PROJECT DESCRIPTION

1 PROJECT DESCRIPTION

1.1 INTRODUCTION

Fiesta Jamaica Limited is proposing to develop its first resort in Jamaica at a site located at Point Estates, Hanover. The proposed site is situated on 80.94 hectares (200 acres) of land located on the north-eastern side of the Lucea Harbour on the north coast of Jamaica east of the town of Lucea, and directly across the bay from the historical site, Fort Charlotte.

The construction phase of the proposed hotel development is scheduled to last approximately 18 months and will consist of 2000 rooms to be developed in two stages, with a total occupancy floor area of approximately 334, 781.40 m^2. The entire project is divided into four (4) different stages. The first and second stages will count for 1000 rooms each. Stage 1 and 2 entails the construction of two hotel complexes each. For the purpose of this report, the buildings have been labelled “Hotel I” and “Hotel II” in stage 1, and Hotel III” and “Hotel IV” in stage 2.

1.1.1 STAGE 1

Hotels I and II are divided into Junior Suites, Villas and Luxurious Royal Service Bungalows. This stage will also have shared service areas and kitchens which will be adaptable to provide service to Stage 2 (Hotel III and IV) simultaneously if required.

Hotel I will comprise 9 junior suite bungalows each having 36 rooms for a total of 324 rooms; and 4 junior suite bungalows (Type B) each having 48 rooms for a total of 192 rooms.

Hotel II will comprise 3 royal service bungalows each having 36 rooms for a total of 108 rooms; 7 junior suite bungalows each having 36 rooms, total 252 rooms; 1 junior suite bungalow (Type B) of 48 rooms, total 48 rooms; and 19 villas each having 4 rooms, total 76 rooms.

All rooms will have an approximate floor area of 57 m^2 with the exception of the villas which will have an approximate floor area of 80 m^2.

A multifunctional Central Building may include commercial areas, administrative offices, a main lobby area, theme restaurants, a casino, a convention centre, and show rooms. Adjoining this area will comprise pools (including restaurant-styled pools). An underground parking area will be housed beneath the Central Building capable of receiving 300 cars.

The Sports Centre will include facilities for 4 tennis courts, 2 paddle courts, 1 archery range, 1 basketball court and 1 volleyball court, and an indoor soccer field. A spa unit will also be constructed comprising; spa pools, solarium, gym, massage parlours, dressing rooms and beauty parlours.

1.1.2 STAGE 2

Hotels III and IV will comprise a combination of villas and Type B junior suites, with the same approximate floor area as Stage 1. A central building area will also be built to give service to Hotels III and IV and will comprise a Disco, Restaurants and Bars, a mini club, and underground parking for 300 cars. This stage will also utilise the sports and spa unit to be built in stage 1.

Hotel III will comprise 6 Bungalow Junior suites Type B, each having 48 rooms for a total of 528 rooms; and 5 villas each having 4 rooms for a total of 20 rooms.

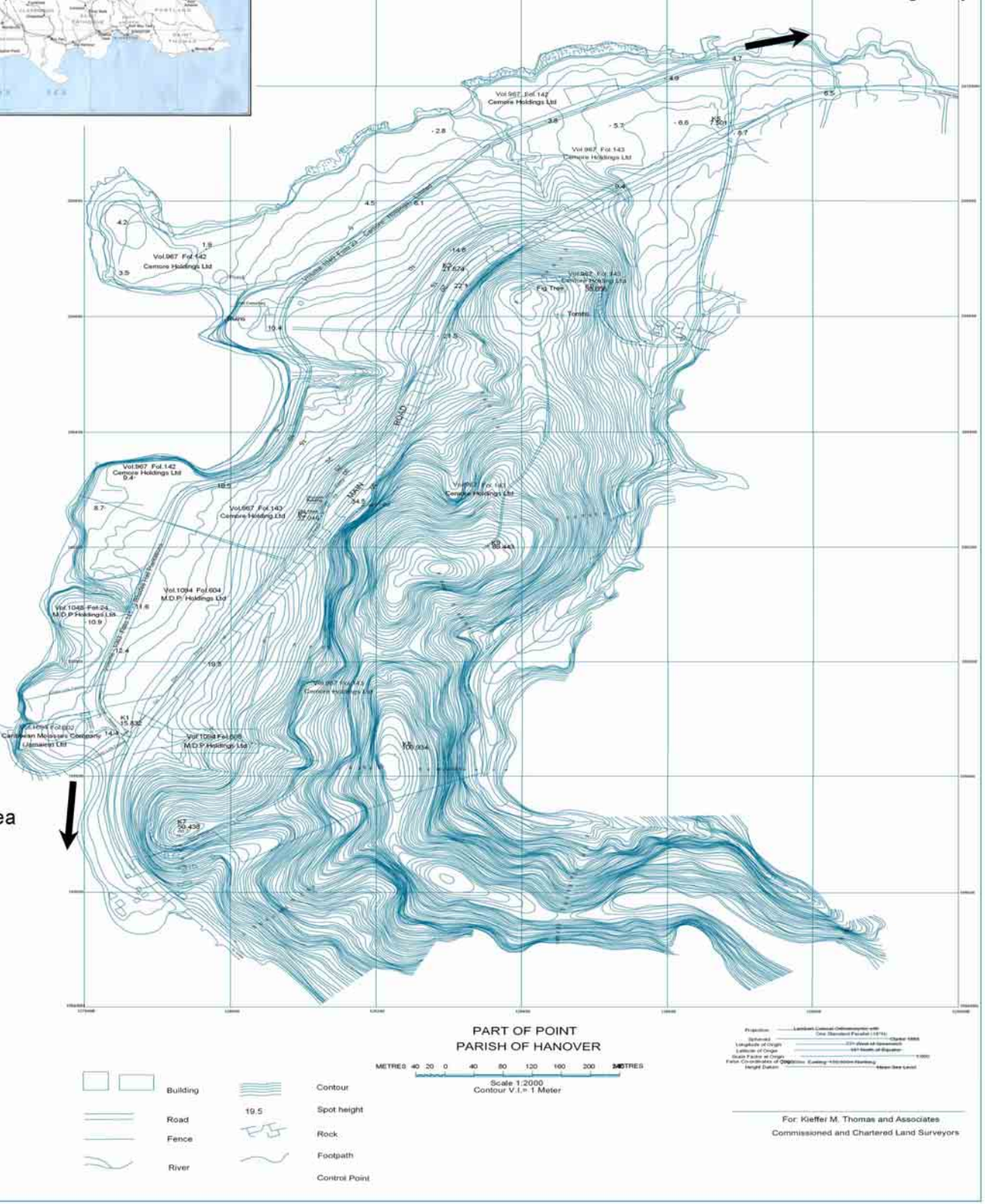
Hotel IV will comprise 6 Bungalow Junior suites Type B each, having 74 rooms for a total of 444 rooms; and 4 villas each having 4 rooms for a total of 16 rooms.

All rooms will have an approximate floor area of 57 m^2 with the exception of the villas which will have an approximate floor area of 80 m^2.

The central building area will comprise pools (including restaurant-styled pools), theme restaurants, commercial areas, administrative offices, a main lobby area, casino hall and convention rooms.

TABLE 1-1: SQUARE METRES OF OCCUPANCY PER TYPE OF ROOM

Type of Rom	Total Floor Area (m^2)
Junior Suite Bungalow	1031.50
Junior Suite Bungalow Type B (16 rooms per floor)	1278.20
Royal Service Bungalow	1166.60
Villas	214.20


Vol.967 Fol.142
Cemore Holdings Ltd
Vol.967 Fol.143
Cemore Holdings Ltd
Vol.1094 Fol.604
M.D.P. Holdings Ltd
Vol.1048 Fol.24
M.D.P Holdings Ltd
Vol.1094 Fol.605
M.D.P Holdings Ltd
Caribbean Molasses Company (Jamaica) Ltd
Fig Tree
Tombs
ROAD
PART OF POINT
PARISH OF HANOVER
METRES 40 20 0 40 80 120 160 200 240 METRES
Scale 1:2000
Contour V.I.= 1 Meter
Building
Road
Fence
River
Contour
Spot height
19.5
Rock
Footpath
Control Point
For: Kieffer M. Thomas and Associates
Commissioned and Chartered Land Surveyors

1.2 STRUCTURAL SCOPE OF BUILDINGS

1.2.1 CENTRAL BUILDING

The configuration of the central building is an irregular shape divided by sectors developed in 1 and 2 storey, the function of this sectors are public an operation areas such as offices, meeting rooms, etc.

The building sectors have been provided by separation joints between each sector and the adjacent one.

1.2.1.1 STRUCTURAL FEATURES:

The structural system selected are in situ reinforced concrete rigid frames and in conjunction with floor diagrams in reinforced concrete with the beam like boundary element, all the concrete elements are designed in accordance with the 4.4 national building code of Jamaica, the latest version of ACI 318.

The proposed foundation is a shallow type, with reinforced concrete strip and isolated footing designed that the soil pressure shall be reasonably uniform to minimize differential settlement. However, where the bearing capacity of soil is in question, before any foundation activity is advised that the design capacity of the soil be substantiated by an examination of subsoil conditions, the foundation system could switch to a deep solution like cast in place concrete piers or reinforced concrete bearing piles. All the foundation elements and the capacity of soil would be designed in accordance with the 4.2, 4.2.2 national building code of Jamaica and the latest version of ACI 318.

The rigid frames and floor diagrams are designed like resisting system for earthquakes in accordance whit recommended lateral force requirements and commentary seismology committee structural engineers association of California.

The effect of wind pressure on these buildings is determined in accordance with the latest edition of BSCP chapter v, part 2. The basic speeds taken are not less than 56 ms^{-1} at a height of 10 meters above the ground.

1.2.1.2 BUNGALOWS AND VILLAS

The hotel project will comprise three (3) royal service bungalows, 16 Bungalow Junior Suites and 5 Bungalow Junior Suites Type B, as 3-storey buildings, with irregular but symmetrical shapes, the function of these buildings being guest rooms.

1.2.1.2.1 STRUCTURAL FEATURES

The structural system selected are masonry shear walls in both directions confined with reinforced concrete posted/tie columns and reinforced concrete slabs, the floor system are diagrams in reinforced concrete with beams and slabs like boundary element.

The proposed foundation is of shallow type, with reinforced concrete strip and isolated footing designed that the soil pressure shall be reasonably uniform to minimize differential settlement. However, where the bearing capacity of the soil is in question, before any foundation activity it is advised that the design capacity of the soil be substantiated by an examination of subsoil conditions, the foundation system could switch to a deep solution like cast in place concrete piers or reinforced concrete friction piles. All the foundation elements and the capacity of soil would be designed in accordance with the 4.2, 4.2.2 national building code of Jamaica and the latest version of ACI 318.

The confined shear walls and floor diagrams are designed like resisting system for earthquakes in accordance with recommended lateral force requirements and commentary seismology committee structural engineers association of California.

The effects of wind pressures on these buildings are determined in accordance with the latest edition of BSCP chapter v, part 2. The basic speeds taken are not less than 56 ms^{-1} at a height of 10 meters above the ground.

Detailed design criteria, parameters, codes and rules are provided in Appendix IV.

•7 Bungalows Junior Suites of 36 Rooms – 252 rooms
•1 Bungalow Junior Suite Type B of 48 Rooms – 48 Rooms
•19 Villas of 4 Rooms – 76 Rooms

Central Building
- •Swimming Pool
- •Swimming Pool Restaurant
- •Thematic Restaurants
- •Business Area
- •Administrative Offices
- •Activity/Entertainment Area
- •Lobby
- •Convention Room
- •Casino

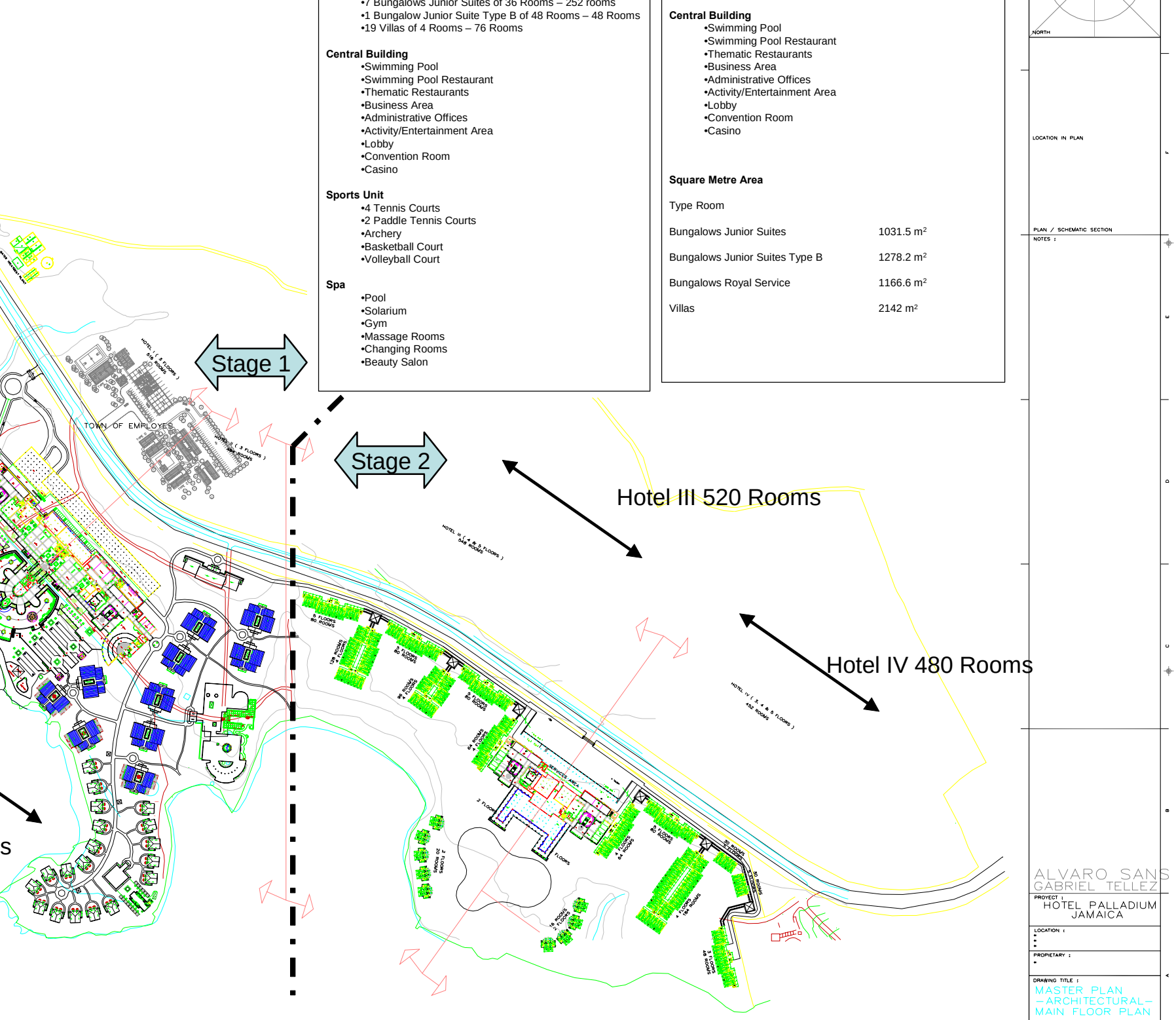
Sports Unit
- •4 Tennis Courts
- •2 Paddle Tennis Courts
- •Archery
- •Basketball Court
- •Volleyball Court

Spa
- •Pool
- •Solarium
- •Gym
- •Massage Rooms
- •Changing Rooms
- •Beauty Salon

Central Building
- •Swimming Pool
- •Swimming Pool Restaurant
- •Thematic Restaurants
- •Business Area
- •Administrative Offices
- •Activity/Entertainment Area
- •Lobby
- •Convention Room
- •Casino

Square Metre Area

Type Room	
Bungalows Junior Suites	1031.5 m²
Bungalows Junior Suites Type B	1278.2 m²
Bungalows Royal Service	1166.6 m²
Villas	2142 m²



ALVARO SANS
GABRIEL TELLEZ

PROYECT :
HOTEL PALLADIUM
JAMAICA

LOCATION :

PROPIETARY :

DRAWING TITLE :
MASTER PLAN
–ARCHITECTURAL–
MAIN FLOOR PLAN

SCALE : 1:2000 | DIMENSIONS : CMS.

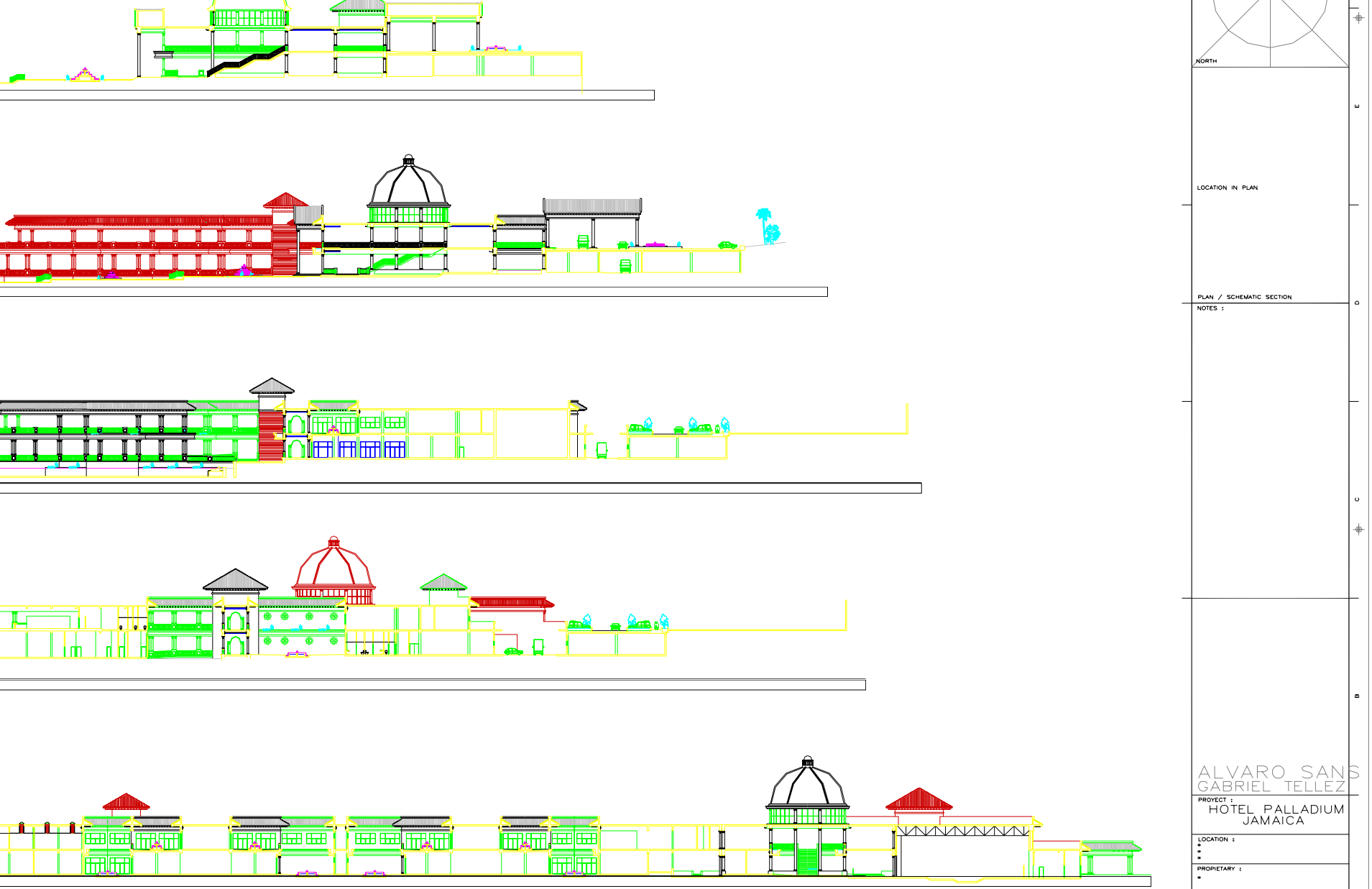
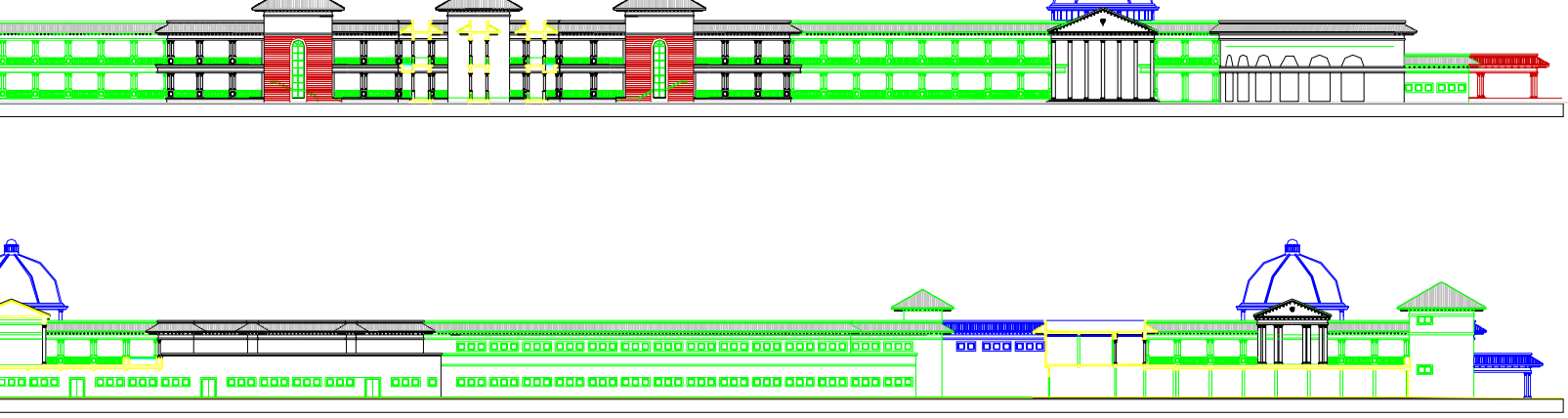
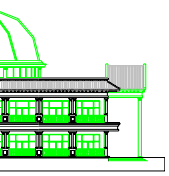
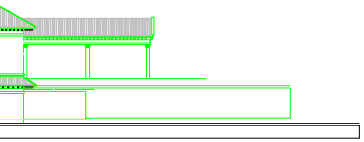


FIGURE 1-3: CENTRAL BUILDING ELEVATIONS OF PROPOSED FIESTA HOTEL, POINT, HANOVER







NORTH

LOCATION IN PLAN

PLAN / SCHEMATIC SECTION

NOTES :

ALVARO SANS
GABRIEL TELLEZ

PROYECT :
HOTEL PALLADIUM
JAMAICA

LOCATION :
•
•
•

PROPIETARY :
•

DRAWING TITLE :
CENTRAL BUILDING
–ARCHITECTURAL–
ELEVATION TYPES A,
B, C, & D.

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	3				
	4				

REVISIONS	No	BY	DATE	CHECK BY	DESCRIPTION
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DESIGNED BY:	AS/GT		
REVISED:	•		
CHECKED BY:			
MADE IN:		DATE	SEPT 7th 2005

SCALE: 1:400 DIMENSIONS: CMS.
PROYECT N°: REV.
DRAWING NAME:
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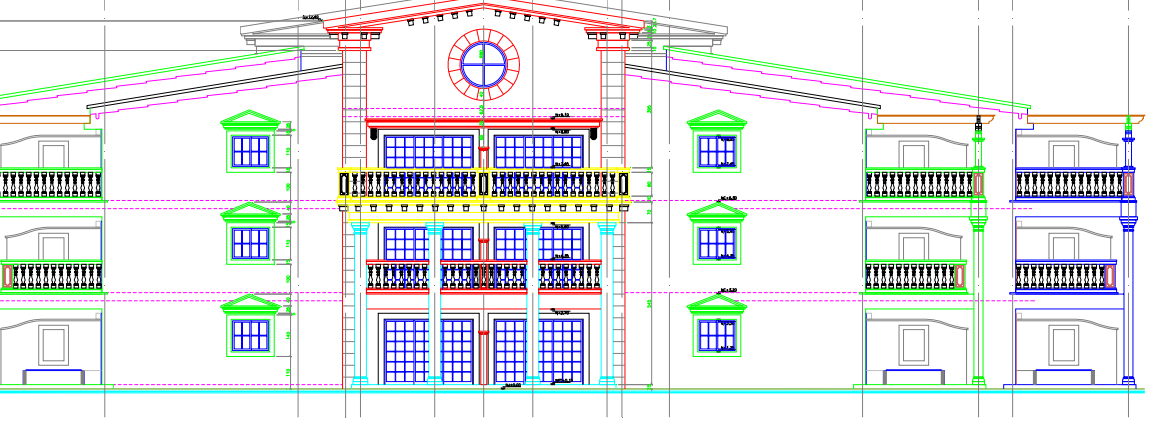
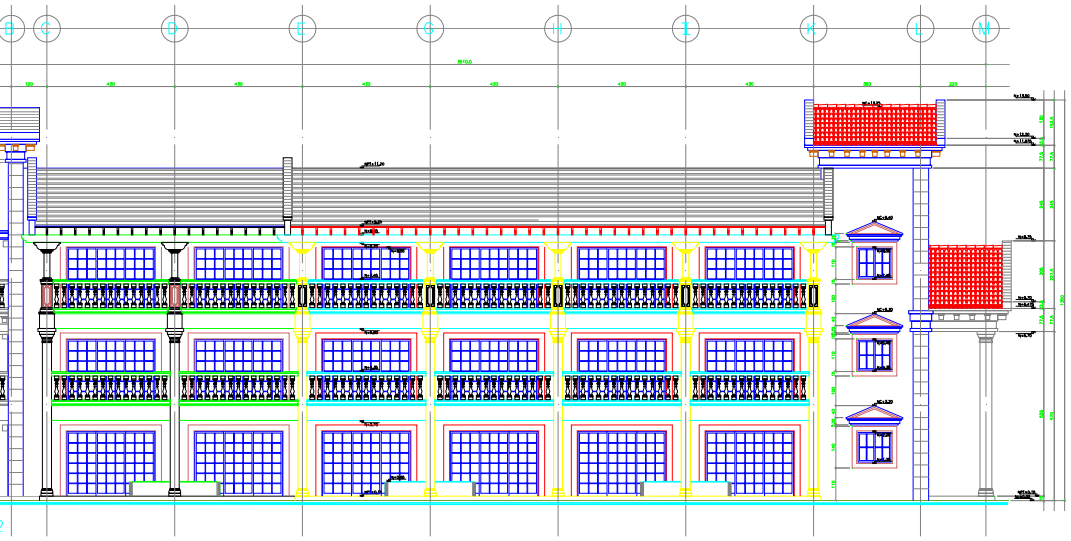
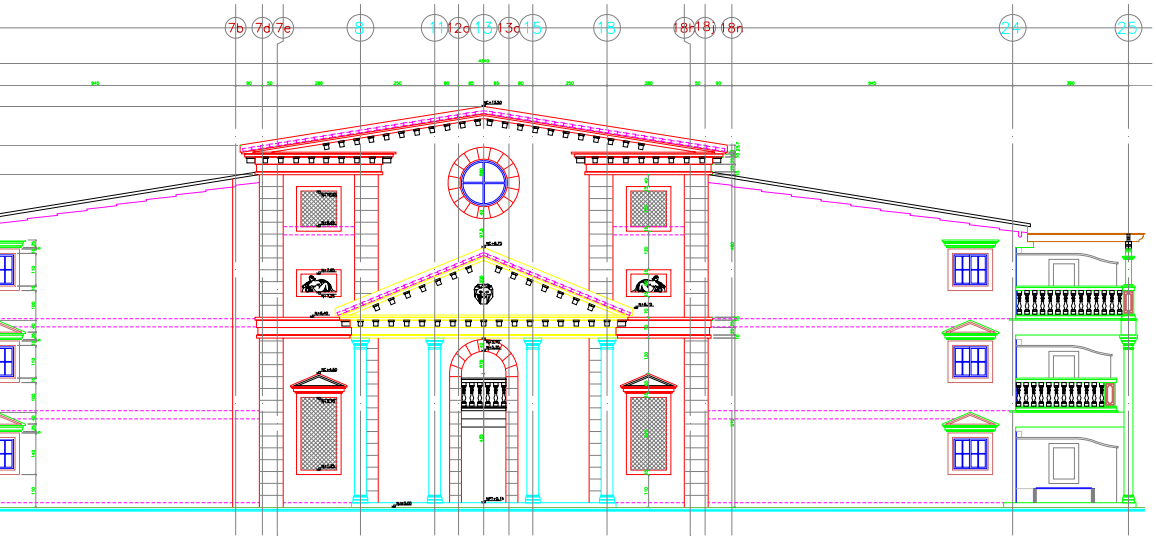
FIGURE 1-4: CENTRAL BUILDING ELEVATIONS OF PROPOSED FIESTA HOTEL, POINT, HANOVER







NORTH

LOCATION IN PLAN

PLAN / SCHEMATIC SECTION

NOTES :

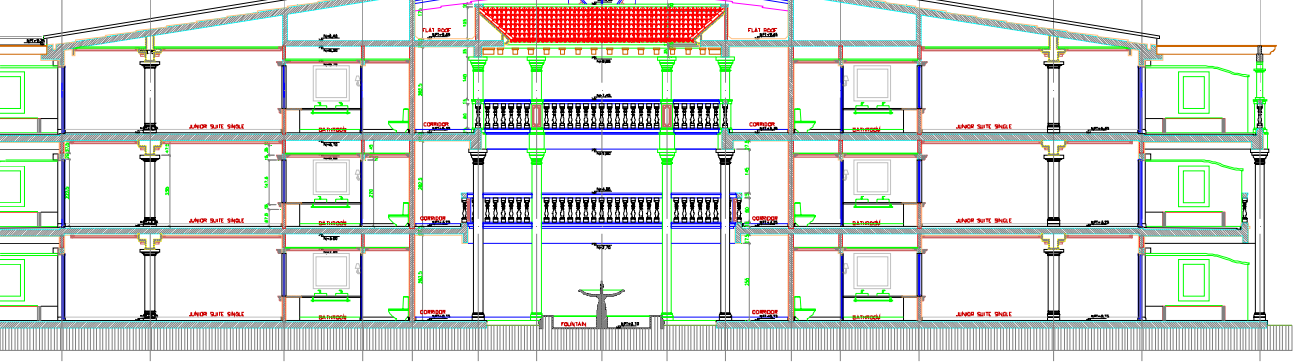
ALVARO SANS
GABRIEL TELLEZ

PROYECT :
HOTEL PALLADIUM
JAMAICA

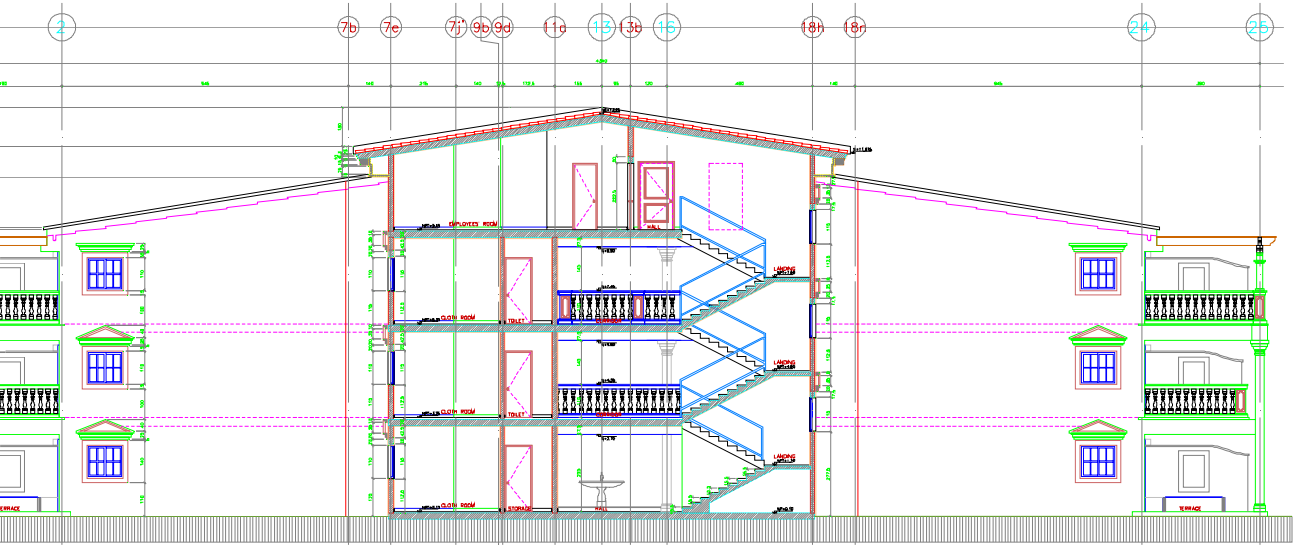
LOCATION :

PROPIETARY :

DRAWING OF :
BUNGALOW ROYAL SERVICE
ELEVATIONS



AL SECTION CT-1



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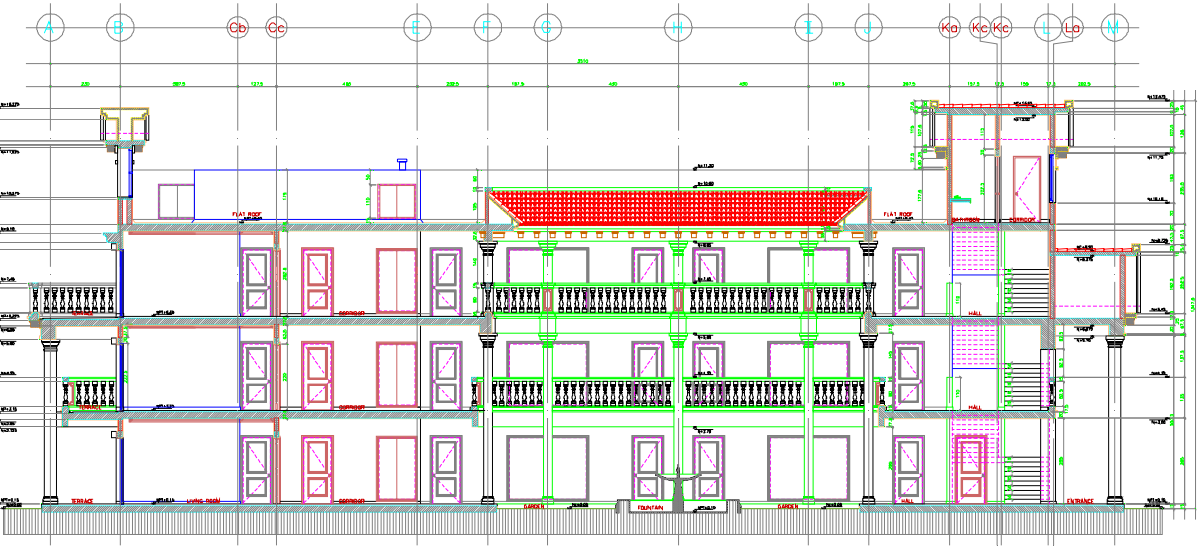

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LOCATION IN PLAN

PLAN / SCHEMATIC SECTION

NOTES :

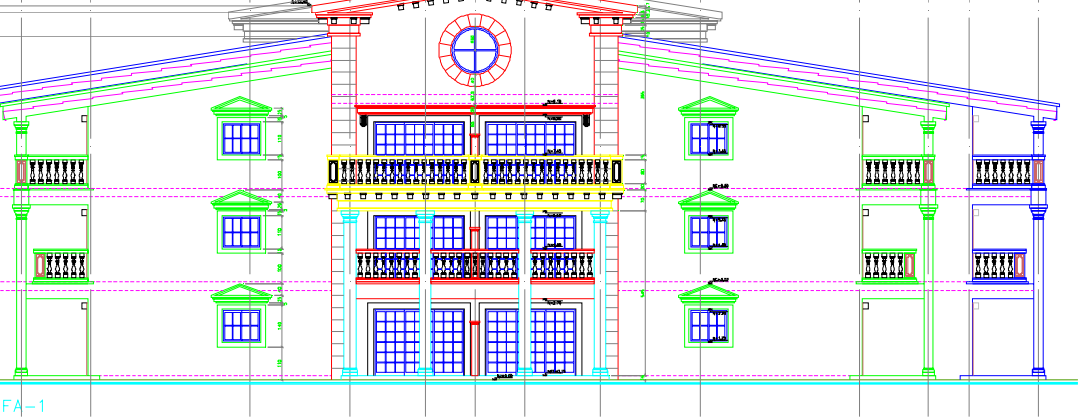
ALVARO SANS
GABRIEL TELLEZ

PROYECT :
HOTEL PALLADIUM
JAMAICA

LOCATION :

PROPIETARY :

DRAWING OF :
BUNGALOW ROYAL SERVICE
SECTIONS



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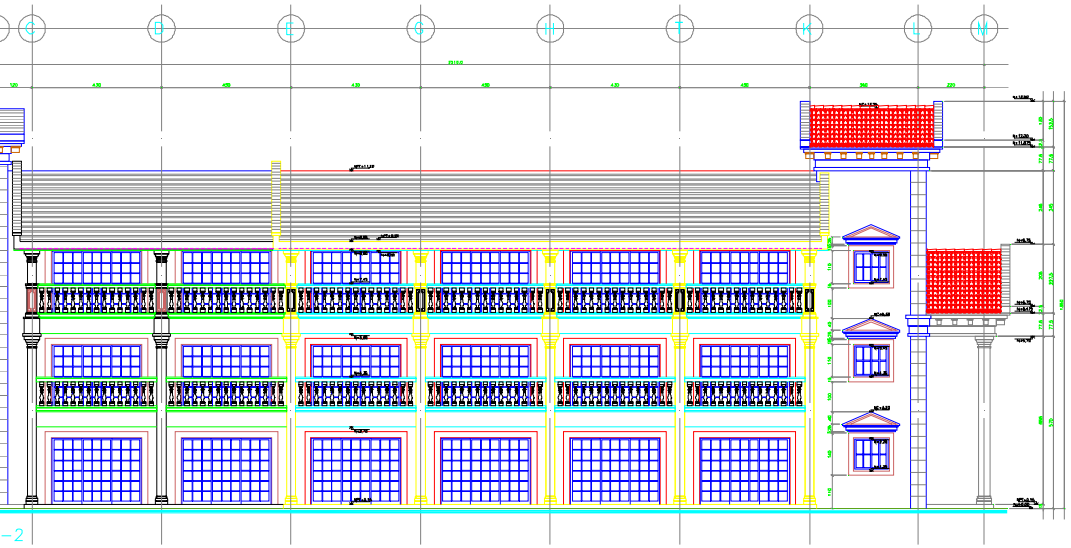

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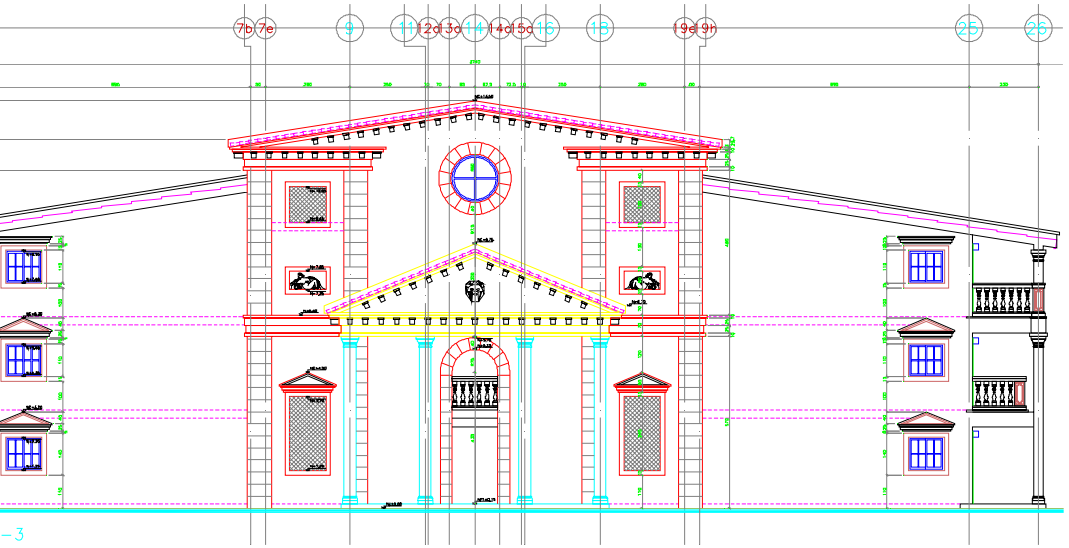

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NORTH

LOCATION IN PLAN

PLAN / SCHEMATIC SECTION

NOTES :

ALVARO SANS
GABRIEL TELLEZ

PROYECT NAME:
RESORT PALLADIUM
JAMAICA

LOCATIONS:
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*
*

PROPIETARY :
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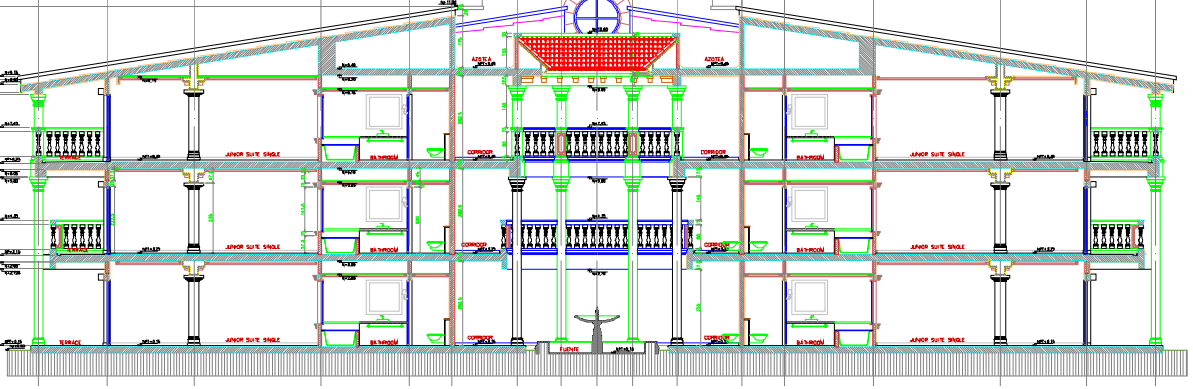
DRAWING TITLE:
BUNGALOW JUNIOR SUITES
ELEVATIONS



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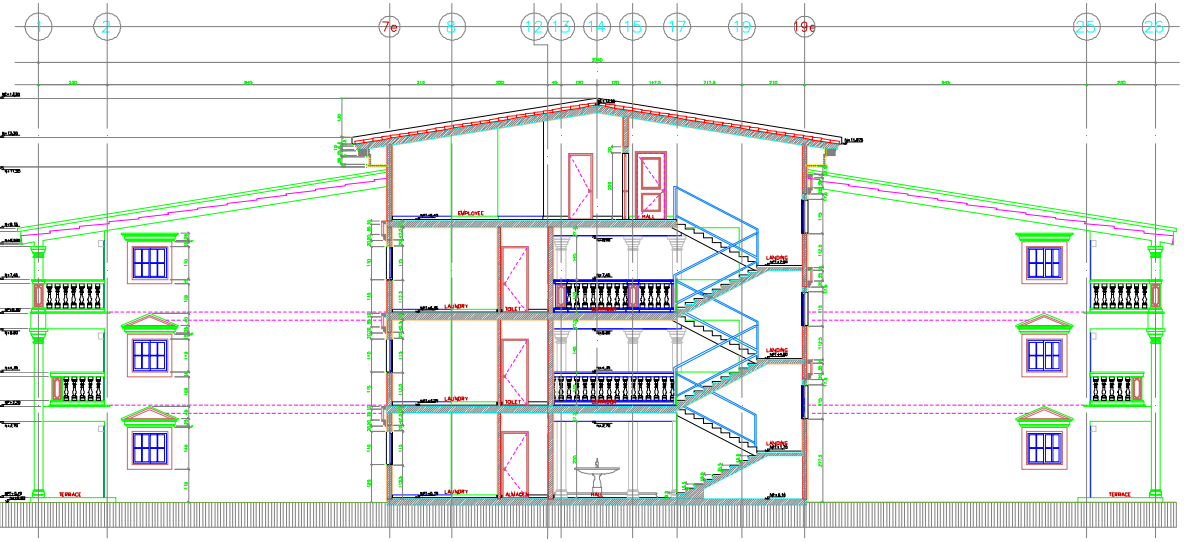

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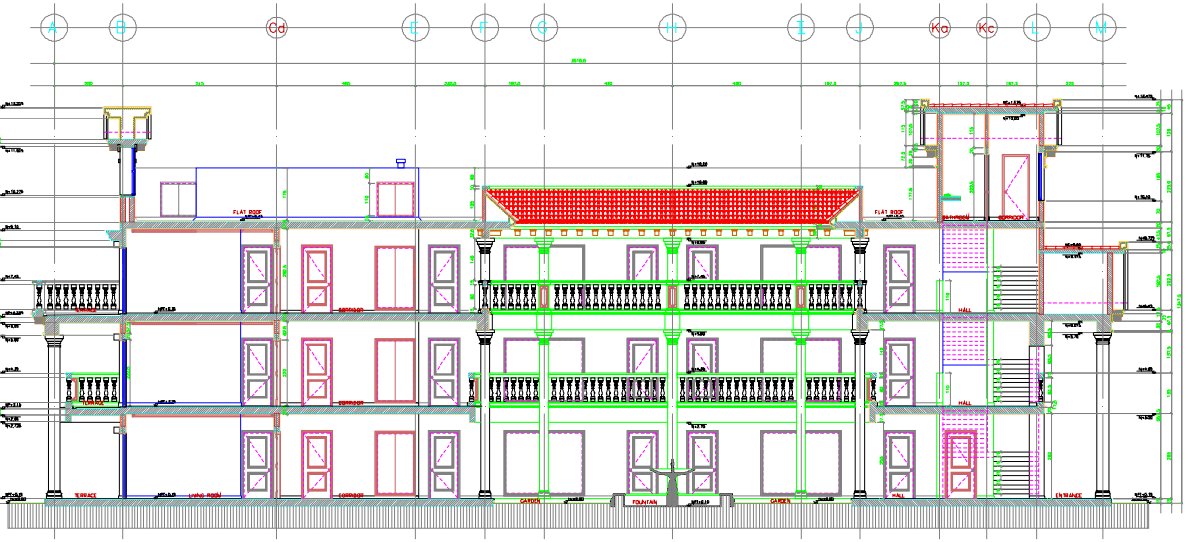


SECTION CL-1

NORTH

LOCATION IN PLAN

PLAN / SCHEMATIC SECTION

NOTES :

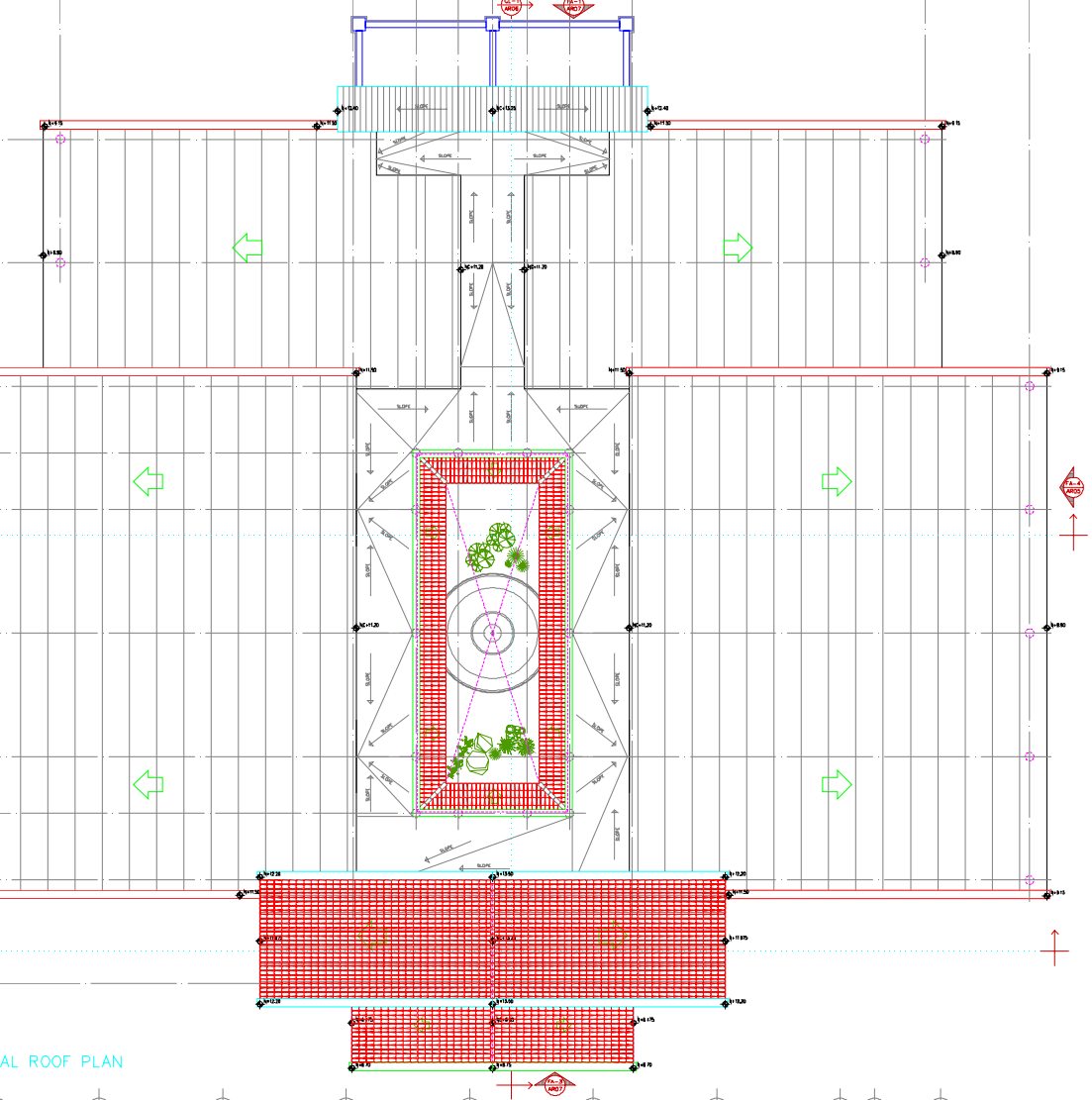
ALVARO SANS
GABRIEL TELLEZ

PROYECT NAME:
RESORT PALLADIUM
JAMAICA

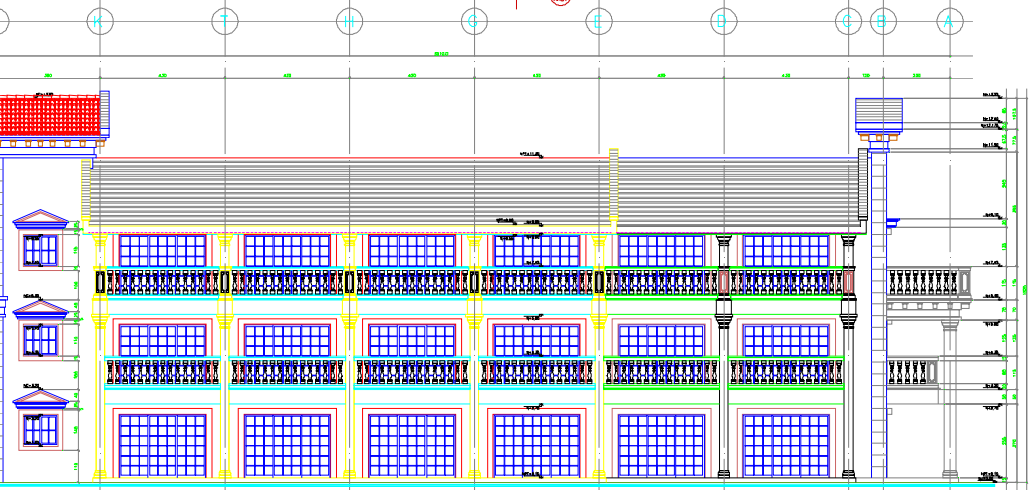
LOCATIONS:
1.
2.
3.

PROPIETARY :
1.

DRAWING TITLE:
BUNGALOW JUNIOR SUITES
SECTIONS



AL ROOF PLAN



FA-4

NORTH

LOCATION IN PLAN

PLAN / SCHEMATIC SECTION

NOTES :

ALVARO SANS
GABRIEL TELLEZ

PROYECT NAME:
RESORT PALLADIUM
JAMAICA

LOCATIONS:
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PROPIETARY :
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DRAWING TITLE:
BUNGALOW JUNIOR SUITES
PLANTA DE TECHOS
GENERAL Y FACHADA 4

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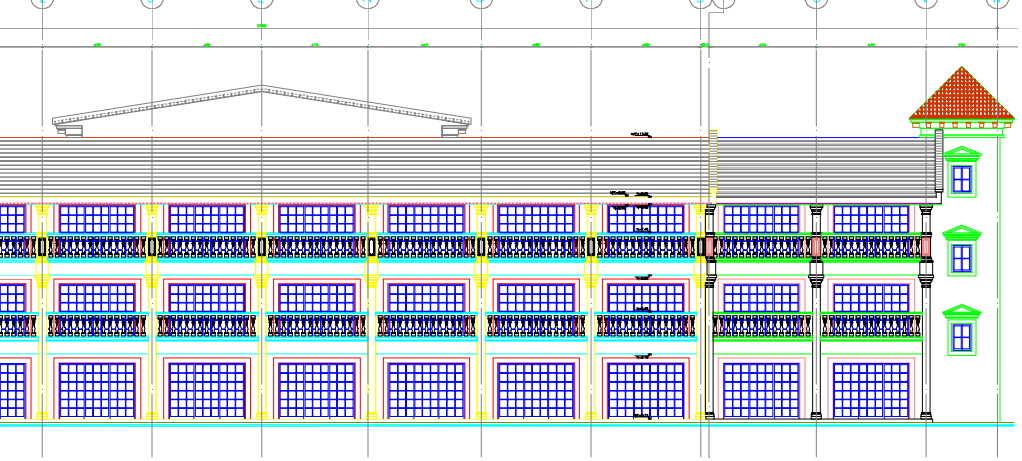

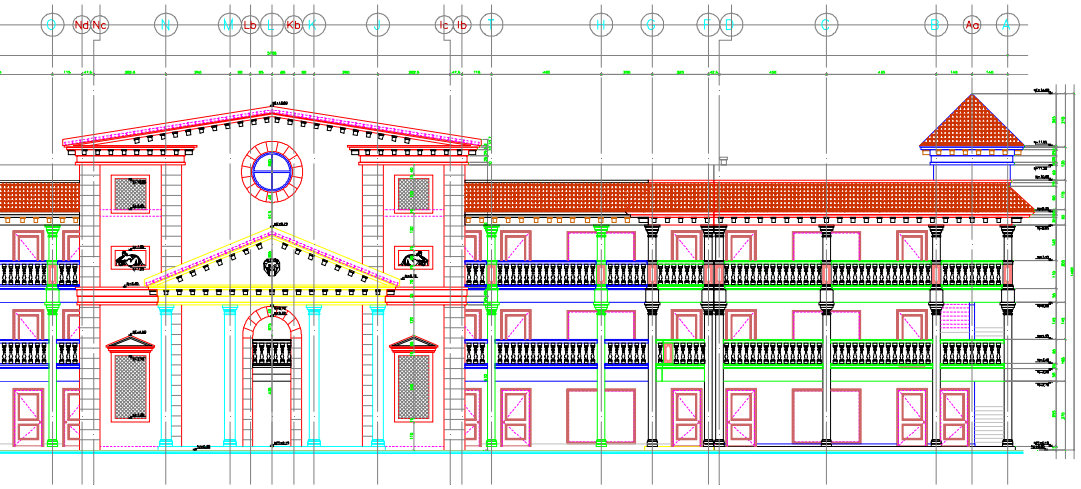

LOCATION IN PLAN

PLAN / ESQUEMATIC SECTION

NOTES :

ALVARO SANS
GABRIEL TELLEZ

PROJECT NAME:
RESORT PALLADIUM
JAMAICA

LOCATIONS:

PROPIETARY :

DRAWING TITLE:
BUNGALOW JUNIOR SUITES
TYPE "B", ELEVATIONS

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REVISED:	-			DRAWING NAME:	
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MADE IN:		DATE: OCT. 2005			

FIGURE 1-10: BUNGALOW JUNIOR SUITE TYPE B ELEVATIONS

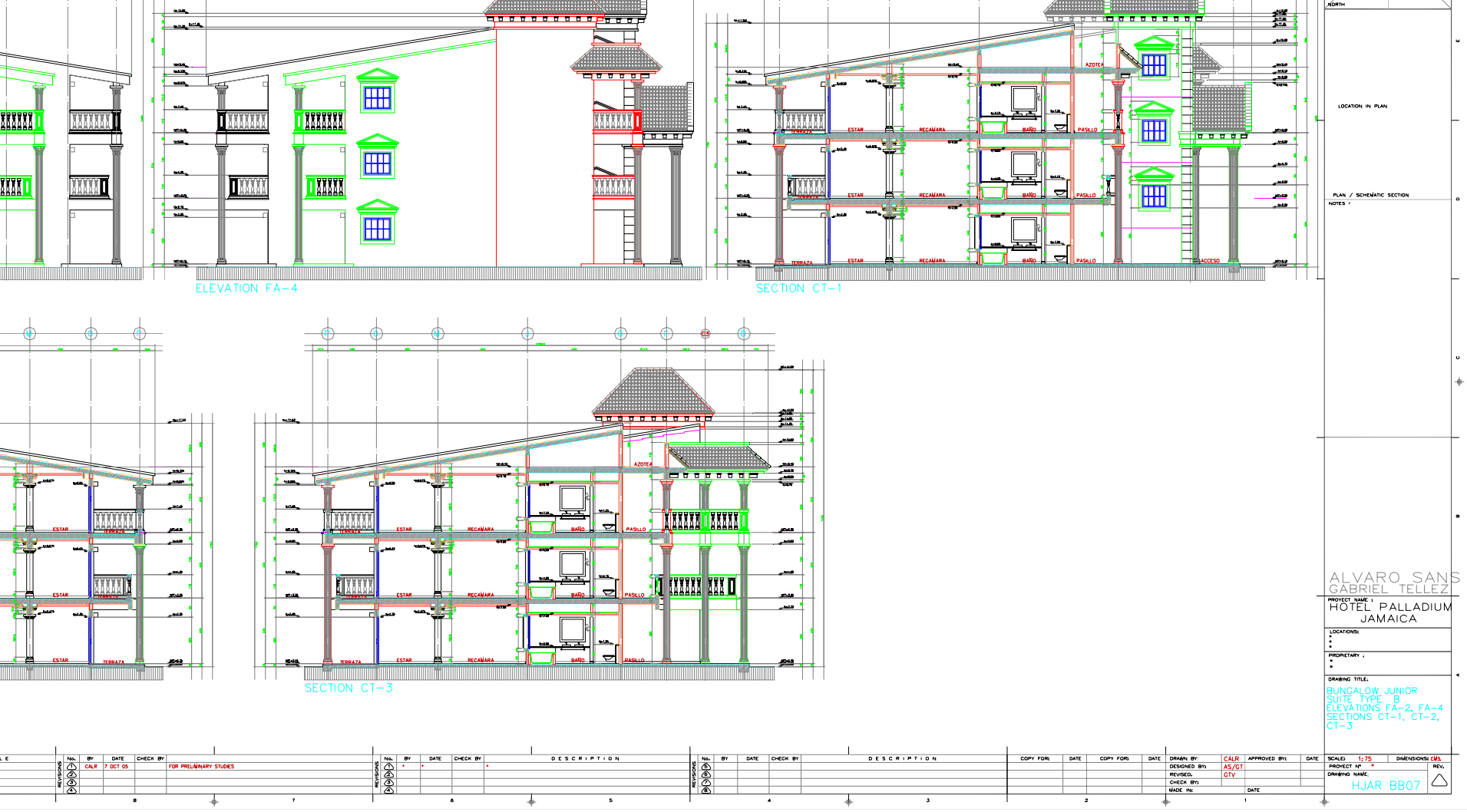
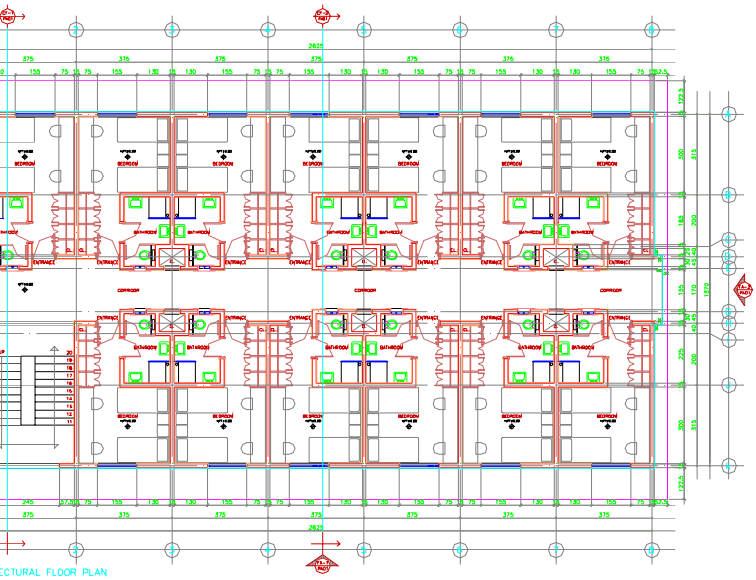


FIGURE 1-11: BUNGALOW JUNIOR SUITE TYPE B ELEVATIONS & SECTIONS



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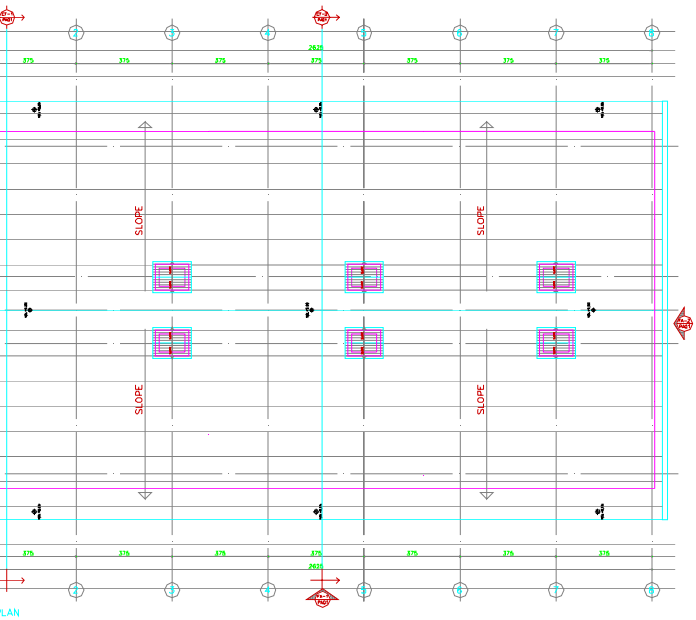

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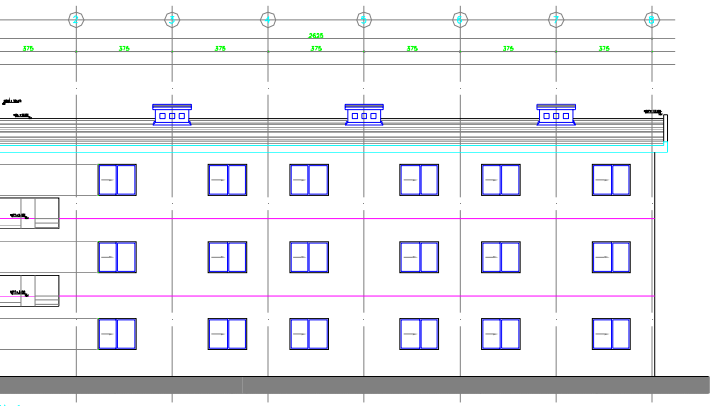

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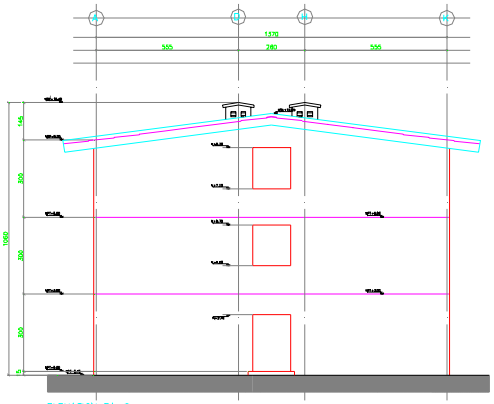

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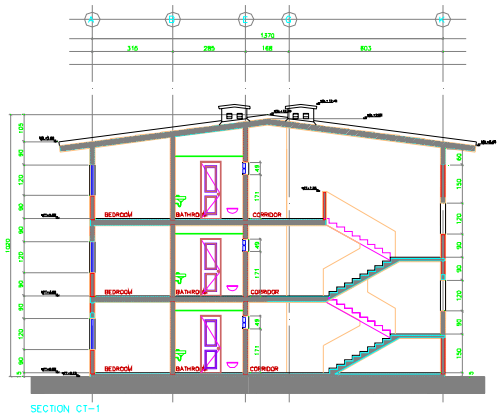

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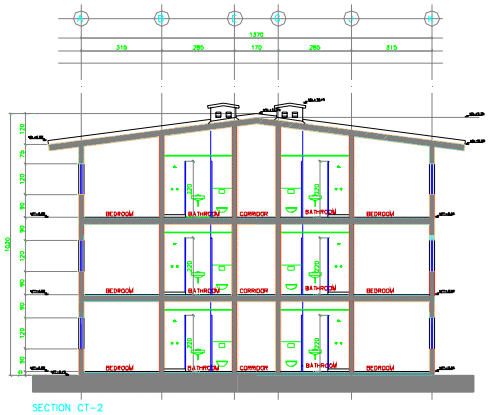

SECTION CT-2

TYPE A

BEDROOMS 4 BEDS
1 BUILDING 3 LEVELS
39 BEDROOMS 156 BEDS

REFERENCES	DRAWING No.	TITLE

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REVISIONS	No.	BY	DATE	CHECK BY	DESCRIPTION

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DESIGNED BY:	AS/GT		
REVISED:	CTV		
CHECK BY:			
MADE IN:		DATE: NOV-2005	

NORTH

LOCATION IN PLAN

PLAN / SCHEMATIC SECTION

NOTES :

ALVARO SANS
GABRIEL TELLEZ

PROYECT :
HOTEL PALLADIUM
JAMAICA

LOCATION :
*
*
*

PROPIETARY :
*

DRAWING TITLE :
MASTER PLAN
-ARCHITECTURAL-
MAIN FLOOR PLAN

During construction, the property will be fenced along the boundary lines to provide for security and minimize the potential for fugitive emissions of dust to impact on the neighbouring establishments or traffic. Temporary buildings will be utilized onsite during construction for storage and field offices. These buildings will be removable containers and/or temporary structures on the site.

Mobile temporary chemical toilets will be provided throughout the construction phase through contract with an approved company. These units will be fully contained and will be removed from the site where they will be disposed of appropriately. At the request of any regulatory agency, the contracted company will be subject to an audit of its operations to insure that waste materials are properly handled and disposed of.

Approximately one quarter of the available lands is expected to be preserved in its existing state (more or less) with brush removal and landscaping being done to maintain the aesthetics of the development and the area. Mature trees will be left in place, as much as practicable. There is adequate parking for the hotel on the coastal strip north of the Highway. All structures to be built on the site will adhere to and fall within the regulations and standards of the Hanover Parish Council and the Natural Resources Conservation Act of 1991, which is enforced by the statutory body, the National Environmental Planning Authority (NEPA).

1.3 SEWAGE/WASTEWATER TREATMENT

In order to preserve the ecological integrity of the site, the project will incorporate a Water Treatment Plant that will adequately service both stages of the proposed developemnt.

Two types of wastewater will be generated at the hotel development:

1. Black Water (faecal content and general human egested/excreted waste)
2. Grey Water (bath, laundry and wash basin water)

*The grey water to black water ratio will be approximately 3:1

Based on a design of 2000 rooms and an estimated water volume of 2,700 m^3/day (31.25 l/sec) it is anticipated that 1,350 m^3 (356,632.3 gals) of wastewater will be generated on a daily basis at maximum occupancy of the property. This represents the basis of design for the sewage treatment system, which will treat it to the tertiary level (suitable for use as irrigation water). The system to be incorporated will utilize an activated sludge process.

The system is designed to meet all requirements of NEPA including the 15% extra holding service capacity for contingencies.

The treatment process will be as follows:

A. Pre-treatment:	Self –Cleaning Fine Sieve Grease mechanical collector Regulating tank and pumps
B. Primary Treatment:	Primary Sedimentation
C. Secondary Treatment:	Aeration with submersible mechanical aerators
D. Effluent Polishing:	Disinfection with: UV light and chlorine solution Filtration in sand and anthracite
E. Sludge Treatment:	Anaerobic Digestion of primary sludge and Aerobic Digestion of excess of biological sludge And Centrifugation of digested sludge

1.3.1 PRE-TREATMENT

1.3.1.1 SELF-CLEANING MESH

All non-biodegradable solids more than 1 mm in size like sands, seeds, etc will be retained by a curved sieve constructed of stainless steel and with such geometry that allows the removal of solids by gravity and their collection in a box, to be sent to final disposal.

1.3.1.2 GREASE TRAP

In order to capture the excessive grease which is not collected by the kitchen traps, a mechanical grease collector will be installed inside a rectangular concrete tank. The grease collected will be stored in steel drums for final disposition.

1.3.1.3 REGULATION TANK AND PUMPING STATION

A concrete tank will be built for the purpose of regulating and homogenizing the raw water streams coming to the plant. This will receive the different qualities and volumes and will allow for a steady flow to be pumped to the process

1.3.2 PRIMARY TREATMENT

1.3.2.1 PRIMARY SEDIMENTATION

Raw water will be pumped to a double rectangular tank (Imhoff tank) that has an upper chamber that promotes the separation of inorganic matter, mixed with some organic matter by simple gravity. The concentrated sludge will fall to the tank bottom where it will be anaerobically digested.

This system eliminates between 30 and 35 % of all the organic matter in the waste water.

1.3.3 SECONDARY TREATMENT

1.3.3.1 AERATION

The water, now containing 70% of the original organic matter, will pass to a rectangular concrete tank where air will be blown from the bottom by means of submersible aerators manufactured by IMPEL. This biological reactor will develop the microorganism system that will remove the rest of the organic matter and will allow for meeting the parameters defined as limits.

1.3.3.2 SECONDARY SETTLING

The mixed liquor coming from the aeration tank will be conducted to a circular concrete tank where the water will be clarified through sedimentation of the biological sludge. The sludge will be concentrated in a bottom hopper by means of a mechanical system with bottom rakes that are powered by a moving bridge with peripheral traction. The tank also has dampers and a peripheral collector. Pumps will be used to remove the sludge concentrated in the bottom and send it back to the aeration tank or to the sludge digestion tank. The floating impurities and foams will be sent to the raw water regulation tank.

1.3.4 EFFLUENT POLISHING

1.3.4.1 DISINFECTION

The effluent will be subject to a double disinfection process in order to guarantee the efficient re-motion of pathogenous organisms (99.9%). This is accomplished with the use of a UV system which is very inexpensive to operate, and a system that de-odifies a solution of chlorine salts that provides the residual disinfectant that prevents the contamination of the storage tanks.

1.3.4.2 FILTRATION

In order to eliminate any solid matter that could interfere with the irrigation system, and in order to eliminate any helmynth eggs (a requirement of the Mexican Standard NOM-003-SEMARNAT-1997 used in Fiesta's Caribbean properties), a filtration system that utilizes sand and anthracite will be installed. The Mexican Standard refers to water that could come in contact with people.

1.3.5 TREATMENT OF EXCESS SLUDGE

1.3.5.1 AEROBIC DIGESTION

The excess sludge from the biological stage will be stabilized in two rectangular concrete tanks that will have air supply from IMPEL mechanical submersible aerators. The micro-organisms will be subject to a self-destructing process that will render an inorganic, stable compound.

1.3.5.2 ANAEROBIC DIGESTION

The primary sludge will be stabilized in the bottom part of the Imhoff tanks that act as Anaerobic Digesters where a series of micro-organisms that live in the absence of dissolved oxygen and turn the organic matter into stable inorganic compounds.

1.3.5.3 DIGESTED SLUDGE CENTRIFUGATION

The digested excess sludge will be dehydrated by means of a centrifugal dehydrator which will allow the dry sludge to be used for compost making and its further use in garden improvements.

1.3.6 MACHINE HOUSE

A closed area is required in order to house the filtration equipment, pumps, chlorine dosification, sludge dehydration and electric control equipment.

A flow chart of the proposed sewage treatment process is provided below as Figure 1-14 along with general and sectional plans. The physical structures that will comprise the sewage treatment system will be constructed in south-eastern region of the property

(see Figure 1-15). The structures will be partially underground with approximately one metre of the tanks and decanters above ground. This will facilitate ease of access and allow for the opportunity to utilize landscaping techniques to reduce any impacts on the aesthetics of the site. Table 1-2: Dimensions of Concrete Tanks and below outlines the list of tanks, buildings and their dimensions, and Table 1-3 outlines the process equipment required for the operation of the waste water treatment plant.

TABLE 1-2: DIMENSIONS OF CONCRETE TANKS

Stage of Treatment	Quantity	Size (m)
Pre-Treatment		
Solids removal tank and grease trap	1	12.3 x 3.00 x 3.70
Regulating and pumping station tank	1	13.00 x 12.30 x 3.70
equipment installation room	1	4.30 x 3.00 x 2.50
Primary Treatment		
Tanks	2	13.00 x 7.00 x 5.50
Secondary (Biological) Treatment		
Aeration tanks	2	14.00 x 7.00 x 4.50
Circular Sedimentation Tank	1	14.00 m. dia. x 4.00 m height
sludge pumping station	1	2.00 x 2.00 x 4.80
Effluent Polishing		
Disinfection and filtering room	1	14.00 x 6.00 x 3.00
Sludge Treatment		
Aerobic digestion tanks	2	10.00 x 5.00 x 4.50
Machine House		
Control room for filtration and sludge conditioning	1	12.00 x 6.00 x 3.00

*** Anaerobic digestion will take place in the bottom section of the primary settling tanks

TABLE 1-3: LIST OF PROCESS EQUIPMENT

Pre-Treatment

2 IMPEL Self cleaning meshes, opening: 2.5 mm, manufactured in electro-welded stainless steel mesh by Johnson Screens, structural components are also made of stainless steel and designed for peak capacity.

1 IMPEL Mechanical collector for grease and oil.

2 Submersible pumps manufactured by IMPEL, Model LD-100-104-195-W equipped with 10 HP motors. One in operation, one in stand-by

1 IMPEL recirculation submersible pump, model LD-100-104-195-W with 10 HP motor.

6 Electric level switches with mercury capsule, manufactured by IMPEL.

Primary Treatment

2 Sludge handling pumps manufactured by Sentinel, horizontal, centrifugal, 3 HP motor.

Secondary (Biological) Treatment

Aeration:

4 Submersible mechanical aerators, manufactured by IMPEL, model AMS-50-10 with 10 HP motors

Sedimentation:

1 Sludge mechanical collector for circular tank, 14.00 meters in diameter, with peripheral traction system utilizing a 1 HP motor, moving bridge, rakes, perimeter discharge system and sludge trays.

2 Submersible pumps, IMPEL, model LD-100-104-195-W with 10 HP motor.

Effluent Polishing

1 Disinfection system integrated by a UV light unit formed by:
- 2 contact channels manufactured in stainless steel
- 48 UV lamps with protective cover
- 2 lots of stainless steel supports
- 1 control panel

1 System for the dosification of a 5% solution of calcium hypochloride including:
- 1 Peristaltic, dosifing pump with capacity for 367 liters/day
- 1 600 liter polypropilene tank
- 1lot of dry granular disinfectant (100 Kg)

1 Pressure Filtration System consisting of:
- 5 Horizontal cylindrical filters, 1.10m in dia. 2.50m high
- 5 Loads of sand and anthracite
- 2 Sets of feed and backwash pipe manifolds
- 3 Basket type strainers for solids retention
- 3 Horizontal centrifugal pumps, 15 HP ea. 220/440 volts

Sludge Treatment

4 Submersible aerators IMPEL, Mod. AMS-40-7.5 with electric motor, 7.5 HP and guides

1 Centrifugal filter for sludge de-watering by Pieralissi or similar

Machine House

Electric Control

1 Motors control center (MCC), 440 V, built in a NEMA 1 metallic cabinet, with general switch, thermo-magnetic protections and controls for all motors in the plant.

The equipment above described for

- Disinfection
- Filtration
- Sludge dehydration

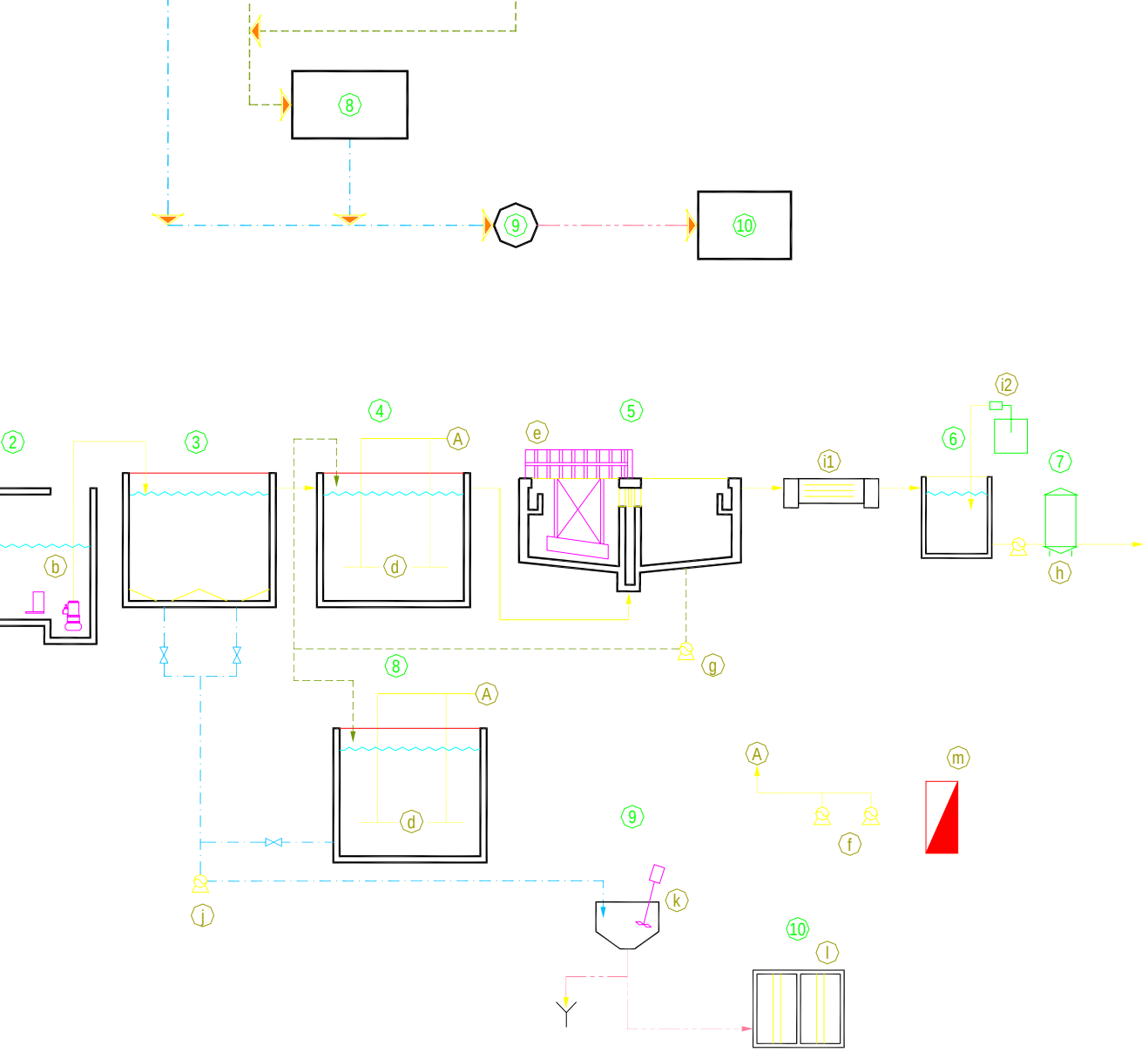
Materials

Hydraulic piping in Carbon Steel (outsides) and PVC for interiors.

1 lot for raw water handling
1 lot for sludge handling

Electric
1 lot for power
1 lot for control

Maintenance
1 lot of laboratory test equipment



1	REGULATION
2	REGULATION
3	PRIMARY DECANTER (IMHOFF)
4	AEREATION
5	SECONDARY DECANTER
6	DESINFECTION
7	FILTRATION
8	AEROBIC DIGESTION
9	ESPESADOR SLUDGE
10	SLUDGE DRYER

EQUIPMENT

ID	DESCRIPCION
a	GREASE COLECTOR
b	INFLUENT PUMP
c	SCREENER
d	AIR DIFFUSERS
e	MECHANIC SLUDGE COLECTOR
f	AIR BLOWER
g	SLUDGE RECIRCULATION PUMPING
h	FILTRATION SYSTEM
i	DESINFECTION SYSTEMS i1 UV LIGTH i2 CHLORINE SOLUTION
j	DIGESTED SLUDGE PUMPING
k	CHEMICAL SLUDGE THICKENER SYSTEM
l	DRYER SYSTEM
m	ELECTRIC CONTROL SYSTEM

SIMBOLOGY:

- WATER IN PROCESS
- BIOLOGYC SLUDGE
- DIGESTED SLUDGE
- DRY SLUDGE

CONT: **WASTE WATER TREATMENT PLANT**

CLIENT: **HOTEL "PALLADIUM JAMAICA"**

LOCATION: **POINT STATE, HANOVER JAMAICA**

No. PROYECT: **1787**

ESC. **1:100**

COT. **METERS**

PROYECT **A.B.T.**

PLAN: **FLOW DIAGRAM**

2

DATE: **NOV 24,2005**

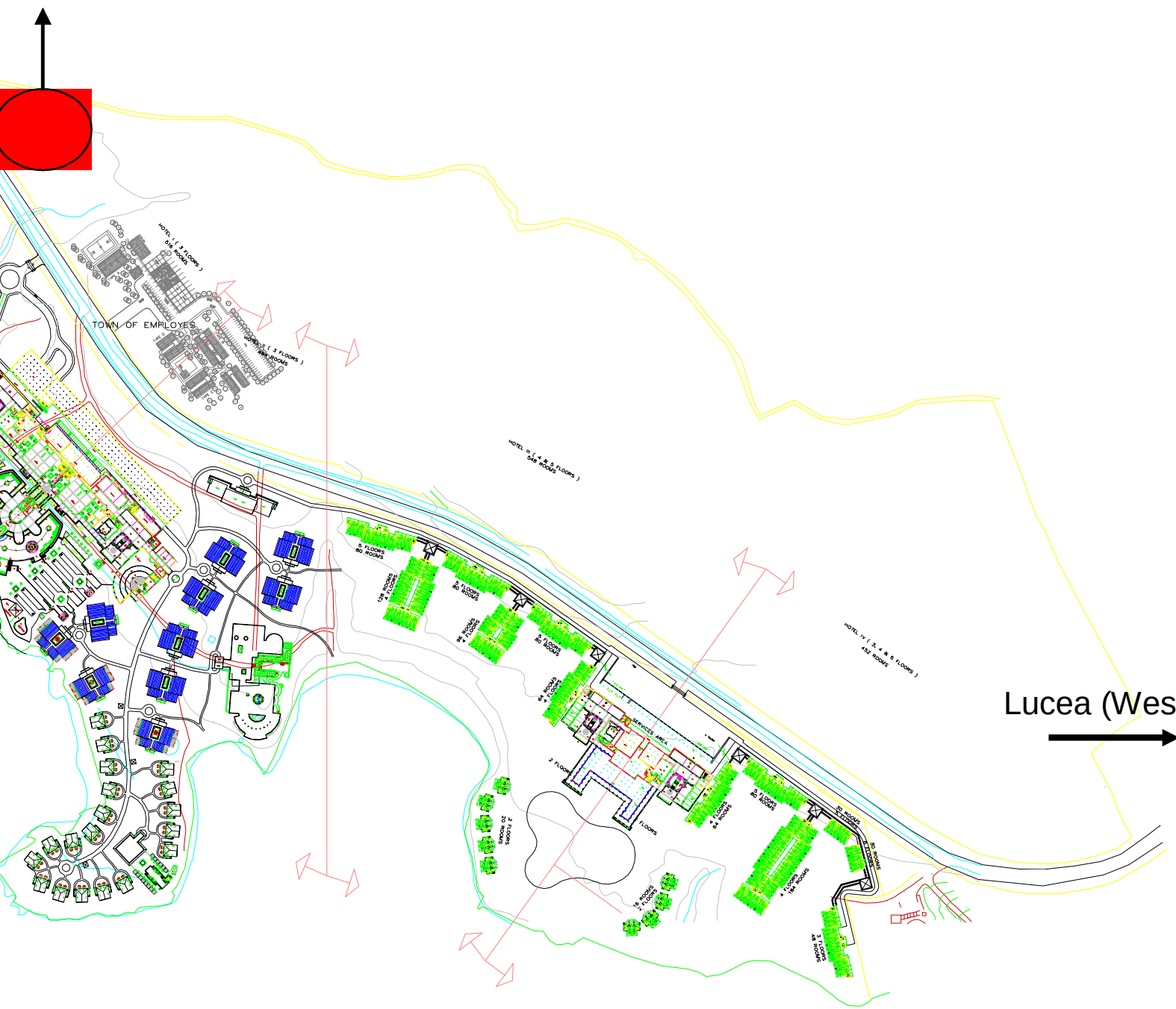
00 REV. DAYMONTH YEAR 03 06 2004

DIBUJO: **E.R.A.**

FIGURE 1-14: PROCESS DIAGRAM OF THE PROPOSED SEWAGE TREATMENT PLANT

ego Bay (East)

Location of Waste Water Treatment Plant



NORTH

LOCATION IN PLAN

PLAN / SCHEMATIC SECTION

NOTES :

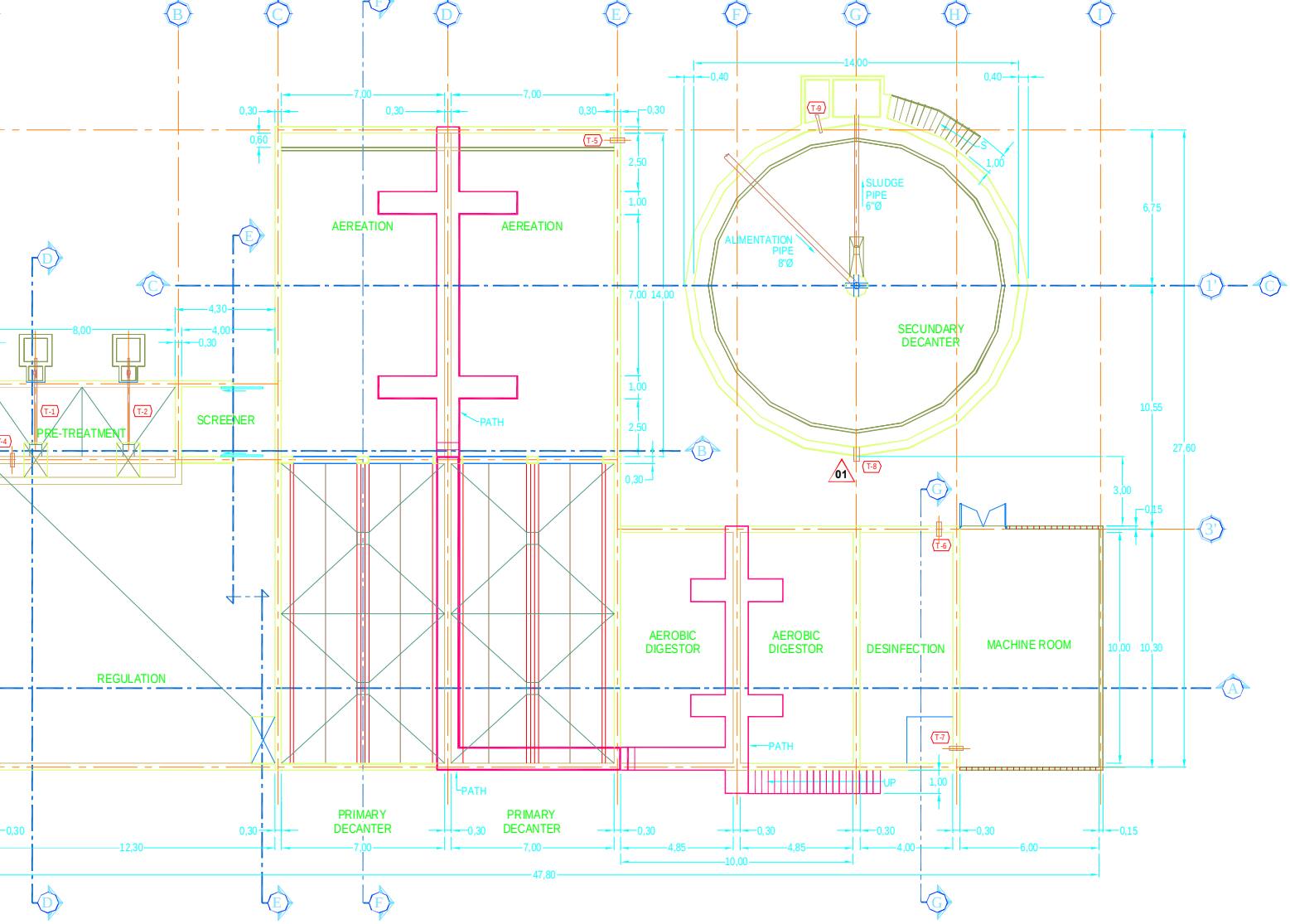
ALVARO SANS
GABRIEL TELLEZ

PROYECT :
HOTEL PALLADIUM
JAMAICA

LOCATION :

PROPIETARY :

DRAWING TITLE :
MASTER PLAN
-ARCHITECTURAL-
MAIN FLOOR PLAN



LAN

DROWNED PIPES :

T-1	3"Ø	4.70 m long	T-6	8"Ø	0.60 m long
T-2	3"Ø	4.70 m long	T-7	6"Ø	0.60 m long
T-3	3"Ø	0.60 m long	T-8	8"Ø	0.60 m long
T-4	6"Ø	0.60 m long	T-9	4"Ø	0.80 m long
T-5	8"Ø	0.60 m long			

ALIMENTATION PIPES 8"Ø
SLUDGE PIPES 6"Ø

REV-01 : 01

- CHANGE PIPE DIAMETER T-8 FROM 10" TO 8".

CONTENT: WATER TREATMENT PLANT

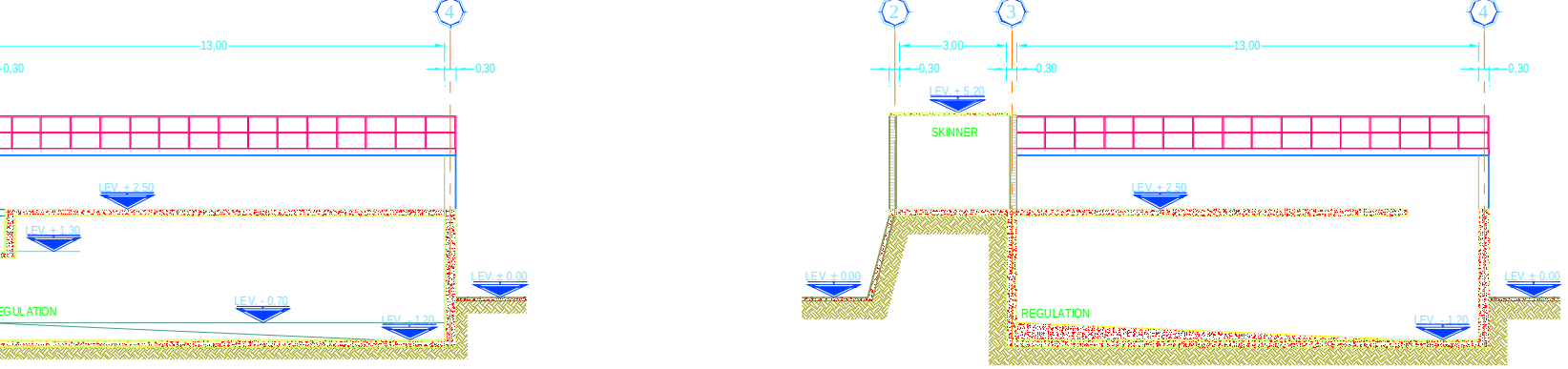
CLIENT: HOTEL "PALLADIUM JAMAICA"

LOCATION: POINT ESTATE, HANOVER, JAMAICA

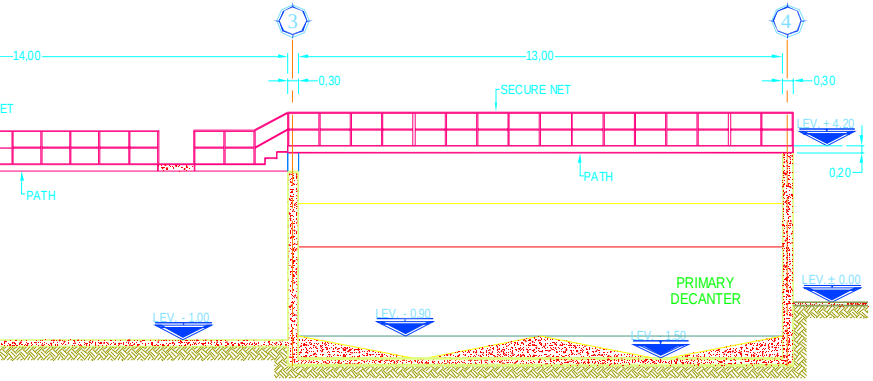
No. PROYECT: 1847 | SCALE: 1:100 | MEAS.: METERS | PROYECT: A.B.T. | PLAN: DIMENTIONAL GENERAL PLAN | C-1

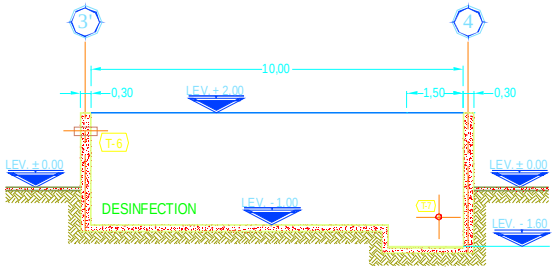
DATE: JUNE 15, 2005 | 01 REV. DAY 15 MONTH 06 YEAR 2005 | DRAWING: E.R.A.

FIGURE 1-16: PROPOSED WASTEWATER TREATMENT SYSTEM FIESTA JAMAICA LIMITED – POINT ESTATE. GENERAL PLAN



SECTION " E - E "





SECTION " G - G "

DROWNED PIPES :

T-1	3"Ø	4.70 m Long	-	ALIMENTATION PIPE	8"Ø
T-2	3"Ø	4.70 m Long	-	SLUDGE PIPES	6"Ø
T-3	3"Ø	0.60 m Long	-		
T-4	6"Ø	0.60 m Long	-		
T-5	8"Ø	0.60 m Long	-		
T-6	8"Ø	0.60 m Long	-		
T-7	6"Ø	0.60 m Long	-		
T-8	8"Ø	0.60 m Long	-		
T-9	4"Ø	0.80 m Long	-		

CONTENT: **WATER TREATMENT PLANT**

CLIENT: **HOTEL "PALLADIUM JAMAICA"**

LOCATION: **POINT ESTATE, HANOVER, JAMAICA**

No. PROYECT: **1847**

SCALE: **1:75**

MEAS: **METERS**

PROYECT: **A.B.T.**

PLAN: **DIMENTIONAL SECTIONS**

C-3

DATE: **JUNE 15, 2005**

01 REV. DAYMONTH YEAR **15 06 2005**

DRAWING: **E.R.A.**

1-17: PROPOSED WASTEWATER TREATMENT SYSTEM FIESTA JAMAICA LIMITED – POINT ESTATE. SECTIONAL PLAN ELEVATIONS

The sewage treatment system will be provided with back up facilities and spare parts to accommodate any contingencies that may arise. This includes the ability to remove treated effluent from the system via approved septic hauler service for appropriate disposal should the holding tank approach its capacity. It is in the best interest of the developers to construct and operate a quality sewage treatment system that will not impact negatively on the environment, tourism product, or their image. Additionally, the sewage treatment system will include a standby generator to provide emergency power. The use of the liquid effluent from the sewage treatment system for irrigation will assist in reducing the water demand of the development, provide a highly beneficial use for the treated water and afford the facility the opportunity to support a vibrant flora regardless of weather conditions at the property. It is important to note that the greater portion of the property will be landscaped and kept in a natural state through preservation of many of the existing trees.

The proposed sewage treatment system is designed to meet and in some instances exceed the regulatory standards. NEPA Sewage Effluent Guidelines are the primary regulatory guidelines utilized for this design, with consideration given to World Health Organization (WHO) standards. NEPA Sewage Effluent Guidelines for new plants constructed after 1997 are presented below:

TABLE 1-4: WASTE WATER TREATMENT PLANT DESIGN SPECIFICATIONS

PARAMETER	INLET WATER	TREATED WATER
pH	6-8	6.5-7.5
BOD (mg/l)	500	20
Grease and Oils	50	10
TSS (mg/l)	400	20
Total Nitrogen (mg/l)	20	10
Total Phosphates (mg/l)	40	4
Methylene Blue Active Substance - MBAS (mg/l)	20	3
Fecal Coliforms (MPN/100ml)	>109	<100
Helmynth Eggs	>2	<1
Residual Chlorine (mg/l)		1.5

**use of the treated water: Re-use in gardens irrigation (In touch with people)

TABLE 1-5: NEPA SEWAGE EFFLUENT GUIDELINES

PARAMETER	EFFLUENT LIMIT
BOD_5	20 mg/L
TSS	20 mg/L
TOTAL NITROGEN	10 mg/L
PHOSPHATES	4 mg/L
COD	100 mg/L
PH	6 – 9
FAECAL COLIFORM	200 MPN/100 ml
RESIDUAL CHLORINE	1.5 mg/L

Since the treated effluent from the sewage treatment system is slated for use as irrigation water, the final effluent quality that must be adhered to is the more stringent **Interim Irrigation Standards**, which are provided below:

TABLE 1-6: NEPA INTERIM IRRIGATION STANDARDS

PARAMETER	STANDARD LIMIT
OIL & GREASE	10 mg/L
TSS	15 mg/L
RESIDUAL CHLORINE	0.5 mg/L
BOD	15 mg/L
COD	<100 mg/L
FAECAL COLIFORM	12 MPN/100 ml

As required, approved flow measurement devices will be installed on the system to measure influent and effluent on the system. A complete set of "As Built" plans for the new sewage treatment system will be located at the treatment facility.

1.4 IRRIGATION

The irrigation regime proposed for the facility will be largely towards the southern section of the property which will be landscaped and maintained primarily as green areas. In these areas, the distance between ground surface and the expected water table is anticipated to be no less than 5 meters above ground water level and increasing, moving to the south. This depth to groundwater and the nature of the soil (being mainly sandy loam to sandy soil on the property north of the highway and clay/limestone mix, south of the highway) will

act as a filtration mechanism that will further clean the irrigation water as it moves through the soil formation. It is not anticipated that water meeting the irrigation standard will impact negatively on ground water quality.

Irrigation will be an ongoing activity at the site. Irrigation will take place in different areas at different times both day and night, to avoid direct human contact with the water where possible. There is no defined rate of application established at this time. Most of the irrigation will be done through the use of drip irrigation with low volume sprinklers utilized in larger spaces and used mostly at night or early morning.

1.5 UTILITIES

1.5.1 WATER DEMAND

The calculations for water demand were done for a defined number of rooms based on maximum guest occupancy and their general habits. Consideration is given to the fact that guests at all-inclusive resorts tend to demand more water and generate more sewage due to the extended time spent at the resort during the course of an average day.

The project is expected to consume approximately 2,400,000.00 litres/day (634, 012.9 gals/day) of water at maximum capacity during the operational phases of the development.

It is anticipated that the source of the water will be additional to that which presently supplies the communities of Elgin Town, Point and Lucea and will come from the Bogue water supply system. Water for the facility will be taken off a relatively new water main which is has been run from Great River in St. James to Lucea in Hanover, and which facilitated the upgrading work on water supply in the area.

The reserve vessels for the hotel will have storage capacity for two days (approx. 5,000 m^3).

1.5.2 ELECTRICITY DEMAND

The hotel is estimated to use approximately 4,875,000 kW/month during the operational phase at maximum occupancy. Electrical power will be supplied from the Jamaica Public Service Company (JPS Co.) service lines. The facility will also be equipped with standby generators that will ensure continued facility operation (inclusive of the sewage treatment system) in the event of a power outage on the JPS Co supply.

The reception of electricity from JPS Co will be reduced by two general transformers to 13,200 V and will be distributed to the different reduction station areas of the hotel. The hotel will have eight (8) electric generators with 1150 kva each (920 kW), a total of 9200kvA (7360 kW) of power. Each generator has a 1350 HP Cummings engine, fed with diesel and cooled by air. The efficiency of each generator is 0.4 litres/kW (1 litre = 2.5 kW). 110-220 V will be distributed to each guest room and all service and common areas.

1.5.3 FUEL DEMAND AND FUEL STORAGE

The hotel is estimated to use approximately 3.65 litres/room of gas (butane and propane) or 7300 litres/day for 2000 rooms during the operational phase at maximum occupancy. The demand for diesel will vary depending on the requirements for generation, possibly 0.4litres/kW.

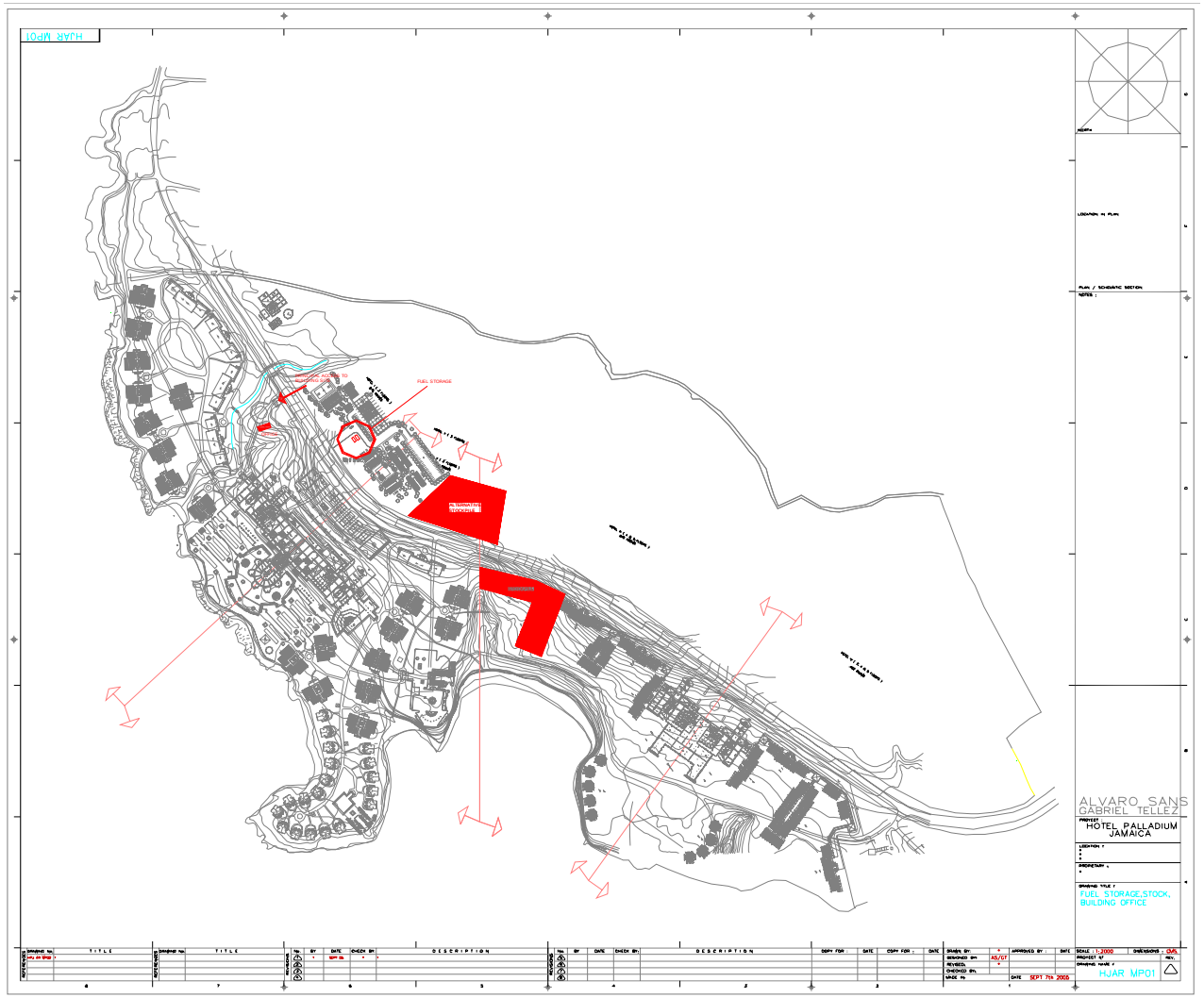


FIGURE 1-18: FUEL STORAGE LOCATIONS AND BUILDING OFFICES

1.6 LAUNDRY

The laundry is expected to handle a load of 13.5 kg/guest room (2000 rooms = 27,000 kg/day. The equipment to handle this demand will have load bearing capacity of 16hr. It will be utilized in two shifts of 8 hours each. The table below outlines the general requirements for the hotel, its workers and the equipment to be put in place.

The equipment for this demand is considerate to work 16 hrs. In the next table is the necessary equipment to work in 2 shifts of 8 hours each.

TABLE 1-7: HOTEL REQUIREMENTS AND EQUIPMENT SPECIFICATIONS

Hotel Requirements	
Guest Rooms	2000
Estimated Factor kg / room	13.5
kg / day	27000
week days	7
kg / week	189000
laundry operation days	7
% of occupation	100%
Total kg / day	**27000**
Laundry daily operation hours	16
kg / hr	**1687.5**
Employers Requirements	
employ Rooms	340
Estimated Factor kg / room	8
kg / day	2720
week days	7
kg / week	19040
laundry operation days	7
% of occupation	100%
Total kg / day	**2720**
Laundry daily operation hours	16
kg / hr	**170**

Equipment:		
DESCRIPTION	QTY	Capacity kg
WASH MACHINE UNIMAC MOD. UF-250PV-V	17	113
DRYER. MILNOR MOD. M190S-V	9	86.26
MANGLE CHICAGO MOD. CENTURY II-3200-S-VAPOR	2	450
MANGLE CHICAGO MOD. CENTURY I-3200-S-VAPOR	1	204-227 hr
WRAPPING MACHINE CHICAGO MOD. SKYLINE 2000 S-14	2	
MANGLE CHICAGO MOD. SL-16-120 TIPO REVERSIBLE	2	55-65 hr
TOWEL WRAPPING MACHINE CHICAGO MOD. AIR		
BINDING MACHINE OF BULKS FELINS MOD. 2000-22		
LINT COLLECTOR CLEAN CYCLE MOD. WLF-725		25000 cfm
Sub Totals		
Valet		
WASHING MACHINE IN DRY UNION MOD. L-728S/V	1	12
WATER COOLANT ARCTICHILL MOD. DACVPV-3	1	3 ton
CLOTHING MARKER MOD. TAG-O-MATIC	1	
MARKER THERMOPATCH MOD. Y-140b	1	
STAIN REMOVER HOFFMAN MOD. SLB-V		
IRONING TABLE FIMAS MOD. 166.02 AS		
PANTS TOPP./MANIQUIE FIMAS MOD. 370.01		
PRESS MACHINE AJAX MOD. 554-C		
PRESS MACHINE AJAX MOD. 218-C		
PRESS MACHINE AJAX MOD. 222-C		
WASHING MACHINE UNIMAC MOD. UF-50PV6	2	23
WASHING MASHINE UNIMAC MOD. UX-100		45
DRYER UNIMAC 50-CSH	1	23
DRYER MILNOR MOD. M122S	1	54
CARRIER WHITE MOD. GADS-300		
CARRIER WHITE MOD. GADS-300		
GAS STEAMER FULTON MOD. ICS-50/GAS	1	927
INJECTION SYSTEM FULTON VT-50	1	269
PURGE SEPARATOR FULTON F-50	1	135
AIR COMPRESSOR QUINCY MOD. QTH-7.5-120	1	455

1.7 MODIFICATIONS TO BEACH OR FORESHORE

The proposed development includes beach frontage which will be utilized for recreational bathing and resort activities. At this time, there are no plans to modify or place any structures on the beach or foreshore that would require a license under the Beach Control Act. If any such modification or structure is planned in the future, all applicable licenses will be obtained prior to implementation.

1.8 HOTEL PLOT AREA

TABLE 1-8: HOTEL PLOT AREA

PALLADIUM JAMAICA STAGE 1			
1	CENTRAL BUILDING	25,890.18	m^2
2	SPA	6,372.15	m^2
3	SWIMMING POOL & EXTERIOR	23,237.60	m^2
4	ROOMS	30,501.05	m^2
5	SWIMMING POOL & LOBBY 'ROYAL SERVICE'	1,494.53	m^2
6	PATHS	15,174.50	m^2
7	COURTS (SPORT)	6,041.29	m^2
	TOTAL	**108,711.30**	**m^2**
PALLADIUM JAMAICA STAGEA 2			
1	CENTRAL BULDING 2	13,506.45	m^2
2	ROOMS	21,245.62	m^2
3	PATHS	10,282.61	m^2
	TOTAL	**45,034.68**	**m^2**
SUPPORT VILLAGES			
1	PATHS & EXTERIORS	6,755.90	m^2
2	ROOMS	2,332.80	m^2
3	SERVICES	1,228.13	m^2
4	RECEPTION AREA, HUTS	456.55	m^2
	TOTAL	**10,773.38**	**m^2**

	TOTAL	**164,519.36**	**m^2**
CONSTRUCTION IN SQ M PALLADIUM JAMAICA, STAGE 1			
1	CENTRAL BUILDING	43,646.88	m^2
2	SPA	6,372.15	m^2
3	SWIMMING POOL & EXTERIORS	23,237.60	m^2
4	ROOMS	101,153.03	m^2
5	SWIMMING POOL & LOBBY 'ROYAL SERVICE'	1,494.53	m^2
6	PATHS	15,174.50	m^2
7	COURTS (SPORT)	6,041.29	m^2
	TOTAL	**197,119.99**	**m^2**
CONSTRUCTION IN SQ M, PHASE 2			
1	CENTRAL BUILDING 2	25,219.68	m^2
2	ROOMS	86,720.15	m^2
3	PATHS	10,282.61	m^2
	TOTAL	**122,222.44**	**m^2**
CONSTRUCTION IN SQ M, SUPPORT VILLAGES			
1	PATHS & EXTERIORS	6,755.90	m^2
2	ROOMS	6,998.40	m^2
3	SERVICES	1,228.13	m^2
4	RECEPTION, HUTS	456.55	m^2
	TOTAL	**15,438.98**	**m^2**
	TOTAL	**334,781.40**	**m^2**