

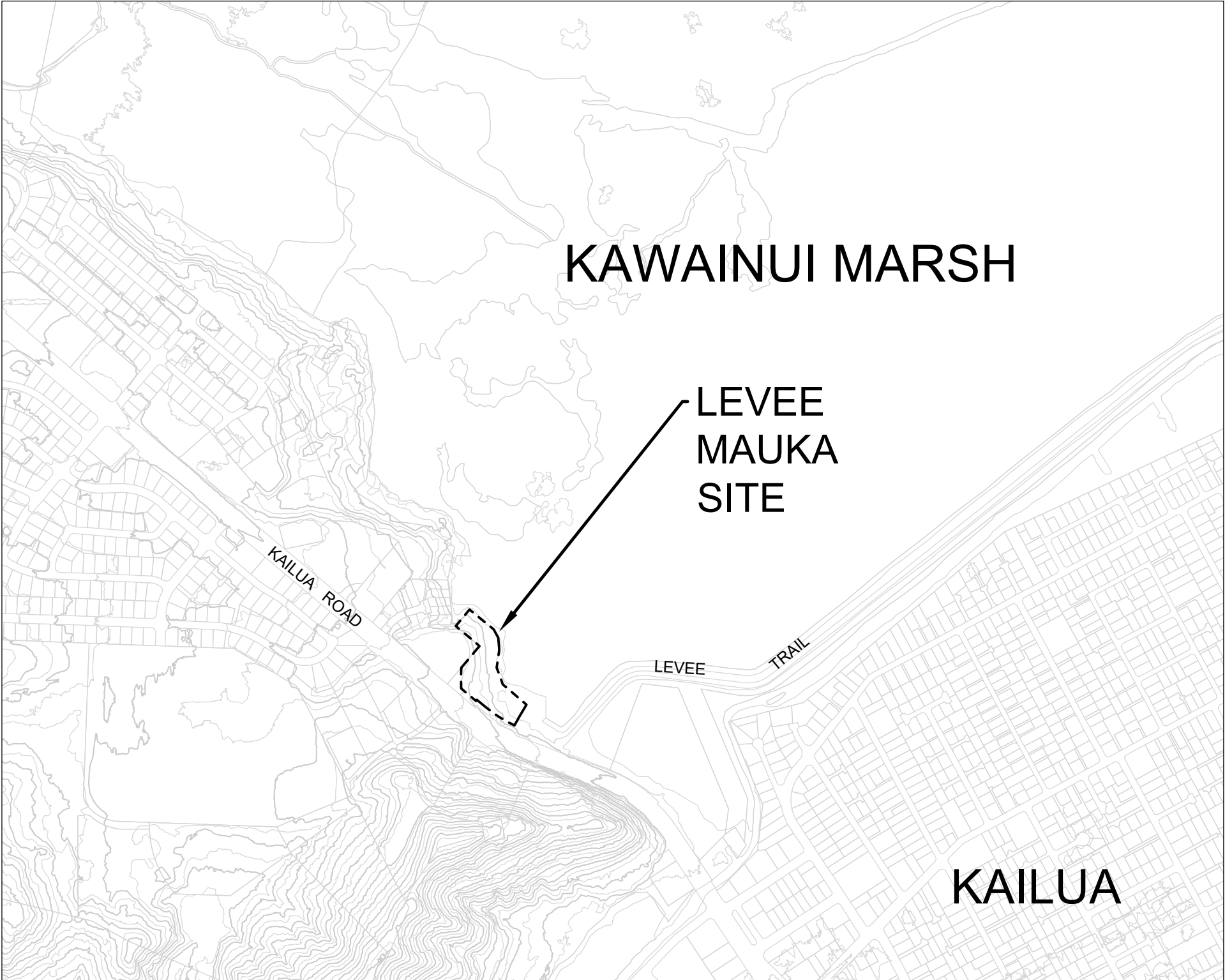
STATE OF HAWAII
 DEPARTMENT OF LAND AND NATURAL RESOURCES
 ENGINEERING DIVISION

FOR
 DIVISION OF FORESTRY AND WILDLIFE

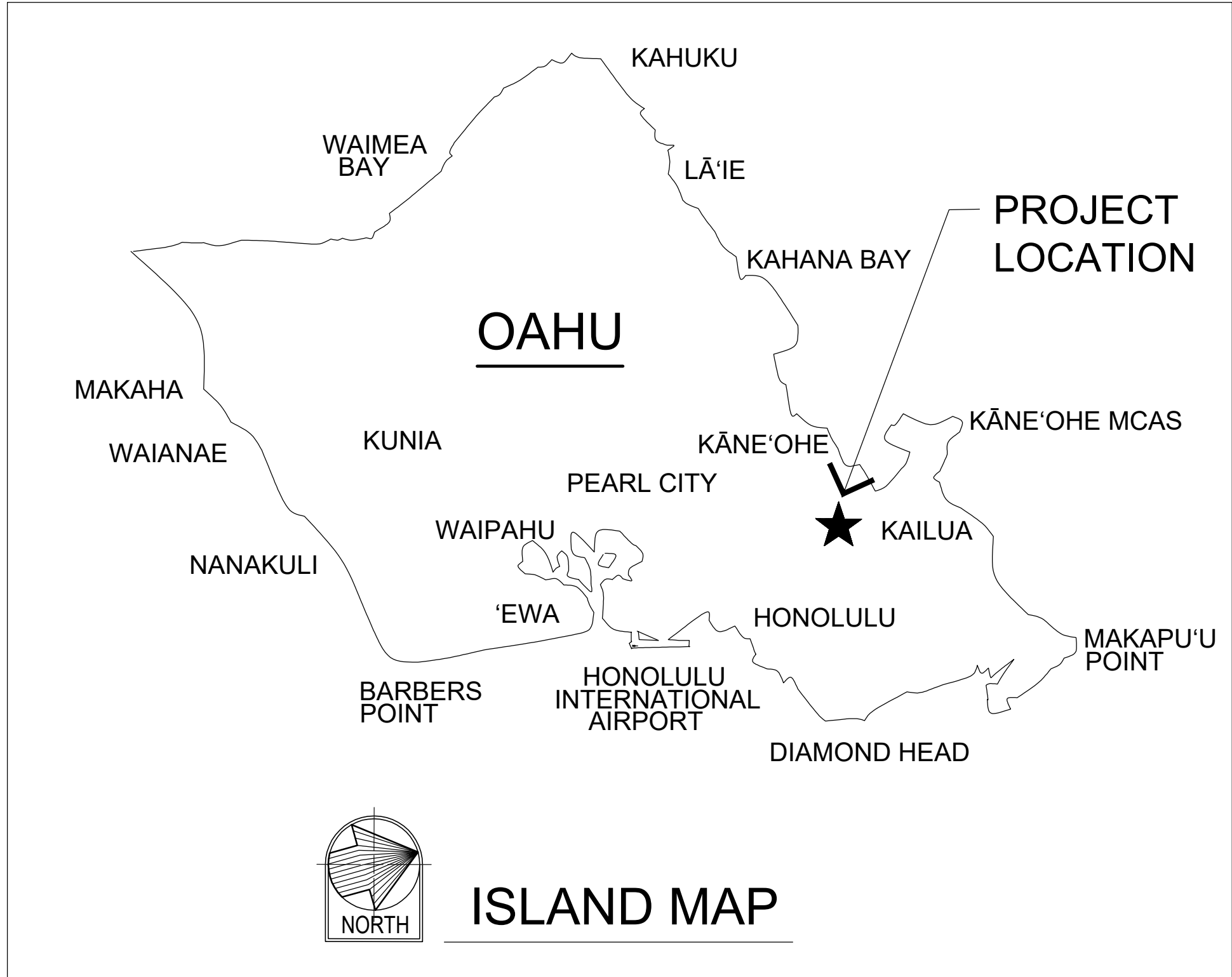
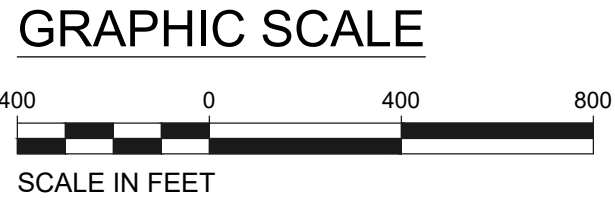
JOB NO. D00CO45B

KAWAINUI MARSH PROTECTION; LEVEE MAUKA TRAIL IMPROVEMENTS

TMK: (1) 4-2-016: PORTION OF 015
 KAILUA, OAHU, HAWAII



PROJECT
 LOCATION



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APPROVED: _____ DATE: 05/12/2026

David G. Smith
 DAVID G. SMITH
 ADMINISTRATOR
 DIVISION OF FORESTRY AND WILDLIFE
 DEPARTMENT OF LAND AND NATURAL RESOURCES

APPROVED: _____ DATE: 05/08/2026

Dina U. Lau
 DINA U. LAU, P.E.
 ACTING CHIEF ENGINEER
 ENGINEERING DIVISION
 DEPARTMENT OF LAND AND NATURAL RESOURCES

JOB NO. D00CO45B KAWAINUI MARSH PROTECTION; LEVEE MAUKA TRAIL IMPROVEMENTS

CONSTRUCTION NOTES

1. ALL APPLICABLE CONSTRUCTION WORK MUST BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, SEPTEMBER 1986 AND STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION, SEPTEMBER 1984, AS AMENDED, OF THE DEPARTMENT OF PUBLIC WORKS, CITY AND COUNTY OF HONOLULU AND COUNTIES OF KAUAI, MAUI, AND HAWAII.
2. THE UNDERGROUND PIPES, CABLES OR DUCTLINES KNOWN TO EXIST BY THE ENGINEER FROM HIS SEARCH OF RECORDS ARE INDICATED ON THE PLANS. THE CONTRACTOR MUST VERIFY THE LOCATIONS AND DEPTHS OF THE FACILITIES AND EXERCISE PROPER CARE IN EXCAVATING IN THE AREA. WHEREVER CONNECTIONS OF NEW UTILITIES TO EXISTING UTILITIES ARE SHOWN ON THE PLANS, THE CONTRACTOR MUST EXPOSE THE EXISTING LINES AT THE PROPOSED CONNECTIONS TO VERIFY THEIR LOCATIONS AND DEPTHS PRIOR TO EXCAVATION FOR THE NEW LINES.
3. NO CONTRACTOR MUST PERFORM ANY CONSTRUCTION OPERATION SO AS TO CAUSE FALLING ROCKS, SOIL OR DEBRIS IN ANY FORM TO FALL, SLIDE OR FLOW INTO EXISTING CITY DRAINAGE SYSTEMS, OR ADJOINING PROPERTIES, STREETS OR NATURAL WATERCOURSES. SHOULD SUCH VIOLATIONS OCCUR, THE CONTRACTOR MAY BE CITED AND THE CONTRACTOR MUST IMMEDIATELY MAKE ALL REMEDIAL ACTIONS NECESSARY.
4. THE CONTRACTOR OF THE PROJECT MUST BE RESPONSIBLE FOR CONFORMANCE WITH APPLICABLE PROVISIONS OF THE HAWAII ADMINISTRATIVE RULES, TITLE 11, CHAPTER 54, "WATER QUALITY STANDARDS," AND TITLE 11, CHAPTER 55, "WATER POLLUTION CONTROL", AS WELL AS CHAPTER 18A OF THE REVISED ORDINANCES OF HONOLULU, AS AMENDED. BEST MANAGEMENT PRACTICES MUST BE EMPLOYED AT ALL TIMES DURING CONSTRUCTION.

THE CONTRACTOR OF THE PROJECT MUST OBTAIN NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT COVERAGE(S) FOR THE FOLLOWING:

1. STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES THAT DISTURB ONE (1) ACRE OR MORE AND
2. DISCHARGES OF HYDROTESTING EFFLUENT, DEWATERING EFFLUENT, AND WELL DRILLING EFFLUENT TO STATE WATERS.

IN ACCORDANCE WITH STATE LAW, ALL DISCHARGES RELATED TO PROJECT CONSTRUCTION OR OPERATIONS ARE REQUIRED TO COMPLY WITH STATE WATER QUALITY STANDARDS (HAWAII ADMINISTRATIVE RULES, CHAPTER 11-54), BEST MANAGEMENT PRACTICES MUST BE USED TO MINIMIZE OR PREVENT THE DISCHARGE OF SEDIMENT, DEBRIS, AND OTHER POLLUTANTS TO STATE WATERS. PERMIT COVERAGE IS AVAILABLE FROM THE DEPARTMENT OF HEALTH, CLEAN WATER BRANCH AT <http://health.hawaii.gov/cwb>. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING OTHER FEDERAL, STATE, OR LOCAL AUTHORIZATIONS AS REQUIRED BY LAW.

5. THE CONTRACTOR MUST NOTIFY THE CIVIL ENGINEERING BRANCH, DPP AT (808) 768-8084 TO ARRANGE FOR INSPECTIONAL SERVICES AND SUBMIT TWO (2) SETS OF APPROVED CONSTRUCTION PLANS SEVEN (7) DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION WORK. FOR CITY PROJECTS, THE CONTRACTOR MUST COORDINATE INSPECTIONAL SERVICES WITH RESPONSIBLE CITY AGENCY.

6. CONFINED SPACE

FOR ENTRY BY CITY PERSONNEL, INCLUDING INSPECTORS, INTO A PERMIT REQUIRED CONFINED SPACE AS DEFINED IN 29 CFR PART 1910.146(b), THE CONTRACTOR MUST BE RESPONSIBLE FOR PROVIDING:

- I. ALL SAFETY EQUIPMENT REQUIRED BY THE CONFINED SPACE REGULATIONS APPLICABLE TO ALL PARTIES OTHER THAN THE CONSTRUCTION INDUSTRY, TO INCLUDE, BUT NOT LIMITED TO, THE FOLLOWING:

- A) FULL BODY HARNESS FOR UP TO TWO PERSONNEL
- B) LIFELINE AND ASSOCIATES CLIPS
- C) INGRESS/EGRESS AND FALL PROTECTION EQUIPMENT
- D) TWO-WAY RADIOS (WALKIE-TALKIES) IF OUT OF LINE-OF-SIGHT
- E) EMERGENCY (ESCAPE) RESPIRATOR (10 MINUTE DURATION)
- F) CELLULAR TELEPHONES TO CALL FOR EMERGENCY ASSISTANCE
- G) CONTINUOUS GAS DETECTOR (CALIBRATED) TO MEASURE OXYGEN, HYDROGEN SULFIDE, CARBON MONOXIDE AND FLAMMABLES (CAPABLE OF MONITORING AT A DISTANCE AT LEAST 20-FEET AWAY)
- H) PERSONAL MULTI-GAS DETECTOR TO BE CARRIED BY INSPECTOR

- II. CONTINUOUS FORCED AIR VENTILATION ADEQUATE TO PROVIDE SAFE ENTRY CONDITIONS.

- III. ONE ATTENDANT/RESCUE PERSONNEL TOPSIDE (TWO, IF CONDITIONS WARRANT IT).

7. PURSUANT TO CHAPTER 6E, HRS, IN THE EVENT ANY ARTIFACTS OR HUMAN REMAINS ARE UNCOVERED DURING CONSTRUCTION OPERATIONS, THE CONTRACTOR MUST IMMEDIATELY SUSPEND WORK AND NOTIFY THE HONOLULU POLICE DEPARTMENT, THE STATE DEPARTMENT OF LAND AND NATURAL RESOURCES-HISTORIC PRESERVATION DIVISION (808-692-8015). IN ADDITION, FOR NON-CITY PROJECTS, THE CONTRACTOR MUST INFORM THE CIVIL ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING (808-768-8084), AND FOR CITY PROJECTS, NOTIFY THE RESPONSIBLE CITY AGENCY.

8. FOR PROJECTS ABUTTING STATE HIGHWAYS' RIGHT-OF-WAY, THE OWNER OR HIS AUTHORIZED REPRESENTATIVE MUST NOTIFY THE STATE DEPARTMENT OF TRANSPORTATION, HIGHWAYS DIVISION, OAHU DISTRICT, DRAINAGE DISCHARGE UNIT AT 808-631-6793 FOR AN ASSESSMENT OF STATE HIGHWAYS PERMIT REQUIREMENTS.

9. FOR BENCHMARK, SEE SHEET C-1.6.

GRADING NOTES

1. ALL GRADING WORK MUST BE DONE IN ACCORDANCE WITH CHAPTER 18A, ARTICLES 1, 2, 3 AND 4, AS RELATED TO GRADING, SOIL EROSION AND SEDIMENT CONTROL OF THE REVISED ORDINANCES OF HONOLULU, 2021, AS AMENDED, AND SOILS REPORT.
2. NO CONTRACTOR MUST 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 MUST IMMEDIATELY MAKE ALL REMEDIAL ACTIONS NECESSARY.
3. THE CONTRACTOR, AT HIS OWN EXPENSE, MUST KEEP THE PROJECT AREA AND SURROUNDING AREA FREE FROM DUST NUISANCE. THE WORK MUST BE IN CONFORMANCE WITH THE AIR POLLUTION CONTROL STANDARDS CONTAINED IN THE HAWAII ADMINISTRATIVE RULES, TITLE 11, CHAPTER 60.1, "AIR POLLUTION CONTROL".
4. THE UNDERGROUND PIPES, CABLES OR DUCTLINES KNOWN TO EXIST BY THE ENGINEER FROM HIS SEARCH OF RECORDS ARE INDICATED ON THE PLANS. THE CONTRACTOR MUST 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 MUST EXPOSE THE EXISTING LINES AT THE PROPOSED CONNECTIONS TO VERIFY THEIR LOCATIONS AND DEPTHS PRIOR TO EXCAVATION FOR THE NEW LINES.
5. ADEQUATE PROVISIONS MUST BE MADE TO PREVENT SURFACE WATERS FROM DAMAGING THE CUT FACE OF AN EXCAVATION OR THE SLOPED SURFACES OF A FILL. FURTHERMORE, ADEQUATE PROVISIONS MUST BE MADE TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE SITE.
6. ALL SLOPES AND EXPOSED AREAS MUST BE SODDED OR PLANTED AS SOON AS FINAL GRADES HAVE BEEN ESTABLISHED. PLANTING MUST NOT BE DELAYED UNTIL ALL GRADING WORK HAS BEEN COMPLETED. GRADING TO FINAL GRADE MUST BE CONTINUOUS, AND ANY AREA WITHIN WHICH WORK HAS BEEN INTERRUPTED OR DELAYED MUST BE PLANTED.
7. FILLS ON SLOPES STEEPER THAN 5:1 MUST BE KEYED.
8. THE CITY MUST BE INFORMED OF THE LOCATION OF THE BORROW/DISPOSAL SITE FOR THE PROJECT WHEN THE APPLICATION FOR A GRADING PERMIT IS MADE. THE BORROW/DISPOSAL SITE MUST ALSO FULFILL THE REQUIREMENTS OF THE GRADING ORDINANCE.
9. NO GRADING WORK MUST BE DONE ON SATURDAYS, SUNDAYS AND HOLIDAYS AT ANY TIME WITHOUT PRIOR NOTICE TO THE DIRECTOR, DPP, 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".
10. THE LIMITS OF THE AREA TO BE GRADED MUST BE FLAGGED BEFORE THE COMMENCEMENT OF THE GRADING WORK.
11. THE GENERAL CONTRACTOR OF THE PROJECT MUST BE RESPONSIBLE FOR CONFORMANCE WITH APPLICABLE PROVISIONS OF THE HAWAII ADMINISTRATIVE RULES, TITLE 11, CHAPTER 54, "WATER QUALITY STANDARDS," AND TITLE 11, CHAPTER 55, "WATER POLLUTION CONTROL", AS WELL AS CHAPTER 18A OF THE REVISED ORDINANCES OF HONOLULU, AS AMENDED. BEST MANAGEMENT PRACTICES MUST BE EMPLOYED AT ALL TIMES DURING CONSTRUCTION.

THE GENERAL CONTRACTOR OF THE PROJECT MUST OBTAIN NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT COVERAGE(S) FOR THE FOLLOWING:

1. STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES THAT DISTURB ONE (1) ACRE OR MORE AND
2. DISCHARGES OF HYDROTESTING EFFLUENT, DEWATERING EFFLUENT, AND WELL DRILLING EFFLUENT TO STATE WATERS.

IN ACCORDANCE WITH STATE LAW, ALL DISCHARGES RELATED TO PROJECT CONSTRUCTION OR OPERATIONS ARE REQUIRED TO COMPLY WITH STATE WATER QUALITY STANDARDS (HAWAII ADMINISTRATIVE RULES, CHAPTER 11-54), BEST MANAGEMENT PRACTICES MUST BE USED TO MINIMIZE OR PREVENT THE DISCHARGE OF SEDIMENT, DEBRIS, AND OTHER POLLUTANTS TO STATE WATERS. PERMIT COVERAGE IS AVAILABLE FROM THE DEPARTMENT OF HEALTH, CLEAN WATER BRANCH AT <http://health.hawaii.gov/cwb>. THE OWNER/DEVELOPER/CONTRACTOR IS RESPONSIBLE FOR OBTAINING OTHER FEDERAL, STATE, OR LOCAL AUTHORIZATIONS AS REQUIRED BY LAW.

12. WHERE APPLICABLE AND FEASIBLE THE MEASURES TO CONTROL EROSION AND OTHER POLLUTANTS MUST BE IN PLACE BEFORE ANY EARTH MOVING PHASE OF THE GRADING IS INITIATED.

13. TEMPORARY EROSION CONTROLS MUST NOT BE REMOVED BEFORE PERMANENT EROSION CONTROLS ARE IN-PLACE AND ESTABLISHED.

14. TEMPORARY EROSION CONTROL PROCEDURES MUST BE SUBMITTED FOR APPROVAL PRIOR TO APPLICATION FOR GRADING PERMIT.

15. IF THE GRADING WORK INVOLVES CONTAMINATED SOIL, THEN ALL GRADING WORK MUST BE DONE IN CONFORMANCE WITH APPLICABLE STATE AND FEDERAL REQUIREMENTS.

16. BUILDING PERMIT FOR RETAINING WALLS MUST BE OBTAINED PRIOR TO COMMENCEMENT OF GRADING WORK ON SITE.

17. PURSUANT TO CHAPTER 6E, HRS, IN THE EVENT ANY ARTIFACTS OR HUMAN REMAINS ARE UNCOVERED DURING CONSTRUCTION OPERATIONS, THE CONTRACTOR MUST IMMEDIATELY SUSPEND WORK AND NOTIFY THE HONOLULU POLICE DEPARTMENT AND THE STATE DEPARTMENT OF LAND AND NATURAL RESOURCES-HISTORIC PRESERVATION DIVISION (808-692-8015). IN ADDITION, FOR NON-CITY PROJECTS, THE CONTRACTOR MUST INFORM THE CIVIL ENGINEERING BRANCH, DPP (808-768-8084); AND FOR CITY PROJECTS, NOTIFY THE RESPONSIBLE CITY AGENCY.

GRADING NOTES (CONTINUED)

18. FOR ALL PROJECTS, WHICH WILL DISTURB ONE (1) ACRE OR MORE OF LAND, THE CONTRACTOR MUST NOT START CONSTRUCTION UNTIL A NOTICE OF GENERAL PERMIT COVERAGE (NGPC) IS RECEIVED FROM THE DEPARTMENT OF HEALTH, STATE OF HAWAII, AND HAS SATISFIED ANY OTHER APPLICABLE REQUIREMENTS OF THE NPDES PERMIT PROGRAM. ALSO, FOR NON-CITY AND OTHER NON-GOVERNMENTAL AGENCY PROJECTS, THE CONTRACTOR MUST PROVIDE A WRITTEN COPY OF THE NGPC TO THE PERMITTING AND INSPECTION SECTION, CIVIL ENGINEERING BRANCH, DPP, AT LEAST SEVEN (7) CALENDAR DAYS BEFORE THE START OF THE CONSTRUCTION. FOR CITY OR OTHER GOVERNMENTAL PROJECTS, THE CONTRACTOR SHOULD PROVIDE A WRITTEN COPY OF THE NGPC TO THE APPROPRIATE CITY DEPARTMENT OR GOVERNMENTAL AGENCY PER THEIR REQUIREMENTS.
19. ALL GRADING AND CONSTRUCTION WORK MUST IMPLEMENT MEASURES TO ENSURE THAT THE DISCHARGE OF POLLUTANTS FROM THE CONSTRUCTION SITE WILL BE REDUCED TO THE MAXIMUM EXTENT PRACTICABLE AND WILL NOT CAUSE OR CONTRIBUTE TO AN EXCEEDANCE OF WATER QUALITY STANDARDS.
20. NON-COMPLIANCE TO ANY OF THE ABOVE REQUIREMENTS MUST MEAN IMMEDIATE SUSPENSION OF ALL WORK, AND REMEDIAL WORK MUST COMMENCE IMMEDIATELY. ALL COSTS INCURRED MUST BE BILLED TO THE VIOLATOR. FURTHERMORE, VIOLATORS MUST BE SUBJECT TO ADMINISTRATIVE, CIVIL AND/OR CRIMINAL PENALTIES.
21. FOR BENCH MARK, SEE SHEET C-1.6.
22. THE CONTRACTOR SHALL HIRE A GEOTECHNICAL ENGINEER TO PROVIDE ON-SITE OBSERVATIONS AND TESTING OF GRADING OPERATIONS AND TO PROVIDE A CERTIFICATION LETTER FOR GRADING ACTIVITIES AT THE COMPLETION OF THE PROJECT. (ALL COSTS OF SAMPLING AND TESTING SHALL BE BORNE BY THE CONTRACTOR.)

PUBLIC HEALTH, SAFETY AND CONVENIENCE NOTES:

1. THE CONTRACTOR MUST OBSERVE AND COMPLY WITH ALL FEDERAL, STATE, AND LOCAL LAWS REQUIRED FOR THE PROTECTION OF THE PUBLIC HEALTH AND SAFETY AND ENVIRONMENTAL QUALITY.
2. THE CONTRACTOR MUST PROVIDE, INSTALL AND MAINTAIN ALL NECESSARY SIGNS, LIGHTS, FLARES, BARRICADES, MARKERS, CONES AND OTHER PROTECTIVE FACILITIES AND MUST TAKE ALL NECESSARY PRECAUTIONS FOR THE PROTECTION, CONVENIENCE AND SAFETY OF THE PUBLIC. THE CONTRACTOR MUST APPLY FOR A CONSTRUCTION PERMIT WITH A NOISE POLLUTION CONTROL PLAN.

ARCHAEOLOGICAL NOTES

1. ALL TRENCHING AND EXCAVATION WORK IN ARCHAEOLOGICAL SITE(S) MUST BE MONITORED BY AN ARCHAEOLOGIST RETAINED BY THE DBOM CONTRACTOR FOR THIS PROJECT.

WILDLIFE NOTES

1. A PROJECT BIOLOGIST FROM THE DIVISION OF FORESTRY AND WILDLIFE (DOFAW) SHALL REVIEW THE SITE PRIOR TO CONSTRUCTION ACTIVITIES TO PROVIDE ASSISTANCE TO THE CONTRACTOR IN PREVENTING DISTURBANCE TO WATERBIRDS AND HAWAIIAN HOARY BATS THAT MAY BE PRESENT.
2. IF A WATERBIRD NEST IS DISCOVERED, WORK SHALL CEASE IMMEDIATELY IN THE VICINITY FOR A MINIMUM OF 60 DAYS; IF A NEST WITH CHICKS IS DISCOVERED, WORK SHALL CEASE IMMEDIATELY FOR 30 DAYS. THESE STANDARD GUIDELINES ARE INTENDED TO PROTECT CHICKS AND MAY BE SHORTENED IF PROJECT BIOLOGIST VERIFIES THAT CHICKS HAVE FLEDGED (USUALLY 5 TO 6 WEEKS AFTER HATCHING). IN EACH CASE, DOFAW SHALL BE CONTACTED IMMEDIATELY.
3. IF A PREVIOUSLY UNDISCOVERED NEST IS FOUND AFTER WORK BEGINS, ALL WORK WILL CEASE IMMEDIATELY WITHIN A MINIMUM RADIUS OF 100 FEET OF THE NEST AND DOFAW SHALL BE CONTACTED IMMEDIATELY.
4. NO WOODY VEGETATION TALLER THAN 15 FEET (4.6 METERS) SHALL BE DISTURBED DURING HAWAIIAN HOARY BAT BIRTHING AND REARING SEASON (JUNE 1 THROUGH SEPTEMBER 15). IN ADVANCE OF WORK ON WOODY VEGETATION, DOFAW SHALL BE CONTACTED TO VERIFY HEIGHT.
5. DOFAW CONTACT INFORMATION: JASON MISAKI, WILDLIFE PROGRAM MANAGER, DEPARTMENT OF LAND AND NATURAL RESOURCES, DIVISION OF FORESTRY AND WILDLIFE, OAHU BRANCH
WORK PHONE: (808) 973-9786; CELL PHONE: (808) 295-5896
ADDRESS: 2135 MAKIKI HEIGHTS DRIVE, HONOLULU, HI 96822

APPROVED BY:

CHIEF, CIVIL ENGINEERING BRANCH, DPP

DATE

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION					
KAWAINUI MARSH PROTECTION; LEVEE MAUKA TRAIL IMPROVEMENTS KAILUA, OAHU, HAWAII					
CONSTRUCTION NOTES					
DESIGNED: HP			SUBMITTED: <i>ac</i> <i>ca</i>		
DRAWN: TN			DATE: APRIL 30, 2026		
CHECKED: RS			SCALE:		
APPROVED: <i>Dina Lau</i> Signature			Dina Lau E-signed 2026-05-08 09:50PM HST dina.u.lau@hawaii.gov State of Hawaii		DRAWING NO. C-1.1
CHIEF ENGINEER			CHIEF ENGINEER		

JOB NO. D00C045B

SHEET NO. 2 OF 11 SHEETS

PROJECT SEQUENCE

1. PRIOR TO START OF WORK, INSTALL STABILIZED CONSTRUCTION ENTRANCE AND TEMPORARY SILT FENCE/FILTER SOCKS PERIMETER CONTROL FOR PROTECTED AREAS. CLEAR AND GRUB AS NECESSARY FOR THE INSTALLATION OF THESE BMPs.
2. COMMENCE WORK. PROVIDE STABILIZATION FOR STEEP SLOPES (>15%) WITH HYDROSEEDING AS SOON AS GRADING IS COMPLETED ON THOSE AREAS.
3. PROCEED WITH TRAIL PATH WALKWAY INSTALLATION WITH SPOT ELEVATIONS MATCHING EXISTING GROUND CONDITION.
4. REMOVE OR DISMANTLE TEMPORARY EROSION CONTROL STRUCTURES AFTER FULL ESTABLISHMENT OF PERMANENT VEGETATIVE COVER.
5. PRACTICE GOOD HOUSEKEEPING MEASURES THROUGHOUT THE DURATION OF CONSTRUCTION.
6. INSPECTIONS SHALL BE PERFORMED WEEKLY.

RAIN RESPONSE PLAN

THE FOLLOWING WILL BE PERFORMED WHEN HEAVY RAINS, TROPICAL STORM OR HURRICANE IS IMMINENT OR IS FORECASTED IN THE NEXT 48 HOURS:

1. TEMPORARY SUSPEND ACTIVE GRADING.
2. INSPECT ALL PERIMETER CONTROLS AND MAINTAIN AS NEEDED. REINSTALL ANY PERIMETER CONTROLS THAT WERE REMOVED DUE TO ACTIVE WORK IN THE AREA. IF A SEVERE STORM IS EXPECTED, REMOVE INLET PROTECTION DEVICES TO PREVENT FLOODING ON SURROUNDING STREETS.
3. COVER OR RELOCATE MATERIALS AND LIQUID MATERIAL CONTAINERS TO AVOID CONTACT WITH RAINWATER.
4. PLACE SPILL PANS OR OIL-ONLY SPILL PANS UNDER CONSTRUCTION VEHICLES TO PREVENT RUNOFF FROM CONTACTING ANY SPILLED PETROLEUM PRODUCTS. PROPERLY DISPOSE OF ANY ACCUMULATED OILY WATER AFTER THE RAIN EVENT.
5. RE-INSPECT AFTER THE APPROACHING HEAVY RAINS, TROPICAL STORM OR HURRICANE, AND REPLACE OR MAINTAIN BMPs AS NEEDED.

EROSION AND SEDIMENT CONTROL NOTES

1. THE CONTRACTOR MUST FOLLOW THE GUIDELINES IN THE CITY AND COUNTY OF HONOLULU'S "RULES RELATING TO WATER QUALITY".
2. MEASURES TO CONTROL EROSION AND OTHER POLLUTANTS MUST BE IN PLACE BEFORE ANY EARTHWORK IS INITIATED.
3. REGULARLY INSPECT AND MAINTAIN ALL EROSION AND SEDIMENT CONTROLS TO ENSURE CONTINUED PERFORMANCE.
4. SLOPE PROTECTION

SLOPE PROTECTION IS REQUIRED ON AREAS WITH SLOPES GREATER THAN 15% AND ON AREAS OF MODERATE SLOPE THAT ARE PRONE TO EROSION UNLESS THEY ARE BEING ACTIVELY WORKED. USE DIVERSION UPSTREAM OF SLOPE (DIKES, SWALES, SLOPE DRAINS) TO DIVERT WATER AROUND THE SLOPE. PROVIDE A 10-FT BUFFER ZONE AT THE TOE OF SLOPE. ONLY 5 ACRES MAY BE DISTURBED AT ANYTIME ON SLOPES GREATER THAN 15%.
5. TEMPORARY STABILIZATION

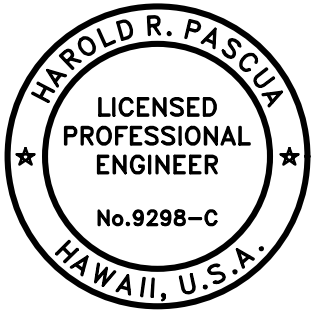

TEMPORARY STABILIZATION IS REQUIRED ON DISTURBED AREAS WHICH ARE AT FINAL GRADE OR WHEN THE DISTURBED AREA WILL NOT BE WORKED FOR 14 CONSECUTIVE DAYS OR MORE.
6. PERMANENT STABILIZATION ALL DISTURBED AREAS MUST BE PERMANENTLY STABILIZED USING VEGETATIVE COVERING, PAVEMENT, OR EQUIVALENT, PRIOR TO REMOVING EROSION AND SEDIMENT MEASURES. TRAPPED SEDIMENT AND AREAS OF DISTURBED SOIL WHICH RESULT FROM THE REMOVAL OF THE TEMPORARY MEASURES MUST BE IMMEDIATELY AND PERMANENTLY STABILIZED.
7. PRESERVE EXISTING VEGETATION CLEARLY MARK THE AREAS TO BE PRESERVED WITH FLAGS OR TEMPORARY FENCING. WHERE TEMPORARY FENCING IS USED, FENCING MUST BE ADEQUATELY SUPPORTED BY POSTS AND MAINTAINED IN AN UPRIGHT POSITION.
8. MINIMIZE SOIL COMPACTION AREAS WHERE FINAL STABILIZATION OR INFILTRATION PRACTICES WILL BE INSTALLED MUST BE PROTECTED FROM EXCESSIVE COMPACTION DURING CONSTRUCTION. VEHICLE AND EQUIPMENT USE MUST BE RESTRICTED OR TECHNIQUES TO CONDITION THE SOILS TO SUPPORT VEGETATION MUST BE IMPLEMENTED IN THE AREAS THAT HAVE BEEN COMPACTED AND ARE DESIGNATED TO REMAIN VEGETATIVE OR POST-CONSTRUCTION INFILTRATION AREAS. CLEARLY MARK THE AREAS TO BE AVOIDED WITH FLAGS OR TEMPORARY FENCING. WHERE TEMPORARY FENCING IS USED, FENCING MUST BE ADEQUATELY SUPPORTED BY POSTS AND MAINTAINED IN AN UPRIGHT POSITION.
9. PERIMETER CONTROLS

PERIMETER CONTROLS ARE REQUIRED DOWNSLOPE OF ALL DISTURBED AREAS. MAINTAIN DOWNSTREAM VEGETATED BUFFER AREA
10. TRACKING CONTROL
 - MINIMIZE SEDIMENT TRACK-OUT ONTO OFF-SITE STREETS, OTHER PAVED AREAS, AND SIDEWALKS FROM VEHICLES EXITING THE CONSTRUCTION SITE BY RESTRICTING VEHICLE TRAFFIC TO PROPERLY DESIGNATED AREAS AND USING ADDITIONAL CONTROLS TO REMOVE SEDIMENT FROM VEHICLE TIRES PRIOR TO EXITING THE SITE.
 - VEHICULAR PARKING AND MOVEMENTS ON PROJECT SITES MUST BE CONFINED TO PAVED SURFACES OR PREDEFINED PARKING AREAS AND VEHICLE PATHS, WHICH MUST BE MARKED WITH FLAGS OR BOUNDARY FENCING.
 - ALL POLLUTANTS AND MATERIALS THAT ARE DROPPED, WASHED, TRACKED, SPILLED, OR OTHERWISE DISCHARGED FROM A PROJECT SITE TO OFF-SITE STREETS, OTHER PAVED AREAS, SIDEWALKS OR THE MS4 MUST BE CLEANED USING DRY METHODS SUCH AS SWEEPING OR VACUUMING.
 - WASHING POLLUTANTS AND MATERIALS THAT ARE DISCHARGED FROM THE PROJECT SITE TO THE MS4 INTO DRAIN INLETS OR CATCH BASINS IS PROHIBITED UNLESS THE MATERIAL IS SEDIMENT AND THE INLETS ARE DIRECTED TO A SEDIMENT BASIN OR SEDIMENT TRAP.
11. BEST MANAGEMENT PRACTICES (BMPs) MUST NOT BE REMOVED UNTIL FINAL STABILIZATION IS COMPLETE FOR THAT PHASE.
12. REFER TO CITY AND COUNTY OF HONOLULU BEST MANAGEMENT PRACTICES MANUAL-CONSTRUCTION, FOR MORE INFORMATION ON BMPs.
13. AN ESCP COORDINATOR IS REQUIRED FOR THE PROJECT AND MUST BE DESIGNATED TO DPP IN WRITING AT LEAST TWO WEEKS PRIOR TO STARTING WORK.
14. NOTIFY DPP IN WRITING TWO WEEKS PRIOR TO STARTING WORK.
15. PRACTICE GOOD HOUSEKEEPING MEASURES THROUGHOUT THE DURATION OF CONSTRUCTION.
16. REGULARLY INSPECT AND MAINTAIN ALL EROSION AND SEDIMENT CONTROLS TO ENSURE CONTINUED PERFORMANCE.
17. INSPECTIONS WILL BE PERFORMED WEEKLY.
18. CONTRACTOR SHALL COMPLY WITH THE PROJECT SCHEDULING REQUIREMENTS.
19. THE CONTRACTOR SHALL HIRE AND DESIGNATE AN "ESCP COORDINATOR" WHO WILL BE RESPONSIBLE FOR IMPLEMENTING THE APPROVED ESCP AND FOR OVERSEEING COMPLIANCE WITH CITY AND STATE REQUIREMENTS FOR EROSION AND SEDIMENT CONTROL FOR THE DURATION OF THE PROJECT. THE "ESCP COORDINATOR" SHALL BE AUTHORIZED TO SIGN ANY REPORTS, CHECKLISTS, STORMWATER POLLUTION PREVENTION PLANS, AND ALL OTHER DOCUMENTS REQUIRED BY THE PERMITS.

APPROVED BY:

CHIEF, CIVIL ENGINEERING BRANCH, DPP

DATE

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION KAWAINUI MARSH PROTECTION; LEVEE MAUKA TRAIL IMPROVEMENTS KAILUA, OAHU, HAWAII ESCP NOTES-1					
		THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.			
DESIGNED: HP		SUBMITTED: <i>RS</i> <i>DL</i>			
DRAWN: TN		DATE: APRIL 30, 2026			
CHECKED: RS		_____			
APPROVED:		Dina Lau E-signed 2026-05-08 09:50PM HST dina.u.lau@hawaii.gov State of Hawaii Civil Engineer		DRAWING NO. C-1.2	
CHIEF ENGINEER					

GOOD HOUSEKEEPING BMPs

INSPECT BMPs AND SITE WEEKLY

1. MAINTAIN BMPs AND SITE AS REQUIRED TO ENSURE CONTINUED PERFORMANCE.

2. DUST CONTROL

DUST FROM THE PROJECT SITE MUST NOT BE TRANSPORTED OR DISCHARGED TO OFF-SITE AREAS. WORK MUST BE IN CONFORMANCE WITH THE AIR POLLUTION STANDARDS CONTAINED IN THE "HAWAII ADMINISTRATIVE RULES" TITLE 11, CHAPTER 60.1 "AIR QUALITY CONTROL".

3. MATERIALS DELIVERY, STORAGE, AND USE MANAGEMENT

PREVENT, REDUCE, OR ELIMINATE THE DISCHARGE OF POLLUTANTS FROM MATERIAL DELIVERY, STORAGE, AND USE TO THE STORM WATER SYSTEM OR WATERCOURSES BY MINIMIZING THE STORAGE OF HAZARDOUS MATERIALS ONSITE, STORING MATERIALS IN A DESIGNATED AREA, INSTALLING SECONDARY CONTAINMENT, CONSTRUCTION MATERIALS, WASTE, TOXIC AND HAZARDOUS SUBSTANCES, STOCKPILES, AND OTHER SOURCES OF POLLUTION MUST NOT BE STORED IN BUFFER AREAS, NEAR AREAS OF CONCENTRATED FLOW, OR AREAS ABUTTING THE MS4, RECEIVING WATERS, OR DRAINAGE IMPROVEMENTS THAT DISCHARGE OFF-SITE. PRIMARY AND SECONDARY CONTAINMENT CONTROLS AND COVERS MUST BE IMPLEMENTED TO THE MEP.

4. STOCKPILE MANAGEMENT

STOCKPILES MUST NOT BE LOCATED IN DRAINAGE WAYS, WITHIN 50 FEET FROM AREAS OF CONCENTRATED FLOWS, AND ARE NOT ALLOWED IN THE CITY RIGHT-OF-WAY. SEDIMENT BARRIERS OR SILT FENCES MUST BE USED AROUND THE BASE OF ALL STOCKPILES. STOCKPILES MUST NOT EXCEED 15 FEET IN HEIGHT. STOCKPILES GREATER THAN 15 FEET IN HEIGHT MUST REQUIRE 8 FOOT WIDE BENCHING IN ACCORDANCE WITH ROH CHAPTER 18A, ARTICLE 3. STOCKPILES MUST BE COVERED WITH PLASTIC SHEETING OR A COMPARABLE MATERIAL IF THEY WILL NOT BE ACTIVELY USED WITHIN 7 DAYS.

5. SPILL PREVENTION AND CONTROL

CREATE AND IMPLEMENT SPILL PREVENTION AND RESPONSE PLANS TO ELIMINATE AND MINIMIZE THE DISCHARGE OF POLLUTANTS TO THE MS4 AND RECEIVING WATERS FROM LEAKS AND SPILLS BY REDUCING THE CHANCE FOR SPILLS, ABSORBING, CONTAINING, AND CLEANING UP SPILLS AND PROPERLY DISPOSING OF SPILL MATERIALS. AT A MINIMUM, ALL PROJECTS MUST CLEANUP ALL LEAKS AND SPILL IMMEDIATELY.

6. SOLID WASTE MANAGEMENT

PREVENT OR REDUCE DISCHARGE OF POLLUTANTS TO THE LAND, GROUNDWATER, AND IN STORM WATER FROM SOLID WASTE OR CONSTRUCTION AND DEMOLITION WASTE BY PROVIDING DESIGNATED WASTE COLLECTION AREAS, COLLECT SITE TRASH DAILY, AND ENSURING THAT CONSTRUCTION WASTE IS COLLECTED, REMOVED, AND DISPOSED OF ONLY AT AUTHORIZED DISPOSAL AREAS.

7. HAZARDOUS MATERIALS

PREVENT OR REDUCE THE DISCHARGE OF POLLUTANTS TO STORM WATER FROM HAZARDOUS WASTE THROUGH PROPER MATERIAL USE AND WASTE DISPOSAL. IN THE EVENT THAT HAZARDOUS MATERIALS ARE DISCHARGED TO THE MS4, THE PROPERTY OWNER OR ESCP COORDINATOR MUST IMMEDIATELY NOTIFY THE DEPARTMENT OF FACILITIES MAINTENANCE, HONOLULU FIRE DEPARTMENT, AND HONOLULU POLICE DEPARTMENT OF THE DISCHARGE BY TELEPHONE. A WRITTEN REPORT DESCRIBING THE POLLUTANTS THAT WERE DISCHARGED, THE REASONS FOR THE DISCHARGE, AND THE MEASURES THAT HAVE BEEN TAKEN OR WILL BE TAKEN TO PREVENT A REOCCURRENCE OF THE DISCHARGE MUST BE SUBMITTED TO THE DIRECTOR NO LESS THAN 3 DAYS AFTER NOTIFICATION BY PHONE.

8. NON-HAZARDOUS MATERIALS

IN THE EVENT THAT NON-HAZARDOUS MATERIALS ARE DISCHARGED TO THE MS4, THE PROPERTY OWNER OR ESCP COORDINATOR MUST NOTIFY THE CITY DEPARTMENT OF FACILITIES MAINTENANCE BY TELEPHONE NO LATER THAN THE NEXT BUSINESS DAY. A WRITTEN REPORT DESCRIBING THE POLLUTANTS THAT WERE DISCHARGED, THE REASONS FOR THE DISCHARGE, AND THE MEASURES TAKEN OR WILL BE TAKEN TO PREVENT A REOCCURRENCE OF THE DISCHARGE MUST BE SUBMITTED TO THE DIRECTOR NO LESS THAN 3 DAYS AFTER NOTIFICATION BY PHONE.

9. CONTAMINATED SOIL MANAGEMENT

AT MINIMUM, CONTAIN CONTAMINATED SOIL MATERIAL BY SURROUNDING WITH IMPERMEABLE LINED BERMS OR COVER EXPOSED CONTAMINATED MATERIAL WITH PLASTIC SHEETING. CONTAMINATED SOIL SHOULD BE DISPOSED OF PROPERLY, IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS.

10. CONCRETE WASTE MANAGEMENT

PREVENT OR REDUCE THE DISCHARGE OF POLLUTANTS TO STORM WATER FROM CONCRETE WASTE BY CONDUCTING WASHOUT OFFSITE OR PERFORMING ONSITE WASHOUT IN A DESIGNATED AREA CONSTRUCTED AND MAINTAINED IN SUFFICIENT QUANTITY AND SIZE TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS. PLASTIC LINING MATERIAL SHOULD BE A MINIMUM OF 10 MILLIMETER POLYETHYLENE SHEETING AND SHOULD BE FREE OF HOLES, TEARS, AND OTHER DEFECTS THAT COMPROMISE THE IMPERMEABILITY OF THE MATERIAL. DO NOT LOCATE CONTAINMENT AREAS OR DEVICES WHERE ACCIDENTAL RELEASE OF THE CONTAINED LIQUID CAN DISCHARGE TO WATER BODIES, CHANNELS, OR STORM DRAINS. WASHOUT FACILITIES MUST BE CLEANED, OR NEW FACILITIES MUST BE CONSTRUCTED AND READY FOR USE ONCE THE WASHOUT IS 75 PERCENT FULL. ONCE CONCRETE WASTES ARE WASHED INTO THE DESIGNATED AREA AND ALLOWED TO HARDEN, THE CONCRETE MUST BE BROKEN UP, REMOVED, AND DISPOSED OF AS SOLID WASTES.

GOOD HOUSEKEEPING BMPs (CONTINUED)

11. SANITARY/SEPTIC WASTE MANAGEMENT

TEMPORARY AND PORTABLE SANITARY AND SEPTIC WASTE SYSTEMS MUST BE MOUNTED OR STAKED IN, WELL-MAINTAINED, AND SCHEDULED FOR REGULAR WASTE DISPOSAL AND SERVICING. SOURCES OF SANITARY AND/OR SEPTIC WASTE MUST NOT BE STORED NEAR THE MS4 OR RECEIVING WATERS.

12. LIQUID WASTE MANAGEMENT

LIQUID WASTE MUST BE CONTAINED IN A CONTROLLED AREA SUCH AS A HOLDING PIT, SEDIMENT BASIN, ROLL-OFF BIN, OR PORTABLE TANK OF SUFFICIENT VOLUME TO CONTAIN THE LIQUID WASTES GENERATED. CONTAINMENT AREAS OR DEVICES MUST BE IMPERMEABLE AND LEAK FREE AND MUST NOT BE LOCATED WHERE ACCIDENTAL RELEASE OF THE CONTAINED LIQUID CAN DISCHARGE TO WATER BODIES, CHANNELS, OR STORM DRAINS.

13. VEHICLE AND EQUIPMENT CLEANING

ELIMINATE AND MINIMIZE THE DISCHARGE OF POLLUTANTS TO STORM WATER FROM VEHICLE AND EQUIPMENT CLEANING OPERATIONS BY USING OFF-SITE FACILITIES WHEN FEASIBLE, WASHING IN DESIGNATED, CONTAINED AREAS ONLY, AND ELIMINATING DISCHARGES TO THE STORM DRAIN SYSTEM BY EVAPORATING AND/OR TREATING WASH WATER AS APPROPRIATE, OR INFILTRATING WASH WATER FOR EXTERIOR CLEANING ACTIVITIES THAT USE WATER ONLY.

14. VEHICLE AND EQUIPMENT FUELING

PREVENT FUEL SPILLS AND LEAKS BY USING OFF-SITE FACILITIES, FUELING ONLY IN DESIGNATED AREAS, ENCLOSING OR COVERING STORED FUEL, AND IMPLEMENTING SPILL CONTROLS SUCH AS SECONDARY CONTAINMENT AND ACTIVE MEASURES USING SPILL RESPONSE KITS.

15. VEHICLE AND EQUIPMENT MAINTENANCE

ELIMINATE AND MINIMIZE THE DISCHARGE OF POLLUTANTS TO STORM WATER FROM VEHICLE AND EQUIPMENT OPERATIONS BY USING OFF-SITE FACILITIES WHEN FEASIBLE, PERFORMING WORK IN DESIGNATED AREAS ONLY, USING SPILL PADS UNDER VEHICLES AND EQUIPMENT, CHECKING FOR LEAKS AND SPILLS, AND CONTAINING AND CLEANING UP SPILLS IMMEDIATELY.

16. TRACKING CONTROL

- MINIMIZE SEDIMENT TRACK-OUT ONTO OFF-SITE STREETS, OTHER PAVED AREAS, AND SIDEWALKS FROM VEHICLES EXITING THE CONSTRUCTION SITE BY RESTRICTING VEHICLE TRAFFIC TO PROPERLY DESIGNATED AREAS AND USING ADDITIONAL CONTROLS TO REMOVE SEDIMENT FROM VEHICLE TIRES PRIOR TO EXITING JOB SITE.
- VEHICULAR PARKING AND MOVEMENTS ON PROJECT SITES MUST BE CONFINED TO PAVED SURFACES OR PREDEFINED PARKING AREAS AND VEHICLE PATHS, WHICH MUST BE MARKED WITH FLAGS OR BOUNDARY FENCING.
- ALL POLLUTANTS AND MATERIALS THAT ARE DROPPED, WASHED, TRACKED, SPILLED, OR OTHERWISE DISCHARGED FROM A PROJECT SITE TO OFF-SITE STREETS, OTHER PAVED AREAS, SIDEWALKS OR THE MS4 MUST BE CLEANED USING DRY METHODS SUCH AS SWEEPING OR VACUUMING.
- WASHING POLLUTANTS AND MATERIALS THAT ARE DISCHARGED FROM THE PROJECT SITE TO THE MS4 INTO DRAIN INLETS OR CATCH BASINS IS PROHIBITED UNLESS THE MATERIAL IS SEDIMENT AND THE INLETS ARE DIRECTED TO A SEDIMENT BASIN OR SEDIMENT TRAP.

17. STABILIZED CONSTRUCTION ENTRANCE AND EXIT

A STABILIZED CONSTRUCTION ENTRANCE AND EXIT MUST BE PROVIDED BASED ON EROSION AND SEDIMENT CONTROL PLAN DETAILS, AND MUST BE REGULARLY INSPECTED/MAINTAINED TO ENSURE CONTINUED PERFORMANCE.

18. DEWATERING OPERATIONS

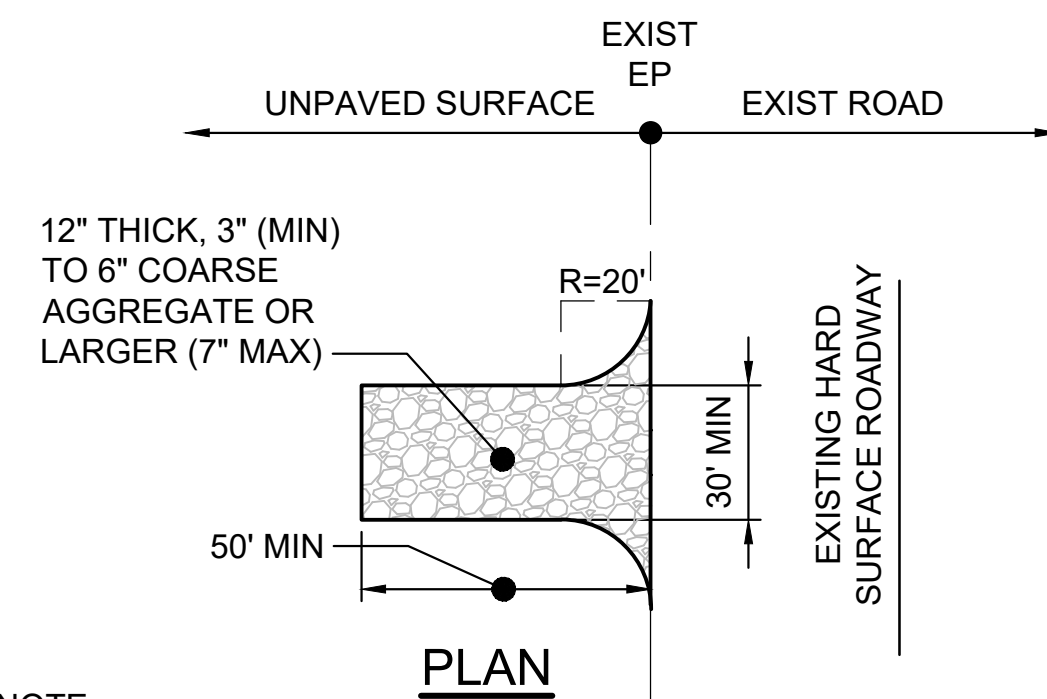
DEWATERING NON-STORM WATER CANNOT BE DISCHARGED FROM THE SITE WITHOUT PRIOR NOTICE AN APPROVAL FROM THE DPP AND DEPARTMENT OF HEALTH. DEWATERING DISCHARGES MUST BE KEPT ONSITE USING A SEDIMENT BASIN, SEDIMENT TRAP, WEIR TANK, DEWATERING TANK, FILTRATION SYSTEM OR OTHER MANUFACTURED SYSTEM.

APPROVED BY:

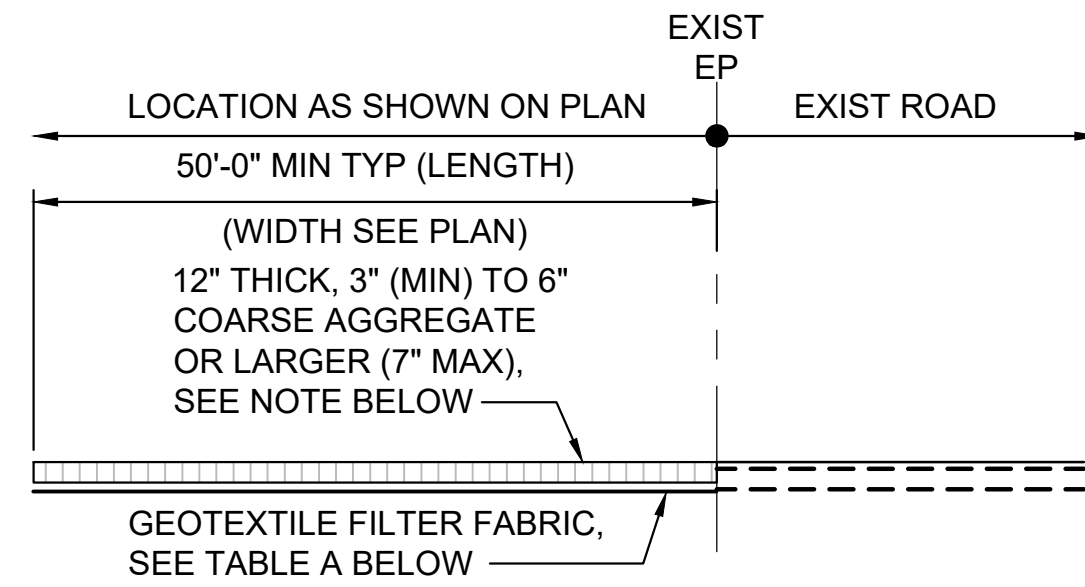
CHIEF, CIVIL ENGINEERING BRANCH, DPP

DATE

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION KAWAINUI MARSH PROTECTION; LEVEE MAUKA TRAIL IMPROVEMENTS KAILUA, OAHU, HAWAII ESCP NOTES-2					
DESIGNED: HP		SUBMITTED: <i>RS</i> <i>DL</i>			
DRAWN: TN		DATE: APRIL 30, 2026			
CHECKED: RS					
APPROVED: <i>Dina Lau</i>		Dina Lau		E-signed 2026-05-08 09:50PM HST	
Signature		Date of License Expiration: 4/30/28		Dina.u.lau@hawaii.gov	
CHIEF ENGINEER		State of Hawaii		DRAWING NO. C-1.3	



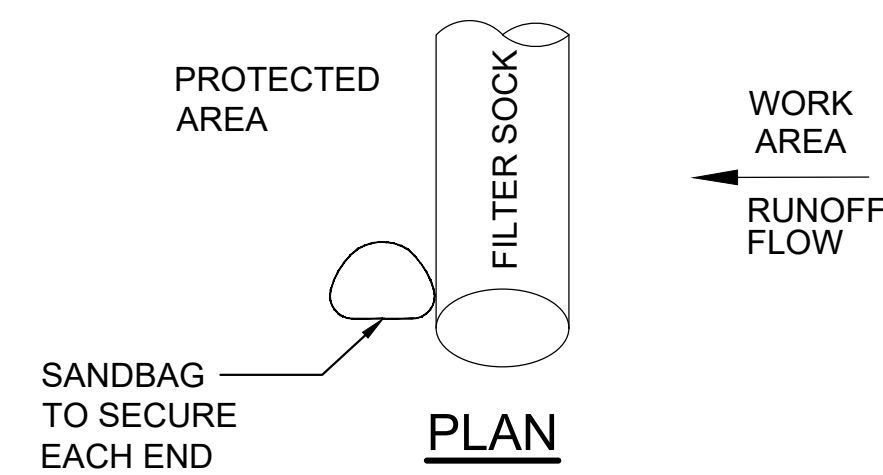
NOTE:
COARSE AGGREGATE LAYER SHALL BE REMOVED IMMEDIATELY PRIOR TO INSTALLATION OF ROADWAY BASE COURSE.



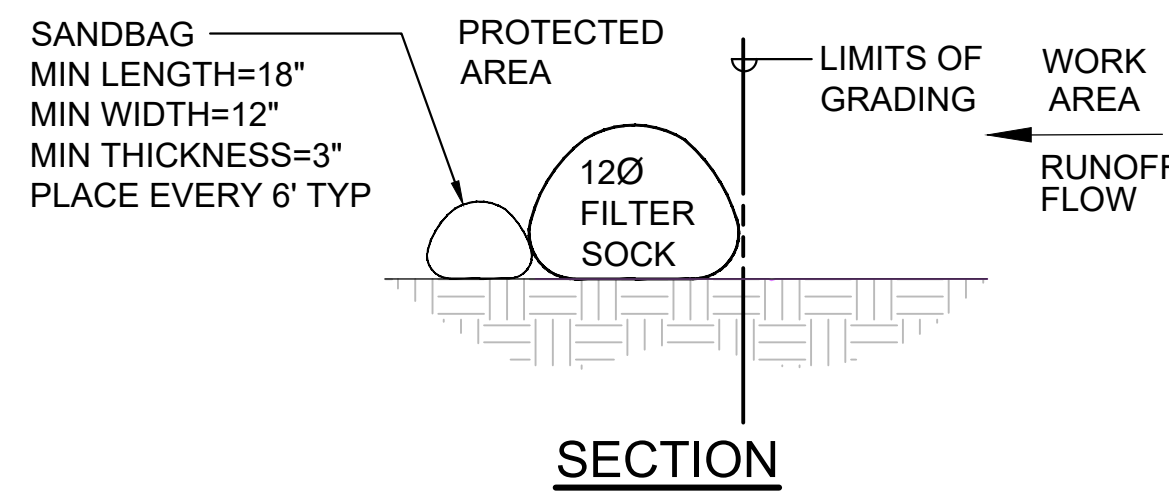
SECTION

TABLE A GEOTEXTILE REQUIREMENTS	
PHYSICAL PROPERTY	REQUIREMENTS
GRAB TENSILE STRENGTH	220 LB (ASTM D1682)
ELONGATION FAILURE	60% (ASTM D1682)
MULLEN BURST STRENGTH	430 LB (ASTM D3768)
PUNCTURE STRENGTH	125 LB (ASTM D751, MODIFIED)
EQUIVALENT OPENING	SIZE 40-80 (U.S. STD SIEVE, CW-02215)

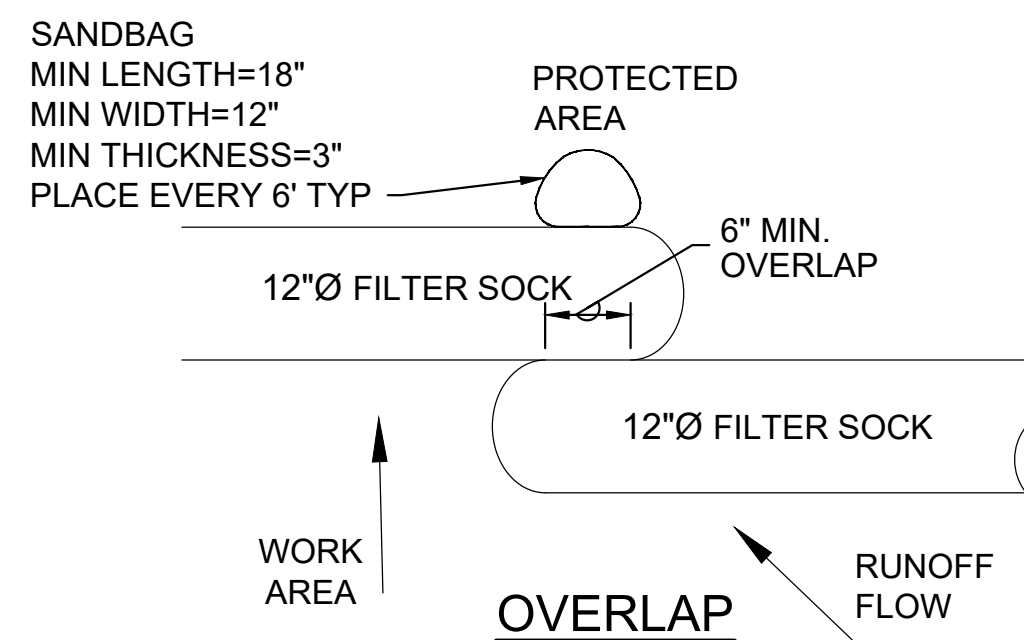
1 CONSTRUCTION INGRESS/EGRESS DETAIL
SCALE: NTS



PLAN

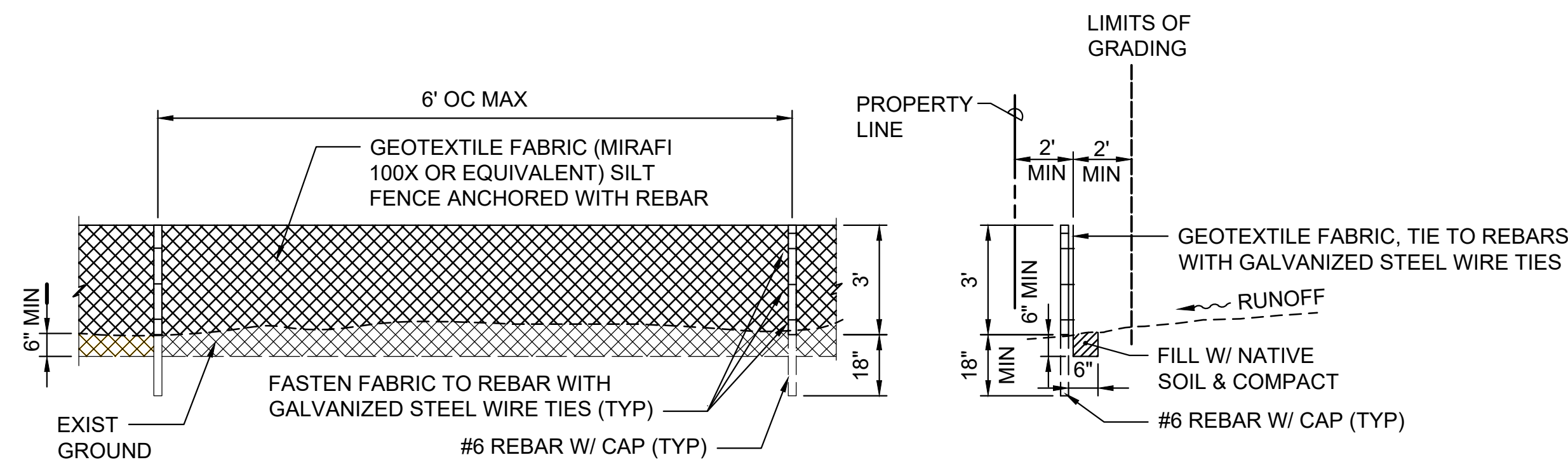


SECTION



OVERLAP

2 FILTER SOCK DETAIL
SCALE: NTS



ELEVATION

SECTION

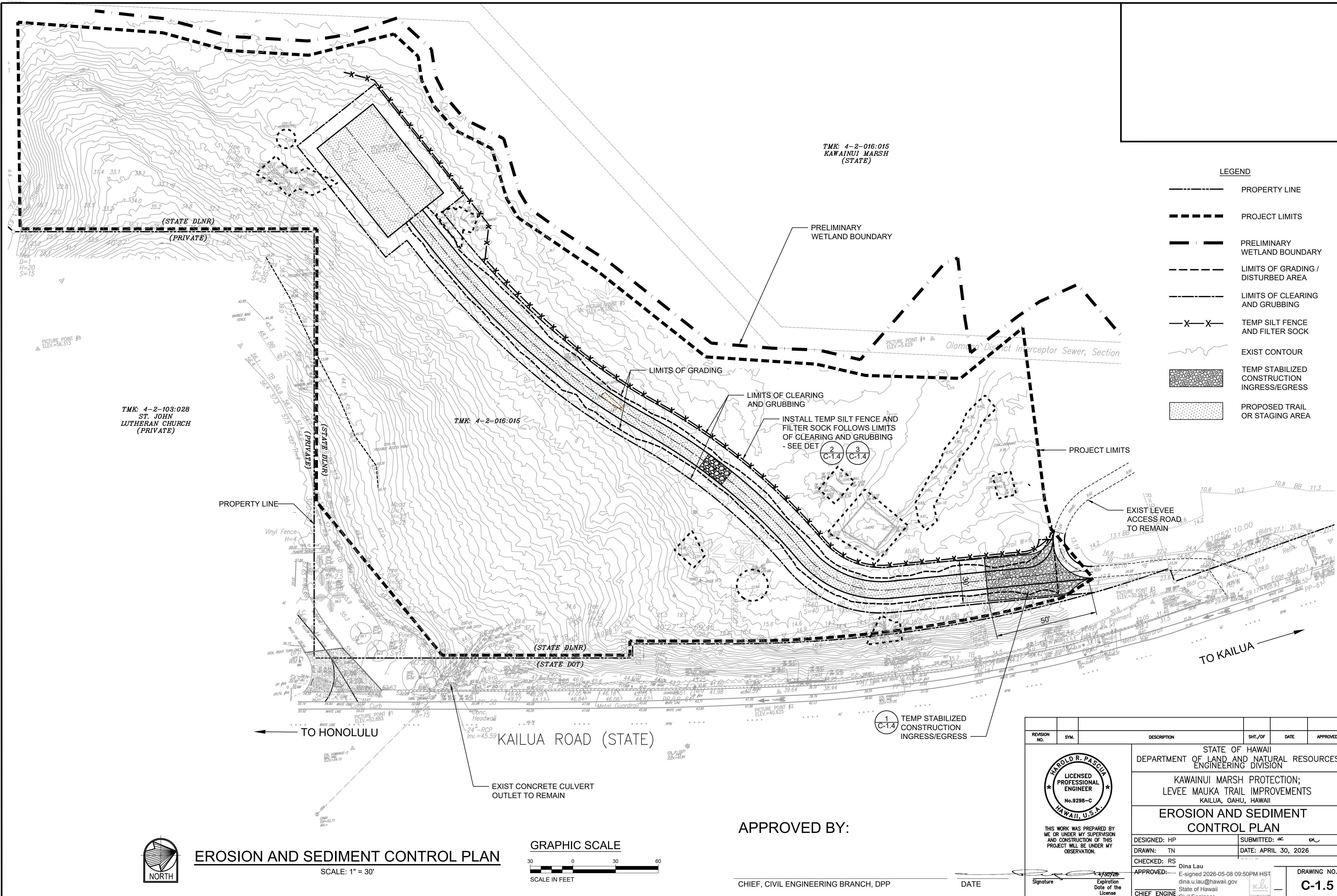
3 SILT FENCE DETAIL
SCALE: NTS

APPROVED BY:

CHIEF, CIVIL ENGINEERING BRANCH, DPP

DATE

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION KAWAINUI MARSH PROTECTION; LEVEE MAUKA TRAIL IMPROVEMENTS KAILUA, OAHU, HAWAII ESCP AND SITE DETAILS					
DESIGNED: HP		SUBMITTED: <i>HP</i>			
DRAWN: TN		DATE: APRIL 30, 2026			
CHECKED: RS		DATE:			
APPROVED: <i>Dina Lau</i>		Dina Lau E-signed 2026-05-08 09:50PM HST dina.u.lau@hawaii.gov State of Hawaii		DRAWING NO. C-1.4	
CHIEF ENGINEER		State of Hawaii			



LEGEND

- PROPERTY LINE
- PROJECT LIMITS
- PRELIMINARY WETLAND BOUNDARY
- LIMITS OF GRADING / DISTURBED AREA
- LIMITS OF CLEARING AND GRUBBING
- TEMP SILT FENCE AND FILTER SOCK
- EXIST CONTOUR
- TEMP STABILIZED CONSTRUCTION INGRESS/EGRESS
- PROPOSED TRAIL OR STAGING AREA

TMK: 4-2-016:015
KAWAINUI MARSH
(STATE)

TMK: 4-2-103:028
ST. JOHN
LUTHERAN CHURCH
(PRIVATE)

TMK: 4-2-016:015

REVISION NO.	SYMBOL	DESCRIPTION	SHT./OF	DATE	APPROVED

HAROLD R. PASQUA
LICENSED PROFESSIONAL ENGINEER
No. 9298-C
HAWAII, U.S.A.

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

**KAWAINUI MARSH PROTECTION;
LEVEE MAUKA TRAIL IMPROVEMENTS
KAILUA, OAHU, HAWAII**

**EROSION AND SEDIMENT
CONTROL PLAN**

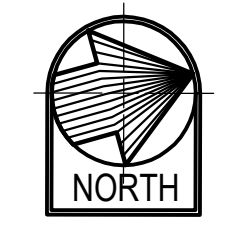
DESIGNED: HP	SUBMITTED:
DRAWN: TN	DATE: APRIL 30, 2026
CHECKED: RS	
APPROVED:	DATE: APRIL 30, 2026
CHIEF ENGINEER	DRAWING NO. C-1.5

JOB NO. D00CO45B SHEET NO. 6 OF 11 SHEETS

APPROVED BY:

CHIEF, CIVIL ENGINEERING BRANCH, DPP

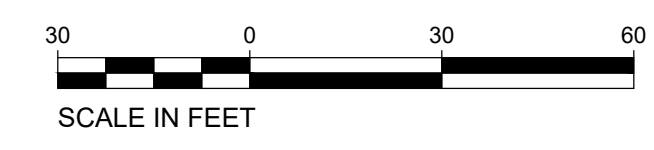
DATE



EROSION AND SEDIMENT CONTROL PLAN

SCALE: 1" = 30'

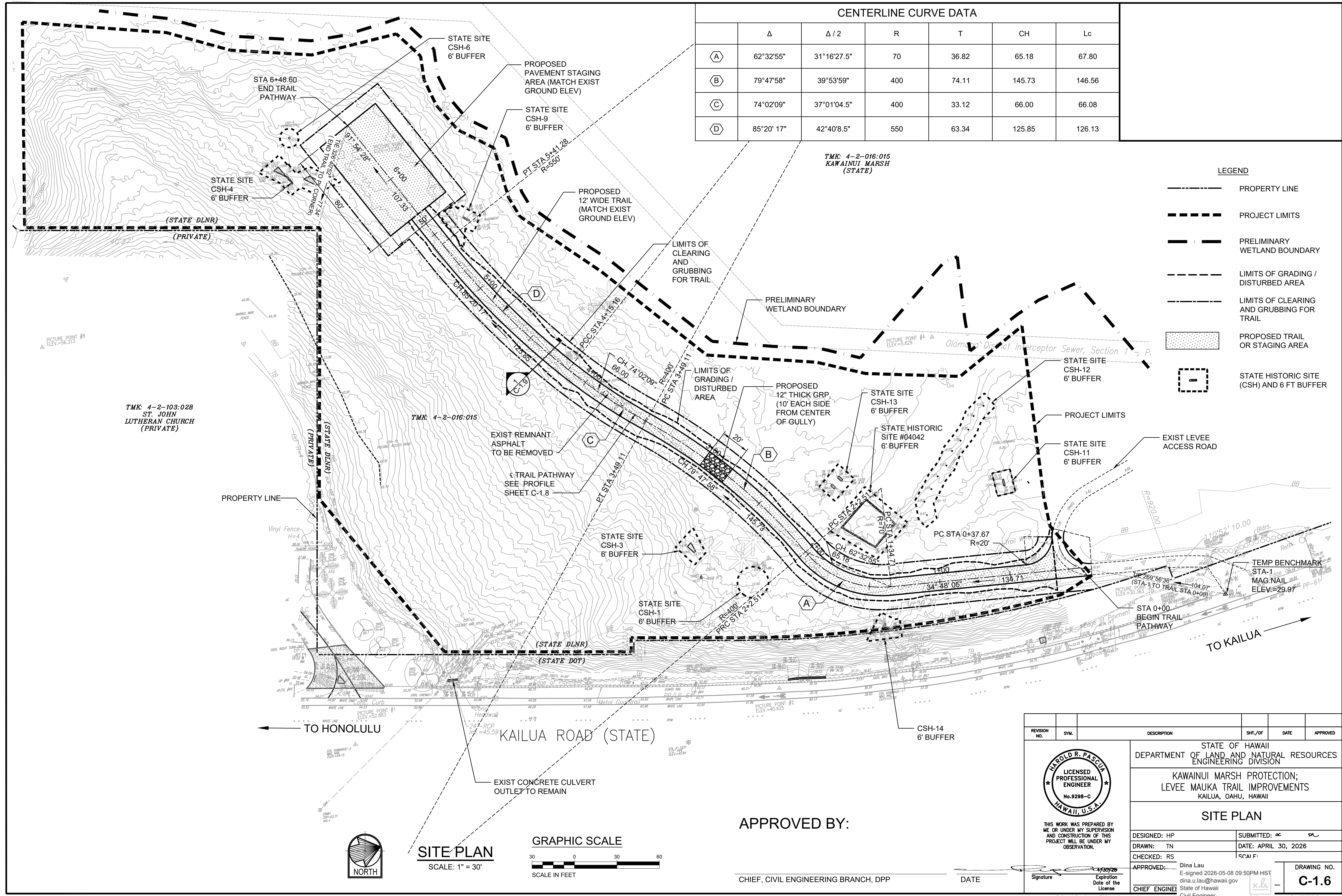
GRAPHIC SCALE



CENTERLINE CURVE DATA						
	Δ	$\Delta / 2$	R	T	CH	Lc
(A)	62°32'55"	31°16'27.5"	70	36.82	65.18	67.80
(B)	79°47'58"	39°53'59"	400	74.11	145.73	146.56
(C)	74°02'09"	37°01'04.5"	400	33.12	66.00	66.08
(D)	85°20' 17"	42°40'8.5"	550	63.34	125.85	126.13

LEGEND

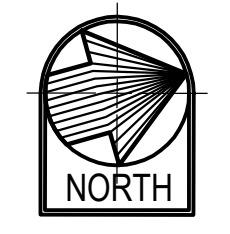
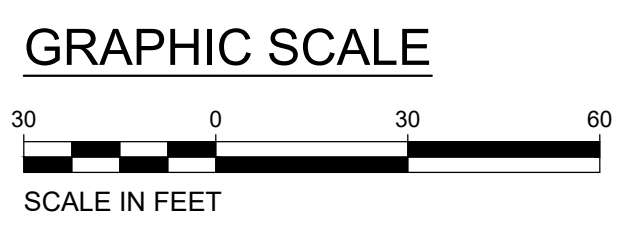
- PROPERTY LINE
- PROJECT LIMITS
- PRELIMINARY WETLAND BOUNDARY
- LIMITS OF GRADING / DISTURBED AREA
- LIMITS OF CLEARING AND GRUBBING FOR TRAIL
- PROPOSED TRAIL OR STAGING AREA
- STATE HISTORIC SITE (CSH) AND 6 FT BUFFER



TMK: 4-2-103:028
ST. JOHN
LUTHERAN CHURCH
(PRIVATE)

TMK: 4-2-016:015
KAWAINUI MARSH
(STATE)

SITE PLAN
SCALE: 1" = 30'

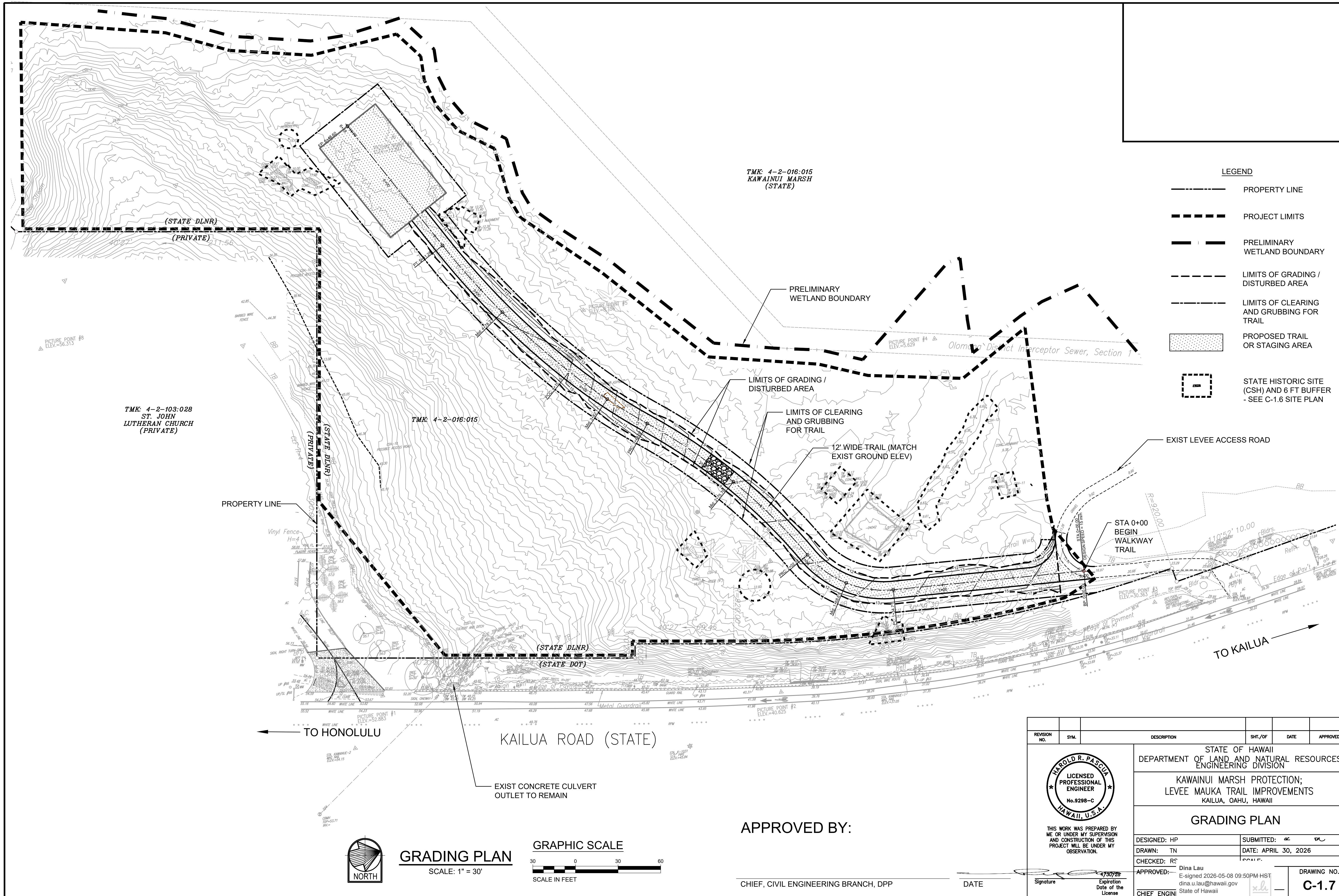


APPROVED BY:

CHIEF, CIVIL ENGINEERING BRANCH, DPP

DATE

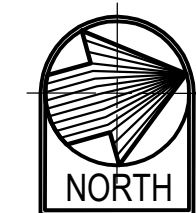
REVISION NO.	SYMBOL	DESCRIPTION	SHT./OF	DATE	APPROVED
<p>STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION</p> <p>KAWAINUI MARSH PROTECTION; LEVEE MAUKA TRAIL IMPROVEMENTS KAILUA, OAHU, HAWAII</p> <p>SITE PLAN</p>					
DESIGNED: HP			SUBMITTED:		
DRAWN: TN			DATE: APRIL 30, 2026		
CHECKED: RS			SCALE: F		
APPROVED:	Dina Lau E-signed 2026-05-08 09:50PM HST dina.u.lau@hawaii.gov State of Hawaii		DRAWING NO. C-1.6		
CHIEF ENGINEER			JOB NO. D00CO45B		SHEET NO. 7 OF 11 SHEETS



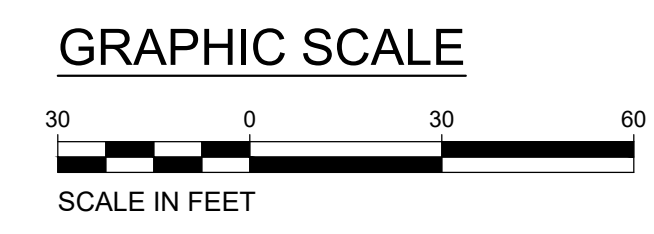
LEGEND

- PROPERTY LINE
- PROJECT LIMITS
- PRELIMINARY WETLAND BOUNDARY
- LIMITS OF GRADING / DISTURBED AREA
- LIMITS OF CLEARING AND GRUBBING FOR TRAIL
- PROPOSED TRAIL OR STAGING AREA
- STATE HISTORIC SITE (CSH) AND 6 FT BUFFER - SEE C-1.6 SITE PLAN

REVISION NO.	SYMBOL	DESCRIPTION	SHT./OF	DATE	APPROVED
<p>STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION</p> <p>KAWAINUI MARSH PROTECTION; LEVEE MAUKA TRAIL IMPROVEMENTS KAILUA, OAHU, HAWAII</p> <p>GRADING PLAN</p>					
DESIGNED:	HP	SUBMITTED:	al	PL	
DRAWN:	TN	DATE:	APRIL 30, 2026		
CHECKED:	RC	SCALE:			
APPROVED:	<p>Dina Lau E-signed 2026-05-08 09:50PM HST dina.u.lau@hawaii.gov State of Hawaii</p>		DRAWING NO.		C-1.7
CHIEF ENGINEER	<p>Signature: <i>[Signature]</i> Expiration Date of License: 4/30/26</p>		DATE		
<p>CHIEF, CIVIL ENGINEERING BRANCH, DPP</p>					



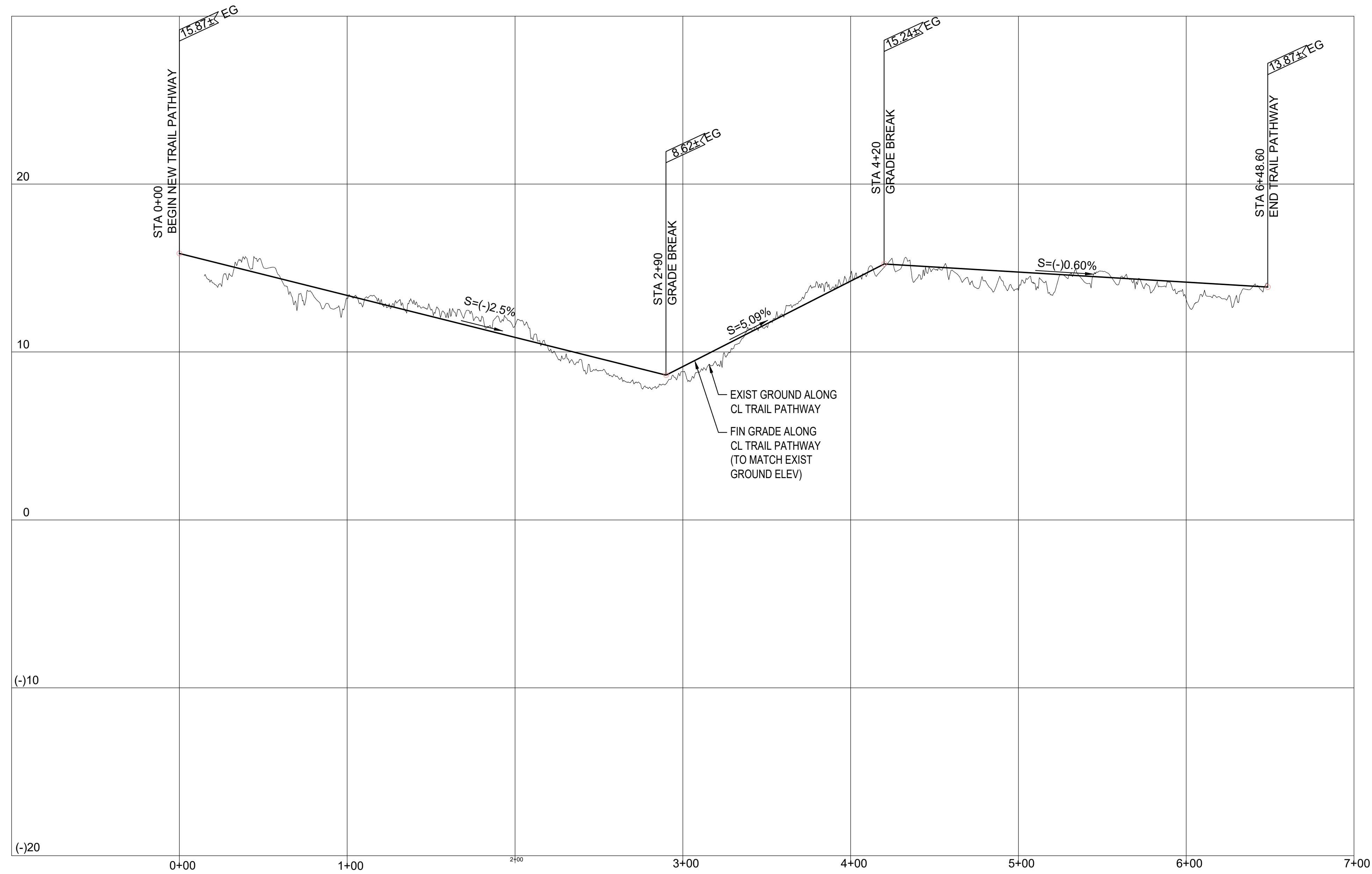
GRADING PLAN
SCALE: 1" = 30'



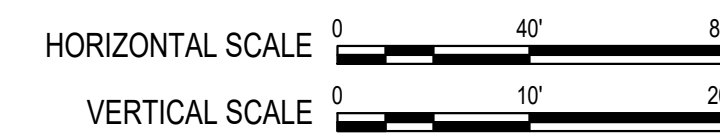
APPROVED BY:

CHIEF, CIVIL ENGINEERING BRANCH, DPP

DATE



1 PROFILE - TRAIL PATHWAY
 SCALE: 1" = 40' (HORIZ)
 1" = 8' (VERT)



APPROVED BY:

 CHIEF, CIVIL ENGINEERING BRANCH, DPP

 DATE

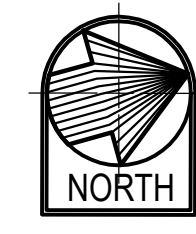
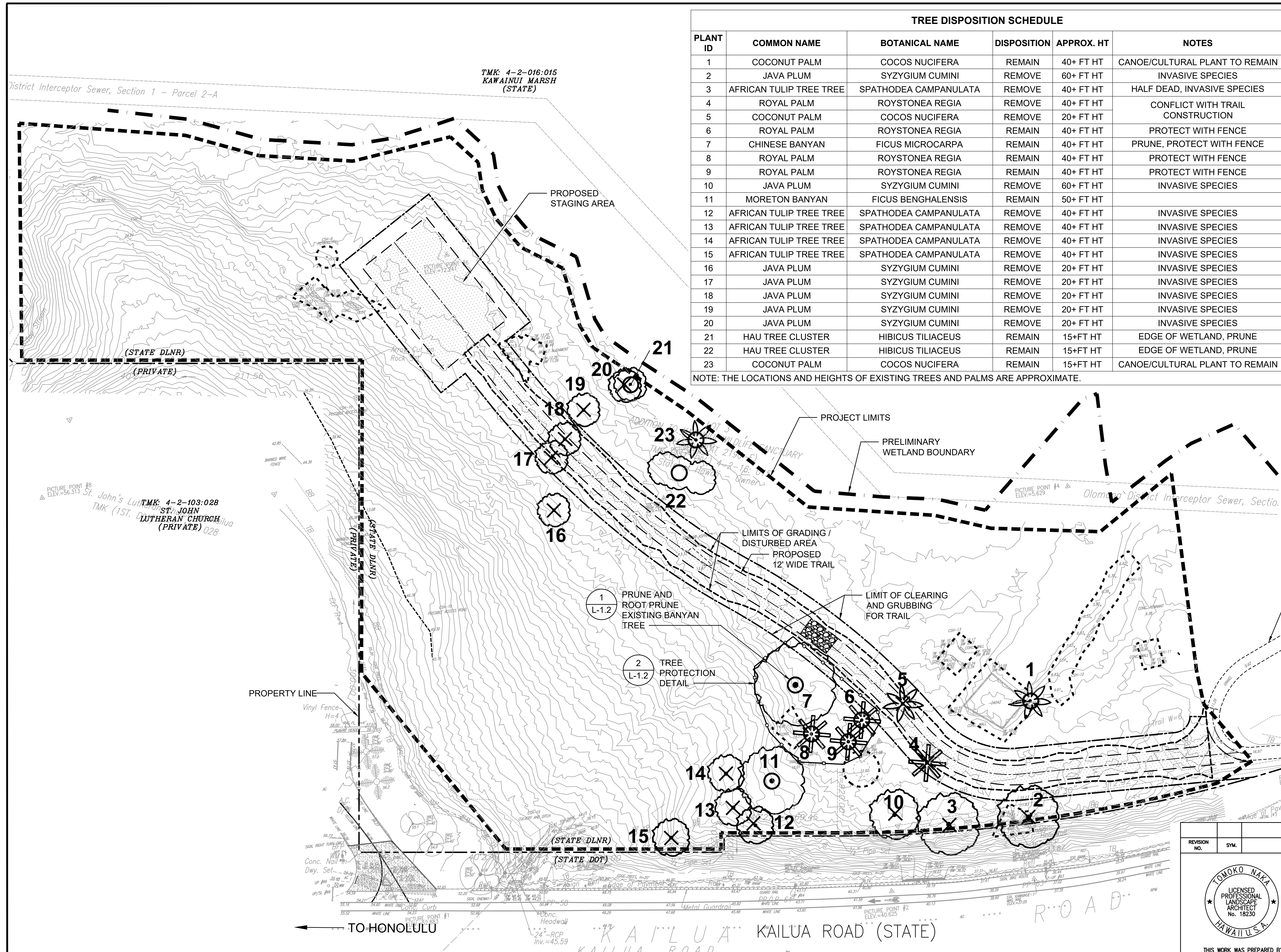
REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION					
KAWAINUI MARSH PROTECTION; LEVEE MAUKA TRAIL IMPROVEMENTS KAILUA, OAHU, HAWAII					
PROFILES					
DESIGNED: HP			SUBMITTED: <i>HP</i>		
DRAWN: HP/TN			DATE: APRIL 30, 2026		
CHECKED: HP					
APPROVED: <i>[Signature]</i>	Dina Lau E-signed 2026-05-08 09:50PM HST dina.u.lau@hawaii.gov State of Hawaii		4/30/28 Expiration Date of the License		DRAWING NO. C-1.8
CHIEF ENGINEER					

TREE DISPOSITION SCHEDULE					
PLANT ID	COMMON NAME	BOTANICAL NAME	DISPOSITION	APPROX. HT	NOTES
1	COCONUT PALM	COCOS NUCIFERA	REMAIN	40+ FT HT	CANOE/CULTURAL PLANT TO REMAIN
2	JAVA PLUM	SYZYGIUM CUMINI	REMOVE	60+ FT HT	INVASIVE SPECIES
3	AFRICAN TULIP TREE TREE	SPATHODEA CAMPANULATA	REMOVE	40+ FT HT	HALF DEAD, INVASIVE SPECIES
4	ROYAL PALM	ROYSTONEA REGIA	REMOVE	40+ FT HT	CONFLICT WITH TRAIL CONSTRUCTION
5	COCONUT PALM	COCOS NUCIFERA	REMOVE	20+ FT HT	
6	ROYAL PALM	ROYSTONEA REGIA	REMAIN	40+ FT HT	PROTECT WITH FENCE
7	CHINESE BANYAN	FICUS MICROCARPA	REMAIN	40+ FT HT	PRUNE, PROTECT WITH FENCE
8	ROYAL PALM	ROYSTONEA REGIA	REMAIN	40+ FT HT	PROTECT WITH FENCE
9	ROYAL PALM	ROYSTONEA REGIA	REMAIN	40+ FT HT	PROTECT WITH FENCE
10	JAVA PLUM	SYZYGIUM CUMINI	REMOVE	60+ FT HT	INVASIVE SPECIES
11	MORETON BANYAN	FICUS BENGHALENSIS	REMAIN	50+ FT HT	
12	AFRICAN TULIP TREE TREE	SPATHODEA CAMPANULATA	REMOVE	40+ FT HT	INVASIVE SPECIES
13	AFRICAN TULIP TREE TREE	SPATHODEA CAMPANULATA	REMOVE	40+ FT HT	INVASIVE SPECIES
14	AFRICAN TULIP TREE TREE	SPATHODEA CAMPANULATA	REMOVE	40+ FT HT	INVASIVE SPECIES
15	AFRICAN TULIP TREE TREE	SPATHODEA CAMPANULATA	REMOVE	40+ FT HT	INVASIVE SPECIES
16	JAVA PLUM	SYZYGIUM CUMINI	REMOVE	20+ FT HT	INVASIVE SPECIES
17	JAVA PLUM	SYZYGIUM CUMINI	REMOVE	20+ FT HT	INVASIVE SPECIES
18	JAVA PLUM	SYZYGIUM CUMINI	REMOVE	20+ FT HT	INVASIVE SPECIES
19	JAVA PLUM	SYZYGIUM CUMINI	REMOVE	20+ FT HT	INVASIVE SPECIES
20	JAVA PLUM	SYZYGIUM CUMINI	REMOVE	20+ FT HT	INVASIVE SPECIES
21	HAU TREE CLUSTER	HIBICUS TILIACEUS	REMAIN	15+FT HT	EDGE OF WETLAND, PRUNE
22	HAU TREE CLUSTER	HIBICUS TILIACEUS	REMAIN	15+FT HT	EDGE OF WETLAND, PRUNE
23	COCONUT PALM	COCOS NUCIFERA	REMAIN	15+FT HT	CANOE/CULTURAL PLANT TO REMAIN

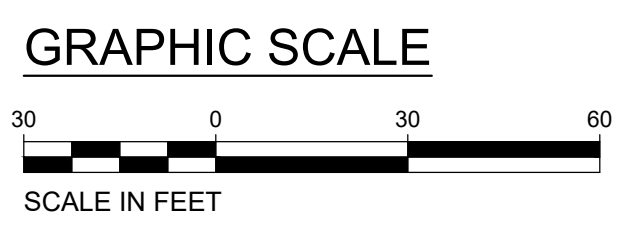
NOTE: THE LOCATIONS AND HEIGHTS OF EXISTING TREES AND PALMS ARE APPROXIMATE.

LEGEND

- PROPERTY LINE
- PROJECT LIMITS
- PRELIMINARY WETLAND BOUNDARY
- LIMITS OF GRADING / DISTURBED AREA
- LIMITS OF CLEARING AND GRUBBING FOR TRAIL
- TREE PROTECTION FENCE
- PROPOSED TRAIL OR STAGING AREA
- STATE HISTORIC SITE (CSH) AND 6 FT BUFFER - SEE C-1.6 SITE PLAN
- EXIST. PLANT ID # ○ EXISTING TREES OR PALMS TO REMAIN
- EXIST. PLANT ID # ✕ EXISTING TREES OR PALMS TO REMOVE



TREE DISPOSITION PLAN
SCALE: 1" = 30'

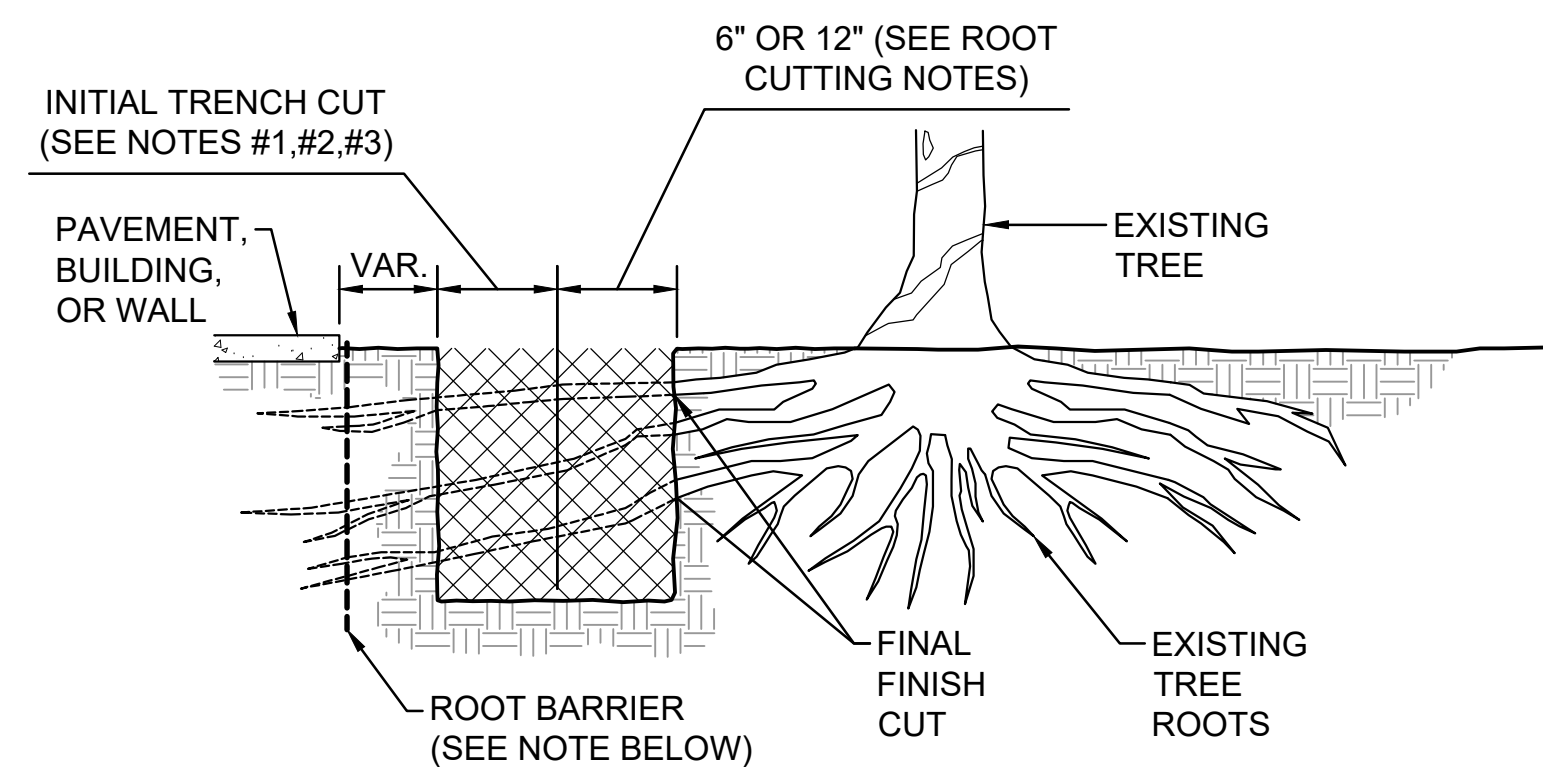


APPROVED BY: _____
CHIEF, CIVIL ENGINEERING BRANCH, DPP DATE _____

REVISION NO.	SYMBOL	DESCRIPTION	SHT./OF	DATE	APPROVED
<p>STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION</p> <p>KAWAINUI MARSH PROTECTION; LEVEE MAUKA TRAIL IMPROVEMENTS KAILUA, OAHU, HAWAII</p> <p>TREE DISPOSITION PLAN AND SCHEDULE</p>					
DESIGNED: TN	SUBMITTED: <i>ae</i>				
DRAWN: TN	DATE: APRIL 30, 2026				
CHECKED: BT	SCALE:				
APPROVED: <i>Dina Lau</i>	Dina Lau E-signed 2026-05-08 09:50PM HST dina.u.lau@hawaii.gov State of Hawaii		DRAWING NO. L1.1		
CHIEF ENGR		SHEET NO. 10 OF 11 SHEETS			

ROOT PRUNING NOTES:

1. MAKE INITIAL TRENCH CUTS 6" BEYOND THE FINAL FINISH CUT WHEN USING A TRENCHER.
2. MAKE INITIAL TRENCH CUTS 12" BEYOND THE FINAL FINISH CUTS AND AVOID RIPPING ROOTS WHEN USING A BACKHOE.
3. BACKFILL TRENCH WITH NATIVE SOIL DUG FROM THE TRENCH AND COMPACT ALL VOIDS TO MATCH EXISTING FINISH GRADE, AND SEED, SPRIG OR SOD WITH GRASS AS SPECIFIED.
4. WHEN USING BACKHOE EQUIPMENT FOR INITIAL CUTS USE THE FRONT EDGE OF BUCKET PARALLEL TO THE TREE ROOTS (TRANSVERSE DIRECTION TO RADIATING ROOTS) TO SEVER THE TREE ROOTS TO AVOID RIPPING THE ROOTS.
5. HAND EXCAVATE AROUND ROOTS TO THE SIZE OF DESIRED ROOT BALL AND THEN TRIM OFF PROTRUDING ROOTS BY HANDSAW OR CHAINSAW.
6. ALL FINAL CUTS MUST BE MADE USING A SHARP HAND SAW OR APPROVED ROOT PRUNING EQUIPMENT TO ENSURE CLEAN, NON-JAGGED CUTS.
7. WORK MUST BE DONE UNDER THE DIRECT SUPERVISION OF A QUALIFIED ARBORIST.
8. THE QUALIFIED ARBORIST MUST DETERMINE THE AMOUNT OF TREE CANOPY THAT WILL BE PRUNED AFTER THE ROOT PRUNING.
9. ALL PRUNED ROOTS AND BRANCHES MUST BE REMOVED AND DISPOSED OF.
10. WHEN EXCAVATING ROOTS, DO NOT DAMAGE OR STRIP OUTER LAYER OF ROOT TISSUE.
11. ALL SEVERED ROOTS IRRESPECTIVE OF SIZE MUST BE CUT CLEAN WITH A CHAINSAW, LOPPER, PRUNING SHEARS AND/OR HANDSAW. A CLEAN CUT ALLOWS SEVERED ROOTS TO ABSORB WATER AND NUTRIENTS, AND FACILITATES ROOT REGENERATION AND COMPARTMENTALIZATION.



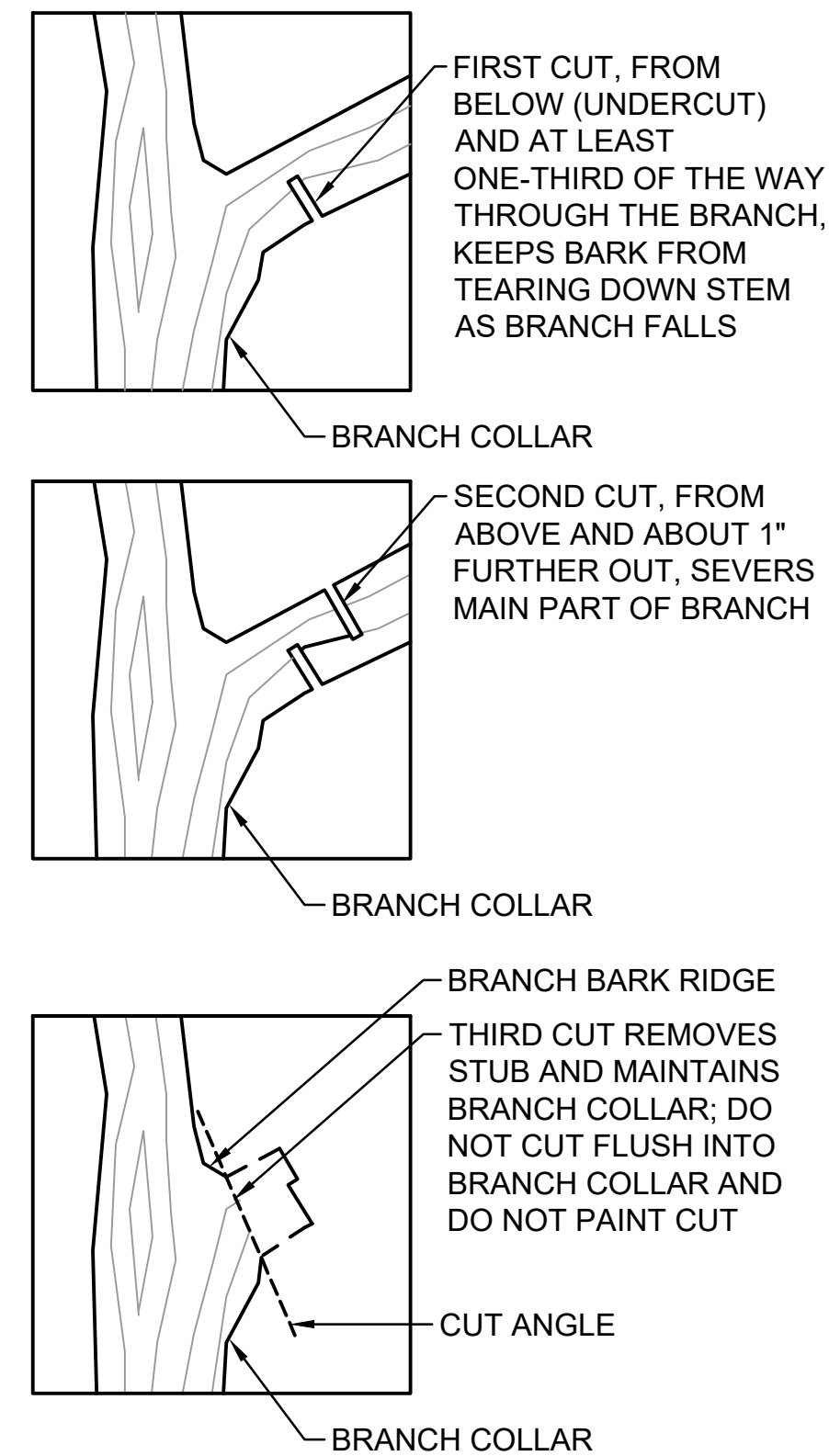
ROOT BARRIER NOTE:
INSTALL ROOT BARRIER AS PER MANUFACTURER'S INSTRUCTIONS. LENGTH OF ROOT BARRIER MUST SPAN DRIP LINE OF THE TREE.

1 ROOT AND BRANCH PRUNING DETAIL

NOT TO SCALE

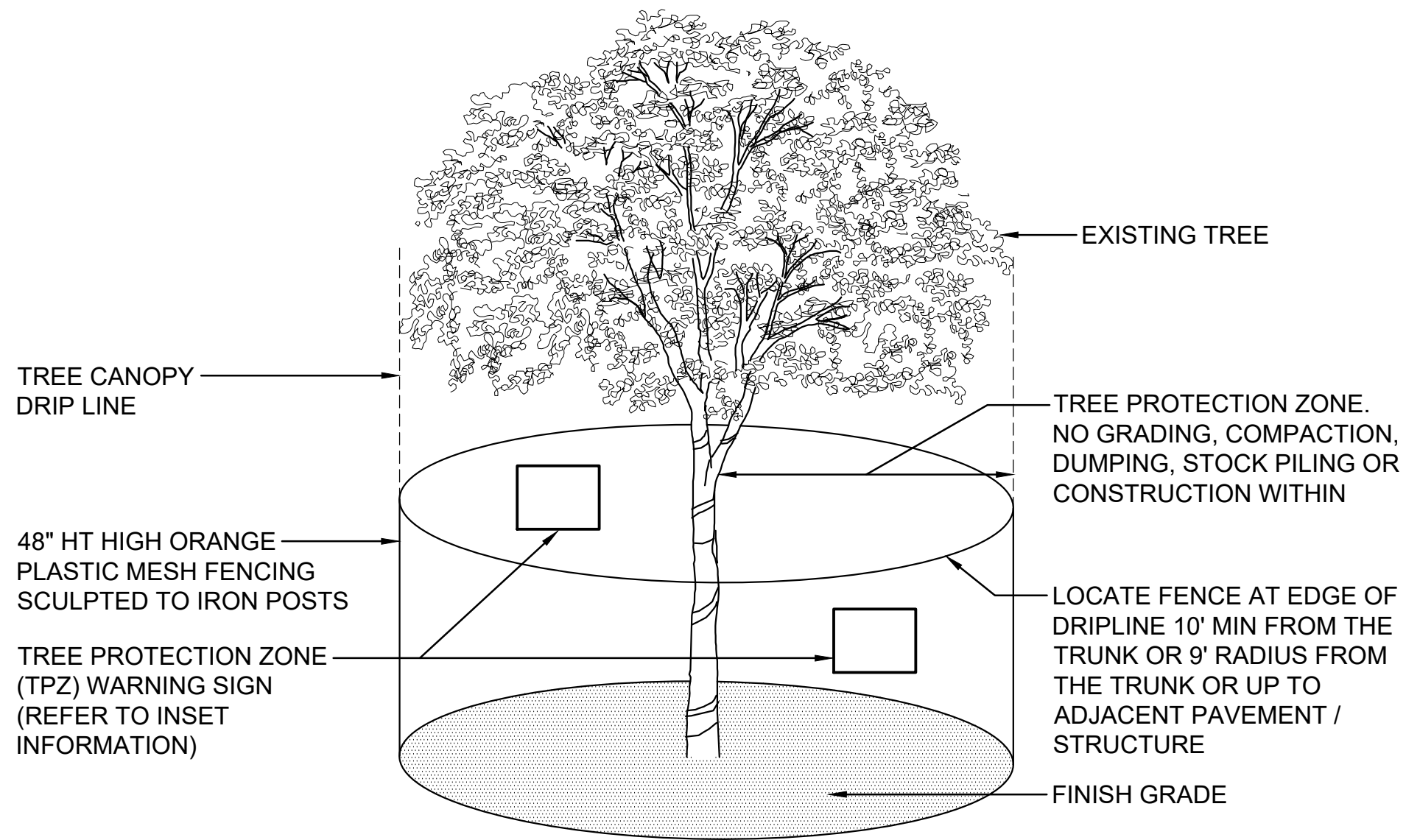
BRANCH PRUNING NOTES:

BRANCH PRUNING MUST BE PERFORMED BY A LICENSED CONTRACTOR WITH A CLASS CODE OF C-27 OR C-27B, WHO HAS BEEN APPROVED BY DUF. THE QUALIFIED ARBORIST MUST POSSESS A THOROUGH WORKING KNOWLEDGE OF THE AMERICAN NATIONAL STANDARD FOR TREE CARE OPERATIONS: "PRUNING, TRIMMING, REPAIRING, MAINTAINING AND REMOVING TREES AND CUTTING BRUSH - SAFETY REQUIREMENTS, ANSI Z133.1" - LATEST EDITION AND "TREE, SHRUB AND OTHER WOODY PLANT MAINTENANCE - STANDARD PRACTICES, ANSI A300" - LATEST EDITION.



TREE DISPOSITION NOTES

1. A PROJECT BIOLOGIST FROM DIVISION OF FORESTRY AND WILDLIFE (DOFAW) MUST REVIEW THE SITE PRIOR TO CONSTRUCTION ACTIVITIES TO PROVIDE ASSISTANCE TO THE CONTRACTOR IN PREVENTING DISTURBANCE TO WATERBIRD AND HAWAIIAN HOARY BATS THAT MAY BE PRESENT.
2. IF A WATERBIRD NEST IS DISCOVERED, WORK MUST IMMEDIATELY IN THE VICINITY FOR A MINIMUM OF 60 DAYS; IF NEXT WITH CHICKS IS DISCOVERED WORK SHALL CEASE IMMEDIATELY FOR 30 DAYS. THESE STANDARD GUIDELINES ARE INTENDED TO PROTECT CHICKS AND MAY BE SHORTENED IF PROJECT BIOLOGIST VERIFIES THAT CHICKS HAVE FLEDGED (USUALLY 5 TO 6 WEEKS AFTER HATCHING). IN EACH CASE, DOFAW MUST BE CONTACTED IMMEDIATELY.
3. IF A PREVIOUSLY UNDISCOVERED NEST IS FOUND AFTER WORK BEGINS, ALL WORK WILL CEASE IMMEDIATELY WITHIN AN MINIMUM RADIUS OF 100 FEET OF THE NEST AND DOFAW MUST BE CONTACTED IMMEDIATELY.
4. NO WOODY VEGETATION TALLER THAN 15 FEET (4.5 METERS) MUST BE DISTURBED DURING HAWAIIAN HOARY BAT BIRTHING AND REARING SEASON (JUNE 1 THROUGH SEPTEMBER 15) IN ADVANCE OF WORK ON WOODY VEGETATION. DOFAW MUST BE CONTACTED TO VERIFY HEIGHT.
5. DOFAW CONTACT INFORMATION: JASON MISAKI, WILDLIFE PROGRAM MANAGER, DEPARTMENT OF LAND AND NATURAL RESOURCES, DIVISION OF FORESTRY AND WILDLIFE, OAHU BRANCH. WORK PHONE NUMBER: (808) 973-9786 CELL PHONE NUMBER: (808)-395-5896 ADDRESS: 2135 MAKIKI HEIGHTS DRIVE, HONOLULU HI 96822
6. THE PURPOSE OF TREE PRUNING IS TO REMOVE DEAD OR WEAK BRANCHES AND PROVIDE ADEQUATE VERTICAL CLEARANCE BENEATH TREES WITHIN DESIGNATED WORK AREAS.
7. SELECTIVE TREE PRUNING MUST OCCUR UNDER THE DIRECTION OF QUALIFIED ARBORIST.
8. DEMOLISHED TREES AND BRANCHES MUST BE CHIPPED ON SITE IN AREA(S) APPROVED BY DOFAW.
9. CHIPS MUST BE STOCKPILED IN DESIGNATED AREA APPROVED BY DOFAW.
10. VINE TRIMMINGS MUST BE LEFT ON SITE FOR DECOMPOSITION IN AN AREA APPROVED BY DOFAW.
11. PRIOR TO CONSTRUCTION AND PLANT REMOVAL ACTIVITIES, CONTRACTOR MUST CONFIRM THE LOCATIONS OF HISTORIC AND CULTURAL SITES WITHIN THE PROJECT LIMITS AND ENSURE THAT THE NECESSARY BUFFER STRUCTURES ARE ERECTED AND IN PLACE.
12. PRIOR TO CONSTRUCTION AND PLANT REMOVAL ACTIVITIES, CONTRACTOR MUST CONFIRM THE LOCATIONS OF HISTORIC AND CULTURAL SITES WITHIN THE PROJECT LIMITS AND ENSURE THAT THE NECESSARY BUFFER STRUCTURES ARE ERECTED AND IN PLACE.

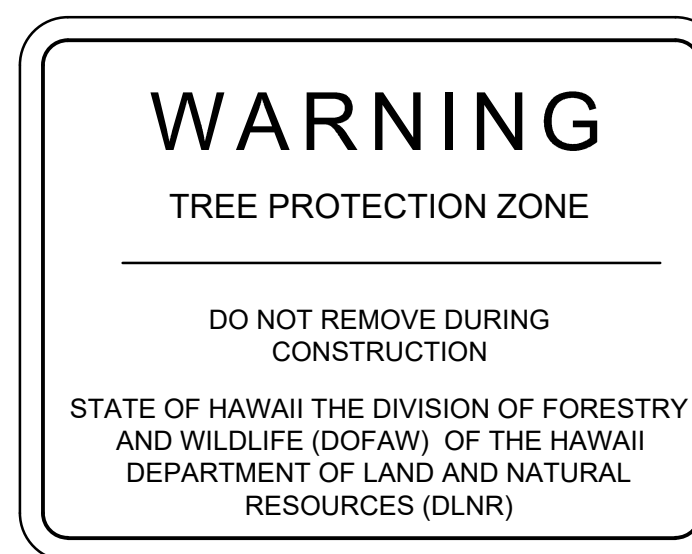


2 TREE PROTECTION DETAIL

NOT TO SCALE

NOTES:

1. FOR TREES THAT ARE IN NARROW PLANTING STRIPS, THE ENTIRE PLANTING STRIP SHALL BE ENCLOSED.
2. FOR TREE WELLS AND SMALL PLANTER AREAS THAT ARE FULL OF ROOTS, USE PLASTIC TRAFFIC BARRICADES (WATER FILLABLE) MINIMUM (3) EACH, OR TYPE 1 OR TYPE 2 TRAFFIC BARRICADES, MINIMUM FOUR (4) EACH, OR AS DETERMINED BY DUF.
3. TREE WILL REQUIRE SUPPLEMENTAL WATERING AND SHALL BE PROVIDED.
4. IF THE FENCE IS INSIDE THE DRIP LINE, PLYWOOD BOARDS OR STEEL PLATES OR HEAVY DUTY GROUND PROTECTION MATS OVER AN 1" MULCH LAYER WILL BE REQUIRED TO PROTECT THE TREE ROOTS AND GROUND FROM DAMAGE, SOIL COMPACTION AND EROSION FROM CONSTRUCTION EQUIPMENT AND VEHICLES.
5. 2" DIA GALVANIZED IRON POSTS, DRIVEN INTO THE GROUND TO 24" MIN DEPTH, AT NO MORE THAN 10'-0" SPACING.
6. ENSURE NO DAMAGING TO ROOTS, WATERLINES AND, UTILITIES DURING FENCE POST INSTALLATION AND REMOVAL.
7. MAINTAIN ALL PLANTING WITHIN PROTECTION ZONE DURING CONSTRUCTION. UPON CONSTRUCTION COMPLETION, REMOVE BARRIER FENCING AND POSTS FROM THE SITE. REPAIR/REPLACE PLANTING TO PRE-CONSTRUCTION CONDITIONS OR BETTER.



SIGN NOTES:

1. MINIMUM SIZE OF SIGN: 8-1/2" X 11".
2. SECURELY FASTEN TO FENCE.
3. HANG ONE SIGN AT EACH QUADRANT AROUND TPZ SPACED EQUALLY AND VISIBILITY.
4. SIGN TO BE MADE OF WEATHERPROOF MATERIAL.

APPROVED BY:

CHIEF, CIVIL ENGINEERING BRANCH, DPP

DATE

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TREE DISPOSITION DETAILS					
DESIGNED: TN			SUBMITTED: <i>al</i>		
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APPROVED: <i>Dina Lau</i>	Dina Lau E-signed 2026-05-08 09:50PM HST dina.u.lau@hawaii.gov State of Hawaii		DRAWING NO. L-1.2		
CHIEF ENGINEER					