

Section VI. Specifications

SPECIFICATIONS FOR THE PROPOSED INTERIOR FIT OUT OF NEDA – PPP OFFICE 8th FLOOR, CYBERPOD CENTRIS, LOCATED IN ETON CENTRIS COMPOUND, EDSA QUEZON CITY

PROJECT : INTERIOR FIT OUT OF NEDA – PPP OFFICE

PROCURING ENTITY: NEDA - PPP

LOCATION : ETON CENTRIS , EDSA QUEZON CITY

OUTLINE SPECIFICATIONS FOR GENERAL CONSTRUCTION:

I. INTENT AND APPLICATION OF THE PROVISIONS OF THIS SECTION

- A. The Scope of Work covered within these Specifications is the complete construction of the ***PROPOSED INTERIOR FIT – OUT OF NEDA-PPP OFFICE, Located at ETON CENTRIS BPO-1 BUILDING, EDSA corner QUEZON AVENUE, Quezon City, Philippines.***
- B. This section is prepared in a concise manner, the intention of which is to save time and effort in locating important contents within these Specifications.
- C. Execution of this Section shall be coordinated and harmonized to each corresponding elaborated section of these same specifications.
- D. **In case discrepancies exist between this Section and its corresponding elaborated sections, notify the Procuring Entity immediately for clarification; their decision shall be final.**
- E. The Contractor shall bear the responsibility of checking all the numbers and units as indicated in the Bill of Quantities. It is understood that the Contractor shall supply and install the required units in accordance with the Plans and the Specifications.
- F. In their bid proposal, the bidders may propose materials or equipment or makes other than those specified in the BOQ and/or Specifications, provided they are of equivalent specifications and functionalities.
- G. During project implementation, the winning bidder/contractor may propose substitution of materials or equipment or makes other than those specified in the Contract documents shall be subject to the approval of the Procuring Entity for the following reasons only:
 - 1. That the materials or equipment proposed for substitution is equal or superior to the materials or equipment specified in construction efficiency and utility provided that any and all costs relative thereof shall be shouldered by the Contractor.

2. Or that the materials or equipment specified cannot be delivered to the job site on time to complete the work of the other Contractors due to conditions beyond the control of the Contractor.
3. In case of a price difference, the Procuring Entity shall receive all benefits of the difference in cost involved in any substitution and the Contract shall be altered by Change Order to credit the Procuring Entity with any savings so obtained.

H. ***To receive consideration, request(s) for substitution shall be accompanied by documentary proof of equality or difference in price and delivery, if any, in the form of certified quotations and guaranteed date of delivery from suppliers of either the proposed substituted materials or equipment.***

II. GENERAL CONDITIONS OF PLANS AND SPECIFICATIONS

The execution of this Specification, Plans and other related Contract Documents shall be subjected to the rules and regulations as provided in the General Conditions of the Contract. **The Plans and specifications shall be interpreted by the Procuring Entity and or his/her representative.** The Contractor is enjoined to confer with the Procuring Entity on items for clarification before submitting his bid. No excuses shall be entertained for misinterpretation of the Plans and specifications after the award of contract. All work as deemed required by the Procuring Entity shall be carried out properly by the Contractor.

- A. The Contractor shall consult the Procuring Entity on portion of the work not mentioned in the Specification and not illustrated on the Plans. He shall not work without proper instruction or detailed plans approved by the Procuring Entity, otherwise he shall be responsible for the in acceptance of the work done without details. In such case, the Contractor shall make good the work at his own expense.
- B. No alteration or addition shall be allowed without the consent and proper documentation approved by the Procuring Entity, even such change is ordered by the Procuring Entity. The Contractor shall bring the case to the Procuring Entity. Request for approval of such changes, alteration, deviation of work shall not be done without the consent of the Procuring Entity. Changes may be presented to the Procuring Entity in the form of shop drawings.

TWO (2) SET of clean Plans and specification shall always be kept at the jobsite to be available to the Procuring Entity or their representative upon his request during the construction.

DIVISION 1: GENERAL REQUIREMENTS

1.0 Processing and Securing of Permits and Insurance

The contractor shall be responsible for securing all necessary permits related to the project, which shall include but not limited to building permits, occupancy permit, etc.), Contractor's All Risk Insurance & Third Party Liability and Workman's Compensation Insurance (CARI), and other insurances required by the Local Government Unit (LGU) and Eton Cyberpod Centris (ECC), among others, including payment of assessed fees as may be required by the LGU, ECC and/or Regulating Agencies before the implementation of the project. All related documents shall be submitted to the PPP Center.

DIVISION 2: SCOPE OF WORK

- A. The Contractor shall conduct thorough inspection of the existing job site conditions.
- B. The scope of work shall include all additions necessary in order to implement the whole set of approved Plans, Working Drawings and Specifications.
- C. The Contractor shall secure and do all the legwork necessary for all pertinent permits needed for the Procuring Entity to occupy and use the building,
- D. The Contractor shall construct All Architectural, Structural, Electrical, Sanitary/ Plumbing, Mechanical / Fire Protection works in accordance with the Plans and Specifications. All items shown on the Plans but not mentioned in the Specifications shall be included. Discrepancies shall be verified with the Procuring Entity.
- E. The Contractor shall have a licensed surveyor to locate benchmarks. Shop drawings of stake out plan and actual reference marks shall be verified and approved by the Procuring Entity prior to any permanent construction. He shall refer to the General Nature and Scope of Work and other Bid Documents for more extensive description of the work.
- F. The Contractor shall submit details and shop drawings, templates, and schedules required for the coordination of the work of the various trades. Drawings should include information on all working dimensions, arrangement and sectional views, connections and materials.
- G. **Final Cleaning As Pre-requisite To Final Acceptance:** Final cleaning of the work by a reputable building maintenance company shall be employed by the General Contractor prior to the Procuring Entity's 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 first class building cleaning and maintenance program.
- H. The Contractor shall be responsible for the safety and safe working practices of its respective employees, servants and agents.
- I. The Procuring Entity may at any time without invalidating the Contract

make changes by altering, adding to or deducting from the work as covered by the drawings, specifications, and general scope in written instructions. Provisions under General Conditions of the contract cover such circumstances.

DIVISION 3: SITE WORK

A. VISIT AND ACCEPT SITE, AS IS. The following works shall be included:

1. **Site Clearing:** Protection and/or removal of existing structures with the approval from the Procuring Entity and or lessor.
2. **Removal of improvements above and below grade** (if any) necessary to permit construction and other work as indicated. The Procuring Entity and Lessor must be consulted prior to any demolition. Coordination with Eton Properties Philippines Incorporated (EPPI) Maintenance / Facilities Group & proper investigation is to be conducted to avoid damage on existing utilities. Rubbish shall be legally and properly disposed of. Other items for relocation / demolition will be discussed in the Pre-Bid Conference.

B. SITE SAFETY REQUIREMENTS:

1. The Contractor shall, maintain a temporary board – up, security for the proper execution of site up-keeping. Such board-up shall be built where necessary and required by EPPI for its full length except for such openings as may be necessary for the proper execution of the work, in such case, openings shall be provided with doors which shall be kept closed at all times except in actual use. Which shall be made of painted 12mm thick GYPSUM BOARD on METAL STUDS FRAMING with complete accessories, structurally stable.

C. TEMPORARY SITE FACILITIES

1. **Temporary Facilities:** The contractor shall provide An office for the following: Construction site office: complete Resident Architect's / Engineers office for business related to the supervision of the project.
2. **Other Temporary Provisions:**
 - The General Contractor shall provide all temporary lighting, power, water supply and all necessary facilities sufficient enough for the simultaneous use of all possible fields of work to complete the project.
 - The General Contractor shall provide the necessary number of warehousemen to ensure security of construction site.
 - The General Contractor shall provide at necessary no of units of Fire extinguishers.

	<ul style="list-style-type: none"> • The General Contractor shall provide Billboards for precautions for Public Safety. • Other provisions as required by the National Building Code and BESC. • All others required as discussed in the Pre-Bid Conference or as issued Supplemental Bid Bulletins <p>D. STORAGE AND FILING OF MATERIALS</p> <ol style="list-style-type: none"> 1. Delivery: General Contractor shall ensure that materials are properly turned over and delivered on site in good quality and condition. A time and delivery record shall be available. 2. Storage: General Contractor shall designate and/or allot a space to sub-contractors for storage of their materials and for erection of their sheds and tool houses (if necessary). Materials shall be arranged properly and accordingly in terms of sizes, quality, quantity, category and time of use. 3. Warehouse shall be maintained properly by a designated person of the General Contractor. 4. All cement, lime and other materials affected by moisture shall be stored on platforms and protected from weather. Materials shall be stored as to insure the preservation of their quality and fitness for their work. Stored materials shall be located so as to facilitate prompt inspection. 5. Should it be necessary at any time to move materials, sheds or storage platforms, the Contractor shall do so at his own expense. <p>DIVISION 4: <u>MASONRY</u></p> <p>A. CONCRETE MASONRY UNITS</p> <ol style="list-style-type: none"> 1. Masonry Units (CHB): 100mm thick for all interior walls unless otherwise indicated. Use 400 psi for non-load bearing blocks and 700 psi for load bearing blocks where required. <ol style="list-style-type: none"> a. Supplier: Allied Concrete, Rock built or Jack built b. 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. 2. Sand: S-1, washed, clean and greenish in color. 3. Mortar: One part "Portland" cement and two parts sand and 	
--	---	--

water but not more than three parts sand and water.

4. **Plaster bond:** N and H Plaster bond - Apply to all wall areas prior to plastering.

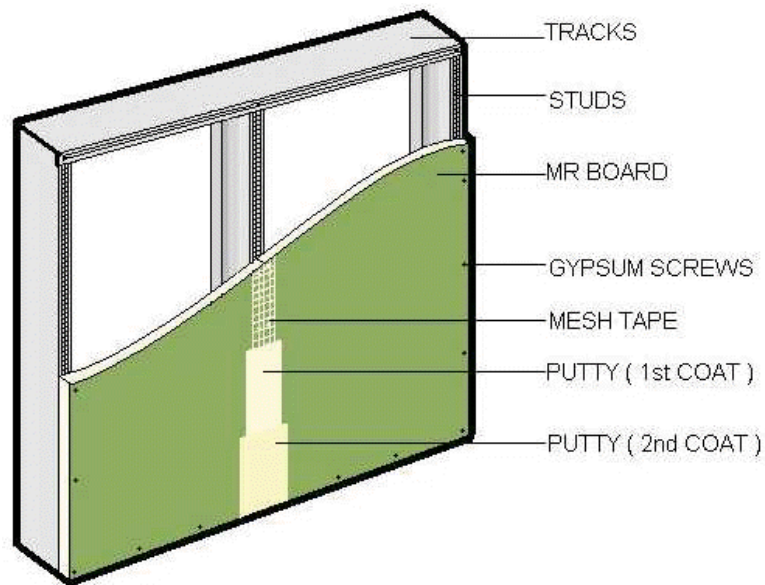
DIVISION 5: METAL

A. Stainless Steel

1. **Stainless Steel Push Plate:** Refer to Doors Schedule A-6

B. LIGHT GALVANIZED STEEL FRAMING FOR GYPSUM DRYWALL, CEILING & FIBER CEMENT CEILING

Light Galvanized Steel Framing Members shall be formed from cold-rolled steel with a minimum tensile strength of 50 ksi & a minimum yield point of 33 ksi. Light Galvanized Steel Framing Members shall be formed from cold-rolled steel having a minimum galvanized coating of 180 g/sq.m both sides and shall be lock-forming quality. Should conform to the ASTM C645A Standard Specification for Nonstructural Steel Framing Members.



C. MISCELLANEOUS METAL WORKS

1. Submit Professional Shop Drawings for fabrication, connections and erection of miscellaneous metal fabrications.
2. **Pipe hangers:** Galvanized steel angular bars, hot dipped. Refer to Sanitary / Electrical drawings for sizes and dimension.

DIVISION 6: WOOD & PLASTICS

LUMBER AND ARCHITECTURAL WOODWORKS

	<p>A. Schedule of Lumber and Plywood Works</p> <ol style="list-style-type: none"> 1. Medium Density Fiberboard: As per manufacturer's specifications. 2. Plywood Backing for Glass Mirror: 6-mm thick marine plywood anchored to wall with necessary anchoring. Areas to be covered by mirror on toilets should be provided with tiles. <p><u>DIVISION 7: THERMAL AND MOISTURE PROTECTION</u></p> <p>All applications shall be strictly as per Manufacturer's Specifications. It shall strictly be performed by licensed or certified applicators / waterproofing contractor representing waterproofing manufacturer or insulation company specified herein. The Procuring Entity shall be furnished with pertinent literature and detailed drawings</p> <p>WATERPROOFING</p> <p>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.</p> <p>All materials shall be Environmental Protection Agency (EPA) certified and approved.</p> <p>Testing: Test waterproofed area by seventy-two (72) hours and check for any seepages.</p> <ol style="list-style-type: none"> for Toilets <p>Note: Areas not stated above but requiring waterproofing by Procuring Entity shall be included in the scope of work. Thickness should be as per Manufacturers Specifications and Installation depending on the Areas to be applied with.</p> <p><u>DIVISION 8: DOORS AND INTERIOR VIEWING WINDOWS :</u></p> <p>Refer to Schedule of Doors and VIEWING Windows Architectural Plan A-6</p> <p>A. DOORS AND FRAMES</p> <ol style="list-style-type: none"> 1. Wood Louver Door: 50mm thick x 600mm wide Philippine mahogany wood frame with 8mm thick glass, frame painted with quick dry enamel finish. 2. Aluminum Powder Coated Door with Viewing Glass: 45mm x 600mm x 1.5mm thick Powder Coated aluminum door tubular frame with 6mm thick clear viewing panel glass, champagne shade, powder coat finish. 3. Aluminum Framed Glass Door: : 45mm x 600mm x 1.5mm thick Powder Coated aluminum door tubular frame with 10mm thick clear full glass, champagne shade, powder coat finish. 	
--	---	--

	<p>4. MAIN ENTRANCE DOOR – Heavy Duty Floor Hinge Glass door, 12mm thick tempered, frameless glass door.</p> <p>5. Procuring Entity-supplied Glass Doors :9 sets 33"L x 82"H glass door</p> <p>5.1 Dismantling of Procuring Entity-supplied Glass Doors from existing office</p> <p>5.2 Transfer of dismantled glass doors to new office</p> <p>5.3 Fabrication of new door jambs and accessories for Procuring Entity-supplied glass doors</p> <p>5.4 Installation of Procuring Entity-supplied doors shall be in the following areas:</p> <p>5.4.1 Administrative Services Testing Room</p> <p>5.4.2 Driver"s Waiting Room</p> <p>5.4.3 Janitor/Supply Room</p> <p>5.4.4 Supply Room</p> <p>5.4.5 Serving Area/Pantry</p> <p>5.4.6 Audio Visual Room</p> <p>5.4.7 COA Room</p> <p>5.4.8 Records Room</p> <p>5.4.9 Wellness Room</p> <p>Note: The contractor shall exercise the utmost care in dismantling, transfer and installation of the Procuring Entity-supplied glass doors. In case of any damage, the contractor shall replace the glass door without additional cost to the Procuring Entity.</p> <p>B. FINISHING HARDWARE</p> <p>The following Hardware Sets are furnished for whatever assistance it may afford the Contractor. The Contractor shall verify Plans and Specifications for hardware quality. Should any particular item be omitted, Contractor shall provide similar or equivalent item or hardware same as required.</p> <p>All door hardware must be ANSI A156.2 approved.</p> <p>1. Locksets shall be Heavy duty lever type handles, HAFELE, Bonco or Hope Brand with locked keys and profile cylinders.</p> <p>a. All locks shall have three (3) keys with the lock number stamped for identification. Verify number of duplicates.</p> <p>b. Schedule: Use extra heavy duty industrial / commercial series of door hardware. Refer to Schedule of Doors A-6</p> <p>Toilet Privacy Lock: Use Corridor or Passage Lock for unlockable lockset.</p>	
--	--	--

	<p>Keyed Entrance Mortise Lock: Single cylinder with throw-deadbolt, standard full latch bolt with heavy duty anti-friction tongue. When locked, key outside or Knob inside retracts all bolts simultaneously. Outside Knob remains locked until thumb turn is restored to vertical position. Use Knob type.</p> <p>Single Cylinder Deadbolt Lock: deadbolt thrown or retracted by key from outside or by inside turn unit. Bolt automatically deadlocks when fully thrown</p> <p>Indicator Lock: for Toilet Stalls with safety release lock.</p> <p>2. Door Hinges</p> <p>a. Brand: Morgan or hafele, loose pin hinge 4 ½" x 4" heavyduty, chrome finish.</p> <p>Schedule:</p> <ul style="list-style-type: none"> - Four Ball Bearing Hinges: 4 ½ " x 4" for metal louver doors over 900 mm in width and/or over 44 mm thickness, strictly SUS 304, Stainless Steel based - Floor Hinge: standard duty floor hinge with closer on active and inactive leaf <p>b. Hinge finish shall match locusts of respective openings; stainless steel.</p> <p>3. Door Closer:(Only on Specified Doors) grade 1 door closer with hold open function on active and inactive leaf. Can be surface mounted on hinge face or stop face for metal doors indicated in the Schedule, with finish matching locust of the respective opening and a slim line look; concealed type for aluminum doors to provide by aluminum door fabricator. Door closer shall be incorporated in the door closer. <i>Brand: RYOBI brand</i></p> <p>4. Miscellaneous Hardware</p> <p>a. Door Plate and Pull Bar: Ga 16. Stainless Steel plate with stainless steel 20 mm diameter x 200 mm length pull bar, both in hairline finish. <i>Brand: Yale</i></p> <p>b. Flush 6" and Head Bolt 12": for two leaves of steel swing doors</p> <p>c. Push-Pull Bar: approximately 30 mm diameter x 600 mm long stainless steel</p> <p>c. Push Plate: approximately 150 mm wide x 400 mm high stainless steel</p> <p>d. Stainless Steel handle bars</p> <p>e. Heavy Duty Flush Bolt</p>	
--	---	--

- f. All other necessary hardware such as latch bolts, catch locks, door chain fasteners, door stops, wall stops and holders, push plates, handles, etc. shall be of type, size and design suitable for the purpose.

C. GLASS AND GLAZING

1. **Caulking, Weather stripping, Sealing and Glazing Compound** : refer to Division 7 on Sealants

2. Schedule: All glass should match color of existing. The contractor shall submit glass sample with performance data and certifications from the manufacturer.

a. Aluminum Framed Fixed interior Viewing Windows

1. 10 mm thick clear tempered glass for aluminum fixed windows on building interiors.
2. 8 mm thick tempered for door and big window glass areas with sill height less than 800 mm from floor finish.

Manufacturer: Metro Shutters, Door Tech or Republic Asahi

- b. 6 mm thk. **facial mirror** with beveled edges for Toilets on 6mm thk marine plywood backing

DIVISION 9: FINISHES

Refer to Architectural Plans for location. Verify plans for other finishes not specified or omitted herein. Sample of all materials shall be submitted to the Procuring Entity for approval as to color and quality workmanship.

A. FLOOR FINISHES

1. Supply and installation of 2100mm width x 2mm thick Static Control Homogenous Vinyl Floor Covering Roll Type by **Gerflor**. Offices, Hallway and other Areas, See floor plan for Legend & Call Out Specifications as to where to be applied. Submit sample for Procuring Entity's approval.
2. Supply and installation of 500mm x 500 x 5mm thick **Flotex** Floor Covering Carpet tile Type. For Conference Rooms as shown in Floor Key Plan Finish with Codes. Submit sample for Procuring Entity's approval.
3. **Vinyl Tiles**: Supply and installation of 2.0 mm thk. x 300 mm x 300 mm homogenous vinyl tiles. Color: beige. Contractor shall submit samples for Procuring Entity's approval. After work completion, vinyl tiles shall be cleaned, free from all cement, dirt, or other substances, with two coats of water emulsion wax,

	<p>each coat polished to produce a well-polished finish. <i>Manufacturer: Armstrong</i></p> <ol style="list-style-type: none"> 4. FullyVitrified Tiles: Supply and installation of 600 mm x 600 mm or 800mm x 800mm unglazed tiles; polished / unpolished / textured and colored: set on tile adhesive setting with 3 - 5 mm spacing between tile. For Reception / Lobby Area. See Design. Submit Samples for approval. 5. Vitrified Glazed &Unglazed Tiles: Supply and installation of 9 to 10 mm x 600 mm x 600 mm premium series for Toilet Wall & Floor Tiles. Refer to Schedule of finishes. Submit sample for Procuring Entity's approval. 6. Raised Flooring. Supply of materials and installation of Raised Flooring for DATA room. Please refer to Architectural plan A-7. <p>B. WALL FINISHES</p> <ol style="list-style-type: none"> 1. Plain Cement Plaster Finish: 10 mm. thick. on vertical, on masonry and for all concrete hollow block surfaces, painted finish as indicated in the Drawings and for all areas not otherwise noted with other finishes. 2. Fully Vitrified Homogeneous Tiles: Supply and installation of 600 mm x 600 mm homogeneous tiles complete with all PVC trims; 20 - 30 mm thick mortar setting bed with tile grout spacing of 5 mm. Wall tiles for Toilet shall extend up to the ceiling or as indicated on plans. Submit samples for approval 3. Supply and installation of MDF ply-panel accents 4. Wall Base: <ol style="list-style-type: none"> a. Vinyl Cove Base: 150 mm high vinyl straight profile. On Areas With Synthetic Floor Tile, Carpet Tile , Vinyl Tile Finish Manufacturer: Atlanta b. Roll Type Floor Finish: Extend Vinyl Floor up to 150 mm high as Baseboard with Corner Bead, P Bead Fittings, See Manufacturers installation procedures. 5. Fiber Cement Board: 6-mm thick for all Dry Interior Walls. <ol style="list-style-type: none"> a. Use standard G.I. metal Studs framing at every 600-mm on center both ways. Provide standard construction system complete with seismic bracing. <p>C. CEILING FINISHES</p>	
--	--	--

	<ol style="list-style-type: none"> Dismantling & Demolition Works: Removal of some parts of existing ceiling as affected by the new ceiling layout and finish. (Please refer to Architectural Sheet No: ____) Acoustic Mineral Ceiling Boards: Installation of 15 mm x 600 mm x 600 mm, with 5-year warranty to withstand humidity conditions up to at least 90°F/ 90% RH without visible sag; in white color. PLEASE SEE EXISTING Ceiling Suspension System: ASTM C 635 (Intermediate-duty) main beam and cross tee classification, commercial-quality dipped galvanized steel. All exposed surfaces to be chemically cleansed with capping in baked polyester and/or treated with powder coat white finish. Provide seismic bracing. Submit shop drawings for approval. Gypsum Board: Supply and installation of Gypsum ceiling on a 400mm x 400mm G.I. Framing Suspended Ceiling System complete with all accessories and acrylic diffuser lighting system. Please see ceiling details in all conference rooms and library. Supply and installation of decorated ceiling using moisture resistant 12mm thick Boral gypsum board panels and metal furring and hanger rods as per design. Supply and installation of 6mm thick MDF decorative wood panel as ceiling design. <p>NOTE :</p> <p>EXISTING CEILING SHALL BE RETAINED AND EXISTING SUPPLY OF ACOUSTIC BOARDS ON SITE ARE FOR INSTALLATION.</p> <p>AREAS WITH ADDITIONAL CEILING DESIGN ARE THE FOLLOWING AREAS : SEE ARCHITECTURAL DESIGN FOR DETAILS</p> <ol style="list-style-type: none"> MAIN ENTRANCE / RECEPTION MAIN CONFERENCE ROOM CONFERENCE ROOM NO. 2 CONFERENCE ROOM NO. 3 CONFERENCE ROOM NO. 4 CONSULTANT'S ROOM LIBRARY <p>D. PAINTING WORKS</p> <p>All materials shall be Environmental protection Agency (EPA) certified and approved.</p> <p>Painting Materials:</p> <ol style="list-style-type: none"> Submit various painting materials specification data and sample to be used for Procuring Entity's approval. 	
--	--	--

	<ol style="list-style-type: none"> 2. All primers, thinners and putty, also waterproofing for internal and external application shall be the same brand as the specified material. 3. Painting materials including its application must be covered with minimum of five- (5) year guarantee to be rendered by the painting manufacturer. 7. Use BOYSEN or DAVIES only for all painted works. <p>Application:</p> <ol style="list-style-type: none"> 1. All sample paint shall be submit on at least 300-mm x 300-mm plywood panel, color and shade as per approval by the Procuring Entity. 2. Application shall be as per paint Manufacturer's specification and recommendation. 3. Provide all drop cloth and other covering requisite for protection of floors, walls, aluminum, glass, finishes and other works. 4. All applications and methods used shall strictly follow the Manufacturer's Instructions and Specifications. All surfaces including masonry wall shall be thoroughly cleaned, puttied, sandpapered, rubbed and polished; masonry wall shall be treated with Neutralizer. <p>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. All other surfaces endangered by stains and paint marks should be taped and covered with craft paper. <i>Manufacturer: Boysen or Davies Paint</i></p> <p>Painting Schedule:</p> <ol style="list-style-type: none"> 1. <u>Interior</u> <ol style="list-style-type: none"> a. Interior Concrete or Masonry Painted - Three (3) coats water-based masonry plain semi-gloss finish. Sample Shades for Procuring Entity's Approval. b. Plain Flat Finish: Acrylic water-based paint on ceilings, three (3) coats. FLAT c. Plain Semi-gloss in Acrylic water-based Epoxy paint on interior walls, columns, on all other interior concrete surfaces. (3) coats <p>DIVISION 10: <u>SPECIALTIES</u></p> <p>TOILET <u>DOORS AND PARTITIONS</u></p>	
--	--	--

	<p>A. TOILET CUBICLES</p> <ol style="list-style-type: none"> 1. Partition System: homogeneous, floor-anchored, high pressure compact OR Marine laminated partition and doors complete with stainless steel bracing and hinges, brass or molded plastic pedestals, and indicator lock with heavy duty stainless steel hardware. Submit catalogue & mock-up for Procuring Entity's approval. 2. Accessories: All accessories should be in molded plastic material. Submit samples for Procuring Entity's Approval. <ol style="list-style-type: none"> a. Grab Bars: provide stainless steel grab bars for handicapped toilets. b. Urinal Dividers: wall-hung suspended type with stainless stiffener and stainless steel wall bracket; material same as toilet partition system <p>B. OFFICE WORKING STATION SYSTEMS: Please see detailed plans with specification.</p> <p>DIVISION 11: <u>TOILETS</u></p> <p>A. PLUMBING FIXTURES AND ACCESSORIES</p> <p>All fixtures shall be installed complete with accessories, such as fittings, angle valve, shut-off valve and supply pipe assembly, p-traps flange and others to make it functional. Submit model and color samples for Procuring Entity's approval of all fixtures and accessories.</p> <p>Plumbing Fixture Colors: White Verify with Procuring Entity</p> <ol style="list-style-type: none"> 1. Water closet: Siphon Vortex bottom inlet top flush. <i>WC Supplier: Kuysen, Mcbuild Hardware, Mc Home Depot, Ortigas Home Depot or Wilcon Builders.</i> 2. Urinal: Wall-hung type, wash-out urinal to match water closet color. 3. Lavatory: <ol style="list-style-type: none"> 3.a Under the counter type lavatory with single faucet hole on center w/ front overflow hole, to match water closet color. 3.b <i>Wall hung type</i> 3.c <i>Wall hung with full pedestal type</i> 4. Lavatory Faucets: self-closing press-action tap model with timed flow and anti-blocking system. 5. Floor Drains: Stainless steel 4"x4" <i>Supplier: Asian hardware</i> 	
--	---	--

6. **Slop Sink Bibb:** wall-mounted long gooseneck faucet

DIVISION 12 ELECTRICAL SPECIFICATION

1.0 GENERAL DESCRIPTION

- 1.1 The work to be done under this DIVISION of the Specifications consist of the fabrication, furnishing delivery and installation, complete in all details of the Electrical Work, at the subject premises and all work materials incidental to the proper completion of the installation, except those portions of the work which are expressly stated to be done by others. All work shall be done in accordance with the governing Codes and Regulations and with the Specifications, except where same shall conflict with such codes etc., which latter shall then govern. The requirements with regards to materials and workmanship specify the required standard for the furnishing of all labor, materials and appliances necessary for the complete installation of the work specified herein and indicated on the drawings. The Specifications are intended to provide a broad outline of the requirement and are not intended to include all details of design and construction.

1.2 LAWS/CODES and REGULATIONS:

The work under this DIVISION shall be executed in accordance with the latest requirements of the following:

- Building Code of the Philippines
- Philippine Electrical Code
- Laws, ordinances, and regulations of the locality having jurisdiction over the project.
- Power and telephone utility companies
- UAP Doc. 301

The requirements of the above mentioned governing laws/codes and the requirements of the companies having involvement/participation are hereby made part of this Specifications and the ELECTRICAL CONTRACTOR is required to comply with the same.

This does not relieve the ELECTRICAL CONTRACTOR from complying with requirements of specifications or drawings in excess of above laws and ordinances, codes and requirements which are not prohibited by the same.

1.3 GUARANTEE

The ELECTRICAL CONTRACTOR shall guarantee that the electrical system is free from all grounds and defective materials and workmanship for a period of one (1) year from the date of acceptance of the work. All defects arising within the guarantee period shall be reminded by the ELECTRICAL CONTRACTOR at his own expense.

The ELECTRICAL CONTRACTOR shall indemnify and save harmless PROCURING ENTITY from and against all claims, suits,

	<p>actions, or liabilities for damages arising from injuries, disabilities or loss of life to persons or damage to public or private properties resulting from fault or any act of contractor or his representative in the execution of this work.</p> <p>The partial acceptance of the work for the purpose of making partial payments, based on the estimated cost satisfactorily completed by the ELECTRICAL CONTRACTOR, shall not be considered as final acceptance of that portion of the work.</p> <p>1.4 DRAWINGS & SPECIFICATIONS</p> <p>1.4.1 The electrical plans, which constitute an integral part of these Specifications, shall serve as the working drawings. The plans indicate the general layout and arrangement of the complete electrical system and other works.</p> <p>1.4.2 The drawings and specifications are meant specifically to be complementary to each other and where it is called for by one shall be binding as if called for by both. Anything which is basically required to complete the installation for proper operation but not expressly mentioned on the drawings and/or specifications shall be furnished and installed by the ELECTRICAL CONTRACTOR at no extra cost to the PROCURING ENTITY as though specifically stipulated or shown in both.</p> <p>1.4.3 Procuring Entity shall have the final decision on any apparent conflict between the drawings and specifications or on any under and controversial point in either or both.</p> <p>1.4.4 All dimensions and locations shown on the plans are approximate and shall be verified in the field, as actual locations, distances, and levels are governed by actual conditions.</p> <p>2.0 SCOPE OF WORK</p> <p>2.1 Work Included</p> <p>The work to be done under this DIVISION shall include the furnishing of all tools, labor, equipment, fixtures and materials, each complete and in proper working condition unless one or other is specifically excluded or stated otherwise in these Specifications but not limited to the following principal items of work:</p> <p>2.1.1 Furnish and install a complete wiring and raceway system for the underground power and telephone distribution system including concrete pedestals, concrete hand holes and necessary wiring gutters and boxes.</p> <p>2.1.2 Furnish and install a complete grounding system.</p> <p>2.1.3 Perform terminations for all electrical system.</p> <p>2.1.4 Complete testing of all electrical systems.</p> <p>2.1.5 Preparation of "As-built" drawings.</p> <p>2.1.6 If any item of works or material has been omitted which are necessary for the completion of the Electrical Work as</p>	
--	---	--

	<p>outlined herein before, then such items shall be and hereby included in this section of work.</p> <p>3.0 PROCEDURE</p> <p>3.1 Workmanship</p> <p>The ELECTRICAL CONTRACTOR shall execute the work in the most thorough, prompt and workmanlike manner and in accordance with the plans and specifications. The installations shall be done thru standard methods and good engineering practices.</p> <p>3.2 Materials</p> <p>All materials to be installed shall be brand new except as otherwise noted on the plans or specifications. The materials shall be as specified. No substitution of materials is allowed. Should the ELECTRICAL CONTRACTOR find it necessary to use another type/brand of materials instead of the specified item, he shall first obtain approval from the PROCURING ENTITY prior to installation. Any substituted material installed without the approval of the PROCURING ENTITY shall be subject to replacement.</p> <p>3.3 Coordination</p> <p>It is the sole responsibility of the ELECTRICAL CONTRACTOR to conduct coordination of his activities with the following:</p> <ul style="list-style-type: none"> 3.3.1 Other trades and suppliers 3.3.2 Procuring Entity/Engineer 3.3.3 EPPI 3.3.4 Local Government Authority <p>3.4 Deviation From The Plans</p> <p>No deviation from the plans is to be made unless given notice or approval by the PROCURING ENTITY.</p> <p>3.5 Record Drawings and „As-Built” plan.</p> <p>The ELECTRICAL CONTRACTOR is required to keep an active record of the actual installation during the progress of the job. This shall be the reference in the preparation of the „As-Built” plans which shall include all pertinent information, complete in all aspect of the actual installation, and all new information not originally shown in the contract drawings. The „As-Built” plans shall be prepared by the ELECTRICAL CONTRACTOR at his expense and shall be submitted to the Procuring Entity for approval upon the completion of the work. The approval of the „As-Built” drawings shall be a pre-requisite for the final acceptance of the electrical works.</p> <p>Submit two (2) copies of the “As-Built” drawings signed and dry sealed by the ELECTRICAL CONTRACTOR’S. Registered Professional Electrical Engineer. Original tracing/reproducible copy shall also be submitted to the PROCURING ENTITY.</p>	
--	--	--

	<p>3.6 Samples & Shop Drawings</p> <p>3.6.1 30 days prior to the installation or fabrication of materials the ELECTRICAL CONTRACTOR shall submit to Procuring Entity the following for approval.</p> <ul style="list-style-type: none"> a. Shop drawings of panel boards showing arrangements of circuit breakers, bus bar sizes, lugs, etc. Indicate all dimensions. b. Shop drawings or samples required as noted in the drawings. c. Samples and catalogs of materials intended to be installed. <p>3.6.2 The ELECTRICAL CONTRACTOR shall also submit to the Procuring Entity without delay shop drawings and other submittals which may be required by Procuring Entity during the progress of construction.</p> <p>3.6.3 The above requirements shall be submitted to the Procuring Entity at the earliest possible time to give allowance for checking and verification. These shall be complete in all aspects.</p> <p>3.6.4 Submit four (4) sets of each shop drawings.</p> <p>3.7 Electric Power</p> <p>The ELECTRICAL CONTRACTOR shall be responsible for his own electric power needed for the execution of the job.</p> <p>3.8 TEST</p> <p>Conduit tests on all electrical conductors installed in the presence of the PROCURING ENTITY's representative.</p> <ul style="list-style-type: none"> 3.8.1 check for grounds 3.8.2 insulation resistance test 3.8.3 continuity test for all outlets 3.8.4 voltage level test 3.8.5 phase relationship 3.8.6 check circuit connections at panel boards, all single phase circuit shall be connected to phase as shown in the load schedule. <p>3.9 Submit Reports On Tests</p> <p>All reports must be formal, typewritten and properly identified.</p> <p>3.10 All defects found during the test shall be repaired immediately by the ELECTRICAL CONTRACTOR.</p> <p>3.11 All tools, equipment and instruments needed to conduct tests shall be on the account of the CONTRACTOR.</p> <p>4.0 METHODS & MATERIALS</p>	
--	--	--

	<p>4.1 Conduits</p> <p>4.4.1 Rigid Steel Conduits (RSC) and Intermediate Metal Conduit (IMC):</p> <ol style="list-style-type: none"> Standard trade sizes, hot dipped galvanized with inside enamel or epoxy coating. Matsushita, Allied, Setsuyo, Pusan and Maruichi. Joints-threaded coupling for joints. Use for power & lighting. <p>4.4.2 Polyvinyl Chloride Conduit (PVC)</p> <ol style="list-style-type: none"> Standard trade sizes, schedule 40 "ATLANTA". Coupling & fittings - standard couplings for joints by solvent weld process. Telephone System & other auxiliary system. <p>4.4.3 Installation of Conduits</p> <ol style="list-style-type: none"> Installation is in accordance with PEC and of good engineering practice. Use standard trade sizes locknut and bushing at each end terminating in boxes/panel boards. Ensure electrically continuous conduit system. Provide independent conduits supports using hangers, supports or fastenings spaced in accordance with good engineering practice and PEC. Use adjustable trapeze hangers for horizontal parallel runs. Conduits bends shall not be more than the equivalent of three (3) 90 degree bends between pulling points. Conduit threads cut on job shall have same effective lengths, thread dimensions, and taper as factory threads. Cut ends of conduit square with hand or power saw and ream to remove burrs and sharp edges. Do not use wheel cutter. Clamps shall be galvanized malleable iron one-hole straps, beam clamps or other approved device with necessary bolts and expansion shields. Trapeze hangers shall be used for parallel runs of conduits. Install conduit clamps at end of each run and at each elbow. Paint hangers one prime coat of red lead or zinc chromate, and one finish coat of an approved color. Hangers are not detailed but must be adequate to support combined weight of conduit, conductors and hangers. Submit shop drawings for approval. All underground conduits installed shall be provided with concrete encasement at least 8cm. thick outer face of conduit. 	
--	--	--

	<p>4.2 Wires</p> <ol style="list-style-type: none"> 1. Wires shall be annealed copper, 98% or better conductivity, insulated, single, except as noted in the drawings. 2. 600 volt class type as indicated in the plans. 3. Wires greater than no. 8 mm² shall be stranded. 4. Minimum size shall be #3.5 TW for power and lighting circuits. 5. Telephone wires shall be no. 22 AWG jacketed type, 4 wires. 6. Use standard methods in pulling wires. 7. Splices of wires/cables shall be done inside junction boxes or auxiliary gutters using standard connectors. No wires shall be spliced inside conduits. 8. All wires and cables shall be color coded as follows: <ul style="list-style-type: none"> Phase A Red Phase B Yellow Phase C Black Ground Green Neutral/White <p>4.2 Connectors</p> <p>Use solderless mechanical pressure - type lugs, copper</p> <p>4.3 Insulation</p> <p>All splices shall be properly insulated using 3M electrical tape. Application of insulation tape shall be equivalent to the insulation of the wire concerned. Use filler compound, "Scotch fillat sharp edges to provide smooth surface before taping.</p> <p>4.5 Panel board & Circuit Breaker</p> <ol style="list-style-type: none"> 4.5.1 NEMA type/enclosure unless noted, PEC rules and regulations, circuit breaker type shall be 230V, number of pole as required. 4.5.2 Panel boards shall contain a single brand of circuit breakers and as manufactured by "Schneider Electric", "Cutler Hammer" or "GE". 4.5.3 All circuit breakers used as main shall be "Bolt on" type molded case, thermal magnetic protective, quick make, quick break, trip free from handle, trip indicating, number and size as shown in the schedule. Internal common trip for 2 and 3 pole breakers. 4.5.4 Breaker minimum interrupting capacities shall be based on NEMA and UL test procedures. 	
--	--	--

	<p>a. 230 volt breakers - 10,000 rms. Symmetrical amperes at 240V A/C (minimum)</p> <p>4.5.5 All circuit breakers used as branches rated at below 100 AT and specifically installed in lighting panel boards shall be be „bolt-on“.</p> <p>4.5.6 Word “space” indicated in the schedule shall mean that complete bus, insulators, etc. shall be included ready to accept future circuit breaker of the same frame size as the largest branch circuit breaker.</p> <p><u>DIVISION 13 PLUMBING / SANITARY WORKS</u></p> <p>PSW 1.0 SCOPE OF WORKS</p> <p>1.1 The work to be undertaken under this section shall consist of the furnishing of all materials, labor tools, equipment and other facilities and the satisfactory performance of all work necessary for the complete installation, testing and operation of the plumbing system accordance with the applicable drawing and this section of that specifications consisting of, but not necessarily limited to the following:</p> <p>a. Soil, waste and vents pipe system, within the building up to sewer line.</p> <p>b. Interior fire protection system consisting of combination standpipes, valves, fire hose cabinets, inlets, connectors and portable fire extinguishers.</p> <p>c. Water service connection from main building distribution system.</p> <p>d. Furnishing, installation and testing of water closets, lavatories, accessories including controls & piping works.</p> <p>e. Furnishing and installation of all plumbing fixtures, fittings, trims and accessories.</p> <p>l. All work shall be performed in accordance with the requirements of all applicable laws of the Republic of the Philippines and all local codes and ordinances.</p> <p>1.2 The contractor is required to refer to all mechanical, electrical, structural and architectural plans and specifications all shall investigate all possible interference and conditions affecting his work in this section and that of the other sections.</p> <p>1.3 All plumbing works to be done and sizes of pipe to be used shall be of the sizes, which are required and in accordance with the NATIONAL PLUMBING CODE OF THE PHILIPPINES.</p>	
--	--	--

	<p>PSW 2.0 GENERAL</p> <p>2.1 DRAWING AND SPECIFICATIONS:</p> <ul style="list-style-type: none"> a) The contract drawings and the specifications are complimentary to each other, and any labor or materials called for by both, if necessary for the successful operation of any other particular types of equipment shall be furnished and installed without additional cost of Procuring Entity. b) All dimensional locations of fixtures, equipment, floors and roof drains risers and pipe. Chases shall be verified on the architectural drawings and manufacturer's catalogs. c) Upon completion of the work as described herein, the Contractor shall at his own expense furnish the Procuring Entity originals and three (3) sets of "AS BUILT" Plans for future reference and maintenance purposes. <p>2.2 PROTECTION:</p> <p>The contractor shall protect all his work and materials loss, injury or defacement. Protection of fixtures and materials shall be provided by boards, papers and/or cloth as required and any loss, damaged or deface material shall be replaced by the Contractor at his own expense.</p> <p>2.3 INSTALLATION AND WORKMANSHIP:</p> <ul style="list-style-type: none"> a. All labor shall be performed in a first-class, neat and workman like manner by mechanic skilled in their work shall be satisfactory to the Project Architect. b. No piping in any location shall be closed up, furred in or covered before testing and the examination of same by the inspector, Procuring Entity or their representatives. <p>PSW 3.0 IDENTIFICATION OF MATERIALS:</p> <ul style="list-style-type: none"> a. Each length of pipe, fitting, traps, fixtures, and device used in the plumbing system shall have cast, stamped or indelibly marked on it the manufacturer's trade mark or name, the weight, the type, and classes of product when so required by the standards mention above. b. All plumbing fixtures and fittings installed without the above trademarks shall be removed and replaced with probably marked fixtures and fittings without any extra cost to the Procuring Entity. <p>PSW 4.0 WATER SUPPLY</p>	
--	--	--

	<ul style="list-style-type: none"> a. Pipes and fittings for waterline shall be as SPECIFIED BY EPPI. b. Valves-All valves, unless otherwise specified shall be gate valves of size as indicated in the drawings: for hot water supply, valves and fittings shall be insulated of a thickness equal to that of the insulation on the adjoining pipe, securely fastened in place. <p>4.1 SANITARY DRAINAGE</p> <ul style="list-style-type: none"> a. Soil and waste Pipes and Fittings: Soil and waste pipes and fittings shall be PVC pipes (POLYVINYL CHLORIDE) series 1000 Neltex. b. Vent Pipes and Fittings: Vent pipes and fittings shall be PVC pipes c. Shower and Floor Drains: Shower and floor drains shall be of high grade, strong, tough, and even grained metals. d. Cleanouts: <ul style="list-style-type: none"> 1. Ceiling cleanouts shall be of the same material as pipe with sealed screw type, raised head plug. 2. Floor cleanouts shall be cast-iron body with brass plug, colt-type or countersunk head; METMA brand. <p>4.3 HANGERS, INSERTS AND PIPE SUPPORTS</p> <ul style="list-style-type: none"> A. Provide suitable and substantial hangers and supports for all piping. B. Support horizontal piping in accordingly approved sizes where pipe clamps are too short to connect to the building construction. <p>PSW 5.0 EXECUTION</p> <p>5.1 GENERAL INSTALLATION OF PIPES</p> <ul style="list-style-type: none"> A. Install pipes approximately as shown on the drawings, as straight and direct as possible forming right angles parallel lines with walls and other pipes, and neatly spaced unless otherwise indicated. Care shall be taken not to weaken the structural portions of the building. B. Maintain minimum slope of 3mm (1/8 inch fall per foot) on all soil, waste and drain lines 100mm in 	
--	--	--

	<p>diameter.</p> <p>C. Do not install pipes or other apparatus in a manner which will interfere with full swing of the doors and windows.</p> <p>D. The arrangement, position and connection of pipe fixtures, drains, valves and the like indicated on the drawings shall be followed as closely as possible, the right is reserved by the Procuring Entity to change location and elevations to accommodate conditions which may arise during the progress of the work prior to installation, without additional cost of the Procuring Entity for such changes. The responsibility for accurately laying out of the work rests with this Contractor. Should be found that any work if laid out caused interference, the matter shall be reported to the Engineer before connecting the work.</p> <p>E. Ream all screwed pipes smooth before installation. Do not bend, flatten, split or injure pipes in any way.</p> <p>F. Use reducing fittings, in making reduction in size of pipe. Bushing will not be allowed unless specifically approved.</p> <p>G. Where chrome plated piping is installed, cut and thread pipe. Bushing will not be allowed unless specifically approved.</p> <p>H. Carry fixture connections, concealed in building constructions, to points above floor, break out close to underside of fixture and rise exposed to fixture.</p> <p>I. No piping shall be installed which will provide a cross or interconnection between a distribution supply of drinking water of Domestic use and pollution or waste pipe, the water line shall be placed above the waste pipe in ground installation.</p> <p>5.2 INSTALLATION OF WATER SUPPLY PIPES AND FITTINGS</p> <p>A. The piping shall be extended to all fixtures, outlets and equipment. Ends of pipes and outlets shall be capped or plugged and left ready for future connections.</p> <p>B. Branch pipe from service line may take off of main, bottom of main, or side of main, using such cross over fittings as may be required by structural or installation conditions.</p> <p>All service pipes, valves and fittings shall be kept at sufficient distance from other work to permit finished covering not less than 12.7mm (1/2") from such other work and not less than 12.7mm between finished coverings on the different services. No</p>	
--	---	--

	<p>water piping shall be buried in floors until after they have been inspected and approved.</p> <p>C. Where the branch serves more than one fixture, the branch shall be increased in size in proportion to sizes as shown on the drawings.</p> <p>D. Cast bronze unions shall be installed at the connection to all equipment so that they may be conveniently disassembles.</p> <p>E. Upon completion of water system, flush out lines and all valve sets to clear system of particles and dirt.</p> <p>5.3 INSTALLATION OF SOIL, WASTE, VENT AND DRAINAGE PIPING</p> <p>A. Horizontal Drainage Pipe and Vent Piping Horizontal waste pipe 75mm (3") and smaller shall have minimum grade of 6mm (1/4") per foot, and for 100mm (4") and larger, 3mm (1/8") per foot. Vertical vent pipes may be connected to a vent lines carrying other fixtures, the connection to be at least 1.20m (4 feet) above floor on which the fixtures and located to prevent the use of any vent lines as waste lines. Horizontal waste lines receiving the discharge from two (2) or more fixtures shall be provided with vents, unless separate venting of fixtures noted.</p> <p>B. Fittings - All changes in pipes sizes on soil waste line shall be made with reducing fittings or recessed reducers. All changes in direction shall be made with the appropriate use of 45 wyes, half wyes, long sweep quarter bends, or elbows may use in soil and waste lines where the change in direction of flow is from horizontal to vertical, and on the discharge from water closets. Where it become necessary to use short radius fittings in any other location, the approval of the Procuring Entity shall be obtained before they are installed.</p> <p>C. Traps - Each fixture and place of equipment connection to the drainage system except fixture with continuous waste shall be equipped with a trap. Traps shall be placed as near to fixtures as possible.</p> <p>5.4 FIXTURES AND EQUIPMENT SUPPORTS AND FASTENINGS</p> <p>All fixtures and equipment shall be supported and fattened in a satisfactory manner.</p> <p>A. Where secured to concrete on hollow block, walls,</p>	
--	--	--

	<p>they shall be fastened with 6mm (1/4") brass bolts with twenty threads to the inch and of sufficient length to extend at least 75mm (3") into solid concrete on hollow block work; fitted with loose tubing or sleeve inserts, shall be securely anchored and installed flushed with the finished wall and shall be completely concealed when the fixtures are installed.</p> <p>B. Where though bolts are used, they shall be provided with name plates and washers at backsets so that head, nuts and washer will be concealed by plaster. Bolts and nuts shall be hexagonal and screw shall be provided chromium brass washers.</p> <p>C. Upon completion of work, all fixtures, trimmings, and equipment shall be thoroughly cleaned, polished and left in first class condition for final acceptance.</p> <p>5.5 CLEANING AND PAINTING</p> <p>A. Prior to acceptance of the work, thoroughly clean all exposed metal surface and rid of grease, dirt or other foreign material. Chrome or nickel - plated piping"s, fitting and trimming shall be polished.</p> <p>B. Pipe hangers, supports and all other iron work in concealed spaces shall be thoroughly cleaned and painted with one coat of red lead and a finish coat of oil enamel paint.</p> <p>C. All exposed soil, waste and vent piping or cast iron that are asphalt or tar-coated shall be given two (2) coats of shellac and two (2) coats of oil paint.</p> <p>5.6 WATER SYSTEM TEST</p> <p>A. Upon completion of the roughing-in and before fixtures, the entire water piping system shall be tested at a hydrostatic pressure of one and half (1- 1/2) times the expected working pressure in the system when in operation, and proven tight at this pressure or not less than 150 psi gauge.</p> <p>B. Where a portion of the water piping system is to be concealed before completion, this portion shall be tested separately in a manner to that described for the entire system, and in the presence of the Procuring Entity or its representative.</p> <p>5.7 DRAINAGE SYSTEM TEST</p> <p>A. The entire drainage and venting system shall have necessary opening which can be plugged to permit the entire system to be filled with water to the level of the</p>	
--	--	--

	<p>highest vent stack and/or vent above the roof.</p> <p>B. The system shall hold this water for a full thirty (30) minutes during which time there shall be no drop more than four inches 100mm (4").</p> <p>C. If and when the Procuring Entity decides that an additional test is needed, such as an air or smoke test on the drainage system, the Contractor shall perform such test without additional cost to the Procuring Entity.</p> <p><u>DIVISION 14 MECHANICAL WORKS</u></p> <p>NOTE :</p> <p>Contractor / Builder will be provided with List of INVENTORY OF AIR CONDITIONING UNITS TO BE SUPPLIED BY THE PROCURING ENTITY – COMING FROM EXISTING OFFICE. This ATTACHMENT SHALL BE “ ATTACHMENT A” Such items are prescribed to be RE-Used.</p> <p>Additional ACUs to be installed are shown in the mechanical plans. Provision for additional ACUs in excess of what is prescribed will be considered non-responsive.</p> <p>4.2.1 Relocation of some existing cassette type ACU's (please refer to the Mechanical Plan M-2)</p> <p>4.2.2 Dismantling, transfer and installation of ACU"s from existing PPPCP office to its new location as shown in the mechanical plan</p> <p>4.2.3 Relocation of Building Owned ACU's as shown in the mechanical plans</p> <p>4.2.4 Fabrication of Duct connecting to Building Owned ACU's as shown in the mechanical plans</p> <p>4.2.4.1 The air-conditioning supply ducts shall be of low-pressure construction and fabricated as per “SMACNA” (Sheet Metal and Air-Conditioning National Association) Standards.</p> <p>4.2.4.2 The air ducts shall be properly insulated with fiberglass insulation, 32 kg/m³ density with reinforced aluminum foil vapor barrier on the outside. Insulation thickness shall be 25mm.</p> <p>4.2.5 Installation of refrigerant lines, drain pipes and electrical supply on all relocated ACUs</p> <p>4.2.6 Installation of Exhaust System at the following areas: Refer to Mechanical Plan M-1 for details</p> <ul style="list-style-type: none"> • Additional Toilets (Male, Female and Executive CR) • Audio-Visual Room • Employees Lounge • Serving Area/Pantry • Data Center 	
--	---	--

4.2.7 Installation of return air inlets on all enclosed rooms supplied by ducted ACUs (Refer to mechanical plans M-2)

DIVISION 15 FIRE PROTECTION

FP 1. General

1. General Description

The scope of work to be done this division of the specification consist of the fabrication, complete in all details, of fire protection works at the subject premises, the installation, except those portions shall be in accordance with governing Codes and Regulations and with the specifications, except where the same shall conflict with the codes, etc. which, later shall be govern. The requirements in regards to materials and workmanship specify the required standards for the furnishing of all labor, materials and appliances necessary for the complete installation of the work specified herein and indicated on the drawings.

2. Drawing and Specifications

- 1.1 The contract drawing and specifications are complimentary to each other and any labor or material for by either, whether or not called for both if necessary for the successful operation of any of the particular type of the equipment furnished and installed without additional cost of the Procuring Entity.
- 1.2 All dimensional locations of piping's, equipment, risers and pipes chase shall be verified on the architectural drawings and manufacturers catalogue

3. Intent

It is not intended that the drawings shall show every pipes, fittings, valve and equipment. All such items whether specifically mentioned or not, or indicated on the drawings, shall be furnished and installed if necessary to complete the system in accordance with the best practice of the fire protection trade and to the satisfaction of the Procuring Entity.

4. Site Investigation

The contractor required to visit the site and to ascertain himself as to the local conditions and facilities that may affect his work. He will be deemed to have done this before preparing his proposal and any subsequent claims on the ground of inadequate or inaccurate information will not be entertained

5. Shop Drawings.

	<p>The Contractor shall submit to the Procuring Entity, for approval, four (4) copies of all shop drawings of details and connections not shown on the drawings or details or deviations thereof but required for the work. The Contractor shall certify that the drawings have been checked for dimensions, materials, erection details and conform to the intent of drawings and specifications.</p> <p>6. Record Drawing</p> <ul style="list-style-type: none"> a. The Contractor shall during the progress of work, keep a record of the actual installation from that shown on the contract drawings b. Upon completion of the work, The Contractor shall submit four (4) copies of the as built drawings indicating the work as actually and finally installed. <p>7. Guarantee</p> <p>The Contractor shall guarantee that the fire protection system is free from all defective workmanship and materials and will remain so for a period of one (1) year from date of acceptance of the work. Any defects, appearing within aforesaid period shall be remedied by the Contractor at his own expense.</p> <p>8. Permits</p> <p>The Contractor shall responsible for securing all the required construction and operation permits, together with the certificate of inspections shall be submitted to the Procuring Entity.</p> <p>9. Codes and Standard</p> <p>The work under this contract is to be installed with the reference to the latest requirements of the following.</p> <ul style="list-style-type: none"> a. Philippine National Building Code b. Fire Code of the Philippines c. American Society for Testing and Materials (ASTM) d. American National Standards Institute (ANSI) e. National Fire Protection Association (NFPA) f. Underwriters" Laboratories" (UL) g. Factory Mutual (FM) h. National Electrical Manufacturers Association (NEMA) <p>10. Materials.</p>	
--	---	--

	<ul style="list-style-type: none"> i. Quality Assurance – All materials to be used shall be new and shall be conform to the reference codes and standards. Use of materials shall further be governed by other requirements, imposed in other sections of these specifications". Materials shall be subject to the test necessary their fitness if so requires. ii. Alternative Materials – Use of any materials, not specified in this specification any be allowed provided such alternative has been approved further by the Procuring Entity and provided further that a test if required, shall be done by an approved agency in accordance with generally accepted standards. iii. Identification of Materials – Each length of pipe, fittings, equipment, and device used in the fire protection system shall have cast, stamped or indelibly marked on it the manufacturer's trademarks or name, the weight, type and classes or product when so required by the standards mentioned above. <p>b. Galvanized Iron Piping –</p> <ul style="list-style-type: none"> i. Type – ERW, ASTM A -120 or A-53 ii. Minimum Wall Thickness – Schedule 40 iii. Joints Threaded joints for pipe sizes 50mm and smaller. Welded or flange joints for pipe sizes 63mm and bigger. iv. Fittings – Malleable iron ANSI B 16.3 for threaded fittings; Steel ANSI B 16.5 for welded fittings and steel flange. v. Valves – Bronze ASTM B 62, 1200 Kpa for sizes 50mm and bigger UL listed <p>Gate Valves – O S & T type</p> <p>Check Valves – Non-slam, swing or water type</p> <p>Drain Valves – Non-rising stem type, Globe</p> <p>Valves – Bronze, ASTM B 62 1200 Kpa for sizes</p> <p>10.5 Flexible Connector</p> <ul style="list-style-type: none"> 10.5.1 Type – Mechanical grooved coupling, all iron with Buna gasket 10.5.2 Pressure Rating – 1200 – Kpa 	
--	--	--

	<p>10.6 Pipe Hanger and Support</p> <p>10.6.1 Pipe hanger and sway braces shall be fabricated with flat bar and angular bar of appropriate size.</p> <p>10.6.2 Anchorage of pipe hanger and sway braces on concrete slab or beam shall be expansion shields or directly fasten to structural steel member as shown on details as required.</p> <p>10.7 Pipe Sleeve</p> <p>10.7.1 Pipe sleeves black iron pipe, Schedule 40</p> <p>10.7.2 Sleeve shall have a minimum clearance of 25mm around the pipe and caulked with oakum and mastic sealant.</p> <p>10.8 Equipment Foundation</p> <p>10.8.1 Equipment foundation shall basically consist of a steel angles, channels, reinforced concrete pads and foundations required by the equipment manufacturer's standards</p> <p>10.9 Electrical Wiring</p> <p>10.9.1 Power wirings of all equipment shall be approved by the contractor from the circuit breaker or junction box installed by the electrical contractor to the equipment.</p> <p>10.9.2 All control wirings shall be the sole responsibility of the contractor</p> <p>10.9.3 Conduit shall be rigid steel, unless otherwise noted and must be size in accordance with the equipment load and manufacturers standard.</p> <p>10.9.4 Wire shall be THW, unless otherwise noted and must be size in accordance with the equipment load and standards</p> <p>11. Equipment</p> <ul style="list-style-type: none"> i. Quality Assurance – All equipment to be used shall be new and shall conform to the reference codes and standards. The manufacturers shall provide representatives for start-up supervision ii. Operation and Maintenance Manual – The manufacturers shall provide four (4) copies of operation and maintenance manual, including spare parts list to the Procuring Entity. 	
--	--	--

	<p>b. Sprinkler Head</p> <ul style="list-style-type: none"> i. Type –Solder Type ii. Size -12mm orifice dia. with k=5.6 minimum iii. Temperature rating – 74 c general area 100 c for high temperature area iv. Model-Pendent –recessed type, chrome finish Upright –standard brush finish <p>Sidewall – horizontal brush finish</p> <p>c. Alarm Check Valve</p> <ul style="list-style-type: none"> i. Alarm check valve shall be constructed that it shall be used as a check valve and such that anti-flow of water from the sprinkler system equal to or greater than that from a single sprinkler head will result in continuous flow of water to the water motor gong thus sounding an audible alarm ii. Alarm check valve shall be variable pressure type consist of retarding chamber, alarm test valve, alarm shut – off valve, pressure gauges and pressure switch. Valve shall be UL listed iii. Water motor gong shall be 300mm diameter weatherproof with impeller and striker assembly which is actuated flow of water. Gong shall be provided with strainer <p>d. Water Flow Detector</p> <ul style="list-style-type: none"> i. Water flow detector shall be vane operated with pneumatically retarded switch assembly mounted on an aluminum base plate. The retard element shall be adjusted from 0 to 70 seconds ii. Water flow detector shall have two SPDT switches that will close instantaneously at the flow of water. Switches shall have a minimum rated capacity of 0.25 amps. 24 VDC <p>e. Monitor Switch</p> <ul style="list-style-type: none"> i. Monitor switch shall consists of a SPDT Switch, a roller type switch actuator and a spring loaded plunger ii. Monitor switch shall be installed on floor control valve or sectionalizing valves such that turning off the valve will cause the closing of switch thus sending a trouble signal 	
--	---	--

	<p>f. Sight Flow Connector</p> <p>i. Sight flow connector shall be 25mm diameter connected at the drain valves of the floor control valve. The glass plate shall withstand 1200 Kpa pressured</p> <p>g. Fire Hose Cabinet</p> <p>i. Unit shall consist of the following</p> <p>One (1) – 40mm x 30mm single jacket hose with brass coupling</p> <p>One (1) – 40mm combination fog and solid stream nozzle, brass</p> <p>One (1) - semi-automatic rack, brass finish and hose nipples</p> <p>One (1) – 40mm angle valve, brass finish</p> <p>One (1) spanner wrench</p> <p>One (1) 4.5 kg. Dry chemical fire extinguisher, Class ABC, UL/FM</p> <p>ii. Fire Hose Cabinet shall be subject to the approval of the Procuring Entity.</p> <p>h. Fire Department Connections</p> <p>i. type – Threaded type, to match the local fire department requirement</p> <p>ii. Pressure Rating –Kpa</p> <p>iii. Finish – Rough Brass</p> <p>iv. Uses and Sizes</p> <p>Siamese Twin – 150x63x63mm Female connector</p> <p>Roof Manifold -150 x63 x 63 Male connector Fire Hose Valve- 63mm Male Connector</p> <p>Sprinkler – 150 x 63 x63mm Female connector street inlet</p> <p>v. All fire department signs shall be provided with caps, chains and signs</p> <p>i. SIGNS</p> <p>i. Identification signs shall be provided as required by NFPA codes or as shown on the drawing</p> <p>ii. Identification signs shall have red background and white letter sizes that are easily readable</p> <p>12.0 Installation</p>	
--	--	--

	<p>12.1 Workmanship</p> <p>12.1.1 The work throughout shall be executed in the best and most thorough manner in accordance with NFPA standard and to the satisfaction of the Procuring Entity, who will jointly interpret the meaning of the drawings and specifications and shall have power to reject any work and materials which in their judgment are not in full accordance therewith</p> <p>12.1.2 This Contractor shall assume unit responsibility and shall provide the service of the qualified Engineer to supervise the complete installation of equipment and systems and who shall be available for conducting the final acceptance test.</p> <p>12.1.3 All equipment shall be installed in accordance with NFPA standard and in accordance with the manufacturer's standard Certificate of Compliance by the manufacturer's representative shall be submitted to the Procuring Entity.</p> <p>12.2 Piping's Installation</p> <p>12.2.1 Install pipe hanger parallel to the building line or as shown on the drawing</p> <p>12.2.2 Install essentially as shown on the drawing. Modify as required to clear the building structure and openings, lights, ducts, and other services</p> <p>12.2.3 Install valves where it can be conveniently operated from the floor. Valve system shall be installed upright or horizontal only.</p> <p>12.2.4 Provide adequate spacing between walls and other piping's permit servicing of valves and other devices.</p> <p>12.2.5 Provide pipes sleeves for all piping's passing through building structures</p> <p>12.2.6 Install piping to permit natural drainage by gravity towards to control valve.</p> <p>12.3 Pipe, Hanger, and Support Installation</p> <p>12.3.1 All supports shall be independent of the ceiling suspension and other system such as duct works and other piping.</p> <p>12.3.2 Sway braces shall be installed on feed mains and cross main to avoid piping oscillations.</p>	
--	---	--

	<p>12.3.3 Risers shall be supported by attachment directly to the risers or by hanger located on the horizontal connection close to the riser.</p> <p>12.3.4 Hangers or Branch lines – There shall be at least 1 hanger for each sprinkler installed on the branch lines.</p> <p>12.3.5 Hangers or Cross mains – There should be at least 1 hanger between 2 branch line.</p> <p>12.3.6 Hanger for Risers – There should be at least 1 hanger for every floor.</p> <p>12.4 Painting</p> <p>12.4.1 All above ground piping shall be painted with 2 coats of primer (anti-rust) paints and one coat of red enamel finishing paint</p> <p>12.5 Cleaning and Protection</p> <p>12.5.1 Before erection, remove all foreign materials from the pipes</p> <p>12.5.2 During construction, cap or otherwise protect all expose finished pipe ends. Remove all temporary preservatives coatings from valves and accessories</p> <p>12.6 Testing</p> <p>12.6.1 Simulation Testing –of sprinkler system (including pumps)by burning of one or more sprinkler heads shall be performed in the presence of the Procuring Entity or its representatives.</p> <p>12.7 Alarm Interconnection</p> <p>12.7.1 The Contractor shall coordinate with the Alarm Contractor for the interconnection of the Sprinkler alarm to the building fire alarm system. Conduits and wires shall be provided by this Contractor</p> <p><u>DIVISION 16 FURNITURE</u></p> <p>The Contractor shall supply, delivery and install the following items at the new office:</p> <p>17.1 Eight (8) sets of Executive Tables, Executive Chairs and Visitor"s Chair for 2 DED"s and 6 Service Directors Each set consist of the following:</p> <p>* 1 - Executive Table - 25 mm Thick Table Top with legs, modesty and shelf, MFC Wengue Finish</p> <p>* 1 - Executive Chair – Mesh Type with Gas Lift, Plastic Arms and Base with Fabric Seat</p>	
--	--	--

	<p>* 2 - Visitor's Chair – Sled Type Base Fabric Chair</p> <p>17.2 Seven (7)units of Executive Chairs for 1 ED, 1 DG and 5 Asst. Directors *Executive Chair – Mesh Type with Gas Lift, Plastic Arms and Base with Fabric Seat</p> <p>17.3 Fourteen (14) units of Visitor"s Chairs for 1 ED, 1 DG and 5 Asst. Directors *Visitor's Chair – Sled Type Base Fabric Chair</p> <p>17.4 Nineteen (19) workstations, chairs, mobile pedestals and meeting room tables for Division Chiefs Each set consist of the following: *1 - Workstation – see detailed plan (A3 size) for details *1 - Executive Chair – Mesh Type with Gas Lift, Plastic Arms and Base with Fabric Seat *1 - Mobile Pedestal – 3-drawer mobile pedestal. Powder coated finish w/ divider and pencil tray *1 - Meeting table - 3 cm. thick round table top in cherry laminate w/ B.I. Pipe – spray painted finish *2 - Visitor's Chair – Sled Type Base Fabric Chair</p> <p>17.4 Sixty (60) chairs for Regular Staff *Staff Chair – Heavy Duty Gas Lift w/ Black Revolving Base. Mesh Back Rest and Fabric Seat in Black Finish</p> <p>17.5 One (1) lot Tables and Thirty-Six(36)Chairs for Main Conference Room *Conference Table – 25 mm Thick Table Top and Leg Panel, MFC Dark Brown Finish with Steel Legs. The table should be able to accommodate wire management for the conference system. *Executive Chair – Mesh Type with Gas Lift, Plastic Arms and Base with Fabric Seat</p> <p>17.6 One (1) lot Tables and Twelve (12)Chairs for Conference Room no. 4 *Conference Table – 25 mm Thick Table Top and Leg Panel, MFC Dark Brown Finish with Steel Legs. The table should be able to accommodate wire management for the conference system. *Executive Chair – Mesh Type with Gas Lift, Plastic Arms and Base with Fabric Seat</p> <p>17.7 One Hundred One (102) Workstation Tables for Staff *Workstation – see attached detailed plans (A3 size) for details Note: Mobile Pedestals will not be included in the proposal</p> <p>17.8 Eleven (11) sets Monoblock Tables and Chairs for Employees" Lounge/ Pantry. Each set consist of the following: *1 Circular Table *4 Chairs</p> <p>17.9 Fabrication of cabinets/table on the following areas:</p> <p>17.9.1 Information Desk Counter</p> <p>17.9.2 Info Desk Back Draft Panel</p>	
--	---	--

	<p>17.9.3 Supply Room</p> <p>17.9.4 Records Room</p> <p>17.9.5 Serving Area</p> <p>17.9.6 Main Conference Room</p> <p>17.9.7 Library Area</p> <p>17.9.8 Cashier and Releasing Area</p> <p>17.10 Supply of one (1) unit Cashier's Vault/ Safe File Cabinet</p> <p>*Fabricated with heavy gauge BI cold rolled steel sheet gauge #18</p> <p>*One (1) vault on top, purely insulated asbestos, imported combination lock</p> <p>*Two (2) legal files, mounted with roller bearing, imported combination lock</p> <p>*Four (4) hours fire resistant</p> <p>See Furniture Plan for more details.</p> <p><u>DIVISION 18 WARRANTY</u></p> <p>18.1 ETON Centris VRF Air-conditioning Units</p> <p>Warranty for the relocation, modification of the VRF and refrigeration piping would be for the account of the general contractor.</p> <p>18.2 ETON Centris Fire Protection</p> <p>Warranty for the relocation, modification of the sprinkler heads, pipes and fittings and smoke detectors would be for the account of the general contractor.</p>	
--	---	--

Statement of Compliance

Bidders must state here either “Comply” or “Not Comply” against each of the individual parameters of each Specification stating the corresponding performance parameter of the equipment offered. Statements of “Comply” or “Not Comply” must be supported by evidence in a Bidders Bid and cross-referenced to that evidence. Evidence shall be in the form of manufacturer’s un-amended sales literature, unconditional statements of specification and compliance issued by the manufacturer, samples, independent test data etc., as appropriate. A statement that is not supported by evidence or is subsequently found to be contradicted by the evidence presented will render the Bid under evaluation liable for rejection. A statement either in the Bidders statement of compliance or the supporting evidence that is found to be false either during Bid evaluation, post-qualification or the execution of the Contract may be regarded as fraudulent and render the Bidder or supplier liable for prosecution subject to the provisions of **ITB Clause Error! Reference source not found.** and/or **GCC Clause Error! Reference source not found..**

Quantity	SCOPE OF WORKS / ITEM/SPECIFICATION	Statement of Compliance
DIVISION 17 STRUCTURED CABLING SYSTEM (SCS) FOR DATA AND VOICE CONNECTIVITY (Both Horizontal and Vertical Layout)		
1 lot	I. STRUCTURED CABLING SYSTEM FOR DATA CONNECTIVITY	
	200 Data nodes distributed to PPC office areas	
	COMPONENT SPECIFICATIONS:	
	<ul style="list-style-type: none"> The following components must meet or exceed the performance requirements of ANSI/TIA/EIA-568B.2-1: 	
	<ul style="list-style-type: none"> Category 6, 4-pair UTP cable shall be 24 AWG, 100-Ohm, 4-pair UTP that support Ethernet Standards: 10Base-T, 100Base-T and 1000Base-T 	
	<ul style="list-style-type: none"> Category 6 Patch Panel: <ul style="list-style-type: none"> Shall be 1RU and provide 24 modular jack ports, with universal wiring that maybe terminated to T568A or T568B Shall terminate the building cabling on 110-style insulation displacement connectors Shall include port and panel labeling 	
	<ul style="list-style-type: none"> Category 6 Information Outlet/Modular Jack shall be terminated using a 110-style pc board connector, color-coded for both T568A and T568B wiring. With I/O label 	
	<ul style="list-style-type: none"> All horizontal and vertical data cable runs should be continuous, with no splices, with no length exceeding 295 feet or 90 meters 	
	<ul style="list-style-type: none"> Shall observe the bending and pulling strength requirements of the cables as per manufacturer specification. 	
	<ul style="list-style-type: none"> All cable runs must maintain 10 foot service loop at both end of the cable and placed in the ceiling 	
	<ul style="list-style-type: none"> Shall include cable trays in the ceiling 	
	<ul style="list-style-type: none"> Category 6 Patch Cord: Properly tagged <ul style="list-style-type: none"> Equipment patch cable assemblies, 5 ft. in length, must be factory-manufactured with stranded CMR UTP cable and color-matched snag less rubber boots Work area patch cord shall be at minimum 5 ft. in length. 	

	<ul style="list-style-type: none"> ○ One patch cord per user outlet and equipment connectivity must be provided. 	
	<ul style="list-style-type: none"> ○ One patch cord per patch panel port (assigned cable color) 	
	<ul style="list-style-type: none"> • Ladder racks must match the configuration of the equipment rows. 	
	<ul style="list-style-type: none"> • For Category 6 Cabling installation – It shall all pass the following end-to-end Testing Parameters using Level III Cable Tester: 	
	<ul style="list-style-type: none"> ○ Attenuation 	
	<ul style="list-style-type: none"> ○ Attenuation to Crosstalk Ratio (ACR) 	
	<ul style="list-style-type: none"> ○ Power Sum Attenuation to Crosstalk Ratio (PSACR) 	
	<ul style="list-style-type: none"> ○ Near End Crosstalk (NEXT) 	
	<ul style="list-style-type: none"> ○ Power Sum Near-End Crosstalk (PSNEXT) 	
	<ul style="list-style-type: none"> ○ Equal Level Far-End Crosstalk (ELFEXT) 	
	<ul style="list-style-type: none"> ○ Power Sum Equal Level Far-End Crosstalk (PSELFEXT) 	
	<ul style="list-style-type: none"> ○ Return Loss 	
	<ul style="list-style-type: none"> ○ Propagation Delay 	
	<ul style="list-style-type: none"> ○ Delay Skew 	
	<ul style="list-style-type: none"> ○ Transfer Impedance 	
	<ul style="list-style-type: none"> • 50 pieces of Hook and Loop cable Tie wrap 	
	<ul style="list-style-type: none"> • Patch Panel for cabinets 	
1 lot	II. STRUCTURED CABLING SYSTEM FOR VOICE CONNECTIVITY	
	200 Voice nodes distributed to PPPC office areas	
	<ul style="list-style-type: none"> • 60 Digital Voice Provision • 140 Analog Voice Provision 	
	<ul style="list-style-type: none"> • Voice backbone and horizontal cabling shall be Category 6, 4-pair UTP which are 24 AWG, 100-Ohm, and shall meet or exceed the performance requirements of ANSI/TIA/EIA-568-B.2 	
	<ul style="list-style-type: none"> • Category 6 Information Outlet/Modular Jack with label 	
	<ul style="list-style-type: none"> • Telecommunication Terminal Cabinet shall be 4 post open bay rack mounted and has sufficient space or dimension to accommodate required wiring components 	
	<ul style="list-style-type: none"> • All cable components must meet Category 6 specifications, including jacks, patch cables, rack mount 110 blocks 	
	<ul style="list-style-type: none"> • All horizontal data cable runs should be continuous, with no splices, with no length exceeding 295 feet or 90 meters 	
	<ul style="list-style-type: none"> • All cable runs must maintain 10 foot service loop at both end of the cable and placed in the ceiling 	
	<ul style="list-style-type: none"> • All cables must be labeled accordingly 	
	<ul style="list-style-type: none"> • Horizontal cabling shall be terminated onto 110 block mounted in an open bay rack/cabinet and/or wall mounting. 	
	<ul style="list-style-type: none"> • Ladder racks must match the configuration of the equipment rows. 	
	<ul style="list-style-type: none"> ○ Provide 12" single tier overhead ladder and shall be grounded to master ground buss. 	
	<ul style="list-style-type: none"> ○ Must be extended to and bolted to the wall on both ends. 	
	<ul style="list-style-type: none"> ○ Must support 40lbs per linear feet weight capacity 	
	<ul style="list-style-type: none"> ○ Maintain a minimum of 4" separation between cabling and any types of power cables (AC, DC, Grounding) 	
	<ul style="list-style-type: none"> • Provide Cable trays under Raised Flooring at a standard 2ft x 2ft raised floor grid spacing 	
	<ul style="list-style-type: none"> ○ Adequate clearance under the raised floor to lift and secure the cable tray system 	
	<ul style="list-style-type: none"> ○ Secure support the cable-tray system above the slab. Put brackets if necessary so as not to move trays from pulling cables 	
	<ul style="list-style-type: none"> ○ Keep proper distance of cable trays from the electrical lines. 	

	o Keep proper spacing on the cable organization and bending,	
	o Cable Spread type layout under raised flooring,	
	o Use Hook and loop cable ties, ties not too tight.	
	• Assistance in the Migration to the PABX system, termination , connection and testing	
	• For Category 6 Cabling installation – It shall all pass the following end-to-end Testing Parameters using Level III Cable Tester:	
	o Attenuation	
	o Attenuation to Crosstalk Ratio (ACR)	
	o Power Sum Attenuation to Crosstalk Ratio (PSACR)	
	o Near End Crosstalk (NEXT)	
	o Power Sum Near-End Crosstalk (PSNEXT)	
	o Equal Level Far-End Crosstalk (ELFEXT)	
	o Power Sum Equal Level Far-End Crosstalk (PSELFEXT)	
	o Return Loss	
	o Propagation Delay	
	o Delay Skew	
	o Transfer Impedance	
	o Attenuation	
	o Attenuation to Crosstalk Ratio (ACR)	
1 lot	III. RISER - 25 PAIR VERTICAL RISER(FROM MDF TO DATA CENTER) FOR DATA 25 pair Vertical Riser (from MDF to Data Center) for data <ul style="list-style-type: none"> • Panel Board (Data) • Conduit for 25 pairs data (Horizontal and Vertical) • Termination block (connecting block with 25 pairs 110 Block-Data) from the following: <ul style="list-style-type: none"> o MDF to TTC – TTC to Server Room – New Data line connection o TTC - Server Room – extension Data line connection • Tie cable between floors, should be Category 6 - 25 pair bundles • For horizontal cable needs wall mount wiring blocks at one end and the cabinet mount wiring blocks at the other end • Cable runs must maintain 10 feet service loop at both end of the cable and must be neatly coiled and tied on the table tray or ladder system • All horizontal/vertical data cable runs should be continuous, with no splices, with no length exceeding 295 feet or 90 meters • Provide patch panel with patch cord management that can be mounted on an open bay rack • All cables must be labeled accordingly • Data riser must be terminated at the server room area 	
1 lot	IV. RISER - 25 PAIR VERTICAL RISER(FROM MDF TO DATA CENTER) FOR VOICE 25 pair Vertical Riser (from MDF to Data Center) for voice <ul style="list-style-type: none"> • Panel Board (Voice) • Conduit for 25 pairs data (Horizontal and Vertical) • Termination block (connecting block with 25 pairs 110 Block-Voice) from <ul style="list-style-type: none"> o MDF to TTC –TTC to IPPBX Room – New Voice line connection o TTC - IPPBX Room – Extension Voice line connection 	

	<ul style="list-style-type: none"> • Tie cable between floors, should be Category 6 - 25 pair bundles 	
	<ul style="list-style-type: none"> • For horizontal cable needs wall mount wiring blocks at one end and the cabinet mount wiring blocks at the other end 	
	<ul style="list-style-type: none"> • Cable runs must maintain 10 feet service loop at both end of the cable and must be neatly coiled and tied on the table tray or ladder system 	
	<ul style="list-style-type: none"> • All horizontal/vertical voice cable runs should be continuous, with no splices, with no length exceeding 295 feet or 90 meters 	
	<ul style="list-style-type: none"> • Provide patch panel with patch cord and management that can be mounted on an open bay rack 	
	<ul style="list-style-type: none"> • All cables must be labeled accordingly 	
	<ul style="list-style-type: none"> • Voice riser must be terminated to the bay rack at the communication room 	
1 lot	V. RISER - 8 PAIR FIBER OPTICS VERTICAL RISER (FROM MDF TO DATA CENTER)	
	8 pair fiber optics Vertical Riser (from MDF to 1 Data Center)	
	<ul style="list-style-type: none"> • Multimode Optical Fiber Cabling shall be 50/125um and shall meet and exceed the following specifications: <ul style="list-style-type: none"> ○ ANSI/TIA/EIA-568B.3 ○ ISO/IEC 11801 ○ Cable construction and specification ○ 50/125um loose tube fiber construction ○ Tight buffer design ○ Thermoplastic outer and inner jackets ○ Must follow industry standard color codes for buffer and sub-buffer units ○ Operating temperature = 20 to 70 degree Celsius ○ Conduit for 8 pairs fiber optics ○ Support Full Duplex ○ Interconnect Panel 	
	<ul style="list-style-type: none"> • Shall provide 8 pair fiber optic interconnect capabilities and contain cable management for supporting and routing fiber cables. 	
	<ul style="list-style-type: none"> • Shall be rack mountable in an open bay rack 	
	<ul style="list-style-type: none"> • Accommodate SC adaptor plates 	
	<ul style="list-style-type: none"> • Modular in design with internal fiber managers that provides slack storage to comply with fiber bend radius and the recommend slack length 	
	<ul style="list-style-type: none"> • Horizontal and centralized fiber shall support 25mm bend radius under no load 	
	<ul style="list-style-type: none"> • cables with a minimum bend radius of 25mm 	
	<ul style="list-style-type: none"> • Shall provide fiber optic enclosure or patch panel 	
	<ul style="list-style-type: none"> • Patch Cord 	
	<ul style="list-style-type: none"> • 5 meters length and shall meet or exceed standards as defined in ANSI/TIA/EIA-568B.3 and ISO/IEC 11801 	
	<ul style="list-style-type: none"> • Utilize duplex fiber cable that is 50/125um 	
	<ul style="list-style-type: none"> • Jacket color shall be orange 	
	<ul style="list-style-type: none"> • Shall be factory made with duplex SC fiber optic connector at both ends in accordance with TIA/EIA568B and must include a ceramic ferrule 	
	<ul style="list-style-type: none"> • All cables must be labeled accordingly 	
	<ul style="list-style-type: none"> • Splices should not have attenuation of .3 dB as per ANSI/TIA/EIA-455-34 	
	<ul style="list-style-type: none"> • Must conduct and pass optical loss testing with an optical meter 	

	device	
	<ul style="list-style-type: none"> • Provide an LC compatible connector cable or converter 	
5 units	VI. Wireless Devices	
	REQUIREMENT SPECIFICATIONS:	
	<ul style="list-style-type: none"> • Wireless router horizontal cabling and termination POE 	
	<ul style="list-style-type: none"> • Must be and Enterprise Class WLAN access point 	
	<ul style="list-style-type: none"> • Must support simultaneous dual band operations (2.4Ghz and 5 Ghz) 	
	<ul style="list-style-type: none"> • Provide enclosure to device 	
	<ul style="list-style-type: none"> • 1 Gigabit Ethernet 	
	<ul style="list-style-type: none"> • Support wireless G and N 	
	<ul style="list-style-type: none"> • 5 units access points Devices 	
	<ul style="list-style-type: none"> • Up to 300Mbps Wireless Data transfer 	
	<ul style="list-style-type: none"> • Support at least 8 multiple Service Set Identifiers (SSIDs) and VLANs 	
	<ul style="list-style-type: none"> • Network Protocols that supports: <ul style="list-style-type: none"> ○ IEEE 802.11N, 802.11G, 802.11B, 802.3, 802.3U, 802.1X (SECURITY AUTHENTICATION), ○ 802.1Q (VLAN) ○ 802.11I (WPA2 SECURITY) ○ 802.11E (WIRELESS QOS) ○ IPV4 (RFC 791) ○ IPV6 (RFC 2460) ○ RADIUS ○ SYSLOG, HTTP/HTTPS, SIMPLE NETWORK MANAGEMENT PROTOCOL (SNMP) 	
	<ul style="list-style-type: none"> • Supports IPv6 	
	<ul style="list-style-type: none"> • Security: WEP/WPA/WPA2 or any advance security 	
	<ul style="list-style-type: none"> • With Quality of Service (QoS) feature 	
	<ul style="list-style-type: none"> • Supports Power over Ethernet (PoE) 	
	<ul style="list-style-type: none"> • All horizontal cable runs should be continuous, with no splices, with no length exceeding 295 feet or 90 meters 	
	<ul style="list-style-type: none"> • Wall mounting bracket for each unit 	
1 lot	VII. OPEN BAY RACK (FOR PABX MOUNTED)	
	<ul style="list-style-type: none"> • 1 unit 42U Telecommunication Cabinet (7ft x 800mm x 1200mm) with rollers and lock 	
	<ul style="list-style-type: none"> • 4 Post designed for telecommunication equipment 	
	<ul style="list-style-type: none"> • UL Listed for 2,000 lbs. load rating 	
	<ul style="list-style-type: none"> • Rail width 19" opening EIA compliant 	
	<ul style="list-style-type: none"> • with vertical cable managers mounted directly to the 4 post rack 	
	<ul style="list-style-type: none"> • with rack anchor kit and mounting screws 	
	<ul style="list-style-type: none"> • 1 power strip 8co's, 3 prong 30 amperes <ul style="list-style-type: none"> • with patch panel horizontal management at the front 	
	<ul style="list-style-type: none"> • with 2 rack mount adjustable shelves (275 lbs load rating) 	
	<ul style="list-style-type: none"> • Provision for 25/50 pairs 110 Rack mount termination block for 200 ports, 19" 	
	<ul style="list-style-type: none"> • Connecting blocks, color coded tips 	
	<ul style="list-style-type: none"> • Jumpers for horizontal management 	
	<ul style="list-style-type: none"> • Finish plating painted black medium texture 	
	<ul style="list-style-type: none"> • Voltage rating: 125 VAC RMS, Current rating: 1.5 AMP, 	
	<ul style="list-style-type: none"> • Contact Resistance: 100 milliohms max 	
	<ul style="list-style-type: none"> • Insulation Resistance: 1000 mega ohms min @500 VDC 	

	<ul style="list-style-type: none"> Dielectric strength:750 VAC RMS 60HZ, 1Min 	
1 lot	VIII. COMMUNICATION CABINET	
	<ul style="list-style-type: none"> 42U Communication Cabinet (7ft x 800mm x 1200mm) with rollers and lock 	
	<ul style="list-style-type: none"> Rail width 19" opening EIA compliant 	
	<ul style="list-style-type: none"> framing & paneling Ga#16 	
	<ul style="list-style-type: none"> 1 power strip 8co's, 3 prong 30 amperes 	
	<ul style="list-style-type: none"> with front, side and back panels 	
	<ul style="list-style-type: none"> w/ 2 units vertical wire manager @ the front both sides 	
	<ul style="list-style-type: none"> w/ vertical wire management @ the back ring type 	
	<ul style="list-style-type: none"> w/ 60 pcs. Cage nuts & rack screws 	
	<ul style="list-style-type: none"> w/ 15 patch panel Cable horizontal management @ the front 	
	<ul style="list-style-type: none"> w/ caster wheels & leveling feet 	
	<ul style="list-style-type: none"> w/ 3 pcs. Fixed tray D= 30 	
	<ul style="list-style-type: none"> powder coated (black) 	
1 lot	IX. WALL MOUNT DATA CABINET	
	<ul style="list-style-type: none"> One (1) 9U Mountable rack rails 	
	<ul style="list-style-type: none"> Tempered glass front locking door 	
	<ul style="list-style-type: none"> Hinged rear entry for easy access 	
	<ul style="list-style-type: none"> Locking lift off louvered side panel 	
	<ul style="list-style-type: none"> With exhaust fan (rated 220 volts) 	
	<ul style="list-style-type: none"> Rail width 19" opening EIA compliant 	
	<ul style="list-style-type: none"> Maximum weight 150lbs 	
	<ul style="list-style-type: none"> Include wall hanging bracket 	
	<ul style="list-style-type: none"> w/ 16 pcs. Cage nuts & rack screws 	
	<ul style="list-style-type: none"> powder coated (black) 	
	<ul style="list-style-type: none"> 1w/ one(1) Horizontal management Tray 	
	<ul style="list-style-type: none"> Dimensions (outside) 23W X 21D X 17H 	
10 units	X. Digital phones (Panasonic)	
	<ul style="list-style-type: none"> Adjustable graphical B&W display 	
	<ul style="list-style-type: none"> 6 soft keys 	
	<ul style="list-style-type: none"> 4 directions navigator 	
	<ul style="list-style-type: none"> Hands Free 	
	<ul style="list-style-type: none"> Mute key 	
	<ul style="list-style-type: none"> Redial key 	
	<ul style="list-style-type: none"> Direct access to mailbox 	
	<ul style="list-style-type: none"> Programmable keys (up to 70) 	
	<ul style="list-style-type: none"> Headset plug 	
10 units	XI. Analog phones (Panasonic)	
	<ul style="list-style-type: none"> HANDS FREE KEY WITH BACKLIGHT AND ADJUSTABLE VOLUME 	
	<ul style="list-style-type: none"> ON-HOOK DIALING 	
	<ul style="list-style-type: none"> 3 DIRECT ACCESS MEMORIES 	
	<ul style="list-style-type: none"> 10 INDIRECT MEMORIES 	
	<ul style="list-style-type: none"> LAST NUMBER REDIAL 	
	<ul style="list-style-type: none"> REDIALING 	
	<ul style="list-style-type: none"> Speaker phone 	
	<ul style="list-style-type: none"> Must prepare detailed Plan and submit for prior approval of the PPP 	

	Center and Building Management of Eton Properties, Inc. Plans must include the following:	
	<ul style="list-style-type: none"> Plan and elevation views of the Data center(Communication Room, Monitoring Area, Server Room), MDF, TTC rooms both horizontal and vertical runs 	
	<ul style="list-style-type: none"> Show major pathways of cable runs 	
	<ul style="list-style-type: none"> Equipment closets 	
	<ul style="list-style-type: none"> Location of conduit pull boxes 	
	<ul style="list-style-type: none"> Wall penetrations 	
	<ul style="list-style-type: none"> Location of all cable terminations 	
	<ul style="list-style-type: none"> Jack numbers and outlets location should be on the floor plan 	
	<ul style="list-style-type: none"> Design , proper installation and positioning of wireless devices 	
	<ul style="list-style-type: none"> All design and layout submissions shall be in 20X30 inch sheets approved and signed 	
	<ul style="list-style-type: none"> All wirings and cabling shall be aligned to the base building distribution system installation 	
	<ul style="list-style-type: none"> All wirings and cabling shall be compatible to the required design of the raised flooring of the data center 	
	<ul style="list-style-type: none"> Coordinate with Building Administration for the location of the MDF that will accommodate voice and data lines. 	
	<ul style="list-style-type: none"> Piping should be compatible to the required Polyvinyl chloride (PVC) for the use of data and voice wiring and should aligned on the concrete slab of the floor 	
	<ul style="list-style-type: none"> Cabling system installation shall comply with requirement of the building guidelines and administration 	
	<ul style="list-style-type: none"> 30-day testing period prior to the issuance of Certificate of Completion and 	
	<ul style="list-style-type: none"> Acceptance to validate the testing parameters stated in the Service Level Agreement. 	
	<ul style="list-style-type: none"> Availability of spare parts/materials for ten (10) year after the warranty period 	
	<ul style="list-style-type: none"> Availability of technical personnel to maintain the system after the warranty period 	
	<ul style="list-style-type: none"> No “draping” of cables over obstacle (ducts and fixtures). 	
	<ul style="list-style-type: none"> Cabling system should not rest on panels, wires power or light fixtures wires, power or light fixture 	
	<ul style="list-style-type: none"> Use reusable cable wrap or straps (Hook and loop) at the data center 	
1 lot	XII. DIRECT LINE CABLING SYSTEM	
	Provision for direct lines cabling to be installed in the following locations. <ul style="list-style-type: none"> Two (2) lines for the Executive Director with extension to the secretary Two (2) lines for the two (2) Deputy Executive Directors with extension to the secretary Two (2) lines for the Admin Director with extension to the secretary One (1) line each for six (5) Service Directors with extension to the secretary 	
	Voice backbone and horizontal cabling shall be 4-wire Telephone Cord or Telephone wire gauge.	
	Provide faceplates for telephone cable.	

	Provide Outlet/Modular Jack with label	
	All cable components must meet minimum standard specifications, including jacks, patch cables	
	All horizontal direct line cable runs should be continuous, with no splices	
	All cable runs must maintain 10 foot service loop at both end of the cable and placed in the ceiling	
	All cables must be labeled accordingly	
	Provide PVC conduit and fittings including all necessary accessories	
1 lot	TECHNICAL IMPLEMENTATION SERVICES	
	<ul style="list-style-type: none"> Bidder must provide all labor, manpower, tools and materials, expertise, and logistics in implementing end-to-end data and voice structured cabling installation and data center civil works. 	
	<ul style="list-style-type: none"> Bidder must specifically include the following scope as part of the data and voice cabling implementation: <ul style="list-style-type: none"> Cables and components, cable organizer, roughing-in materials ordering Materials preparations, design, delivery, and management Onsite mobilization and site preparation Roughing-in installations Horizontal cable pulling per office/department Patch panel mounting and installation Faceplate mounting and installation Information Outlet (I/O) mounting and installation Patch panel termination I/O terminations per office location Cable testing using Level III cable tester Cable, patch panel, faceplate(I/O) modular and 110 block LABELING as specified in Section II of this TOR As-built documentation Cable test results Civil works to include restoration works and/or improvement of cabling installation points. Overhead, Under-Floor and Wall- Mount cable Pathways and trays (Cable Management) Patch cables must be color coded (horizontal cable, patch cord, uplink cord) 	
	<ul style="list-style-type: none"> Bidder must document and submit all end to end connectivity showing which port are interconnected (mapping) including 110 block termination 	
1 package	TRAINING / ORIENTATION SERVICE	
	<ul style="list-style-type: none"> Training for the cabling (Data and Voice) shall cover SCS administration and orientation on as-built documentation and actual setup for 5 PPP personnel 	
	<ul style="list-style-type: none"> Training for the wireless devices shall cover operation and security setup configuration. 	
	TESTING OF CABLING SYSTEM AND EQUIPMENT:	
	Bidder must submit test results and configurations	
	For Copper Cables:	
	<ul style="list-style-type: none"> All cables and termination hardware shall be 100% tested for defects in installation and to verify cable performance under installed conditions. Any defect in the cabling system installation including but 	

	not limited to cable, connectors, patch panels, and connector blocks shall be repaired or replaced in order to ensure 100% useable conductors in all cables installed.	
	<ul style="list-style-type: none"> Testing shall be completed with Microtest Pentascanner and Single Line Tester for Category 5/6 links or any equivalent devices and test results provided for each link tested. All result shall meet or exceed the requirements of ANSI/TIA/EIA-568B port performance tests. All links that failed the requirements will be replaced at no cost to the PPP Center. 	
	<ul style="list-style-type: none"> All wireless devices should be installed, configured connected into PPOE port and tested 	
	For Fiber Optic Cables:	
	<ul style="list-style-type: none"> Fiber cables shall be 100% tested for attenuation and length 	
	<ul style="list-style-type: none"> Length shall be tested using an OTDR, optical length measurement device or sequential cable measurement marking 	
	<ul style="list-style-type: none"> Attenuation shall be tested at 850nm and 1300nm and shall not exceed 3.5db for 850nm and 1.5db for 1300nm 	
	<ul style="list-style-type: none"> Installation and Workmanship Warranty: <ul style="list-style-type: none"> The Contractor shall warrant the cabling system against defects for Ten (10) years for the installation and workmanship from the date of turnover. 	
	<ul style="list-style-type: none"> Cabling Warranty: <ul style="list-style-type: none"> The Contractor shall facilitate a Manufacturer's component warranty for PPP. 	
	<ul style="list-style-type: none"> Wireless Device Warranty: <ul style="list-style-type: none"> The contractor shall warrant all wireless devices for Three (3) years 	
	<ul style="list-style-type: none"> Telephone Device Warranty; <ul style="list-style-type: none"> The contractor shall warrant all wireless devices for Three (3) years 	
	DIVISION 18 DATA CENTER	
	GENERAL MINIMUM REQUIREMENTS:	
1 lot	I. Raised flooring for the Server Room, Communications (IPPBX) and Technical Working/Monitoring Rooms	
1 lot	Floor Components	
	<ul style="list-style-type: none"> Total estimated of 50 sq./m for Data Center that includes (server room, Communications (IPPBX) and Technical Working/Monitoring Rooms) 	
	<ul style="list-style-type: none"> Raised-floor height shall be a minimum of 12 inches. Clearances must be adequate to accommodate interconnecting cables, pathways, power distributions, and any piping that is present under the floor or multi-level cable tray system 	
	<ul style="list-style-type: none"> Protected from corrosion 	
	FLOOR TILES and STATIC	
	<ul style="list-style-type: none"> Lightweight, durable, perfectly fit 24" size panel 	
	<ul style="list-style-type: none"> Grommets fit for the panel and pathways 	
1 lot	STRINGERS	
	<ul style="list-style-type: none"> Shall be rectangular shaped steel construction designed to be secured to each pedestal head. It shall be provided in 4 foot lengths. 	
	<ul style="list-style-type: none"> Interconnect pedestals in a 2" X 2" grid for greater stability and to provide support for the floor panels 	
	<ul style="list-style-type: none"> Provide stringers that support each edge of each panel where 	

	required to meet design load criteria	
	<ul style="list-style-type: none"> Bolted on the pedestal head 	
1 lot	PEDESTALS	
	<ul style="list-style-type: none"> Base: Square base plate with not less than 16 square inches (103 sq. mm) of bearing area. 	
	<ul style="list-style-type: none"> Column: Welded to base plate and of height required to bring finished floor to elevations indicated. 	
	<ul style="list-style-type: none"> Provide vibration-proof leveling mechanism for making and holding fine adjustments in height over a range of not less than 2 inches (50 mm) and for locking at a selected height, so deliberate action is required to change height setting and prevents vibratory displacement. 	
	<ul style="list-style-type: none"> Construct pedestal adjusting rod of minimum $\frac{3}{4}$" (19 mm) diameter solid steel, and vertical column of minimum $\frac{7}{8}$" (22 mm) square steel tubing. All steel components to have manufacturer's standard galvanized finish. 	
	<ul style="list-style-type: none"> Head: Pedestal head to accept bolted stringers 	
	<ul style="list-style-type: none"> Galvanized finished 	
1 lot	SEISMIC BRACING	
	<ul style="list-style-type: none"> Provide as per manufacturer specification, bracing for the Telecommunications and Data Center Rooms for additional strengthening support to the understructure. 	
	<ul style="list-style-type: none"> Directly bolted to the slab. 	
1 lot	RAMPS	
	<ul style="list-style-type: none"> Ramp should have 1.8 meters wide for sufficient maneuvering of equipment. 	
	<ul style="list-style-type: none"> Ramp that is not steeper than 1:12, with non-slip raised-disc runner or vinyl floor covering, and of same materials, performance, and construction requirements as the raised flooring. 	
	<ul style="list-style-type: none"> Should be strong enough to support the weight of the servers, racks and other big devices while being moved on the surface. 	
1 lot	II. PANEL LIFTING DEVICE	
	<ul style="list-style-type: none"> Provide two (2) portable panel lifting device (double suction cups) that is rated in lifting the panels. 	
	<ul style="list-style-type: none"> 4" Rubber Suction Cups with air release handle 	
	<ul style="list-style-type: none"> Mounted on aluminum die cast handle. 	
1 lot	III. Pathways (Runner grid) for electrical supply with space provisions for data/voice cabling	
	Cable Runner	
	<ul style="list-style-type: none"> Modular, under floor cable wire basket system to route data and power cables 	
	<ul style="list-style-type: none"> Accommodate the height of the raised floor grid 	
	<ul style="list-style-type: none"> Uses standard section to carry cables horizontally throughout the raised floor 	
	<ul style="list-style-type: none"> Pedestal bracket shall form a mechanical bond with the raised floor and wire basket sections ensuring electrical continuity 	
	<ul style="list-style-type: none"> With horizontal intersection fitting that will provide horizontal turns and intersections 	
	<ul style="list-style-type: none"> Adjustable level change component up to 12" 	
	<ul style="list-style-type: none"> Provide snap-in bend radius control up to 1.5" 	
	<ul style="list-style-type: none"> Provide needed accessories and equipment 	

	Electrical Runner	
	<ul style="list-style-type: none"> Electric and data/voice cables must be separated at least 4" apart. 	
	<ul style="list-style-type: none"> Intermediate Metallic Conduit (IMC) with an interior coating shall be used for power distribution 	
1 lot	IV. Provision for cabling riser and communication line entrance in the Data Center	
	a. <i>Note: Structured cabling for data/voice will be installed by a qualified provider</i>	
	b. <i>Please refer to Division 14 for the structured cabling ,in particular to cable riser installation</i>	
1 lot	V. Electrical system for Data Center, Technical Working/Monitoring work area , and Communications (PABX) room	
	<ul style="list-style-type: none"> Supply circuits shall be provided and terminated in a separate electrical panel 	
	<ul style="list-style-type: none"> Separate circuits shall be provided for convenience outlet and power distribution units for the telecommunication and data center rooms 	
	<ul style="list-style-type: none"> Provide separate circuit panel board (Distribution panel)for server UPS 	
	<ul style="list-style-type: none"> Provide main circuit breaker applicable for 4 units 6KVA UPS 	
	<ul style="list-style-type: none"> Provision Distribution Panel from the centralized UPS for backup purpose 	
	Note:	
	<ul style="list-style-type: none"> <i>Electrical system shall be provided in reference to the approved electrical layout/plan</i> 	
	<ul style="list-style-type: none"> <i>Please refer to the general electrical provision as stated in the technical specification</i> 	
1 lot	VI. Wall partition and door installation for Data Center, Communications (PABX) and Technical Working/Monitoring Rooms	
	Wall Partition	
	<ul style="list-style-type: none"> Construct back wall partition made of fiber cement board for the data center 	
	<ul style="list-style-type: none"> Must be constructed from floor to ceiling of materials that is at least one hour fire-resistance-rated wall 	
	<ul style="list-style-type: none"> Must use 2 ½ " metal studs with 2" sound insulation up to ceiling grid 	
	<ul style="list-style-type: none"> Side and Front partition must be made of tempered glass ¾ inch from floor to ceiling 	
	<ul style="list-style-type: none"> Inside wall partition must be made of the same material used in the side and front partition 	
	<ul style="list-style-type: none"> Fabricated assemblies consisting of glass panels, fastened with top and bottom rails 	
	<ul style="list-style-type: none"> Sealing materials 	
	<ul style="list-style-type: none"> The panels shall have a full perimeter, extruded aluminum frame bolted together 	
	Doors (Main Door , Server and PABX – Sliding)	
	<ul style="list-style-type: none"> Includes: Panel rails, track assembly, vertical support and lateral bracings, floor locking lock 	
	<ul style="list-style-type: none"> Fabricated assemblies consisting of glass panels, fastened with 	

	top and bottom rails	
	<ul style="list-style-type: none"> Designed to withstand door operation under normal traffic without damage, racking, sagging and deflection 	
	<ul style="list-style-type: none"> Overhead track with corners and intersection fittings for supporting glass panels 	
	<ul style="list-style-type: none"> With rollers that provides directional control, prevent accidental panel rotation and allow smooth movement of glass panel 	
	<ul style="list-style-type: none"> With door pulls with concealed deadbolt lock 	
	<ul style="list-style-type: none"> Finish matching side and front glass partition 	
	<ul style="list-style-type: none"> Provide rubber seals 	
	<ul style="list-style-type: none"> Use tempered glass with frosted sticker <ul style="list-style-type: none"> Thickness: ¾ inch Dimensions: Minimum of 3ft. wide, 7ft high 	
1 lot	VII. Provision for physical security system installation	
	<i>Note: Provision on the location to install camera and door access devices</i>	
1 lot	VIII. Furniture and Fixtures for Technical Working/Monitoring Area	
	<ul style="list-style-type: none"> Console furniture that is suitable for control room and network operations center that can accommodate at least four (4) monitor 	
	<ul style="list-style-type: none"> At least 500 lb. load rating 	
	<ul style="list-style-type: none"> Vertical and horizontal cable and wire management 	
	<ul style="list-style-type: none"> Integrated power 	
	<ul style="list-style-type: none"> Module width at least 72" 	
	<ul style="list-style-type: none"> With one (1) corner module for technical support activities 	
	<ul style="list-style-type: none"> High pressure laminate work surface 	
	<ul style="list-style-type: none"> Pass-through grommets to hide and manage wires and cables 	
	<ul style="list-style-type: none"> Monitor arms to position monitor vertically and horizontally 	
	<ul style="list-style-type: none"> With CPU holders and keyboard tray 	
	<ul style="list-style-type: none"> At least four (4) office chair 	
1 lot	IX. Environmental Control : Ventilation ducting and exhaust system, cooling system, fire suppression system, Humidification system, pre-action wet system	
	VENTILATION REQUIREMENT	
	<ul style="list-style-type: none"> Ventilation systems shall be designed and installed so that air is properly circulated throughout the occupied areas (server room, technical working area, communications room) 	
	<ul style="list-style-type: none"> Installation of ducts and other accessories as required. 	
	<ul style="list-style-type: none"> Provide exhaust fan for air circulation 	
	<ul style="list-style-type: none"> Material surfaces must be resistant to mold growth 	
	<ul style="list-style-type: none"> Ventilation systems should be designed to prevent re entertainment of exhaust contaminants, condensation and freeze-ups 	
	<ul style="list-style-type: none"> Provide dehumidifier equipment in all rooms (compact in design) that can maintain humidity in a 50 sq/m Data Center(Server room, IPPBX room and monitoring work area room) 	
	<ul style="list-style-type: none"> Must take all necessary precautions to have a minimum noise generation 	
	<ul style="list-style-type: none"> Must support the following operational parameters of the data center's air conditioning system <ul style="list-style-type: none"> Temperature: 200 C 	

	<ul style="list-style-type: none"> Relative Humidity: 40% to 55% 	
1 lot	X. Facility Relocation <i>(Please. Refer to the Technical Specification provision for facility relocation)</i>	
	<ul style="list-style-type: none"> Relocation of building facility that may hinder in the construction of the data center that includes but not limited to: <ul style="list-style-type: none"> Cassette type Air-conditioning Water sprinklers Air vents and ducts Ceiling and hangers Water pipe and other tubing ACU Drainage system Detectors 	
1 lot	XI. Early Warning Smoke Detection System	
	<ul style="list-style-type: none"> Provide Fire suppressant system for PBX room that will extend to the Monitoring work area <ul style="list-style-type: none"> FM-200 55Lbs Beta cylinder to be filled with 35lbs of FM-200 agent FM-200 Agent Beta Completer Kit, with Accs, 24 VDC Discharge Tube, Valve Outlet Adapter,(for PBX, working area and server room under flooring) 360 deg. Discharge Nozzle Single Hazard releasing control panel Backup Battery, 12VDC, 7AH Smoke Detector Ionization Sys Sensor Smoke Detector Photoelectric Sys Sensor Standard base Two wire Manual Release Station Abort Toggle Switch Station 6" Dia Fire Alarm Bell Kobishi Horn Strobe System Sensor 	
1 lot	XII. Finishing, Painting and Sealing	
	<ul style="list-style-type: none"> Bidders should use nontoxic materials in rendering this work <p>Note:</p> <ol style="list-style-type: none"> For the Painting, please refer to the Section VI Technical Specification, "Painting Works" For Finishing and Sealing, please refer to Section VI Technical Specification 	
	WARRANTY REQUIREMENT	
	Installation and Workmanship Warranty:	
	<ul style="list-style-type: none"> The Contractor shall warrant the data center against defects for five (5) years for the installation and workmanship from the date of turnover. 	
	<ul style="list-style-type: none"> The Contractor shall facilitate a Manufacturer's component warranty for PPP. 	
	<ul style="list-style-type: none"> The Contractor shall warrant the fire suppressant against defects for three (3) years for the equipment, installation and workmanship from the date of turnover. 	
1 lot	TECHNICAL IMPLEMENTATION SERVICES	
	Should adhere to global Data Center Design standards and guidelines detailed by the following:	
	<ul style="list-style-type: none"> TIA 942 Telecommunications Infrastructure Standard for Data 	

	Centers	
	<ul style="list-style-type: none"> o ANSI-BICSI-002 Data Center Standard complementary to TIA 942 	
	<ul style="list-style-type: none"> o IEEE Std 1100-1999 Recommended Practice for Power and Grounding Sensitive Electronic Equipment 	
	<ul style="list-style-type: none"> o ISO/IEC NP 24764 – Information Technology-Generic cabling for Data Centers 	
	<ul style="list-style-type: none"> o References (American National Standard Institute(ANSI)), Occupational Safety Standards and Health Occupational Standards 	
	For Raised Flooring:	
	Bidder must provide all labor, manpower, expertise, tools/materials and logistics in implementing raised flooring of Server Room, Communications (IPPBX) and Technical Working/Monitoring Rooms	
	<ul style="list-style-type: none"> • Must prepare detailed Plan and submit for prior approval of the PPP Center and Building Management of Eton Properties, Inc. Plans must include the following: 	
	<ul style="list-style-type: none"> o Drawings/schematic diagram showing complete raised floor system including floor panel layout and all accessories that are a part of the system. 	
	<ul style="list-style-type: none"> o Submit details and descriptive notes for finishes of components, anchoring, edge details, etc. 	
	<ul style="list-style-type: none"> • All design and layout submissions shall be in 20X30 inch sheets approved and signed 	
	<ul style="list-style-type: none"> • Shall provide clear access, dry secure storage, and a clean sub-floor area which is free of construction debris and other trades during installation of the raised flooring 	
	<ul style="list-style-type: none"> • The raised flooring covers insulation and air discharge panels will be rigid-grid framework formed by galvanized stringers, free of rattles, and other vibrations. 	
	<ul style="list-style-type: none"> • Floors, walls and ceiling shall be sealed, painted or constructed of materials that does not shed dust or other particles and free from water seepage. 	
	<ul style="list-style-type: none"> • Shall ensure that the raised flooring is strong enough to handle heavy equipment, vault, UPS and racks, level, in good order, and correctly earth all metal work 	
	<ul style="list-style-type: none"> o Load capacity and strength testing 	
	<ul style="list-style-type: none"> o Shall provide ramps to the Data Center with quad rails(if needed) 	
	<ul style="list-style-type: none"> o Raised flooring must be complied with flame spread rating and fire resistance 	
	For Cable Pathways	
	<ul style="list-style-type: none"> • Shall provide cable management pathways, and cable entrance for electrical, data and voice 	
	For Electrical System	
	Bidder must provide all labor, manpower, expertise, tools/materials and logistics in implementing end-to-end electrical systems for Server Room, Communications (IPPBX) and Technical Working/Monitoring Rooms	
	Bidder must specifically include the following scope as part of the electrical and cabling implementation:	
	<ul style="list-style-type: none"> • Cables and components, electrical organizer, roughing-in materials ordering 	
	<ul style="list-style-type: none"> • Materials preparations, design distribution, delivery, and management 	

	• Onsite mobilization and site preparation	
	• Electrical Roughing-in installations	
	• Horizontal cable pulling per room	
	• Piping and Insulation installation	
	• Main and distribution panel mounting and installation	
	• Circuit Breakers mounting and installation	
	• Equipment Outlet mounting and receptacle installation	
	• Electrical panel termination	
	• Proper grounding terminals and grounding materials, installation and insulation(Cross Bar grounding)	
	• Cable/ Power load testing using electrical standard tester	
	• Cable labeling	
	• As-built documentation	
	• Power load capacity and test results	
	• Civil works to include restoration works and/or improvement of distribution and installation points.	
	• Overhead, under-floor and wall-mount cable pathways grounding system	
	• Load balancing in 3-phase connection	
	• Lighting and lighting fixtures installation	
	• Raised Floor Electric outlet boxes	
	Bidders shall separate electrical all motorized equipment and cooling system against the IT equipment power distribution and connectivity	
	Bidder shall submit or provide the following:	
	• Schedule of installation (Timeline)	
	○ Electrical extension cable wire installation and outlet to wall cabinet near at the executive area	
	For Wall Partition and Doors	
	Bidder must provide all labor, manpower, expertise, tools/materials and logistics in implementing wall partition of Server Room, Communications (IPPBX) and Technical Working/Monitoring Rooms	
	Bidder must specifically include the following scope as part of the construction of Data Center wall partition and doors	
	• Materials preparations, design, distribution, delivery, management and installation	
	• Onsite mobilization and site preparation	
	• Provide layout design for partitioning	
	• Wall finishing and painting	
	• Layout and work on walls and doors must be aligned, plumb, level and squared	
	• Walls shall be sealed, painted and constructed of materials that does not shed dust or other particles including water seepage	
	Bidders should follow clearances and building procedure in constructing wall partition/doors in the data center	
	Bidders should conduct Testing/Inspection of Data Center:	
	Bidders must provide walls, floors and doors that have anti-static properties as per IEC 61000-4-2	
	For Furniture and Fixtures	
	Bidders should ensure that fixture will not hamper or block the cabling system pathways	
	Bidders should install appropriate number of furniture and fixtures to the Technical Working/Monitoring Rooms as well as fixture for server and	

	IPPBX room.	
	For Environmental Control	
	Bidders should provide sensors and detectors to protect the data center from unwanted incidents.	
	Bidders should ensure that the flow of air be circulated properly within the data center and raised flooring.	
	Bidders should provide necessary fire protection, exhaust and ventilation systems within the data center	
	Bidders should install the fire suppressant to the PBX room to be extended to the monitoring work area.	
	For Facility Relocation	
	Bidders should comply with building guidelines in rendering relocation of facility needed and hindered in the construction of data center	
	DIVISION 19 CONFERENCE DEVICES COMPONENT The Contractor shall supply, delivery and install the following items at the new office:	
	MINIMUM COMPONENT REQUIREMENT and SPECIFICATION	
1 lot	19.1 Projector with Motorized Screen (with all necessary peripherals) for Conference Room 4	
	Same Specs as 16.2	
1 lot	19.2 Projector with Motorized Screen (with all necessary peripherals), Ceiling mount assembly and Multimedia controller switcher for Main Conference Room	
	<ul style="list-style-type: none"> One (1) unit Projector <ul style="list-style-type: none"> 3500 ANSI LUMENS 15000:1 CONTRAST RATIO DLP 0.55" XGA (1024x768) WITH HDMI PORT With USB-A (for PC-less) 	
	<ul style="list-style-type: none"> One (1) Ceiling Mount Assembly <ul style="list-style-type: none"> Adjustable Height Quick release universal mount for Projector Pitching upwards and downward Cable-routing channel for a clean look Cable management Adaptable to different projectors 	
	<ul style="list-style-type: none"> One (1) Motorized Projector Screen 	
	<ul style="list-style-type: none"> Multimedia Switcher Controller 	
1 lot	19.3 Conference Sound System	
	<ul style="list-style-type: none"> 1 Amplifier/Mixer 20 units Delegate microphones <ul style="list-style-type: none"> Compact, attractive design Built-in volume control for headphones Microphone with flexible stem and light ring With headphone sockets Conforms to international standard IEC 60914, the international standard for conference systems. 	
	<ul style="list-style-type: none"> 1 unit Chairman microphone 	

	<ul style="list-style-type: none"> ▶ Incorporates all functions of the Delegate Units ▶ Priority button for chairman microphone ▶ Temporary or permanent muting of delegate microphones ▶ Optional chime tone facility for preceding chairman announcements ▶ Conforms to international standard IEC 60914, the international standard for conference systems. 	
	<ul style="list-style-type: none"> • Control Unit <ul style="list-style-type: none"> ▶ Built-in MP3 recording and playback with graphical display ▶ Digital Acoustic Feedback Suppression ▶ Discussion control without operator ▶ Built-in monitor loudspeaker ▶ Conforms to international standard IEC 60914, the international standard for conference systems. 	
	<ul style="list-style-type: none"> • 1 set speaker system 	
	<ul style="list-style-type: none"> • 2 sets wireless lapel microphones 	
	<ul style="list-style-type: none"> • 1 pair wireless microphones with receiver <ul style="list-style-type: none"> - 8 selectable frequencies per band - Up to 4 compatible channels per band - Balanced and unbalanced audio output - Adjustable Squelch and Mic / Line Switch - Fixed antenna at front 	
	<ul style="list-style-type: none"> • 1 pc. Microphone stand 	
	<ul style="list-style-type: none"> • 1 unit Lectern with Built-in amplifier <ul style="list-style-type: none"> - built-in amplifier, - built in woofers and one alt speaker, - flexible gooseneck microphone and concealed reading light. - 3 audio inputs and one line output to an external system if required - Black powder coated finish 	
	<ul style="list-style-type: none"> • 1 lot cables and accessories 	
	TECHNICAL IMPLEMENTATION SERVICES	
	Should adhere to the installation standards of the project system and conference system	
	Bidder must provide all labor, manpower, tools and materials, expertise, and logistics in implementing end-to-end of the conference system	
	TRAINING / ORIENTATION SERVICES	
	The winning bidder must train/orient the end user on the setup and configuration of the conference and sound system	
	TESTING OF SOUND SYSTEM AND EQUIPMENT:	
	The contractor shall have a quality test for the line, equipment and sound quality	
	The contractor shall have quality test for the projector system	
	The contractor shall consider and realigned the signaling of the system free from echo and interference.	

	WARRANTY REQUIREMENT	
	The Contractor shall warrant the conference and sound system against defects for one (1) year for the installation and workmanship from the date of turnover.	
	The Contractor shall warrant the projector system against defects for one (1) year for the installation and workmanship from the date of turnover.	