From:	Eric Nakagawa
To:	Rsato@hhf.com
Cc:	Derrickson, Scott A; "Eric Nakagawa"
Subject:	HMP Expansion Project
Date:	Monday, October 22, 2018 3:58:54 PM
Attachments:	HMP Expansion comment to HHF Planners.pdf

Mr. Sato

Please find attached, my written concerns in regards to the Draft EIS for this project.

I have cc'd Mr. Scott Derrickson of the State Land Use Commission.

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October 19, 2018

HHF Planners
733 Bishop St., Suite 2590
Honolulu, HI 96813

Reference: Hawaiian Memorial Park Cemetery Expansion Project
Draft Environmental Impact Statement dated 08/22/2018

Dear HHF Planners:

I am a 55 year Kaneohe resident and have enjoyed the beauty of the hillside involved in this proposed expansion of Hawaiian Memorial Park (HMP). The Draft Environmental Impact Statement (DEIS) generally depicts this proposed expansion as having little visual impact to our community. However, I strongly disagree. There will be obvious visual impact from parts of Kaneohe as well as the views you see when entering Kaneohe from Likelike and H-3.

I am still concerned with the potential effects of Kaneohe Bay, but my major concern remains with the potential flooding of residential property downhill from the proposed expansion site.

In reading of the latest version of the DEIS document, it is not clear to me that the document satisfactorily addresses the additional rainwater that will be redirected towards the Pikoiloa Subdivision when a portion of the hillside top is cut down. This action will result in forcing additional rainwater that would have naturally drained away from the subdivision, to now be directed towards our homes. See Attachment 1 which is an excerpt from the report.

In order to mitigate flooding conditions, the report frequently interchanges the language of the use of detention and retention/detention basins. May I point out to you that these are two very different methods of flood control. Detention basins will generally not have any standing water during drier periods, as they detain and drain water at a controlled rate. The retention/detention basins will have standing water (retention portion) and an "overflow" (detention portion) component to drain water at elevated water levels. The success of either method is highly dependent on good maintenance. In addition, standing water will create safety hazards and a conducive environment for mosquitos and the health hazards they cause, as an example, our recent Zika virus outbreak.

I do not favor the method of having standing ponds above our homes. For my piece of mind during any rain activity, my family and community's safety is depending

on the hope that as water levels rise, there is adequate drainage capacity and proper maintenance to prevent water from overflowing and flooding into our back yards. Worst yet, to have a catastrophic occurrence due to a failure of a containment wall. We often see how Mainland communities have levies that are designed to hold back storm water fail, or our very own Kaloko dam incident, causing loss of life. The DEIS indicates possible locations of three (3) retention/detention basins, but no means of draining the site to these basins except for a few sub-terrain drainage lines. See attachments 2 and 3.

There are many issues brought on by the use of detention and retention/detention basins. I have attached a document by Delaware Riverkeeper Network, a non-profit organization that works to protect the Delaware River Watershed, which identifies concerns of detention basins from various resources, stating hazards and concerns associated with detention basins (retention/detention basins would be similar). This document even identifies the August 2005 drowning lawsuit of a 5-year old girl in Pearl City that lost her life due to clogged drain pipes that caused the detention basin to flood (page 5, Headlines, paragraph 7). See Attachment 4.

I do acknowledge that the latest DEIS is surpassing the City and County of Honolulu's Drainage System Standards for a 10-year storm criteria for areas less than 100 acres. However, in our most recent rainfall brought on by storm system Olivia, the Honolulu Board of Water Supply had to bring in pumps as a proactive measure to keep the water level of the Nuuanu Reservoir #1 from breeching its banks. The DEIS does not address any action plan should we have an event that surpasses the 1 hour, 100-year storm that it is being designed for.

On behalf of the Pikoiloa community, please do the right thing and not gamble with our family's lives or our homes.

Sincerely,

Eric S. Nakagawa and Family

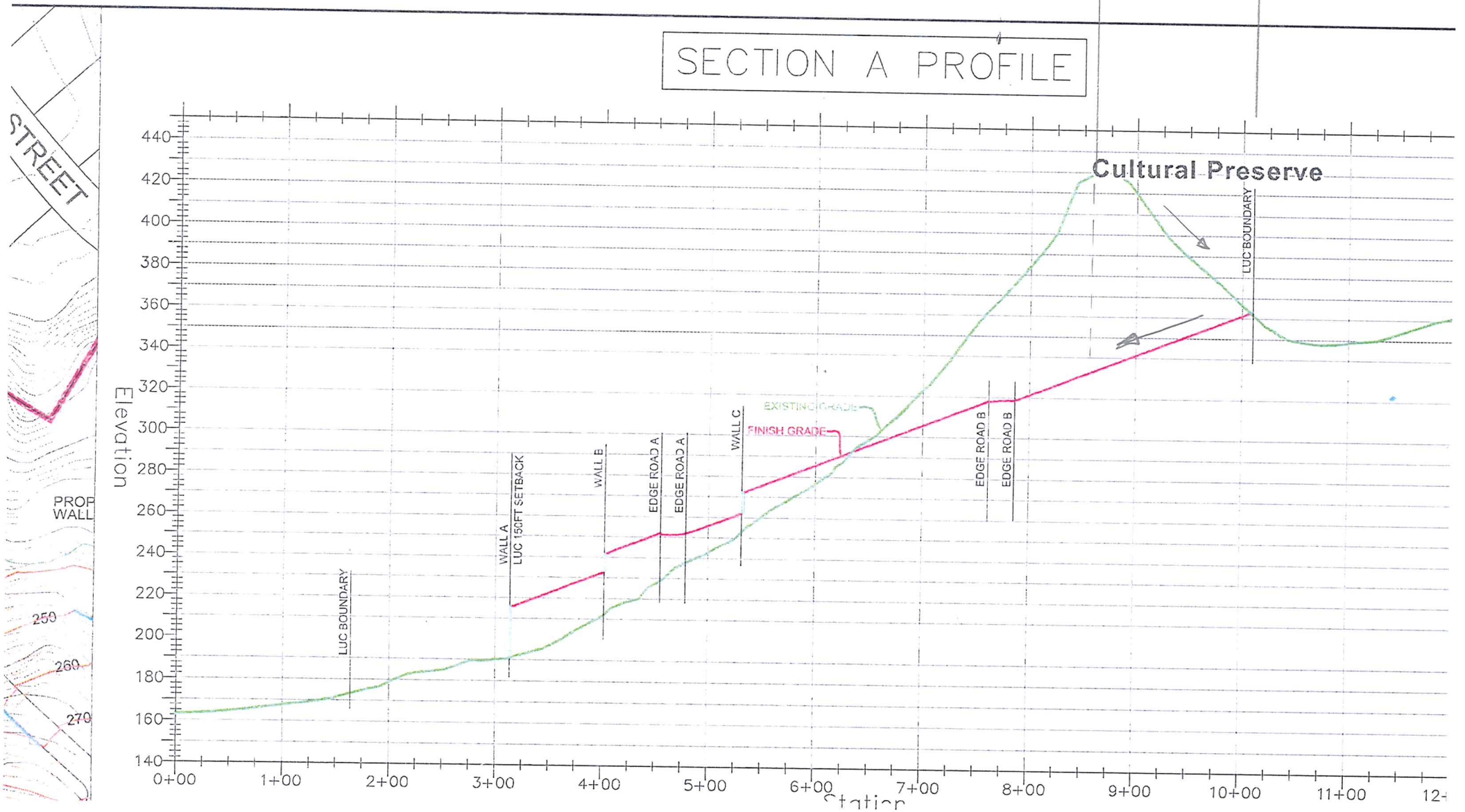
cc: Mr. Scott Derrickson
State of Hawaii
Land Use Commission, State of Hawaii
Department of Business, Economic Development and Tourism

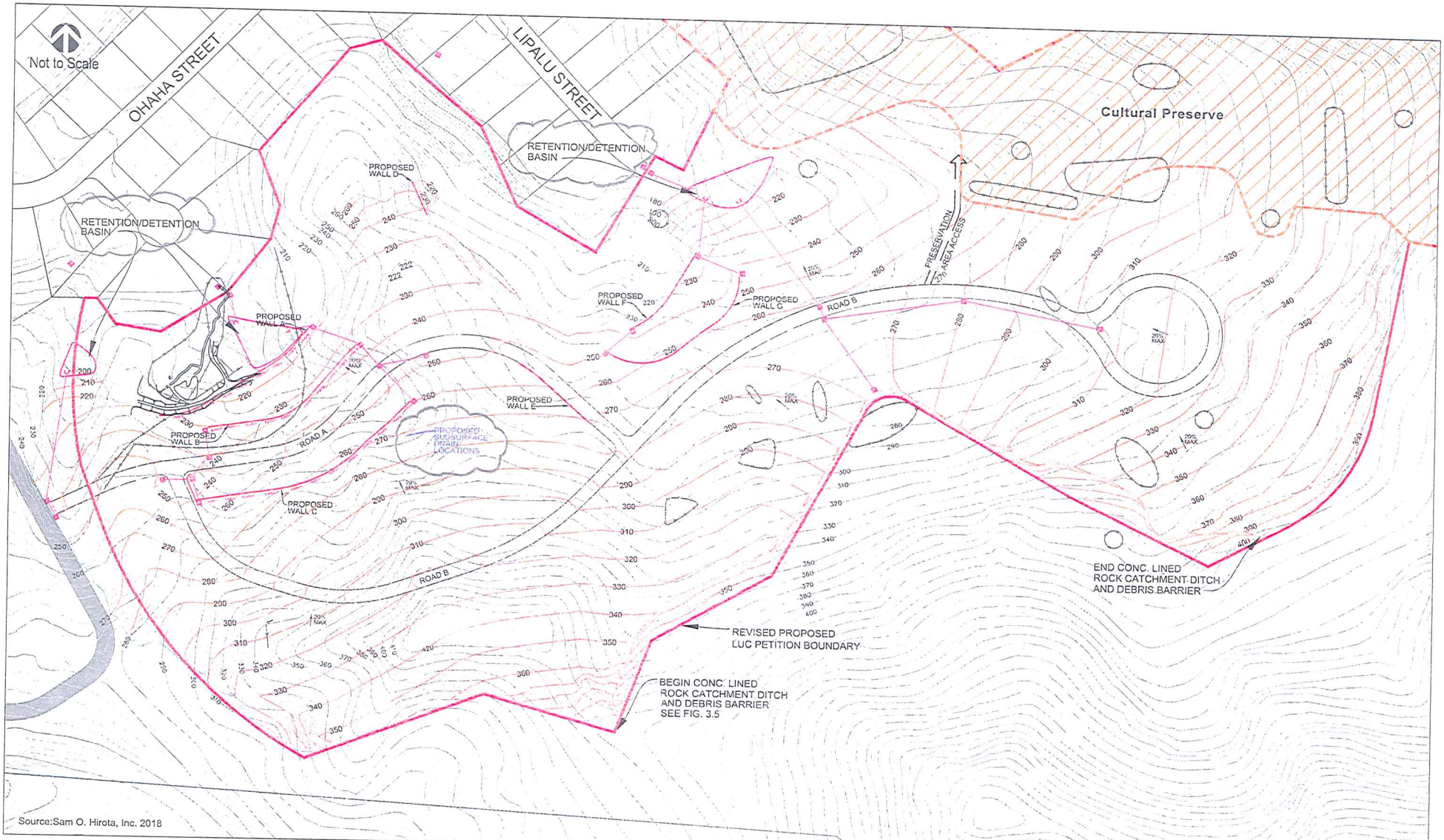
ATTACHMENT 1

pg 2-27 of DEIS

THIS IS THE PORTION OF EXCAVATION WHERE RAINWATER WOULD FLOW AWAY FROM SUBDIVISION.

NOW IT WOULD FLOW TOWARDS THE SUBDIVISION



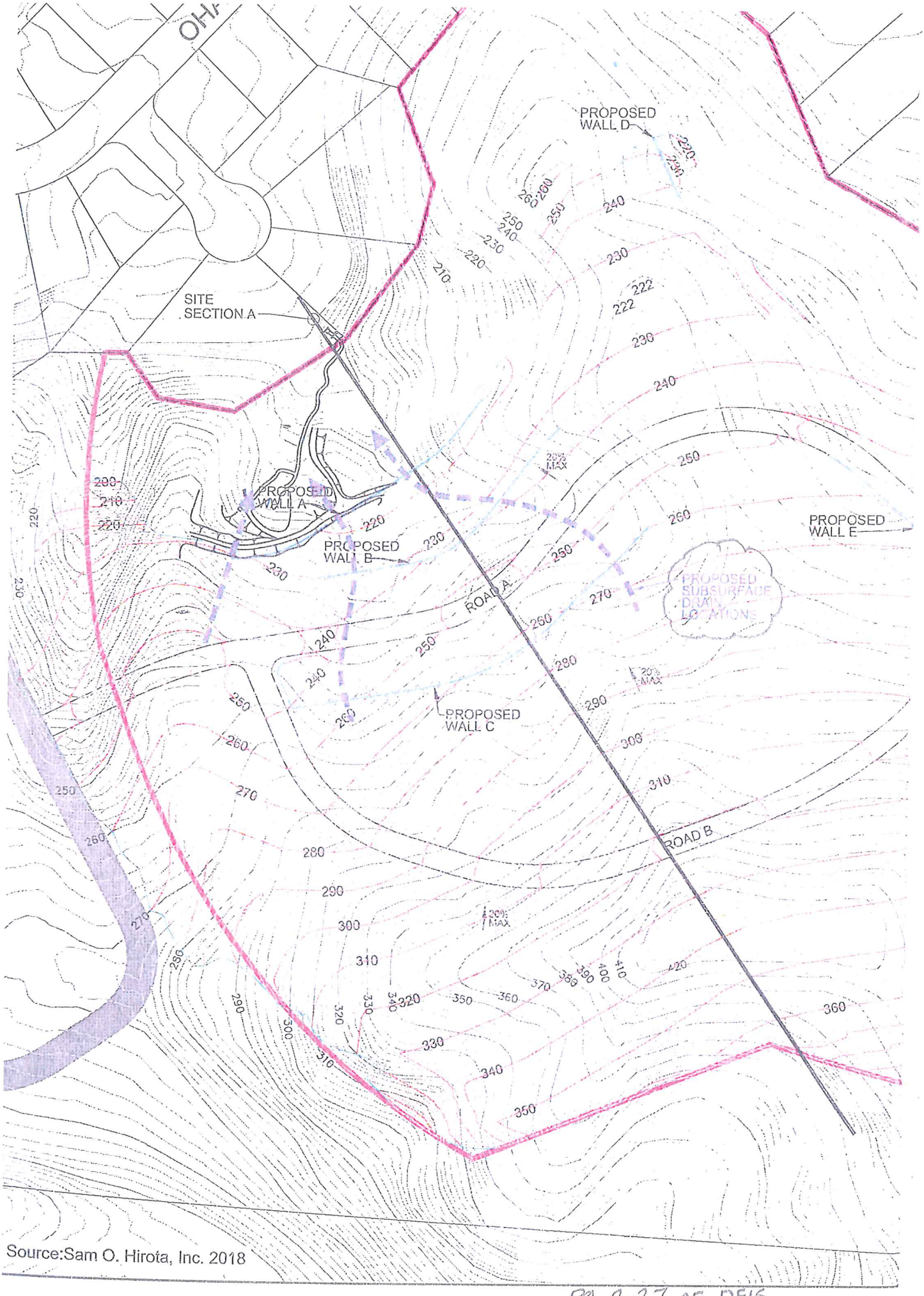


Proposed Drainage Improvements Plan

Hawaiian Memorial Park Cemetery Expansion Project Draft Environmental Impact Statement
Kāne'ohe, O'ahu, Hawai'i

Figure 2.5

ATTACHMENT 2



Source:Sam O. Hirota, Inc. 2018

ATTACHMENT 3

PG 2-27 OF DEIS

eliminary Grading Plan with Section View

ATTACHMENT 4

DELAWARE RIVERKEEPER NETWORK

Research Assessing the Safety Hazards Associated with Detention Basins

Safety Hazards: Detention basins pose multiple potential safety hazards including drowning, exposure to contaminated water, and increased exposure of adjacent community to mosquito transmitted diseases. Standards for the design of stormwater basins are primarily based on improving water quality, and few standards address the safety of civilian populations. Furthermore, the location of stormwater basins near high traffic areas (i.e. parks) leads the public to think it is an amenity, rather than a device treating polluted water and heightens the potential for injury.

1. Jones, J. E., Ben Urbonas, P. E., & Pittinger, R. (2012). Essential Safety Considerations for Urban Stormwater Retention and Detention Ponds. Stormwater Magazine.
    a. Detention ponds can be installed adjacent to incompatible land uses, and therefore the location of stormwater facilities leads to high potential for human injury. Stormwater facilities are typically located near high trafficked areas, in residential neighborhoods, near schools or trails or playgrounds. The public is effectively invited to spend time near these facilities, and little is typically done to minimize obvious risks associated with these facilities because public safety is not a specific design objective. When facilities are located where children congregate, multiple layers of safety are necessary.
    b. Hydraulic structures are designed and constructed in a manner that makes them hazardous. For example, steel bars on grates are not beveled, rounded, or covered, but have sharp ends. Bolts have jagged, exposed ends. Gaps between steel bars and concrete walls are too wide. Railings are either not used where they should be or are improperly designed.
    c. Inflow and outflow pipes are quickly inundated and then not visible making them a safety hazard. For example, a dry pond in an office park had a rapid rise, and a child playing in the pond was apparently knocked down by jet flows from an inlet pipe, tumbled by vortex flows, and ultimately, dragged into an unprotected outlet pipe by suction forces.
    d. Furthermore, racks put on the opening of pipes pose a danger to the public because they can impinge a person against them during high velocity flow. If the racks are too close to the outlet, a person can be knocked over by impulse forces and then sucked into or pinned against outlet structure.
    e. Designers typically fail to recognize that events larger than the design event can and do occur. This makes the facilities inadequate when larger storms occur.

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2. American Society of Civil Engineers et al. (2013). Guidance for Protection of Public Safety at Urban Stormwater Management Facilities. May 2013
    a. Physical risk is due to the sharp edges, confined spaces, unreliable footing, slippery surfaces, uneven ground, and abrasive surfaces associated with stormwater facilities.
    b. Stormwater runoff often has pollutants that can adversely affect public health, including bacteria, viruses, trash, diapers, hypodermic needles, and hazardous needles.
    c. High-velocity and rapidly rising flow can be overwhelming to even adults let alone children. This is particularly hazardous where there are areas that double as pedestrian access and are subject to inundation.
    d. People swept into long pipes could be trapped and submerged for minutes if not longer.
    e. Erosion can occur in areas where pedestrian traffic is anticipated.
    f. Earthen embankments or pond sides can fail upon overtopping or erode away over time.
    g. Threats to public safety include potential harm to maintenance workers. For example, steep slopes are hazardous when using heavy equipment such as lawn mowers.
    h. There is a lack of understanding about the hazards that these facilities pose. Although News coverage does increase public awareness, this heightened awareness is usually limited to the local area and is typically short-lived.

3. Hansen, J.J. (undated). Hazard Assessment for Water Retention and Detention Ponds. Available at: http://www.usfa.fema.gov/pdf/efop/efo45799.pdf
    a. Detention basins are constructed based on standards that are written primarily for improving water quality and not for the safety of civilian populations.
    b. Risks and hazards associated with detention basins include drowning, exposure to contaminated water, and increased abundance of mosquito populations and associated disease vectors.
    c. Drowning is the second leading cause of unintentional death according to the Center for Disease Control.
    d. Ponds attract people and children and can be mistaken for a recreational body of water.
    e. Children can crawl into pipes resulting in no way of escape. Furthermore, racks which reduce this risk can result in a person or child being pinned against the rack by the force of flowing water.
    f. Steep slopes on one or more sides and fences aimed at keeping people out can become a barrier to rescue crews in an emergency.
    g. Exposure to contaminated water is associated with several common illnesses (Gastrointestinal, infectious hepatitis or aseptic meningitis, leptospirosis, intestinal bacteria such as E.Coli Salmonella, shiggela, Hepatitis A Virus, typhoid, paratyphoid, and tetanus).
    h. Ponds increase the potential for mosquito habitat, and therefore, increase the potential for exposure of adjacent community to West Nile Virus.

4. Guo, J. C., Jones, J. E., & Earles, A. (2010). Method of superimposition for suction force on trash rack. Journal of Irrigation and Drainage Engineering, 136(11), 781-785.
    a. Urban flood flows are quick, concentrated, and fast. Therefore safety around storm facilities is a concern for the public.
    b. A trash rack at a stormwater facility's outfall entrance can prevent a human body from being washed into the pipe, but it also increases the flow velocity resulting in pinning force on a human body if trapped in the basin.

5. Guo, J. C., & Jones, J. (2009). Pinning Force during Closure Process at Blocked Pipe Entrance. Journal of irrigation and drainage engineering, 136(2), 141-144. of a
    a. During a storm, a trapped person will flow with water towards the outfall entrance. The flow force acting on a person can be pinning at first but eventually deadly.
    b. It is difficult to quantify and design for this flow force.

6. Metzger, M. E. (2004). Managing mosquitoes in stormwater treatment devices. Univ. Calif ANR Publ, 8125(11).
    a. Stormwater facilities often provide aquatic habitats suitable for mosquitoes and other vector species as an unintended consequence.
    b. Mosquito management is critical to prevent disease transmission but is often overlooked.
    c. Most stormwater facilities remain unsupervised for extended periods and therefore, mosquito breeding could occur unobserved and uncontrolled.
    d. If not designed properly, mosquitoe control requires the use of pesticides which has additional potential health hazards.

7. Chaplin, N. (2003). Personal Injury Litigation as a Barrier to the Adoption of Sustainable Drainage Ponds--A Proposal for Legislative Reform.
    a. Where there are a significant number of visitors, there is an increased risk of injury from stormwater ponds and an increased liability of civil litigation which seeks damages.
    b. In certain climates, ice becomes an additional danger.
    c. Blue green algae blooms from fertilizer runoff can produce toxic chemicals which pose a threat to wild and domestic animals and humans. Furthermore, a pool covered in algae may make the presence of water less apparent to a child.
    d. Operators or owners of stormwater basins can face civil action were a person to drown or be injured. Even where there are warnings communicating dangers and basins are designed in accordance with the law, litigation can still be pursued against the owner.

8. Shinde, P.S. (2002). Multi-use of Stormwater Detention Ponds in Parks and Open Spaces. MLA Thesis, University of Georgia.
    a. The outlet of a detention basin is designed to slow down flow, and therefore, is either a constricted culvert or narrow pipe. Large volumes of water exert a lot of pressure on narrow outlets leading to faster flow. However, broad open outlets are much safer than narrow outlets.

9. Ferguson, B. K. (1998). Introduction to stormwater: concept, purpose, design. John Wiley & Sons.
    a. Detention basins functionally become a trap for people to fall into and drown.
    b. Even if sloped correctly, a child can be trapped against a trash rack when there is excess water entering the culvert. For example, a 4 year old girl in State College, PA, slid down wet slippery grass and became trapped. Even two men who tried to pull her away failed due to the force of water, and she drowned.

Fencing: Fencing around a basin can itself become a hindrance for rescue personnel, impede escape, and limit maintenance.

1. Jones, J.E., et al. (2013). Public Safety at Stormwater Management Facilities. Water Environment Federation Stormwater Report.
    a. Fences cannot be relied on exclusively for safety, and fencing has not proven to be an effective deterrent.
    b. Many children or youth view climbing a fence as an exciting challenge.
    c. Ponds surrounded by fences are not as well maintained and therefore, a greater safety hazard.
    d. Fences block vision and impede emergency access, rescue attempts, and escape.
    e. Fences can create more danger than they are intending to mitigate.

2. Liebl, D.S. (2006) Stormwater Detention Ponds Site Safety and Design. Solid and Hazardous Waste Education Center, University of Wisconsin- Extension.
    a. "Generally, fencing should not be necessary if other appropriate design practices are used."
    b. Although fencing may discourage toddlers, it can be viewed as a worthy and exciting challenge to some children and older youth.
    c. Fences can hinder mowing and collect debris.
    d. Fences can hamper rescue efforts.

3. Chaplin, N. (2003). Personal Injury Litigation as a Barrier to the Adoption of Sustainable Drainage Ponds--A Proposal for Legislative Reform.
    a. Fences simply act as a challenge to be overcome.
    b. Fences reduce safety by acting as a visual and physical barrier.
    c. Even the most substantial fence is still scaleable.

4. Shinde, P.S. (2002). Multi-use of Stormwater Detention Ponds in Parks and Open Spaces. MLA Thesis, University of Georgia.
    a. Fences are expensive to install and maintain.
    b. Fences produce edges which increases grounds maintenance needs.
    c. "Fencing of detention ponds should be discouraged wherever possible"

Select Public Safety Incidents at Detention Basins: News Headlines

1. Action News Jasonville, December 24, 2014, Body found in retention pond in Northwest Jacksonville. Jacksonville, Florida
2. 1011 now, October 13, 2014, Authorities identified body found in Grand Island Pond (a Detention pond). Grand Island, Nebraska.
3. Twin Cities Pioneer Press, November 29, 2013, St. Louis Park Drowning accident spurs questions about retention ponds. St. Louis Park, Minnesota.
    a. Mothers car went off the roadway, dropped down an embankment and into pond sinking into 9 feet of water and trapping her and five children in the car.
    b. 2 children drown and the other 3 children were hospitalized.
4. Renton Reporter, June 28, 2012: Five-year-old Renton girl nearly drowns in detention pond; is fence the answer? Renton, Washington.
5. Loudoun Times, May 22, 2012, Missing Leesburg man drowns in drainage pond, Loudoun County, Virginia.
6. The Columbus Dispatch, May 10, 2007, Vigilance only line of defense at retention ponds, Columbus, Ohio
    a. In 2007, 4-year-old girl drown in pond.
    b. In 2004, 2-year-old boy drown in pond.
    c. In 2002, 2-year-old boy was hospitalized after falling into a pond despite fence.
7. News Star Bulletin, August 24, 2005, $2 million settles drowning lawsuit: Charlotte Schaefers, 5, died last year on military housing. Pearl City, Hawaii.
    a. Due to clogged drainage pipe, detention pond flooded regularly.
    b. In only 3 to 4 feet of water, 5-year-old girl drown while neighbors frantically searched in murky water.
8. New York Times, July 21, 1989. Our Towns; Only a Dry Field, But Other Boys could Drown in it, East Brunswick, New Jersey.
    a. Field that doubles as a drainage basin turned into a lake.
    b. Two boys, 15-years-old, were drawn into water and swept into 3-mile-long drainage pipe where they drown.
    c. Suction of the vortex and the enclosure of the pipes allowed them no escape once they slipped down steep-sided basin.