

GENERAL NOTES

1. The scope of work for this project includes constructing a new bridge across the Kaipapau Stream; installing temporary diversion road, temporary prefabricated steel beam bridge, walls and fences; channel shaping; shoulder improvements, installing bridge approaches; pavement markings, striping and signing; guardrails and end treatments and relocating water and utility lines.
2. The Contractor is reminded of the requirements of Subsection 105.16 – Subcontracts, which requires him to perform work amounting to not less than 30 percent of the total contract cost less deductible items. Noncompliance with this Subsection may be grounds for rejection of bid.
3. The Contractor’s attention is directed to the following sections of the Special Provisions: Subsection 104.09 – Maintenance of Traffic; Subsection 104.11 – Utilities and Services; Subsection 107.06 – Contractor Duty Regarding Public Convenience; and Subsection 645 – Work Zone Traffic Control.
4. At the end of each day’s work, the Contractor shall remove all equipment and other obstructions and provide signage to permit free and safe passage of public traffic.
5. The existence and location of underground utilities, manholes, monuments, buried railroad tracks and concrete pavements, and other structures as shown on the plans are from the latest available data but the accuracy is not guaranteed. The encountering of other obstacles during the course of work is possible. The Contractor shall make an independent check on the ground by probing and/or with the various utility companies and governmental agencies to verify the exact locations and depths of the existing utilities and obstructions. The Contractor shall exercise proper care in excavating and cold planing in the area. Whenever connections of new utilities to existing utilities are shown on the plans, the Contractor shall expose the existing lines at the proposed connections to verify their locations and depths prior to excavating for the new lines. The Contractor shall be held liable for any damages incurred to the existing facilities and/or improvements as a result of their operations.
6. The Contractor shall notify the Engineer in writing, at least three (3) weeks prior to starting operations.
7. Dressing of shoulder, sidewalk and bus turnout shall consist of clearing, grubbing, grading, reshaping and compacting the unpaved shoulders with suitable material as shown on the plans and/or as directed by the Engineer. This work shall be considered incidental to the various contract items.
8. Existing drainage system will be functional at all times during construction. The Contractor shall furnish materials, equipment, labor, tools and incidentals necessary to maintain drainage flow. This includes all drainage runoff entering and leaving the project. This work shall be considered incidental to various contract items.
9. The Contractor shall notify in writing the Oahu Transit Services, Inc., Roads Supervisor office, 811 Middle St., Honolulu, HI 96819 (848–4571) seven (7) days prior to the start of construction.
10. The contractor shall provide vehicular access to and from all existing side streets and driveway at all times.
11. Contractor shall dispose of all construction debris at a state approved dump site.
12. The Contractor shall be held liable for any damages incurred to the existing landscaping as a result of their operations.
13. After the project is completed, the Contractor shall restore landscaping in the project limits to pre–construction condition or better.
14. All existing utilities, whether or not shown on the plans, shall be protected at all times by the Contractor during construction unless specified on the plans as abandoned. Any damage to the existing utilities shall be repaired and paid for by the Contractor.

15. Unless relocation is called for on the plans, existing utilities shall remain in service and in place at all times. If relocation of the existing utilities is required for the Contractor’s convenience, interruption of service shall be kept to a minimum and shall be done at the Contractor’s expense only with the prior written approval of the affected utility company and Engineer.
16. The Contractor shall field verify the operational status of all existing utilities to be removed or abandoned in place. Any discrepancy shall be brought to the attention of the Engineer.
17. The Contractor shall verify all dimensions and details shown on the drawings prior to the start of construction. Any discrepancy shall be immediately brought to the attention of the Engineer.
18. Construction outside the Hawaii Department of Transportation (HDOT) right–of–way is subject to permission of the affected owner as verified by HDOT.
19. For structures to be abandoned in place, the top 4’ below finish grade shall be removed and backfilled with approved material.
20. All construction work shall be done in accordance with the standards and specifications of the State Department of Transportation as amended, unless otherwise specified by the contract plans and specifications.
21. The Contractor shall notify the Engineer and contact the State Historic Preservation Division upon uncovering any potential historical artifacts or items of archaeological significance. See Section 107.13 in the 2005 State Standard Specifications.
22. The existing improvements on the premises and in adjacent area that are not to be removed shall be preserved and protected. Any and all damages resulting from the Contractor’s construction operations shall be replaced and repaired to original condition, to the satisfaction of the owner at no cost to the State.
23. For benchmark, see sheet C–9.
24. All drainage structures shall be marked as directed by the Engineer.
25. Azimuths and coordinates are referred to Government Survey Triangulation Station “Kaipapau”. Topographic survey done by R.M. Towill Corp. on 7/14/03 and 12/4/09. Topographic survey done to National Mapping Standards.
26. Elevations shown on these plans are referenced to Mean Sea Level (MSL).
27. The Contractor shall adjust centerline and reference survey monuments to the finished pavement grade. This work shall be considered incidental to superpave asphalt concrete pavement and will not be paid for separately.
28. All steel plates shall be flat and have a non–skid surface and shall emit no objectionable noise when crossed. The contractor shall safely maintain non–skid surface plate at all times. The work material shall be considered incidental to Traffic Control.
29. The Contractor shall coordinate, if applicable, construction of electrical, telephone, cable television, water, and sewer relocation work with Hawaiian Electric Company, Hawaiian Tel Com, Oceanic Cable, Board of Water Supply, and Department of Environmental Services, respectively. Coordination shall be considered incidental to roadway excavation work.

30. Stream topography continually changes. The contractor shall conduct a pre–bid stream survey and adjust construction accordingly. Any changes as a result of changes in stream topography shall be considered incidental to various items of work.
31. The contractor shall probe/excavate to verify the exact location of the 16–inch centerline pole support system within the project limits prior to any construction. The contractor shall survey the location of the waterline support system and map the waterline support system. The waterline support system shall be superimposed on the construction documents. The contract shall adjust accordingly to account for the actual location of the 16–inch waterline structural support system which includes piles, concrete cradles, concrete reaction blocks and appurtenances. Any adjustments to the contract and result of the 16–inch waterline support system will be considered incidental to various items of work.
32. The Contractor shall be advised of the following concurrent projects during this project’s duration:
- Kamehameha Highway Rehabilitation, Vicinity of Kapuhi Street to Dairy Road
 - Kamehameha Highway Resurfacing, Kamananui Road and Wilikina Dr., Vicinity of Weed Circle to Interstate Route H–2
- The Engineer will inform the Contractor when more information is known about the concurrent projects. The Contractor shall adjust trucking routes and loads accordingly. This cost shall be considered incidental to various Contract Items.

The Contractor shall be advised of the legal size and weight limits for vehicles and equipment in HRS 291–34 and HRS 291–35. In compliance with the law, the operation or transport of any equipment or truck which exceeds these limits shall apply for an Oversized and/or Overweight Vehicle permit through the Department of Transportation in accordance with HRS 291–36.

PUBLIC HEALTH, SAFETY AND CONVENIENCE NOTES:

1. The Contractor shall observe and comply with all Federal, State and local laws required for the protection of public health and safety and environmental quality.
2. The Contractor, at his own expense, shall keep the project and its surrounding areas free from dust nuisance. The work shall be in conformance with the Air Pollution Standards of the State Department of Health. The State may require supplementary measures as necessary.

WALTER G. C. CHONG

LICENSED PROFESSIONAL ENGINEERS

No. 8302-C

HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. SUPERVISION OF CONSTRUCTION IS DEFINED IN CHAPTER 16-115, HAWAII ADMINISTRATIVE RULES, ENTITLED PROFESSIONAL ENGINEERS, ARCHITECTS, SURVEYORS AND LANDSCAPE ARCHITECTS.

Walter G. C. Chong

SIGNATURE

R. M. TOWILL CORPORATION

4/30/22

LIC. EXPIRATION

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

GENERAL NOTES – 1

Kamehameha Highway

Kaipapau Stream Bridge Replacement

Federal Aid Project No. BR-083-1(48)

Scale: As Noted

Date: February 2021

SHEET No. C-2 OF SHEETS

DESIGNED BY	DATE
DRAWN BY	
CHECKED BY	
IN CHARGE	
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REVISIONS	
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SECTION 7 NOTES

- 1. According to National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Kaipapau Stream Bridge project appears to take place near a beach with a known Hawaiian monk seal haul-out-zone. Hawaiian monk seals are protected under the Marine Mammal Protection Act and the Endangered Species Act. Contractor shall employ good "best management practices" during construction to ensure debris (plastics, etc that could entangle animals if washed downstream), and pollution runoff is controlled.
- 2. Contractor shall contact Mr. David Schofield, the Marine Mammal Response Coordinator for National Marine Fisheries Service Protected Resources Division at 808-725-5161 to schedule a protected wildlife briefing between Mr. Schofield and the construction crew.

SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT NOTES

- 1. State Historic Preservation Division required that Contractor shall photograph the Kaipapau Stream Bridge before demolition. These photographs may be in digital or print format. A copy of the photograph shall be provided to the Engineer.
- 2. Contractor is required to conduct archaeological monitoring for any planned ground disturbance of any potentially sensitive area of the Area of Potential Effect.
- 3. A human burial was previously identified on the makai side of Kamehameha Highway, approximately 20 feet north of the intersection with Pipilani Place, just north (outside) of the Kaipapau Stream Bridge Replacement project area. The proximity of this burial indicates a heightened probability of additional burials in this area. In the event of the inadvertent discovery of human skeletal remains or any other significant finds, all work in the immediate vicinity should stop. Contractor shall immediately notify State Historic Preservation Division at 808-692-8015 of the findings.

FISH AND WILDLIFE NOTES FOR OUT OF WATER WORK

- 1. Any increase in the use of night-time lighting, particularly during each year's peak fallout period (September 15 through December 15) could result in additional seabird injury or mortality. Contractor shall minimized impacts to seabirds by shielding outdoor lights to the maximum extent possible, eliminating night time construction from September 15 through December 15 and providing all project staff and residents with information about seabird fallout.
- 2. Contractor shall shield all lights, including street lights so the bulb can only be seen from below and use the lowest wattage bulbs possible.
- 3. Outdoor lighting for construction work shall have automatic motion sensor switches and controls installed; or lights shall be turned off when human activity is not occurring in the lighted area.

GRADING NOTES

- 1. All grading work shall be done in accordance with State of Hawaii Standard Specifications for Road and Bridge Construction, 2005.
- 2. No contractor shall perform any grading operation so as to cause falling rocks, soil or debris in any form to fall, slide or flow onto adjoining properties, streets or natural watercourses. Should such violations occur, the Contractor may be cited and the Contractor shall immediately make all remedial actions necessary.
- 3. The Contractor, at the Contractor's own expense, shall keep the project area and surrounding area free from dust nuisance.
- 4. The underground pipes, cables or ductlines known to exist by the Design Engineer from his/her search of records are indicated on the plans. The Contractor shall verify the locations and depths of the facilities and exercise proper care in excavating in the area. Wherever connections of new utilities are shown on the plans, the Contractor shall expose the existing lines at the proposed connections to verify their locations and depths prior to excavation for the new lines.
- 5. Prevent damage to the cut face of an excavation or the sloped surfaces of a fill. Furthermore, sediment-laden runoff shall not leave the site.
- 6. All slopes and exposed areas shall be sodded, planted, or hydromulched, as soon as practicable, but no later than the end of the next work day, following the day when the earth-disturbing activities have temporarily or permanently ceased on any portion of the site. Planting shall not be delayed until all grading work has been completed. Grading to final grade shall be continuous, and any area within which work has been interrupted or delayed shall be planted. Earth-disturbing activities have permanently ceased when clearing and excavation within any area of the construction site that will not include permanent structures has been completed. Earth-disturbing activities have temporarily ceased when clearing, grading, and excavation within any area of the site that will not include permanent structures will not resume for a period of 14 or more calendar days, but such activities will resume in the future. For construction areas discharging into waters not impaired for nutrients or sediments, complete initial stabilization within 14 calendar days after the temporary or permanent cessation of earth-disturbing activities. For construction areas discharging into nutrient or sediment impaired waters, complete initial stabilization within 7 calendar days after the temporary or permanent cessation of earth-disturbing activities. For projects without an NPDES Permit for Construction activities, complete initial stabilization within 14 calendar days after the temporary or permanent cessation of earth-disturbing activities.

GRADING NOTES (CONT.)

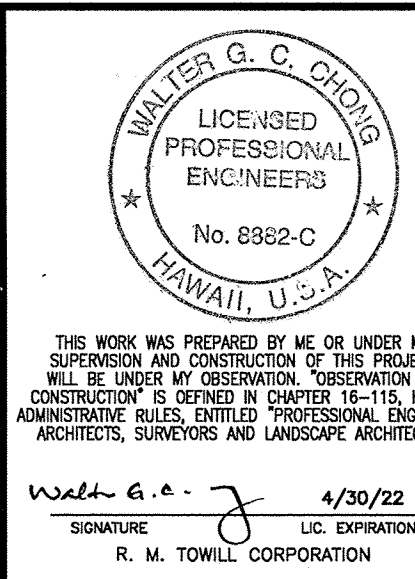
- 7. Fills on slopes steeper than 5:1 shall be keyed.
- 8. No grading work shall be done on Saturdays, Sundays and holidays at any time without prior notice and acceptance by the Engineer, provided such grading work is also in conformance with the community noise control standards contained in the Hawaii Administrative Rules, Title 11, Chapter 46, "Community Noise Control."
- 9. The limits of the area to be graded shall be flagged before the commencement of the grading work.
- 10. All grading operations shall be performed in conformance with the applicable provisions of the water quality and water pollution control standards contained in Hawaii Administrative Rules, Title 11, Chapter 54, "Water Quality Standards," and Title 11, Chapter 55, "Water Pollution Control" and if applicable, the NPDES permit for the project.
- 11. The measures to control erosion and other pollutants shall be in place before any earth-moving phase of the grading is initiated.
- 12. Temporary erosion controls shall not be removed before permanent erosion controls are in-place and established.
- 13. Temporary erosion control procedures shall be submitted to the Engineer for approval prior to application for permit.
- 14. If the grading work involves contaminated soil, then all grading work shall be done in conformance with applicable State and Federal requirements.
- 15. Building permit for retaining walls shall be obtained from the Department of Public Works prior to commencement of grading work on site.
- 16. In the event any artifacts or human remains are uncovered during construction operations, the contractor shall immediately suspend work and notify the Island of Hawaii District office ((808) 933-8866), the Island of Hawaii Police Department, the State Department of Land and Natural Resources-Historic Preservation Division (808-933-7650).
- 17. Non-compliance to any of the above requirements shall mean immediate suspension of all work, and remedial work shall commence immediately. All costs incurred shall be billed to the violator. Furthermore, violators shall be subjected to administrative, civil and/or criminal penalties.
- 18. Place topsoil prior to placement of erosion control matting, in accordance with the requirements of Section 617-Planting Soil, and Section 716-Geotextiles.
- 19. Any loose/soft soils encountered shall be removed and backfilled with proper compacted fill prior to mass grading.

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-083-1(48)	2021	4	161

NATIONAL MARINE FISHERIES SERVICE (NMFS) PROTECTED RESOURCES DIVISION, FISH & WILDLIFE NOTES, BEST MANAGEMENT PRACTICES (BMPs) FOR IN-STREAM WATER WORK

NMFS Protected Resources Division recommends implementation of the following BMPs to reduce potential adverse affects on protected marine species. These BMPs are in no way intended to supersede or replace measures required by any other agency including, but not limited to the ACOE, USFWS, USEPA, or NMFS Habitat Conservation Division. BMPs shall be considered incidental to the various items of work.

- 1. Constant vigilance shall be kept for the presence of Endangered Species Act (ESA)-listed marine species during all aspects of the proposed action, particularly in-water activities such as deploying the buoys' anchors and mooring lines, boat operations, or diving.
 - a. The project manager shall designate a competent observer to survey the marine areas adjacent to the proposed action for ESA-listed marine species.
 - b. Surveys shall be made prior to the start of work each day, and periodically during the day, including prior to resumption of work following any break of more than one half hour.
 - c. All in-water work will be postponed or halted when ESA-listed marine species are within 50 feet of the proposed work, and will only begin/resume after the animals have voluntarily departed the area. If ESA-listed marine species are noticed after work has already begun, that work may continue only if there is no way for the activity to adversely affect the animal(s).
- 2. No contamination of the marine environment will result from project-related activities.
 - a. A contingency plan to control petroleum products accidentally spilled during the project will be developed. Appropriate materials to contain and clean potential spills will be stored at the work site, and be readily available.
 - b. All project-related materials and equipment placed in the water will be free of pollutants. The project manager and heavy equipment operators will perform daily pre-work equipment inspections for cleanliness and leaks. All heavy equipment operations will be postponed or halted should a leak be detected, and will not proceed until the leak is repaired and equipment cleaned.
 - c. A plan will be developed to prevent debris and other wastes from entering or remaining in the marine environment during the project.



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GENERAL NOTES - 2

Kamehameha Highway
Kaipapau Stream Bridge Replacement
Federal Aid Project No. BR-083-1(48)

Scale: As Noted Date: February 2021

WATER POLLUTION AND EROSION CONTROL NOTES

- A. GENERAL:
- See Special Provisions Section 209 – Water Pollution and Erosion Control. Section 209 describes but is not limited to: submittal requirements; scheduling of a water pollution and erosion control conference with the Engineer; construction requirements; method of measurement; and basis of payment. In addition, Appendix A lists potential pollutant sources and corresponding BMPs used to mitigate the pollutants.
 - Follow the guidelines in the current HDOT Construction Best Management Practices Field Manual in developing, installing and maintaining the Best Management Practices (BMP) for the project. For any conflicting requirements between the Manual and applicable bid documents, the applicable bid documents will govern. Should a requirement not be clearly described within the applicable bid documents, the Contractor shall notify the Engineer immediately for interpretation. For the purposes of clarification under Note A.2, "applicable bid documents" include the construction plans, standard specifications, Special Provisions, Permits, and the Storm Water Pollution Prevention Plan (SWPPP) when applicable.
 - Follow the guidelines in the Honolulu’s City & County ”Rules Relating to Soil Erosion Standards and Guidelines” along with applicable Soil Erosion Guidelines for projects on Maui, Molokai, Kauai, and Hawaii.
 - The Engineer may assess liquidated damages of up to \$27,500 for non–compliance of each BMP requirement and each requirement stated in Section 209 and special provisions, for every day of non–compliance. There is no maximum limit on the amount assessed per day.
 - The Engineer will deduct the cost from the progress payment for all citations received by the Department for non–compliance, or the Contractor shall reimburse the State for the full amount of the outstanding cost incurred by the State.
 - If necessary, install a rain gage prior to any field work including the installation of any site–specific best management practices. The rain gage shall have a tolerance of at least 0.05 inches of rainfall. Install the rain gage on the project site in an area that will not deter rainfall from entering the gage opening. Do not install in a location where rain water may splash into rain gage. The rain gage installation shall be stable and plumbed. Do not begin field work until the rain gage is installed and site–specific best management practices are in–place.
 - Submit Site–Specific BMP Plan to the Engineer along with a completed Site–Specific BMP Review Checklist within 30 calendar days of contract execution. The Site–Specific BMP Review Checklist may be obtained from <http://www.stormwaterhawaii.com>.

- B. WASTE DISPOSAL:
- Waste Materials: Collect and store all waste materials in a securely lidded metal dumpster or roll off container with cover to keep rain out or loss of waste during windy conditions. The dumpster shall meet all local and State solid waste management regulations. Deposit all trash and construction debris from the site in the dumpster. Empty the dumpster weekly or when the container is two–thirds full, whichever is sooner. Do not bury construction waste materials onsite. The Contractor’s supervisory personnel shall be instructed regarding the correct procedure for waste disposal. Post notices stating these practices in the office trailer, on a weatherproof bulletin board, or other accessible location acceptable to the Engineer. The Contractor shall be responsible for seeing that these procedures are followed. Submit the Solid Waste Disclosure Form for Construction Sites to the Engineer within 30 calendar days of contract execution. Provide a copy of all the disposal receipts from the facility permitted by the Department of Health to receive solid waste to the Engineer monthly. This should also include documentation from any intermediary facility where solid waste is handled or processed.
 - Hazardous Waste: Dispose all hazardous waste materials in the manner specified by local or State regulations and by the manufacturer. The Contractor’s site personnel shall be instructed in these practices and shall be responsible for seeing that these practices are followed.

WATER POLLUTION AND EROSION CONTROL NOTES (CONT.)

- Sanitary Waste: Collect all sanitary waste from the portable units a minimum of once per week, or as required. Position sanitary facilities where they are secure and will not be tipped over or knocked down.
- EROSION AND SEDIMENT CONTROL INSPECTION AND MAINTENANCE PRACTICES:
 - For projects with an NPDES Permit for Construction Activities, inspect at the following intervals. For construction areas discharging to nutrient or sediment impaired waters, inspect all control measures at least once each week and within 24 hours of any rainfall event of 0.25 inches or greater within a 24 hour period. For construction areas discharging to waters not impaired for nutrient or sediments, inspect all control measures weekly. Inspections are only required during the project’s normal working hours. The discharge point water classification may be found in the SWPPP.
 - For projects without an NPDES Permit for Construction Activities, inspect all control measures weekly.
 - Maintain all erosion and sediment control measures in good working order. If repair is necessary, initiate repair immediately and complete by the close of the next work day if the problem does not require significant repair or replacement, or if the problem can be corrected through routine maintenance. When installation of a new erosion or sediment control or a significant repair is needed, install the new or modified control or complete the repair no later than 7 calendar days from the time of discovery. ”Immediately” means the Contractor shall take all reasonable measures to minimize or prevent discharge of pollutants until a permanent solution is installed and made operational. If a problem is identified at a time in the day in which it is too late to initiate repair, initiation of repair shall begin on the following work day.
 - Remove built–up sediment from silt fence when it has reached one–third the height of the fence. Remove sediment from other perimeter sediment control devices when it has reached one–half the height of the device.
 - Inspect silt screen or fence for depth of sediment, tears, to verify that the fabric is securely attached to the fence posts or concrete slab and to verify that the fence posts are firmly in the ground. Inspect and verify the bottom of the silt screen is buried a minimum of 6 inches below the existing ground.
 - Inspect temporary and permanent seeding and planting for bare spots, washouts and healthy growth.
 - Complete and submit to the Engineer a maintenance inspection report within 24 hours after each inspection.
 - Provide a stabilized construction entrance at all points of exit onto paved roads to reduce vehicle tracking of sediments. Include stabilized construction entrance in the Water Pollution, Dust, and Erosion Control submittals. Minimum length should be 50 feet. Minimum width should be 30 feet. Minimum depth should be 12 inches or as recommended by the soils engineer and underlain with geo–textile fabric. If minimum dimensions cannot be met, provide other stabilization techniques that remove sediment prior to exit. Clean the paved street adjacent to the site entrance daily or as required to remove any excess mud, cold–planed materials, dirt or rock tracked from the site. Do not hose down the street without containing or vacuuming wash water. Cover dump trucks hauling material from the construction site with a tarpaulin. Remove sediment tracked onto the street, sidewalk, or other paved area by the end of the day in which the track–out occurs.
 - Include designated Concrete Washout Area(s) in the Water Pollution, Dust, and Erosion Control submittals.
 - Submit the name of a specific individual designated responsible for inspections, maintenance and repair activities and filling out the inspection and maintenance report.
 - Personnel selected for the inspection and maintenance responsibilities shall receive training from the Contractor. They shall be trained in all the inspection and maintenance practices necessary for keeping the erosion and sediment controls used onsite in good working order.

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-083-1(48)	2021	5	161

WATER POLLUTION AND EROSION CONTROL NOTES (CONT.)

- Contain, remove, and dispose slurry generated from saw cutting of pavement in accordance with approved BMP practices. Do not allow discharge into the drainage system or State waters.
- For projects with an NPDES Permit for Construction Activities, immediately initiate stabilizing exposed soil areas upon completion of earth–disturbing activities for areas where earth–disturbing activities have permanently or temporarily ceased. Earth–disturbing activities have permanently ceased when clearing and excavation within any area of the construction site that will not include permanent structures has been completed. Earth–disturbing activities have temporarily ceased when clearing, grading, and excavation within any area of the site that will not include permanent structures will not resume (i.e., the land will be idle) for a period of 14 or more calendar days, but such activities will resume in the future. For construction areas discharging into waters not impaired for nutrients sediments, complete initial stabilization within 14 calendar days after the temporary or permanent cessation of earth–disturbing activities. For construction areas discharging into nutrient or sediment impaired waters, complete initial stabilization within 7 calendar days after the temporary or permanent cessation of earth–disturbing activities. Classification of water at the discharge point may be found in the SWPPP.
- For projects without an NPDES Permit for Construction Activities, complete initial stabilization within 14 calendar days after the temporary or permanent cessation of earth–disturbing activities.

D. GOOD HOUSEKEEPING BEST MANAGEMENT PRACTICES:

- Materials Pollution Prevention Plan
 - Applicable materials or substances listed below are expected to be present onsite during construction. Other materials and substances not listed below shall be added to the inventory.

Concrete	Cleaning Solvents
Detergents	Wood
Paints (enamel and latex)	Masonry Block
Metal Studs	Herbicides and Pesticides
Tar	Curing Compounds
Fertilizers	Adhesives
Petroleum Based Products	
 - Use Material Management Practices to reduce the risk of spills or other accidental exposure of materials and substances to storm water runoff. Make an effort to store only enough product as is required to do the job.
 - Store all materials stored onsite in a neat, orderly manner in their appropriate containers and if possible under a roof or other enclosure.
 - Keep products in their original containers with the original manufacturer’s label.

SURVEY PLANNED BY	DATE
DRAWN BY	REV
DESIGNED BY	WC
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	

WALTER G. C. CHONG

LICENSED PROFESSIONAL ENGINEERS

No. 9382-C

HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. OBSERVATION OF CONSTRUCTION IS DEFINED IN CHAPTER 16-115, HAWAII ADMINISTRATIVE RULES, ENTITLED "PROFESSIONAL ENGINEERS, ARCHITECTS, SURVEYORS AND LANDSCAPE ARCHITECTS."

WALTER G. C.

SIGNATURE

4/30/22

LIC. EXPIRATION

R. M. TOWILL CORPORATION

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

WATER POLLUTION & EROSION CONTROL NOTES – 1

Kamehameha Highway

Kaipapau Stream Bridge Replacement

Federal Aid Project No. BR-083-1(48)

Scale: As Noted

Date: February 2021

SHEET No. C-4 OF SHEETS

RMTC JOB NO. : 1-19548-0E

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- e. Do not mix substances with one another unless recommended by the manufacturer.
- f. Whenever possible, use a product up completely before disposing of the container.
- g. Follow manufacturer's recommendations for proper use and disposal.
- h. Conduct a daily inspection to ensure proper use and disposal of materials onsite.
2. Hazardous Material Pollution Prevention Plan
 - a. Keep products in original containers unless they are not resealable.
 - b. Retain original labels and Safety Data Sheets (SDS), formerly Material Safety Data Sheets (MSDS).
 - c. Dispose of surplus products according to manufacturers' instructions and local and State regulations.
3. Onsite and Offsite Product Specific Plan

The following product specific practices shall be followed onsite:

 - a. Petroleum Based Products: Monitor all onsite vehicles for leaks and perform regular preventive maintenance to reduce the chance of leakage. Store petroleum products in tightly sealed containers which are clearly labeled. Apply asphalt substances used onsite according to the manufacturer's recommendation.
 - b. Fertilizers: Apply fertilizers used only in the minimum amounts recommended by the manufacturer and federal, state, and local requirements. Avoid applying just before a heavy rain event. Apply at the appropriate time of year for the location, and preferably timed to coincide as closely as possible to the period of maximum vegetation uptake and growth. Once applied, work fertilizer into the soil to limit exposure to storm water. Do not apply to storm conveyance channels with flowing water. Storage shall be in a covered shed or in an area where fertilizer will not come into contact with precipitation or stormwater. Transfer the contents of any partially used bags of fertilizer to a sealable plastic bin to avoid spills.
 - c. Paints: Seal and store all containers when not required for use. Do not discharge excess paint to the drainage system, sanitary sewer system, or State waters. Dispose properly according to manufacturers' instructions and State and local regulations.
 - d. Concrete Trucks: Washout or discharge concrete truck drum wash water only at a designated site as far as practicable from storm drain inlets or State waters. Do not discharge water in the drainage system or State waters. Disposal by percolation is prohibited. Clean disposal site as required or as requested by the Engineer.
4. Spill Control Plan
 - a. Post a spill prevention plan to include measures to prevent and clean up each spill.
 - b. The Contractor shall be the spill prevention and cleanup coordinator. Designate at least three site personnel who shall receive spill prevention and cleanup training. These individuals shall each become responsible for a particular phase of prevention and cleanup. Post the names of responsible spill personnel in the material storage area on a weatherproof bulletin board or other accessible location acceptable to the Engineer and in the office trailer onsite.
 - c. Clearly post manufacturers' recommended methods for spill cleanup. Make site personnel aware of the procedures and the location of the information and cleanup supplies.

- d. Keep ample materials and equipment necessary for spill cleanup in the material storage area onsite.
- e. Clean up all spills immediately after discovery.
- f. Keep the spill area well ventilated. Personnel shall wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
- g. Report spills of toxic hazardous material to the appropriate State or local government agency, regardless of the size. Where a leak, spill, or other release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR Part 110, 40 CFR Part 117, or 40 CFR Part 302 occurs during a 24-hour period, the Contractor shall notify the Engineer as soon as the Contractor has knowledge of the discharge. The Engineer will notify the National Response Center (NRC) at (800) 424-8802, the Clean Water Branch during regular business hours at 586-4309, and the Hawaii State Hospital Operator at 247-2191 and the Clean Water Branch (DOH-CWB) via email at cleanwaterbranch@doh.hawaii.gov during non-business hours immediately. The Contractor shall also provide to the Engineer, within 7 calendar days of knowledge of the release, a description of the release, the circumstances leading to the release, and the date of the release. The Engineer will provide this information to the DOH-CWB. The Engineer will provide information to the NRC if requested.

E. PERMIT REQUIREMENTS:

1. A National Pollutant Discharge Elimination System (NPDES) Permit for Construction Activities of one acre or more of disturbed area is required for this project. If the Contractor requires extra land disturbance, including staging and storage areas, that is not covered by the NPDES Permit obtained by the State, the Contractor shall be responsible for obtaining the required NPDES Construction Activities Permit to cover this additional disturbed area. See Hawaii Administrative Rules Chapter 11-55, Appendix C for definition of land disturbance. The Contractor's attention is directed to the applicable NPDES Permit documents on the bid package compact disc.
2. Comply with all applicable State and Federal Permit conditions. Permits may include, but not limited to the following:
 - a. NPDES Permit for Construction Activities
 - b. NPDES Permit for Construction Dewatering
 - c. NPDES Permit for Hydrotesting Waters
 - d. Water Quality Certification
 - e. Stream Channel Alteration Permit
 - f. Section 404 Army Corps of Engineer Permit

F. SITE-SPECIFIC BMP REQUIREMENTS:

Each BMP below is referenced to the corresponding section of the current HDOT Construction Best Management Practices Field Manual and appropriate Supplemental Sheets. The Manual may be obtained from the HDOT Statewide Stormwater Management Program Website at <http://www.stormwaterhawaii.com/resources/contractors-and-consultants/> under Construction Best Management Practices Field Manual. Supplemental BMP sheets are located at <http://stormwaterhawaii.com/contractors-and-consultants/storm-water-pollution-prevention-plan-swppp/> under Concrete Curing and Irrigation Water.

The requirements for Water Pollution, Dust, and Erosion Control submittals are included in Section 209 of the Hawaii Standard Specifications for Road and Bridge Construction dated 2005 and applicable Special Provisions. A list of pollutant sources and corresponding BMP used to mitigate the pollutants are included in Section 209 of the Special Provisions under Appendix A.

F. (Continued)
Follow the requirements below:

1. Protect all Drainage Inlets receiving runoff from disturbed areas (SC-2).
2. Contain on-site runoff using Perimeter Sediment Controls
 - a. SC-1 Silt Fence
 - b. SC-5 Vegetated Filter Strips and Buffers
 - c. SC-8 Compost Filter Berm
 - d. SC-13 Sandbag Barrier
 - e. SC-14 Brush or Rock Filter
3. Control offsite runoff from entering construction area
 - a. EC-8 Run-On Diversion
 - b. SC-6 Earth Dike
 - c. SC-7 Temporary Drains and Swales
4. Incorporate applicable Site Management BMP
 - a. SM-1 Employee Training
 - b. SM-2 Material Delivery and Storage
 - c. SM-3 Material Use
 - d. SM-4 Protection of Stockpiles
 - e. SM-6 Solid Waste Management
 - f. SM-7 Sanitary/Septic Waste Management
 - g. SM-9 Hazardous Waste Management
 - h. SM-10 Spill Prevention and Control
 - i. SM-11 Vehicle and Equipment Cleaning
 - j. SM-12 Vehicle and Equipment Maintenance
 - k. SM-13 Vehicle and Equipment Refueling
 - l. SM-14 Scheduling
 - m. SM-15 Location of Potential Sources of Sediment
 - n. SM-16 Preservation of Existing Vegetation
 - o. SM-18 Dust Control
5. Contain pollutants within the Construction Staging/Storage Area BMP with applicable Perimeter Sediment Controls and Site Management BMP. Include a Stabilized Construction Entrance/Exit (EC-2) for all areas which exit onto a paved street. Restrict vehicle access to these points.
6. Manage Concrete Waste including installing a Concrete Washout Area (SM-5) and properly disposing of Concrete Curing Water (California Stormwater BMP Handbook NS-12 Concrete Curing).
7. Remove saw cut slurry and hydrodemolition water from the site by vacuuming. Provide storm drain protection and/or perimeter sediment controls during saw cutting and hydrodemolition work.

NPDES NOTES

1. Contractor shall obtain NPDES permit for off-site staging area to assemble post-tensioned sections.

1. Contractor shall obtain NPDES permit for off-site staging area to assemble post-tensioned sections.

ORIGINAL PLAN	SURVEY PLOTTED BY _____	DATE _____
NOTE BOOK	DRAWN BY _____	BSY _____
	TRACED BY _____	WC _____
	DESIGNED BY _____	_____
	QUANTITIES BY _____	_____
No. _____	CHECKED BY _____	_____

A circular professional engineer seal for Walter G. C. Chong. The outer ring contains the name "WALTER G. C. CHONG" at the top and "HAWAII, U.S.A." at the bottom. Inside the ring, it says "LICENSED PROFESSIONAL ENGINEERS". In the center, the license number "No. 8982-C" is printed.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WATER POLLUTION &
EROSION CONTROL NOTES – 2
Kamehameha Highway
Kaipapau Stream Bridge Replacement
Federal Aid Project No. BR-083-1(48)

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE IN MY OBSERVANCE. "CONSERVATION OF CONSTRUCTION" IS DEFINED IN CHAPTER 18-115, HAWAII ADMINISTRATIVE RULES, ENTITLED "PROFESSIONAL ENGINEERS, ARCHITECTS, SURVEYORS AND LANDSCAPE ARCHITECTS."

Walter G. C. Chong 4/30/22

SIGNATURE _____

LIC. EXPIRATION _____

R. M. TOWILL CORPORATION

Scale: As Noted

Date: February 2021

BOARD OF WATER SUPPLY NOTES

1. Unless otherwise specified, all materials and construction of water system facilities and appurtenances shall be in accordance with the STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, dated 2005, as amended, of the Hawaii Highways Division, Department of Transportation, and the City and County of Honolulu Board of Water Supply's "WATER SYSTEM STANDARDS", DATED 2002, THE "WATER SYSTEM EXTERNAL CORROSION CONTROL STANDARDS", VOLUME 3, DATED 1991, and all subsequent amendments and additions.
2. All plans approved by the Board of Water Supply are based solely on the adequacy of the water supply. All other features of the water system, such as lines, grades, fittings, drainage, etc., and other features of improvements shall not be the responsibility of the Board of Water Supply.
3. Test pressure shall be 150 psi. During the 30-minute pressure test, the pressure shall not drop more than 10 psi.
4. The Contractor shall notify BWS Capital Projects Division, Construction Section in writing and submit six (6) sets of approved construction plans one week prior to commencing work on the water system.
5. After installation of tapping sleeve and valve prior to actual tapping operations, the assembly shall be tested at 150 psi. on both sides of the valve.
6. The Contractor shall chlorinate the entire inside surface of each pipe and fitting with disinfection solution of 5 ounces of sodium hypochlorite mixed with 10 gallons of water. (for connection only)
7. The Contractor shall be responsible for the protection of all water lines during construction. The Contractor shall be especially careful when excavating behind water lines, tees, and bends wherever there is a possibility of water line movement due to the removal of the supporting earth beyond the existing reaction blocks. The Contractor shall take whatever measures necessary to protect the water lines, such as constructing special reaction blocks (with BWS approval) and/or modifying his construction method.
8. The existence and location of underground utilities and structures as shown on the plans are from the latest available data but is not guaranteed as to the accuracy or the encountering of other obstacles during the course of work. The Contractor shall be responsible and shall pay for all damages to existing utilities. The Contractor shall not assume that where no utilities are shown, that none exist.
9. Prior to installation, the Contractor shall submit for approval by Board of Water Supply, the manufacturer's certification that all cast iron (gray or ductile) fittings for the project conform in all respects to the Water System Standards, dated 2002.
10. Polygon shape for mechanical joint glands as described in AWWA Standard C111 shall be "straight-sided" or an approved equal on a job-to-job basis.
11. Re-approval shall be required if this project is not under construction within a period of two (2) years.
12. The Contractor/developer shall obtain a NPDES permit prior to chlorination and/or dewatering. A copy of the permit shall be submitted to the Board of Water Supply, Capital Projects Division, Construction Section.
13. Pipe cushion shall be of high resistivity material. The Contractor shall submit a soil certification that high resistant cushion material has a resistivity greater than 5,000 ohm-cm. Remainder of the backfill material shall be as specified in the water system standards. Pipe cushion and backfill material shall contain no hazardous substances above regulatory action levels including but not limited to lead, asbestos, mercury, chromium, cadmium, zinc, strontium, and polychlorinated biphenyls (pcb).
14. All ductile iron pipe, fittings and valves shall be wrapped with two (2) layers of 8 mil. polyethylene wrap. The inside surface of the polyethylene wrap to be in contact with the pipe exterior shall be infused with a blend of an antimicrobial to mitigate microbiologically influenced corrosion and a volatile corrosion inhibitor to control galvanic corrosion.
15. All ductile iron pipe and fittings, including sections requiring reinforced concrete jacketing, shall be ductile iron Class 53, and zinc coated as per the BWS Water System Standards.
16. Easement documents must be submitted to BWS and recorded before completion of project is issued.

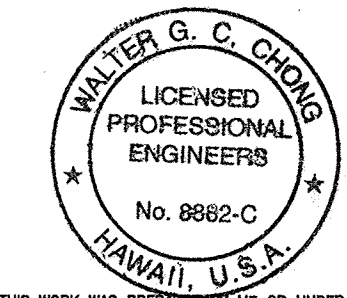
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ORIGINAL PLAN	NOTE BOOK	No.

BOARD OF WATER SUPPLY NOTES (CONT.)

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-083-1(48)	2021	7	161

17. Cleaning shall be by the use of "pigs" introduced into the pipeline and run completely through all installed pipelines and all branch lines for fire hydrants. "Pigging" of service laterals is not required. Bare foam "pigs" shall be used to swab piping clean as each length of the pipeline is installed. Each "pig" shall consist of a cylindrical piece of polyurethane foam with a density of 3-7 pounds per cubic foot and a vinyl-coated nose. Outside diameter of the "pig" shall be equal to 1-1/4 to 1-1/2 times the inside diameter of the pipe being installed. The length of the "pig" shall be 1-1/2 to 2 times its diameter. Prior to use, the "pig" shall be submerged in a chlorine solution of 1 oz. of 5% chlorine bleach in 5 gallons of water. "Pigging" of the pipeline shall be considered incidental to the installation of the new pipeline.
18. All fire hydrants to be adjusted and/or relocated shall be replaced with new fire hydrants, unless otherwise directed by the BWS.
19. Two-way blue reflective hydrant markers Type DB shall be installed at all new fire hydrant installations. Contractor shall verify the exact locations of hydrant markers with the nearest Honolulu Fire Department Battalion Chief.
20. Ball corp and ball stop shall be used in lieu of a corporation stop and stopcock, respectively.
21. Install 4 mil thick, non-metallic, blue colored, 6 inches wide warning tape over centerline of the pipe and below the base course along the entire length of trench. Tape should be marked with "caution water line buried below".
22. The Contractor shall install electronic markers to all mains and test the electronic markers prior to installations to verify proper operation. BWS personnel shall verify the number and locations of placed electronic markers before final paving of the project.
23. For ductlines crossing existing or new waterline:
A. At the electrical/signal ductline water crossings, adjust all electrical/signal ductline elevations to maintain 12" vertical clear separation from all waterlines at no cost to the board of water supply.
B. Maintain 3'-0" min. horizontal clear separation between all waterline systems and nearest electrical/signal ductlines paralleling the water system at no cost to the board of water supply.
C. Maintain 3'-0" min. horizontal clear separation between street light/traffic signal, standards (including any modular units) and the nearest water system.
D. Contractor shall field verify for any conflicts at each street light/traffic signal standard location. Where conflicts occur, the contractor shall coordinate with the project engineer to revise the street light/traffic signal standard to provide the required clearances at no cost to the BWS.
24. For cut-in connection to existing:
All waterline construction requiring shutdown connection shall be scheduled for after working hours at six (6) hours maximum downtime.
25. Contractor shall cut and plug all existing unused laterals at the mains whether or not shown on the plans. Meter and valve boxes to be or already abandoned shall be demolished or removed and properly disposed of. The damaged area shall be repaired to an equal or better condition than the immediate area. All work shall be done at the expense of the contractor.
26. Board of Water Supply approval of these plans does not constitute a water commitment. Availability of water will be determined when building permit is presented to the department. Water commitment will depend upon the status of the water system at that time. Should water service be made available, the water commitment will be effective when the project receives an approved building permit from the building department. All water commitments will be canceled in the event the building permit is canceled.

APPROVED:	MAY 24 2021
DATE	
Manager and Chief Engineer, BWS	
(for work affecting BWS facilities	
State R/W & BWS easements only)	

 <p>THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. OBSERVATION OF CONSTRUCTION IS DEFINED IN CHAPTER 16-115, HAWAII ADMINISTRATIVE RULES, ENTITLED "PROFESSIONAL ENGINEERS, ARCHITECTS, SURVEYORS AND LANDSCAPE ARCHITECTS."</p> <p>SIGNATURE: WATER G. C. CHONG LIC. EXPIRATION: 4/30/22 R. M. TOWILL CORPORATION</p>	<p>STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION</p> <p>WATER NOTES - 1</p> <p>Kamehameha Highway Kaipapau Stream Bridge Replacement Federal Aid Project No. BR-083-1(48)</p> <p>Scale: As Noted Date: February 2021</p>
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WATER METER INSTALLATION NOTES (FOR METERS SMALLER THAN 3 INCHES)

- 1. Prior to any excavating, the Contractor shall verify in the field, the location of existing waterlines and appurtenances.
- 2. Any adjustments to the existing water system required during construction, to meet the requirements of the BWS Standards, whether shown on the plans or not, shall be done by the Contractor at no cost to the Board.
- 3. The project shall be subject to the Board of Water Supply's Cross-Connection Control requirements prior to issuance of the Building Permit.
- 4. The installation, chlorination and testing of the water main and facilities after the meter shall not be the responsibility of the Board of Water Supply.
- 5. The backflow preventer device must be installed before meter is issued.
- 6. The Contractor shall furnish and install polyethylene wrap, 3 feet minimum at all taps (for DI pipe and copper lateral combination only).
- 7. Ball corp. and ball stop shall be used in lieu of a corporation stop and stopcock, respectively.

WATERLINE CHLORINATION & TESTING PROCEDURES

The following chlorination and water sample collection procedure shall apply to all water pipeline projects (All work to be coordinated through BWS Inspector):

- 1. Chlorination of Water Systems
 - a. The Contractor shall provide a 4 week advance notice, in writing, to the Officer-In-- Charge for proposed flushing, filling and bacterial testing of the new pipeline.
 - b. The Contractor shall hire a State of Hawaii -- Department of Health certified laboratory to provide water sampling services and to deliver water samples to the Micro Lab for analysis. Water samples for bacterial testing shall be delivered no later than 2:30 p.m. on the day the samples are taken to the BWS Microlab located at 630 S. Beretania St., Honolulu, HI 96843. The Micro Lab shall perform analysis and provide their results to the Officer-In-Charge by 4:30 p.m. on the following day (in some cases, final results notification may take up to 48 hours).
 - c. Water mains shall be disinfected in accordance with Honolulu Board of Water Supply Water System Standards (2002), as amended.
 - d. Liquid chlorine, chlorine based liquid disinfectants or calcium hypochlorite that has been tested and certified as meeting the specifications of ANSI/NSF Standard 60, Drinking Water Treatment Chemicals -- Health Effects, shall be used for the chlorination of the water mains.
 - e. Prior to chlorination, the water mains shall be thoroughly flushed.
 - f. The interior surfaces of the water mains shall be exposed to the chlorinating solution by completely filling the main remove air pockets, for a minimum of 24- hours and the free chlorine residual shall not be less than 10 ppm after such time.
 - g. Should the calcium hypochlorite be used, no solid and/or undissolved portion of the compound shall be introduced into any section of the water mains to be chlorinated.
 - h. At the end of the 24-hour disinfection period, representative samples shall be taken and analyzed to assure a free chlorine residual of a least 10 ppm.
 - i. Should the free chlorine residual results indicate adequate chlorination, the water mains shall be thoroughly flushed and filled with water from the existing system and again tested for free chorine residual. The flushing shall be considered adequate if the free chlorine residual test results indicate that the water in the water mains has a comparable chlorine residual as the water in the existing system.
 - j. The Contractor shall be responsible for the proper disposal of chlorinated water to safeguard public health and the environment in accordance with applicable State of Hawaii Department of Health requirements. A neutralizing chemical shall be applied to the water to be disposed to thoroughly neutralize the chlorine residual remaining in the water in accordance with Honolulu Board of Water Supply Water System Standards (2002), as amended.

WATERLINE CHLORINATION & TESTING PROCEDURES (CONT.)

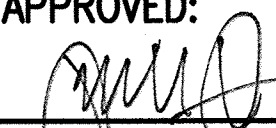
- k. The Contractor shall be responsible for obtaining a National Pollutant Discharge Elimination System (NPDES) Permit from the Department of Health, Clean Water Branch prior to the start of construction, for the disposal of water used for hydro testing and chlorination, as required by the contract documents.
- l. Following the acceptable flushing of the water mains, three (3) consecutive days of acceptable samples, taken at least 24-hours apart, from representative points shall be taken and subjected to microbiological tests. For water lines, at least one set of samples shall be collected from every 1,200 feet of the new water main, plus one from the end of the line and at least one set from each branch. Positive or invalid test results will not be acceptable and the process will be repeated.
- m. All measurements for chlorine residual shall be analyzed using E.P.A. approved methods for drinking water.
- n. All microbiological tests shall be performed by a laboratory approved by the Department of Health, State of Hawaii and the Water Quality Division of the Honolulu Board of Water Supply.
- o. The Contractor shall be responsible for all costs associated with all of the foregoing.
- p. Cleaning and Swabbing procedures shall be in accordance with Honolulu Board of Water Supply Water System Standards (2002), as amended.

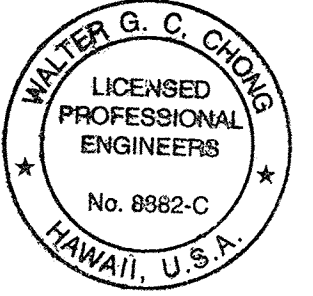
All materials in direct contact with the potable water shall have National Sanitation Foundations (NSF) approvals. The Contractor shall submit these approvals to the Board of Water Supply for information only prior to its application.

PVC NOTES (PVC INSTALLATIONS/RELOCATIONS OF WATERLINES)

- 1. Polyvinyl chloride (PVC) pipes shall be DR 14 (for 4"-12"). All ductile iron valves and metallic fittings shall be wrapped with two layers of 8 mil polyethylene wrap. No bending of polyvinyl chloride pipes shall be permitted. The installation of PVC pipe, according to the plans and specifications as bid on by the Contractor, may require additional design work, and additional fittings, and shall be considered incidental to the unit price bid in the proposal for PVC pipe. Any additional design work shall be the responsibility of the Contractor.
- 2. The Contractor shall furnish and install polyethylene wrap, 3 feet minimum at all taps (for DI pipe and copper lateral combination only).
- 3. PVC fittings, including deflection couplings are not approved.
- 4. All sections of the water main requiring reinforced concrete jacketing shall be ductile iron pipe Class 53 with ductile iron fittings
- 5. Bossed tees required for all lateral and ARV connections to PVC mains 12" and smaller.
- 6. Ductile iron fittings shall be used for all types of fittings

ORIGINAL PLAN	DATE	SURVEY PLOTTED BY	BY	DATE
		DRAWN BY	BY	DATE
		TRACED BY	BY	DATE
		QUANTITIES BY	BY	DATE
NOTE BOOK	NO.	CHECKED BY	BY	DATE

APPROVED:	MAY 24 2021
	DATE
Manager and Chief Engineer, BWS (for work affecting BWS facilities State R/W & BWS easements only)	



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Walter G. C. Chong
SIGNATURE
R. M. TOWILL CORPORATION
LIC. EXPIRATION 4/30/22

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WATER NOTES - 2

Kamehameha Highway
Kaipapau Stream Bridge Replacement
Federal Aid Project No. BR-083-1(48)

Scale: As Noted Date: February 2021

SHEET No. C-6A OF SHEETS

GENERAL NOTES FOR TRAFFIC CONTROL PLAN

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-083-1(48)	2021	9	161

1.

The Contractor shall make minor adjustments at intersection, driveways, bridges, structures, etc, to fit field conditions.
2.

Cones or delineators shall be extended to a point where they are visible to approaching traffic.
3.

Traffic control devices shall be installed such that the sign or device farthest from the work area shall be placed first. The others shall then be placed progressively toward the work area.
4.

Regulatory and warning signs within the construction zone that are in conflict with the traffic control plans shall be removed or covered. All signs shall be restored upon completion of the work.
5.

When required by the issuing office, the permittee shall install a flashing arrow signal as shown on the traffic control plans.
6.

All traffic lanes shall be a minimum of ten (10) feet wide.
7.

All construction warning signs shall be promptly removed or covered whenever the message is not applicable or not in use.
8.

The backs of all signs used for traffic control shall be appropriately covered to preclude the display of inapplicable sign messages (i.e., when signs have messages on both faces).
9.

At the end of each day's work or as soon as the work is completed, the permittee shall remove all traffic control devices no longer needed to permit free and safe passage of public traffic. Removal shall be in the reverse order of installation.
10.

Sign spacing (D), taper lengths (T) and spacing of cones or delineators shall be as shown in Table 645-1, unless otherwise noted on the Traffic Control Plans.

Table 645-1 For Traffic Control Plan							
Posted Speed Limit (M.P.H.)	Sign Spacing (D) (Feet)	Taper Length (T) (Feet)		Longitudinal Buffer Space (B) (Feet)	Spacing of Cones or Delineators (Feet)		
		W = 12' Or Less	W > 12'		Taper	Tangent	Work Area
25	250	200	W X 17	55	25	25	10

W = Width of Lane, Shoulder, or Offset

11.

Contractor to provide access and/or directional signs to reroute pedestrian traffic.
12.

All workers who are exposed to either vehicles using the roadway or to construction equipment shall wear high visibility safety apparel that meets the performance class 3 requirements of "ANSI/ISEA 107-2004". "Workers" is defined as people on foot whose duties place them within the State Right-of-Way, such as but not limited to construction and maintenance forces, equipment operators, survey crew, utility crews, responders to incidents (E.G., EMT and firemen), and law enforcement personnel directing traffic, investigating accidents, handling lane closures and constructed roadways.
13.

Flaggers and/or police officers shall be insight of each other or in direct communications at all times.
14.

Lane Closures shall be only during the hours indicated in section 645. During those hours, the movable barriers shall be deployed to the location indicated in the contract documents. During the hours when the lane closures are not allowed, the movable barriers shall be moved to the storage position. All movable barriers shall have a preformed 6-inch wide pavement stripe applied to the face facing traffic. Maintain stripe for the duration of the project.
15.

Permanent pavement markings and traffic signs shall be replaced upon completion of each phase of work.
16.

Driveways shall be kept open unless the Owners of the property using the Right-of-Way are otherwise provided for satisfactorily. Further, the Contractor shall control traffic going in and out of driveways.
17.

Buffer and taper areas on approach to any work area shall be kept clear of vehicles and equipment.
18.

A high level warning device (flag tree) shall be installed on approach to all work areas.

19.

An advertisement shall be placed in the newspaper by the Contractor for any lane closures. The advertisement shall be made one (1) week before any lane closure and shall contain the following information:

(A)

Map of the Traffic Change Limits;

(B)

Notice of starting and ending dates, times & duration;

(C)

Map to show Lane Closure;

(D)

Explanation of the Lane Closure, "Notice to Motorists"

The Contractor shall be required to have any lane closures announced daily over the radio two (2) days before starting date until the work is completed. Both advertisements in the newspaper and the radio shall be aid for by the Contractor. The Contractor shall also notify the Hospital, ambulatory services, Police Department and Fire Department of the lane closure.
20.

The buffer space should extend so the two-way traffic taper is placed before a horizontal (or crest vertical) curve to provide adequate sight distance for the flagger and a queue of stopped vehicles.
21.

No lane closures will be allowed during holidays without the prior approval of the engineer.

WORK ZONE NOTES

1.

This Work Zone Sign Plan is intended for use on long-term stationary work zones/construction phases (3 days or more). All work zones or construction phases less than 3 days duration will use Traffic Control Plans shown in Section 645 of the Special Provisions. See sheet C-49 to C-52 for Work Zone Signing and temporary traffic control measures.
2.

All existing regulatory speed limit signs with posts within the work zone/project limits shall be removed and replaced with work zone speed limit sign assemblies (R2-1(XX) and R2-5b(XX) with "CONSTRUCTION AREA" AND "\$250 FINE HRS 291C-104" Supplemental Signs).
3.

Construction sign assemblies shall be installed on both the approaching and trailing ends of each work zone as shown on this plan.
4.

Each construction warning sign shall have a minimum of two (2) Type II OM. Each work zone speed limit assembly shall have a minimum of one (1) Type II OM. Installation of each Type II OM shall be considered incidental to Item No. 645.1000, Traffic Control.
5.

Upon the completion of all physical work or as directed by the Engineer, all construction signs and work zone speed limit assemblies shall be removed. All speed limit signs and posts that were existing at the start of the project within the work zone/project limits shall be restored back to their original locations and configurations.
6.

Placement of construction signs shall not obstruct the path of pedestrians and bicyclists.
7.

The removal and restoration of existing regulatory speed limit signs with new posts along with the installation, maintenance and removal of work zone speed limit sign assemblies shall be considered incidental to Item No. 645.1000, Traffic Control.

ORIGINAL PLAN	SURVEY PLANNED BY	DATE
	DRAWN BY	REV
	DESIGNED BY	WC
	CHECKED BY	
NOTE BOOK		
No.		

WALTER G. C. CHONG

LICENSED PROFESSIONAL ENGINEERS

No. 8882-C

HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. "OBSERVATION OF CONSTRUCTION" IS DEFINED IN CHAPTER 10-15, HAWAII ADMINISTRATIVE RULES, ENTITLED "PROFESSIONAL ENGINEERS, ARCHITECTS, SURVEYORS AND LANDSCAPE ARCHITECTS."

Walter G. C.

SIGNATURE

R. M. TOWILL CORPORATION

4/30/22

LIC. EXPIRATION

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

TRAFFIC CONTROL &

WORK ZONE NOTES

Kamehameha Highway

Kaipapau Stream Bridge Replacement

Federal Aid Project No. BR-083-1(48)

Scale: As Noted

Date: February 2021

SHEET No. C-7 OF SHEETS

9

RMTC JOB NO. : 1-19548-OE

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-083-1(48)	2021	10	161

LEGEND

	Existing Overhead Utility Line (Primary)
	Existing Overhead Utility Line (Secondary)
	Existing Overhead Utility Line (Television)
	Existing Overhead Utility Line (Telephone)
	New Overhead Utility Line (Primary)
	New Overhead Utility Line (Secondary)
	New Overhead Utility Line (Television)
	New Overhead Utility Line (Telephone)
	Existing Utility Pole & Pole No.
	New Utility Pole & Pole No.
	Existing Guy Pole
	Existing Guy Wire
	New Guy Wire
	Existing Electrical Manhole
	Existing Street Light Box
	Existing HECo Handhole
	New HECo Handhole
	Existing Signal Corps Line
	New Signal Corps Line
	New Signal Corps Manhole
	Existing Street Light
	New Street Light

	Existing 8" Water Line
	New 8" Water Line
	Existing 12" Water Line
	New 12" Water Line
	Existing 16" Water Line
	New 16" Water Line
	Existing Water Manhole
	Existing Water Air Valve
	New Water Air Valve
	Existing Water Valve in Box
	New Water Valve in Box
	Existing Water Meter
	New Water Meter
	Existing Fire Hydrant & No.
	New Fire Hydrant
	Existing Irrigation Control Valve in Box
	Existing 24" Drain Line

	Existing Street Monument
	Adjusted Street Monument
	Existing Traffic Sign
	New Traffic Sign
	Existing Guardrail
	New Guardrail
	Existing Chain Link Fence
	New Chain Link Fence
	Existing Plastic Fence
	Existing Gate
	Existing Mailbox
	Existing Coconut Tree
	Existing Tree
	Existing Shrub or Bush
	New AC Pavement
	New PCC Pavement or Shotcrete Lining
	New Dumped Riprap
	Existing Ground Elevation
	Finished Grade Elevation
	Existing Ground Contour
	Finished Grade Contour
	Limit of Grading
	Top of Bank (Fill Condition)
	Bottom of Bank
	Top of Bank (Cut Condition)
	Bottom of Bank
	Drainage Flow or Stream Flow Direction

ABBREVIATIONS

AC	Asphaltic Concrete	Pavt.	Pavement
approx.	approximate	PC	Point of Curvature
	Baseline	PCC	Portland Cement Concrete
BGGV	Beveled Gear Gate Valve	P.I.	Point of Intersection
B.V.C.	Begin Vertical Curve	PVC	Polyvinyl Chloride
BW	Bottom of Wall	V.C.	Vertical Curve
C	Length of Chord		Property Line
	Centerline	PT	Point of Tangent
CB	Catch Basin	R	Radius
Clr.	Clearance	r/w	Existing Right-of-Way
C.O.	Cleanout	R/W	New Right-of-Way
CMU	Concrete Masonry Unit	RC	Reinforced Concrete
Conc.	Concrete	RCJ	Reinforced Concrete Jacket
Conn.	Connection	RCP	Reinforced Concrete Pipe
C.Y.	Cubic Yards	Rd.	Road
Dim.	Dimension	Refl.	Reflector
Det.	Details	Rt.	Right
D.I.	Ductile Iron	S	Slope
Dia.	Diameter	SB	South Bound
Dwgs.	Drawings	SE	Superelevation
ep	Existing Edge of Pavement	S/W	Sidewalk
EP	New Edge of Pavement	Shldr.	Shoulder
	existing property line	Sht.	Sheet
es	Existing Edge of Shoulder	Shts.	Sheets
ES	New Edge pf Shoulder	SF	square feet
ex.	existing	Sta.	Station
exist.	existing	Struct.	Structural
E.V.C.	End Vertical Curve	T	Tangent
FT	Feet	Temp.	Temporary
FUT.	Future	Thk.	Thick
GRP	Grouted Rubble Paving	TMK	Tax Map Key
HGL	Hydraulic Grade Line	TW	Top of Wall
Hwy.	Highway	Typ.	Typical
Inv.	Invert	VC	Vertical Curve
lbs.	Pounds	w8	Existing 8" Water Line
Lc	Length of Curve	W8	New 8" Water Line
LF	Linear Feet	w12	Existing 12" Water Line
Lt.	Left	W12	New 12" Water Line
Max.	Maximum	w16	Existing 16" Water Line
Min.	Minimum	W16	New 16" Water Line
NB	North Bound		Diameter
NO.	Number		Delta
O.C.	on center		Half Delta
O/S	Offset		

SURVEY PLANNED BY	DATE
DRAWN BY	
TRACED BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. OBSERVATION OF CONSTRUCTION IS DEFINED IN CHAPTER 16-115, HAWAII ADMINISTRATIVE RULES, ENTITLED "PROFESSIONAL ENGINEERS, ARCHITECTS, SURVEYORS AND LANDSCAPE ARCHITECTS".

Walter G. C. Chong
4/30/22
R. M. TOWILL CORPORATION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LEGEND & ABBREVIATIONS

Kamehameha Highway
Kaipapau Stream Bridge Replacement
Federal Aid Project No. BR-083-1(48)

Scale: As Noted Date: February 2021

SHEET No. C-8 OF SHEETS