.587	20 AT 2P C.B.	2-3.5mm ² THHN, 1-2.0mm ² THW(G) 20mm ² PVC
8	230	LPFB-EQUIPMENT	1.587	1.587	1.587	20 AT 2P C.B.	2-3.5mm ² THHN, 1-2.0mm ² THW(G) 20mm ² PVC
9	230	LPFB-EQUIPMENT	1.587	1.587	1.587	20 AT 2P C.B.	2-3.5mm ² THHN, 1-2.0mm ² THW(G) 20mm ² PVC
10	230	LPFB-EQUIPMENT	1.587	1.587	1.587	20 AT 2P C.B.	2-3.5mm ² THHN, 1-2.0mm ² THW(G) 20mm ² PVC
11	230	LPFB-EQUIPMENT	1.587	1.587	1.587	20 AT 2P C.B.	2-3.5mm ² THHN, 1-2.0mm ² THW(G) 20mm ² PVC
12	230	LPFB-EQUIPMENT	1.587	1.587	1.587	20 AT 2P C.B.	2-3.5mm ² THHN, 1-2.0mm ² THW(G) 20mm ² PVC
13	230	LPFB-EQUIPMENT	1.587	1.587	1.587	20 AT 2P C.B.	2-3.5mm ² THHN, 1-2.0mm ² THW(G) 20mm ² PVC
14	230	LPFB-EQUIPMENT	1.587	1.587	1.587	20 AT 2P C.B.	2-3.5mm ² THHN, 1-2.0mm ² THW(G) 20mm ² PVC
15	230	LPFB-EQUIPMENT	1.587	1.587	1.587	20 AT 2P C.B.	2-3.5mm ² THHN, 1-2.0mm ² THW(G) 20mm ² PVC
16	230	LPFB-EQUIPMENT	1.587	1.587	1.587	20 AT 2P C.B.	2-3.5mm ² THHN, 1-2.0mm ² THW(G) 20mm ² PVC
17	230	LPFB-EQUIPMENT	1.587	1.587	1.587	20 AT 2P C.B.	2-3.5mm ² THHN, 1-2.0mm ² THW(G) 20mm ² PVC
18	230	LPFB-EQUIPMENT	1.587	1.587	1.587	20 AT 2P C.B.	2-3.5mm ² THHN, 1-2.0mm ² THW(G) 20mm ² PVC
19	230	LPFB-EQUIPMENT	1.587	1.587	1.587	20 AT 2P C.B.	2-3.5mm ² THHN, 1-2.0mm ² THW(G) 20mm ² PVC
20	230	LPFB-EQUIPMENT	1.587	1.587	1.587	20 AT 2P C.B.	2-3.5mm ² THHN, 1-2.0mm ² THW(G) 20mm ² PVC
21	230	LPFB-EQUIPMENT	1.587	1.587	1.587	20 AT 2P C.B.	2-3.5mm ² THHN, 1-2.0mm ² THW(G) 20mm ² PVC
22	230	LPFB-EQUIPMENT	1.587	1.587	1.587	20 AT 2P C.B.	2-3.5mm ² THHN, 1-2.0mm ² THW(G) 20mm ² PVC
TOTAL CONNECTED LOAD			57.05			MAIN CIRCUIT BREAKER	
TOTAL DEMAND LOAD CURRENT			57.05			FEEDER LINE	
IT = 1.732 x (57.05) + (10.00 x 0.25) = 100.81 A						USE : 125 AT, 200 AF, 3P 25 KAC Ø240 V Bolt-On	
						MAIN FEEDER:	
						USE : 3-35mm ² THHN + 1-8.0mm ² THW (G) 20mm ² IMC/Y14	

PROPOSED ADDITIONAL LOAD (DPWH PROJECT)

LPFB-EQUIPMENT

CIRCUIT NO.	VOLTS	LOAD DESCRIPTION	AMPERE LOAD			CIRCUIT BREAKER	SIZE OF WIRE & CONDUIT
			AB	BC	CA		
1	230	LPFB-EQUIPMENT	3.31	3.31	3.31	20 AT 2P C.B.	2-3.5mm ² THHN, 1-2.0mm ² THW(G) 20mm ² PVC
2	230	LPFB-EQUIPMENT	3.31	3.31	3.31	20 AT 2P C.B.	2-3.5mm ² THHN, 1-2.0mm ² THW(G) 20mm ² PVC
3	230	LPFB-EQUIPMENT	4.09	4.09	4.09	20 AT 2P C.B.	2-3.5mm ² THHN, 1-2.0mm ² THW(G) 20mm ² PVC
4	230	LPFB-EQUIPMENT	4.09	4.09	4.09	20 AT 2P C.B.	2-3.5mm ² THHN, 1-2.0mm ² THW(G) 20mm ² PVC
5	230	LPFB-EQUIPMENT	10.00	10.00	10.00	20 AT 2P C.B.	2-3.5mm ² THHN, 1-2.0mm ² THW(G) 20mm ² PVC
6	230	LPFB-EQUIPMENT	10.00	10.00	10.00	20 AT 2P C.B.	2-3.5mm ² THHN, 1-2.0mm ² THW(G) 20mm ² PVC
7	230	LPFB-EQUIPMENT	10.00	10.00	10.00	20 AT 2P C.B.	2-3.5mm ² THHN, 1-2.0mm ² THW(G) 20mm ² PVC
8	230	LPFB-EQUIPMENT	13.84	13.84	13.84	20 AT 2P C.B.	2-3.5mm ² THHN, 1-2.0mm ² THW(G) 20mm ² PVC
9	230	LPFB-EQUIPMENT	8.82	8.82	8.82	20 AT 2P C.B.	2-3.5mm ² THHN, 1-2.0mm ² THW(G) 20mm ² PVC
10	230	LPFB-EQUIPMENT	8.82	8.82	8.82	20 AT 2P C.B.	2-3.5mm ² THHN, 1-2.0mm ² THW(G) 20mm ² PVC
TOTAL CONNECTED LOAD			57.05			MAIN CIRCUIT BREAKER	
TOTAL DEMAND LOAD CURRENT			57.05			FEEDER LINE	
IT = 1.732 x (57.05) + (10.00 x 0.25) = 59.97 A						USE : 70 AT, 100 AF, 3P 18 KAC Ø240 V Bolt-On	
						MAIN FEEDER:	
						USE : 3-14mm ² THHN + 1-8.0mm ² THW (G) 20mm ² IMC/Y14	

1 SCHEDULE OF LOADS



Republika ng Pilipinas
Lungsod ng Quezon

CITY ENGINEERING DEPARTMENT

LOCATION: BARANGAY SAN BARTOLOME, DISTRICT 5, QUEZON CITY

PROJECT TITLE:

PROPOSED IMPROVEMENT OF
NOVALICHES DISTRICT HOSPITAL
(PHASE 3)

LOCATION: BARANGAY SAN BARTOLOME, DISTRICT 5, QUEZON CITY

DRAWN BY:

DATE: 06/25/2021

CHECKED BY: ENR. LEO S. DEL ROSARIO

REVISION (NO.):

SUBMITTED BY:

ENR. LEO S. DEL ROSARIO

HEAD, PLANNING & PROGRAMMING DIVISION

RECOMMENDING APPROVAL:

ENR. ISAGANI R. VERZOSA, JR.

CHIEF, ENGINEERING DEPARTMENT

APPROVED BY:

HON. MA. JOSEFINA G. BELMONTE

CITY MAYOR, QUEZON CITY

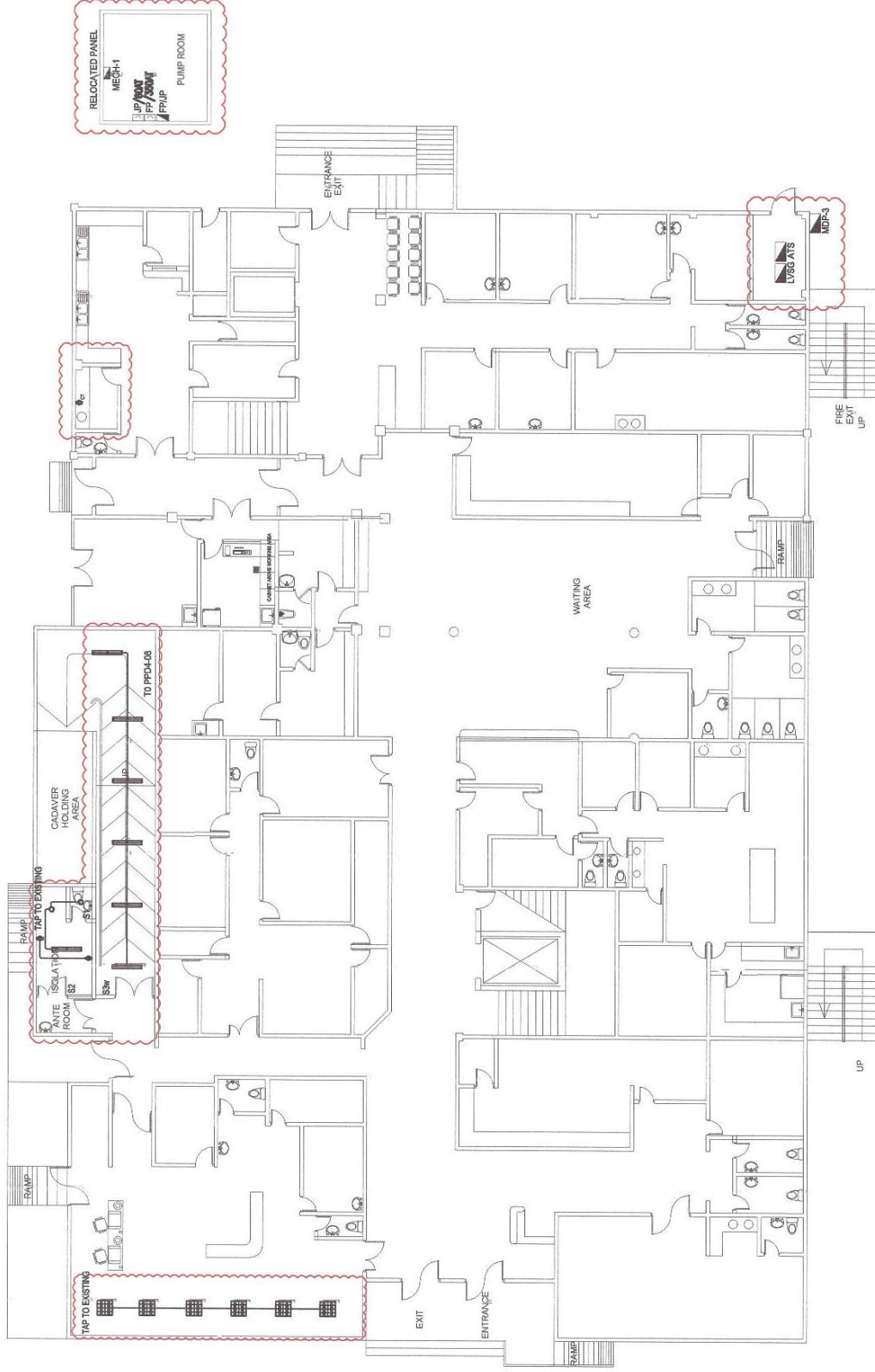
SHEET NO.

SCHEDULE OF LOADS

EL-11

22 42

NOT TO SCALE

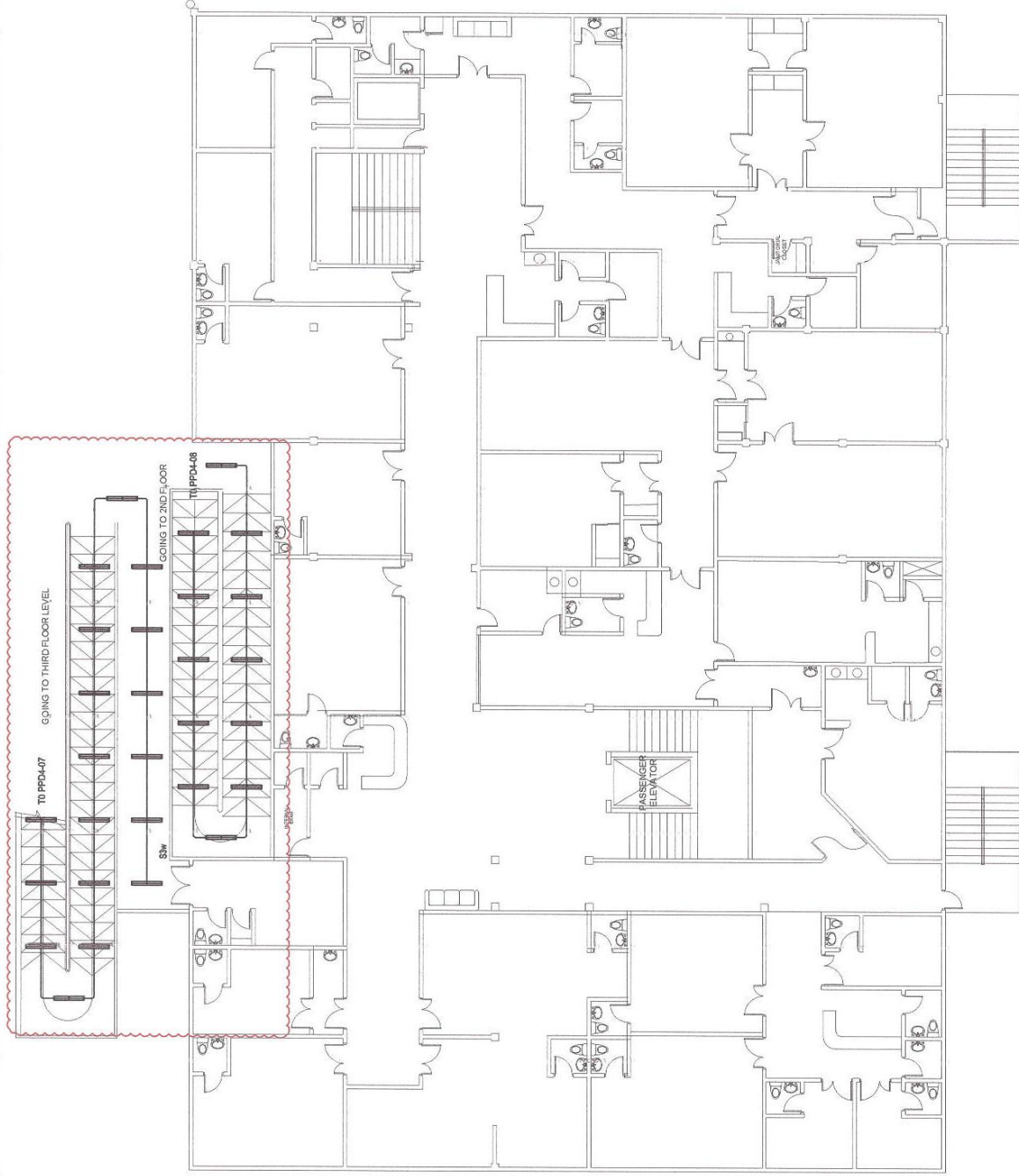


PROJECT TITLE :		SUBMITTED BY:		RECOMMENDING APPROVAL:		APPROVED BY:		SHEET CONTENT		SHEET NO.	
1 GROUND FLOOR LIGHTING & POWER LAYOUT		DRAWN BY: SDO		DATE: 04/25/2021		CHECKED BY: SN		REVISION NO.:		EL-12 23 42	
PROPOSED IMPROVEMENT OF NOVALICHES DISTRICT HOSPITAL (PHASE 3)		ENGR. LEON DEL ROSARIO HEAD, PLANNING & PROGRAMMING DIVISION		ENGR. ISAGAM R. VERZOSA, JR. OIC, CITY ENGINEERING DEPARTMENT		HON. MA. JOSEFINA G. BELMONTE CITY MAYOR, QUEZON CITY		GROUND FLOOR LIGHTING & POWER LAYOUT			
LOCATION: BARANGAY SAN BARTOLOME, DISTRICT 5, QUEZON CITY											

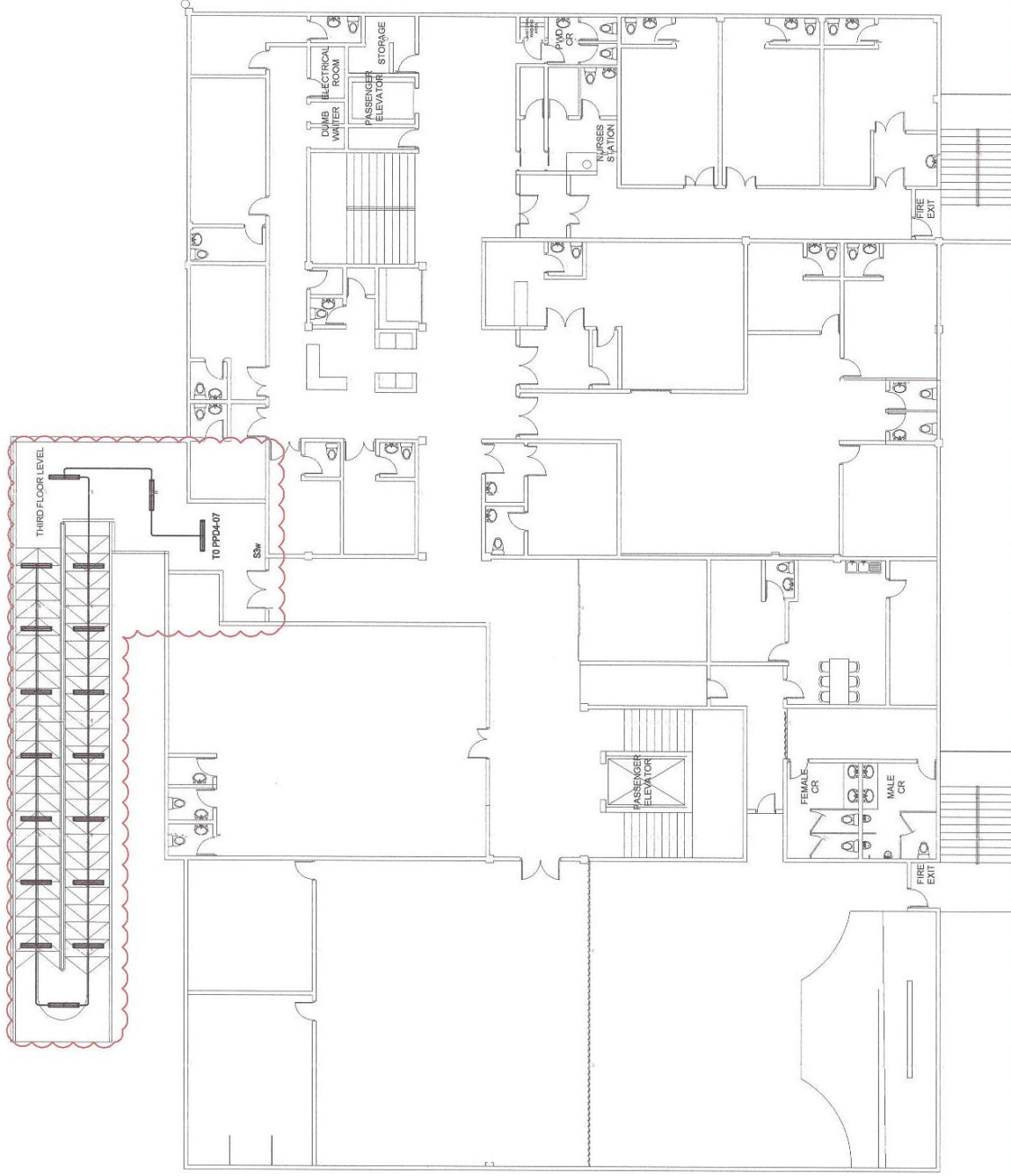


Republika ng Pilipinas
Lungsod ng Quezon
CITY ENGINEERING DEPARTMENT

NOT TO SCALE



1 SECOND FLOOR LIGHTING & POWER LAYOUT	NOT TO SCALE										
	PROJECT TITLE :		SHEET NO.								
	DRAWN BY: 		APPROVED BY:								
	DATE: 06/25/2021		RECOMMENDING APPROVAL:								
	CHECKED BY: 		SUBMITTED BY:								
Republica ng Pilipinas Lungsod ng Quezon CITY ENGINEERING DEPARTMENT	PROPOSED IMPROVEMENT OF NOVALICHES DISTRICT HOSPITAL (PHASE 3)		ENGR. LEO S. DEL ROSARIO HEAD, PLANNING & PROGRAMMING DIVISION		ENGR. USMANI R. VERZOSA, JR. CITY ENGINEERING DEPARTMENT		HON. MA. JOSEFINA G. BELMONTE CITY MAYOR, QUEZON CITY		SECOND FLOOR LIGHTING & POWER LAYOUT		
	LOCATION :		REVISION NO. :		ENGR. LEO S. DEL ROSARIO		ENGR. USMANI R. VERZOSA, JR.		HON. MA. JOSEFINA G. BELMONTE		
	BARANGAY SAN BARTOLOME, DISTRICT 5, QUEZON CITY										
											



1		THIRD FLOOR LIGHTING & POWER LAYOUT		NOT TO SCALE										
 Republika ng Pilipinas Lungsod ng Quezon CITY ENGINEERING DEPARTMENT	PROJECT TITLE :		PROPOSED IMPROVEMENT OF NOVALICHES DISTRICT HOSPITAL (PHASE 3)		DRAWN BY: 		SUBMITTED BY: 		RECOMMENDING APPROVAL:		APPROVED BY:		SHEET NO.	
	LOCATION :		BARANGAY SAN BARTOLOME, DISTRICT 5, QUEZON CITY		DATE: 06/25/2021		ENGR. LEO S. DEL ROSARIO HGO, PLANNING & PROGRAMMING DIVISION		ENGR. ISAGANI R. VERZOSA, JR. CITY ENGINEERING DEPARTMENT		HON. MA. JOSEFINA G. BELMONTE CITY MAYOR, QUEZON CITY		EL-14 2542	
					CHECKED BY: 									
					REVISION NO. :									