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DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU
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DEPUTY DIRECTOR

October 30, 2020

2020/ED-6(JD)

Mr. Keith Kawaoka, Acting Director
State of Hawaii
Department of Health
Office of Environmental Quality Control
235 South Beretania Street, Room 702
Honolulu, Hawaii 96813

Dear Mr. Kawaoka:

SUBJECT:	Chapter 25, Revised Ordinances of Honolulu Draft Environmental Assessment (DEA)
Project:	New Hope Oahu Renovations and Addition
Applicant:	New Hope International Ministries
Agent:	Environmental Communications, Inc. (Taeyong Kim)
Location:	290 Sand Island Access Road - Kalihi-Kai
Tax Map Key (TMK):	1-2-021: 026

With this letter, the Department of Planning and Permitting hereby transmits the DEA and anticipated finding of no significant impact (AFNSI) for the New Hope Oahu renovations and additions, including new parking garage at 290 Sand Island Access Road (TMK 1-2-021:026), in the Honolulu District on the island of Oahu, for publication in the November 8, 2020, edition of "The Environmental Notice."

The DEA-AFNSI for this project was previously published in the June 23, 2020 edition of "The Environmental Notice." However, there were omissions in the distribution list. Therefore, a second publication of the unchanged DEA is requested. We have uploaded an electronic copy of this letter, the publication form, and the unchanged DEA to your online submittal site. Should you have any questions, please contact Jordan Dildy, of our staff, at 768-8027.

Very truly yours,

For: Kathy K. Sokugawa
Acting Director

21-077

October 2015

NON-CHAPTER 343 DOCUMENT
PUBLICATION FORM
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

Project Name: New Hope Oahu Renovations and Additions

Applicable Law: Chapter 25, Revised Ordinances of Honolulu

Type of Document: Draft Environmental Assessment

Island: Oahu

District: Honolulu

TMK: (1) 1-2-021: 026

Permits Required: SMA Use Permit (Major), Building Permit, Grading/Grubbing Permit.

Applicant or Proposing Agency:
New Hope Oahu
290 Sand Island Access Road
Honolulu, Hawaii 96819
Tel: 808 528-4661
Email: tkim@environcom.com

Approving Agency or Accepting Authority:
City and County of Honolulu, Department of Planning and Permitting (DPP),
650 South King Street, 7th Floor,
Honolulu, Hawaii 96813
Contact Person - Jordan Dildy
Tel: 808-768-8027
Email: jdildy@honolulu.gov

Consultant:
Environmental Communications, Inc. (Taeyong Kim)
P.O. Box 236097
Honolulu, Hawaii 96823
Tel: 808 528-4661
Email: tkim@environcom.com

Status: DEA-AFNSI

Project Summary:

This is a republication of a previously published Draft Environmental Assessment and Anticipated Finding of No Significant Impact (DEA-AFNSI). The previously published DEA-AFNSI was published in the June 23, 2020 edition of "The Environmental Notice." The DEA has not been changed since the original publication date. The proposed action consists of improvements to an existing two-story warehouse type building, the demolition of an existing single-story warehouse type building, and the construction of a three level parking garage.

New Hope Oahu Renovations and Addition

Honolulu District, Island of Oahu
Tax Map Key: 1-2-021: 026

Environmental Assessment

Applicant:	New Hope International
Approving Agency:	City and County of Honolulu Department of Planning and Permitting

April 2020

New Hope Oahu Renovations and Addition

Honolulu District, Island of Oahu
Tax Map Key: 1-2-021: 026

Environmental Assessment

Prepared by New Hope Oahu pursuant to Chapter 343, Hawaii Revised Statutes (HRS)
for review by the Department of Planning and Permitting, City and County of Honolulu

For additional information concerning this document please contact:

Mr. Taeyong Kim
Environmental Communications, Inc.
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Honolulu, HI 96823
Phone: (808) 528-4661
Email: tkim@envirocom.com

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REFERENCES

APPENDIX

ACRONYMS AND ABBREVIATIONS

AAQS	Ambient Air Quality Standards
AGL	Above Ground Level
ANSI	American National Standards Institute
BLNR	Board of Land and Natural Resources
BMPs	Best Management Practices
BWS	Board of Water Supply
CDUP	Conservation District Use Permit
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CFR	Code of Federal Regulations
CIC	Clean Islands Council
City	City and County of Honolulu
CO	Carbon Monoxide
CO_2	Carbon Dioxide
COC	Contaminant of Concern
COPC	Contaminant of Potential Concern
CT	Census Tract
CWA	Clean Water Act of 1977
CZMA	Coastal Zone Management Act
DA	Department of the Army
dB	Decibel
dBA	Decibels A-Weighted Scale
DBEDT	Dept. of Business, Economic Development and Tourism
DHS	U.S. Department of Homeland Security
DLNR	Department of Land and Natural Resources
DNL	Day-night sound level
DOA	Department of Agriculture (State of Hawaii)
DOD	U.S. Department of Defense
DOE	Department of Education (State of Hawaii)
DOH	Department of Health (State of Hawaii)
DOT-A	Department of Transportation, Airports Division (State of Hawaii)
DOT-H	Department of Transportation, Harbors Division (State of Hawaii)
DPP	Department of Planning and Permitting (City and County of Honolulu)
DU	Decision Units
EA	Environmental Assessment
EFH	Essential Fish Habitats
EHE	Environmental Health Evaluation
EHMP	Environmental Hazard Management Plan
EIS	Environmental Impact Statement
EISPN	Environmental Impact Statement Preparation Notice
EMS	Emergency Medical Services (City and County of Honolulu)
EO	Executive Order(s)
EPA	U.S. Environmental Protection Agency

ESA	Endangered Species Act of 1973
ESA	Environmental Site Assessment
F	Fahrenheit
FAA	Federal Aviation Administration
FAQ	Frequently Asked Questions
FAR	Federal Aviation Regulations
FEMA	Federal Emergency Management Agency
FHA	Federal Housing Administration
FIRM	Flood Insurance Rate Map(s)
FONSI	Finding of No Significant Impact
FR	Federal Register
FWCA	Fish and Wildlife Coordination Act
GHG	Greenhouse gas
GHGRP	Greenhouse Gas Reporting Program
GWP	Global warming potential
H_2S	Hydrogen Sulfide
HAR	Hawai‘i Administrative Rules
HART	Honolulu Authority for Rapid Transit
HCC	Honolulu Community College
HCDA	Hawaii Community Development Authority
HCM	Highway Capacity Manual
HECO	Hawaiian Electric Company
HEER	Hazard Evaluation and Emergency Response Office (State of Hawaii)
HEPA	Hawaii Environmental Policy Act
HFFC	Hawaii Fueling Facilities Corporation
HFD	Honolulu Fire Department
HFM	Hawaiian Flour Mill
HHUG	Hawaii Harbors Users Group
HIA	Honolulu International Airport
HISC	Hawaii Invasive Species Council
HRS	Hawaii Revised Statutes
HTCO	Hawaiian Telcom
HUD	U.S. Department of Housing and Urban Development
IBC	International Building Code
IDPP	Iwilei District Participating Parties
IPCC	Intergovernmental Panel on Climate Change
JBPHH	Joint Base Pearl Harbor-Hickam
KDA	Kapalama Development Area
kV	Kilovolt
LED	Light emitting diode
Leq	Equivalent sound level
LOS	Level of Service
LUC	Land Use Commission (State of Hawaii)
LUO	Land Use Ordinance
MHHW	Mean higher high water
MLLW	Mean lower low water

MS4	Municipal Separate Storm Sewer System
MSL	Mean sea level
MSRC	Marine Spill Response Corporation
MUS	Management Unit Species
NAAQS	National Ambient Air Quality Standards
NAS	National Airspace System
NEC	Network Enterprise Center
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service (National Oceanic and Atmospheric Administration)
NO_2	Nitrogen Dioxide
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O_3	Ozone
OCCL	Office of Conservation and Coastal Lands (State of Hawaii)
OEQC	Office of Environmental Quality Control
OHA	Office of Hawaiian Affairs (State of Hawaii)
OMPO	Oahu Metropolitan Planning Organization
ORMP	Ocean Resources Management Plan (State of Hawaii)
OU1C	Operating Unit 1C
Pb	Lead
PCB	Polychlorinated biphenyl
PET	Polyethylene terephthalate
PUC	Public Utilities Commission
PVC	Polyvinyl chloride
ROI	Region of influence
ROW	Right of way
SB	Senate Bill
SHPD	State Historic Preservation Division
SLUC	State Land Use Commission
SMA	Special Management Area
SOEST	School of Ocean and Earth Science and Technology (University of Hawaii)
SO_2	Sulfur dioxide
SPS	Sewage Pump Station
State	State of Hawaii
SVOC	Semi-volatile organic compounds
SWMP	Storm Water Management Plan
TMDL	Total Maximum Daily Load(s)
TMK	Tax Map Key
UH	University of Hawaii
US	United States
USACE	U.S. Army Corps of Engineers

USCG	U.S. Coast Guard
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	Underground storage tanks
VA	U.S. Department of Veterans Affairs
VOC	Volatile organic compound
VPH	Vehicles per hour
WQC	Water Quality Certification

I. PROJECT SUMMARY

APPLICANT:	New Hope Oahu 290 Sand Island Access Road Honolulu, Hawaii 96819
APPROVING AGENCY:	City and County of Honolulu Department of Planning and Permitting 650 South King Street Honolulu, Hawaii 96813
ENVIRONMENTAL CONSULTANT:	Environmental Communications, Inc. P.O. Box 236097 Honolulu, Hawaii 96823
PROJECT NAME:	New Hope Oahu Renovation and Expansion
PROJECT LOCATION:	290 Sand Island Access Road Honolulu, Hawaii 96819
TAXMAPKEY/ OWNERSHIP:	1-2-021: 026 New Hope International Ministries
TAX MAP AREA:	1-2-021: 026 52,921 square feet
ZONING:	I-2 Industrial
SPECIAL DISTRICT:	Special Management Area
STATE LAND USE:	Urban District
FLOOD ZONE:	Zone X
CURRENT LAND USE:	The project site presently consists of a developed industrial parcel presently in use as a sanctuary, classrooms, assembly area, offices and other ancillary uses for New Hope Oahu. All uses are permitted in the I-2 zoning district . Classrooms, offices and smaller assembly areas are located in a two-story industrial type structure that is located on the western side of the parcel. A single-story warehouse type structure is located on the eastern half of the site, roughly bifurcating a parking area along the Sand Island Access Road frontage and a fabric tent covered open space that is located along the northern Hoonee Place side of the site. The main

meeting/assembly area is located on the northwestern corner of the site, while the open air assembly are is located along the Hoonee Place frontage.

The site is presently used as a place of worship and religious education with ancillary activities including television broadcast production. The assembly periods are limited to Saturdays and Sundays but administrative and some educational activities are conducted throughout week days.

PROJECT SCOPE:

The existing two story structure, will be renovated with the exterior shell remaining essentially intact. The single-story building will be demolished in favor of a new parking garage structure and other support facilities

The floor area of the two story structure will not increase. The grand hall and some support functions will essentially replace floor area currently existant in the single-story warehouse structure.

The limited on-site parking has required to church lease off-site properties to accommodate parishioner parking and to operate shuttle buses for transportation between the parking areas and the project site. The proposed improvements include the construction of three level, 216 stall parking garage on-site.

PROJECT COST/PHASING

The total project hard cost is approximately $10,000,000 and will be privately financed.

The proposed project will be conducted in a single continuous phase with a projected completion period of 12 months.

PERMITS AND APPROVALS

City and County of Honolulu Demolition Permit
City and County of Honolulu Building Permit
City and County of Honolulu Electrical Permit
City and County of Honolulu Plumbing Permit

II. PROPOSED PROJECT AND STATEMENT OF OBJECTIVES

The purpose and need for the subject Environmental Assessment is to obtain a Special Management Permit from the City and County of Honolulu. The document is prepared in compliance with the Hawaii Environmental Policy Act. The purpose of the proposed improvements include the general renovation of the facility and the construction of a parking garage for operational efficiency and improved services to the parishioners and visitors of the facility.

A. Project Description

The proposed action consists of improvements to an existing two-story warehouse type building, the demolition of an existing single-story warehouse type building, and the construction of a three level parking garage. The proposed improvements reflect the changing attendance of the church as well as to better serve its current and future participants and staff.

Demolition

The existing two-story structure located along the western boundary of the site will remain largely intact with most improvements primarily consisting of interior improvements. The demolition activities required to make the interior changes will not have any impact to the surrounding area.

A single-story warehouse type structure that is perpendicularly oriented and adjacent to the two-story structure will be demolished in favor of the new parking structure. This structure presently houses a multi-media studio, media resource storage, offices and restrooms. This structure is connected to the existing adjacent structure by two interior doorways. The structure is also has three exterior access points.

Two-story Structure Interior Improvements

Extensive interior improvements will be conducted within the existing shell. Presently the first floor and mezzanine level consist of a warren of offices, meeting and classrooms, a library and multiple toilets and ancillary support spaces. Interior circulation is circuitous on the ground level and does not function efficiently. The planned improvements organize the spaces and create a simplified grid plan.

Uses located on the ground floor will include a lobby, offices, classrooms, storage rooms, a small staff kitchen, and restrooms

The Lead Center (auditorium) located on the southwestern corner of the site will be renovated but will retain its basic floor plan. This function area consists of a stage and support spaces, with a large open area that is used for assembly without fixed seating on the ground floor.

The second floor (mezzanine level) of the structure will be improved to support 325 fixed seats including ADA compliant seats. Other areas located on the mezzanine level include a video room, dressing rooms, and a green room (pre-performance guest room).

Connecting Structure

A new connecting structure will be constructed. This space will link the parking structure with the existing two-story structure. The ground level will consist of a grand entry foyer that faces Sand Island Access Road, a vestibule leading to the Lead Center, and an exitway and stairway. The second level of the connecting structure will contain a prayer room, mothers room, electrical room and storage.

Parking Garage

A new three level parking garage will be constructed on the site of the existing single-story structure and the former parking area that was converted to an overflow parishioner viewing area. By consolidating the area occupied by these uses, the three level parking will allow the facility significantly greater self-sufficient in terms of parking. Typically, parking for approximately 358 vehicles is required per service period. The first floor of the parking structure will also include restrooms and a storage room. The new parking structure will provide 178 individual stalls and 38 tandem stalls for a total of 216 parking spaces. A 12x35 foot loading zone and an 8.5 x 18 foot loading zone will be located outside of the parking structure. The parking garage will be accessible from Sand Island Access Road and Hoonee Place. The balance of parking is obtained off-property through parking areas identified in the traffic study prepared for the project.

Operations

The project property is used on a daily basis. The site conducts Christian College classes on week days, and ministry meetings are conducted during the evenings. Parking for these activities is typically accommodated on-site with some additional parking off-site on an adjacent lot. On the weekends, Church services are held on Saturday's at 5:00 pm and 7:00 pm, and on Sundays at 7:00 am, 9:00 am and 11:00 am. During peak periods, parking is available on adjacent businesses that typically do not operate during the service periods.

B. Project Location

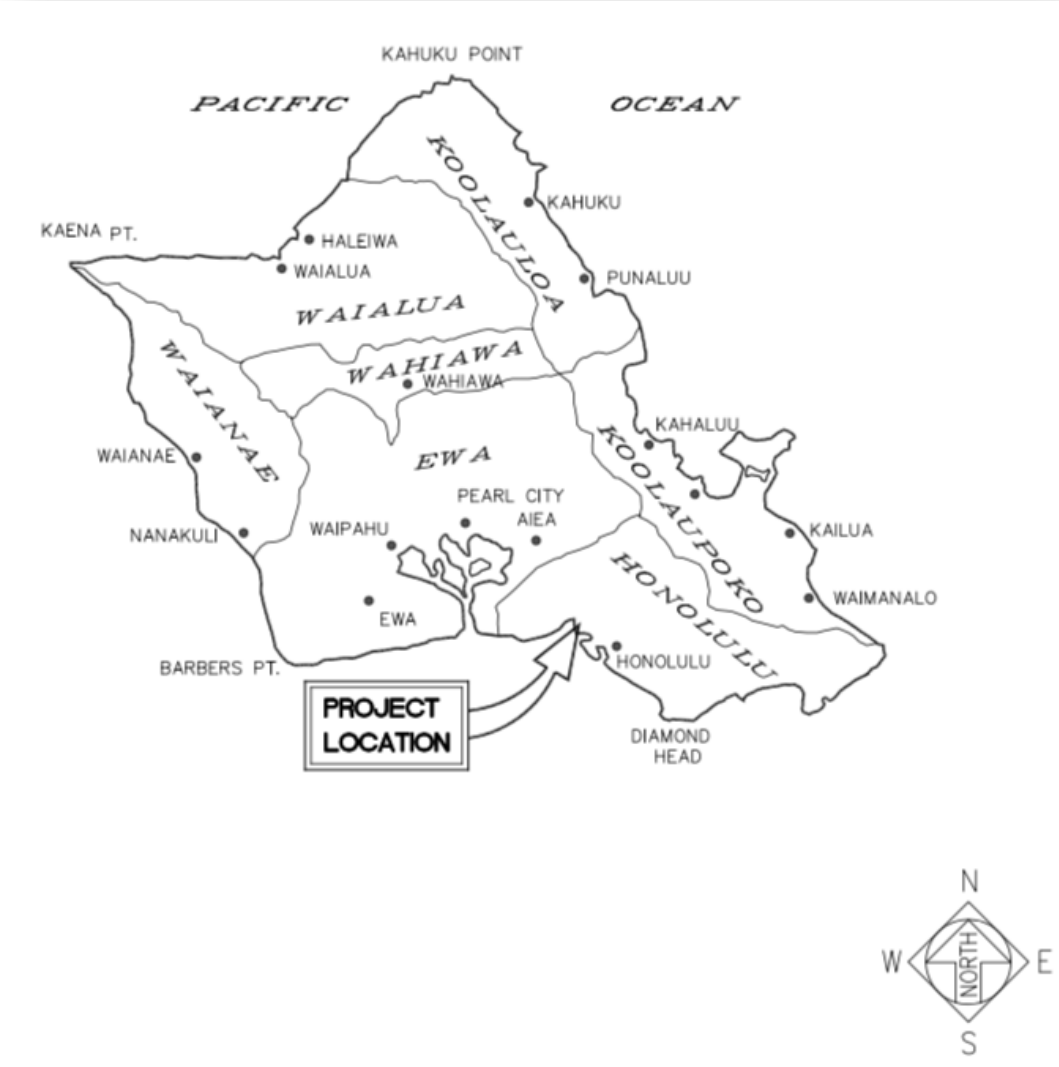
The proposed action is located on industrial zoned lands owned by the Applicant. The project site is located at 290 Sand Island Access Road and is identified as TMK 1-2-021: 026 on a single parcel of 52,921 square feet. The project site is a corner parcel and with a second street frontage along Hoonee Place.

The surrounding area generally consists of industrial uses primarily in joint sales and warehousing functions. The area is characterized by industrial scale buildings with significant activity occurring during week days but very limited activity during the weekends. The Sand Island area is one of the primary large scale industrial activity areas in urban Honolulu.

C. Project Objective and Purpose of this Document

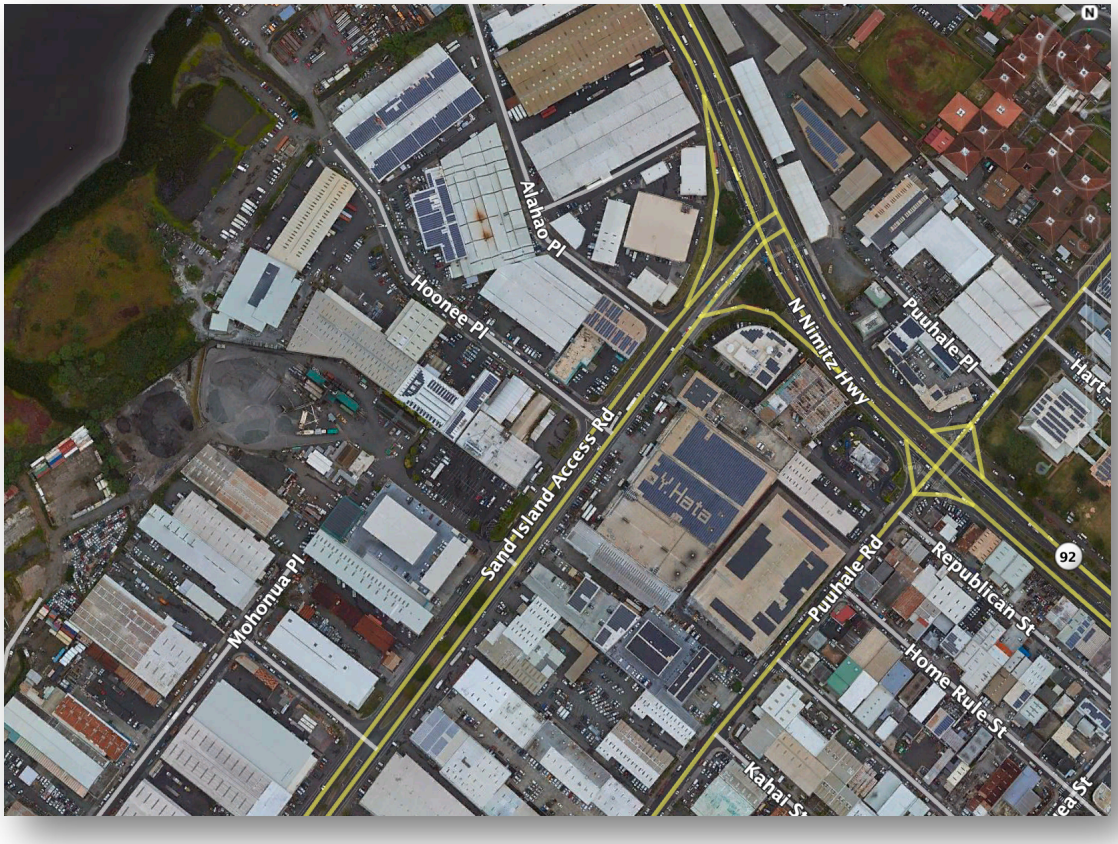
The objective of the proposed action is to improve an existing religious institution campus through renovation of an existing building and the replacement of a second building with a new parking structure. The proposed use is compatible with the prevailing zoning and land use policies, does not have any hazardous, noxious or other undesirable characteristics. The project will create temporary employment from the construction activities and will ensure that an important community service is retained and can serve its community with improved function.

The subject Environmental Assessment is prepared in conformance with Chapter 343 Hawaii Revised Statutes, as the project will not involve the use of State or County lands or funds. The property is privately owned in fee by the Applicant. The Department of Planning and Permitting will serve as the approving agency for the subject Environmental Assessment and the subsequent Special Management Area Permit will be approved by the Honolulu City Council. The proposed action will be privately financed.

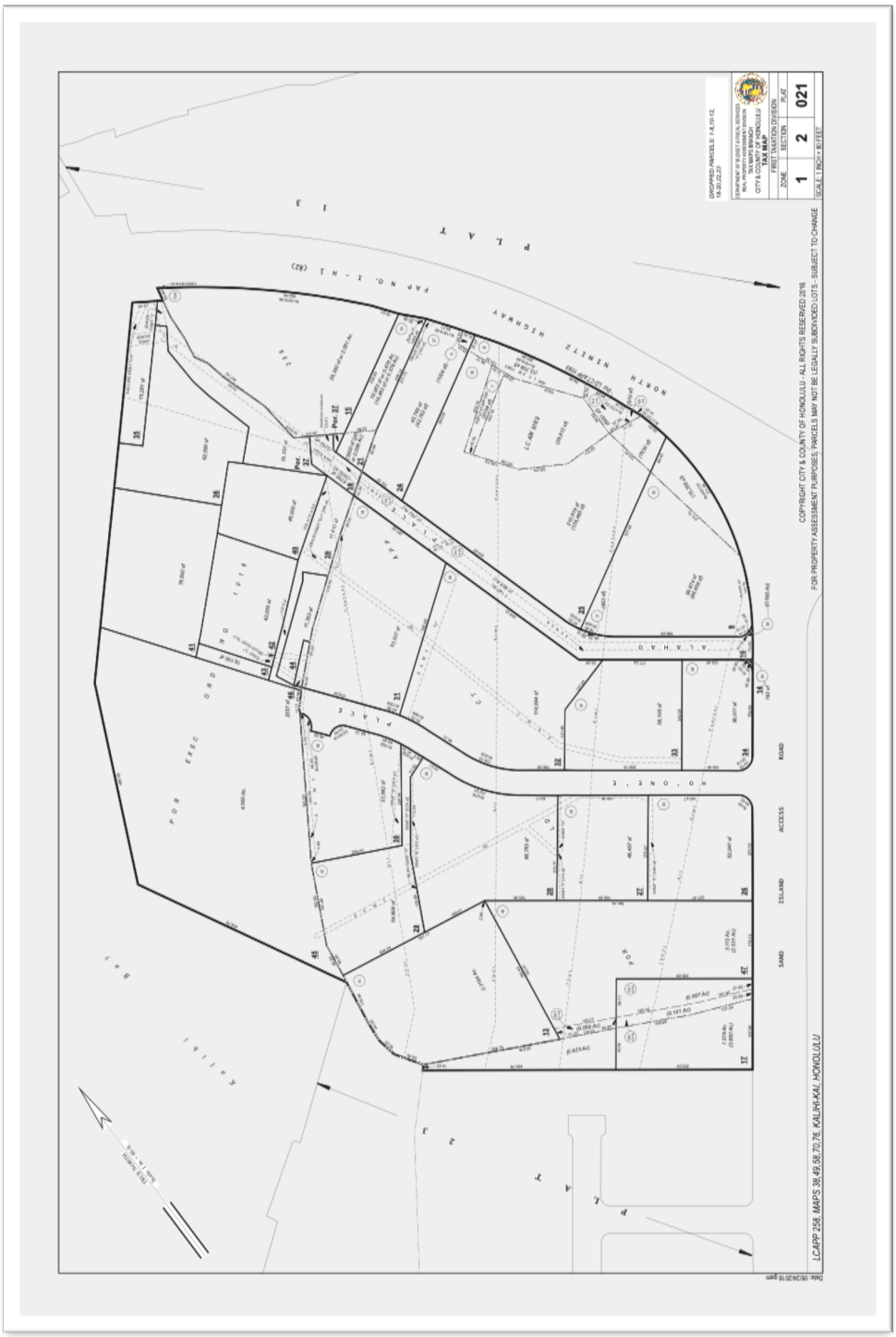


Location Map and Vicinity Map	Figure 1
Source: Anbe, Aruga & Ishizu, Architects, Inc.	New Hope Oahu
Environmental Assessment	Honolulu, Hawaii

The Traffic Management Consultant. *Traffic Access Analysis Report for the Proposed Atlantis Adventures Pier 27 Maintenance Facility*, 2014.



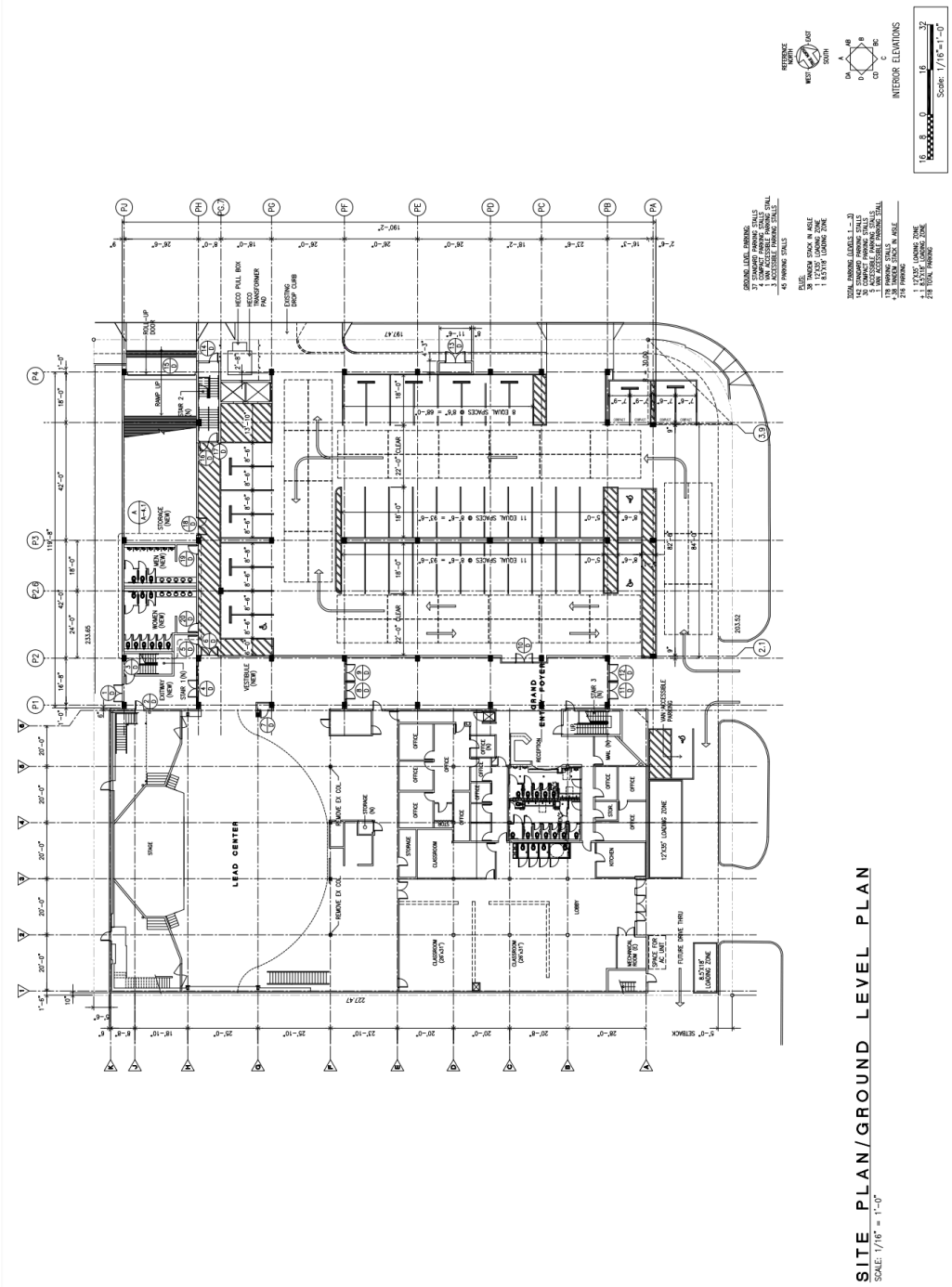
Project Location Aerial Photograph	Figure 2
Source: Google Earth	New Hope Oahu
Environmental Assessment	Honolulu, Hawaii



Tax Map Parcel **Figure 3**

Source: City and County of Honolulu — New Hope Oahu

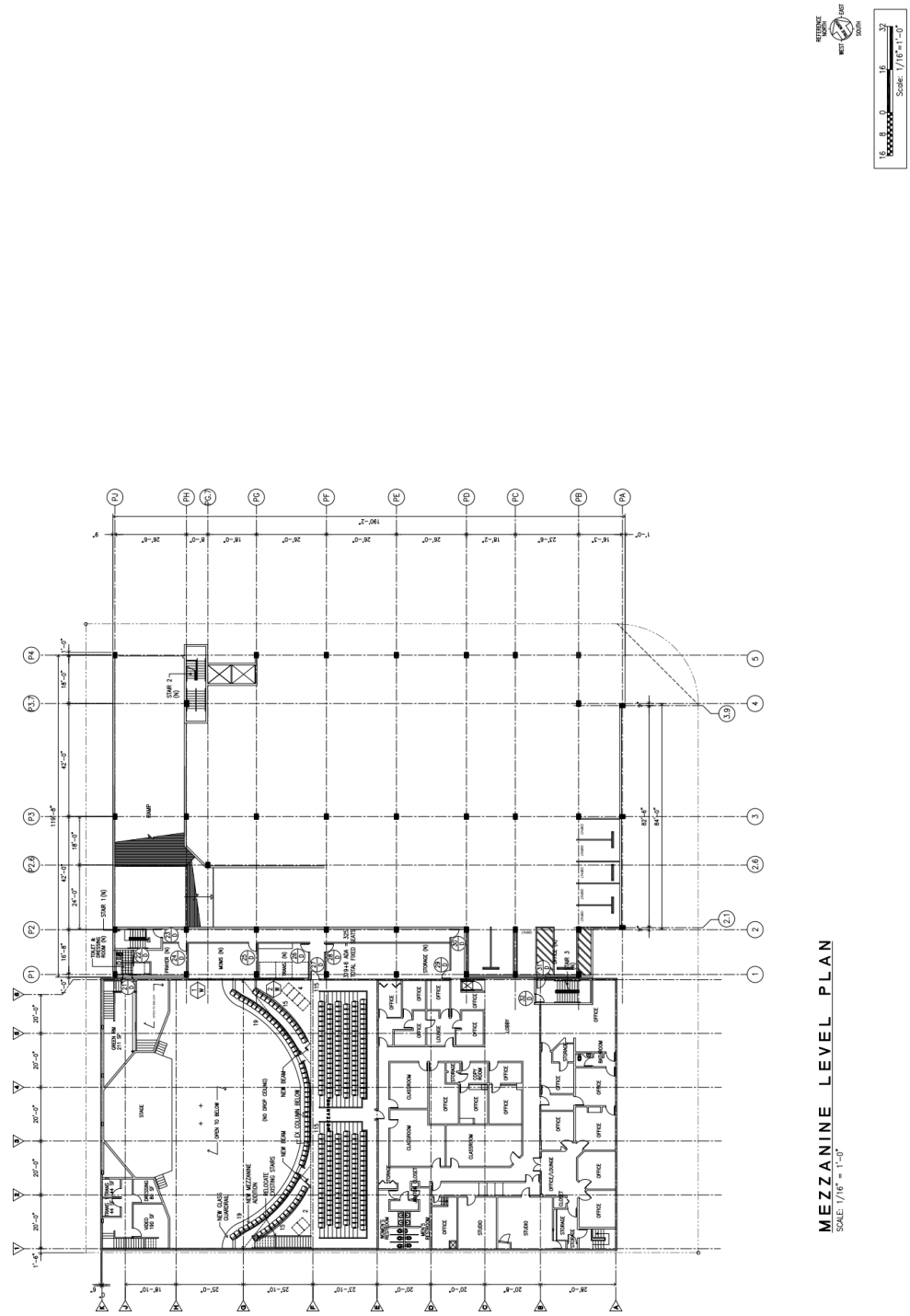
Environmental Assessment — Honolulu, Hawaii



Site and Ground Level Plan **Figure 4**

Source: Anbe Aruga & Ishizu, Architects, Inc. **New Hope Oahu**

Environmental Assessment **Honolulu, Hawaii**



Mezzanine Level Plan

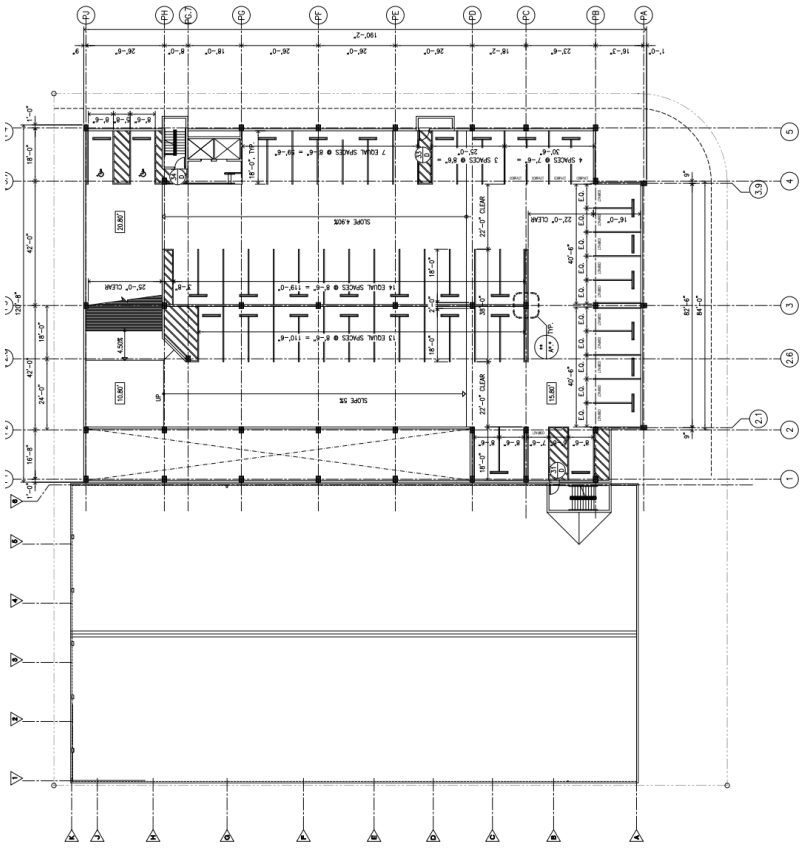
Figure 5

Source: Anbe Aruga & Ishizu, Architects, Inc.

New Hope Oahu

Environmental Assessment

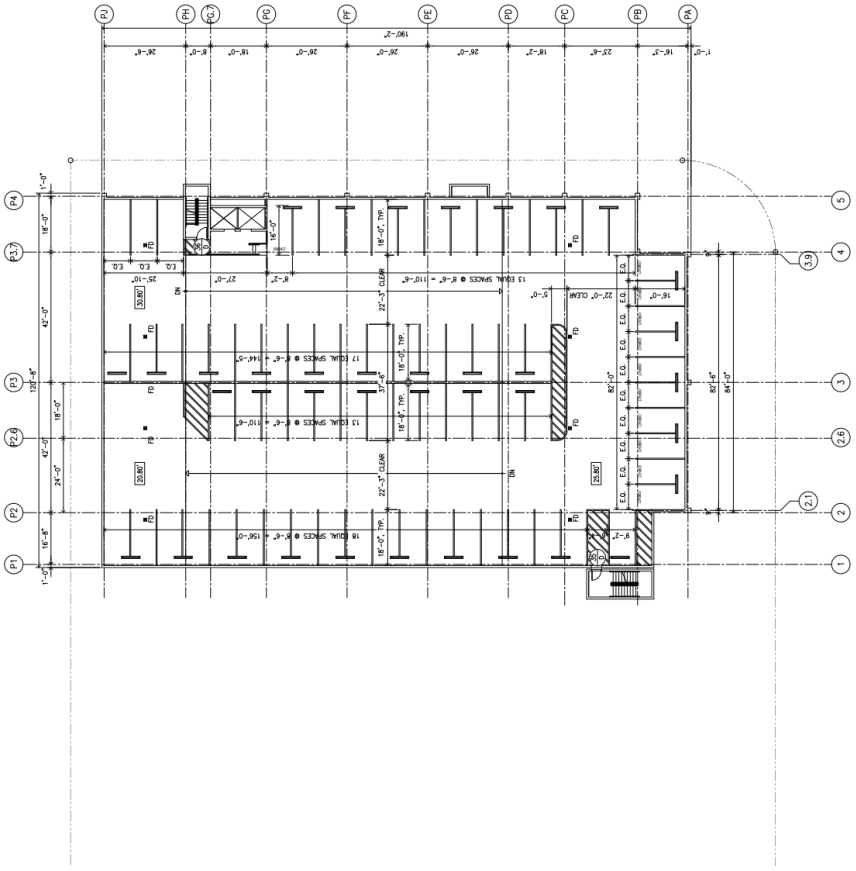
Honolulu, Hawaii



Second Level Plan — **Figure 6**

Source: Anbe Aruga & Ishizu, Architects, Inc. — New Hope Oahu

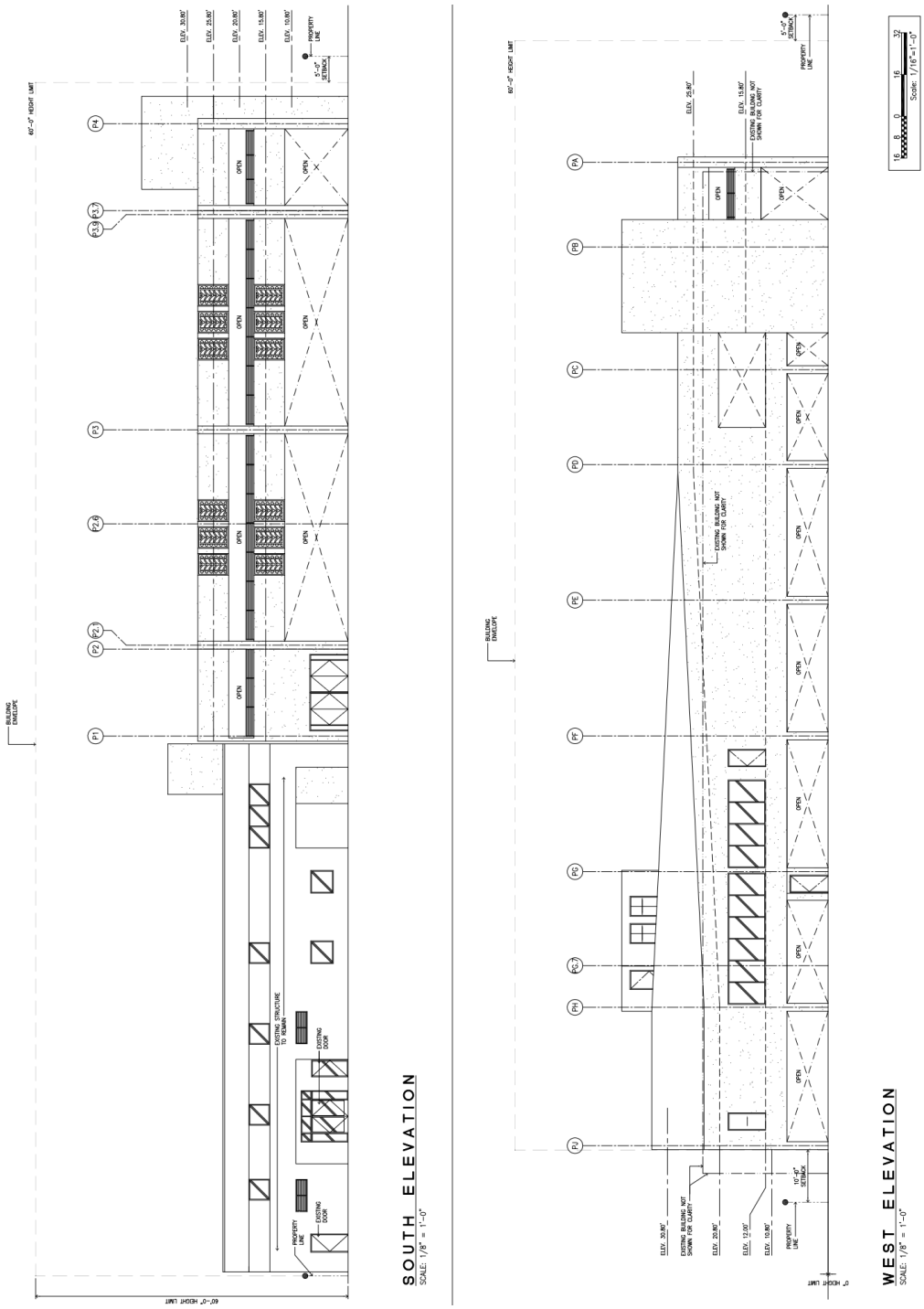
Environmental Assessment — Honolulu, Hawaii



Third Level Plan **Figure 7**

Source: Anbe Aruga & Ishizu, Architects, Inc. New Hope Oahu

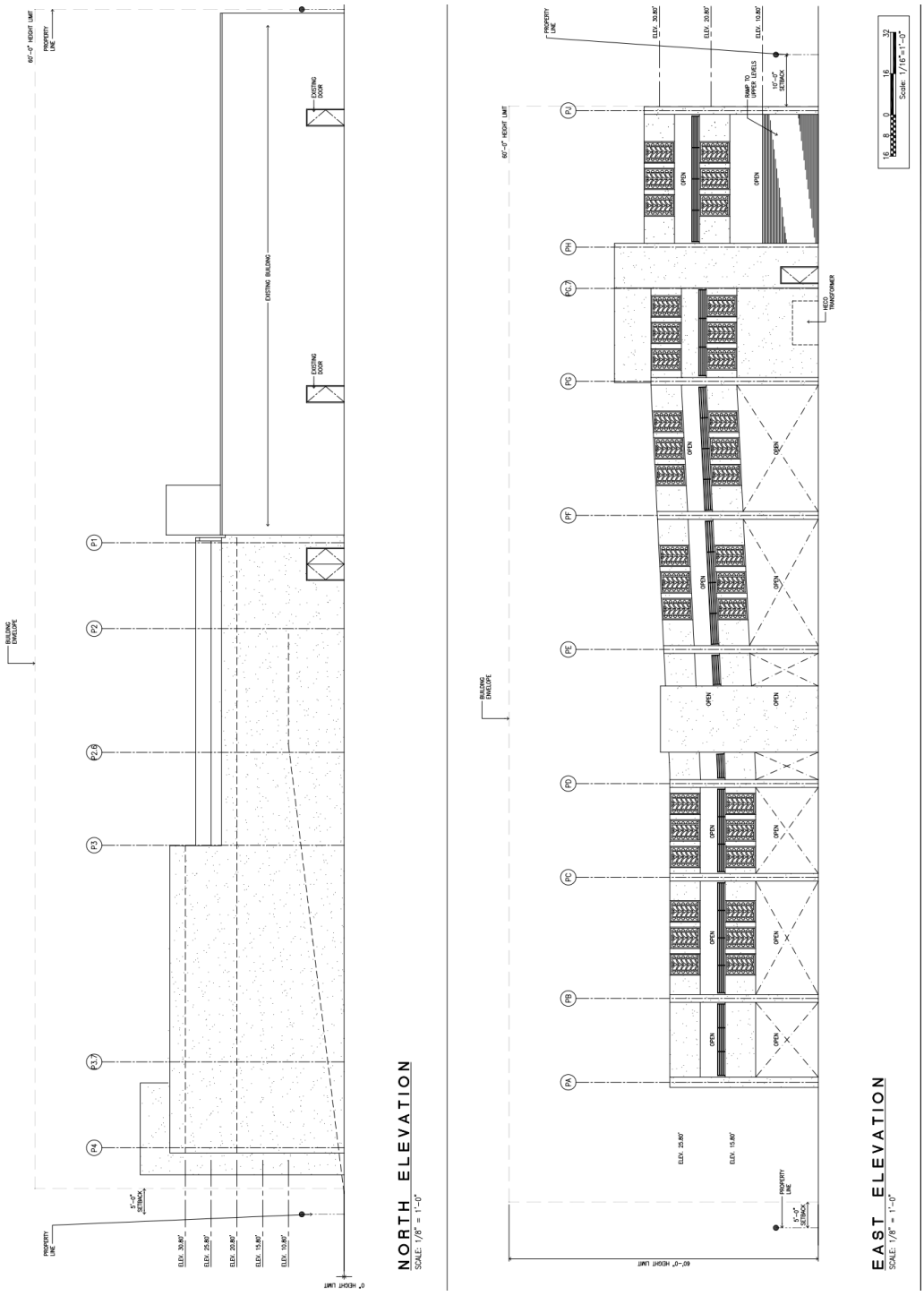
Environmental Assessment Honolulu, Hawaii



South and West Elevations **Figure 8**

Source: Anbe Aruga & Ishizu, Architects, Inc. New Hope Oahu

Environmental Assessment Honolulu, Hawaii



North and East Elevations **Figure 9**

Source: Anbe Aruga & Ishizu, Architects, Inc. **New Hope Oahu**

Environmental Assessment **Honolulu, Hawaii**

III. AFFECTED ENVIRONMENT AND POTENTIAL CONSEQUENCES

A. Environmental Setting

The project site consists a 52,941 square foot parcel of privately owned Industrial (I-2) zoned land located at the intersection of Sand Island Access Road and Hoonee Place in the Kalihi Kai industrial area. The area is characterized by its general industrial uses.

Typical uses in the project vicinity consist of industrial and commercial uses. Typically, the area is dominated by large scale industrial buldings intersperced with supporting commercial functions such as eateries, banks and other support services. The area is active and heavily trafficked during weekdays but is generally very quiet during weekends reflecting the industrial nature of the area.

The project site is not a scenic resource nor does it serve as a natural view resource. The project is located within an industrial district and is visually distinct due to the relatively heavy landscaping fronting the site. Most of the Sand Island Access Road and surrounding area are devoid or very limited in landscaping and other non-industrial visual relief. Ocean views or any city or horizon views are not available in the project area. It could be considered that the project will provide visual improvement to the area since an existing building building will be renovated and refinished as well as visually incorporated with a new parking garage. Some visual improvement will also be obtained by the addition of the new parking garage that will replace an older warehouse structure and temporary tent covered area. The area is not well suited for residential or retail use nor are these uses allowed by the zoning code.

B. Surrounding Uses

The Kalihi Kai area surrounding the project site is characterized by industrial uses that have been historically present since the area became urbanized. Further to the north lie the Kalihi and Palama areas that contain both industrial and residential areas. Farther north lies the area known as Fort Shafter Flats which is comprised of Federal Government owned lands.

In the easterly direction lies the predominantly industrial/ mixed use Iwilei area. This area has a stronger large scale commercial component with several “big box” retails dominating the area. Commercial services are also found throughout the area.

South of the project site lies more industrial areas and the piers of Honolulu Harbor located along the perimeter of the Kapalama Basin. Sand Island Access Road continues south from the project site, crossed the Kapalama Basin Channel and terminates on the Sand Island industrial complex.

Keehi Lagoon is located west of the project area. The current use is consistent with the immediate surroundings and zoning as well as the general character of the entire district.

C. Environmental Conditions and Impacts

1. Site Characteristics

Topography

The project area is flat and open, and has been previously cleared, graded and paved and developed. The open areas of the project site, outside of the structures area are presently paved with asphalt and used for parking or landscaped with ornamental plants.

A minimal amount of excavation will be required for the new parking structure and for internal infrastructure improvements. All utilities are presently available to the site and utility improvements will be limited to the project site. No topographical changes outside of the project boundaries will occur.

Views

The proposed improvements will not result in the loss of any open space nor will it result in the loss of any scenic views from public access points. The site is in industrial use and warehouse structures are normative for this use. The existing open space areas will continue to serve as visual relief for an otherwise industrial looking area.

Climate

The Honolulu District is typically warm and dry in climate. Prevailing trade winds arrive from the northeast. According to the National Weather Service Honolulu Office, over a period of 30 years, normal monthly high temperatures range from 80 degrees in January to a high of 89 degrees in August for an average of 84 degrees. Normal month low temperatures range from a low of 65 degrees in February and a high of 74 degrees in August for a monthly average of 70 degrees. Precipitation typically ranges from 0.44 inches in August to a high of 3.8 inches in December. The annual average rainfall in Honolulu is 70 inches per year.

The proposed project is not expected to have any impact on the climate. The proposed improvements will not contribute in any significantly measurable way to global climate change. By consolidating parking by way of the new parking structure, some minor improvements in vehicular traffic might be experienced as the need for shuttle vehicles is expected to decrease.

USDA Soil Survey Report

According to panel 62 of the *Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii* by the US Department of Agriculture Soil Conservation Service, the project site is located primarily on soils classified as Fill Lands, Mixed (FL). This land type occurs primarily near Pearl Harbor and Honolulu. It consists of dredged material, garbage and general excess material. This land type is used for urban development including industrial facilities. The project will not adversely impact soil conditions nor is it expected to introduce any contaminants to the soil.

Soils Map — **Figure 10**
Source: USDA Soil Conservation Service — New Hope Oahu
Environmental Assessment — Honolulu, Hawaii

Hazardous Materials

No hazardous materials are or have been stored on or within the existing structures. No asbestos, lead paint or other hazardous materials are known to exist on or within the existing structures as the buildings have been improved to current building codes and regulations.

Air Quality

The ambient air quality of the project site is typical of the industrial nature of the site. No point source pollution sources have been identified in the general area and typical trade winds ensure that air quality remains within acceptable standards as recorded by the Department of Health air quality monitors. No odors were noted on site and the site is well ventilated and well exposed to prevailing winds.

Air quality impacts from the construction and operation of the renovated facility are expected to be insignificant to non-existent as no significant grading will be required. Operations within the campus will not involve the use of heavy equipment that might produce fumes or contaminants. During the construction period, gasoline or diesel powered heavy equipment will be required to transport and erect portions of the building.

Air quality degradation from the operation of this equipment will be negligible and temporary. Private vehicles owned by employees, parishioners and guests will generate minimal amounts of air-borne emissions as would be typical of any parking lot however not net change in vehicular emissions are expected as the parking structure will consolidate more vehicles to a single location but will not increase vehicle count. No long-term air quality impacts should occur from the operation of the facility.

Noise Environment

The noise environment will be minimally affected by the project improvements. Parking activities will occur within the confines of the parking garage. The tent covered overflow seating area will also be eliminated in favor of seating provided within the Lead Center. Noise associated with the worship services and activities will be conducted indoors in air-conditioned and insulated structures. Potential noise generation from the proposed use will be limited to vehicles entering and exiting the site and are expected to peak only during periods before and after services and primarily on weekends. No residential areas are located in the area and most industrial and commercial areas near the project site are closed during weekends.

Construction activities will generate noise. However most activities will occur within the existing structure. Construction related noise impacts will be short-term in nature and will not include any atypical construction noises. All activities will continue to adhere to State Department of Health community noise standards.

2. Water Resources

Hydrologic Hazards and Resources

According to Panel 15003C0353G of the Federal Emergency Management Agency Flood Insurance Rate Map dated November 5, 2014, the project facility is located in Zone X, an area where flood hazards are undetermined.

Rising sea levels for the State of Hawaii are not anticipated to affect the project site on a "lesser inundation depth" until sea levels rise 5 feet above Current Mean Higher High Level based on the National Oceanic and Atmospheric Administration (NOAA) Sea Level Rise Viewer. The *Hawaii Sea Level Rise Vulnerability and Adaption Report* updated in December 2017 states that the potential sea level rise by the year 2100 is estimated at 3.2 feet above current mean sea levels. The base elevation of the building is 8-feet above mean sea level therefore no impacts from rising sea levels are expected for this project site. Based upon these findings it has been determined that no additional mitigation is needed.

Tsunami Inundation Area

According to the City and County of Honolulu Department of Emergency Management Tsunami Map, the project site is not located in a Tsunami Evacuation Zone.

Special Management Area

The project site is located within the Special Management Area (SMA). A Special Management Permit (SMP) is required for the project prior to the commencement of any construction activities.

Water Quality

The project will not adversely affect surface water quality. Physically, the project site will remain largely unchanged from its current condition and impervious

Flood Hazard Assessment Report

www.hawaiinfip.org

Property Information

COUNTY:	HONOLULU
TMK NO:	(1) 1-2-021:026
WATERSHED:	KALIHI
PARCEL ADDRESS:	290 SAND ISLAND ACC RD HONOLULU, HI 96819

Notes:

Flood Hazard Information

FIRM INDEX DATE:	NOVEMBER 05, 2014
LETTER OF MAP CHANGE(S):	NONE
FEMA FIRM PANEL:	15003C0353G
PANEL EFFECTIVE DATE:	JANUARY 19, 2011

THIS PROPERTY IS WITHIN A TSUNAMI EVACUTION ZONE: NO
FOR MORE INFO, VISIT: http://www.scd.hawaii.gov/

THIS PROPERTY IS WITHIN A DAM EVACUATION ZONE: NO
FOR MORE INFO, VISIT: http://dlnreng.hawaii.gov/dam/

0 200 400 ft

Disclaimer: The Hawaii Department of Land and Natural Resources (DLNR) assumes no responsibility arising from the use, accuracy, completeness, and timeliness of any information contained in this report. Viewers/Users are responsible for verifying the accuracy of the information and agree to indemnify the DLNR, its officers, and employees from any liability which may arise from its use of its data or information.

If this map has been identified as 'PRELIMINARY', please note that it is being provided for informational purposes and is not to be used for flood insurance rating. Contact your county floodplain manager for flood zone determinations to be used for compliance with local floodplain management regulations.

FLOOD HAZARD ASSESSMENT TOOL LAYER LEGEND
(*Note: legend does not correspond with NFHL*)

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD - The 1% annual chance flood (100-year), also know as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. SFHAs include Zone A, AE, AH, AO, V, and VE. The Base Flood Elevation (BFE) is the water surface elevation of the 1% annual chance flood. Mandatory flood insurance purchase applies in these zones:

- **Zone A**: No BFE determined.
- **Zone AE**: BFE determined.
- **Zone AH**: Flood depths of 1 to 3 feet (usually areas of ponding); BFE determined.
- **Zone AO**: Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined.
- **Zone V**: Coastal flood zone with velocity hazard (wave action); no BFE determined.
- **Zone VE**: Coastal flood zone with velocity hazard (wave action); BFE determined.
- **Zone AEF**: Floodway areas in Zone AE. The floodway is the channel of stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without increasing the BFE.

NON-SPECIAL FLOOD HAZARD AREA - An area in a low-to-moderate risk flood zone. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities.

- **Zone XS (X shaded)**: Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
- **Zone X**: Areas determined to be outside the 0.2% annual chance floodplain.

OTHER FLOOD AREAS

- **Zone D**: Unstudied areas where flood hazards are undetermined, but flooding is possible. No mandatory flood insurance purchase apply, but coverage is available in participating communities.

Flood Hazard Assessment Report
Source: Dept. of Land and Natural Resources
Environmental Assessment

Figure 11
New Hope Oahu
Honolulu, Hawaii

areas will not be expanded. No hazardous materials will be stored in the outside of the buildings. Any surface water generated from the project site is expected to be limited to rainfall. The project parcel is served by curbs on both Sand Island Access Road and Hoonee Place with a stormwater collection system located on Hoonee Place.

The nearest body of water is Keehi Lagoon located approximately 0.2 miles from the western edge of the subject project site. No water quality impacts to Keehi Lagoon or Honolulu Harbor are anticipated from the proposed facility during its operations. During construction activities Best Management Practices will be used to retain or filter project site runoff.

Site drainage will not be affected as the existing site is already completely paved.

Special Management Area — **Figure 11**
Source: City and County of Honolulu — New Hope Oahu
Environmental Assessment — Honolulu, Hawaii

A Stormwater Management Plan (SWMP) for Honolulu Harbor was revised in 2015 for the State of Hawaii Department of Transportation Harbors Division. This report encompassed the entirety of Honolulu Harbor including the project location. The general findings and recommendations are applicable to the proposed project and in turn, the proposed improvements are consistent with the stormwater management plan. The site will not result in any additional runoff as no permeable surfaces will be created and the runoff produced on-site will be essentially the same as the current conditions.

During construction activities, runoff controls including Best Management Practices shall be implemented along with good housekeeping practices to ensure that any construction related runoff is contained or controlled and treated before entering any storm drain.

3. Archaeological, Historical, Cultural, Botanical and Faunal Resources

Archaeological Resources

As stated earlier, the project site is located on mixed fill lands that consist entirely of materials that were brought to the current location. As such no archaeological or historic materials are expected to exist on the project site. Photographs dated 1952 show the area improved with roadways and occupied by industrial warehouse buildings.

The State Historic Preservation Division has issued a determination that "no historic properties affected" for the proposed project. This determination letter is attached as Appendix D.

In the unlikely event that any archaeological artifacts are uncovered, all work will cease and the Department of Land and Natural Resources State Historic Preservation Division (SHPD) will be notified for appropriate action.

Cultural Resources

The Honolulu Harbor area has historically been a heavily used seaport and trade center. This is well recorded and documented but specific to the project site, no cultural activities are known to have occurred on the subject area. As stated in the preceding paragraph, the site was created by introduced fill material and cultural activities, if any, have not occurred on the site since the time the site was hardened and used for industrial use.

Flora

The entire surface of the project site is covered with structures and concrete or asphalt paving. The site is devoid of any flora with the exception of landscaping along the Sand Island Access Road and Hoonee Place frontages and subsequently, no rare, threatened or endangered species of flora were observed within the project site. Existing landscaping plants include coconut, hibiscus, ti, naupaka, lawai fern, plumeria and lawn grass.

Fauna

The site does not serve as an endangered wildlife habitat. No land-based fauna was observed on site visits and no rare or endangered species of avifauna were identified. The proposed improvements will not result in the increase in any ocean-going activities therefore no additional impacts are expected to any near shore or marine life.

The U.S. Fish and Wildlife Service has noted that the following threatened or endangered species of avifauna may occur or transit through the project site. These species include the endangered band-rumped storm petrel (Oceanodroma castro), the endangered Hawaiian petrel (Petrodroma sandwichensis), the threatened Newll's shearwater (Puffinus auricularis newelli), and the wedge-tailed shearwater (Ardenna pacificus).

To minimize potential impacts to seabirds, it has been recommended by the U.S. Fish and Wildlife Service that mitigation measures be incorporated to prevent disorientation, injury and mortality. Shielded outdoor lights will be used on all outdoor lights to prevent unnecessary light exposure.

White terns are known to nest in areas between Hawaii Kai to Hickam Air Force Base. The project is located between these two points however the site does not include any trees that would be suitable for nesting and the likelihood of such nesting occurring on-site is unlikely.

4. Infrastructure and Utilities

The proposed improvements are not expected to have a significant impact on existing infrastructure and utilities. Water and electrical power is presently available on site and future operations can be serviced by the local utilities. The project represents improvements that a decrease in overall use and impact to the project area from previous use of the site.

Vehicular Access and Traffic Conditions

A traffic impact report was prepared by the Wilson Okamoto Corporation for a larger version of the proposed project in February 2015. The report, *Traffic Impact*

Report, New Hope Ministry Center indicated that only traffic at the Sand Island Access Road and Hoonee Place intersection would be affected during peak periods associated with weekend worship services would be impacted. The report is included in its entirety as Appendix B. Subsequent to the traffic report issuance, the project was deferred and an assessment by the Applicant determined that a smaller project was warranted. The smaller project will allow for more parking self sufficiency and decreased environmental footprint. Supplemental information regarding parking was prepared by the Applicant and is included as Appendix C.

The traffic impact report is summarized below.

Area Roadway System

The existing New Hope Ministry Center is located adjacent to Sand Island Access Road in Honolulu. Sand Island Access Road is a predominantly four-lane, two-way divided roadway between North Nimitz Highway and Auiki Street with auxiliary lanes provided at major intersections. At the signalized T-intersection with North Nimitz Highway, the northbound approach of Sand Island Access Road has three exclusive left-tum lanes and a channelized right-tum lane. North Nimitz Highway is generally a six-lane, two-way divided roadway that serves as a major east-west corridor through Honolulu. At the intersection with Sand Island Access Road, the eastbound approach of North Nimitz Highway has three through lanes and an exclusive right-tum lane, while the westbound approach has two exclusive left-tum lanes and three through lanes. Contra-flow operations are implemented along the highway during the morning peak hours of 5:00 AM to 8:30 AM. During this period, the eastbound approach of North Nimitz Highway has four through lanes and an exclusive right-tum lane, while the westbound approach has two exclusive left-tum lanes and three through lanes.

South of the intersection with North Nimitz Highway, Sand Island Access Road intersects Hoonee Place. At this unsignalized intersection, the northbound approach of Sand Island Access Road has an exclusive left-tum lane, one through lane, and a shared through and right-tum lane, while the southbound approach has a shared left-tum and through lane, one through lane, and an exclusive right-tum lane. Hoonee Place is a two-lane, two-way roadway generally oriented in the east-west direction. At the intersection with Sand Island Access Road, the eastbound approach of Hoonee Place has one stop-controlled lane that serves all traffic movements. The westbound approach of the intersection is comprised of a driveway for an adjacent business that has one stop-controlled lane that serves all traffic movements.

Further south, Sand Island Access Road intersects the northern terminus of Pahounui Drive. At this unsignalized T-intersection, the

northbound approach of Sand Island Access Road has an exclusive left-tum lane and two through lanes, while the southbound approach has one through lane and a shared through and right-tum lane. Pahounui Drive is a two lane, two-way roadway that loops through the commercial/industrial area west of Sand Island Access Road. At the intersection with Sand Island Access Road, the eastbound approach of Pahounui Drive has one stop- controlled lane to serve all traffic movements.

At the southern end of the study area, Sand Island Access Road intersects Auiki Street, the southern terminus of Pahounui Drive, and Sand Island Parkway. At this signalized intersection, the southbound approach of Sand Island Access Road has an exclusive left-tum lane, one through lane, and a shared through and right-tum lane while the eastbound approach of Pahounui Drive has one lane that serves all traffic movements. Auiki Street is a predominantly two-lane, two-way roadway generally oriented in the east-west direction that has one lane that serves all traffic movements at this intersection. The northbound approach of the intersection is comprised of Sand Island Parkway, a predominantly four-lane, two-way roadway generally oriented in the north-south direction. At the intersection with Sand Island Access Road, Auiki Street, and Pahounui Drive, the Sand Island Parkway approach has an exclusive left-tum lane, one through lane, and ashared through and right-tum lane.

Projected Traffic Conditions

The proposed expansion project is intended to serve the existing congregation at New Hope Ministry and, as such, the proposed improvements are not expected to generate additional trips. However, the development of additional on-site parking is expected to result in a reassignment of trips from off-site parking areas during weekend services since parishioners will have the opportunity to park on-site at the church facility. As such, the vehicles currently parking at the three off-site lots were reassigned to the surrounding roadways based on their assumed origin/destination and the relative convenience of available routes. The directional distribution of the reassigned trips was based on the existing distribution of traffic along North Nimitz Highway. Figure 7 shows the trip reassignment during the weekend peak period.

Traffic operations in the vicinity of the New Hope Ministry Center are generally expected to remain similar to Year 2017 without project conditions with the expansion of the existing church facility. The plam1ed expansion is not expected to generate additional trips during the weekday AM and PM peak periods and, as such, the study intersections along Sand Island Access Road are expected to continue operating at levels of service similar to without project conditions. During the weekend peak period, the approaches of the

intersections of Sand Island Access Road with Pahounui Drive and Auiki Street/Pahonui Drive/Sand Island Parkway are generally expected to continue operation at levels of service similar to without project conditions despite the anticipated increases in traffic due to the reassignment of site- generated trips. The westbound and northbound approaches of the intersection of Sand Island Access Road with North Nimitz Highway are expected to operate at slightly lower levels of service during this period. At the intersection of Sand Island Access Road with Hoonee Place, the eastbound approach of Hoonee Place is expected to deteriorate from LOS "C" to LOS "E" since Hoonee Place serves as the primary access road for the church facility. However, it should be noted that trips associated with the New Hope Ministry Center are expected to be clustered around the start and end of services during the weekend and any resulting congestion or queuing is expected to clear quickly. As such, management of traffic associated with the New Hope Ministry Center may be the most appropriate strategy to minimize the impact of the church facility on the surrounding roadway network.

Traffic Report Conclusion

The existing New Hope Ministry Center adjacent to Sand Island Access Road currently houses office, classroom, meeting spaces, and at-grade parking areas to support classes and meetings during the weekdays and services on the weekends. On weekdays, parking for the facility is accommodated on-site or in an adjacent parking lot while parking on weekends is accommodated in adjacent parking areas, as well as, three off-site parking areas with shuttle services. The proposed expansion project is intended to serve the existing New Hope Ministry congregation and other functions and entail the replacement of the existing temporary gathering and overflow areas with permanent facilities, as well as, provide additional on-site parking. The provision of additional on-site parking is expected to result in additional vehicular traffic to and from the project site with the church's congregation size not expecting to significantly increase. With the implementation of the aforementioned recommendations, traffic operations in the vicinity of the New Hope Ministry Center are expected to generally remain similar to existing and without project conditions. However, the preparation of a Traffic Management Plan for the New Hope Ministry Center is recommended to minimize the impact of the church facility on the surrounding roadways.

Water

The project site is served by the municipal water system. The potable water request has been coordinated and approved by the Board of Water Supply by the project

engineers. Water use on site primarily consists of restroom use and limited landscape irrigation.

Wastewater

Wastewater for the project site will be accommodated by the existing municipal wastewater system.

Drainage

The site is paved and is very flat. The proposed action will not result in the loss of any permeable surfaces as the site is already paved. Stormwater is collected and will enter an existing drainage inlets located along Hoonee Place. Drainage is not directed onto other properties.

Solid Waste

Solid waste disposal will be collected by a private hauler and disposed of at an approved County refuse site.

Telephone and Electrical Services

Telephone and electrical services are available for the project via mainlines located along Sand Island Access Road. A new pad mounted transformer will be located along the Hoonee Place frontage in the new parking structure. General energy conservation practices will be implemented wherever practicable.

5. Public Facilities

The proposed project will not have any significant impact on public facilities including schools, police, and fire or emergency medical services as the project continues an industrial use of an existing industrial building. The project will not increase population in the area therefore no impact on schools is expected. Police, fire protection and emergency medical services are already available in the area but the project is not expected to increase demand for any of these emergency services.

Schools that serve the area but will not be impacted by the project include Puuhale Elementary School located at 345 Puuhale Road, Central Middle School located at 1302 Queen Emma Street, and Farrington High School located at 1564 North King Street.

Kalihi Kai Fire Station Number 31 provides fire protection and first response emergency and rescue service to the project area. The station is located at 1334 Nimitz Highway, approximately one mile from the project site. Response time to

the site is approximately 5 minutes. An engine and ladder company serve this station.

Ambulance service for the project vicinity is provided by City and County of Honolulu Emergency Medical Service Unit Charlie-1 located at Kuakini Medical Center. Units Baker 1 located at Queens Hospital and Metro 1 located on Young Street provide backup. Response time to the project area is approximately 5 to 10 minutes.

Police service in the project area is part of the Honolulu Police Department's District 5. The district's administrative offices are located at the Kalihi Police Station.

D. Social and Economic Characteristics

The proposed are important to a significant social service center to the surrounding area and beyond. Religious facilities are an important part of the social fabric of any community. The project improvements proposed by the Applicant should be considered as more than locally beneficial as the facility is also used to broadcast televised services that are available throughout the State of Hawaii.

The project will have beneficial economic impacts. Operation of the new facility will create a more efficient facility and will offer the opportunity to become more energy efficient. The construction of the facility will create short-employment, the purchase of goods and services, the generation of excise and income taxes, and other secondary and tertiary effects as a result of the project expenditures.

The long-term operations of the facility will create employment opportunities, enhance faith based education and worship opportunities, and will strengthen the social fabric of the general community.

E. Relationship to Plans, Codes and Ordinances

The project site is zoned I-2 industrial use as specified under the City and County of Honolulu Zoning Map. According to Table 21-3, Revised Ordinances of Honolulu, Meeting Facilities, including churches, are permitted under I-2 zoning and are subject to Article 5 of the Land Use Ordinance. The existing facility is in conformance with the provisions of Article 5 and the proposed improvements will not changes any uses and will remain consistent with this requirement.

The proposed action is consistent with sections of the City and County of Honolulu General Plan. While religious institutions are not specifically addressed in the General Plan, the project use is does promote the Plan's general objective IX, Health and Education, and objective X, Culture and Recreation. As a religious organization, spiritual education is a paramount function and mission for the

Applicant. The organizations function can also be considered part of the cultural fabric of the community at large through its provision of spiritual nourishment.

Under the City's Primary Urban Center Development Plan, the project is generally consistent with all aspects of the plan but religious facilities are not specifically addressed. Most applicable to the project is Section 3.2.3, Relation to Land Use Maps and Zoning, which specifically states that smaller institutional uses are not identified on the Land Use Maps but are generally permitted in most zoning districts subject to appropriate zoning controls to ensure that the uses are compatible with surrounding areas.

From an accessibility standpoint, the project site is conveniently located near bus lines that provide easy and quick access to communities in the Ewa, Diamond Head and Mauka directions. Additionally, the Chinatown and Kakaako areas have been creating many new planned housing opportunities for residents whom may choose to become members of the church.

The State Land Use Boundary Maps show the project location to be in Urban use. The project is located within the Special Management Area (SMA). This Environmental Assessment document is prepared as a requirement for Chapter 25, Revised Ordinances of Honolulu. The project is considered a Major Permit as the cost of the proposed improvements exceeds $500,000.

The project is also consistent with the objectives of the Hawaii State Plan and is subject to review by the Office of Planning under the Hawaii State Planning Act. The Office of Planning. Functional Plans identify the boarder planning objectives of the Hawaii State Plan. Religious institutions are not specifically addressed in the plans however the proposed project is consistent with the overall general objectives of the State Plan in its provision of spiritual health services and the overall wellbeing of the community at large.

The proposed improvements will require City and County of Honolulu Demolition, Building, Electrical and Plumbing Permits.

Work on the proposed improvements will not commence until building permits and the environmental assessment process are completed.

F. Summary of Impacts on the Environment

The proposed improvements will result in a more intensive permanent use of the existing property. While the physical mass of the proposed use is greater than its current state, the subject property is zoned for industrial development which allows meeting facilities and the proposed scope of improvements. The site is also designated for urban use on the State Land Use Map. As such, reasonable development of the site must be expected.

Approximately half of the proposed improvements are largely interior in nature, with the other half in new construction intended to minimize current off-street parking demand. No additional volume or impact related activities are anticipated and it is anticipated that the project will have negligible environmental impact.

Minor impacts related to the site and building improvements may occur during the construction period. Other offsetting construction related impacts are the creation of short-term employment both on property and off-property, the generation of additional tax revenues to the State of Hawaii and the lessee and the resultant secondary and tertiary spending and tax collections that will likely be experienced in the community.

Secondary impacts include the use of resources that are not expected to be recovered in short-term. This would include the use of local construction materials, impacts associated with the operation such as electrical demand that would have some minor impacts at the point of power generation, and air quality impacts resulting from the operation of construction equipment and operational vehicles. The minor physical environmental impacts of the project are offset by the significant efficiency gains, improved service to parishioners, and the improvement of a significant community asset.

Cumulative impact to Kalihi Kai is not anticipated to be significant in that the proposed use generates traffic when area traffic conditions are at their lowest intensity. The improvements will not create any conditions that should affect adjacent uses. The project is clean and non-intrusive to the surrounding area.

G. Adverse Impacts Which Cannot be Avoided

Adverse impacts that cannot be avoided are generally related to short-term construction activities. These impacts can be minimized by sound construction practices, adherence to applicable construction regulations as prescribed by the Department of Health, and coordination with applicable State and County agencies. Best Management Practices (BMPs) will be incorporated wherever practicable to ensure that the local environment is minimally affected by construction activities.

No significant grading work will be required for the construction of the project improvements. Exterior construction work may create some dust, noise and a minor traffic nuisance during the course of construction. New paving will be to repairs of areas that were disturbed during the course of construction of the proposed improvements. Heavy vehicles will be required for the installation of heavy machinery. Traffic control measures may be required for the sewer lateral excavation and installation work.

H. Alternatives to the Proposed Action

An alternative development was initially considered for the site but scaled down after leadership of the organization had changed and the number of church members decreased. The larger alternative the subject of the traffic study conducted for the site but after consideration, it was determined that a smaller scale project would be better suited to the church and would also be more efficient operationally.

The no-action alternative was considered however this would continue the need for additional off-site parking and would also continue a highly undesirable use of temporary outdoor viewing areas. With the proposed plan, participants can be comfortably accommodated in a climate controlled indoor environment.

I. Mitigation Measures

Long-term impacts resulting from the proposed improvements are expected to be minimal or non-existent based upon the subject environmental assessment. Long-term air and noise impacts are not expected to change significantly after improvements are completed. Traffic conditions will only minimally change, as there will not be any net increase in traffic from the former uses of the site. Short-term construction-related noise and air quality impact mitigation measures include general good housekeeping practices and keeping the construction period as short as possible. The contractor will be directed to use Best Management Practices (BMP) wherever applicable.

Examples of BMPs that may be implemented include watering during any dust generating activities and the containment of any runoff during the construction period. All waste materials will be securely contained and appropriately disposed.

The project site is not located in a tsunami inundation zone. While no special design mitigation measures will be required.

J. Irreversible and Irretrievable Commitment of Resources

Implementation of the proposed project will result in the irreversible and irretrievable commitment of resources in the use of non-recyclable energy expenditure and labor. Materials used for new construction may have salvage value; however, it is unlikely that such efforts will be cost-effective. No usable material is expected to be salvaged from the demolition activities. The expenditure of these resources is offset by gains in construction-related wages, increased tax base and tertiary spending.

IV. REASONS SUPPORTING FINDING OF NO SIGNIFICANT IMPACT

As stated in Section 11-200-12, EIS Rules, Significance Criteria: in determining whether an action may have a significant impact on the environment, every phase of a proposed action shall be considered. The expected consequences of an action, both primary and secondary, and the cumulative as well as the short-term and long-term effects must be assessed in determining if an action shall have significant effect on the environment. Each of the significance criteria is listed below and is followed by the means of compliance or conflict (if extant).

- Involves the loss or destruction of any natural or cultural resource.

The proposed action will not involve the loss or destruction of any natural or cultural resource. The project site was previously completely developed and is devoid of any natural or cultural resources. The site consists of fill lands so the likelihood of finding any cultural artifacts is highly unlikely or non-existant.

- Curtails the range of beneficial uses of the environment.

The proposed installation will not curtail any beneficial uses of the environment. The project area is not generally used by the public nor is it used as a recreational or native Hawaiian cultural resource.

- Conflicts with the State's long-term goals or guidelines as expressed in Chapter 344, Hawaii Revised Statutes.

The proposed action is consistent with the goals and guidelines expressed in Chapter 344, Hawaii Revised Statutes. The proposed action requires the preparation of the subject Environmental Assessment because the project site lies within the Special Management Area.

- Substantially affects the economic or social welfare of the community or state.

The proposed action will make a positive contribution to the social welfare of the County and State by improving an opportunity for spiritual nourishment, education and worship. During the construction period the State will through increased tax revenue.

- Substantially affects public health.

The proposed improvements will not have a significant effect on public health. The project may promote health by providing safe and secure on-site parking thereby alleviating the need to walk off-site. The improvements will also minimally reduce vehicular emission by requiring vehicles to travel shorter distances and also by reducing the need for shuttle vehicles.

- Involves substantial or adverse secondary impacts, such as population changes or effect on public facilities.

The proposed action will not produce substantial secondary impacts resulting in population changes or significantly increase use of public facilities.

- Involves substantial degradation of environmental quality.

The proposed improvements will not involve the substantial degradation of environmental quality. The improvements proposed will have short-term impact on the environment; however, this is temporary in nature.

- Cumulatively have a considerable effect upon the environment or involve a commitment for larger actions.

The proposed action is not a first phase of any larger action nor will it have a considerable effect on the environment. The project is expected to remain for the long-term and is not designed for larger expansion or other related development.

- Affect rare, threatened or endangered species, or their habitats.

The proposed action will not affect any rare, threatened or endangered species of flora or fauna. The project site is not located near any wildlife refuge or sensitive environmental area.

- Detrimentally affect air or water quality or ambient noise levels.

The proposed action is not expected to impact air or water quality. Long-term noise levels may increase slightly due to the increased level of activity on the site. This impact is expected to be within acceptable levels of the surrounding industrial area.

Minimal impacts on air quality and noise are anticipated during construction. These impacts will be limited by normal construction practices and compliance with Department of Health construction mitigation standards.

Water quality will not be affected by the proposed action.

- Affect scenic vistas and view planes identified in County or State plans or studies.

The proposed action will not affect any scenic vistas or view planes identified by the County or State. According to the City and County of Honolulu Primary Urban Center Development Plan (PUCDP), A.1. Significant Panoramic Views, the project site falls within the Daniel K. Inouye Airport and Kakaako view corridors. The project building

is not visible from either view fan origin. It should be noted that the existing structures were constructed prior to the development of the PUCDP.

- Require substantial energy consumption.

The project during its operational life will increase energy efficiency over the existing condition. Energy utilization during the construction phase will increase through the use of fossil fuels used by construction vehicles.

- Affects or is likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters.

The project is not located in a tsunami zone. Rising coastal waters will not affect the project site as the finished grade of the project improvements are above 5 feet over the mean highest high water levels. The proposed project will not create any erosion however construction related activities will use BMPs to mitigate and potential runoff impacts.

Anticipated Finding of No Significant Impact

Based on the above stated criteria, the Applicant anticipates that the Department of Planning and Permitting (DPP) will determine that the proposed project will not have any significant adverse environmental impacts and that an Environmental Impact Statement will not be required for the proposed action. This Draft Environmental Assessment will be subject to public review and prescribed by Chapter 343 Hawaii Revised Statutes.

V. LIST OF PARTIES CONSULTED PRIOR TO DEVELOPMENT OF THE DRAFT ENVIRONMENTAL ASSESSMENT

Agencies with ministerial or specific interests regarding the proposed project were contacted for their comments by telephone regarding the proposed project. The agencies consulted have provided information that is referenced in this document or were reserved until the Draft Environmental Assessment is provided for review.

Department of Land and Natural Resources State Historic Preservation Office State of Hawaii	Requirements for determination discussed with SHPD April 2014.
Department of Planning and Permitting City and County of Honolulu	Confirmation of existing zoning and regulatory conditions with DPP.
Emergency Medical Services County of Honolulu	Unit Charlie 1 located at Kuakini Hospital is the closest EMS unit. Backup provided by Baker 1 located at Queens and Metro 1 located on Young Street. Information Confirmed by Diane at Administrative Services to be November 22, 2017.
Honolulu Fire Department City and County of Honolulu	Confirmation of equipment and service area via telephone call. Jenkins, February 2017. Verified by Operator 6 on November 22, 2017.
Honolulu Police Department	Confirmation of service area City and County of Honolulu via telephone call. February 2017. Verified by Ed Valmar, Central Receiving, Kalihi Kai Station, November 22, 2017.
Board of Water Supply	Meter and water supply availability confirmed via architect's project engineers.

Hawaii Electric Company	Electrical power requirements confirmed via architect's project engineers.

VI. LIST OF AGENCIES, ORGANIZATIONS AND INDIVIDUALS TO BE CONSULTED DURING THE ENVIRONMENTAL ASSESSMENT PROCESS

Federal

1. Department of the Army, Corps of Engineers
2. Environmental Protection Agency
3. National Ocean and Atmospheric Administration
   National Marine Fisheries Service
4. US Fish and Wildlife Service

State of Hawaii Agencies

1. Dept. of Agriculture
2. Dept. of Business, Economic Development
   and Tourism, Office of Planning
3. Dept. of Health, Environmental Planning Office
4. Dept. of Health, Clean Air Branch
5. Dept. of Health, Clean Water Branch
6. Dept. of Health, Noise, Radiation and Indoor Noise Branch
7. Dept. of Land and Natural Resources
   Historic Preservation Division
8. Dept. of Transportation, Highways Division
9. Office of Environmental Quality Control
10. Office of Hawaiian Affairs

City and County of Honolulu Agencies

1. Board of Water Supply
2. Department of Environmental Services
3. Department of Planning and Permitting
4. Department of Transportation Services
5. Fire Department
6. Police Department

Libraries

1. Hawaii State Library
2. Kalihi Public Library

Other Parties

4. Kalihi Palama Neighborhood Board, No. 15

REFERENCES

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APPENDIX A
PROJECT PLANS

NEW HOPE OAHU :
RENOVATION AND ADDITION

T.M.K. : 1 - 2 - 21 : 26

290 SAND ISLAND ACCESS ROAD, HONOLULU, HI

HONOLULU, OAHU, HAWAII

ANBE, ARUGA & ISHIZU, ARCHITECTS, INC. ARCHITECTS

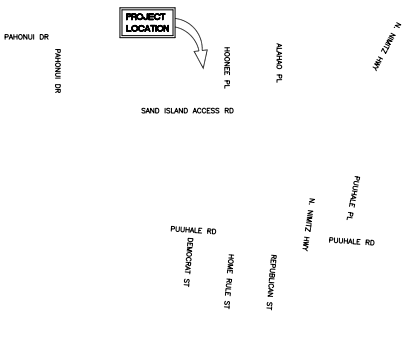
KAI, HAWAII, INC. STRUCTURAL ENGINEERS

DOUGLAS ENGINEERING PACIFIC, INC. MECHANICAL ENGINEERS

DOUGLAS ENGINEERING PACIFIC, INC. ELECTRICAL ENGINEERS

VICINITY MAP

LOCATION MAP



CONFORMANCE

CITY AND COUNTY OF HONOLULU
REVISED ORDINANCE CHAPTER 32,
HONOLULU COUNTY CODE 1990, AS AMENDED

To the best of my knowledge, this project's design substantially conforms to the Building Energy Conservation Code for:

_____ Building Component Systems

Signature: _____ Date: _____

Name: CLARENCE T. IZUO

Title: ARCHITECT

License No.: 4981

Basis of design: 2006 International Building Code (IBC) as amended by the City and County of Honolulu (ROH Chapter 16).

PROJECT DATA

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION

CLARENCE T. IZUO — LICENSED PROFESSIONAL ARCHITECT — No. 4981 — HAWAII, U.S.A.

EXP. DATE: 04-30-20

ANBE, ARUGA & ISHIZU, ARCHITECTS, INC.

1441 KAPIOLANI BLVD. SUITE 206 HONOLULU, HAWAII 96814

TITLE SHEET

NEW HOPE OAHU
RENOVATION AND ADDITION
T.M.K. : 1 - 2 - 21 : 26
290 SAND ISLAND ACCESS ROAD, HONOLULU, HI

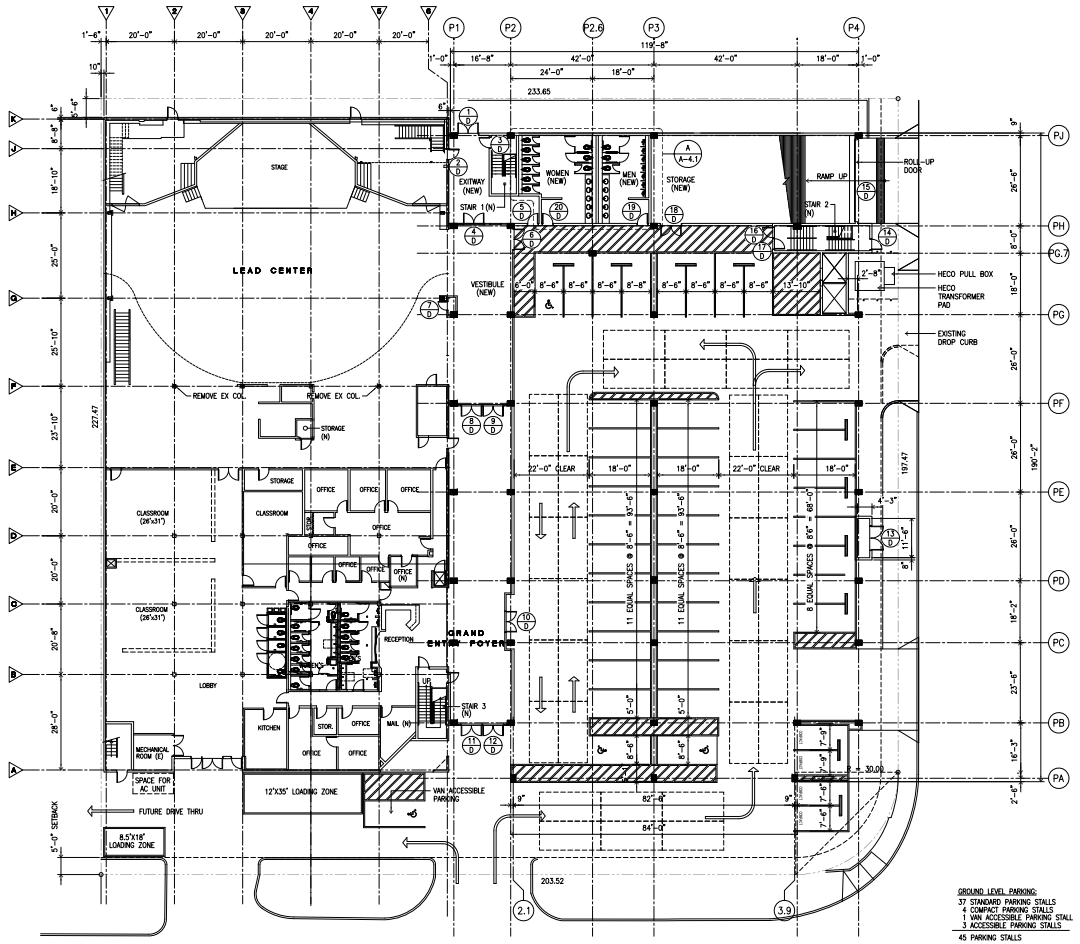
Designed by: C.I. | Checked by: C.I. | Scale: As Noted
Drawn by: J.A. | Approved by: M.A. | Project No.:

MARCH 2018
DATE

SHEET NO.

T-1

OF *** SHEETS



SITE PLAN/GROUND LEVEL PLAN

SCALE: 1/16" = 1'-0"

GROUND LEVEL PARKING:
37 STANDARD PARKING STALLS
6 COMPACT PARKING STALLS
1 VAN ACCESSIBLE PARKING STALL
1 ACCESSIBLE PARKING STALLS
45 PARKING STALLS

PLUS:
38 TANDEM STACK IN AISLE
1 12'X35' LOADING ZONE
1 8.5'X18' LOADING ZONE

TOTAL PARKING (LEVELS 1 – 3)
142 STANDARD PARKING STALLS
30 COMPACT PARKING STALLS
5 ACCESSIBLE PARKING STALLS
1 VAN ACCESSIBLE PARKING STALL
178 PARKING STALLS
+ 38 TANDEM STACK IN AISLE
216 PARKING

1 12'X35' LOADING ZONE
+ 1 8.5'X18' LOADING ZONE
218 TOTAL PARKING

REFERENCE NORTH
WEST EAST
SOUTH

INTERIOR ELEVATIONS

16 8 0 16 32
Scale: 1/16"=1'-0"

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EXP. DATE: 04-30-20

GLENN T. ARUGA LICENSED PROFESSIONAL ARCHITECT No. 4991 HAWAII U.S.A.

ANBE, ARUGA & ISHIZU, ARCHITECTS, INC.

1441 KAPIOLANI BLVD. SUITE 206 HONOLULU, HAWAII 96814

SITE PLAN, GROUND FLOOR PLAN

NEW HOPE OAHU RENOVATION AND ADDITION

290 SAND ISLAND ACCESS ROAD, HONOLULU, HI

T.M.K. : 1 – 2 – 21 : 26

Designed by: C.I.	Checked by: C.I.	Scale: As Noted	
Drawn by: J.A.	Approved by: M.A.	Project No.:	

MARCH 2018
DATE

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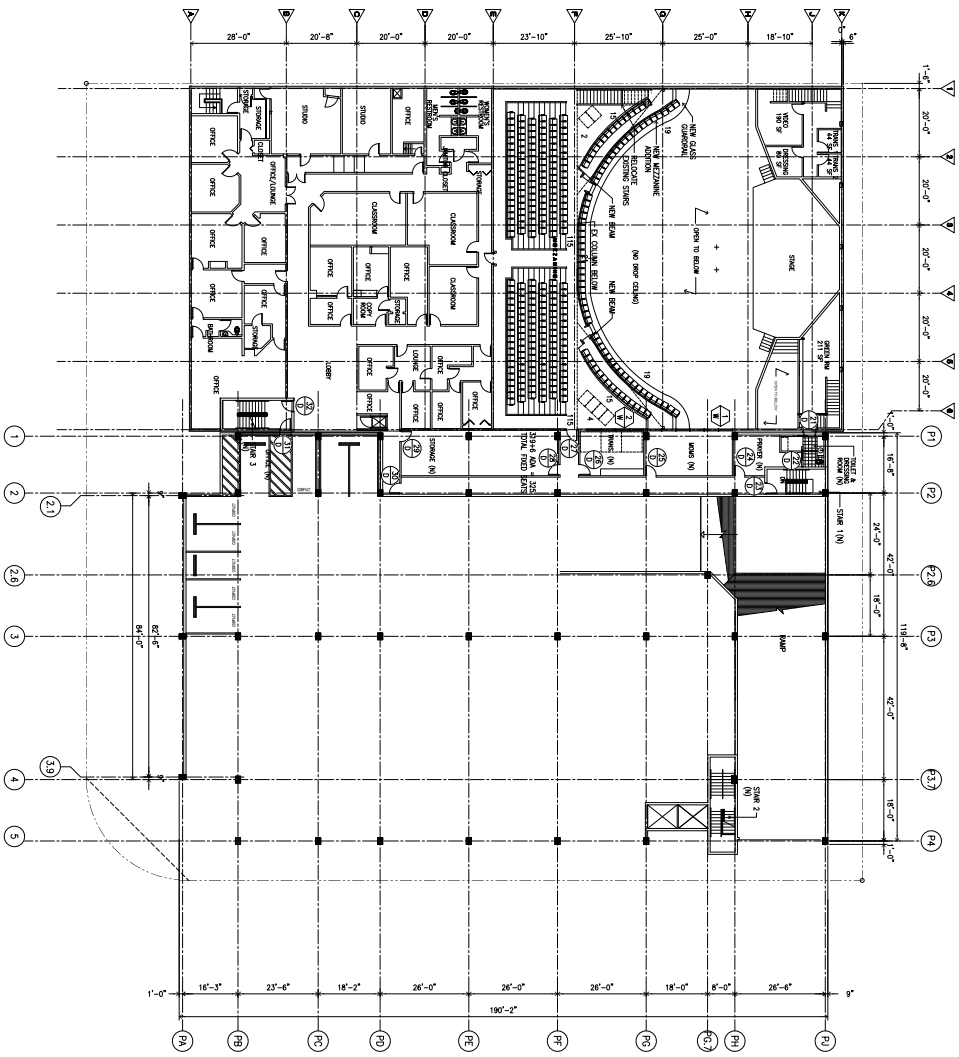
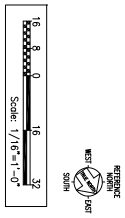
MEZZANINE LEVEL PLAN

SCALE: 1/16" = 1'-0"





SECOND FLOOR PLAN, MEZZANINE PLAN

NEW HOPE OAHU
RENOVATION AND ADDITION

T.M.K. : 1 - 2 - 21 : 26
290 SAND ISLAND ACCESS ROAD, HONOLULU, HI

Designed by: C.I.	Checked by: C.I.	Scale: As Noted
Drawn by: J.A.	Approved by: M.A.	Project No.:

ANBE, ARUGA & ISHIZU, ARCHITECTS, INC.

1441 KAPIOLANI BLVD. SUITE 206 HONOLULU, HAWAII 96814

CLARENCE I. ISHIZU LICENSED PROFESSIONAL ARCHITECT No. 4981 HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION

EXP. DATE: 4-30-20

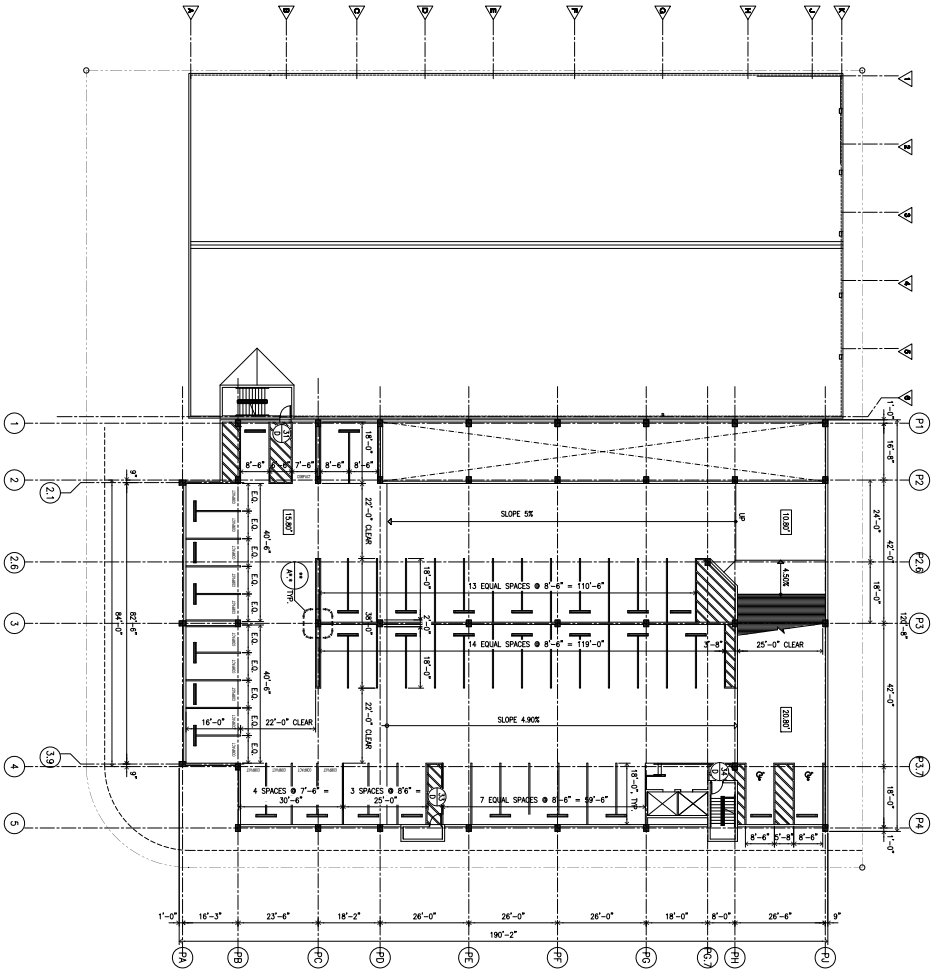
SHEET NO. A1.8

DATE JANUARY 2018

OF *** SHEETS

SECOND LEVEL PLAN

SCALE: 1/16" = 1'-0"



SECOND LEVEL PARKING
49 STANDARD PARKING STALLS
15 COMPACT PARKING STALLS
2 ACCESSIBLE PARKING STALLS
57 PARKING STALLS

Scale: 1/16"=1'-0"

SECOND FLOOR PLAN, MEZZANINE PLAN

NEW HOPE OAHU
RENOVATION AND ADDITION

T.M.K. : 1 - 2 - 21 : 26
290 SAND ISLAND ACCESS ROAD, HONOLULU, HI

Designed by: C.I.	Checked by: C.I.	Scale: As Noted
Drawn by: J.A.	Approved by: M.A.	Project No.:

DATE: MARCH 2018

SHEET NO.: A1.9

OF *** SHEETS

ANBE, ARUGA & ISHIZU, ARCHITECTS, INC.

1441 KAPIOLANI BLVD. SUITE 206 HONOLULU, HAWAII 96814

CLARENCE I. ANBE LICENSED PROFESSIONAL ARCHITECT No. 4981 HAWAII, U.S.A.

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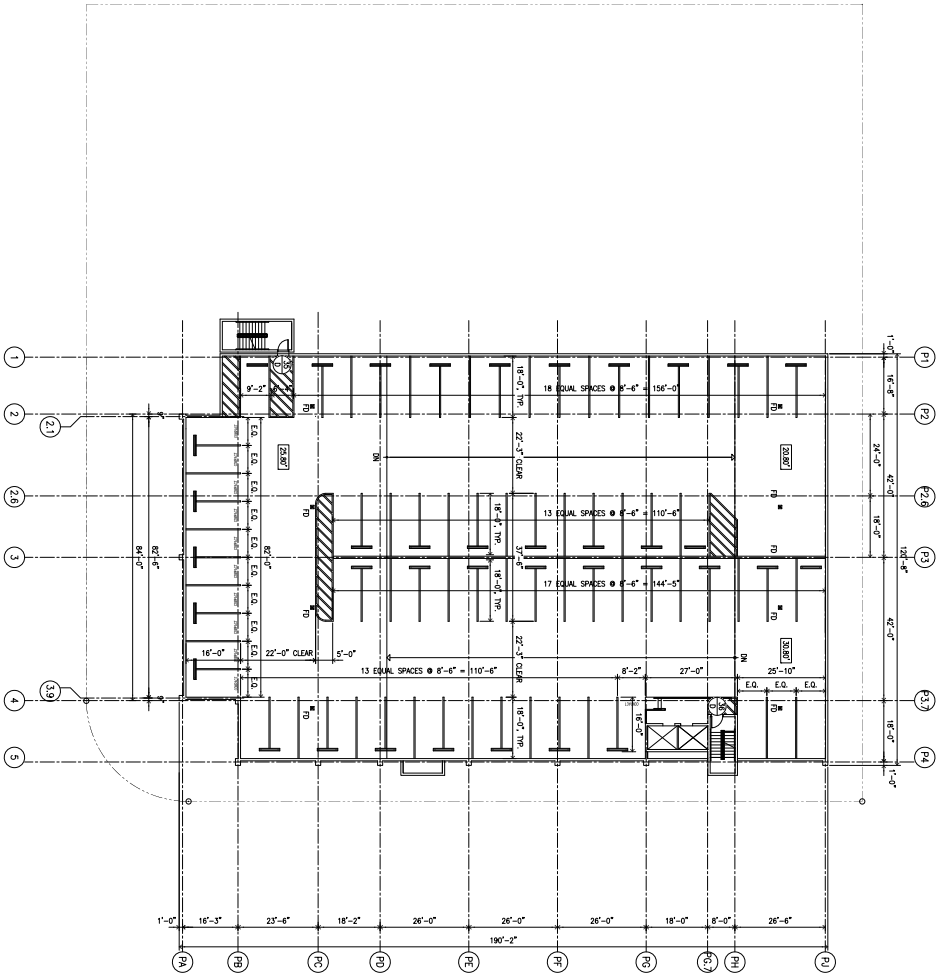
EXP. DATE: 04-30-20

THIRD LEVEL PLAN

SCALE: 1/16" = 1'-0"



THIRD LEVEL PARKING:
69 STANDARD PARKING STALLS
11 COMPACT PARKING STALLS
76 PARKING STALLS

REFERENCE NORTH

Scale: 1/16"=1'-0"

SECOND FLOOR PLAN, MEZZANINE PLAN

NEW HOPE OAHU
RENOVATION AND ADDITION

T.M.K. : 1 - 2 - 21 : 26
290 SAND ISLAND ACCESS ROAD, HONOLULU, HI

Designed by: C.I.	Checked by: C.I.	Scale: As Noted
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DATE: MARCH 2018

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ANBE, ARUGA & ISHIZU, ARCHITECTS, INC.

1441 KAPIOLANI BLVD. SUITE 206 HONOLULU, HAWAII 96814

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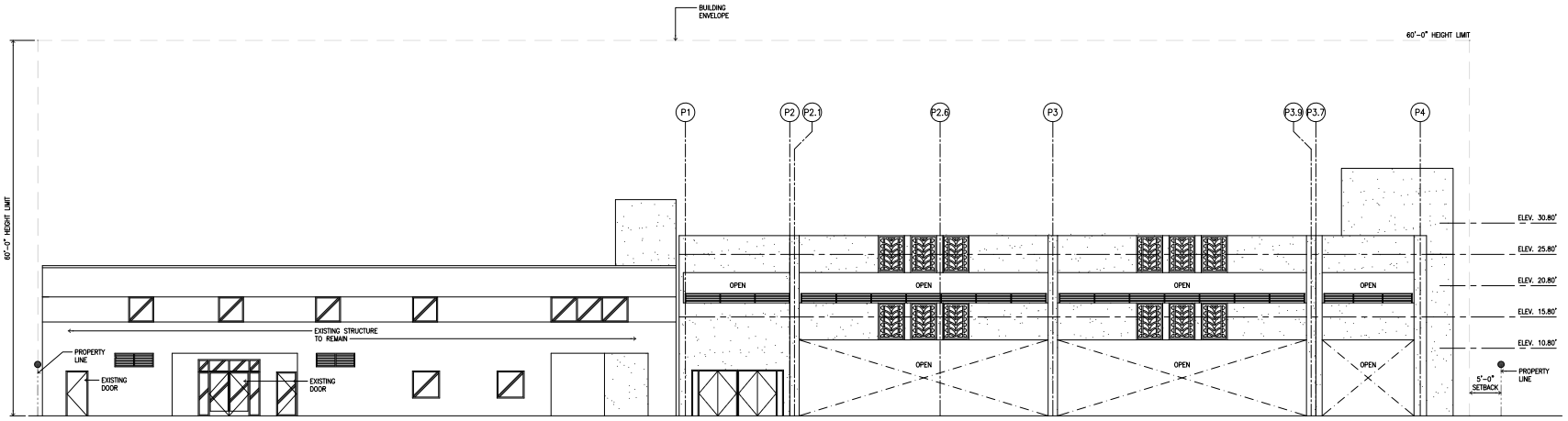
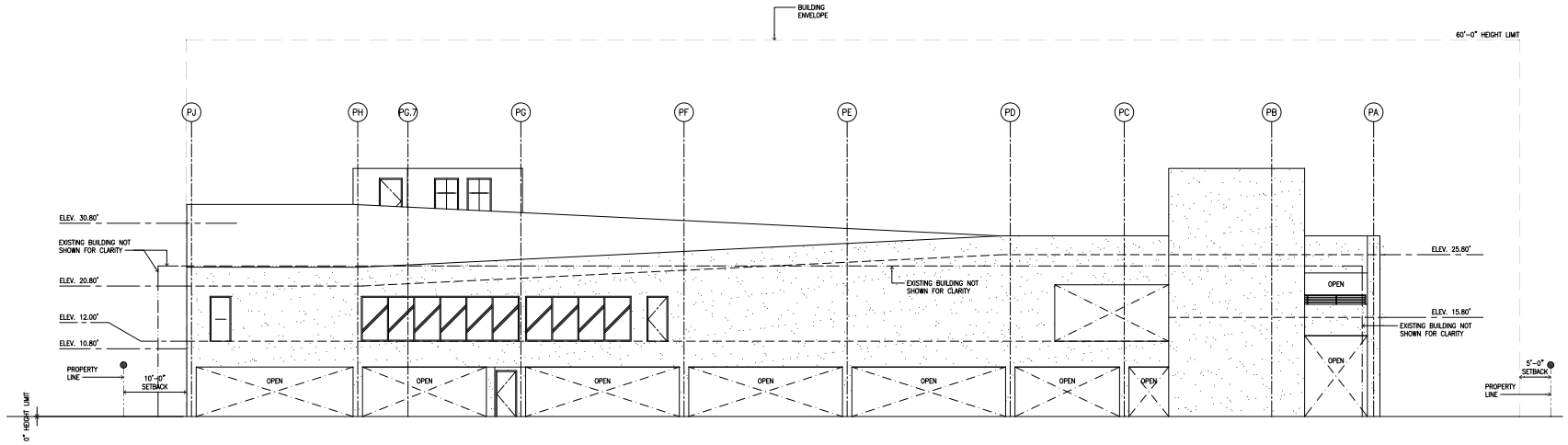


SOUTH ELEVATION

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



WEST ELEVATION

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

16 8 0 16 32
Scale: 1/16"=1'-0"

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EXP. DATE: 04-30-20

GLENN T. ARUGA LICENSED PROFESSIONAL ARCHITECT No. 4991 HAWAII U.S.A.

ANBE, ARUGA & ISHIZU, ARCHITECTS, INC.

1441 KAPIOLANI BLVD. SUITE 206 HONOLULU, HAWAII 96814

EXTERIOR ELEVATIONS

NEW HOPE OAHU RENOVATION AND ADDITION

290 SAND ISLAND ACCESS ROAD, HONOLULU, HI

T.M.K. : 1 – 2 – 21 : 26

Designed by: C.I.	Checked by: C.I.	Approved by: M.A.	Scale: As Noted
Drawn by: J.M.			Project No.:

MARCH 2018
DATE

SHEET NO.

A4.1

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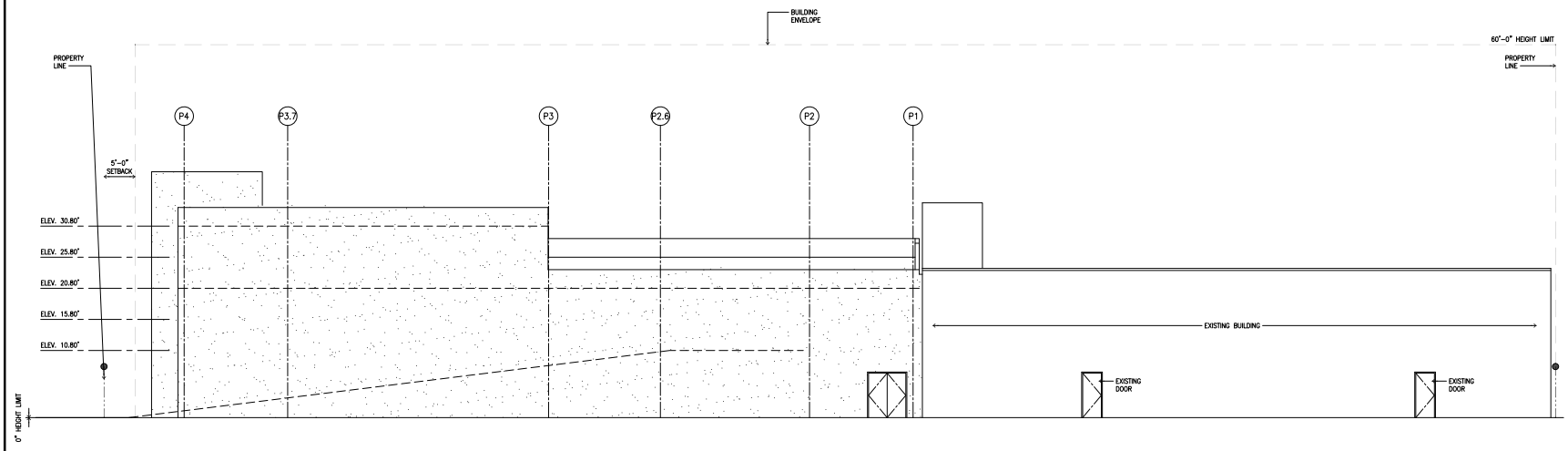
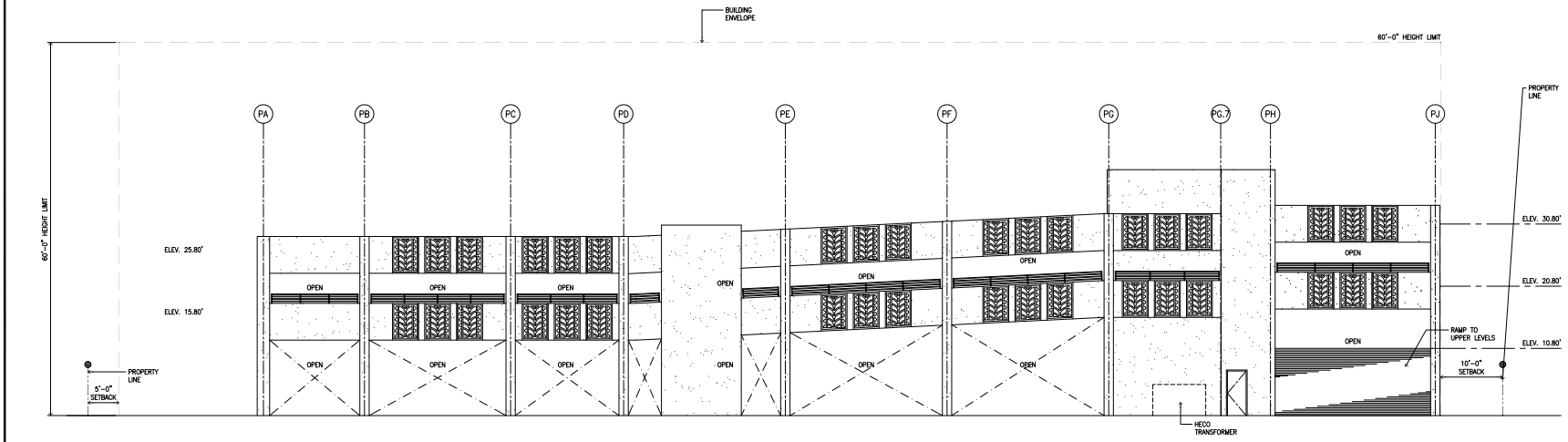


NORTH ELEVATION

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



EAST ELEVATION

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

16 8 0 16 32
Scale: 1/16"=1'-0"

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EXP. DATE: 04-30-20

GLENN T. ARUGA LICENSED PROFESSIONAL ARCHITECT No. 4991 HAWAII U.S.A.

ANBE, ARUGA & ISHIZU, ARCHITECTS, INC.

1441 KAPIOLANI BLVD. SUITE 206 HONOLULU, HAWAII 96814

EXTERIOR ELEVATIONS

NEW HOPE OAHU RENOVATION AND ADDITION

290 SAND ISLAND ACCESS ROAD, HONOLULU, HI

T.M.K.: 1 – 2 – 21 : 26

Designed by: C.I. | Checked by: C.I. | Scale: As Noted

Drawn by: J.M. | Approved by: M.A. | Project No.:

MARCH 2018

DATE

SHEET NO.

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OF *** SHEETS

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APPENDIX B
TRAFFIC IMPACT REPORT

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Traffic Impact Report

New Hope Ministry Center

Prepared for:
New Hope International Ministries

Prepared by:
Wilson Okamoto Corporation

February 2015

TRAFFIC IMPACT REPORT

FOR THE

NEW HOPE MINISTRY CENTER EXPANSION

Prepared for:

New Hope International Ministries
290 Sand Island Access Road
Honolulu, HI 96819

Prepared by:

Wilson Okamoto Corporation
1907 S. Beretania Street, Suite 400
Honolulu, Hawaii 96826
WOC Ref #10072-01

February 2015

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF APPENDICIES

I. INTRODUCTION

A. Purpose of Study

The purpose of this study is to identify and assess the traffic impacts resulting from an expansion of the existing New Hope Ministry Center in Honolulu on the island of Oahu. The project entails the redevelopment of a portion of the existing church facility to provide additional meeting and office spaces, as well as, an on-site parking garage.

B. Scope of Study

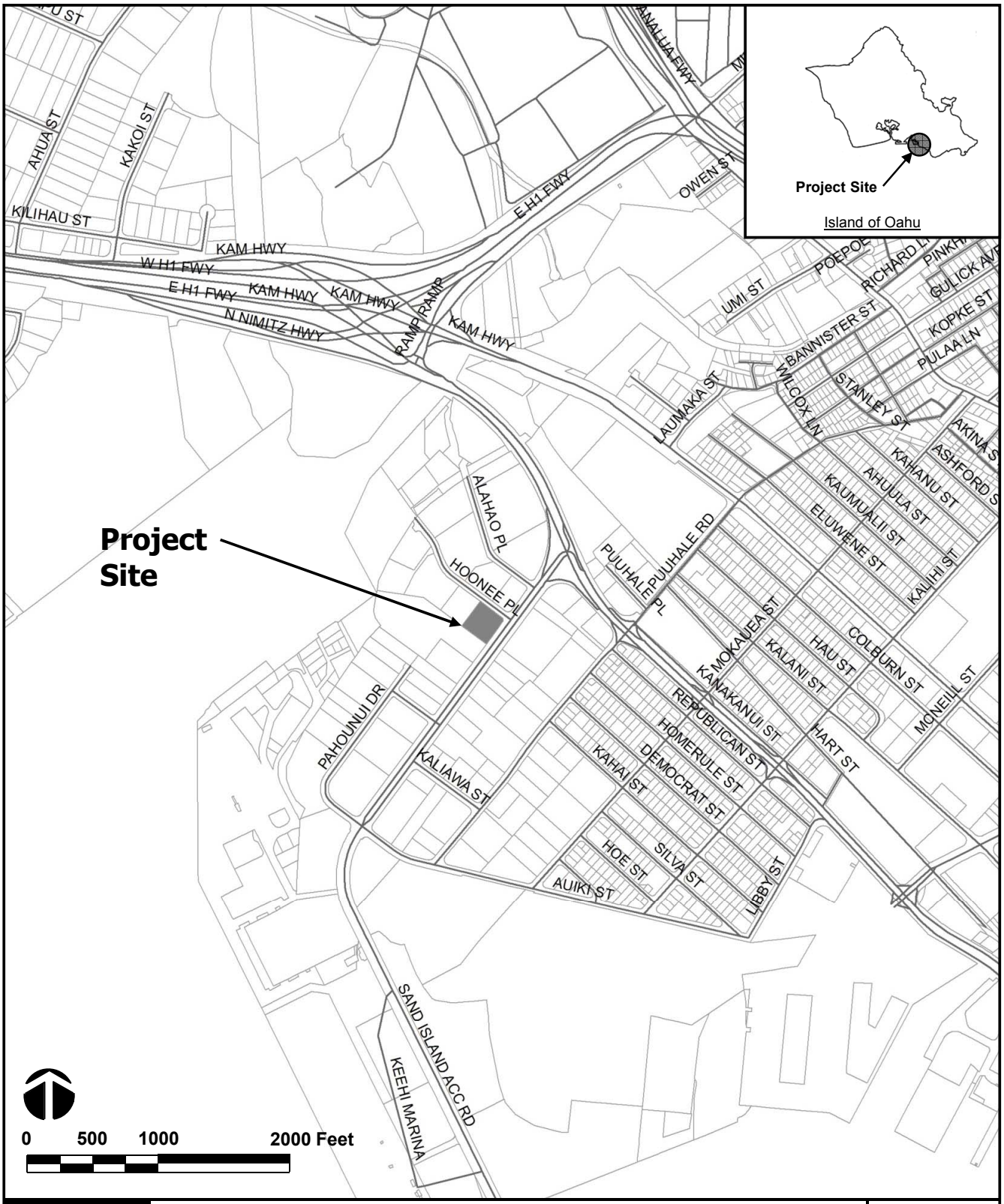
This report presents the findings and conclusions of the traffic study, the scope of which includes:

1. Description of the proposed project.
2. Evaluation of existing roadway and traffic operations in the vicinity.
3. Analysis of future roadway and traffic conditions without the proposed project.
4. Analysis and development of trip generation characteristics for the proposed project.
5. Superimposing site-generated traffic over future traffic conditions.
6. The identification and analysis of traffic impacts resulting from the proposed project.
7. Recommendations of improvements, if appropriate, that would mitigate the traffic impacts resulting from the proposed project.

II. PROJECT DESCRIPTION

A. Location

The project site is located on the southwest corner of the intersection of Sand Island Access Road with Hoonee Place in Honolulu on the island of Oahu (see Figure 1) and is bounded by Sand Island Access Road to the east, Hoonee Place to the north, other commercial/industrial uses to the west, and an at-grade parking area to the south. Access to the church facility will continue to be provided via driveways off Sand Island Access Road and Hoonee Place.



WILSON OKAMOTO CORPORATION	**NEW HOPE MINISTRY CENTER**	FIGURE 1
	LOCATION MAP AND VICINITY MAP	

B. Project Characteristics

The existing New Hope Ministry Center adjacent to Sand Island Access Road currently houses office, classroom, meeting spaces, and at-grade parking areas. During the weekdays (Monday through Friday), Christian College classes are typically held on-site during the day with Ministry meetings held in the evenings. Parking during the weekdays is accommodated on-site or within an adjacent gravel lot. During the weekend, Church services are held at 5:00 PM and 7:00 PM on Saturday, and 7:00 AM, 9:00 AM, and 11:00 AM on Sunday. To accommodate the anticipated number of parishioners, the existing at-grade parking area off Hoonee Place is converted to overflow seating through the use of temporary tents and furniture while the parking area adjacent to Sand Island Access Road is converted to additional gathering space (with temporary tents and furniture) and a drop-off/pick-up area. Parking on the weekends is accommodated within the adjacent gravel lot, at-grade parking for two adjacent businesses (American Carpet One and Bargreen Ellingson), and three off-site parking areas (see Figure 2). The Diamond parking lot located across Sand Island Access Road from the church can accommodate approximately 60 vehicles while the parking lot at Puuhale Elementary School adjacent to Puuhale Road can accommodate approximately 30 vehicles. The third off-site parking area is located along to Nimitz Highway adjacent to an existing paintball lot. New Hope Ministry provides a shuttle services between the church facility and the off-site parking lots to transport parishioners to and from services.

The proposed expansion project is intended to serve the existing New Hope Ministry congregation and entail the replacement of the existing temporary gathering and overflow areas with permanent facilities, as well as, provide additional on-site parking. The use of the existing at-grade parking area along Hoonee Place and a portion of the at-grade parking area along Sand Island Access Road are expected to be replaced by a new structure that incorporates the existing buildings on-site. The new building will provide permanent additional meeting and office spaces, as well as, three floors of parking. The new parking area on the project site is expected to accommodate approximately 199 parking stalls (combination of accessible, tandem, and standard stalls) with access provided off Hoonee Place. A smaller at-grade

WILSON OKAMOTO CORPORATION

NEW HOPE MINISTRY CENTER

DESIGNATED PARKING AREAS

FIGURE 2

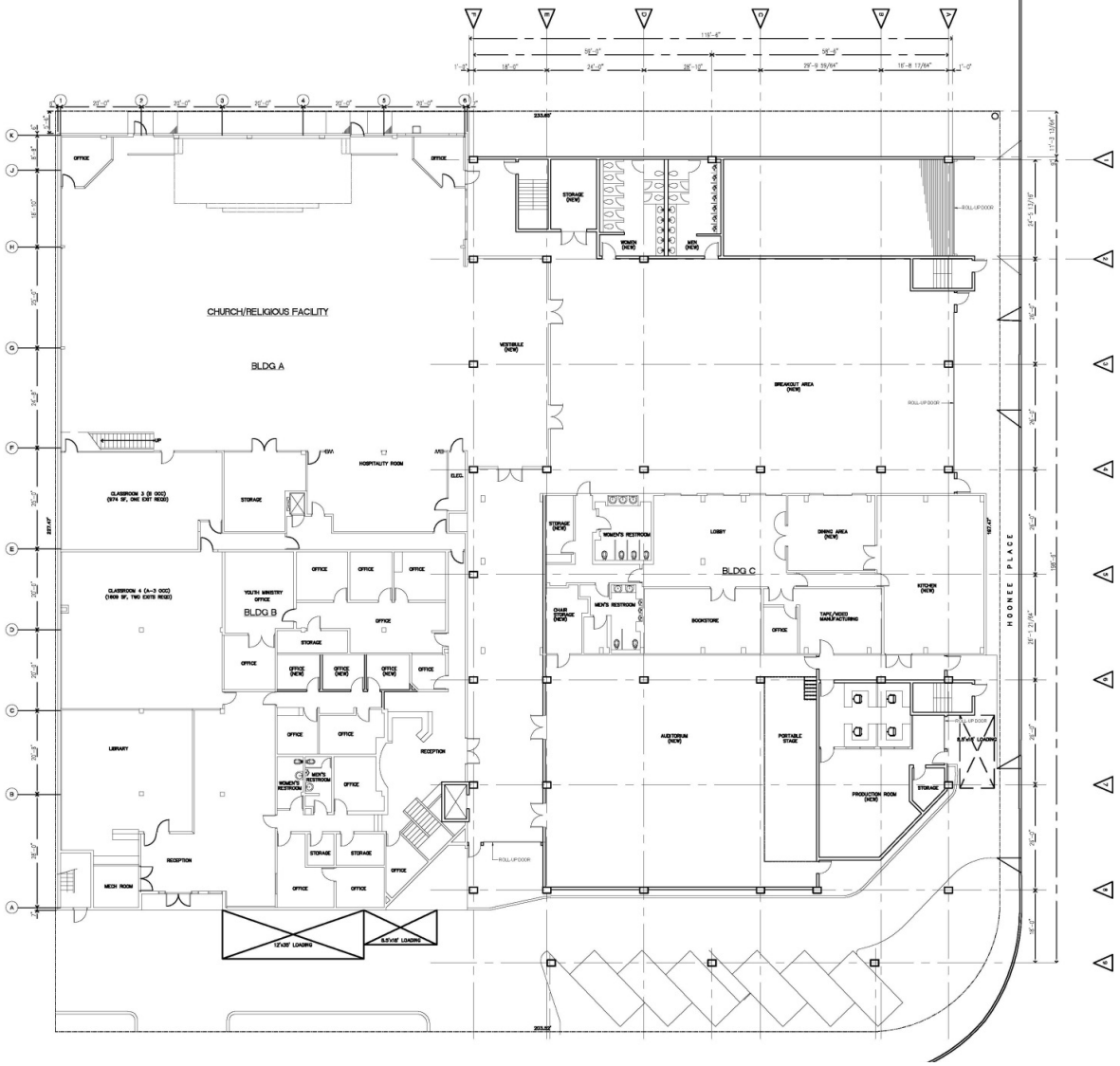
parking area will remain along Sand Island Access Road that will accommodate two loading stalls and 7 additional parking stalls with access maintained via existing driveways off Sand Island Access Road and Hoonee Place. The proposed expansion is expected to be completed by the Year 2017. Figure 3 shows the proposed project site plan.

III. EXISTING TRAFFIC CONDITIONS

A. Area Roadway System

The existing New Hope Ministry Center is located adjacent to Sand Island Access Road in Honolulu. Sand Island Access Road is a predominantly four-lane, two-way divided roadway between North Nimitz Highway and Auiki Street with auxiliary lanes provided at major intersections. At the signalized T-intersection with North Nimitz Highway, the northbound approach of Sand Island Access Road has three exclusive left-turn lanes and a channelized right-turn lane. North Nimitz Highway is generally a six-lane, two-way divided roadway that serves as a major east-west corridor through Honolulu. At the intersection with Sand Island Access Road, the eastbound approach of North Nimitz Highway has three through lanes and an exclusive right-turn lane, while the westbound approach has two exclusive left-turn lanes and three through lanes. Contra-flow operations are implemented along the highway during the morning peak hours of 5:00 AM to 8:30 AM. During this period, the eastbound approach of North Nimitz Highway has four through lanes and an exclusive right-turn lane, while the westbound approach has two exclusive left-turn lanes and three through lanes.

South of the intersection with North Nimitz Highway, Sand Island Access Road intersects Hoonee Place. At this unsignalized intersection, the northbound approach of Sand Island Access Road has an exclusive left-turn lane, one through lane, and a shared through and right-turn lane, while the southbound approach has a shared left-turn and through lane, one through lane, and an exclusive right-turn lane. Hoonee Place is a two-lane, two-way roadway generally oriented in the east-west direction. At the intersection with Sand Island Access Road, the eastbound approach of Hoonee Place has one stop-controlled lane that serves all traffic movements. The



WILSON OKAMOTO CORPORATION

NEW HOPE MINISTRY CENTER

PROPOSED SITE PLAN

FIGURE 3

westbound approach of the intersection is comprised of a driveway for an adjacent business that has one stop-controlled lane that serves all traffic movements.

Further south, Sand Island Access Road intersects the northern terminus of Pahounui Drive. At this unsignalized T-intersection, the northbound approach of Sand Island Access Road has an exclusive left-turn lane and two through lanes, while the southbound approach has one through lane and a shared through and right-turn lane. Pahounui Drive is a two lane, two-way roadway that loops through the commercial/industrial area west of Sand Island Access Road. At the intersection with Sand Island Access Road, the eastbound approach of Pahounui Drive has one stop-controlled lane to serve all traffic movements.

At the southern end of the study area, Sand Island Access Road intersects Auiki Street, the southern terminus of Pahounui Drive, and Sand Island Parkway. At this signalized intersection, the southbound approach of Sand Island Access Road has an exclusive left-turn lane, one through lane, and a shared through and right-turn lane while the eastbound approach of Pahounui Drive has one lane that serves all traffic movements. Auiki Street is a predominantly two-lane, two-way roadway generally oriented in the east-west direction that has one lane that serves all traffic movements at this intersection. The northbound approach of the intersection is comprised of Sand Island Parkway, a predominantly four-lane, two-way roadway generally oriented in the north-south direction. At the intersection with Sand Island Access Road, Auiki Street, and Pahounui Drive, the Sand Island Parkway approach has an exclusive left-turn lane, one through lane, and a shared through and right-turn lane.

B. Traffic Volumes and Conditions

1. General

a. Field Investigation

Field investigations were conducted during January and February 2015 and consisted of manual turning movement count surveys during the weekday AM peak hours of 6:00 AM and 9:00 AM, and the weekday PM peak hours of 3:00 PM and 6:00 PM. In addition, count surveys were conducted during the weekend (Sunday)

AM peak hours of 8:30 AM and 11:30 AM at the following intersections:

- North Nimitz Highway and Sand Island Access Road
- Sand Island Access Road, Hoonee Place, and Y. Hata Driveway
- Sand Island Access Road and Pahounui Drive
- Sand Island Access Road, Auiki Street, Pahounui Drive, and Sand Island Parkway

It should be noted that the church reported an attendance of approximately 557 people for their 7:00 AM service on Sunday, 1009 people for their 9:00 AM service, and 1,134 people for their 11:00 AM service. Appendix A includes the existing traffic count data

b. Capacity Analysis Methodology

The highway capacity analysis performed in this study is based upon procedures presented in the "Highway Capacity Manual", Transportation Research Board, 2000, and the "Synchro" software, developed by Trafficware. The analysis is based on the concept of Level of Service (LOS) to identify the traffic impacts associated with traffic demands during the peak periods of traffic.

LOS is a quantitative and qualitative assessment of traffic operations. Levels of Service are defined by LOS "A" through "F"; LOS "A" representing ideal or free-flow traffic operating conditions and LOS "F" unacceptable or potentially congested traffic operating conditions.

"Volume-to-Capacity" (v/c) ratio is another measure indicating the relative traffic demand to the road carrying capacity. A v/c ratio of one (1.00) indicates that the roadway is operating at or near capacity. A v/c ratio of greater than 1.00 indicates that the traffic demand exceeds the road's carrying capacity. The LOS definitions are included in Appendix B.

2. Existing Peak Hour Traffic

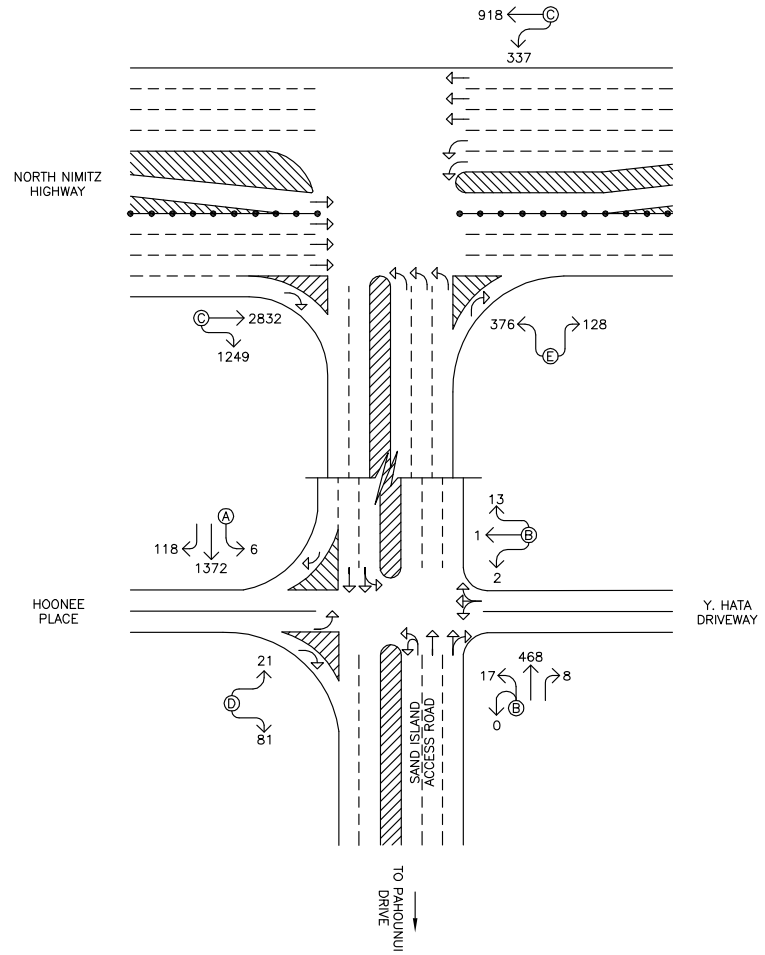
a. General

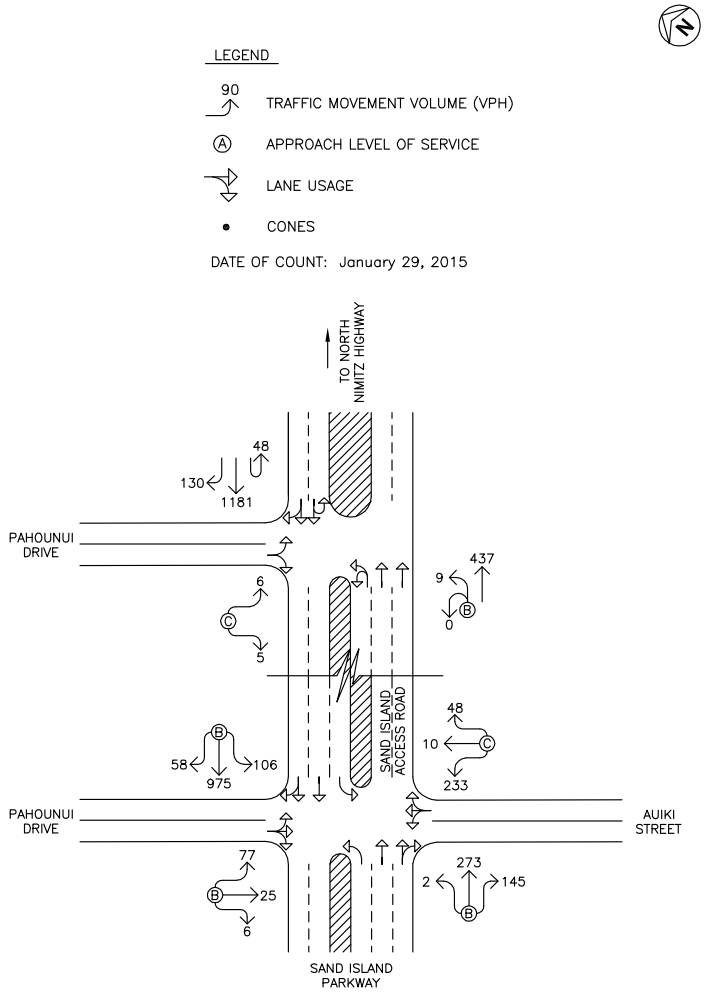
Figures 4 to 6 show the existing weekday and weekend peak period traffic volumes and operating conditions. The weekday AM peak hour of traffic generally occurs between the hours of 6:00 AM and 7:00 AM while the weekday PM peak hour of traffic generally occurs between the hours of 3:00 PM and 4:00 PM. The weekend peak hour of traffic occurs on Sunday between the hours of 10:15 AM and 11:15 AM. The analysis is based on these peak hour time periods for each intersection to identify the traffic impacts resulting from the proposed project. LOS calculations are included in Appendix C.

b. North Nimitz Highway and Sand Island Access Road

At the intersection with Sand Island Access Road, North Nimitz Highway carries 4,081 vehicles eastbound and 1,255 vehicles westbound during the weekday AM peak period. During the weekday PM peak period, the overall traffic volume is lower with 2,583 vehicles traveling eastbound and 2,588 vehicles traveling westbound. Both approaches of North Nimitz Highway operate at LOS "C" during both weekday peak periods. During the weekend peak period, North Nimitz Highway carries 1,655 vehicles eastbound and 1,201 vehicles westbound. The eastbound approach of North Nimitz Highway operates at LOS "B" during this period while the westbound approach operates at LOS "A".

The Sand Island Access Road approach of the intersection carries 504 vehicles and 1,138 vehicles northbound during the weekday AM and PM peak periods, respectively and operates at LOS "E" during both weekday peak periods. During the weekend peak period, the Sand Island Access Road approach carries 560 vehicles northbound and operates at LOS "C".



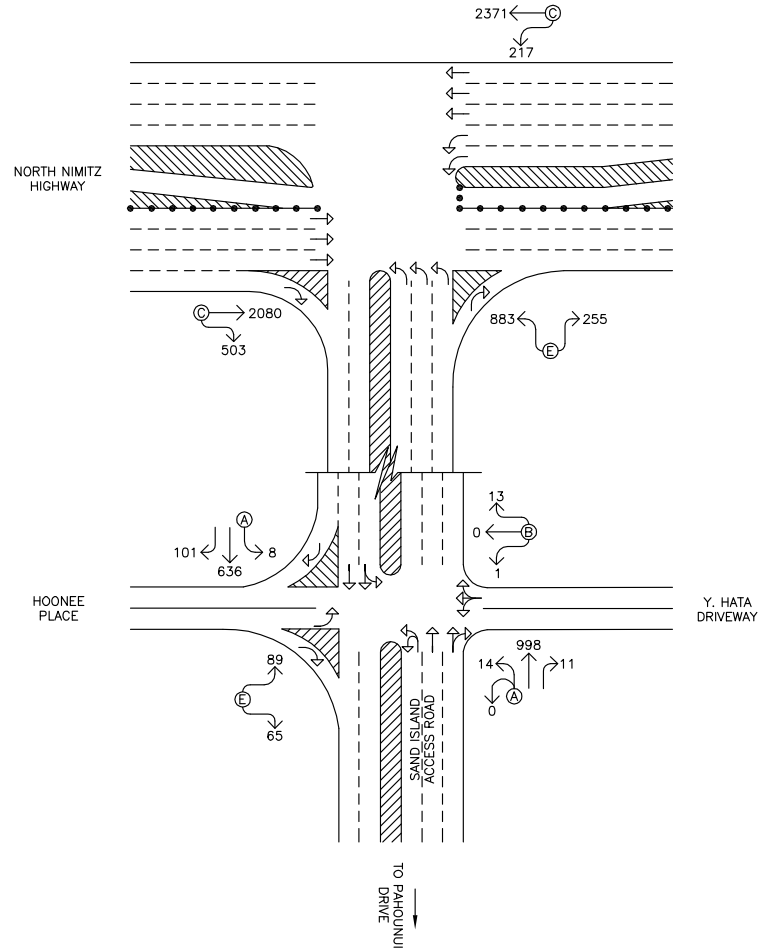


WILSON OKAMOTO CORPORATION

NEW HOPE MINISTRY CENTER

EXISTING WEEKDAY AM PEAK HOUR OF TRAFFIC

FIGURE 4



LEGEND

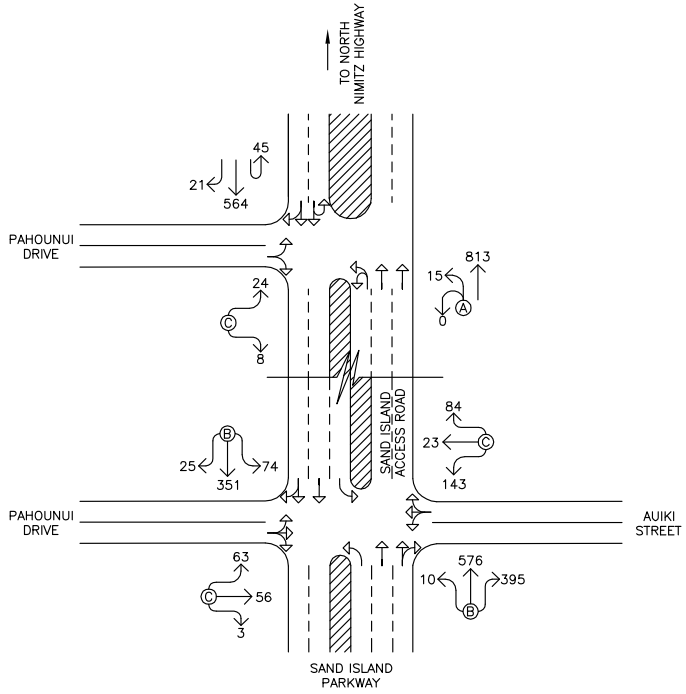
90 TRAFFIC MOVEMENT VOLUME (VPH)

Ⓐ APPROACH LEVEL OF SERVICE

LANE USAGE

CONES

DATE OF COUNT: January 29, 2015

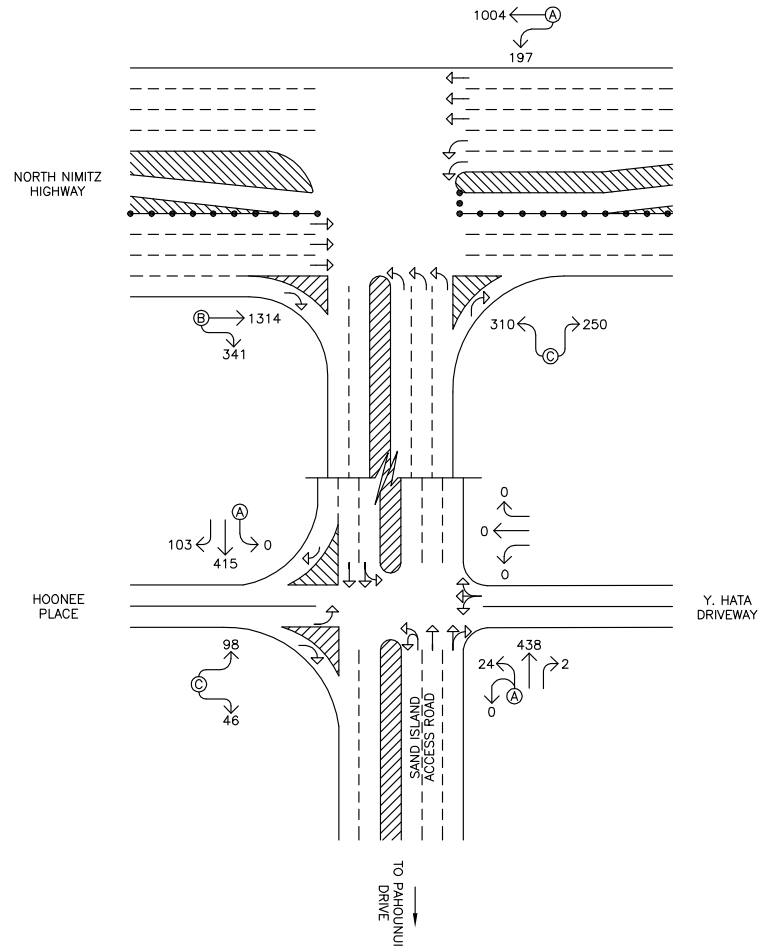


WILSON OKAMOTO CORPORATION

NEW HOPE MINISTRY CENTER

EXISTING WEEKDAY PM PEAK HOUR OF TRAFFIC

FIGURE 5



LEGEND

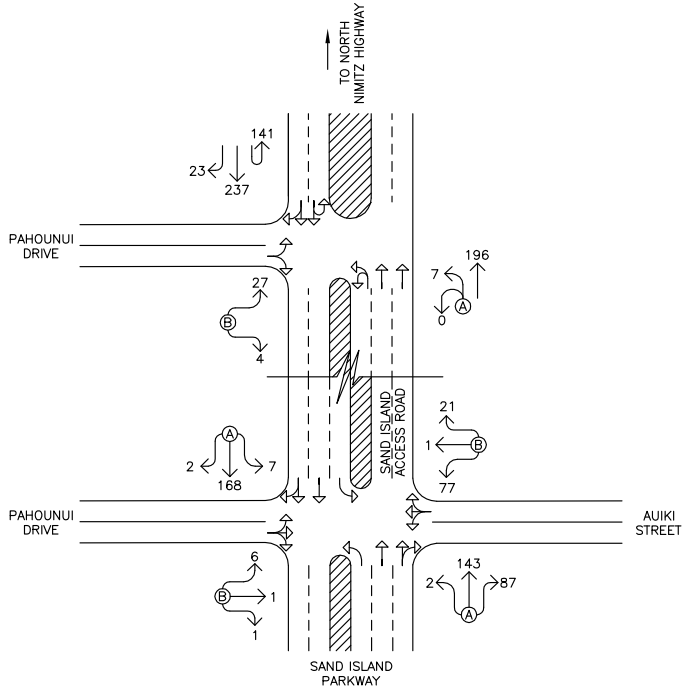
90 TRAFFIC MOVEMENT VOLUME (VPH)

Ⓐ APPROACH LEVEL OF SERVICE

LANE USAGE

CONES

DATE OF COUNT: February 8, 2015



WILSON OKAMOTO CORPORATION

NEW HOPE MINISTRY CENTER

EXISTING WEEKEND PEAK HOUR OF TRAFFIC

FIGURE 6

c. Sand Island Access Road and Hoonee Place

At the intersection with Hoonee Place, Sand Island Access Road carries 493 vehicles northbound and 1,496 vehicles southbound during the weekday AM peak period. During the weekday PM peak period, the overall traffic volume is slightly lower with 1,023 vehicles traveling northbound and 745 vehicles traveling southbound. The critical traffic movement on the Sand Island Access Road approaches is the northbound left-turn traffic movement. The northbound left-turn traffic movement operates at LOS "B" and LOS "A" during the weekday AM and PM peak periods, respectively. During the weekend peak period, Sand Island Access Road carries 464 vehicles northbound and 543 vehicles southbound. The northbound left-turn traffic movement operates at LOS "A" during this period.

The Hoonee Place approach of the intersection carries 102 vehicles and 154 vehicles eastbound during the weekday AM and PM peak periods, respectively. This approach operates at LOS "D" and LOS "E" during the weekday AM and PM peak periods, respectively. During the weekend peak period, the eastbound approach of Hoonee Place carries 144 vehicles and operates at LOS "C".

The westbound approach is comprised of a driveway for an adjacent business. This approach carries a low volume of vehicles throughout the day with 16 vehicles observed on the approach during the weekday AM peak period, 14 vehicles observed during the weekday PM peak period, and no vehicles observed during the weekend peak period.

d. Sand Island Access Road and Pahounui Drive

At the intersection with Pahounui Drive, Sand Island Access Road carries 494 vehicles northbound and 1,311 vehicles southbound during the weekday AM peak period. During the weekday PM peak period, the overall traffic volume is lower with 873 vehicles traveling northbound and 585 vehicles traveling southbound. The critical traffic

movements on the Sand Island Access Road approaches are the northbound and southbound left-turn traffic movements which both operate at LOS "B" and LOS "A" during the weekday AM and PM peak periods, respectively. During the weekend peak period, the northbound approach of Sand Island Access Road carries 203 vehicles while the southbound approach carries 401 vehicles. The northbound left-turn critical movement operates at LOS "A" during this period.

The Pahounui Drive approach of the intersection carries 11 vehicles eastbound during the weekday AM peak period and 32 vehicles during the weekday PM peak period, and operates at LOS "C" during both weekday peak periods. During the weekend peak period, the eastbound approach of Pahounui Drive carries 31 vehicles and operates at LOS "B".

e. Sand Island Access Road, Auiki Street, Pahounui Drive, and Sand Island Parkway

At the intersection with Auiki Street and Pahounui Drive, the Sand Island Parkway approach carries 420 vehicles and 981 vehicles northbound during the weekday AM and PM peak periods, respectively, while the Sand Island Access Road approach carries 1,139 vehicles and 450 vehicles southbound during the weekday AM and PM peak periods, respectively. The northbound and southbound approaches operate at LOS "B" during both weekday peak periods. During the weekend peak period, the Sand Island Parkway approach carries 232 vehicles northbound while the Sand Island Access Road approach carries 177 vehicles southbound. Both approaches operate at LOS "A" during this period.

The eastbound approach of Pahounui Drive carries 108 vehicles and 122 vehicles eastbound during the weekday AM and PM peak periods, respectively. This approach operates at LOS "B" and LOS "C" during the weekday AM and PM peak periods, respectively.

During the weekend peak period, the Pahounui Drive approach carries 8 vehicles eastbound and operates at LOS "B" during this peak period.

The westbound approach of Auiki Street carries 291 vehicles and 250 vehicles westbound during the weekday AM and PM peak periods, respectively. This approach operates at LOS "C" during both weekday peak periods. During the weekend peak period, the Auiki Street approach carries 99 vehicles westbound and operates at LOS "B" during this period.

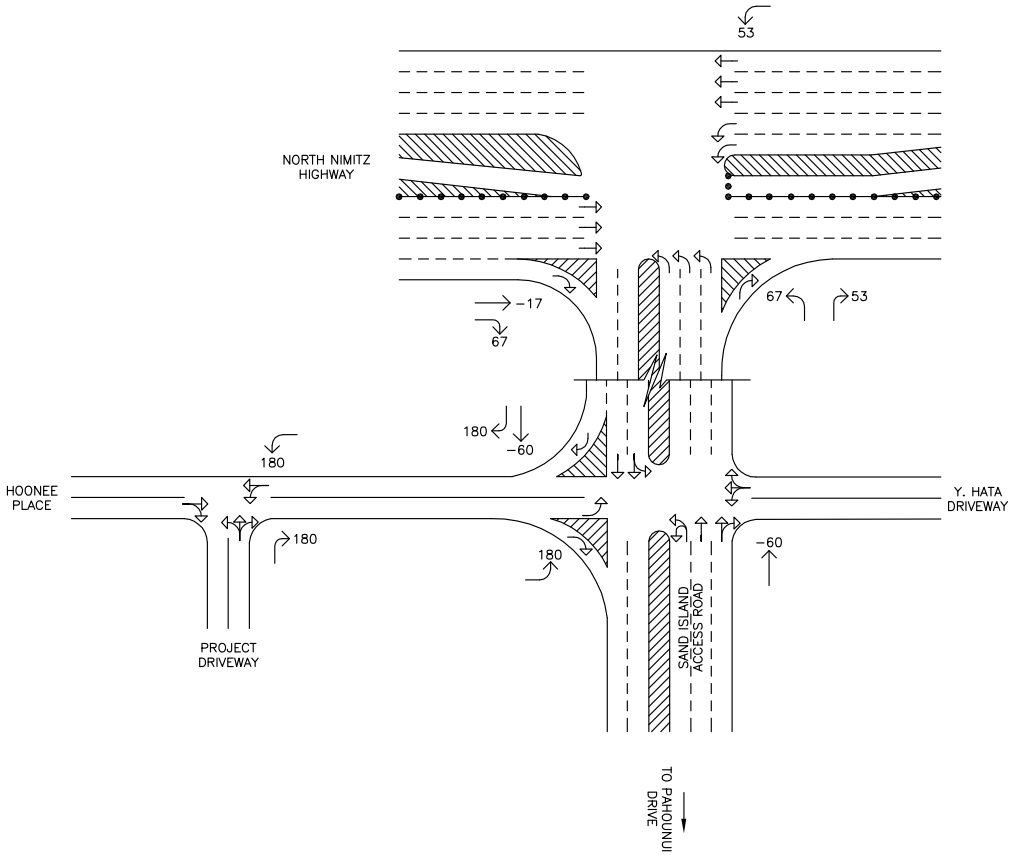
IV. PROJECTED TRAFFIC CONDITIONS

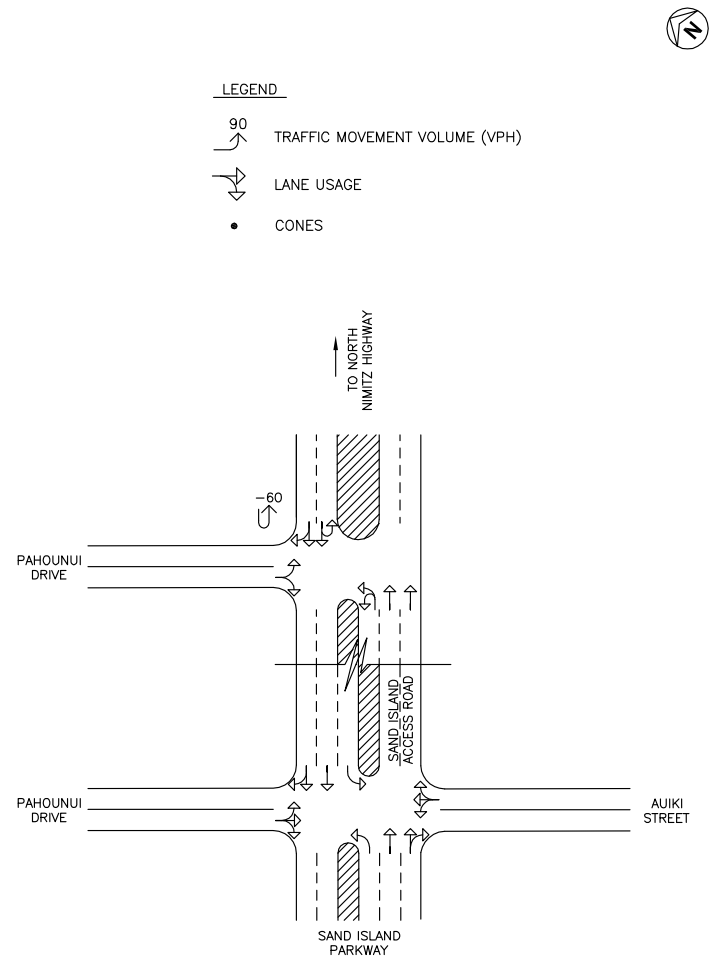
A. Trip Reassignment

The proposed expansion project is intended to serve the existing congregation at New Hope Ministry and, as such, the proposed improvements are not expected to generate additional trips. However, the development of additional on-site parking is expected to result in a reassignment of trips from off-site parking areas during weekend services since parishioners will have the opportunity to park on-site at the church facility. As such, the vehicles currently parking at the three off-site lots were reassigned to the surrounding roadways based on their assumed origin/destination and the relative convenience of available routes. The directional distribution of the reassigned trips was based on the existing distribution of traffic along North Nimitz Highway. Figure 7 shows the trip reassignment during the weekend peak period.

B. Through Traffic Forecasting Methodology

The travel forecast is based upon historical traffic count data obtained from the State DOT, Highways Division at survey stations located along North Nimitz Highway in the vicinity of the project site. The historical data indicates stable or declining traffic volumes and, as such, an annual traffic growth rate of approximately 1.0% was conservatively assumed in the project vicinity. As such, using 2015 as the Base Year, a growth rate factor of 1.02 was applied to the existing through traffic demands along North Nimitz Highway to achieve the projected Year 2017 traffic demands.





WILSON OKAMOTO CORPORATION

NEW HOPE MINISTRY CENTER

YEAR 2017 DISTRIBUTION OF SITE-GENERATED VEHICLES
WEEKEND PEAK HOUR OF TRAFFIC WITH PROJECT

FIGURE 7

C. Total Traffic Volumes Without Project

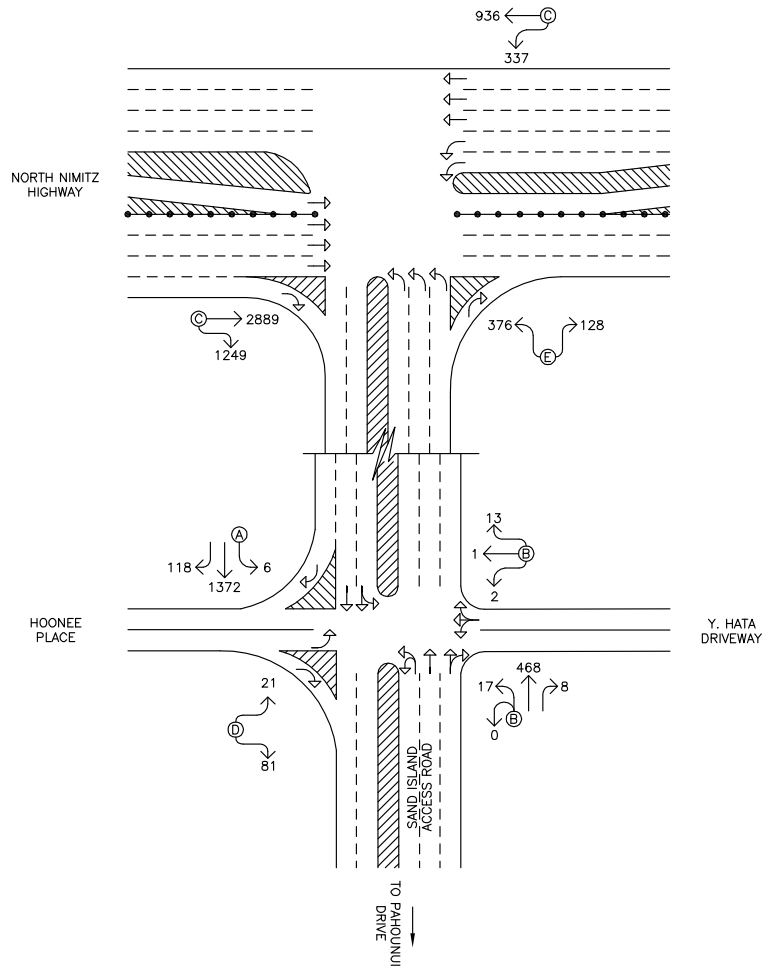
The projected Year 2017 weekday and weekend peak period traffic volumes and operating conditions without the proposed New Hope Ministry Center expansion are shown in Figures 8 to 10, and summarized in Tables 1 and 2. The existing levels of service are provided for comparison purposes. LOS calculations are included in Appendix D.

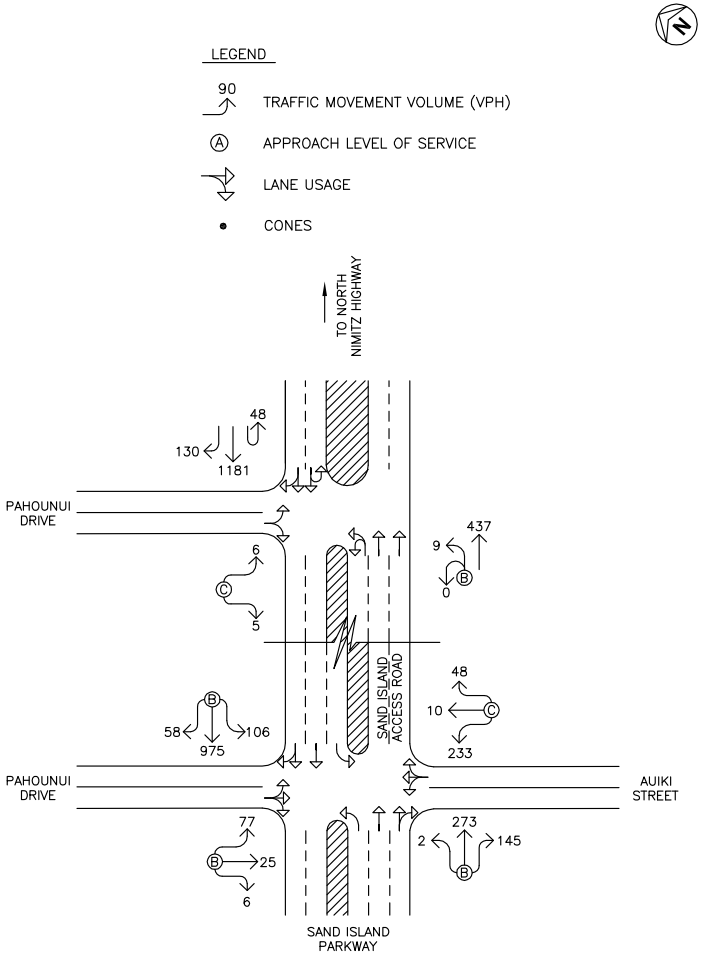
Table 1: Existing and Projected Year 2017 (Without Project) Weekday LOS Traffic Operating Conditions

Intersection	Approach/ Critical Movement	AM		PM	
		Exist	Year 2017 w/out Proj	Exist	Year 2017 w/out Proj
N. Nimitz Hwy/ Sand Island Access Rd	Eastbound	C	C	C	C
	Westbound	C	C	C	C
	Northbound	E	E	E	E
Sand Island Access Rd/ Hoonee Pl	Eastbound	D	D	E	E
	Northbound (LT)	B	B	A	A
Sand Island Access Rd/ Pahounui Dr	Eastbound	C	C	C	C
	Northbound (LT)	B	B	A	A
Sand Island Access Rd/ Auiki St/Pahounui Dr/ Sand Island Pkwy	Eastbound	B	B	C	C
	Westbound	C	C	C	C
	Northbound	B	B	B	B
	Southbound	B	B	B	B

Table 2: Existing and Projected Year 2017 (Without Project) Weekend LOS Traffic Operating Conditions

Intersection	Approach/ Critical Movement	Sunday	
		Exist	Year 2017 w/out Proj
N. Nimitz Hwy/ Sand Island Access Rd	Eastbound	B	B
	Westbound	A	A
	Northbound	C	C
Sand Island Access Rd/ Hoonee Pl	Eastbound	C	C
	Northbound (LT)	A	A



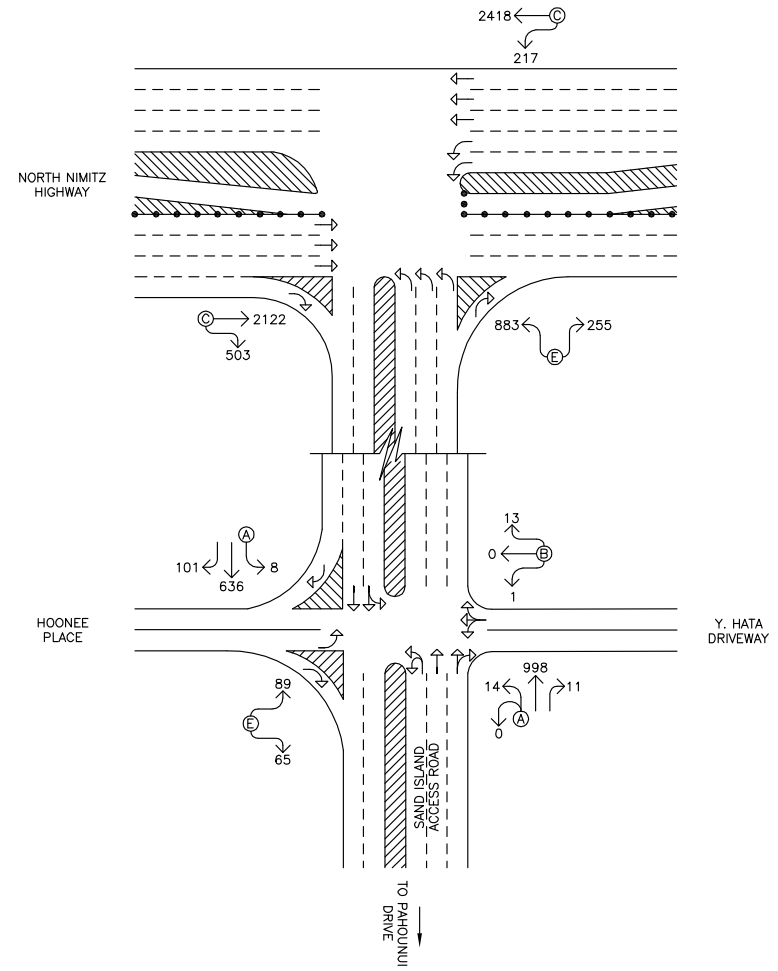


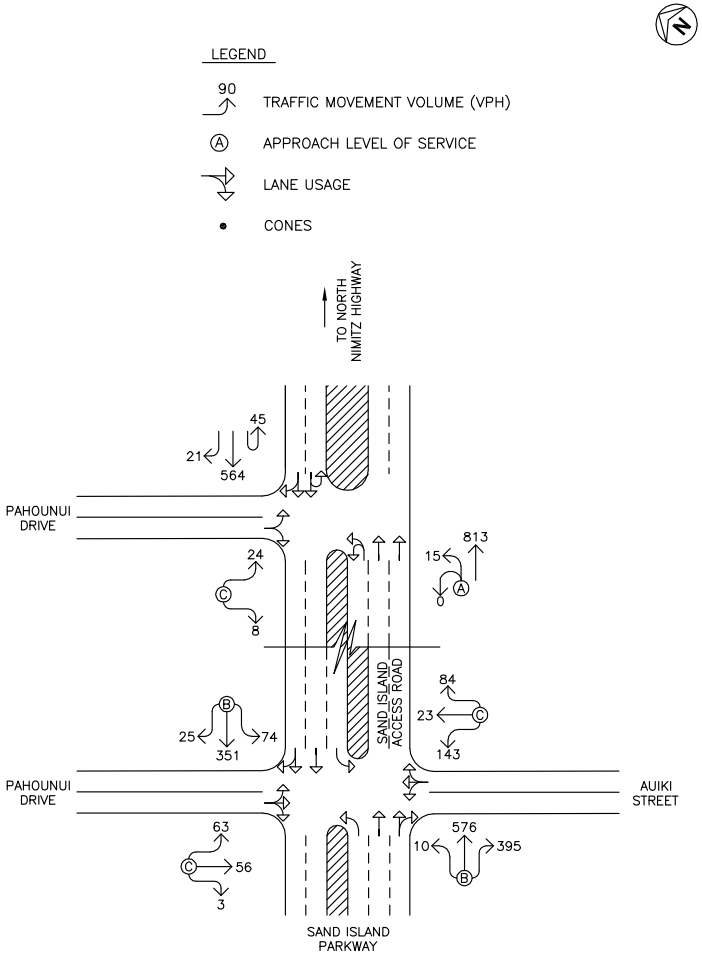
WILSON OKAMOTO CORPORATION

NEW HOPE MINISTRY CENTER

YEAR 2017 WEEKDAY AM PEAK HOUR OF TRAFFIC WITHOUT PROJECT

FIGURE 8



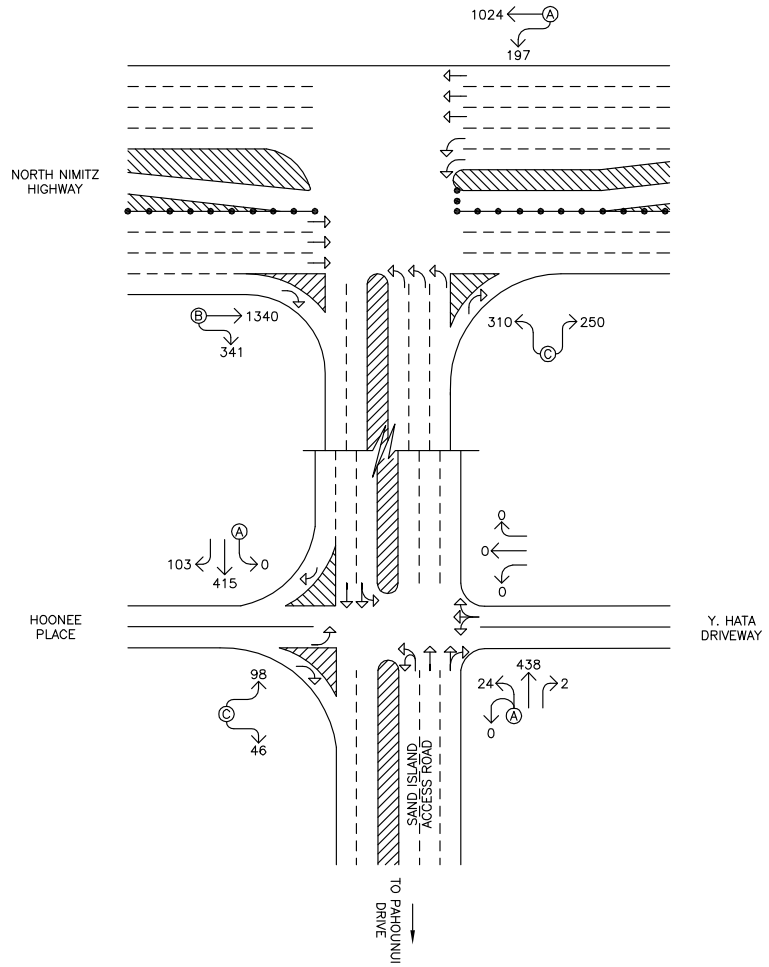


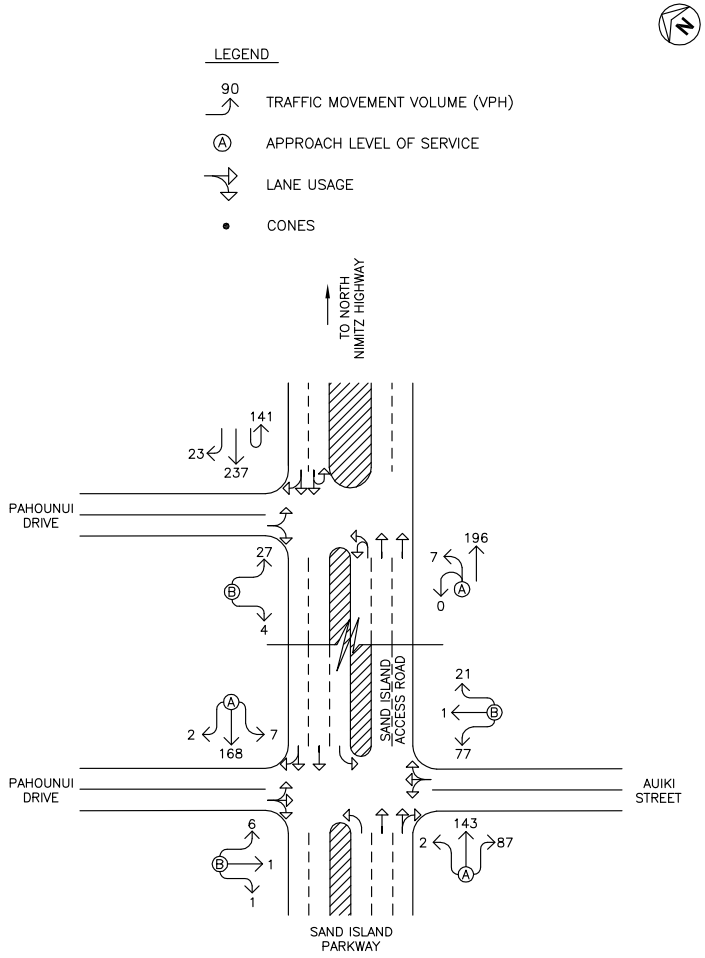
WILSON OKAMOTO CORPORATION

NEW HOPE MINISTRY CENTER

YEAR 2017 WEEKDAY PM PEAK HOUR OF TRAFFIC WITHOUT PROJECT

FIGURE 9





WILSON OKAMOTO CORPORATION

NEW HOPE MINISTRY CENTER

YEAR 2017 WEEKEND PEAK HOUR OF TRAFFIC WITHOUT PROJECT

FIGURE 10

Table 2: Existing and Projected Year 2017 (Without Project) Weekend LOS Traffic Operating Conditions (Cont'd)

Intersection	Approach/ Critical Movement	Sunday	
		Exist	Year 2017 w/out Proj
Sand Island Access Rd/ Pahounui Dr	Eastbound	B	B
	Northbound (LT)	A	A
Sand Island Access Rd/ Auiki St/Pahounui Dr/ Sand Island Pkwy	Eastbound	B	B
	Westbound	B	B
	Northbound	A	A
	Southbound	A	A

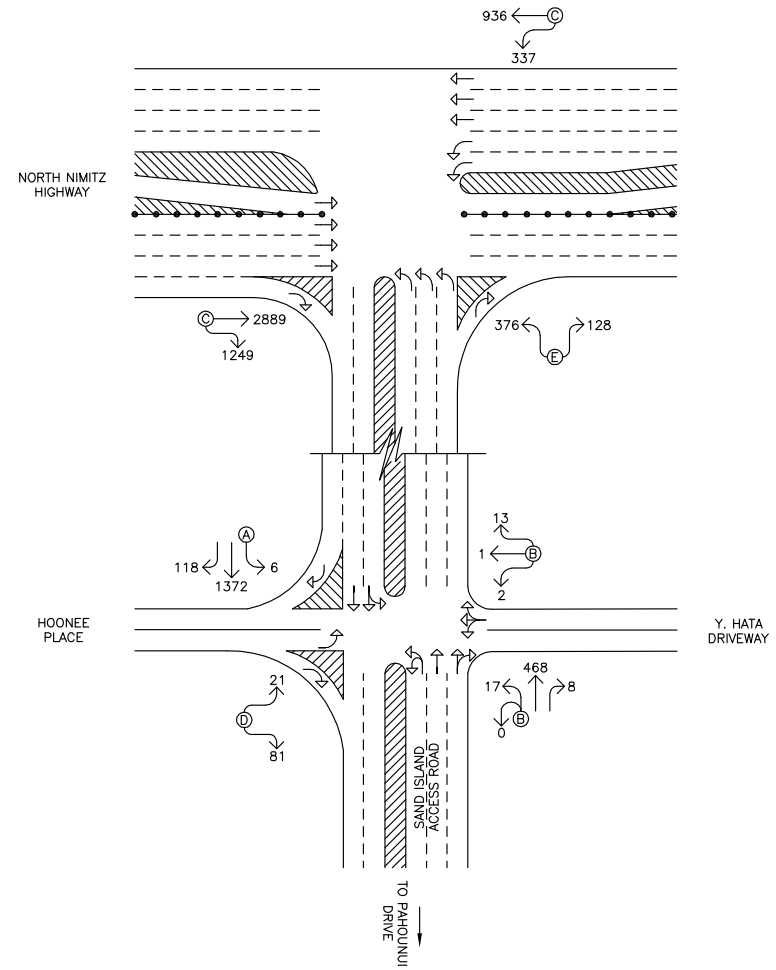
Traffic operations under Year 2017 without project conditions are expected to remain similar to existing conditions. The study intersections along Sand Island Access Road are expected to continue operating at levels of service similar to existing conditions despite the anticipated growth in ambient traffic in the project vicinity. The approaches of the study intersections are expected to continue operating at LOS "E" or better during the weekday AM and PM peak periods, and LOS "C" or better during the weekend peak period.

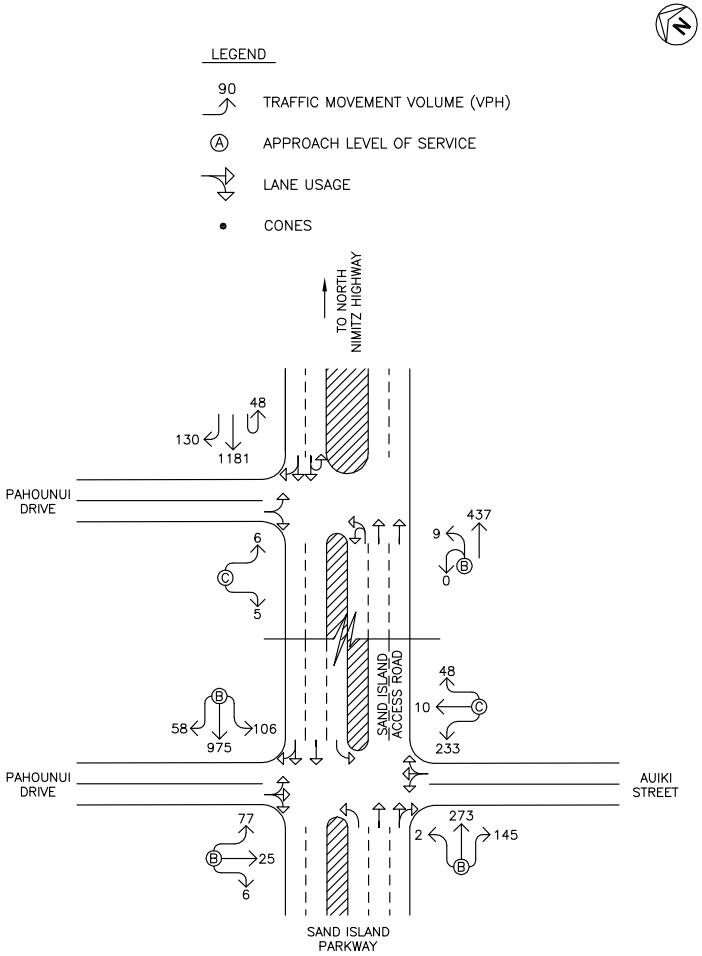
D. Total Traffic Volumes With Project

Figures 11 to 13 show the Year 2017 cumulative AM and PM peak hour traffic conditions resulting from the projected external traffic and the proposed expansion of the New Hope Ministry Center. The cumulative volumes consist of site-generated traffic superimposed over Year 2017 projected traffic demands. The traffic impacts resulting from the proposed project are addressed in the following section.

V. TRAFFIC IMPACT ANALYSIS

The Year 2017 cumulative AM and PM peak hour traffic conditions with the New Hope Ministry Center expansion are summarized in Tables 3 and 4. The projected Year 2017 (Without Project) operating conditions are provided for comparison purposes. LOS calculations are included in Appendix E.





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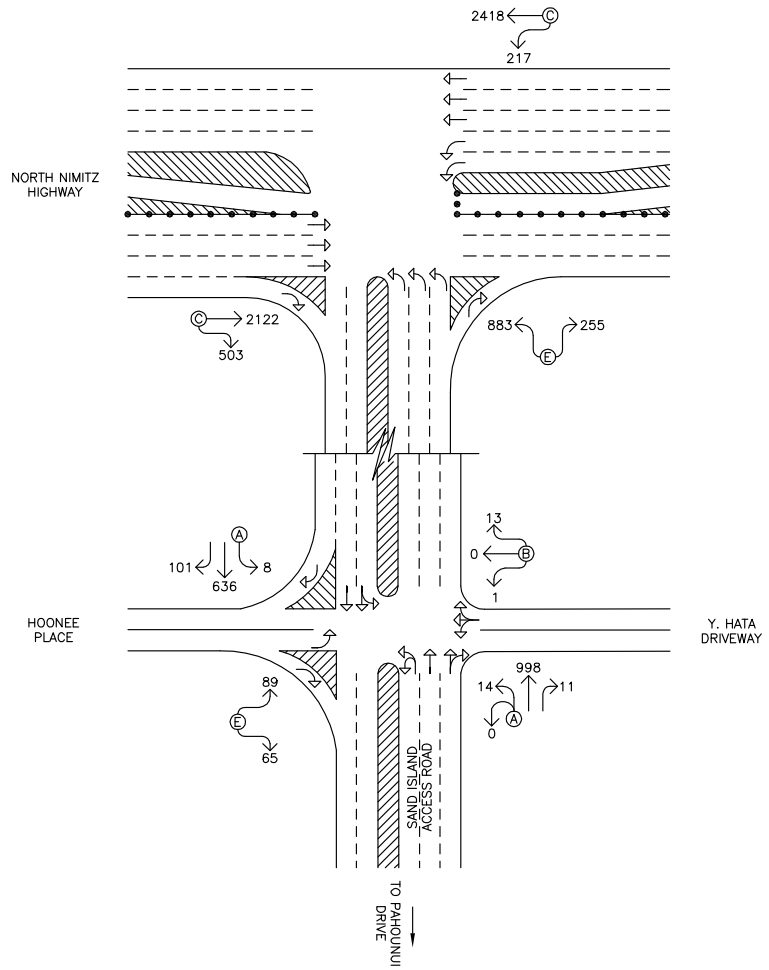
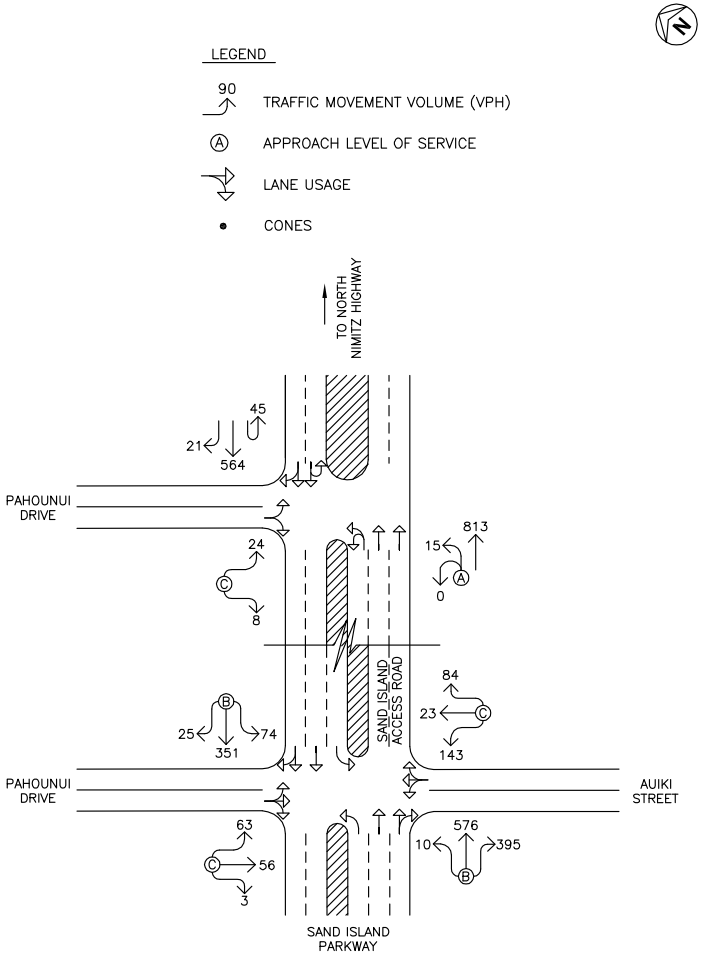
NEW HOPE MINISTRY CENTER

YEAR 2017 WEEKDAY AM PEAK HOUR OF TRAFFIC WITH PROJECT

FIGURE 11



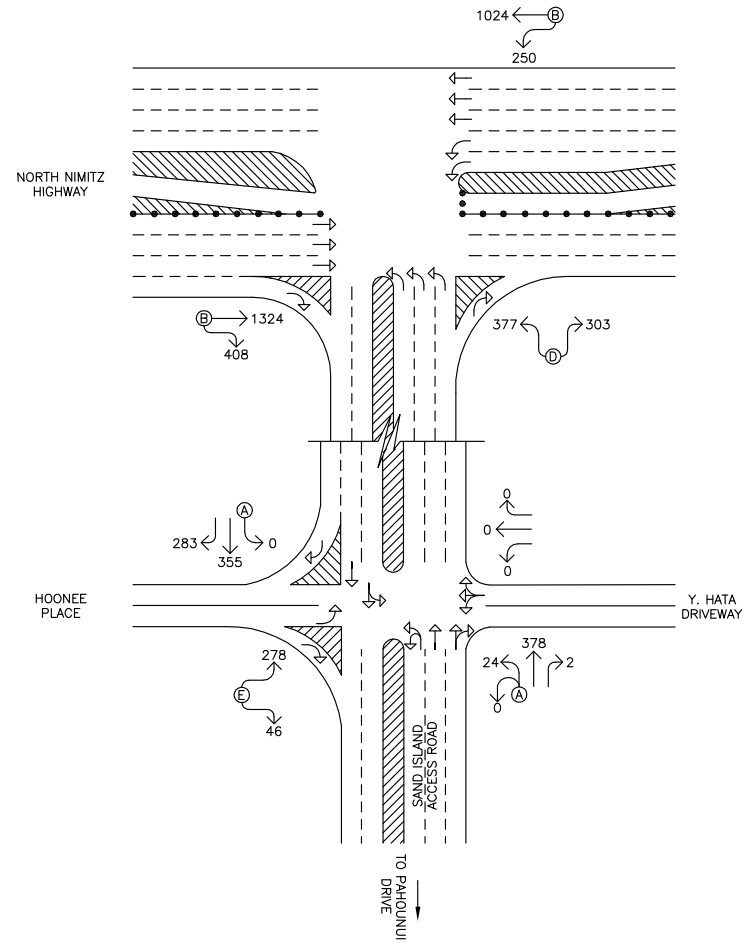


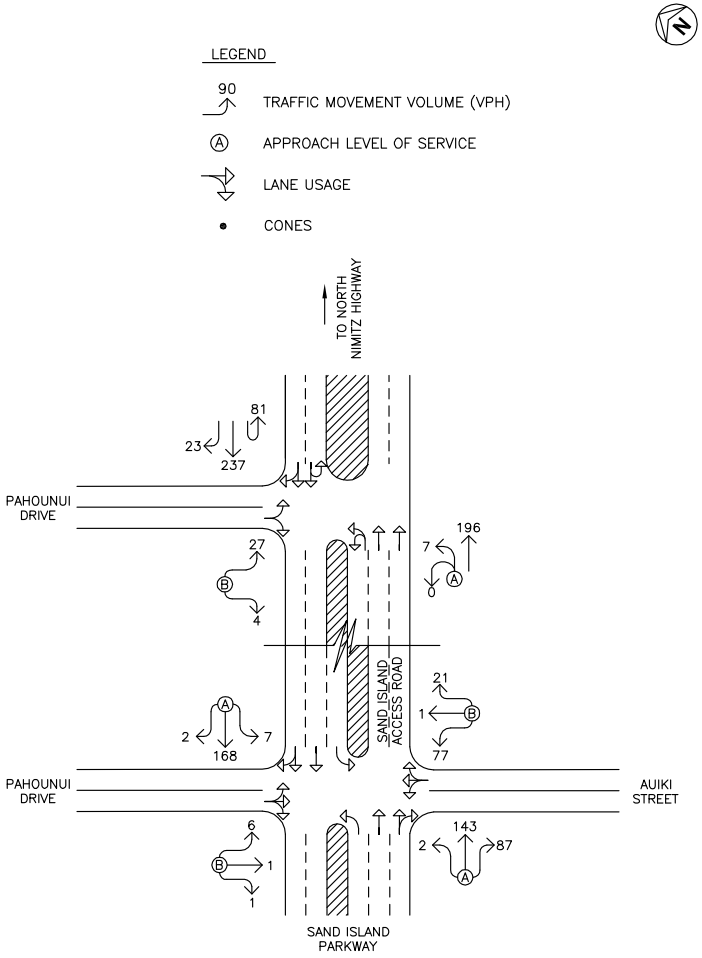
WILSON OKAMOTO CORPORATION

NEW HOPE MINISTRY CENTER

YEAR 2017 WEEKDAY PM PEAK HOUR OF TRAFFIC WITH PROJECT

FIGURE 12





WILSON OKAMOTO CORPORATION

NEW HOPE MINISTRY CENTER

YEAR 2017 WEEKEND PEAK HOUR OF TRAFFIC WITH PROJECT

FIGURE 13

Table 3: Year 2017 (Without and With Project)
Weekday LOS Traffic Operating Conditions

Intersection	Approach/ Critical Movement	AM		PM	
		Year 2017 w/out Proj	Year 2017 w/ Proj	Year 2017 w/out Proj	Year 2017 w/ Proj
N. Nimitz Hwy/ Sand Island Access Rd	Eastbound	C	C	C	C
	Westbound	C	C	C	C
	Northbound	E	E	E	E
Sand Island Access Rd/ Hoonee Pl	Eastbound	D	D	E	E
	Northbound (LT)	B	B	A	A
Sand Island Access Rd/ Pahounui Dr	Eastbound	C	C	C	C
	Northbound (LT)	B	B	A	A
Sand Island Access Rd/ Auiki St/Pahounui Dr/ Sand Island Pkwy	Eastbound	B	B	C	C
	Westbound	C	C	C	C
	Northbound	B	B	B	B
	Southbound	B	B	B	B

Table 4: Projected Year 2017 (Without and With Project)
Weekend LOS Traffic Operating Conditions

Intersection	Approach/ Critical Movement	Sunday	
		Year 2017 w/out Proj	Year 2017 w/ Proj
N. Nimitz Hwy/ Sand Island Access Rd	Eastbound	B	B
	Westbound	A	B
	Northbound	C	D
Sand Island Access Rd/ Hoonee Pl	Eastbound	C	E
	Northbound (LT)	A	A
Sand Island Access Rd/ Pahounui Dr	Eastbound	B	B
	Northbound (LT)	A	A
Sand Island Access Rd/ Auiki St/Pahounui Dr/ Sand Island Pkwy	Eastbound	B	B
	Westbound	B	B
	Northbound	A	A
	Southbound	A	A

Traffic operations in the vicinity of the New Hope Ministry Center are generally expected to remain similar to Year 2017 without project conditions with the expansion of the existing church facility. The planned expansion is not expected to generate additional trips during the weekday AM and PM peak periods and, as such, the study intersections along Sand Island Access Road are expected to continue operating at levels of service similar to without project conditions. During the weekend peak period, the approaches of the intersections of Sand Island Access Road with Pahounui Drive and Auiki Street/Pahonui Drive/Sand Island Parkway are generally expected to continue operation at levels of service similar to without project conditions despite the anticipated increases in traffic due to the reassignment of site-generated trips. The westbound and northbound approaches of the intersection of Sand Island Access Road with North Nimitz Highway are expected to operate at slightly lower levels of service during this period. At the intersection of Sand Island Access Road with Hoonee Place, the eastbound approach of Hoonee Place is expected to deteriorate from LOS "C" to LOS "E" since Hoonee Place serves as the primary access road for the church facility. However, it should be noted that trips associated with the New Hope Ministry Center are expected to be clustered around the start and end of services during the weekend and any resulting congestion or queuing is expected to clear quickly. As such, management of traffic associated with the New Hope Ministry Center may be the most appropriate strategy to minimize the impact of the church facility on the surrounding roadway network.

VI. RECOMMENDATIONS

Based on the analysis of the traffic data, the following are the recommendations of this study to be incorporated in the project design.

1. Maintain sufficient sight distance for motorists to safely enter and exit the project driveway.

2. Provide adequate on-site loading and off-loading service areas and prohibit off-site loading operations.

3. Provide adequate turn-around area for service, delivery, and refuse collection vehicles to maneuver on the project site to avoid vehicle-reversing maneuvers onto public roadways.

4. Provide sufficient turning radii at all project driveways to avoid or minimize vehicle encroachments to oncoming traffic lanes.

5. Prepare a Traffic Management Plan (TMP) for the New Hope Ministry Center to minimize the impact of church related traffic (vehicular and pedestrian) on surrounding roadways. This plan should also address the continued use of off-site parking areas and shuttle services.

VII. CONCLUSION

The existing New Hope Ministry Center adjacent to Sand Island Access Road currently houses office, classroom, meeting spaces, and at-grade parking areas to support classes and meetings during the weekdays and services on the weekends. On weekdays, parking for the facility is accommodated on-site or in an adjacent parking lot while parking on weekends is accommodated in adjacent parking areas, as well as, three off-site parking areas with shuttle services. The proposed expansion project is intended to serve the existing New Hope Ministry congregation and other functions and entail the replacement of the existing temporary gathering and overflow areas with permanent facilities, as well as, provide additional on-site parking. The provision of additional on-site parking is expected to result in additional vehicular traffic to and from the project site with the church's congregation size not expecting to significantly increase. With the implementation of the aforementioned recommendations, traffic operations in the vicinity of the New Hope Ministry Center are expected to generally remain similar to existing and without project conditions. However, the preparation of a Traffic Management Plan for the New Hope Ministry Center is recommended to minimize the impact of the church facility on the surrounding roadways.

APPENDIX A

EXISTING TRAFFIC COUNT DATA

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu, Hi 96826

Counted By:KW
Counters:D4-5676
Weather:Clear

File Name : Driveway No. 1 & Driveway No. 1A - AM
Site Code : 00000001
Start Date : 1/29/2015
Page No : 1

Groups Printed- Unshifted

	Driveway No. 1A Southbound					Hoonee Place Westbound					Driveway No. 1 Northbound					Hoonee Place Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	0	6	0	6	3	0	2	0	5	0	0	1	0	1	0	0	1	0	1	13
06:15 AM	2	0	0	5	7	1	0	3	1	5	0	0	0	2	2	0	0	1	0	1	15
06:30 AM	0	0	1	0	1	0	0	2	0	2	0	0	0	3	3	1	0	0	0	1	7
06:45 AM	0	0	0	0	0	2	0	2	0	4	0	0	0	2	2	0	0	0	0	0	6
Total	2	0	7	5	14	6	0	9	1	16	0	0	1	7	8	1	0	2	0	3	41
07:00 AM	4	0	0	0	4	4	0	3	0	7	0	0	1	0	1	0	0	0	0	0	12
07:15 AM	6	0	0	0	6	0	0	2	0	2	0	0	1	1	2	0	0	0	0	0	10
07:30 AM	1	0	1	0	2	1	0	2	0	3	0	0	0	0	0	0	0	0	0	0	5
07:45 AM	3	0	0	0	3	0	0	5	0	5	0	0	0	0	0	0	0	0	0	0	8
Total	14	0	1	0	15	5	0	12	0	17	0	0	2	1	3	0	0	0	0	0	35
08:00 AM	1	0	0	0	1	4	0	5	0	9	0	0	0	1	1	0	0	0	0	0	11
08:15 AM	0	0	0	0	0	6	0	3	0	9	1	0	0	0	1	0	0	1	0	1	11
08:30 AM	0	0	1	0	1	3	0	1	0	4	0	0	0	1	1	1	0	0	0	1	7
08:45 AM	1	0	0	0	1	5	0	2	0	7	0	0	0	0	0	0	0	0	0	0	8
Total	2	0	1	0	3	18	0	11	0	29	1	0	0	2	3	1	0	1	0	2	37
Grand Total	18	0	9	5	32	29	0	32	1	62	1	0	3	10	14	2	0	3	0	5	113
Apprch %	56.2	0	28.1	15.6		46.8	0	51.6	1.6		7.1	0	21.4	71.4		40	0	60	0		
Total %	15.9	0	8	4.4	28.3	25.7	0	28.3	0.9	54.9	0.9	0	2.7	8.8	12.4	1.8	0	2.7	0	4.4	

	Driveway No. 1A Southbound				Hoonee Place Westbound				Driveway No. 1 Northbound				Hoonee Place Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	**3**	0	0	**3**	0	0	**5**	5	0	0	0	0	0	0	0	0	8
08:00 AM	1	0	0	1	4	0	5	**9**	0	0	0	0	0	0	0	0	10
08:15 AM	0	0	0	0	**6**	0	3	9	**1**	0	0	**1**	0	0	**1**	**1**	**11**
08:30 AM	0	0	**1**	1	3	0	1	4	0	0	0	0	**1**	0	0	1	6
Total Volume	4	0	1	5	13	0	14	27	1	0	0	1	1	0	1	2	35
% App. Total	80	0	20		48.1	0	51.9		100	0	0		50	0	50		
PHF	.333	.000	.250	.417	.542	.000	.700	.750	.250	.000	.000	.250	.250	.000	.250	.500	.795

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu, Hi 96826

Counted By:KW
Counters:D4-5676
Weather:Clear

File Name : Driveway No. 1 & Driveway No. 1A - PM
Site Code : 00000001
Start Date : 1/29/2015
Page No : 1

Groups Printed- Unshifted

	Driveway No. 1A Southbound					Hoonee Place Westbound					Driveway No. 1 Northbound					Hoonee Place Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	4	0	0	0	4	2	0	0	0	2	0	0	0	3	3	0	0	0	0	0	9
03:15 PM	3	0	0	0	3	1	0	2	0	3	0	0	0	1	1	0	0	0	0	0	7
03:30 PM	3	0	0	0	3	1	0	2	0	3	0	0	0	3	3	0	0	0	0	0	9
03:45 PM	6	0	0	0	6	3	0	2	0	5	0	0	1	2	3	0	0	0	0	0	14
Total	16	0	0	0	16	7	0	6	0	13	0	0	1	9	10	0	0	0	0	0	39
04:00 PM	1	0	0	0	1	4	0	2	0	6	0	0	1	5	6	0	0	0	0	0	13
04:15 PM	0	0	0	0	0	2	0	1	0	3	2	0	0	4	6	1	0	0	0	1	10
04:30 PM	3	0	1	0	4	0	0	1	0	1	0	0	0	0	0	1	0	0	0	1	6
04:45 PM	2	0	0	0	2	3	0	2	0	5	0	0	0	5	5	0	0	0	0	0	12
Total	6	0	1	0	7	9	0	6	0	15	2	0	1	14	17	2	0	0	0	2	41
05:00 PM	5	0	0	0	5	3	0	1	0	4	0	0	1	3	4	2	0	0	0	2	15
05:15 PM	1	0	0	0	1	2	0	0	0	2	1	0	0	3	4	0	0	0	0	0	7
05:30 PM	1	0	1	0	2	1	0	1	0	2	0	0	0	2	2	1	0	0	0	1	7
05:45 PM	2	0	0	0	2	3	0	0	0	3	0	0	0	1	1	0	0	0	0	0	6
Total	9	0	1	0	10	9	0	2	0	11	1	0	1	9	11	3	0	0	0	3	35
Grand Total	31	0	2	0	33	25	0	14	0	39	3	0	3	32	38	5	0	0	0	5	115
Apprch %	93.9	0	6.1	0		64.1	0	35.9	0		7.9	0	7.9	84.2		100	0	0	0		
Total %	27	0	1.7	0	28.7	21.7	0	12.2	0	33.9	2.6	0	2.6	27.8	33	4.3	0	0	0	4.3	

	Driveway No. 1A Southbound				Hoonee Place Westbound				Driveway No. 1 Northbound				Hoonee Place Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:15 PM																	
03:15 PM	3	0	0	3	1	0	**2**	3	0	0	0	0	0	0	0	0	6
03:30 PM	3	0	0	3	1	0	2	3	0	0	0	0	0	0	0	0	6
03:45 PM	**6**	0	0	**6**	3	0	2	5	0	0	**1**	**1**	0	0	0	0	**12**
04:00 PM	1	0	0	1	**4**	0	2	**6**	0	0	1	1	0	0	0	0	8
Total Volume	13	0	0	13	9	0	8	17	0	0	2	2	0	0	0	0	32
% App. Total	100	0	0		52.9	0	47.1		0	0	100		0	0	0		
PHF	.542	.000	.000	.542	.563	.000	1.00	.708	.000	.000	.500	.500	.000	.000	.000	.000	.667

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu, Hi 96826

Counted By:KW
Counters:D4-5676
Weather:Clear

File Name : Driveway No. 1 & Driveway No. 1A - AM
Site Code : 00000001
Start Date : 1/29/2015
Page No : 1

Groups Printed- Unshifted

	Driveway No. 1A Southbound					Hoonee Place Westbound					Driveway No. 1 Northbound					Hoonee Place Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	0	6	0	6	3	0	2	0	5	0	0	1	0	1	0	0	1	0	1	13
06:15 AM	2	0	0	5	7	1	0	3	1	5	0	0	0	2	2	0	0	1	0	1	15
06:30 AM	0	0	1	0	1	0	0	2	0	2	0	0	0	3	3	1	0	0	0	1	7
06:45 AM	0	0	0	0	0	2	0	2	0	4	0	0	0	2	2	0	0	0	0	0	6
Total	2	0	7	5	14	6	0	9	1	16	0	0	1	7	8	1	0	2	0	3	41
07:00 AM	4	0	0	0	4	4	0	3	0	7	0	0	1	0	1	0	0	0	0	0	12
07:15 AM	6	0	0	0	6	0	0	2	0	2	0	0	1	1	2	0	0	0	0	0	10
07:30 AM	1	0	1	0	2	1	0	2	0	3	0	0	0	0	0	0	0	0	0	0	5
07:45 AM	3	0	0	0	3	0	0	5	0	5	0	0	0	0	0	0	0	0	0	0	8
Total	14	0	1	0	15	5	0	12	0	17	0	0	2	1	3	0	0	0	0	0	35
08:00 AM	1	0	0	0	1	4	0	5	0	9	0	0	0	1	1	0	0	0	0	0	11
08:15 AM	0	0	0	0	0	6	0	3	0	9	1	0	0	0	1	0	0	1	0	1	11
08:30 AM	0	0	1	0	1	3	0	1	0	4	0	0	0	1	1	1	0	0	0	1	7
08:45 AM	1	0	0	0	1	5	0	2	0	7	0	0	0	0	0	0	0	0	0	0	8
Total	2	0	1	0	3	18	0	11	0	29	1	0	0	2	3	1	0	1	0	2	37
Grand Total	18	0	9	5	32	29	0	32	1	62	1	0	3	10	14	2	0	3	0	5	113
Apprch %	56.2	0	28.1	15.6		46.8	0	51.6	1.6		7.1	0	21.4	71.4		40	0	60	0		
Total %	15.9	0	8	4.4	28.3	25.7	0	28.3	0.9	54.9	0.9	0	2.7	8.8	12.4	1.8	0	2.7	0	4.4	

	Driveway No. 1A Southbound				Hoonee Place Westbound				Driveway No. 1 Northbound				Hoonee Place Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	**3**	0	0	**3**	0	0	**5**	5	0	0	0	0	0	0	0	0	8
08:00 AM	1	0	0	1	4	0	5	**9**	0	0	0	0	0	0	0	0	10
08:15 AM	0	0	0	0	**6**	0	3	9	**1**	0	0	**1**	0	0	**1**	**1**	**11**
08:30 AM	0	0	**1**	1	3	0	1	4	0	0	0	0	**1**	0	0	1	6
Total Volume	4	0	1	5	13	0	14	27	1	0	0	1	1	0	1	2	35
% App. Total	80	0	20		48.1	0	51.9		100	0	0		50	0	50		
PHF	.333	.000	.250	.417	.542	.000	.700	.750	.250	.000	.000	.250	.250	.000	.250	.500	.795

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu, Hi 96826

Counted By:KW
Counters:D4-5676
Weather:Clear

File Name : Driveway No. 1 & Driveway No. 1A - PM
Site Code : 00000001
Start Date : 1/29/2015
Page No : 1

Groups Printed- Unshifted

	Driveway No. 1A Southbound					Hoonee Place Westbound					Driveway No. 1 Northbound					Hoonee Place Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	4	0	0	0	4	2	0	0	0	2	0	0	0	3	3	0	0	0	0	0	9
03:15 PM	3	0	0	0	3	1	0	2	0	3	0	0	0	1	1	0	0	0	0	0	7
03:30 PM	3	0	0	0	3	1	0	2	0	3	0	0	0	3	3	0	0	0	0	0	9
03:45 PM	6	0	0	0	6	3	0	2	0	5	0	0	1	2	3	0	0	0	0	0	14
Total	16	0	0	0	16	7	0	6	0	13	0	0	1	9	10	0	0	0	0	0	39
04:00 PM	1	0	0	0	1	4	0	2	0	6	0	0	1	5	6	0	0	0	0	0	13
04:15 PM	0	0	0	0	0	2	0	1	0	3	2	0	0	4	6	1	0	0	0	1	10
04:30 PM	3	0	1	0	4	0	0	1	0	1	0	0	0	0	0	1	0	0	0	1	6
04:45 PM	2	0	0	0	2	3	0	2	0	5	0	0	0	5	5	0	0	0	0	0	12
Total	6	0	1	0	7	9	0	6	0	15	2	0	1	14	17	2	0	0	0	2	41
05:00 PM	5	0	0	0	5	3	0	1	0	4	0	0	1	3	4	2	0	0	0	2	15
05:15 PM	1	0	0	0	1	2	0	0	0	2	1	0	0	3	4	0	0	0	0	0	7
05:30 PM	1	0	1	0	2	1	0	1	0	2	0	0	0	2	2	1	0	0	0	1	7
05:45 PM	2	0	0	0	2	3	0	0	0	3	0	0	0	1	1	0	0	0	0	0	6
Total	9	0	1	0	10	9	0	2	0	11	1	0	1	9	11	3	0	0	0	3	35
Grand Total	31	0	2	0	33	25	0	14	0	39	3	0	3	32	38	5	0	0	0	5	115
Apprch %	93.9	0	6.1	0		64.1	0	35.9	0		7.9	0	7.9	84.2		100	0	0	0		
Total %	27	0	1.7	0	28.7	21.7	0	12.2	0	33.9	2.6	0	2.6	27.8	33	4.3	0	0	0	4.3	

	Driveway No. 1A Southbound				Hoonee Place Westbound				Driveway No. 1 Northbound				Hoonee Place Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:15 PM																	
03:15 PM	3	0	0	3	1	0	**2**	3	0	0	0	0	0	0	0	0	6
03:30 PM	3	0	0	3	1	0	2	3	0	0	0	0	0	0	0	0	6
03:45 PM	**6**	0	0	**6**	3	0	2	5	0	0	**1**	**1**	0	0	0	0	**12**
04:00 PM	1	0	0	1	**4**	0	2	**6**	0	0	1	1	0	0	0	0	8
Total Volume	13	0	0	13	9	0	8	17	0	0	2	2	0	0	0	0	32
% App. Total	100	0	0		52.9	0	47.1		0	0	100		0	0	0		
PHF	.542	.000	.000	.542	.563	.000	1.00	.708	.000	.000	.500	.500	.000	.000	.000	.000	.667

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu, Hi 96826

Counted By:PA
Counters:D4-5674
Weather:Clear

File Name : Driveway No. 2 - AM
Site Code : 00000002
Start Date : 1/29/2015
Page No : 1

Groups Printed- Unshifted

	Southbound	Westbound	Northbound	Driveway No. 2 Eastbound					
Start Time	App. Total	App. Total	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	0	0	0	0	1	0	1	1
06:15 AM	0	0	0	0	0	1	0	1	1
06:30 AM	0	0	0	0	0	2	0	2	2
06:45 AM	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	4	0	4	4
07:00 AM	0	0	0	0	0	1	1	2	2
07:15 AM	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	1	1	1
07:45 AM	0	0	0	0	0	0	1	1	1
Total	0	0	0	0	0	1	3	4	4
08:00 AM	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	1	0	1	1
08:30 AM	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	5	0	5	5
Total	0	0	0	0	0	6	0	6	6
Grand Total	0	0	0	0	0	11	3	14	14
Apprch %				0	0	78.6	21.4		
Total %	0	0	0	0	0	78.6	21.4	100	

	Southbound	Westbound	Northbound	Driveway No. 2 Eastbound				
Start Time	App. Total	App. Total	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1								
Peak Hour for Entire Intersection Begins at 08:00 AM								
08:00 AM	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	1	1	1
08:30 AM	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	**5**	**5**	**5**
Total Volume	0	0	0	0	0	6	6	6
% App. Total				0	0	100		
PHF	.000	.000	.000	.000	.000	.300	.300	.300

1907 S. Beretania Street, Suite 400
Honolulu, Hi 96826

Counted By:PA
Counters:D4-5673
Weather:Clear

File Name : Driveway No. 2 - PM
Site Code : 00000002
Start Date : 1/29/2015
Page No : 1

Groups Printed- Unshifted

	Southbound	Westbound	Northbound	Driveway No. 3 Eastbound					
Start Time	App. Total	App. Total	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	0	0	0	0	0	1	0	1	1
03:15 PM	0	0	0	0	0	0	0	0	0
03:30 PM	0	0	0	0	0	1	0	1	1
03:45 PM	0	0	0	0	0	2	0	2	2
Total	0	0	0	0	0	4	0	4	4
04:00 PM	0	0	0	0	0	2	0	2	2
04:15 PM	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	2	1	3	3
Total	0	0	0	0	0	4	1	5	5
05:00 PM	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	4	0	4	4
05:30 PM	0	0	0	0	0	1	0	1	1
05:45 PM	0	0	0	0	0	2	0	2	2
Total	0	0	0	0	0	7	0	7	7
Grand Total	0	0	0	0	0	15	1	16	16
Apprch %				0	0	93.8	6.2		
Total %	0	0	0	0	0	93.8	6.2	100	

	Southbound	Westbound	Northbound	Driveway No. 3 Eastbound				
Start Time	App. Total	App. Total	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1								
Peak Hour for Entire Intersection Begins at 04:45 PM								
04:45 PM	0	0	0	0	0	2	2	2
05:00 PM	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	**4**	**4**	**4**
05:30 PM	0	0	0	0	0	1	1	1
Total Volume	0	0	0	0	0	7	7	7
% App. Total				0	0	100		
PHF	.000	.000	.000	.000	.000	.438	.438	.438

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu, Hi 96826

Counted By:PA
Counters:D4-5671
Weather:Clear

File Name : Driveway No.3 AM
Site Code : 00000002
Start Date : 1/29/2015
Page No : 1

Groups Printed- Unshifted

	Southbound	Westbound	Northbound	Driveway No. 3 Eastbound					
Start Time	App. Total	App. Total	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	0	0	0	0	0	0	0	0
06:15 AM	0	0	0	0	0	0	0	0	0
06:30 AM	0	0	0	0	0	0	0	0	0
06:45 AM	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0
07:00 AM	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	1	0	1	1
07:45 AM	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	1	0	1	1
08:00 AM	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	1	0	1	1
Apprch %				0	0	100	0		
Total %	0	0	0	0	0	100	0	100	

	Southbound	Westbound	Northbound	Driveway No. 3 Eastbound				
Start Time	App. Total	App. Total	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1								
Peak Hour for Entire Intersection Begins at 06:45 AM								
06:45 AM	0	0	0	0	0	0	0	0
07:00 AM	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	1	1	1
Total Volume	0	0	0	0	0	1	1	1
% App. Total				0	0	100		
PHF	.000	.000	.000	.000	.000	.250	.250	.250

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu, Hi 96826

Counted By:PA
Counters:D4-5671
Weather:Clear

File Name : Driveway No.3 PM
Site Code : 00000002
Start Date : 1/29/2015
Page No : 1

Groups Printed- Unshifted

	Southbound	Westbound	Northbound	Driveway No. 3 Eastbound					
Start Time	App. Total	App. Total	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	0	0	0	0	0	0	0	0	0
03:15 PM	0	0	0	0	0	0	0	0	0
03:30 PM	0	0	0	0	0	1	0	1	1
03:45 PM	0	0	0	0	0	1	0	1	1
Total	0	0	0	0	0	2	0	2	2
04:00 PM	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	1	0	1	1
04:30 PM	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	1	0	1	1
05:00 PM	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	1	0	1	1
05:30 PM	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	1	0	1	1
Grand Total	0	0	0	0	0	4	0	4	4
Apprch %				0	0	100	0		
Total %	0	0	0	0	0	100	0	100	

	Southbound	Westbound	Northbound	Driveway No. 3 Eastbound				
Start Time	App. Total	App. Total	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1								
Peak Hour for Entire Intersection Begins at 03:30 PM								
03:30 PM	0	0	0	0	0	**1**	**1**	**1**
03:45 PM	0	0	0	0	0	1	1	1
04:00 PM	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	1	1	1
Total Volume	0	0	0	0	0	3	3	3
% App. Total				0	0	100		
PHF	.000	.000	.000	.000	.000	.750	.750	.750

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu, Hi 96826

Counted By:RJ, GC
Counters:D4-5671, D4-5675
Weather:Clear

File Name : SandNim AM
Site Code : 00000001
Start Date : 1/29/2015
Page No : 1

Groups Printed- Unshifted

	Southbound	Nimitz Highway Westbound					Sand Island Access Road Northbound					Nimitz Highway Eastbound					
Start Time	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	79	217	0	6	302	50	0	34	8	92	0	614	296	0	910	1304
06:15 AM	0	85	201	0	10	296	100	0	38	8	146	0	630	324	0	954	1396
06:30 AM	0	107	261	0	4	372	117	0	28	5	150	0	719	308	0	1027	1549
06:45 AM	0	66	239	0	7	312	109	0	28	7	144	0	869	321	0	1190	1646
Total	0	337	918	0	27	1282	376	0	128	28	532	0	2832	1249	0	4081	5895
07:00 AM	0	89	294	0	5	388	91	0	34	7	132	0	911	202	0	1113	1633
07:15 AM	0	79	307	0	9	395	111	0	54	8	173	0	911	188	0	1099	1667
07:30 AM	0	100	310	0	5	415	102	0	39	7	148	0	704	169	0	873	1436
07:45 AM	0	66	296	0	4	366	97	0	42	3	142	0	815	239	0	1054	1562
Total	0	334	1207	0	23	1564	401	0	169	25	595	0	3341	798	0	4139	6298
08:00 AM	0	104	325	0	10	439	70	0	32	9	111	0	786	225	0	1011	1561
08:15 AM	0	57	311	0	4	372	108	0	58	2	168	0	789	193	0	982	1522
08:30 AM	0	55	287	0	2	344	104	0	49	5	158	0	588	226	0	814	1316
08:45 AM	0	61	328	0	2	391	124	0	41	8	173	0	540	187	0	727	1291
Total	0	277	1251	0	18	1546	406	0	180	24	610	0	2703	831	0	3534	5690
Grand Total	0	948	3376	0	68	4392	1183	0	477	77	1737	0	8876	2878	0	11754	17883
Apprch %		21.6	76.9	0	1.5		68.1	0	27.5	4.4		0	75.5	24.5	0		
Total %	0	5.3	18.9	0	0.4	24.6	6.6	0	2.7	0.4	9.7	0	49.6	16.1	0	65.7	

	Southbound	Nimitz Highway Westbound				Sand Island Access Road Northbound				Nimitz Highway Eastbound				
Start Time	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 06:30 AM														
06:30 AM	0	**107**	261	0	368	**117**	0	28	145	0	719	308	1027	1540
06:45 AM	0	66	239	0	305	109	0	28	137	0	869	**321**	**1190**	1632
07:00 AM	0	89	294	0	383	91	0	34	125	0	**911**	202	1113	1621
07:15 AM	0	79	**307**	0	**386**	111	0	**54**	**165**	0	911	188	1099	**1650**
Total Volume	0	341	1101	0	1442	428	0	144	572	0	3410	1019	4429	6443
% App. Total		23.6	76.4	0		74.8	0	25.2		0	77	23		
PHF	.000	.797	.897	.000	.934	.915	.000	.667	.867	.000	.936	.794	.930	.976

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu, Hi 96826

Counted By:GC, RJ
Counters:D4-5671, D4-5675
Weather:Clear

File Name : SandNim PM
Site Code : 00000001
Start Date : 1/29/2015
Page No : 1

Groups Printed- Unshifted

	Southbound					Nimtz Highway Westbound					Sand Island Access Road Northbound					Nimtz Highway Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	0	0	0	0	0	61	554	0	13	628	240	0	62	13	315	0	449	138	0	587	1530
03:15 PM	0	0	0	0	0	60	591	0	2	653	236	0	58	6	300	0	547	142	0	689	1642
03:30 PM	0	0	0	0	0	41	639	0	12	692	225	0	70	18	313	0	531	120	0	651	1656
03:45 PM	0	0	0	0	0	55	587	0	8	650	182	0	65	13	260	0	553	103	0	656	1566
Total	0	0	0	0	0	217	2371	0	35	2623	883	0	255	50	1188	0	2080	503	0	2583	6394
04:00 PM	0	0	0	0	0	43	649	1	4	697	195	0	83	5	283	0	476	105	0	581	1561
04:15 PM	0	0	0	0	0	33	660	0	4	697	181	0	82	3	266	0	541	89	0	630	1593
04:30 PM	0	0	0	0	0	30	703	0	3	736	177	0	91	2	270	0	567	90	0	657	1663
04:45 PM	0	0	0	0	0	33	680	0	6	719	128	0	54	3	185	0	592	78	0	670	1574
Total	0	0	0	0	0	139	2692	1	17	2849	681	0	310	13	1004	0	2176	362	0	2538	6391
05:00 PM	0	0	0	0	0	28	622	0	6	656	158	1	69	7	235	0	542	70	0	612	1503
05:15 PM	0	0	0	0	0	31	666	0	9	706	130	0	56	5	191	0	581	77	0	658	1555
05:30 PM	0	0	0	0	0	28	705	0	7	740	96	0	47	12	155	0	531	77	0	608	1503
05:45 PM	0	0	0	0	0	31	577	0	6	614	64	0	36	4	104	0	414	76	0	490	1208
Total	0	0	0	0	0	118	2570	0	28	2716	448	1	208	28	685	0	2068	300	0	2368	5769
Grand Total	0	0	0	0	0	474	7633	1	80	8188	2012	1	773	91	2877	0	6324	1165	0	7489	18554
Apprch %	0	0	0	0		5.8	93.2	0	1		69.9	0	26.9	3.2		0	84.4	15.6	0		
Total %	0	0	0	0	0	2.6	41.1	0	0.4	44.1	10.8	0	4.2	0.5	15.5	0	34.1	6.3	0	40.4	

	Southbound	Nimtz Highway Westbound				Sand Island Access Road Northbound				Nimtz Highway Eastbound				
Start Time	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 04:00 PM														
04:00 PM	0	**43**	649	**1**	693	**195**	0	83	**278**	0	476	**105**	581	1552
04:15 PM	0	33	660	0	693	181	0	82	263	0	541	89	630	1586
04:30 PM	0	30	**703**	0	**733**	177	0	**91**	268	0	567	90	657	**1658**
04:45 PM	0	33	680	0	713	128	0	54	182	0	**592**	78	**670**	1565
Total Volume	0	139	2692	1	2832	681	0	310	991	0	2176	362	2538	6361
% App. Total		4.9	95.1	0		68.7	0	31.3		0	85.7	14.3		
PHF	.000	.808	.957	.250	.966	.873	.000	.852	.891	.000	.919	.862	.947	.959

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu, Hi 96826

Counted By:EV, JJ
Counters:TU-0652, TU-0651
Weather:Clear

File Name : SandHoo AM
Site Code : 00000002
Start Date : 1/29/2015
Page No : 1

Groups Printed- Unshifted

	Sand Island Access Road Southbound					Y. Hata Driveway Westbound					Sand Island Access Road Northbound					Hoonee Place Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	1	321	30	0	352	0	1	3	7	11	3	80	1	1	85	6	0	33	1	40	488
06:15 AM	1	368	23	0	392	0	0	4	3	7	5	131	1	1	138	4	0	21	2	27	564
06:30 AM	2	344	35	0	381	1	0	4	0	5	3	128	2	0	133	4	0	14	1	19	538
06:45 AM	2	339	30	0	371	1	0	2	1	4	4	129	4	0	137	7	0	13	2	22	534
Total	6	1372	118	0	1496	2	1	13	11	27	15	468	8	2	493	21	0	81	6	108	2124
07:00 AM	1	264	22	0	287	1	0	2	2	5	6	123	1	0	130	10	0	8	0	18	440
07:15 AM	4	234	15	0	253	1	0	0	2	3	2	137	0	0	139	11	0	14	1	26	421
07:30 AM	5	206	29	2	242	0	0	2	7	9	4	120	2	0	126	9	0	10	0	19	396
07:45 AM	1	268	23	0	292	0	0	2	7	9	5	129	1	0	135	6	0	11	1	18	454
Total	11	972	89	2	1074	2	0	6	18	26	17	509	4	0	530	36	0	43	2	81	1711
08:00 AM	0	257	44	0	301	0	0	2	3	5	3	128	3	0	134	8	0	16	1	25	465
08:15 AM	4	209	36	0	249	0	0	4	1	5	4	110	1	0	115	13	0	8	0	21	390
08:30 AM	2	235	37	0	274	0	0	4	1	5	5	132	2	0	139	15	0	12	0	27	445
08:45 AM	5	213	24	0	242	0	0	0	1	1	7	146	8	0	161	11	0	7	0	18	422
Total	11	914	141	0	1066	0	0	10	6	16	19	516	14	0	549	47	0	43	1	91	1722
Grand Total	28	3258	348	2	3636	4	1	29	35	69	51	1493	26	2	1572	104	0	167	9	280	5557
Apprch %	0.8	89.6	9.6	0.1		5.8	1.4	42	50.7		3.2	95	1.7	0.1		37.1	0	59.6	3.2		
Total %	0.5	58.6	6.3	0	65.4	0.1	0	0.5	0.6	1.2	0.9	26.9	0.5	0	28.3	1.9	0	3	0.2	5	

	Sand Island Access Road Southbound				Y. Hata Driveway Westbound				Sand Island Access Road Northbound				Hoonee Place Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 06:00 AM																	
06:00 AM	1	321	30	352	0	**1**	3	4	3	80	1	84	6	0	**33**	**39**	479
06:15 AM	1	**368**	23	**392**	0	0	**4**	4	**5**	**131**	1	**137**	4	0	21	25	**558**
06:30 AM	**2**	344	**35**	381	**1**	0	4	**5**	3	128	2	133	4	0	14	18	537
06:45 AM	2	339	30	371	1	0	2	3	4	129	**4**	137	**7**	0	13	20	531
Total Volume	6	1372	118	1496	2	1	13	16	15	468	8	491	21	0	81	102	2105
% App. Total	0.4	91.7	7.9		12.5	6.2	81.2		3.1	95.3	1.6		20.6	0	79.4		
PHF	.750	.932	.843	.954	.500	.250	.813	.800	.750	.893	.500	.896	.750	.000	.614	.654	.943

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu, Hi 96826

Counted By:MA, JJ
Counters:TU-0651, TU-0652
Weather:Clear

File Name : SandHoo AM - U-Turns
Site Code : 00000002
Start Date : 1/29/2015
Page No : 1

Groups Printed- Unshifted

	Sand Island Access Road Left = U-Turns Southbound					Westbound	Sand Island Access Road Left = U-Turns Northbound					Eastbound	
Start Time	Left	Thru	Right	Peds	App. Total	App. Total	Left	Thru	Right	Peds	App. Total	App. Total	Int. Total
06:00 AM	0	0	0	0	0	0	1	0	0	0	1	0	1
06:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 AM	0	0	0	0	0	0	1	0	0	0	1	0	1
Total	0	0	0	0	0	0	2	0	0	0	2	0	2
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	2	0	0	0	2	0	0	0	0	0	0	0	2
07:30 AM	4	0	0	0	4	0	0	0	0	0	0	0	4
07:45 AM	2	0	0	0	2	0	1	0	0	0	1	0	3
Total	8	0	0	0	8	0	1	0	0	0	1	0	9
08:00 AM	2	0	0	0	2	0	0	0	0	0	0	0	2
08:15 AM	1	0	0	0	1	0	0	0	0	0	0	0	1
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	3	0	0	0	3	0	0	0	0	0	0	0	3
Grand Total	11	0	0	0	11	0	3	0	0	0	3	0	14
Apprch %	100	0	0	0			100	0	0	0			
Total %	78.6	0	0	0	78.6	0	21.4	0	0	0	21.4	0	

	Sand Island Access Road Left = U-Turns Southbound				Westbound	Sand Island Access Road Left = U-Turns Northbound				Eastbound	
Start Time	Left	Thru	Right	App. Total	App. Total	Left	Thru	Right	App. Total	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 07:15 AM											
07:15 AM	2	0	0	2	0	0	0	0	0	0	2
07:30 AM	**4**	0	0	**4**	0	0	0	0	0	0	**4**
07:45 AM	2	0	0	2	0	**1**	0	0	**1**	0	3
08:00 AM	2	0	0	2	0	0	0	0	0	0	2
Total Volume	10	0	0	10	0	1	0	0	1	0	11
% App. Total	100	0	0			100	0	0			
PHF	.625	.000	.000	.625	.000	.250	.000	.000	.250	.000	.688

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu, Hi 96826

Counted By:EV, JJ
Counters:TU-0651, TU-0652
Weather:Clear

File Name : SandHoo PM
Site Code : 00000002
Start Date : 1/29/2015
Page No : 1

Groups Printed- Unshifted

	Sand Island Access Road Southbound					Y, Hata Driveway Westbound					Sand Island Access Road Northbound					Hoonee Place Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	2	180	29	1	212	0	0	1	1	2	2	273	3	0	278	17	0	15	1	33	525
03:15 PM	0	159	35	0	194	0	0	3	1	4	4	254	3	0	261	20	0	15	0	35	494
03:30 PM	1	156	21	0	178	0	0	6	2	8	4	264	2	1	271	32	0	21	2	55	512
03:45 PM	3	141	16	0	160	1	0	3	2	6	3	207	3	0	213	20	0	14	1	35	414
Total	6	636	101	1	744	1	0	13	6	20	13	998	11	1	1023	89	0	65	4	158	1945
04:00 PM	1	136	20	0	157	0	0	7	4	11	5	248	0	0	253	27	0	12	0	39	460
04:15 PM	1	111	21	0	133	0	0	1	0	1	0	232	1	0	233	18	0	11	0	29	396
04:30 PM	2	113	8	0	123	0	0	2	2	4	2	199	4	0	205	27	0	12	1	40	372
04:45 PM	0	105	10	0	115	0	0	1	0	1	4	147	6	0	157	22	0	10	3	35	308
Total	4	465	59	0	528	0	0	11	6	17	11	826	11	0	848	94	0	45	4	143	1536
05:00 PM	0	90	5	0	95	0	0	4	7	11	2	200	0	0	202	27	0	10	0	37	345
05:15 PM	0	97	8	0	105	2	0	3	0	5	1	153	0	0	154	14	0	3	1	18	282
05:30 PM	1	102	6	0	109	2	0	2	0	4	3	139	0	0	142	6	0	4	0	10	265
05:45 PM	1	83	6	0	90	0	0	3	0	3	2	90	2	0	94	11	0	3	0	14	201
Total	2	372	25	0	399	4	0	12	7	23	8	582	2	0	592	58	0	20	1	79	1093
Grand Total	12	1473	185	1	1671	5	0	36	19	60	32	2406	24	1	2463	241	0	130	9	380	4574
Apprch %	0.7	88.2	11.1	0.1		8.3	0	60	31.7		1.3	97.7	1	0		63.4	0	34.2	2.4		
Total %	0.3	32.2	4	0	36.5	0.1	0	0.8	0.4	1.3	0.7	52.6	0.5	0	53.8	5.3	0	2.8	0.2	8.3	

	Sand Island Access Road Southbound				Y, Hata Driveway Westbound				Sand Island Access Road Northbound				Hoonee Place Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:00 PM																	
03:00 PM	2	**180**	29	**211**	0	0	1	1	2	**273**	**3**	**278**	17	0	15	32	**522**
03:15 PM	0	159	**35**	194	0	0	3	3	**4**	254	3	261	20	0	15	35	493
03:30 PM	1	156	21	178	0	0	**6**	**6**	4	264	2	270	**32**	0	**21**	**53**	507
03:45 PM	**3**	141	16	160	**1**	0	3	4	3	207	3	213	20	0	14	34	411
Total Volume	6	636	101	743	1	0	13	14	13	998	11	1022	89	0	65	154	1933
% App. Total	0.8	85.6	13.6		7.1	0	92.9		1.3	97.7	1.1		57.8	0	42.2		
PHF	.500	.883	.721	.880	.250	.000	.542	.583	.813	.914	.917	.919	.695	.000	.774	.726	.926

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu, Hi 96826

Counted By:MA, JJ
Counters:TU-0651, TU-0652
Weather:Clear

File Name : SandHoo PM - U-Turns
Site Code : 00000002
Start Date : 1/29/2015
Page No : 1

Groups Printed- Unshifted

	Sand Island Access Road Left = U-Turns Southbound					Westbound	Sand Island Access Road Left = U-Turns Northbound					Eastbound	
Start Time	Left	Thru	Right	Peds	App. Total	App. Total	Left	Thru	Right	Peds	App. Total	App. Total	Int. Total
03:00 PM	1	0	0	0	1	0	0	0	0	0	0	0	1
03:15 PM	1	0	0	0	1	0	0	0	0	0	0	0	1
03:30 PM	0	0	0	0	0	0	1	0	0	0	1	0	1
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	2	0	0	0	2	0	1	0	0	0	1	0	3
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	1	0	0	0	1	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	0	0	0	1	0	1
05:00 PM	1	0	0	0	1	0	0	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	0	0	0	1	0	0	0	0	0	0	0	1
Grand Total	3	0	0	0	3	0	2	0	0	0	2	0	5
Apprch %	100	0	0	0			100	0	0	0			
Total %	60	0	0	0	60	0	40	0	0	0	40	0	

	Sand Island Access Road Left = U-Turns Southbound				Westbound	Sand Island Access Road Left = U-Turns Northbound				Eastbound	
Start Time	Left	Thru	Right	App. Total	App. Total	Left	Thru	Right	App. Total	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 03:00 PM											
03:00 PM	**1**	0	0	**1**	0	0	0	0	0	0	**1**
03:15 PM	1	0	0	1	0	0	0	0	0	0	1
03:30 PM	0	0	0	0	0	**1**	0	0	**1**	0	1
03:45 PM	0	0	0	0	0	0	0	0	0	0	0
Total Volume	2	0	0	2	0	1	0	0	1	0	3
% App. Total	100	0	0			100	0	0			
PHF	.500	.000	.000	.500	.000	.250	.000	.000	.250	.000	.750

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu, Hi 96826

Counted By:FS, CY
Counters:TU-0649, TU-0650
Weather:Clear

File Name : SandPah AM
Site Code : 00000003
Start Date : 1/29/2015
Page No : 1

Groups Printed- Unshifted

	Sand Island Access Road Southbound					Westbound	Sand Island Access Road Northbound					Pahounui Drive Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	19	299	22	1	341	0	0	80	0	1	81	1	0	1	0	2	424
06:15 AM	11	306	69	1	387	0	5	108	0	2	115	4	0	0	0	4	506
06:30 AM	12	326	33	0	371	0	1	118	0	0	119	0	0	2	0	2	492
06:45 AM	6	250	6	0	262	0	3	131	0	0	134	1	0	2	1	4	400
Total	48	1181	130	2	1361	0	9	437	0	3	449	6	0	5	1	12	1822
07:00 AM	11	204	20	0	235	0	3	125	0	1	129	1	0	5	0	6	370
07:15 AM	29	187	11	0	227	0	2	126	0	1	129	2	0	1	1	4	360
07:30 AM	14	149	10	0	173	0	0	105	0	0	105	4	0	1	0	5	283
07:45 AM	20	213	9	0	242	0	1	112	0	0	113	4	0	3	0	7	362
Total	74	753	50	0	877	0	6	468	0	2	476	11	0	10	1	22	1375
08:00 AM	12	182	10	0	204	0	3	112	0	1	116	7	0	5	1	13	333
08:15 AM	11	150	6	2	169	0	4	92	0	1	97	5	0	1	1	7	273
08:30 AM	10	164	5	0	179	0	2	118	0	0	120	1	0	2	0	3	302
08:45 AM	18	163	9	2	192	0	1	135	0	0	136	5	0	0	0	5	333
Total	51	659	30	4	744	0	10	457	0	2	469	18	0	8	2	28	1241
Grand Total	173	2593	210	6	2982	0	25	1362	0	7	1394	35	0	23	4	62	4438
Apprch %	5.8	87	7	0.2			1.8	97.7	0	0.5		56.5	0	37.1	6.5		
Total %	3.9	58.4	4.7	0.1	67.2	0	0.6	30.7	0	0.2	31.4	0.8	0	0.5	0.1	1.4	

	Sand Island Access Road Southbound				Westbound	Sand Island Access Road Northbound				Pahounui Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 06:00 AM														
06:00 AM	**19**	299	22	340	0	0	80	0	80	1	0	1	2	422
06:15 AM	11	306	**69**	**386**	0	**5**	108	0	113	**4**	0	0	**4**	**503**
06:30 AM	12	**326**	33	371	0	1	118	0	119	0	0	**2**	2	492
06:45 AM	6	250	6	262	0	3	**131**	0	**134**	1	0	2	3	399
Total Volume	48	1181	130	1359	0	9	437	0	446	6	0	5	11	1816
% App. Total	3.5	86.9	9.6			2	98	0		54.5	0	45.5		
PHF	.632	.906	.471	.880	.000	.450	.834	.000	.832	.375	.000	.625	.688	.903

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu, Hi 96826

Counted By:FS, CY
Counters:TU-0649, TU-0650
Weather:Clear

File Name : SandPah AM - U-Turns
Site Code : 00000003
Start Date : 1/29/2015
Page No : 1

Groups Printed- Unshifted

	Sand Island Access Road Southbound					Westbound	Sand Island Access Road Northbound					Eastbound	
Start Time	Left	Thru	Right	Peds	App. Total	App. Total	Left	Thru	Right	Peds	App. Total	App. Total	Int. Total
06:00 AM	0	0	0	0	0	0	2	0	0	0	2	0	2
06:15 AM	0	0	0	0	0	0	3	0	0	0	3	0	3
06:30 AM	1	0	0	0	1	0	1	0	0	0	1	0	2
06:45 AM	2	0	0	0	2	0	4	0	0	0	4	0	6
Total	3	0	0	0	3	0	10	0	0	0	10	0	13
07:00 AM	1	0	0	0	1	0	1	0	0	0	1	0	2
07:15 AM	0	0	0	0	0	0	2	0	0	0	2	0	2
07:30 AM	1	0	0	0	1	0	1	0	0	0	1	0	2
07:45 AM	3	0	0	0	3	0	1	0	0	0	1	0	4
Total	5	0	0	0	5	0	5	0	0	0	5	0	10
08:00 AM	0	0	0	0	0	0	2	0	0	0	2	0	2
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	1	0	0	0	1	0	4	0	0	0	4	0	5
08:45 AM	0	0	0	0	0	0	1	0	0	0	1	0	1
Total	1	0	0	0	1	0	7	0	0	0	7	0	8
Grand Total	9	0	0	0	9	0	22	0	0	0	22	0	31
Apprch %	100	0	0	0			100	0	0	0			
Total %	29	0	0	0	29	0	71	0	0	0	71	0	

	Sand Island Access Road Southbound				Westbound	Sand Island Access Road Northbound				Eastbound	
Start Time	Left	Thru	Right	App. Total	App. Total	Left	Thru	Right	App. Total	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 06:00 AM											
06:00 AM	0	0	0	0	0	2	0	0	2	0	2
06:15 AM	0	0	0	0	0	3	0	0	3	0	3
06:30 AM	1	0	0	1	0	1	0	0	1	0	2
06:45 AM	**2**	0	0	**2**	0	**4**	0	0	**4**	0	**6**
Total Volume	3	0	0	3	0	10	0	0	10	0	13
% App. Total	100	0	0			100	0	0			
PHF	.375	.000	.000	.375	.000	.625	.000	.000	.625	.000	.542

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu, Hi 96826

Counted By:CY, FS
Counters:TU-0649, TU-0650
Weather:Clear

File Name : SandPah PM
Site Code : 00000003
Start Date : 1/29/2015
Page No : 1

Groups Printed- Unshifted

	Sand Island Access Road Southbound					Westbound	Sand Island Access Road Northbound					Pahounui Drive Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	9	153	6	1	169	0	1	237	0	0	238	7	0	2	0	9	416
03:15 PM	11	144	7	0	162	0	1	195	0	0	196	4	0	1	0	5	363
03:30 PM	12	130	3	1	146	0	2	221	0	0	223	6	0	2	0	8	377
03:45 PM	13	137	5	0	155	0	0	160	0	0	160	7	0	3	0	10	325
Total	45	564	21	2	632	0	4	813	0	0	817	24	0	8	0	32	1481
04:00 PM	11	112	7	0	130	0	1	193	0	1	195	8	0	2	1	11	336
04:15 PM	13	102	2	0	117	0	2	197	1	0	200	9	0	0	0	9	326
04:30 PM	17	95	5	0	117	0	0	149	0	1	150	10	3	1	1	15	282
04:45 PM	12	82	1	0	95	0	1	129	0	0	130	1	0	0	0	1	226
Total	53	391	15	0	459	0	4	668	1	2	675	28	3	3	2	36	1170
05:00 PM	2	93	4	0	99	0	0	162	0	1	163	3	0	0	0	3	265
05:15 PM	8	91	2	0	101	0	0	120	0	1	121	5	0	2	0	7	229
05:30 PM	4	83	3	0	90	0	2	118	0	1	121	3	0	3	1	7	218
05:45 PM	3	68	2	0	73	0	2	71	0	0	73	8	0	1	0	9	155
Total	17	335	11	0	363	0	4	471	0	3	478	19	0	6	1	26	867
Grand Total	115	1290	47	2	1454	0	12	1952	1	5	1970	71	3	17	3	94	3518
Apprch %	7.9	88.7	3.2	0.1			0.6	99.1	0.1	0.3		75.5	3.2	18.1	3.2		
Total %	3.3	36.7	1.3	0.1	41.3	0	0.3	55.5	0	0.1	56	2	0.1	0.5	0.1	2.7	

	Sand Island Access Road Southbound				Westbound	Sand Island Access Road Northbound				Pahounui Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 03:00 PM														
03:00 PM	9	**153**	6	**168**	0	1	**237**	0	**238**	**7**	0	2	9	**415**
03:15 PM	11	144	**7**	162	0	1	195	0	196	4	0	1	5	363
03:30 PM	12	130	3	145	0	**2**	221	0	223	6	0	2	8	376
03:45 PM	**13**	137	5	155	0	0	160	0	160	7	0	**3**	**10**	325
Total Volume	45	564	21	630	0	4	813	0	817	24	0	8	32	1479
% App. Total	7.1	89.5	3.3			0.5	99.5	0		75	0	25		
PHF	.865	.922	.750	.938	.000	.500	.858	.000	.858	.857	.000	.667	.800	.891

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu, Hi 96826

Counted By:FS, CY
Counters:TU-0649, TU-0650
Weather:Clear

File Name : SandPah PM - U-Turns
Site Code : 00000003
Start Date : 1/29/2015
Page No : 1

Groups Printed- Unshifted

	Sand Island Access Road Left = U-Turns Southbound					Westbound	Sand Island Access Road Left = U-Turns Northbound					Eastbound	
Start Time	Left	Thru	Right	Peds	App. Total	App. Total	Left	Thru	Right	Peds	App. Total	App. Total	Int. Total
03:00 PM	1	0	0	0	1	0	2	0	0	0	2	0	3
03:15 PM	0	0	0	0	0	0	3	0	0	0	3	0	3
03:30 PM	2	0	0	0	2	0	2	0	0	0	2	0	4
03:45 PM	1	0	0	0	1	0	4	0	0	0	4	0	5
Total	4	0	0	0	4	0	11	0	0	0	11	0	15
04:00 PM	0	0	0	0	0	0	2	0	0	0	2	0	2
04:15 PM	0	0	0	0	0	0	2	0	0	0	2	0	2
04:30 PM	1	0	0	0	1	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	2	0	0	0	2	0	2
Total	1	0	0	0	1	0	6	0	0	0	6	0	7
05:00 PM	0	0	0	0	0	0	1	0	0	0	1	0	1
05:15 PM	0	0	0	0	0	0	1	0	0	0	1	0	1
05:30 PM	0	0	0	0	0	0	2	0	0	0	2	0	2
05:45 PM	1	0	0	0	1	0	0	0	0	0	0	0	1
Total	1	0	0	0	1	0	4	0	0	0	4	0	5
Grand Total	6	0	0	0	6	0	21	0	0	0	21	0	27
Apprch %	100	0	0	0			100	0	0	0			
Total %	22.2	0	0	0	22.2	0	77.8	0	0	0	77.8	0	

	Sand Island Access Road Left = U-Turns Southbound				Westbound	Sand Island Access Road Left = U-Turns Northbound				Eastbound	
Start Time	Left	Thru	Right	App. Total	App. Total	Left	Thru	Right	App. Total	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 03:00 PM											
03:00 PM	1	0	0	1	0	2	0	0	2	0	3
03:15 PM	0	0	0	0	0	3	0	0	3	0	3
03:30 PM	**2**	0	0	**2**	0	2	0	0	2	0	4
03:45 PM	1	0	0	1	0	**4**	0	0	**4**	0	**5**
Total Volume	4	0	0	4	0	11	0	0	11	0	15
% App. Total	100	0	0			100	0	0			
PHF	.500	.000	.000	.500	.000	.688	.000	.000	.688	.000	.750

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu, Hi 96826

Counted By:DY, JK
Counters:TU-0653, TU-0654
Weather:Clear

File Name : SandAuiPah AM
Site Code : 00000004
Start Date : 1/29/2015
Page No : 1

Groups Printed- Unshifted

	Sand Island Access Road Southbound					Auiki Street Westbound					Sand Island Access Road Northbound					Pahounui Drive Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	31	232	3	1	267	58	0	5	1	64	1	45	21	0	67	17	2	1	0	20	418
06:15 AM	31	243	8	0	282	71	4	14	2	91	0	63	41	1	105	27	6	3	1	37	515
06:30 AM	18	265	17	4	304	57	3	18	0	78	0	76	47	1	124	17	11	0	0	28	534
06:45 AM	26	235	30	5	296	47	3	11	2	63	2	89	36	1	128	16	6	2	0	24	511
Total	106	975	58	10	1149	233	10	48	5	296	3	273	145	3	424	77	25	6	1	109	1978
07:00 AM	38	148	13	6	205	50	8	12	3	73	3	72	65	1	141	21	7	2	0	30	449
07:15 AM	29	113	12	2	156	33	3	15	1	52	3	68	61	0	132	19	10	3	0	32	372
07:30 AM	36	95	6	0	137	41	6	16	2	65	1	66	42	0	109	13	9	2	0	24	335
07:45 AM	48	138	12	5	203	39	3	11	5	58	1	70	57	0	128	8	9	0	0	17	406
Total	151	494	43	13	701	163	20	54	11	248	8	276	225	1	510	61	35	7	0	103	1562
08:00 AM	34	148	7	4	193	49	1	18	3	71	1	68	54	0	123	7	6	4	0	17	404
08:15 AM	25	110	17	2	154	47	7	18	2	74	1	49	52	1	103	6	6	0	0	12	343
08:30 AM	26	128	15	5	174	24	7	14	3	48	1	80	46	0	127	15	9	2	0	26	375
08:45 AM	31	130	14	3	178	40	7	23	2	72	2	78	49	0	129	19	16	2	0	37	416
Total	116	516	53	14	699	160	22	73	10	265	5	275	201	1	482	47	37	8	0	92	1538
Grand Total	373	1985	154	37	2549	556	52	175	26	809	16	824	571	5	1416	185	97	21	1	304	5078
Apprch %	14.6	77.9	6	1.5		68.7	6.4	21.6	3.2		1.1	58.2	40.3	0.4		60.9	31.9	6.9	0.3		
Total %	7.3	39.1	3	0.7	50.2	10.9	1	3.4	0.5	15.9	0.3	16.2	11.2	0.1	27.9	3.6	1.9	0.4	0	6	

	Sand Island Access Road Southbound				Auiki Street Westbound				Sand Island Access Road Northbound				Pahounui Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 06:15 AM																	
06:15 AM	31	243	8	282	**71**	4	14	**89**	0	63	41	104	**27**	6	**3**	**36**	511
06:30 AM	18	**265**	17	**300**	57	3	**18**	78	0	76	47	123	17	**11**	0	28	**529**
06:45 AM	26	235	**30**	291	47	3	11	61	2	**89**	36	127	16	6	2	24	503
07:00 AM	**38**	148	13	199	50	**8**	12	70	**3**	72	**65**	**140**	21	7	2	30	439
Total Volume	113	891	68	1072	225	18	55	298	5	300	189	494	81	30	7	118	1982
% App. Total	10.5	83.1	6.3		75.5	6	18.5		1	60.7	38.3		68.6	25.4	5.9		
PHF	.743	.841	.567	.893	.792	.563	.764	.837	.417	.843	.727	.882	.750	.682	.583	.819	.937

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu, Hi 96826

Counted By:DY, KC
Counters:TU-0653, TU-0654
Weather:Clear

File Name : SandAuiPah AM - U-Turns
Site Code : 00000004
Start Date : 1/29/2015
Page No : 1

Groups Printed- Unshifted

	Sand Island Access Road Left = U-Turns Southbound					Westbound	Sand Island Access Road Left = U-Turns Northbound					Eastbound	
Start Time	Left	Thru	Right	Peds	App. Total	App. Total	Left	Thru	Right	Peds	App. Total	App. Total	Int. Total
06:00 AM	1	0	0	0	1	0	0	0	0	0	0	0	1
06:15 AM	0	0	0	0	0	0	1	0	0	0	1	0	1
06:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	0	0	0	1	0	1	0	0	0	1	0	2
07:00 AM	2	0	0	0	2	0	0	0	0	0	0	0	2
07:15 AM	1	0	0	0	1	0	0	0	0	0	0	0	1
07:30 AM	1	0	0	0	1	0	0	0	0	0	0	0	1
07:45 AM	3	0	0	0	3	0	1	0	0	0	1	0	4
Total	7	0	0	0	7	0	1	0	0	0	1	0	8
08:00 AM	3	0	0	0	3	0	1	0	0	0	1	0	4
08:15 AM	1	0	0	0	1	0	0	0	0	0	0	0	1
08:30 AM	2	0	0	0	2	0	0	0	0	0	0	0	2
08:45 AM	2	0	0	0	2	0	0	0	0	0	0	0	2
Total	8	0	0	0	8	0	1	0	0	0	1	0	9
Grand Total	16	0	0	0	16	0	3	0	0	0	3	0	19
Apprch %	100	0	0	0			100	0	0	0			
Total %	84.2	0	0	0	84.2	0	15.8	0	0	0	15.8	0	

	Sand Island Access Road Left = U-Turns Southbound				Westbound	Sand Island Access Road Left = U-Turns Northbound				Eastbound	
Start Time	Left	Thru	Right	App. Total	App. Total	Left	Thru	Right	App. Total	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 07:45 AM											
07:45 AM	**3**	0	0	**3**	0	**1**	0	0	**1**	0	**4**
08:00 AM	3	0	0	3	0	1	0	0	1	0	4
08:15 AM	1	0	0	1	0	0	0	0	0	0	1
08:30 AM	2	0	0	2	0	0	0	0	0	0	2
Total Volume	9	0	0	9	0	2	0	0	2	0	11
% App. Total	100	0	0			100	0	0			
PHF	.750	.000	.000	.750	.000	.500	.000	.000	.500	.000	.688

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu, Hi 96826

Counted By:DY, JK
Counters:TU-0653, TU-0654
Weather:Clear

File Name : SandAuiPah PM
Site Code : 00000004
Start Date : 1/29/2015
Page No : 1

Groups Printed- Unshifted

	Sand Island Access Road Southbound					Auiki Street Westbound					Sand Island Access Road Northbound					Pahounui Drive Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	21	104	9	2	136	39	6	13	0	58	1	182	112	0	295	15	16	0	0	31	520
03:15 PM	20	87	7	4	118	35	4	20	2	61	2	136	94	0	232	19	11	3	0	33	444
03:30 PM	18	80	4	7	109	43	7	30	2	82	4	147	101	1	253	16	14	0	0	30	474
03:45 PM	15	80	5	4	104	26	6	21	4	57	3	111	88	0	202	13	15	0	0	28	391
Total	74	351	25	17	467	143	23	84	8	258	10	576	395	1	982	63	56	3	0	122	1829
04:00 PM	20	69	3	2	94	37	3	33	1	74	0	108	94	0	202	18	19	4	1	42	412
04:15 PM	14	63	4	3	84	21	2	18	1	42	3	138	102	1	244	14	12	0	0	26	396
04:30 PM	15	62	1	1	79	29	3	23	1	56	1	91	73	1	166	19	10	0	0	29	330
04:45 PM	8	53	7	5	73	29	1	19	2	51	0	75	72	0	147	7	2	0	0	9	280
Total	57	247	15	11	330	116	9	93	5	223	4	412	341	2	759	58	43	4	1	106	1418
05:00 PM	12	59	7	1	79	25	3	15	2	45	0	103	95	2	200	14	10	0	0	24	348
05:15 PM	8	78	5	4	95	26	1	19	0	46	1	75	61	0	137	10	8	1	0	19	297
05:30 PM	5	61	8	4	78	36	2	10	2	50	1	73	67	0	141	9	9	1	0	19	288
05:45 PM	1	60	3	0	64	24	2	4	3	33	0	63	50	2	115	2	5	0	0	7	219
Total	26	258	23	9	316	111	8	48	7	174	2	314	273	4	593	35	32	2	0	69	1152
Grand Total	157	856	63	37	1113	370	40	225	20	655	16	1302	1009	7	2334	156	131	9	1	297	4399
Apprch %	14.1	76.9	5.7	3.3		56.5	6.1	34.4	3.1		0.7	55.8	43.2	0.3		52.5	44.1	3	0.3		
Total %	3.6	19.5	1.4	0.8	25.3	8.4	0.9	5.1	0.5	14.9	0.4	29.6	22.9	0.2	53.1	3.5	3	0.2	0	6.8	

	Sand Island Access Road Southbound				Auiki Street Westbound				Sand Island Access Road Northbound				Pahounui Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:00 PM																	
03:00 PM	**21**	**104**	**9**	**134**	39	6	13	58	1	**182**	**112**	**295**	15	**16**	0	31	**518**
03:15 PM	20	87	7	114	35	4	20	59	2	136	94	232	**19**	11	**3**	**33**	438
03:30 PM	18	80	4	102	**43**	**7**	**30**	**80**	**4**	147	101	252	16	14	0	30	464
03:45 PM	15	80	5	100	26	6	21	53	3	111	88	202	13	15	0	28	383
Total Volume	74	351	25	450	143	23	84	250	10	576	395	981	63	56	3	122	1803
% App. Total	16.4	78	5.6		57.2	9.2	33.6		1	58.7	40.3		51.6	45.9	2.5		
PHF	.881	.844	.694	.840	.831	.821	.700	.781	.625	.791	.882	.831	.829	.875	.250	.924	.870

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu, Hi 96826

Counted By:KW
Counters:D4-5671
Weather:Clear

File Name : Driveway No. 1 & 1A - AM
Site Code : 00000001
Start Date : 2/8/2015
Page No : 1

Groups Printed- Unshifted

	Driveway No. 1A Southbound					Hoonee Place Westbound					Driveway No. 1 Northbound					Hoonee Place Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
08:30 AM	0	0	31	0	31	0	0	0	20	20	0	0	0	0	0	3	0	3	12	18	69
08:45 AM	0	0	17	0	17	0	0	0	11	11	1	0	0	0	1	2	0	2	38	42	71
Total	0	0	48	0	48	0	0	0	31	31	1	0	0	0	1	5	0	5	50	60	140
09:00 AM	0	0	2	0	2	0	0	0	8	8	0	0	0	0	0	1	0	0	12	13	23
09:15 AM	0	0	1	0	1	0	0	0	6	6	0	0	0	0	0	0	0	0	19	19	26
09:30 AM	0	0	2	0	2	0	0	0	9	9	0	0	0	0	0	1	0	0	5	6	17
09:45 AM	0	0	2	0	2	0	0	0	4	4	0	0	0	0	0	0	0	1	5	6	12
Total	0	0	7	0	7	0	0	0	27	27	0	0	0	0	0	2	0	1	41	44	78
10:00 AM	0	0	0	0	0	0	0	0	11	11	0	0	0	0	0	0	0	0	4	4	15
10:15 AM	0	0	10	0	10	0	0	0	23	23	1	0	0	1	2	6	0	18	52	76	111
10:30 AM	0	0	30	0	30	0	0	0	14	14	2	0	0	0	2	5	0	11	31	47	93
10:45 AM	0	0	10	0	10	0	0	0	21	21	2	0	0	0	2	1	0	3	16	20	53
Total	0	0	50	0	50	0	0	0	69	69	5	0	0	1	6	12	0	32	103	147	272
11:00 AM	0	0	5	0	5	0	0	0	17	17	0	0	0	0	0	0	0	2	25	27	49
11:15 AM	0	0	1	0	1	0	0	0	7	7	0	0	0	0	0	0	0	1	15	16	24
Grand Total	0	0	111	0	111	0	0	0	151	151	6	0	0	1	7	19	0	41	234	294	563
Apprch %	0	0	100	0		0	0	0	100		85.7	0	0	14.3		6.5	0	13.9	79.6		
Total %	0	0	19.7	0	19.7	0	0	0	26.8	26.8	1.1	0	0	0.2	1.2	3.4	0	7.3	41.6	52.2	

	Driveway No. 1A Southbound				Hoonee Place Westbound				Driveway No. 1 Northbound				Hoonee Place Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 08:30 AM to 11:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 10:15 AM																	
10:15 AM	0	0	10	10	0	0	0	0	1	0	0	1	**6**	0	**18**	**24**	35
10:30 AM	0	0	**30**	**30**	0	0	0	0	**2**	0	0	**2**	5	0	11	16	**48**
10:45 AM	0	0	10	10	0	0	0	0	2	0	0	2	1	0	3	4	16
11:00 AM	0	0	5	5	0	0	0	0	0	0	0	0	0	0	2	2	7
Total Volume	0	0	55	55	0	0	0	0	5	0	0	5	12	0	34	46	106
% App. Total	0	0	100		0	0	0		100	0	0		26.1	0	73.9		
PHF	.000	.000	.458	.458	.000	.000	.000	.000	.625	.000	.000	.625	.500	.000	.472	.479	.552

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu, Hi 96826

Counted By:JJ
Counters:T-1841
Weather:Clear

File Name : Driveway 2 - Private Vehicle Count Into Parking Lot - Midday
Site Code : 00000001
Start Date : 2/8/2015
Page No : 1

Groups Printed- Unshifted

	Sand Island Access Road Right = RT Into Parking Lot Southbound					Westbound	Northbound	Eastbound	
Start Time	Left	Thru	Right	Peds	App. Total	App. Total	App. Total	App. Total	Int. Total
08:30 AM	0	0	6	0	6	0	0	0	6
08:45 AM	0	0	3	0	3	0	0	0	3
Total	0	0	9	0	9	0	0	0	9
09:00 AM	0	0	6	0	6	0	0	0	6
09:15 AM	0	0	2	0	2	0	0	0	2
09:30 AM	0	0	0	0	0	0	0	0	0
09:45 AM	0	0	1	0	1	0	0	0	1
Total	0	0	9	0	9	0	0	0	9
10:00 AM	0	0	1	0	1	0	0	0	1
10:15 AM	0	0	4	0	4	0	0	0	4
10:30 AM	0	0	2	0	2	0	0	0	2
10:45 AM	0	0	10	0	10	0	0	0	10
Total	0	0	17	0	17	0	0	0	17
11:00 AM	0	0	9	0	9	0	0	0	9
11:15 AM	1	0	6	0	7	0	0	0	7
Grand Total	1	0	50	0	51	0	0	0	51
Apprch %	2	0	98	0					
Total %	2	0	98	0	100	0	0	0	

	Sand Island Access Road Right = RT Into Parking Lot Southbound				Westbound	Northbound	Eastbound	
Start Time	Left	Thru	Right	App. Total	App. Total	App. Total	App. Total	Int. Total
Peak Hour Analysis From 08:30 AM to 11:15 AM - Peak 1 of 1								
Peak Hour for Entire Intersection Begins at 10:30 AM								
10:30 AM	0	0	2	2	0	0	0	2
10:45 AM	0	0	**10**	**10**	0	0	0	**10**
11:00 AM	0	0	9	9	0	0	0	9
11:15 AM	**1**	0	6	7	0	0	0	7
Total Volume	1	0	27	28	0	0	0	28
% App. Total	3.6	0	96.4					
PHF	.250	.000	.675	.700	.000	.000	.000	.700

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu, Hi 96826

Counted By:JJ
Counters:T-1841
Weather:Clear

File Name : Driveway 2 - Shuttle Bus Count - Midday
Site Code : 00000001
Start Date : 2/8/2015
Page No : 1

Groups Printed- Unshifted

	Sand Island Access Road Right = RT Into Drop-Off Area Southbound				Westbound	Northbound	Eastbound	
Start Time	Left	Thru	Right	Peds	App. Total	App. Total	App. Total	App. Total	Int. Total
08:30 AM	0	0	12	0	12	0	0	0	12
08:45 AM	0	0	8	0	8	0	0	0	8
Total	0	0	20	0	20	0	0	0	20
09:00 AM	0	0	9	0	9	0	0	0	9
09:15 AM	0	0	10	0	10	0	0	0	10
09:30 AM	0	0	8	0	8	0	0	0	8
09:45 AM	0	0	5	0	5	0	0	0	5
Total	0	0	32	0	32	0	0	0	32
10:00 AM	0	0	10	0	10	0	0	0	10
10:15 AM	0	0	9	0	9	0	0	0	9
10:30 AM	0	0	9	0	9	0	0	0	9
10:45 AM	0	0	10	0	10	0	0	0	10
Total	0	0	38	0	38	0	0	0	38
11:00 AM	0	0	8	0	8	0	0	0	8
11:15 AM	0	0	9	0	9	0	0	0	9
Grand Total	0	0	107	0	107	0	0	0	107
Apprch %	0	0	100	0					
Total %	0	0	100	0	100	0	0	0	

	Sand Island Access Road Right = RT Into Drop-Off Area Southbound				Westbound	Northbound	Eastbound	
Start Time	Left	Thru	Right	App. Total	App. Total	App. Total	App. Total	Int. Total
Peak Hour Analysis From 08:30 AM to 11:15 AM - Peak 1 of 1								
Peak Hour for Entire Intersection Begins at 08:30 AM								
08:30 AM	0	0	**12**	**12**	0	0	0	**12**
08:45 AM	0	0	8	8	0	0	0	8
09:00 AM	0	0	9	9	0	0	0	9
09:15 AM	0	0	10	10	0	0	0	10
Total Volume	0	0	39	39	0	0	0	39
% App. Total	0	0	100					
PHF	.000	.000	.813	.813	.000	.000	.000	.813

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu, Hi 96826

Counted By:JJ
Counters:T-1841
Weather:Clear

File Name : Driveway 2 - Private Vehicle Count At Drop-Off Area - Midday
Site Code : 00000001
Start Date : 2/8/2015
Page No : 1

Groups Printed- Unshifted

	Sand Island Access Road Right = RT Into Drop-Off Area Southbound				Westbound	Northbound	Eastbound	
Start Time	Left	Thru	Right	Peds	App. Total	App. Total	App. Total	App. Total	Int. Total
08:30 AM	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0
09:00 AM	0	0	2	0	2	0	0	0	2
09:15 AM	0	0	0	0	0	0	0	0	0
09:30 AM	0	0	0	0	0	0	0	0	0
09:45 AM	0	0	0	0	0	0	0	0	0
Total	0	0	2	0	2	0	0	0	2
10:00 AM	0	0	1	0	1	0	0	0	1
10:15 AM	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0
Total	0	0	1	0	1	0	0	0	1
11:00 AM	0	0	0	0	0	0	0	0	0
11:15 AM	1	0	1	0	2	0	0	0	2
Grand Total	1	0	4	0	5	0	0	0	5
Apprch %	20	0	80	0					
Total %	20	0	80	0	100	0	0	0	

	Sand Island Access Road Right = RT Into Drop-Off Area Southbound				Westbound	Northbound	Eastbound	
Start Time	Left	Thru	Right	App. Total	App. Total	App. Total	App. Total	Int. Total
Peak Hour Analysis From 08:30 AM to 11:15 AM - Peak 1 of 1								
Peak Hour for Entire Intersection Begins at 08:30 AM								
08:30 AM	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0
09:00 AM	0	0	**2**	**2**	0	0	0	**2**
09:15 AM	0	0	0	0	0	0	0	0
Total Volume	0	0	2	2	0	0	0	2
% App. Total	0	0	100					
PHF	.000	.000	.250	.250	.000	.000	.000	.250

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu, Hi 96826

Counted By:JJ
Counters:T-1839
Weather:Clear

File Name : Driveway No. 3 AM - Shuttle Bus Count
Site Code : 00000001
Start Date : 2/8/2015
Page No : 1

Groups Printed- Unshifted

	Southbound	Westbound	Northbound	Driveway No.3		Eastbound	(Shuttle Buses)		
Start Time	App. Total	App. Total	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
08:30 AM	0	0	0	0	0	10	0	10	10
08:45 AM	0	0	0	0	0	9	0	9	9
Total	0	0	0	0	0	19	0	19	19
09:00 AM	0	0	0	0	0	9	0	9	9
09:15 AM	0	0	0	0	0	10	0	10	10
09:30 AM	0	0	0	0	0	8	0	8	8
09:45 AM	0	0	0	0	0	6	0	6	6
Total	0	0	0	0	0	33	0	33	33
10:00 AM	0	0	0	0	0	6	0	6	6
10:15 AM	0	0	0	0	0	10	0	10	10
10:30 AM	0	0	0	0	0	10	0	10	10
10:45 AM	0	0	0	0	0	11	0	11	11
Total	0	0	0	0	0	37	0	37	37
11:00 AM	0	0	0	0	0	7	0	7	7
11:15 AM	0	0	0	0	0	10	0	10	10
Grand Total	0	0	0	0	0	106	0	106	106
Apprch %				0	0	100	0		
Total %	0	0	0	0	0	100	0	100	

	Southbound	Westbound	Northbound	Driveway No.3		Eastbound	(Shuttle Buses)		
Start Time	App. Total	App. Total	App. Total	Left	Thru	Right		App. Total	Int. Total
Peak Hour Analysis From 08:30 AM to 11:15 AM - Peak 1 of 1									
Peak Hour for Entire Intersection Begins at 08:30 AM									
08:30 AM	0	0	0	0	0	**10**		**10**	**10**
08:45 AM	0	0	0	0	0	9		9	9
09:00 AM	0	0	0	0	0	9		9	9
09:15 AM	0	0	0	0	0	10		10	10
Total Volume	0	0	0	0	0	38		38	38
% App. Total				0	0	100			
PHF	.000	.000	.000	.000	.000	.950		.950	.950

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu, Hi 96826

Counted By:GC, RJ
Counters:D4-3889, D4-5672
Weather:Clear

File Name : SandNim AM
Site Code : 00000001
Start Date : 2/8/2015
Page No : 1

Groups Printed- Unshifted

	Southbound	Nimitz Highway Westbound					Sand Island Access Road Northbound					Nimitz Highway Eastbound					
Start Time	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
08:30 AM	0	53	185	0	3	241	27	0	25	3	55	0	226	111	0	337	633
08:45 AM	0	33	147	0	2	182	25	0	21	4	50	0	218	90	0	308	540
Total	0	86	332	0	5	423	52	0	46	7	105	0	444	201	0	645	1173
09:00 AM	0	40	179	0	5	224	36	0	25	5	66	0	215	71	0	286	576
09:15 AM	0	22	197	0	6	225	34	0	16	7	57	0	250	59	0	309	591
09:30 AM	0	28	203	0	2	233	40	0	22	2	64	0	281	49	0	330	627
09:45 AM	0	25	210	0	2	237	28	0	17	3	48	0	235	44	0	279	564
Total	0	115	789	0	15	919	138	0	80	17	235	0	981	223	0	1204	2358
10:00 AM	0	26	219	0	8	253	45	0	34	5	84	0	246	68	0	314	651
10:15 AM	0	48	219	0	5	272	117	0	126	6	249	0	297	71	0	368	889
10:30 AM	0	48	243	0	7	298	95	0	70	10	175	0	352	95	0	447	920
10:45 AM	0	66	263	0	2	331	48	0	26	2	76	0	342	108	0	450	857
Total	0	188	944	0	22	1154	305	0	256	23	584	0	1237	342	0	1579	3317
11:00 AM	0	35	279	0	6	320	50	0	28	3	81	0	323	67	1	391	792
11:15 AM	0	36	307	0	3	346	50	0	23	4	77	0	310	67	0	377	800
Grand Total	0	460	2651	0	51	3162	595	0	433	54	1082	0	3295	900	1	4196	8440
Apprch %		14.5	83.8	0	1.6		55	0	40	5		0	78.5	21.4	0		
Total %	0	5.5	31.4	0	0.6	37.5	7	0	5.1	0.6	12.8	0	39	10.7	0	49.7	

	Southbound	Nimitz Highway Westbound				Sand Island Access Road Northbound				Nimitz Highway Eastbound				
Start Time	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 08:30 AM to 11:15 AM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 10:15 AM														
10:15 AM	0	48	219	0	267	**117**	0	**126**	**243**	0	297	71	368	878
10:30 AM	0	48	243	0	291	95	0	70	165	0	**352**	95	447	**903**
10:45 AM	0	**66**	263	0	**329**	48	0	26	74	0	342	**108**	**450**	853
11:00 AM	0	35	**279**	0	314	50	0	28	78	0	323	67	390	782
Total Volume	0	197	1004	0	1201	310	0	250	560	0	1314	341	1655	3416
% App. Total		16.4	83.6	0		55.4	0	44.6		0	79.4	20.6		
PHF	.000	.746	.900	.000	.913	.662	.000	.496	.576	.000	.933	.789	.919	.946

Wilson Okamoto Corporation
1907 S. Beretania Street, Suite 400
Honolulu, Hi 96826

Counted By:GC, RJ
Counters:D4-5671, D4-5675
Weather:Clear

File Name : SandNim AM - U-Turns
Site Code : 00000001
Start Date : 2/8/2015
Page No : 1

Groups Printed- Unshifted

	Southbound	Nimitz Highway Left = U-Turns Westbound					Sand Island Access Road Left = U-Turns Northbound					Nimitz Highway Eastbound					
Start Time	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30 AM	0	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0	2
09:45 AM	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	2
Total	0	1	0	0	0	1	3	0	0	0	3	0	0	0	0	0	4
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	1	0	0	0	1	3	0	0	0	3	0	0	0	0	0	4
Apprch %		100	0	0	0		100	0	0	0		0	0	0	0		
Total %	0	25	0	0	0	25	75	0	0	0	75	0	0	0	0	0	

	Southbound	Nimitz Highway Left = U-Turns Westbound				Sand Island Access Road Left = U-Turns Northbound				Nimitz Highway Eastbound				
Start Time	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 08:30 AM to 11:15 AM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 09:00 AM														
09:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30 AM	0	**1**	0	0	**1**	1	0	0	1	0	0	0	0	**2**
09:45 AM	0	0	0	0	0	**2**	0	0	**2**	0	0	0	0	2
Total Volume	0	1	0	0	1	3	0	0	3	0	0	0	0	4
% App. Total		100	0	0		100	0	0		0	0	0		
PHF	.000	.250	.000	.000	.250	.375	.000	.000	.375	.000	.000	.000	.000	.500

Wilson Okamoto Corporation
1907 S. Beretania Street, Suite 400
Honolulu, Hi 96826

Counted By:AC, KC
Counters:TU-0654, TU-0653
Weather:Clear

File Name : SandHoo AM
Site Code : 00000002
Start Date : 2/8/2015
Page No : 1

Groups Printed- Unshifted

	Sand Island Access Road Southbound					Y. Hata Driveway Westbound					Sand Island Access Road Northbound					Hoonee Place Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
08:30 AM	0	130	19	16	165	0	0	0	0	0	2	58	0	24	84	5	0	5	4	14	263
08:45 AM	0	98	25	13	136	0	0	0	0	0	3	39	0	13	55	7	0	6	4	17	208
Total	0	228	44	29	301	0	0	0	0	0	5	97	0	37	139	12	0	11	8	31	471
09:00 AM	0	77	20	8	105	0	0	0	0	0	4	49	0	6	59	14	0	11	4	29	193
09:15 AM	1	69	9	0	79	0	0	0	0	0	0	49	0	0	49	5	0	6	5	16	144
09:30 AM	0	63	7	0	70	0	0	0	0	0	2	58	0	0	60	3	0	2	3	8	138
09:45 AM	0	60	8	0	68	0	0	1	0	1	3	46	0	0	49	6	0	6	2	14	132
Total	1	269	44	8	322	0	0	1	0	1	9	202	0	6	217	28	0	25	14	67	607
10:00 AM	0	80	11	2	93	0	0	0	0	0	1	60	0	2	63	8	0	2	3	13	169
10:15 AM	0	100	24	32	156	0	0	0	0	0	4	181	0	48	233	51	0	7	9	67	456
10:30 AM	0	106	28	15	149	0	0	0	0	0	4	110	1	11	126	31	0	6	4	41	316
10:45 AM	0	119	38	11	168	0	0	0	0	0	1	74	1	12	88	9	0	16	8	33	289
Total	0	405	101	60	566	0	0	0	0	0	10	425	2	73	510	99	0	31	24	154	1230
11:00 AM	0	90	13	0	103	0	0	0	0	0	4	73	0	2	79	7	0	17	4	28	210
11:15 AM	1	78	13	3	95	0	0	0	0	0	1	63	0	5	69	4	0	10	8	22	186
Grand Total	2	1070	215	100	1387	0	0	1	0	1	29	860	2	123	1014	150	0	94	58	302	2704
Apprch %	0.1	77.1	15.5	7.2		0	0	100	0		2.9	84.8	0.2	12.1		49.7	0	31.1	19.2		
Total %	0.1	39.6	8	3.7	51.3	0	0	0	0	0	1.1	31.8	0.1	4.5	37.5	5.5	0	3.5	2.1	11.2	

	Sand Island Access Road Southbound				Y. Hata Driveway Westbound				Sand Island Access Road Northbound				Hoonee Place Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 08:30 AM to 11:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 10:15 AM																	
10:15 AM	0	100	24	124	0	0	0	0	**4**	**181**	0	**185**	**51**	0	7	**58**	**367**
10:30 AM	0	106	28	134	0	0	0	0	4	110	**1**	115	31	0	6	37	286
10:45 AM	0	**119**	**38**	**157**	0	0	0	0	1	74	1	76	9	0	16	25	258
11:00 AM	0	90	13	103	0	0	0	0	4	73	0	77	7	0	**17**	24	204
Total Volume	0	415	103	518	0	0	0	0	13	438	2	453	98	0	46	144	1115
% App. Total	0	80.1	19.9		0	0	0		2.9	96.7	0.4		68.1	0	31.9		
PHF	.000	.872	.678	.825	.000	.000	.000	.000	.813	.605	.500	.612	.480	.000	.676	.621	.760

Wilson Okamoto Corporation
1907 S. Beretania Street, Suite 400
Honolulu, Hi 96826

Counted By:AC, KC
Counters:TU-0654, TU-0653
Weather:Clear

File Name : SandHoo AM - U-Turns
Site Code : 00000002
Start Date : 2/8/2015
Page No : 1

Groups Printed- Unshifted

	Sand Island Access Road Left = U-Turns Southbound					Westbound	Sand Island Access Road Left = U-Turns Northbound					Eastbound	
Start Time	Left	Thru	Right	Peds	App. Total	App. Total	Left	Thru	Right	Peds	App. Total	App. Total	Int. Total
08:30 AM	2	0	0	0	2	0	4	0	0	0	4	0	6
08:45 AM	1	0	0	0	1	0	4	0	0	0	4	0	5
Total	3	0	0	0	3	0	8	0	0	0	8	0	11
09:00 AM	0	0	0	0	0	0	4	0	0	0	4	0	4
09:15 AM	0	0	0	0	0	0	5	0	0	0	5	0	5
09:30 AM	1	0	0	0	1	0	3	0	0	0	3	0	4
09:45 AM	2	0	0	0	2	0	2	0	0	0	2	0	4
Total	3	0	0	0	3	0	14	0	0	0	14	0	17
10:00 AM	1	0	0	0	1	0	3	0	0	0	3	0	4
10:15 AM	5	0	0	0	5	0	9	0	0	0	9	0	14
10:30 AM	3	0	0	0	3	0	4	0	0	0	4	0	7
10:45 AM	3	0	0	0	3	0	8	0	0	0	8	0	11
Total	12	0	0	0	12	0	24	0	0	0	24	0	36
11:00 AM	0	0	0	0	0	0	4	0	0	0	4	0	4
11:15 AM	0	0	0	0	0	0	8	0	0	0	8	0	8
Grand Total	18	0	0	0	18	0	58	0	0	0	58	0	76
Apprch %	100	0	0	0			100	0	0	0			
Total %	23.7	0	0	0	23.7	0	76.3	0	0	0	76.3	0	

	Sand Island Access Road Left = U-Turns Southbound				Westbound	Sand Island Access Road Left = U-Turns Northbound				Eastbound	
Start Time	Left	Thru	Right	App. Total	App. Total	Left	Thru	Right	App. Total	App. Total	Int. Total
Peak Hour Analysis From 08:30 AM to 11:15 AM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 10:00 AM											
10:00 AM	1	0	0	1	0	3	0	0	3	0	4
10:15 AM	**5**	0	0	**5**	0	**9**	0	0	**9**	0	**14**
10:30 AM	3	0	0	3	0	4	0	0	4	0	7
10:45 AM	3	0	0	3	0	8	0	0	8	0	11
Total Volume	12	0	0	12	0	24	0	0	24	0	36
% App. Total	100	0	0			100	0	0			
PHF	.600	.000	.000	.600	.000	.667	.000	.000	.667	.000	.643

1907 S. Beretania Street, Suite 400
Honolulu, Hi 96826

Counted By:FS, CY
Counters:TU-0650, TU-0649
Weather:Clear

File Name : SandPah AM
Site Code : 00000003
Start Date : 2/8/2015
Page No : 1

Groups Printed- Unshifted

	Sand Island Access Road Southbound					Westbound	Sand Island Access Road Northbound					Pahounui Drive Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
08:30 AM	23	50	3	0	76	0	1	28	0	0	29	2	0	0	0	2	107
08:45 AM	35	39	14	1	89	0	0	29	0	0	29	0	0	1	1	2	120
Total	58	89	17	1	165	0	1	57	0	0	58	2	0	1	1	4	227
09:00 AM	31	54	10	11	106	0	2	41	0	0	43	1	0	1	1	3	152
09:15 AM	10	53	7	10	80	0	1	36	0	0	37	0	0	0	0	0	117
09:30 AM	10	46	4	4	64	0	0	48	0	2	50	1	0	0	4	5	119
09:45 AM	12	44	2	2	60	0	0	32	0	0	32	2	0	0	1	3	95
Total	63	197	23	27	310	0	3	157	0	2	162	4	0	1	6	11	483
10:00 AM	8	56	0	0	64	0	0	44	0	2	46	1	0	0	2	3	113
10:15 AM	37	71	0	19	127	0	0	61	0	6	67	16	0	2	2	20	214
10:30 AM	30	61	2	7	100	0	1	45	0	1	47	6	0	0	1	7	154
10:45 AM	47	48	11	1	107	0	0	38	0	0	38	3	0	0	1	4	149
Total	122	236	13	27	398	0	1	188	0	9	198	26	0	2	6	34	630
11:00 AM	24	57	10	20	111	0	0	52	0	1	53	2	0	2	2	6	170
11:15 AM	21	57	7	2	87	0	0	44	0	1	45	3	0	0	1	4	136
Grand Total	288	636	70	77	1071	0	5	498	0	13	516	37	0	6	16	59	1646
Apprch %	26.9	59.4	6.5	7.2			1	96.5	0	2.5		62.7	0	10.2	27.1		
Total %	17.5	38.6	4.3	4.7	65.1	0	0.3	30.3	0	0.8	31.3	2.2	0	0.4	1	3.6	

	Sand Island Access Road Southbound					Westbound	Sand Island Access Road Northbound					Pahounui Drive Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 08:30 AM to 11:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 10:15 AM																	
10:15 AM	37	**71**	0	19	**127**	0	0	**61**	0	**6**	**67**	**16**	0	**2**	**2**	**20**	**214**
10:30 AM	30	61	2	7	100	0	**1**	45	0	1	47	6	0	0	1	7	154
10:45 AM	**47**	48	**11**	1	107	0	0	38	0	0	38	3	0	0	1	4	149
11:00 AM	24	57	10	**20**	111	0	0	52	0	1	53	2	0	2	2	6	170
Total Volume	138	237	23	47	445	0	1	196	0	8	205	27	0	4	6	37	687
% App. Total	31	53.3	5.2	10.6			0.5	95.6	0	3.9		73	0	10.8	16.2		
PHF	.734	.835	.523	.588	.876	.000	.250	.803	.000	.333	.765	.422	.000	.500	.750	.463	.803

Wilson Okamoto Corporation
1907 S. Beretania Street, Suite 400
Honolulu, Hi 96826

Counted By:FS, CY
Counters:TU-0650, TU-0649
Weather:Clear

File Name : SandPah AM - U-Turns
Site Code : 00000003
Start Date : 2/8/2015
Page No : 1

Groups Printed- Unshifted

	Sand Island Access Road Left = U-Turns Southbound					Westbound	Sand Island Access Road Left = U-Turns Northbound					Eastbound	
Start Time	Left	Thru	Right	Peds	App. Total	App. Total	Left	Thru	Right	Peds	App. Total	App. Total	Int. Total
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	1	0	0	0	1	0	1	0	0	0	1	0	2
Total	1	0	0	0	1	0	1	0	0	0	1	0	2
09:00 AM	0	0	0	0	0	0	1	0	0	0	1	0	1
09:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30 AM	2	0	0	0	2	0	4	0	0	0	4	0	6
09:45 AM	0	0	0	0	0	0	1	0	0	0	1	0	1
Total	2	0	0	0	2	0	6	0	0	0	6	0	8
10:00 AM	0	0	0	0	0	0	2	0	0	0	2	0	2
10:15 AM	1	0	0	0	1	0	2	0	0	0	2	0	3
10:30 AM	1	0	0	0	1	0	1	0	0	0	1	0	2
10:45 AM	0	0	0	0	0	0	1	0	0	0	1	0	1
Total	2	0	0	0	2	0	6	0	0	0	6	0	8
11:00 AM	1	0	0	0	1	0	2	0	0	0	2	0	3
11:15 AM	0	0	0	0	0	0	1	0	0	0	1	0	1
Grand Total	6	0	0	0	6	0	16	0	0	0	16	0	22
Apprch %	100	0	0	0			100	0	0	0			
Total %	27.3	0	0	0	27.3	0	72.7	0	0	0	72.7	0	

	Sand Island Access Road Left = U-Turns Southbound				Westbound	Sand Island Access Road Left = U-Turns Northbound				Eastbound	
Start Time	Left	Thru	Right	App. Total	App. Total	Left	Thru	Right	App. Total	App. Total	Int. Total
Peak Hour Analysis From 08:30 AM to 11:15 AM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 09:30 AM											
09:30 AM	**2**	0	0	**2**	0	**4**	0	0	**4**	0	**6**
09:45 AM	0	0	0	0	0	1	0	0	1	0	1
10:00 AM	0	0	0	0	0	2	0	0	2	0	2
10:15 AM	1	0	0	1	0	2	0	0	2	0	3
Total Volume	3	0	0	3	0	9	0	0	9	0	12
% App. Total	100	0	0			100	0	0			
PHF	.375	.000	.000	.375	.000	.563	.000	.000	.563	.000	.500

Wilson Okamoto Corporation
1907 S. Beretania Street, Suite 400
Honolulu, Hi 96826

Counted By:JK, DY
Counters:TU-0651, TU-0652
Weather:Clear

File Name : SandPahAui AM
Site Code : 00000004
Start Date : 2/8/2015
Page No : 1

Groups Printed- Unshifted

	Sand Island Access Road Southbound					Auiki Street Westbound					Sand Island Access Road Northbound					Pahounui Drive Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
08:30 AM	2	36	1	0	39	19	0	6	0	25	0	19	20	0	39	0	2	0	0	2	105
08:45 AM	2	30	1	0	33	11	0	3	1	15	0	22	24	0	46	0	0	0	0	0	94
Total	4	66	2	0	72	30	0	9	1	40	0	41	44	0	85	0	2	0	0	2	199
09:00 AM	3	39	2	0	44	9	0	3	2	14	1	35	20	1	57	2	0	0	0	2	117
09:15 AM	2	40	3	0	45	12	0	0	0	12	0	31	22	1	54	1	3	2	0	6	117
09:30 AM	2	41	0	0	43	16	0	6	1	23	0	38	18	0	56	1	1	0	0	2	124
09:45 AM	0	34	0	0	34	20	0	6	1	27	0	33	21	0	54	0	0	0	0	0	115
Total	7	154	5	0	166	57	0	15	4	76	1	137	81	2	221	4	4	2	0	10	473
10:00 AM	1	47	1	0	49	22	1	4	1	28	0	41	19	0	60	0	1	0	0	1	138
10:15 AM	1	40	1	0	42	25	0	6	1	32	0	39	19	0	58	4	0	0	0	4	136
10:30 AM	5	46	0	0	51	22	0	5	0	27	0	38	18	0	56	0	0	1	0	1	135
10:45 AM	0	41	0	0	41	15	0	5	0	20	0	23	23	0	46	2	1	0	0	3	110
Total	7	174	2	0	183	84	1	20	2	107	0	141	79	0	220	6	2	1	0	9	519
11:00 AM	0	41	1	0	42	15	1	5	0	21	0	43	27	0	70	0	0	0	0	0	133
11:15 AM	2	51	0	0	53	22	0	1	1	24	1	37	18	0	56	0	2	1	0	3	136
Grand Total	20	486	10	0	516	208	2	50	8	268	2	399	249	2	652	10	10	4	0	24	1460
Apprch %	3.9	94.2	1.9	0		77.6	0.7	18.7	3		0.3	61.2	38.2	0.3		41.7	41.7	16.7	0		
Total %	1.4	33.3	0.7	0	35.3	14.2	0.1	3.4	0.5	18.4	0.1	27.3	17.1	0.1	44.7	0.7	0.7	0.3	0	1.6	

	Sand Island Access Road Southbound				Auiki Street Westbound				Sand Island Access Road Northbound				Pahounui Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 08:30 AM to 11:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 09:45 AM																	
09:45 AM	0	34	0	34	20	0	**6**	26	0	33	**21**	54	0	0	0	0	114
10:00 AM	1	**47**	**1**	49	22	**1**	4	27	0	**41**	19	**60**	0	**1**	0	1	**137**
10:15 AM	1	40	1	42	**25**	0	6	**31**	0	39	19	58	**4**	0	0	**4**	135
10:30 AM	**5**	46	0	**51**	22	0	5	27	0	38	18	56	0	0	**1**	1	135
Total Volume	7	167	2	176	89	1	21	111	0	151	77	228	4	1	1	6	521
% App. Total	4	94.9	1.1		80.2	0.9	18.9		0	66.2	33.8		66.7	16.7	16.7		
PHF	.350	.888	.500	.863	.890	.250	.875	.895	.000	.921	.917	.950	.250	.250	.250	.375	.951

Wilson Okamoto Corporation
1907 S. Beretania Street, Suite 400
Honolulu, Hi 96826

Counted By:JK, DY
Counters:TU-0651, TU-0652
Weather:Clear

File Name : SandPahAui AM - U-Turns
Site Code : 00000004
Start Date : 2/8/2015
Page No : 1

Groups Printed- Unshifted

	Sand Island Access Road Southbound					Westbound	Sand Island Access Road Northbound					Eastbound	
Start Time	Left	Thru	Right	Peds	App. Total	App. Total	Left	Thru	Right	Peds	App. Total	App. Total	Int. Total
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	1	0	0	0	1	0	0	0	0	0	0	0	1
Total	1	0	0	0	1	0	0	0	0	0	0	0	1
09:00 AM	2	0	0	0	2	0	0	0	0	0	0	0	2
09:15 AM	0	0	0	0	0	0	1	0	0	0	1	0	1
09:30 AM	1	0	0	0	1	0	2	0	0	0	2	0	3
09:45 AM	1	0	0	0	1	0	0	0	0	0	0	0	1
Total	4	0	0	0	4	0	3	0	0	0	3	0	7
10:00 AM	1	0	0	0	1	0	1	0	0	0	1	0	2
10:15 AM	1	0	0	0	1	0	0	0	0	0	0	0	1
10:30 AM	0	0	0	0	0	0	1	0	0	0	1	0	1
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	2	0	0	0	2	0	2	0	0	0	2	0	4
11:00 AM	0	0	0	0	0	0	1	0	0	0	1	0	1
11:15 AM	1	0	0	0	1	0	0	0	0	0	0	0	1
Grand Total	8	0	0	0	8	0	6	0	0	0	6	0	14
Apprch %	100	0	0	0			100	0	0	0			
Total %	57.1	0	0	0	57.1	0	42.9	0	0	0	42.9	0	

	Sand Island Access Road Southbound				Westbound	Sand Island Access Road Northbound				Eastbound	
Start Time	Left	Thru	Right	App. Total	App. Total	Left	Thru	Right	App. Total	App. Total	Int. Total
Peak Hour Analysis From 08:30 AM to 11:15 AM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 08:45 AM											
08:45 AM	1	0	0	1	0	0	0	0	0	0	1
09:00 AM	**2**	0	0	**2**	0	0	0	0	0	0	2
09:15 AM	0	0	0	0	0	1	0	0	1	0	1
09:30 AM	1	0	0	1	0	**2**	0	0	**2**	0	**3**
Total Volume	4	0	0	4	0	3	0	0	3	0	7
% App. Total	100	0	0			100	0	0			
PHF	.500	.000	.000	.500	.000	.375	.000	.000	.375	.000	.583

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu, Hi 96826

Counted By:HI
Counters:D4-5672
Weather:Clear

File Name : Paint Ball Lot AM - Private Vehicle Count
Site Code : 00000001
Start Date : 2/8/2015
Page No : 1

Groups Printed- Unshifted

	Southbound	Westbound	Paint Ball Lot Northbound					Nimitz Highway Eastbound					
Start Time	App. Total	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
08:30 AM	0	0	0	0	3	0	3	0	0	13	0	13	16
08:45 AM	0	0	0	0	2	0	2	0	0	23	0	23	25
Total	0	0	0	0	5	0	5	0	0	36	0	36	41
09:00 AM	0	0	0	0	0	0	0	0	0	14	0	14	14
09:15 AM	0	0	0	0	1	0	1	0	0	11	0	11	12
09:30 AM	0	0	0	0	1	0	1	0	0	2	0	2	3
09:45 AM	0	0	0	0	0	0	0	0	0	2	0	2	2
Total	0	0	0	0	2	0	2	0	0	29	0	29	31
10:00 AM	0	0	0	0	1	0	1	0	0	0	0	0	1
10:15 AM	0	0	0	0	7	0	7	0	0	12	0	12	19
10:30 AM	0	0	0	0	21	0	21	0	0	8	0	8	29
10:45 AM	0	0	0	0	18	0	18	0	0	21	0	21	39
Total	0	0	0	0	47	0	47	0	0	41	0	41	88
11:00 AM	0	0	0	0	2	0	2	0	0	11	0	11	13
11:15 AM	0	0	0	0	1	0	1	0	0	4	0	4	5
Grand Total	0	0	0	0	57	0	57	0	0	121	0	121	178
Apprch %			0	0	100	0		0	0	100	0		
Total %	0	0	0	0	32	0	32	0	0	68	0	68	

	Southbound	Westbound	Paint Ball Lot Northbound				Nimitz Highway Eastbound				
Start Time	App. Total	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 08:30 AM to 11:15 AM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 10:15 AM											
10:15 AM	0	0	0	0	7	7	0	0	12	12	19
10:30 AM	0	0	0	0	**21**	**21**	0	0	8	8	29
10:45 AM	0	0	0	0	18	18	0	0	**21**	**21**	**39**
11:00 AM	0	0	0	0	2	2	0	0	11	11	13
Total Volume	0	0	0	0	48	48	0	0	52	52	100
% App. Total			0	0	100		0	0	100		
PHF	.000	.000	.000	.000	.571	.571	.000	.000	.619	.619	.641

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu, Hi 96826

Counted By:HI
Counters:5672
Weather:Clear

File Name : Paint Ball Lot AM - Shuttle Bus Count
Site Code : 00000001
Start Date : 2/8/2015
Page No : 1

Groups Printed- Unshifted

	Southbound	Westbound	Paint Ball Lot Northbound				(Shuttle Buses)	Nimitz Hiighway Eastbound				(Shuttle Buses)	
Start Time	App. Total	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
08:30 AM	0	0	0	0	4	0	4	0	0	4	0	4	8
08:45 AM	0	0	0	0	2	0	2	0	0	1	0	1	3
Total	0	0	0	0	6	0	6	0	0	5	0	5	11
09:00 AM	0	0	0	0	2	0	2	0	0	3	0	3	5
09:15 AM	0	0	0	0	2	0	2	0	0	3	0	3	5
09:30 AM	0	0	0	0	2	0	2	0	0	4	0	4	6
09:45 AM	0	0	0	0	1	0	1	0	0	1	0	1	2
Total	0	0	0	0	7	0	7	0	0	11	0	11	18
10:00 AM	0	0	0	0	4	0	4	0	0	1	0	1	5
10:15 AM	0	0	0	0	1	0	1	0	0	2	0	2	3
10:30 AM	0	0	0	0	3	0	3	0	0	5	0	5	8
10:45 AM	0	0	0	0	6	0	6	0	0	2	0	2	8
Total	0	0	0	0	14	0	14	0	0	10	0	10	24
11:00 AM	0	0	0	0	2	0	2	0	0	5	0	5	7
11:15 AM	0	0	0	0	3	0	3	0	0	1	0	1	4
Grand Total	0	0	0	0	32	0	32	0	0	32	0	32	64
Apprch %			0	0	100	0		0	0	100	0		
Total %	0	0	0	0	50	0	50	0	0	50	0	50	

	Southbound	Westbound	Paint Ball Lot Northbound			(Shuttle Buses)	Nimitz Hiighway Eastbound			(Shuttle Buses)	
Start Time	App. Total	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 08:30 AM to 11:15 AM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 10:30 AM											
10:30 AM	0	0	0	0	3	3	0	0	**5**	**5**	**8**
10:45 AM	0	0	0	0	**6**	**6**	0	0	2	2	8
11:00 AM	0	0	0	0	2	2	0	0	5	5	7
11:15 AM	0	0	0	0	3	3	0	0	1	1	4
Total Volume	0	0	0	0	14	14	0	0	13	13	27
% App. Total			0	0	100		0	0	100		
PHF	.000	.000	.000	.000	.583	.583	.000	.000	.650	.650	.844

Wilson Okamoto Corporation
1907 S. Beretania Street, Suite 400
Honolulu, Hi 96826

Counted By:PA
Counters:D4-5677
Weather:Clear

File Name : Puuhale Elem. School Lot AM - Private Vehicle Count
Site Code : 00000001
Start Date : 2/8/2015
Page No : 1

Groups Printed- Unshifted

	Puuhale Road Southbound					Puuhale Elem. School Lot Westbound					Puuhale Road Northbound					Eastbound	
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	App. Total	Int. Total
08:30 AM	10	0	0	0	10	0	0	1	0	1	0	0	3	0	3	0	14
08:45 AM	12	0	0	0	12	0	0	0	0	0	0	0	7	0	7	0	19
Total	22	0	0	0	22	0	0	1	0	1	0	0	10	0	10	0	33
09:00 AM	7	0	0	0	7	0	0	0	0	0	0	0	5	0	5	0	12
09:15 AM	5	0	0	0	5	0	0	0	0	0	0	0	2	0	2	0	7
09:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	0	4
09:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	0	3
Total	12	0	0	0	12	0	0	0	0	0	0	0	14	0	14	0	26
10:00 AM	2	0	0	0	2	1	0	0	0	1	0	0	0	0	0	0	3
10:15 AM	1	0	0	0	1	7	0	15	0	22	0	0	2	0	2	0	25
10:30 AM	5	0	0	0	5	6	0	10	0	16	0	0	3	0	3	0	24
10:45 AM	8	0	0	0	8	8	0	8	0	16	0	0	9	0	9	0	33
Total	16	0	0	0	16	22	0	33	0	55	0	0	14	0	14	0	85
11:00 AM	4	0	0	0	4	4	0	5	0	9	0	0	5	0	5	0	18
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	0	3
Grand Total	54	0	0	0	54	26	0	39	0	65	0	0	46	0	46	0	165
Apprch %	100	0	0	0		40	0	60	0		0	0	100	0			
Total %	32.7	0	0	0	32.7	15.8	0	23.6	0	39.4	0	0	27.9	0	27.9	0	

	Puuhale Road Southbound				Puuhale Elem. School Lot Westbound				Puuhale Road Northbound				Eastbound	
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	App. Total	Int. Total
Peak Hour Analysis From 08:30 AM to 11:15 AM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 10:15 AM														
10:15 AM	1	0	0	1	7	0	**15**	**22**	0	0	2	2	0	25
10:30 AM	5	0	0	5	6	0	10	16	0	0	3	3	0	24
10:45 AM	**8**	0	0	**8**	**8**	0	8	16	0	0	**9**	**9**	0	**33**
11:00 AM	4	0	0	4	4	0	5	9	0	0	5	5	0	18
Total Volume	18	0	0	18	25	0	38	63	0	0	19	19	0	100
% App. Total	100	0	0		39.7	0	60.3		0	0	100			
PHF	.563	.000	.000	.563	.781	.000	.633	.716	.000	.000	.528	.528	.000	.758

Wilson Okamoto Corporation
1907 S. Beretania Street, Suite 400
Honolulu, Hi 96826

Counted By:HY
Counters:D4-5673
Weather:Clear

File Name : Puuhale Elem. School Lot AM - Shuttle Bus Count
Site Code : 00000001
Start Date : 2/8/2015
Page No : 1

Groups Printed- Unshifted

	Puuhale Road (Shuttle Buses) Southbound					Puuhale Elementary School Lot (Shuttle Buses) Westbound					Puuhale Road (Shuttle Buses) Northbound					Eastbound	
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	App. Total	Int. Total
08:30 AM	0	0	0	0	0	3	0	0	0	3	0	0	3	0	3	0	6
08:45 AM	0	0	0	0	0	1	0	0	0	1	0	0	2	0	2	0	3
Total	0	0	0	0	0	4	0	0	0	4	0	0	5	0	5	0	9
09:00 AM	0	0	0	0	0	1	0	0	0	1	0	0	2	0	2	0	3
09:15 AM	0	0	0	0	0	3	0	0	0	3	0	0	3	0	3	0	6
09:30 AM	0	0	0	0	0	2	0	0	0	2	0	0	2	0	2	0	4
09:45 AM	0	0	0	0	0	2	0	0	0	2	0	0	2	0	2	0	4
Total	0	0	0	0	0	8	0	0	0	8	0	0	9	0	9	0	17
10:00 AM	0	0	0	0	0	2	0	0	0	2	0	0	1	0	1	0	3
10:15 AM	0	0	0	0	0	2	0	0	0	2	0	0	2	0	2	0	4
10:30 AM	0	0	0	0	0	2	0	0	0	2	0	0	2	0	2	0	4
10:45 AM	0	0	0	0	0	2	0	0	0	2	0	0	3	0	3	0	5
Total	0	0	0	0	0	8	0	0	0	8	0	0	8	0	8	0	16
11:00 AM	0	0	0	0	0	3	0	0	0	3	0	0	3	0	3	0	6
11:15 AM	0	0	0	0	0	2	0	0	0	2	0	0	3	0	3	0	5
Grand Total	0	0	0	0	0	25	0	0	0	25	0	0	28	0	28	0	53
Apprch %	0	0	0	0		100	0	0	0		0	0	100	0			
Total %	0	0	0	0	0	47.2	0	0	0	47.2	0	0	52.8	0	52.8	0	

	Puuhale Road (Shuttle Buses) Southbound				Puuhale Elementary School Lot (Shuttle Buses) Westbound				Puuhale Road (Shuttle Buses) Northbound				Eastbound	
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	App. Total	Int. Total
Peak Hour Analysis From 08:30 AM to 11:15 AM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 10:30 AM														
10:30 AM	0	0	0	0	2	0	0	2	0	0	2	2	0	4
10:45 AM	0	0	0	0	2	0	0	2	0	0	**3**	**3**	0	5
11:00 AM	0	0	0	0	**3**	0	0	**3**	0	0	3	3	0	**6**
11:15 AM	0	0	0	0	2	0	0	2	0	0	3	3	0	5
Total Volume	0	0	0	0	9	0	0	9	0	0	11	11	0	20
% App. Total	0	0	0		100	0	0		0	0	100			
PHF	.000	.000	.000	.000	.750	.000	.000	.750	.000	.000	.917	.917	.000	.833

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu, Hi 96826

Counted By:RS
Counters:D4-5677
Weather:Clear

File Name : New Hope Parking Lot Adjacent To Church - AM
Site Code : 00000002
Start Date : 2/8/2015
Page No : 1

Groups Printed- Unshifted

	Sand Island Access Road Southbound					Westbound	Sand Island Access Road Northbound					New Hope Parking Lot Adjacent To Church Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
08:30 AM	0	0	4	27	31	0	3	0	0	0	3	0	0	1	0	1	35
08:45 AM	0	0	1	11	12	0	1	0	0	0	1	0	0	1	0	1	14
Total	0	0	5	38	43	0	4	0	0	0	4	0	0	2	0	2	49
09:00 AM	0	0	6	13	19	0	1	0	0	0	1	1	0	0	0	1	21
09:15 AM	0	0	1	5	6	0	0	0	0	0	0	0	0	0	0	0	6
09:30 AM	0	0	1	2	3	0	0	0	0	0	0	0	0	0	0	0	3
09:45 AM	0	0	1	4	5	0	1	0	0	0	1	0	0	0	0	0	6
Total	0	0	9	24	33	0	2	0	0	0	2	1	0	0	0	1	36
10:00 AM	0	0	1	8	9	0	0	0	0	0	0	0	0	1	0	1	10
10:15 AM	0	0	11	46	57	0	12	0	0	0	12	2	0	8	0	10	79
10:30 AM	0	0	4	43	47	0	6	0	0	0	6	1	0	8	0	9	62
10:45 AM	0	0	2	25	27	0	0	0	0	0	0	0	0	3	0	3	30
Total	0	0	18	122	140	0	18	0	0	0	18	3	0	20	0	23	181
11:00 AM	0	0	7	11	18	0	0	0	0	0	0	3	0	1	0	4	22
11:15 AM	0	0	4	3	7	0	0	0	0	0	0	1	0	0	0	1	8
Grand Total	0	0	43	198	241	0	24	0	0	0	24	8	0	23	0	31	296
Apprch %	0	0	17.8	82.2			100	0	0	0		25.8	0	74.2	0		
Total %	0	0	14.5	66.9	81.4	0	8.1	0	0	0	8.1	2.7	0	7.8	0	10.5	

	Sand Island Access Road Southbound				Westbound	Sand Island Access Road Northbound				New Hope Parking Lot Adjacent To Church Eastbound				
Start Time	Left	Thru	Right	App. Total	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 08:30 AM to 11:15 AM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 10:15 AM														
10:15 AM	0	0	**11**	**11**	0	**12**	0	0	**12**	2	0	**8**	**10**	**33**
10:30 AM	0	0	4	4	0	6	0	0	6	1	0	8	9	19
10:45 AM	0	0	2	2	0	0	0	0	0	0	0	3	3	5
11:00 AM	0	0	7	7	0	0	0	0	0	**3**	0	1	4	11
Total Volume	0	0	24	24	0	18	0	0	18	6	0	20	26	68
% App. Total	0	0	100			100	0	0		23.1	0	76.9		
PHF	.000	.000	.545	.545	.000	.375	.000	.000	.375	.500	.000	.625	.650	.515

APPENDIX B

LEVEL OF SERVICE DEFINITIONS

LEVEL OF SERVICE DEFINITIONS

LEVEL-OF-SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS

Level of Service (LOS) for signalized intersections is defined in terms of delay, which is a measure of driver discomfort, frustration, fuel consumption, and increased travel time. Specifically, level-of-service (LOS) criteria are stated in terms of the average control delay per vehicle, typically a 15-min analysis period. The criteria are given in the following table.

Table 1: Level-of-Service Criteria for Signalized Intersections

Level of Service	Control Delay per Vehicle (sec/veh)
A	≤10.0
B	>10.0 and ≤20.0
C	>20.0 and ≤35.0
D	>35.0 and ≤55.0
E	>55.0 and ≤80.0
F	>80.0

Delay is a complex measure and depends on a number of variables, including the quality of progression, the cycle length, the green ratio, and the v/c ratio for the lane group.

Level of Service A describes operations with low control delay, up to 10 sec per vehicle. This level of service occurs when progression is extremely favorable and most vehicles arrive during the green phase. Many vehicles do not stop at all. Short cycle lengths may tend to contribute to low delay values.

Level of Service B describes operations with control delay greater than 10 and up to 20 sec per vehicle. This level generally occurs with good progression, short cycle lengths, or both. More vehicles stop than with LOS A, causing higher levels of delay.

Level of Service C describes operations with control delay greater than 20 and up to 35 sec per vehicle. These higher delays may result from only fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level. Cycle failure occurs when a given green phase does not serve queued vehicles and overflows occur. The number of vehicles stopping is significant at this level, though many still pass through the intersection without stopping.

Level of Service D describes operations with control delay greater than 35 and up to 55 sec per vehicle. At level of service D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.

"Highway Capacity Manual," Transportation Research Board, 2000.

Level of Service E describes operation with control delay greater than 55 and up to 80 sec per vehicle. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent.

Level of Service F describes operations with control delay in excess of 80 sec per vehicle. This level, considered to be unacceptable to most drivers, often occurs with oversaturation, that is, when arrival flow rates exceed the capacity lane groups. It may also occur at high v/c ratios with many individual cycle failures. Poor progression and long cycle lengths may also contribute significantly to high delay levels.

"Highway Capacity Manual," Transportation Research Board, 2000.

LEVEL OF SERVICE DEFINITIONS

LEVEL-OF-SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS

Level of Service (LOS) criteria are given in Table 1. As used here, control delay is defined as the total elapsed time from the time a vehicle stops at the end of the queue to the time required for the vehicle to travel from the last-in-queue position to the first-in-queue position, including deceleration of vehicles from free-flow speed to the speed of vehicles in the queue.

The average total delay for any particular minor movement is a function of the service rate or capacity of the approach and the degree of saturation. If the degree of saturation is greater than about 0.9, average control delay is significantly affected by the length of the analysis period.

Table 1: Level-of-Service Criteria for Unsignalized Intersections

Level of Service	Average Control Delay (Sec/Veh)
A	≤10.0
B	>10.0 and ≤15.0
C	>15.0 and ≤25.0
D	>25.0 and ≤35.0
E	>35.0 and ≤50.0
F	>50.0

"Highway Capacity Manual," Transportation Research Board, 2000.

APPENDIX C

CAPACITY ANALYSIS CALCULATIONS
EXISTING PEAK PERIOD TRAFFIC ANALYSIS

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	2832	1249	337	918	376	128
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	0.86	1.00	0.97	0.91	0.94	
Frt	1.00	0.85	1.00	1.00	0.96	
Flt Protected	1.00	1.00	0.95	1.00	0.96	
Satd. Flow (prot)	6408	1583	3433	5085	4871	
Flt Permitted	1.00	1.00	0.95	1.00	0.96	
Satd. Flow (perm)	6408	1583	3433	5085	4871	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	3147	1388	374	1020	418	142
RTOR Reduction (vph)	0	524	0	0	42	0
Lane Group Flow (vph)	3147	864	374	1020	518	0
Turn Type	NA	Perm	Prot	NA	Prot	
Protected Phases	2		1	6	4	
Permitted Phases		2				
Actuated Green, G (s)	90.2	90.2	20.4	115.6	19.3	
Effective Green, g (s)	90.2	90.2	20.4	115.6	19.3	
Actuated g/C Ratio	0.62	0.62	0.14	0.80	0.13	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	3988	985	483	4056	648	
v/s Ratio Prot	0.49		c0.11	0.20	c0.11	
v/s Ratio Perm		c0.55				
v/c Ratio	0.79	0.88	0.77	0.25	0.80	
Uniform Delay, d1	20.3	22.7	60.0	3.7	60.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.1	8.9	7.6	0.0	6.9	
Delay (s)	21.4	31.6	67.6	3.7	67.6	
Level of Service	C	C	E	A	E	
Approach Delay (s)	24.5			20.9	67.6	
Approach LOS	C			C	E	

Intersection Summary			
HCM 2000 Control Delay	27.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	144.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	95.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
10: Sand Island Access Rd & Hoonee Pl/Y. Hata Dwy

2/27/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	21	0	81	2	1	13	17	468	8	6	1372	118
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	22	0	86	2	1	14	18	498	9	6	1460	126
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											663	
pX, platoon unblocked												
vC, conflicting volume	1772	2015	730	1281	2011	253	1460			506		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1772	2015	730	1281	2011	253	1460			506		
tC, single (s)	*6.5	6.5	*5.9	*6.5	*5.5	*5.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	73	100	81	98	99	98	96			99		
cM capacity (veh/h)	83	55	451	139	99	803	459			1055		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	109	17	18	332	174	493	973	126
Volume Left	22	2	18	0	0	6	0	0
Volume Right	86	14	0	0	9	0	0	126
cSH	235	393	459	1700	1700	1055	1700	1700
Volume to Capacity	0.46	0.04	0.04	0.20	0.10	0.01	0.57	0.07
Queue Length 95th (ft)	56	3	3	0	0	0	0	0
Control Delay (s)	32.8	14.6	13.2	0.0	0.0	0.2	0.0	0.0
Lane LOS	D	B	B			A		
Approach Delay (s)	32.8	14.6	0.5			0.1		
Approach LOS	D	B						

Intersection Summary				
Average Delay	1.8			
Intersection Capacity Utilization	58.7%	ICU Level of Service	B	
Analysis Period (min)	15			

* User Entered Value

HCM Unsignalized Intersection Capacity Analysis
15: Sand Island Access Rd & Pahounui Dr

2/26/2015

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Volume (veh/h)	6	5	9	437	48	1181	130
Sign Control	Stop			Free		Free	
Grade	0%			0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	5	10	475	0	1284	141
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type				None		None	
Median storage veh)							
Upstream signal (ft)				938			
pX, platoon unblocked					0.00		
vC, conflicting volume	1611	712	1425		0		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1611	712	1425		0		
tC, single (s)	*5.8	*5.9	4.1		0.0		
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2		0.0		
p0 queue free %	96	99	98		0		
cM capacity (veh/h)	148	460	473		0		

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	12	10	238	238	856	569
Volume Left	7	10	0	0	0	0
Volume Right	5	0	0	0	0	141
cSH	214	473	1700	1700	1700	1700
Volume to Capacity	0.06	0.02	0.14	0.14	0.50	0.33
Queue Length 95th (ft)	4	2	0	0	0	0
Control Delay (s)	22.8	12.8	0.0	0.0	0.0	0.0
Lane LOS	C	B				
Approach Delay (s)	22.8	0.3			0.0	
Approach LOS	C					

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		

* User Entered Value

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	77	25	6	233	10	48	2	273	145	106	975	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.99			0.98		1.00	0.95		1.00	0.99	
Flt Protected		0.97			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1786			1751		1770	3355		1770	3510	
Flt Permitted		0.71			0.73		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1318			1326		1770	3355		1770	3510	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	83	27	6	251	11	52	2	294	156	114	1048	62
RTOR Reduction (vph)	0	2	0	0	8	0	0	75	0	0	4	0
Lane Group Flow (vph)	0	114	0	0	306	0	2	375	0	114	1106	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		19.5			19.5		0.9	21.8		7.9	28.8	
Effective Green, g (s)		19.5			19.5		0.9	21.8		7.9	28.8	
Actuated g/C Ratio		0.30			0.30		0.01	0.34		0.12	0.45	
Clearance Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		400			402		24	1139		217	1574	
v/s Ratio Prot							0.00	0.11		c0.06	c0.32	
v/s Ratio Perm		0.09			c0.23							
v/c Ratio		0.28			0.76		0.08	0.33		0.53	0.70	
Uniform Delay, d1		17.0			20.2		31.2	15.8		26.4	14.3	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.4			8.2		1.5	0.2		2.3	1.4	
Delay (s)		17.4			28.5		32.7	15.9		28.7	15.7	
Level of Service		B			C		C	B		C	B	
Approach Delay (s)		17.4			28.5			16.0			16.9	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	64.2	Sum of lost time (s)	15.0
Intersection Capacity Utilization	64.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
8: Sand Island Access Rd & N. Nimitz Hwy

2/26/2015

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	2080	503	217	2371	883	255
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	0.91	1.00	0.97	0.91	0.94	
Frt	1.00	0.85	1.00	1.00	0.97	
Flt Protected	1.00	1.00	0.95	1.00	0.96	
Satd. Flow (prot)	5085	1583	3433	5085	4887	
Flt Permitted	1.00	1.00	0.95	1.00	0.96	
Satd. Flow (perm)	5085	1583	3433	5085	4887	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	2144	519	224	2444	910	263
RTOR Reduction (vph)	0	167	0	0	36	0
Lane Group Flow (vph)	2144	352	224	2444	1137	0
Turn Type	NA	Perm	Prot	NA	Prot	
Protected Phases	2		1	6	4	
Permitted Phases		2				
Actuated Green, G (s)	77.2	77.2	13.6	95.8	38.8	
Effective Green, g (s)	77.2	77.2	13.6	95.8	38.8	
Actuated g/C Ratio	0.53	0.53	0.09	0.66	0.27	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	2714	845	322	3368	1311	
v/s Ratio Prot	c0.42		0.07	c0.48	c0.23	
v/s Ratio Perm		0.22				
v/c Ratio	0.79	0.42	0.70	0.73	0.87	
Uniform Delay, d1	27.2	20.2	63.5	15.9	50.4	
Progression Factor	1.00	1.00	1.00	1.00	0.99	
Incremental Delay, d2	1.6	0.3	6.4	0.8	6.3	
Delay (s)	28.8	20.5	69.9	16.7	56.5	
Level of Service	C	C	E	B	E	
Approach Delay (s)	27.2			21.1	56.5	
Approach LOS	C			C	E	

Intersection Summary			
HCM 2000 Control Delay	30.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	144.6	Sum of lost time (s)	15.0
Intersection Capacity Utilization	81.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
10: Sand Island Access Rd & Hoonee Pl/Y. Hata Dwy

2/27/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	89	0	65	1	0	13	14	998	11	8	636	101
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	96	0	70	1	0	14	15	1073	12	9	684	109
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											663	
pX, platoon unblocked												
vC, conflicting volume	1282	1816	342	1468	1810	542	684			1085		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1282	1816	342	1468	1810	542	684			1085		
tC, single (s)	*6.5	6.5	*5.9	*6.5	6.5	*5.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	43	100	90	99	100	98	98			99		
cM capacity (veh/h)	169	75	722	120	76	566	905			639		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	166	15	15	715	370	237	456	109
Volume Left	96	1	15	0	0	9	0	0
Volume Right	70	14	0	0	12	0	0	109
cSH	250	448	905	1700	1700	639	1700	1700
Volume to Capacity	0.66	0.03	0.02	0.42	0.22	0.01	0.27	0.06
Queue Length 95th (ft)	105	3	1	0	0	1	0	0
Control Delay (s)	43.8	13.3	9.0	0.0	0.0	0.6	0.0	0.0
Lane LOS	E	B	A			A		
Approach Delay (s)	43.8	13.3	0.1			0.2		
Approach LOS	E	B						

Intersection Summary				
Average Delay	3.7			
Intersection Capacity Utilization	50.2%	ICU Level of Service	A	
Analysis Period (min)	15			

* User Entered Value

HCM Unsignalized Intersection Capacity Analysis
15: Sand Island Access Rd & Pahounui Dr

2/26/2015

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Volume (veh/h)	24	8	15	813	45	564	21
Sign Control	Stop			Free		Free	
Grade	0%			0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	26	9	16	884	0	613	23
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type				None		None	
Median storage veh)							
Upstream signal (ft)				938			
pX, platoon unblocked					0.00		
vC, conflicting volume	1099	318	636		0		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1099	318	636		0		
tC, single (s)	*5.8	*5.9	4.1		0.0		
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2		0.0		
p0 queue free %	91	99	98		0		
cM capacity (veh/h)	279	743	943		0		

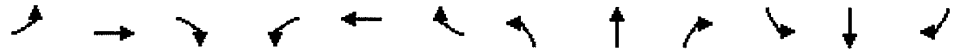
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	35	16	442	442	409	227
Volume Left	26	16	0	0	0	0
Volume Right	9	0	0	0	0	23
cSH	331	943	1700	1700	1700	1700
Volume to Capacity	0.11	0.02	0.26	0.26	0.24	0.13
Queue Length 95th (ft)	9	1	0	0	0	0
Control Delay (s)	17.2	8.9	0.0	0.0	0.0	0.0
Lane LOS	C	A				
Approach Delay (s)	17.2	0.2			0.0	
Approach LOS	C					

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	53.4%	ICU Level of Service	A
Analysis Period (min)	15		

* User Entered Value

HCM Signalized Intersection Capacity Analysis
11: Sand Island Access Rd & Pahounui Dr/Auiki St

2/26/2015



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	63	56	3	143	23	84	10	576	395	74	351	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		1.00			0.95		1.00	0.94		1.00	0.99	
Flt Protected		0.97			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1810			1729		1770	3323		1770	3504	
Flt Permitted		0.75			0.78		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1385			1380		1770	3323		1770	3504	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	68	61	3	155	25	91	11	626	429	80	382	27
RTOR Reduction (vph)	0	1	0	0	22	0	0	116	0	0	4	0
Lane Group Flow (vph)	0	131	0	0	249	0	11	939	0	80	405	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		17.9			17.9		1.1	29.1		6.9	34.9	
Effective Green, g (s)		17.9			17.9		1.1	29.1		6.9	34.9	
Actuated g/C Ratio		0.26			0.26		0.02	0.42		0.10	0.51	
Clearance Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		359			358		28	1403		177	1774	
v/s Ratio Prot							0.01	c0.28		c0.05	0.12	
v/s Ratio Perm		0.09			c0.18							
v/c Ratio		0.37			0.69		0.39	0.67		0.45	0.23	
Uniform Delay, d1		20.9			23.0		33.6	16.0		29.2	9.5	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.6			5.8		8.9	1.2		1.8	0.1	
Delay (s)		21.5			28.8		42.4	17.2		31.0	9.6	
Level of Service		C			C		D	B		C	A	
Approach Delay (s)		21.5			28.8			17.5			13.1	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	68.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1314	341	197	1004	310	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	0.91	1.00	0.97	0.91	0.94	
Frt	1.00	0.85	1.00	1.00	0.93	
Flt Protected	1.00	1.00	0.95	1.00	0.97	
Satd. Flow (prot)	5085	1583	3433	5085	4769	
Flt Permitted	1.00	1.00	0.95	1.00	0.97	
Satd. Flow (perm)	5085	1583	3433	5085	4769	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1383	359	207	1057	326	263
RTOR Reduction (vph)	0	175	0	0	103	0
Lane Group Flow (vph)	1383	184	207	1057	486	0
Turn Type	NA	Perm	Prot	NA	Prot	
Protected Phases	2		1	6	4	
Permitted Phases		2				
Actuated Green, G (s)	43.8	43.8	11.5	60.3	15.3	
Effective Green, g (s)	43.8	43.8	11.5	60.3	15.3	
Actuated g/C Ratio	0.51	0.51	0.13	0.70	0.18	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	2601	809	461	3582	852	
v/s Ratio Prot	c0.27		c0.06	0.21	c0.10	
v/s Ratio Perm		0.12				
v/c Ratio	0.53	0.23	0.45	0.30	0.57	
Uniform Delay, d1	14.0	11.5	34.1	4.7	32.1	
Progression Factor	1.00	1.00	1.00	1.00	0.98	
Incremental Delay, d2	0.2	0.1	0.7	0.0	0.9	
Delay (s)	14.2	11.7	34.8	4.8	32.2	
Level of Service	B	B	C	A	C	
Approach Delay (s)	13.7			9.7	32.2	
Approach LOS	B			A	C	

Intersection Summary			
HCM 2000 Control Delay	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	85.6	Sum of lost time (s)	15.0
Intersection Capacity Utilization	54.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
10: Sand Island Access Rd & Hoonee Pl/Y. Hata Dwy

2/27/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	98	0	46	0	0	0	24	438	2	25	415	103
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	107	0	50	0	0	0	26	476	2	27	451	112
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											663	
pX, platoon unblocked												
vC, conflicting volume	796	1036	226	809	1035	239	451			478		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	796	1036	226	809	1035	239	451			478		
tC, single (s)	*6.5	6.5	*5.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	68	100	94	100	100	100	98			97		
cM capacity (veh/h)	337	219	830	246	219	762	1106			1080		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	157	0	26	317	161	178	301	112
Volume Left	107	0	26	0	0	27	0	0
Volume Right	50	0	0	0	2	0	0	112
cSH	416	1700	1106	1700	1700	1080	1700	1700
Volume to Capacity	0.38	0.00	0.02	0.19	0.09	0.03	0.18	0.07
Queue Length 95th (ft)	43	0	2	0	0	2	0	0
Control Delay (s)	18.8	0.0	8.3	0.0	0.0	1.5	0.0	0.0
Lane LOS	C	A	A			A		
Approach Delay (s)	18.8	0.0	0.4			0.4		
Approach LOS	C	A						

Intersection Summary				
Average Delay	2.7			
Intersection Capacity Utilization	42.6%	ICU Level of Service	A	
Analysis Period (min)	15			

* User Entered Value

HCM Unsignalized Intersection Capacity Analysis
15: Sand Island Access Rd & Pahounui Dr

2/26/2015

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Volume (veh/h)	27	4	7	196	141	237	23
Sign Control	Stop			Free		Free	
Grade	0%			0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	29	4	8	213	0	258	25
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type				None		None	
Median storage veh)							
Upstream signal (ft)				938			
pX, platoon unblocked					0.00		
vC, conflicting volume	392	141	283		0		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	392	141	283		0		
tC, single (s)	*5.8	*5.9	4.1		0.0		
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2		0.0		
p0 queue free %	95	100	99		0		
cM capacity (veh/h)	651	917	1277		0		

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	34	8	107	107	172	111
Volume Left	29	8	0	0	0	0
Volume Right	4	0	0	0	0	25
cSH	676	1277	1700	1700	1700	1700
Volume to Capacity	0.05	0.01	0.06	0.06	0.10	0.07
Queue Length 95th (ft)	4	0	0	0	0	0
Control Delay (s)	10.6	7.8	0.0	0.0	0.0	0.0
Lane LOS	B	A				
Approach Delay (s)	10.6	0.3			0.0	
Approach LOS	B					

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	30.1%	ICU Level of Service	A
Analysis Period (min)	15		

* User Entered Value

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	1	1	77	1	21	2	143	87	7	168	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.98			0.97		1.00	0.94		1.00	1.00	
Flt Protected		0.96			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1765			1742		1770	3338		1770	3533	
Flt Permitted		0.76			0.77		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1393			1400		1770	3338		1770	3533	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	6	1	1	81	1	22	2	151	92	7	177	2
RTOR Reduction (vph)	0	1	0	0	15	0	0	51	0	0	1	0
Lane Group Flow (vph)	0	7	0	0	89	0	2	192	0	7	178	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		4.6			4.6		0.9	16.7		0.9	16.7	
Effective Green, g (s)		4.6			4.6		0.9	16.7		0.9	16.7	
Actuated g/C Ratio		0.12			0.12		0.02	0.45		0.02	0.45	
Clearance Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		172			173		42	1498		42	1586	
v/s Ratio Prot							0.00	c0.06		c0.00	0.05	
v/s Ratio Perm		0.01			c0.06							
v/c Ratio		0.04			0.52		0.05	0.13		0.17	0.11	
Uniform Delay, d1		14.4			15.3		17.7	6.0		17.8	5.9	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.1			2.6		0.5	0.0		1.9	0.0	
Delay (s)		14.5			17.8		18.2	6.0		19.7	6.0	
Level of Service		B			B		B	A		B	A	
Approach Delay (s)		14.5			17.8			6.1			6.5	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.21		
Actuated Cycle Length (s)	37.2	Sum of lost time (s)	15.0
Intersection Capacity Utilization	21.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

APPENDIX D

CAPACITY ANALYSIS CALCULATIONS
PROJECTED YEAR 2017 PEAK PERIOD TRAFFIC
ANALYSIS WITHOUT PROJECT

HCM Signalized Intersection Capacity Analysis
8: Sand Island Access Rd & N. Nimitz Hwy

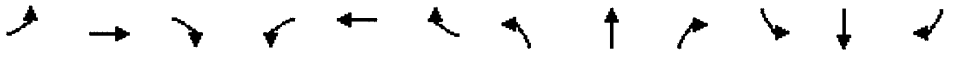
2/26/2015

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	2889	1249	337	936	376	128
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	0.86	1.00	0.97	0.91	0.94	
Frt	1.00	0.85	1.00	1.00	0.96	
Flt Protected	1.00	1.00	0.95	1.00	0.96	
Satd. Flow (prot)	6408	1583	3433	5085	4871	
Flt Permitted	1.00	1.00	0.95	1.00	0.96	
Satd. Flow (perm)	6408	1583	3433	5085	4871	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	3210	1388	374	1040	418	142
RTOR Reduction (vph)	0	524	0	0	42	0
Lane Group Flow (vph)	3210	864	374	1040	518	0
Turn Type	NA	Perm	Prot	NA	Prot	
Protected Phases	2		1	6	4	
Permitted Phases		2				
Actuated Green, G (s)	90.2	90.2	20.4	115.6	19.3	
Effective Green, g (s)	90.2	90.2	20.4	115.6	19.3	
Actuated g/C Ratio	0.62	0.62	0.14	0.80	0.13	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	3988	985	483	4056	648	
v/s Ratio Prot	0.50		c0.11	0.20	c0.11	
v/s Ratio Perm		c0.55				
v/c Ratio	0.80	0.88	0.77	0.26	0.80	
Uniform Delay, d1	20.7	22.7	60.0	3.7	60.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.2	8.9	7.6	0.0	6.9	
Delay (s)	21.9	31.6	67.6	3.8	67.6	
Level of Service	C	C	E	A	E	
Approach Delay (s)	24.9			20.6	67.6	
Approach LOS	C			C	E	

Intersection Summary			
HCM 2000 Control Delay	27.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	144.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	95.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
10: Sand Island Access Rd & Hoonee Pl/Y. Hata Dwy

2/27/2015



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	21	0	81	2	1	13	17	468	8	6	1372	118
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	22	0	86	2	1	14	18	498	9	6	1460	126
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											663	
pX, platoon unblocked												
vC, conflicting volume	1772	2015	730	1281	2011	253	1460			506		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1772	2015	730	1281	2011	253	1460			506		
tC, single (s)	*6.5	6.5	*5.9	*6.5	*5.5	*5.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	73	100	81	98	99	98	96			99		
cM capacity (veh/h)	83	55	451	139	99	803	459			1055		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	109	17	18	332	174	493	973	126
Volume Left	22	2	18	0	0	6	0	0
Volume Right	86	14	0	0	9	0	0	126
cSH	235	393	459	1700	1700	1055	1700	1700
Volume to Capacity	0.46	0.04	0.04	0.20	0.10	0.01	0.57	0.07
Queue Length 95th (ft)	56	3	3	0	0	0	0	0
Control Delay (s)	32.8	14.6	13.2	0.0	0.0	0.2	0.0	0.0
Lane LOS	D	B	B			A		
Approach Delay (s)	32.8	14.6	0.5			0.1		
Approach LOS	D	B						

Intersection Summary				
Average Delay	1.8			
Intersection Capacity Utilization	58.7%	ICU Level of Service	B	
Analysis Period (min)	15			

* User Entered Value

HCM Unsignalized Intersection Capacity Analysis
15: Sand Island Access Rd & Pahounui Dr

2/26/2015

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Volume (veh/h)	6	5	9	437	48	1181	130
Sign Control	Stop			Free		Free	
Grade	0%			0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	5	10	475	0	1284	141
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type				None		None	
Median storage veh)							
Upstream signal (ft)				938			
pX, platoon unblocked					0.00		
vC, conflicting volume	1611	712	1425		0		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1611	712	1425		0		
tC, single (s)	*5.8	*5.9	4.1		0.0		
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2		0.0		
p0 queue free %	96	99	98		0		
cM capacity (veh/h)	148	460	473		0		

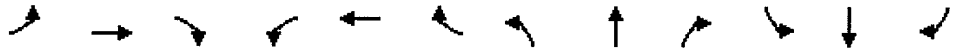
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	12	10	238	238	856	569
Volume Left	7	10	0	0	0	0
Volume Right	5	0	0	0	0	141
cSH	214	473	1700	1700	1700	1700
Volume to Capacity	0.06	0.02	0.14	0.14	0.50	0.33
Queue Length 95th (ft)	4	2	0	0	0	0
Control Delay (s)	22.8	12.8	0.0	0.0	0.0	0.0
Lane LOS	C	B				
Approach Delay (s)	22.8	0.3			0.0	
Approach LOS	C					

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		

* User Entered Value

HCM Signalized Intersection Capacity Analysis
11: Sand Island Access Rd & Pahounui Dr/Auiki St

2/26/2015



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	77	25	6	233	10	48	2	273	145	106	975	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.99			0.98		1.00	0.95		1.00	0.99	
Flt Protected		0.97			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1786			1751		1770	3355		1770	3510	
Flt Permitted		0.71			0.73		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1318			1326		1770	3355		1770	3510	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	83	27	6	251	11	52	2	294	156	114	1048	62
RTOR Reduction (vph)	0	2	0	0	8	0	0	75	0	0	4	0
Lane Group Flow (vph)	0	114	0	0	306	0	2	375	0	114	1106	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		19.5			19.5		0.9	21.8		7.9	28.8	
Effective Green, g (s)		19.5			19.5		0.9	21.8		7.9	28.8	
Actuated g/C Ratio		0.30			0.30		0.01	0.34		0.12	0.45	
Clearance Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		400			402		24	1139		217	1574	
v/s Ratio Prot							0.00	0.11		c0.06	c0.32	
v/s Ratio Perm		0.09			c0.23							
v/c Ratio		0.28			0.76		0.08	0.33		0.53	0.70	
Uniform Delay, d1		17.0			20.2		31.2	15.8		26.4	14.3	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.4			8.2		1.5	0.2		2.3	1.4	
Delay (s)		17.4			28.5		32.7	15.9		28.7	15.7	
Level of Service		B			C		C	B		C	B	
Approach Delay (s)		17.4			28.5			16.0			16.9	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	64.2	Sum of lost time (s)	15.0
Intersection Capacity Utilization	64.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
8: Sand Island Access Rd & N. Nimitz Hwy

2/26/2015

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	2122	503	217	2418	883	255
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	0.91	1.00	0.97	0.91	0.94	
Frt	1.00	0.85	1.00	1.00	0.97	
Flt Protected	1.00	1.00	0.95	1.00	0.96	
Satd. Flow (prot)	5085	1583	3433	5085	4887	
Flt Permitted	1.00	1.00	0.95	1.00	0.96	
Satd. Flow (perm)	5085	1583	3433	5085	4887	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	2188	519	224	2493	910	263
RTOR Reduction (vph)	0	164	0	0	35	0
Lane Group Flow (vph)	2188	355	224	2493	1138	0
Turn Type	NA	Perm	Prot	NA	Prot	
Protected Phases	2		1	6	4	
Permitted Phases		2				
Actuated Green, G (s)	78.5	78.5	13.7	97.2	38.6	
Effective Green, g (s)	78.5	78.5	13.7	97.2	38.6	
Actuated g/C Ratio	0.54	0.54	0.09	0.67	0.26	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	2737	852	322	3390	1293	
v/s Ratio Prot	c0.43		0.07	c0.49	c0.23	
v/s Ratio Perm		0.22				
v/c Ratio	0.80	0.42	0.70	0.74	0.88	
Uniform Delay, d1	27.3	20.0	64.0	15.9	51.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.7	0.3	6.4	0.9	7.1	
Delay (s)	29.0	20.4	70.4	16.7	58.3	
Level of Service	C	C	E	B	E	
Approach Delay (s)	27.3			21.2	58.3	
Approach LOS	C			C	E	

Intersection Summary			
HCM 2000 Control Delay	30.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	145.8	Sum of lost time (s)	15.0
Intersection Capacity Utilization	81.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
10: Sand Island Access Rd & Hoonee Pl/Y. Hata Dwy

2/27/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	89	0	65	1	0	13	14	998	11	8	636	101
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	96	0	70	1	0	14	15	1073	12	9	684	109
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											663	
pX, platoon unblocked												
vC, conflicting volume	1282	1816	342	1468	1810	542	684			1085		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1282	1816	342	1468	1810	542	684			1085		
tC, single (s)	*6.5	6.5	*5.9	*6.5	6.5	*5.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	43	100	90	99	100	98	98			99		
cM capacity (veh/h)	169	75	722	120	76	566	905			639		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	166	15	15	715	370	237	456	109
Volume Left	96	1	15	0	0	9	0	0
Volume Right	70	14	0	0	12	0	0	109
cSH	250	448	905	1700	1700	639	1700	1700
Volume to Capacity	0.66	0.03	0.02	0.42	0.22	0.01	0.27	0.06
Queue Length 95th (ft)	105	3	1	0	0	1	0	0
Control Delay (s)	43.8	13.3	9.0	0.0	0.0	0.6	0.0	0.0
Lane LOS	E	B	A			A		
Approach Delay (s)	43.8	13.3	0.1			0.2		
Approach LOS	E	B						

Intersection Summary				
Average Delay	3.7			
Intersection Capacity Utilization	50.2%	ICU Level of Service	A	
Analysis Period (min)	15			

* User Entered Value

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Volume (veh/h)	24	8	15	813	45	564	21
Sign Control	Stop			Free		Free	
Grade	0%			0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	26	9	16	884	0	613	23
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type				None		None	
Median storage veh)							
Upstream signal (ft)				938			
pX, platoon unblocked					0.00		
vC, conflicting volume	1099	318	636		0		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1099	318	636		0		
tC, single (s)	*5.8	*5.9	4.1		0.0		
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2		0.0		
p0 queue free %	91	99	98		0		
cM capacity (veh/h)	279	743	943		0		

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	35	16	442	442	409	227
Volume Left	26	16	0	0	0	0
Volume Right	9	0	0	0	0	23
cSH	331	943	1700	1700	1700	1700
Volume to Capacity	0.11	0.02	0.26	0.26	0.24	0.13
Queue Length 95th (ft)	9	1	0	0	0	0
Control Delay (s)	17.2	8.9	0.0	0.0	0.0	0.0
Lane LOS	C	A				
Approach Delay (s)	17.2	0.2			0.0	
Approach LOS	C					

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	53.4%	ICU Level of Service	A
Analysis Period (min)	15		

* User Entered Value

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	63	56	3	143	23	84	10	576	395	74	351	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		1.00			0.95		1.00	0.94		1.00	0.99	
Flt Protected		0.97			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1810			1729		1770	3323		1770	3504	
Flt Permitted		0.75			0.78		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1385			1380		1770	3323		1770	3504	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	68	61	3	155	25	91	11	626	429	80	382	27
RTOR Reduction (vph)	0	1	0	0	22	0	0	116	0	0	4	0
Lane Group Flow (vph)	0	131	0	0	249	0	11	939	0	80	405	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		17.9			17.9		1.1	29.1		6.9	34.9	
Effective Green, g (s)		17.9			17.9		1.1	29.1		6.9	34.9	
Actuated g/C Ratio		0.26			0.26		0.02	0.42		0.10	0.51	
Clearance Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		359			358		28	1403		177	1774	
v/s Ratio Prot							0.01	c0.28		c0.05	0.12	
v/s Ratio Perm		0.09			c0.18							
v/c Ratio		0.37			0.69		0.39	0.67		0.45	0.23	
Uniform Delay, d1		20.9			23.0		33.6	16.0		29.2	9.5	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.6			5.8		8.9	1.2		1.8	0.1	
Delay (s)		21.5			28.8		42.4	17.2		31.0	9.6	
Level of Service		C			C		D	B		C	A	
Approach Delay (s)		21.5			28.8			17.5			13.1	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	68.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1340	341	197	1024	310	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	0.91	1.00	0.97	0.91	0.94	
Frt	1.00	0.85	1.00	1.00	0.93	
Flt Protected	1.00	1.00	0.95	1.00	0.97	
Satd. Flow (prot)	5085	1583	3433	5085	4769	
Flt Permitted	1.00	1.00	0.95	1.00	0.97	
Satd. Flow (perm)	5085	1583	3433	5085	4769	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1411	359	207	1078	326	263
RTOR Reduction (vph)	0	173	0	0	104	0
Lane Group Flow (vph)	1411	186	207	1078	485	0
Turn Type	NA	Perm	Prot	NA	Prot	
Protected Phases	2		1	6	4	
Permitted Phases		2				
Actuated Green, G (s)	45.0	45.0	11.6	61.6	15.4	
Effective Green, g (s)	45.0	45.0	11.6	61.6	15.4	
Actuated g/C Ratio	0.52	0.52	0.13	0.71	0.18	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	2630	818	457	3600	844	
v/s Ratio Prot	c0.28		c0.06	0.21	c0.10	
v/s Ratio Perm		0.12				
v/c Ratio	0.54	0.23	0.45	0.30	0.58	
Uniform Delay, d1	14.0	11.5	34.8	4.7	32.8	
Progression Factor	1.00	1.00	1.00	1.00	0.96	
Incremental Delay, d2	0.2	0.1	0.7	0.0	1.0	
Delay (s)	14.2	11.6	35.5	4.8	32.6	
Level of Service	B	B	D	A	C	
Approach Delay (s)	13.7			9.7	32.6	
Approach LOS	B			A	C	

Intersection Summary			
HCM 2000 Control Delay	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	87.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	55.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
10: Sand Island Access Rd & Hoonee Pl/Y. Hata Dwy

2/27/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	98	0	46	0	0	0	24	438	2	25	415	103
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	107	0	50	0	0	0	26	476	2	27	451	112
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											663	
pX, platoon unblocked												
vC, conflicting volume	796	1036	226	809	1035	239	451			478		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	796	1036	226	809	1035	239	451			478		
tC, single (s)	*6.5	6.5	*5.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	68	100	94	100	100	100	98			97		
cM capacity (veh/h)	337	219	830	246	219	762	1106			1080		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	157	0	26	317	161	178	301	112
Volume Left	107	0	26	0	0	27	0	0
Volume Right	50	0	0	0	2	0	0	112
cSH	416	1700	1106	1700	1700	1080	1700	1700
Volume to Capacity	0.38	0.00	0.02	0.19	0.09	0.03	0.18	0.07
Queue Length 95th (ft)	43	0	2	0	0	2	0	0
Control Delay (s)	18.8	0.0	8.3	0.0	0.0	1.5	0.0	0.0
Lane LOS	C	A	A			A		
Approach Delay (s)	18.8	0.0	0.4			0.4		
Approach LOS	C	A						

Intersection Summary				
Average Delay	2.7			
Intersection Capacity Utilization	42.6%	ICU Level of Service	A	
Analysis Period (min)	15			

* User Entered Value

HCM Unsignalized Intersection Capacity Analysis
15: Sand Island Access Rd & Pahounui Dr

2/26/2015

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Volume (veh/h)	27	4	7	196	141	237	23
Sign Control	Stop			Free		Free	
Grade	0%			0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	29	4	8	213	0	258	25
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type				None		None	
Median storage veh)							
Upstream signal (ft)				938			
pX, platoon unblocked					0.00		
vC, conflicting volume	392	141	283		0		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	392	141	283		0		
tC, single (s)	*5.8	*5.9	4.1		0.0		
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2		0.0		
p0 queue free %	95	100	99		0		
cM capacity (veh/h)	651	917	1277		0		

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	34	8	107	107	172	111
Volume Left	29	8	0	0	0	0
Volume Right	4	0	0	0	0	25
cSH	676	1277	1700	1700	1700	1700
Volume to Capacity	0.05	0.01	0.06	0.06	0.10	0.07
Queue Length 95th (ft)	4	0	0	0	0	0
Control Delay (s)	10.6	7.8	0.0	0.0	0.0	0.0
Lane LOS	B	A				
Approach Delay (s)	10.6	0.3			0.0	
Approach LOS	B					

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	30.1%	ICU Level of Service	A
Analysis Period (min)	15		

* User Entered Value

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↰	↑↱		↰	↑↱	
Volume (vph)	6	1	1	77	1	21	2	143	87	7	168	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.98			0.97		1.00	0.94		1.00	1.00	
Flt Protected		0.96			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1765			1742		1770	3338		1770	3533	
Flt Permitted		0.76			0.77		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1393			1400		1770	3338		1770	3533	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	6	1	1	81	1	22	2	151	92	7	177	2
RTOR Reduction (vph)	0	1	0	0	15	0	0	51	0	0	1	0
Lane Group Flow (vph)	0	7	0	0	89	0	2	192	0	7	178	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		4.6			4.6		0.9	16.7		0.9	16.7	
Effective Green, g (s)		4.6			4.6		0.9	16.7		0.9	16.7	
Actuated g/C Ratio		0.12			0.12		0.02	0.45		0.02	0.45	
Clearance Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		172			173		42	1498		42	1586	
v/s Ratio Prot							0.00	c0.06		c0.00	0.05	
v/s Ratio Perm		0.01			c0.06							
v/c Ratio		0.04			0.52		0.05	0.13		0.17	0.11	
Uniform Delay, d1		14.4			15.3		17.7	6.0		17.8	5.9	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.1			2.6		0.5	0.0		1.9	0.0	
Delay (s)		14.5			17.8		18.2	6.0		19.7	6.0	
Level of Service		B			B		B	A		B	A	
Approach Delay (s)		14.5			17.8			6.1			6.5	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.21		
Actuated Cycle Length (s)	37.2	Sum of lost time (s)	15.0
Intersection Capacity Utilization	21.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

APPENDIX E

CAPACITY ANALYSIS CALCULATIONS
PROJECTED YEAR 2017 PEAK PERIOD TRAFFIC
ANALYSIS WITH PROJECT

HCM Signalized Intersection Capacity Analysis
8: Sand Island Access Rd & N. Nimitz Hwy

2/26/2015

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	2889	1249	337	936	376	128
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	0.86	1.00	0.97	0.91	0.94	
Frt	1.00	0.85	1.00	1.00	0.96	
Flt Protected	1.00	1.00	0.95	1.00	0.96	
Satd. Flow (prot)	6408	1583	3433	5085	4871	
Flt Permitted	1.00	1.00	0.95	1.00	0.96	
Satd. Flow (perm)	6408	1583	3433	5085	4871	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	3210	1388	374	1040	418	142
RTOR Reduction (vph)	0	524	0	0	42	0
Lane Group Flow (vph)	3210	864	374	1040	518	0
Turn Type	NA	Perm	Prot	NA	Prot	
Protected Phases	2		1	6	4	
Permitted Phases		2				
Actuated Green, G (s)	90.2	90.2	20.4	115.6	19.3	
Effective Green, g (s)	90.2	90.2	20.4	115.6	19.3	
Actuated g/C Ratio	0.62	0.62	0.14	0.80	0.13	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	3988	985	483	4056	648	
v/s Ratio Prot	0.50		c0.11	0.20	c0.11	
v/s Ratio Perm		c0.55				
v/c Ratio	0.80	0.88	0.77	0.26	0.80	
Uniform Delay, d1	20.7	22.7	60.0	3.7	60.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.2	8.9	7.6	0.0	6.9	
Delay (s)	21.9	31.6	67.6	3.8	67.6	
Level of Service	C	C	E	A	E	
Approach Delay (s)	24.9			20.6	67.6	
Approach LOS	C			C	E	

Intersection Summary			
HCM 2000 Control Delay	27.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	144.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	95.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
10: Sand Island Access Rd & Hoonee Pl/Y. Hata Dwy

2/27/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	21	0	81	2	1	13	17	468	8	6	1372	118
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	22	0	86	2	1	14	18	498	9	6	1460	126
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											663	
pX, platoon unblocked												
vC, conflicting volume	1772	2015	730	1281	2011	253	1460			506		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1772	2015	730	1281	2011	253	1460			506		
tC, single (s)	*6.5	6.5	*5.9	*6.5	*5.5	*5.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	73	100	81	98	99	98	96			99		
cM capacity (veh/h)	83	55	451	139	99	803	459			1055		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	109	17	18	332	174	493	973	126
Volume Left	22	2	18	0	0	6	0	0
Volume Right	86	14	0	0	9	0	0	126
cSH	235	393	459	1700	1700	1055	1700	1700
Volume to Capacity	0.46	0.04	0.04	0.20	0.10	0.01	0.57	0.07
Queue Length 95th (ft)	56	3	3	0	0	0	0	0
Control Delay (s)	32.8	14.6	13.2	0.0	0.0	0.2	0.0	0.0
Lane LOS	D	B	B			A		
Approach Delay (s)	32.8	14.6	0.5			0.1		
Approach LOS	D	B						

Intersection Summary				
Average Delay	1.8			
Intersection Capacity Utilization	58.7%	ICU Level of Service	B	
Analysis Period (min)	15			

* User Entered Value

HCM Unsignalized Intersection Capacity Analysis
15: Sand Island Access Rd & Pahounui Dr

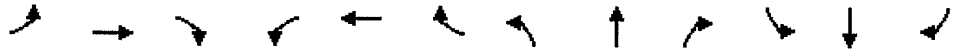
2/26/2015

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Volume (veh/h)	6	5	9	437	48	1181	130
Sign Control	Stop			Free		Free	
Grade	0%			0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	5	10	475	0	1284	141
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type				None		None	
Median storage veh)							
Upstream signal (ft)				938			
pX, platoon unblocked					0.00		
vC, conflicting volume	1611	712	1425		0		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1611	712	1425		0		
tC, single (s)	*5.8	*5.9	4.1		0.0		
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2		0.0		
p0 queue free %	96	99	98		0		
cM capacity (veh/h)	148	460	473		0		

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	12	10	238	238	856	569
Volume Left	7	10	0	0	0	0
Volume Right	5	0	0	0	0	141
cSH	214	473	1700	1700	1700	1700
Volume to Capacity	0.06	0.02	0.14	0.14	0.50	0.33
Queue Length 95th (ft)	4	2	0	0	0	0
Control Delay (s)	22.8	12.8	0.0	0.0	0.0	0.0
Lane LOS	C	B				
Approach Delay (s)	22.8	0.3			0.0	
Approach LOS	C					

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		

* User Entered Value



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	77	25	6	233	10	48	2	273	145	106	975	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.99			0.98		1.00	0.95		1.00	0.99	
Flt Protected		0.97			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1786			1751		1770	3355		1770	3510	
Flt Permitted		0.71			0.73		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1318			1326		1770	3355		1770	3510	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	83	27	6	251	11	52	2	294	156	114	1048	62
RTOR Reduction (vph)	0	2	0	0	8	0	0	75	0	0	4	0
Lane Group Flow (vph)	0	114	0	0	306	0	2	375	0	114	1106	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		19.5			19.5		0.9	21.8		7.9	28.8	
Effective Green, g (s)		19.5			19.5		0.9	21.8		7.9	28.8	
Actuated g/C Ratio		0.30			0.30		0.01	0.34		0.12	0.45	
Clearance Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		400			402		24	1139		217	1574	
v/s Ratio Prot							0.00	0.11		c0.06	c0.32	
v/s Ratio Perm		0.09			c0.23							
v/c Ratio		0.28			0.76		0.08	0.33		0.53	0.70	
Uniform Delay, d1		17.0			20.2		31.2	15.8		26.4	14.3	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.4			8.2		1.5	0.2		2.3	1.4	
Delay (s)		17.4			28.5		32.7	15.9		28.7	15.7	
Level of Service		B			C		C	B		C	B	
Approach Delay (s)		17.4			28.5			16.0			16.9	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	64.2	Sum of lost time (s)	15.0
Intersection Capacity Utilization	64.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
8: Sand Island Access Rd & N. Nimitz Hwy

2/26/2015

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↱	↰↰	↑↑↑	↰↰↑	
Volume (vph)	2122	503	217	2418	883	255
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	0.91	1.00	0.97	0.91	0.94	
Frt	1.00	0.85	1.00	1.00	0.97	
Flt Protected	1.00	1.00	0.95	1.00	0.96	
Satd. Flow (prot)	5085	1583	3433	5085	4887	
Flt Permitted	1.00	1.00	0.95	1.00	0.96	
Satd. Flow (perm)	5085	1583	3433	5085	4887	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	2188	519	224	2493	910	263
RTOR Reduction (vph)	0	164	0	0	35	0
Lane Group Flow (vph)	2188	355	224	2493	1138	0
Turn Type	NA	Perm	Prot	NA	Prot	
Protected Phases	2		1	6	4	
Permitted Phases		2				
Actuated Green, G (s)	78.5	78.5	13.7	97.2	38.6	
Effective Green, g (s)	78.5	78.5	13.7	97.2	38.6	
Actuated g/C Ratio	0.54	0.54	0.09	0.67	0.26	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	2737	852	322	3390	1293	
v/s Ratio Prot	c0.43		0.07	c0.49	c0.23	
v/s Ratio Perm		0.22				
v/c Ratio	0.80	0.42	0.70	0.74	0.88	
Uniform Delay, d1	27.3	20.0	64.0	15.9	51.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.7	0.3	6.4	0.9	7.1	
Delay (s)	29.0	20.4	70.4	16.7	58.3	
Level of Service	C	C	E	B	E	
Approach Delay (s)	27.3			21.2	58.3	
Approach LOS	C			C	E	

Intersection Summary			
HCM 2000 Control Delay	30.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	145.8	Sum of lost time (s)	15.0
Intersection Capacity Utilization	81.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
10: Sand Island Access Rd & Hoonee Pl/Y. Hata Dwy

2/27/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	89	0	65	1	0	13	14	998	11	8	636	101
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	96	0	70	1	0	14	15	1073	12	9	684	109
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											663	
pX, platoon unblocked												
vC, conflicting volume	1282	1816	342	1468	1810	542	684			1085		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1282	1816	342	1468	1810	542	684			1085		
tC, single (s)	*6.5	6.5	*5.9	*6.5	6.5	*5.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	43	100	90	99	100	98	98			99		
cM capacity (veh/h)	169	75	722	120	76	566	905			639		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	166	15	15	715	370	237	456	109
Volume Left	96	1	15	0	0	9	0	0
Volume Right	70	14	0	0	12	0	0	109
cSH	250	448	905	1700	1700	639	1700	1700
Volume to Capacity	0.66	0.03	0.02	0.42	0.22	0.01	0.27	0.06
Queue Length 95th (ft)	105	3	1	0	0	1	0	0
Control Delay (s)	43.8	13.3	9.0	0.0	0.0	0.6	0.0	0.0
Lane LOS	E	B	A			A		
Approach Delay (s)	43.8	13.3	0.1			0.2		
Approach LOS	E	B						

Intersection Summary				
Average Delay	3.7			
Intersection Capacity Utilization	50.2%	ICU Level of Service	A	
Analysis Period (min)	15			

* User Entered Value

HCM Unsignalized Intersection Capacity Analysis
15: Sand Island Access Rd & Pahounui Dr

2/26/2015

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Volume (veh/h)	24	8	15	813	45	564	21
Sign Control	Stop			Free		Free	
Grade	0%			0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	26	9	16	884	0	613	23
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type				None		None	
Median storage veh)							
Upstream signal (ft)				938			
pX, platoon unblocked					0.00		
vC, conflicting volume	1099	318	636		0		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1099	318	636		0		
tC, single (s)	*5.8	*5.9	4.1		0.0		
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2		0.0		
p0 queue free %	91	99	98		0		
cM capacity (veh/h)	279	743	943		0		

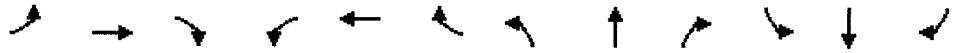
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	35	16	442	442	409	227
Volume Left	26	16	0	0	0	0
Volume Right	9	0	0	0	0	23
cSH	331	943	1700	1700	1700	1700
Volume to Capacity	0.11	0.02	0.26	0.26	0.24	0.13
Queue Length 95th (ft)	9	1	0	0	0	0
Control Delay (s)	17.2	8.9	0.0	0.0	0.0	0.0
Lane LOS	C	A				
Approach Delay (s)	17.2	0.2			0.0	
Approach LOS	C					

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	53.4%	ICU Level of Service	A
Analysis Period (min)	15		

* User Entered Value

HCM Signalized Intersection Capacity Analysis
11: Sand Island Access Rd & Pahounui Dr/Auiki St

2/26/2015



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	63	56	3	143	23	84	10	576	395	74	351	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		1.00			0.95		1.00	0.94		1.00	0.99	
Flt Protected		0.97			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1810			1729		1770	3323		1770	3504	
Flt Permitted		0.75			0.78		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1385			1380		1770	3323		1770	3504	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	68	61	3	155	25	91	11	626	429	80	382	27
RTOR Reduction (vph)	0	1	0	0	22	0	0	116	0	0	4	0
Lane Group Flow (vph)	0	131	0	0	249	0	11	939	0	80	405	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		17.9			17.9		1.1	29.1		6.9	34.9	
Effective Green, g (s)		17.9			17.9		1.1	29.1		6.9	34.9	
Actuated g/C Ratio		0.26			0.26		0.02	0.42		0.10	0.51	
Clearance Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		359			358		28	1403		177	1774	
v/s Ratio Prot							0.01	c0.28		c0.05	0.12	
v/s Ratio Perm		0.09			c0.18							
v/c Ratio		0.37			0.69		0.39	0.67		0.45	0.23	
Uniform Delay, d1		20.9			23.0		33.6	16.0		29.2	9.5	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.6			5.8		8.9	1.2		1.8	0.1	
Delay (s)		21.5			28.8		42.4	17.2		31.0	9.6	
Level of Service		C			C		D	B		C	A	
Approach Delay (s)		21.5			28.8			17.5			13.1	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	68.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1324	408	250	1024	377	303
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	0.91	1.00	0.97	0.91	0.94	
Frt	1.00	0.85	1.00	1.00	0.93	
Flt Protected	1.00	1.00	0.95	1.00	0.97	
Satd. Flow (prot)	5085	1583	3433	5085	4770	
Flt Permitted	1.00	1.00	0.95	1.00	0.97	
Satd. Flow (perm)	5085	1583	3433	5085	4770	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1394	429	263	1078	397	319
RTOR Reduction (vph)	0	212	0	0	103	0
Lane Group Flow (vph)	1394	217	263	1078	613	0
Turn Type	NA	Perm	Prot	NA	Prot	
Protected Phases	2		1	6	4	
Permitted Phases		2				
Actuated Green, G (s)	48.8	48.8	13.8	67.6	19.4	
Effective Green, g (s)	48.8	48.8	13.8	67.6	19.4	
Actuated g/C Ratio	0.50	0.50	0.14	0.70	0.20	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	2558	796	488	3543	954	
v/s Ratio Prot	c0.27		c0.08	0.21	c0.13	
v/s Ratio Perm		0.14				
v/c Ratio	0.54	0.27	0.54	0.30	0.64	
Uniform Delay, d1	16.5	13.9	38.6	5.7	35.6	
Progression Factor	1.00	1.00	1.00	1.00	0.98	
Incremental Delay, d2	0.2	0.2	1.1	0.0	1.5	
Delay (s)	16.7	14.1	39.8	5.7	36.5	
Level of Service	B	B	D	A	D	
Approach Delay (s)	16.1			12.4	36.5	
Approach LOS	B			B	D	

Intersection Summary			
HCM 2000 Control Delay	18.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	97.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	58.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
10: Sand Island Access Rd & Hoonee Pl/Y. Hata Dwy

2/27/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	278	0	46	0	0	0	24	378	2	25	355	283
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	302	0	50	0	0	0	26	411	2	27	386	308
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											663	
pX, platoon unblocked												
vC, conflicting volume	698	905	193	711	904	207	386			413		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	698	905	193	711	904	207	386			413		
tC, single (s)	*6.5	6.5	*5.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	22	100	94	100	100	100	98			98		
cM capacity (veh/h)	386	262	863	291	263	800	1169			1142		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	352	0	26	274	139	156	257	308
Volume Left	302	0	26	0	0	27	0	0
Volume Right	50	0	0	0	2	0	0	308
cSH	419	1700	1169	1700	1700	1142	1700	1700
Volume to Capacity	0.84	0.00	0.02	0.16	0.08	0.02	0.15	0.18
Queue Length 95th (ft)	201	0	2	0	0	2	0	0
Control Delay (s)	45.0	0.0	8.1	0.0	0.0	1.6	0.0	0.0
Lane LOS	E	A	A			A		
Approach Delay (s)	45.0	0.0	0.5			0.3		
Approach LOS	E	A						

Intersection Summary			
Average Delay	10.8		
Intersection Capacity Utilization	49.3%	ICU Level of Service	A
Analysis Period (min)	15		

* User Entered Value

HCM Unsignalized Intersection Capacity Analysis
15: Sand Island Access Rd & Pahounui Dr

2/26/2015

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Volume (veh/h)	27	4	7	196	81	237	23
Sign Control	Stop			Free		Free	
Grade	0%			0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	29	4	8	213	0	258	25
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type				None		None	
Median storage veh)							
Upstream signal (ft)				938			
pX, platoon unblocked					0.00		
vC, conflicting volume	392	141	283		0		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	392	141	283		0		
tC, single (s)	*5.8	*5.9	4.1		0.0		
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2		0.0		
p0 queue free %	95	100	99		0		
cM capacity (veh/h)	651	917	1277		0		

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	34	8	107	107	172	111
Volume Left	29	8	0	0	0	0
Volume Right	4	0	0	0	0	25
cSH	676	1277	1700	1700	1700	1700
Volume to Capacity	0.05	0.01	0.06	0.06	0.10	0.07
Queue Length 95th (ft)	4	0	0	0	0	0
Control Delay (s)	10.6	7.8	0.0	0.0	0.0	0.0
Lane LOS	B	A				
Approach Delay (s)	10.6	0.3			0.0	
Approach LOS	B					

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	28.4%	ICU Level of Service	A
Analysis Period (min)	15		

* User Entered Value

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	1	1	77	1	21	2	143	87	7	168	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.98			0.97		1.00	0.94		1.00	1.00	
Flt Protected		0.96			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1765			1742		1770	3338		1770	3533	
Flt Permitted		0.76			0.77		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1393			1400		1770	3338		1770	3533	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	6	1	1	81	1	22	2	151	92	7	177	2
RTOR Reduction (vph)	0	1	0	0	15	0	0	51	0	0	1	0
Lane Group Flow (vph)	0	7	0	0	89	0	2	192	0	7	178	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		4.6			4.6		0.9	16.7		0.9	16.7	
Effective Green, g (s)		4.6			4.6		0.9	16.7		0.9	16.7	
Actuated g/C Ratio		0.12			0.12		0.02	0.45		0.02	0.45	
Clearance Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		172			173		42	1498		42	1586	
v/s Ratio Prot							0.00	c0.06		c0.00	0.05	
v/s Ratio Perm		0.01			c0.06							
v/c Ratio		0.04			0.52		0.05	0.13		0.17	0.11	
Uniform Delay, d1		14.4			15.3		17.7	6.0		17.8	5.9	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.1			2.6		0.5	0.0		1.9	0.0	
Delay (s)		14.5			17.8		18.2	6.0		19.7	6.0	
Level of Service		B			B		B	A		B	A	
Approach Delay (s)		14.5			17.8			6.1			6.5	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.21		
Actuated Cycle Length (s)	37.2	Sum of lost time (s)	15.0
Intersection Capacity Utilization	21.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

APPENDIX C
SUPPLEMENTAL TRAFFIC INFORMATION

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New Hope Oahu & New Hope International
Traffic Management Plan
Update
March 12, 2018

In the original plan of the **New Hope Oahu Ministry Center Expansion**, the anticipated growth of the church was based on the church continuing to grow by 33.5%, under the senior pastor leadership of Pastor Wayne Cordeiro. Therefore, the plans for attendance were calculated and presented in the Traffic Management Plan as such.

However, since 2015, although Pastor Wayne Cordeiro continues as the senior pastor of the New Hope Oahu network of churches, Pastor Cordeiro relocated to Eugene, Oregon on a full-time basis, and visits New Hope Oahu at Sand Island, 4-6 times per year, since 2016.

There has been a transition in leadership with Pastor Jon Burgess, becoming the campus pastor of the New Hope Oahu Sand Island campus. The subsequent decrease in church attendance was anticipated, based on the founding leader's transition. The result has been a 21% decrease in attendance from January 2015 to December 2017. Therefore, relatively speaking, the number of "cars parked at peak" has decreased from 453 in 2015, to 358 in 2017.

Therefore, New Hope Oahu leadership made a conscious decision to downsize the expansion project, including the number of parking spaces in the new parking structure.

History & Projections of Stalls Available & Stalls Used

January 2015

- **587 Total Stalls Available**
- **714 Total Available Parking During Peak** (Incl. street parking)
- **453 Actual Cars Parked at Peak** (Sunday, 9:00 a.m. Service)

July 2015

- **675 Total Stalls Available**
- **802 Total Available Parking During Peak** (Incl. street parking)
- **484 Actual Cars Parked at Peak (**Sunday, 11:00 a.m. Service)

2017 Projections (Made in 2015)

- **676 Total Stalls Available**
- **803 Total Available Parking During Peak** (Incl. street parking)
- **605 Initially Projected as needed during peak (**25% increase)
- **358 Cars Actually Parked During Peak** (Attendance decrease)

2018 Currently

- **612 Total Stalls Available** (On property and close proximity lots)
- **802 Total Available Parking During Peak** (Incl. street parking)
- **358 Average # Cars Parking during Peak** (Attendance holding)

2020 Projections (Upon Completion of Project)

- **218 New Parking Structure Stalls**
- **802 Total Available Parking During Peak** (Incl. street parking)
- **376 Projected Actual Parking** (Hoping for a 5% increase in attendance)

The original five-story planned parking structure included **276 stalls.** The revised and down-sized parking structure will have **218 stalls.**

Sincerely Submitted,

John Tilton
Executive Pastor & Project Director
New Hope Oahu & New Hope International

APPENDIX D
STATE HISTORIC PRESRVATION DIVISION

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DAVID Y. IGE
GOVERNOR OF
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BOARD OF LAND AND NATURAL RESOURCES
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LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING
601 KAMOKILA BLVD, STE 555
KAPOLEI, HAWAII 96707

January 2, 2020

LOG NO: 2019.02252
DOC NO: 1912JF10
Architecture, Archaeology

Kathy Sokugawa, Acting Director
Department of Planning & Permitting
City & County of Honolulu
650 S. King Street
Honolulu, HI 96813
Via email: wcarvalho@honolulu.gov

Dear Ms. Sokugawa:

SUBJECT: **Chapter 6E-42 Historic Preservation Review**
290 Sand Island Access Road – Addition/ Alteration (A2019-02-0906; 0907)
290 Sand Island Access Road, Honolulu, HI 96819
Owner Name: New Hope International Ministries
Kalihi Ahupua'a, Kona Moku, Island of O'ahu
TMK: (1) 1-2-021:026

Thank you for the opportunity to comment on this request for Hawai'i Revised Statutes (HRS) Chapter 6E-42 review. The State Historic Preservation Division (SHPD) received this submittal on October 7, 2019. The submittal included the HRS 6E submittal form, building permit application, permit set, and photographs. The proposed scope of work includes constructing a new connected multi-story parking garage on the south side of the chapel buildingand updating the electrical, fire, mechanical, and plumbing systems. The proposed ground disturbance for construction of the garage includes trenching for footings and underground utility infrastructure.

Although the industrial warehouse building (1953) is defined as a historic property per §6E-2, HRS, it has diminished integrity and lacks historic significance.

The SHPD records indicate that the project area has been extensively impacted by prior construction. The USDA (Foote et al. 1972) identifies the soil as Fill lands (FL). Low potential exists for significant archaeological historic properties to be encountered.

Per §13-284-7, HAR, the project will have no effect on significant historic properties and therefore the SHPD's determination is **"no historic properties affected"** for the current project. Pursuant to HAR §13-284-7(e), when the SHPD agrees that the action will not affect any significant historic properties, this is the SHPD's written concurrence and historic preservation review ends. The historic preservation review process is ended. The permit issuance process may proceed.

Please attach to the permit: In the unlikely event that subsurface historic resources, including human skeletal remains, structural remains, cultural deposits, artifacts, sand deposits, or sink holes are identified during the demolition and/or construction work, cease work in the immediate vicinity of the find, protect the find from additional disturbance, and contact the State Historic Preservation Division, at (808) 692-8015.

Please contact Dr. Susan Lebo, Archaeology Branch Chief, at (808) 692-8019 or at Susan.A.Lebo@hawaii.gov regarding archaeological resources, or Julia Flauaus, Architectural Historian, at (808) 692-8029 or julia.flauaus@hawaii.gov regarding architectural resources or this letter.

Aloha,
Alan Downer

Alan S. Downer, PhD
Administrator, State Historic Preservation Division
Deputy State Historic Preservation Officer

cc: Clarence Izuo, c.izuo@aai-architects.com
Perry Tamayo, ptamayo@honolulu.gov
Kanani Padeken, kpadeken@honolulu.gov