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12th May 2022

The Department of Planning
Turks and Caicos Islands Government
Providenciales, TCI

Attn: The Director

Dear Mr. Lightbourne,

EnvironmentALL is pleased to submit an Environmental Impact Assessment relating to the Grant of Outline Development Permission for the Beaches Resort-Treasure Beach Expansion Project (PR15741).

As per established protocol an e-copy and 5 hard copies of the report is being submitted for your consideration.

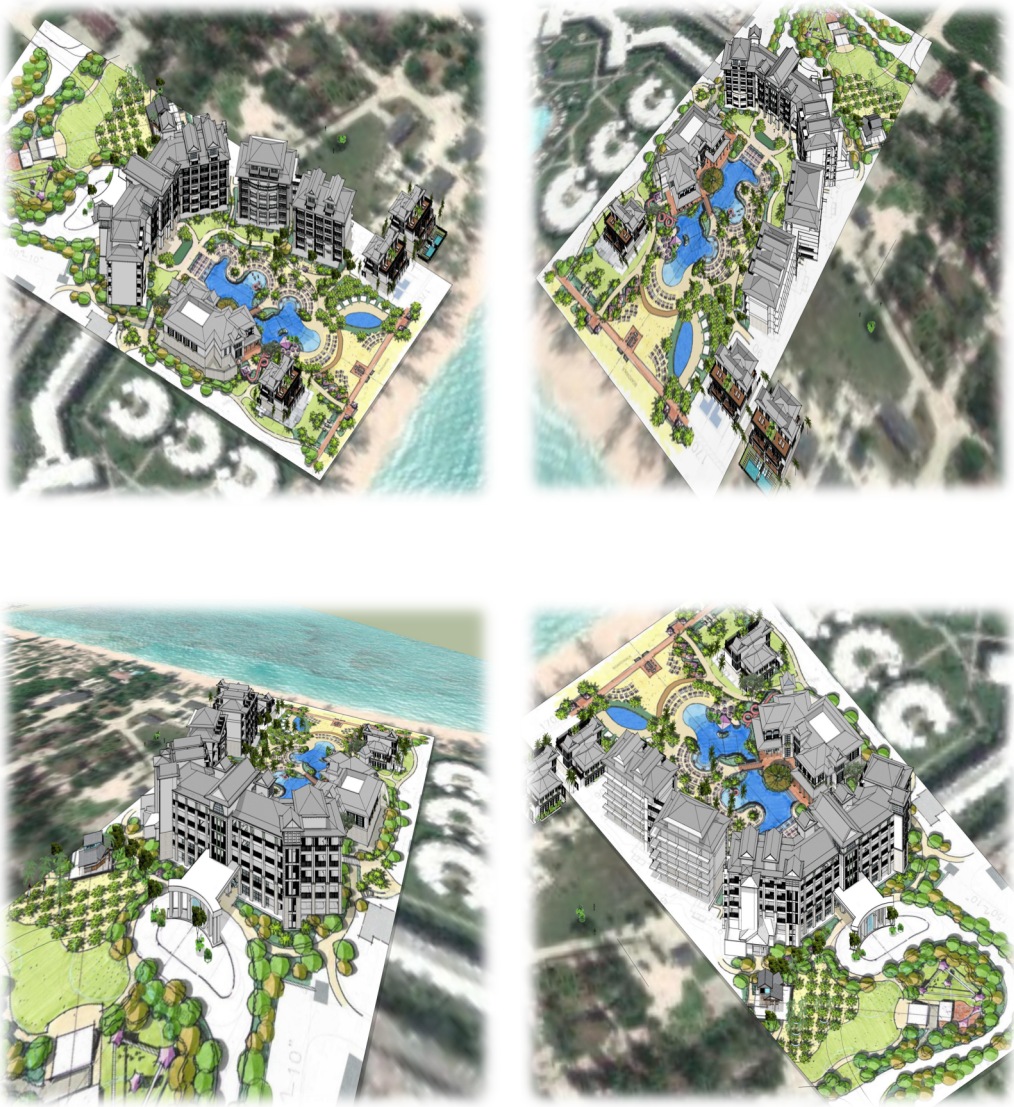
Please contact me directly, should you have and questions or need further clarifications.

Sincerely,

Ezekiel Hall

ENVIRONMENTALL

ENVIRONMENTAL IMPACT ASSESSMENT



BEACHES RESORT: TREASURE BEACH EXPANSION

PR15741

PREPARED FOR:

ROYAL BAY RESORTS & VILLAS
G & P CORPORATE SERVICES
82 CHEROKEE ROAD
PROVIDENCIALES, TCI

PREPARED BY:

ENVIRONMENTALL
#6 Flame Tree Circle
Long Bay Hills, Providenciales, TCI

MAY 2022

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1.0 INTRODUCTION

Under the grant of an Outline Development Permission (ODP) relating to a Planning Application referenced as Beaches Resort: Treasure Beach Expansion PR15741 an Environmental Impact Assessment was included as one of several conditions required by the Planning Department – Turks and Caicos Islands Government (TCIG). The EIA will focus primarily on the marine and terrestrial components directly impacted by the proposed project. Assessment made under past studies will be re-validated and subjected to review by the Department of Environment and Coastal Resources (DECR).

A Scientific Research Permit was obtained from the DECR prior to the execution of field investigations. The EIA Team was approved by the Department of Planning and comprises a list of qualified professionals duly licensed and permitted to conduct work within the Turks and Caicos Islands.

EnvironmentALL, a TCI registered and licensed Environmental Consulting Company, was retained by the proponent of the development to coordinate the EIA study and generate a report for consideration by TCIG.

1.1 REFERENCE PAGE WITH CONTACT INFORMATION AND PROJECT IDENTIFICATION

Development Proponent:	Beaches Resort – Turks and Caicos Islands
EIA Contractor:	EnvironmentALL – Turks and Caicos Islands #6 Flame Tree Circle, Long Bay Hills Providenciales, Trks and Caicos Islands Tel: 649-246-8263 email:hallenvironment1@gmail.com
PR Number:	PR15741
Blocks/Parcels:	608031/15,16,17,18,19,22,24,26,28,29,31,32,34,35, 37,38,41,42
Location:	The Bight Settlement, Providenciales, Turks and Caicos Islands
Submission Date:	12th May 2022

1.2 NON-TECHNICAL SUMMARY

Beaches Resort Turks and Caicos Islands is a premier tourism destination in the Turks and Caicos Islands and the Caribbean and has been at the forefront of tourism development within the Turks and Caicos Islands since the late 1990's. The proposed Beaches – Treasure Beach Expansion Project , Figure 1, will significantly add to the growth of the local tourism sector with the addition of one hundred and one – (101) guest rooms nestled within:

a. five 5-storye structures - 1 building for the reception area and 4 buildings for room
b. three 2-storey beach front villa structures
c. one – 2-storey

The project will be a single-phase development within the boundaries of Block 60803 and parcels 22, 24, 91 and 93. Access to the development will follow the existing main entry to the Beaches resort and flow along existing service roads in efforts to minimize traffic flow impacts. The objective of the proposed development is to supply additional hotel rooms to meet an ever-increasing demand for hotel rooms on Providenciales and by extension boost the collective economic reserves of the Turks and Caicos Islands. The perceived potential impacts derived from the proposed project will span across the pre-construction, construction and post-construction components. Direct and indirect impacts, positive and negative impacts, reversible and irreversible impacts, long-term and short-term impacts will comply with the International Finance Corporation's Performance Standards (IFC, 2012) relating to Environmental and Social sustainability. Mitigation measures to mitigate impacts to a 'No Net Loss' are proposed to compensate, reduce and restore perceived potential impacts. Strategic planning activities during pre-construction will lend itself to business opportunities for a cross-section of local businesses including architecture, project management, environmental consulting, engineering, town planning, legal, and land surveying. These impacts are described as socio-economic, short-term, positive benefits. The construction component of the project will bring a continuation of short-term socio-economic benefits to local companies alongside increased job creation and temporary employment. The construction and hardware business will realize a direct uptick in service demands. The operational component of the project will provide long-term socio-economic benefits derived from tourism related sales, tax revenue generation, permanent job and business opportunities.

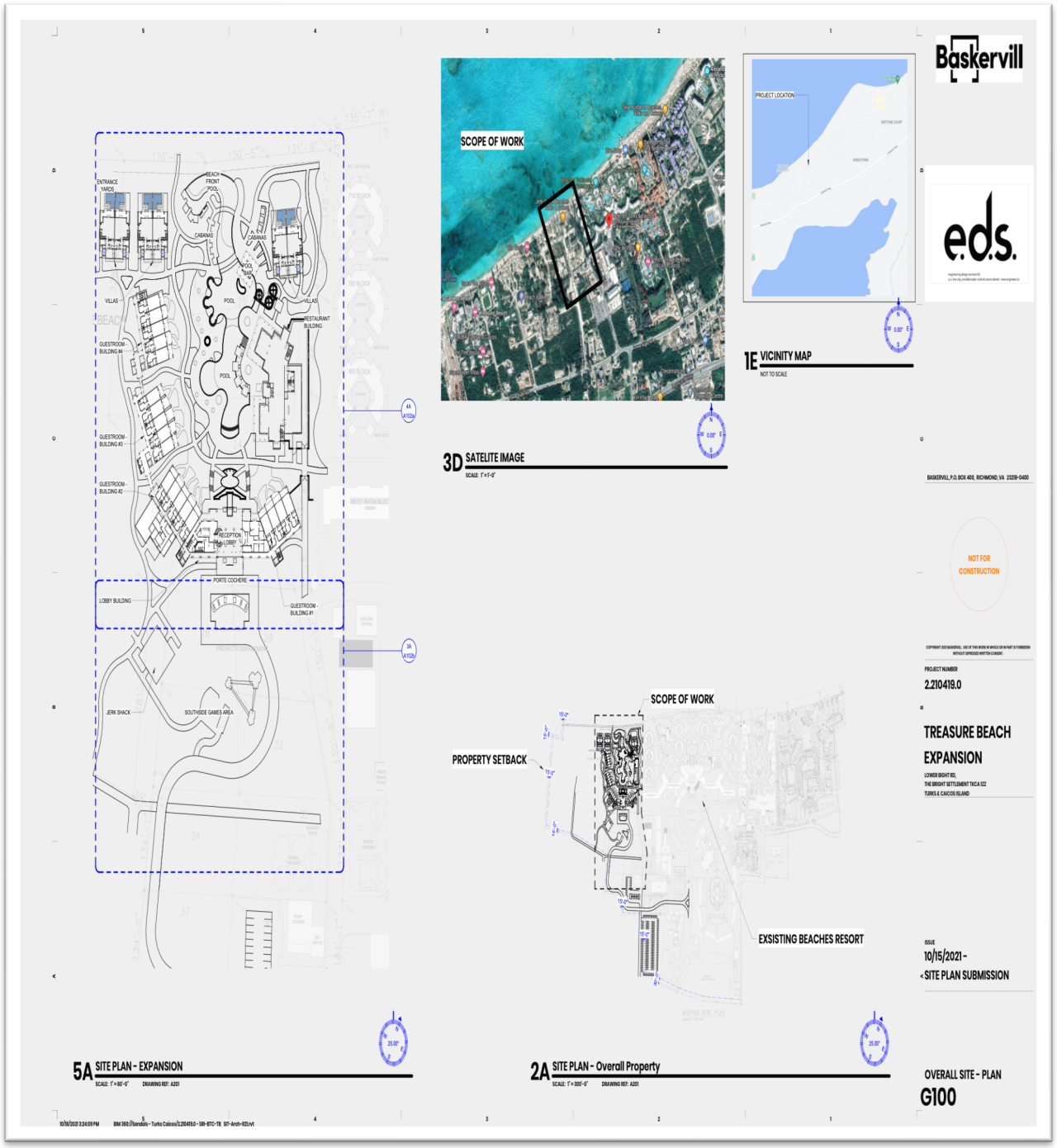


Figure 1. Location map of Beaches Resort, TCI

1.3 A BRIEF DESCRIPTION OF THE PROPOSED DEVELOPMENT AND ITS RELATIONSHIP WITH OTHER DEVELOPMENTS IN THE AREA.

The proposed development, Figure 2, is an expansion of the Beaches Resort tourism footprint on Providenciales, Turks and Caicos Islands. The components of the development comprise:

a. multi-level (5 floors) guest room structures
b. split-level beach front family villas
c. split-level structure housing several restaurants
d. a stand-alone cultural jerk pit
e. kids' playground, assorted inground pools/cabanas

The development aims to expand a pre-existing high-end tourism product in an area along the north coastline of Providenciales that was recently awarded "Best Beach in the World". The general area of the project is zoned for tourism development and sits adjacent to the Princess Alexandra National Park and bordered to the south by an indigenous residential community that is mixed with small to medium scale commercial business along the secondary roadway. A local public primary school sits adjacent to the pre-existing Beaches Resort property while the remaining coastline is home to hotels and commercial villas.

Figure 2. Master Plan-Beaches Treasure beach Expansion Project

1.4 AIM AND OBJECTIVES OF THE ASSESSMENT

The primary aim and objectives of the assessment are to:

a. conduct baseline field studies (terrestrial, marine, hydrogeological, socio-economic) to ascertain the existing physical conditions of the project site and surrounding areas
b. identify perceived potential impacts derived from the proposed project on the natural physical environment, pre-existing built environment and socio-economic and cultural environments
c. provide mitigation measure aimed at offsetting identified negative impacts
d. provide an environmental management plan to monitor and remediate identified impacts over time.

1.5 OVERVIEW OF THE AREAS/TOPICS TO BE ADDRESSED IN THIS EIA

Perceived key environmental issues were assessed in a scoping exercise to provide a feel for the potential impacts derived from the proposed project:

a. terrestrial environment
b. marine environment
c. socio-economic environment
d. hydrogeological environment

The terrestrial environment is classified as a disturbed site where the vegetation was previously removed and is a pre-existing physical condition. Mitigation for this pre-existing condition would involve a strategic landscape plan aimed at revegetating the project area.

The marine environment will not be directly impacted by the project since marine developments will not form any component of the proposed project. Marine habitats, wildlife and water quality may be subjected to short-term avoidable impacts derived from construction debris entering the marine environment during the construction phase of the project.

Socio-economic and cultural potential impacts will be mostly positive economic benefits over the short to long term. Potential negative impacts may derive from the importation of foreign workers and their associated cultures coupled with short-term impacts resulting from an increase usage of local traffic infrastructure during the construction activities.

The hydrogeological environmental maybe subjected to potential long-term negative impacts derived from nutrient loading associated with the landscape plan and operations. Nutrients contained in the irrigation water may migrate over time towards the marine environment and create a potential threat to the marine ecosystem. Potable groundwater exists as a fragile, thin and unexploitable resource across the project site. There are no fluvial or surface water systems within the project site or the immediate surrounding areas.

Environmental air quality will be subjected to short-term avoidable impact from temporary dust plumes during high wind episode and movement of construction plant and equipment. These impacts are avoidable and can be mitigated with a routine ground wetting regime.

Environmental noise impacts are unavoidable, short-term and can be mitigated with regulated work schedules to allow the surrounding per-existing development to enjoy and ease of comfort from noise outside of normal working hours.

1.6 IMPACT ASSESSMENT METHODS/ANALYSIS

Qualitative and quantitative field assessment methods were used to conduct field studies.

Terrestrial

Standard quantitative and qualitative assessment methods could not be applied to field studies since the entire development site was cleared of vegetative cover prior to the site visit. Areas identified for transportation access will follow pre-existing roadways and vegetation in those

areas will not be disturbed or impacted. A qualitative description was made of the line of invasive Casuarina equisetifolia (Australian Pine) that line seaward boundary of the project site.

Marine Assessment

A qualitative assessment of the marine indirectly impacted by the project comprised a description of the benthic ecosystem using snorkeling and manta tow investigation techniques. A diver swam or was towed along transects parallel and perpendicular to the shoreline. Parallel transects ran the length of the survey area to record shoreline conditions. Random perpendicular transects were taken from the shoreline to approximately 500m offshore with divers swimming in an area approximately 50ft wide. An under drone was used to record underwater video and still photography.

A record was taken of flora, fauna species and substrate type. General observations were made for the surveyed areas. Data was collected underwater on slates and transcribed at the end of the day. Photographs and videos were taken. Species identification was confirmed using Humann et al 2013, Reef Coral Identification, Humann et al. 2013, Reef Fish Identification and Humann et al. 2013, Reef Creature Identification.

Water quality sample stations were established as recorded in the table below. In-situ measurement of basic parameters were measured.

Socio-Economic and Cultural

Best practice methods for socio-economic assessments used included the UNEP Social Impact Assessment Tools and Methods and Guidelines for Socio-economic and Cultural Impact Assessment outlined in the TCI Development Manual (2014).

Hydrogeology

Two test pits were excavated at selected locations within footprint of the project. Lithological profiles were made of the subsurface earth material at 1-foot intervals. A handheld YSI QuatroPro Multiparameter instrument was used to measure depth versus salinity profiles, determine the absence/presence of potable groundwater and determine the depth to the water table below land surface. A soil penetrometer was used to calculate the load bearing capacity of the earth material.

Environmental Air Quality

Direct measurements of the six criteria pollutants were taken using a Quest EVM-7 particulate and Air Quality Monitor.

Environmental Noise

A TSI Quest Edge Noise Dosimeter to measure average sound level over time.

2.0 BASELINE STUDIES

2.1 Historical Overview of the Site and Existing Development

The proposed project site is located along the northern coastline of the island of Providenciales. It sits immediately adjacent to the landward boundary of the Princess Alexandra National Park within a tourism development zone and is surrounded by hotels, an indigenous residential community and small-scale commercial businesses. The footprint of the proposed project occupies several adjacent properties, namely Block 60803 and parcels 15, 22, 24, 26, 91,92 and 93.

Historical use of the site was primarily private residential. All pre-existing built structures were demolished during the first quarter of 2022 resulting in a completely cleared site. Two pre-existing RO Feedwater wells remain within the footprint of the development and are subject to imminent abandonment. The beach face is currently being used as a seating area for the beachside kitchen and picnic dining.

A public beach access at the end of Ianthe Pratt Road was sold to beaches Resort several years ago and exchange for another alternate parcel and new beach access. The entire footprint of the project site can be classified as anthropogenic with no remaining ecologically intact areas.

A comparison of a google earth photo (pre-2022) and drone photos taken on 25th February 2022 and 14th April 2022 illustrates a time lapse of the extent of land clearing that has taken place and renders the site entirely anthropogenic. Figure 3 depicts the built environment that was pre-existing within the project site including residential homes. Figures 3a and 3b illustrate varying degrees of impacts to the site including land clearing and building demolition.

Figure 3. Pre-existing built structures

Figure 3a: Footprint of Development Site (25-02-2022)

Figure 3b: Drone photo of project site (14-04-2022)

2.2 Biological Environmental Baseline Assessment

2.2.1 Baseline Terrestrial Environment

The Beaches Treasure Beach expansion site is located along the Northern coastline of Providenciales, Turks & Caicos Islands (TCI) and is bordered on the South, East and West by developed lands. At the time of acquisition, it was formerly a private residence that was completely human altered and devoid of native habitats; comprising of buildings, compacted fill used as access roads and invasive and landscaping plant species.

Terrestrial assessments were conducted during the week ending 8th April 2022. Project works up to the time of field investigations on 6th - 7th April 2022 included demolition of buildings and complete clearing of the site except for a stand of the invasive alien species *Casuarina equisetifolia* (Australian Pine) present along the shoreline and a small patch of *Coccothrinax inaguensis* a Lucayan endemic species, Figure 4.

Figure 4. Cleared vegetation across project site

Site Conditions (6th -7th April 2022)

The beach profile along the Northern boundary of the site has a slope between 10% and 15% (based on visual observation), with approximately 20-25 feet of dry beach beyond mean high tide, and a low foredune that is devoid of native dune vegetation. *Casuarina equisetifolia* is present in a row along the dune crest, Figures 5. There are less than twent- (20) individual plants approximately 25 feet in height.

Figure 5. Stand of Australine Pines-East & West Viws

Wildlife Observations

As the site is almost completely free of vegetations there was limited resources to support wildlife which is reflected in the minimal species observed . Two (2) avian species were recorded during the survey as detailed in the Table1.

Table 1. Avifauna observed during field visit

Common Name	Scientific Name	Range	Status	Observations	
1. American Kestrel	*Falco sparverius*	PRB	LC	S	Fly Over and Perched in Australian Pine along Shoreline
2. Mourning Dove	*Zenaida macroura*	PRB	LC	S	Perched on electrical line

TABLE KEY:
PRB = Permanent Resident Breeding,
S = Single,
LC = Least Concern, (IUCN),
IUCN = International Union for Conservation of Nature

Figure 6. Resident avian species

Range:

The range of a species is the geographic areas where the birds can be consistently found e.g. migrant birds have seasonal ranges while restricted range species remain on same island or in same region year-round. The avifauna population of TCI comprise of Permanent Resident Breeding (PRB) species, Summer Resident Breeding (SRB) species and Winter Resident Non-breeding (WRN) species. PRB refers to the resident species, Figure 6, that live and breed year-round on TCI. SRB species refers to migrants that breed in TCI during summer months from April to October and spend the rest of the year in other regions. WRN species refers to the annual non-breeding fall/winter migrants to the TCI from North America. Both species recorded were PRB.

Status:

The International Union for Conservation of Nature (IUCN) Red List of Threatened Species assigns plant and animal species a conservation status based on evaluation of population numbers and distribution. A least-concern species is a species that is not a focus of conservation ae it is still plentiful in the wild. Both species observed are considered as Least Concern by IUCN.

Habitat Utilization:

The American Kestrel that was observed perched on the Australian Pine utilized the height of the trees as a vantage point to hunt for prey and as a rest spot. There are several seed eating avian species that are typically found among this species including the Mourning dove that was observed perching on the electrical line. Other PRB species likely to be found

in this area include *Tiaris bicolor* (Black-faced grassquit), *Loxigilla violacea* (Greater Antillean bullfinch), *Columbina passerina* (Common ground dove), and *Zenaida aurita* (Zenaida dove); as well as various migrant species such as *Passerina cyanea* (Indigo Bunting) and *Passerina ciris* (Painted Bunting).

The entire footprint of the proposed development is absent of intact terrestrial ecological assets. A stand of invasive Casuarina equisetifolia dominates the vegetation line and crest of the beach face.

2.2.1 Baseline Marine Environment

Baseline marine assessments were conducted on 7th April 2022. The marine environment is not subject to any direct impacts from the proposed development and no development will occur in the marine environment. Indirect impacts are expected from wind-blown debris during the construction phase. A benthic description of the immediate and surrounding marine environment was undertaken. In general, the benthic composition varied from sandy shore to sandy bottom with areas of seagrass beds interspersed with algae and hardbottom and patch reefs Figure 7.

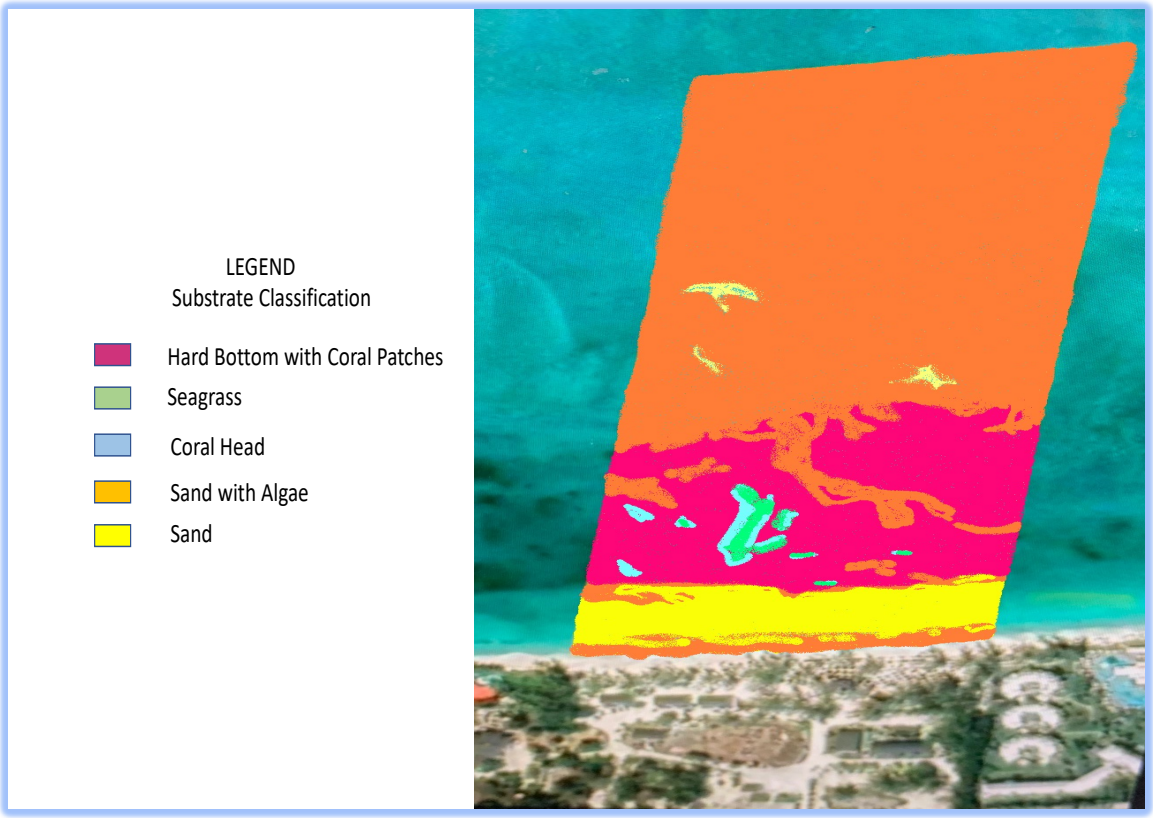


Figure 7. Benthic Map

Sandy bottom and Seagrass beds

The benthic sandy bottom habitat Figure 8with a consistent cover of >5 cm over bedrock dominated (approximately 60.81%) the near shore and offshore habitats. The sandy bottom was dispersed with areas of sparse to medium Turtle Grass,

Thalassia testidium and algae. *Thalassia* blades were typically narrow and short and may be evidence of grazing from juvenile green turtles. Blades did not display unnaturally high levels of cyanobacterial coatings, epi-benthic growth or diseases.

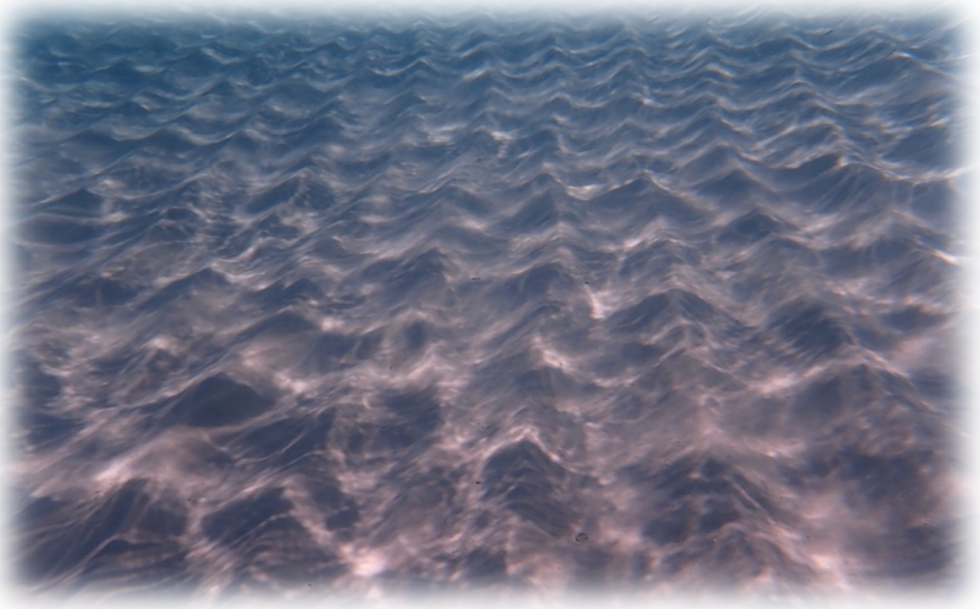


Figure 8. Sandy benthic Bottom Substrate

Hardbottom

The benthic hardbottom were noted as areas with <5cm of sand and areas of exposed rock. The hardbottom and coral dominated areas accounted for approximately 39.19% benthic cover of the area. Hard corals were assembled in small and medium patches or individual heads. The corals in the area were in relatively good health and there were no physical signs of stony coral tissue loss disease in the area. The most abundant coral present was the Mustard Hill Coral, *Porities astreoides*. Other reef building corals were observed in low diversity and abundance. Patch reefs were observed on the fringes of the hardbottom coral reef systems to the east and scattered through the western portion of the area of study. Patch reefs are stony coral dominated high relief structures that are some of the most diverse and productive habitats. The patch reefs occurred as isolated structures Figure 9. They are built on the remains of dead coral skeletons that accumulated over time. During the assessment boating, swimming and snorkeling were observed in the area.

Figure 9. Isolated Patch Reef Structure

Fish Species List

Roving Diver visual fish surveys were conducted using a modified Atlantic and Gulf Rapid Reef Assessment (AGRRA) Protocol. Fish observed were identified and given a frequency rating (based on occurrence) of Few (2-10 individuals), Many (11-100 individuals), or Abundant (>100 individuals).

Twenty-nine species of fish were observed during the assessment, Table 2. Significant fish activity was observed mainly around the reef systems. The reef fish observed were typical of a reef system and varied in size classes from 5cm up to 25cm.

Table 2. List of Fish species observed

Common Name	Species Name	Abundance
Bar Jack	*Caranx ruber*	*Many*
Barracuda	*Sphyraena barracuda*	*Few*
Beaugregory	*Stegastes leucostictus*	*Few*
Bicolor Damselfish	*Stegastes partitus*	*Few*
Blackbar Soldierfish	*Myripristis jacobus*	*Many*
Blue Chromis	*Chromis cyanea*	*Few*
Blue Tang	*Acanthurus coeruleus*	*Many*
Blueheaded Wrasse	*Thalassoma bifasciatum*	*Few*
Bucktooth Parrotfish	*Sparisoma radians*	*Few*
Cocoa Damselfish	*Stegastes variabilis*	*Few*
Dusky Damselfish	*Stegastes adustus*	*Many*
Fairy Basslet	*Gramma loreto*	*Few*
French Grunts	*Haemulon flavolineatum*	*Many*
Gray Snapper	*Lutjanus griseus*	*Many*
Juvenile Parrotfish	*Sparisoma spp.*	*Many*
Princess Parrotfish	*Scarus taeniopterus*	*Many*
Redband Parrotfish	*Sparisoma aurofrenatum*	*Few*
Scrawled Filefish	*Aluterus scriptus*	*Many*
Sergeant Major	*Abudefduf saxatilis*	*Many*
Silversides	*Menidia*	*Abundant*
Slippery Dick	*Halichoeres bivittatus*	*Many*
Squirrelfish	*Holocentrus rufus*	*Many*
Stoplight Parrotfish	*Sparisoma viride*	*Many*
Three Spot Damselfish	*Stegastes planifrons*	*Few*
White Grunts	*Haemulon plumieri*	*Many*
Yellowfin Mojarra	*Gerres cinereus*	*Many*
Yellowheaded Wrasse	*Halichoeres garnoti*	*Few*
Yellowtail Damselfish	*Microspathodon chrysurus*	*Few*
Yellowtail Snapper	*Ocyurus chrysurus*	*Many*

Coral Species

Divers' observations were made using manta tows along transects by capturing photographs, use of underwater drone video recordings and spot dives to confirm conditions. Species diversity, general abundance and overall health were observed. The coral species were observed on the hardbottom areas with a significant reef building coral cover, Table 3.

Table 3. Names of coral species observed

Common Name	Species Name
Boulder Star Coral	*Orbicella annularis*
Elliptical Star Coral	*Dichocoenia stokesii*
Finger Coral	*Porites*
Fire Coral (branching)	*Millepora alcicornis*
Golfball Coral	*Favia fragum*
Grooved Brain Coral	*Diploria labyrinthiformis*
Lesser Starlet Coral	*Siderastrea radions*
Massive Starlet Coral	*Siderastea sidera*
Mustard hill Coral	*Porites astreiods*
Smooth Brain Coral	*Pseudodiploria strigosa*
Thin Finger Coral	*Porities divaricata*

Non- coral Invertebrate Species

Majority of the non-coral invertebrate species were either on the sea floor or on rocks that sat on the sea floor. Sixteen (16) non-coral species were observed on site, Table 4.

Table 4. names f non-coral invertebrate species observed

Common Name	Species Name
Sea Plumes	*Pseudopterogorgia spp.*
Porous Sea Rods	*Pseudoplexaura spp.*
Sea Fans	*Gorgonia spp.*
Corky Sea Fingers	*Briareum asbestinum*
Black Sea Rod	*Plexaura homomalla*
Spotted Sea Hare	*Aplysia dactylomela*
Donkey Dung Sea Cucumber	*Holothuria mexicana*
Marine Sponges	
Coral Encrusting Sponge	*Cliona langae*
Black Ball Sponge	*Ircinia strobilina*
Rope Sponge	*Aplysina spp.*
Fire Sponge	*Tedania ignis*
Dark Volcano Sponge	*Svenzea zeai*
Branching Tube Sponge	*Alochroia crassa*
Maroon Colored Sponge	*Calyx podatypa**
Brown Variable Sponge	*Anthosigmella varians*
Vase Sponge	*Ircinia campana*

Flora - Algae, Seagrass and Seaweed Species

Flora species , Table 5, were found throughout the survey site. Seventeen (17) fauna species were observed on site.

Table 5. names of fauna species observed

Common Name	Species Name
Bristle Ball Brush	*Penicillus dumetosus*
Dictyota	*Dictyota sp.*
Fuzz Ball Alga	*Cyanophyta*
Fuzzy Finger	*Dasycladus vermicularis*
Green Grape Algae	*Caulerpa racemosa*
Green Net Algae	*Microdictyon umbilicatum*
Halimeda	*Halimeda incrassata*
Manatee Grass	Syringodium filiforme
Pinecone Algae	*Rhipocephalus phoenix*
Porous Sea Rods	*Pseudoplexaura spp.*
Sargassum	*Sargassum natans*
Sea Pearl	*Ventricaria ventricosa*
Tubular Thicket Algae	*Galaxaura sp.*
Turtle Grass	Thalassia testudinum
Udotea	*Udotea sp.*
White Mermaid's Wine Glass	*Acetabularia crenulata*
White Scroll Algae	*Padina jamaicensis*

Commercially Important, Endangered and Invasive Species

Snappers were the only commercially important species observed at the site. Fish species are motile and other species my use the area and may not have been present at the time of observations. There were no observations of invasive species.

2.3 Physical Environmental Baseline Assessment

2.3.1 Topography

The topographic data was generated using drone-imagery to create a topographic map of the of the proposed project site [Appendix 4. The average elevation across the site was approximately 9.0 ft above mean sea level with a gentle relief of less than 2 feet moving landward from the coastline. A series of discontinuous topographic troughs occurred about the site showing average depths of lees than 50 cm or 1.5 feet. In general, the overall topography can be classified a flat terrain. The topography does not lend itself to localized flooding and its height above mean sea level is approximately nine feet.

Proposed mitigation measures in response to climate change and storm surge impact include:

i. Elevation of the height of the primary dune during the dune restoration process using sand materials of similar grade and quality. The elevation of the primary dune will be followed by a dune stabilization exercise including the use of native dune stabilizing flora (i.e. seeding in native silver top palm Coccothrinax Inaguensia from wild harvest seeds) coupled with the use of sand fences and planting of array of dune stabilizing species for revegetation:

Trees:	Jacquina keyensis (Joewood), Cordia sebestena(Geiger Tree), Coccoloba uvifera (Sea grape)
Palms & Large Shrubs:	Byrsonima lucida (Guana Berry), Coccothrinax inaguensis (Top Palm), Conocarpus erectus (Buttonwood)

Shrubs:	Argusia gnaphalodes (Bay lavender), Borrichia arborescens (Bay Marigold), Chrysobalanus icaco (Coco plum), Genipa clusiifolia (Seven -year apple), Hymenenocalis Arenicola (Spider lily), Scaevola plumiera (Inkberry)
Ground Covers:	Ernodea littoralis (Golden Creeper), Ipomea pes-carpae (Railroad vine), Sesuvium portulacastrum (Sea purslane), Uniola paniculate (Sea oats)

ii. Construction of suspended boardwalks to prevent the degradation of the sand dune.

2.3.2 Bathymetry

No development within the marine environment will occur under the proposed project and potential impacts to bathymetry is non-existent. Against this backdrop, random recordings of water depths were recorded and measurement ranged from 3 feet near shore up to an average of 14 feet seaward toward the 500m mark.

2.3.3 Geology

Carbonate geology dominates the geology of the proposed development site. Lithological descriptions of the subsurface geology to an average depth of 14 feet below ground level revealed a relative thin layer of loosely compacted Holocene sand that transition to well compacted and well cemented Limestone formation. Paleo soil zones were not observed in the 2 excavated test pits.

A soil penetrometer was used to measure soil bearing capacity at the two test pits locations 21°47'13"N / 72°11'54"W and 21°47'12"N / 72°11'57"W, respectively. The measured soil bearing capacity at each location was 1280 kN/m^2.

2.3.4 Hydrogeology

The hydrogeology of the project site and the island of Providenciales is characteristic of a classical Ghybeh-Hertzberg lens that is situated within the upper Lucayan formation. A thin freshwater lens approximately 2.5 feet thick was measured in the 2 test pits excavated within the project site. Recharge to the freshwater lens is derived from local rainfall. The average depth to the water table was measured at 102" and 72.99", respectively. A loosely compacted sandy layer of approximately 32 inched overlaid a well cemented limestone layer, Figure 10. Groundwater flow is generally outward towards the coastline and is subjected to a swirling motion that is directly impacted by the semi-diurnal tides where two high tide and two low tide episodes occur over a 1-day period. Karst geology, surface water and fluvial features do not occur within the project site or the immediate and surrounding areas

Figure 10. Photo of earth layers

2.3.5 Sediment Analysis

A representative sand sample was collected at GPS coordinates 21°47'16" N / 72°11'58"W on the 17th June 2022.1kg sample load was used to conduct a dry sand sieve analysis based on the ASTM (E-11) Standard. Physical observation of the sand sample suggested that the sand could be classified as fine grained and against this backdrop sieve sizes for fine sand were used, Table 6

Table 6. Sand Sieve Analysis Data

Sample Calculation (Sieve Analysis of Fine Sand)				
ASTM E-11 Sieve Size (mm)	Weight Retained (kg)	%. Weight Retained	Cumulative % Weight Retained	Cumulative % Weight Passing
1.8	0	0	0	100
1	0.08	8	8	92
0.6	0.85	85	93	7
0.3	0.02	2	95	5
0.15	0	0	0	0
0.075	0	0	0	0
Pan	0	0	0	0

Using the sample data, a particle size distribution curve, Figure 11, was created as illustrated in the figure below. The D60, D30 and D10 values were 0.84941176, 0.70823529 and 0.61411765, respectively. The coefficient of uniformity (C_u) was 1.38314176 and the coefficient of curvature(C_c) was 0.36365063. The results from the sieve analysis indicated that the sand sample was uniformly graded, fine grained sand.

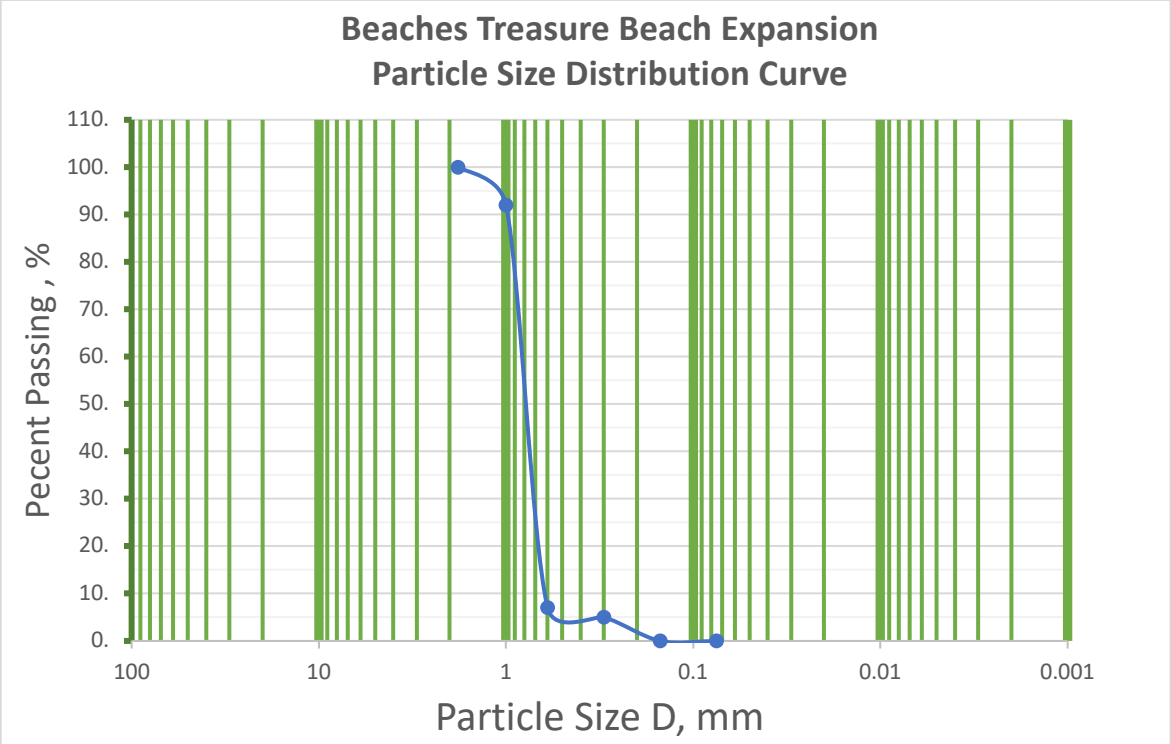


Figure 11. Grain Size Distribution Curve

2.3.6 Climate and Meteorology

Climate and meteorological data for the Turks and Caicos Islands are not directly monitoring in real-time, instead, data is extrapolated from the southeastern Bahamas region that is monitored by the Bahamas Meteorological Department. Limited data suggests that a wet season extends from May to October and a dry season extends from November to April of each year. The hurricane season that extends from June through November directly impacts the rainfall amount that are derived from passing tropical

depressions, tropical storms and hurricanes. The summer season is characterized by predominant southeasterly winds and rainfall accumulation affected by intense events associated with the passage of tropical waves, tropical storms and hurricanes.

Historical meteorological data from the southeast Bahamas and Grand Turk **(Bahamas Meteorological Department – Bahamas Government)** suggests an average annual rainfall of approximately 28 inches with the greatest amount of rainfall occurring during the months of May and October each year. Temperatures average 29°C (85°F) in summer and 21°C (70°F) in winter. Maximum and minimum temperatures seldom exceed 32°C (90°F) or 16°C (60°F). Historical model data ***(source:Meteoblue)*** from 2009 to 2021 is illustrated below in Figure 12.

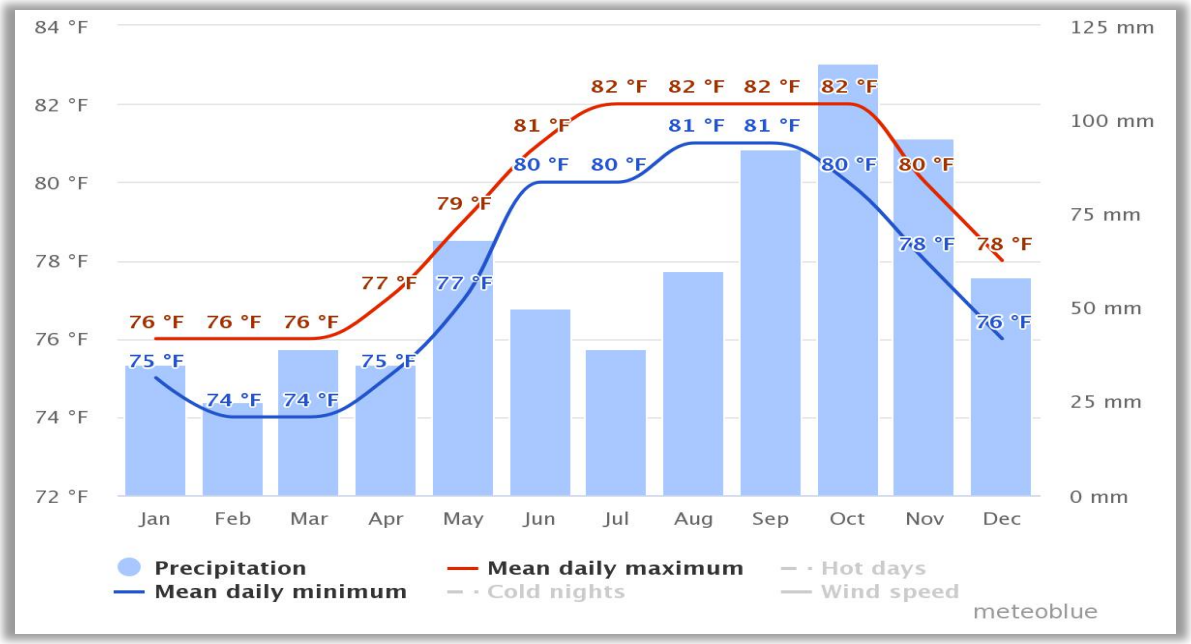


Figure 12. Historical Climate data(2009-2021 (Source MetaBlue)

2.4 Baseline Aesthetics

The pre-existing aesthetics of the site void of physical characteristics because the entire site has been rendered anthropogenic. Figures 3, 3a and 3b illustrates the chronological changes from beach front residential properties to cleared vacant land. A ring of

Casuarina trees still lines the seaward and western boundaries of the development site and albeit temporary, the site has been denuded. The white sandy beach area presents a wonderful contract and provides a tranquil and relaxing ambiance. A populated strand of picnic tables and shady umbrellas provides an ease of comfort to beach users. The view over the calm waters created picture-perfect vantage points to view sunsets.

2.5 Baseline Coastal Processes and Dynamics

The proposed project is strictly land based without any direct impacts to the marine environment. Consideration of impacts on the design of the project is not applicable.

2.6 Water Quality From Within the Area to be Directly Impacted by the Project

The marine environment will not be directly impacted by the project. A representative water quality sample was assessed and the in-situ results were satisfactory: Temperature (25.9 °C), pH (8.6), Dissolved Oxygen (9.4), Salinity (33.2), Turbidity (0.32 NTU).

2.7 Socio-economic

The main purpose of the socio-economic analysis is to place the proposed development project within the context of the human environment upon which it will have an important influence. Data collection took place in the three main communities (Grace Bay the Bight and Juba Sound) that will more immediately experience the project's positive or negative impacts. The impacts on the human environment are grouped under the following headings: demography, population, employment, and worker housing. Employment and related income generation are areas in which the development is challenged to partner solutions with TCIG for optimizing project benefits. Worker housing is an area that requires considerable attention as experience indicates that a serious shortage attends major hospitality developments and this acts as a catalyst for illegal development and squatting.

Heritage matters such as impact of the development on historical / cultural sites are always worth considering, however in the context they are not deemed an issue given the intended location of the extension and the fact that the proposed footprints of the project exist well within the required setbacks. Consideration has been given for the relocation of the beach access as well as access to the local community cemetery.

Communities: The intended location is zoned for Tourism related activities and comprised a mix of high, middle and low-income units. Included in the review were the important commercial and government agencies that operate in or close to them. These communities, roughly aligned from west to east were:

1. Grace Bay
2. Juba Sound
3. The Bight Community
4. Richmond Hills

2.7.1 Demographics

Population census of the Turks and Caicos Islands from 1970 to 2012 illustrated a continual increase in the total population, Table 5. The projected population figures provided by TCIG estimated populations of 42,953 (2019) and 44,542 (2020). The population demographic by sex and age depicted a near 1:1 ratio of male to female over the years and the greatest percentage of the population was between the ages of 15 to 64 or approximately 74% of the total population.

Table 7. Population increases by census year (Source: Dept of Economics & Statistics – TCIG)

1970 to 2012	
Census Year	**% Increase**
1970 to 1980	33.40
1980 to 1990	54.17
1990 to 2001	73.40
2001 to 2012	58.20

Youths less than 15 years of age and seniors over 64 years of age represented approximately 21% and 5% of the total population. The island of Providenciales became home to most of the population since 1990 and this trend has continued to this date. The 2021 population census suggested that the population of Providenciales represented approximately 75% of the total population of the Turks and Caicos Islands.

2.7.2 Employment

The projected labor requirements relating to the Beaches Treasure Beach Expansion Project is as follows:

a. Construction Demand

   Locals (85) Foreign (170) for approximately 250 workers during construction

b. Operations Demand

   Locals (161) Foreign (312) for a total of approximately 473 workers during operations

Approximately one third of the labour requirement for the construction and operations phases of the development will derive from the local labor force while two thirds of the labour requirement will derive from foreign labour. Local and foreign labour forces will comprise unskilled, skilled and management positions.

2.7.3 Safety and Security Concerns Within the Community

Crimes against persons is on the increase on the Island of Providenciales and recent travel advisories have been issued by the United States Embassy in Nassau, New Providence informing visitors to the Turks and Caicos Islands to be aware of their surroundings.

Beaches – TCI advises that additional lighting will be installed during the construction phase and fulltime security and extensive external lighting will be added during the operations phase. Any lighting used will be directed away from adjacent properties or seaward to prevent potential disturbance to marine wildlife and contribution to light pollution. Security concerns for the community is minimized by the fact that Beaches-TCI

is an All-Inclusive Resort where guests usually remain on property. Access will be via the existing guest and staff entrances. Therefore, road safety will not impact the operations at the adjacent Ianthe Pratt Primary School.

2.7.4 Economic Impact: Short-term and Long-term

The proposed Treasure Beach Expansion will contribute significantly to the growth of the tourism sector within the island of Providenciales through tourists related sales, profits, jobs, tax revenues, and other income opportunities. Indirectly, the project will also have an overall positive impact on most other sectors of the island's economy.

Long-term Impact

The long-term economic impact analysis of this type of tourism development allows for an increase in tourist arrivals, local sales, income, and employment. Improvements in education, technology, increase in number of qualified local professionals, access to foreign markets, enhanced advertising and strategic marketing of the destination should be realized as spinoff benefits.

2.7.5 Others

The above factors collectively boost the economic reserves of the Turks & Caicos, thus leading to a rise in job opportunities, income and better disposable income. As money and tourist comes into the country it will stimulate new business enterprises and higher markets and promote a more positive image of the country. The income generated helps the national balance of payments, earning revenue through direct taxation and indirect taxes on goods and services purchased by the tourists; about 75% - 85% of National GDP of the TCI is derive from the Tourism Sector.

2.8 Other relevant parameters identified during the scoping exercise by the consultants.

Although the economic impact of the proposed development is greatly positive for the TIC economy, there are however, negative economic effects that are also apparent and

significant, which cannot be ignored, particularly, a likely increase in demand for imported goods as the tourist number increases and the possibility of revenue leakages out.

3.0 Legislative and Regulative Context

Long-term sustainable development has played a vital role in the growth and development the Turks and Caicos Islands. Tourism has been at the forefront in revenue generation and continues to facilitate a leading role. The National Physical Sustainable Development Plan (NPSDP) was recently updated and approved. The updated plan seeks to streamline future developments towards environmentally sound protocols to enhance preservation of the natural and built environments through sustainable developments.

3.1 TCI Development Plan/Master Plan

The long wait for the approval of the NPSDP ended on the 1st of October 2021. The intended use of the new ten-year plan is aim at providing a Master Plan for development throughout the Turks and Caicos Islands. When used as a development tool, a proactive approach will be launched to guide future physical, environmental and social developments. The NPSDP ensures that all development application comply with the plan. Some key components of the NPSDP cause changes in the classification of development zones, most notably the rezoning of key residential area to tourism development zones. The net result of this update will drive the engine for further economic growth for Providenciales and by extension the rest of the Turks and Caicos Islands.

3.2 Physical Planning Ordinance

The Physical Planning Ordinance set out a road map for the processes involved in developments within the Turks and Caicos Islands:

a. Physical Planning Board
b. Building Regulations
c. Development Permission Regulations
d. Permitted Development Regulations.

The proponents of the project are required by Law to follow established guidelines set out under the respective regulations under oversight of the Department of Planning-TCIG.

To this end, the developer has complied with established regulations as follows:

a. Made a submission to the Department of Planning-TCIG for Outline Development Permission (ODP). The ODP was subsequently approved with a set of conditions placed on the developer. The developer is required to fulfill each condition as a prerequisite to Development Approval.
b. Posted public notices of intention to undertake development
c. Conducted an Environmental Impact Assessment of the proposed development on the physical environment and socio-economic and cultural environments

The developer is committed to follow all establish protocols leading up the submission for Detailed Development Permission, receipt of a Building Permit and compliance with established Build Controls.

3.3 TCI Development Manual (Section 4)

Development Standards are outlined in the TCI Development Manual (2014). Under this legislation building density, building heights and building setbacks are provided for compliance. The proposed development remains in full compliance with requirements under this legislation and where necessary have successfully applied to the Department of Planning-TCIC for variations in accordance with the regulations.

3.4 TCI Building Code

Minimum requirement for quality control, safety standards and building materials are set out under the TCI Building Code(2014). The Code advocates for Public Health and Safety alongside sustainable use of environmental resources. Under this Regulation the developer will satisfy requirement for site drainage, waste management, construction

management, site security and hoarding, storage and handling of hazardous materials, control of dust, water and noise pollution and provide an emergency mitigation plan. The developer intends to meet all requirements of the TCI Building Code as per descriptions provided in Section 4 of this EIA report.

3.5 Coast Protection Ordinance (Sections 3, 4, 5, 6)

The Coast Protection Ordinance, in force since 3 June 1990 seeks to put in place legal penalties to deter the deposit of any offensive material along the coast and the digging and removal of earth materials from the coast. Activities under the proposed project will not result in the deposition of any offensive materials on the coast and construction activities will be restricted landside of the coast. Construction waste materials will be stored and contained upland of the coast.

3.6 Mineral Ordinance (Section 7, 12)

During the construction phase of the project earth materials will be excavated for the construction of inground swimming pools and building foundations. The excavated materials will be reused in the landscape plan.

3.7 Marine Pollution Ordinance (Sections 9, 12, 15, 17, 21 & 30)

Under the proposed project, direct discharge of pollutants or any substance will not occur. Marine construction does not form any component of the project.

3.8 Fisheries Protection Ordinance (Part III)

Under the proposed project any activity deemed to be harmful or deleterious to marine life will not be allowed and does not form any part of activities that will occur within the marine environment.

3.9 International Treaties and Conventions

International Treaties and Conventions are not applicable to the proposed development.

3.10 Other Relevant Laws and Regulations

Other relevant laws and regulations include:

a. Public and Environmental Health Ordinance
b. National Parks Ordinance.

Public and Environmental Health Ordinance (Sections 20 & 21)

Safe and reliable potable water will be supplied by the local water municipality, Provo Water Company. An existing bulk sewerage treatment facility will be upgraded to accommodate the additional load produced by the proposed project.

National Park Ordinance (Sections 4, 6)

Recreational activities under the proposed will be subjected to guidelines outlined in the National Parks Ordinance.

4.0 Project Description and Construction and Operation and Alternatives

4.1 Description of the proposed project/Components

Beaches Treasure Beach project is an expansion to the existing Resort concept located in the Bight community of Providenciales, Turks & Caicos Islands. The proposed development calls for the construction of six main resort components designed to accommodate one hundred and one (101) additional guest rooms. The proposed guest accommodations are grouped into two main design typologies: Family Suites and beachfront Villas. Also proposed are the inclusion of other amenities such as restaurants, designated kids play areas, reflection pools, adult's pools, and cabanas. The expansion will enhance the existing tourism product while at the same time, creating another high-end tourism area within the existing resort that is environmentally friendly and which will directly contribute to the economic development of the area.

The Concept

The developers are aware of their responsibility for ensuring a truly sustainable, environmentally sound, green resort development and have adopted an approach to development which will be informed by an environmental feasibility study that will guide the planning and implementation process.

Green hotel development criteria parameters will be established for the site. They will help guide the architectural design, construction methodology and operational needs for the area. They will help minimize damage and ensure that resources saving devices and appropriate waste management practices are incorporated in the operation and maintenance of the resort.

SITE LAYOUT

The proposed expansion call for the construction of three (3) main hotel components (the Family Suites); three (3) beachfront structures (beachfront villas) and a standalone two-storey structure comprising the various restaurants. The layout of the building footprints superimposed on a 2021-satellite image of the site is shown EDS – L3 sheet. Also indicated are the proposed three phases for the construction works. Most dining areas are in a single standalone two-storey building comprising several different restaurants with an additional standalone Jerk-House. Table 8 indicates the number of family and beachfront rooms associated with each structure.

Table 8. Number of Guest Units

GUESTROOM TOTAL

BUILDING	LEVELS	UNIT TOTAL	COMMENT
GUESTROOM BUILDING 1	1 - 5	20	4 - TYPE A1 UNITS PER LEVEL
GUESTROOM BUILDING 2	1 - 5	25	5 - TYPE A1 UNITS PER LEVEL
GUESTROOM BUILDING 3	1 - 5	20	3 - TYPE A1 UNITS AND 1 - TYPE B1 SUITE UNIT PER LEVEL
GUESTROOM BUILDING 4	1 - 5	20	3 - TYPE A1 UNITS AND 1 - TYPE B1 SUITE UNIT PER LEVEL
RECEPTION	4 - 5	10	5 - TYPE A1 UNITS PER LEVEL
VILLA	NA	6	3 LEVEL UNIT FOR A SINGLE GUEST GROUP
TOTAL		101	

It can be noted that the proposed expansion will occupy the underdeveloped Treasure Beach site to the west of the existing property. The supporting services (water treatment plant, laundry, stand-by generator, workshops, etc.) will be accommodated through the existing infrastructure.

Table 9. Number of units by property

Blue Haven Resort	HOTEL	PROVIDENCIALES	Marina Road, Leeward	51
Beach House Resort	HOTEL	PROVIDENCIALES	218 Lower Bight, Grace Bay	21
Alexandra Resort & Spa	HOTEL	PROVIDENCIALES	Princess Drive, Grace Bay	172
The Atrium	CONDO HOTEL	PROVIDENCIALES	Governor's Road, Leeward	28
Byculla Villa	VILLA	PROVIDENCIALES	Leeward Settlement	4
Villa Whitesands	VILLA	PROVIDENCIALES	#7 Blue Mountain Villas, Cobalt Close	5
Sea La Vie	VILLA	PROVIDENCIALES	140 Long Bay Beach Road	11
Kokomo Botanical Resort	VILLA	PROVIDENCIALES	31 Downwind Street, Venetian Road	24
One On Marlin Resort	VILLA	PROVIDENCIALES	31 Downwind Street, Venetian Road	24
Sovey Creeker Villa LB	VILLA	PROVIDENCIALES	17 Sky Blue Close, Long Bay Hills	4
Top Notch Villa	VILLA	PROVIDENCIALES	35 Hawksbill Lane, Turtle Tail	4
Beaches Turks & Caicos Resort & Spa	HOTEL	PROVIDENCIALES	Lower Bight	770
Samsara Villa	VILLA	PROVIDENCIALES	#5 International Drive, Cherpkee Rd	6
Cascade Villa	VILLA	PROVIDENCIALES	#2 Cherokee Road, Blue Mountain	6
Vision Kite	VILLA	PROVIDENCIALES	Long Bay Hills, Long Bay	1
Vision Balance	VILLA	PROVIDENCIALES	Kera Isle Close, Leeward	4
Vision Beach	VILLA	PROVIDENCIALES	Prince of Whale Drive, Leeward	5
Taino	Guest House	PROVIDENCIALES	48 Garden Loop, Grace Bay Gardens	2
Hura Sea Villa	VILLA	PROVIDENCIALES	122 Long Bay Beach Rd.	6
Triton Real Estate Ltd	VILLA	PROVIDENCIALES	203 Long Bay Beach Dr.	7
The Yacht Club	CONDO HOTEL	PROVIDENCIALES	Coconut Road, Turtle Cove	11

4.2 Project Justification – socio-economic, ecological, etc.

Given the growing tourism sector in the Turks & Caicos Islands, and the increase in the demand for guest rooms / accommodations in Providenciales, the proposed Beaches Resort Treasure Beach Expansion will immediately address current shortages in room accommodations by adding an additional 101 to the existing 770 rooms. The development will allow for an increase of 13% to the resorts current number of beds while increasing the number of guests in Provo by 2.2% and accommodations overall in TCI also by 2%.

4.3 How the Project will affect erosion or accretion

No construction will occur in the marine environment. This section of the term of reference is non-applicable to the proposed project.

4.4 Describe the Coastal engineering Plan

No construction will occur in the marine environment. This section of the term of reference is non-applicable to the proposed project.

4.5 Coastal/Beach Development and Management

No construction will occur in the marine environment. This section of the term of reference is non-applicable to the proposed project.

4.6 Source and Quality of Sand, fill and other Materials to be Used for Coastal Structures and Terraforming

No construction will occur in the marine environment. This section of the term of reference is non-applicable to the proposed project.

4.7 Solid Waste Management During Construction and Operation

Beaches Resort TCI will contract the services of a private waste management operator to provide solid waste receptacles and provide routine weekly waste collection services.

4.8 Surface-Run-Off Management / Storm water Runoff and Treatment

Stormwater will be directed to subsurface disposal wells strategically positioned in topographic lows across the project site. Treatment of stormwater will include a filtration network of sand and gravel ahead of drainage into the subsurface wells.

4.9 Traffic Flow and Safety (Marine /Coastal)

Traffic will adhere to established protocol set out under the National Park Ordinance. The 300 feet marine setback established as a safe swim zone will be promoted by the project. Beach access will follow designated beach access zones as outlined in the National Parks Ordinance. Recreational motorized boating activities will be prohibited in areas outside the designated Water Sports Zone.

4.10 Water and Electrical Demand and Source (Construction and Operations)

Table 10. water and Electricity Supply and Sources

Demand Type	Source	Construction Phase	Operations Phase
Water	Provo Water	4,000 USgal/Day	50,000 USgal/day
Electricity	Fortis	480V 3 Phase (2,000 KVA)	480 V 3-Phase (5,000 KVA)

Water supply will be provided by Provo Water Company and the electricity supply will be supply by Fortis, TCI, Table 10.

4.11 Landscaping

The entire project site has been cleared of vegetation and built structures. An extensive landscape plan will be created to revegetate the project site. Invasive plants pre-existing immediately outside the seaward boundary will be removed. The purpose of this plan is to ensure that potential impacts associated with invasive species removal are addressed.

When removing Invasive species from along the shoreline, consideration should be given to the approach if it is determined that removal may result in wave erosion or contribute to exiting erosion. Given that the Australian Pine to be removed is not at a location with current erosion impacts and in an area where it is not likely to cause wave impact erosion complete removal is recommended.

Removal Method

The trees will be fell manually using chainsaws and the root system completely excavated using heavy equipment to avoid stump regrowth. Removal of the root system will loosen sediment along the crest which can lead to wind erosion; and leave areas with large excavation that can destabilize the dune crest and are a safety concern. Thus, excavations resulting from removal of roots should be immediately back filled using material similar grade and quality including earth materials removed during excavation. The existing dune profile should be maintained, and revegetation should begin immediately.

4.12 Construction Phase Activities

4.12.1Construction methods and program

The construction methodology for the proposed development will be block and steel. The project will be a single-phase development.

4.12.2 Site Security and Hoarding

The proposed Treasure Beach site falls currently within the secure enclosure of the resort and maintains constant surveillance and daily security oversight. During the construction phase the area with be properly hoard from the existing resort operations with controlled access to and from the construction area at all times.

4.12.3 Storage of materials and Equipment

A designated area within the project site be used to temporarily store excavated earth materials, plant and equipment.

4.12.4 Beach Traffic Impact and Safety

The proposed development will be far removed from beach access and safety of beach users will not be impacted. Existing hoarding along the vegetation line will remain intact during the construction phase.

4.12.5 Temporary Sanitary facilities

Inadequate provision of toilets for use by workers can lead to ad hoc defecation in secluded areas on the site, thus creating unsanitary conditions and sources of fly infestation. The developer will employ the use of portable toilets *"Johnny on the spots"* along with proper wash-hand stations.

4.12.6 Access and Staging

Access to the project site will be via the existing security access point. Access will be restricted to project workers. Separate dining areas, toilets and materials storage areas will be created as part of effective project management.

4.12.7 Solid Waste Management

Waste disposal bins to accommodate domestic and construction waste will be strategically placed around the project site. The waste containers will be removed on a routine schedule to prevent waste container overflows.

4.12.8 Liquid Waste Management

A full containment approach will be taken to mitigate potential liquid waste and control runoff.

4.12.9 Control of Air, Dust, Noise Pollution

Air - A no burn policy will be enforced and spraying polystyrene, foam and insulation will be restricted to fully enclosed areas to prevent blow away.

Dust – A surface wetting regime will be employed to minimize the occurrence loose earth materials

Water - oil spillage will be remediated using surfactant

Noise - Construction hours will be limited to normal working hours and early notification will be given in advance of unavoidable noise generation.

4.12.10 Control/Storage of Fuels and other Dangerous Substances

Bulk fuels will not be stored within the proposed project site. Hazardous substances will be stored in approved containers under the guidance of the Department of Environmental Health.

4.12.11 Emergency Mitigation Plan

The Emergency Mitigation Plan is appended at Annex II. The plan targets emergency responses to natural disasters and provides a list of key stakeholders, roles and responsibilities and contact information.

4.13 Socio-economic

4.13.1 Demographics of Surrounding / Adjacent Area

The project site is situated in the heart of an indigenous local residential community called The Bight. The area immediately to the north is home to a mix of local and immigrant communities. Small and medium scale commercial business line the main transportation route.

The western boundary of the project site contains some cultural components, namely a local TCIG primary school, community church, and burial compound. Further westward and eastward of the project site are dominated by other tourism developments. The acclaimed 'Best Beach' in the world lines the southern boundary of the project site.

4.13.2 Employment

A description of the employment characteristics of the project was outlined in Section 2.6.2 of this report. The greater percentage of each classification of employment will be foreign workers. This fact is directly attributed to the low critical mass of the local population.

4.13.3 Safety/ Security Concerns within the Community

The Health and Public Safety infrastructure on the island of Providenciales seem inadequate to meet the project, community and larger corridor needs. In the event of an emergency Providenciales, existing hospital has a limited number of available beds, with its nearest support being in Grand Turk at the Cockburn Hospital. Fire services also seem inadequate, with two functional fire trucks located within the downtown area of Providenciales. Security concerns in and around the existing site is adequately address through the means of existing resort security. Within the context of the Bight Community, the lower bight road is also adequately lighted with visual monitoring.

4.13.4 Issues Raised in the Public Consultation

No issues were raised during the rounds 1 and 2 of the public consultation process.
Required signage giving notice of intent to develop the project was executed in accordance with the regulated Planning guidelines. A final round of public consultation will be scheduled following the submission and review of this report by TCIG.

4.13.5 Any Other Issues

Tourism resort development in Turks & Caicos (Providenciales) has not been matched by the corresponding development and construction of housing and the social infrastructure to meet the demand of resort facility workers and the immigration to the resort areas induced etc. Therefore, squatting and informal settlements are common occurrence within these tourism communities, towns and may add to the already heighten social tensions in the island. This if not properly addressed can be viewed as an indirect, cumulative, long-term, reversible negative impact. The developer will seek to ensure that provisions for adequate housing opportunities with the assistance of the relevant authorities are put in place for hotel workers. This will reduce incidence of squatting and

unplanned development associated with resort development in Providenciales and the Turks & Caicos in general.

The removal of vegetation has left the project area completely cleared to 'barren Earth' and highly susceptible to dust pollution, in the immediate and surrounding areas, during windy conditions.

Construction will take place immediately adjacent to guest rooms within the existing Beaches Resort.

4.14 Potential Alternatives

There are no potential alternatives.

5.0 IMPACT ASSESSMENT

5.1 Impact Identification

Environmental Impacts are classified as avoidable, unavoidable, reversible, irreversible, direct, indirect, requires mitigation, and does not require mitigation. A summary of perceived potential impacts is presented in Table 11.

Table 11. Identified Potential Impacts

PROJECT Phasing	**IMPACT**
Pre-Construction	Socio-economic
Construction	Socio-economic
	Groundwater
	Waste Disposal
	Air
	Noise
	Marine
	Terrestrial
Operations	Socio-economic
	Groundwater
	Waste Disposal
	Air
	Noise
	Marine
	Terrestrial

5.2 Description of Impact

5.2.1 Potential Impact to the Biotic Environment

The entire acreage of the proposed project has been cleared prior to this assessment. The project site has been rendered anthropogenic.

5.2.2 Potential Impact to Coastal Environment and Processes

Under the proposed project construction and development will not occur in the marine environment.

5.2.3 Potential Impact to Geological Environment

Under the proposed project existing disposal wells will be abandoned and rendered unusable. New disposal wells will be constructed and are subject to a separate application. Storm water and treated effluent waters are intended to be injected into the deep subsurface via double cased boreholes. Shallow surface excavation will take place during pool construction and installation of footings for built structures.

5.2.4 Potential Impact to Aesthetics and other Built Environments

The invasive strand of 'Australian Pine Trees' will be removed and replaced with coconut trees. The anthropogenic site with be restored under an environmentally friendly landscape plan and construction of modern 5-storey hotel complex and supporting amenities. The built structures are expected to reach heights of 60 feet above land surface and tower above other built structure in the immediate and surrounding areas. Hoarding shield fencing will be installed around the full perimeter of the project site to obstruct the view of activities within the site.

Dune restoration measures outlined under Section 2.3.1 will be utilized to enhance the visual aesthetics of the primary dune and the general landscape of the project site where native hard wood trees, namely Bursera simaruba (Gumbo Limbo Tree) will be added to the landscape.

5.2.5 Water Quality and Noise Pollution

Impact threats to water quality would derive from accidental fuel spills. Noise pollution would derive from construction activities during normal working hours.

5.2.6 Ecosystem and Economic Analysis to Determine the Best Use of the Area

The rationale for Ecosystem and Economic analysis is to establish the magnitude of environmental, social, and economic benefits and costs as well as preventive cost of a project or undertaking, Figure .

This is guided by the following principles:

(i) Sustainable decision-making; balancing economic, social and environmental aspects of projects.

(ii) Full environmental and social costs or benefits in projects.

(iii) Relevancy to existing policies, laws, and regulations and institutional needs.

(iv) Consistency / linkage to the 10-Year National Physical Sustainable Development Plan (NPSDP) and TCIG's National Vision 2040

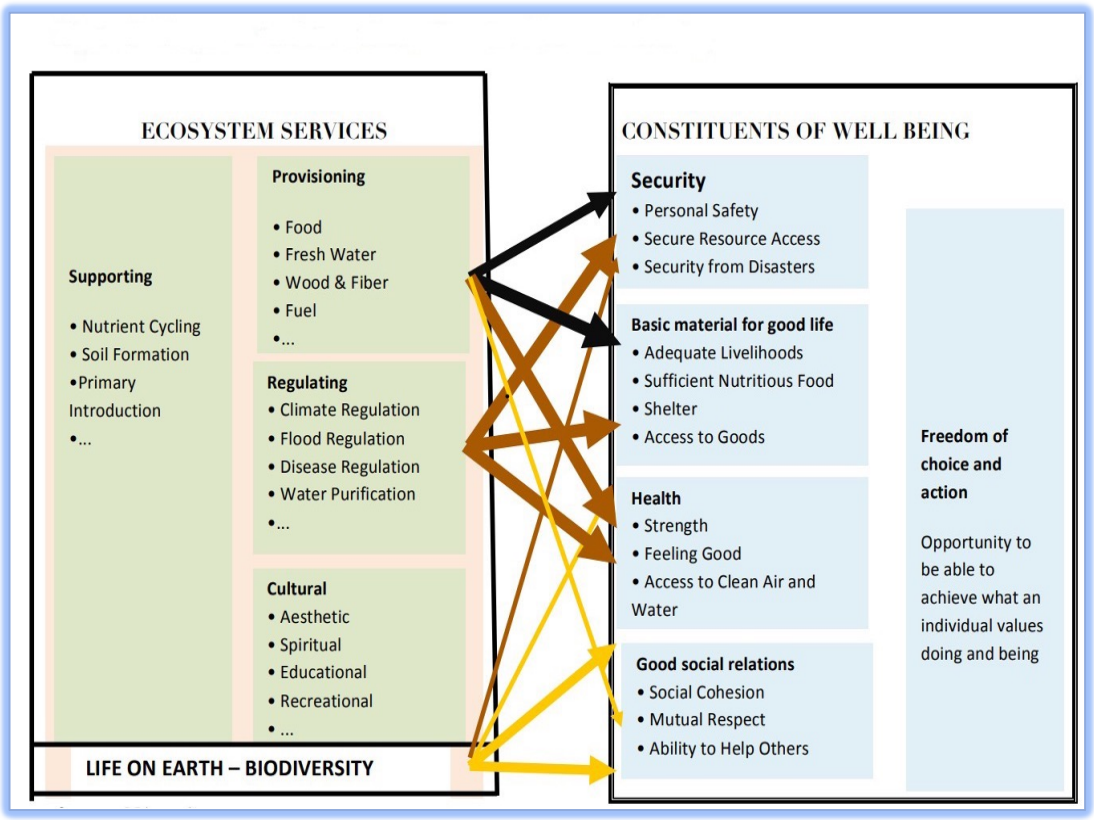


Figure 13. Socio-economic benefits

(*source: Guidelines for Conducting Economic Analysis of Environmental Impactsin Uganda, 2014)*

Providenciales and by extension the Turks and Caicos Islands forms part of a developing country that is reliant mainly on its natural resources and ecosystem for income generation within the tourism industry. The ecosystem in the immediate and surrounding areas of the proposed project (Beaches Treasure Beach Extention) provides great opportunities for the local residences and small business to benefit from sustainable commercialized tourism related activities (revenue generation business where local businesses derive increase economic benefits and reduce negative impacts cause by tourism -i.e. local handmade arts and crafts and marine tour operations that operate in compliance with local ordinances). The Direct benefit of the existing ecosystem on the local economy is therefore seen through the

provision of business opportunities, job opportunities, positive social outlets and recreation. Notable eccsystem services include :

1. Positive Impacts on environmental air quality
2. Functions of coral reefs in the mitigation of storms and , coastal erosion control, regulation of local rainfall
3. Provision of natural habitats for local flora and fauna

A SWOT analysis for the ecosystem and economy relating to the proposed development is summarized in Table 12 .

Table 12. SWOT Analysis

SWOT ANALYSIS OF ECOSYSTEM AND ECONOMY	
STRENGTHS Increased tourism development resulting in development of Protected Areas, business and job creation, regulation of resource use	WEAKNESS Habitat loss, Urban development, impact on carrying capacity of local beach
OPPORTUNITIES Regulation services provided by the 10-year NationPhysical Sustainable Develoment Plan, Removal of Invasive Alien Species	THREATS Traffic impacts, coastal flooding, coastal erosion

5.2.7 Socio-economic Impact

5.2.7.1 Public Beach Access

Beach access will not be interrupted during the construction and operation phases of the proposed project. The developer has facilitated public beach access complete with a car

park within the surrounding area. The public beach access is used by locals and visitor to Princess Alexandra Nation Park.

5.2.7.2 Potential Impact to Neighbouring Developments, Businesses and Residential Houses

Neighbouring developments, businesses and residential homes will be exposed to short-term increase in construction traffic along the Leeward Highway and secondary roadway to the Beaches property.

5.2.7.3 Other Impacts

The proposed project will add an additional 101 units to the total number of units available on Providenciales. Job creation and business opportunities will be added positive impacts of the project.

5.3 Impact Assessment

The predominant identified impact derived from the proposed project will be a long-term and positive influence on the social economy of Providenciales and the Turks and Caicos Islands on a broader scale.

Impacts to the physical environments will be long-term, low, and indirect except for perceived long-term, high impact on the terrestrial environment arising from new construction and the revegetation of a landscape that has been rendered anthropogenic.
Impacts to the marine environment will be nominal due to the absence of marine side construction. Beach user load are expected to increase and inevitably impact the carrying capacity of the beach.

The recent passing of the 10-year National Development Plan for Turks and Caicos Islands will act to mitigate potential negative impacts.

Identified perceived potential impacts derived from the proposed project are summarized in Table 13.

Table 13. Impact Assessment

PROJECT Phasing	IMPACT	AREA(S) OF IMPACT	IMPACT RATING	MITIGATION
Pre-Construction	Socio-economic	National	ST-H	Nil
Construction	Socio-economic	National		EMP
	Groundwater	Immediate and Surrounding Area	ST-L	
	Waste Disposal			
	Air			
	Noise			
	Marine			
	Terrestrial			
Operations	Socio-economic	National	LT-H	Nil
	Groundwater	Immediate and Surrounding Area	LT-L	EMP
	Waste Disposal			
	Air			
	Noise			
	Marine			
	Terrestrial		LT-H	

NB: ST-H (Short term high), ST-L (Short term low), LT-H (Long term high), LT-L (Long term low)

5.4 Derivation of Significance

The potential for any derivation of significance is low. The application of renewable energy did not form part considerations relating to the design and operation of the proposed project.

6.0 Mitigation and Monitoring

6.1 Proposed Actions and Schedules to Mitigate Against Any Environmental Impact

The proponent of the development will adopt the International Best Practice approach to mitigation protocol including avoidance, minimization, restoration, offsets, and compensation for loss. An emergency response plan is attached at Appendix 5.

6.2 Storm Surge Analysis and Mitigation Plan for Sea Level Rise

Construction will not take place in within the marine environment and the coastline will not be altered. Against this background a storm surge analysis and mitigation plan are not applicable.

6.3 Building Around, or Rescue and Removal of Rare, Threaten, and Endangered Species of Plant Where Possible

The entire project site was cleared of vegetation and built structures and in a pre-existing anthropogenic state.

6.4 Landscaping / Replanting Utilizing Native Species

A land scape plan , Figure 8, will introduce non-invasive native species that will be used extensively where possible.

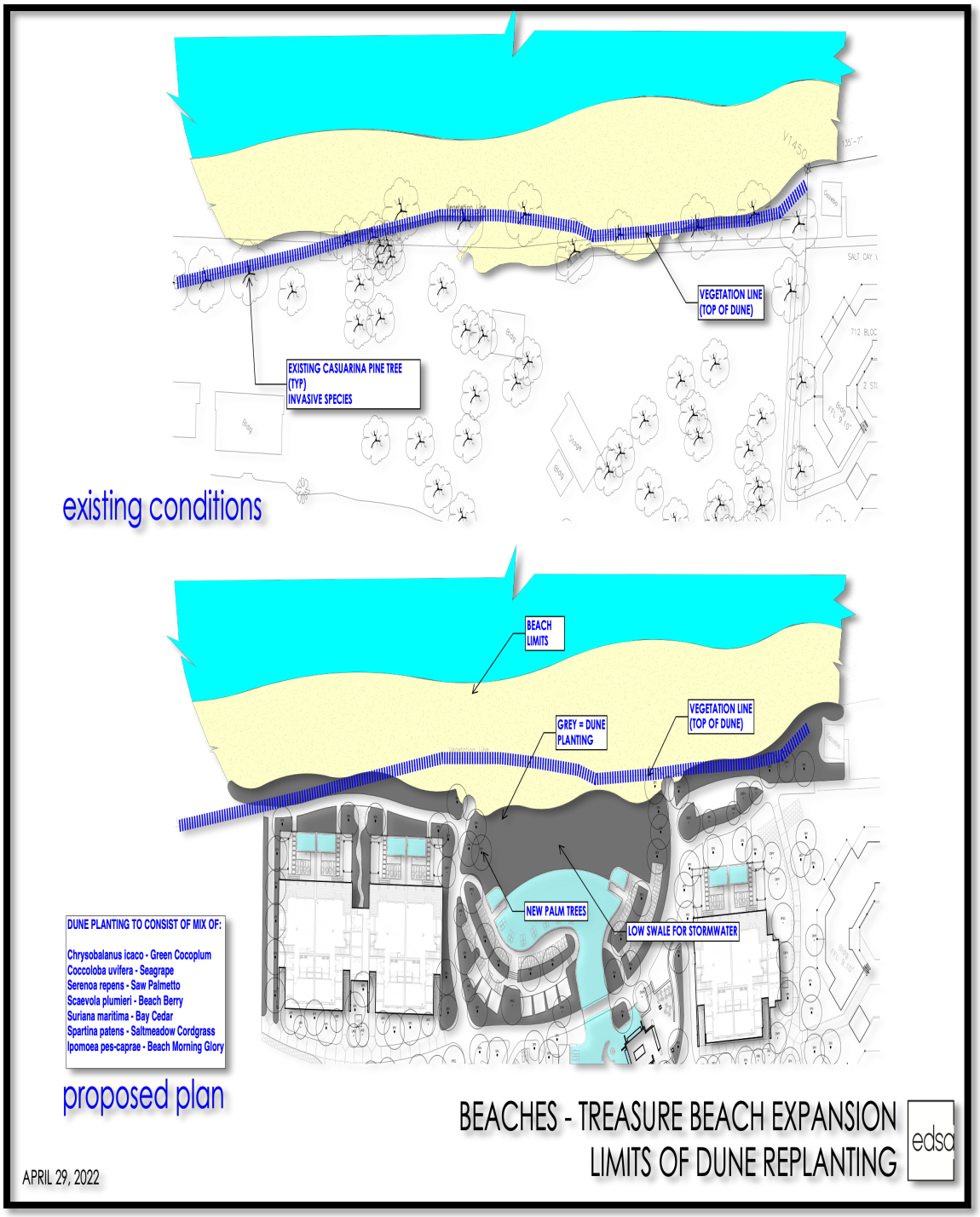


Figure 14. Landscape Plan (Source: EDSA)

6.5 Dune Remediation and Restoration, Including Control of Invasive Dune -Threatening Species and Establishment of native Dune-Stabilizing Species

Table 14. Dune Stabilizing Species

Botanical Name	Common Name
TREES	
Jacquina keyensis	Joewood
Cordia sebestena	Geiger Tree
Coccoloba uvifera	Sea grape
PALMS & LARGE SHRUBS	
Byrsonima lucida	Guana Berry
Coccothrinax argentata	Silver Top Palm
Conocarpus erectus	Buttonwood
SHRUBS	
Argusia gnaphalodes	Bay lavander
Borrichia arborescens	Bay Marigold
Chrysobalanus icaco	Coco plum
Genipa clusiifolia	Seveny-ear apple
Hymenocalis arenicola	Spider lily
Scaevola plumieri	Inkberry
GROUND COVERS	
Ernodea littoralis	Golden Creeper
Ipomea pes-caprae	Railroad vine
Sesuvium portulacastrum	Sea purslane
Uniola paniculata	Sea Oats

The development proposes to utilize native species, Table 14, in the landscaping as a mitigation for project impacts. Use of native tree and shrub species includes species that bear fruit that will serve as food for resident and migrant avifauna species. Landscape design within the upland development area will also include some native drought tolerant plant species which will reduce water demands on the project. Once these native species become established, their dependence upon project water will be significantly reduced.

While this exercise will result in a positive impact on native flora biodiversity and avifauna, there are potential negative impacts associated with the activity including unintentional introduction of invasive plant and animal species and introduction of pest and disease.

The purpose of this plan is to ensure that potential impacts associated the landscaping exercise are addressed. Specifically, this plan aims to:

i. prevent the reestablishment of invasive species
ii. increase wildlife habitat
iii. ensure that new invasive plant and animal species are not introduced to the site
iv. prevent the introduction of plant pest and disease

Potential Impacts associated with landscaping include:

i. Unintentional introduction of new invasive plant and animal species through importation of plants
ii. introduction of plant pest and disease

Plants selected for landscaping should be based on the following criteria:

i. No invasive species will be permitted on the landscape palette

Native species selected should consider the following:

i. Native plants that can be a food source for avian species
ii. Protected species
iii. Species readily available in local and Florida Nurseries

6.6 Financial Resources for Mitigation

The EMP, inclusive of the mitigation plan, will be fully financed by Beaches Resort TCI.

6.7 Environmental Monitoring and Financial Requirements

Environmental monitoring in accordance with the EMP (Section 6.9) will continue during the construction and operation phases of the project. Reporting will be enforced and results shared with TCIG.

6.8 Public Consultation/ Social Listening/Monitoring

The proponents of the project will engage the Department of Planning and DECR in a public open forum to listen to expressed concerns.

6.9 Environmental Management Plan

ENVIRONMENTAL MANAGEMENT PROGRAM

BEACHES: TREASURE BEACH EXPANSION, PROVIDENCIALES, TCI

ENVIRONMENTAL CONSULTANT: Ezekiel E. Hall- EnvironmentALL
MONITORING CLASSIFICATION: Impact Assessment Monitoring

BACKGROUND

Under grant of an Outline Development Permission (PR.15741) relating to the expansion of the industry leading Beaches Turks and Caicos Tourism property (The Bight, Providenciales, TCI) several conditions were established by the Department of Planning (DoP) and Department of Environment and Coastal Resources (DECR). The subsequent Building Permit for the construction of 101 additional guest rooms, restaurants and community pool will result in the restoration the project site that was rendered anthropogenic. The restoration process will include the removal of invasive plant species and the introduction of native species where possible. The removal of invasive species will be carried out in a manner that is non detrimental to the existing coastal dune ridge.

Beaches Turks and Caicos is positioned to comply with environmental management protocols and guidelines presented to TCIC as outlined in the Environmental Impact Assessment report. To this end, this Environmental Monitoring Program presents onsite monitoring, sample collection, data measurements and reporting activities in response to the compliance requirements of the proposed project.

OBJECTIVE

To implement an early warning system for the detection of potential adverse environmental impact(s), establish environmental benchmarks for pre-existing conditions within the immediate and surrounding areas of the proposed project site and implement on-going environmental monitoring of marine water quality during the operations phase of the project.

STATISTICAL CONSIDERATIONS

The statistical design of this Environmental Monitoring Program will be based on a comparison of environmental quality parameters during pre-construction, construction and operations phases of the project. Sampling will be stratified by wet and dry seasons and conducted on a quarterly basis. The monitoring program allows for statistical analysis of the seasonal and yearly variations during the operations phase.

ENVIRONMENTAL MONITORING PROGRAM

Seawater Quality Parameters

Seawater -	pH, Turbidity, Temperature, Salinity, Dissolved Oxygen, Fecal Coliforms, Total Coliform	
Frequency -	Once during pre-construction phase	($1,200.00)
	Weekly during construction phase	($1,200.00/week)
	Quarterly during operations phase	($1,200.00/Quarterly)

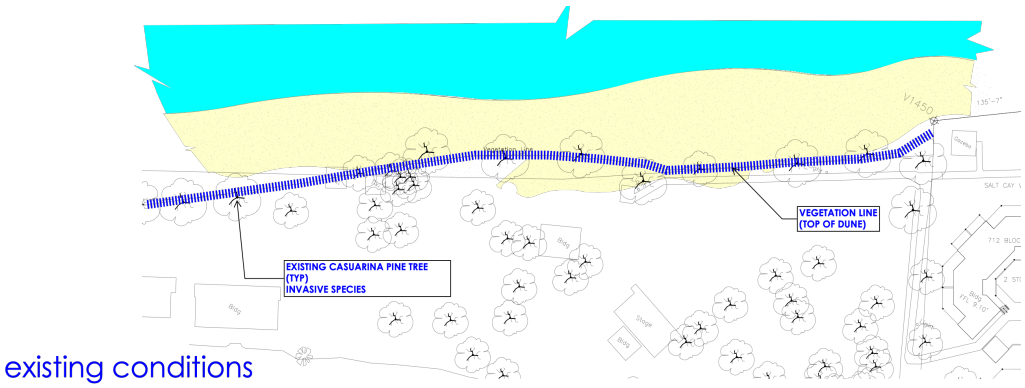
EnvironmentALL assumes full responsibility marine boat hire, sample collection, sample analysis and reporting.

Sample site location: 21°47’19”N / 72°12’02W

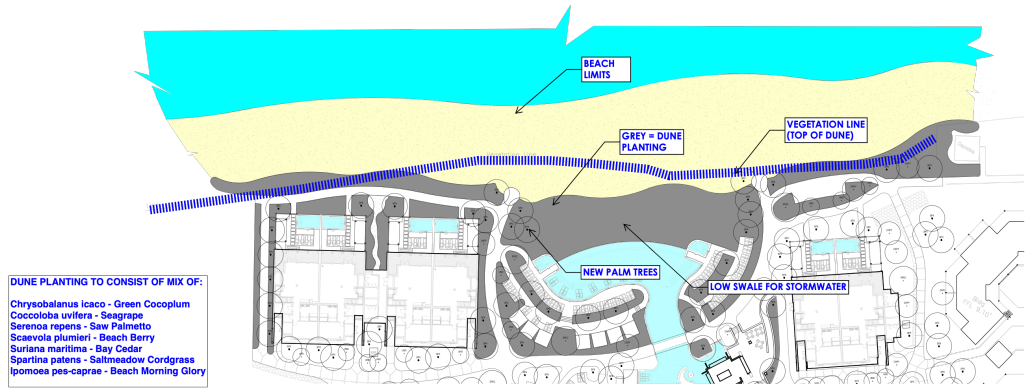
Landscape Restoration Plan

Problem:	Invasive Plant Species (Australian Pine). The Australian Pine is an Alien Invasive Species (IAS) that usually displace native beach flora that provide wildlife habitat for threatened and endangered flora and fauna.
Background:	Alteration of micro environment Alleopathic properties Promotes beach erosion – shallow root

Solution:	Removal of invasive alien pecies (Australian Pine)
Removal Method:	Tree cutting and stump application method (mulching)
Revegetation:	Green coco plum, Sea Grape, Big Top Sabal Palmetto, Coconut, Beach Morning Glory
Reporting:	Sample data collected will be shared with DoP and DECR as per established protocol and summarized in reports during the pre-construction phase, construction phase and operations phase.



existing conditions



DUNE PLANTING TO CONSIST OF MIX OF:

Chrysobalanus icaco - Green Cocoplum
Coccoloba uvifera - Seagrape
Serenoa repens - Saw Palmetto
Scaevola plumieri - Beach Berry
Suriana maritima - Bay Cedar
Spartina patens - Saltmeadow Cordgrass
Ipomoea pes-caprae - Beach Morning Glory

proposed plan

BEACHES - TREASURE BEACH EXPANSION
LIMITS OF DUNE REPLANTING

edsa

APRIL 29, 2022

Invasive Species Removal & Control Plan

Purpose

The purpose of this plan is to ensure that potential impacts associated with invasive species removal are addressed. Specifically, this plan aims to:

i. provide guidance on the removal of existing invasive plant species on site;
ii. decrease the likelihood of invasive plant species re-emerging after removal and
iii. ensure that new and or additional alien invasive species are not introduced through the project

Definitions

Alien species – *non-native, non-indigenous, foreign, exotic species occurring outside of their natural range and dispersal potential, and includes any part, such as seeds and larvae, that might survive and subsequently reproduce.*

Biodiversity – *The variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems. Short for biological diversity.*

Control – *Measures to eliminate or reduce the effects of invasive species, including eradicating infestations, reducing populations of invasive species, preventing their spread and mitigating their impact on the economy.*

Intentional introduction – *An introduction made deliberately by humans, involving the purposeful movement of a species outside of its natural range and dispersal potential. Such introductions may be done legally or illegally.*

Introduction – *The movement by human agency of a species, subspecies or lower taxon outside its natural range. This movement can be either within a country or between countries.*

Invasive alien species - *Alien species that become established in a new environment, then proliferate and spread in ways that are destructive to native ecosystems, human health, and ultimately human welfare.*

Native species – *A species occurring within its natural range and dispersal potential, i.e. within the range it occupies naturally or could occupy without direct or*

indirect introduction or by care of humans. Those plants and animals that occurred when Columbus arrived.

Sanitary or phytosanitary measure – *Any measure applied: To protect animal or plant life or health within a country from the risks arising from the entry, establishment or spread of pests, diseases, disease-carrying organisms or disease-causing organisms;*

Unintentional introduction – *An unintended introduction made as a result of a species utilizing humans or human delivery systems as vectors for dispersal outside its natural range.*

Potential Impacts

Potential Impacts associated with invasive species include:

i. Spread of invasive species from existing individuals on the site
ii. Introduction of additional individuals of existing species
iii. Introduction of new plant and animal invasive species

Pathways for spread and introduction of invasive species during construction include:

i. Regeneration of plants from improper removal
ii. Transfer of seeds and other propagative parts from one location to the next
iii. The introduction of invasive plants for replacement of invasive species / landscaping
iv. The introduction of invasive animals with the importation of plants for landscaping

Removal Methodology

When removing Invasive species from along the shoreline, consideration should be given to the approach if it is determined that removal may result in wave erosion or contribute to exiting erosion. Given that the Australian Pine to be removed is not at a location with current erosion impacts and in an area where it is not likely to cause wave impact erosion complete removal is recommended.

The trees will be fell manually using chainsaws and the root system completely excavated using heavy equipment to avoid stump regrowth. Removal of the root system will loosen sediment along the crest which can lead to wind erosion; and leave areas with large excavation that can destabilize the dune crest and are a safety concern. Thus, excavations resulting from removal of roots should be immediately back filled using loose sediment removed during excavation. The existing dune profile should be maintained, and revegetation should begin immediately.

Revegetation

Alternatively, revegetation can commence immediately using the excavations as planting pits for *Cocos nucifera* (Coconut Palm) or native trees from the dune species outlined in Table 15 below. Native dune shrubs and ground covers that will easily become establish and hold in sand will assist with swift stabilization of the dune crest.

Table 15. List of Dune Flora species

Botanical Name	Common Name
TREES	
Jacquina keyensis	Joewood
Cordia sebestena	Geiger Tree
Coccoloba uvifera	Sea grape
PALMS & LARGE SHRUBS	
Byrsonima lucida	Guana Berry
Coccothrinax argentata	Silver Top Palm
Conocarpus erectus	Buttonwood
SHRUBS	
Argusia gnaphalodes	Bay lavander
Borrichia arborescens	Bay Marigold
Chrysobalanus icaco	Coco plum
Genipa clusiifolia	Seveny-ear apple
Hymenocalis arenicola	Spider lily
Scaevola plumieri	Inkberry
GROUND COVERS	
Ernodea littoralis	Golden Creeper
Ipomea pes-caprae	Railroad vine
Sesuvium portulacastrum	Sea purslane
Uniola paniculata	Sea Oats

Protocols to prevent Introduction of New Invasive Plant & Animal Species

In addition to removing existing invasive there should be no introduction of new invasive species to the site as a result of the project. The potential pathway for introduction of invasive species is through the shipment of plant material for the project. Specifically, there is a concern for the introduction of:

i. Cane toads (*Rhinella marina*), Green Iguana (*Iguana iguana*), Corn Snake (*Pantherophis guttatus*) and Knight anole (*Anolis equestris*) which can be "hitchhikers" in plant material shipped from outside of the country.
ii. Accidental inclusion of invasive plant species for landscaping.

Biosecurity protocols to prevent introduction of invasive species to the site will involve preventive measures and procedures to respond to incursions.

Preventative measures

A. No invasive species will be included on the landscape palette.
B. Local procurement of plants should be a first option.
C. Upon arrival and offloading of plants, a plant inventory and inspection should be to ensure that plants present are as per the approved landscape palette.
D. Any invasive plant material should be disposed of by incineration.

Invasive Species sightings response protocol

Should there be a sighting of an invasive species the following actions are to be taken:

i. For all sightings, the DECR should be notified immediately.
ii. If sighting is at the time of offloading, every effort should be made to contain or capture the animal.
iii. Photographs of the animal should be taken to assist in identification of the organism and verification of its status as an invasive alien species.
iv. An incident report will be prepared by the EnvironmentALL and forwarded to Thye DECR

Dune Stabilization and Native Landscaping

The development proposes to utilize native species in the landscaping as a mitigation for project impacts. Use of native tree and shrub species includes species that bear fruit that will serve as food for resident and migrant avifauna species. Landscape design within the upland development area will also include some native drought tolerant plant species which will reduce water demands on the project. Once these native species become established, their dependence upon project water will be significantly reduced.

While this exercise will result in a positive impact on native flora biodiversity and avifauna, there are potential negative impacts associated with the activity including unintentional introduction of invasive plant and animal species and introduction of pest and disease.

Purpose

The purpose of this plan is to ensure that potential impacts associated the landscaping exercise are addressed. Specifically, this plan aims to:

i. prevent the reestablishment of invasive species
ii. increase wildlife habitat
iii. ensure that new invasive plant and animal species are not introduced to the site
iv. prevent the introduction of plant pest and disease

Potential Impacts

Potential Impacts associated with landscaping include:

i. Unintentional introduction of new invasive plant and animal species through importation of plants
ii. introduction of plant pest and disease

Plant Selection

Plants selected for landscaping should be based on the following criteria:

i. No invasive species will be permitted on the landscape palette

Native species selected, Table 16 should consider the following:

i. Native plants that can be a food source for avian species
ii. Protected species
iii. Species readily available in local and Florida Nurseries

Table 16. Native species for use in landscape plan

#	Botanical Name	Common Name
1	*Bursera simarouba*	Gum Elemi
2	*Chrysobalanus icaco*	Coco plum
3	*Coccoloba diversifoloa*	Pigeon Plum
4	*Coccoloba uvifera*	Sea Grape
5	*Conocarpus erectus*	Buttonwood
6	*Cordia sebestena*	Geiger
7	*Guaiacum sanctum*	Lignum Vitae
8	*Guapira discolour*	Long leaf Blolly
9	*Ipomoea pes-caprae*	Railroad vine
10	*Myrcianthes fragrans*	Simpson Stopper
11	*Myrica cerifera*	Wax Myrtle
12	*Plumeria obtusa*	Wild Frangipani
13	*Pseudophoenix sargentii*	Buccaneer Palm
14	*Psychotria ligustrifolia*	Wild Coffee
15	*Sabal palmetto*	Sabal Palm
16	*Suriana maritima*	Bay Cedar
17	*Swietenia mahagoni*	Mahagony
18	*Thrinax radiata*	Thatch palm
19	*Turnera ulmifolia*	Buttercup
20	*Uniola paniculata*	Sea Oats

Plant procurement procedure

To safeguard against the introduction of plant pest and disease:

i. Local procurement of plants will be a first option

ii. When purchasing from the United States, a phytosanitary certificate from the point of origin, certifying that plants are free from pest and disease, should be provided for all imported plants.

iii. Upon arrival, plants should be inspected by a professional trained in identifying plant pest and disease.

FUEL SPILL EMERGENCY RESPONSE PLAN

There are four critical steps that outlines the process for a fuel spill response:

COMMUNICATION

The Duty Manager should immediately communicate the spill episode to the Incident Commander via radio or cellphone. The notification should include the type , location and estimated quantity of the material spilled. As necessary, the area should be evacuated.

CONTROL

After communicating the spill episode take action to control it:

i. Close supply valves
ii. Shut off power supply
iii. Turn off engines (Vehicles)
iv. Excavate and dispose contaminated earth materials as per local codes
v. Restore excavated area(s) with clean earth material of similar grade and quality
vi. Always use PPE

CONTAIN

After the spill episode has been controlled the situation has to be contained and prevent it from spreading to drains of ingress to environmentally sensitive areas:

i. Deploy absorbents or neutralizers
ii. Contain from the outer boundary towards the interior using a spill sock, a dike or trench to block or direct to spill plume
iii. Use caution tape as an access barrier so alert others not to enter the secluded area.

CLEAN-UP

When the spill episode has been controlled and contained clean up can begin:

i. Move spill plume from the outside inward

ii. Collect any free standing liquid plume in leak proof containers

iii. Dispose of any absorbent mats, neutralizing materials, garbage bags rubbish bags

iv. Restore excavated areas with earth materials of similar grade and quality

v. Dispose of spill materials at the local landfill site

vi. Wash affected surfaces with the correct solution for the spills

vii. Repair physical breaches

ACTION PLAN

PRE-EMERGENCY PLANNING AND COORDINATION WITH OUTSIDE PARTIES

Facility Manager to coordinate activities with outside response organizations and emergency response organizations including fire departments, ambulance/hospital emergency room services , Department of Disaster Management & Emergencies (DDME-TCIG) and the Police.

Phone numbers and contact personnel must be readily available and correct

Facility Manager	1(649) _____
Assistant Facility Manager	1(649) _____
Hotel Manager	1(649) _____
Incident Commander	1(649) _____
Fire Department	1(649) _____
Police	911
DDME	1(649) 946-4521

A line of authority and responsibility matrix , Table 17, must be clearly written and defined. Initial communication channels should be directed to the on-scene incident

commander quickly in the event of an emergency. Although first responder awareness level respondents may be expected to inform their supervisors (as opposed to the on-scene incident commander or hazmat response team) in the event of an emergency, the supervisor should be trained to inform the emergency response personnel. Responder training should form an integral part of the spill recovery plan. This might include the training course outline for each of the various levels of emergency responder. A system to communicate evacuations of all potentially affected employees who are not designated as emergency responders should be developed. The following information is critical to inform employees of what their immediate response should be:

1. Notification — Making the existence of the emergency known.
2. Level & Type of Response — The required response based on the extent and type of emergency.
3. Nature of the Emergency — Type of emergency condition (fire, explosion, vapor release, chemical spill, medical).
4. Location — Critically important in large facilities.
5. Ambient Conditions — Environmental factors that influence evacuation or response procedures (wind speed and direction).

Table 17. Responsibility matrix

Responsibility Matrix	
Person Responsible	Duties
Incident Commander	Assess Spill Episode Coordinate Emergency Response Make Notifications Facilitate Planning Meetings Liaise with Government Facilitate post Emergency Review
Planning Leader/Duty Manager	Supervise Emergency Action Plan Maintain up-to-date information on the status of the spill episode Share Incident Status Evaluate Environmental effects
Logistics Leader	Identify Support Requirements Supervise Communication Plan Maintain Video Documentation Supervise exchange of Emergency Inventory

7.0 Conclusions and Recommendations

The following conclusions are made regarding the proposed Treasure Beach Expansion project:

Conclusions

1. The project is a high-end resort development
2. The intended use of the acreage is in full compliance with Land Use Plan(TCIG)
3. Proposed building heights are within the guidelines set out in the 10-year National Physical Sustainable Development Plan
4. Setbacks for the development are in full compliance with the TCI Building code
5. The terrestrial environment of the project site is rendered anthropogenic
6. The Demolition of built structures within the project site was unavoidable and is subject to mitigation
7. The proposed mitigation restoration plan will introduce native non-invasive species
8. Impacts to the socio-economic environment will be long-term positive
9. Impacts to the physical environment will be long-term positive
10. Impacts the hydrogeological environment will be long-term low
11. Impacts to the marine environment will be long-term low
12. Impacts to aesthetics will be long-term high
13. There are no perceived impacts or hinderances to preclude to progress of the proposed project

Recommendations

1. A Special Inspector should be assigned to the project for development oversight (DoP)
2. An Environmental Monitor should be assigned to the project (DoP / DECR)
3. The proposed Environmental Management Plan should be implemented
4. Strict compliance with the guidelines for the removal of the Australian Pines along the beach ridge should be followed
5. Seawater quality monitoring should be continued during the operations phase of the project
6. Non-invasive species should be extensively used in the landscape plan

List of References

Areces-Mallea, A.E., A.S. Weakley, X. Li, R.G. Sayre, J.D. Parrish, C.V. Tipton, and Timothy Boucher. 1999. *A Guide to Caribbean Vegetation Types: Preliminary Classification System and Descriptions*. The Nature Conservancy, Arlington, VA.

Bradley, Patricia. The Birds of the Turks and Caicos Islands- The Official Checklist. 24 pp. Convention on International Trades of Threatened Species, 2019. List of Endangered Species.

Correll, D.S. and H.B. Correll. 1982. *Flora of the Bahama Archipelago*. Straus and Cramer, Germany.

Fetter, C. W., Applied Hydrogeology. Second Edition. (1988).

Hall, E.E. (1992). The application of borehole logging, electromagnetic surveying and surface resistivity to the evaluation of groundwater resources on the western half of New Providence, Bahamas. School of Earth Science, Hydrogeology Department, University of Birmingham

Hanson, Paul E. and K. Nishida. 2016. Insects and other Arthropods of Tropical America. Comstock Publishing Associates, Ithaca and London. 375pp. International Union for the Conservation of Nature (IUCN) 2018. The IUCN Red List of Threatened Species. Version 2018-2. http://www.iucnredlist.org. Downloaded on 7 March 2019.

Mather, J.D., 1971. A Study of the Groundwater Resources of the Turks and Caicos Islands. Institute of Geological Sciences, Hydrogeological Department, London, U.K.

McNary Wood, Kathleen. 2003. Flowers of the Bahamas and the Turks and Caicos Islands. Macmillan-Caribbean.Oxford.

National Physical Sustainable Development Plan(2021). TCIG

Ralph M. Fields Associates Inc., 1985, - Ecological *Study for the Turks and Caicos Islands*

Raffaele, H.A. and J.W. Wiley. 2014. Wildlife of the Caribbean. 304 pp. White, Anthony W. 1998. A Birders Guide to The Bahama Islands (Including the Turks and Caicos Islands). American Birding Association.

Salm, Rodney V. & John R. Clark. 1984. Marine and Coastal Protected Areas: A Guide for Planners and Managers. State Printing Company, Columbia, South Carolina. 302 pages.

TCIG., (2012) Population and Housing Census Report. Preliminary Report. Turks and Caicos Islands Government

TCIG (2011) Climate Change Policy for the Turks and Caicos Islands. Climate Change Committee. Turks and Caicos Islands Government

TCIG Wild Birds Protection Ordinance CA

8.0 Appendicies

Appendix 1: Terms of Reference

Appendix 2: EIA Team: Qualifications

Appendix 3: TCIG Permits

Appendix 4: Site Plans, Architectural Drawings

Appendix 5: Standards & Protocol for Assumptions Used in Predicting Environmental Impacts

Appendix 6: Public Consultation Reports

Appendix 7: Photo Documentary

Appendix 8: Certification Documents (EnvironmentALL)

APPENDIX 1

TERMS OF REFERENCE (PR15741)

Terms of Reference for an Environmental Impact Assessment

BEACHES RESORT: TREASURE BEACH EXPANSION
PR15741
60803/ 15, 16, 17, 18, 19, 22, 24, 26, 28, 29, 31, 32, 34, 35, 37, 38, 41, & 42

General: The Environmental Impact Assessment (EIA) must be conducted for this development with emphasis on the marine and terrestrial areas directly affected by the proposed project. The cumulative impact of all projects in the area must be analysed (with new data and information). All environmental studies/data prior to this application must be re-validated, in consultation with Department of Environment and Coastal Resources (DECR) and Department of Planning (DoP).

Qualification: EIA process shall be carried out by fully qualified consultants in all areas of study as per these Terms of Reference. The approval of the EIA team including consultants and sub-contractor consultants shall be carried out by DoP and DECR.

Scientific Research Permit: All scientific field research in Turks and Caicos Islands requires a Scientific Research Permit. This includes field research towards an Environmental Impact Assessment, to be licensed with a commercial Scientific Research Permit from the Department of Environment and Coastal Resources. The EIA consultant shall apply for this permit through the Office of the Assistant Director of Environmental Research & Development in DECR using the most current application form.

Formatting Requirements: All documents shall be submitted as digital files to the ***Department of Planning*** in electronically shareable format; that is, either by email or reference to an online website from which the documents may be downloaded (not read online only, nor password-protected to read, as documents may be referenced in future). Each document, report, and appendix shall be submitted in either consistently portrait or landscape layout throughout, with all images and sections in parallel alignment and proper, upright orientation (including tables and maps); and with all sections (including text within images) clear and readable. Maps (other than aesthetic representation figures) shall be presented with conventionally representative orientation (north-up). Currently accepted zoological and botanical names shall be used adjacent to common names throughout documents; valid synonyms are acceptable but not required. All documents must be submitted with security settings to allow both internal commenting and copying of text; the use of which will be restricted to within DECR and DoP to internally share comments and extract passages for responses. Documents not submitted within these requirements may be rejected and subject to review delay.

Submission: Complete Environmental Impact Statement (EIS) must be submitted to the ***Department of Planning*** Documents shall not be submitted directly to DECR. All documents shall be submitted digitally in addition to the number of printed copies required by DoP. DoP may request additional or hard copies of documents.

1. Introduction and Overview

1.1 Reference page with names and contact information of development proponent and EIA contractor; Department of Planning reference number; block and parcel numbers concerned; island and general location; and date completed/ submitted.
1.2 Non-technical summary (including aims, objectives and scoping).
1.3 A brief description of the proposed development and its relationship with other development in the area; including adjacent development in the geographic area.
1.4 Aims and objectives of the assessment.
1.5 Overview of the areas/topics to be addressed in this EIA (present the results of scoping exercise).
1.6 Impact Assessment methods/analyses.

2. Baseline Studies

2.1 Historical overview of the site and existing development- use historical and current aerial maps (time-series visualization) and official TCI generated map (Block/Parcel). Describe the historical ownership and land-use of the proposed development, including the surrounding areas. Describe ecologically intact areas versus anthropogenic areas. Describe any intact buildings or structures to be demolished or removed, including wells and other subterranean infrastructure.

2.2 Biological environmental baseline assessment:
- 2.2.1 Baseline terrestrial environment (including areas that are cleared, bulldozed and disturbed/damaged) – to include a quantitative description of any terrestrial ecological assets, notably flora (plant species and ecosystems) and fauna (invertebrates, reptiles and amphibians, birds, mammals, fish); habitat types; and making special note of rare, threatened, and endangered species) to be directly impacted by the project and a qualitative assessment of assets that may be indirectly impacted. This should include current condition of sand dune areas and areas colonized by invasive plant species.
- 2.2.2 Baseline marine environment (including the coast, ironshore, beach and 500 meters seaward) – to include a quantitative description of marine ecology, within all areas to be directly impacted by the project and a qualitative assessment of areas that may be indirectly impacted. Describe sargassum invasion in the area. Map the marine habitats in the area

directly affected by the proposed development. The map should be geo-referenced.

2.3 Physical environmental baseline assessment to include topography, soil type, structure, geotechnical study, sediments and profile:

2.3.1 Topography of the area. It is recommended to use drone-imagery and processed by professionals.

2.3.2 Bathymetry for site shoreline, any other underwater areas conceivably affected by the project, extending at least 500 meters from the coast and within the entire footprint of proposed project.

2.3.3 Geology (check previous EIA or nearby projects, if any, validate when necessary), including load-bearing capacity.

2.3.4 Hydrology.

2.3.5 Sediment analyses, including grain size (beach) and testing for contaminants (if any).

2.3.6 Climate and meteorology. Meteorological parameters within the area- at least for the last 10 years.

2.4 Baseline aesthetics – this should be supported by drone/UAV imageries plus ground photography and descriptions/characterizations.

2.5 Baseline coastal processes and dynamics with historical reference ten years back (this should be factored in the design of the project and maintenance/operation of the beach, if applicable):

2.5.1 Currents and tides.

2.5.2 Sediment transport.

2.5.3 Erosion and accretion, as applicable

2.5.4 Coastal dynamics.

2.5 Water quality from within the area to be directly impacted by the project (e.g. marina, nearshore areas)– parameters to include dissolved oxygen (mg/l), temperature (°C), salinity (ppt), pH, turbidity (NTU), total dissolved solids (mg/l), ammonia (as mgN/l), nitrate/nitrite (as mnN/l), nitrite (as mgN/l), total dissolved phosphorus (mg/l), total chlorophyll (µg/l), pheophytin (µg/l), active chlorophyll (µg/l) and total Coliform. Nutrient loads are to be tested to an ultra-low level.

2.6 Social-economic:

2.6.1 Demographic.

2.6.2 Employment: labor & skills demand at construction and operation; local and foreign workers needed.

2.6.3 Safety/security concerns within the community.

2.6.4 Economic impact: short-term and long-term.

2.6.5 Others.

2.7 Other relevant parameters identified during the scoping exercise by the consultants.

3. **Legislative and Regulative Context** – to include a discussion of any aspects of law, regulation and/or policy relevant to the project, such as, but not limited to the following:

3.1 TCI Development Plan/Master Plan.
3.2 Physical Planning Ordinance and subsidiary legislations.
3.3 TCI Development Manual.
3.4 TCI Building Code.
3.5 Coast Protection Ordinance and subsidiary legislations.
3.6 Mineral (Exploration and Exploitation) Ordinance and subsidiary legislations.
3.7 Marine Pollution Ordinance and subsidiary legislations.
3.8 Fisheries Protection Ordinance and subsidiary legislations.
3.9 International treaties and conventions.
3.10 Other relevant laws and regulations.

This section shall point out the section of the laws that are permissible or otherwise with this proposed development.

4. Project Description and Construction and Operation and alternatives

4.1 Description of the proposed project/components.
4.2 Project Justification – socio-economic, ecological, etc.
4.3 How the proposed project will affect erosion or accretion.
4.4 Describe the coastal engineering plans, including modeling of how these plans (for example engineering structures) will affect the flow of currents and transport of sediments both within the area of work and including potential areas of impact.
4.5 Coastal/beach development and management including beach access (including consideration for heavy equipment to access dune area for any future necessary coastal remedial works, without requiring transport of same equipment over adjacent beach).
4.6 Source and quality of beach sand, fill and other materials to be used for coastal structures and terraforming.
4.7 Solid waste management during construction and operation.
4.8 Surface-run-off management/ Storm water runoff and treatment.
4.9 Traffic flow and safety (marine, coastal).
4.10 Water and electrical demand and source (construction and operations).
4.11 Landscaping (initial phase and maintenance/operation, including removal and control of invasive plant species).
4.12 Construction phase activities:
4.12.1 Construction methods and program, including phasing of the development.
4.12.2 Site security and hoarding.
4.12.3 Storage of materials and equipment (including soil and excavated (dry) materials).

4.12.4 Beach traffic impact and safety.
4.12.5 Temporary sanitary facilities.
4.12.6 Access and staging.
4.12.7 Solid waste management- those generated during construction, if any.
4.12.8 Liquid waste management, including control of runoff- those generated during construction, if any.
4.12.9 Control of air, dust, water and noise pollution (generated by the project/heavy equipment, if any); including waste from construction processes such as polystyrene, foam, insulation, etc.
4.12.10 Control/storage of fuels and other dangerous substances, if any.
4.12.11 Emergency mitigation plan.
4.13 Social-economic:
4.13.1 Demographics of surrounding/ adjacent area.
4.13.2 Employment – labor & skills demand at construction and operation; availability of local workforce and need for foreign workers.
4.13.3 Safety/security concerns within the community (construction and operation).
4.13.4 Issues raised in the public consultation (written and verbal/oral concerns).
4.13.5 Any other issues.
4.14 Potential Alternatives.

5. Impact Assessment.

5.1 Impact identification.
5.2 Description of impact:
5.2.1 Potential impacts to the biotic environment, including predicted direct and indirect impacts coastal, and marine assets.
5.2.2 Potential impact to coastal environment and processes.
5.2.3 Potential impact to geological environment, particularly taking into consideration any existing and new subterranean infrastructure; or karst, cavern, cave, or solution hole/ sinkhole on site.
5.2.4 Potential impacts to the aesthetic and other built environment.
5.2.5 Water quality and noise pollution (construction and operation).
5.2.6 Ecosystem and economic analyses (may summarize above; valuation is needed) to determine the best use of the area.
5.2.7 Socio-economic impact – Socio-economic and cultural baseline (including labor, tourism, public infrastructure, crime, etc., Predicted impacts (positive and negative- influx of population/ workers, safe & security) to the above baseline, Identification and involvement of stakeholder groups:
5.2.7.1 Public beach access – considering that the beach is public in TCI.
5.2.7.2 Potential impact to neighboring developments, businesses and residential houses.
5.2.7.3 Other Impacts.
5.3 Impact assessment.

5.4 Derivation of significance.

Note: Use computer modelling, as appropriate, for wind-wave prediction, wave energy dissipation, waves and currents and sediment transport and shoreline changes, etc. Particular attention should be given to sensitivity and vulnerability of important geomorphological features and processes; how these are likely to respond to particular impact, regardless of whether the effects are temporary, long-term, reversible or permanent. The potential cumulative impacts of and to other project components and nearby developments (as applicable) must be noted and addressed.

6. Mitigation and Monitoring

6.1 Proposed actions and schedule to mitigate against any environmental impact (including proposed monitoring activities).
6.2 Storm surge analysis and mitigation plan for sea level rises.
6.3 Building around, or rescue and removal of rare, threatened, and endangered species of plants where possible.
6.4 Landscaping/ replanting plan utilizing native species.
6.5 Dune remediation and restoration, including control of invasive dune-threatening species (*Casuarina equisetifolia* and *Scaevola taccada*) and establishment of native dune-stabilizing species
6.6 Financial resources for mitigation.
6.7 Environmental monitoring and financial requirements.
6.8 Public Consultation/social listening/monitoring.
6.9 An **Environmental Management Plan (EMP)** must be prepared with the following minimum components:
- 6.8.1 Summary of the potential impacts of the proposal;
- 6.8.2 Description of the recommended mitigation measures;
- 6.8.3 Statement of their compliance with relevant standards;
- 6.8.4 Allocation of resources and responsibilities for plan implementation;
- 6.8.5 Schedule of the actions to be taken;
- 6.8.6 Programme for surveillance, monitoring and auditing; and
- 6.8.7 Contingency plan when impacts are greater than expected.

The EMP Environmental management plan (EMP) for pre-, during- and post-construction phases (contents may be modified, as applicable).

7. Recommendations and Conclusions

8. Appendices

8.1 The Terms of Reference (ToR) for the EIA, as issued by DoP, TCIG.
8.2 Qualifications of the EIA team of experts and the special requirements and information needed to form the team to conduct the EIA for this project. The contact information (functional phone numbers and email addresses) must be

provided. Curricula vitae and résumés shall be relevantly abridged to **no more than two pages for each consultant**.

8.3 Government Permits (e.g. work permits if required; Scientific Research Permit, etc.)

8.4 Site Plan, project plans, architectural drawing and other related documents.

8.5 Direct, unabridged reports of independent consultants involved in the EIA.

8.6 Scientific analyses reports (pdf copy from the Laboratory that analyzed the samples, and the like), if any.

8.7 Standards or protocols and assumptions used in predicting the environmental impacts.

8.8 Public Consultative Meeting and Stakeholders meeting reports. Include evidence of advertisement for Public Consultative Meetings, the names and contact information for those who attended the meetings, issues raised and conclusions.

8.9 Photo documentations (with captions – dates, place, description of the subject of the photo).

8.10 Certification/legal document from the EIA group/company that submits the EIS, that all submitted reports/documents and etc. as part of the EIA report/EIS were first-hand information and if it taken from secondary source, the authors should be properly acknowledged or compensated.

Prepared collaboratively by Department of Environment and Coastal Resources

Under supervision of Director Lormeka Williams, MSc.
Turks and Caicos Islands Government

Date: 25 January 2022

Checklist of items for EIS	
Cover/ reference page as described in 1.1	
All images and sections in upright orientation, clear and readable	
Maps oriented conventionally, north-up	
Saved in manner to allow for downloading and saving, text copying and comments to be inserted	
All sections in ToR addressed by EIS	
All appendices attached (may be in separate files) as described in 8	

APPENDIX 2

EIA TEAM: QUALIFICATIONS

Ian Astwood
Janeen Bullard
Tanya Ferguson
Ezekiel Hall

Ian Mac Gregory Astwood

ARCHITECT

649-231-1075

ianastwood@yahoo.com

Providenciales, TCI

LinkedIn

Skype

Website

ABOUT ME

EXPRESSING THE ESSENCE OF PLACE THROUGH ARCHITECTURE

Bringing over 30 years of architectural experience and knowledge. A keen appreciation and respect for nature and the environment allows for the perfect synthesis of form and space through architecture.

SKILLS

- 9/10 Architectural Design & Drafting
- 8 / 10 Auto Cad
- 9 / 10 Adobe Photo Shop
- 6/10 MS Excel
- 8/10 MS Word

EDUCATION

Master of Architecture

(Essence of Place in Architecture)

Florida A & M University; Tallahassee, Fl.

2000 - 2002

Bachelors of Architecture

University of Technology, Kingston Jamaica.

1994-1998

Diploma Architectural Technology

College of Arts Science & Technology, Kingston, JA.

1991-1994

EXPERIENCE

PERMANENT SECRETARY

MINISTRY OF PHYSICAL PLANNING & INFRASTRUCTURE 2016-2021

Preformed the duties of

- Accounting Officer for Ministry and Departments
- Chief Executive Officer and Manager for Ministry
- Contract Review & Administration /TCIG Capital Project Program

PERMANENT SECRETARY

MINISTRY of HOME AFFAIRS TELECOMMUNICATIONS & TRANSPORTATION 2012-2016

Responsible for all executive decisions for the Ministry; Provide general advice and direction to Department Heads and staff. Carry out agenda for the Government of the day

- Chief Executive Officer / Manager for Ministry & Departments
- Accounting Officer for Ministry and Departments
- Contract Review and Administration

DEPUTY PERMANENT SECRETARY

MINISTRY OF FINAINCE / MINISTRY OF GOVERNEMNT SUPPORT SERVICES 2010 - 2012

Responsible for all executive decisions for the Ministry; Provide general advice and direction to Department Heads and staff. Carry out agenda for the Government of the day

- TCIG Development Agreements - Ministry Review / Consideration
- Carnival / TCIG Infrastructure Fund - Ministry of Finance member
- Business License Review and Approvals

Ian Mac Gregory Astwood

ARCHITECT

EDUCATION

Certificate General Business

Knox Community College,
Clarendon, Jamaica.
1988-1990

Certificate (Second Class)

Helena J Robinson High School,
Grand Turk, Turks & Caicos Islands.
1982-1988

EXPERIENCE

DEPUTY DIRECTOR PLANNING

Physical Planning Department – Turks & Caicos Government 2008-2010

Acting Director of Planning: Carrying out the overall management of the Physical Planning Department

- Review and Approval of all residential development for TCI (Section 42)
- Advisory member of the Physical Planning Board
- Provide advice to TCI Government on Urban Development and growth for the islands

PRINCIPAL ARCHITECT / PARTNER

LEE & ASTWOOD ARCHITECTS 2002 -2008

Senior Partner and Manager for the Firm: Head Design Team on major projects / Specializing in Historical Restoration and Preservation.

- Lead Design Architect
- Project Management
- Contract Administration
- Office Management and Administration

GOVERNMENT CHIEF ARCITECT (COUNTERPART)

Public Works Department / Grand Turk 1994 - 2002

Head Drawing Office Staff -work with Chief Engineer PWD on TCIG Capital Projects.
Preparation of Contract documentation for all Government infrastructure Projects.

- Principal Architect
- Project Documentation
- Conceptual Design
- Production Drawings

GOVERNMENT – Drafting Technician

Physical Planning & Public Works Department / Grand Turk 1990 - 1991

Work with Chief ARCHITECT PWD on TCIG Recurrent / Capital Projects.
Preparation of Contract documentation for: Conceptual Design, Production Drawings

JANEEN MARLO BULLARD

Phone: (242) 357-9262
Jmbullard2109@gmail.com

25 Turnquest Alley
Nassau, Bahamas

With over 15 years of experience in the scientific and environmental field I can bring forth a plethora of skill sets that arrange from multi-tasking, planning and coordination, management of personnel and time as well as confidential handling of sensitive information and resources. I am dedicated and hardworking, with a passion for excellence. I possess skills in project management, educational & public outreach and research & development.

EDUCATION

MS Tuskegee University, Biology (Concentration in Plant and soil Science) 2004
Thesis: The Effects of Superoptimal CO2 on the Growth, Yield, Gas Exchange, Stomatal Conductance and Starch of Sweet Potato and Peanut.

BS Tuskegee University, Marine Biology 1999

EXPERIENCE

Environmental Specialist (2011 – Present) Principal of JSS Consulting Ltd (On The Bahamas Department of Planning and Protection approved Environmental Consultant List 2019 - present)

Projects

- Disney Lighthouse Point Cruise Port Development, Eleuthera, Bahamas Environmental Management (EM)
- Adelaide Creek Development Project; Nassau, The Bahamas Environmental Impact Assessment (EIA) and Marine Assessment
- Exuma International Airport Infrastructure Project, Exuma, The Bahamas Environmental & Social Baseline Assessment (ESBA) and Environmental & Social Management Plan (ESMP)
- North Eleuthera International Airport Infrastructure Project ESBA & ESMP
- Community Based Conch Management in the Family Islands, Conch Farm Feasibility Study and Environmental Baseline Assessment (EBA)
- Rose Island Development; Rose Island, The Bahamas Marine Assessment for EIA
- Paradise Island, Royal Caribbean, The Bahamas, Marine Assessment for EIA
- Coco Cay Island Development, Coco Cay, The Bahamas Environmental Management (EM), Botanical, Marine and Avian Assessment EIA, EBA), Environmental Management Services (EMS) and EMP
- Ocean Cay, Bimini, The Bahamas; EMS, Coral Relocation Monitoring, Public Outreach, Rapid Ecological Assessment (REA)
- Big Pond National Park Development, EMP & EMS

Project Coordinator

- Cane Toad Eradication, Lyford Cay, Nassau, The Bahamas
- Cane Toad Eradication, Marsh Harbour, Abaco, The Bahamas

Parks Planner and Community Liaison Officer (2006-2011) Bahamas National Trust,Nassau, Bahamas Duties

- Develop proposals to government for the establishment of new National Parks.
- Grant writing
- Develop General Management Plans for existing National Parks.
- Work with surrounding communities to gain support for the importance of establishing new National Parks.
- Project Management for the establishment of the Leon Levy Native Plant Preserve, Eleuthera, The Bahamas.
- Manage all daily details and education of staff for educational programs.
- Organize all special events for the Education Department.
- Liaise with corporate sponsors to further fund educational programs.
- Develop marine education lesson plans and activities (on and off site) for grade levels K-12 and college students.
- Attendance and professional presentations at events both locally and abroad.
- Development of the National High School Marine Science Curriculum.

Research Assistant (2001-2004) Tuskegee University, Tuskegee, AL

- Developed and maintained research projects in conjunction with Tuskegee University and NASA.
- Aided in the daily maintenance and running of a greenhouse.
- Organized and taught Environmental and General Biology courses.

Marine Mammal Trainer (1999-2001) Dolphin Encounters, Blue Lagoon, Bahamas

- Trained Atlantic Bottlenose Dolphins in educational and interactive programs.
- Assisted in developing marine conservation and educational programs.

AUTHOR

Conch Farming Feasibility Study (present)

The Bahamas Sixth National Report on Biological Biodiversity to The Convention on Biological Diversity (2019)

Co-Author of the "Andros Sustainable Development Masterplan" (2014)

Author of the "Critical Situation Analysis of Invasive Alien Species for The Bahamas" (2013)

PRESENTATIONS AND INVITED LECTURES

Policies, Strategies and Best Practices for Managing Invasive Alien Species (IAS) in the Insular Caribbean March 31st – April 4th, 2014, Trinidad. Port of Spain, Trinidad & Tobago. The Cane Toad Invasion: Its Origin, Status and The Bahamas' Response to prevent spread.

TANYA N. FERGUSON

P. O Box N 10377
Nassau, Bahamas
Phone: (242) 601-0251 or (242) 426-6708
email: tanyanf27@gmail.com

EDUCATION:

2008	UNIVERSITY OF LONDON **PG Certificate in Environmental Management** **Environmental Impact Assessment Course**
2008	UNIVERSITY OF LONDON **PG Certificate in Environmental Management** **Environmental Auditing Course**
2003 – 2006	COLLEGE OF THE BAHMAS **Bachelor of Education, Biology with Combined Science**
1991 – 1995	COLLEGE OF THE BAHAMAS **Associates of Arts, Biology**

TRAINING:

- Biodiversity Data Management Workshop; Mar. 2005; Nassau, Bahamas
- Workshop on Bahamas becoming signatory to The Rotterdam Convention; Feb. 2005; Nassau, Bahamas
- Workshop on Bahamas becoming signatory to International Treaty on Plant Genetic Resources for Food and Agriculture; Feb. 2005; Nassau, Bahamas
- Geo Bahamas Workshop; June 2004; Nassau, Bahamas
- Fire Management Workshop; May 2002; Belize
- Eco-lodge Design Workshop; May 2001; Nassau, Bahamas
- Terrestrial Ecology Workshop; April 2001; Nassau, Bahamas
- Hibiscus Mealy bug Workshop; January 2001; Nassau, Bahamas
- Pest Risk Analysis Workshop; January 2001; Nassau, Bahamas
- Ozone Depletion Workshop; March 1998; Nassau, Bahamas
- Agriculture Conference & Tradeshow; September 1998; Orlando, Florida
- Green Management Seminar; October 1997; Nassau, Bahamas
- Ecotourism Planning Seminar; September 1997; Nassau, Bahamas

EMPLOYMENT:

2008 – Present DESIGN ELEMENTS

Principal
- Organize and coordinate staff and sub-contractors
- Prepare proposal and final reports
- Project Management

Field Scientist
- Botanical Assessments
- Environmental Field Services

2014 – 2015 BAHAMAS GOVERNMENT,
MINISTRY OF WORKS & URBAN DEVELOPMENT,
PROJECT EXECUTION UNIT, BIG POND PARK PROJECT

Environmental Specialist
- Conduct site environmental inspections
- Monitor civil works and park construction activities to ensure environmental compliance
- Provide advice on selection of appropriate plants for landscaping
- Provide on-site biological and botanical evaluation

2005 – 2007 BAHAMAS NATIONAL TRUST
Curator, Retreat Gardens
- Design and implement restoration plan
- Develop maintenance program
- Management of rare collection of palms

1997 – 2007 BAHAMAS GOVERNMENT, DEPARTMENT OF AGRICULTURE

Bahamas National Herbarium, Curator
- Identify and Curate plant specimens

National Entomology Collection, Curator
- General maintenance of insect collection

Conservation Unit
- Vegetation survey and analysis
- Review of scientific research permits
- Review of Environmental Impact Assessments
- Public education publications and training

Ezekiel E. Hall, MSc, IAH

Consulting Hydrogeologist – Environmentalist
#6 Flame Tree Circle
Long Bay Hills, Providenciales
Turks and Caicos Islands, B.W.I.
Tel: 649.246.8263
Email: hallenvironment1@gmail.com

Summary

Ezekiel Hall is a practicing environmentalist with over 25 years experience working in Small Oceanic Islands environments in the Bahamas and Turks and Caicos Islands. Mr. Hall's experience includes consultative services for private utility companies, government agencies, property owners and tourism developers who wish to design, construct and manage operation facilities with a focus on protection of natural resources and compliance with applicable Ordinances, Regulations and environmental best practices.

Education

1991 – 1992: Mr. Hall attended the University of Birmingham, UK and obtained a Master of Science Degree in Hydrogeology, specializing in the Hydrogeology of Small Oceanic Islands.

1981 – 1985: Mr. Hall attended St. Lawrence University, Canton, New York, USA and obtained a Bachelor of Science Degree in Geology.

CERTIFICATIONS & PROFESSIONAL MEMBERSHIP

PADI Certified SCUBA Diver: Dive Master.

Member of the International Association of Hydrogeologists.

NASTeC Certified Major Appliance Repair Technician [B981174]

GCAP Graduate Technician Certified Appliance Technician [Reg #: TC21727]

PUBLICATION(S)

"Saltwater Intrusion in the Bahamas: A case study of the Grand Lucayan Waterway, Grand Bahama, The Commonwealth of the Bahamas." *Proceedings of the AWRA Conference (1989), Puerto Rico.*

"An appraisal of the Application of Surface and Borehole Geophysical Techniques to Groundwater assessment in Wellfields in The Bahamas." *Proceedings of the WMO/IDB Conference (1995), Costa Rica.*

PROJECTS AND STUDIES

1. Water Quality Monitoring: Providenciales Hospital Project, TCI, 2009.
2. Environmental Impact Assessment: The Shore Club, Providenciales, TCI, 2008-09
3. Environmental Impact Assessment: East Bay Resort and Marina, South Caicos, TCI, 2008-09
4. Environmental Impact Assessment: Terrestrial and Hydrogeological Input into EIA for CMK Developments at South Caicos Islands, TCI 2008 to present.
5. Hydrogeological Assessment: Input into the Environmental Impact Assessment for PPC Limited Bulk Fuel Storage Facility, Providenciales, TCI 2008
6. Seawater Quality Monitoring: Carnival Cruise Lines (Grand Turks Cruise Port), Grand Turks Island, TCI 2008-2009.
7. Environmental Impact Assessment: Leeward Lake; Providenciales, TCI, 2008
8. Environmental Impact Assessment: Leeside Canals; Providernciales, TCI 2008
9. Seawater Quality Monitoring: Carnival Cruise Lines (Grand Turks Cruise Port), Grand Turks Island, TCI 2007-2008.
10. Seawater Quality Monitoring: Carnival Cruise Lines (Grand Turks Cruise Port), Grand Turks Island, TCI 2006-2007.
11. Feedwater and Disposal Wells design and construction: Beaches Resort – Italian Village, Providenciales, Turks and Caicos Islands, 2008
12. Environmental Impact Assessment: Bone Fish Point, Providenciales, TCI, 2007

APPENDIX 3

TCIG PERMITS

Scientific Research Permit
Temporary Work Permits

Department of Environment and Coastal Resources
Ministry of Tourism, Environment, Fisheries, Maritime Affairs, Culture & Heritage, Agriculture, Religious Affairs and Gaming. Turks and Caicos Islands Government
Lower Bight Road, Providenciales
Turks and Caicos Islands

SCIENTIFIC RESEARCH PERMIT

SRP No.: 2022-03-30-11

Main Title of Research:	Beaches Resort: Treasure Beach Expansion PR15741
Principal:	Ezekiel Hall [EnvironmentALL]
Other applicants:	Tanya Ferguson & Janeen Bullard [EnvironmentALL]
Partners/collaborators in TCI (if any):	Oswald Williams, Ian Astwood
Type of application:	Comm
Location:	The Bight, Providenciales
Total duration of application:	One Year (3 months)
Period covered by this application:	1 March 2022 – 28 February 2023 (1 March 2022- 30 June 2022)
Research Fee:	$500.00 Receipt # 2533662794

Authorized Approving Officer:

LORMEKA WILLIAMS, MSc.
Director, DECR

Date: 30 March 2022

Not Valid without the
Official Seal of the DECR

Note:

This Permit should be presented to authorized-DECR Officers or TCIG officials when requested during monitoring activities which may be done anytime throughout the duration of the approved activities. The Application for Research Permit, Conditions of Approval and required attachments may be requested too.

MINISTRY OF EDUCATION, LABOUR, EMPLOYMENT & CUSTOMER SERVICE
EMPLOYMENT SERVICES DEPARTMENT
TURKS & CAICOS ISLANDS GOVERNMENT
PROVIDENCIALES, TURKS & CAICOS ISLANDS, BRITISH WEST INDIES
TELEPHONE: 649-338-4113, EXT: 4113 WEBSITE: www.gov.tc

Your Ref: A22058/12TH APRIL, 2022

Our Reference: A22058/TW P FILE

DATE: 12TH APRIL, 2022

The Manager

ENVIRONMENT ALL

NAME of Company:

ENVIRONMENT ALL

REF: A22058 EMERGENCY/ TEMPORARY WORK PERMIT

Permission is hereby granted for the person named below to be gainfully employed as **a CONSULTANT with ENVIRONMENT ALL** for a period of for forty-two (42) days.

NAME OF EMPLOYEE:	**JANEEN MARLO BULLARD**
DATE OF BIRTH:	**04 JANUARY, 1978**
COUNTRY OF BIRTH:	**NEW PROVIDENCE, BAHAMAS**
PASSPORT NUMBER:	**AA183799**
COMMENCING DATE:	**13TH APRIL, 2022**
THIS PERMISSION EXPIRES ON:	**25TH MAY, 2022**

Yours Sincerely,

Edwin Benjamin Franklyn Taylor
Commissioner of Labour

Cc: Director of Immigration

MINISTRY OF EDUCATION, LABOUR, EMPLOYMENT & CUSTOMER SERVICE
EMPLOYMENT SERVICES DEPARTMENT
TURKS & CAICOS ISLANDS GOVERNMENT
PROVIDENCIALES, TURKS & CAICOS ISLANDS, BRITISH WEST INDIES
TELEPHONE: 649-338-4113, EXT: 4113 WEBSITE: www.gov.tc

Your Ref: A22057/12TH APRIL, 2022

Our Reference: A22057/TW P FILE

DATE: 12TH APRIL, 2022

The Manager

ENVIRONMENT ALL

NAME of Company:

ENVIRONMENT ALL

REF: A22057 EMERGENCY/ TEMPORARY WORK PERMIT

Permission is hereby granted for the person named below to be gainfully employed as a **CONSULTANT** with **ENVIRONMENT ALL** for a period of for forty-two (42) days.

NAME OF EMPLOYEE:	**TANYA NICOLE FERGUSON**
DATE OF BIRTH:	**28 NOVEMBER, 1974**
COUNTRY OF BIRTH:	**NEW PROVIDENCE, BAHAMAS**
PASSPORT NUMBER:	**AA152953**
COMMENCING DATE:	**13TH APRIL, 2022**
THIS PERMISSION EXPIRES ON:	**25TH MAY, 2022**

Yours Sincerely,

Edwin Benjamin Franklyn Taylor
Commissioner of Labour
Cc: Director of Immigration

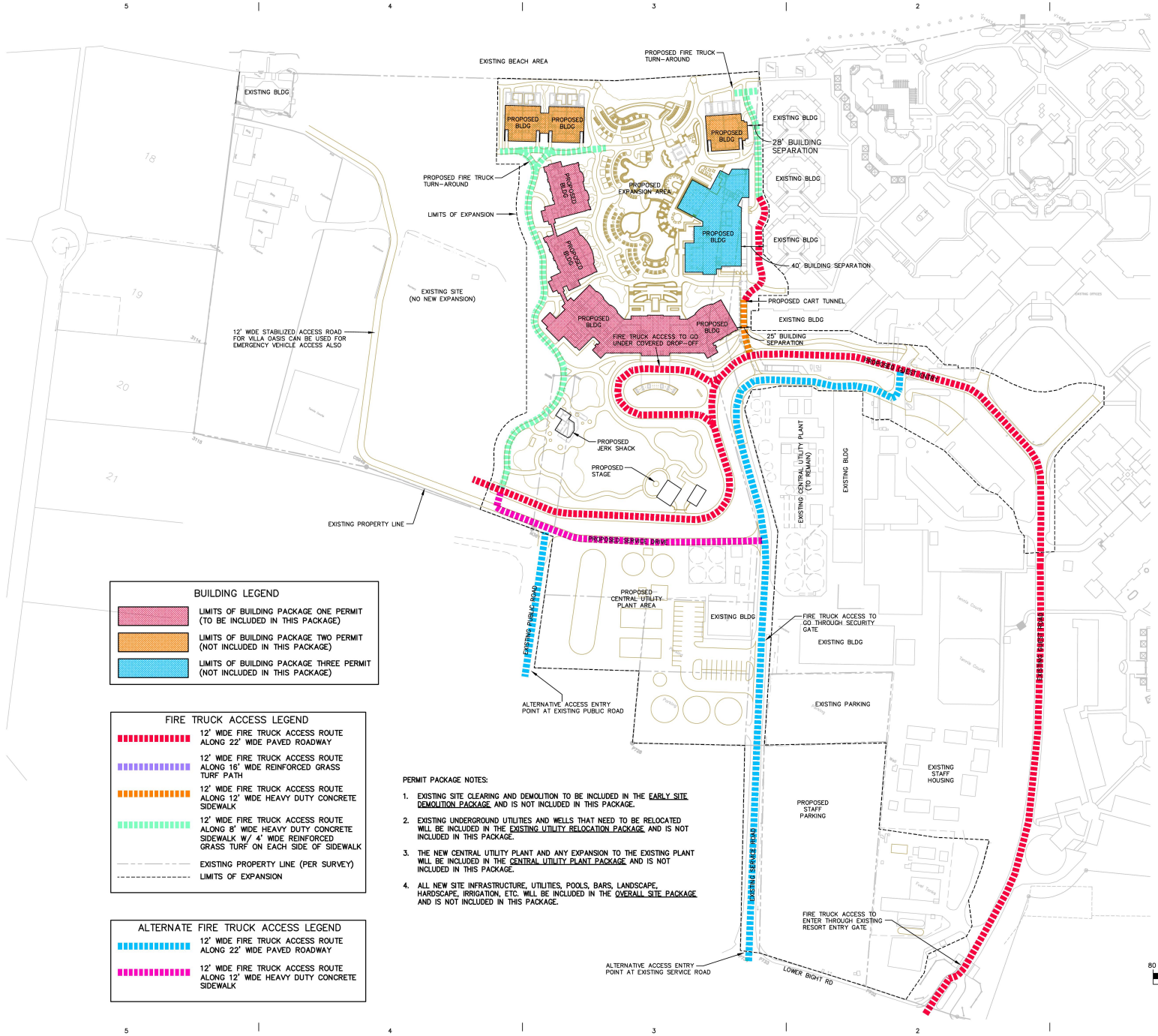
APPENDIX 4

SITE DRAWINGS

CABANAS ~ 32

SOFTSCAPE ~ 110,000 sf

HARDSCAPE ~ 71,000 sf



BUILDING LEGEND

- LIMITS OF BUILDING PACKAGE ONE PERMIT (TO BE INCLUDED IN THIS PACKAGE)
- LIMITS OF BUILDING PACKAGE TWO PERMIT (NOT INCLUDED IN THIS PACKAGE)
- LIMITS OF BUILDING PACKAGE THREE PERMIT (NOT INCLUDED IN THIS PACKAGE)

FIRE TRUCK ACCESS LEGEND

- 12' WIDE FIRE TRUCK ACCESS ROUTE ALONG 22' WIDE PAVED ROADWAY
- 12' WIDE FIRE TRUCK ACCESS ROUTE ALONG 16' WIDE REINFORCED GRASS TURF PATH
- 12' WIDE FIRE TRUCK ACCESS ROUTE ALONG 12' WIDE HEAVY DUTY CONCRETE SIDEWALK
- 12' WIDE FIRE TRUCK ACCESS ROUTE ALONG 8' WIDE HEAVY DUTY CONCRETE SIDEWALK W/ 4' WIDE REINFORCED GRASS TURF ON EACH SIDE OF SIDEWALK
- EXISTING PROPERTY LINE (PER SURVEY)
- LIMITS OF EXPANSION

ALTERNATE FIRE TRUCK ACCESS LEGEND

- 12' WIDE FIRE TRUCK ACCESS ROUTE ALONG 22' WIDE PAVED ROADWAY
- 12' WIDE FIRE TRUCK ACCESS ROUTE ALONG 12' WIDE HEAVY DUTY CONCRETE SIDEWALK

PERMIT PACKAGE NOTES:

1. EXISTING SITE CLEARING AND DEMOLITION TO BE INCLUDED IN THE EARLY SITE DEMOLITION PACKAGE AND IS NOT INCLUDED IN THIS PACKAGE.
2. EXISTING UNDERGROUND UTILITIES AND WELLS THAT NEED TO BE RELOCATED WILL BE INCLUDED IN THE EXISTING UTILITY RELOCATION PACKAGE AND IS NOT INCLUDED IN THIS PACKAGE.
3. THE NEW CENTRAL UTILITY PLANT AND ANY EXPANSION TO THE EXISTING PLANT WILL BE INCLUDED IN THE CENTRAL UTILITY PLANT PACKAGE AND IS NOT INCLUDED IN THIS PACKAGE.
4. ALL NEW SITE INFRASTRUCTURE, UTILITIES, POOLS, BARS, LANDSCAPE, HARDSCAPE, IRRIGATION, ETC. WILL BE INCLUDED IN THE OVERALL SITE PACKAGE AND IS NOT INCLUDED IN THIS PACKAGE.

80 0 40 80 160

1 Inch = 80 Ft

This plan may have been reduced in size. Verify before scaling dimensions

HARRIS
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EB 9814

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BASKERVILL
300 S. ORANGE AVENUE, SUITE 1125 ORLANDO, FL 32801

PROJECT NUMBER
HCE 7283001

TREASURE BEACH EXPANSION - GUESTROOM BUILDING

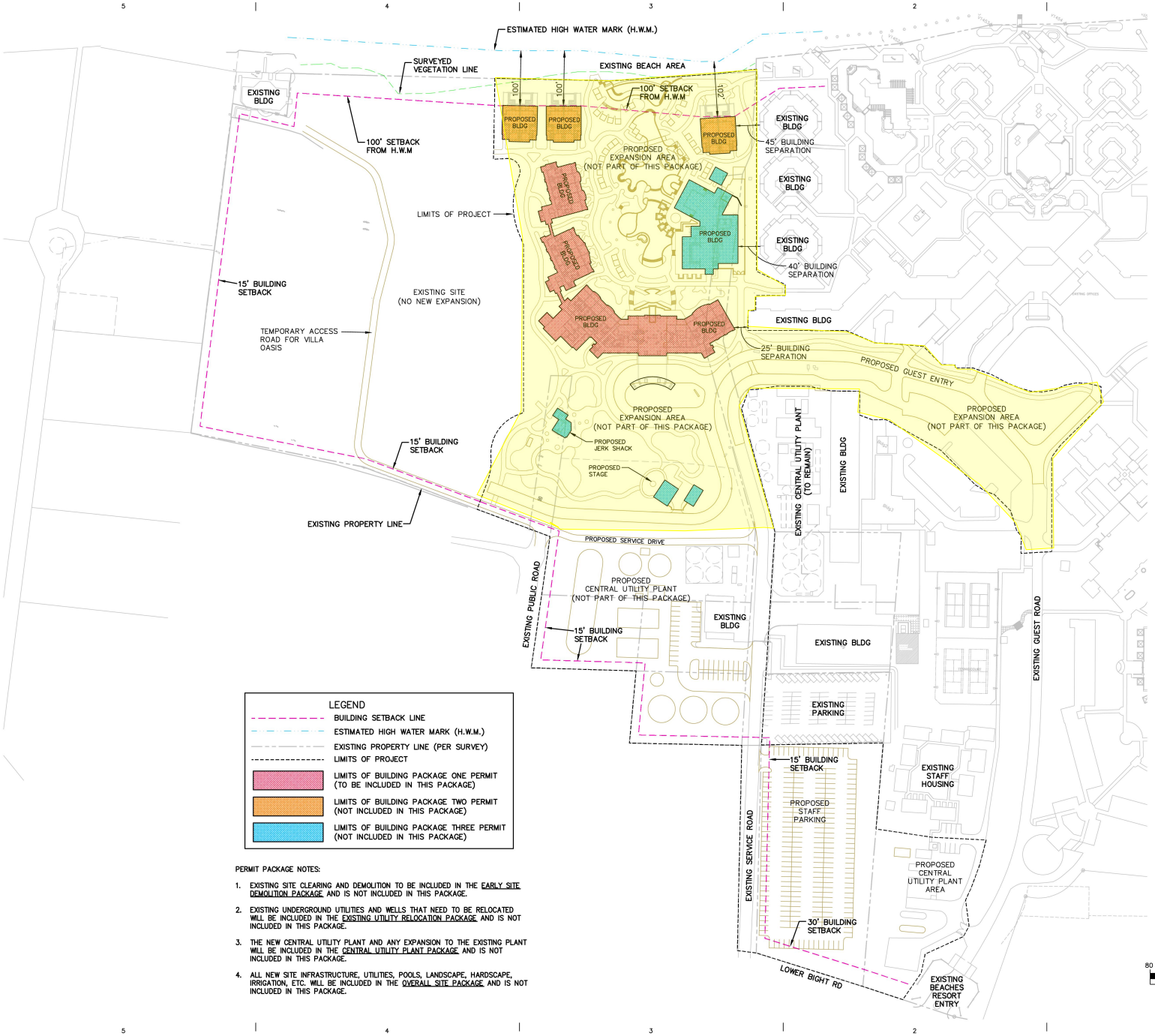
LOWER BIGHT RD.
THE BRIGHT SETTLEMENT TKCA 1ZZ
TURKS & CAICOS ISLAND

ISSUE
03/04/2022
PERMIT DOCUMENTS

Overall Fire Truck Access Exhibit

C-2

File Name & Location: G:\PROJ\07283001\CIVIL\SHEETS\Bldg Pkg One\C-2 BP1-Fire Access.dwg Layout: C-2 Printed: Fri, 04 Mar 2022 - 13:23



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BASKERVILL
300 S. ORANGE AVENUE, SUITE 1125 ORLANDO, FL 32801

PROJECT NUMBER
HCE 7283001

TREASURE BEACH EXPANSION - GUESTROOM BUILDING

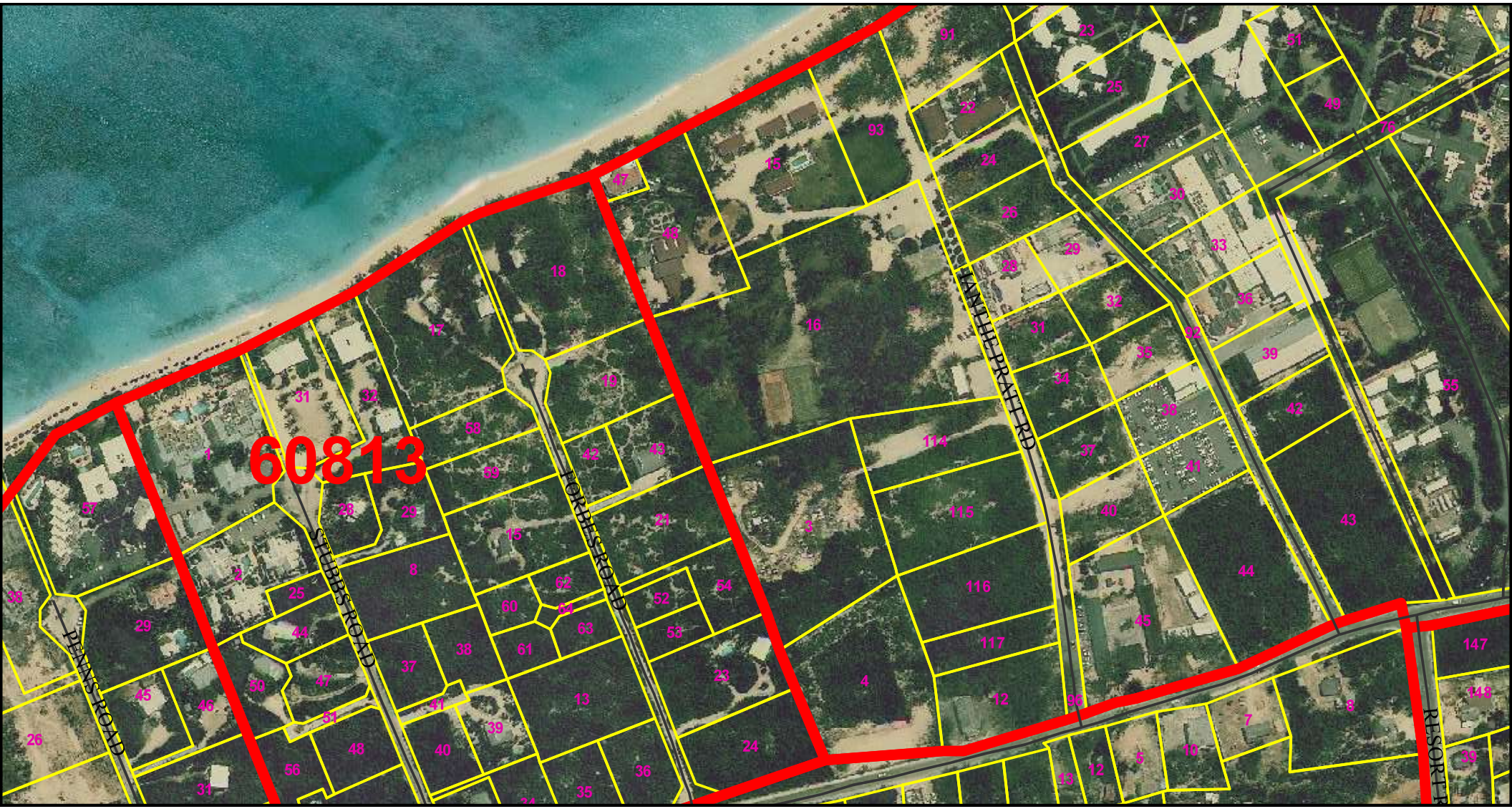
LOWER BIGHT RD.
THE BRIGHT SETTLEMENT TKCA 1ZZ
TURKS & CAICOS ISLAND

ISSUE
12/09/2021
PERMIT DOCUMENTS

Overall Site Plan

C-100

File Name & Location: G:\PROJ\07283001\CIVIL\SHEETS\Bldg Pkg One\C-100 BP1-Site Plan.dwg Layout: C-100 Printed: Wed, 08 Dec 2021 - 15:35


60813
STUBBS ROAD
FORBES ROAD
JANTHE PRATT RD
PETTYS ROAD
RESORT R

ROYAL BAY RESORTS & VILLAS LTD.

TREASURE BEACH EXPANSION

LOWER BIGHT RD,
THE BRIGHT SETTLEMENT TKCA 1ZZ
TURKS & CAICOS ISLAND

OWNER / CLIENT
ROYAL BAY RESORTS & VILLAS LTD.
G&P CORPORATE SERVICES
82 CHEROKEE ROAD, PROVIDENCIALES, TURKS AND CAICOS
(876) 979-9130

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CIVIL ENGINEER:
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SUZIE TURN ROAD TURTLE COVE
PROVIDENCIALES, TURKS AND CAICOS ISLANDS
(649) 332-4405

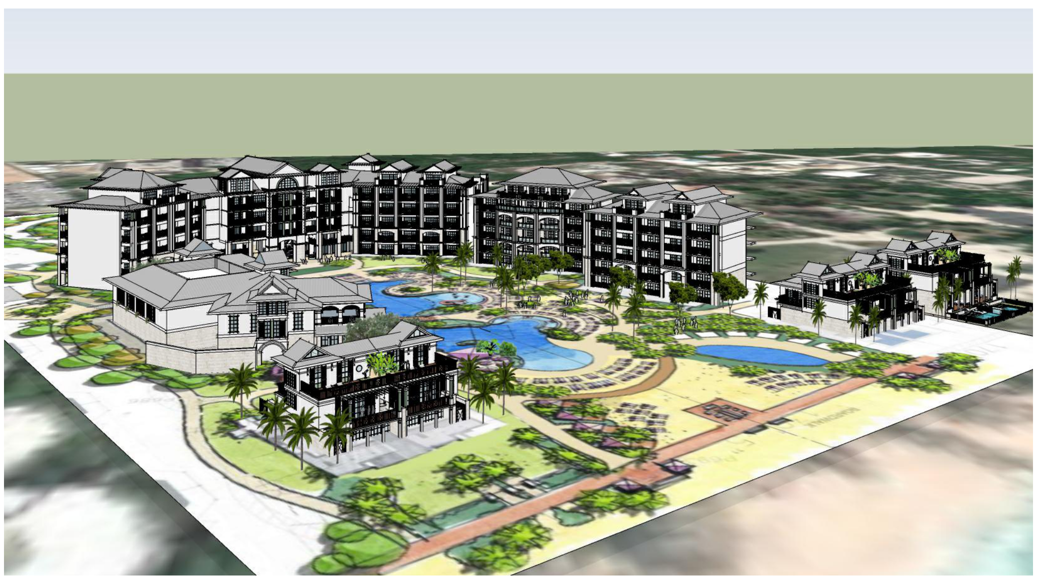
DESIGN CONSULTANT
BASKERVILL
1051 E CARY ST., SUITE 200 (23219)
RICHMOND, VA 23218-0400
(804) 343-1010
WWW.BASKERVILL.COM

DESIGN MEP,
TECH DESIGN (LV/AV/SECURITY),
LIGHTING DESIGNER
EXP.
5215 PONDEROSA WAY
LAS VEGAS, NV 89118
(725) 224-6656

DESIGN CIVIL
HARRIS CIVIL ENGINEERS, LLC
1200 HILLCREST STREET, SUITE 200
ORLANDO, FL 32803
(407) 629-4777

LANDSCAPE / AQUATIC DESIGNER:
EDSA
800 NORTH ORANGE AVENUE, SUITE 300
ORLANDO, FL 32801
(407) 425-3330

FOOD & BEVERAGE DESIGNER:
NEXT STEP DESIGN
913 WEST STREET
ANNAPOLIS, MD 21401
(410) 263-1200



DRAWING INDEX

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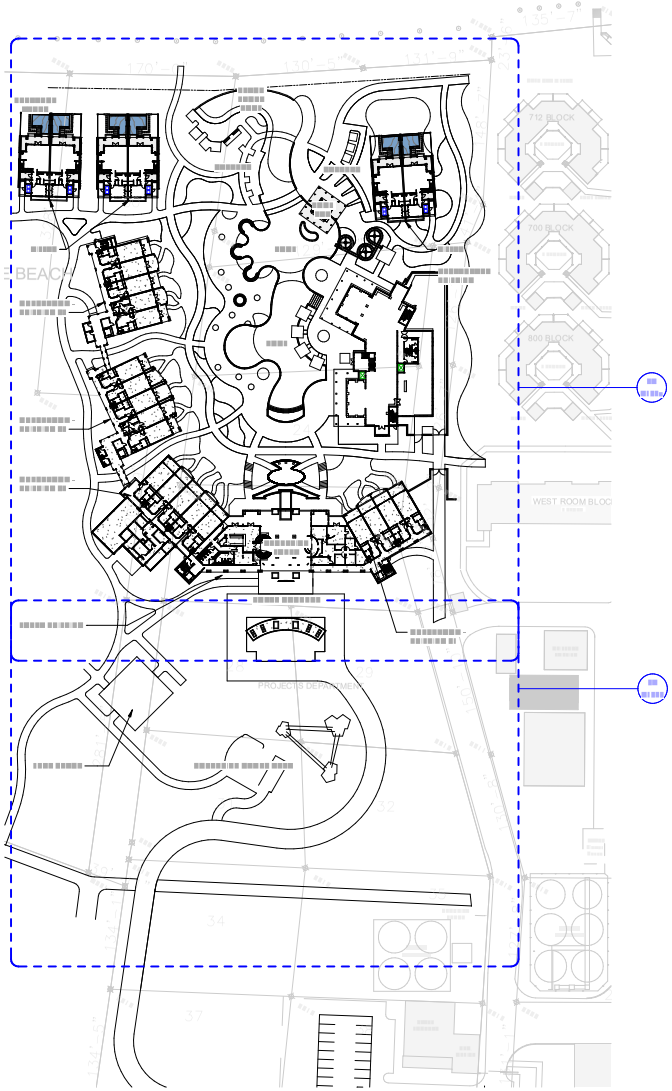
2.210419.0

TREASURE BEACH EXPANSION

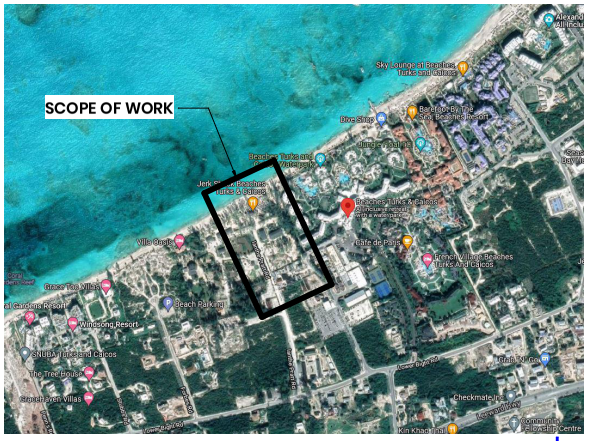
10/15/2021 - SITE PLAN SUBMISSION

TITLE SHEET

T001

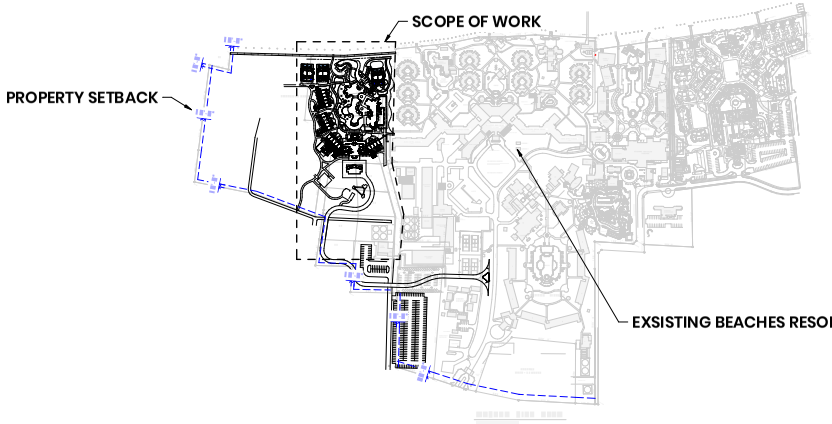


5A SITE PLAN - EXPANSION



3D SATELITE IMAGE

1E VICINITY MAP
NOT TO SCALE



2A SITE PLAN - Overall Property

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TREASURE BEACH EXPANSION

10/15/2021 -
SITE PLAN SUBMISSION

OVERALL SITE - PLAN
G100

RECEPTION BUILDING =

- 1ST
- 2ND
- 3RD
- 4TH
- 5TH

16,138 GSF
17,360 GSF
20,404 GSF
20,147 GSF
20,147 GSF
94,196 GSF

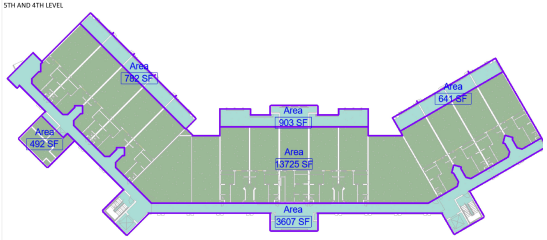
AREA FOR SITE SUBMISSION
(PATIO VS CONDITONED)

OPEN AIR BALCONY (POOL SIDE) =
(ground level not included in it)
2ND LEVEL = 2,630 SF
3RD LEVEL = 3,023 SF
4TH LEVEL = 2,326 SF
5TH LEVEL = 2,326 SF
TOTAL = **10,305 SF**

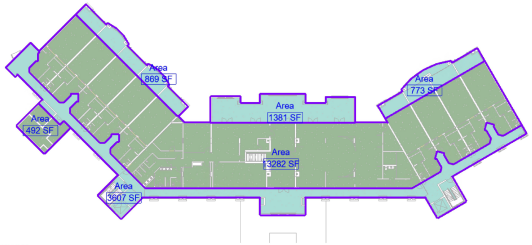
OPEN AIR CORRIDOR
(ground level not included in it)
2ND LEVEL = 3,094 SF
3RD LEVEL = 3,607 SF
4TH LEVEL = 3,607 SF
5TH LEVEL = 3,607 SF
TOTAL = **13,915 SF**

GSF	=	94,196
OPEN AIR BALCONY	10,305	
OPEN AIR CORRIDOR	13,915	
OPEN AIR TOTAL		24,220
CONDITIONED		69,976

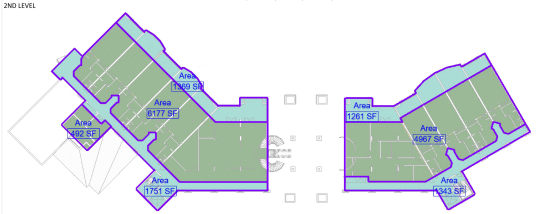
5TH AND 4TH LEVEL



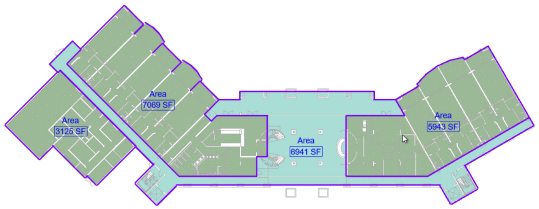
3RD LEVEL



2ND LEVEL



1ST LEVEL = 23,078 GSF



GUESTROOM BLDG 3 & 4 =

- 1ST LEVEL
- 2ND LEVEL
- 3RD LEVEL
- 4TH LEVEL
- 5TH LEVEL

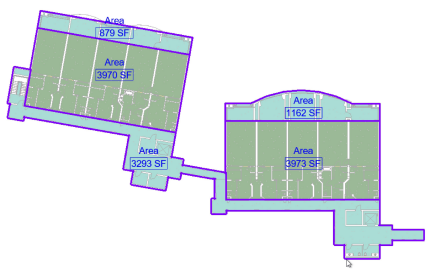
13,277 GSF
13,277 GSF
13,277 GSF
13,277 GSF
13,277 GSF
66,385 GSF

AREA FOR SITE SUBMISSION
(PATIO VS CONDITONED)
OPEN AIR BALCONY (POOL SIDE) =
(ground level not included in it)
2ND LEVEL = 2,041 SF
3RD LEVEL = 2,041 SF
4TH LEVEL = 2,041 SF
5TH LEVEL = 2,041 SF
TOTAL = **8,164 SF**

OPEN AIR CORRIDOR
(ground level not included in it)
2ND LEVEL = 3,293 SF
3RD LEVEL = 3,293 SF
4TH LEVEL = 3,293 SF
5TH LEVEL = 3,293 SF
TOTAL = **13,172 SF**

BLDG 3 & 4

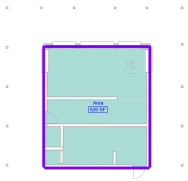
GSF	=	66,385
OPEN AIR BALCONY	8,164	
OPEN AIR CORRIDOR	13,172	
OPEN AIR TOTAL		21,336
CONDITIONED		45,049



BLDG 3 & 4 TOTAL = **66,385 GSF**

JERK SHACK — SINGLE STORY UNCONDITIONED STRUCTURE

AREA = 626 GSF



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TREASURE BEACH EXPANSION

10/15/2021 -
SITE PLAN SUBMISSION

AREA PLANS

G101

RESTAURANT BUILDING
- 1ST LEVEL
- 2ND LEVEL

=

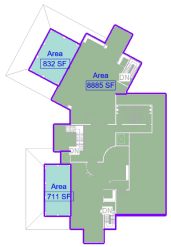
10,256 GSF
10,428
20,684 GSF

AREA FOR SITE SUBMISSION
(PATIO VS CONDITONED)

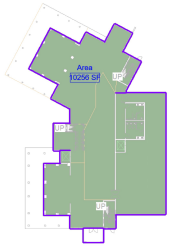
OPEN AIR BALCONY =
(ground level not included in it)
2ND LEVEL = 711 SF
832
= 1,543 SF

GSF	=	20,684
OPEN AIR BALCONY	1,534	
OPEN AIR TOTAL		1,534
CONDITIONED		19,150

2ND LEVEL

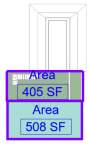


1ST LEVEL



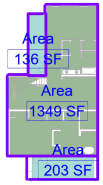
VILLAS

3RD LEVEL = 913



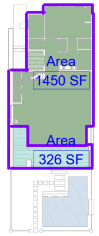
PATIO = 508

2ND LEVEL = 1688



PATIO = 339

1ST LEVEL = 1776



PATIO = 326

AREA FOR SITE SUBMISSION
(PATIO VS CONDITONED)

GSF	=	4,377
OPEN AIR BALCONY	1,173	
OPEN AIR TOTAL		1,173
CONDITIONED		3,204

THERE ARE 6 OF THESE
TOTAL FOR 6 =

GSF	=	26,262
OPEN AIR BALCONY	7,038	
OPEN AIR TOTAL		7,038
CONDITIONED		19,224

TOTAL = **4377** GSF

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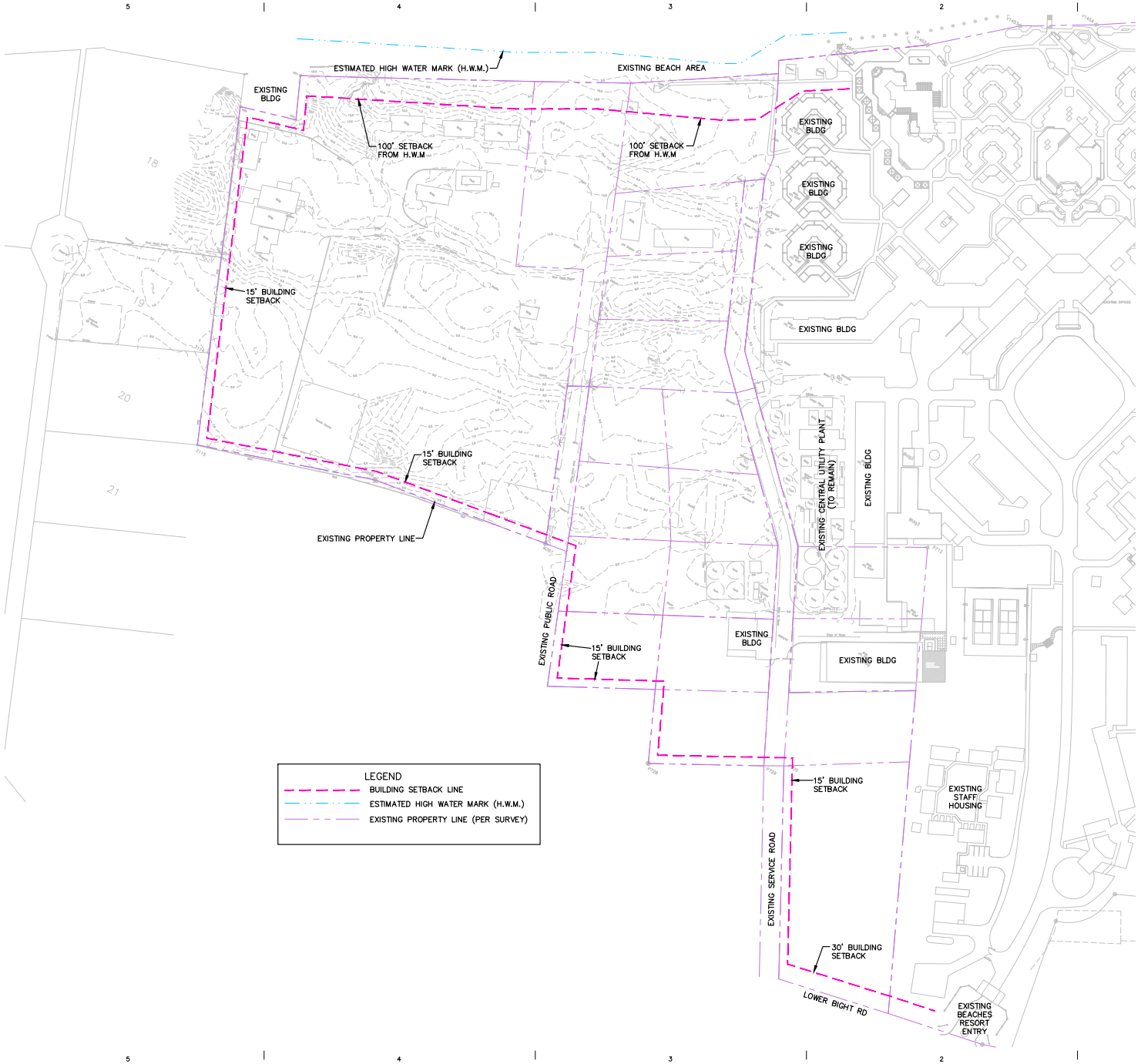
TREASURE BEACH EXPANSION

10/15/2021 -
SITE PLAN SUBMISSION

AREA PLANS
G102



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BASKERVILL
109 S. ORANGE AVENUE, SUITE 1120 ORLANDO, FL 32801

NOT FOR CONSTRUCTION

PROJECT NUMBER
HCE 7283001

TREASURE BEACH EXPANSION

LOWER BIGHT RD.
THE BIGHT SETTLEMENT TKCA 1ZZ
TURKS & CAICOS ISLAND

10/15/2021
SITE PLAN SUBMISSION

Existing Site Plan

C-90

80 0 40 80 160
1 Inch = 80 Ft
This plan may have been reduced in size. Verify before scaling dimensions

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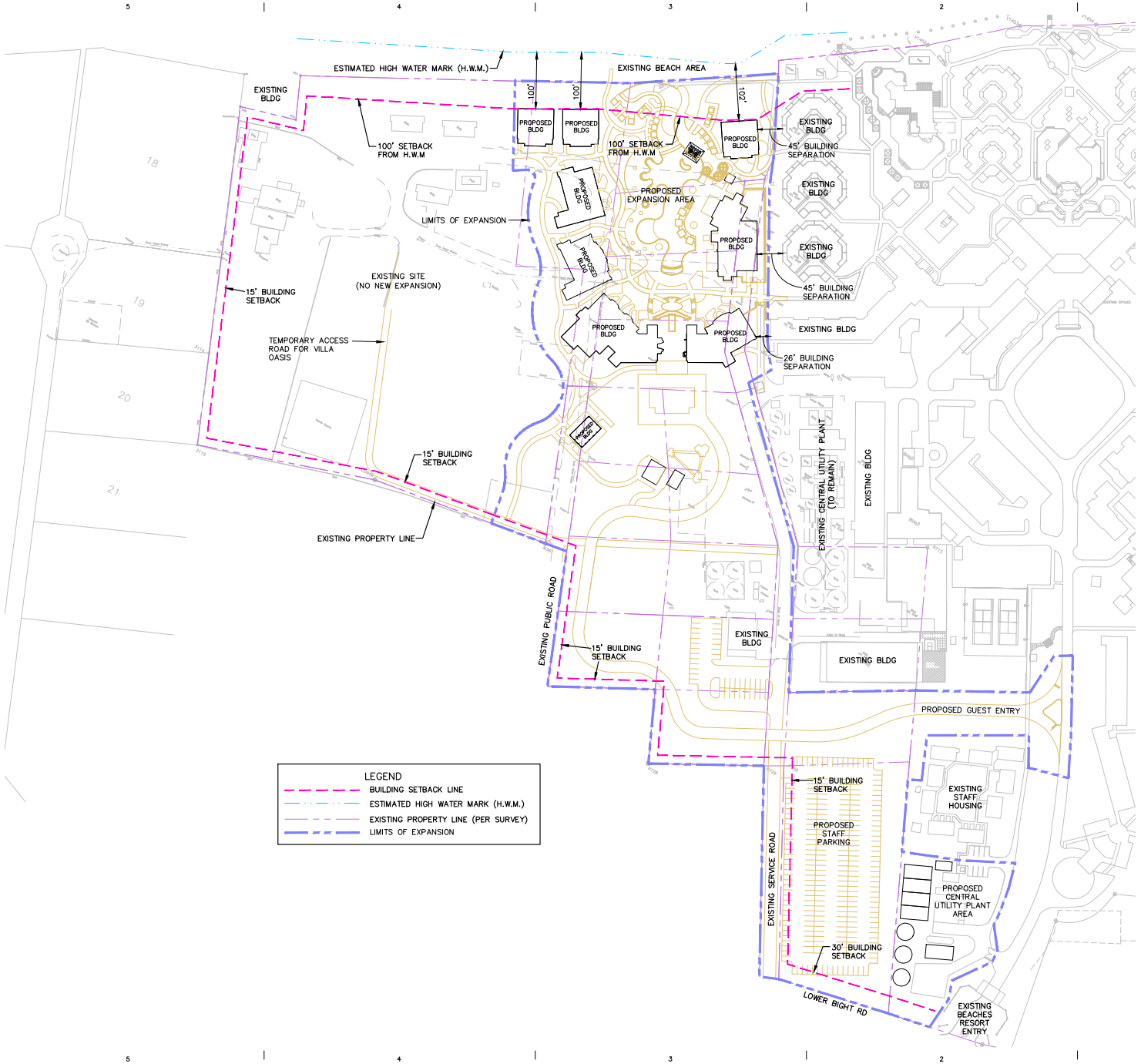

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BASKERVILL
320 S. ORANGE AVENUE, SUITE 1120 ORLANDO, FL 32801

NOT FOR CONSTRUCTION

PROJECT NUMBER
HCE 7283001

TREASURE BEACH EXPANSION

LOWER BIGHT RD.
THE BIGHT SETTLEMENT TKCA 1ZZ
TURKS & CAICOS ISLAND

10/15/2021
SITE PLAN SUBMISSION

Overall Site Plan

C-100

80 0 40 80 160
1 Inch = 80 Ft
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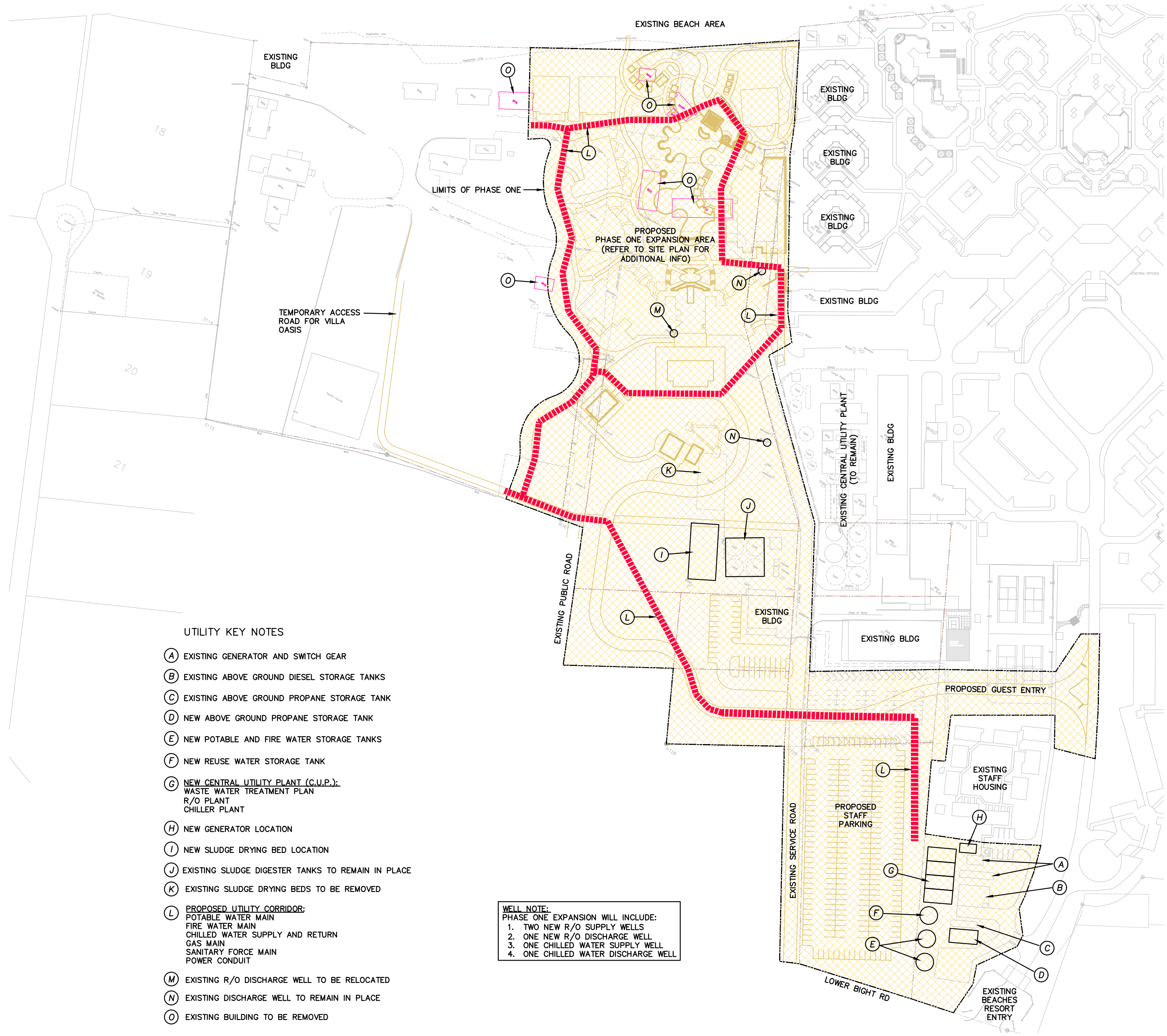

UTILITY KEY NOTES

- (A) EXISTING GENERATOR AND SWITCH GEAR
- (B) EXISTING ABOVE GROUND DIESEL STORAGE TANKS
- (C) EXISTING ABOVE GROUND PROPANE STORAGE TANK
- (D) NEW ABOVE GROUND PROPANE STORAGE TANK
- (E) NEW POTABLE AND FIRE WATER STORAGE TANKS
- (F) NEW REUSE WATER STORAGE TANK
- (G) NEW CENTRAL UTILITY PLANT (C.U.P.):
  WASTE WATER TREATMENT PLAN
  R/O PLANT
  CHILLER PLANT
- (H) NEW GENERATOR LOCATION
- (I) NEW SLUDGE DRYING BED LOCATION
- (J) EXISTING SLUDGE DIGESTER TANKS TO REMAIN IN PLACE
- (K) EXISTING SLUDGE DRYING BEDS TO BE REMOVED
- (L) PROPOSED UTILITY CORRIDOR:
  POTABLE WATER MAIN
  FIRE WATER MAIN
  CHILLED WATER SUPPLY AND RETURN
  GAS MAIN
  SANITARY FORCE MAIN
  POWER CONDUIT
- (M) EXISTING R/O DISCHARGE WELL TO BE RELOCATED
- (N) EXISTING DISCHARGE WELL TO REMAIN IN PLACE
- (O) EXISTING BUILDING TO BE REMOVED

WELL NOTE:
PHASE ONE EXPANSION WILL INCLUDE:
1. TWO NEW R/O SUPPLY WELLS
2. ONE NEW R/O DISCHARGE WELL
3. ONE CHILLED WATER SUPPLY WELL
4. ONE CHILLED WATER DISCHARGE WELL

1 Inch = 80 Ft
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80 0 40 80 160

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NOT FOR CONSTRUCTION

PROJECT NUMBER
HCE 7283001

TREASURE BEACH EXPANSION

LOWER BIGHT RD.
THE BRIGHT SETTLEMENT TKCA 1ZZ
TURKS & CAICOS ISLAND

ISSUE
10/15/2021
SITE PLAN SUBMISSION

Overall Utility Plan

C-300

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edsa

PLANNING
LANDSCAPE ARCHITECTURE
URBAN DESIGN

800 N. ORANGE AVENUE, SUITE 300
ORLANDO, FLORIDA 32801 USA
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300 S. ORANGE AVENUE, SUITE 1125 ORLANDO, FL 32801

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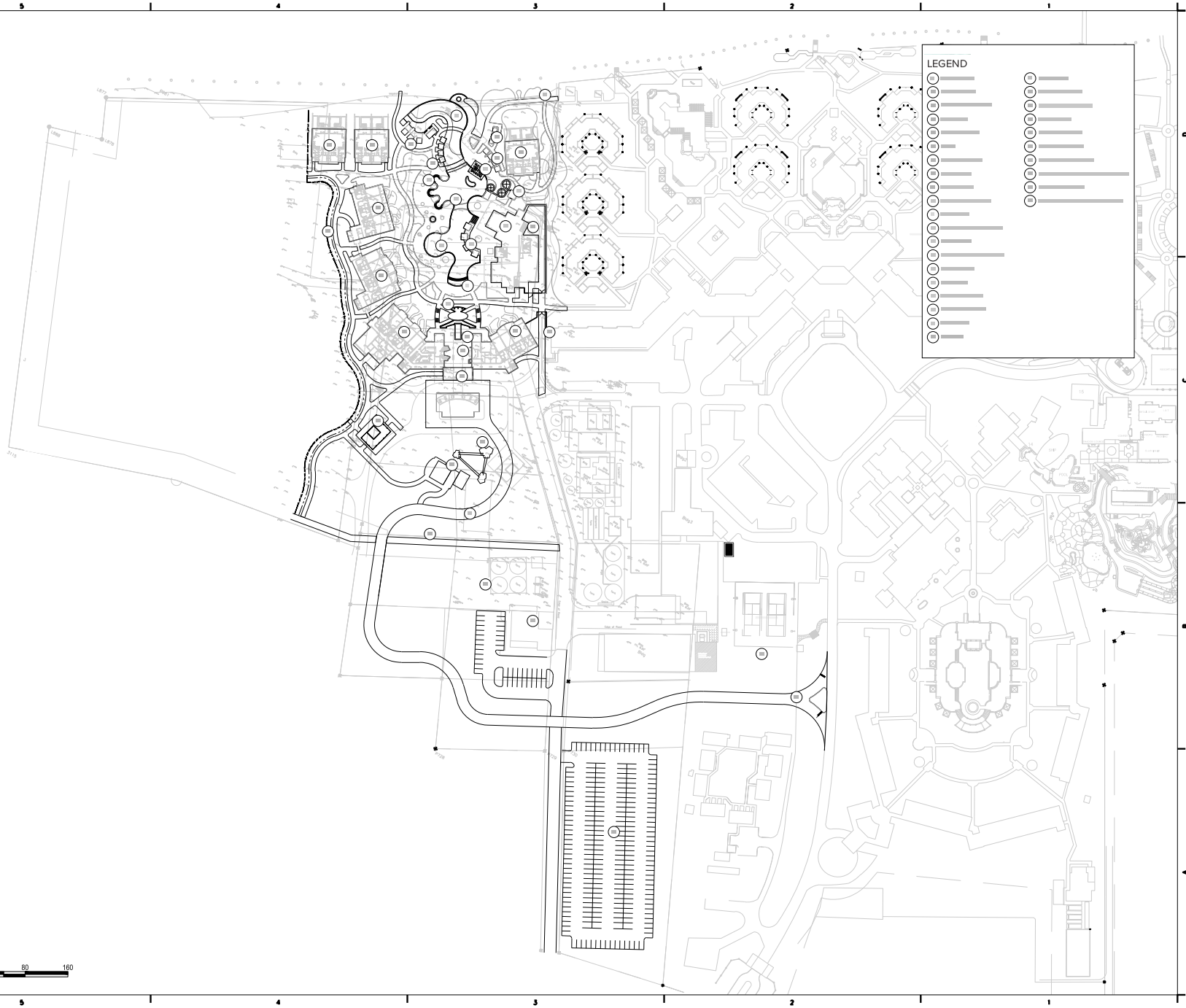
TREASURE BEACH EXPANSION

LOWER BIGHT RD.
THE BIGHT SETTLEMENT TKCA 1ZZ
TURKS & CAICOS ISLAND

ISSUE
10/15/2021
SITE PLAN SUBMISSION

OVERALL ILLUSTRATIVE MASTERPLAN

L1



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PLANNING
LANDSCAPE ARCHITECTURE
URBAN DESIGN

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ORLANDO, FLORIDA 32801 USA
TEL: 407.425.3330

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300 S. ORANGE AVENUE, SUITE 1125 ORLANDO, FL 32801

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TREASURE BEACH EXPANSION

LOWER BIGHT RD.
THE BIGHT SETTLEMENT TKCA 1ZZ
TURKS & CAICOS ISLAND

ISSUE
10/15/2021
SITE PLAN SUBMISSION

OVERALL MASTERPLAN

L2

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300 S. ORANGE AVENUE, SUITE 1125 ORLANDO, FL 32801

NOT FOR CONSTRUCTION

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HCE 7283001

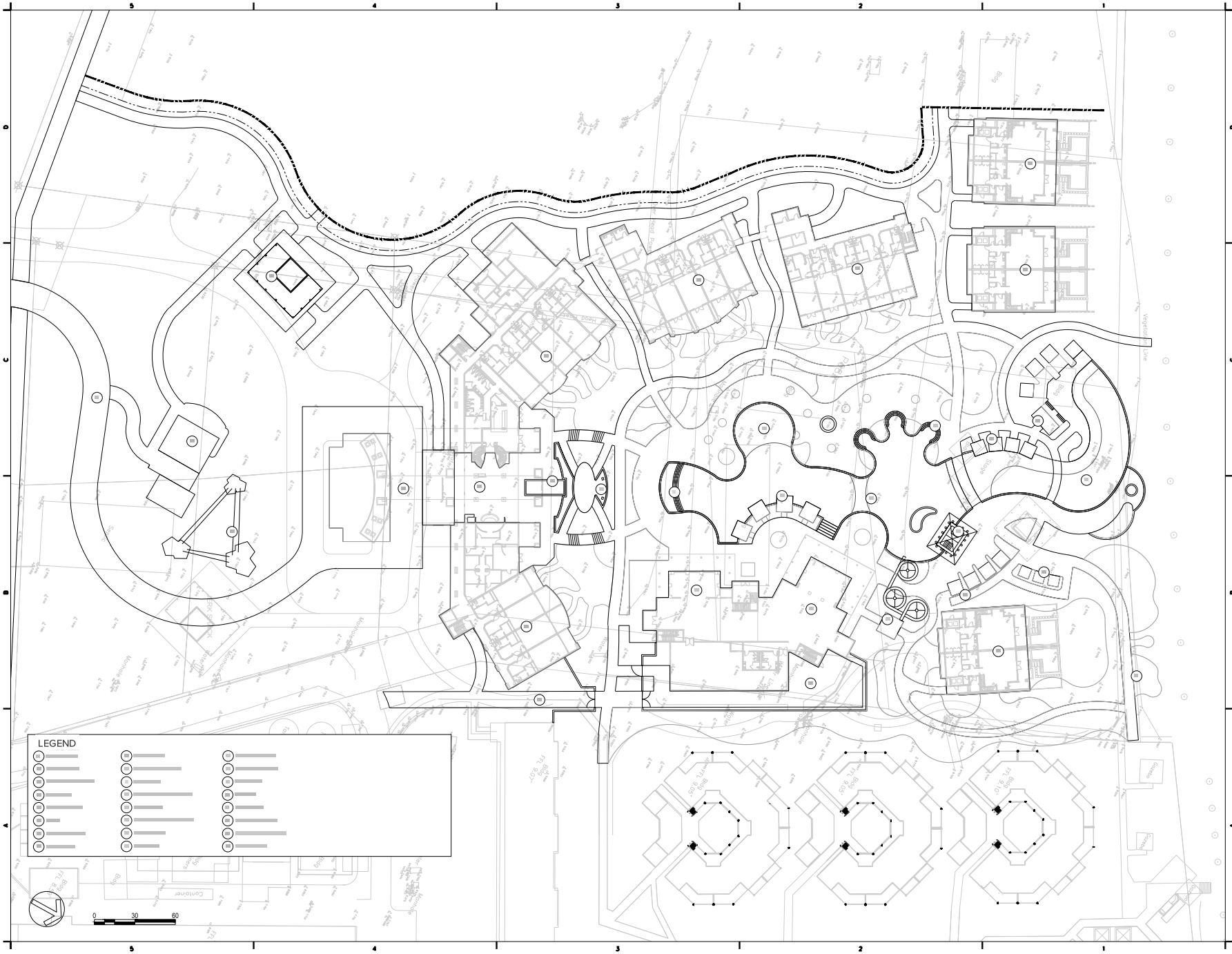
TREASURE BEACH EXPANSION

LOGER BIGHT RD.
THE BIGHT SETTLEMENT TKCA 1ZZ
TURKS & CAICOS ISLAND

ISSUE
10/15/2021
SITE PLAN SUBMISSION

ENLARGEMENT ILLUSTRATIVE PLAN

L3



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300 S. ORANGE AVENUE, SUITE 1125 ORLANDO, FL 32801

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PROJECT NUMBER
HCE 7283001

TREASURE BEACH EXPANSION

LOWER BIGHT RD.
THE BIGHT SETTLEMENT TKCA 1ZZ
TURKS & CAICOS ISLAND

ISSUE
10/15/2021
SITE PLAN SUBMISSION

ENLARGEMENT PLAN

L4

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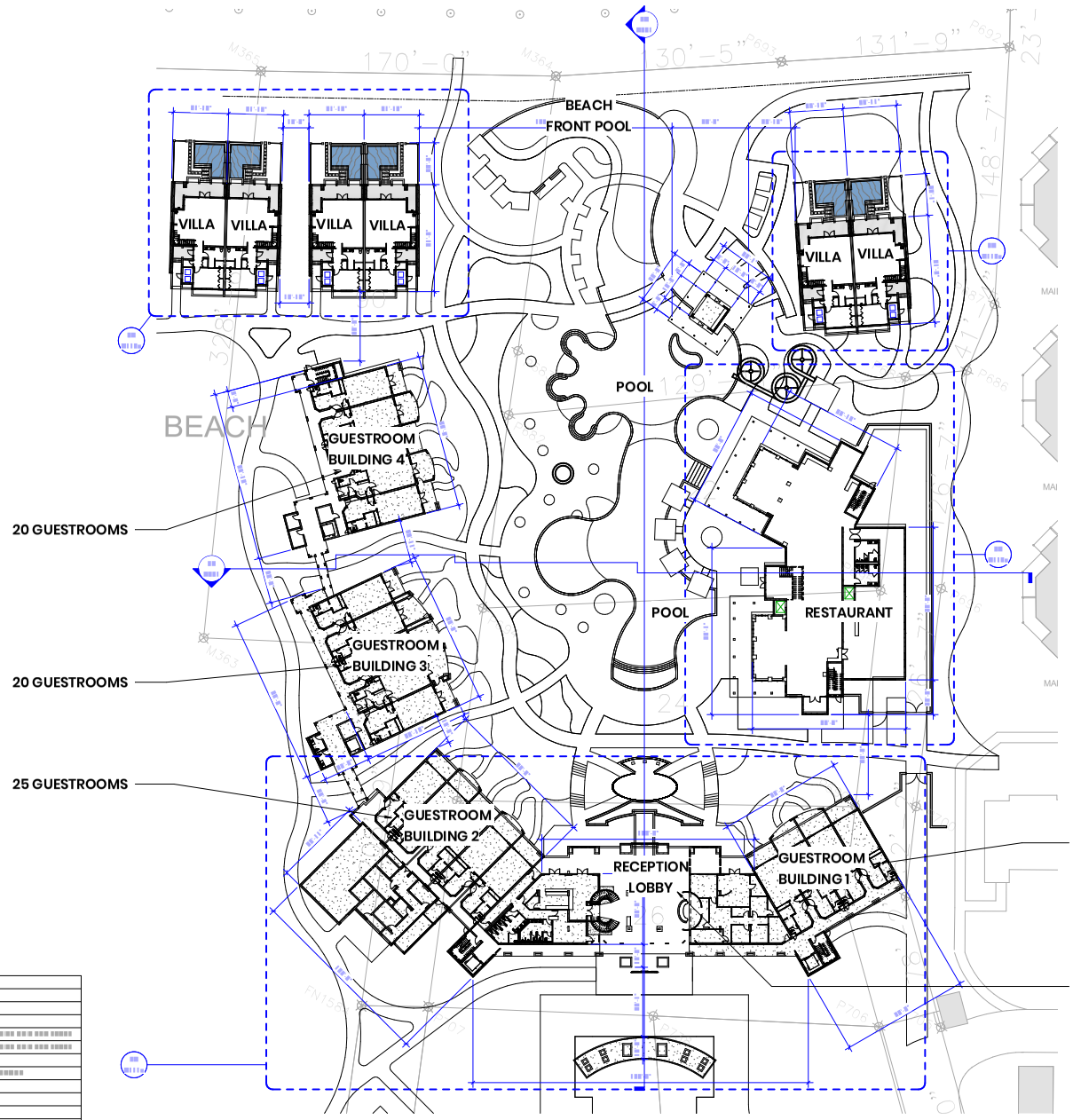
TREASURE BEACH EXPANSION

10/15/2021 -
SITE PLAN SUBMISSION

3D VIEWS

A101



GUESTROOM TOTAL

4A SITE PLAN - EXPANSION PARTIAL PLAN

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TREASURE BEACH EXPANSION

10/15/2021 -
SITE PLAN SUBMISSION

SITE - PLAN
A102a

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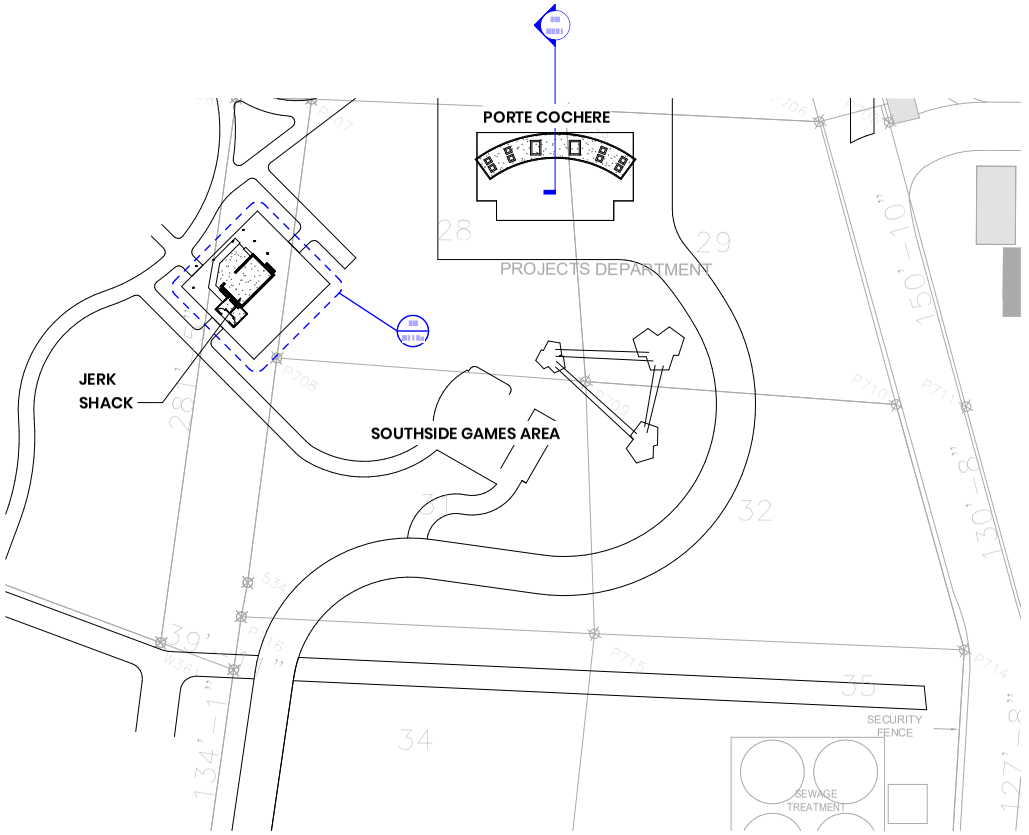

3A SITE PLAN - EXPANSION PARTIAL PLAN

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TREASURE BEACH EXPANSION

10/15/2021 -
SITE PLAN SUBMISSION

SITE - PLAN
A102b

KEYNOTES

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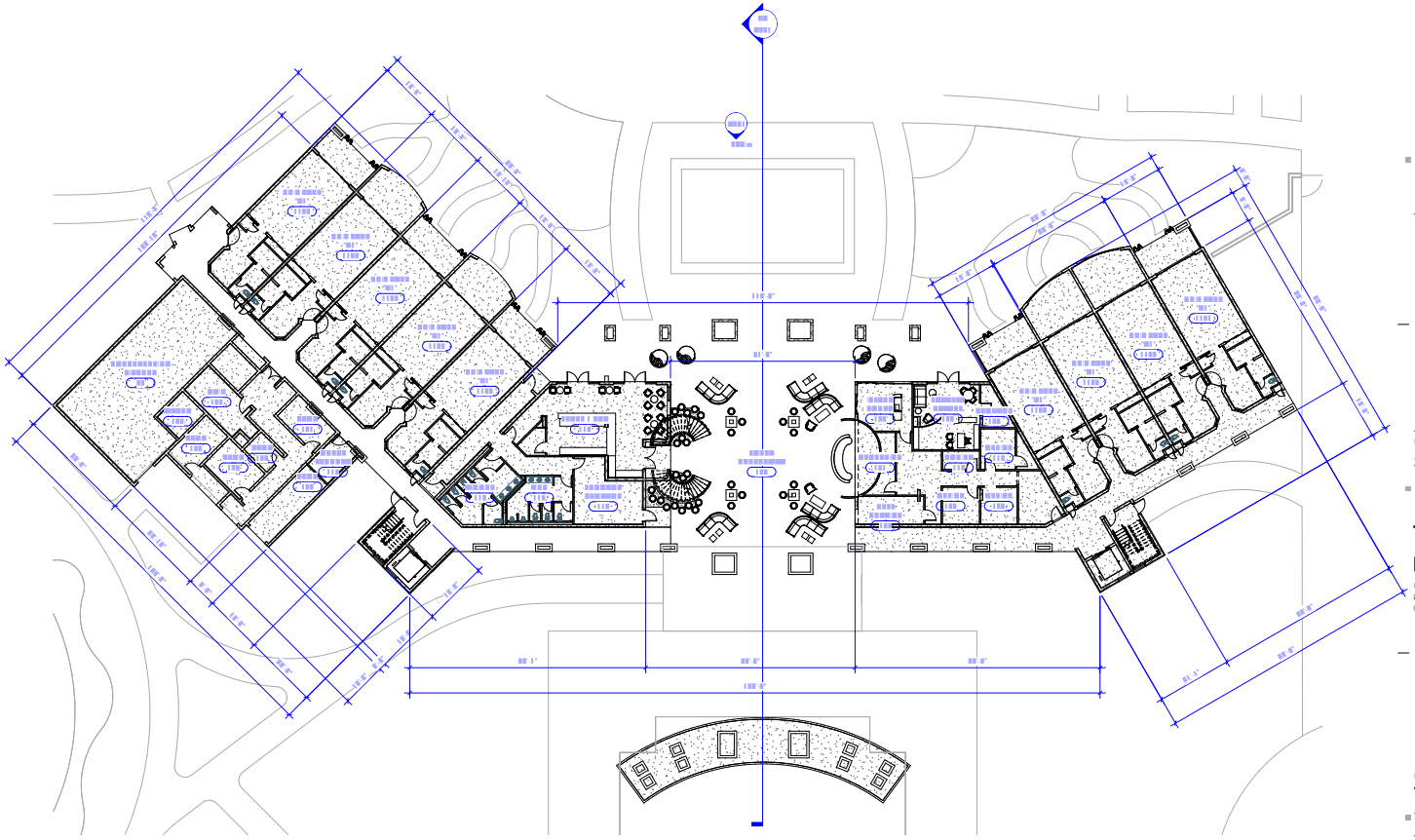

4A PLAN - 1ST FLOOR - BLDG 1-L-2

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TREASURE BEACH EXPANSION

10/15/2021 -
SITE PLAN SUBMISSION

PLAN - BUILDING 1, LOBBY & 2

A111a

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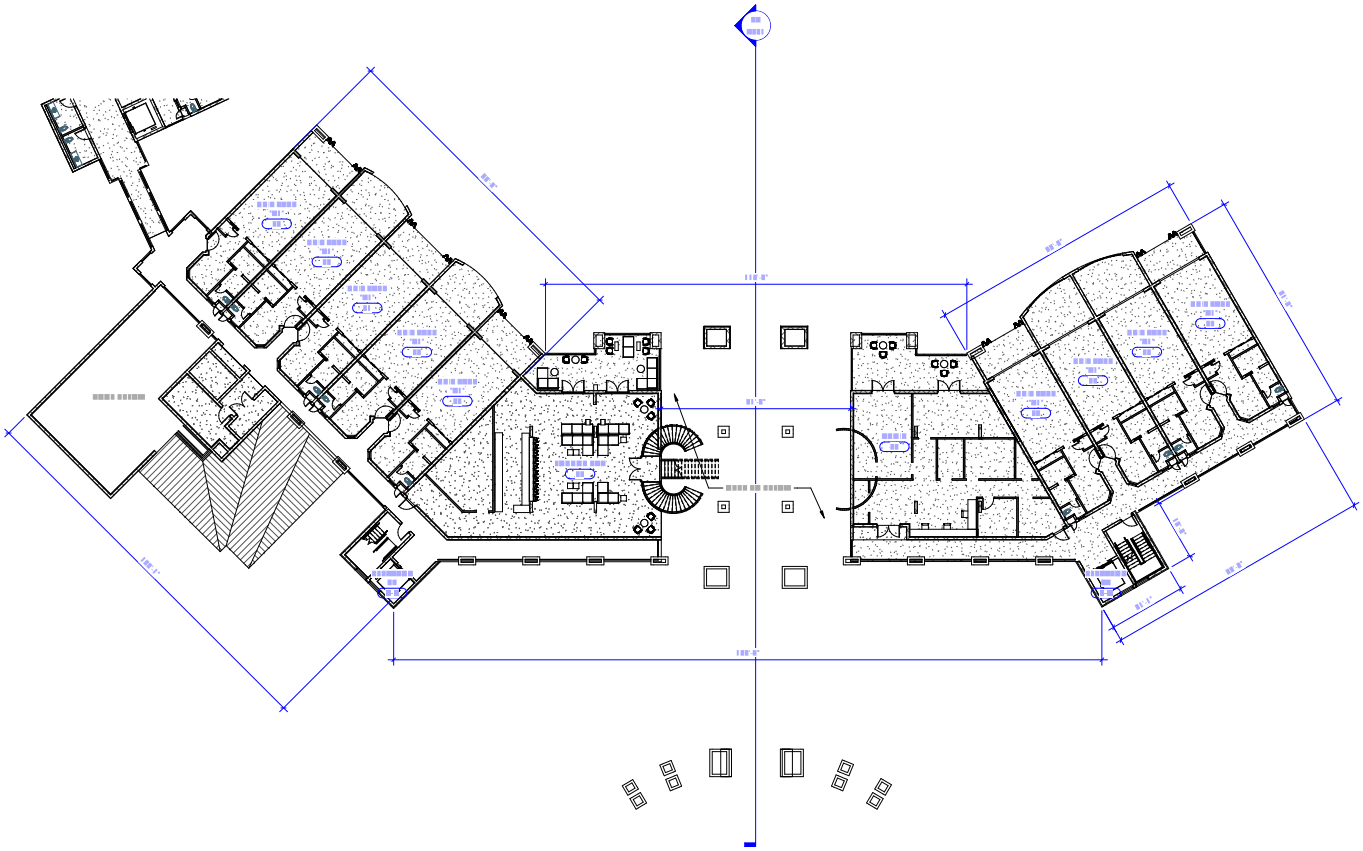

4A PLAN - 2ND FLOOR - BLDG 1-L-2

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TREASURE BEACH EXPANSION

10/15/2021 -
SITE PLAN SUBMISSION

PLAN - BUILDING 1, LOBBY & 2

A111b

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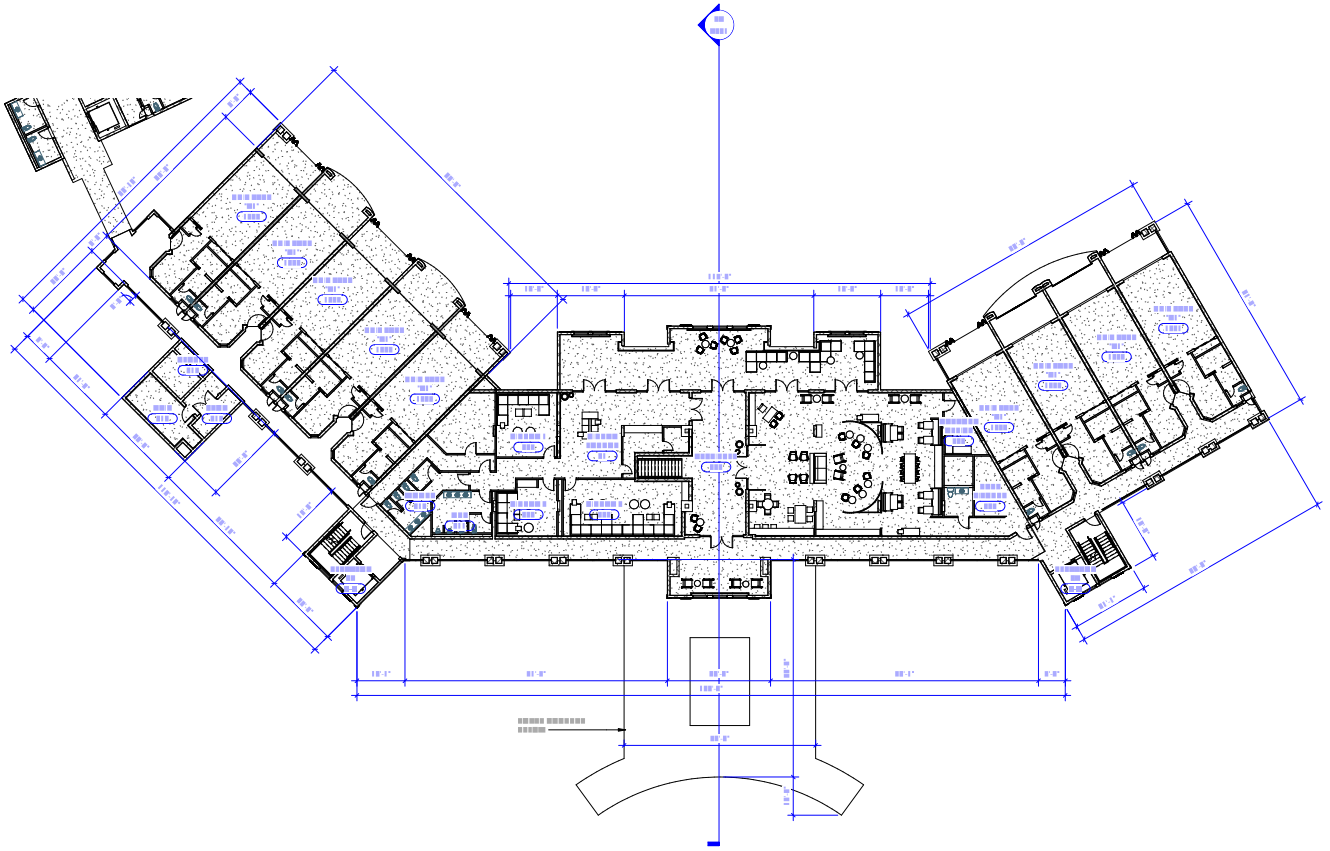
TREASURE BEACH EXPANSION



4A PLAN - 3RD FLOOR - BLDG 1-L-2

10/15/2021 -
SITE PLAN SUBMISSION

PLAN - BUILDING 1, LOBBY & 2

A111c

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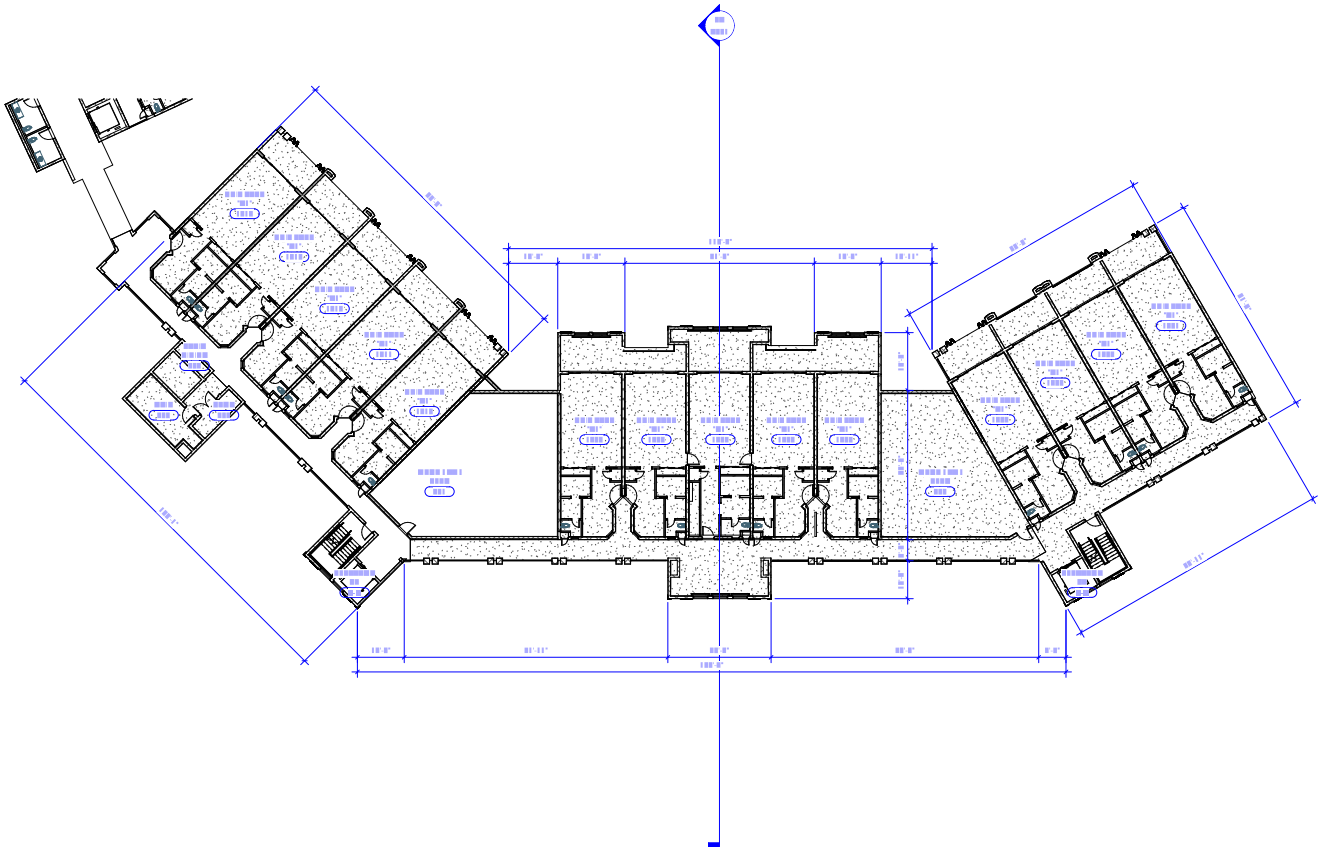

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TREASURE BEACH EXPANSION

10/15/2021 -
SITE PLAN SUBMISSION

4A PLAN - 4TH FLOOR - BLDG 1-L-2

PLAN - BUILDING 1, LOBBY & 2

A111d

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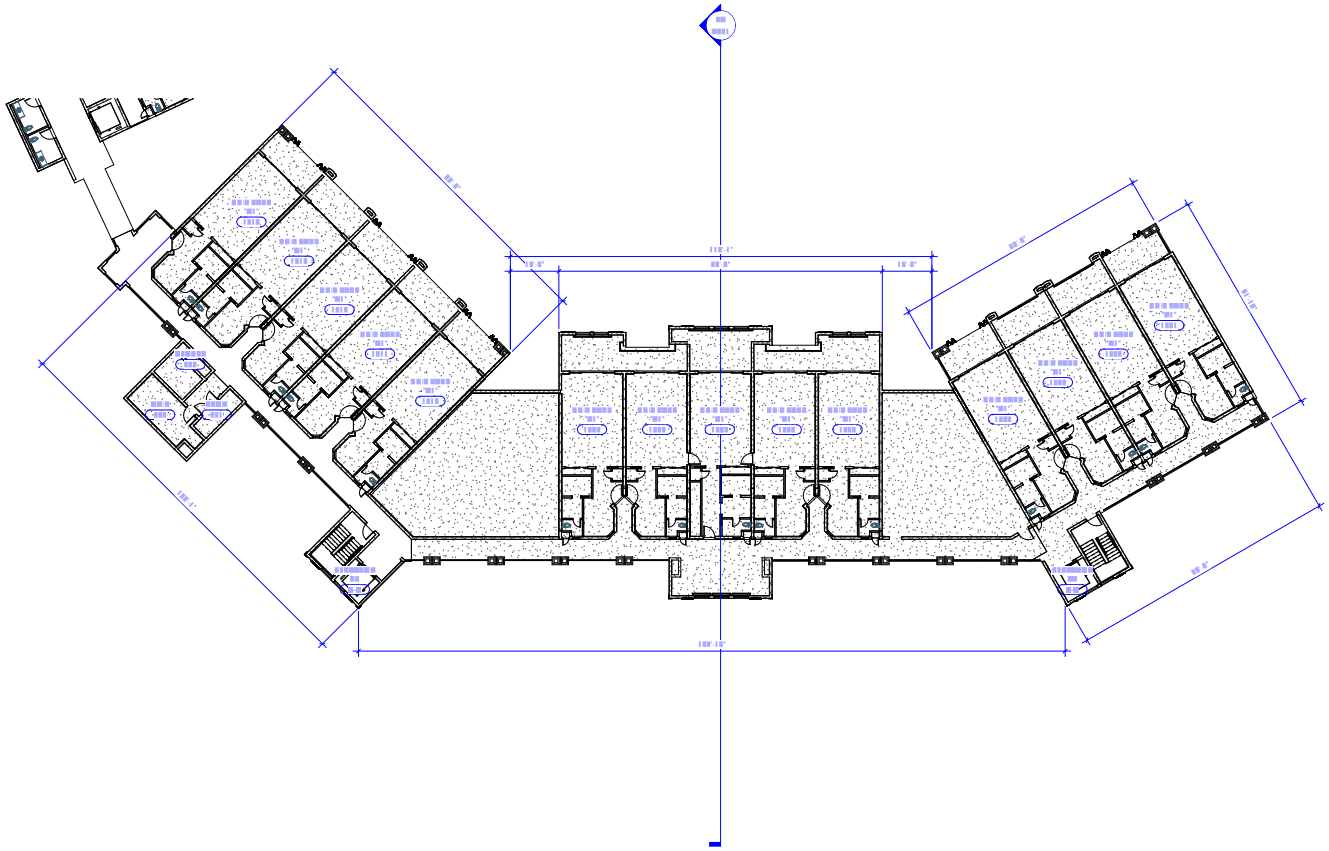

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TREASURE BEACH EXPANSION

10/15/2021 -
SITE PLAN SUBMISSION

4A PLAN - 5TH FLOOR - BLDG 1-L-2

PLAN - BUILDING 1, LOBBY & 2

A111e

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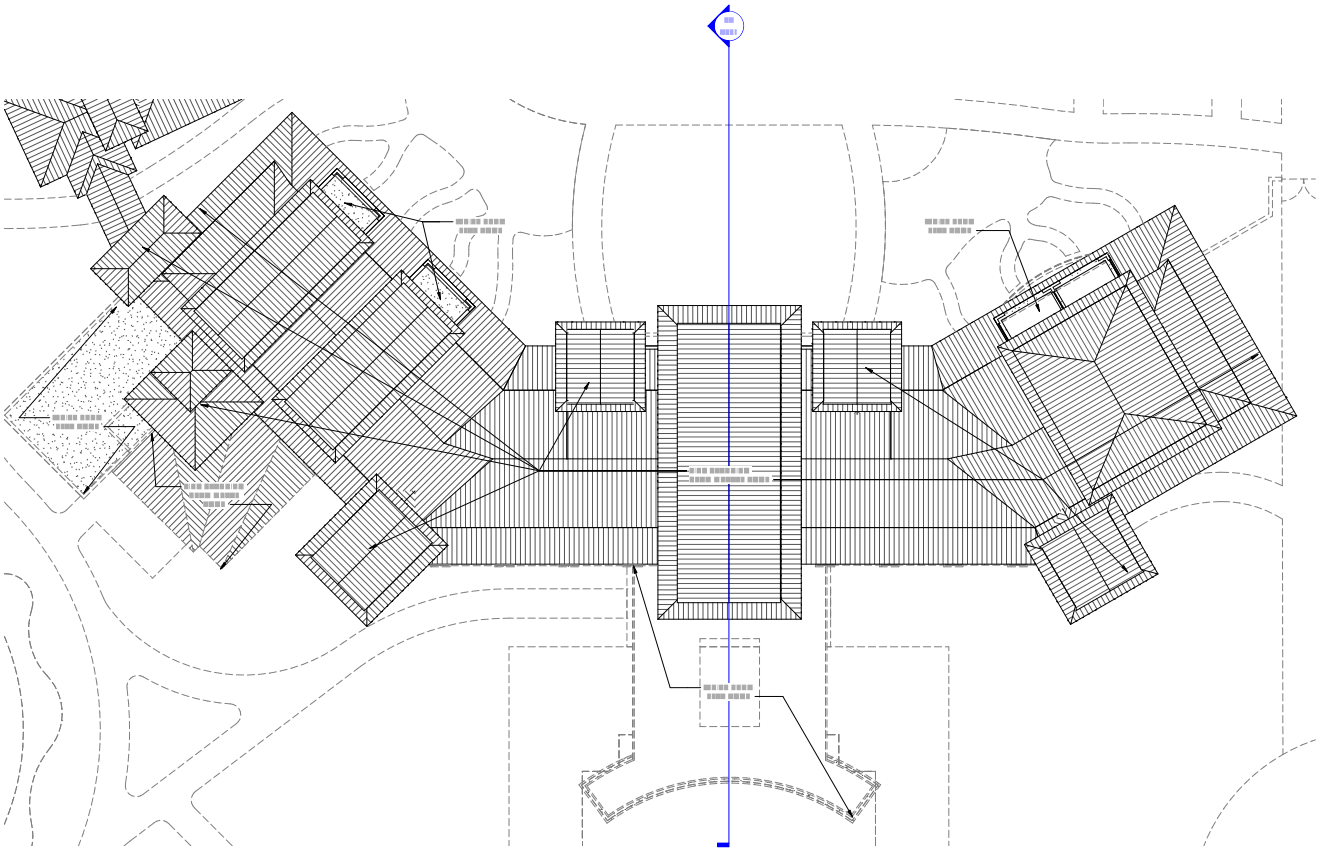

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TREASURE BEACH EXPANSION

10/15/2021 -
SITE PLAN SUBMISSION

4A ROOF PLAN - BLDG 1, LOBBY & 2

PLAN - BUILDING 1, LOBBY & 2

A111f

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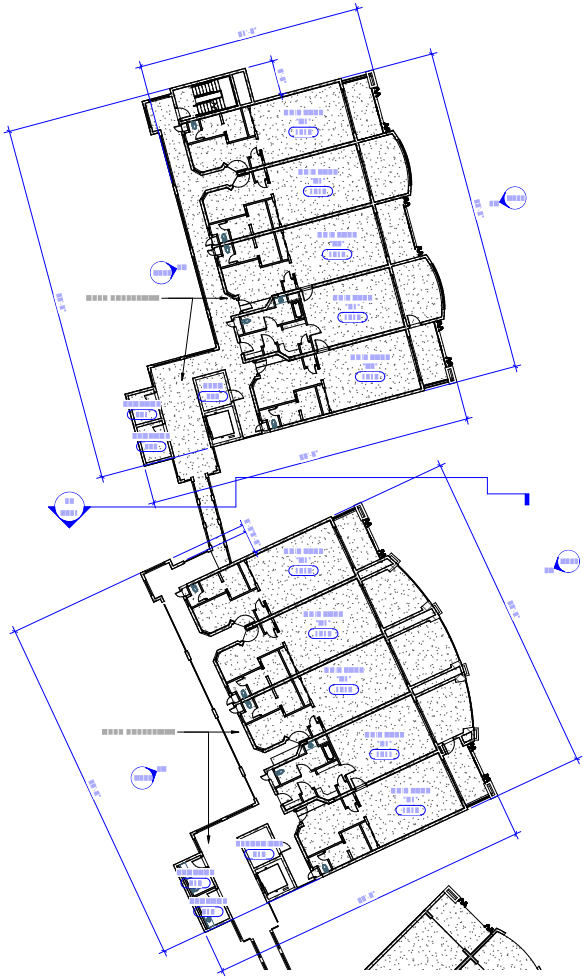
TREASURE BEACH EXPANSION

10/15/2021 -
SITE PLAN SUBMISSION



4A PLAN - 2ND FLOOR - BLDG 3-4

2A PLAN - 1ST FLOOR - BLDG 3-4

PLAN - BUILDING 3 & 4

A112a

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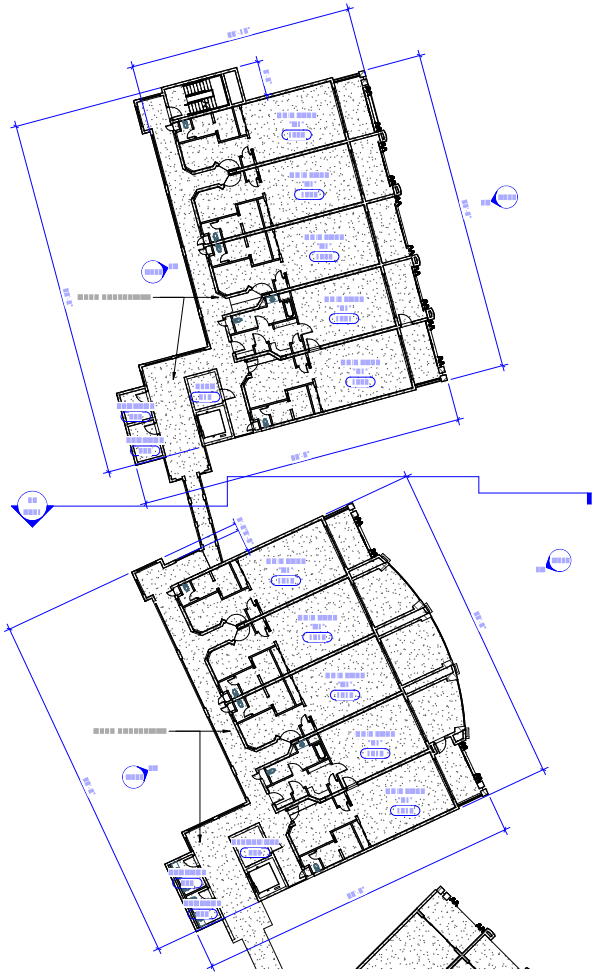
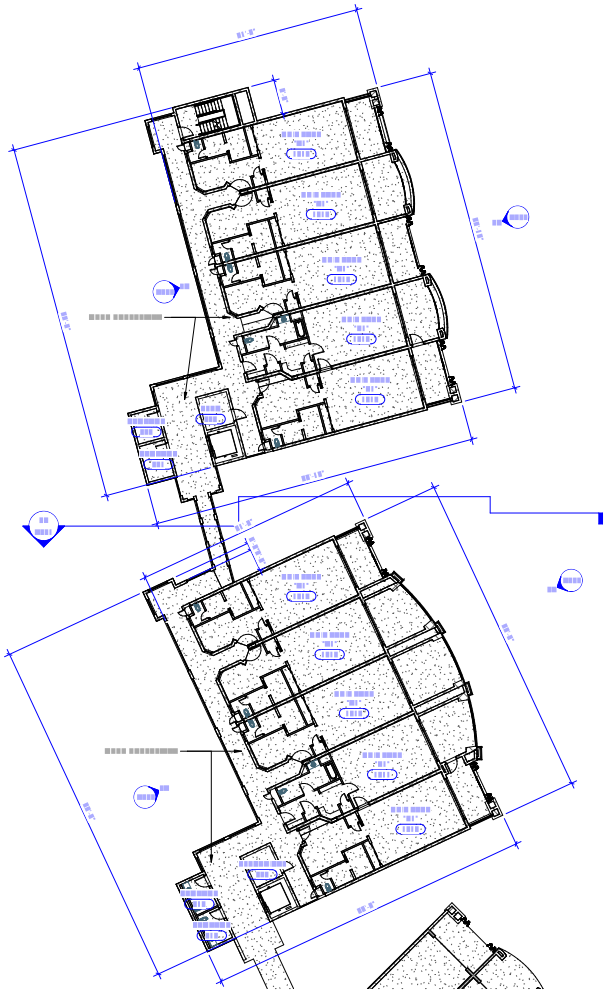
TREASURE BEACH EXPANSION

10/15/2021 -
SITE PLAN SUBMISSION



4A PLAN - 4TH FLOOR - BLDG 3-4



2A PLAN - 3RD FLOOR - BLDG 3-4

PLAN - BUILDING 3 & 4

A112b

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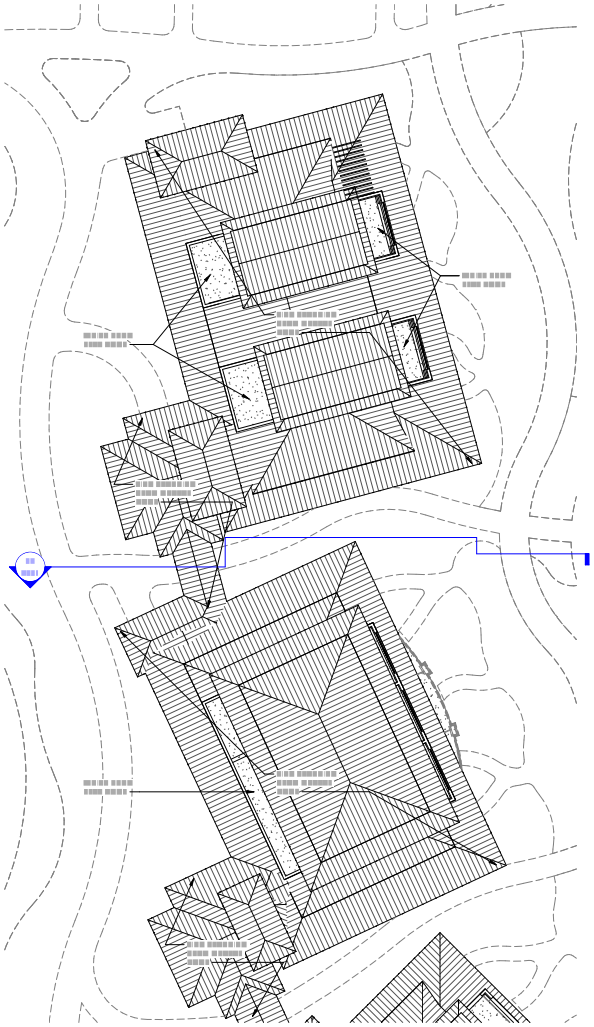
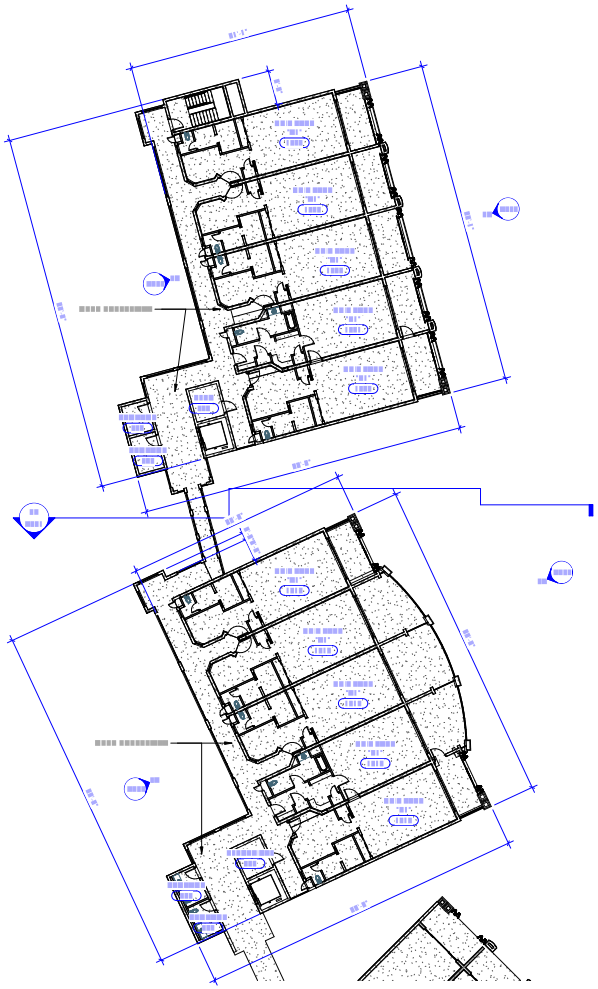
TREASURE BEACH EXPANSION

10/15/2021 -
SITE PLAN SUBMISSION



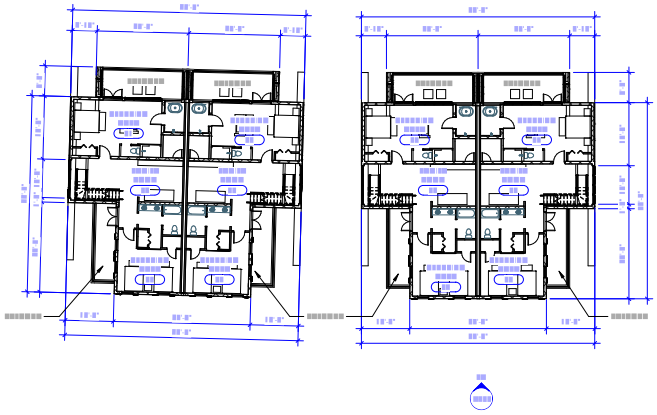
4A ROOF PLAN - BLDG 3-4



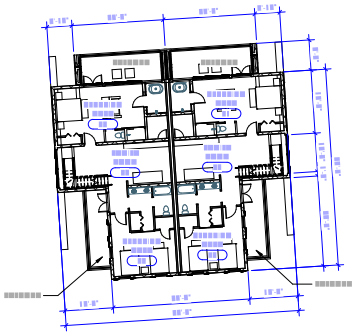
2A PLAN - 5TH FLOOR - BLDG 3-4

PLAN - BUILDING 3 & 4

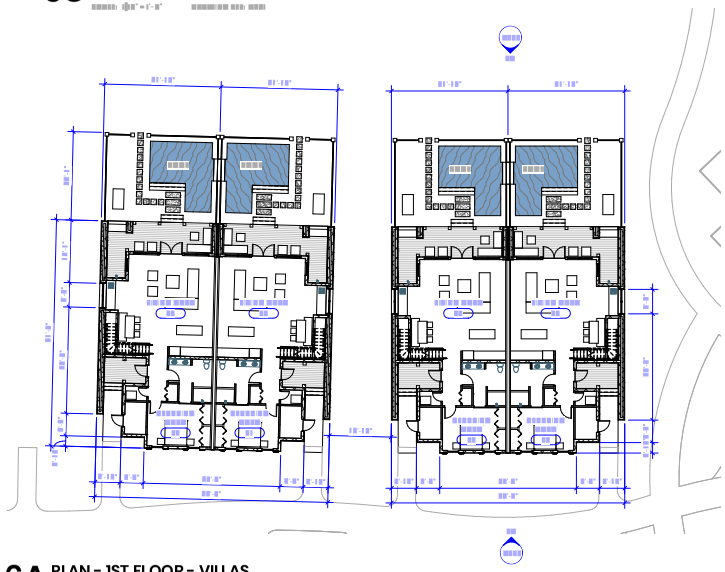
A112c



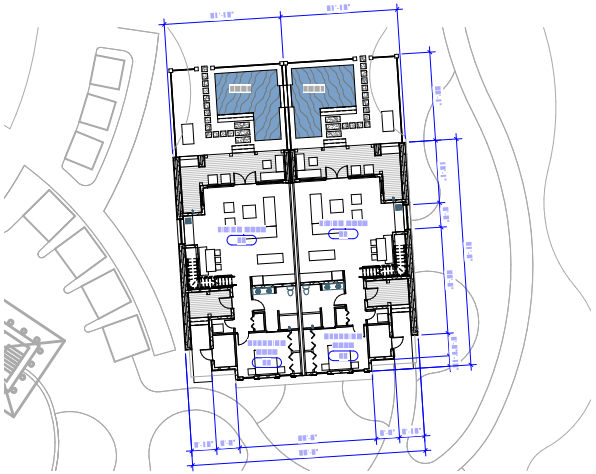
6C PLAN - 2ND FLOOR - VILLAS



2C PLAN - 2ND FLOOR - VILLAS



6A PLAN - 1ST FLOOR - VILLAS



2A PLAN - 1ST FLOOR - VILLA

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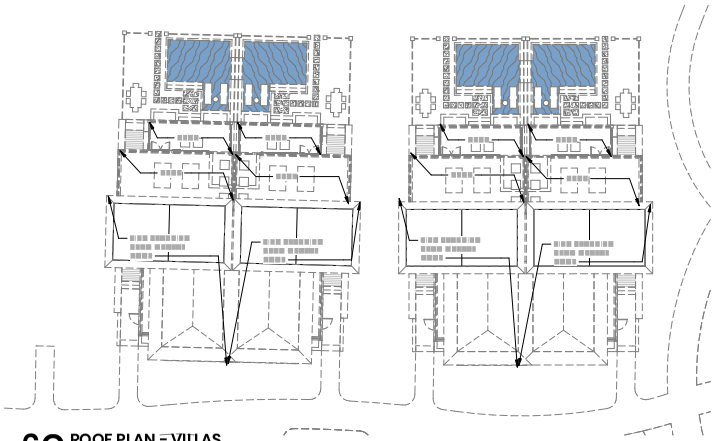
TREASURE BEACH EXPANSION

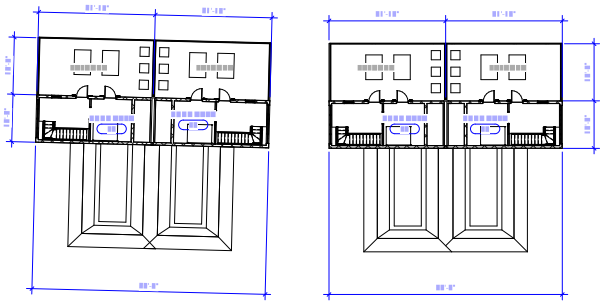
10/15/2021 -
SITE PLAN SUBMISSION

PLAN - VILLAS

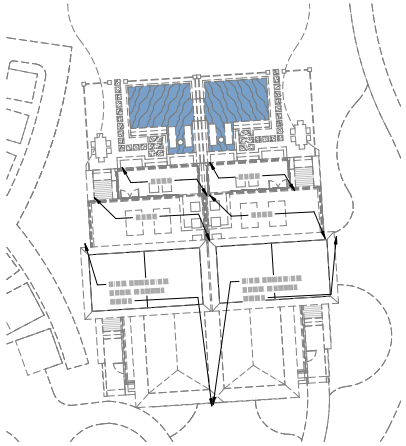
A113a



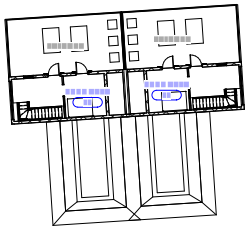
6C ROOF PLAN - VILLAS



6A PLAN - 3RD FLOOR - VILLAS



2C ROOF PLAN - VILLAS



2A PLAN - 3RD FLOOR - VILLAS

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TREASURE BEACH EXPANSION

10/15/2021 -
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PLAN - VILLAS

A113b

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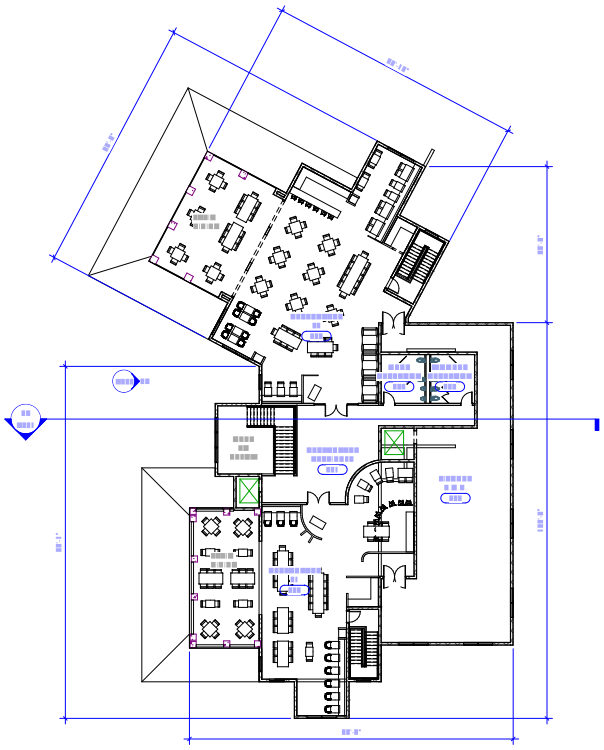
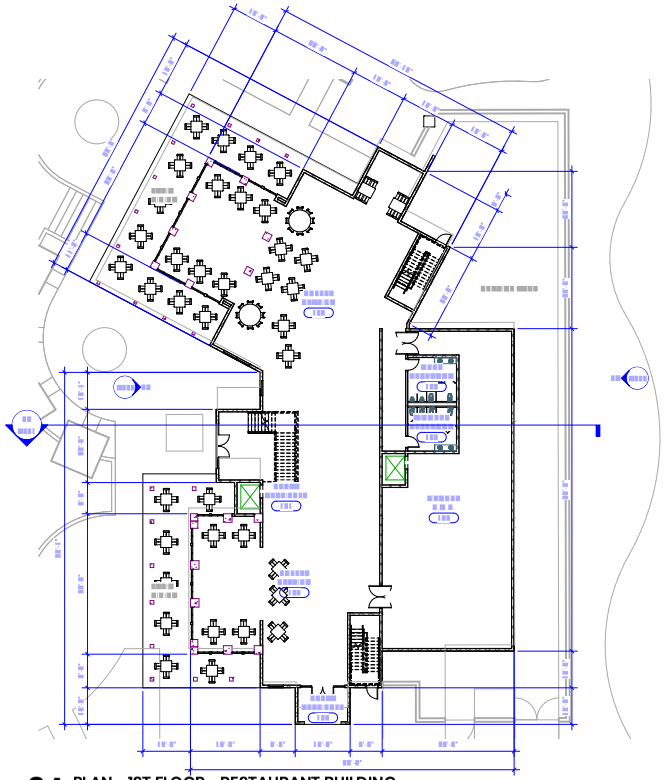


5A PLAN - 2ND FLOOR - RESTUARANT BUILDING



3A PLAN - 1ST FLOOR - RESTAURANT BUILDING

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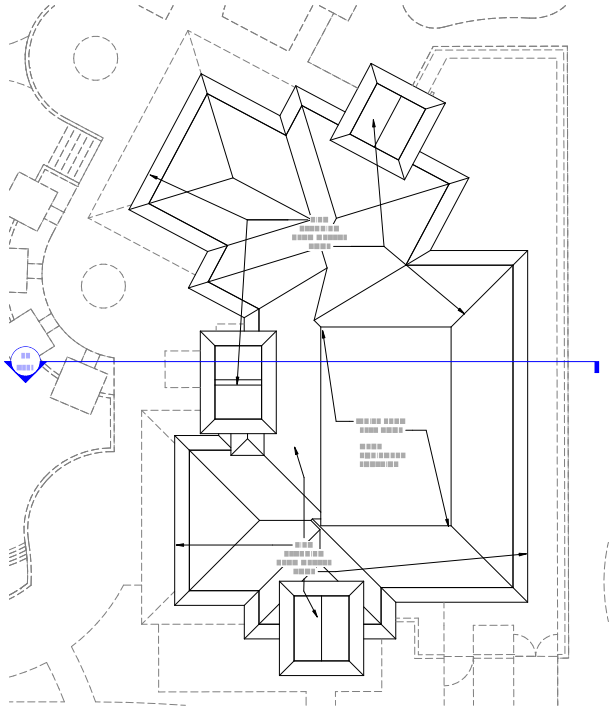
TREASURE BEACH EXPANSION

10/15/2021 -
SITE PLAN SUBMISSION

PLAN - RESTAURANT BUILDING

A114a



2A ROOF PLAN - RESTAURANT BUILDING

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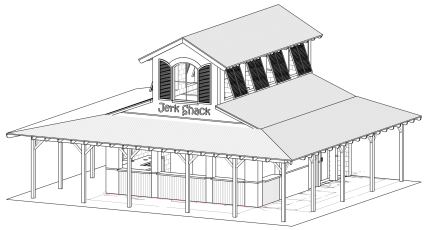
TREASURE BEACH EXPANSION

10/15/2021 -
SITE PLAN SUBMISSION

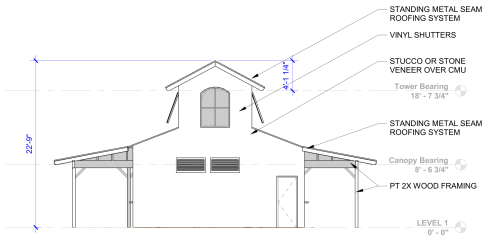
PLAN - RESTURANT BUILDING

A114b



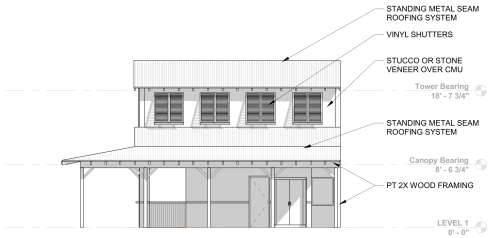
1 3D VIEW

SCALE:



6B EXTERIOR ELEVATION

SCALE: 1/8" = 1'-0" DRAWING REF: A111



4B EXTERIOR ELEVATION

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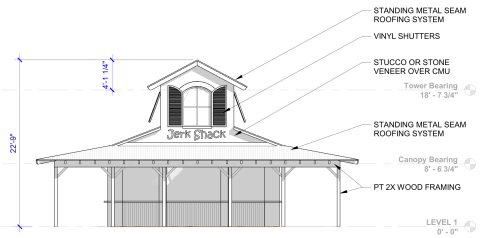
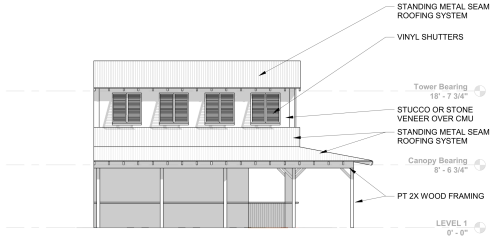


6A EXTERIOR ELEVATION

SCALE: 1/8" = 1'-0" DRAWING REF: A111



4A EXTERIOR ELEVATION

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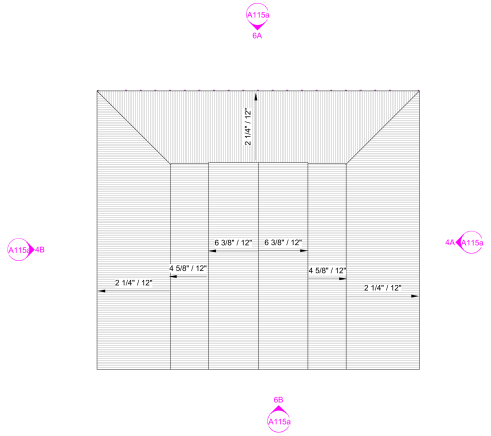
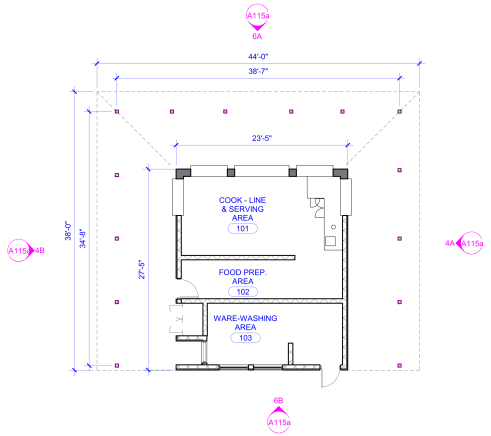


2B ROOF PLAN

SCALE: 1/8" = 1'-0"



2A FLOOR PLAN - 1ST LEVEL

SCALE: 1/8" = 1'-0" DRAWING REF: A115a

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TREASURE BEACH EXPANSION

10/15/2021 -
SITE PLAN SUBMISSION

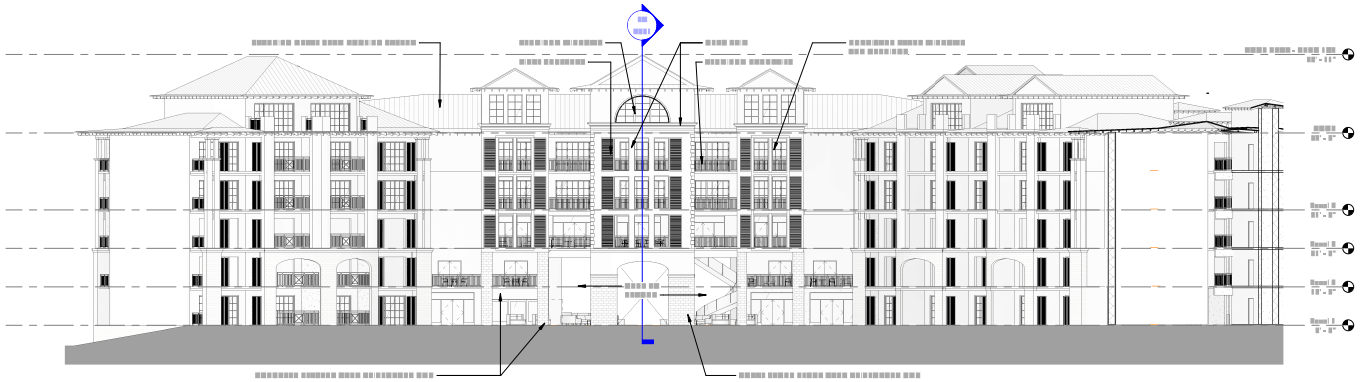
PLAN - JURK SHACK

A115a

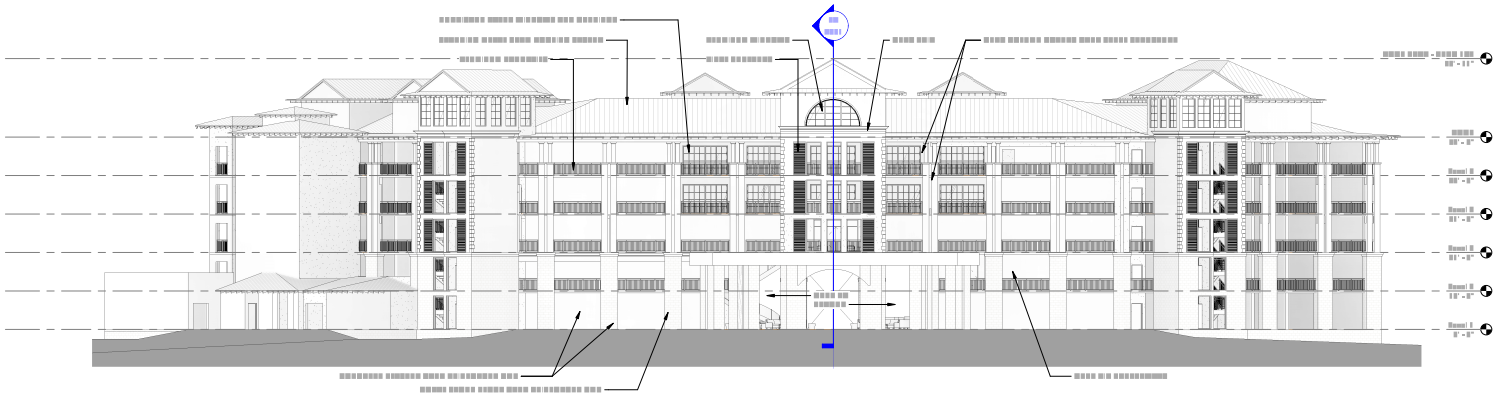
EXTERIOR FINISH NOTES

EXTERIOR ELEVATION NOTES

KEYNOTES



5C BUILDING 1 - BACK ELEVATION



5A BUILDING 1 - FRONT ELEVATION

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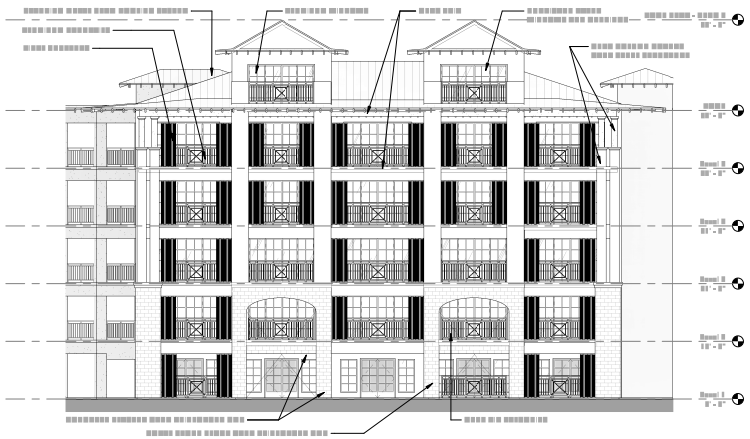
TREASURE BEACH EXPANSION

10/15/2021 -
SITE PLAN SUBMISSION

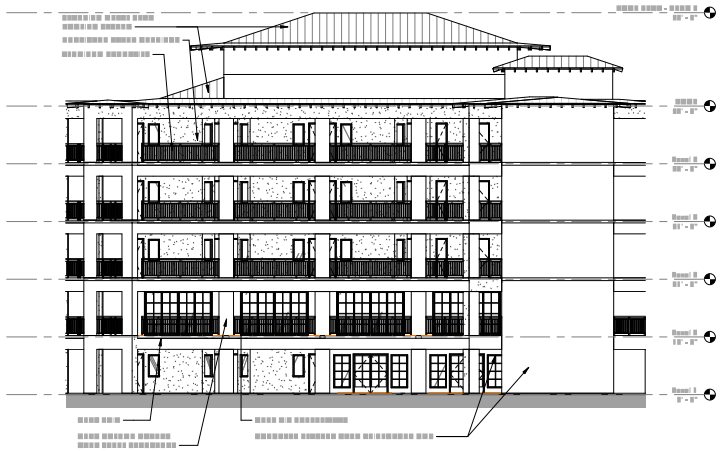
EXTERIOR ELEVATIONS - BUILDING 1

A201

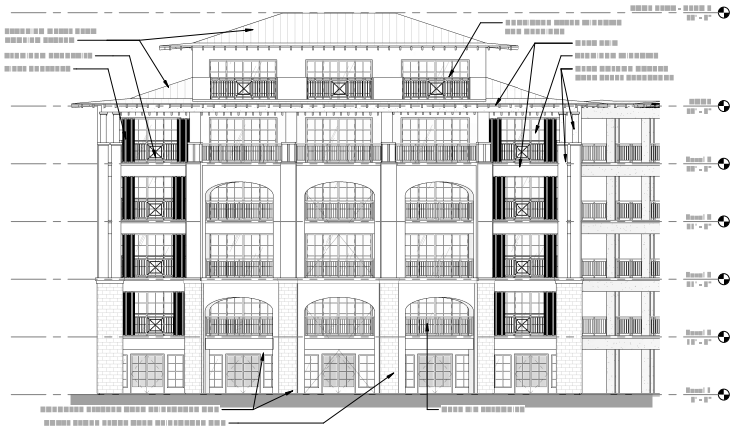
5C BUILDING 4 - BACK ELEVATION



3C BUILDING 4 - FRONT ELEVATION



5A BUILDING 3 - BACK ELEVATION



3A BUILDING 3 - FRONT ELEVATION

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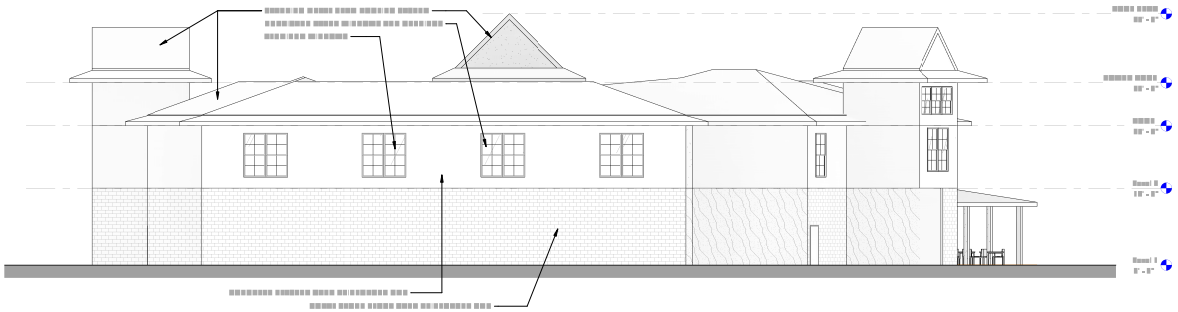
TREASURE BEACH EXPANSION

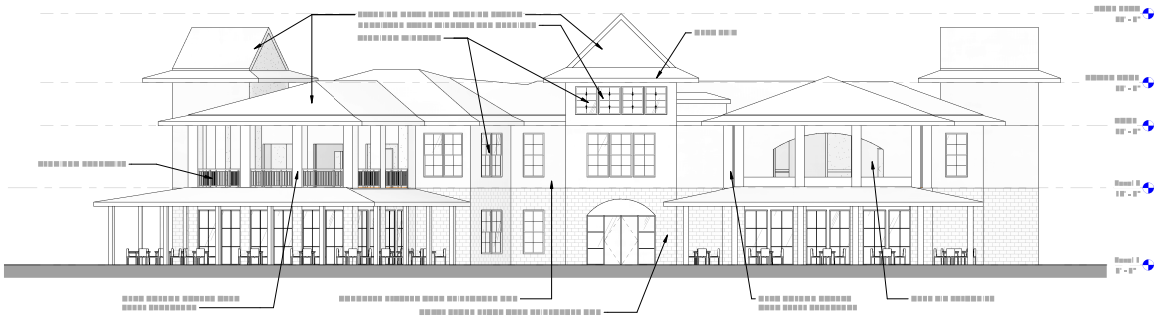
10/15/2021 -
SITE PLAN SUBMISSION

EXTERIOR ELEVATION - BUILDING 3 & 4

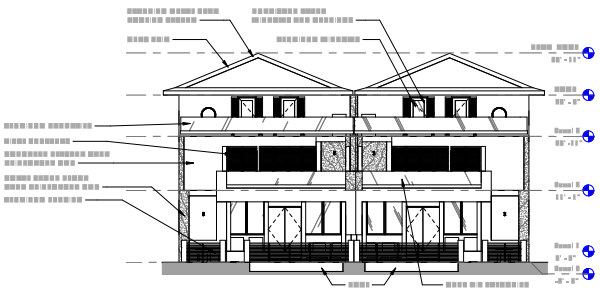
A202



4C RESTAURANT BLDG - BACK ELEVATION



4B RESTAURANT BLDG - FRONT ELEVATION



4A VILLAS - BACK ELEVATION

2A VILLAS - FRONT ELEVATION

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TREASURE BEACH EXPANSION

10/15/2021 -
SITE PLAN SUBMISSION

EXTERIOR ELEVATION

A203

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3B SECTION - SITE

4A SECTION - SITE

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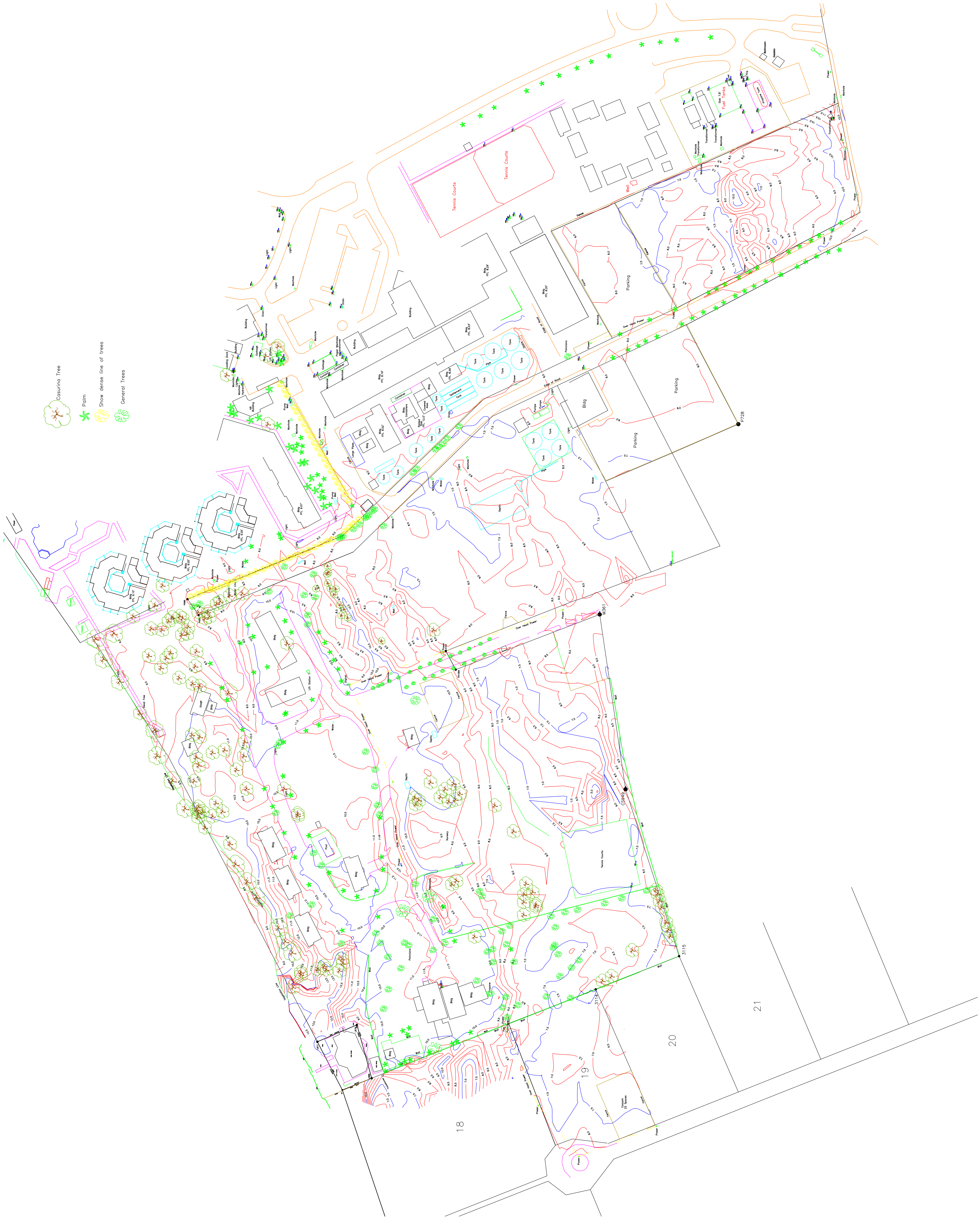
TREASURE BEACH EXPANSION

10/15/2021 -
SITE PLAN SUBMISSION

OVERALL SITE SECTION

A301



Casurina Tree
Palm
Show dense line of trees
General Trees
Tennis Courts
Tennis Courts
Fuel Tanks
Parking
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P728
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3115
18
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21

APPENDIX 5

STANDARDS & PROTOCOL FOR ASSUMPTIONS USED IN PREDICTING ENVIRONMENTAL IMPACTS

EIA Team Member Reports

Environmental Management Plan
Beaches Hurricane Preparedness Plan

Socio-Economic Environmental Report

Author: Ian Astwood

ISLAND VILLA
ARCHITECTS & CONSULTANTS

BEACHES RESORT-TREASURE BEACH EXPANSION

Terms of Reference for an Environmental Impact Assessment

BEACHES RESORT: TREASURE BEACH EXPANSION

Terms of Reference for an Environmental Impact Assessment

PR15741: 60803/ 15, 16, 17, 18, 19, 22, 24, 26, 28, 29, 31, 32, 34, 35, 37, 38, 41, & 42

2. Baseline Studies

2.6 SOCIO-ECONOMIC ENVIRONMENT

The main purpose of the socio economic analysis is to place the proposed development project within the context of the human environment upon which it will have an important influence. Data collection took place in the three main communities (Grace Bay the Bight and Juba Sound) that will more immediately experience the project's positive or negative impacts.

The impacts on the human environment is grouped under the following headings: demography, population, employment, and worker housing. Employment and related income generation are particular areas in which the development is challenged to partner solutions with TCIG for optimizing project benefits.

Worker housing is an area that requires considerable attention as experience indicates that a serious shortage attends major hospitality developments and this acts as a catalyst for illegal development and squatting.

Heritage matters such as impact of the development on historical / cultural sites are always worth considering, however in the context they are not deemed an issue given the intended location of the extension and the fact that the proposed footprints of the project exist well within the required setbacks. Consideration has been given for the relocation of the beach access as well as access to the local community cemetery.

Communities: The intended location is zoned for Tourism related activities and comprised a mix of high, middle and low-income units.

Included in the review were the important commercial and government agencies that operate in or close to them. These communities, roughly aligned from west to east were:

1. Grace Bay
2. Juba Sound
3. The Bight Community
4. Richmond Hills

2.6.1 Demographic.

2.6.2 **Employment: labor & skills demand at construction and operation; local and foreign workers needed**.

During construction phase, the Beaches *Treasure Beach Expansion* project will require skilled and unskilled labors. During construction and finishing purposes there will be about 100 labors and hence will generate about 100 employments for 24 months. While employing workers, priority will be given to the available local work force of the Bight community and Provo in general Depending upon available local skills, training specific to construction works during employment will be given maintaining gender balance as far as possible. However, it is anticipated that a small percentage of skilled labors would still be required from outside. The primary beneficiaries will be the interested local Turks & Caicos Islanders from the before mentioned communities within the project vicinity area. The involvements of the local work force in the construction activities not only increase their level of income but also provides an opportunity for the development of their skill.

2.6.3 Safety/security concerns within the community.

2.6.4 **Economic impact: short-term and long-term.**

The proposed Treasure Beach Expansion will contributed significantly to the growth of the tourism sector within the island of Providenciales through tourists related sales, profits, jobs, tax revenues, and other income opportunities. Indirectly, the project will also have an overall positive impact on most other sectors of the island's economy.

2.6.5 Others.

The above factors collectively boost the economic reserves of the Turks & Caicos, thus leading to a rise in job opportunities, income and better disposable income. As money and tourist comes into the country it will stimulates new business enterprises and higher markets and promote a more positive image of the country. The income generated helps the national balance of payments, earning revenue through direct taxation and indirect taxes on goods and services purchased by the tourists; about 75%-85% of National GDP of the TCI is derive from the Tourism Sector.

2.7 Other relevant parameters identified during the scoping exercise by the consultants.

Although the economic impact of the proposed development is greatly positive for the TIC economy, there are however, negative economic effects that are also apparent and significant, which cannot be ignored, particularly, a likely increase in demand for imported goods as the tourists number increases and the possibility of revenue leakages out.

4. Project Description and Construction and Operation and alternatives

4.1 The Project

Beaches Treasure Beach project is an expansion to the existing Resort concept located in the Bight community of Providenciales, Turks & Caicos Islands. The proposed development calls for the construction of six main resort components designed to accommodate one hundred and one (101) additional guest rooms. The proposed guest accommodations are grouped into two main design typologies; Family Suites and beachfront Villas. Also proposed are the inclusion of other amenities such as Restaurants, designated Kids Play areas, reflection pools, adult's pools, and cabanas. The expansion will enhance the existing tourism product while at the same time, creating another high-end tourism area within the existing resort that is environmentally friendly and which will directly contribute to the economic development of the area.

The Concept

The developers are aware of their responsibility for ensuring a truly sustainable, environmentally sound, green resort development and have adopted an approach to development which will be informed by an environmental feasibility study that will guide the planning and implementation process.

Green hotel development criteria parameters will be established for the site. They will help guide the architectural design, construction methodology and operational needs for the area. They will help minimize damage and ensure that resources saving devices and appropriate waste management practices are incorporated in the operation and maintenance of the resort.

Fig: 1.1a

SITE LAYOUT

The proposed expansion call for the construction of three (3) main hotel components (the Family Suites); three (3) beachfront structures (beachfront villas) and a standalone two-storey structure comprising the various restaurants. The layout of the building footprints superimposed on a 2021-satellite image of the site is shown EDS – L3 sheet. Also indicated are the proposed three phases for the construction works.

The majority of the dining areas are located in a single standalone two-storey building comprising a number of different restaurants with an additional standalone Jerk-House. Table 1.2.1 indicates the number of family and beachfront rooms associated with each structure.

GUESTROOM TOTAL

BUILDING	LEVELS	UNIT TOTAL	COMMENT
GUESTROOM BUILDING 1	1 - 5	20	4 - TYPE A1 UNITS PER LEVEL
GUESTROOM BUILDING 2	1 - 5	25	5 - TYPE A1 UNITS PER LEVEL
GUESTROOM BUILDING 3	1 - 5	20	3 - TYPE A1 UNITS AND 1 - TYPE B1 SUITE UNIT PER LEVEL
GUESTROOM BUILDING 4	1 - 5	20	3 - TYPE A1 UNITS AND 1 - TYPE B1 SUITE UNIT PER LEVEL
RECEPTION	4 - 5	10	5 - TYPE A1 UNITS PER LEVEL
VILLA	NA	6	3 LEVEL UNIT FOR A SINGLE GUEST GROUP
TOTAL		101	

Fig. 1.2

It can be noted that the proposed expansion will occupy the under developed Treasure Beach site to the west of the existing property. The supporting services (water treatment plant, laundry, stand-by generator, workshops, etc.) will be accommodated through the existing infrastructure.

Blue Haven Resort	HOTEL	PROVIDENCIALES	Marina Road, Leeward	51
Beach House Resort	HOTEL	PROVIDENCIALES	218 Lower Bight, Grace Bay	21
Alexandra Resort & Spa	HOTEL	PROVIDENCIALES	Princess Drive, Grace Bay	172
The Atrium	CONDO HOTEL	PROVIDENCIALES	Governor's Road, Leeward	28
Byculla Villa	VILLA	PROVIDENCIALES	Leeward Settlement	4
Villa Whitesands	VILLA	PROVIDENCIALES	#7 Blue Mountain Villas, Cobalt Close	5
Sea La Vie	VILLA	PROVIDENCIALES	140 Long Bay Beach Road	11
Kokomo Botanical Resort	VILLA	PROVIDENCIALES	31 Downwind Street, Venetian Road	24
One On Marlin Resort	VILLA	PROVIDENCIALES	31 Downwind Street, Venetian Road	24
Sovey Creeker Villa LB	VILLA	PROVIDENCIALES	17 Sky Blue Close, Long Bay Hills	4
Top Notch Villa	VILLA	PROVIDENCIALES	35 Hawksbill Lane, Turtle Tail	4
Beaches Turks & Caicos Resort & Spa	HOTEL	PROVIDENCIALES	Lower Bight	770
Samsara Villa	VILLA	PROVIDENCIALES	#5 International Drive, Cherpkee Rd	6
Cascade Villa	VILLA	PROVIDENCIALES	#2 Cherokee Road, Blue Mountain	6
Vision Kite	VILLA	PROVIDENCIALES	Long Bay Hills, Long Bay	1
Vision Balance	VILLA	PROVIDENCIALES	Kera Isle Close, Leeward	4
Vision Beach	VILLA	PROVIDENCIALES	Prince of Whale Drive, Leeward	5
Taino	Guest House	PROVIDENCIALES	48 Garden Loop, Grace Bay Gardens	2
Hura Sea Villa	VILLA	PROVIDENCIALES	122 Long Bay Beach Rd.	6
Triton Real Estate Ltd	VILLA	PROVIDENCIALES	203 Long Bay Beach Dr.	7
The Yacht Club	CONDO HOTEL	PROVIDENCIALES	Coconut Road, Turtle Cove	11

4.2 Project Justification – socio-economic, ecological, etc.

Given the growing tourism sector in the Turks & Caicos Islands, and the increase in the demand for guest rooms / accommodations in Providenciales, the proposed Beaches Resort Treasure Beach Expansion will immediate address this shortages in room accommodations by adding an additional 101 to the existing 770 rooms. The development will allow for an increase of 13% to the resorts current number of beds while increasing the number of guess in Provo by 2.2% and accommodations overall in TCI also by 2%.

4.12.1 Construction methods and program, including phasing of the development.

A determination of the construction methodology to be employed (e.g. tunnel form, block and steel, etc.) has not yet been made. This is relevant insofar as tunnel forms typically require a greater amount of space alongside the building to accommodate the tunnels. On the other hand, the technology allows for a shorter period of construction.

4.12.2 Site security and hoarding.

The proposed Treasure Beach site falls currently within the secure enclosure of the resort and maintains constant surveillance and daily security oversight. During the construction phase the area with be properly hoard off form the existing resort with controlled access to and form the construction area at all times.

4.12.5 Temporary sanitary facilities.

Inadequate provision of toilets for use by workers can lead to ad hoc defecation in secluded areas on the site, thus creating of unsanitary conditions and sources of fly infestation. Improper disposal of food cartons and other domestic forms of construction camp garbage could lead to littering of the site and pollution of adjacent coastal waters. To mitigate against this occurrence the developer will employ the use of portable toilets *"Johnny on the spots"* along with proper wash-hand stations. Proper garbage disposals with be ideally place throughout the construction site. All waste will be properly disposed as per TCIG Environmental Health regulations.

4.13 Social-economic:

During construction phase, the Beaches *Treasure Beach Expansion* project will require skilled and unskilled labors. While constructing and finishing purpose there will be about 30 labors at construction phase and hence will generate about 30 employments for 24 months. While employing workers, priority will be given to the available local work force of the Bight community depending upon their skills and trainings specific to construction works and the employment will be given maintaining gender balance as far as possible. However, it is anticipated that a small percentage of skilled labors would still be required from outside. The primary beneficiaries will be the interested local Turks & Caicos Islanders from the Bight community within the project vicinity area. The involvements of the local work force in the construction activities not only increase their level of income but also have opportunity develop their skill.

4.13.3 Safety/security concerns within the community (construction and operation).

The Health and public safety infrastructure on the island of Providenciales seem inadequate to meet the project, community and larger corridor needs. In the event of an emergency Providenciales, existing hospital has a limited amount of available beds, with its nearest support being in Grand Turk at the Cockburn Hospital. Fire services also seem inadequate, with two functional fire trucks located within the downtown area of Providenciales.

Security concerns in and around the existing site is adequately address through the means of existing resort security. Within the context of the Bight Community, the lower bight road is also adequately lighted with visual monitoring at all times.

4.14 Potential Alternatives.

Tourism resort development in Turks & Caicos (Providenciales) has not been matched by the corresponding development and construction of housing and the social infrastructure to meet the demand of resort facility workers and the immigration to the resort areas induced etc. Therefore, squatting and informal settlements are common occurrence within these tourism communities towns and may add to the already heighten social tensions in the island. This if not properly addressed can be viewed as an indirect, cumulative, long-term, reversible negative impact.

The developer will seek to ensure that provisions for adequate housing opportunities with the assistance of the relevant authorities are put in place for hotel workers. This will reduce incidence of squatting and unplanned development associated with resort development in Providenciales and the Turks & Caicos in general.

5. Impact Assessment.

5.2.7 **Socio-economic impact – Socio-economic and cultural baseline (including labor, tourism, public infrastructure, crime, etc., Predicted impacts (positive and negative- influx of population/ workers, safe & security) to the above baseline, Identification and involvement of stakeholder groups:**

The long-term economic impact of this type of tourism activity should allow for an increase in tourist numbers, local sales and employment / income opportunities for local residences. Improvements in education, advanced technology, a higher number of qualified professionals, opening up of foreign markets and better advertising and strategic marketing should also be realized as secondary benefits.

Marine Environmental Report

Author: Janeen Bullard

JSS CONSULTING
Environmental Consulting Services

BEACHES TURKS AND CAICOS ISLANDS

Biological Assessment

Prepared by: JSS Consulting

Date: April 26th 2022

Table of Contents

Introduction

An assessment was conducted to examine the benthic environment of this area and identify potential impacts of proposed works. The assessment was conducted on April 7th 2022.

Methodology

The benthic ecosystem was assessed using snorkeling and manta tow investigations in areas that may be indirectly impacted by the proposed construction footprint. A diver swam or was towed along transects both parallel and perpendicular to the shoreline. Parallel transects ran the length of the survey area to record shoreline conditions. The perpendicular transects were taken from the shoreline to approximately 500m offshore with divers swimming in an area approximately 50ft wide. A record was taken of all flora, fauna species and substrate type. General observations were made for the surveyed areas. Data was collected underwater on slates and transcribed at the end of the day. Photographs and videos were taken. Species identification was confirmed using Humann et al 2013, Reef Coral Identification, Humann et al. 2013, Reef Fish Identification and Humann et al. 2013, Reef Creature Identification.

It is highly unlikely that this assessment identifies all the marine species but it provides a representation of those present on the site.

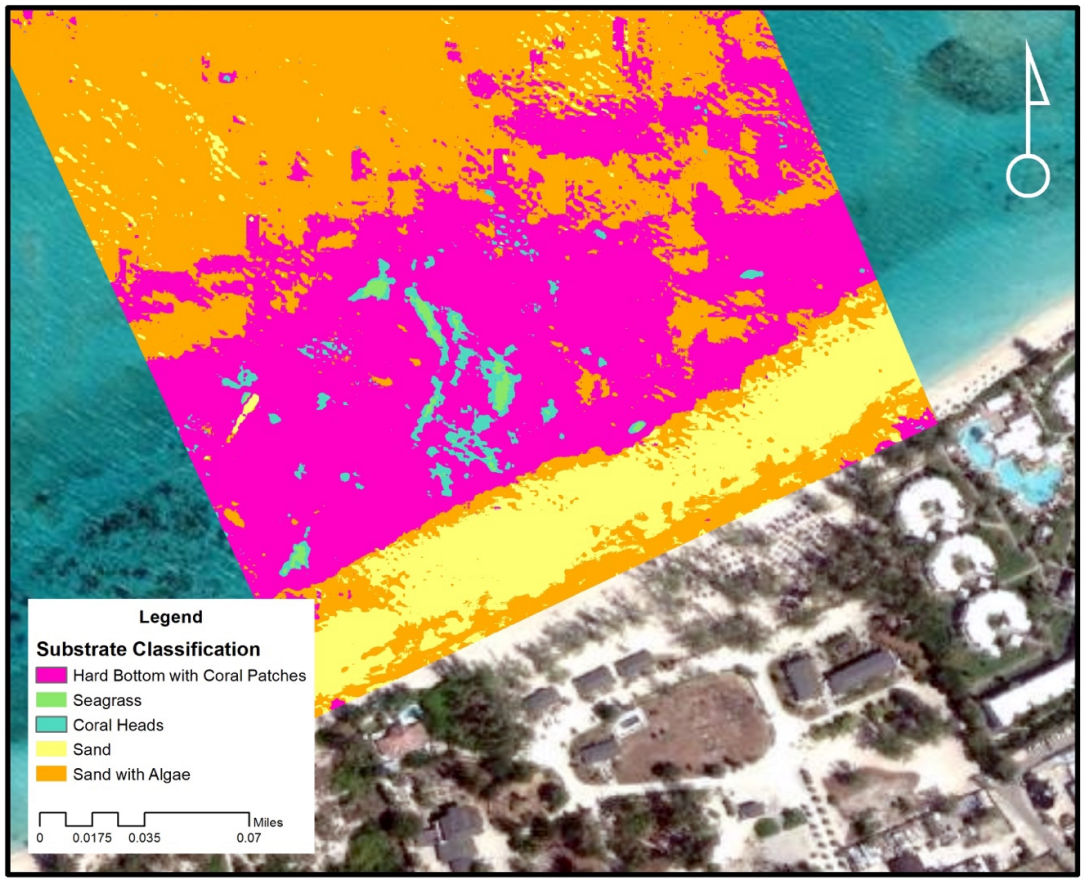


Figure 1: Beaches Benthic Map.

Results

General Observation

The weather conditions during this assessment were clear to partly cloudy skies with 13 to 15 knot winds. Water depth averaged 0 to 10ft in the observed areas.

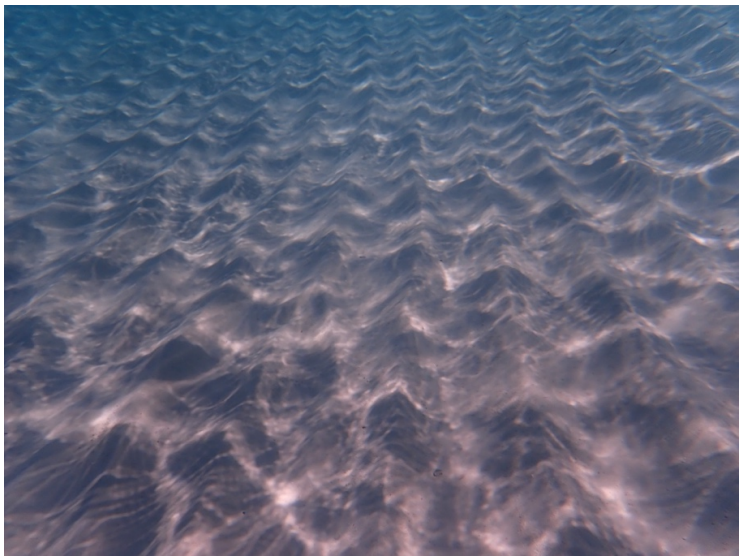


Photo 1: Sandy bottom

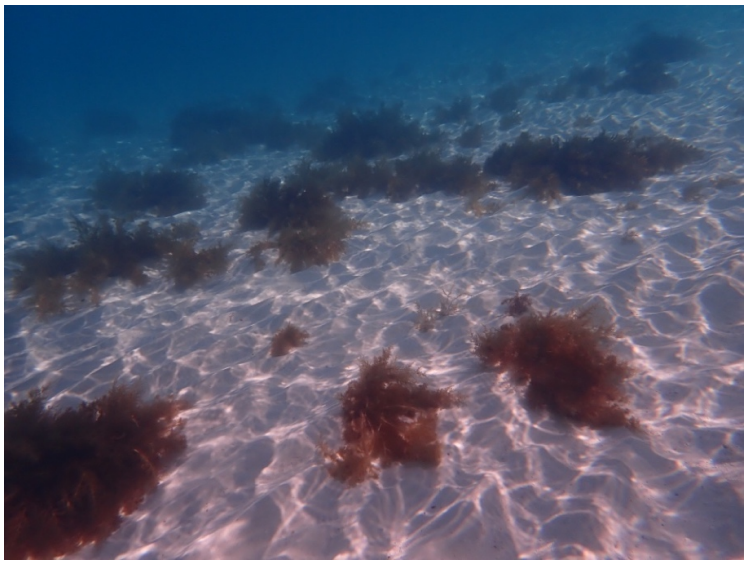


Photo 2: Sandy Bottom with

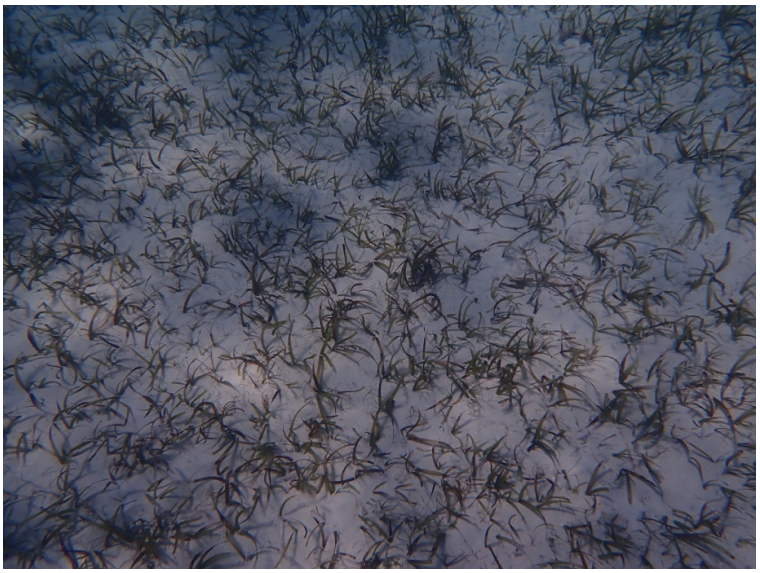


Photo 3: *Thalassia testudinum* , Seagrass bed

Benthic Profile

Benthic Description

The benthic composition varied from sandy shore to sandy bottom with areas of seagrass beds interspersed with algae and hardbottom with patch reefs.

Figure 1 illustrates the benthic substrate.

Sandy bottom and Seagrass beds

The benthic sandy bottom habitat with a consistent cover of >5 cm over bedrock and dominates approximately 60.81% of the near shore and offshore habitat. The sandy bottom was dispersed with areas of Sparse to Medium Turtle Grass, *Thalassia testidium and algae*. *Thalassia* blades were typically narrow and short, and may be evidence of grazing from juvenile green turtles. Blades did not display unnaturally high levels of cyanobacterial coatings, epi-benthic growth or diseases.

Hardbottom

The benthic hardbottom were noted as areas with <5cm of sand and areas of exposed rock. The hardbottom and coral dominated areas account for approximately 39.19% benthic cover of the area.

Hard corals are assembled in small and medium patches or individual heads. The corals in the area are in relatively good health and there are no physical signs of stony coral tissue loss disease in the area. However, the disease has been reported around Turks and Caicos Islands and should continuously be monitored for signs. Some corals are threatened by the invasion of sponge species. The most abundant coral present is the Mustard Hill Coral, *Porities astreoides*. Other reef building corals were observed in low diversity and abundance.

Patch reefs were observed on the fringes of the hardbottom coral reef systems to the east and scattered through the western portion of the site. Patch reefs are stony coral dominated high relief structures that are some of the most diverse and productive habitats. The patch reefs were isolated structures. They are built on the remains of dead coral skeletons that accumulated over time.

There is significant boat and jet ski traffic to the island as it is used for recreational purposes. During the assessment boating, swimming, and snorkeling were observed in the are

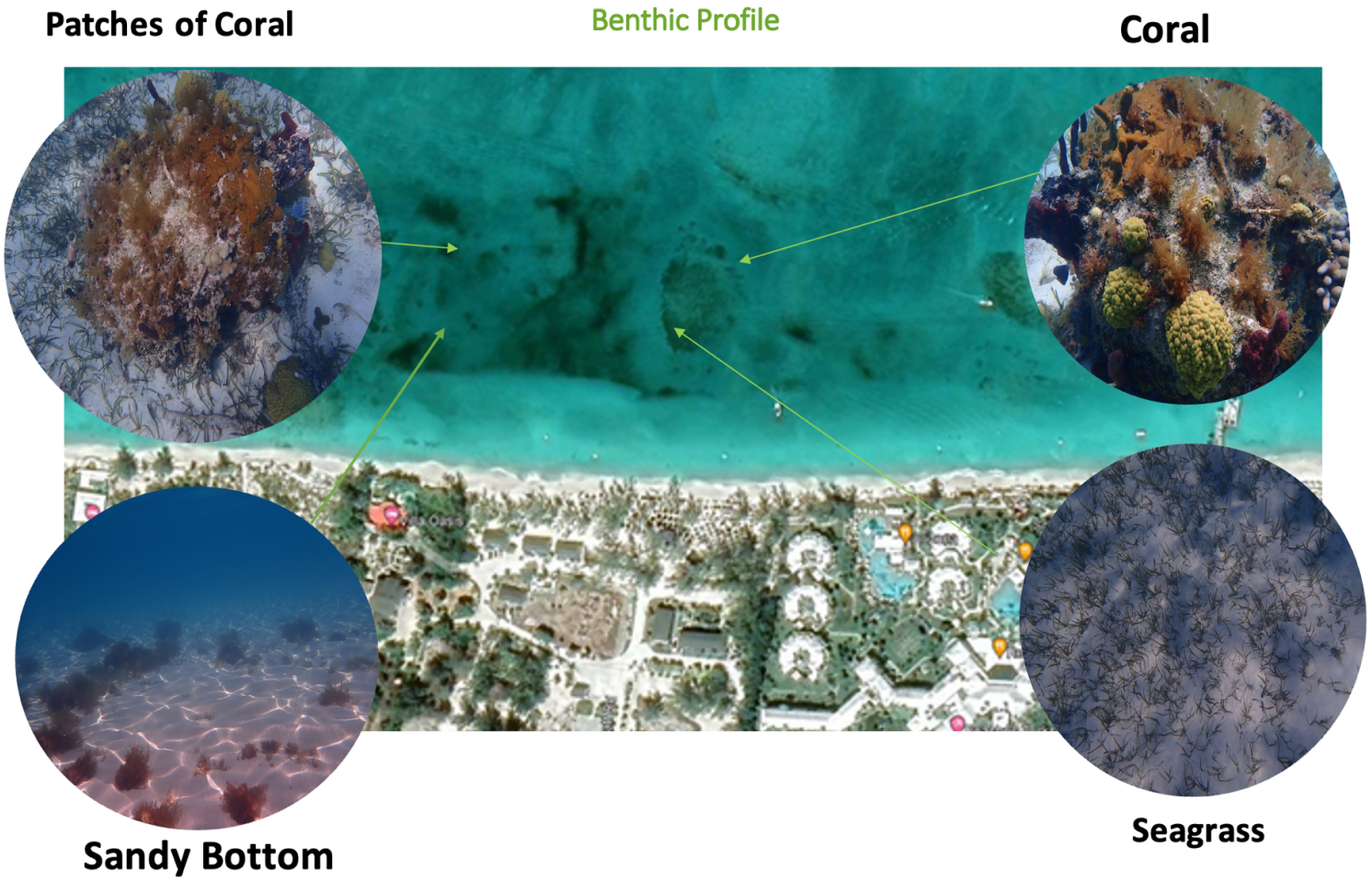


Figure 2: Benthic Profile

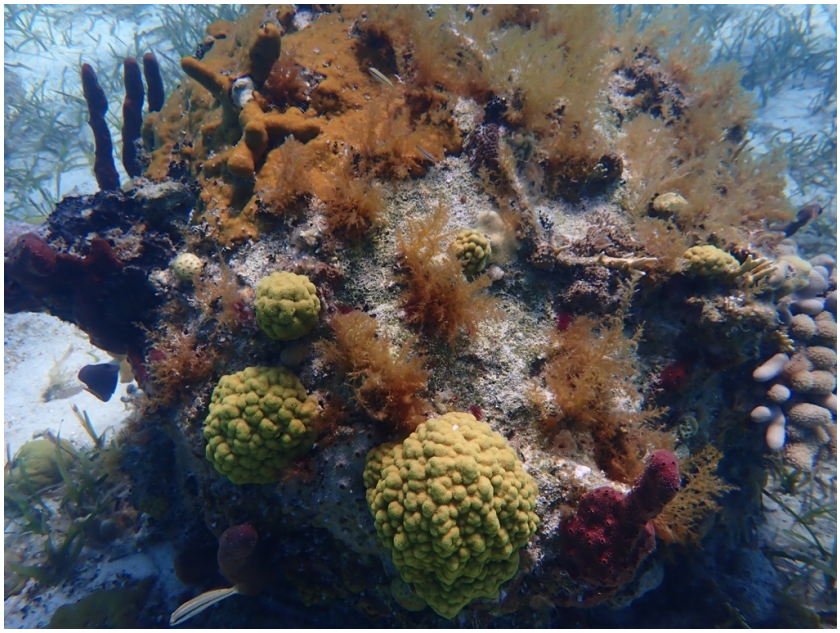


Figure 4: Patch reef formation

Species List

Fish Species

Roving Diver visual fish surveys were conducted using a modified Atlantic and Gulf Rapid Reef Assessment (AGRRA) Protocol Fish observed were identified and given a frequency rating (based on occurrence) of Few (2-10 individuals), Many (11-100 individuals), or Abundant (>100 individuals).

There were twenty-nine (29) species of fish were observed during the assessment. Significant fish activity was observed mainly around the reef systems with little to no activity observed. The reef fish observed were typical of a reef system and varied in size classes from 5cm up to 25cm.

Table 1: Listing of fish species observed during survey.

Common Name	Species Name	Abundance
Bar Jack	*Caranx ruber*	*Many*
Barracuda	*Sphyraena barracuda*	*Few*
Beaugregory	*Stegastes leucostictus*	*Few*

Bicolor Damselfish	*Stegastes partitus*	*Few*
Blackbar Soldierfish	*Myripristis jacobus*	*Many*
Blue Chromis	*Chromis cyanea*	*Few*
Blue Tang	*Acanthurus coeruleus*	*Many*
Blueheaded Wrasse	*Thalassoma bifasciatum*	*Few*
Bucktooth Parrotfish	*Sparisoma radians*	*Few*
Cocoa Damselfish	*Stegastes variabilis*	*Few*
Dusky Damselfish	*Stegastes adustus*	*Many*
Fairy Basslet	*Gramma loreto*	*Few*
French Grunts	*Haemulon flavolineatum*	*Many*
Gray Snapper	*Lutjanus griseus*	*Many*
Juvenile Parrotfish	*Sparisoma spp.*	*Many*
Princess Parrotfish	*Scarus taeniopterus*	*Many*
Redband Parrotfish	*Sparisoma aurofrenatum*	*Few*
Scrawled Filefish	*Aluterus scriptus*	*Many*
Sergeant Major	*Abudefduf saxatilis*	*Many*
Silversides	*Menidia menidia*	*Abundant*
Slippery Dick	*Halichoeres bivittatus*	*Many*
Squirrelfish	*Holocentrus rufus*	*Many*
Stoplight Parrotfish	*Sparisoma viride*	*Many*
Three Spot Damselfish	*Stegastes planifrons*	*Few*
White Grunts	*Haemulon plumieri*	*Many*
Yellowfin Mojarra	*Gerres cinereus*	*Many*
Yellowheaded Wrasse	*Halichoeres garnoti*	*Few*
Yellowtail Damselfish	*Microspathodon chrysurus*	*Few*
Yellowtail Snapper	*Ocyurus chrysurus*	*Many*

Photo 5: School of Blue tang observed in the hardbottom area

Coral Species

Divers' observations were made using manta tows along transects by capturing photographs, video recordings and spot dives to confirm conditions. Species diversity, general abundance and overall health was observed. The coral species were observed on the hardbottom areas with a significant reef building coral cover.

Table 4: Names of eleven (11) species of coral species observed during survey

Common Name	Species Name
Boulder Star Coral	*Orbicella annularis*
Elliptical Star Coral	*Dichocoenia stokesii*
Finger Coral	*Porites porites*
Fire Coral (branching)	*Millepora alcicornis*
Golfball Coral	*Favia fragum*

Grooved Brain Coral	*Diploria labyrinthiformis*
Lesser Starlet Coral	*Siderastrea radions*
Massive Starlet Coral	*Siderastea sidera*
Mustard hill Coral	*Porites astreiods*
Smooth Brain Coral	*Pseudodiploria strigosa*
Thin Finger Coral	*Porities divaricata*

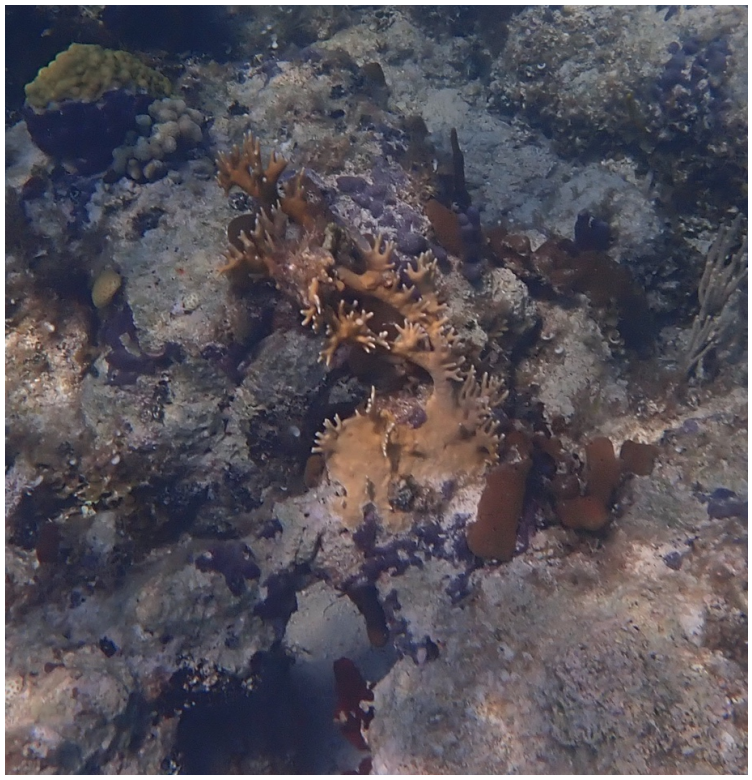


Photo 6: *Millepora alcicornis*, Fire coral

Photo 7: *Diploria labyrinthiformis*, Grooved Brain Coral

Photo 8: *Siderastrea siderea*, Massive Starlet Coral

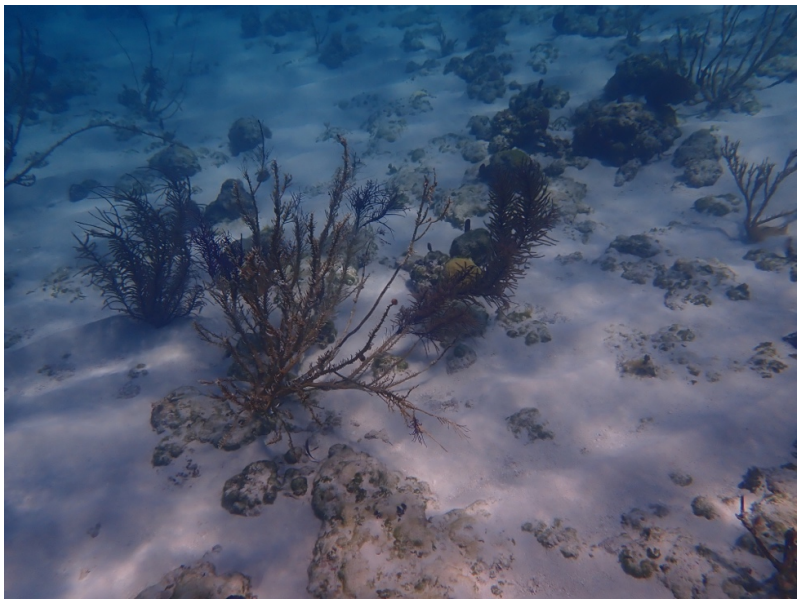


Photo 9: Benthic habitat in the northeastern site area

Non- coral Invertebrate Species

Majority of the non-coral invertebrate species were either on the sea floor or on rocks that sat on the sea floor.

Table 5: Names of non-coral invertebrate species observed during survey. Sixteen (16) non-coral species were observed on site.

Common Name	Species Name
Sea Plumes	*Pseudopterogorgia spp.*
Porous Sea Rods	*Pseudoplexaura spp.*
Sea Fans	*Gorgonia spp.*
Corky Sea Fingers	*Briareum asbestinum*
Black Sea Rod	*Plexaura homomalla*
Spotted Sea Hare	*Aplysia dactylomela*
Donkey Dung Sea Cucumber	*Holothuria mexicana*
Marine Sponges	
Coral Encrusting Sponge	*Cliona langae*
Black Ball Sponge	*Ircinia strobilina*
Rope Sponge	*Aplysina spp.*
Fire Sponge	*Tedania ignis*

Dark Volcano Sponge	*Svenzea zeai*
Branching Tube Sponge	*Alochroia crassa*
Maroon Colored Sponge	*Calyx podatypa**
Brown Variable Sponge	*Anthosigmella varians*
Vase Sponge	*Ircinia campana*

Flora - Algae, Seagrass and Seaweed Species

Flora species were found throughout the survey site.

Table 6: Names of fauna species observed during survey. Seventeen (17) fauna species were observed on site.

Common Name	Species Name
Bristle Ball Brush	*Penicillus dumetosus*
Dictyota	*Dictyota sp.*
Fuzz Ball Alga	*Cyanophyta*
Fuzzy Finger	*Dasycladus vermicularis*
Green Grape Algae	*Caulerpa racemosa*
Green Net Algae	*Microdictyon umbilicatum*
Halimeda	*Halimeda incrassata*
Manatee Grass	Syringodium filiforme
Pinecone Algae	*Rhipocephalus phoenix*
Porous Sea Rods	*Pseudoplexaura spp.*
Sargassum	*Sargassum natans*
Sea Pearl	*Ventricaria ventricosa*
Tubular Thicket Algae	*Galaxaura sp.*
Turtle Grass	Thalassia testudinum
Udotea	*Udotea sp.*
White Mermaid's Wine Glass	*Acetabularia crenulata*
White Scroll Algae	*Padina jamaicensis*

Photo 10: Hardbottom habitat

Commercially Important, Endangered and Invasive Species

Snappers were the only commercially important species observed at the site. Fish species are motile and other species my use the area and may not have been present at the time of observations. There were no invasive species observed.

Discussion

The project area consists of sandy shoreline. The dominant habitat types include sandy bottom with seagrass beds and algae, hardbottom with a thin layer of sand and algae. The northeastern area has the highest density of coral. There was not much diversity in the corals on site. There are no physical signs of stony coral tissue loss disease in the area. Fish density was highest at the hardbottom and patch coral areas.

The hardbottom areas further away from shore had lower visibility than areas within 300 ft from shore. This may be due to the constant boat traffic observed in the area

The area is an active tourist location and there is constant boat traffic and swimmers. The coral sites in the area as well as to the northeast appear to be frequented by snorkelers.

Although there is no marine construction proposed for this project, it is located downstream from the proposed upland works. The construction may have negative impacts on the environment such as an increase in pollution including runoff and dust and erosion. These impacts may increase the turbidity levels at the site. Upland works should be closely monitored for possible impacts and to ensure that mitigation strategies are properly implemented to reduce any possible impacts on the marine environment.

Terrestrial Environmental Report

Author: Tanya Ferguson

BEACHES

INVASIVE SPECIES REMOVAL & CONTROL PLAN

Prepared by:

Design Elements Limited

For:
Hall Environmental

Date:
17 June 2022

1 Table of Contents

1.0 Site Description

The Beaches Treasure Beach expansion site is located along the Northern coastline of Providenciales, Turks & Caicos and is bordered on the South, East and West by developed lands. At the time of acquisition, it was formerly a private residence that was completely human altered and devoid of native habitats; comprising of buildings, compacted fill used as access roads and invasive and landscaping plant species. Project works up to the time of inspection on 5 May 2022 included demolition of buildings and complete clearing of the site except for a stand of *Casuarina equisetifolia* (Australian Pine) along the shoreline and a small patch of *Coccothrinax* x (x).

Figure 1: Site Consitions (May 2022)

The beach profile at Northern boundary of the site the site has slope that is visually ranges between 10% and 15% with approximately 20-25 feet of beach slope (dry beach beyond mean high tide) and a low foredune that is devoid of native dune vegetation. *Casuarina equisetifolia* is present in a row along the dune crest. There are less than twenty individual plants approximately 25 feet in height with an average dbh (diameter at breast height) of x.

Figure 2: Shoreline with Australian Pine (Left - view facing East, Right – view facing West)

Removal of the invasive Australian Pine and landscaping with native species are proposed as a mitigation for project impacts. While these activities will have positive impacts there are also possible negative impacts associated with implementation of these actions to manage. This Invasive Species Removal and Control Plan was developed to guide the removal and replanting activities for the project.

2.0 Invasive Species Removal & Control Plan

2.1 Purpose

The purpose of this plan is to ensure that potential impacts associated with invasive species removal are addressed. Specifically, this plan aims to:

- provide guidance on the removal of existing invasive plant species on site;
- decrease the likelihood of invasive plant species re-emerging after removal and
- ensure that new and or additional alien invasive species are not introduced through the project

2.2 Definitions

Alien species *– non-native, non-indigenous, foreign, exotic species occurring outside of their natural range and dispersal potential, and includes any part, such as seeds and larvae, that might survive and subsequently reproduce.*

Biodiversity *– The variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems. Short for biological diversity.*

Control *– Measures to eliminate or reduce the effects of invasive species, including eradicating infestations, reducing populations of invasive species, preventing their spread and mitigating their impact on the economy.*

Intentional introduction *– An introduction made deliberately by humans, involving the purposeful movement of a species outside of its natural range and dispersal potential. Such introductions may be done legally or illegally.*

Introduction *– The movement by human agency of a species, subspecies or lower taxon outside its natural range. This movement can be either within a country or between countries.*

Invasive alien species *- Alien species that become established in a new environment, then proliferate and spread in ways that are destructive to native ecosystems, human health, and ultimately human welfare.*

Native species *– A species occurring within its natural range and dispersal potential, i.e. within the range it occupies naturally or could occupy without direct or indirect introduction or by care of humans. Those plants and animals that occurred when Columbus arrived*.

Sanitary or phytosanitary measure *– Any measure applied: To protect animal or plant life or health within a country from the risks arising from the entry, establishment or spread of pests, diseases, disease-carrying organisms or disease-causing organisms;*

Unintentional introduction *– An unintended introduction made as a result of a species utilizing humans or human delivery systems as vectors for dispersal outside its natural range.*

2.3 Potential Impacts

Potential Impacts associated with invasive species include:

- Spread of invasive species from existing individuals on the site
- Introduction of additional individuals of existing species
- Introduction of new plant and animal invasive species

Pathways for spread and introduction of invasive species during construction include:

- Regeneration of plants from improper removal
- Transfer of seeds and other propagative parts from one location to the next
- The introduction of invasive plants for replacement of invasive species / landscaping
- The introduction of invasive animals with the importation of plants for landscaping

2.4 Removal Methodology

When removing Invasive species from along the shoreline, consideration should be given to the approach if it is determined that removal may result in wave erosion or contribute to exiting erosion. Given that the Australian Pine to be removed is not at a location with current erosion impacts and in an area where it is not likely to cause wave impact erosion complete removal is recommended.

The trees will be fell manually using chainsaws and the root system completely excavated using heavy equipment to avoid stump regrowth. Removal of the root system will loosen sediment along the crest which can lead to wind erosion; and leave areas with large excavation that can destabilize the dune crest and are a safety concern. Thus, excavations resulting from removal of roots should be immediately back filled using loose sediment removed during excavation. The existing dune profile should be maintained, and revegetation should being immediately following.

2.5 Revegetation

Alternatively, revegetation can commence immediately using the excavations as planting pits for *Cocos nucifera* (Coconut Palm) or native trees from the dune species outlined in Table 1 below. Native dune shrubs and ground covers that will easily become establish and hold in sand will assist with swift stabilization of the dune crest.

Table 1: Dune species for revegetation of shoreline after invasive species removal

Botanical Name	Common Name
TREES	
Jacquina keyensis	Joewood
Cordia sebestena	Geiger Tree
Coccoloba uvifera	Sea grape
PALMS & LARGE SHRUBS	
Byrsonima lucida	Guana Berry
Coccothrinax argentata	Silver Top Palm
Conocarpus erectus	Buttonwood
SHRUBS	
Argusia gnaphalodes	Bay lavander
Borrichia arborescens	Bay Marigold
Chrysobalanus icaco	Coco plum
Genipa clusiifolia	Seveny-ear apple
Hymenocalis arenicola	Spider lily
Scaevola plumieri	Inkberry
GROUND COVERS	
Ernodea littoralis	Golden Creeper
Ipomea pes-caprae	Railroad vine
Sesuvium portulacastrum	Sea purslane
Uniola paniculata	Sea Oats

2.6 Protocols to prevent Introduction of New Invasive Plant & Animal Species

In addition to removing existing invasive there should be no introduction of new invasive species to the site as a result of the project.

The potential pathway for introduction of invasive species is through the shipment of plant material for the project. Specifically, there is a concern for the introduction of:

- Cane toads (*Rhinella marina*), Green Iguana (*Iguana iguana*), Corn Snake (*Pantherophis guttatus*) and Knight anole (*Anolis equestris*) which can be "hitchhikers" in plant material shipped from outside of the country.
- Accidental inclusion of invasive plant species for landscaping.

Biosecurity protocols to prevent introduction of invasive species to the site will involve preventive measures and procedures to respond to incursions.

Preventative measures:

- No invasive species will be included on the landscape palette.
- Local procurement of plants should be a first option.
- Upon arrival and offloading of plants, a plant inventory and inspection should be to ensure that plants present are as per the approved landscape palette.
- Any invasive plant material should be disposed of by incineration.

Invasive Species sightings response protocol

Should there be a sighting of an invasive species the following actions are to be taken:

- For all sightings, the Environmental Officer should be notified immediately.
- If sighting is at the time of offloading, every effort should be made to contain or capture the animal.
- Photographs of the animal should be taken to assist in identification of the organism and verification of its status as an invasive alien species.
- An incident report will be prepared by the Environmental Officer and forwarded to the ????

3.0 Dune Stabilization and Native Landscaping

The development proposes to utilize native species in the landscaping as a mitigation for project impacts. Use of native tree and shrub species includes species that bear fruit that will serve as food for resident and migrant avifauna species. Landscape design within the upland development area will also include some native drought tolerant plant species which will reduce water demands on the project. Once these native species become established, their dependence upon project water will be significantly reduced.

While this exercise will result in a positive impact on native flora biodiversity and avifauna, there are potential negative impacts associated with the activity including unintentional introduction of invasive plant and animal species and introduction of pest and disease.

3.1 Purpose

The purpose of this plan is to ensure that potential impacts associated the landscaping exercise are addressed. Specifically, this plan aims to:

- prevent the reestablishment of invasive species
- increase wildlife habitat
- ensure that new invasive plant and animal species are not introduced to the site
- prevent the introduction of plant pest and disease

3.2 Potential Impacts

Potential Impacts associated with landscaping include:

- Unintentional introduction of new invasive plant and animal species through importation of plants
- introduction of plant pest and disease

3.3 Plant Selection

Plants selected for landscaping should be based on the following criteria:

- No invasive species will be permitted on the landscape palette

Native species selected should consider the following:

- Native plants that can be a food source for avian species
- Protected species
- Species readily available in local and Florida Nurseries

Table 2: Native Species proposed for use in landscaping

#	Botanical Name	Common Name
1	*Bursera simarouba*	Gum Elemi
2	*Chrysobalanus icaco*	Coco plum
3	*Coccoloba diversifoloa*	Pigeon Plum
4	*Coccoloba uvifera*	Sea Grape
5	*Conocarpus erectus*	Buttonwood
6	*Cordia sebestena*	Geiger
7	*Guaiacum sanctum*	Lignum Vitae
8	*Guapira discolour*	Long leaf Blolly
9	*Ipomoea pes-caprae*	Railroad vine
10	*Myrcianthes fragrans*	Simpson Stopper
11	*Myrica cerifera*	Wax Myrtle
12	*Plumeria obtusa*	Wild Frangipani
13	*Pseudophoenix sargentii*	Buccaneer Palm
14	*Psychotria ligustrifolia*	Wild Coffee
15	*Sabal palmetto*	Sabal Palm
16	*Suriana maritima*	Bay Cedar
17	*Swietenia mahagoni*	Mahagony
18	*Thrinax radiata*	Thatch palm
19	*Turnera ulmifolia*	Buttercup
20	*Uniola paniculata*	Sea Oats

Plant procurement procedure

To safeguard against the introduction of plant pest and disease:

- Local procurement of plants will be a first option
- When purchasing from the United States, a phytosanitary certificate from the point of origin, certifying that plants are free from pest and disease, should be provided for all imported plants.
- Upon arrival, plants should be inspected by a professional trained in identifying plant pest and disease.

ENVIRONMENTAL MANAGEMENT PROGRAM

BEACHES: TREASURE BEACH EXPANSION, PROVIDENCIALES, TCI

ENVIRONMENTAL CONSULTANT: Ezekiel E. Hall- EnvironmentALL
MONITORING CLASSIFICATION: Impact Assessment Monitoring

BACKGROUND

Under grant of an Outline Development Permission (PR.15741) relating to the expansion of the industry leading Beaches Turks and Caicos Tourism property (The Bight, Providenciales, TCI) several conditions were established by the Department of Planning (DoP) and Department of Environment and Coastal Resources (DECR). The subsequent Building Permit for the construction of 101 additional guest rooms, restaurants and community pool will result in the restoration the project site that was rendered anthropogenic. The restoration process will include the removal of invasive plant species and the introduction of native species where possible. The removal of invasive species will be carried out in a manner that is non detrimental to the existing coastal dune ridge.

Beaches Turks and Caicos is positioned to comply with environmental management protocols and guidelines presented to TCIC as outlined in the Environmental Impact Assessment report. To this end, this Environmental Monitoring Program presents onsite monitoring, sample collection, data measurements and reporting activities in response to the compliance requirements of the proposed project.

OBJECTIVE

To implement an early warning system for the detection of potential adverse environmental impact(s), establish environmental benchmarks for pre-existing conditions within the immediate and surrounding areas of the proposed project site and implement on-going environmental monitoring of marine water quality during the operations phase of the project.

STATISTICAL CONSIDERATIONS

The statistical design of this Environmental Monitoring Program will be based on a comparison of environmental quality parameters during pre-construction, construction and operations phases of the project. Sampling will be stratified by wet and dry seasons and conducted on a quarterly basis. The monitoring program allows for statistical analysis of the seasonal and yearly variations during the operations phase.

ENVIRONMENTAL MONITORING PROGRAM

Seawater Quality Parameters

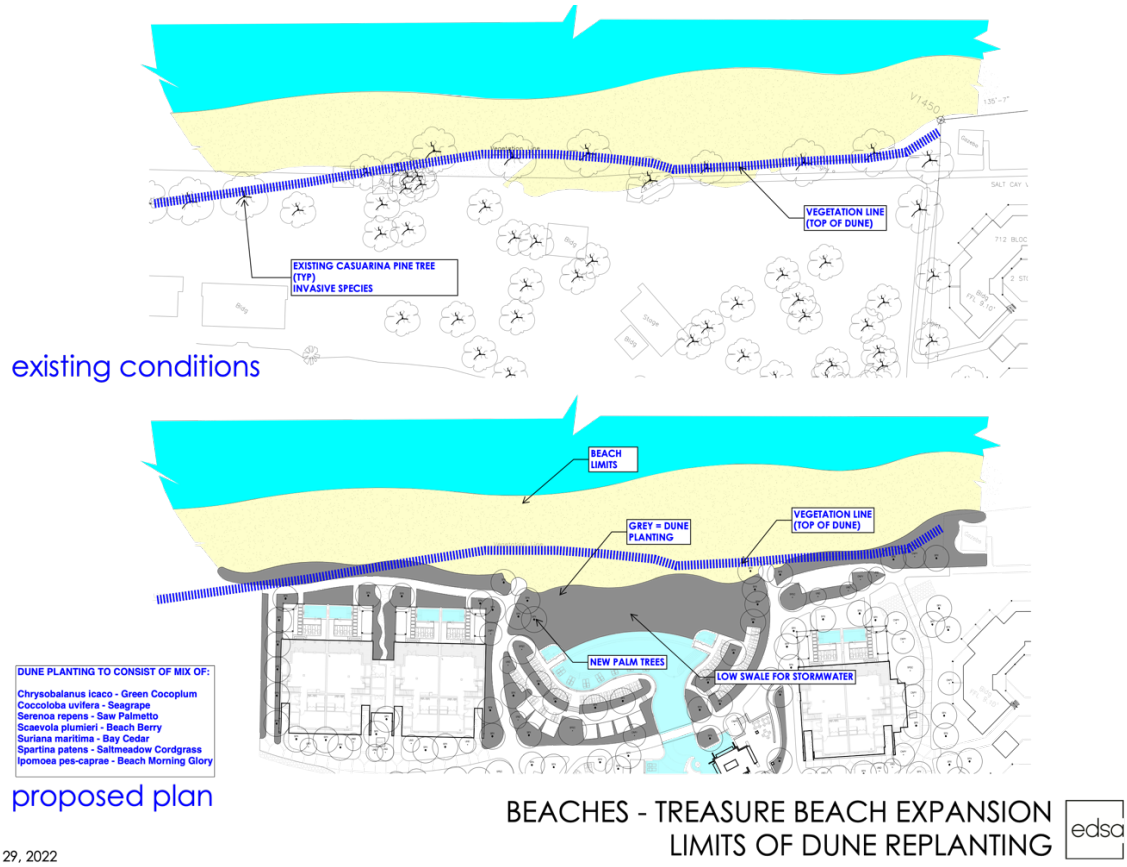
Seawater -	pH, Turbidity, Temperature, Salinity, Dissolved Oxygen, Fecal Coliforms, Total Coliform	
Frequency -	Once during pre-construction phase	($1,200.00)
	Weekly during construction phase	($1,200.00/week)
	Quarterly during operations phase	($1,200.00/Quarterly)

EnvironmentALL assumes full responsibility marine boat hire, sample collection, sample analysis and reporting.

Sample site location: 21°47'19"N / 72°12'02W

Landscape Restoration Plan

Problem:	Invasive Plant Species (Australian Pine). The Australian Pine is an Alien Invasive Species (IAS) that usually displace native beach flora that provide wildlife habitat for threatened and endangered flora and fauna.
Background:	Alteration of micro environment Alleopathic properties Promotes beach erosion – shallow root
Solution:	Removal of invasive alien species (Australian Pine)
Removal Method:	Tree cutting and stump application method (mulching)
Revegetation:	Green coco plum, Sea Grape, Big Top Sabal Palmetto, Coconut, Beach Morning Glory
Reporting:	Sample data collected will be shared with DoP and DECR as per established protocol and summarized in reports during the pre-construction phase, construction phase and operations phase.



Invasive Species Removal & Control Plan

Purpose

The purpose of this plan is to ensure that potential impacts associated with invasive species removal are addressed. Specifically, this plan aims to:

i. provide guidance on the removal of existing invasive plant species on site;
ii. decrease the likelihood of invasive plant species re-emerging after removal and
iii. ensure that new and or additional alien invasive species are not introduced through the project

Definitions

Alien species – *non-native, non-indigenous, foreign, exotic species occurring outside of their natural range and dispersal potential, and includes any part, such as seeds and larvae, that might survive and subsequently reproduce.*

Biodiversity – *The variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems. Short for biological diversity.*

Control – *Measures to eliminate or reduce the effects of invasive species, including eradicating infestations, reducing populations of invasive species, preventing their spread and mitigating their impact on the economy.*

Intentional introduction – *An introduction made deliberately by humans, involving the purposeful movement of a species outside of its natural range and dispersal potential. Such introductions may be done legally or illegally.*

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Sanitary or phytosanitary measure – *Any measure applied: To protect animal or plant life or health within a country from the risks arising from the entry, establishment or spread of pests, diseases, disease-carrying organisms or disease-causing organisms;*

Unintentional introduction – *An unintended introduction made as a result of a species utilizing humans or human delivery systems as vectors for dispersal outside its natural range.*

Potential Impacts

Potential Impacts associated with invasive species include:

i. Spread of invasive species from existing individuals on the site
ii. Introduction of additional individuals of existing species

iii. Introduction of new plant and animal invasive species

Pathways for spread and introduction of invasive species during construction include:

i. Regeneration of plants from improper removal
ii. Transfer of seeds and other propagative parts from one location to the next
iii. The introduction of invasive plants for replacement of invasive species / landscaping
iv. The introduction of invasive animals with the importation of plants for landscaping

Removal Methodology

When removing Invasive species from along the shoreline, consideration should be given to the approach if it is determined that removal may result in wave erosion or contribute to exiting erosion. Given that the Australian Pine to be removed is not at a location with current erosion impacts and in an area where it is not likely to cause wave impact erosion complete removal is recommended.

The trees will be fell manually using chainsaws and the root system completely excavated using heavy equipment to avoid stump regrowth. Removal of the root system will loosen sediment along the crest which can lead to wind erosion; and leave areas with large excavation that can destabilize the dune crest and are a safety concern. Thus, excavations resulting from removal of roots should be immediately back filled using loose sediment removed during excavation. The existing dune profile should be maintained, and revegetation should begin immediately.

Revegetation

Alternatively, revegetation can commence immediately using the excavations as planting pits for *Cocos nucifera* (Coconut Palm) or native trees from the dune species outlined in Table 15 below. Native dune shrubs and ground covers that will easily become establish and hold in sand will assist with swift stabilization of the dune crest.

Table 1. List of Dune Flora species

Botanical Name	Common Name
TREES	
Jacquina keyensis	Joewood
Cordia sebestena	Geiger Tree
Coccoloba uvifera	Sea grape
PALMS & LARGE SHRUBS	
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Chrysobalanus icaco	Coco plum
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Scaevola plumieri	Inkberry
GROUND COVERS	
Ernodea littoralis	Golden Creeper
Ipomea pes-caprae	Railroad vine
Sesuvium portulacastrum	Sea purslane
Uniola paniculata	Sea Oats

Protocols to prevent Introduction of New Invasive Plant & Animal Species

In addition to removing existing invasive there should be no introduction of new invasive species to the site as a result of the project. The potential pathway for introduction of invasive species is through the shipment of plant material for the project. Specifically, there is a concern for the introduction of:

i. Cane toads (*Rhinella marina*), Green Iguana (*Iguana iguana*), Corn Snake (*Pantherophis guttatus*) and Knight anole (*Anolis equestris*) which can be "hitchhikers" in plant material shipped from outside of the country.
ii. Accidental inclusion of invasive plant species for landscaping.

Biosecurity protocols to prevent introduction of invasive species to the site will involve preventive measures and procedures to respond to incursions.

Preventative measures

A. No invasive species will be included on the landscape palette.
B. Local procurement of plants should be a first option.
C. Upon arrival and offloading of plants, a plant inventory and inspection should be to ensure that plants present are as per the approved landscape palette.
D. Any invasive plant material should be disposed of by incineration.

Invasive Species sightings response protocol

Should there be a sighting of an invasive species the following actions are to be taken:

i. For all sightings, the DECR should be notified immediately.
ii. If sighting is at the time of offloading, every effort should be made to contain or capture the animal.
iii. Photographs of the animal should be taken to assist in identification of the organism and verification of its status as an invasive alien species.
iv. An incident report will be prepared by the EnvironmentALL and forwarded to Thye DECR

Dune Stabilization and Native Landscaping

The development proposes to utilize native species in the landscaping as a mitigation for project impacts. Use of native tree and shrub species includes species that bear fruit that will serve as food for resident and migrant avifauna species. Landscape design within the upland development area will also include some native drought tolerant plant species which will reduce water

demands on the project. Once these native species become established, their dependence upon project water will be significantly reduced.

While this exercise will result in a positive impact on native flora biodiversity and avifauna, there are potential negative impacts associated with the activity including unintentional introduction of invasive plant and animal species and introduction of pest and disease.

Purpose

The purpose of this plan is to ensure that potential impacts associated the landscaping exercise are addressed. Specifically, this plan aims to:

i. prevent the reestablishment of invasive species
ii. increase wildlife habitat
iii. ensure that new invasive plant and animal species are not introduced to the site
iv. prevent the introduction of plant pest and disease

Potential Impacts

Potential Impacts associated with landscaping include:

i. Unintentional introduction of new invasive plant and animal species through importation of plants
ii. introduction of plant pest and disease

Plant Selection

Plants selected for landscaping should be based on the following criteria:

i. No invasive species will be permitted on the landscape palette

Native species selected, Table 16 should consider the following:

i. Native plants that can be a food source for avian species
ii. Protected species
iii. Species readily available in local and Florida Nurseries

Table 2. Native species for use in landscape plan

#	Botanical Name	Common Name
1	*Bursera simarouba*	Gum Elemi
2	*Chrysobalanus icaco*	Coco plum
3	*Coccoloba diversifoloa*	Pigeon Plum
4	*Coccoloba uvifera*	Sea Grape
5	*Conocarpus erectus*	Buttonwood
6	*Cordia sebestena*	Geiger
7	*Guaiacum sanctum*	Lignum Vitae
8	*Guapira discolour*	Long leaf Blolly
9	*Ipomoea pes-caprae*	Railroad vine
10	*Myrcianthes fragrans*	Simpson Stopper
11	*Myrica cerifera*	Wax Myrtle
12	*Plumeria obtusa*	Wild Frangipani
13	*Pseudophoenix sargentii*	Buccaneer Palm
14	*Psychotria ligustrifolia*	Wild Coffee
15	*Sabal palmetto*	Sabal Palm
16	*Suriana maritima*	Bay Cedar
17	*Swietenia mahagoni*	Mahagony
18	*Thrinax radiata*	Thatch palm
19	*Turnera ulmifolia*	Buttercup
20	*Uniola paniculata*	Sea Oats

Plant procurement procedure

To safeguard against the introduction of plant pest and disease:

i. Local procurement of plants will be a first option

ii. When purchasing from the United States, a phytosanitary certificate from the point of origin, certifying that plants are free from pest and disease, should be provided for all imported plants.

iii. Upon arrival, plants should be inspected by a professional trained in identifying plant pest and disease.

FUEL SPILL EMERGENCY RESPONSE PLAN

There are four critical steps that outlines the process for a fuel spill response:

COMMUNICATION

The Duty Manager should immediately communicate the spill episode to the Incident Commander via radio or cellphone. The notification should include the type , location and estimated quantity of the material spilled. As necessary, the area should be evacuated.

CONTROL

After communicating the spill episode take action to control it:

i. Close supply valves
ii. Shut off power supply
iii. Turn off engines (Vehicles)
iv. Excavate and dispose contaminated earth materials as per local codes
v. Restore excavated area(s) with clean earth material of similar grade and quality
vi. Always use PPE

CONTAIN

After the spill episode has been controlled the situation has to be contained and prevent it from spreading to drains of ingress to environmentally sensitive areas:

i. Deploy absorbents or neutralizers
ii. Contain from the outer boundary towards the interior using a spill sock, a dike or trench to block or direct to spill plume
iii. Use caution tape as an access barrier so alert others not to enter the secluded area.

CLEAN-UP

When the spill episode has been controlled and contained clean up can begin:

i. Move spill plume from the outside inward

ii. Collect any free-standing liquid plume in leak proof containers

iii. Dispose of any absorbent mats, neutralizing materials, garbage bags rubbish bags

iv. Restore excavated areas with earth materials of similar grade and quality

v. Dispose of spill materials at the local landfill site

vi. Wash affected surfaces with the correct solution for the spills

vii. Repair physical breaches

ACTION PLAN

PRE-EMERGENCY PLANNING AND COORDINATION WITH OUTSIDE PARTIES

Facility Manager to coordinate activities with outside response organizations and emergency response organizations including fire departments, ambulance/hospital emergency room services , Department of Disaster Management & Emergencies (DDME-TCIG) and the Police.

Phone numbers and contact personnel must be readily available and correct

Facility Manager	1(649) _____
Assistant Facility Manager	1(649) _____
Hotel Manager	1(649) _____
Incident Commander	1(649) _____
Fire Department	1(649) _____
Police	911
DDME	1(649) 946-4521

A line of authority and responsibility matrix , Table 17, must be clearly written and defined. Initial communication channels should be directed to the on-scene incident

commander quickly in the event of an emergency. Although first responder awareness level respondents may be expected to inform their supervisors (as opposed to the on-scene incident commander or hazmat response team) in the event of an emergency, the supervisor should be trained to inform the emergency response personnel. Responder training should form an integral part of the spill recovery plan. This might include the training course outline for each of the various levels of emergency responder. A system to communicate evacuations of all potentially affected employees who are not designated as emergency responders should be developed. The following information is critical to inform employees of what their immediate response should be:

1. Notification — Making the existence of the emergency known.
2. Level & Type of Response — The required response based on the extent and type of emergency.
3. Nature of the Emergency — Type of emergency condition (fire, explosion, vapor release, chemical spill, medical).
4. Location — Critically important in large facilities.
5. Ambient Conditions — Environmental factors that influence evacuation or response procedures (wind speed and direction).

Table 3. Responsibility matrix

Responsibility Matrix	
Person Responsible	Duties
Incident Commander	Assess Spill Episode Coordinate Emergency Response Make Notifications Facilitate Planning Meetings Liaise with Government Facilitate post Emergency Review
Planning Leader/Duty Manager	Supervise Emergency Action Plan Maintain up-to-date information on the status of the spill episode Share Incident Status Evaluate Environmental effects

HURRICANE EMERGENCY PLAN

HURRICANE SEASON = June 1st to November 30th in the Caribbean

Beaches Turks and Caicos Resort and Spa Disaster Committee will comprise of the following persons:

1. *Managing Director* _____ *Commander in Chief*
2. *General Manager* _____ *Oversight of Coordinated Efforts*
3. *Hotel Manager* _____ *Co-ordinate all Guest Services*
4. *Director of Operation* _____ *Co-ordinate all Village Preparation*
5. *Senior Executive Assistant Manager* _____ *Co-ordinate Village Preparations*
6. *Executive Assistant Manager* _____ *Co-ordinate Village Preparations*
7. *Technical Service Manager* _____ *Co-ordinate Property Emergency Operations*
8. *Food and Beverage Director* _____ *Food and Beverage*
9. *Engineering Manager* _____ *Maintenance*
10. *Security Manager* _____ *Security/Emergency*
11. *Executive Chef* _____ *Menus*
12. *Purchasing Manager* _____ *Purchasing*
13. *EHS Coordinators/ Nurse* _____ *Emergency Supplies/Medical*
14. *EAM* _____ *Rooms Status and Guest Relations*

5.1 EXECUTIVE SUMMARY

The "Atlantic Hurricane Season", which includes the Caribbean Basin, begins June 1st and ends on November 30th each year; although hurricanes can occur outside this window if weather conditions are appropriate. This document outlines the procedures to be implemented in the event of a hurricane emergency. It is designed to provide mitigating measures and planning guidance for all Sandals and Beaches hotels so that there is zero or at least minimal impact on human safety and facilities damage and also to ensure minimal back-to-business recovery time after the event. This document also aims to reduce losses related to legal action and to represent due diligence planning on the part of the Sandals and Beaches Group of hotels with respect to emergency preparedness planning for tropical cyclones.

5.2 What is a Hurricane?

- A "hurricane" is the most severe category of the meteorological phenomenon known as the "tropical cyclone."
- Tropical cyclones are low pressure systems that have thunderstorm activity and rotate counterclockwise. A tropical cyclone that has winds of 38 mph (33 kt) or less is called a tropical depression. When the tropical cyclones winds reach 39-73 mph (34-63 kt), it is called a tropical storm. When the winds exceed 74 mph (64 kt), the storm is considered to be a hurricane.
- The Saffir-Simpson Hurricane Scale defines hurricane strength by categories. A Category 1 storm is the weakest hurricane (winds 74-95 mph or 64-82 kt); a Category 5 hurricane is the strongest (winds greater than 155 mph or 135 kt).

- The category of the storm does not necessarily relate directly to the damage it will inflict. Lower category storms (and even tropical storms) can cause substantial damage depending on what other weather features they interact with, where they strike, and how slow they move.

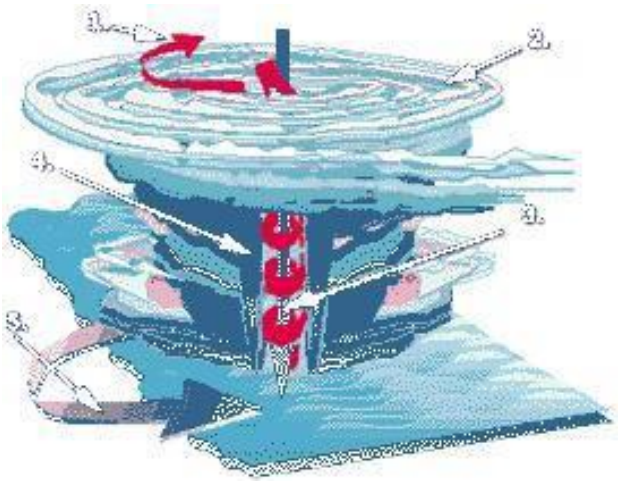
Hurricane Formation

- The formation of a tropical cyclone and its growth into a hurricane requires: 1) a pre-existing weather disturbance; 2) ocean temperatures at least 80ºF to a depth of about 150 feet; and 3) winds that are relatively light throughout the depth of the atmosphere (low wind shear).
- Tropical storms and hurricanes weaken when their sources of heat and moisture are cut off (such as happens when they move over land) or when they encounter strong wind shear.
- A weakening hurricane can re-intensify if it moves into a more favorable region. The remnants of a land-falling hurricane can still cause considerable damage.

How Tropical Cyclones are observed

- *Direct* measurements of tropical storm and hurricane dimensions and wind speeds are taken primarily by reconnaissance aircraft, although ships and buoys also take important measurements. Once a hurricane is near and/or on land, Automated Surface Observation Systems (ASOS) provide surface conditions, and radiosondes (radio-meteorographs) take upper air measurements.
- *Indirect* observational methods include satellite imagery and Doppler radar. In particular, satellites have greatly improved our ability to monitor and understand hurricanes. Radar data are important once the storm comes close to shore and after landfall.

The Anatomy of a Hurricane



1. Exhaust / Outflow
The high level clouds moving clockwise out away from the hurricane at heights of over 35,000 feet. These clouds are indicative of air spreading out over the top of the storm, which is essential to its development.

2. Storm Clouds / Feeder Bands
These are squally bands of showers characterized by strong gusty winds and heavy rains. These bands become more pronounced as the storm intensifies, and are fed by the warm ocean. The clouds associated with these bands are seen to create a spiral in upper atmosphere.

3. Eye
The most recognizable feature found within a hurricane is the eye. The eye is the centre of the cyclone's activities and is usually 20km - 50km in diameter. This feature is the focus of the

hurricane, the point about which the rest of the storm rotates and where the lowest surface pressures are found in the storm. Cool air descends into the 20-mile wide eye, creating a small center of clam weather.

4. Eye Wall

The eyewall is the most devastating region and it has the storm fiercest winds. Surrounding the eye is the region of most intense winds and rainfall called the eye wall. Large bands of clouds and precipitation spiral from the eye wall and are thusly called spiral rain bands. Depending on the speed at which the system is moving, the passing of the 'eye' can last from fifteen minutes to an hour. It should be noted that when the winds return, they come from the opposite direction. If the eye does not pass overhead, there may not be a lull in the weather activities, or only a short one.

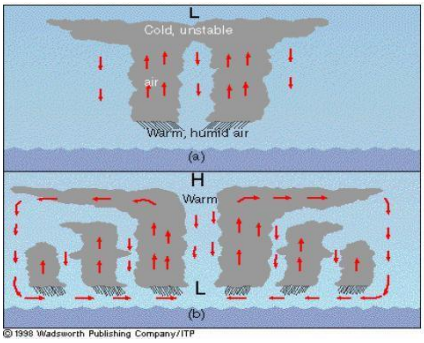
5. Spiraling Winds

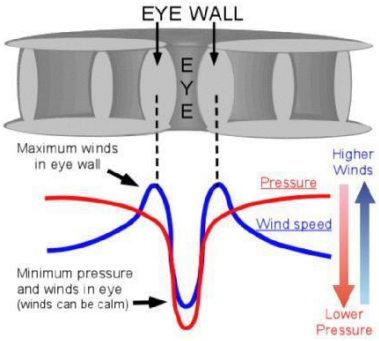
In the hurricane's lower realms, air flows in toward the center and whirls upward. These counterclockwise winds gain speed as they approach the eye, like a whirlpool. The narrower the eye, the stronger the winds.

Additional Hurricane Information

- Typical hurricanes are about 300 miles wide although they can vary considerably in size.
- The eye at a hurricane's center is a relatively calm, clear area approximately 20-40 miles across.
- The eye wall surrounding the eye is composed of dense clouds that contain the highest winds in the storm.
- The storm's outer rain bands (often with hurricane or tropical storm-force winds) are made up of dense bands of thunderstorms ranging from a few miles to tens of miles wide and 50 to 300 miles long.
- Hurricane-force winds can extend outward to about 25 miles in a small hurricane and to more than 150 miles for a large one. Tropical storm-force winds can stretch out as far as 300 miles from the center of a large hurricane.
- Frequently, the right side of a hurricane is the most dangerous in terms of storm surge, winds, and tornadoes.
- A hurricane's speed and path depend on Complex Ocean and atmospheric interactions, including the presence or absence of other weather patterns. This complexity of the flow makes it very difficult to predict the speed and direction of a hurricane.

- Do not focus on the eye or the track – hurricanes are immense systems that can move in complex patterns that are difficult to predict. Be prepared for changes in size, intensity, speed, and direction.





THE SAFFIR-SIMPSON HURRICANE SCALE

Hurricanes are defined by their wind speed according to the Saffir-Simpson Scale. The Saffir-Simpson Hurricane Scale is a 1-5 rating based on the hurricane's present intensity. This is used to give an estimate of the potential property damage and flooding expected along the coast from a hurricane landfall. Wind speed is the determining factor in the scale, as storm surge values are highly dependent on the slope of the continental shelf in the landfall region. Note that all winds are using the U.S. 1-minute average.

Category One Hurricane:

Winds 74-95 mph (64-82 kt or 119-153 km/hr). Storm surge generally 4-5 ft above normal. No real damage to building structures. Damage primarily to unanchored mobile homes, shrubbery, and trees. Some damage to poorly constructed signs. Also, some coastal road flooding and minor pier damage. Hurricanes Allison of 1995 and Danny of 1997 were Category One hurricanes at peak intensity.

Category Two Hurricane:

Winds 96-110 mph (83-95 kt or 154-177 km/hr). Storm surge generally 6-8 feet above normal. Some roofing material, door, and window damage of buildings. Considerable damage to shrubbery and trees with some trees blown down. Considerable damage to mobile homes, poorly constructed signs, and piers. Coastal and low-lying escape routes flood 2-4 hours before arrival of the hurricane centre. Small craft in unprotected anchorages break moorings. Hurricane Bonnie of 1998 was a Category Two hurricane when it hit the North Carolina coast, while Hurricane Georges of 1998 was a Category Two Hurricane when it hit the Florida Keys and the Mississippi Gulf Coast.

Category Three Hurricane:

Winds 111-130 mph (96-113 kt or 178-209 km/hr). Storm surge generally 9-12 ft above normal. Some structural damage to small residences and utility buildings with a minor amount of curtainwall failures. Damage to shrubbery and trees with foliage blown off trees and large trees blown down. Mobile homes and poorly constructed signs are destroyed. Low-lying escape routes are cut by rising water 3-5 hours before arrival of the centre of the hurricane. Flooding near the coast destroys smaller structures with larger structures damaged by battering from floating debris. Terrain continuously lower than 5 ft above mean sea level may be flooded inland 8 miles (13 km) or more. Evacuation of low-lying residences with several blocks of the shoreline may be required. Hurricanes Roxanne of 1995 and Fran of 1996 were Category Three hurricanes at landfall on the Yucatan Peninsula of Mexico and in North Carolina, respectively.

Category Four Hurricane:

Winds 131-155 mph (114-135 kt or 210-249 km/hr.). Storm surge generally 13-18 ft. above normal. More extensive curtain wall failures with some complete roof structure failures on small residences. Shrubs, trees, and all signs are blown down. Complete destruction of mobile homes. Extensive damage to doors and windows. Low-lying escape routes may be cut by rising water 3-5 hours before arrival of the centre of the hurricane. Major damage to lower floors of structures near the shore. Terrain lower than 10 ft above sea level may be flooded requiring massive evacuation of residential areas as far inland as 6 miles (10 km). Hurricane Luis of 1995 was a Category Four hurricane while moving over the Leeward Islands. Hurricanes Felix and Opal of 1995 also reached Category Four status at peak intensity.

Category Five Hurricane:

Winds greater than 155 mph (135 kt or 249 km/hr). Storm surge generally greater than 18 ft above normal. Complete roof failure on many residences and industrial buildings. Some complete building failures with small utility buildings blown over or away. All shrubs, trees, and signs blown down. Complete destruction of mobile homes. Severe and extensive window and door damage. Low-lying escape routes are cut by rising water 3-5 hours before arrival of the centre of the hurricane. Major damage to lower floors of all structures located less than 15 ft above sea level and within 500 yards of the shoreline. Massive evacuation of residential areas on low ground within 5-10 miles (8-16 km) of the shoreline may be required. Hurricane Mitch of 1998 was a Category Five hurricane at peak intensity over the western Caribbean. Hurricane Gilbert of 1988 was a Category Five hurricane at peak intensity and is one of the strongest Atlantic tropical cyclones of record.

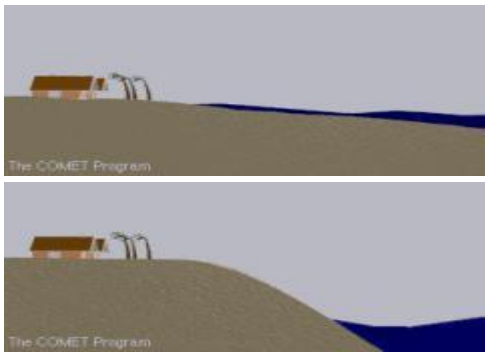
WEATHER ACTIVITIES and HAZARDS ASSOCIATED WITH HURRICANES

STORM SURGES

"The greatest potential for loss of life related to a hurricane is from the storm surge." - Brian Jarvinen, National Hurricane Center

Storm surge is simply water that is pushed toward the shore by the force of the winds swirling around the storm. This advancing surge combines with the normal tides to create the hurricane storm tide, which can increase the mean water level 15 feet or more. In addition, wind driven waves are superimposed on the storm tide. This rise in water level can cause severe flooding in coastal areas, particularly when the storm tide coincides with the normal high tides. Because much of the United States' densely populated Atlantic and Gulf Coast coastlines lie less than 10 feet above mean sea level, the danger from storm tides is tremendous.

The level of surge in a particular area is also determined by the slope of the continental shelf. A shallow slope off the coast (right, top picture) will allow a greater surge to inundate coastal communities. Communities with a steeper continental shelf (right, bottom picture) will not see as much surge inundation, although large breaking waves can still present major problems. Storm tides, waves, and currents in confined harbors severely damage ships, marinas, and pleasure boats.



One tool used to evaluate the threat from storm surge is the SLOSH model. Emergency managers use this data from SLOSH to determine which areas must be evacuated for storm surge. The links below provide some altered photos that show how the intensity of the storm (as given by the Saffir-Simpson Hurricane Scale) affects the possibility of flooding from storm surge at two locations. Storm surge also affects rivers and inland lakes, potentially increasing the area that must be evacuated.

In general, the more intense the storm, and the closer a community is to the right-front quadrant, the larger the area that must be evacuated. The problem is always the uncertainty about how intense the storm will be when it finally makes landfall. Emergency managers and local officials balance that uncertainty with the human and economic risks to their community. This is why a rule of thumb for emergency managers is to plan for a storm one category higher than what is forecast. This is a reasonable precaution to help minimize the loss of life from hurricanes.

Wave and current action associated with the tide also causes extensive damage. Water weighs approximately 1,700 pounds per cubic yard; extended pounding by frequent waves can demolish any structure not specifically designed to withstand such forces.

The currents created by the tide combine with the action of the waves to severely erode beaches and coastal highways. Many buildings withstand hurricane force winds until their foundations, undermined by erosion, are weakened and fail.

In estuaries and bayous, intrusions of salt water endanger the public health and send animals, such as snakes, to flee from flooded areas and take refuge in urban areas.

FLOODING

"In the last 30 years, inland flooding has been responsible for more than half the deaths associated with tropical cyclones in the United States."

Ed Rappaport
National Hurricane Centre

When it comes to hurricanes, wind speeds do not tell the whole story. Hurricanes produce storm surges, tornadoes, and often the most deadly of all - inland flooding.

While storm surge is always a potential threat, more people have died from inland flooding in the last 30 years. Intense rainfall is not directly related to the wind speed of tropical cyclones. In fact, some of the greatest rainfall amounts occur from weaker storms that drift slowly or stall over an area.

Inland flooding can be a major threat to communities hundreds of miles from the coast as intense rain falls from these huge tropical air masses.

Tropical Storm Allison (2001) produced extremely heavy rainfall and catastrophic floods in the Houston, Texas area. Allison then acquired subtropical characteristics and continued to produce heavy rainfall and flooding near its track from Louisiana eastward to North Carolina, and then northward along the U.S. east coast to Massachusetts. Forty-one deaths were directly related to the heavy rain, flooding, tornadoes, and high surf. Damage estimates reported by the Federal Emergency Management Agency (FEMA) were near $5 billion, with approximately $4.8 billion in the Houston metropolitan area alone

Hurricane Floyd (1999) brought intense rains and record flooding to the Eastern U.S. Of the 56 people who perished, 50 drowned due to inland flooding.

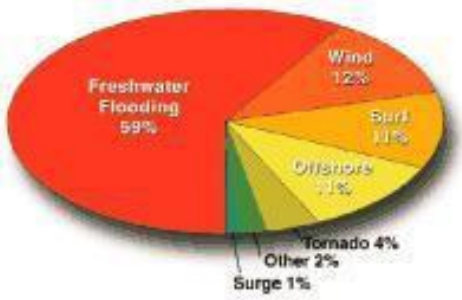
Hurricane Floyd Courtesy of NASA/GSFC

Tropical Storm Alberto (1994) drifted over the Southeast United States and produced torrential rainfall. More than 21 inches of rain fell at Americus, Georgia. Thirty-three people drowned. Damages exceeded $750 million.

Tropical Storm Claudette (1979) brought 45 inches of rain to an area near Alvin, Texas, contributing to more than $600 million in damages.

Hurricane Agnes (1972) produced floods in the Northeast United States which contributed to 122 deaths and $6.4 billion in damages. Long after the winds from Hurricane Diane (1955) subsided, the storm brought inland flooding to Pennsylvania, New York, and New England contributing to nearly 200 deaths and $4.2 billion in damages.

Freshwater floods accounted for more than half (59%) of U.S. tropical cyclone deaths over the past 30 years. These floods are why 63% of U.S. tropical cyclone deaths during that period occurred in inland counties.



At least 23% of U.S. tropical cyclone deaths occur to people who drown in, or attempting to abandon, their cars.

78% of children killed by tropical cyclones drowned in freshwater floods.

So, the next time you hear hurricane -- think inland flooding!

What can you do?

- When you hear hurricane, think inland flooding.
- Determine whether you live in a potential flood zone.
- If advised to evacuate, do so immediately.
- Keep abreast of road conditions through the news media.
- Move to a safe area before access is cut off by flood water.
- Do not attempt to cross flowing water. As little as six inches of water may cause you to lose control of your vehicle.
- Develop a flood emergency action plan.
- Have flood insurance. Flood damage is not usually covered by homeowners insurance. Do not make assumptions. Check your policy.

HIGH WINDS

The intensity of a land falling hurricane is expressed in terms of categories that relate wind speeds and potential damage. According to the Saffir-Simpson Hurricane Scale, a Category 1 hurricane has lighter winds compared to storms in higher categories. **A Category 4 hurricane** would have winds between 131 and 155 mph and, on the average, would usually be **expected to cause 100 times the damage of the Category 1 storm.** Depending on circumstances, less intense storms may still be strong enough to produce damage, particularly in areas that have not prepared in advance.

Tropical storm-force winds are strong enough to be dangerous to those caught in them. For this reason, emergency managers plan on having their evacuations complete and their personnel sheltered **before the onset of tropical storm-force winds**, not hurricane-force winds.

Hurricane-force winds can easily destroy poorly constructed buildings and mobile homes. Debris such as signs, roofing material, and small items left outside become flying missiles in hurricanes. Extensive damage to trees, towers, water and underground utility lines (from uprooted trees), and fallen poles cause considerable disruption.

High-rise buildings are also vulnerable to hurricane-force winds, particularly at the higher levels since wind speed tends to increase with height. Recent research suggests you should stay below the tenth floor, but still above any floors at risk for flooding. It is not uncommon for high-rise buildings to suffer a great deal of damage due to windows being blown out. Consequently, the areas around these buildings can be very dangerous.

Burger King Headquarters' CEO office in Miami after Hurricane Andrew

The strongest winds usually occur in the right side of the eye wall of the hurricane. Wind speed usually decreases significantly within 12 hours after landfall. Nonetheless, **winds can stay above hurricane strength well inland.** Hurricane Hugo (1989), for example, battered Charlotte, North Carolina (which is 175 miles inland) with gusts to nearly 100 mph.

The **Inland High Wind Model** can be used by emergency managers to estimate how far inland strong winds extend. The inland wind estimates can only be made shortly before landfall when the Winfield forecast errors are relatively small. This information is most useful in the decision-making process to decide which people might be most vulnerable to high winds at inland locations.

Damage from Hurricane Frederic (1979)

TORNADOS

Hurricanes can also produce tornadoes that add to the storm's destructive power. Tornadoes are most likely to occur in the **right-front quadrant** of the hurricane. However, they are also often found elsewhere **embedded in the rain bands**, well away from the center of the hurricane.

Some hurricanes seem to produce no tornadoes, while others develop multiple ones. Studies have shown that more than half of the land falling hurricanes produce at least one tornado; Hurricane Buelah (1967) spawned 141 according to one study. In general, tornadoes associated with hurricanes are less intense than those that occur in the Great Plains (see the **Fujita Intensity Scale** below). Nonetheless, the effects of tornadoes, added to the larger area of hurricane-force winds, can produce substantial damage.

We have no way at present to predict exactly which storms will spawn tornadoes or where they will touch down. The new Doppler radar systems have greatly improved the forecaster's warning capability, but the technology usually provides lead times from only a few minutes up to about 30 minutes. Consequently, **preparedness is critical**.

Tornado Facts

When associated with hurricanes, tornadoes are not usually accompanied by hail or a lot of lightning, clues that citizens in other parts of the country watch for.

Tornado production can occur for days after landfall when the tropical cyclone remnants maintain an identifiable low pressure circulation.

They can also develop at any time of the day or night during landfall. However, by 12 hours after landfall, tornadoes tend to occur mainly during daytime hours.

Fujita scale
The Fujita scale (F-scale) uses actual damage to determine a tornado's wind speed

F0 Gale Tornado
40-72 mph
Some damage to chimneys. Tree branches broken off. Shallow rooted trees uprooted.

F1 Moderate Tornado
73-112 mph
Peels surface off roofs. Mobile homes overturned. Moving autos pushed off roads.

F2 Significant Tornado
113-157 mph
Considerable damage. Roofs torn off frame houses. Large trees snapped or uprooted. Light-object missiles generated.

F3 Severe Tornado
158-206 mph
severe damage. Roofs and some walls torn off well constructed homes. Trains overturned. Most trees in forests uprooted. Heavy cars lifted off ground.

F4 Devastating Tornado
207-260 mph
Well-constructed houses leveled. Structures with weak foundations blown off some distance. Cars thrown and large missiles generated.

F5 Incredible Tornado
261-318 mph
Strong frame houses lifted off foundations and disintegrated. Automobile-sized missiles fly through the air in excess of 100 mph. Trees debarked.

THE PHASES OF HURRICANE PREPARATION

Phase 1 – Preliminary Alert	First notice of the existence of a storm in the region
Phase 2 – Hurricane Watch	Hurricane indicating a specific direction towards the island ETA 24-48hrs
Phase 3 – Hurricane Warning	Hurricane is continuing on the path towards Turks and Caicos. **DANGER IMMINENT** ETA 12-24 hrs
Phase 4 – Hurricane Strike	Hurricane will reach location within next 3 - 6 hrs
Phase 5 – Post Hurricane	Measures that are carried out after the disaster

In the event that guests and staff have to be evacuated, the alternate locations are to be contacted and arrangements made. Evacuation points must be identified and reconfirmed at the beginning of every hurricane season as changes in facilities, management, or policies cause previously used locations to become unavailable. The decision to evacuate is to be made by the General Manager or the Resident Manager in his absence after careful consideration of the information available.

NOTE: HURRICANES ARE DEADLY SO THESE PLANS MUST BE EXECUTED QUICKLY TO MINIMIZE DAMAGE TO PROPERTY AND TO SAVE LIVES.

5.3 PRE-SEASON PREPARATION

The Hotel Manager must convene a meeting with the Hotel Emergency Action Team (H.E.A.T) and all Heads of Department at the beginning of May to assess the resort's level of preparedness in the event of a hurricane. The H.E.A.T team **must** include the following managers with others added at the discretion of the General Manager:

Managing Director
General Manager
Hotel Manager
Engineering/Maintenance Manager
EHS Coordinators
Security Manager
Senior Executive Assistant Manager
Financial Controller
Director of Operations
Executive Assistant Managers
Resort Nurse
Grounds

It is imperative that prior to the start of the hurricane season review of the emergency storeroom inventory is conducted and verify that sufficient emergency equipment and supplies are in stock. Par stock of these items needs to be established and they must be stored in one location. The emergency supplies storeroom should only be accessed by the General Manager, Hotel Manager, Financial Controller, Environment Health and Safety Manager, Cost Controller and Maintenance Manager. The key for this storeroom should be very visibly tagged and kept in the cost control office.

5.4 OPERATION A-R-R-R

At the beginning of the hurricane season each hotel should implement "Operation A-R-R-R", the acronym for **A**nchor-**R**efit-**R**elocate-**R**emove. This method is used to identify actual and potential hazards, determine remedies for mitigating the effects each hazard, and for recommending how each hazard can be addressed. The activity can be utilized in hurricane preparedness, earthquake safety inspections, and for any general facility safety procedures.

This example of the checklist requires a thorough inspection of the property by the team to identify all hazards.

Area of Facility	Potential Hazard	Action to Be Taken	Person Responsible	Comments

Tasks to be accomplished:

1. Identify potential hazards
2. Determine the action necessary to mitigate against the potential hazards
3. Make recommendations about how each hazard can be eliminated (or at least reduced)

Anchor Secure any item or object that may get blown around by the hurricane and thus have the risk of becoming airborne missiles

Refit Add or change for increased safety e.g. use plastic cups/bottles instead of glass. Use closed hooks instead of open hooks.

Relocate Move/relocate item/object to a safe location (storage)

Remove Eliminate.

Emergency Storeroom Supplies

The stock of equipment and supplies in the emergency storeroom should include the following items and all hotels should establish a par level appropriate to the scale of the hotel's operations:

Item	Counted during inventory	Needed to complete stock	Total Quantity needed for hurricane season	Comments
Axe	3		6	
Batteries(D size)	7 cases		200D, 120C, 120AA	Flash lights/battery operated devices
Candles(Venetian) Regular	 36		500 1000	
Caution Tape			3000ft	
Chain Saw			4	
Lantern and torch fuel			20 gallons	
Duct tape Masking tape			50 50	
Water container	53		6*50 gallons	
First Aid Kits			20	
Regular Flash Light Heavy duty	5 3		30 40	
Garden Fork			6	
Heavy Duty Garbage Bags	1 case		5 Cases	
Hammer	4		25	
Hand Saw	2		8	
Shovels/Spades			10/10	
Kerosene Lanterns Fluorescent Lanterns(battery and rechargeable ones)	 84		50 30	
Leather work gloves			30 pairs	
Machete file			10	
Machetes	3		20	
Drill (Makita)	2		5	
Screw Bits (#2 drywall, long and short)	4 boxes			
Matches	4 cartons		600 individual packs	
Nails 1"(box)	4		4	
Nails 2.5"(box)	4		6	
Pick axe			4	
Push Broom/sticks			20	
Rain coat(Latex)			100	
Rake (metal)			15	
Rope (1/2", 3/8", 5/8")			1800 ft total	
Tape Measure			4	
Sandbags	1500		1500	Already in Stores
Squeegee Large			24	
Water Boots (sizes 9-13)			150 Pairs	
Wheelbarrow			4	
Wire Nails 3"			50 lbs.	

Ply board			Sheets	
Wheel Barrow			4	
Raincoat Panchos			1000 pairs	
**AM/FM powered battery operated radios				
**Tarpaulins				

N.B: There should be at least 2 copies of a **weather proof hurricane-tracking chart**

5.5 RESPONSIBILITIES

ALL HEADS OF DEPARTMENT

- Review hurricane emergency plan and brief team members as such.
- Recommend that team members initiate precautions and purchase stock for their homes.

TECHNICAL SERVICE DIRECTOR/CHIEF ENGINEER

- Give an update on the status of the generator. These should be serviced at the start of the hurricane season.
- Give an update on the fresh water tanks – At least 5 days' supply of drinking water must be available and accessible from tanks (maybe without electric power)

MANAGING DIRECTOR / GENERAL MANAGER / HOTEL MANAGER

- All necessary property and human injury insurance is to be in place.

EXECUTIVE ASSISTANT MANAGER

- With the assistance of the Front Office Manager make contingency plans re: accommodation of guest off property in the event that an evacuation is deemed necessary.

HUMAN RESOURCE MANAGER

- To identify volunteers to stay over in the event of a hurricane.
- Assess accommodation facilities for employees who will be on the property during the hurricane especially Housekeeping, Kitchen, Maintenance, and the Managers.

THE H.E.A.T (Hotel Emergency Action Team) TEAM

- Does property walk use the Operation A-R-R-R (Anchor-Retrofit-Relocate-Remove) checklist to identify potential hazards, have them addressed. Ensure that evacuation routes are safe, and all safe areas, zones and threats are identified.

SECURITY MANAGER

- Arrange with security contractors for additional security manpower.
- Identify additional security post locations during a hurricane.

DIRECTOR FOOD & BEVERAGE

- To prepare hot and cold menu for 7 days for approximately 100% house count. (Include community assistance stock, estimate community assistance to be between 75-100 persons)
- Prepare to feed guests and staff from other properties in the region in the event that this is needed.

PUBLIC RELATIONS MANAGER

- Establish location of command centre (suggested location must be off the ground floor)

Ensure that the following are available:

- Phone lines/fax lines
- 2 way radios
- Computers with internet access
- Tracking maps
- Lanterns and Flashlights
- Waterproof camera/camcorder

Be prepared to issue correspondence both internally and externally

With the assistance of the Security Manager establish communication with the following: Department of Disaster Management and Emergencies (DDME)

- Police Department
- Fire Department
- Hospital and external medical agencies
- Doctors on call
- Public Service Co. (Light and Power)
- National Water Commission
- Suppliers

WATERSPORTS MANAGER

- Identify secure area for all boats and equipment and confirm arrangements.
- Identify logistics to move them (layout)
- Start filling sandbags and store at Treasure Beach

NURSE

- Establish list of items needed for First Aid Station.
- 12 additional kits ordered for the hurricane stores

GROUNDS MANAGER

- Start pruning trees especially away from power lines.

5.6 PHASE 1: PRELIMINARY ALERT

Hurricane may be a threat to the island in the next 3-4 days. The following actions should be implemented:

HOTEL MANAGER/ ENVIRONMENT HEALTH AND SAFETY COORDINATORS

- Meet with all department heads and brief on procedures if the island is put under a Hurricane watch. The decision to evacuate the hotel will be a directive from the corporate office.

PUBLIC RELATIONS MANAGER/ EXECUTIVE SECRETARY

- Maintain liaison with the Metrological Office in Turks and Bahamas and inform Department Heads and guests of storm progress.
- Call for the most up to date information after the first bulletin has been issued.

ENVIRONMENT HEALTH AND SAFETY COORDINATORS/COST CONTROLLER

- Check over emergency storeroom stock and ensure that par has been fulfilled.

ALL DEPARTMENT HEADS

- Check over steps in pre-season preparation and ensure that they are all in place.
- Inform all staff what their functions will be in event that the island is upgraded to a hurricane watch/warning.

TECHNICAL SERVICE ENGINEER

- Test generator
- Check all fuel tanks ensure maximum levels of LPG
- and Diesel Check emergency lighting
- Check fire systems (hydrants,alarms,
- extinguishers.
- Check all lock off valves and system.
- Ensure that there are no trees near power lines

  Check all emergency equipment and ensure that they are functioning properly.

SECURITY MANAGER

- Establish emergency radio net
- Provide portable and base station communications
- Equip out stations with flashlights, batons and radios
- Confirm additional security personnel through Contractor
- Company Confirm emergency petrol stock
- Make arrangements to have all vehicles fully gassed in Phase
- 3 Identify list of drivers to work during the hurricane
- Identify parking locations of all other company vehicles (Receiving dock and Port-Cochere)

DIRECTOR OF ENTERTAINMENT

- Prepare Indoor activity plan
- Work with PR Manager on public notifications

FOOD AND BEVERAGE DIRECTOR

- Conference rooms to be used as housing for all guests and staff in the event. Be prepared to relocate furniture as much as possible
- Ensure that the hotel has adequate supply of drinks (water, juice, soda etc.) and food for emergency use
- Supply an inventory of all food and beverage items in stock to General Manager for review.

HOUSEKEEPING

- Prepare to have conference rooms equipped with emergency sleeping kits i.e. 1 pillow, 1 blanket, 1 towel to be issued per staff and guests.
- Have roll away beds available for elderly guests

IT MANAGER

- Coordinate radio communications installation for command centre
- Prepare plastic covers for all computer equipment and elevate
- Prepare to commence information download and secure.
- Prepare PR office to accommodate command post

GROUNDS MANAGER

- Start identifying and cutting down trees that will likely go down in a strike

NURSE

- Replenish First Aid Kits
- Identify and meet with CPR and First Aid trained staff
- Establish emergency medical call listing inclusive of doctor on
- call Ensure adequate drug supply for at least 5 days
- Arrange with medical services for ambulance evacuation of necessary.

5.7 PHASE 2: HURRICANE WATCH

This indicates that hurricane conditions pose a possible threat to the Turks and Caicos Islands within 36-48 hours. The hurricane is indicating a specific direction towards the island. In the event of the island being placed on a Hurricane watch, the following procedures must be implemented:

MANAGING DIRECTOR/HOTEL MANAGER

- All H.E.A.T Team members and Heads of Departments to meet for briefing

PUBLIC RELATIONS MANAGER

- Set up a Command Centre at your present location with:
  - Phone lines/fax lines
  - A tracking map
  - A battery–powered radio
  - Emergency lighting
  - Internet accessibility
  - 2 way radios
  - Lanterns and Flashlights
  - Waterproof camera/camcorder
- All hurricane bulletins must be monitored and plotted on the chart
- Maintain liaison with the Meteorological Office, the local Disaster Coordinator, and the Department of Disaster Management and Emergencies (DDME).
- Issue statements to guests and prepare statements for ETA 12 hrs and letters to be delivered to all rooms in case evacuation of guests is necessary.
- Set up bulletin board for guest's village lobbies.

FRONT OFFICE/ DGS/ LOOP ADMINISTRATOR

- Make flight arrangements for all guests departing early
- Delay immediate arrivals if possible (24hrs)
- Commence computer back up
- Acquire additional assistance from sales team to make flight arrangements.

TECHNICAL SERVICE MANAGER

- Clear all drains
- Commence reinforcement of necessary areas
- Use the Operation A-R-R-R checklist to ascertain what hazards have not been dealt with and address it\them
- Plumbers, electricians and carpenters to be identified to work with command centre
- Secure all loose materials and equipment

Checklist:

- Generator service completed
- Test run generator
- Potable water tanks full
- Diesel tanks full
- Lpg tank full
- Emergency lighting all operating correctly
- Check all motor driven water pumps
- Test all fire hydrants and extinguishers
- Portable generators tested and full of gas
- Radios charged and available
- Plywood / fasteners / masking tape available
- Clear all drains
- Reinforce glass, etc as required
- Ensure technicians available
- Secure all loose materials and equipment
- Dismantle tennis court lighting
- Removal of ceiling fans
- Removal of signage
- Isolate all major electrical appliances

COST CONTROLLER/ ENVIRONMENT HEALTH AND SAFETY COORDINATORS

- Begin checking the emergency supplies to ensure these are easily accessible should the need arise.

SECURITY MAXIMUM

- Gas all vehicles (24 hrs)

- Ensure that all vehicles are parked in authorized areas
- Coordinate vehicle operations during preparation
- Deploy security staff to out stations identified in the pre-season plan.
- Lock down beach area 6 hrs before strike

Loss Prevention has advised the Security Centre to be on alert in case we do need additional officers, they answered in the affirmative.

We have some equipment but will ensure that officers are equipped with proper gear such as rain coats, booths, flashlights etc, at the appropriate time gear.

We met with Supervisors and will continue to meet with them and officers regarding our internal and external or perimeter responsibilities.

We will continue to monitor radio communications with all out stations to ensure proper coverage

We will assist in ensuring that all company vehicles are properly secured in the designated locations

We believe that the only spots that would require additional officers are the guest populated areas for crowd control and any area of the perimeter that might incur damage to the fence line.

ASSISTANT MANAGER

- Re-assess accommodation facilities for employees who will be on the property during the hurricane especially Housekeeping, Kitchen, Maintenance, and the Managers
- Re-assess contingency plans re: accommodation of guests off property if available.

WATERSPORTS

- 1/2 empty the swimming pools
- Fill all sand bags
- Deploy bags to necessary areas
- Secure all watersports equipment
- Shut off pool pumps and lights
- Secure pool furniture
- Co-ordinate with Grounds team to work throughout period with your team.

DIVE SHOP

- Ensure enough fuel in vessels to keep them from being tossed
- around. Remove fenders from the dock
- Remove all non-motorized craft from beach and
- secured. Place all computers in bags and elevate them.
- Important paper work must be secured off the ground.
- Take all boats to the turtle cove Marina and ensure that they are properly secured.

BEACH

- Trees or post.
- Store cabanas in pump rooms.
- Ensure that there is no other debris on beach that could be blown away.
- Remove all chairs from the beach and secure between the villas and or tied to sturdy.

POOLS

- Remove umbrellas from pools and secure in pump rooms.
- Place lounge chairs in pools to prevent them from being blown away.
- Ensure that there are no other furniture on the deck that can become airborne

DIRECTOR OF FINANCE

- Commence download and storage of information
- Have float available for after the strike because banks may not be open
- Secure all necessary items in plastic bags and place in fire proof safe

DIRECTOR ENTERTAINMENT

- Secure all outdoor equipment (i.e. tennis nets, basketball hoop, nets etc.)
- Secure in plastic bags all disco equipment
- Prepare indoor games at assembly
- area Assist PR with publications

HUMAN RESOURCES

- Confirm manning availability (volunteers first then assign responsibilities)
- Send home staff that will return to work 24hrs (Prior to ETA 48 hrs)
- Maintenance- 4 Plumbers, 4 Electricians, 4 Carpenters
- Housekeeping - 8 Room Attendants, 6
- Housemen Security - 2 Full shifts
- 2 Nurses
- 4 Drivers
- Water Sports team combined with Grounds team
- Kitchen - 6 cooks, 2 Baker, 4 Prep Cooks
- Sanitation - 10 Persons

F&B DIRECTOR

- Ensure on hand stock is at 100%
- Start hot and cold menu on instructions from the general manager
- Ensure adequate supply of bottled water
- Prepare boxed and tin food distribution to out stations

Equipment Required:

- Plastic wrap
- Bus bins
- Inventory sheets
- Garbage bags
- Marker
- Boxes

- Masking tape
- Blank paper
- 14 service personnel

CHECKLIST:

SILVERWARE

- Pull all silverware out of storage and kitchen
- Any dirty silverware is to be washed and polished before packing
- Count all silverware and separate in packing of 50 ea. E.g. knives with knives, dinner forks with dinner forks
- Wrap silverware in plastic wrap and tag with name of outlet and numbered count on the
- package Pack into silverware bins and log on the inventory sheets

CHINAWARE:

- Pull all chinaware out of storage and kitchen.
- Wash and dry any dirty chinaware before packing
- Count all chinaware, separate into size and pack into boxes with 50 per box
- Tape boxes with masking tape and tag the box with name of outlet, type and size of plate and numbered count on the box. Log on the inventory sheet

SERVICE ITEMS:

- Pull all tray stands and service trays out of storage and kitchen.
- Tape together tray stands with tray stands and service trays with service trays. This packing should 3 or 5 depending on the item.
- Tag the tape of the packing with name of outlet and numbered count. Log on inventory sheet

GLASSWARE:

- Pull all water glasses out of storage and kitchen.
- Wash and polish any dirty water glasses before packing
- Count all water glasses and pack into boxes with 36 per box
- Tape boxes with masking tape and tag the box with name of outlet, water glasses and numbered count on the box. Log on the inventory sheet
- Pull all wine glasses out of storage and kitchen.
- Wash and polish any dirty wine glasses before packing
- Count all water glasses and pack into boxes with 36 per box
- Tape boxes with masking tape and tag the box with name of outlet, wine glasses and numbered count on the box. Log on the inventory sheet
- Pull all salt and pepper shakers from kitchen and storage
- Empty all salt and pepper shakers of their contents, wash and dry Pack into boxes with a count of 48 per box.
- Tape boxes with masking tape and tag the box with name of outlet, salt and peppershakers and numbered count on the box. Log on the inventory sheet

LINEN:

- Pull all linen out of laundry, storage and kitchen
- All dirty linen is to be cleaned and washed before packing
- Pack napkins in counts of 50 and tablecloths in counts of 12. Linen is to be packed according to size, color and pattern into plastic garbage bags

- Bags are to be tagged with the outlet name, size of linen, count, and pattern. Log on inventory sheet

SMALL WARES:

- Pull all water pitchers, dispensers, coffee thermos and decanters, milk jugs, hot plates, wine buckets, wine stands, etc from storage and kitchen.
- These are to be cleaned and dried.
- Tag all items using tape and marker. Log on inventory sheet

PORTION CONTROL ITEMS AND CONDIMENTS:

- All items to be pulled out of storage and caddies Items are to packed in one box and plastic wrapped
- Package is to be tagged with the outlet name, item description and count
- Logged into inventory sheet
- Items to be stored in General Stores and signed in for by store room clerk

CLOSING:

- Clear the podium of any papers. Keep necessary documents and discard any unwanted paper.
- Clean and wipe menus
- Wipe all chairs and tables
- Pack all chairs and tables into the centre of the dining room
- Clean and wipe all cupboards and storage closets
- All items are to be moved to West Caicos for storage with the inventory sheets and security cages.
- Items to be checked in by Dereck Watson at storage locations
- Turn off all lights, air conditioners and exhausts in the outlet.
- After all items have been moved into storage, lock all doors and secure the outlet.

STORAGE AREAS FOR RESTAURANTS:

- Reflections, Sapodillas, Arizona, Schooners, Kimonos, Sushi bar, and Bobby D's items will be stored in East Caicos

- Le Petit, Café de Paris, Guisseppes items will be stored in security cages behind the buffet line in Guisseppes

- Barefoot by the sea, Cricketers, Dinos and Marios items will be underneath Marios in the pump room.

- If vacant room is available, Sky, Neptunes and Bayside items will be caged and stored away, however glass tops must be taken off.

HOUSEKEEPING

- Prepare conference rooms to accommodate guests and staff in the event (ETA 12hrs)
- Take all emergency sleep kits to the assembly area for distribution
- Begin preparation in all vacant rooms-strip linen and send for cleaning, wash bathtubs in rooms nearest the conference rooms and fill with water then close the bathroom door
- Distribute adequate laundry supplies to the resident staff
- Have housekeepers tape all windows in all rooms on the main building with MASKING TAPE
- Place guests luggage in large garbage bags on top of luggage rack

- Use large garbage bags to cover televisions in rooms
- All balcony furniture to be placed inside

Checklist:

- Fill all bath with water as and when directed by general manager
- Plastic bags to guests for packing belonging
- All balcony furniture placed in room
- Strip bed of linen – fold neatly and return to linen room
- Fold bed spreads and place on vanity in bathroom
- Tape all sliding door, lock and pull drapes, push beds against windows
- Place all pillows in closets
- All mattresses in first floor rooms to be placed on top of armoire.
- All small furnishing in rooms should be placed in the
- Bathroom and the door locked.
- Lobby furniture to be placed on second floor.

GROUNDS MANAGER

- Ensure that all trees near utility poles have been trimmed back.
- Remove all potted plants to green house
- Secure all department equipment (hoses, rakes buckets etc.)

IT MANAGER

- Effect all computer downloads
- Ensure all equipment is wrapped and stored

NURSES STATION

- Relocate Nurse Stations to conference rooms
- Establish contact with doctor on call
- Medical driver to report to you
- Check vehicle and equip for casualty evacuation
- Check oxygen tank, splints, bandages etc.

ALL HEADS OF DEPARTMENT

- Begin preparations for the hurricane's impact. Inform all staff what their functions will be in event that the island is upgraded to a hurricane warning. These functions should be prioritized and pre-recorded in the form of checklist.
- Inform all staff of the situation and find out those who are willing to stay on property during the hurricane; prepare a list and forward to the Emergency Coordinators.
- Each Department Head must assess the manpower requirement to carry out their assigned functions in the event of a warning and ensure that the manpower is available on short notice. This must be pro-rated per number of guests in house

5.8 PHASE 3: HURRICANE WARNING

This indicates that the hurricane conditions are expected to affect The Turks and Caicos Islands within 24 hours or less. The island may experience either stormy winds or high waves along with flooding or both. All functions should be completed within this 24-hour period. The electricity supply is usually turned off at least six hours before the hurricane hits the island. All Managers must employ flexibility in executing their respective roles as additional orders may be given depending on the situation. The hurricane watch and final bulletins will determine the evacuation process. Calmness is the key to ensuring that all tasks are well executed.

ALL HEADS OF DEPARTMENTS

- Complete download and hand over to IS manager
- Seal all computers in plastic wraps
- Tape glass windows in office if applicable
- Shut down operation

BAR MANAGER

- Collect and store all glassware from the bars and the property
- The Main Bar should be moved to pre-determined location
- Switch to paper products six hours before the hurricane and ensure adequate stock of these for the period immediately following the hurricane

COST CONTROL/STORES

- Arrange storerooms so that items are stored off the ground and away from windows and doors
- Ensure the security of all storerooms
- Issue frozen food to the kitchen then lock the freezers to maintain the
- temperatures Lock the storerooms and turn in the keys to the Financial Controller

DIRECTOR ENTERTAINMENT

- Set up indoor activity equipment
- Tape all glass in the disco
- Ensure that furniture in the disco is secure.

DIRECTOR F&B MANAGER

- Prepare buffet facility, effect cold menu if applicable

DIRECTOR OF FINACE /FINANCIAL CONTROLLER

- One accounting team member is to stay at the command centre to facilitate any last minute authorization of purchasing for pre or post hurricane needs.
- Double check all purchasing and cost control functions
- Make backup copies of the computer system and store at least two sets-each in a different location. The Financial Controller must get a complete set.
- All computer hardware should be placed on desks and covered with plastic

- Lock all vital documents in the vault
- Run the payroll if possible and store in the vault along with cash and checks
- Ensure that all equipment is sealed in plastic and all windows are taped.

FRONT OFFICE

- Present in house room list of all remaining guests.
- Provide names of persons to man bell desk and PBX if necessary
- Coordinate movement of guests to assembly areas (ETA 6hrs)
- Provide a list of any doctors or nurses in house

GENERAL MANAGER

- All Managers and volunteers meet for final briefing.
- Issue notice on change in hurricane status
- Liase with Front Office and coordinate final guest transfer

GROUNDS MANAGER

- Complete all limb and tree cutting (ETA 12hrs)
- Ensure that all loose material and debris has been removed
- Ensure that all potted plants are secured

EXECUTIVE HOUSEKEEPER

- Ensure that all bathtubs have been cleaned and filled
- Television sets and fridges should be unplugged and placed on a table in the closets. Move couches and chairs away from windows
- Place battery operated lanterns in each occupied room
- Strip all room attendant stations/storerooms of linen, guest supplies, and chemicals. These must be taken to the Housekeeping Department.
- Ensure the assembly area is supplied with trolleys each with linen, beach towels, bath towels, and guest supplies (2 cases candles, 1 case soap, 1 case toilet paper, 1 case hand towels/Kleenex)
- Ensure each staff that will be on duty during the hurricane is set out with a raincoat and a flashlight, in addition to their usual cleaning material and a supply of paper products
- Ensure that all patio furniture is placed inside
- Set up living and dining facilities in assembly area

HUMAN RESOURCES

- Prepare list of all staff staying on property and give a copy to the General
- Manager Ensure all documents and computers are secure in plastic

IT MANAGER

- Do final check to ensure that all equipment is secure
- Secure all servers from water damage and ensure a back-up of **ALL** data to tapes, USB's or CDs

- Set up one computer with internet access for hurricane tracking in the emergency centre

LAUNDRY MANAGER

- If possible, all dirty linen must be cleaned; sort and store any linen which is not cleaned to prevent them from getting wet or by placing them in garbage bags
- Ensure that all chemicals are stored in sealed containers and off the floor
- Lock off all gas water valves

Checklist:

- All linen to be washed dry and bagged (laundry team and available help)
- All chemical containers to be sealed (laundry manager and team)
- All equipment to be turned off and secured (engineer laundry manager)
- Laundry to install shutter (engineer and action team to include laundry team)
- All laundry trollies to be strapped in one area. (laundry team)
- All gas valve to be lock off (engineer/laundry manager)
- All water valve to be locked off (engineer / laundry manager)
- Secure all logs and relevant documents (laundry manager)
- Hold meeting with team

CHIEF ENGINEER

- Reinforce all doors and windows using a combination of ply board and strips of lumber
- Fill all water, LPG and petrol tanks and prepare to effect lock off (ETA 3hrs)
- Lock of breakers and unplug all major appliances (ETA
- 3hrs) Dismantle and shut off flood lights to tennis court
- Remove all outside light shades and bulbs from street lights
- Remove all outdoor signs
- Do final test run on emergency generator
- Remove ceiling fans if necessary

NURSE

- Set up Nurse's station in Conference rooms.

PUBLIC RELATIONS

- Update notice boards and guests
- Notification to guests must include assembly point, evacuation routes and cut off times

SECURITY MANAGER

- Check out station and ensure adequate food, water and light
- Deploy additional staff to out station including utility building
- Ensure all guards are equipped with raincoats, water boots and flash lights
- Brief all outstation officers on their areas of responsibility and how to handle external intrusion
- Ensure radio communication with all out stations is
- working. Ensure that all vehicles are secure

STEWARDING

- Ensure all garbage is removed and as many utensils as possible are cleaned and properly stored
- Stewarding Supervisor is to ensure that the compactor area is cleaned before the hurricane
- Store enough water for use immediately after the hurricane

WATERSPORTS

- Shut down all pool pumps and lights
- Ensure all boats and equipment is secure
- Ensure that all the furniture and equipment on the island is secure
- Have CPR qualified volunteers report to the Nurse's Station
- Additional sand bags to be available

PHOTOSHOP/GIFT SHOP

- Shut down all computers and equipment
- Ensure all office equipment e.g. computers and cameras is secured in plastic bags and elevated
- Secure waterproof disposable cameras for before, during and after hurricane
- shots Secure all doors and windows against wind and rain

5.9 PHASE 4: HURRICANE STRIKE

DURING THE HURRICANE

It is the aim to **keep calm** –the ability to act logically is very important; the hurricane must run its course. The emergency coordinators should be in the Command Centre evaluating the extent of damages on a national scale studying the implications that these damages will have on the operations of the resort.

All persons must be aware of the following:

-Do not go outside unless it is absolutely necessary, danger of being hit by flying objects exists -Remain where you are until the hurricane has passed
-If the building shows signs of breaking up, stay under a table or stand under a door frame -Listen to the radio for information on what is happening

Senior managers, security, and maintenance personnel should do a **quick** evaluation and effect emergency repairs. During the 'eye' of the hurricane, all guests must remain indoors. Any guests who have been injured during the hurricane should be carried to the Nurses Station. Any rooms where the windows or doors have been blown out, its occupants must be relocated to another room.

IT IS IMPERATIVE THAT GUESTS ARE NOT ALLOWED TO ROAM ABOUT AS THE EYE PASSES SINCE THE WINDS WILL RETURN WITH LITTLE OR NO WARNING.
Security officers should concentrate on patrolling the room blocks to reassure the guests and assist those who may have to relocate.

5.10 PHASE 5: POST HURRICANE

H.E.A.T TEAM

- Assess damages to the room blocks to ascertain the need for relocation of guests, and to see if those who were evacuated from their rooms can return
- Evaluate the possibility or necessity of moving people out of the resort to return home or to seek medical attention
- All damages are to be documented and photographs taken if possible
- Continue tracking the hurricane for at least 36 hours as it can turn back

ACCOUNTING

- Document all damages for insurance purposes

ALL DEPARTMENT HEADS

- Submit an evaluation of the damages to the General Manager

FOOD and BEVERAGE

- Dining room and stewarding departments should begin clearing the main areas starting at the kitchen and working outwards

FRONT OFFICE/RESERVATION /SALES

- Try to established any damages to telephone communication-first locally, then to outside areas

GROUNDS/LANDSCAPING

- As first priority, the entrances to the property must be cleared, then the internal walkways and roadways

HOUSEKEEPING

- Clear away dirty linen towels from the public areas and issue and dry linen to trolleys at the front desk

KITCHEN

- Boil water for drinking until given the water is checked for safety

MAINTENANCE

- Evaluate any damages to the external source of water and assess what is necessary to restore it
- Water should be turned on to the different areas and the plumbers check for leaks as each area is turned on
- Evaluate if there is any external source of electricity
- Turn the generators on if there is no electricity source-supply power first to the main areas, then turn on the power to the room blocks

NURSE

- Make visits to guests and staff that are unable to come to the nurse's station and treat accordingly

SECURITY

- Patrol the property
- Block patrol should assess whether guests are in need of medical attention or render assistance if needed to move the guests to the nurse's station

WATERSPORTS

- Start clearing the beach area and the property along with the grounds department
- Check on the boats in storage and bring them back to the beach as soon as possible

End of Procedures

5.11 LETTER TEMPLATES FOR VARIOUS HURRICANE PHASES

Date:

Dear Guest,

We are currently tracking the hurricane that is heading towards this area and we will keep you updated on the situation.
At present, the information we have is that Hurricane*********is ********. It is still some distance away from the Turks and Caicos Islands and may not reach here at all.

We are monitoring the storm very closely and we are liaising with Airlines, Government agencies and the local metrological office. All updates on the situation will be given to you via the notice board in the lobby or notes delivered to your room.

Should you have any questions please contact Jamie McAnally, Hotel Manager at ext. 4101.

Sincerely,

Resort Management

Date

Guest Name(s)
Resort
Bkg. #
Arr/Dep

Dear Guest:

As you are aware, seasonal weather issues have caused airline schedules to be greatly affected. As such, if you were unable to depart at your original, scheduled time, as a gesture of goodwill we will be further extending you up to two (2) nights' accommodation at no additional cost to you, while we work together to arrange your flights.

We want to thank you for your continued co-operation.

Best wishes.

Hotel Manager

Date

Guest Name(s)
Resort
Bkg. #
Arr/Dep

Dear Guest:

We have been most fortunate in that '*****' did not hit Turks and Caicos. However, airline schedules have been greatly affected. As such, if you were unable to depart at your original, scheduled time, we take pleasure in extending up to two (2) nights' accommodation, at no additional cost to you, while we work with you to arrange departure flights.

We want to thank you for your continued co-operation.

Best wishes.

Hotel Manager

Date

Guest Name(s)
Resort
Bkg. #
Arr/Dep

Dear Guest:

Fortunately, Turks and Caicos did not experience hurricane force winds as a result of '*****'. We do realize, however, that inclement weather interrupted certain facilities and activities while you were visiting with us. As such, we take pleasure in extending to you two (2) complimentary nights, equivalent in value to that previously paid, to be taken at the Sandals or Beaches resort of your choice, and subject to conditions below.

These complimentary nights must be taken within one year of your original holiday and excludes airfare. "Equivalent in value" means a holiday available whose price (after publicly available discount) is the same as the price actually paid for the original holiday. Dates will be subject to availability, and may also be subject to Sandals/Beaches imposed blackout restrictions.

U.S. clients may call Unique Vacations, Inc. at 1 (888) SANDALS or BEACHES; Canadian clients may call Unique Vacations Canada at 1 (800) 545-8283; and European clients may call Unique Caribbean Holidays Limited at 44 (0) 207 581 9895.

Best wishes.

Hotel Manager

5.12 Hotel Emergency Action Team (H.E.A.T.)

The following persons should be immediately contacted in the event of **serious emergencies** on property:

Beaches Resort Emergency Extension- 555 (This line must be available and open at all times)

Emergency Hotline- 911

In the event of an emergency at the resort, telephone operators must remain calm and contact emergency personnel and HEAT members immediately (failure to do so will result in disciplinary actions)

Gather as much information as possible and report information accurately

Operators must be reminded that there is NO ROOM for any errors.

If the switch board is busy, find another phone and make the EMERGENCY CALLS!

Managing Director	**Mr. Donald Dagenais**
Hotel Manager	**Jamie McAnally**
Director Of Operation	**Nicholas Abruscato**
Director Of Finance	**Phillip Walcott**
Executive Assistant Managers	**Ghislain Boutoulle& Janel Germoso (CV)** **Michelle Parker and Vernon Johnson (FV)** **Noel Isaacs and Sheldon Wilson (IV)** **Beverly Allen & Paulett Smith(KW)**
MODs	**Benjamin Williams** **Michael Thompson (Snr. MOD)** **Lashiko Seymour**
Loss Prevention Managers	**Mario Stubbs** **Eterel Clarke** **Sadiq Ebanks**
Chief Engineers (If the ER is related to engineering, they should be your first point of contact and then call additional HEAT members)	**Neil Willis** **Mario Campbell** **Dave McNish**
Environmental, Health & Safety Office	**Shuntal Gibson** **Stefon Tyndall**
Nurses: (If the ER is Health Related the Nurse's Station must be your first point of contact and then the rest of the HEAT members wherever applicable)	**Nurse Elaine Clare** **Nurse Madeline Climo** **Nurse Simi Vithayathil** **Nurse Mikette Been**
IT Manager (IN CASE OF BUILDING FIRE)	**Jerrel Lowe or Pete Sherwood**

APPENDIX 6

PUBLIC CONSULTATION REPORTS

NOTICE

Regulation 8 of the Physical Planning
(Development Permission) Regulations, 2014

An Application, **REGISTERED PR 15741,** by **Beaches TCI Ltd.** for the development of the Expansion of **the Existing Resort consisting of Two Hundred and Fourteen (214) Bedrooms, Restaurants, Kids Area, Staff Parking, Back of House Expansion, Reflecting Pool, Performance Stage, Swimming Pool, Swimup Pool Bar, Jerk Shack, Cabanas, Terrace with Firepits, Water Bridge, Water Slide and Ancillary Facilities** has been submitted to the Department of Planning for consideration of Outline Development Permission on parcels **60803/15, 16, 18, 19, 22, 24, 26, 28, 29, 31, 32, 34, 35, 37, 38, 41, 42, 43, 48, 65 & 96. The land is to the west of Beaches Resort & Spa, area known as Treasure Beach, Lower Bight, Providenciales.**

Anyone wishing to make representation(s) may do so in writing to the Director of Planning, South Base, Grand Turk or through the Department of Planning, Emily House, Leeward Highway, Providenciales, within twenty-eight (28) days of publication of this Notice.

Date: _____

Treasure Beach Expansion - Public Notification

TURKS AND CAICOS ISLANDS
REGISTERED LAND ORDINANCE
S.72

NOTICE

PARCEL	SECTION	ISLAND
60804/52	The Bight & Thomas Stubbs	Providenciales

TO: Laura Chevalier Smith
Providenciales
Turks and Caicos Islands

RE: Charge dated 7th July 2017;
Charge registered 20th July 2017; Instrument Number 1783/17;
Amount Outstanding as at 29 October 2021:

This notice is published as a Supplement to this Gazette.

Dated this the 29th October 2021
Hugh G. O'Neill & Co, Attorneys for the Lender

NOTICE

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Anyone wishing to make representation(s) may do so in writing to the Director of Planning, South Base, Grand Turk or through the Department of Planning, Emily House, Leeward Highway, Providenciales, within twenty-eight (28) days of publication of this Notice.

Date:

APPENDIX 7

PHOTO DOCUMENTARY

Treasure Beach Site: Drone photo 25th February 2022

Treasure Beach Site: Drone photo 25th February 2022

Treasure beach Site: Drone photo 25th February 2022

Treasure Beach Surrounding Area: Drone photo 25th February 2022

Treasure Beach Site Clearing: Drone photo 25th February 2022

Treasure Beach Site: Drone photo 14th April 2022

Treasure Beach: Drone photo 14th April 2022

APPENDIX 8

CERTIFICATION DOCUMENTS ENVIRONMENTALL

COMPANIES REGISTRY

BUSINESS NAMES (REGISTRATION) ORDINANCE
(CAP. 17.01)

Certificate of Registration

EZEKIEL E. HALL

Having applied under Section 5 of the Business Names (Registration) Ordinance is/are this day registered under that section as carrying on business under the following business name:

ENVIRONMENTALL

Dated this 29th day of October, 2021

Registrar of Companies

Registration No. : BN.6965
Renewal Period : 2021 - 2022
Expiration Date : 13th day of June, 2022

To authenticate this certificate visit https://kregistry.teifsc.tc/kregistry/, enter the unique document number (located at the bottom left hand corner of this document), then follow the instructions displayed.

#3000001669514

2021/2022

№: 19707

BUSINESS LICENSING ORDINANCE

(Section 22 (1))

THIS LICENCE IS ISSUED TO

EZEKIEL HALL

(NAME OF LICENSEE)

IN RESPECT OF

ENVIRONMENT ALL

(NAME OF BUSINESS)

CLASS OF BUSINESS

(150) - ENVIRONMENTAL & SANITATION SERVICES

and is valid from the 1st day of APRIL, 2021 to the 31st day of MARCH, 2022.

The conditions imposed upon the grant of this licence are as follows:

Subject to payment of the appropriate renewal fee which falls due upon the FIRST day of APRIL each year.

Signed: _____ **Date:** 29-OCT-2021

Permanent Secretary, Ministry of Finance & Trade

Issued by the Business Licensing Authority Turks & Caicos Islands, B.W.I.1251344-22568966-2251788:19707 S/N-2050064102021

BUSINESS LICENSING