



PUNALU'U AHUPUA'A FARMS

Punalu'u Stream Restoration Project

September 13, 2022

Project of



KAMEHAMEHA SCHOOLS®

Punalu'u Stream Restoration

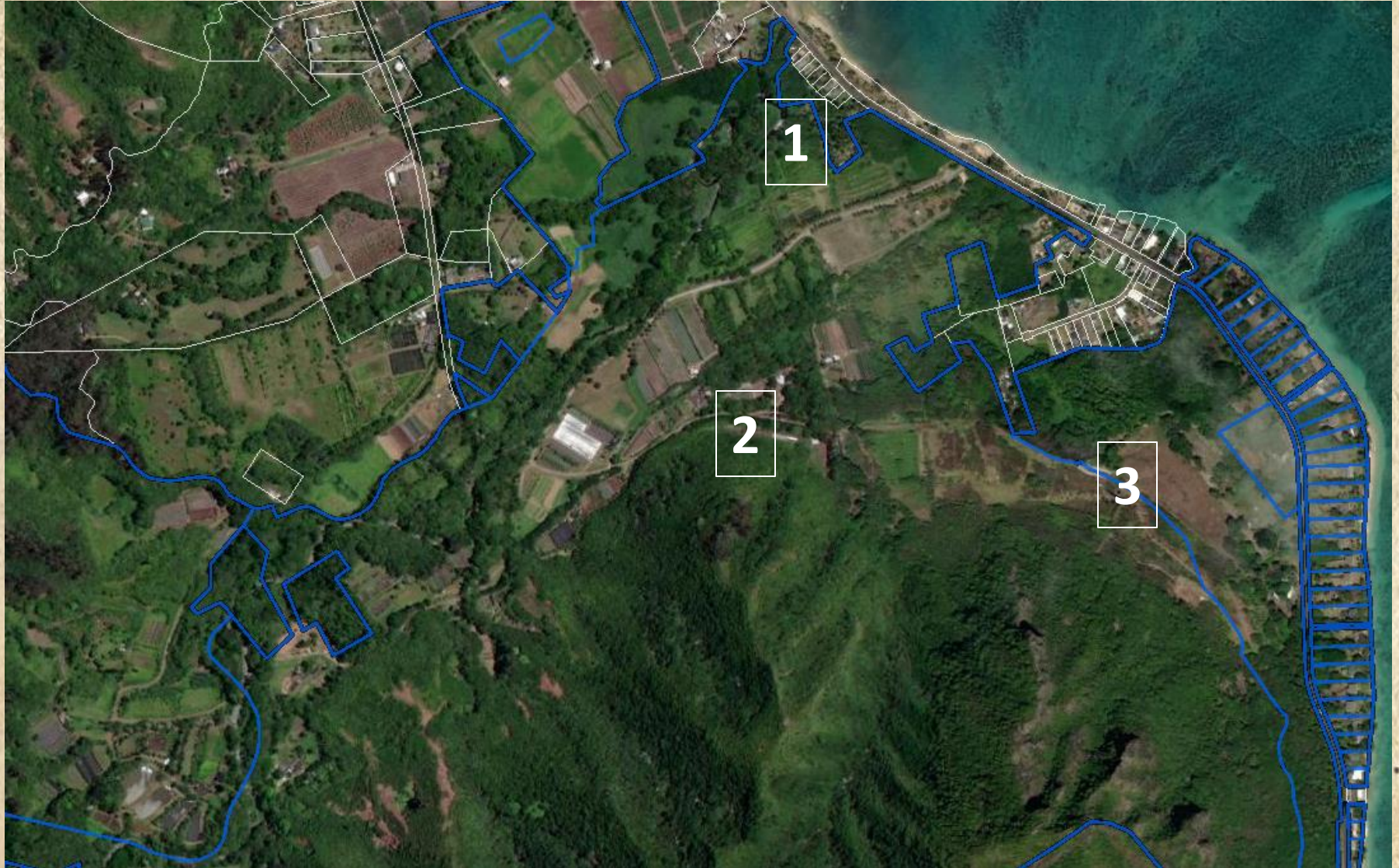


PROJECT PURPOSE

- Restore Stream & Floodplain Processes
- Protect Cultural & Natural Resources
- Increase Community Engagement
- Conduct 'Āina-based Learning

Punalu'u May 2022

Community Hard Hat Tour 6/14



Community Hard Hat Tour 6/14

1 Estuary clearing near makai portion of project



Community Hard Hat Tour 6/14

2

Looking toward stream from Kahana Valley Access Road



Community Hard Hat Tour 6/14

2

Looking toward stream from Kahana Valley Access Road



Community Hard Hat Tour 6/14

3 Looking makai pasture area behind Keneke's





September 2022 Updates

Grading Permit

- The City and County of Honolulu, Department of Planning and Permitting approved our grading permit on August 24, 2022.

Erosion Control Installation

- Our contractor, Goodfellow Bros, is in the process of installing mandated erosion control measures that include nearly 6 miles of silt fencing around the perimeter of working areas. This fencing may be visible from Kamehameha Highway in places.
- We are also shoring up the existing front entrance with additional cobble and gravel material to help control mud and sediment from vehicles leaving the site. No excavated material will leave the site.

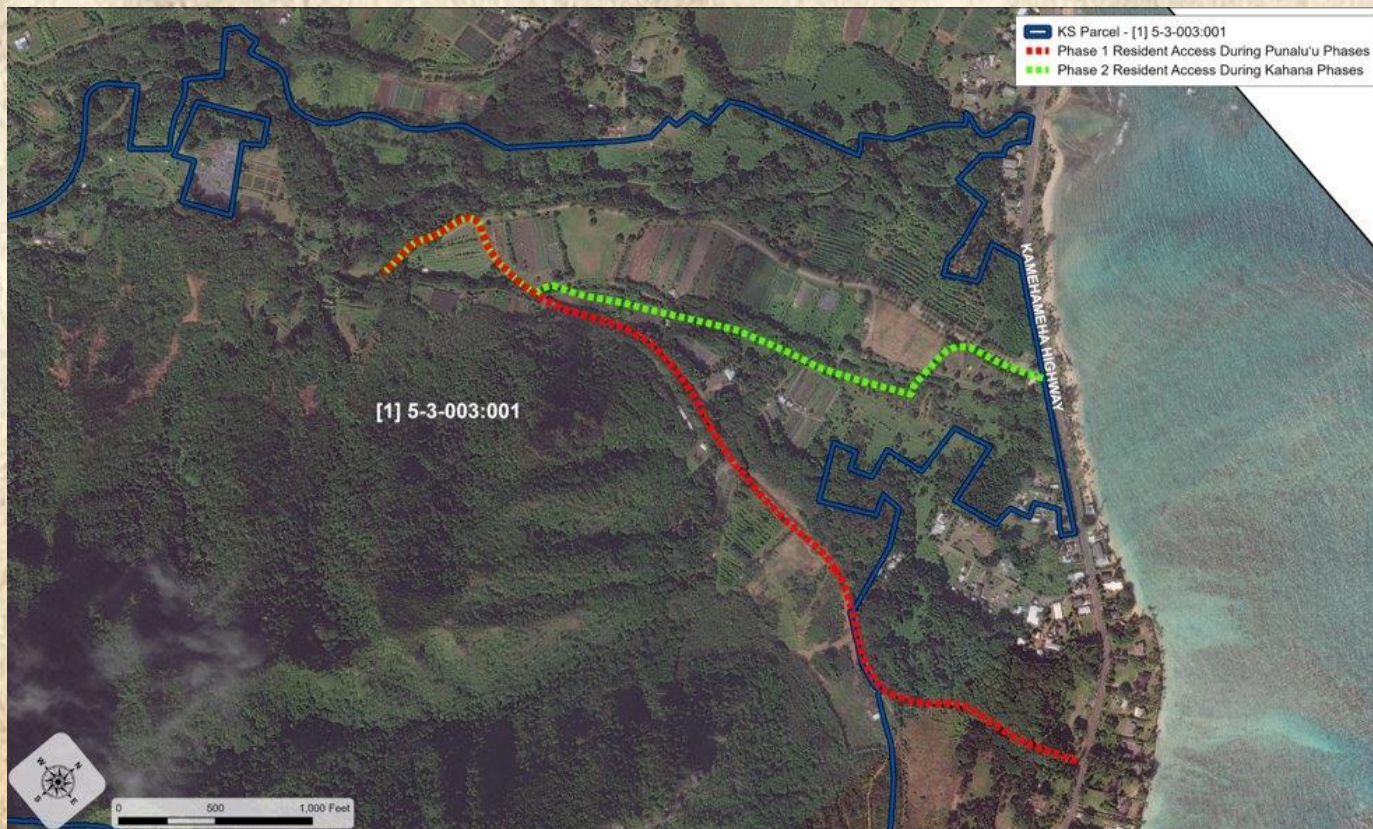
Equipment transfer

- Heavy equipment will be brought to the site to begin the earthwork portion of the project. Traffic impacts along Kamehameha Highway should be minimal and all transportation-related permits for the equipment have been obtained.

September 2022 Updates

Temporary valley entrance

- When the excavation begins, we will close the existing entrance into the valley to visitors. For tenants or anyone else with business in the valley, the entrance will move to a location closer to Keneke's Restaurant (see map). Signs will be placed at the existing entrance indicating the location of the new entrance.





September 2022 Updates

Water quality

- To prevent adverse impact to water quality, special protective curtains will be in place in designated areas of the stream corridor. Frequent water quality testing by a third-party firm will also be conducted. The project will shut down when water quality is not within permit-regulated limits and will not resume until the quality is within the established approved limits.

Potential impacts

- The surrounding neighborhood will hear some construction-related noise throughout the workday, which will be between the hours of 7 a.m. and 5 a.m. The initial excavation area will be near the estuary on the front portion of the property and so we expect constructed-related noise on the Kahana side of the project.



Punalu'u Stream Restoration

CONTACT INFORMATION:

Project Website:

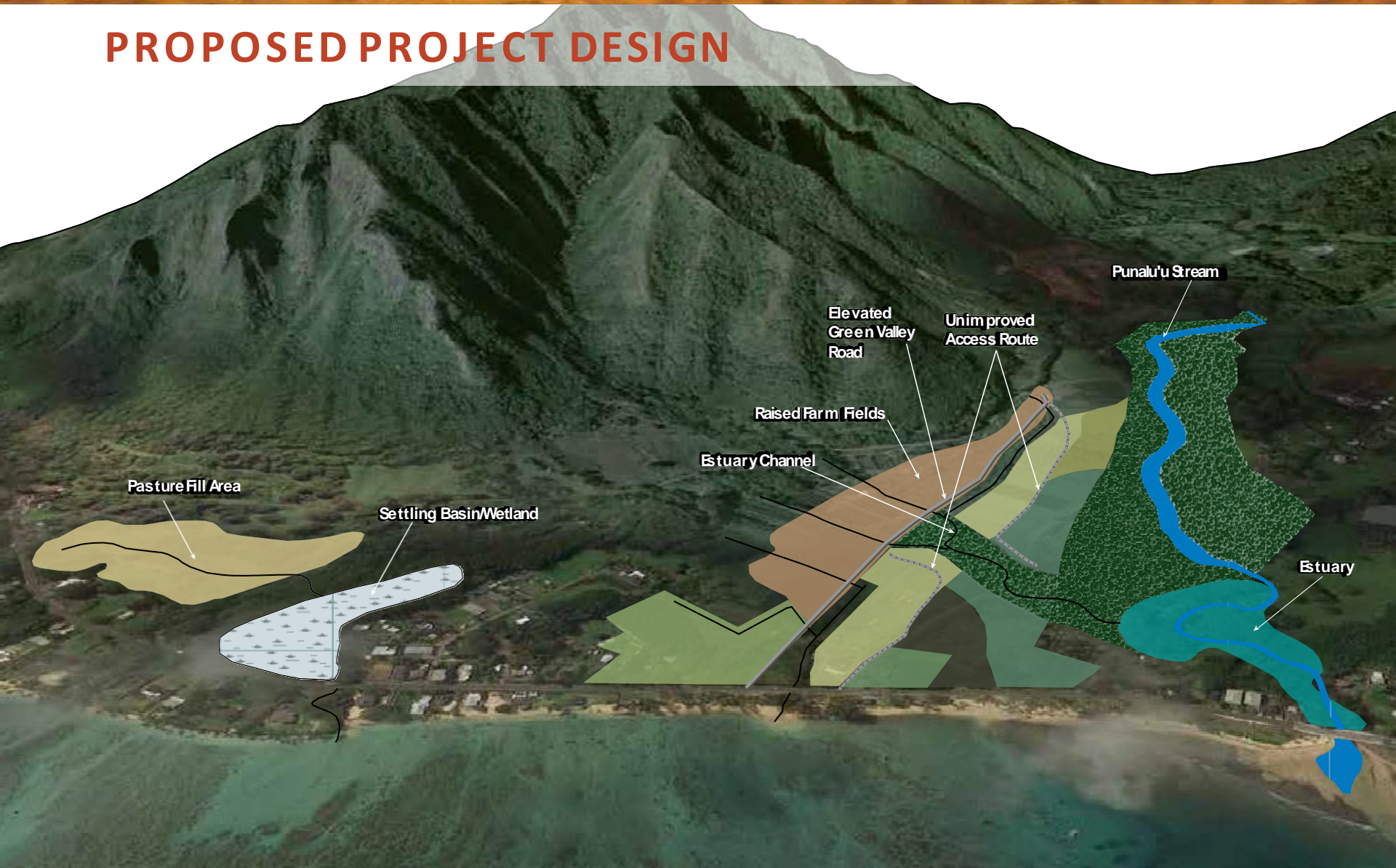
www.ksbe.edu/aina/punaluu/stream_restoration/

Email:

punaluu@ksbe.edu

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PROPOSED PROJECT DESIGN



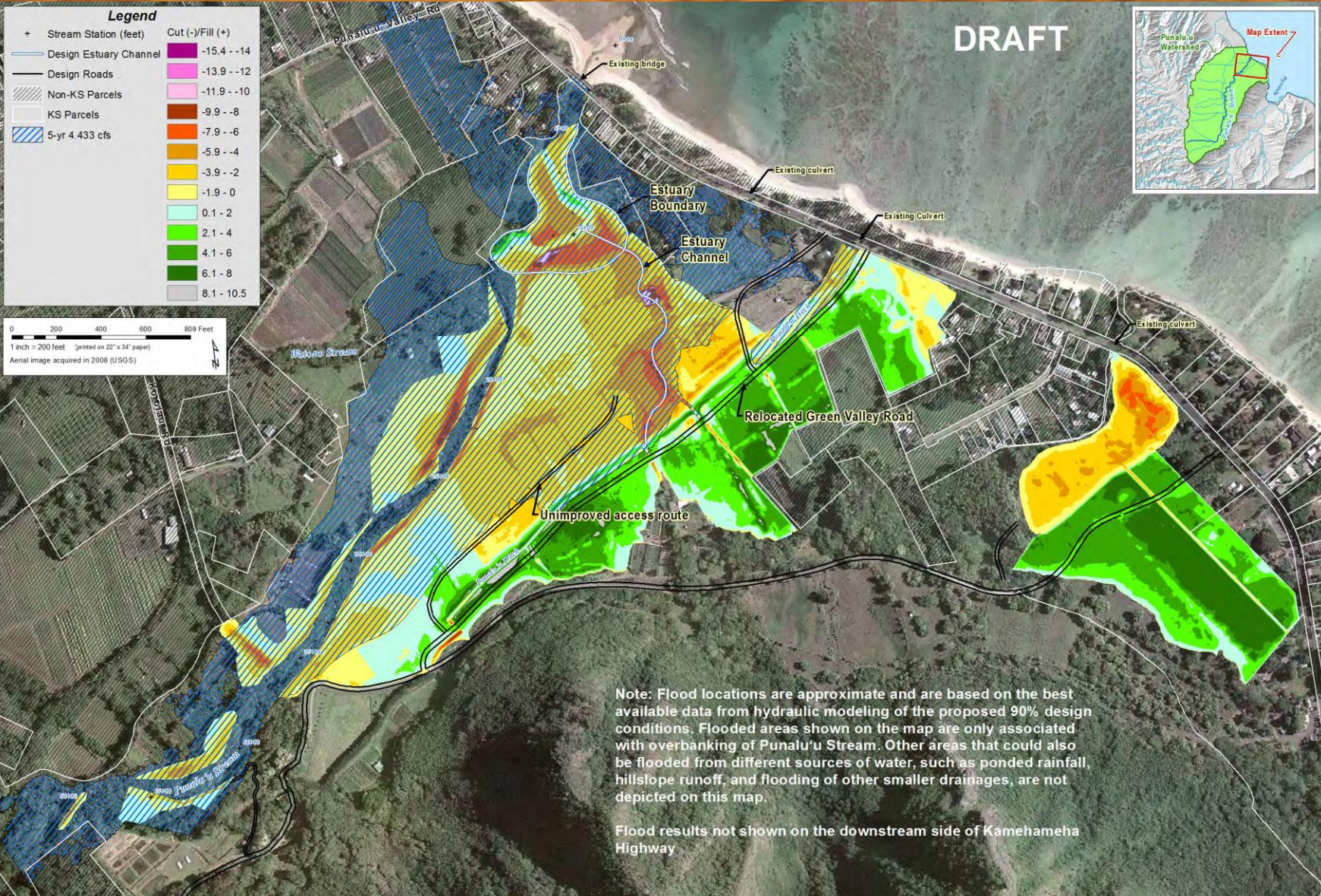
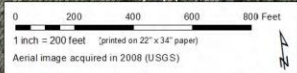
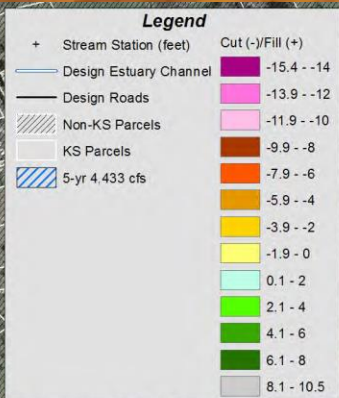
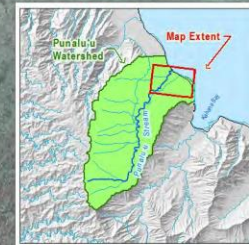
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PROJECT CONSTRUCTION

- Estimated duration 18 to 24 months
- Project segmented and sequenced to minimize impact
- Work within high water mark restricted to USACE work periods & conditions
- Constant monitoring to avoid adverse impacts
- Erosion and sediment controls
- No work during rain and high stream flows
- Immediate work stop if adverse water quality issues are observed
- Archaeological monitoring required

Punalu'u Stream Restoration

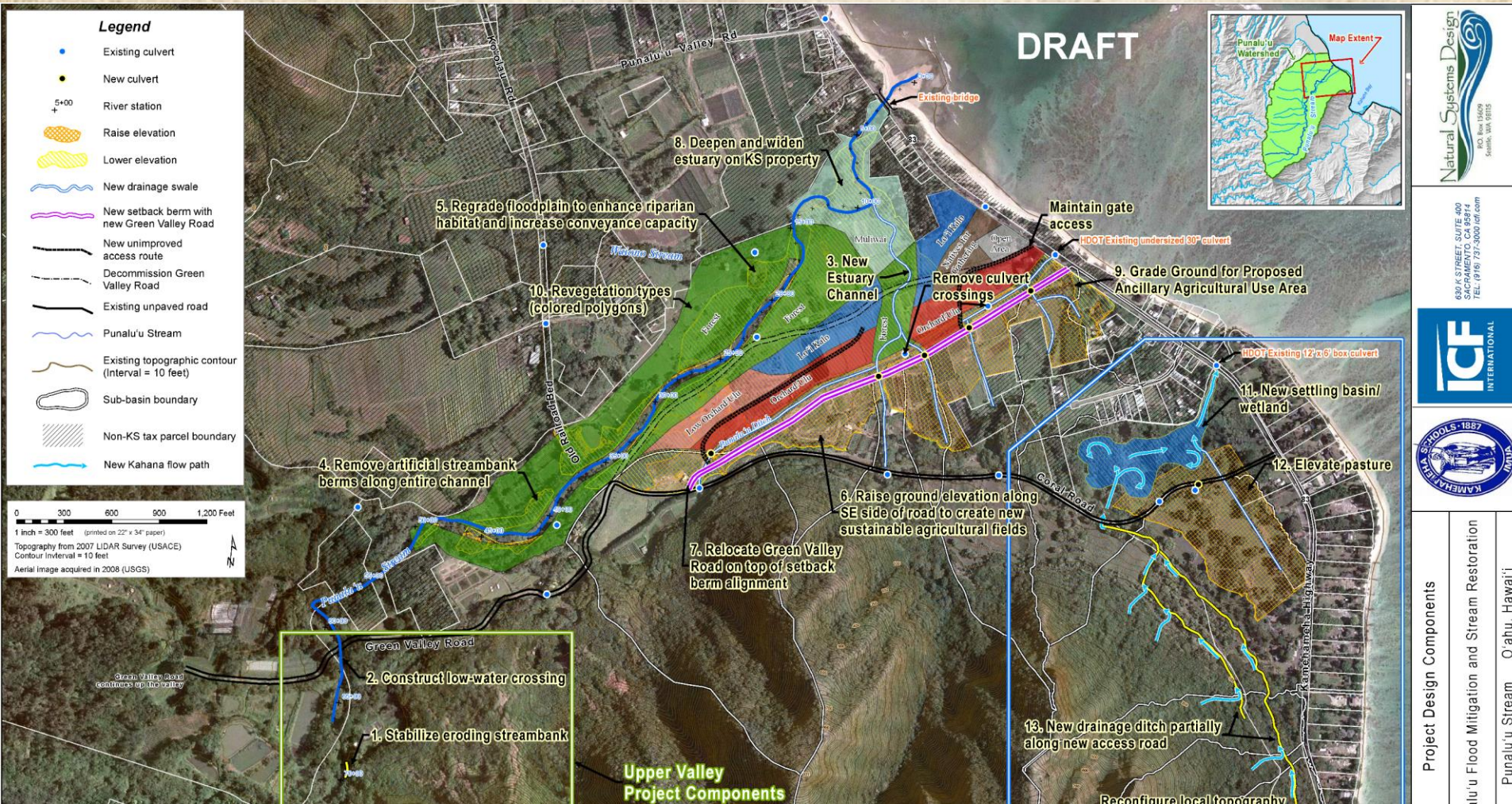
DRAFT



Note: Flood locations are approximate and are based on the best available data from hydraulic modeling of the proposed 90% design conditions. Flooded areas shown on the map are only associated with overbanking of Punalu'u Stream. Other areas that could also be flooded from different sources of water, such as ponded rainfall, hillslope runoff, and flooding of other smaller drainages, are not depicted on this map.

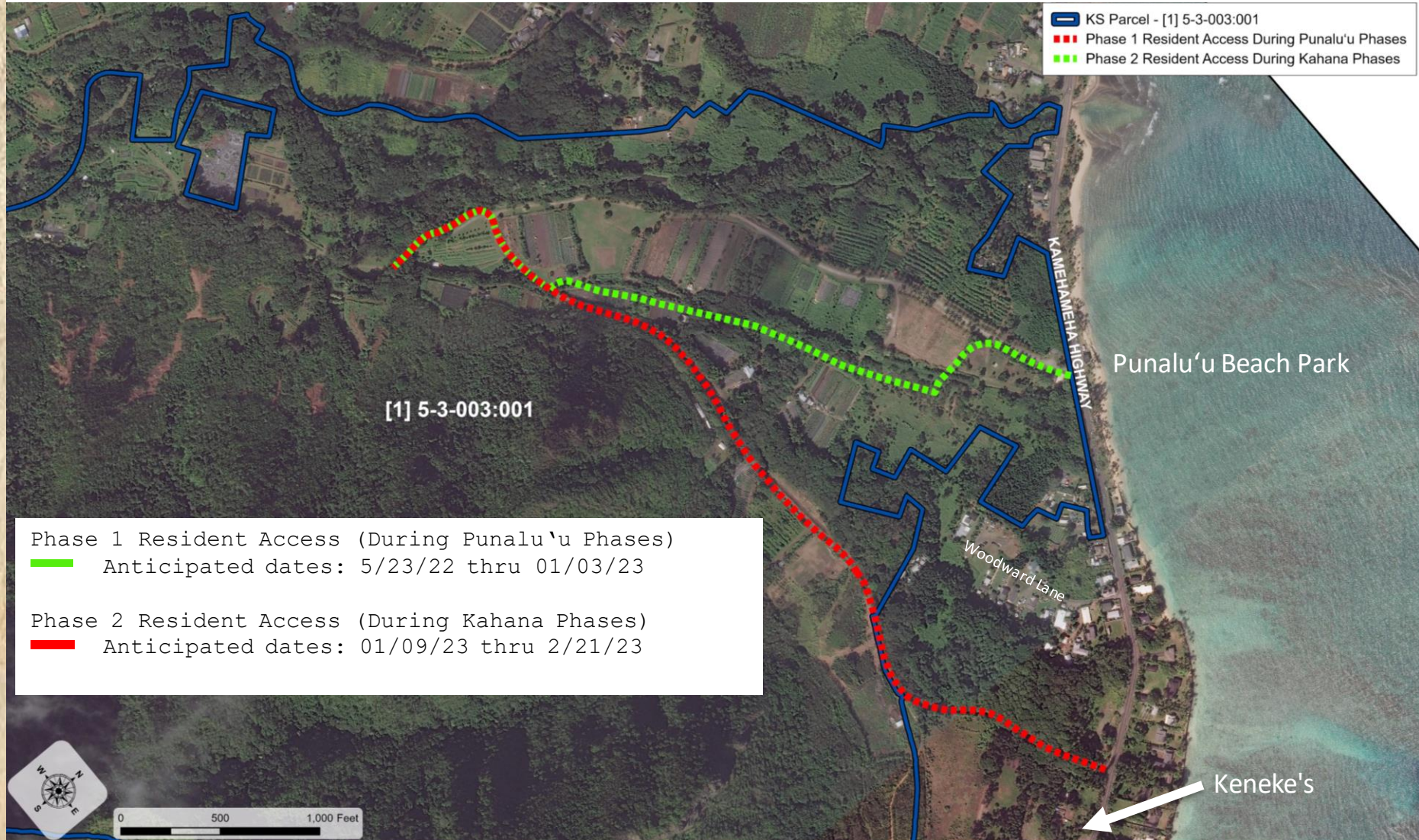
Flood results not shown on the downstream side of Kamehameha Highway

Punalu'u Stream Restoration



Punalu'u Stream Restoration

Note: Dates subject to change based upon construction schedule



Punalu'u Stream Restoration

Construction Access and Safety Protocols



Phase 1 Resident Access (During Punalu'u Phases)

- Anticipated dates: 5/23/22 thru 01/03/23

Phase 2 Resident Access (During Kahana Phases)

- Anticipated dates: 01/09/23 thru 2/21/23

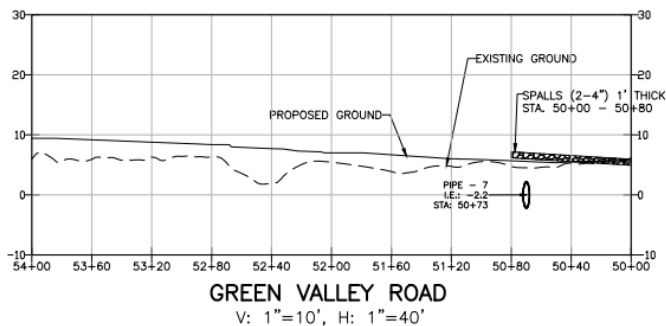
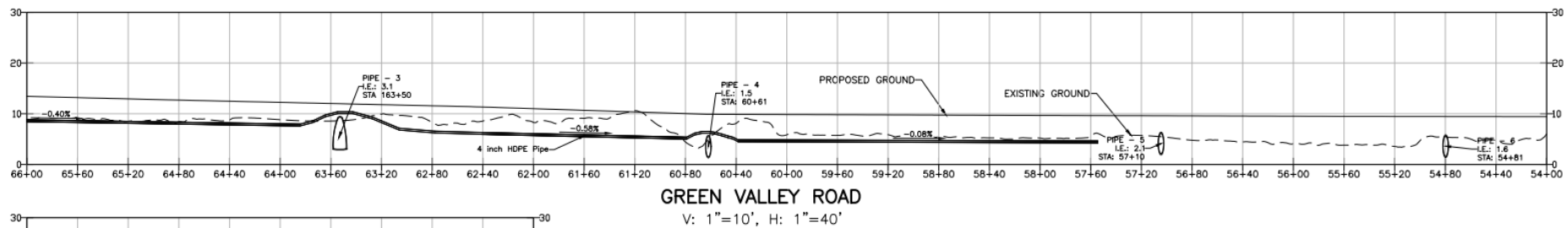
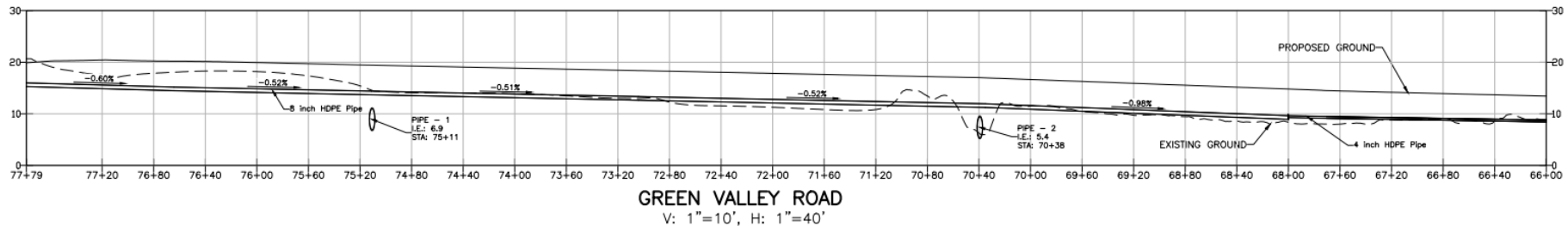
General Job Site Guidelines

- 1) Please remain in vehicle while passing through active construction site. GBI may request an escort be provided.
- 2) Visitors to the construction site must check in at the Goodfellow Bros construction office and wear high visibility safety vests, pants, covered shoes, safety glasses, and hard hat while on site.

Note: Dates subject to change based upon construction schedule

Punalu'u Stream Restoration

Proposed New Green Valley Road (Main Access Road)



| GREEN VALLEY ROAD CONTROL POINTS | | | | |
|----------------------------------|-----------|----------|-----------|---------------|
| STA. | ELEVATION | NORTHING | EASTING | CROSS SECTION |
| 50+00 | 0.00 | 148798.8 | 1680789.0 | |
| 51+00 | 7.39 | 148718.6 | 1680729.7 | |
| 52+00 | 8.31 | 148645.0 | 1680662.4 | G-G |
| 53+00 | 8.58 | 148578.4 | 1680587.8 | |
| 54+00 | 9.43 | 148518.1 | 1680508.0 | H-H |
| 55+00 | 9.47 | 148458.3 | 1680427.9 | |
| 56+00 | 9.52 | 148399.5 | 1680347.0 | I-I |
| 57+00 | 9.60 | 148342.0 | 1680265.2 | |
| 58+00 | 9.67 | 148284.6 | 1680183.3 | J-J |
| 59+00 | 9.76 | 148227.2 | 1680101.4 | |

| GREEN VALLEY ROAD CONTROL POINTS | | | | |
|----------------------------------|-----------|----------|-----------|---------------|
| STA. | ELEVATION | NORTHING | EASTING | CROSS SECTION |
| 60+00 | 9.85 | 148169.8 | 1680019.6 | K-K |
| 61+00 | 10.20 | 148115.5 | 1679935.6 | |
| 62+00 | 11.00 | 148063.2 | 1679850.4 | L-L |
| 63+00 | 11.68 | 148018.7 | 1679761.1 | |
| 64+00 | 12.24 | 147978.6 | 1679669.6 | M-M |
| 65+00 | 12.81 | 147933.4 | 1679580.3 | |
| 66+00 | 13.43 | 147888.3 | 1679491.1 | N-N |
| 67+00 | 14.05 | 147843.1 | 1679401.9 | |
| 68+00 | 14.80 | 147792.0 | 1679316.6 | O-O |
| 69+00 | 15.72 | 147726.9 | 1679240.7 | |

| GREEN VALLEY ROAD CONTROL POINTS | | | | |
|----------------------------------|-----------|----------|-----------|---------------|
| STA. | ELEVATION | NORTHING | EASTING | CROSS SECTION |
| 70+00 | 16.65 | 147661.8 | 1679164.9 | P-P |
| 71+00 | 17.32 | 147602.1 | 1679084.8 | |
| 72+00 | 17.83 | 147545.3 | 1679002.5 | Q-Q |
| 73+00 | 18.35 | 147488.5 | 1678920.2 | |
| 74+00 | 18.85 | 147425.3 | 1678842.7 | R-R |
| 75+00 | 19.36 | 147361.9 | 1678765.4 | |
| 76+00 | 19.94 | 147307.1 | 1678681.8 | S-S |
| 77+00 | 20.33 | 147247.7 | 1678602.2 | |
| 77+80.8 | 19.85 | 147170.5 | 1678591.9 | |

Punalu'u Stream Restoration

Kahana Component Large Tree Removal



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