PROJECT SUMMARY FOR THE DEVELOPMENT OF AN APARTMENT COMPLEX AT AREA ‘C’ PLN. SOPHIA, GREATER GEORGETOWN

ZARC PROPERTIES INC.

MARCH 2024

1.0 Description of the proposed project

This development is being designed for a variety of multi-family residential uses and their accessory uses. There will be two (2) entry points to the site, one from the north off of the main highway and a secondary off the eastern secondary road. The southern portion of the development will comprise of thirty (30) town homes over three "blocks" (or clusters) spread out with one block on the north side of the new road and two blocks to the south side of the new road.

Each townhouse unit will be two stories high and will comprise the following:

- Two bedrooms
- Two and one half bath
- One car garage
- One dedicated area of driveway

Surrounding each block is a series of security features and guard huts. The entire townhouse development shares an indoor and outdoor amenity area composed of a clubhouse, pool, tennis court and playground. There will be secondary guest surface parking at the clubhouse.

The townhouse development will be served by a sewer treatment plant, municipal water/electric, secondary emergency power generation and water filtration. The townhouse refuse will be deposited outside of each individual unit and will be collected by garbage trucks at regular interval.

The remaining northern portion of the site is reserved for future residential development and building services will be provided and designed at a later date.

2.0 Site description

The site is approximately five acres in size and is located at Area ‘C’ Pln. Sophia, Greater Georgetown. It is immediately south of the Rupert Craig highway and is adequately drained primarily by means of the main roadside drain and a drainage trenches along the southern and eastern boundaries of the site. Additionally, the site is nestled in a mixed residential/commercial land use setting.

Several site improvement works will be implemented to improve its functioning, particularly regarding the issues of drainage and soil erosion control (Figure 2).

Figure 1: The Site: Location and land use context

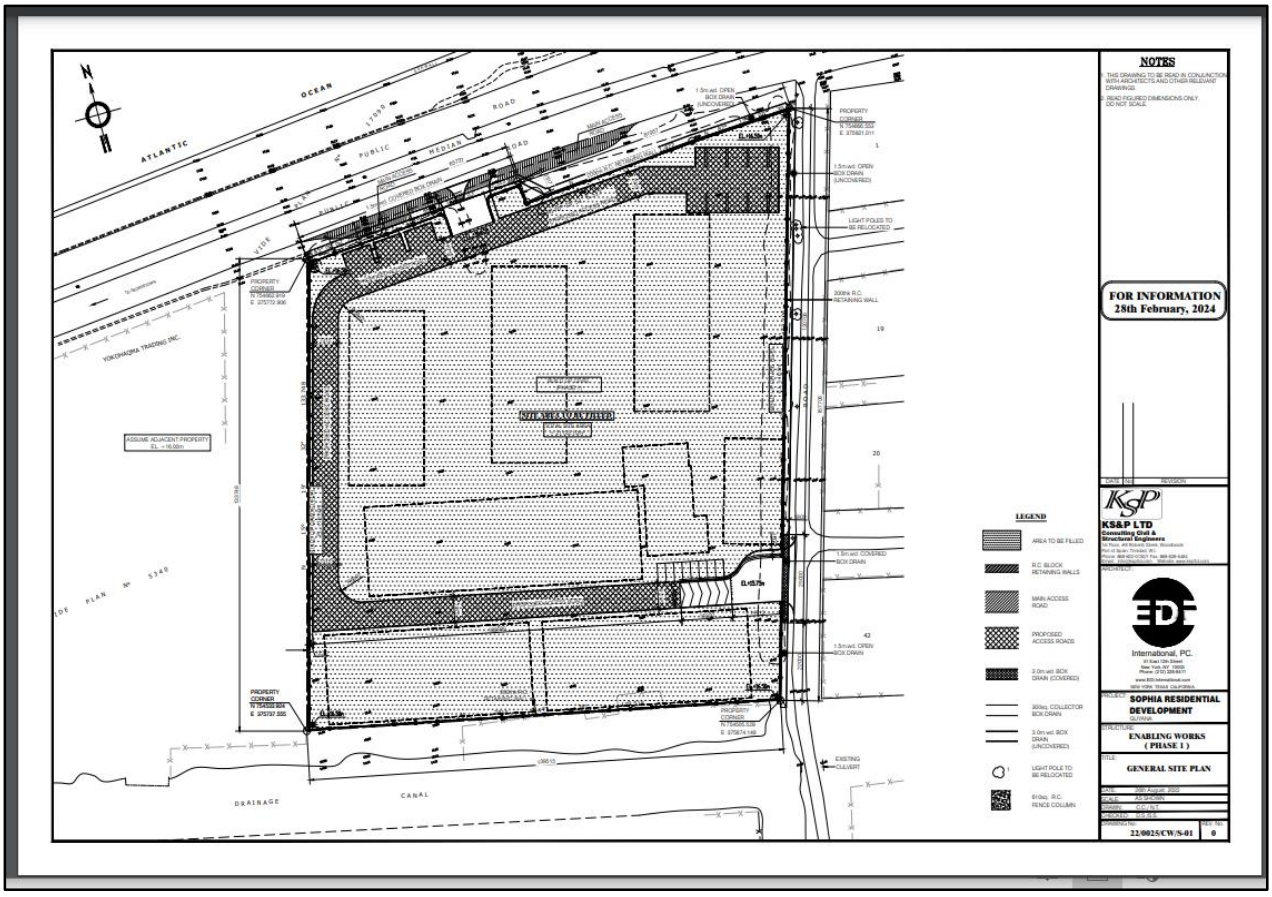


Figure 2: Site plan showing proposed site improvement works

3.0 Project Design

Zarc Properties Inc. chain is committed developing a complete high quality residential environment for the establishment of a set of town houses to cater for the residential occupation needs of a growing market. In this regard, the project is designed to include not only the apartment buildings but also a range of amenities and services to conveniently support and sustain the emerging community. Great emphasis will be placed on site amenity/functional improvement by way of landscaping, efficient drainage and a good waste disposal system. The general intent is to develop a high quality residential environment to serve the needs of Guyana's middle to upper-class corporate clientele, business executives and leisure travelers.

Architecturally, the buildings design will be in keeping with good aesthetic and environmental standards. These buildings will be confined to the low-rise/low density category, with the incorporation of energy saving features and the use of solar energy (green technology).

The development/design concept underpinning the proposed development is grounded in the principles of convenience, safety and environmental sustainability, particularly in view of the

locational prominence of the site and considerations such as its proximity to the sea wall and position along a major road corridor.

The implementation of the Apartment complex facility will be approached in a phased manner. The various phases of the Project are as follows:

- Design phase (preparation of site layout and building designs)
- Pre-construction phase (execution of land preparation or enabling site works)
- Construction phase
- Operation phase

Regarding future development considerations, a portion of land to the northern side of the site was earmarked for future development. The determination of this future development will be guided by agency consultations and will take into account the issue of compatibility with the development hereby proposed.

3.1 Design Phase

Zarc Properties Inc. approaches this project with the objective of balancing project cost with quality, timely delivery and environmental considerations. In this regard, several cautionary approaches to project design were adopted. This includes pre-application consultation with agencies such as the Central Housing and Planning Authority (CH&PA), the Mayor and City Council of Georgetown (M&CC) and the National Drainage and Irrigation Board (NDIA). The outcome of these pre-application consultations served to inform the approach to project design and preparatory site improvement works. The Project will not commence until all the final essential permits are obtained from the Central Housing and Planning Authority, the Mayor and City Council of Georgetown and the Environmental Protection Agency.

3.2 Pre-Construction Phase

This phase will entail site development activities such as the clearing and levelling of the land. At this stage the land will also be sand filled and raised to a higher level to prevent flooding. The areas along the perimeter of the site will also be revetted to secure the site from soil erosion and the resulting negative impact of the surrounding drains. All external drains will be cleared and made to be more effective in terms of discharge capacity. As a result, the land filling task, sand trucks and small wheel loaders (bobcats) will be common on the job site during this phase. Additionally, pile driving equipment will be used to drive concrete piles required for revetment work. This phase is planned to last for three months.

3.3 Construction Phase

The Apartment complex will occupy approximately one hundred square feet of land with building two storeys in height. It will utilize materials consistent with international standards and specifications. This will include mass and reinforced concrete, concrete blocks, bricks, pavers, glass, timber, structural steel, plastic and composite materials. The sub-structure and super-structure works will commence in this phase simultaneously with the external works. The duration of this phase is expected to be eighteen months.

3.4 Operation Phase

The operational phase of the project will entail the completion of internal works to support residential use of buildings and the provision electricity and water supply to all buildings. All services associated with the 30 town houses will be provided at this stage.

The facility's main source of electricity will be the Guyana Power and Light (GPL). In the event of a power outage, a standby generator will be in place to accommodate the transition. Also, the facility will be connected to the Guyana Water Inc. (GWI) water supply network. However, fixed water storage infrastructure will be in place to facilitate emergency needs. Wastewater generated during the operation of the facility will be treated via a wastewater treatment facility before final discharge. Faecal sludge will be contained via a septic system and periodically emptied by a local sanitation service provider. Likewise, solid waste will be contained and managed onsite via storage receptacles and will be retrieved regularly by a contracted local sanitation service provider for final disposal at an authorised solid waste facility.

4.0 Environmental Impacts

Zarc Properties Inc. has concluded that the majorityof the project's impacts will occur during the pre-construction and construction periods. These effects, as well as the necessary mitigation and control methods, are discussed below.

Exhaust Emissions and Fugitive Dust (Air Quality)

The project has the potential to generate reasonable amounts of dust, which could have a negative impact on the air quality in the project region. Most of these effects, however, are likely to be localized and can be avoided or eliminated. Dust will be generated from a variety of sources during construction, including vehicles transporting aggregates, truck loading and unloading, excavation activities, the construction and operation of support facilities such as material stockpiles, and debris deposits from vehicles exiting the construction zone. The entire project site will be screened during the construction phase as a measure to mitigate dust nuisance.

Impacts associated with Fugitive Dust

Construction activities, soil type, moisture content, and wind speed will all have an impact on dust generation during dry periods. Long-term exposure to dust pollution can cause respiratory and ocular irritations in workers and the general population. Dust emissions may also impair workers' and adjacent road users' lines of vision and offers a potentially uncomfortable scenario. Wind can also cause dust to be created from material stockpiles, especially in dry conditions. These effects are manageable and expected to be localized and short-term.

Mitigation measures to reduce potential impacts associated with Fugitive Dust

To limit the influence of dust on the project environment, equipment that produces large amounts of dust would be located in a manner to minimize to spread of dust. Dust masks, respirators, and other appropriate personal protective equipment would be required for personnel working in dusty areas (e.g., stockpile area, cement ransom, or ready-mix service). During dry months, the access route should be checked for dust particles that may become airborne due to the passage of vehicles and equipment. If dust pollution is suspected, soaking of the ground will be adopted on a regular basis. When transporting material, the loaded truck tray would be covered to reduce dust emissions. To prevent wind influence on materials, the material stockpile would be kept to a

minimum height. For materials susceptible to wind, a maximum stockpiling height of 10 feet is recommended, while for materials impervious to wind, a maximum stockpiling height of 15 feet is recommended. To prevent any loose material from being carried away by wind or rain, all material stockpiles will be adequately covered.

Exhaust emissions

The usage of diesel and/or gasoline-fueled heavy-duty equipment will result in combustion emissions during construction. Combustion emissions will be small, temporary, and limited to the region surrounding building activity. It is also believed that emissions will be unavoidable.

Mitigation measures to reduce potential impacts associated with exhaust emissions:

Maintaining construction equipment in accordance with manufacturer's standards so that it runs at maximum efficiency and emits the least amount of pollution. A maintenance log for equipment/machinery must be used to document all maintenance actions. Once dormant, all equipment and machinery must be shut off.

Noise

During the construction phase, noise will be created mostly by fuel-powered generators and heavy-duty equipment and machinery. These consequences are unavoidable, and they are expected to be brief and confined. A 150 Kva generator will be used during the construction period.

Impacts associated with Noise

Noise-induced hearing loss can occur when noise levels exceed the globally acceptable standard of 90 dB. Noise levels exceeding the bearable limit of 72 dB can cause weariness, exhaustion, low morale, and decreased productivity.

Mitigation measures to reduce potential impacts associated with noise

Zarc Properties Inc. will mitigate the potential consequences of noise during the construction period by maintaining noise levels below the EPA's set limit of 90 decibels during the day and 75 decibels at night. Using best practices on-site to reduce occupational noise levels and providing

staff with noise protection equipment. Obtaining hearing protection, such as earplugs, for personnel who are exposed to excessive noise. Wherever possible, efforts will be taken to ensure that machinery and equipment are operating efficiently and that the manufacturer's mandatory muffler devices have been fitted. To the greatest extent possible, night work will be avoided.

Surface Water

Earthworks linked with construction activities such as foundation excavation and primary and secondary drains may cause soil erosion and sedimentation. Improper waste disposal (liquid and solid) and fuel/lubricant management might also endanger surface water, which the Developer will prevent.

Mitigation measures to reduce potential impacts associated with surface water pollution

To prevent excessive dirt deposits and protect watercourses and quality, the developer will site and appropriately cover material stockpiles and excavated materials in a specified area away from water bodies. Waste storage stockpiles or stockpiled material will be positioned at least 30 feet away from any drainage feature. During concrete pours, adequate containment measures will be adopted to guarantee that uncured concrete or concrete leachate does not enter any the drainage system. Sediment traps are one means of prevention. To prevent hydraulic fluid and/or fuel leaks from entering water bodies, place pumps and generators be placed on bermed polyethylene sheeting.

Management of liquid and solid waste

Waste Management Plans will be prepared for each phase to ensure that waste management methods are clearly outlined, given the kind and quantity of wastes to be generated during both stages of the project. Each Waste Management Plan should include a description of the types and volumes of waste that will be generated, waste minimization opportunities, waste management methods, provisions for hazardous waste stream collection, storage, and disposal, and recordkeeping practices, such as manifest and waste tracking forms. The project will generate waste during the construction and operation phase, which, if not effectively managed, can lead to soil and water contamination, contribute to ill health, and detract from the area's attractiveness. This strategy will guarantee that waste created during construction is properly handled and reduced in accordance with EPA rules. Concrete forms, packaging materials, pallets, plastics, waste oil, filters, lubricants and hydraulic fluids, concrete, food, sewage and wastewater are some of the materials that can be expected to be generated during construction. All waste

generated by the project will be carefully managed in accordance with applicable laws and regulations, corporate policies, and international standards. Zarc's Property Inc's. technical and environmental team will perform frequent monitoring and inspections during project construction to ensure no undesirable situation occurs and will also ensure that waste management methods are properly executed during the facility's operations in accordance with a clear Plan.
In the long-term, Zarc Property Inc. will install a waste water treatment plant to handle sewage emanating from the use and occupancy of the apartments (see Figure 1 and 2).

Site Plan Services Coordination
Impacts associated with the improper disposal of waste
Waste heap piles are typically an eyesore and can detract from the aesthetics of any setting. Improper trash disposal, particularly of food waste, can raise the risk of Occupational Safety and Health hazards, as well as produce unpleasant odors and attract vermin. Waste mismanagement can result in secondary pollution and poisoning of land and water.

Mitigation measures to reduce potential impacts associated with improper waste disposal

All effort will be directed at reducing the amount of waste that needs to be disposed of. As a result, measures for reusing 'waste' materials will be adopted. Organic waste (vegetation, topsoil), inert garbage (plastics, food boxes, rubber, etc.), and hazardous waste will be separated from each other. Hazardous and inert trash will be kept in covered bins. The Developer will undertake to ensure the collection and transportation of waste generated on the building site to a certified Landfill (Hags Bosch Landfill).

Domestic waste

Littering and burning of waste products will prohibited in the construction zone. The Developer will clean up the work site on a regular basis to keep it tidy. Waste materials will be collected and stored in bins on site. Domestic waste will not be stored on-site for more than 7 days. Weekly, the Developer will transfer garbage to a designated Landfill. Poorly managed rubbish receptacles may contain bugs and even illnesses carrying vectors. Garbage receptacles will be washed regularly.

Figure 1: Site sewer infrastructure

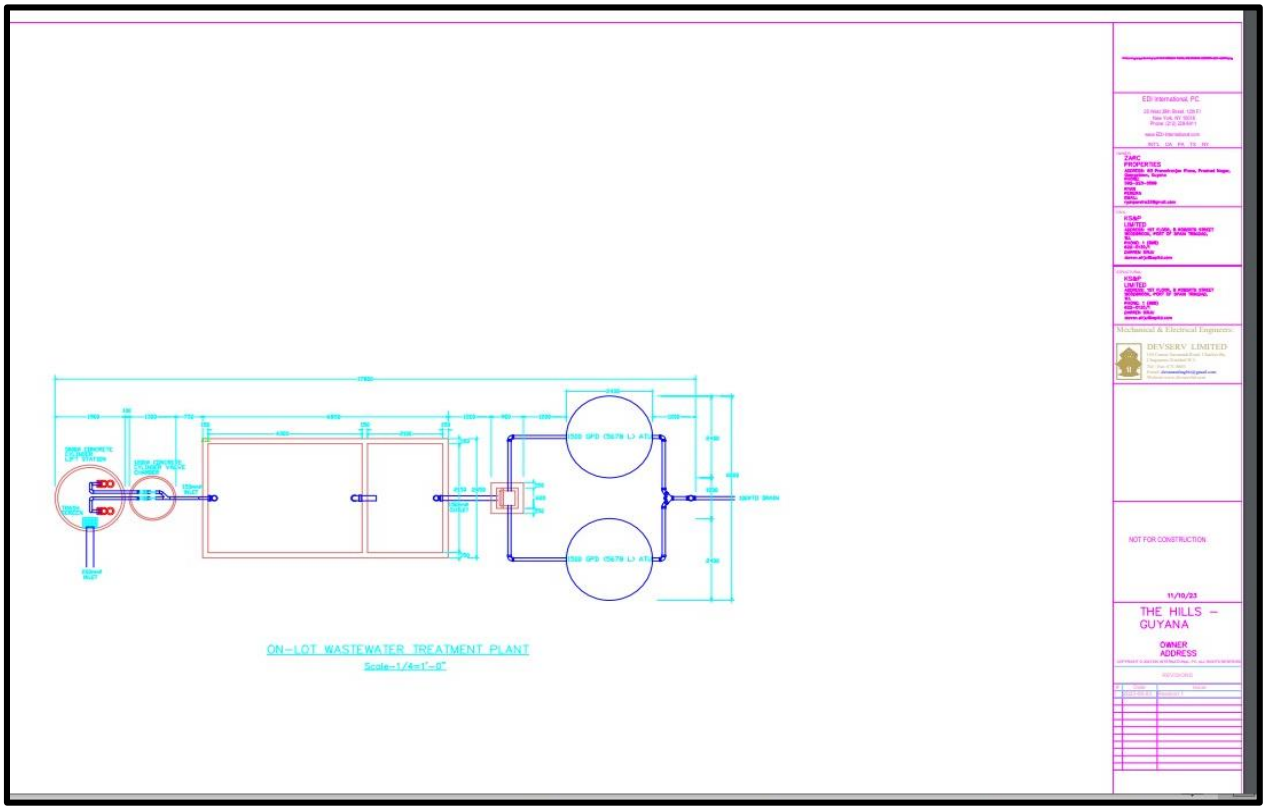


Figure 2: On-Lot Wastewater Treatment Plant

Sanitary wastewater/sewage waste

At the jobsite, a sufficient number of portable toilets will be installed and serviced on a regular basis (weekly). The will be removed at the end of the construction phase.

Construction Waste

For a period of 14 days, building debris and other garbage will not be allowed to accumulate on the work site. To avoid accumulation, the developer will remove it twice weekly. These garbage stockpiles will not be tolerated. The developer will look at all options for reducing, reusing and recycling building waste as deemed feasible.

Concrete Waste

For 48 hours following placement, fresh concrete will be kept away from any authorized watercourse/drainage channel. Cement or new concrete containers or lorries will be washed at a designated location. Only licensed and designated disposal locations will accept concrete waste, including wastewater from batching or cleaning. All cement-contaminated effluent from cleaning or mixing will be treated as poisonous and kept out of any watercourse for at least 48 hours to allow the pH of the water to return to normal.

Fuel, Lubricants and Other Hazardous Materials

Because fuel and lubricants are classed as hazardous substances, special consideration must be given to their transportation, handling, and storage. During project construction, appropriate management actions will be implemented to reduce risks to the environment and human health, as well as to avoid contamination of nearby surface waterways. Any fuel storage onsite will be placed at a safe distance from the surface waterways/drainage system, site office, and work areas. Long-term storage spaces will be covered to keep rain out and will have secondary containment and an impervious base. Fuel will be delivered to work areas as needed or in small quantities during project building and operations to reduce the danger of spills. Signage, fire extinguishers, and/or sand buckets will be put in and around the fuel storage locations during both phases. The type of fuel contained in tanks should be labeled, and 'No Smoking' and 'Highly Flammable' should be prominently displayed. Fuel storage containers will be checked for leaks on a regular basis during both phases. When handling fuel during both phases, extra caution will be taken to avoid spills and leaks. Drip pans will be installed under the equipment during both rounds of refilling to prevent contamination and subsequent fuel runoff due to leaks. Regular

maintenance will be performed during both stages to ensure the proper working of machines and equipment and to prevent needless leaks. Spill kits will be accessible during both phases in the event of spills. Workers, mechanics, and other personnel will be instructed on the correct use of spill kits, as well as the safe handling of fuel and lubricants, during both phases. A simulation spill clean-up exercise is included in the training in proper fuel management methods.

Health and Safety Management

Employees, contractors, visitors, and the general public may be exposed to health and safety concerns as a result of the project's activities. will ensure that plans to handle health and safety hazards unique to construction and operation activities are included in the Health, Safety, Security, and Environment (HSSE) Plan during the construction period. During the hotel's operations, Zarc Properties Inc. shall guarantee that suitable HSSE safeguards are in place for its guests and employees. Identification of health and safety hazards, mitigation measures to protect workers and the public, risk categorization, HSSE procedures, training, and other controls and mitigation measures (for example, personal protective equipment, training, management programs etc.) will all be part of the plans. Onsite, the HSSE Plans will be available to ensure that workers understand the hazards unique to construction and operation activities, as well as how to prevent mishaps, the implementation of the applicable plans will limit or minimize health and safety implications.

Traffic Management

The apartment construction may result in an increase in traffic on nearby roadways. To address this, a traffic management plan was discussed with the Ministry of Public Works and the Guyana Police Force. This will focus more on the impact of the Project on traffic moving along the Rupert Craig Highway. Zarc Properties Inc. Traffic Management Plan will take into the need for safe and convenient movement of traffic in and out of the site along the Rupert Craig Highway (refer to Appendix 1 – a ‘no-objection’ letter dated 2023-11-27 from the Ministry of Public Works in relation to proposed road works to facilitate traffic in and out of the site).

5.0 Conclusion

Zarc Properties Inc. is pursuing the development of Area ‘C’ Pln. Sophia in a holistic manner with the objective of creating a high quality residential community that will be consistently maintained and kept to required standards. It is anticipated that this project will add value to Guyana’s growing

residential accommodation sector, catering to the needs to clientele who place emphasis on quality residential living. The development will not only target travelling professionals/executives but also stakeholders associated with Guyana's emerging oil and gas sector and persons travelling for leisure and tourism, including members of the Guyanese diaspora.

APPENDIX 1

MINISTRY OF PUBLIC WORKS
WORKS SERVICES GROUP
Fort Street, Kingston, Georgetown, Guyana
Email: wsg@publicworksgov.gy I Tel. +592-225-7420 | Fur: +592-225-2689

November 27, 2023

Mr. Ryan Pereira
Executive Chairman
ZARC Properties Inc
83 Premniranjan Place
Prashad Nagar
Georgetown

Dear Mr. Pereira

Re: Construction of hard Shoulder for Ingress and Egress
Area "C" Sophia

Reference is made to your letter dated July 31, 2023 and site visit conducted on November 8, 2023, whereby your company sought the Ministry's No Objection to widen the southern shoulder of the Rupert Craig Highway at Area C Sophia, for Ingress and Egress for the above-mentioned property.

After careful consideration of your application, the Ministry of Public Works hereby offers its "no objection" to the proposed works based on the application and drawings attached.

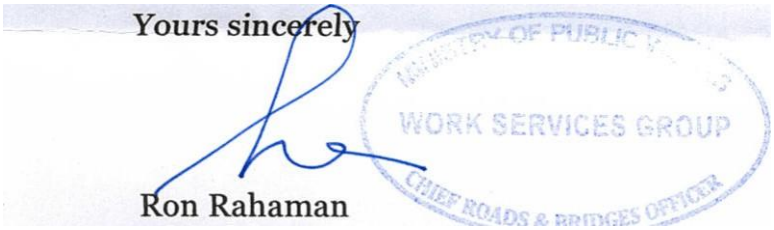
The proposed works entail the following:

1. Construction of an entrance / exist on the street east of the development
2. Development of a widen RC Shoulder for acceleration /deacceleration lanes for Ingress and Egress of the development along the Rupert Craig Highway.
3. Construction of open RC drain 1.5m width along perimeter (east and north) of the property.

Please note that while permission is granted for the development of the road shoulder, the road shoulder remains the property of the Government of Guyana and if required by the Government of Guyana, must be made available within three (3) weeks at no cost to the Government.

Please ensure that the required approvals are obtained from other relevant agencies.

Yours sincerely



Ron Rahaman
Chief Roads and Bridges Officer

cc:
Hon. Minister Bishop Juan Edghill, Minister of Public Works
Hon. Minister Deodat Indar, Minister within the Ministry of Public Works
Mr Vladim Persaud, Permanent Secretary, Ministry of Public Works
Mr Colvern Venture, City Engineer, Georgetown Mayor and City Council