

Republika ng Pilipinas Lungsod Quezon



Lungsod Quezon BIDS AND AWARDS COMMITTEE FOR INFRASTRUCTURE & CONSULTANCY 2nd Floor, Finance Building, Procurement Department, Quezon City Hall Complex, Elliptical Road, Quezon City

March 9, 2022

Request for Quotation/ Proposal

No.	Projec t No.	Project Name	Location	Amount	Duration Cal. Days	Office	Source Fund
Buil	dings –	Small B					
1	22- 001SV	Proposed Rehabilitation of Fire Exit at Social Development Center at Barangay Payatas	Payatas	165,523.84	30	Engineering Department	Engineering Department
2	22- 002SV	Proposed Rehabilitation of Reception Area at Betty Go Belmonte Super Health Center in Barangay Holy Spirit	Holy Spirit	341,124.74	30	Engineering Department	20% Community Development Fund
3	22- 003SV	Proposed Rehabilitation of Novaliches District Hospital Covid Ward	San Bartolome	354,897.38	30	Engineering Department	Engineering Department - SB No. 1
4	22- 004SV	Proposed Rehabilitation of Waterline System at Culiat High School	Culiat	586,890.41	60	Engineering Department	Special Education Fund
5	22- 005SV	Proposed Temporary Enclosure for Crematory Machine at Baesa Crematorium	Baesa	594,910.45	30	Engineering Department	Engineering Department - SB No. 1
6	22- 006SV	Proposed Rehabilitation of Reception Area at Health Centers in Barangay Libis and Barangay Bagumbuhay (District 3)	Libis and Bagumbu hay	632,587.24	30	Engineering Department	20% Community Development Fund
7	22- 007SV	Proposed Rehabilitation of Reception Area at Health Centers in Barangay Alicia and Barangay Paltok (District 1)	Alicia and Paltok	809,220.13	30	Engineering Department	20% Community Development Fund
8	22- 008SV	Proposed Rehabilitation of of Day Care Center at Idang Street, Sitio Aguardiente	Sta. Monica	828,057.99	30	Engineering Department	Engineering Department - SB No. 1
9	22- 009SV	Proposed Upgrading of Electrical System at Sauyo High School	Tandang Sora	846,268.11	Engineerin 90 Departmer		Special Education Fund
10	22- 010SV	Proposed Rehabilitation of Reception Area at Health Centers in Barangay Apolonio Samson, Barangay Tandang Sora and Barangay Pasong Tamo (District 6)	ea at Health Barangay Samson, Indang Sora ay Pasong Tamo		30	Engineering Department	20% Community Development Fund



Republika ng Pilipinas Lungsod Quezon



BIDS AND AWARDS COMMITTEE FOR INFRASTRUCTURE & CONSULTANCY Great Green. Growing 2nd Floor, Finance Building, Procurement Department, Quezon City Hall Complex, Elliptical Road, Quezon City

11	22- 011SV	Proposed Rehabilitation of Electrical System at North Fairview Elementary School	North Fairview	856,353.23	60	Engineering Department	Special Education Fund	
12	22- 012SV	Proposed Upgrading of Service Entrance at NOH Sta. Lucia Senior High School	Sta. Lucia	908,850.15	60	Engineering Department	Special Education Fund	
13	22- 013SV	Proposed Construction of Terrace at Barangay Hall In Barangay Kalusugan	Kalusugan	914,528.02	4,528.02 60		Engineering Department	
14	22- 014SV	Proposed Rehabilitation of Distribution Feeder at Lagro Elementary School	Greater Lagro	933,602.51	60	Engineering Department	Special Education Fund	
15	22- 015SV	Proposed Rehabilitation of Reception Area at Health Centers in Barangay Kamuning, Barangay Kaunlaran and Barangay San Vicente (District 4)	Kamuning, Kaunlaran and San Vicente	953,997.37	30	Engineering Department	20% Community Development Fund	
Roa	Roads – Small B							
16	22- 016SV	Proposed Rehabilitation (Surface Improvement) at Lourdes Street	Novaliches Proper	933,825.43	30	Engineering Department	20% Community Development Fund	

The Quezon City Government through its Bids and Awards Committee – Infra and Consultancy undertake a Small Value Procurement in accordance with **Section 53.9 of the Revised Implementing Rules and Regulations of Republic Act No. 9184**.

Please quote your best offer for the project/s described above, subject to the Terms and Conditions provided. Submit your proposal/price quotation duly signed by you or your duly authorized representative not later than **15 March 2022** on or before **10:00 A.M.**, Philippine Standard Time, together with the following documents:

- 1. PhilGEPS Platinum Certificate (3 pages)
- 2. DTI or SEC Registration Certificate
- 3. Mayor's Permit
- 4. Tax Clearance
- 5. PCAB License (Bidders with valid Philippine Contractors Accreditation Board (PCAB)
- 6. Audited Financial Statements
- 7. Net Financial Contracting Capacity (NFCC)
- 8. List of Key Construction Personnel to be assign for the project
- 9. List of Major Equipment to be used for the Project
- 10. Duly Notarized Affidavit of Undertaking of Key Personnel and Equipment
- 11. Income/Business Tax Returns

12. Omnibus Sworn Statement prescribed by the Government Procurement Policy Board (GPPB) duly notarized with attached Secretary's Certificate (*If a partnership, corporation, cooperative, or joint venture*). The authorized representative as identified in the Omnibus Sworn Statement shall be the signatory in the proposal/price quotation form.



Republika ng Pilipinas Lungsod Quezon



BIDS AND AWARDS COMMITTEE FOR INFRASTRUCTURE & CONSULTANCY QUEZON CITY 2nd Floor, Finance Building, Procurement Department, Quezon City Hall Complex, Elliptical Road, Quezon City

Opening of Quotations/Proposals will be on 15 March 2022 at exactly 1:00 P.M.

in a SEALED LONG BROWN ENVELOPE shall:

- Contain the Name of Project of the contract to be quoted in capital letters: 1
 - Bear the name and address of the Contractor in capital letters; Be addressed to the Procuring Entity's BAC.

Name of Project: IN CAPITAL LETTERS

2 3

Quezon City Local Government BIDS AND AWARDS COMMITTEE (INFRA & CONSULTANCY) 2/F Procurement Department, Finance Building **Quezon City Hall Compound**

TERMS AND CONDITIONS

- 1. Contractor shall provide correct and accurate information required in this form.
- 2. Price quotation/proposal must be valid for a period of thirty (30) calendar days from the date of submission.
- 3. Price quotation/proposal, to be denominated in Philippine Peso shall include all taxes, duties and/or levies payable.
- 4. Quotation/Proposal exceeding the Approved Budget for the Contract (ABC) shall be rejected.
- 5. Award of contract shall be made to the lowest quotation/proposal (for infra) which complies with the minimum technical specifications and other terms and conditions stated herein.
- 6. Any interlineations, erasures or overwriting shall be valid only if they are signed or initialed by the contractor or his/her duly authorized representative/s.
- 7. The Engineering Department shall have the right to inspect and monitor the construction projects
- 8. Non-submission of eligibility documents shall mean disqualification of Quotation/Proposal.
- 9. Liquidated damages equivalent to one tenth (1/10) of one percent (1%) of the cost of the unperformed portion for every day of delay, Engineering Department shall rescind the contract once the cumulative amount of liquidated damages reaches ten percent (10%) of the amount of the contract, without prejudice to other courses of action and remedies open to it.
- 10. Failure to follow these instructions will disqualify your entire quotation/proposal.

For any clarification you may contact us at 89884242 loc. 8505/8709.

ATTY. MARK DAL **DIAMOND P. PERRAL** Infra and Consultancy Chairman. BAC



Lungsod ng Quezon CITY ENGINEERING DEPARTMENT

Republika ng Pilipinas

5th, 6th, 7th Floors, QC Civic Center Building "B" Telephone Nos. 8988-4242 Local 8538



PROJECT TITLE : PROPOSED REHABILITATION OF NOVALICHES DISTRICT HOSPITAL COVID WARD

LOCATION : BARANGAY SAN BARTOLOME, DISTRICT 5, QUEZON CITY

LIST OF MANPOWER

NO.	MANPOWER	QTY
1	Project Engineer	1
2	Materials Engineer	1
3	Safety Officer / Safety Practitioner	Refer to DOLE Requirements
4	Foreman	1
5	Skilled Worker	4
6	Driver	. 1
7	Laborer/Helper	8

Prepared by:

ALESSANDRO NELIO B. GESMUNDO Planning & Programming Division

Checked by:

N A. NAONG JOC Planning & Programming Division



Republika ng Pilipinas Lungsod ng Quezon CIVIL ENGINEERING DEPARTMENT 5th, 6th 7th Floor, QC Civic Center Building "B" Telephone Nos. 8988-4242 Local 8538



PROJECT TITLE : PROPOSED REHABILITATION OF NOVALICHES DISTRICT HOSPITAL COVID WARD

LOCATION : BARANGAY SAN BARTOLOME, DISTRICT 5, QUEZON CITY

LIST OF EQUIPMENT

NO.	NAME OF EQUIPMENT	QTY
1	Elf truck	1
2	Scaffolding	As Needed
3	Power Tools	As Needed
4	Minor Tools	As Needed

Prepared by:

ALESSANDRO NELIO B. GESMUNDO Planning & Programming Division

Checked by:

JOCELYN Q. NAONG Planning & Programming Division

PROJECT TITLE : PROPOSED REHABILITATION OF NOVALICHES DISTRICT HOSPITAL COVID WARD

LOCATION : BARANGAY SAN BARTOLOME, DISTRICT 5, QUEZON CITY

- PROJECT NO. : 22 003SV
- DURATION : Thirty (30) Calendar Days

BREAKDOWN OF COST

ITEM NO.	ITEM OF WORK (DESCRIPTION)	MATERIALS COST	LABOR COST	INDIRECT COST	AGGREGATE COST
I	GENERAL REQUIREMENTS				
Ш	SITE WORKS				
III	CIVIL/ STRUCTURAL WORKS				
IV	ARCHITECTURAL WORKS				
V	PLUMBING WORKS				

TOTAL COST P

LUMP SUM BID IN WORDS : _____

Contractor : _____

Bid Form Page 3 of 3

BILL OF QUANTITIES

(Building Construction/Rehabilitation Project)

PROJECT TITLE : PROPOSED REHABILITATION OF NOVALICHES DISTRICT HOSPITAL COVID WARD

LOCATION : BARANGAY SAN BARTOLOME, DISTRICT 5, QUEZON CITY

PROJECT NO. : 22 - 003SV

DURATION : Thirty (30) Calendar Days

SCOPE OF WORK :

- 1 General Requirements include billboard, clearing, hauling and disposal of construction materials and debris, construction safety and health.
- 2 Site Works include demolition works.
- 3 Civil / Structural Works include metal works.
- 4 Architectural Works include installation of partitions, doors and door jambs, and painting works.
- 5 Sanitary / Plumbing Works include installation of roughing-ins, fixtures and accessories.
- 6 All necessary testing of materials and commissioning works must be performed as per standard procedures.

ITEM NO.	WORK DESCRIPTION & SCOPE OF WORKS	QTY.	UNIT	UNIT COST	TOTAL COST
I	GENERAL REQUIREMENTS				
	Billboard	1	piece	P	P
	Clearing, Hauling and Disposal of Construction Materials and Debris	1	t.l.		
	Construction Safety and Health	1	unit		
				Direct Cost I	₽
II	SITE WORKS				
	Demolition Works				
	Removal of Water Closet	9	set	₽	₽
				Direct Cost II	₽
III	CIVIL/ STRUCTURAL WORKS				
	Metal Works				
	Window Grills				
	W1 - 1.20m x 0.80m Window Grills				
	12mm Flat Bars	4	kg	P	P
	25mm x 25mm Square Bars	64	kg		
	W2 - 1.20m x 1.60m Window Grills				
	12mm Flat Bars	16	kg		
	25mm x 25mm Square Bars	358	kg		
	W3 - 1.20m x 2.40m Window Grills				
	12mm Flat Bars	21	kg		
	25mm x 25mm Square Bars	524	kg		
	Miscellaneous & Consumables				
	Acetylene Tank (Refill)	2	tank		
	Cut Off Blade	2	piece		
	Grinding Disc for Metal	2	piece		
	Oxygen Tank (Refill)	3	tank		
	Welding Rod	2	box		

ITEM NO.	WORK DESCRIPTION & SCOPE OF WORKS	QTY.	UNIT	UNIT COST	TOTAL COST
				Material Cost III	₽
				Labor Cost III	₽
				Direct Cost III	P
IV	ARCHITECTURAL WORKS				
А	Wall Finishes and Partitions				
	6mm Thick Fibercement Board on Metal Framing	8	sq.m.	₽	₽
				Material Cost	₽
				Labor Cost	₽
				Sub-Total Cost	₽
В	Installation of Doors				
	D1 - 0.90m x 2.10m Flush Door	1	set	₽	₽
	Door Jambs				
	D1 - 0.90m x 2.10m Flush Door	1	piece		
	Hardwares and Accessories				
	Door Hinge, Stainless, Heavy Duty	3	piece		

ITEM NO.	WORK DESCRIPTION & SCOPE OF WORKS	QTY.	UNIT	UNIT COST	TOTAL COST
	Door Knob, Lever Type	1	set		
				Material Cost	ŧ
				Labor Cost	₽
				Sub-Total Cost	₽
С	Painting Works				
	Anti-Bacterial Paint Finish (Dry Wall Partition and Flush Door)	19	sq.m	P	₽
	Epoxy Enamel Finish (Steel Members)	34	sq.m		
				Material Cost	₽
				Labor Cost	₽
				Sub-Total Cost	₽
				Material Cost IV	₽
				Labor Cost IV	₽
				Direct Cost IV	₽
v	PLUMBING WORKS				
•	Roughing-ins				
	15Ø, G.I. Nipple	1	piece	₽	₽
	15Ø, G.I. Coupling	1	piece		
	Fixtures		•		
	Bidet with Accessories, Stainless (Water Efficient)	6	set		
	Floor Drain, 100mm x 100mm Stainless Steel	15	piece		
	Hose Bibb, Heavy Duty, Lever Type (Water Efficient)	7	set		
	Lavatory Faucet, Lever Type, Stainless Steel Heavy Duty (Water Efficient)	9	piece		
	Telephone Shower Set (Water Efficient)	7	set		
	Water Closet, Tank Type w/ Accessories (Water Efficient)	9	set		
	Accessories				
	Flexible Hose, Stainless	14	piece		
	Two-Way Angle Valve, Stainless	7	piece		
				Material Cost V	₽
				Labor Cost V	₽
				Direct Cost V	₽

SUMMARY

ITEM NO	WORK DESCRIPTION AND SCOPE OF WORKS	TOTAL COST
		Ð
	GENERAL REQUIREMENTS	P
 	SITE WORKS	
IV	ARCHITECTURAL WORKS	
V	PLUMBING WORKS	

ITEM NO.	WORK DESCRIPTION & SCOPE OF WORKS		QTY.	UNIT	UNIT COST	TOTAL COST
	FE: ictly enforce health protocols relative to the latest DPWH norandum.	Overhe	ead, Cont	ingencies	OTAL DIRECT COST and Miscellaneous and ables Expenses (OCM) Profit VAT	₽
				ΤΟΤΑ	L ESTIMATED COST	P



Replublika ng Pilipinas Lungsod ng Quezon CITY ENGINEERING DEPARTMENT

5TH, 6TH, 7TH Floors, QC Civic Center Building "B" Telephone Nos. 8988-4242 Local 8538



PROJECT TITLE :

PROPOSED REHABILITATION OF NOVALICHES DISTRICT HOSPITAL COVID WARD BARANGAY SAN BARTOLOME, DISTRICT 5, QUEZON CITY

TECHNICAL SPECIFICATIONS

I. GENERAL REQUIREMENTS

- A. Comply with the current and existing laws, ordinances and applicable codes, rules and regulations, and standards. Any works performed 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)
 - 1. 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.
 - 2. 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.
- 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
 - 1. All facilities shall be near the job site, where necessary and shall conform to the best standard for the required types.
 - 2. Temporary facilities shall be provided and maintained including sanitary facilities and first aid stations.

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.

3. Metal Surfaces:

Surfaces shall be clean and free from all scale, flake, rust and rust pitting; wellformed and finished to shape and size, with sharp lines, angle 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.

4. 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.

5. 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 tack welding is permitted. Do not tack weld exposed to connections). Grind smooth visible weld in finished installation.

III. ARCHITECTURAL WORKS

A. WALL FINISHES AND PARTITIONING

 Double-Wall Fiber Cement Board Drywall on Metal Studs. Wall panel shall be two (2) 6 mm thick fiber cement boards, properly cut and prepared for installation and shall conform to the requirements of the Plans.

Metal Studs. Wall framing shall consist of 0.6 mm thick aluminum metal studs and aluminum metal tracks.

Fasteners and Connection detail. All construction and connections shall be secured with rivets, screws and drive pins, and shall conform to local and standard codes. Connections shall also be secured with gypsum putty and gypsum tape.

B. PAINTING WORKS

- 1. Paint Materials. All types of paint material and other related products shall be subject to test as to material composition by the Bureau of Research and Standard, DPWH or the National Institute of Science and Technology.
- 2. Tinting Colors. Tinting colors shall be first grade quality pigment ground in alkyd resin that disperses and mixes easily with paint to produce the color desired. Use the same brand of paint and tinting color to effect good paint body.
- 3. Skim coat. Skim coat shall be fine powder type material like kalsomine that can be mixed into putty consistency, with oil-based primers and paints to fill minor surface dents and imperfections.
- 4. Paint Schedule.
 - b. Exterior Masonry Wall (plain cement plastered finish to be painted)
 - i. 1 coat skim coating, 1 coat primer, 2 coats elastomeric paint finish
 - c. Interior Masonry Wall (plain cement plastered finish to be painted)
 - i. 1 coat skim coating, 1 coat primer, 2 coats latex paint finish
 - d. Interior Dry Wall
 - i. 1 coat primer, 2 coats latex paint finish

- 3. Temporary utilities shall be sufficiently provided until the completion of the project such as water, power and communication.
- 4. Temporary enclosure shall be provided around the construction site with adequate guard lights, railings and proper signage.
- 5. Temporary roadways shall be constructed and maintained to sustain loads to be carried on them during the entire construction period.
- 6. 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.
 - 1. A fully-trained Medical Aide shall be employed permanently on the site who shall be engaged solely to medical duties.
 - 2. The medical room shall be provided with waterproofing; 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.
 - 3. The location of the medical room and any other arrangements shall be made known to all employees by posting on prominent locations and suitable notices in the site.
 - 4. Additional safety precautions shall be provided in the event of a pandemic. Protocols set forth by the government shall be strictly followed.
 - 5. Personal Protective Equipment (PPE) shall consist of safety helmet/hard hat, safety reflectorized vest, safety insulated gloves, dust mask, safety shoes, safety goggles, and safety harness. Every skilled and unskilled worker, and the project foreman shall be provided PPE by the Contractor. Consideration of quantity shall be made for the Project Engineer, Materials Engineer, Safety Officer/Practitioner (as required) and project driver.
 - 6. Construction safety materials shall consist of safety net, fire extinguisher and safety signage and posters.
- 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 the 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. CIVIL / STRUCTURAL WORKS

A. METAL FABRICATION

- 1. Materials:
 - a. 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.
 - b. Bolts, Nuts, Studs and Rivets. ASTM A 307 and A 325.
 - c. Screws. Fed. Spec FF-S-85, Fed. Spec FF-S-92, and Fed. Spec. FF-S-111.
 - d. Metal Purlins. High grade galvanized steel with minimum tensile strength of 275 MPa, 1.4mm in thickness or approved equal.
- 2. Fabrication:

- e. Ceiling Boards
 - i. 1 coat primer, 2 coats latex paint finish
- f. Slab Soffit
 - i. 1 coat primer, 2 coats latex paint finish
- g. Metal / Steel Surfaces
 - i. 1 coat primer, 2 coats epoxy enamel finish
- i. Surface Preparation. All surfaces shall be in proper condition to receive the finish. Woodworks shall be hand-sanded smooth and dusted clean. All knot-holes pitch pockets or sappy portions shall be sealed with natural wood filler. Nail holes, cracks or defects shall be carefully puttied after the first coat, matching the color of paint.

Interior woodworks shall be sandpapered between coats. Cracks, holes of imperfections in plaster shall be filled with patching compound and smoothed off to match adjoining surfaces.

Concrete and masonry surfaces shall be coated with concrete neutralizer and allowed to dry before any painting primer coat is applied. When surface is dried apply first coating. Hairline cracks and unevenness shall be patched and sealed with approved putty or patching compound. After all defects are corrected apply the finish coats as specified on the Plans (color scheme approved).

Metal shall be clean, dry and free from mill scale and rust. Remove all grease and oil from surfaces. Wash, unprimed galvanized metal with etching solution and allow it to dry. Where required to prime coat surface with Red Lead Primer same shall be approved by the Engineer.

In addition, the Contractor shall undertake the following:

- a. Voids, cracks, nick etc. will be repaired with proper patching material and finished flushed with surrounding surfaces.
- b. Marred or damaged shop coats on metal shall be spot primed with appropriate metal primer.
- c. Panting and varnishing works shall not be commenced when it is too hot or cold.
- d. Allow appropriate ventilation during application and drying period
- e. All hardware will be fitted and removed or protected prior to painting and varnishing works.
- ii. Application. Paints when applied by brush shall become non-fluid, thick enough to lay down as adequate film of wet paint. Brush marks shall have flawed out after application of paint.

Paints made for application by roller must be similar to brushing paint. It must be nonsticky when thinned to spraying viscosity so that it will break up easily into droplets.

Paint is atomized by high pressure pumping rather than broken up by the large volume of air mixed with it. This procedure changes the required properties of the paint.

- iii. Application shall be as per paint Manufacturer's specification and recommendation.
- iv. Provide all drop cloth and other covering requisite for protection of floors, walls, aluminum, glass, finishes and other works.
- v. All applications and methods used shall strictly follow the Manufacturer's Instructions and Specifications.

- vi. All surfaces including masonry wall shall be thoroughly cleaned, puttied, sandpapered, rubbed and polished; masonry wall shall be treated with Neutralizer.
- vii. 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.
- viii. All other surfaces endangered by stains and paint marks should be taped and covered with craft paper.

C. DOORS & WINDOWS

Follow as per approved plan and specifications.

D. FABRICATED MATERIALS

Follow as per approved plan and specifications

IV. 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:
 - 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.
 - 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.
 - 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.
 - 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.

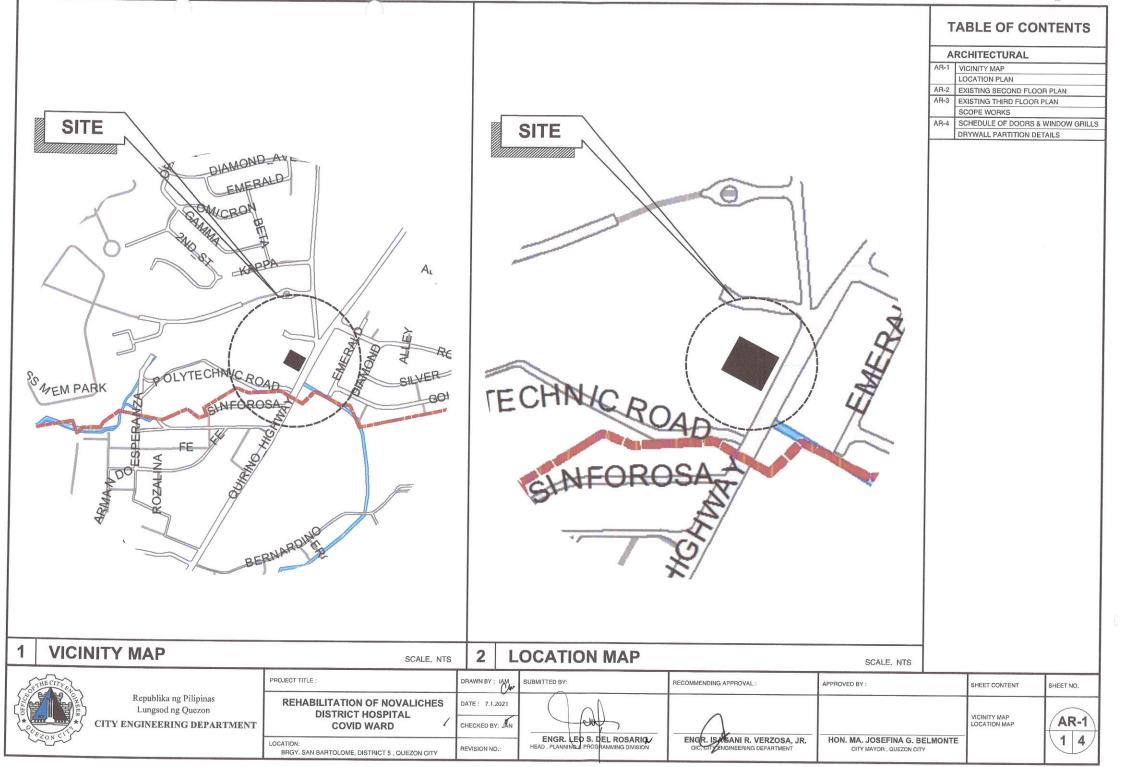
- I. Equipment catalogue and manufacturer's specifications must be submitted for examination and details shall be submitted for approval before any equipment is to be ordered.
- J. This shall include all information necessary to ascertain the equipment comply with this specification and drawings. Data 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.

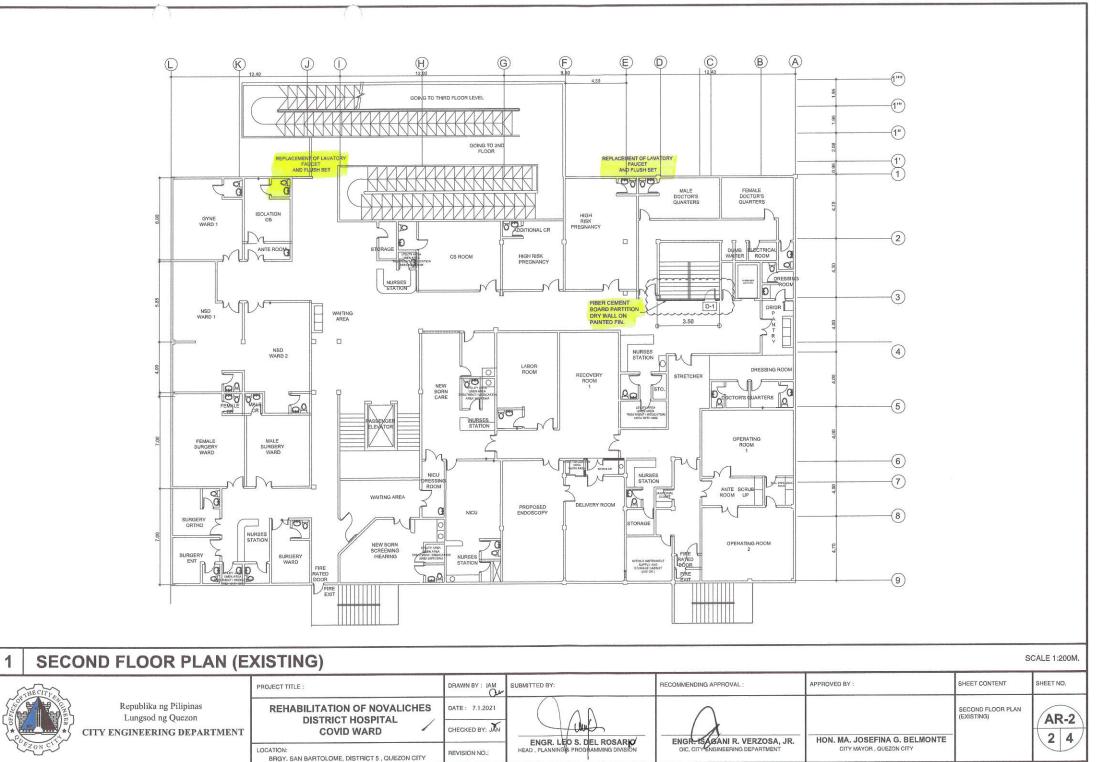
ALESSANDRO NELIO B. GESMUNDO Planning and Programming Division

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