

# H-1 (EB) Improvements Ola Lane to Likelike Highway Off-Ramp



# Project Purpose:

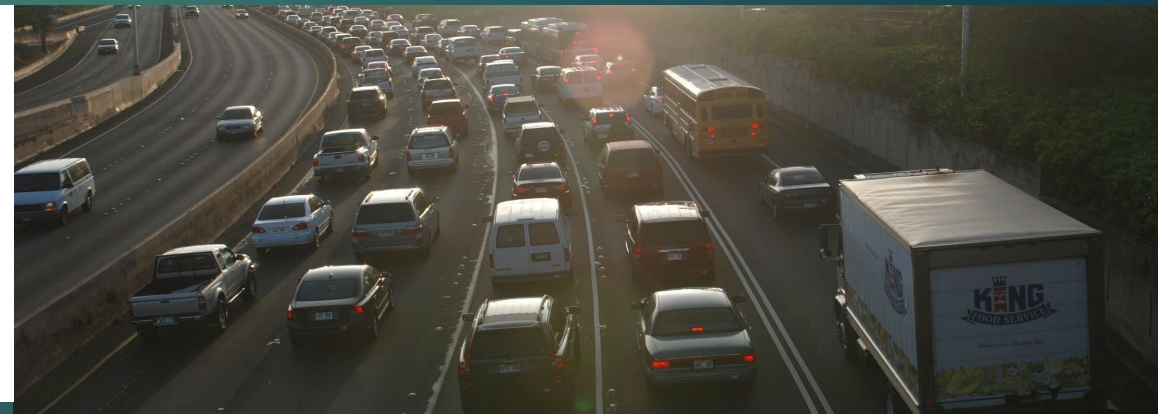
- Improve Safety
- Relieve Congestion



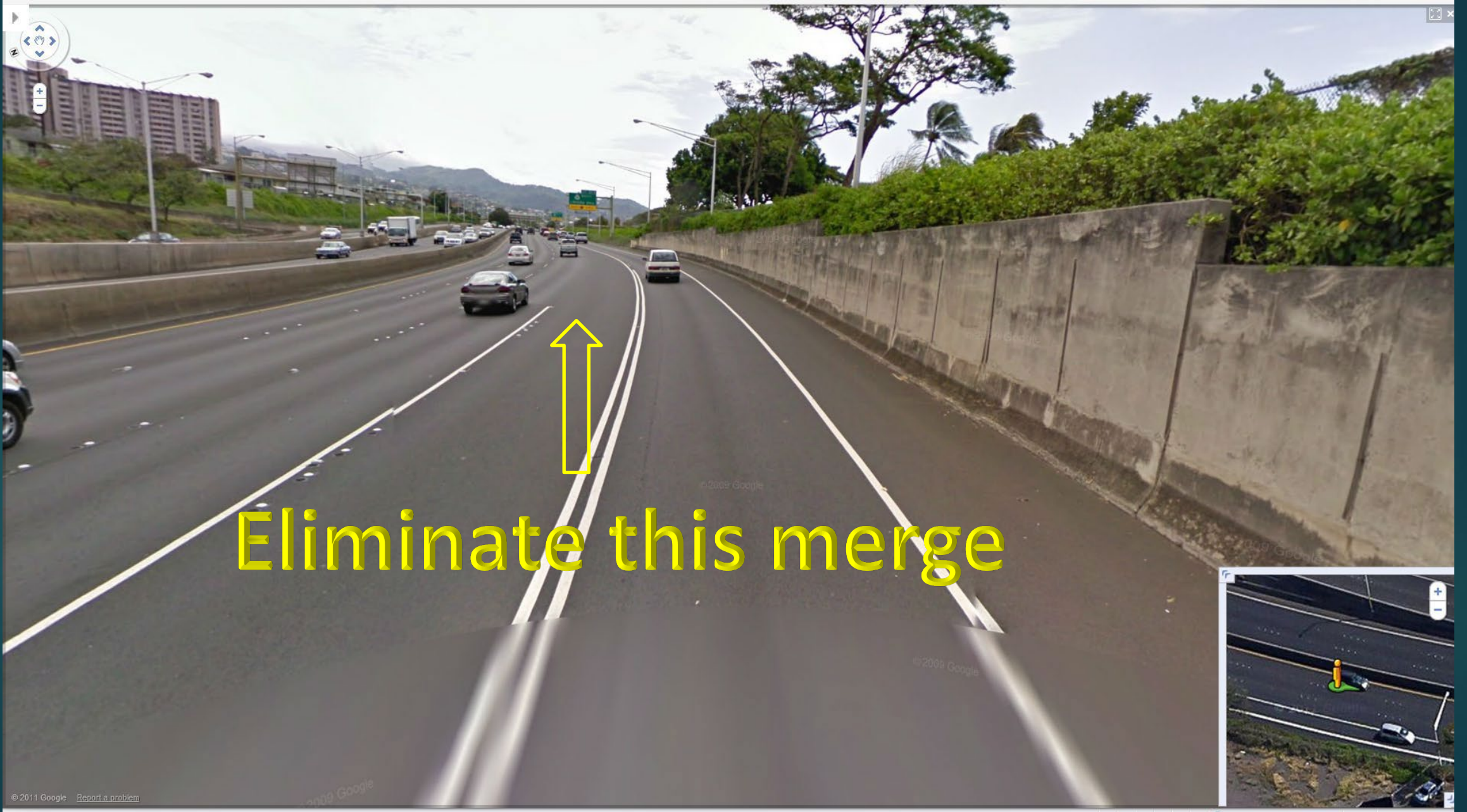
Table 3-5. Travel Time Benefits Summary

Peak Period	2023 Travel Time			2035 Travel Time		
	Current Configuration	With Improvements	Benefit	Current Configuration	With Improvements	Benefit
Morning (6 a.m. to 9 a.m.)	8 – 10	5.5 – 7	2.5 – 3	8.5 – 10.5	6 – 7	2.5 – 3.5
Midday (9 a.m. to 3 p.m.)	2 – 3	1.5 – 2	0.5 – 1	2 – 3	1.5 – 2	0.5 – 1
Afternoon (3 p.m. to 7 p.m.)	8 – 10	5.5 – 7	2.5 – 3	8.5 – 10.5	6 – 7	2.5 – 3.5

Note: Travel time ranges are reported in minutes.

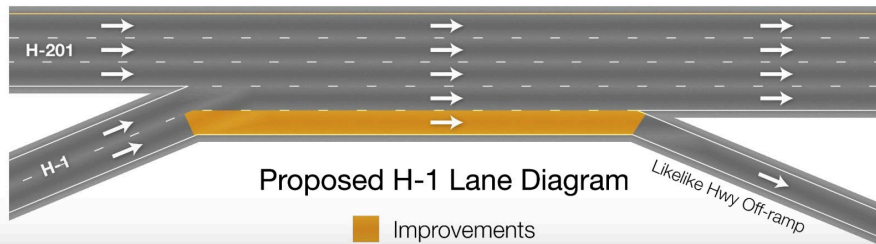
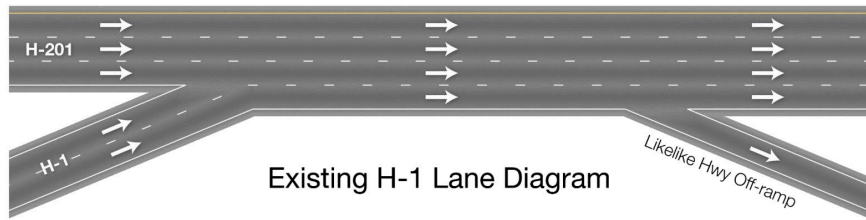






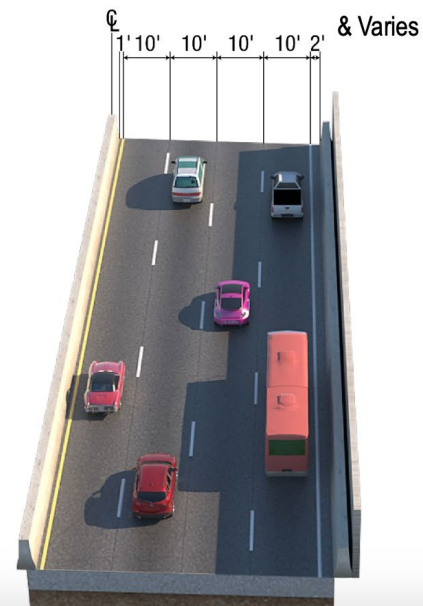
Eliminate this merge

## H1 Improvements – Saving Time



## Typical Section

Incorporate Design Improvements





# Widen H1 Eastbound on Makai side



- Add inside and outside shoulders, increase lane width to 11'
- Construct retaining walls
- Lengthen Gulick Bridge on the makai and mauka sides

# Current Closures

- ▶ H-1 eastbound between Ola Lane and Likelike Highway
  - ▶ 2 lanes closed within the project limits on Sunday nights through Thursday nights, from 8 p.m. to 4:30 a.m., and two lanes closed on Friday nights and Saturday nights from 8 p.m. to 7 a.m.
- ▶ Gulick Avenue Overpass
  - ▶ 1 lane closed on Gulick Avenue overpass bridge between 8 a.m. and 3:30 p.m. Monday through Friday.
  - ▶ Flagger monitor and maintain alternating traffic control. They are aware of the Kalihi Waena pick ups around 2:20 p.m.



# Project Milestones

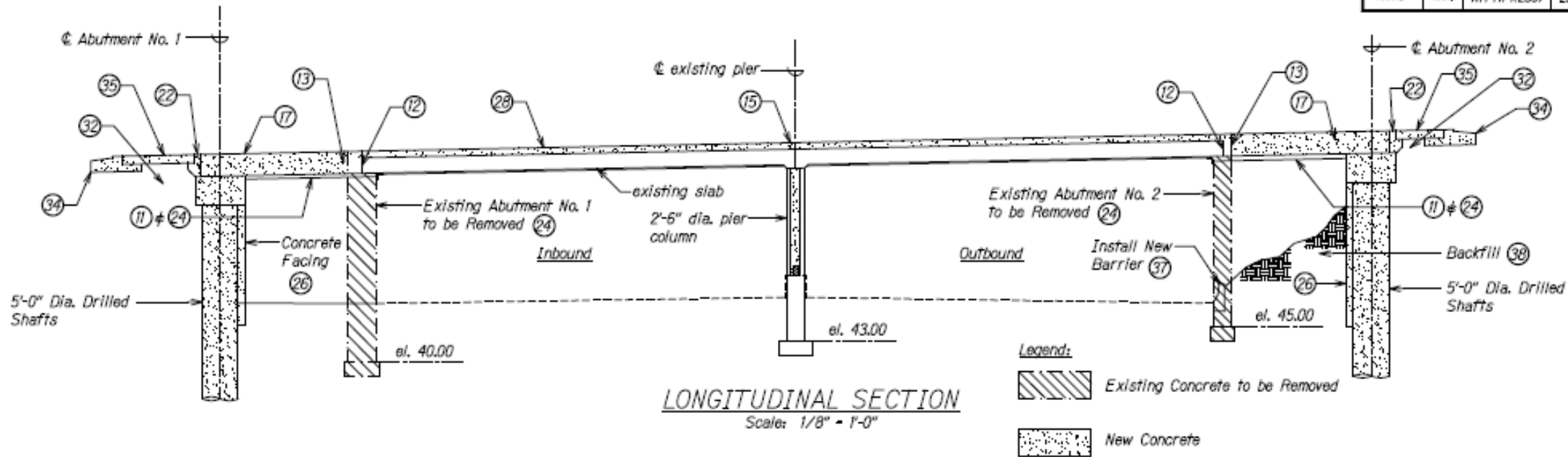
- Eastbound 36" waterline tie-in on freeway start: June, 2025
- Westbound 36" waterline tie-in on freeway start: July, 2025
- Temporary pedestrian bridge installation start: September, 2025
- HECO overhead freeway work start: September, 2025
- Gulick Drilled Shaft work start: September, 2025
- Gulick full structural work start: March, 2026
- HECO permanent relocation work start: October, 2026
- Substantial Completion: End of 2026

# Gulick Avenue Overpass



- Lengthen existing bridge and move abutments on the WB and EB sides about 15.5' each
- Build retaining walls on the WB and EB side





**FULL CLOSURE OF GULICK AVENUE OVERPASS**

- 10** Install BMPs.
- 11** Install temporary tie rods, steel angles, struts, etc. to stabilize existing abutment walls at least 15 days after concrete in drilled shaft cap beam has been poured and has attained a minimum compressive strength of 5,000 psi.
- 12** Detach existing slab from existing abutment wall. (Existing abutments must provide only vertical support of existing slab. i.e. Contractor may incrementally install Teflon pads between bottom of slab to remain and the existing abutment wall to be removed.)
- 13** Remove portion of existing slab to expose existing rebar. Weld all existing horizontal (longitudinal) reinforcement in slab to reinforcement in bridge slab extension and extend post-tensioning ducts to ends of bridge slab extensions.
- 14** Remove existing sidewalks and railings.
- 15** Install remainder of post-tensioning ducts at pier.
- 16** Construct concrete overlay on existing slab.
- 17** Construct bridge slab extensions, including portion of W12 indicated on sheet SB131, 24 hours after concrete overlay pour. Do not place any load on the concrete overlay.
- 18** Install post-tensioning tendons and stress tendons. See SB9 series for phasing and sequencing.
- 19** Stress the remainder of the tendons and grout ducts. See SB9 series for phasing and sequencing.
- 22** Construct end beams and corbels a minimum of 30 days after the bridge slab extension pour. End beam concrete placement shall occur between 2:00 am and 5:00 am.
- 23** Construct portions of Retaining Walls 3 and 4 adjacent to Abutment No. 1.
- 24** Remove temporary restraints for existing abutment, existing abutments and (remainder) portion of existing wingwall and excavate behind existing abutments. Patch abutment cap beam where temporary restraints were located and soffit of overpass.
- 25** Install geocomposite drains and shotcrete.
- 26** Construct facings at abutment #1 and abutment #2.
- 27** Construct sidewalks and curb ramps (except at approach slabs and sleeper slabs) and W12 jacket.
- 28** Construct railings a minimum of 7 days after sidewalk pour.
- 29** Install FRP on soffit of overpass.
- 30** Install Bumper.
- 31** Construct wingwalls and Wall G1 a minimum of 14 days after end beam pour and after the end beam has attained a minimum compressive strength of 5,000 psi.
- 32** Backfill behind abutments equally. The difference in height of backfill at the abutments shall not exceed 2 ft at any time.
- 35** Construct approach slabs a minimum of 7 days after casting sleeper slab and after the sleeper slab concrete has attained a minimum compressive strength of 4,000 psi.
- 36** Construct remainder of sidewalks and curb ramps a minimum of 7 days after casting approach slab and after the approach slab concrete has attained a minimum compressive strength of 4,000 psi.
- 37** Construct Westbound Barrier Wall at Abutment No. 2.
- 38** Backfill behind Westbound Barrier Wall.
- 39** Grind sleeper slabs, approach slabs, slab extensions and overlay a minimum of 14 days after casting the approach slabs.
- 40** Apply surface treatment.
- 41** Installing lighting
- 42** Remove BMPs.



THIS SEAL IS VALID ONLY IF USED BY THE ENGINEER WHOSE NAME IS ON THE SEAL AND WHOSE LICENSE IS CURRENT AND IN FULL COMPLIANCE WITH THE HAWAIIAN ENGINEERING ACT.

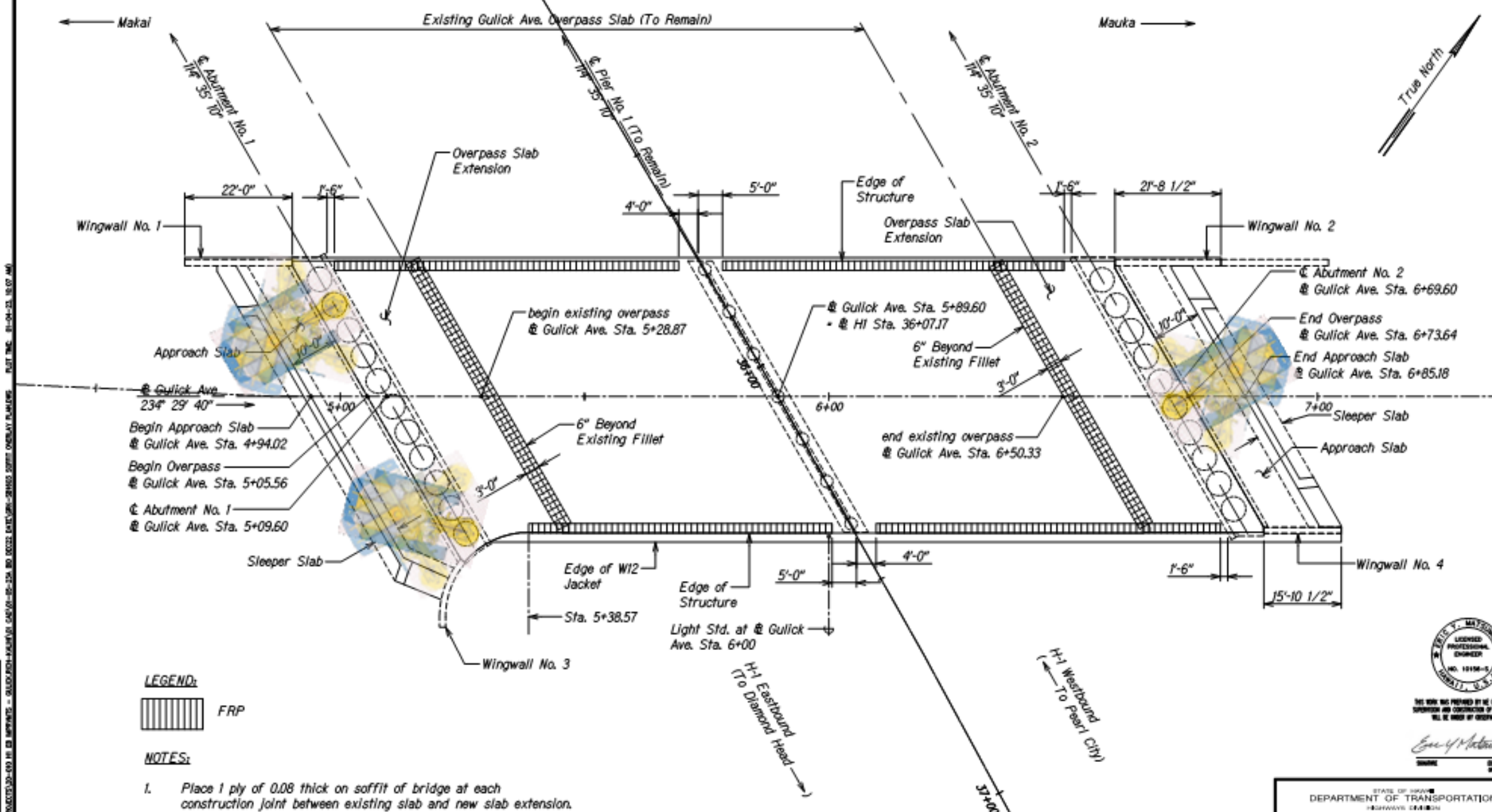
*Eric Y. Matsushima*  
Professional Engineer  
No. 10196-D  
State of Hawaii

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAY DIVISION  
**GULICK AVENUE OVERPASS  
CONSTRUCTION SEQUENCE**

PROJECT: SB-018-2015-001; SHEET: SB-018-2015-001-001; DATE: 11/11/2015; TIME: 10:29 AM

# (11) 5-foot diameter shafts Makai, and (10) shafts Mauka

PROJ. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	NY-HI-V2801	2023	403	466



**LEGEND:**



**NOTES:**

1. Place 1 ply of 0.08 thick on soffit of bridge at each construction joint between existing slab and new slab extension.
2. See Special Provisions Section 577.

FRP - REFLECTED SOFFIT PLAN



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

*Jeffrey S. Matsumoto*  
 LICENSED PROFESSIONAL ENGINEER  
 STATE OF HAWAII

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION  
**GULICK AVENUE OVERPASS**  
 FRP - REFLECTED SOFFIT PLAN

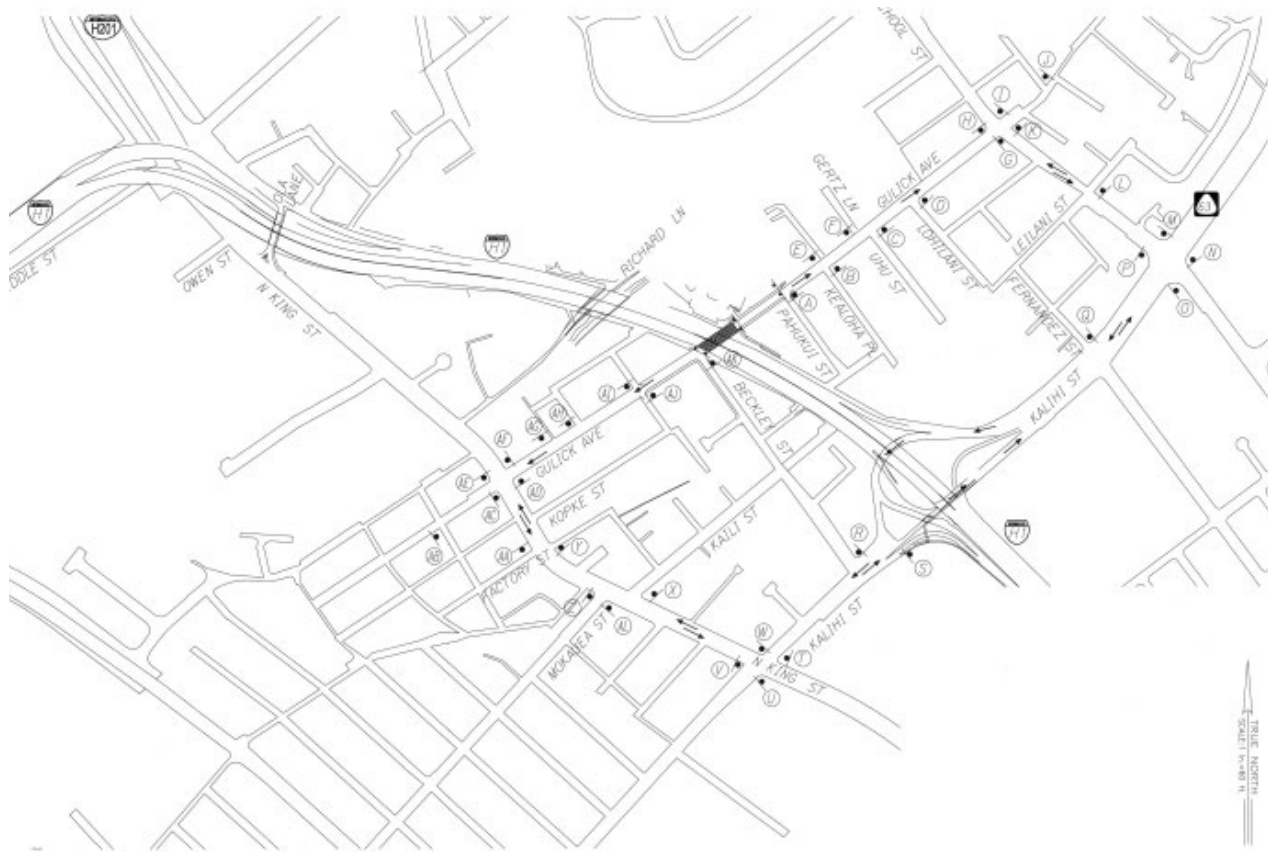
DRAWN BY: [unreadable] CHECKED BY: [unreadable] DATE: 01-24-23 10:07 AM  
 PROJECT: GULICK AVENUE OVERPASS - SHIMIZU STREET OVERLAY PLAN  
 SHEET NO. 403 OF 466



- ▶ Partial lane closures continue between 7a-4p. A lot of utility relocation work to start that will require single lane closures that will alternate directions for the next year.
- ▶ Temporary ACROW pedestrian bridge will be installed around the end of September 2025 connecting Kalihi Waena park to mauka side of the freeway.
- ▶ Full Closure for drilled shaft installation approximate September through early November 2025.
- ▶ Back to Partial Closure approximate December through February 2026 for P/T duct installation work.
- ▶ Then full closure of bridge from approximate March 2026 through Sep 2026 for structural elements of the bridge work.
- ▶ After this major work, we will be back to the 7-4p to finish up paving/close-out, etc through end of 2026.



**ROAD  
CLOSED**



Detour while  
Gulick OP is  
closed



# H-1 lane closures:

Eastbound (majority of work):

- 24-hour shoulder lane closures through end of the project
- 9p-4:30a; 2-lane closures and King Street on ramp closure starting just after King Street off ramp to just before the Likelike off ramp.

Westbound:

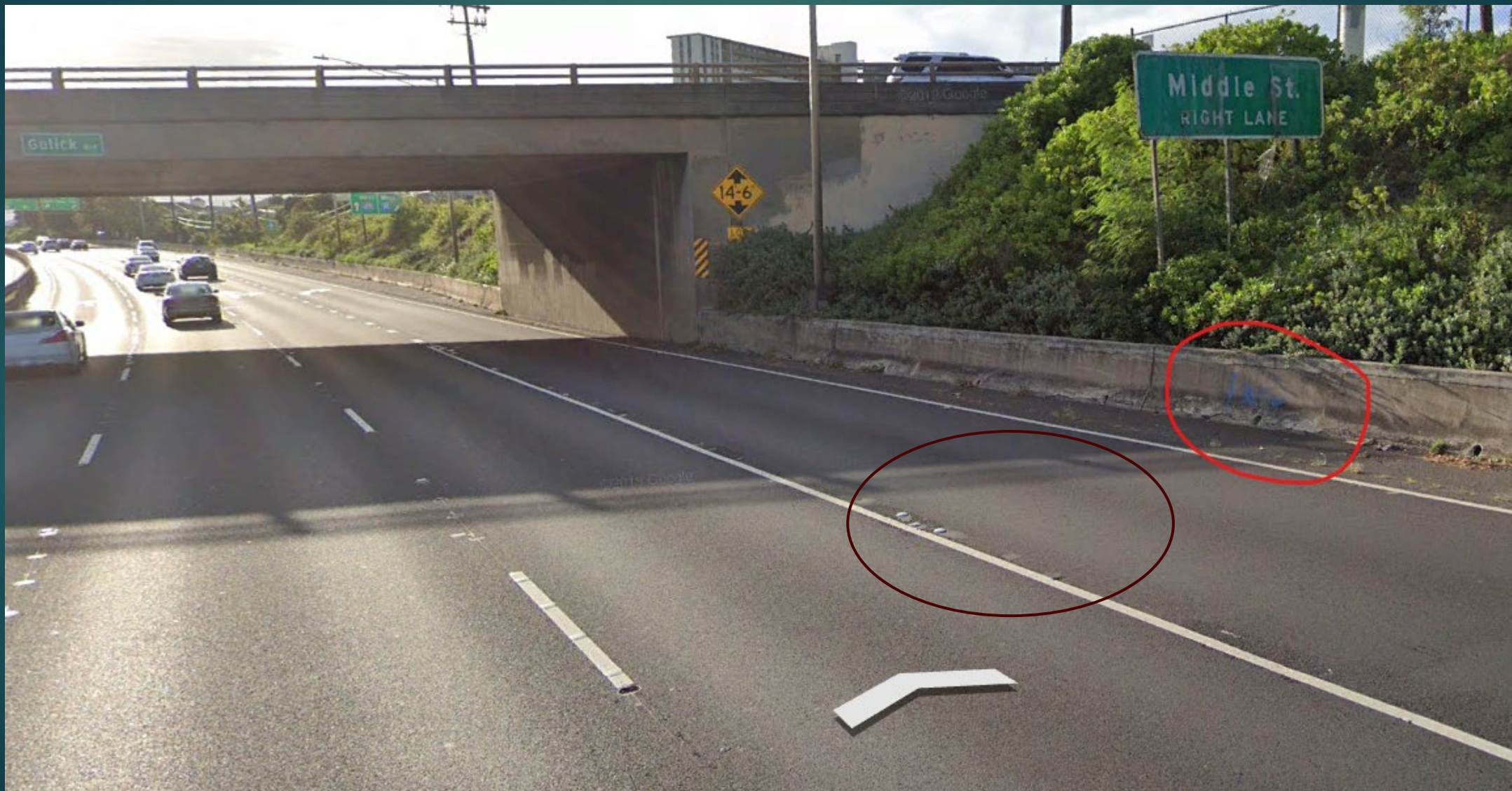
- 2-lane closure and Palama on ramp, Likelike on ramp closures starting just after the Palama Street off ramp to just after the Likelike off ramp

# H-1 lane closures for the waterline tie-in work:

24-hour 1-2 lane closures on the H1 over (6) weekends in mid 2025 to complete 36-inch waterline tie in (3 weekends EB, 3 weekends WB).

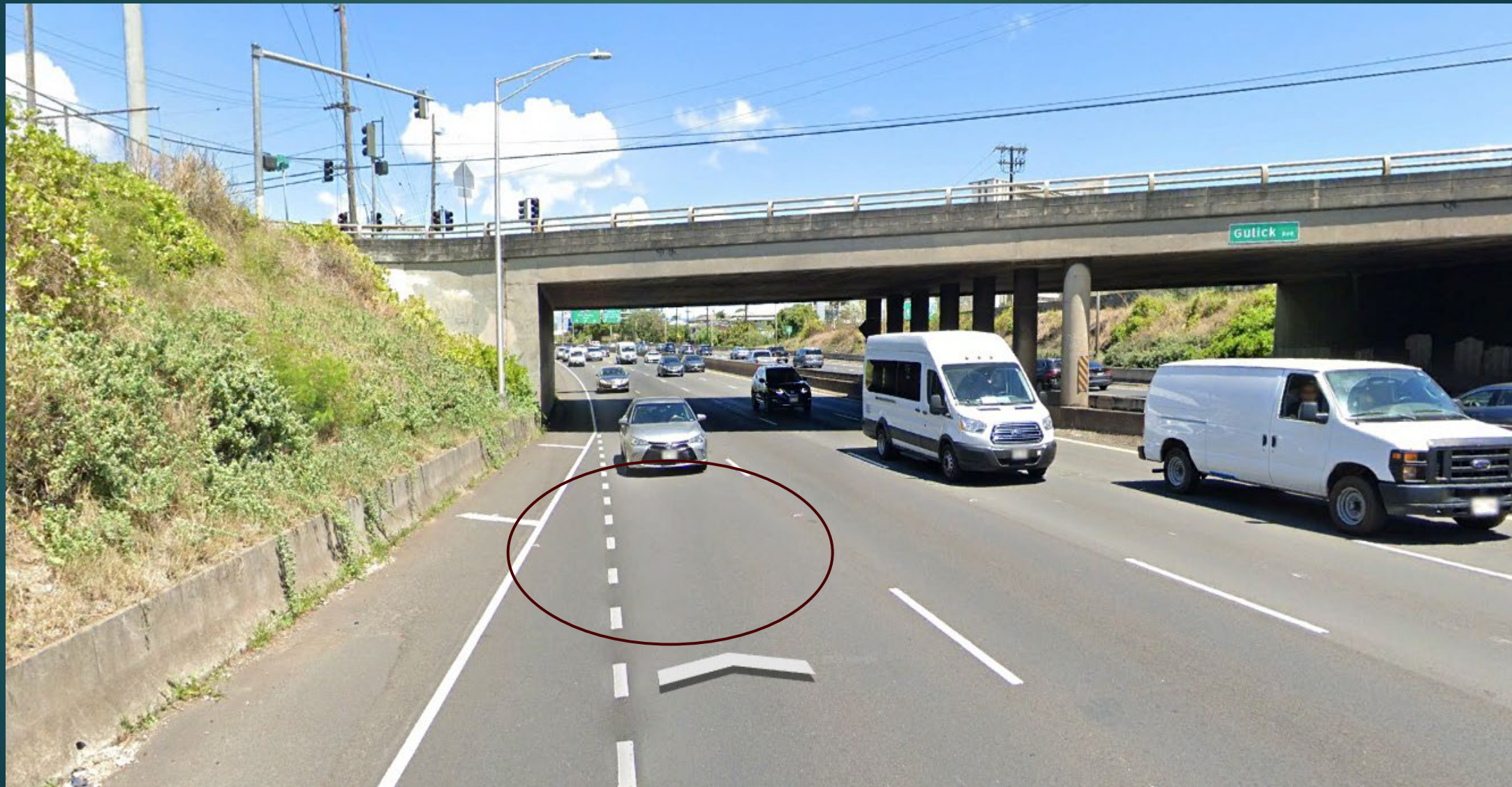


# H1 Westbound:





# H1 Eastbound:





# Work sequencing: Total of 6 weekends Friday night through Monday Morning mid 2025

- ▶ H1 EB Direction (Makai):
  - ▶ First Weekend (5 10-hour shifts): expose existing jacket, partial demo, pour reaction block, cure concrete
  - ▶ Second Weekend (5 10-hour shifts): Shutdown and tie in 36" waterline, cure concrete
  - ▶ Third Weekend (1-2 shifts): Backfill, pave, stripe

## **2-week gap piping install, hydrotest, chlorinate Mauka side**

- ▶ H1 WB Direction (Mauka):
  - ▶ First Weekend (5 10-hour shifts): expose existing jacket, partial demo, pour reaction block, cure concrete
  - ▶ Second Weekend (5 10-hour shifts): Shutdown and tie in 36" waterline, cure concrete
  - ▶ Third Weekend (1-2 shifts): Backfill, pave, stripe

# H1 Full Closures

- ▶ Two weekend full closures will be needed for installation and removal of the temporary pedestrian bridge.
- ▶ Times for the weekend full closures:
  - ▶ Saturday 8 p.m. to midnight
  - ▶ Sunday midnight to 8 a.m.

PHASING SCHEDULE						
PHASE	PHASE DESCRIPTION	MAJOR ACTIVITIES	CORRESPONDING DETOUR PLAN	SURFACE STREET CLOSURES	H-1 LANE CLOSURES	TRAFFIC CONTROL PLAN SCHEME
1	H-1 EB Widening Plan	Roadway widening, retaining walls, lighting, cantilever sign structures, and drainage structures along H-1 (except in the vicinity of Gulick Avenue Bridge)			H-1 EB Shoulder	Figure 1
2A	Temporary Pedestrian Bridge and Temporary Relocation of Utilities Plan	Temporary traffic signal at Gulick Avenue/Beckley St. Install temporary pedestrian bridge and lighting, relocate utilities, and pedestrian connections.	H-1 EB Closure H-1 WB Closure Beckley WB Closure	Gulick Avenue (1 lane closure during non-peak and nighttime hours with police officer) Beckley Street WB Closure	H-1 EB Shoulder  H-1 EB Full Closure H-1 WB Full Closure	Figure 1  H-1 Eastbound Closure H-1 Westbound Closure
2B	Temporary Pedestrian Bridge and Temporary Relocation of Utilities Plan	Relocate existing gas and sewer on Gulick Bridge.		Gulick Avenue (1 lane closure during non-peak and nighttime hours with police officer)		Figure 2
3A	Gulick Bridge Plan	Adjust temporary traffic signal at Gulick Avenue/Beckley St. Install pedestrian crossing of Gulick Avenue to temporary pedestrian bridge. Construct bridge work per Gulick Avenue Bridge Construction Sequence, Steps 1 through 9. H-1 center pier work.		Gulick Avenue (1 lane closure during non-peak and nighttime hours with police officer)	H-1 EB Lane Closure (up to 2 lanes) H-1 WB Lane Closure (up to 2 lanes)	Figure 2, 3, 4 # 5
3B	Gulick Bridge Plan	Construct bridge work per Gulick Avenue Bridge Construction Sequence, Steps 10 through 23.	Gulick Bridge Full Closure Pedestrian Bridge			
3C	Gulick Bridge Plan	Remove existing bridge abutments and wingwalls per Gulick Avenue Bridge Construction Sequence, Step 24.	Gulick Bridge Full Closure Pedestrian Bridge		H-1 EB Lane Closure (up to 2 lanes) H-1 WB Lane Closure (up to 2 lanes)	Figure 3, 4 # 5
3D	Gulick Bridge Plan	Construct facing at new abutments per Gulick Avenue Bridge Construction Sequence, Steps 25 through 42. Install drainage infrastructure and H-1 roadway pavement under bridge. Install Westbound barrier wall.	Gulick Bridge Full Closure Pedestrian Bridge		H-1 EB Lane Closure (1 lane) H-1 WB Lane Closure (1 lane)	Figure 3 # 5
3E	Gulick Bridge Plan	Remove temporary pedestrian bridge, install permanent traffic signal and remove temporary signal infrastructure.	H-1 EB Closure H-1 WB Closure	Gulick Avenue (1 lane closure during non-peak and nighttime hours with police officer)	H-1 EB Full Closure H-1 WB Full Closure	H-1 Eastbound Closure H-1 Westbound Closure
4	Kalhi Stream Bridge Plan	Relocate existing sewer and gas line on Richard Lane. Relocate existing utilities on bridge. Construct bridge work per Richard Lane/Kalhi Stream Bridge Construction, Steps 2 through 14.		Richard Lane (1 lane closure during non-peak and nighttime hours with police officer)	H-1 EB Shoulder (up to 2 lanes) H-1 EB Lane Closure (1 lane) H-1 WB Lane Closure (1 lane)	Figure 1, 2, 3, 4 # 5
5	H-1 EB Final Paving and Striping Plan	Pave final lift of pavement. Install final striping and pavement markings. Restore park property, private property, driveways and sidewalk.			H-1 EB Lane Closure (up to 2 lanes)	Figure 3 # 4



# Work at Gulick Avenue





Any Questions?