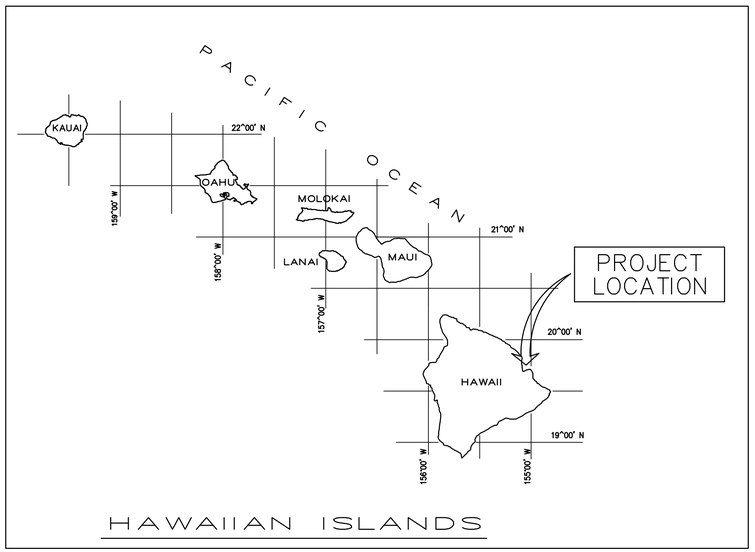
NEW BOAT LIFT IMPROVEMENTS
PIER 1, HILO HARBOR, HAWAII



HAWAIIAN ISLANDS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HARBORS

JOB NO. P50217

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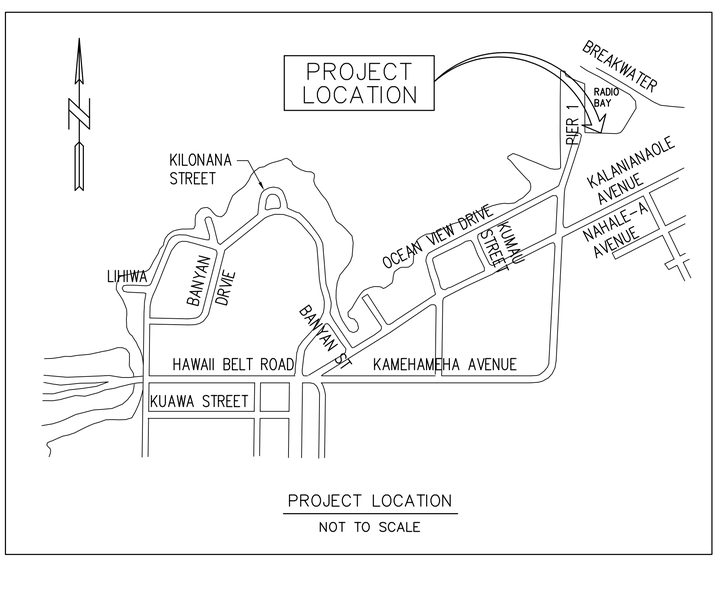

PROJECT LOCATION
NOT TO SCALE

PLANS PREPARED BY:

KAI HAWAII INC.
50 S Beretania St. C-119C
HONOLULU, HI, 96813

REVISION	DATE	DESCRIPTION	BY	APPROVED

DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

APPROVED BY:

for DIRECTOR OF TRANSPORTATION — DATE 04/16/2026

SHEET T-1

1 OF 14 SHEETS

P50217 – NEW BOAT LIFT IMPROVEMENTS PIER 1 HILO HARBOR HAWAII

GENERAL CONSTRUCTION NOTES

1. THE CONTRACTOR SHALL COMPLY WITH THE CLEAN WATER ACT AND THE STATE HARBORS STORMWATER MANAGEMENT PROGRAM. NO POLLUTANT IS ALLOWED TO BE DISCHARGED DIRECTLY OR INDIRECTLY THROUGH THE HARBORS SMALL MS4 OR OTHER POTENTIAL PATHWAYS.

2. THE CONTRACTOR WILL BE RESPONSIBLE FOR REGULATORY FINES OR PENALTIES THAT MAY BE IMPOSED BY ENVIRONMENTAL, REGULATORY AGENCIES (EPA AND /OR STATE DOH) IN THE EVENT OF VIOLATIONS.

3. THE CONTRACTOR SHALL SUBMIT A SITE-SPECIFIC BEST MANAGEMENT PRACTICE PLAN AND HEALTH AND SAFETY PLAN TO THE HABORS ENGINEERING BRANCH PRIOR TO THE START OF ANY CONSTRUCTION WORK.

4. IN CASE OF RELEASE OF OF A HAZARDOUS SUBSTANCE, OIL, OR ENCOUNTER OF CONTAMINATED SOIL, THE CONTRACTOR SHALL NOTIFY APPROPRIATE FACILITY PERSONNEL, EMERGENCY RESPONSE AGENCIES, AND REGULATORY AGENCIES FOLLOWING NOTIFICATION PROCEDURES, AND SHALL NOTIFY THE HARBOR CONSTRUCTION ENGINEER IMMEDIATELY (I.E. WITHIN 24 HOURS). CONTACT INFORMATION MUST BE IN LOCATIONS THAT ARE READILY ACCESSIBLE AND AVAILABLE.

5. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT PLANS AND SPECIFICATIONS; HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2005 EDITION, AND STANDARD PLANS OF THE STATE OF HAWAII, DEPARTMENT OF TRANSPORTATION, HIGHWAYS DIVISION, DATED 2008, AS AMENDED; STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION, SEPTEMBER 1984, AS AMENDED BY DPW, UNLESS OTHERWISE SPECIFIED ON THE PLANS OR SPECIFICATIONS. CONTRACTOR SHALL HAVE THESE REFERENCES AT THE CONSTRUCTION SITE AT ALL TIMES.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF TRAFFIC, IN ACCORDANCE WITH PART 6 OF THE FEDERAL HIGHWAY ADMINSTRATION, MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, 2009 11TH EDITION AND AMENDMENTS.

7. THE CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN THE APPLICABLE REQUIRED PERMITS FROM THE FEDERAL, COUNTY AND STATE AGENCIES REQUIRED TO COMPLETE THE WORK SHOWN ON THESE PLANS AT NO ADDITIONAL COST TO DOT-H.

8. THE CONTRACTOR AGREES THAT IT SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD DOT-H AND ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OR WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE DOT-H OR THE ENGINEER.

9. THE BIOSECURITY PROTOCOL IN THE PROJECT SPECIFICATIONS SHALL BE FOLLOWED AS APPLICABLE AND CONSIDERED INCLUDED IN THE VARIOUS PROJECT PAY ITEMS.

10. THE CONTRACTOR SHALL VERIFY AND CHECK ALL DIMENSIONS AND DETAILS SHOWN ON THE DRAWINGS AND/OR SPECIFICATIONS PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCY SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER FOR CLARIFICATION.

11. ALL CONSTRUCTION LINES, GRADES AND SURVEY MONUMENT STAKEOUTS SHALL BE MADE BY LICENSED SURVEYORS.

12. THE CONTRACTOR SHALL PROVIDE ACCESS TO AND FROM DRIVEWAYS AND PUBLIC STREETS AT ALL TIMES. THE CONTRACTOR SHALL COORDINATE WITH RESIDENCE/BUSINESSES AND PROVIDE REASONABLE ACCESS TO THEIR PROPERTY AT ALL TIMES.

13. THE CONTRACTOR SHALL CONTACT HAWAII ONE CALL CENTER AT (866) 423-7287 OR 811 AT LEAST FIVE (5) DAYS PRIOR TO START OF WORK TO HAVE RESPECTIVE UTILITY COMPANIES LOCATE AND MARK WHERE THEIR UNDERGROUND FACILITIES ARE LOCATED. THE CONTRACTOR SHALL COORDINATE ALL WORK WITH AGENCIES AND UTILITY COMPANIES AND SHALL BE RESPONSIBLE TO SEQUENCE, SCHEDULE AND/OR RESCHEDULE THE WORK AS REQUIRED TO ACCOMMODATE UTILITY COMPANIES'/AGENCIES' WORK WHICH MAYBE SEGMENTED OR NON-CONSECUTIVE.

14. THE ACCURACY OF ALL EXISTING UTILITIES SHOWN ON THE PLANS IS NOT GUARANTEED AND IS FROM THE LATEST AVAILABLE DATA. THE ENCOUNTERING OF OTHER OBSTACLES DURING THE COURSE OF WORK IS POSSIBLE.

15. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHENEVER CONSTRUCTION CROSSES OR IS IN CLOSE PROXIMITY OF UNDERGROUND FACILITIES AND SHALL MAINTAIN ADEQUATE CLEARANCE WHEN OPERATING EQUIPMENT WITHIN OR UNDER OVERHEAD FACILITIES. THE CONTRACTOR SHALL BE HELD LIABLE FOR ANY DAMAGES INCURRED TO THE EXISTING FACILITIES AND/OR IMPROVEMENTS AS A RESULT OF ITS OPERATIONS. ANY DAMAGE INFLICTED ON EXISTING UTILITY LINES RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE IMMEDIATELY REPAIRED OR RESTORED AS DIRECTED BY THE DPW AND/OR ENGINEER AND APPROVED BY THE UTILITY AT NO COST TO THE COUNTY.

16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE DONE TO THE DWS WATER SYSTEM OR OTHER UTILITY LINES (UNDERGROUND OR OVERHEAD).

17. THE CONTRACTOR IS ADVISED THAT THE DEPTHS TO THE EXISTING UTILITIES MAY BE SHALLOW. THE CONTRACTOR IS RESPONSIBLE FOR WORKING AROUND THESE UTILITIES CAREFULLY AT NO ADDITIONAL COST TO DOT-H. HELCO/HTC/CABLE LINES ARE EITHER DIRECT BURY OR CONCRETE JACKETED.

18. EXISTING UTILITIES SHALL REMAIN IN SERVICE DURING CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF WORK WITHIN THE SCOPE, AND WORK DONE BY OTHERS.

19. THE CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS RESULTING FROM ITS WORK DEPOSITED IN DRAINAGE FACILITIES, ROADWAYS AND OTHER AREAS. THE COST INCURRED FOR ANY REMEDIAL ACTION BY THE DPW SHALL BE PAYABLE BY THE CONTRACTOR.

20. THE CONTRACTOR SHALL RESTORE TO THEIR ORIGINAL CONDITION OR BETTER, ALL IMPROVEMENTS DAMAGED AND/OR REMOVED AS A RESULT OF THE CONSTRUCTION INCLUDING BUT NOT LIMITED TO, BENCHMARKS, SURVEY MONUMENTS, PAVEMENTS, PAVEMENT MARKINGS, EMBANKMENTS, SIGNS, UTILITIES, WALLS, ETC., AT THE CONTRACTOR'S EXPENSE, UNLESS OTHERWISE NOTED IN THE PLANS. DEMOLITION AND RESTORATION OF EXISTING ITEMS SHALL BE INCIDENTAL.

GENERAL CONSTRUCTION NOTES (CONT.)

21. WORK INCIDENTAL TO THE CONTRACT AND NECESSARY TO COMPLETE THE PROJECT, ALTHOUGH NOT SPECIFICALLY REFERRED TO ON THE CONTRACT DOCUMENT, SHALL BE FURNISHED AND PERFORMED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE COUNTY.

22. THE CONTRACTOR SHALL CONDUCT ALL TESTS AS REQUIRED BY THE CONTRACT OR AS REQUIRED BY THE ENGINEER AND BE RESPONSIBLE FOR ALL EXPENSES INCURRED IN CONDUCTING THESE TESTS AND SAMPLING.

23. INSPECTIONS ARE PERFORMED FOR THE EXCLUSIVE BENEFIT OF DOT-H. THE INSPECTION OF OR THE FAILURE TO INSPECT THE WORK SHALL NOT RELIEVE THE CONTRACTOR OF OBLIGATIONS TO FULFILL THE CONTRACT AS PRESCRIBED, TO CORRECT DEFECTIVE WORK, AND TO REPLACE UNSUITABLE OR REJECTED MATERIALS REGARDLESS OF WHETHER PAYMENT FOR SUCH WORK HAS BEEN MADE.

24. FAILURE OF AN INSPECTOR AT ANY TIME TO REJECT NON-CONFORMING WORK SHALL NOT BE CONSIDERED A WAIVER OF DOT-H RIGHT TO REQUIRE WORK IN STRICT CONFORMITY WITH THE CONTRACT DOCUMENTS AS A CONDITION OF FINAL ACCEPTANCE.

25. EXISTING TOPOGRAPHIC SURVEY WAS CONDUCTED ON SEPTEMBER 27, 2004 BY CONTROL POINT. UNDERGROUND UTILITIES SHOWN ARE FOR INFORMATION ONLY. NO GUARANTEE IS MADE ON THE ACCURACY AND COMPLETENESS OF THE INFORMATION. THE CONTRACTOR MUST VERIFY THE INFORMATION SHOWN IS ACCURATE PRIOR TO CONSTRUCTION.

WATER POLLUTION AND EROSION CONTROL NOTES

A. GENERAL:

1. THE CONTRACTOR IS REMINDED OF THE REQUIREMENTS OF SECTION 209 – WATER POLLUTION AND EROSION CONTROL, HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION; 2005. SECTION 209 DESCRIBES BUT IS NOT LIMITED TO: SUBMITTAL REQUIREMENTS; SCHEDULING OF WATER POLLUTION AND EROSION CONTROL CONFERENCE WITH THE ENGINEER; CONSTRUCTION REQUIREMENTS; METHOD OF MEASUREMENTS; AND BASIS OF PAYMENT.

2. THE CONTRACTOR SHALL FOLLOW THE GUIDELINES IN THE HDOT "CONSTRUCTION BEST MANAGEMENT PRACTICES FIELD MANUAL", DATED OCTOBER 2021 IN DEVELOPING, INSTALLING AND MAINTAINING THE BEST MANAGEMENT PRACTICES (BMP) FOR THE PROJECT.

3. 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, FOR EVERY DAY OF NON- COMPLIANCE. THERE IS NO MAXIMUM LIMIT ON THE AMOUNT ASSESSED PER DAY.

4. THE ENGINEER WILL DEDUCT THE COST FROM THE PROGRESS PAYMENT FOR ALL CITATIONS RECEIVED BY THE DEPARTMENT FOR NONCOMPLIANCE, OR THE CONTRACTOR SHALL REIMBURSE THE STATE FOR THE FULL AMOUNT OF THE OUTSTANDING COST INCURRED BY DOT-H.

5. USE APPLICABLE SOIL EROSION GUIDELINES FOR PROJECTS ON HAWAII.

6. FOR PROJECTS THAT REQUIRE A NPDES PERMIT FROM THE DEPARTMENT OF HEALTH, INSTALL A RAIN GAGE PRIOR TO ANY FIELD WORK INCLUDING THE INSTALLATION OF ANY SITE-SPECIFIED BEST MANAGEMENT PRACTICE. THE RAIN GAGE SHALL HAVE A TOLERANCE OF AT LEAST 0.05 INCHES OF RAINFALL, AND HAVE AN OPENING OF AT LEAST ONE-INCH IN DIAMETER. INSTALL THE RAIN GAGE ON THE PROJECT SITE IN AN AREA THAT WILL NOT DETER RAINFALL FROM ENTERING THE GAGE OPENING. 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.

7. THE 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, CHAPTER 11-54, "WATER QUALITY STANDARDS," CHAPTER 11-55, "WATER POLLUTION CONTROL," CHAPTER 10 OF THE "HAWAII COUNTY CODE, EROSION AND SEDIMENTATION CONTROL" AND IF APPLICABLE, THE NPDES PERMIT FOR THE PROJECT.

8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFORMANCE WITH THE APPLICABLE PROVISIONS OF CHAPTER 54, WATER QUALITY STANDARDS, AND CHAPTER 55, WATER POLLUTION CONTROL OF TITLE 11, ADMINISTRATIVE RULES OF THE STATE DEPARTMENT OF HEALTH.

9. THE CONTRACTOR AT HIS OWN EXPENSE SHALL KEEP THE PROJECT AREA AND SURROUNDING AREAS FREE FROM DUST NUISANCE. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR AND WATER POLLUTION CONTROL STANDARDS AND REGULATIONS OF THE STATE DEPARTMENT OF HEALTH.

B. WASTE DISPOSAL:

1. WASTE MATERIALS

ALL WASTE MATERIALS SHALL BE COLLECTED AND STORED IN A SECURELY LIDDED METAL DUMPSTER. THE DUMPSTER SHALL MEET ALL LOCAL AND STATE SOLID WASTE MANAGEMENT REGULATIONS. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE SHALL BE DEPOSITED IN THE DUMPSTER. THE DUMPSTER SHALL BE EMPTIED A MINIMUM OF TWICE PER WEEK OR AS IS DEEMED NECESSARY. NO CONSTRUCTION WASTE MATERIALS SHALL BE BURIED ON SITE. THE CONTRACTOR'S SUPERVISORY PERSONNEL SHALL BE INSTRUCTED REGARDING THE CORRECT PROCEDURE FOR WASTE DISPOSAL. NOTICES STATING THESE PRACTICES SHALL BE POSTED IN THE OFFICE TRAILER OR APPROPRIATE LOCATION TO INSURE COMPLIANCE, AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR SEEING THAT THESE PROCEDURES ARE FOLLOWED.

2. HAZARDOUS WASTE

ALL HAZARDOUS WASTE MATERIALS SHALL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL OR STATE REGULATIONS OR BY THE MANUFACTURER. THE CONTRACTOR'S PROJECT 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.)

3. SANITARY WASTE

ALL SANITARY WASTE SHALL BE COLLECTED FROM THE PORTABLE TOILET UNITS A MINIMUM OF ONCE PER WEEK, OR AS REQUIRED.

C. EROSION AND SEDIMENT CONTROL INSPECTION AND MAINTENANCE PRACTICES:

1. ALL CONTROL MEASURES SHALL BE INSPECTED AT LEASE ONCE EACH WEEK, AND WITHIN 24 HOURS OF ANY RAINFALL EVENT OF 0.25 INCHES OR GREATER WITHIN A 24 HOUR PERIOD.

2. ALL MEASURES SHALL BE MAINTAINED IN GOOD WORKING ORDER. IF REPAIR IS NECESSARY, IT SHALL BE INITIATED WITHIN TWENTY FOUR (24) HOURS AFTER THE INSPECTION.

3. IF REQUIRED, A MAINTENANCE INSPECTION REPORT SHALL BE MADE PROMPTLY AFTER EACH INSPECTION BY THE CONTRACTOR AND A COPY SHALL BE SUBMITTED TO THE ENGINEER NO LATER THAN ONE WEEK FROM THE DATE OF THE INSPECTION.

4. THE CONTRACTOR SHALL SUBMIT THE NAME OF A SPECIFIC INDIVIDUAL DESIGNATED RESPONSIBLE FOR INSPECTIONS, MAINTENANCE AND REPAIR ACTIVITIES AND FILLING OUT THE INSPECTION AND MAINTENANCE REPORT (IF REQUIRED).

5. THE CONTRACTOR SHALL CONTAIN, REMOVE, AND DISPOSE SLURRY GENERATED FROM SAW CUTTING OF PAVEMENT IN ACCORDANCE WITH APPROVED BMP PRACTICES. PAYMENT FOR CONFINEMENT, REMOVAL, AND DISPOSAL OF SLURRY SHALL BE CONSIDERED INCIDENTAL TO THE VARIOUS CONTRACT ITEMS.

6. 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.

D. GOOD HOUSEKEEPING, BEST MANAGEMENT PRACTICES:

1. MATERIALS POLLUTION PREVENTION PLAN

A. APPLICABLE MATERIALS OR SUBSTANCES LISTED BELOW ARE ANTICIPATED TO BE PRESENT ONSITE DURING CONSTRUCTION. OTHER MATERIALS AND SUBSTANCES NOT LISTED BELOW SHALL BE ADDED TO THE INVENTORY AS APPLICABLE. DETERGENTS FERTILIZERS CONCRETE PAINTS (ENAMEL & LATEX) CLEANING SOLVENTS PETROLEUM BASED PRODUCTS TAR MORTAR MASONRY

B. MATERIAL MANAGEMENT PRACTICES SHALL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES TO STORM WATER RUNOFF. AN EFFORT SHALL BE MADE TO STORE ONLY ENOUGH PRODUCT AS IS REQUIRED TO DO THE JOB.

C. ALL MATERIALS STORED ONSITE SHALL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR APPROPRIATE CONTAINERS AND IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE.

D. PRODUCTS SHALL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH THE ORIGINAL MANUFACTURER'S LABEL ATTACHED.

E. SUBSTANCES SHALL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER.

F. WHENEVER POSSIBLE, A PRODUCT SHALL BE USED UP COMPLETELY BEFORE DISPOSING OF THE CONTAINER.

G. MANUFACTURER'S RECOMMENDATIONS FOR PROPER USE AND DISPOSAL SHALL BE FOLLOWED.

H. THE CONTRACTOR SHALL CONDUCT DAILY INSPECTIONS TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS ON SITE.

2. HAZARDOUS MATERIAL POLLUTION PREVENTION PLAN

A. PRODUCTS SHALL BE KEPT IN ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE.

B. ORIGINAL LABELS AND MATERIAL SAFETY DATA SHEETS (MSDS) SHALL BE RETAINED.

C. SURPLUS PRODUCTS SHALL BE DISPOSED OF ACCORDING TO MANUFACTURER'S INSTRUCTIONS AND/OR LOCAL AND STATE RECOMMENDED METHODS.

WATER POLLUTION AND EROSION CONTROL NOTES (CONT.)

3. ONSITE AND OFFSITE PRODUCT SPECIFIC PLAN

A. THE FOLLOWING PRODUCT SPECIFIC PRACTICES SHALL BE FOLLOWED ONSITE:

1) PETROLEUM BASED PRODUCTS:
ALL ONSITE VEHICLES, MACHINERY AND EQUIPMENT SHALL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTIVE MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE. PETROLEUM PRODUCTS SHALL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT SUBSTANCES USED ON SITE SHALL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATION. THE REFUELING AND SERVICING OF HEAVY EQUIPMENT SHOULD BE DONE IN A DESIGNATED AREA. CARE SHALL BE USED IN THE REFUELING PROCESS TO PREVENT OVERFLOW AND SPILLAGE.

2) PAINTS:
ALL CONTAINERS SHALL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT SHALL NOT BE DISCHARGED TO THE STATE DRAINAGE SYSTEM BUT SHALL BE PROPERLY DISPOSED OF ACCORDING TO MANUFACTURER'S INSTRUCTIONS AND/OR LOCAL AND STATE REGULATIONS.

3) CONCRETE TRUCKS:
CONCRETE TRUCKS SHALL BE ALLOWED TO WASH OUT OR DISCHARGE DRUM WASH WATER ONLY AT A DESIGNATED SITE. WATER SHALL NOT BE DISCHARGED IN THE STATE DRAINAGE SYSTEM OR WATERS OF THE UNITED STATES. THE CONTRACTOR SHALL CONTACT SOLID AND HAZARD WASTE BRANCH, DEPARTMENT OF HEALTH AT 586-4258 TO RECEIVE PERMISSION TO DESIGNATE A DISPOSAL SITE. THE CONTRACTOR SHALL CLEAN DISPOSAL SITE AS REQUIRED OR AS REQUESTED BY THE OWNER'S REPRESENTATIVE.

4. SPILL CONTROL PLAN

A. A SPILL PREVENTION PLAN SHALL BE POSTED TO INCLUDE MEASURES TO PREVENT AND CLEAN UP EACH SPILL.

B. THE CONTRACTOR SHALL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR. THE CONTRACTOR SHALL 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. THE NAMES OF RESPONSIBLE SPILL PERSONNEL SHALL BE POSTED IN THE MATERIAL STORAGE AREA AND IN THE OFFICE TRAILER ONSITE.

C. MANUFACTURERS' RECOMMENDED METHODS FOR SPILL CLEANUP SHALL BE CLEARLY POSTED AND SITE PERSONNEL SHALL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES.

D. MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP SHALL BE KEPT IN THE MATERIAL STORAGE AREA ONSITE.

E. ALL SPILLS SHALL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY.

F. THE SPILL AREA SHALL BE KEPT WELL VENTILATED AND PERSONNEL SHALL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.

G. SPILLS OF TOXIC HAZARDOUS MATERIAL SHALL BE REPORTED TO THE APPROPRIATE STATE OR LOCAL GOVERNMENT AGENCY, REGARDLESS OF THE SIZE.

REVISION	DATE	DESCRIPTION	BY	APPROVED

CODY A. MIPRANO
LICENSED PROFESSIONAL ENGINEER
NO. 19249-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."

CODY MIPRANO

APRIL 30, 2028
LICENSE EXPIRATION DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HARBORS

JOB TITLE
NEW BOAT LIFT IMPROVEMENTS
PIER 1, HILO HARBOR, HAWAII

SHEET TITLE
CIVIL NOTES

DESIGNED BY: CM	JOB NUMBER P50217
DRAWN BY: SCP	SHEET C01
CHECKED BY: CM	2 OF 14 SHTS.
DATE: APRIL 2026	
SCALE: AS SHOWN	

Mon, 13 Apr 2026 - 6:06am
D:\Dproj\2024\224-074 HDOT Harbors New Boat Lift Improvements at Hilo Harbor\CADD\Sheets\Sht_Notes.dwg

WATER POLLUTION AND EROSION CONTROL NOTES (CONT.)

E. PERMIT REQUIREMENTS:

1. IF A NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT IS REQUIRED FOR CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER SIX SETS OF THE WATER POLLUTION AND EROSION CONTROL SUBMITTALS AS DETAILED IN SUBSECTION 209.03 OF THE SPECIFICATIONS.

2. IF A NPDES PERMIT FOR CONSTRUCTION DEWATERING IS REQUIRED, THE CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN THE PERMIT FROM THE DEPARTMENT OF HEALTH, CLEAN WATER BRANCH.

3. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE STATE AND FEDERAL PERMIT CONDITIONS.
PERMITS MAY INCLUDE BUT ARE 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 U.S. 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 (OCT 2021). SUPPLEMENTAL BMP SHEETS ARE LOCATED AT HTTP://WWW.STORMWATERHAWAII.COM/RESOURCES/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.

FOLLOW THE REQUIREMENTS BELOW:

1. PROTECT ALL DRAINAGE INLETS RECEIVING RUNOFF FROM DISTURBED AREAS (SC-1).

2. CONTAIN ON-SITE RUNOFF USING PERIMETER SEDIMENT CONTROLS
   a. SC-1 STORM DRAIN INLET PROTECTION
   b. SC-6 COMPOST FILTER BERM/SOCK

3. CONTROL OFFSITE RUNOFF FROM ENTERING CONSTRUCTION AREA
   a. EC-3 RUN-ON DIVERSION

4. INCORPORATE APPLICABLE SITE MANAGEMENT BMP
   a. SM-1 CONSTRUCTION BMP TRAINING
   b. SM-2 MATERIAL STORAGE AND HANDLING
   c. SM-3 STOCKPILE MANAGEMENT
   d. SM-4 CONCRETE WASH AND WASTE MANAGEMENT
   e. SM-6 SOLID WASTE MANAGEMENT
   f. SM-7 SANITARY WASTE MANAGEMENT
   g. SM-9 HAZARDOUS MATERIALS AND WASTE MANAGEMENT
   h. SM-10 SPILL PREVENTION AND CONTROL
   i. SM-11 VEHICLE AND EQUIPMENT CLEANING
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   k. SM-13 VEHICLE AND EQUIPMENT REFUELING
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   m. SM-15 LOCATION OF POTENTIAL SOURCES OF SEDIMENT
   n. SM-16 STAGING AREA
   o. SM-19 DUST CONTROL
   p. SM-20 PAVING OPERATIONS
   q. SM-21 STRUCTURE CONSTRUCTION AND PAINTING

5. CONTAIN POLLUTANTS WITHIN THE CONSTRUCTION STAGING/STORAGE AREA BMP WITH APPLICABLE PERIMETER SEDIMENT CONTROLS AND SITE MANAGEMENT BMP.

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.

MISCELLANEOUS EROSION CONTROL NOTE

1. THE SITE-SPECIFIC BMP AND MONITORING PLAN SHALL BE CONSIDERED A PART OF THE CONTRACT AND SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. AN INVENTORY OF ALL THE NECESSARY BMP MATERIALS WILL BE CONDUCTED PRIOR TO START OF THE WORK. THE CONTRACTOR SHALL KEEP AND MAINTAIN ALL THE MATERIALS ON THE JOB SITE OR STAGING AREA READILY AVAILABLE FOR USE. THE NECESSARY EROSION CONTROL MEASURES SHALL BE IN-PLACE BEFORE THE NOTICE TO PROCEED DATE, OR BEFORE THE CONTRACTOR CAN START ITS WORK.

CLEAN WATER ACT – NATIONWIDE PERMIT (NWP)

1. A NATIONWIDE PERMIT (NWP) FOR SECTION 404 OF THE CLEAN WATER ACT FOR THE DISCHARGE OF DREDGED AND/OR FILL MATERIAL INTO WATERS OF THE U.S. AND SECTION 10 OF THE RIVERS AND HARBORS ACT OF 1899 FOR WORK OR STRUCTURES IN, OVER, UNDER OR AFFECTING NAVIGABLE WATERS OF THE U.S., HAS BEEN OBTAINED FOR THIS PROJECT ON APRIL 3, 2026. THIS PROJECT IS COVERED BY THE CURRENT 2022 BLANKET SECTION 401 WATER QUALITY CERTIFICATION FOR CERTAIN 2021 DEPARTMENT OF THE ARMY NATIONWIDE PERMITS AND ACTIVITIES. THIS BLANKET CERTIFICATION WILL EXPIRE AT MIDNIGHT, MARCH 15, 2031.

2. THIS PROJECT IS AUTHORIZED BY AND MUST COMPLY WITH NWP 9 (STRUCTURES IN FLEETING AND ANCHORAGE AREAS) AND NWP 18 (MINOR DISCHARGES). THE PROJECT MUST ALSO COMPLY WITH THE FOLLOWING SPECIAL CONDITIONS:

   A. INCIDENTS WHERE ANY INDIVIDUALS OF GREEN SEA TURTLE (CHELONIA MYDAS), HAWKSBILL TURTLE (ERETMOCHELYS IMBRICATA), LOGGERHEAD SEA TURTLE (CARETTA CARETTA), HAWAIIAN MONK SEAL, (MONACHUS SCHAUINSLANDI) LISTED BY NOAA FISHERIES UNDER THE ENDANGERED SPECIES ACT APPEAR TO BE INJURED OR KILLED AS A RESULT OF STRUCTURES IN NAVIGABLE WATERS OF THE UNITED STATES AUTHORIZED BY THIS NWP SHALL BE REPORTED TO NOAA FISHERIES, OFFICE OF PROTECTED RESOURCES AT (301) 713-1401 AND THE REGULATORY OFFICE OF THE HONOLULU DISTRICT OF THE U.S. ARMY CORPS OF ENGINEERS AT (808) 835-4303. THE FINDER SHOULD LEAVE THE ANIMAL ALONE, MAKE NOTE OF ANY CIRCUMSTANCES LIKELY CAUSING THE DEATH OR INJURY, NOTE THE LOCATION AND NUMBER OF INDIVIDUALS INVOLVED AND, IF POSSIBLE TAKE PHOTOGRAPHS. ADULT ANIMALS SHOULD NOT BE DISTURBED UNLESS CIRCUMSTANCES ARISE WHERE THEY ARE OBVIOUSLY INJURED OR KILLED DISCHARGE EXPOSURE OR SOME UNNATURAL CAUSE. THE FINDER MAY BE ASKED TO CARRY OUT INSTRUCTIONS PROVIDED BY NOAA FISHERIES, OFFICE OF PROTECTED RESOURCES, TO COLLECT SPECIMENS OR TAKE OTHER MEASUREMENTS TO ENSURE THAT EVIDENCE INTRINSIC TO THE SPECIMEN IS PRESERVED (ENCLOSURE 5 OF NWP).

   B. COMPLY WITH THE PAC-SLOPES ACTIVITY SPECIFIC BEST MANAGEMENT PRACTICES AND GENERAL CONDITIONS (ENCLOSURE 6 OF NWP).

   C. IMPLEMENT RELEVANT BMPS FROM THE STATE OF HAWAII DEPARTMENT OF TRANSPORTATION'S CONSTRUCTION BMP FIELD MANUAL (2021), SEE SECTION F. SITE SPEICIFIC BMP REQUIREMENTS OF THE WATER POLLUTION AN DEROSION CONTROL NOTES.

ARCHAEOLOGICAL MONITORING AND PROTECTION NOTES

1. ARCHAEOLOGICAL MONITORING IS INCLUDED IN THIS PROJECT AS A FORCE ACCOUNT. WHENEVER THE CONTRACTOR ENCOUNTERS POSSIBLE OR SUSPECTED ARCHAEOLOGICAL, HISTORICAL OR HUMAN SKELETAL REMAINS, SITES OR FEATURES, THE CONTRACTOR SHALL IMMEDIATELY SUSPEND WORK AND INFORM THE ENGINEER VERBALLY AND FOLLOW UP WITH A WRITTEN LETTER AND FOLLOW THE INSTRUCTIONS OF THE ARCHEOLOGICAL MONITOR.

2. THE CONTRACTOR SHALL, WHEN ENCOUNTERING SUSPECTED OR PREVIOUSLY UNIDENTIFIED SITE, STOP ALL ACTIVITIES IN THE SITE AREA AND PERFORM WORK AT OTHER PROJECT LOCATIONS. NO CLAIM FOR EXTENDED OVERHEAD, IMPACT COSTS, LOSS OF PROFIT, MOBILIZATION/DEMOBILIZATION, RE-MOBILIZATION/RE-DEMOLIBIZATION, OR CHANGE IN WORK WILL BE PERMITTED, PROVIDED ANY OTHER WORK ITEM AT OTHER PROJECT AREAS CAN BE PERFORMED. PROJECT TIME EXTENSION WILL BE GRANTED AS JUSTIFIED.

3. CONTRACTOR SHALL CONFORM TO CHAPTER 6E OF THE HAWAII REVISED STATUTES (HRS). FAILURE OR REFUSAL TO COMPLY WITH THE TERMS SET FORTH MAY SUBJECT THE CONTRACTOR TO THE PENALTIES DESCRIBED IN SECTION 6E-11, HRS.

STAGING AND STOCKPILE AREA SPECIAL NOTES

1. CONTRACTOR TO WORK WITH DOT-H REGARDING STAGING AND STOCKPILE AREA.CONTRACTOR TO COORDINATE WITH VARIOUS AGENCIES ON SCHEDULING. COST TO RESTORE AREA TO BE BORNE BY THE CONTRACTOR AT NO ADDITIONAL COST TO DOT-H.

TEMPORARY DUST CONTROL MEASURES

1. THE PROJECT SITE THAT IS CLEARED SHALL BE KEPT DAMP FOR SEVEN (7) DAYS A WEEK. AT THE END OF EACH DAY, THE SITE SHALL BE SUFFICIENTLY DAMPENED SO THAT THE SITE WILL REMAIN MOISTENED DURING THE NIGHT.

2. THE CONTRACTOR SHALL CONDUCT ITS OPERATIONS SO THAT DEMOLITION, EXCAVATION, EMBANKMENT, AND IMPORTED MATERIAL SHALL BE DAMPENED TO PREVENT DUST PROBLEMS.

3. IN APPLYING FOR A WORK WITHIN THE COUNTY RIGHT-OF-WAY PERMIT, THE CONTRACTOR SHALL SUBMIT PLANS, SCHEDULES AND/OR WRITTEN MEASURES WHICH PROVIDE FOR DUST CONTROL. THE DUST CONTROL MEASURES SHALL CONTAIN POSITIVE STATEMENTS WHICH REQUIRE ACTIONS OR WORK THAT PREVENT DUST PROBLEMS. NO PERMITS WILL BE ISSUED UNLESS THE COUNTY IS ASSURED THAT DUST PROBLEMS WILL BE MINIMIZED.

SOLID WASTE CONSTRUCTION NOTES

1. UNLESS OTHERWISE SPECIFIED, THE CONTRACTOR IS RESPONSIBLE FOR THE PROPER HANDLING, STORAGE AND/OR DISPOSAL OF ALL WASTE GENERATED BY THIS CONSTRUCTION INCLUDING GRUBBING AND EXCESS EXCAVATED MATERIAL. ANY MATERIAL BROUGHT TO THE COUNTY LANDFILLS WILL BE SUBJECTED TO THE INSTITUTED TIPPING FEE SYSTEM, WITH NO EXCEPTIONS OR EXEMPTIONS.

2. ALL WASTES GENERATED BY CONSTRUCTION, INCLUDING GRUBBING, DEMOLITION AND EXCESS EXCAVATION MATERIAL MAY BE BROUGHT TO THE WEST HAWAII SANITARY LANDFILL. THE CONTRACTOR SHALL VERIFY CURRENT LANDFILL FEE WITH THE COUNTY OF HAWAII SOLID WASTE DIVISION. THE NECESSARY LANDFILL FEE SHALL BE INCLUDED IN THE CONTRACTOR'S BID SUM.

SOLID WASTE CONSTRUCTION NOTES (CONT.)

3. CONSTRUCTION, DEMOLITION AND GRUBBING MATERIAL SHALL NOT BE DEPOSITED AT ANY OF THE COUNTY TRANSFER STATIONS BUT SHALL BE TRANSPORTED FOR DISPOSAL TO THE WEST HAWAII SANITARY LANDFILL.

4. ASBESTOS MATERIAL SHALL BE SEPARATED, DOUBLE BAGGED AND LANDFILLED IN ACCORDANCE WITH REGULATIONS OF THE SOLID WASTE DIVISION, DEPARTMENT OF ENVIRONMENTAL MANAGEMENT. INFORMATION MAY BE OBTAINED BY CALLING THE DIVISION AT 961-8270 BETWEEN 7:00 A.M. AND 3:30 P.M., MONDAY THROUGH FRIDAY.

5. CHIP GRUBBED MATERIAL BEFORE BRINGING TO THE COUNTY LANDFILL IN ACCORDANCE WITH REGULATIONS OF THE SOLID WASTE DIVISION, DEM.

RIGHT-OF-ENTRY NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING THE NECESSARY CONSTRUCTION RIGHTS-OF-ENTRY FROM THE AFFECTED LANDOWNERS, INCLUDING STAGING AREAS.

2. RESTORATION WORK OUTSIDE OF THE RIGHT-OF-WAY OR BEYOND THE PLANNED IMPROVEMENTS SHALL BE DONE BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE COUNTY. CONTRACTOR SHALL COORDINATE WITH AFFECTED OWNERS.

EARTHWORK QUANTITIES

TOTAL ROAD EARTHWORK

TRENCH EXCAVATION: 6 CU. YD.

REVISION	DATE	DESCRIPTION	BY	APPROVED

CODY A. MIPRANO
LICENSED PROFESSIONAL ENGINEER
NO. 19249-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."

CODY MIPRANO

APRIL 30, 2028
LICENSE EXPIRATION DATE

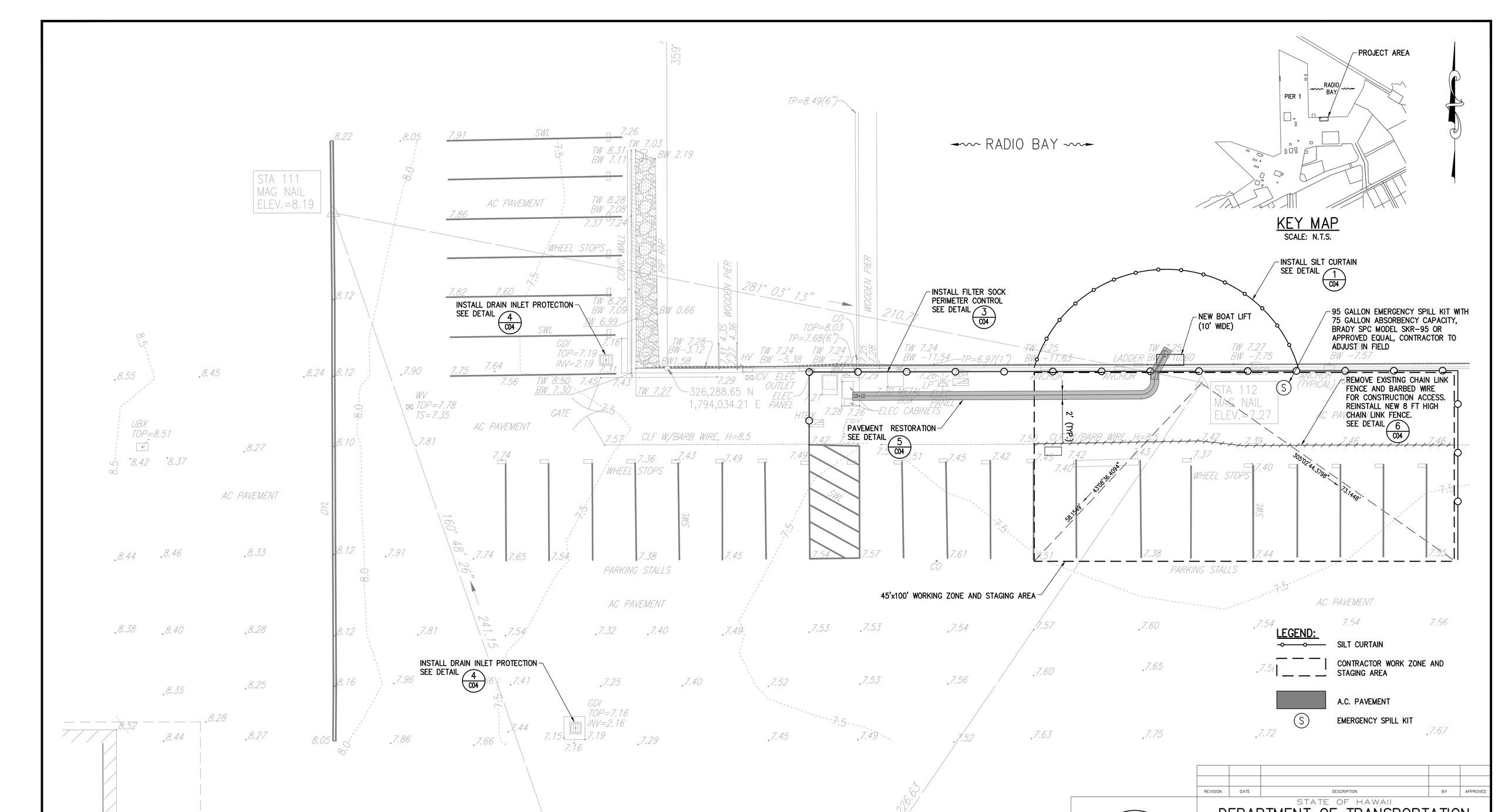
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HARBORS

JOB TITLE
NEW BOAT LIFT IMPROVEMENTS
PIER 1, HILO HARBOR, HAWAII

SHEET TITLE
CIVIL NOTES

DESIGNED BY: CM	JOB NUMBER	SHEET
DRAWN BY: SCP	P50217	C02
CHECKED BY: CM		3 OF 14 SHTS.
DATE: APRIL 2026		
SCALE: AS SHOWN		

Mon, 13 Apr 2026 - 6:06am
D:\Dproj\2024\224-074 HDOT Harbors New Boat Lift Improvements at Hilo Harbor\CADD\Sheets\Sht_Notes.dwg



CIVIL SITE PLAN
SCALE: 1"=10'

GRAPHIC SCALE:

SCALE: 1" = 10'

10' 5' 0 10' 20'

REVISION	DATE	DESCRIPTION	BY	APPROVED

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HARBORS

JOB TITLE
NEW BOAT LIFT IMPROVEMENTS
PIER 1, HILO HARBOR, HAWAII

SHEET TITLE
CIVIL SITE PLAN

CODY A. MIPRANO
LICENSED PROFESSIONAL ENGINEER
NO. 19249-C
HAWAII, U.S.A.

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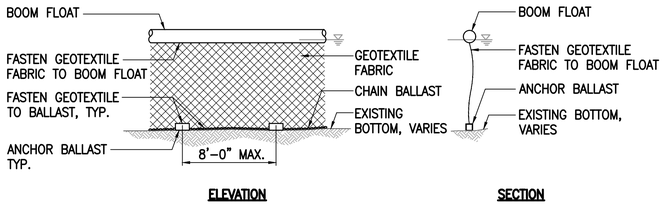
CODY MIPRANO
APRIL 30, 2028
LICENSE EXPIRATION DATE

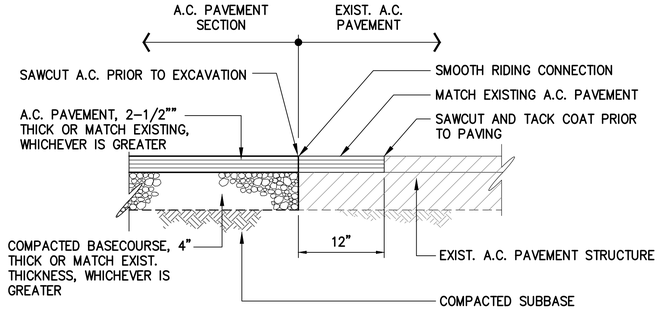
DESIGNED BY: CM	JOB NUMBER P50217
DRAWN BY: SCP	SHEET C03
CHECKED BY: CM	4 OF 14 SHTS.
DATE: APRIL 2026	
SCALE: AS SHOWN	

Mon, 13 Apr 2026 - 6:07am
D:\Proj\2024\224-074 HDOT Harbors New Boat Lift Improvements at Hilo Harbor\CADD\Sheets\Sht_Site Plan.dwg



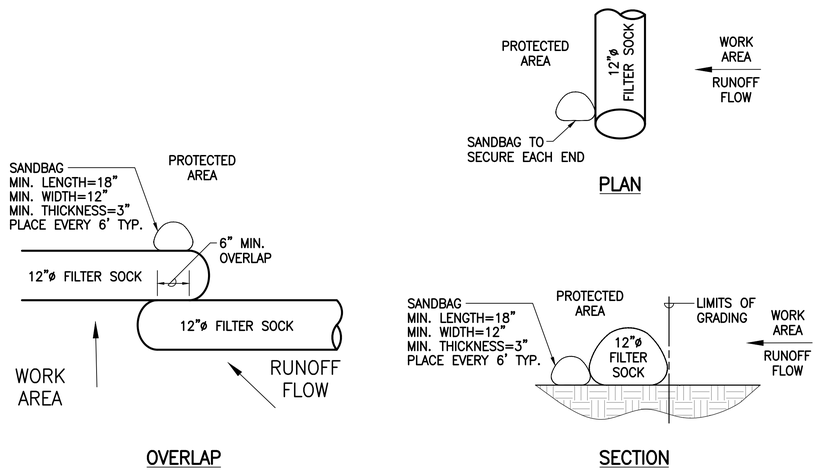
1 C04 SILT CURTAIN DETAIL

NOT TO SCALE



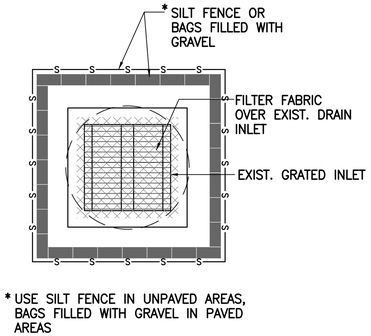
2 C04 ASPHALT CONCRETE PAVEMENT DETAIL

NOT TO SCALE



3 C04 BIOFILTER SOCK DETAIL

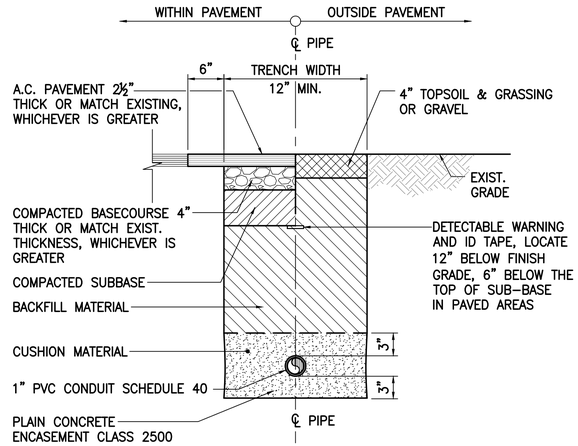
NOT TO SCALE



* USE SILT FENCE IN UNPAVED AREAS, BAGS FILLED WITH GRAVEL IN PAVED AREAS

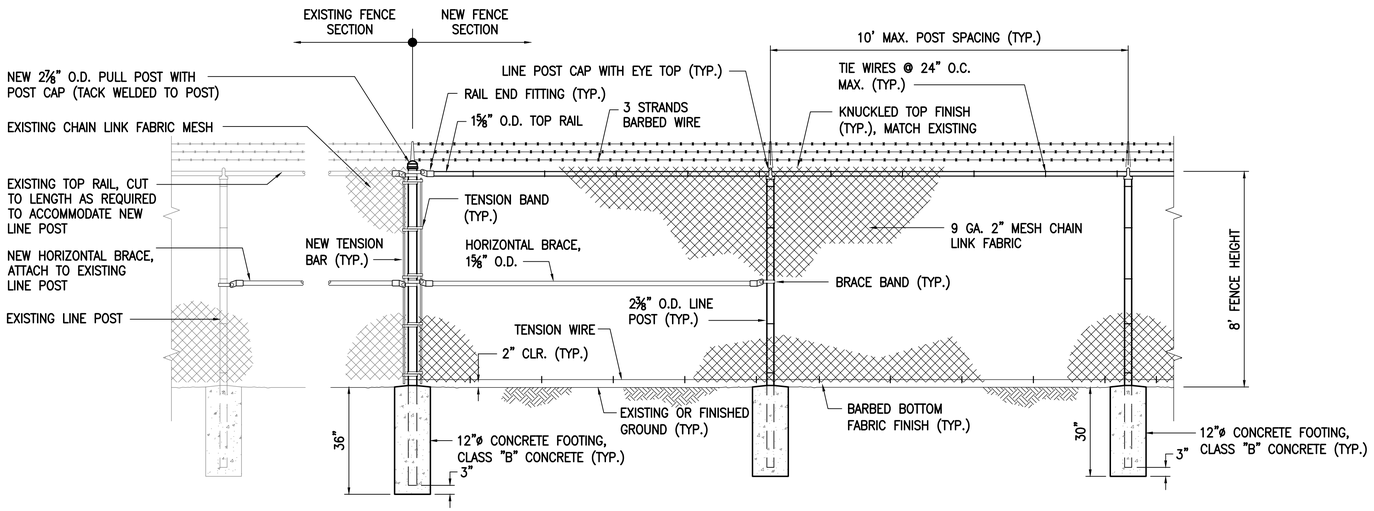
4 C04 DRAIN INLET PROTECTION DETAIL

NOT TO SCALE



5 C04 TRENCH RESTORATION DETAIL

NOT TO SCALE



6 C04 8 ' HIGH CHAIN LINK FENCE DETAIL

NOT TO SCALE

REVISION	DATE	DESCRIPTION	BY	APPROVED

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HARBORS

CODY A. MIPRANO
LICENSED PROFESSIONAL ENGINEER
NO. 19249-C
HAWAII, U.S.A.

JOB TITLE
NEW BOAT LIFT IMPROVEMENTS
PIER 1, HILO HARBOR, HAWAII

SHEET TITLE
CIVIL DETAILS-1

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CODY MIPRANO
APRIL 30, 2028
LICENSE EXPIRATION DATE

DESIGNED BY:	CM
DRAWN BY:	SCP
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DATE:	APRIL 2026
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JOB NUMBER
P50217

SHEET
C04
5 OF 14 SHTS.

Mon, 13 Apr 2026 - 6:07pm
D:\Dproj\2024\224-074 HDOT Harbors New Boat Lift Improvements at Hilo Harbor\CADD\Sheets\Sht_Civil Details.dwg

GENERAL:

A. WORKMANSHIP AND MATERIALS SHALL CONFORM TO THE AASHTO LRFD BRIDGE DESIGN SPECIFICATION, 10TH EDITION (INCLUDING MOST RECENT INTERIMS), AND THE HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (2005 EDITION), AND ALL APPLICABLE SPECIAL PROVISIONS BY THE STATE OF HAWAII DEPARTMENT OF TRANSPORTATION.
B. THE CONTRACTOR SHALL COMPARE ALL THE CONTRACT DOCUMENTS WITH EACH OTHER AND REPORT IN WRITING TO THE ENGINEER ALL INCONSISTENCIES AND OMISSIONS.
C. THE CONTRACTOR SHALL TAKE FIELD MEASUREMENTS AND VERIFY FIELD CONDITIONS AND SHALL COMPARE SUCH FIELD MEASUREMENTS AND CONDITIONS WITH THE DRAWINGS BEFORE COMMENCING WORK. REPORT IN WRITING TO THE ENGINEER ALL INCONSISTENCIES AND OMISSIONS.
D. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE WORK OF ALL TRADES.
E. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEANS AND METHODS OF CONSTRUCTION, WORKMANSHIP AND JOB SAFETY.
F. THE CONTRACTOR SHALL PROVIDE TEMPORARY SHORING AND BRACING AS REQUIRED FOR STABILITY OF STRUCTURAL MEMBERS AND SYSTEMS.
G. CONSTRUCTION LOADING SHALL NOT EXCEED DESIGN LIVE LOAD UNLESS SPECIAL SHORING IS PROVIDED. PERMITTED CONSTRUCTION LOADS SHALL BE PROPERLY REDUCED IN AREAS WHERE THE STRUCTURE HAS NOT ATTAINED FULL DESIGN STRENGTH.
H. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF THE ADJACENT PROPERTIES, STRUCTURES, STREETS AND UTILITIES DURING THE CONSTRUCTION PERIOD. ANY DAMAGED OR DETERIORATED PROPERTY SHALL BE RESTORED TO THE CONDITION PRIOR TO THE BEGINNING OF WORK OR BETTER AT NO COST TO THE STATE.
I. DETAILS NOTED AS TYPICAL ON THE STRUCTURAL DRAWINGS SHALL APPLY IN ALL CONDITIONS UNLESS SPECIFICALLY SHOWN OR NOTED OTHERWISE.

DESIGN CRITERIA

A. BOAT LIFT CAPACITY = 16 KIPS
B. DESIGN VESSEL
   1. MAKE: METAL SHARK
   2. MODEL: DEFIANT 27FT
C. LATERAL LOADS
   1. WIND
      a. BASIC WIND SPEED (3 SECOND GUST): 130 MPH
      b. RISK CATEGORY: I
      c. EXPOSURE: D
      d. ENCLOSURE CLASSIFICATION: OPEN
   2. SEISMIC
      a. IMPORTANCE FACTOR: 1.5
      b. MAPPED SPECTRAL RESPONSE ACCELERATION COEFFICIENTS
         i. SHORT PERIOD: 1.500G
         ii. 1-SEC PERIOD: 0.600G
      c. SITE CLASS: D
      d. PEAK GROUND ACCELERATION: 0.500G
      e. SITE MODIFIED PEAK GROUND ACCELERATION: 0.550G
      f. DESIGN CATEGORY: D

FOUNDATION:

A. FOUNDATION DESIGN IS BASED ON GEOTECHNICAL ENGINEERING EXPLORATION BY KOKUA GEOTECH, INC., DATED OCTOBER 18, 2024.
B. CONTRACTOR SHALL PROVIDE DE-WATERING OF EXCAVATED AREAS, AS REQUIRED. GROUND WATER WAS OBSERVED AT 7.2 FEET BELOW GRADE AT TIME AND LOCATION OF INVESTIGATIVE SOIL BORING.
C. BASED ON GEOTECHNICAL REPORT, A DEEP FOUNDATION SUPPORT SYSTEM SHALL BE USED FOR THE NEW ELEVATOR BOAT LIFT. ALSO SEE SHEET S103 FOR MICROPILE NOTES.
D. CONTRACTOR SHALL PROVIDE DESIGN AND INSTALLATION OF ALL CRIBBING, SHEETING, AND SHORING NECESSARY TO PRESERVE EXCAVATIONS AND EARTH BANKS. SHORING SHALL CONFORM TO OSHA REGULATIONS.
E. FOR UTILITY TRENCHES PROVIDE A MINIMUM 6-INCH OF OPEN-GRADED GRAVEL, SUCH AS NO. 3 FINE GRAVEL (ASTM C33, NO. 67 GRADATION) FOR UNIFORM SUPPORT.
F. OPEN-GRADED GRAVEL (ASTM C33, NO. 67 GRADATION) SHOULD ALSO BE USED FOR THE INITIAL TRENCH BACKFILL UP TO ABOUT 12 INCHES ABOVE THE PIPES (OR GROUNDWATER LEVEL) TO PROVIDE ADEQUATE SUPPORT AROUND THE PIPES.
G. PROVIDE A MINIMUM 12-INCH THICK CAPPING FILL LAYER CONSISTING OF NON-EXPANSIVE, SELECT GRANULAR MATERIALS OR SELECT BORROW SUBBASE BELOW THE SLABS-ON-GRADE. THE NON-EXPANSIVE, SELECT GRANULAR MATERIALS OR SELECT BORROW SUBBASE SHOULD BE PLACED IN LEVEL LIFTS NOT EXCEEDING 8 INCHES IN LOOSE THICKNESS, MOISTURE-CONDITIONED TO ABOVE THE OPTIMUM MOISTURE CONTENT AND COMPACTED TO AT LEAST 90 PERCENT RELATIVE COMPACTION AS MEASURED BY ASTM D1557.
H. SOFT AND/OR LOOSE MATERIALS MAY BE ENCOUNTERED AT OR NEAR THE INVERT ELEVATIONS ALONG PORTIONS OF THE NEW UTILITY LINES. PROVIDE A SUBGRADE STABILIZATION LAYER CONSISTING OF 18 INCHES OF NO. 2 ROCK (ASTM C33, NO.4 GRADATION) WRAPPED IN A NON-WOVEN FILTER FABRIC (MIRAFI 180N OR EQUIVALENT) BELOW THE BEDDING LAYER FOR UNIFORM SUPPORT. THE STABILIZATION LAYER SHALL EXTEND A MINIMUM OF 12-INCH BEYOND THE SIDES OF THE PIPE.
I. THE BACKFILL MATERIALS SHOULD BE PLACED IN MAXIMUM 8-INCH LEVEL LOOSE LIFTS AND MECHANICALLY COMPACTED TO NO LESS THAN 90% RELATIVE COMPACTION TO REDUCE THE POTENTIAL FOR APPRECIABLE FUTURE GROUND SUBSIDENCE. THE UPPER 2 FEET BELOW THE FINISHED GRADE IN AREAS SUBJECTED TO VEHICULAR TRAFFIC SHOULD BE COMPACTED TO A MINIMUM OF 95% RELATIVE COMPACTION.
J. ENGINEERED FILL AND STRUCTURAL BACKFILL SHALL BE IN ACCORDANCE WITH SECTION 703.20 OF THE HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2005 EDITION.
K. CONTROLLED LOW-STRENGTH MATERIAL (CLSM) SHALL BE IN ACCORDANCE WITH ENTIRE SECTION 314 OF THE HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2005 EDITION. THE CLSM SHALL BE PLACED AS SHOWN IN THE DRAWINGS OR AS APPROVED BY THE ENGINEER IN WRITING.

CONCRETE:

A. CONCRETE CONSTRUCTION SHALL CONFORM TO AASHTO LRFD AND ACI 318.
B. CONCRETE SHALL BE NORMAL WEIGHT HARD ROCK CONCRETE AND SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTHS OF 4,000 PSI. IF CONCRETE IS TO BE PLACED VIA TREMIE METHOD, 'SEAL' CLASS CONCRETE SHALL BE USED.
C. CONCRETE DELIVERY TICKETS SHALL RECORD ALL FREE WATER IN THE MIX AT BATCHING PLANT, ADDED FOR CONSISTENCY BY DRIVER, AND ANY ADDITIONAL REQUEST BY CONTRACTOR UP TO THE MAXIMUM AMOUNT ALLOWED BY THE MIX DESIGN.
D. REINFORCING BARS, ANCHOR BOLTS, INSERTS, AND OTHER ITEMS TO BE CAST IN THE CONCRETE SHALL BE SECURED IN POSITION PRIOR TO PLACEMENT OF CONCRETE.
E. CONDUITS, PIPES, AND SLEEVES PASSING THROUGH A SLAB OR FOOTING THAT DO NOT CONFORM TO TYPICAL DETAILS SHALL BE LOCATED AND THE PROPOSED CONSTRUCTION DETAIL SUBMITTED TO THE ENGINEER FOR APPROVAL.
F. CONDUITS, PIPES, AND SLEEVES EMBEDDED WITHIN A SLAB OR WALL (OTHER THAN THOSE MERELY PASSING THROUGH) SHALL BE:
   1. NO LARGER IN OUTSIDE DIMENSIONS THAN ONE THIRD THE OVERALL SLAB OR WALL THICKNESS IN WHICH THEY ARE EMBEDDED.
   2. PLACED IN THE MIDDLE ONE THIRD OF SLAB OR WALL THICKNESS
   3. SPACED NO CLOSER THAN THREE DIAMETERS OR WIDTHS ON CENTER.
G. THE CONTRACTOR SHALL LOCATE CONSTRUCTION JOINTS NOT SHOWN ON THE DRAWINGS, SO AS NOT TO IMPAIR THE STRENGTH OF THE STRUCTURE AND TO MINIMIZE SHRINKAGE STRESSES. SUBMIT PROPOSED LOCATIONS OF CONSTRUCTION JOINTS TO THE ENGINEER FOR APPROVAL.
H. NON-SHRINK GROUT SHALL BE A PREMIXED NON-METALLIC FORMULA AND SHALL BE IN ACCORDANCE WITH ASTM C1107. NON-SHRINK GROUT SHALL BE CAPABLE OF DEVELOPING A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI IN 1 DAY AND 7,000 PSI IN 28 DAYS.
I. A CORROSION INHIBITING ADMIXTURE SHALL BE INCLUDED IN THE CONCRETE MIX FOR ALL CONCRETE. THE ADMIXTURE SHALL BE RHEOCRETE CNI CORROSION INHIBITOR FROM BASF, DCI S CORROSION INHIBITOR FROM GRACE CONSTRUCTION PRODUCTS OR AN APPROVED EQUAL. ADDITION OF CORROSION INHIBITING ADMIXTURE SHALL BE AS RECOMMENDED BY THE MANUFACTURER.

REINFORCING STEEL:

A. REINFORCING STEEL SHALL BE DEFORMED STAINLESS STEEL BARS CONFORMING TO ASTM A955, GRADE 60.
B. CLEAR CONCRETE COVER FOR REINFORCING BARS SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED:
   1. FOOTINGS, SLABS, ETC, CAST AGAINST EARTH: 3"
   2. FOOTINGS, SLABS, ETC. FORMED AND EXPOSED TO EARTH OR WEATHER: 2"
D. REINFORCING STEEL SHALL BE SPLICED WHERE INDICATED ON PLANS. PROVIDE LAP SPLICE LENGTH PER TYPICAL DETAILS AND SCHEDULE, UNLESS OTHERWISE NOTED.
E. MECHANICAL SPLICE CONNECTORS SHALL DEVELOP IN TENSION 125 PERCENT OF THE SPECIFIED MINIMUM YIELD STRENGTH OF REINFORCING BARS.
F. BAR BENDS AND HOOKS SHALL BE "STANDARD HOOKS" IN ACCORDANCE WITH ACI 318.
G. MINIMUM REINFORCEMENT BEND DIAMETERS SHALL COMPLY WITH AASHTO 5.10.2.3.
H. REINFORCING STEEL SHALL BE PLACED AND SECURED IN CONFORMANCE WITH CRSI MANUAL OF STANDARD PRACTICE WITH PLACEMENT TOLERANCES PER ACI STANDARD 117.

STRUCTURAL STEEL:

A. FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION MANUAL OF STEEL CONSTRUCTION, SIXTEENTH EDITION.
B. STRUCTURAL STEEL SHALL CONFORM TO ASTM A36 UNLESS OTHERWISE NOTED.
C. STEEL WIDE FLANGE SECTIONS SHALL CONFORM TO ASTM A709, GRADE 50.
D. STEEL PIPES SHALL CONFORM TO ASTM A53, GRADE B.
E. STEEL TUBES (HSS) SHALL CONFORM TO ASTM A500, GRADE B.
F. PLATES AND BARS SHALL CONFORM TO ASTM A36 OR ASTM A572, GRADE 50 UNLESS NOTED OTHERWISE.
G. STAINLESS STEEL SHALL CONFORM TO ASTM A240, TYPE 316L.
H. WELDS AND WELDING PROCEDURES SHALL CONFORM TO AWS D1.1 - STRUCTURAL WELDING CODE-STEEL AND AWS D1.6 STRUCTURAL WELDING CODE - STAINLESS STEEL OF THE AMERICAN WELDING SOCIETY.
I. WELDING SHALL BE PERFORMED BY WELDERS PREQUALIFIED FOR WELDING PROCEDURES TO BE USED.
J. WELDING ELECTRODES SHALL BE E70XX FOR CARBON STEEL AND E316L FOR STAINLESS STEEL. FILLER MATERIAL SHALL BE COMPATIBLE WITH MATERIAL WELDED PER AWS STANDARDS.
K. THE CONTRACTOR SHALL HIRE AN INDEPENDENT SPECIAL INSPECTOR TO CONDUCT ULTRASONIC NDT TESTING OF ALL FIELD WELDS. THE COST FOR ALL TESTING SHALL BE PAID BY THE CONTRACTOR UNDER VARIOUS CONTRACT PAY ITEMS. THE INSPECTION TEST RESULTS SHALL BE PROVIDED TO THE HARBORS CONSTRUCTION ENGINEER.
L. HIGH-STRENGTH BOLTS SHALL CONFORM TO ASTM F3125, GRADE A325, TYPE N. INSTALLATION SHALL BE ASSURED BY ANY OF THE FOLLOWING METHODS.
   1. TURN OF NUT METHOD
   2. DIRECT TENSION INDICATOR
   3. CALIBRATED WRENCH
   4. ALTERNATIVE DESIGN BOLT
M. HIGH-STRENGTH BOLTS, NUTS, AND WASHERS SHALL CONFORM TO SECTION 718.02, 718.03 AND 718.04 RESPECTIVELY OF THE HDOT STANDARD SPECIFICATION. BOLTS SHALL BE INSTALLED WITH THE HEADS ON EXTERIOR OR EXPOSED SIDE WHENEVER POSSIBLE.
N. STAINLESS STEEL BOLTS SHALL CONFORM TO ASTM F593, TYPE 316, AND STAINLESS STEEL NUTS TO ASTM F594, TYPE 316.
O. STAINLESS STEEL THREADED RODS SHALL CONFORM TO ASTM A193, GRADE B8.

BOAT LIFT NOTES:

A. THE PRE-ENGINEERED ALUMINUM BOAT LIFT SHALL BE THE PLATINUM ELEVATOR BOAT LIFT (16,000 LBS CAPACITY) BY IMM QUALITY BOAT LIFTS, OR APPROVED EQUIVALENT.
B. FABRICATION AND ERECTION OF BOAT LIFT SHALL CONFORM TO THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.
G. CONTRACTOR SHALL SUBMIT SITE SPECIFIC SHOP DRAWINGS (STAMPED BY A STRUCTURAL ENGINEER LICENSED IN THE STATE OF HAWAII), INDICATING PROPOSED MATERIALS, INSTALLATION SEQUENCE, AND ANCHORAGE DETAILS TO THE ENGINEER FOR APPROVAL PRIOR TO FABRICATION.
H. CONTRACTOR SHALL SUBMIT STRUCTURAL CALCULATIONS FOR ELEVATOR LIFT AND CONNECTIONS STAMPED BY A STRUCTURAL ENGINEER LICENSED IN THE STATE OF HAWAII TO THE ENGINEER FOR APPROVAL PRIOR TO FABRICATION.
I. THE COST OF SHOP DRAWING AND CALCULATIONS SHALL BE INCIDENTAL TO BID ITEM OF BOAT LIFT.
J. WATER IS EXPECTED TO BE ENCOUNTERED DURING INSTALLATION. ALL WORK, INCLUDING FORMING, CONCRETE PLACEMENT, REINFORCING STEEL INSTALLATION, SPECIAL INSPECTIONS, AND MICROPILE PROOF TESTING, AND MISC. WORK SHALL BE PERFORMED UNDERWATER. THE CONTRACTOR SHALL PROVIDE A SUITABLE ANTI-WASHOUT ADMIXTURE IN THE GROUT/CONCRETE MIX TO MINIMIZE GROUT LOSS AND SEGREGATION. ALL REQUIRED INSPECTIONS SHALL BE CONDUCTED BY CERTIFIED COMMERCIAL DIVERS.

ABBREVIATIONS

ABUT	ABUTMENT	FRP	FIBER REINFORCED POLYMER
BC	BOTTOM OF CURB	GALV	GALVANIZED
BOT	BOTTOM	HORIZ	HORIZONTAL
BTWN	BETWEEN	MAX	MAXIMUM
BW	BOTTOM OF WALL	MIN	MINIMUM
℄	CENTERLINE	MISC	MISCELLANEOUS
CLR	CLEAR	NO. OR #	NUMBER
CONC	CONCRETE	N.T.S.	NOT TO SCALE
CONT	CONTINUOUS	O.C.	ON CENTER
DIA	DIAMETER	O.D.	OUTSIDE DIAMETER
DWG	DRAWING	OPNG	OPENING
EA	EACH	OPP	OPPOSITE
E.F.	EACH FACE	PL OR ℙ	PLATE
ELEV	ELEVATION	REINF	REINFORCED OR REINFORCING
EQ	EQUAL	SP	SPACES OR SPACING
E.W.	EACH WAY	STA.	STATION
EXIST OR (E)	EXISTING	TYP	TYPICAL
EXT	EXTERIOR	TC	TOP OF CURB
FIN	FINISH	TW	TOP OF WALL
FT	FOOT OR FEET	WWF	WELDED WIRE FABRIC

SPECIAL INSPECTION

SPECIAL INSPECTIONS ARE REQUIRED FOR THIS PROJECT AND SHALL BE PERFORMED IN ACCORDANCE WITH IBC CHAPTER 17. SPECIAL INSPECTIONS SHALL BE PERFORMED BY QUALIFIED THIRD PARTY INSPECTORS FOR THE FOLLOWING CATEGORIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS FOR SPECIAL INSPECTION, INCLUDING INSPECTION, CONCRETE TESTING, COMPACTION TESTING, OTHER TESTING, AND ANY REQUIRED DOCUMENTS.

CONCRETE PLACEMENT – STRUCTURAL WELDING – CONCRETE ANCHORS – REINFORCING STEEL PLACEMENT – GRADING, EXCAVATION, BACKFILLING

REVISION	DATE	DESCRIPTION	BY	APPROVED

MICHAEL P. HUNNEMANN
LICENSED PROFESSIONAL ENGINEER
No. 10393-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."

KAI HAWAII, INC.
APRIL 30, 2028
LICENSE EXPIRATION DATE

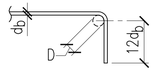
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HARBORS

JOB TITLE
NEW BOAT LIFT IMPROVEMENTS
PIER 1, HILO HARBOR, HAWAII

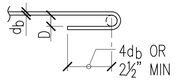
SHEET TITLE
GENERAL STRUCTURAL NOTES

DESIGNED BY: JC	JOB NUMBER	SHEET
DRAWN BY: CAD	P50217	S001
CHECKED BY: BL		06 OF 14 SHTS.
DATE: APRIL 2026		
SCALE: AS SHOWN		

MINIMUM SPLICE AND DEVELOPMENT LENGTHS					
BAR SIZE	CONCRETE STRENGTH = 4,000 PSI				
	LAP SPLICE		DEVELOPMENT		
	TOP BARS	OTHER BARS	STRAIGHT		WITH STANDARD HOOK
			TOP BARS	OTHER BARS	
#3	26"	20"	20"	16"	8"
#4	34"	26"	26"	20"	10"
#5	42"	32"	32"	24"	12"
#6	50"	38"	38"	30"	16"
#7	72"	54"	54"	42"	18"
#8	82"	62"	62"	48"	20"
#9	92"	70"	70"	54"	22"
#10	102"	80"	80"	62"	26"
#11	114"	88"	88"	68"	28"



90° BEND



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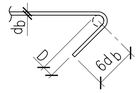
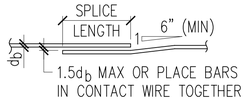


135° BEND



BAR LAP

D = $6d_b$ FOR #8 AND SMALLER
D = $8d_b$ FOR #9 TO #11

NOTES:
1. IF CONCRETE COVER IS NOT GREATER THAN THE DIAMETER OF THE BAR OR THE CENTER-TO-CENTER SPACING IS NOT GREATER THAN 3 BAR DIAMETERS THEN VALUES SHALL BE INCREASED BY 50%.
2. "TOP BARS" ARE HORIZONTAL BARS WITH 12" OR MORE OF CONCRETE CAST BELOW.

1 / S002
TYPICAL REBAR SPLICE AND DEVELOPMENT LENGTH SCHEDULE
NOT TO SCALE

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KAI HAWAII, INC.

APRIL 30, 2028
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HARBORS

JOB TITLE
NEW BOAT LIFT IMPROVEMENTS
PIER 1, HILO HARBOR, HAWAII

SHEET TITLE
TYPICAL STRUCTURAL DETAILS

DESIGNED BY: JC	JOB NUMBER	SHEET
DRAWN BY: CAD	P50217	S002
CHECKED BY: BL		07 OF 14 SHTS.
DATE: APRIL 2026		
SCALE: AS SHOWN		

Fri, 10 Apr 2026 - 6:58pm
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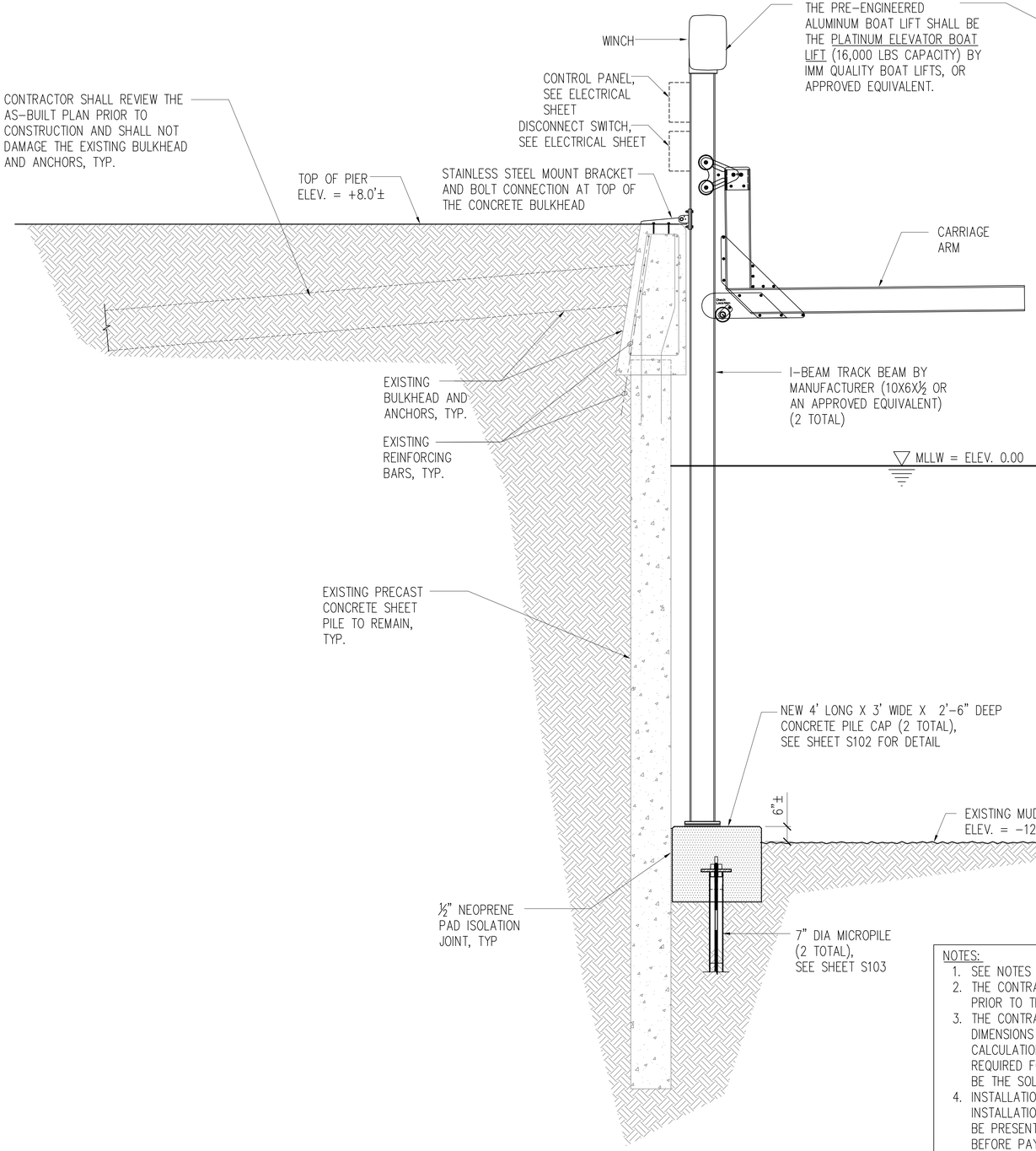

1 S101 NEW BOAT LIFT ELEVATION
NOT TO SCALE

*THE SAMPLE PHOTO IS PROVIDED FOR REFERENCE PURPOSES ONLY.

**THE CONTRACTOR SHALL VERIFY THE FINAL LOCATIONS OF THE BOAT LIFT AND ASSOCIATED ELECTRICAL COMPONENTS WITH THE HARBOR CONSTRUCTION ENGINEER PRIOR TO CONSTRUCTION, AND ENSURE THAT THERE ARE NO CONFLICTS OR OBSTRUCTIONS THAT WOULD INTERFERE WITH BOAT LIFT OPERATIONS.

NOTES:
1. SEE NOTES ON S001 FOR BOAT LIFT.
2. THE CONTRACTOR SHALL REVIEW THE AS-BUILT PLANS (HC 740 AND HC 788) PRIOR TO THE CONSTRUCTION.
3. THE CONTRACTOR SHALL TAKE FIELD MEASUREMENTS AND VERIFY ALL DIMENSIONS BEFORE PREPARING THE SITE SPECIFIC SHOP DRAWINGS AND CALCULATIONS. ANY NECESSARY FIELD MEASUREMENTS AND SITE ADJUSTMENT REQUIRED FOR THE FABRICATION AND INSTALLATION OF THE BOAT LIFT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
4. INSTALLATION – FOLLOW THE MANUFACTURE'S RECOMMENDATION FOR INSTALLATION. A LOCAL REPRESENTATIVE FROM THE MANUFACTURER SHALL BE PRESENT ON SITE DURING THE INSTALLATION. UPON COMPLETION, AND BEFORE PAYMENT FOR THE ITEM, THE TECHNICAL REPRESENTATIVE SHALL TEST AND CERTIFY THAT THE INSTALLATION HAS BEEN COMPLETED CORRECTLY.
5. CONTRACTOR/MANUFACTURER SHALL PROVIDE SACRIFICIAL ZINC ANODES TO PROTECT THE ALUMINUM TRACKS IN SALTWATER.

REVISION	DATE	DESCRIPTION	BY	APPROVED

MICHAEL P. HUNNEMANN LICENSED PROFESSIONAL ENGINEER No. 10393-C HAWAII, U.S.A.

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KAI HAWAII, INC.
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DEPARTMENT OF TRANSPORTATION
HARBORS

JOB TITLE
NEW BOAT LIFT IMPROVEMENTS
PIER 1, HILO HARBOR, HAWAII

SHEET TITLE
NEW BOAT LIFT ELEVATION

DESIGNED BY: JC	JOB NUMBER	SHEET
DRAWN BY: CAD	P50217	S101
CHECKED BY: BL		08 OF 14 SHTS.
DATE: APRIL 2026		
SCALE: AS SHOWN		

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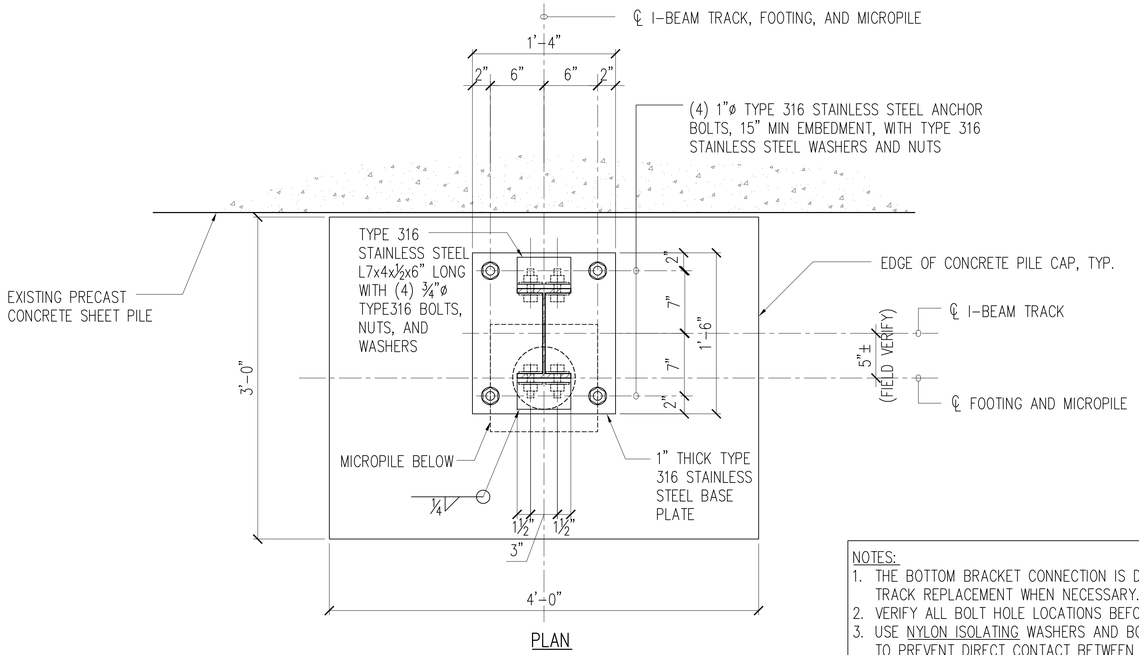
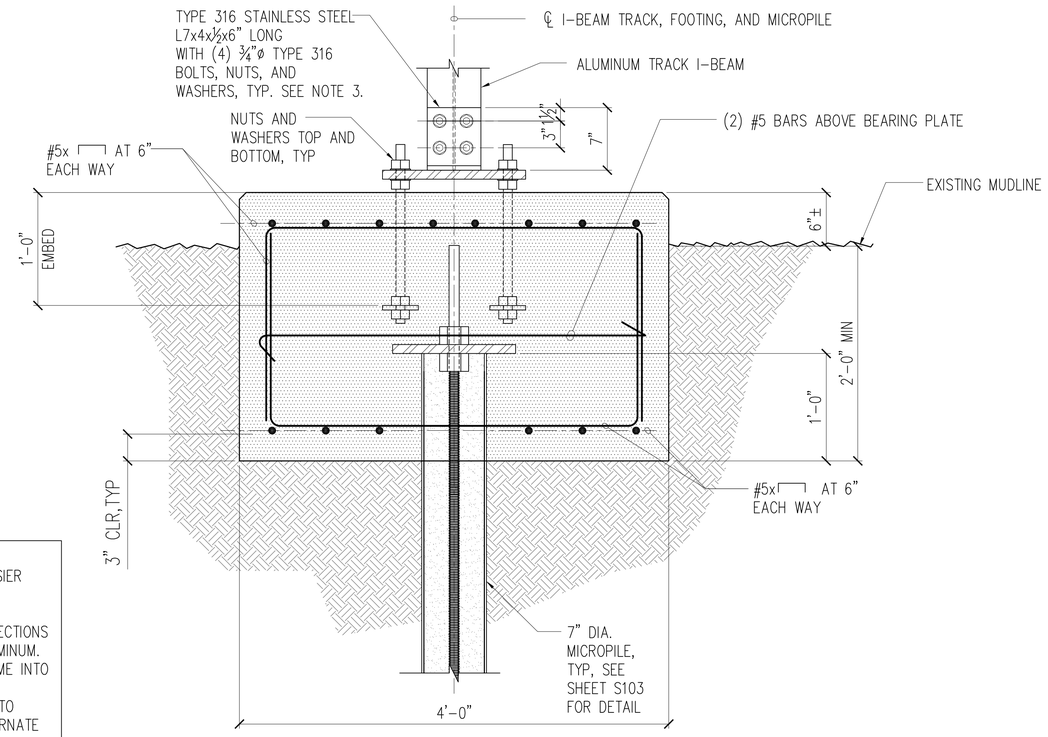


PLAN

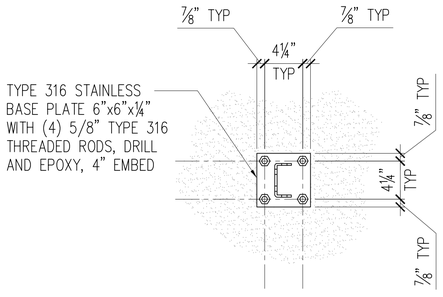
1 S102 **TRACK BASE CONNECTION PLAN**

SCALE: 1 1/2" = 1'-0"

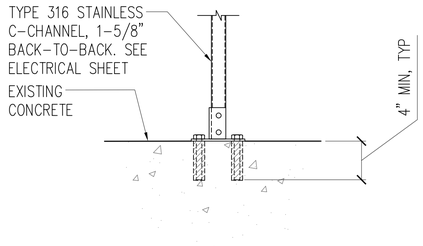
NOTES:
1. THE BOTTOM BRACKET CONNECTION IS DESIGNED TO FACILITATE EASIER TRACK REPLACEMENT WHEN NECESSARY.
2. VERIFY ALL BOLT HOLE LOCATIONS BEFORE INSTALLATION.
3. USE NYLON ISOLATING WASHERS AND BOLT SPACERS AT ALL CONNECTIONS TO PREVENT DIRECT CONTACT BETWEEN STAINLESS STEEL AND ALUMINUM.
4. STAINLESS STEEL ANCHOR BOLTS AND REINFORCING SHALL NOT COME INTO CONTACT WITH MICROPILE COMPONENTS.
5. ALUMINUM COMPONENTS SHALL NOT BE WELDED. IF MODIFICATIONS TO ALUMINUM PARTS ARE REQUIRED, CONTRACTOR SHALL SUBMIT ALTERNATE MECHANICAL FASTENING METHODS FOR APPROVAL.



ELEVATION



PLAN



ELEVATION

NOTES:
1. FOR EQUIPMENT RACK LOCATION AND DETAILS, SEE ELECTRICAL SHEETS

2 S102 **EQUIPMENT RACK CONNECTION DETAIL**

SCALE: 1 1/2" = 1'-0"

0' 6" 1' 2'
1 1/2" = 1'-0"

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DEPARTMENT OF TRANSPORTATION
HARBORS

JOB TITLE
NEW BOAT LIFT IMPROVEMENTS
PIER 1, HILO HARBOR, HAWAII

SHEET TITLE
NEW BOAT LIFT DETAILS

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P50217

SHEET
S102
09 OF 14 SHTS.

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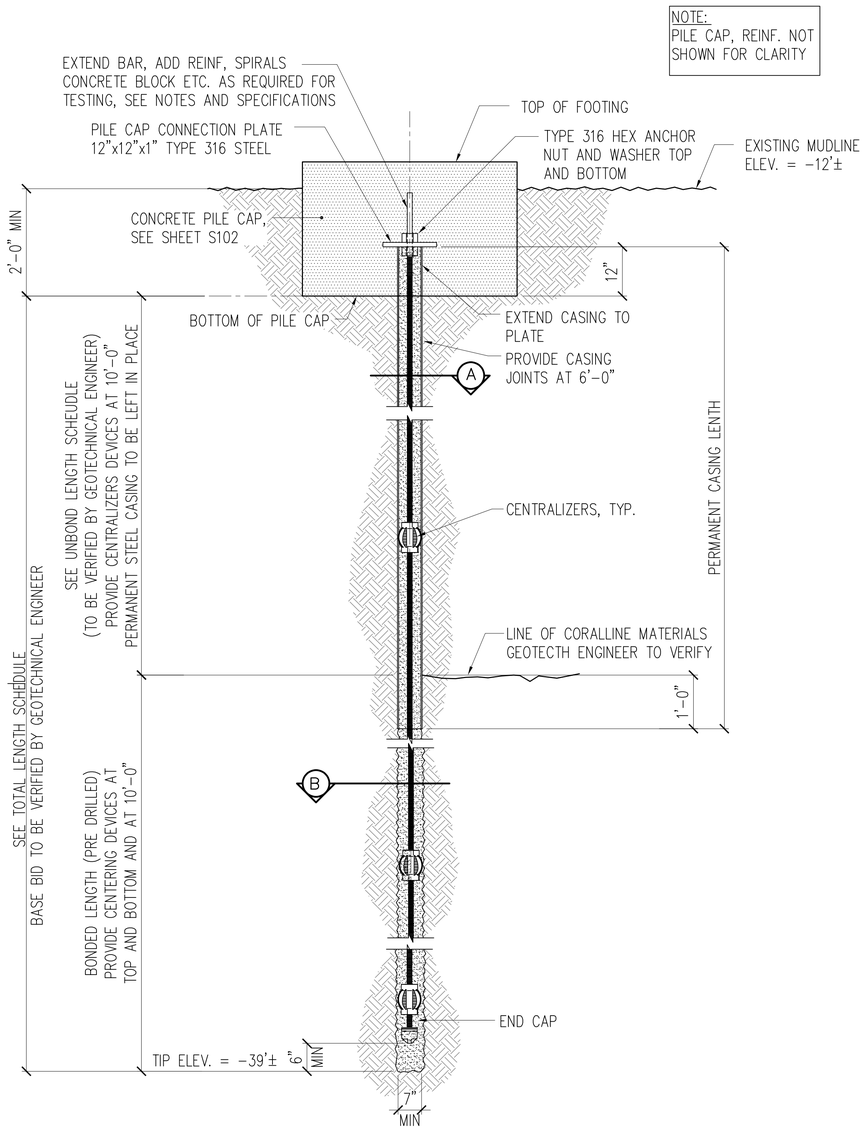
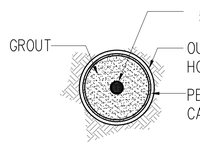
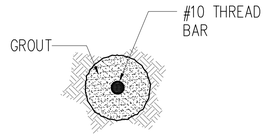


1 / S103 TYPICAL MICROPILE DETAIL
NOT TO SCALE



NOTE:
THE ANNULAR SPACE BETWEEN THE DRILL HOLE AND THE O.D. OF THE PIPE CASING SHALL BE GROUTED THROUGHOUT THE CASED LENGTH IN ORDER TO PROVIDE LATERAL SUPPORT OF THE MICROPILE.

A PLAN SECTION



B PLAN SECTION

MICROPILE SCHEDULE	
BONDED LENGTH (FEET), BASE BID	10'−0" MINIMUM
UNBONDED LENGTH (FEET), BASE BID	15'−0" MINIMUM
TOTAL LENGTH (FEET), BASE BID	25'−0" MINIMUM
ALLOWABLE COMPRESSIVE LOAD CAPACITY (EACH)	15 KIPS
THREADBAR (FULL DEPTH)	NO. 10

INSTALLATION PROCEDURES:

1. DRILL HOLE TO REQUIRED DEPTH AND INSTALL THREADBAR WITH ATTACHED CENTRALIZERS.
2. GROUT THE MICROPILE FROM THE BOTTOM OF THE HOLE UPWARD TO THE INITIAL GROUT ELEVATION SHOWN. PERFORM POST−GROUTING, IF REQUIRED, IN ACCORDANCE WITH THE SPECIFICATIONS TO IMPROVE BOND AND LOAD CAPACITY.
3. AFTER THE CASING HAS BEEN ADVANCED THROUGH THE OLD ALLUVIAL FORMATION, REMOVE ANY TEMPORARY OR EXPOSED CASING ABOVE THE DESIGN CASING ELEVATION. LEAVE THE REMAINING PERMANENT CASING IN PLACE.
4. CONTINUE GROUTING UNTIL GROUT REACHES TOP OF CASING.
5. PERFORM POST GROUTING AFTER PRIMARY GROUTING TO INCREASE CARRYING CAPACITY AS REQUIRED.
6. INSTALL BEARING PLATE ASSEMBLY.
7. TEST ANCHOR PER SPECIFICATIONS.
8. INSTALL ANCHOR NUT.

NOTES:
1. DO NOT WELD TO BAR.
2. DO NOT USE BAR AS GROUND CONNECTION FOR WELDING.
3. DO NOT ALLOW HOT SLAG OR SPARKS TO TOUCH BAR.
4. DO NOT DAMAGE BAR SURFACE.
5. DO NOT USE BARS WITH KINKS OR SHARP BENDS.

MICROPILE NOTES:

1. ALL−THREAD REINFORCING STEEL SHALL CONFORM ASTM A955, GRADE 75, TYPE 316L STAINLESS STEEL ENCASED IN PRE−GROUTED POLY CORRUGATED TUBES FROM THE MANUFACTURER.
2. PERMANENT MICROPILE STEEL CASING: CONFORM TO THE PHYSICAL PROPERTIES OF ASTM A312, TYPE 316L.
3. PILE SHALL BE GROUTED FULL LENGTH. GROUT FOR MICROPILES SHALL BE ASTM C1107 OR ASTM C845, TYPE K, HYDRAULIC−CEMENT GROUT OR EXPANSIVE HYDRAULIC CEMENT, A MINIMUM COMPRESSIVE STRENGTH (FROM CUBES) OF 5,000 PSI AT 28 DAYS IN ACCORDANCE WITH ASTM C109. THE GROUT SHALL CONTAIN SUITABLE ADMIXTURES TO CONTROL BLEEDING AND IMPROVE FLOWABILITY. NO TESTING OR ANY OTHER TYPE OF LOADING SHALL BE APPLIED TO THE MICROPILES UNTIL THE GROUT HAS REACHED THE MINIMUM COMPRESSIVE STRENGTH.
4. TO FACILITATE THE MICROPILE DRILLING AND ENSURE THE QUALITY OF THE GROUTING, ADVANCING THE STEEL CASING TO THE BOTTOM OF THE MICROPILE DURING THE DRILLING OPERATION. THE STEEL CASING MAY BE WITHDRAWN DURING THE GROUTING OPERATION WHILE A MINIMUM OF 5 FEET OF GROUT HEAD IS MAINTAINED ABOVE THE BOTTOM OF THE CASING AT ALL TIMES. THE STEEL CASING SHOULD BE WITHDRAWN ABOVE THE DESIGN CASING DEPTH AND PLUNGED BACK TO THE DESIGN CASING DEPTH.
5. PROOF LOAD TESTING PRODUCTION MICROPILES
   A. BOTH MICROPILES SHALL BE TESTED FOR PULLOUT.
   B. THE CONTRACTOR SHALL FURNISH ALL MATERIALS, EQUIPMENT AND TOOLS NECESSARY TO PERFORM THE PROOF TESTS. THE GEOTECHNICAL ENGINEER RETAINED BY THE CONTRACTOR WILL BE PRESENT ONLY TO OBSERVE THE PERFORMANCE OF THE PROOF TESTS BY THE CONTRACTOR
   C. PROOF LOAD TEST SHALL BE PERFORMED IN ACCORDANCE WITH ASTM TEST DESIGNATION D3689.
   D. CONDUCT PROOF LOAD TEST NO EARLIER THAN 7 DAYS AFTER COMPLETION OF THE MICROPILE INSTALLATION OR WHEN THE MICROPILE GROUT HAS ATTAINED AT LEAST 75% OF THE SPECIFIED COMPRESSIVE STRENGTH.
   E. THE PROOF LOAD TEST MICROPILE SHOULD BE GRADUALLY LOADED TO AT LEAST 150 PERCENT OF THE ALLOWABLE COMPRESSIVE DESIGN LOAD (15 KIPS).
   F. THE MICROPILE SHALL BE LOADED IN 12.5% DESIGN LOAD INCREMENTS, AND EACH LOAD SHALL BE HELD FOR AT LEAST 5 MINUTES. THE MAXIMUM TEST LOAD SHALL BE HELD FOR A MINIMUM OF 10 OR 60 MINUTES.
   G. PROOF LOAD TESTING SHALL BE CONDUCTED UNDER THE OBSERVATION OF A QUALIFIED REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER OF RECORD, WHO PROVIDED THE GEOTECHNICAL RECOMMENDATIONS, AS PART OF THE REQUIRED SPECIAL INSPECTION PROCESS.
6. WATER IS EXPECTED TO BE ENCOUNTERED DURING INSTALLATION. ALL WORK, INCLUDING FORMING, CONCRETE PLACEMENT, REINFORCING STEEL INSTALLATION, SPECIAL INSPECTIONS, AND MICROPILE PROOF TESTING, SHALL BE PERFORMED UNDERWATER. THE CONTRACTOR SHALL PROVIDE A SUITABLE ANTI−WASHOUT ADMIXTURE IN THE GROUT/CONCRETE MIX TO MINIMIZE GROUT LOSS AND SEGREGATION. ALL REQUIRED INSPECTIONS SHALL BE CONDUCTED BY CERTIFIED COMMERCIAL DIVERS.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HARBORS

JOB TITLE
NEW BOAT LIFT IMPROVEMENTS
PIER 1, HILO HARBOR, HAWAII

SHEET TITLE
MICROPILE DETAILS AND NOTES

MICHAEL P. HUNNEMANN
LICENSED PROFESSIONAL ENGINEER
No. 10393−C
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KAI HAWAII, INC.
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JOB NUMBER
P50217

SHEET
S103
10 OF 14 SHTS.

GENERAL ELECTRICAL NOTES

1. BEFORE ANY ELECTRICAL WIRING IS CUT, CONTRACTOR SHALL VERIFY USAGE OF WIRING TO ENSURE THAT REQUIRED SERVICES ARE NOT DISCONTINUED.

2. WHERE ELECTRICAL DEMOLITION IS INDICATED, REMOVE ALL ABANDONED CONCRETE PADS, EXISTING EXPOSED CONDUIT, AND WIRES NOT TO REMAIN IN SERVICE; CONCEALED RACEWAYS NO LONGER REQUIRED SHALL BE CAPPED AND ABANDONED IN PLACE (REMOVE AS REQUIRED TO FACILITATE NEW WORK) WITH ALL WIRES REMOVED. CUT ABANDONED UNDERGROUND CONDUIT RISER BELOW FINISH FLOOR & PATCH/RESTORE AFFECTED FLOOR AREA TO MATCH ADJACENT FINISH.

3. PROVIDE WEATHERPROOF METAL SEALS FOR ALL ABANDONED RACEWAY OPENINGS (KNOCKOUTS) IN BOXES, CABINETS, AND EQUIPMENT ENCLOSURES; SEALS SHALL RETAIN NEMA RATING OF REMAINING BOXES, CABINETS, AND EQUIPMENT ENCLOSURES.

4. CONDUIT STUB-UP LOCATIONS SHOWN ARE APPROXIMATIONS ONLY. VERIFY ALL CONDUIT AND EQUIPMENT CONNECTION (PWR AND SIGNAL) LOCATIONS WITH MECHANICAL AND ELECTRICAL EQUIPMENT SHOP DRAWINGS PRIOR TO CONDUIT ROUGH-IN WORK.

5. ALL ITEMS SPECIFIED AS NEMA 4X SHALL BE STAINLESS STEEL (316L) UNLESS OTHERWISE INDICATED. ALL C-CHANNELS AND FASTENING HARDWARE: SCREWS, NUTS, BOLTS, WASHERS, ETC., SHALL BE STAINLESS STEEL (316L). ALL EXPOSED FACTORY PROVIDED HARDWARE NOT STAINLESS STEEL (316L) SHALL BE REPLACED WITH STAINLESS STEEL (316L) HARDWARE. PAINT ALL NEW ELECTRICAL INSTALLATIONS (EQUIPMENT AND RACEWAYS) PER SPECIFICATION SECTIONS 09800 "PROTECTIVE COATINGS" AND 09901 "PAINTING", UNLESS OTHERWISE NOTED. DO NOT PAINT LIGHT FIXTURES, LIGHT POLES, AND DRY-TYPE TRANSFORMER.

6. NOT ALL PENETRATIONS ARE INDICATED. PENETRATE WALLS, SLABS, BEAMS, AND CEILINGS AS NECESSARY TO COMPLETE CONDUIT INSTALLATIONS. FOR NEW STRUCTURES/BUILDINGS, FIRE STOP, PATCH AND PAINT AS NECESSARY TO COMPLETE CONDUIT INSTALLATIONS. REFER TO ARCHITECTURAL DRAWINGS FOR CODE DATA. FOR EXISTING STRUCTURES/BUILDINGS, FIRE STOP, PATCH AND PAINT PENETRATIONS TO MATCH EXISTING FIRE RATINGS AND ADJACENT FINISHES. FOR PENETRATIONS THROUGH EXTERIOR WALLS, PROVIDE CONDUITS, CONDUIT BODIES, JUNCTION BOXES, AND FIRE STOPPING IMMEDIATELY AFTER PENETRATIONS ARE MADE SO AS TO MAKE PENETRATIONS WEATHERPROOF AND FIRE STOPPED BY THE END OF THE WORK DAY.

7. ALL ITEMS SHOWN ON DRAWINGS SHALL BE NEW UNLESS OTHERWISE INDICATED.

8. VERIFY RATINGS OF ALL ELECTRICALLY OPERATED OR CONTROLLED EQUIPMENT FURNISHED OR PROVIDED BY MECHANICAL OR OTHER TRADES AT BIDDING STAGE, AT THE SHOP DRAWING STAGE AND PRIOR TO INSTALLATION. SIZE CIRCUIT BREAKERS, DISCONNECT SWITCHES, STARTERS, CONDUIT AND WIRING TO MATCH ACTUAL EQUIPMENT PROVIDED AT NO ADDITIONAL COST TO THE STATE.

9. FOR LOCATION OF MECHANICAL AND INSTRUMENTATION EQUIPMENT, REFER TO MECHANICAL DRAWINGS.

10. PROVIDE 4" HIGH CONCRETE CURB AROUND CONDUITS THAT RISE EXPOSED THROUGH CONCRETE SLABS OR FINISHED GRADE.

11. INSTALLATION OF ELECTRICAL CONDUCTORS AND EQUIPMENT SHALL COMPLY WITH NEC 110.10.

12. ELECTRICAL EQUIPMENT SHALL BE MARKED WITH ARC FLASH WARNING SIGNS AS REQUIRED PER NEC 110.16.

ELECTRICAL SYMBOLS

MOUNTING HEIGHT FROM FLOOR TO		EXISTING	NEW	DESCRIPTION
TOP	℄			
	48" UON			DISCONNECT SWITCH, HEAVY-DUTY, HP-RATED, NEMA 4X STAINLESS STEEL (TYPE 316L) UNLESS OTHERWISE INDICATED
		(E)	(E)	EQUIPMENT CONNECTION
			(M)	ELECTRICAL CONNECTION, MOTOR
●		[J]/[J]	[J]/[J]	JUNCTION BOX, LARGE, WALL/FLOOR OR CEILING MTD RESPECTIVELY, NEMA 4X STAINLESS STEEL (TYPE 316L)
●		(J)/(J)	(J)/(J)	JUNCTION BOX, WALL/FLOOR OR CEILING MOUNTED RESPECTIVELY, 4-11/16" SQ. NOM., EXPOSED SHALL BE NEMA 4X (TYPE 316L)
	24" UON		[J]	JUNCTION BOX, NEMA 4X, (TYPE 316) LARGE, CONDUIT MOUNTED WITH PVC COATED GRS DUMMY LEG OR AS NOTED
●				ELECTRIC PANELBOARD
				ELECTRICAL EQUIPMENT
			← 1 , 1	NOTE INDICATOR, NOTE 1 INDICATED, ALL OTHERS SIMILAR
			└ A	DUCT SECTION INDICATOR, SECTION "A" INDICATED
				ELECTRICAL HANDHOLE, 2' X 4'

EXISTING	NEW	DESCRIPTION
--e--	-----	EXPOSED CONDUIT, CEILING OR WALL MOUNTED
	~~	FLEXIBLE CONDUIT, LIQUIDTIGHT
-·-e-	—·—	CONDUIT, CONCEALED BELOW FIN. FLR. OR DUCTLINE FOR EXT LOCATIONS
		MOLDED-CASE CIRCUIT BREAKER
	AFF	DENOTES "ABOVE FINISHED FLOOR"
	AFG	DENOTES "ABOVE FINISHED GRADE"
	ECB	DENOTES "ENCLOSED CIRCUIT BREAKER"
	EHH	DENOTES "ELECTRICAL HANDHOLE"
	GRS	DENOTES "GALVANIZED RIGID STEEL"
	JB	DENOTES "JUNCTION BOX"
	LK	DENOTES "LOCKABLE IN OPEN POSITION"
	UON	DENOTES "UNLESS OTHERWISE NOTED"
	WP	DENOTES "WEATHERPROOF-RATED"

SYMBOL NOTES:

1. NO HASH MARKS ON CONDUIT SYMBOL INDICATES 2-WIRES; —||— INDICATES 3-WIRES; —|||— INDICATES 4-WIRES, ETC. HASH MARKS ARE NOT SHOWN FOR GROUND AND CONTROL CONDUCTORS. PROVIDE SEPARATE INSULATED GROUND CONDUCTOR IN ALL CONDUITS (SIZE PER NEC ARTICLE 250.122).

2. "X" THRU SYMBOL DENOTES EXISTING ITEM TO BE REMOVED OR AS NOTED.

3. SPECIAL MOUNTING HEIGHTS INDICATED ON PLANS.

4. UNLESS OTHERWISE NOTED, DASHED SYMBOLS DENOTE "EXISTING" ITEMS AND SOLID SYMBOLS DENOTE "NEW" ITEMS.

REVISION	DATE	DESCRIPTION	BY	APPROVED

SEY ITO JR. LICENSED PROFESSIONAL ENGINEER No. 12753-E 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."

KRAIG K. OTANI & ASSOCIATES, LLC

APRIL 30, 2028
LICENSE EXPIRATION DATE

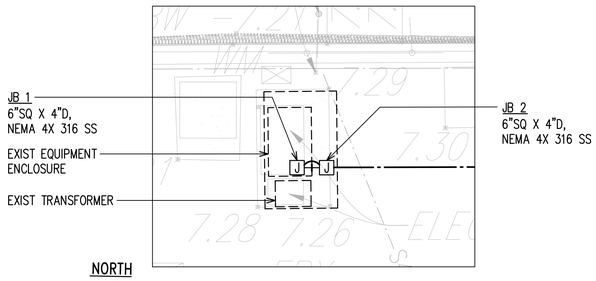
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HARBORS

JOB TITLE
NEW BOAT LIFT IMPROVEMENTS
PIER 1, HILO HARBOR, HAWAII

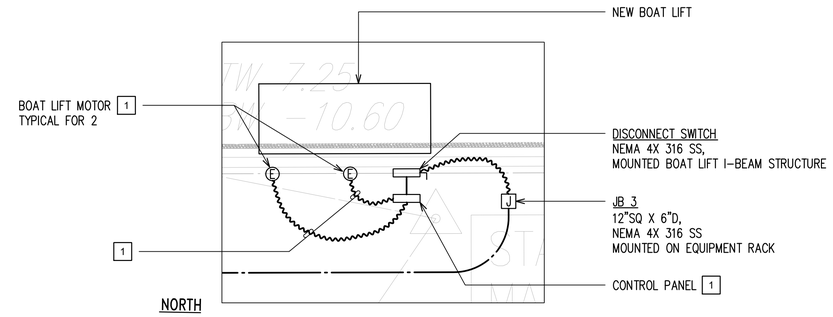
SHEET TITLE
ELECTRICAL SYMBOLS

DESIGNED BY: SJI	JOB NUMBER	SHEET	
DRAWN BY: SJI	P50217	E001	
CHECKED BY: KKO		11 OF 14 SHTS.	
DATE: APRIL 2026			
SCALE: AS SHOWN			

Wed, 08 Apr 2026 - 10:40am
C:\Users\SeyIto\Kraig K. Otani and Associates\Projects - General\24030 HDOT New Boat Lift Improvs at Hilo Harbor\ACAD\E001-01-24030-symbols.dwg



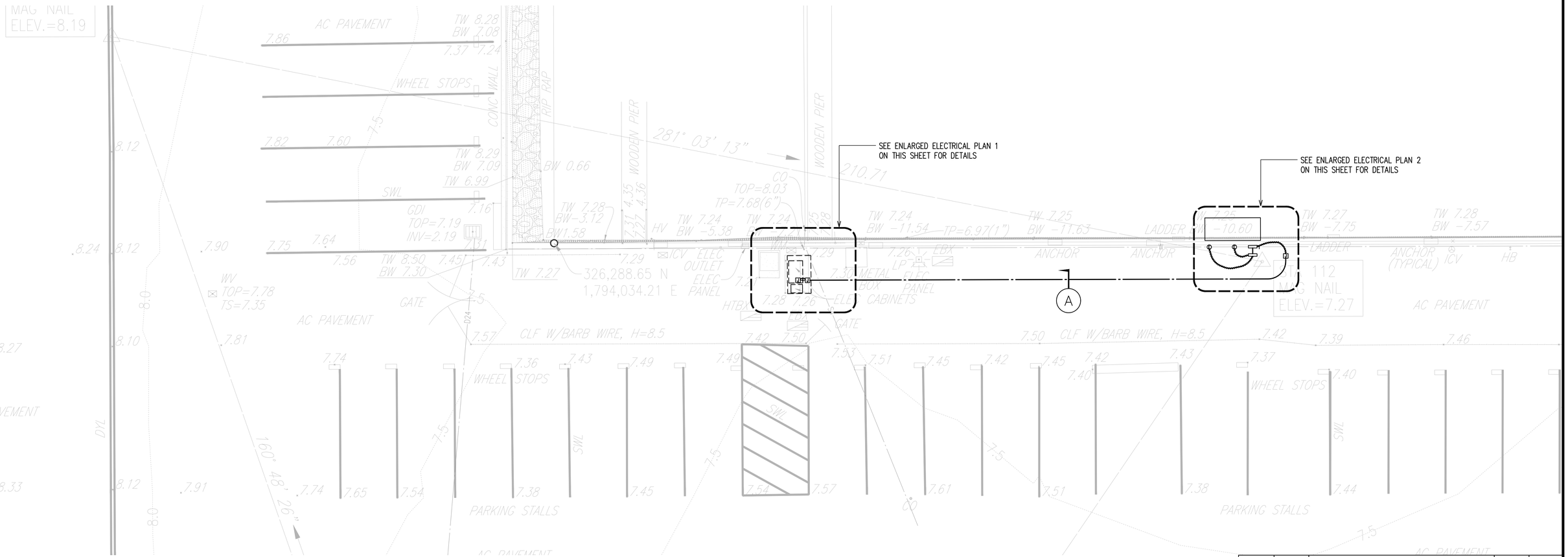
ENLARGED ELECTRICAL PLAN 1
SCALE: NOT TO SCALE



NOTE(S):

[1] EQUIPMENT FURNISHED BY BOAT LIFT MANUFACTURER, INSTALLED BY ELECTRICAL

ENLARGED ELECTRICAL PLAN 2
SCALE: NOT TO SCALE



PARTIAL ELECTRICAL SITE PLAN
SCALE: 1"=10'

10' 5' 0 10' 20' 30'

SCALE: 1"=10'

GRAPHIC SCALE

REVISION	DATE	DESCRIPTION	BY	APPROVED

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HARBORS

JOB TITLE
NEW BOAT LIFT IMPROVEMENTS
PIER 1, HILO HARBOR, HAWAII

SHEET TITLE
PARTIAL ELECTRICAL SITE PLAN

SEY ITO JR.
LICENSED PROFESSIONAL ENGINEER
No. 12753-E
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."

KRAIG K. OTANI & ASSOCIATES, LLC

APRIL 30, 2028
LICENSE EXPIRATION DATE

DESIGNED BY:	SJ
DRAWN BY:	SJ
CHECKED BY:	KKO
DATE:	APRIL 2026
SCALE:	AS SHOWN

JOB NUMBER
P50217

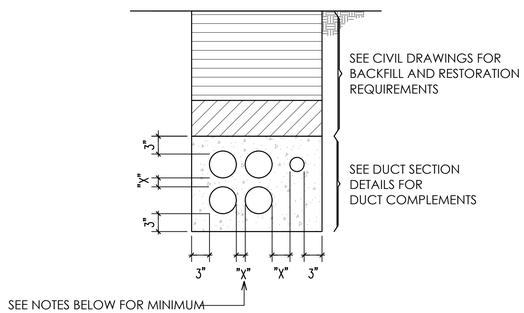
SHEET
E101
12 OF 14 SHTS.

Wed, 08 Apr 2026 - 12:41am
D:\Users\Seyito\Kraig K. Otani and Associates\Projects - General\24030 HDOT New Boat Lift Improvs at Hilo Harbor\ACAD\E101-01-24030-partialelecsite.dwg

EXIST PANEL 2A				225A MAIN BUS, 120/240V, 1 PHASE, 3 WIRE, 10,000 AIC EATON - CAT. NO. BR4242L225S4XG								
CKT. NO.	USE: L-LTS, R-RECEP, PFB-PROVISION FUTURE BKR., S-SPARE, F-FAN, W-WARMER	BREAKER POLE	BREAKER AMPS	WIRE SIZE	ON BUSSES L1		L2		WIRE SIZE	BREAKER POLE	BREAKER AMPS	USE: L-LTS, R-RECEP, PFB-PROVISION FUTURE BKR., S-SPARE, F-FAN, W-WARMER	CKT. NO.
1	R - STATE	1	20	12	0.2	0.2			12	1	20	R -	2
3	L / R	1	20	12			0.4	1.0	12	1	20	QUARTERDECK	4
5	**BOAT LIFT**	**2**	**20**	**12**	**1.5**	0.0			-	-	-	PFB	6
7	-	-	-	-			**1.5**	0.0	-	-	-	PFB	8
9	PFB	-	-	-	0.0	0.0			-	-	-	PFB	10
11	PFB	-	-	-			0.0	0.0	-	-	-	PFB	12
13	PFB	-	-	-	0.0	0.0			-	-	-	PFB	14
15	PFB	-	-	-			0.0	0.0	-	-	-	PFB	16
17	PFB	-	-	-	0.0	0.0			-	-	-	PFB	18
19	PFB	-	-	-			0.0	0.0	-	-	-	PFB	20
21	PFB	-	-	-	0.0	0.0			-	-	-	PFB	22
23	PFB	-	-	-			0.0	0.0	-	-	-	PFB	24
25	PFB	-	-	-	0.0	0.0			-	-	-	PFB	26
27	PFB	-	-	-			0.0	0.0	-	-	-	PFB	28
29	PFB	-	-	-	0.0	0.0			-	-	-	PFB	30
31	PFB	-	-	-			0.0	0.0	-	-	-	PFB	32
33	PFB	-	-	-	0.0	0.0			-	-	-	PFB	34
35	PFB	-	-	-			0.0	0.0	-	-	-	PFB	36
37	PFB	-	-	-	0.0	0.0			-	-	-	PFB	38
39	PFB	-	-	-			0.0	0.0	-	-	-	PFB	40
41	PFB	-	-	-	0.0	0.0			-	-	-	PFB	42
	CONNECTED LOAD PER PHASE					**1.9**		**2.9**					
												TOTAL CONNECTED LOAD (KVA)	**4.8**
												DEMAND FACTOR	**100%**
												TOTAL DEMAND LOAD (KVA)	**4.8**
												TOTAL DEMAND LOAD (AMPS)	**20.0**

PANEL SCHEDULE

NO SCALE



TYPICAL DUCT SECTION

DUCT AND WIRE SCHEDULE

NO.	DUCT SIZE	WIRE SIZE	DESTINATION/USE/DESCRIPTION
1	1"	2#12, 1#12 GND	BOAT LIFT

NOTES:
1. ALL CONCRETE ENCASED DUCTS SHALL BE SCHEDULE 40 PVC.
2. PC INDICATES PROVIDE PULLCORD.

ELEC - ELEC = 1 1/2"

ELEC - TEL = 3"

TEL - TEL = 1 1/2"

ELEC - CTL/SIG = 3"

TEL - CTL/SIG = 1 1/2"

PWR - CTL/SIG = 3"

ELEC - PWR = 3"

TEL - PWR = 3"

PWR - PWR = 1 1/2"

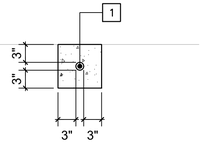
CTL/SIG - CTL/SIG = 1 1/2"

MINIMUM OF 3" CONCRETE ENCASEMENT AROUND DUCTLINE.

ELEC = UTILITY CO. PRIMARY OR SECONDARY ELECTRIC
TEL = UTILITY CO. TELEPHONE
PWR = PRIMARY OR SECONDARY ELECTRIC
CTL = CONTROL
SIG = INSTRUMENTATION OR ANTENNA CABLE

WHERE DUCTLINE CROSSES OVER WATER LINE, PROVIDE THE FOLLOWING:

1. 6" MINIMUM SEPARATION BETWEEN DUCTLINES AND WATER LINE.
2. PROVIDE CONCRETE ENCASEMENT AROUND DUCTLINES.
3. PROVIDE ONLY TYPE "B" BACKFILL AROUND WATER LINE.



SECTION (A)

DUCT SECTION DETAILS

REVISION	DATE	DESCRIPTION	BY	APPROVED

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HARBORS

JOB TITLE
NEW BOAT LIFT IMPROVEMENTS
PIER 1, HILO HARBOR, HAWAII

SHEET TITLE
MISCELLANEOUS DETAILS 1

SEY ITO JR. LICENSED PROFESSIONAL ENGINEER No. 12753-E HAWAII, U.S.A.

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KRAIG K. OTANI & ASSOCIATES, LLC

APRIL 30, 2028
LICENSE EXPIRATION DATE

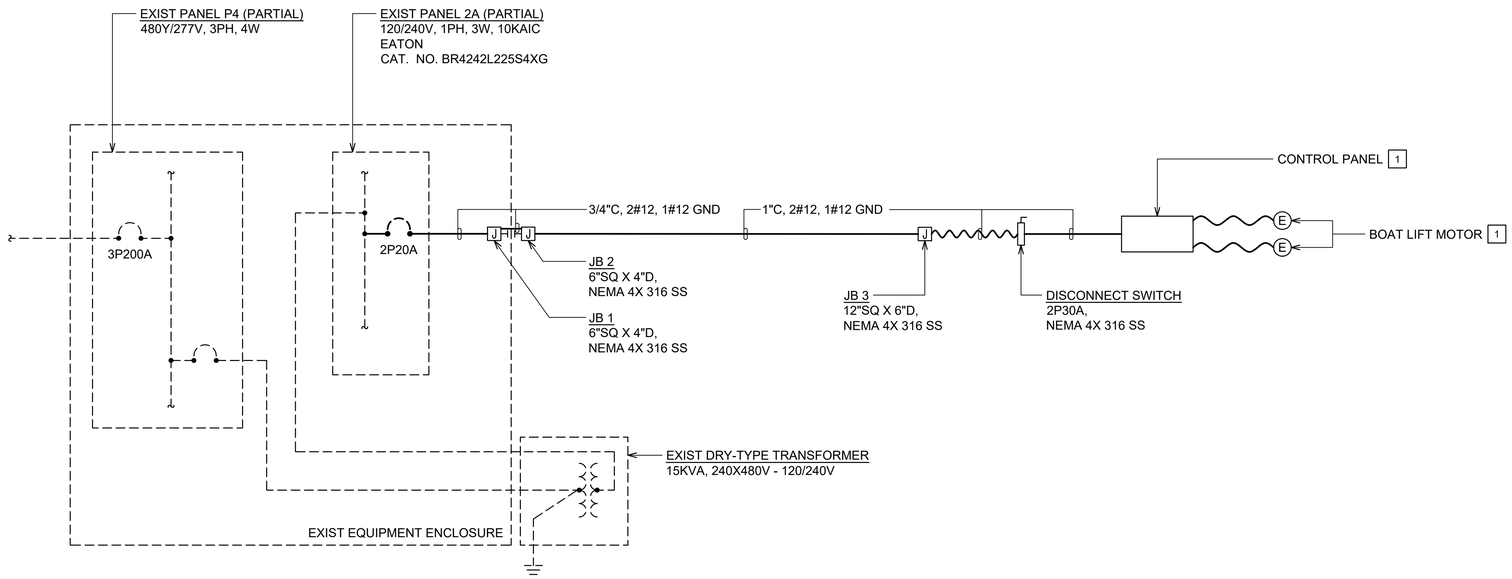
DESIGNED BY:	SU
DRAWN BY:	SU
CHECKED BY:	KKO
DATE:	APRIL 2026
SCALE:	AS SHOWN

JOB NUMBER: P50217

SHEET: E201
13 OF 14 SHTS.

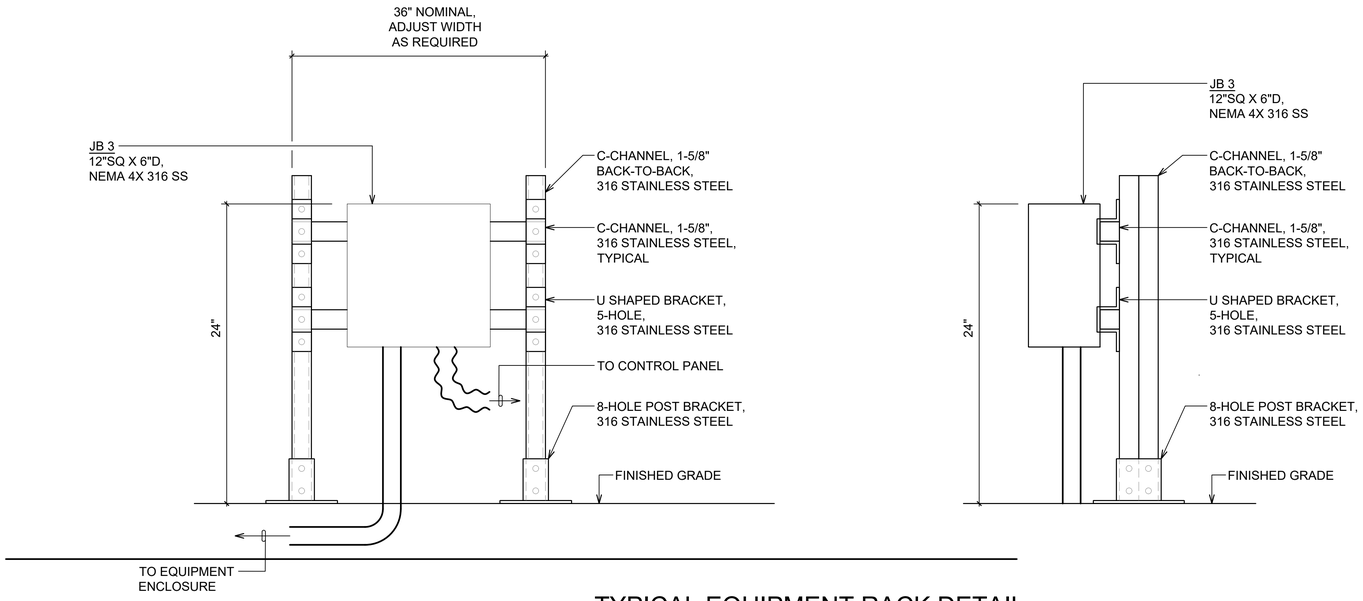
NOTE(S):

1 EQUIPMENT FURNISHED BY BOAT LIFT MANUFACTURER, INSTALLED BY ELECTRICAL



ONE-LINE DIAGRAM

SCALE: NONE



TYPICAL EQUIPMENT RACK DETAIL

NOT TO SCALE

REVISION	DATE	DESCRIPTION	BY	APPROVED

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HARBORS

JOB TITLE

NEW BOAT LIFT IMPROVEMENTS
PIER 1, HILO HARBOR, HAWAII

SHEET TITLE

MISCELLANEOUS DETAILS 2

SEY ITO JR.
LICENSED PROFESSIONAL ENGINEER
No. 12753-E
HAWAII, U.S.A.

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KRAIG K. OHANI & ASSOCIATES, LLC

APRIL 30, 2028
LICENSE EXPIRATION DATE

DESIGNED BY:	SU
DRAWN BY:	SU
CHECKED BY:	KKO
DATE:	APRIL 2026
SCALE:	AS SHOWN

JOB NUMBER: P50217

SHEET: E301
14 OF 14 SHTS.

Wed, 08 Apr 2026 - 12:42pm
C:\Users\SeyIto\Kraig K. Ohani and Associates\Projects - General\24030 HDOT New Boat Lift Improvs at Hilo Harbor\ACAD\E301-01-24030-det02.dwg