

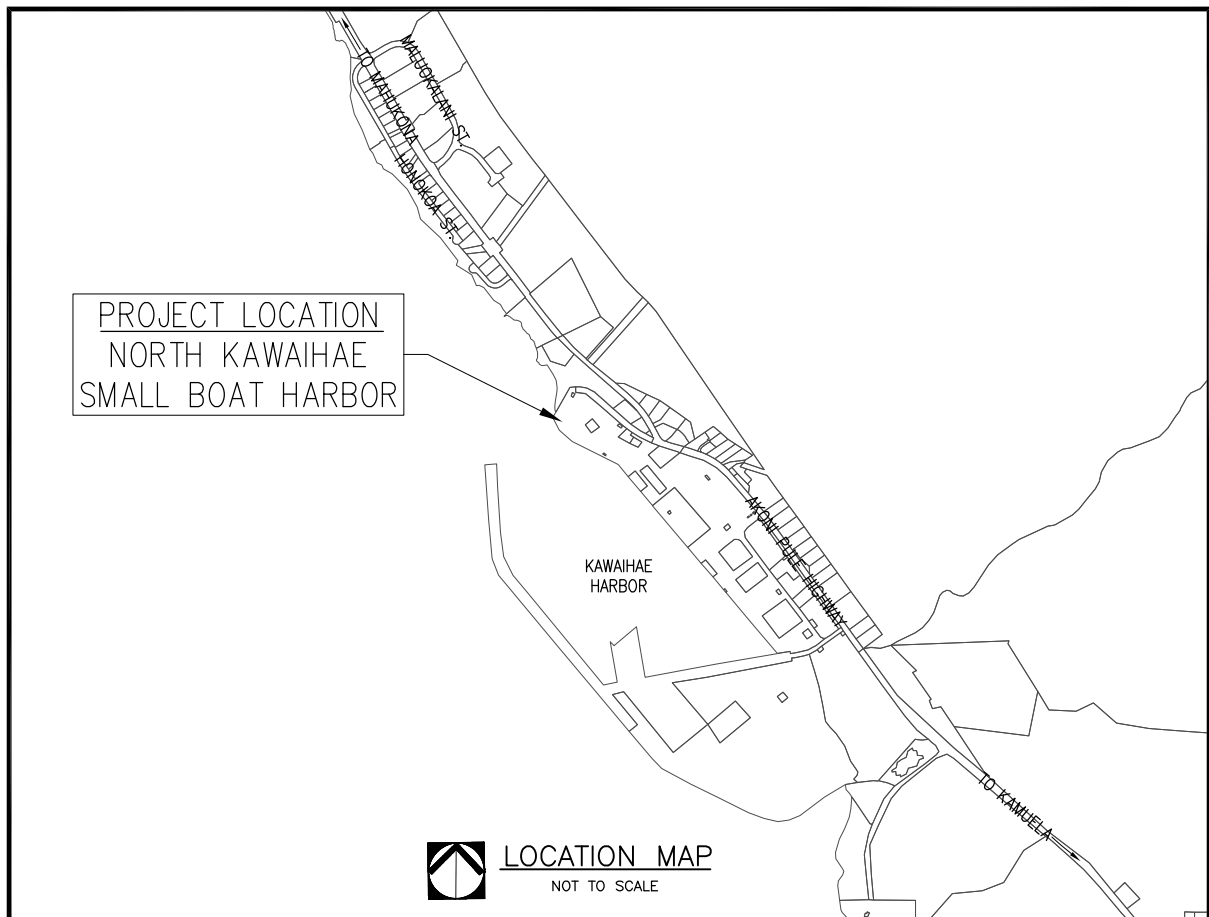
STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION  
DIVISION OF BOATING AND OCEAN RECREATION  
JOB NO. B10CH70B

**NORTH KAWAIHAE SMALL BOAT HARBOR  
INFRASTRUCTURE IMPROVEMENTS**

KAWAIHAE, ISLAND OF HAWAII, HAWAII

TMK: (3)-6-1-003:023

PREPARED BY:



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APPROVED:

May 18, 2020

EDWARD R. UNDERWOOD, ADMINISTRATOR  
DIVISION OF BOATING AND OCEAN RECREATION  
DEPARTMENT OF LAND AND NATURAL RESOURCES

DATE

DAVID YAMAMOTO, P.E., DIRECTOR  
DEPARTMENT OF PUBLIC WORKS  
(FOR GRADING PURPOSES ONLY)

DATE

**GENERAL CONSTRUCTION NOTES**

- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE "STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION", DATED SEPTEMBER 1984, "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION", DATED SEPTEMBER 1986, AS AMENDED, OF THE DEPARTMENT OF PUBLIC WORKS, COUNTY OF HAWAII, THE "HAWAII STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION", DEPARTMENT OF TRANSPORTATION, HIGHWAYS DIVISION, 2005, AND AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS, 3RD EDITION WITH 2010 INTERIM REVISIONS (AASHTO CONSTRUCTION SPECIFICATIONS), UNLESS INDICATED OTHERWISE IN THE PLANS, THESE NOTES, OR THE SPECIAL PROVISIONS. IN THE EVENT OF CONFLICTING PROVISIONS IN THE AASHTO CONSTRUCTION SPECIFICATIONS AND THE STATE STANDARD SPECIFICATIONS, THE STATE STANDARD SPECIFICATIONS SHALL APPLY.
- SURVEY OF MONUMENT STAKEOUT SHALL BE MADE BY REGISTERED LAND SURVEYORS.
- REGISTERED SURVEYORS SHALL SUBMIT A LETTER TO THE DEPARTMENT OF PUBLIC WORKS CERTIFYING THAT THE MONUMENTS STAKEOUT AND INSTALLATION IS CORRECT.
- THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, AND SHALL BE RESPONSIBLE FOR THE REPAIR OR REPLACEMENT OF SAME IN THE EVENT OF DAMAGES DUE TO HIS CONSTRUCTION PRACTICES. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THE RESPECTIVE UTILITY COMPANIES.
- THE CONTRACTOR SHALL MAINTAIN VEHICULAR AND PEDESTRIAN ACCESS TO EXISTING FACILITIES AT ALL TIMES AND SHALL SCHEDULE AND PROSECUTE HIS WORK IN SUCH A MANNER AS TO AVOID INTERRUPTION OF NORMAL ACTIVITIES AT THE EXISTING FACILITIES. THE CONTRACTOR SHALL PROVIDE EARLY NOTIFICATION OF AND OBTAIN APPROVAL FOR ANY ANTICIPATED INTERRUPTIONS. CONTRACTOR SHALL SUBMIT A CONSTRUCTION PHASING PLAN FOR APPROVAL PRIOR TO BEGINNING CONSTRUCTION. TEMPORARY SAFE PEDESTRIAN PASSAGEWAYS AROUND OR THROUGH A CONSTRUCTION SITE SHALL COMPLY WITH ADAAG SECTIONS 206.1 AND 402.1.
- THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL TRAFFIC CONTROL DEVICES IN CONFORMANCE WITH THE CURRENT VERSION OF THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS", AND TO THE SATISFACTION OF THE ENGINEER.
- EXCEPT DURING ACTUAL WORKING HOURS, ALL SIGNS WHICH DO NOT PERTAIN TO THE CONSTRUCTION ACTIVITY, SUCH AS "MEN WORKING" AND "FLAGMAN AHEAD" SHALL BE COVERED OR LAID DOWN. HOWEVER, ALL SIGNS NECESSARY FOR THE SAFETY OF THE PUBLIC SHALL BE MAINTAINED.
- NO CONSTRUCTION EQUIPMENT SHALL BE PARKED WITHIN THE ROAD RIGHT-OF-WAY IN SUCH A MANNER THAT THE EQUIPMENT WILL OBSTRUCT THE NORMAL MOVEMENT AND SIGHT DISTANCE OF THE DRIVING MOTORIST, EXCEPT DURING ACTUAL WORKING HOURS.
- ALL EXISTING PAVEMENTS, WALKS, UTILITIES, AND OTHER FACILITIES WHETHER SHOWN ON THE PLANS OR NOT, WHICH ARE DAMAGED BY THE CONTRACTOR SHALL BE RECONSTRUCTED OR REPLACED BY THE CONTRACTOR AT HIS OWN EXPENSE TO THE ORIGINAL UNDAMAGED CONDITION.
- NO TRENCHING SHALL BE LEFT OPEN FOR MORE THAN FIVE (5) WORKING DAYS. CONTRACTOR SHALL PROPERLY BARRICADE ALL OPEN TRENCHES DURING ALL PHASES OF CONSTRUCTION.
- EXISTING CONDITIONS ARE SHOWN TO THE BEST OF OUR KNOWLEDGE. DISCREPANCIES SHALL BE PROMPTLY REPORTED TO THE OWNER AND BE RESOLVED BEFORE PROCEEDING WITH THE WORK.
- PRIOR TO COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL UTILITIES, WHICH MAY BE AFFECTED BY HIS WORK. INTERFERENCE WITH THE STRUCTURE SHALL BE PROMPTLY REPORTED TO THE OWNER AND BE RESOLVED BEFORE PROCEEDING WITH THE WORK.
- SHOULD A DISCREPANCY OCCUR ON THE DRAWINGS BETWEEN ANY PROJECT SPECIAL NOTES/ SPECIAL DETAILS, AND THE TYPICAL SPECS/TYPICAL DETAILS, SAID SPECIAL NOTES/SPECIAL DETAILS SHALL TAKE PRECEDENCE.

**GRADING NOTES**

- ALL GRADING WORK SHALL CONFORM TO CHAPTER 10 OF THE HAWAII COUNTY CODE. SHOULD A GRADING PERMIT BE REQUIRED, NO WORK SHALL COMMENCE UNTIL THE DEPARTMENT OF PUBLIC WORKS APPROVES A GRADING PERMIT.
- THE CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS DEPOSITED IN DRAINAGE FACILITIES, ROADWAYS AND OTHER AREAS RESULTING FROM HIS WORK. THE COSTS INCURRED FOR ANY NECESSARY REMEDIAL ACTION BY THE OWNER SHALL BE PAYABLE BY THE CONTRACTOR.
- THE CONTRACTOR, AT HIS OWN EXPENSE, SHALL KEEP THE PROJECT AND SURROUNDING AREAS FREE FROM DUST NUISANCES. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION CONTROL RULES OF THE STATE DEPARTMENT OF HEALTH, HAR 11-60.1. FUGITIVE DUST.

**GRADING NOTES (CONT.)**

- ALL GRADING OPERATIONS SHALL BE PERFORMED IN CONFORMANCE WITH THE APPLICABLE PROVISIONS OF THE HAWAII ADMINISTRATIVE RULES, TITLE 11, CHAPTER 55, WATER POLLUTION CONTROL AND CHAPTER 54, WATER QUALITY STANDARDS, AND TO THE EROSION AND SEDIMENTATION CONTROL STANDARDS AND GUIDELINES OF THE DEPARTMENT OF PUBLIC WORKS, COUNTY OF HAWAII.
- THE CONTRACTOR SHALL INFORM THE DEPARTMENT OF PUBLIC WORKS OF THE LOCATIONS OF THE DISPOSAL AND/OR BORROW SITE(S) REQUIRED FOR THIS PROJECT WHEN AN APPLICATION FOR A GRADING PERMIT IS MADE. THE DISPOSAL AND/OR BORROW SITE(S) MUST ALSO FULFILL THE REQUIREMENTS OF THE GRADING ORDINANCE.
- NO GRADING WORK SHALL BE DONE ON SATURDAYS, SUNDAYS AND HOLIDAYS ANYTIME WITHOUT PRIOR APPROVAL FROM THE OWNER. GRADING WORK ON NORMAL WORKING DAYS SHALL BE BETWEEN THE HOURS OF 7:00 AM TO 3:30 PM.
- FILLS FOR ROADWAY SHALL BE COMPACTED TO 90 PERCENT (90%) OF MAXIMUM DENSITY PER ASTM D1557 TEST.
- THE CONTRACTOR SHALL VERIFY ALL LINES, LEVELS, ELEVATIONS, AND IMPROVEMENTS INDICATED ON THE DRAWINGS BEFORE ANY CLEARING, EXCAVATION OR CONSTRUCTION BEGINS. ANY DISCREPANCY SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER AND ANY CHANGE SHALL BE MADE IN ACCORDANCE WITH HIS INSTRUCTION. STARTING OF CLEARING AND GRUBBING OPERATIONS SHALL BE CONSTRUED TO MEAN THAT THE CONTRACTOR AGREES THAT THE EXISTING GRADES AND IMPROVEMENTS ARE ESSENTIALLY CORRECT AS SHOWN. THE CONTRACTOR SHALL NOT BE ENTITLED TO EXTRA PAYMENT IF EXISTING GRADES AND IMPROVEMENTS ARE IN ERROR AFTER HIS VERIFICATION THEREOF, OR IF HE FAILS TO REPORT THE DISCREPANCIES BEFORE PROCEEDING WITH ANY WORK WHETHER WITHIN AREA AFFECTED OR NOT.
- THE CONTRACTOR SHALL REMOVE ALL VEGETATION BEFORE THE PLACING OF FILLS ON A NATURAL GROUND SURFACE.

ESTIMATED EARTHWORK QUANTITIES  
 TOTAL RAW CUT = 3,050 C.Y.  
 TOTAL RAW FILL = 2,893 C.Y.  
 TOTAL AREA TO BE GRADED = 63,000 SQ. FT.

**NOTES:**

- THE QUANTITIES SHOWN ARE FOR GRADING PERMIT PURPOSES ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE TO DETERMINE THE EXACT QUANTITIES FOR BIDDING PURPOSES.
- NO ADJUSTMENT FACTOR IS APPLIED TO THE RAW CUT/FILL QUANTITIES.
- EARTHWORK QUANTITIES SHOWN WERE TAKEN FROM EXISTING GROUND TO FINISH GRADE.
- CONTRACTOR / BIDDER SHALL NOT USE THE EARTHWORK QUANTITIES SHOWN ABOVE FOR BIDDING PURPOSES. REGARDLESS OF THE CUT AND FILL EARTHWORK QUANTITIES SHOWN ABOVE, THE CONTRACTOR IS RESPONSIBLE TO IMPORT OR EXPORT ALL NECESSARY MATERIALS TO COMPLETE THE GRADING WORK AT NO ADDITIONAL COST TO THE OWNER.

**EROSION / TEMPORARY DUST CONTROL NOTES**

- DURING CONSTRUCTION, PREVENTIVE MEASURES SHALL BE USED TO CONTROL FORSEEABLE DUST, EROSION OR SEDIMENTATION PROBLEMS WHICH MAY ARISE AS THE JOB PROGRESSES.
- DRAINAGE SYSTEMS AS SHOWN ON THE CONSTRUCTION PLANS SHALL BE CONSTRUCTED AS EARLY AS PRACTICALLY POSSIBLE.
- THE CONTRACTOR SHALL CONDUCT HIS GRADING OPERATIONS SO THAT EXCAVATION, EMBANKMENT, AND IMPORTED MATERIAL SHALL BE DAMPENED WITH WATER DURING HIS GRADING OPERATIONS AT ALL TIMES.
- WATER TRUCK AND/OR TEMPORARY SPRINKLERS SHALL BE AVAILABLE ON THE JOBSITE AT ALL TIMES TO ENSURE BARE EARTH DOES NOT CREATE DUST PROBLEMS. HOWEVER, DUST CONTROL WATERING SHALL NOT BE EXCESSIVE SO THAT RUNOFF WILL NOT BE GENERATED FROM WATERING.
- FUGITIVE DUST AND SOLID WASTE DISPOSAL DURING GRUBBING AND GRADING ACTIVITIES SHALL MEET REQUIREMENTS OF ADMINISTRATIVE RULES, TITLE 11, CHAPTER 60, AIR POLLUTION CONTROL AND CHAPTER 58, SOLID WASTE MANAGEMENT CONTROL.

**CONCRETE NOTES (FOR SITE CONCRETE ONLY)**

- ALL CONCRETE UNLESS OTHERWISE NOTED SHALL BE REGULAR WEIGHT HARD ROCK TYPE (150 LB/CU. FT.)
- ALL PHASES OF WORK PERTAINING TO THE CONCRETE CONSTRUCTION SHALL CONFORM TO THE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI 318) WITH MODIFICATION AS NOTED IN THE DRAWINGS OR SPECIFICATIONS.
- ALL CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4,000 PSI.

**CONCRETE NOTES (FOR SITE CONCRETE ONLY)**

- PORTLAND CEMENT SHALL CONFORM TO ASTM C-150 TYPE II.
- AGGREGATE FOR HARDROCK CONCRETE SHALL CONFORM TO ALL REQUIREMENTS AND TESTS OF ASTM C-33 AND PROJECT SPECIFICATIONS.
- CONCRETE MIXES SHALL BE DESIGNED BY A QUALIFIED TESTING LABORATORY AND SHALL BE SUBMITTED TO THE ENGINEER FOR HIS REVIEW.
- CONCRETE MIXING OPERATION, ETC. SHALL CONFORM TO ASTM C94.
- PLACEMENT OF CONCRETE SHALL CONFORM TO ACI STANDARD 301 AND PROJECT SPECIFICATIONS.
- UNLESS OTHERWISE NOTED ON THE PLANS, MINIMUM CLEAR CONCRETE PROTECTION FOR REINFORCEMENT SHALL BE PROVIDED AS FOLLOWS:  
CAST-IN-PLACE CONCRETE: 3"
- ALL REINFORCING BARS, ANCHOR BOLTS AND OTHER CONCRETE INSERTS SHALL BE WELL SECURED IN POSITION PRIOR TO PLACING CONCRETE.
- PROJECTING CORNERS OF BEAMS, WALLS, COLUMNS, EQUIPMENT PADS, ETC. SHALL BE FORMED WITH 3/4" CHAMFER, UNLESS OTHERWISE NOTED ON ARCHITECTURAL DRAWINGS.
- PROVIDE SLEEVES FOR PLUMBING AND ELECTRICAL OPENINGS IN CONCRETE BEFORE PLACING. DO NOT CUT ANY REINFORCING WHICH MAY CONFLICT. CORING IN CONCRETE IS NOT PERMITTED EXCEPT AS SHOWN. NOTIFY THE ENGINEER IN ADVANCE OF CONDITIONS NOT SHOWN ON THE DRAWINGS.
- CONDUIT OR PIPE SIZE (O.D.) THAT IS BURIED IN ANY CONCRETE SLABS SHALL NOT EXCEED 25 PERCENT OF SLAB THICKNESS AND SHALL BE PLACED BETWEEN THE TOP AND BOTTOM REINFORCING UNLESS SPECIFICALLY DETAILED OTHERWISE. CONCENTRATIONS OF CONDUITS OR PIPES SHALL BE AVOIDED EXCEPT WHERE DETAILED OPENINGS ARE PROVIDED.
- THE CONCRETE SLAB THICKNESS SHALL BE MAINTAINED AS A MINIMUM UNLESS OTHERWISE SHOWN.
- PROVIDE TWO-WEEK SCHEDULES SHOWING EXPECTED CONCRETE POUR LOCATIONS AND TIMES. NOTIFY ENGINEER AND SPECIAL INSPECTOR 48 HOURS PRIOR TO ANY CONCRETE POUR IF DIFFERENT THAN ON THE TWO-WEEK SCHEDULE.

**REINFORCING STEEL (FOR SITE CONCRETE ONLY)**

- ALL REINFORCING STEEL SHALL BE DETAILED AND PLACED IN CONFORMANCE WITH THE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI 318), THE CRSI "MANUAL OF STANDARD PRACTICE", AND THE "ACI DETAILING MANUAL-1994" (SP-66) AS MODIFIED BY THE PROJECT DRAWINGS AND SPECIFICATIONS.
- REINFORCING BARS SHALL CONFORM TO ASTM 1035, CHROMX 4100 OR APPROVED EQUAL.
- ANCHOR BOLTS, DOWELS AND OTHER EMBEDDED ITEMS ARE TO BE SECURELY TIED IN PLACE BEFORE CONCRETE IS POURED.
- ALL REINFORCING BAR BENDS SHALL BE MADE COLD.
- REINFORCING SPLICES SHALL BE MADE ONLY WHERE INDICATED ON THE DRAWINGS.
- DOWELS BETWEEN FOOTING AND WALL OR COLUMNS SHALL BE THE SAME GRADE, SIZE, SPACING, AND NUMBER AS THE VERTICAL REINFORCING RESPECTIVELY, UNLESS OTHERWISE NOTED.
- WELDING OF REINFORCING STEEL IS NOT PERMITTED UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
- CONTRACTOR SHALL SUBMIT REINFORCING BAR LAYOUTS AND DETAILS FOR THE ENGINEER'S REVIEW PRIOR TO FABRICATION. FABRICATE FROM REVIEWED DRAWINGS ONLY.
- REINFORCING BARS SHALL BE AS LONG AS PRACTICABLE AND AS DETAILED AND SHALL BE LAPPED AT SPLICES AND CORNERS NOT LESS THAN 32 BAR DIAMETER (24" MINIMUM), UNLESS OTHERWISE SHOWN. STAGGER HORIZONTAL WALL BAR SPLICES. IN GENERAL, BAR SPLICES SHALL BE MADE AT POINTS OF MINIMUM STRESS. IN BEAMS AND SLABS, SPLICE TOP BARS AT MID-SPAN, BOTTOM BARS OVER SUPPORTS, UNLESS OTHERWISE SHOWN.
- EMBEDDED METAL COMPONENTS MADE UP OF ALLOYS THAT ARE DISSIMILAR TO THAT OF THE REINFORCING STEEL SHALL NOT BE ATTACHED DIRECTLY TO REINFORCING. MEASURES SHALL BE TAKEN TO ELECTRICALLY ISOLATE SAID COMPONENTS FROM ANY REINFORCING TO PREVENT CATHODIC EFFECTS.


**BEST MANAGEMENT PRACTICES**

- THE CONTRACTOR SHALL IMPLEMENT STANDARD BEST MANAGEMENT PRACTICES (BMPs), INCLUDING THE ABILITY TO CONTAIN AND MINIMIZE SILT IN NEAR SHORE WATERS AND CLEAN UP FUEL, FLUID OR OIL SPILLS IMMEDIATELY.
- EQUIPMENT WILL NOT BE REFUELED IN THE SHORELINE AREA. IF VISIBLE PETROLEUM, PERSISTENT TURBIDITY OR OTHER UNUSUAL SUBSTANCES ARE OBSERVED IN THE WATER AS A RESULT OF THE PROPOSED OPERATION, ALL WORK MUST CEASE IMMEDIATELY TO ASCERTAIN THE SOURCE OF THE SUBSTANCE.
- SAND PLACEMENT AND GRADING WORK SHALL TAKE PLACE AT LOW TIDE AND UNDER LOW WAVE CONDITIONS TO MINIMIZE SAND LOSS AND TURBIDITY.
- THE CONTRACTOR SHALL ENSURE THAT EXCESSIVE SILTATION AND TURBIDITY IS CONTAINED OR OTHERWISE MINIMIZED TO THE SATISFACTION OF ALL APPROPRIATE AGENCIES, THROUGH SILT CONTAINMENT DEVICES OR BARRIERS, HIGH SAND QUALITY AND SELECTIVE SAND PLACEMENT.
- ALL PLACED MATERIAL SHALL BE FREE OF CONTAMINANTS OF ANY KIND INCLUDING EXCESSIVE SILT, SLUDGE, ANOXIC OR DECAYING ORGANIC MATTER; TURBIDITY, TEMPERATURE OR ABNORMAL WATER CHEMISTRY; CLAY, DIRT, ORGANIC MATERIAL, OIL, FLOATING DEBRIS, GREASE OR FOAM; OR ANY OTHER POLLUTANT THAT WOULD PRODUCE AN UNDESIRABLE CONDITION TO THE BEACH OR WATER QUALITY.
- WHERE ANY INTERFERENCE, NUISANCE, OR HARM MAY BE CAUSED, OR HAZARD ESTABLISHED BY THE PROPOSED MEASURES, THE CONTRACTOR SHALL TAKE MEASURES TO MINIMIZE OR ELIMINATE THE INTERFERENCE, NUISANCE, HARM OR HAZARD.
- THE CONSTRUCTION ACTIVITY SHALL NOT ADVERSELY AFFECT A FEDERALLY LISTED THREATENED OR ENDANGERED SPECIES OR A SPECIES PROPOSED FOR SUCH DESIGNATION, OR DESTROY OR ADVERSELY MODIFY ITS DESIGNATED CRITICAL HABITAT.
- THE CONSTRUCTION ACTIVITY SHALL NOT SUBSTANTIALLY DISRUPT THE MOVEMENT OF THOSE SPECIES OF AQUATIC LIFE INDIGENOUS TO THE AREA, INCLUDING THOSE SPECIES, WHICH NORMALLY MIGRATE THROUGH THE AREA.
- NO CONTAMINATION OF THE MARINE OR COASTAL ENVIRONMENT (TRASH OR DEBRIS) SHALL RESULT FROM PROJECT-RELATED ACTIVITIES.
- NO MOTORIZED CONSTRUCTION EQUIPMENT IS TO BE OPERATED IN THE WATER AT ANY TIME.

**HISTORIC PRESERVATION NOTES**

- SHOULD HISTORIC REMAINS SUCH AS ARTIFACTS, BURIALS, CONCENTRATIONS OF SHELL OR CHARCOAL BE ENCOUNTERED DURING CONSTRUCTION ACTIVITIES, WORK SHALL CEASE IMMEDIATELY IN THE IMMEDIATE VICINITY OF THE FIND, AND THE FIND SHALL BE PROTECTED FROM FURTHER DAMAGE. THE CONTRACTOR SHALL CORDON OFF THE AREA AND IMMEDIATELY NOTIFY THE PLANNING DEPARTMENT AT (808) 241-4050 AND THE STATE HISTORIC PRESERVATION DIVISION AT (808) 692-8015, WHO WILL ASSESS THE SIGNIFICANCE OF THE FIND AND RECOMMEND THE APPROPRIATE MITIGATION MEASURES, IF NECESSARY.

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
		STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES DIVISION OF BOATING AND OCEAN RECREATION			
		NORTH KAWAIIHAE SMALL BOAT HARBOR INFRASTRUCTURE IMPROVEMENTS			
<b>NOTES</b>					
DESIGNED: GT		SUBMITTED:			
DRAWN: GT/CT		DATE: MAY 2020			
CHECKED: DV		SCALE: NONE			
APPROVED:				DRAWING NO.	
ADMINISTRATOR		DATE		<b>T-2</b>	



I HEREBY CERTIFY THAT THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

Signature: *[Signature]* Expiration date of the license: 04/30/20

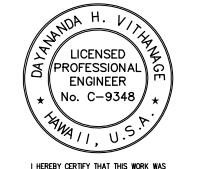
**WATER POLLUTION AND EROSION CONTROL NOTES**

1. GENERAL:
  - A. THE CONTRACTOR IS REMINDED OF THE REQUIREMENTS OF SECTION 209-WATER POLLUTION AND EROSION CONTROL, IN THE "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" 2005 AS AMENDED. SECTION 209 DESCRIBES BUT IS NOT LIMITED TO: SUBMITTAL REQUIREMENTS; SCHEDULING OF A WATER POLLUTION AND EROSION CONTROL CONFERENCE WITH THE ENGINEER; CONSTRUCTION REQUIREMENTS; METHOD OF MEASUREMENT; AND BASIS OF PAYMENT. NO WORK SHALL COMMENCE WITHOUT A BMP PLAN APPROVED BY THE DEPARTMENT OF HEALTH.
  - B. ALL WORK SHALL BE IN ACCORDANCE WITH CHAPTER 10 - EROSION AND SEDIMENTATION CONTROL, OF THE HAWAII COUNTY CODE, AND AS SHOWN ON THE APPROVED PLANS.
  - C. THE CONTRACTOR SHALL KEEP A COPY OF THE APPROVED BMP, NOI, ETC. ON THE PROJECT SITE. THE BMP SHALL BE UPDATED TO REFLECT ANY CHANGES MADE DURING THE COURSE OF CONSTRUCTION FOR THE DURATION OF THE PROJECT.
  - D. THE ENGINEER MAY ASSESS LIQUIDATED DAMAGES OF UP TO \$27,500 FOR NONCOMPLIANCE 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.
  - E. THE ENGINEER MAY DEDUCT THE COST FROM THE PROGRESS PAYMENT FOR ALL CITATIONS RECEIVED BY THE DEPARTMENT FOR NON COMPLIANCE, OR THE CONTRACTOR SHALL REIMBURSE THE STATE, AND/OR COUNTY FOR THE FULL AMOUNT OF THE OUTSTANDING COST INCURRED BY THE STATE, WHICHEVER IS GREATER.
2. WASTE DISPOSAL:
  - A. WASTE MATERIALS: ALL WASTE MATERIALS SHALL BE COLLECTED AND STORED IN A SECURELY LIDDED METAL DUMPSTER THAT DOES NOT BREAK/LEAK. 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 OFTEN AS IS DEEMED NECESSARY. NO CONSTRUCTION WASTE MATERIALS SHALL BE BURIED ONSITE. 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 AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR SEE THAT THESE PROCEDURES ARE FOLLOWED.
  - B. SANITARY WASTE: ALL SANITARY WASTE SHALL BE COLLECTED FROM THE PORTABLE UNITS A MINIMUM OF ONCE PER WEEK, OR AS REQUIRED.
3. EROSION AND SEDIMENT CONTROL INSPECTION AND MAINTENANCE PRACTICES:
  - A. ALL CONTROL MEASURES SHALL BE INSPECTED AT LEAST ONCE EACH WEEK AND WITHIN 24 HOURS FOLLOWING ANY RAINFALL OF 0.5 INCHES OR GREATER.
  - B. ALL MEASURES SHALL BE MAINTAINED IN GOOD WORKING ORDER. IF REPAIR IS NECESSARY, IT SHALL BE INITIATED WITHIN 24 HOURS AFTER THE INSPECTION.
  - C. BUILT UP SEDIMENT SHALL BE REMOVED FROM SILT BARRIER, WHEN IT HAS REACHED ONE-THIRD THE HEIGHT OF THE BARRIER.
  - D. SILT BARRIER SHALL BE INSPECTED FOR DEPTH OF SEDIMENT, TEARS, TO VERIFY THAT THE FABRIC IS SECURED TO THE SANDBAGS.
  - E. TEMPORARY AND PERMANENT SEEDING AND PLANTING SHALL BE INSPECTED FOR BARE SPOTS, WASH OUTS AND HEALTHY GROWTH.
  - F. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER A MAINTENANCE INSPECTION REPORT PROMPTLY AFTER EACH WEEKLY INSPECTION.
  - G. THE CONTRACTOR SHALL SELECT A MINIMUM OF THREE PERSONNEL WHO SHALL BE RESPONSIBLE FOR INSPECTIONS, MAINTENANCE AND REPAIR ACTIVITIES AND FILLING OUT THE INSPECTION AND MAINTENANCE REPORT.
  - H. 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 CONDITIONS.
  - I. ALL SLOPES AND EXPOSED AREAS SHALL BE GRASSED AS FINAL GRADES HAVE BEEN ESTABLISHED, GRADING TO FINAL GRADE SHALL BE CONTINUOUS, AND ANY AREA IN WHICH WORK HAS BEEN INTERRUPTED OR DELAYED OR EXPOSED FOR MORE THAN 15 DAYS SHALL BE GRASSED IN ORDER TO PREVENT DUST, EROSION AND SILT RUNOFF. AREAS WITH IMPORTED SOILS SHALL BE GRASSED NOT MORE THAN 5 WORKING DAYS AFTER THE FINAL GRADES HAVE BEEN ESTABLISHED.
  - J. TEMPORARY EROSION CONTROLS SHALL NOT BE REMOVED BEFORE PERMANENT EROSION CONTROLS ARE IN PLACE AND ESTABLISHED.

**WATER POLLUTION AND EROSION CONTROL NOTES (CONT'D)**

4. GOOD HOUSEKEEPING BEST MANAGEMENT PRACTICES  
MATERIALS POLLUTION PREVENTION PLAN:
  - A. APPLICABLE MATERIALS OR SUBSTANCES LISTED BELOW ARE EXPECTED TO BE PRESENT ONSITE DURING CONSTRUCTION. OTHER MATERIALS AND SUBSTANCES NOT LISTED BELOW SHALL BE ADDED TO THE INVENTORY OF THE CONSTRUCTION CONTRACTOR'S SITE-SPECIFIC BMP PLAN.
 

CONCRETE	FERTILIZERS
DETERGENTS	PETROLEUM BASED PRODUCTS
PAINTS (ENAMEL AND LATEX)	CLEANING SOLVENTS
METAL STUDS	WOOD
TAR	MASONRY BLOCK
  - 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 PRODUCTS 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.
  - E. SUBSTANCES SHALL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER.
  - F. 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 A DAILY INSPECTION TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS ONSITE.
5. HAZARDOUS MATERIAL POLLUTION PREVENTION PLAN:
  - A. PRODUCTS SHALL BE KEPT IN ORIGINAL CONTAINERS UNLESS THEY ARE NOT REUSABLE.
  - B. ORIGINAL LABELS AND MATERIAL SAFETY DATA SHEETS (MSDS) SHALL BE RETAINED AND MADE AVAILABLE TO THE ENGINEER UPON REQUEST.
  - C. SURPLUS PRODUCTS SHALL BE DISPOSED OF ACCORDING TO MANUFACTURER'S INSTRUCTIONS OR LOCAL AND STATE RECOMMENDED ACTIONS.
6. ONSITE AND OFFSITE PRODUCTS SPECIFIC PLANS:
  - A. PETROLEUM BASED PRODUCTS: ALL ONSITE VEHICLES 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 ONSITE SHALL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATION.

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES DIVISION OF BOATING AND OCEAN RECREATION NORTH KAWAIIHAE SMALL BOAT HARBOR INFRASTRUCTURE IMPROVEMENTS NOTES					
		I HEREBY CERTIFY THAT THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.			
DESIGNED: GT/CT		SUBMITTED:			
DRAWN: AK/CT		DATE: MAY 2020			
CHECKED: DV		SCALE: NONE			
APPROVED: _____					DRAWING NO.
ADMINISTRATOR _____					DATE _____
					<b>T-3</b>

**ABBREVIATIONS:**

AC ASPHALT CONCRETE  
 ACP ASBESTOS CONCRETE PIPE  
 AD AMERICANS WITH DISABILITIES ACT  
 AL ALUMINUM  
 & AND  
 APPROX APPROXIMATE  
 ARV AIR RELEASE VALVE  
 @ AT  
 AWWA AMERICAN WATERWORKS ASSOCIATION

BAS BOTTOM ARMOR STONE  
 BC AGGREGATE BASE COURSE  
 ☉ BASELINE  
 BB BOTTOM BANK  
 BLDG BUILDING  
 BLK BLOCK  
 BM BENCH MARK  
 BMP BEST MANAGEMENT PRACTICES  
 BOT BOTTOM  
 BSA BOTTOM SPLASH APRON  
 BV BOTTOM VERTICAL  
 BVC BEGIN VERTICAL CURVE  
 BW BOTTOM WALL

Ch CHORD  
 ☉ CENTERLINE  
 CA CENTRAL ANGLE  
 CB CATCH BASIN  
 CF CUBIC FEET  
 CFS CUBIC FEET PER SECOND  
 CH CHORD LENGTH (CURVE)  
 CMP CORRUGATED METAL PIPE  
 CMU CONCRETE MASONRY UNIT  
 CNO "CANNOT OPEN"  
 CONC CONCRETE  
 CONN CONNECT  
 CONSTR CONSTRUCTION  
 CONT CONTINUOUS, CONTINUATION  
 CONT'D CONTINUED  
 CP CONTROL POINT  
 CRM CONCRETE RUBBLE MASONRY  
 CSP CORRUGATED STEEL PIPE  
 CU COPPER  
 CY CUBIC YARD

D= APPROXIMATE DIAMETER  
 Ø, DIA DIAMETER  
 DET DETAIL  
 DI DUCTILE IRON  
 DIP DUCTILE IRON PIPE  
 DL DRAINLINE  
 DMH DRAIN MANHOLE  
 DPW DEPARTMENT OF PUBLIC WORKS  
 DWG(S) DRAWING(S)  
 D/W DRIVEWAY

E EAST, EASTING  
 EA EACH  
 EC END CURVE  
 ECP EDGE OF CONCRETE PAVEMENT  
 EF EACH FACE  
 EG EXISTING GROUND  
 ELEC ELECTRIC, ELECTRICAL  
 ELEV, EL ELEVATION  
 EMB EMBANKMENT  
 EMH ELECTRIC MANHOLE  
 EOW EDGE OF WATER  
 EP EDGE OF PAVEMENT, ELECTRIC POLE  
 EPB ELECTRIC PULLBOX  
 ER EDGE OF ROAD  
 EVC END VERTICAL CURVE  
 EW EACH WAY  
 EXC EXCAVATION  
 EXIST, EX EXISTING  
 EXP JT EXPANSION JOINT  
 EQ EQUAL

FB FIELD BOOK  
 FE FLANGE END  
 FG FINISH GRADE  
 FH FIRE HYDRANT  
 FIN FINISH  
 FL FLOW LINE  
 FS FINISHED SURFACE  
 FT FEET

G,GR,GRD GRADE, GROUND  
 GI GALVANIZED IRON  
 GALV GALVANIZED  
 GB GRADE BREAK  
 GMH GAS MANHOLE  
 GP GATE POST  
 GRND GROUND  
 GRP GROUTED RUBBLE PAVING  
 GRVL GRAVEL  
 GS GALVANIZED STEEL  
 GUY GUY WIRE ANCHOR

**ABBREVIATIONS (CONT'D)**

H HEIGHT, HIGH, HORIZONTAL  
 H= APPROXIMATE HEIGHT  
 HBV HORIZONTAL BOTTOM VERTICAL  
 HDWL HEADWALL  
 HDPE HIGH DENSITY POLYETHYLENE  
 HOR, HORIZ HORIZONTAL  
 HP HIGH POINT  
 HR HOUR  
 HTV HORIZONTAL TOP VERTICAL

ID INSIDE DIAMETER  
 IE THAT IS  
 IN INCH (ES)  
 INV INVERT  
 IP IRON PIPE  
 K RATE OF CURVATURE  
 KV KILO-VOLT  
 L LEFT, LENGTH  
 LB POUND  
 Lc LENGTH OF CURVE (CURVE LENGTH)  
 LF LINEAR FEET  
 LP LOW POINT  
 Lt LEFT

M&O MAINTENANCE AND OPERATION  
 MAX MAXIMUM  
 MHHW MEAN HIGHER HIGH WATER  
 MIN MINIMUM  
 MJ MECHANICAL JOINT  
 MLLW MEAN LOWER LOW WATER  
 MON MONUMENT  
 MRP MORTARED RUBBLE PAVING  
 MSL MEAN SEA LEVEL  
 N NORTHING  
 NIC NOT IN CONTRACT  
 NTS NOT TO SCALE

OC ON CENTER  
 OD OUTSIDE DIAMETER  
 OH OVERHEAD  
 OS, O/S OFFSET  
 PAVT PAVEMENT  
 PC, POC POINT OF CURVATURE  
 PCC POINT OF COMPOUND CURVE, PORTLAND CEMENT CONCRETE  
 PFC POUNDS PER CUBIC FOOT  
 % PERCENT  
 PH PHONE  
 PI POINT OF INTERSECTION  
 PK PARKER-KALON FASTENER  
 PL PLATE  
 PM POST MERIDIAN  
 PNE PINE  
 PNRS PROJECT NOTIFICATION & REVIEW SYSTEM  
 PP POWER POLE  
 PRC POINT OF REVERSE CURVE  
 PRVC POINT OF REVERSE VERTICAL CURVE  
 PT POINT OF TANGENCY, POINT  
 PVI POINT OF VERTICAL INTERSECTION  
 PVC POLYVINYL CHLORIDE, POINT ON VERTICAL CURVE  
 PSF POUNDS PER SQUARE FOOT  
 PSI POUNDS PER SQUARE INCH

R RADIUS  
 RC REINFORCED CONCRETE  
 RCJ REINFORCED CONCRETE JACKET  
 RCP REINFORCED CONCRETE PIPE  
 RD ROAD  
 REINF REINFORCEMENT  
 REF REFERENCE  
 REQD REQUIRED  
 RP ROYAL PALM  
 RPM RAISED PAVEMENT MARKER  
 RT RIGHT  
 ROW RIGHT-OF-WAY

S= APPROXIMATE SIZE, SLOPE  
 SCHED SCHEDULE  
 SDFPWC STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION- SEP 1984  
 SF SQUARE FEET (FOOT)  
 SHLDR SHOULDER  
 SHT(S) SHEET(S)  
 SLP, S SLOPE  
 SIM SIMILAR  
 SMH SEWER MANHOLE  
 STD STANDARD  
 STA STATION  
 SWL SWALE  
 SW SIDEWALK  
 SY SQUARE YARD  
 SYMM SYMMETRICAL

**ABBREVIATIONS (CONT'D)**

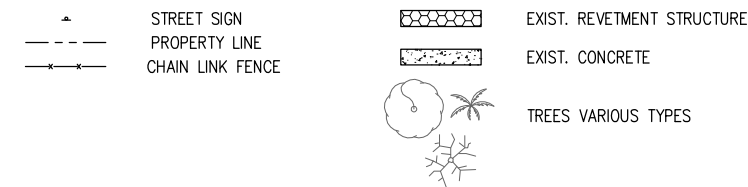
TAS TOP ARMOR STONE  
 T TANGENT, TELEPHONE  
 TB TOP BANK  
 TC TOP CONCRETE  
 TCP TRAFFIC CONTROL PLAN  
 TEL TELEPHONE  
 THK THICK  
 THRD,THD THREAD  
 TMH TELEPHONE MANHOLE  
 TP TOP PAVEMENT  
 TR TOP RIPRAP  
 TS= TOP STEM=  
 TSA TOP SPLASH APRON  
 TUS TOP UNDERLAYER STONE  
 TV= TOP VALVE=  
 TV TOP VERTICAL  
 TW TOP WALL  
 TYP TYPICAL

UON UNLESS OTHERWISE NOTED  
 US UNITED STATES

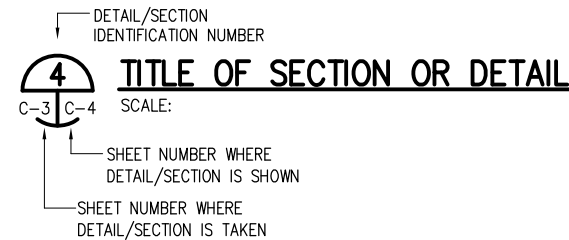
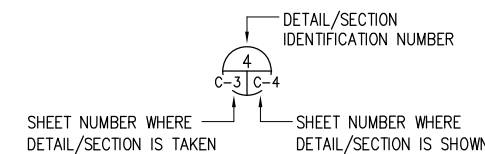
VAR. VARIABLE, VARIOUS  
 VIF VERIFY IN FIELD  
 V,VER,VERT VERTICAL  
 VC VERTICAL CURVE  
 VPC,VPI,VPT VERTICAL POINT OF CURVATURE, INTERSECTION, TANGENCY

W WIDTH  
 W/ WITH  
 WL WATERLINE  
 WMH WATER MANHOLE  
 WP WORK POINT  
 WSE WATER SURFACE ELEVATION  
 WTR WATER  
 WV WATER VALVE  
 W/W WALKWAY


**LEGEND**

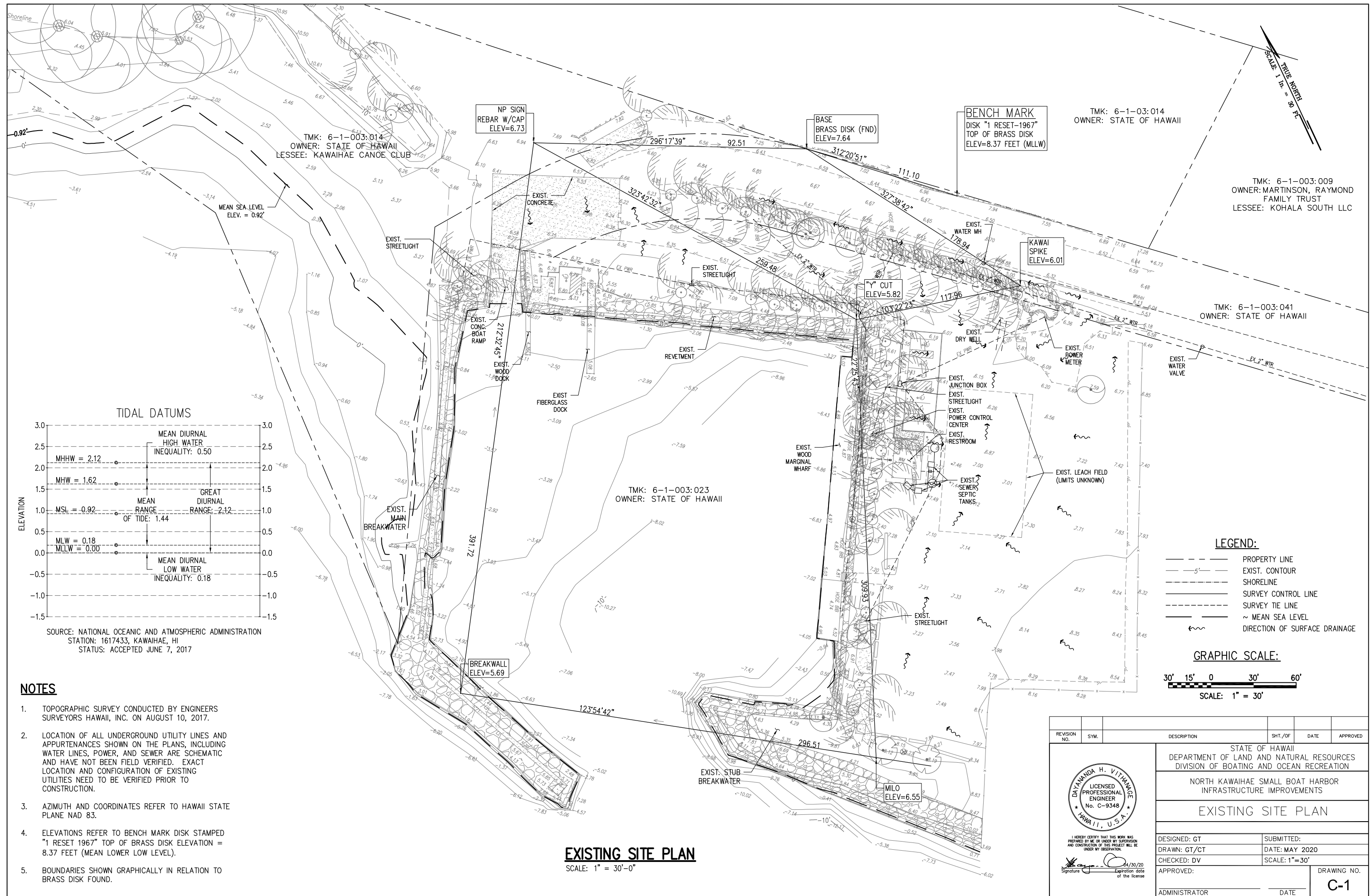


**DETAIL/SECTION TITLE**



REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES DIVISION OF BOATING AND OCEAN RECREATION					
NORTH KAWAIHAE SMALL BOAT HARBOR INFRASTRUCTURE IMPROVEMENTS					
<b>LIST OF ABBREVIATIONS</b>					
DESIGNED:			SUBMITTED:		
DRAWN: AK			DATE: MAY 2020		
CHECKED: DV			SCALE: NONE		
APPROVED:					DRAWING NO.
ADMINISTRATOR _____ DATE _____					<b>T-4</b>

  
 DAYANANDA H. VITTHALAKR  
 LICENSED PROFESSIONAL ENGINEER  
 No. C-9348  
 HAWAII, U.S.A.  
 I HEREBY CERTIFY THAT THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.  
 Signature: \_\_\_\_\_ Expiration date of the license: 04/30/20



TMK: 6-1-003:014  
OWNER: STATE OF HAWAII  
LESSEE: KAWAIHAE CANOE CLUB

NP SIGN  
REBAR W/CAP  
ELEV=6.73

BASE  
BRASS DISK (FND)  
ELEV=7.64

BENCH MARK  
DISK "1 RESET-1967"  
TOP OF BRASS DISK  
ELEV=8.37 FEET (MLLW)

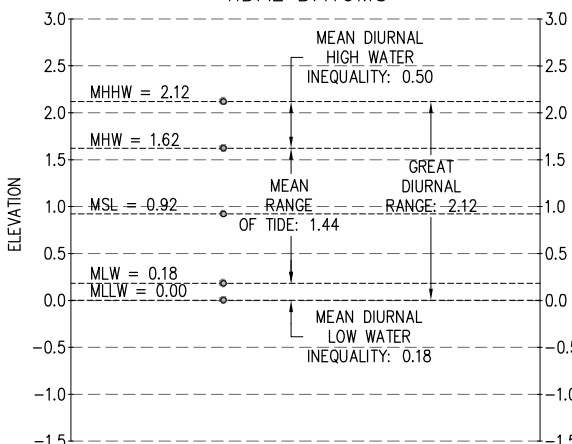
TMK: 6-1-03:014  
OWNER: STATE OF HAWAII

TMK: 6-1-003:009  
OWNER: MARTINSON, RAYMOND  
FAMILY TRUST  
LESSEE: KOHALA SOUTH LLC

TMK: 6-1-003:041  
OWNER: STATE OF HAWAII

TMK: 6-1-003:023  
OWNER: STATE OF HAWAII

**TIDAL DATUMS**

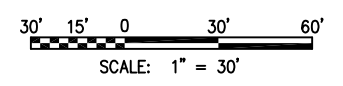


SOURCE: NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
STATION: 1617433, KAWAIHAE, HI  
STATUS: ACCEPTED JUNE 7, 2017

**LEGEND:**

- PROPERTY LINE
- - - EXIST. CONTOUR
- SHORELINE
- SURVEY CONTROL LINE
- SURVEY TIE LINE
- ~ MEAN SEA LEVEL
- ~ ~ ~ DIRECTION OF SURFACE DRAINAGE

**GRAPHIC SCALE:**



**NOTES**

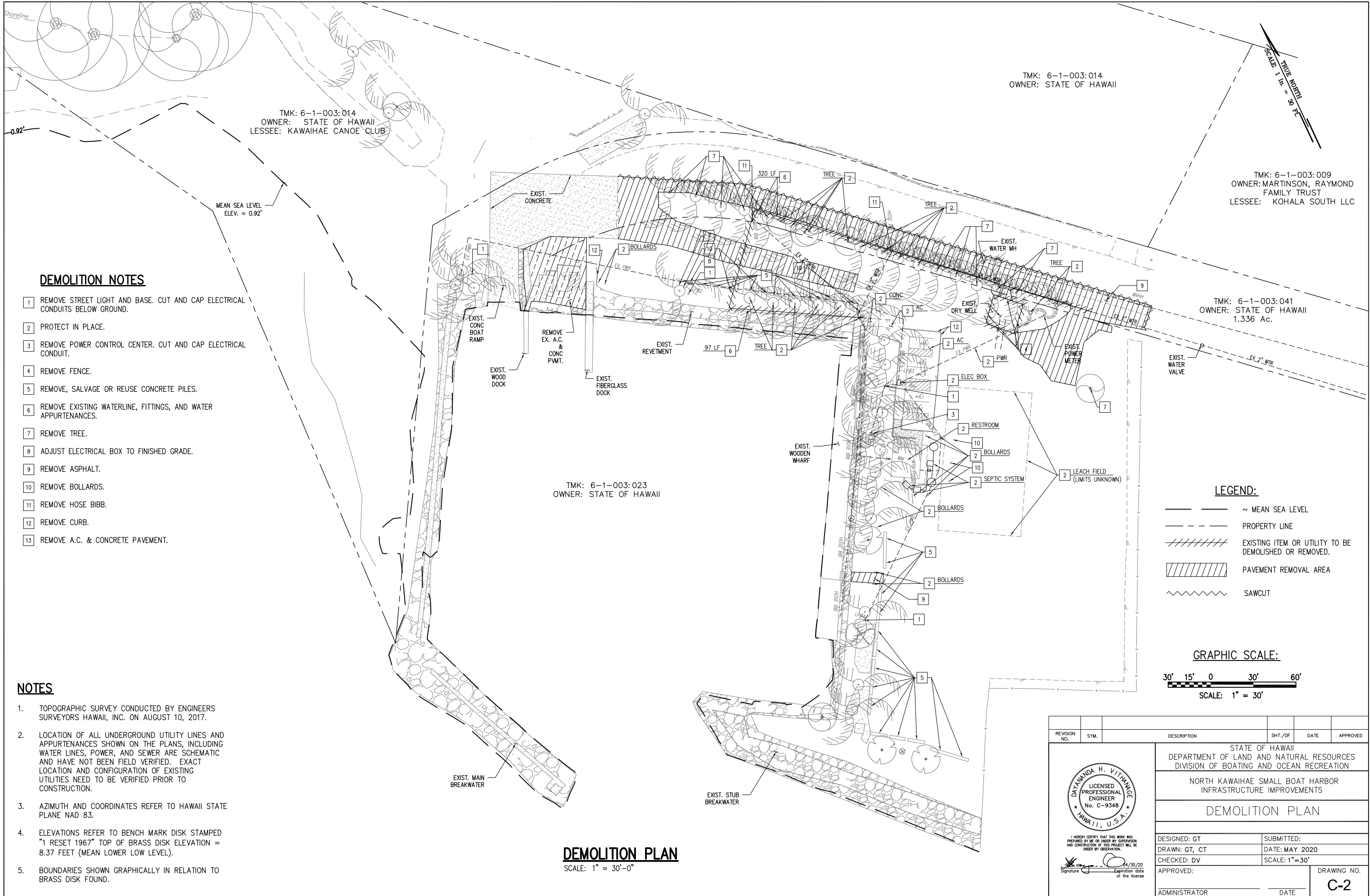
1. TOPOGRAPHIC SURVEY CONDUCTED BY ENGINEERS SURVEYORS HAWAII, INC. ON AUGUST 10, 2017.
2. LOCATION OF ALL UNDERGROUND UTILITY LINES AND APPURTENANCES SHOWN ON THE PLANS, INCLUDING WATER LINES, POWER, AND SEWER ARE SCHEMATIC AND HAVE NOT BEEN FIELD VERIFIED. EXACT LOCATION AND CONFIGURATION OF EXISTING UTILITIES NEED TO BE VERIFIED PRIOR TO CONSTRUCTION.
3. AZIMUTH AND COORDINATES REFER TO HAWAII STATE PLANE NAD 83.
4. ELEVATIONS REFER TO BENCH MARK DISK STAMPED "1 RESET 1967" TOP OF BRASS DISK ELEVATION = 8.37 FEET (MEAN LOWER LOW LEVEL).
5. BOUNDARIES SHOWN GRAPHICALLY IN RELATION TO BRASS DISK FOUND.

**EXISTING SITE PLAN**  
SCALE: 1" = 30'-0"

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES DIVISION OF BOATING AND OCEAN RECREATION					
NORTH KAWAIHAE SMALL BOAT HARBOR INFRASTRUCTURE IMPROVEMENTS					
<b>EXISTING SITE PLAN</b>					
DESIGNED: GT		SUBMITTED:			
DRAWN: GT/CT		DATE: MAY 2020			
CHECKED: DV		SCALE: 1"=30'			
APPROVED:					DRAWING NO.
ADMINISTRATOR					<b>C-1</b>



I HEREBY CERTIFY THAT THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.  
Signature: [Signature] 4/30/20 Expiration date of the license



**DEMOLITION NOTES**

- 1 REMOVE STREET LIGHT AND BASE. CUT AND CAP ELECTRICAL CONDUITS BELOW GROUND.
- 2 PROTECT IN PLACE.
- 3 REMOVE POWER CONTROL CENTER. CUT AND CAP ELECTRICAL CONDUIT.
- 4 REMOVE FENCE.
- 5 REMOVE, SALVAGE OR REUSE CONCRETE PILES.
- 6 REMOVE EXISTING WATERLINE, FITTINGS, AND WATER APPURTENANCES.
- 7 REMOVE TREE.
- 8 ADJUST ELECTRICAL BOX TO FINISHED GRADE.
- 9 REMOVE ASPHALT.
- 10 REMOVE BOLLARDS.
- 11 REMOVE HOSE BIBB.
- 12 REMOVE CURB.
- 13 REMOVE A.C. & CONCRETE PAVEMENT.

**NOTES**

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5. BOUNDARIES SHOWN GRAPHICALLY IN RELATION TO BRASS DISK FOUND.

**DEMOLITION PLAN**  
SCALE: 1" = 30'-0"

TMK: 6-1-003:014  
OWNER: STATE OF HAWAII

TMK: 6-1-003:009  
OWNER: MARTINSON, RAYMOND  
FAMILY TRUST  
LESSEE: KOHALA SOUTH LLC

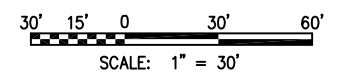
TMK: 6-1-003:041  
OWNER: STATE OF HAWAII  
1.336 Ac.

TMK: 6-1-003:023  
OWNER: STATE OF HAWAII

**LEGEND:**

- ~ MEAN SEA LEVEL
- PROPERTY LINE
- ////// EXISTING ITEM OR UTILITY TO BE DEMOLISHED OR REMOVED.
- ||||| PAVEMENT REMOVAL AREA
- ~~~~~ SAWCUT

**GRAPHIC SCALE:**

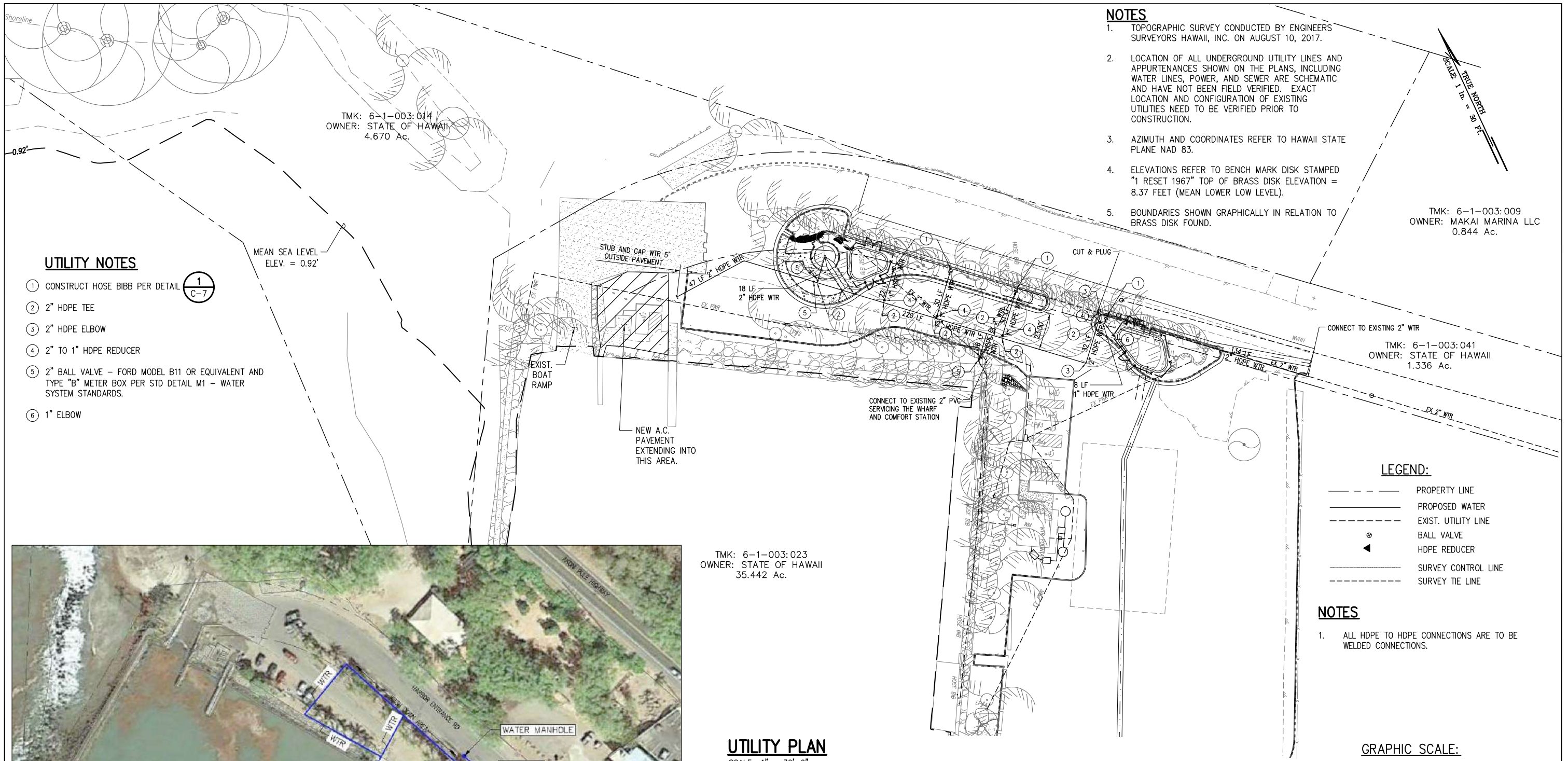


REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES DIVISION OF BOATING AND OCEAN RECREATION					
NORTH KAWAIIHAE SMALL BOAT HARBOR INFRASTRUCTURE IMPROVEMENTS					
<b>DEMOLITION PLAN</b>					
DESIGNED: GT		SUBMITTED:			
DRAWN: GT, CT		DATE: MAY 2020			
CHECKED: DV		SCALE: 1"=30'			
APPROVED: _____					DRAWING NO.
ADMINISTRATOR _____					<b>C-2</b>

DAYANANDA H. VITTHANAR  
LICENSED PROFESSIONAL ENGINEER  
No. C-9348  
HAWAII, U.S.A.

I HEREBY CERTIFY THAT THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

Signature: \_\_\_\_\_ Date: 4/30/20  
Expiration date of the license



TMK: 6-1-003:014  
OWNER: STATE OF HAWAII  
4.670 Ac.

TMK: 6-1-003:009  
OWNER: MAKAI MARINA LLC  
0.844 Ac.

TMK: 6-1-003:041  
OWNER: STATE OF HAWAII  
1.336 Ac.

TMK: 6-1-003:023  
OWNER: STATE OF HAWAII  
35.442 Ac.



**WATER METER & WATER VALVE LOCATIONS**

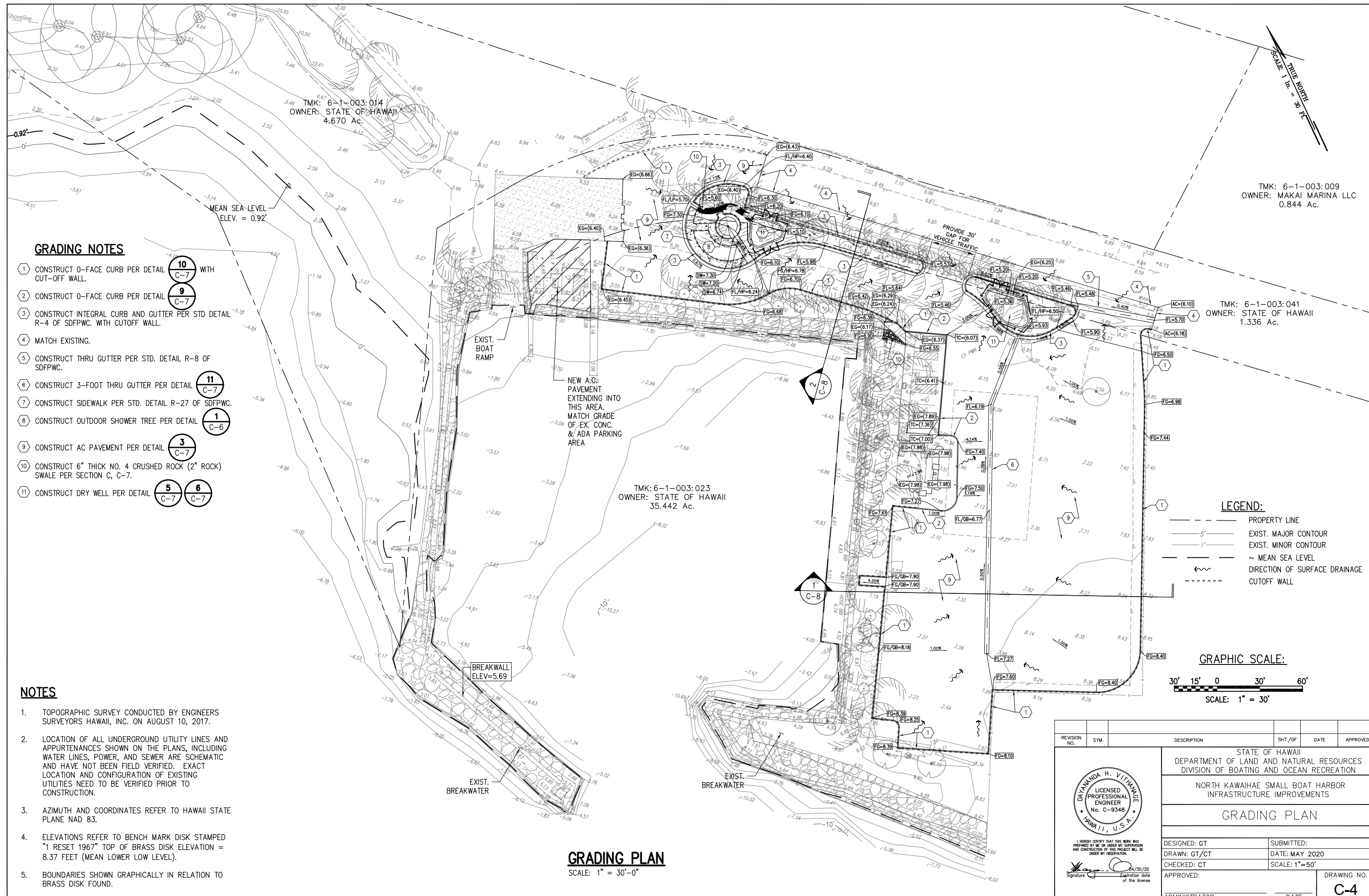
**UTILITY PLAN**  
SCALE: 1" = 30'-0"

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES DIVISION OF BOATING AND OCEAN RECREATION					
NORTH KAWAIIAE SMALL BOAT HARBOR INFRASTRUCTURE IMPROVEMENTS					
<b>UTILITY PLAN</b>					
DESIGNED: GT			SUBMITTED:		
DRAWN: GT/CT			DATE: MAY 2020		
CHECKED: CT			SCALE: 1"=30'		
APPROVED: _____					DRAWING NO.
ADMINISTRATOR _____					<b>C-3</b>

DAYANANDA H. VITTHANAKER  
LICENSED PROFESSIONAL ENGINEER  
No. C-9348  
HAWAII, U.S.A.

I HEREBY CERTIFY THAT THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

Signature: \_\_\_\_\_ Date: 04/30/20  
Expiration date of the license



TRUE NORTH  
SCALE: 1" = 30' PL

TMK: 6-1-003:009  
OWNER: MAKAI MARINA LLC  
0.844 Ac.

TMK: 6-1-003:041  
OWNER: STATE OF HAWAII  
1.336 Ac.

TMK: 6-1-003:023  
OWNER: STATE OF HAWAII  
35.442 Ac.

**GRADING NOTES**

- 1 CONSTRUCT 0-FACE CURB PER DETAIL **10** WITH CUT-OFF WALL. **C-7**
- 2 CONSTRUCT 0-FACE CURB PER DETAIL **9** **C-7**
- 3 CONSTRUCT INTEGRAL CURB AND GUTTER PER STD DETAIL R-4 OF SDFPWC. WITH CUTOFF WALL.
- 4 MATCH EXISTING.
- 5 CONSTRUCT THRU GUTTER PER STD. DETAIL R-8 OF SDFPWC.
- 6 CONSTRUCT 3-FOOT THRU GUTTER PER DETAIL **11** **C-7**
- 7 CONSTRUCT SIDEWALK PER STD. DETAIL R-27 OF SDFPWC.
- 8 CONSTRUCT OUTDOOR SHOWER TREE PER DETAIL **1** **C-6**
- 9 CONSTRUCT AC PAVEMENT PER DETAIL **3** **C-7**
- 10 CONSTRUCT 6" THICK NO. 4 CRUSHED ROCK (2" ROCK) SWALE PER SECTION C, C-7.
- 11 CONSTRUCT DRY WELL PER DETAIL **5** **C-7** **6** **C-7**

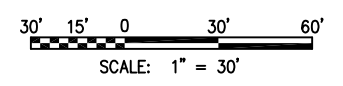
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5. BOUNDARIES SHOWN GRAPHICALLY IN RELATION TO BRASS DISK FOUND.

**LEGEND:**

- PROPERTY LINE
- 5' — EXIST. MAJOR CONTOUR
- 1' — EXIST. MINOR CONTOUR
- ~ MEAN SEA LEVEL
- DIRECTION OF SURFACE DRAINAGE
- - - - CUTOFF WALL

**GRAPHIC SCALE:**



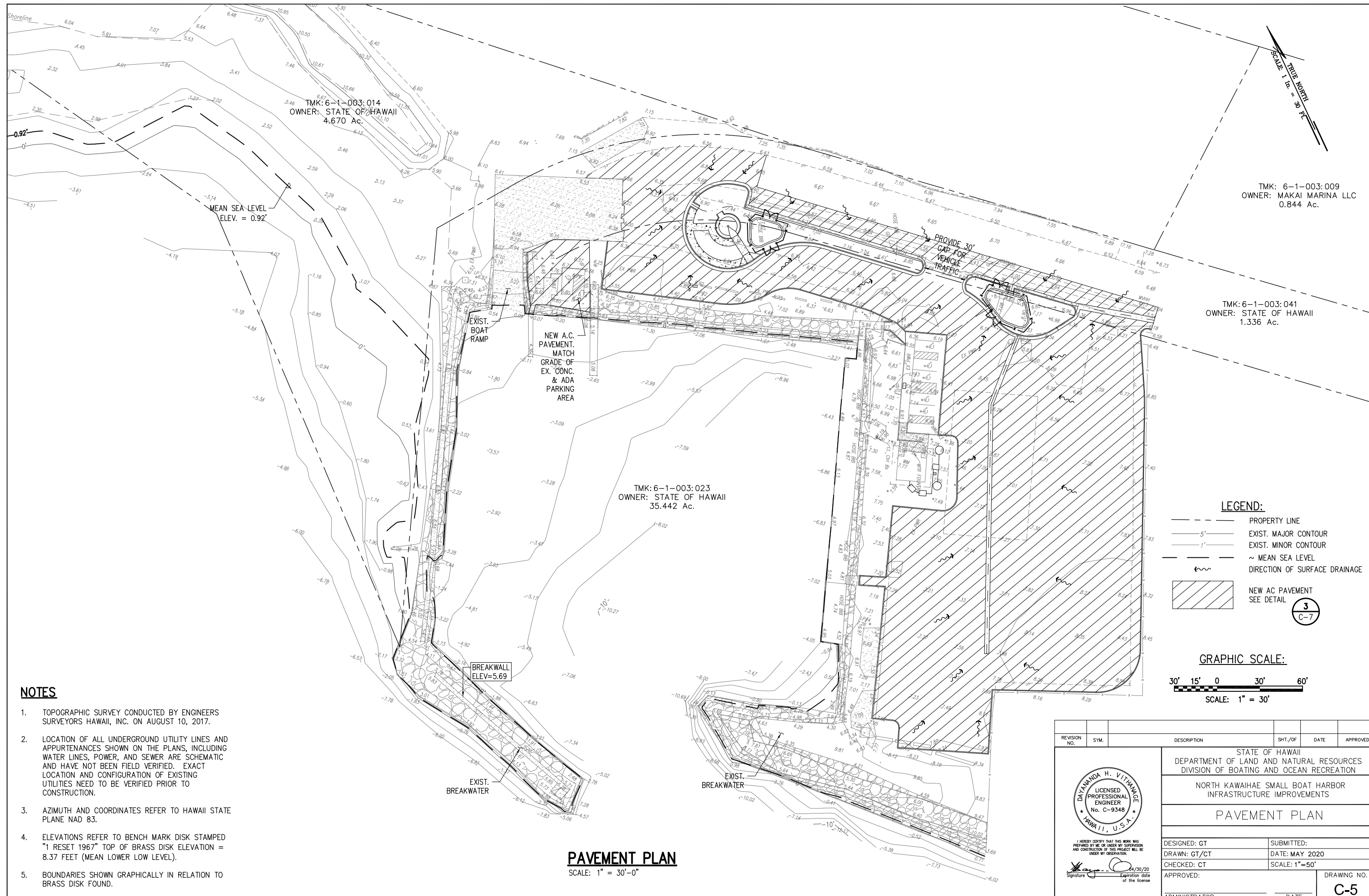
**GRADING PLAN**  
SCALE: 1" = 30'-0"

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES DIVISION OF BOATING AND OCEAN RECREATION					
NORTH KAWAIIHAE SMALL BOAT HARBOR INFRASTRUCTURE IMPROVEMENTS					
<b>GRADING PLAN</b>					
DESIGNED: GT			SUBMITTED:		
DRAWN: GT/CT			DATE: MAY 2020		
CHECKED: CT			SCALE: 1"=50'		
APPROVED:					DRAWING NO.
ADMINISTRATOR					<b>C-4</b>



I HEREBY CERTIFY THAT THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.  
Signature: [Signature] 4/30/20  
Expiration date of the license





TRUE NORTH  
SCALE: 1" = 30' PL

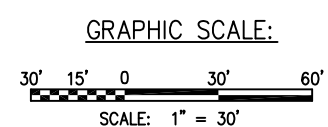
TMK: 6-1-003:009  
OWNER: MAKAI MARINA LLC  
0.844 Ac.

TMK: 6-1-003:041  
OWNER: STATE OF HAWAII  
1.336 Ac.

TMK: 6-1-003:023  
OWNER: STATE OF HAWAII  
35.442 Ac.

- LEGEND:**
- PROPERTY LINE
  - 5' — EXIST. MAJOR CONTOUR
  - 1' — EXIST. MINOR CONTOUR
  - ~ MEAN SEA LEVEL
  - ~ DIRECTION OF SURFACE DRAINAGE
  - ▨ NEW AC PAVEMENT  
SEE DETAIL

3  
C-7



**NOTES**

1. TOPOGRAPHIC SURVEY CONDUCTED BY ENGINEERS SURVEYORS HAWAII, INC. ON AUGUST 10, 2017.
2. LOCATION OF ALL UNDERGROUND UTILITY LINES AND APPURTENANCES SHOWN ON THE PLANS, INCLUDING WATER LINES, POWER, AND SEWER ARE SCHEMATIC AND HAVE NOT BEEN FIELD VERIFIED. EXACT LOCATION AND CONFIGURATION OF EXISTING UTILITIES NEED TO BE VERIFIED PRIOR TO CONSTRUCTION.
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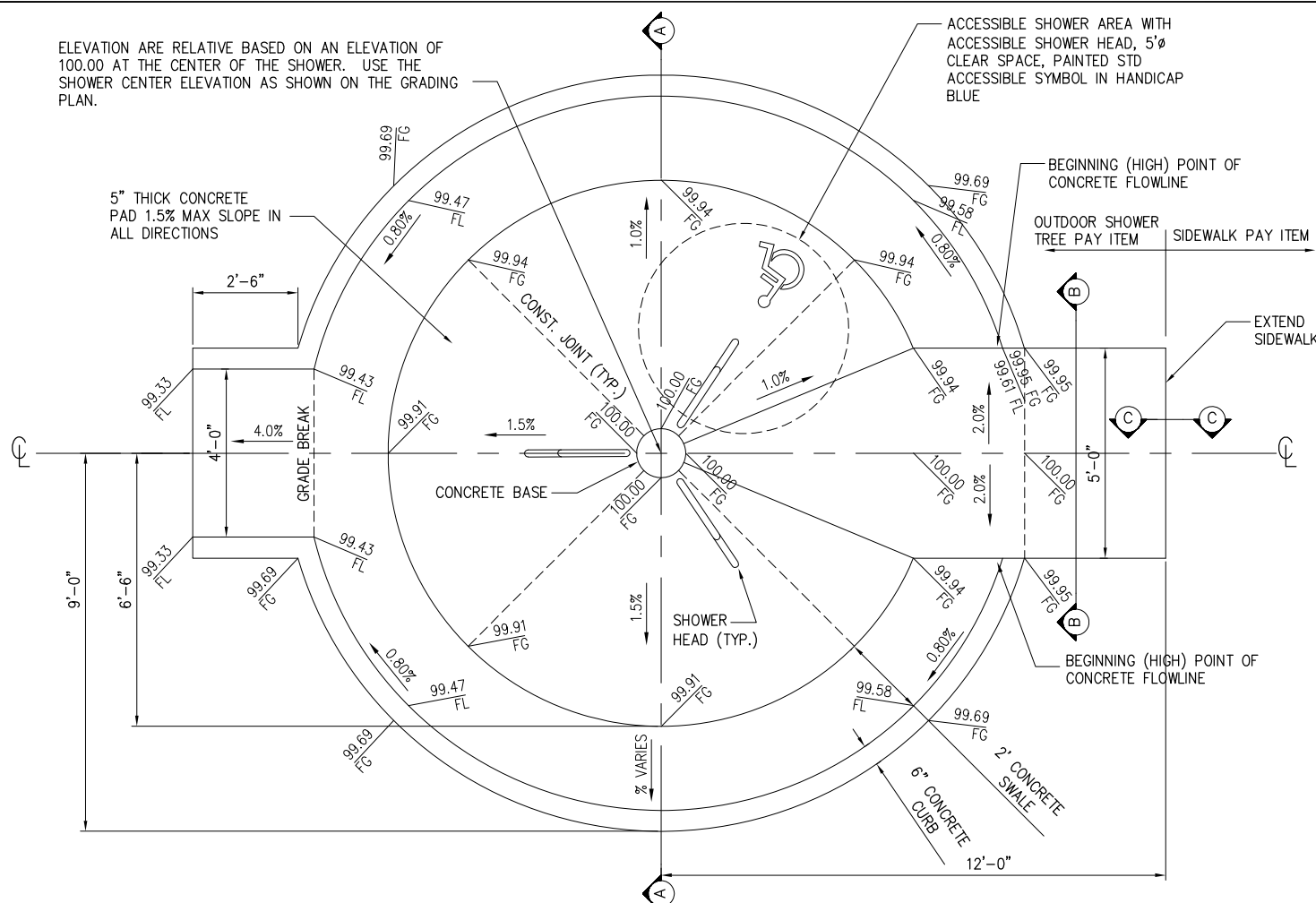
**PAVEMENT PLAN**  
SCALE: 1" = 30'-0"

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES DIVISION OF BOATING AND OCEAN RECREATION					
NORTH KAWAIIHAE SMALL BOAT HARBOR INFRASTRUCTURE IMPROVEMENTS					
PAVEMENT PLAN					
DESIGNED: GT		SUBMITTED:			
DRAWN: GT/CT		DATE: MAY 2020			
CHECKED: CT		SCALE: 1"=50'			
APPROVED:					DRAWING NO.
ADMINISTRATOR					DATE
					<b>C-5</b>

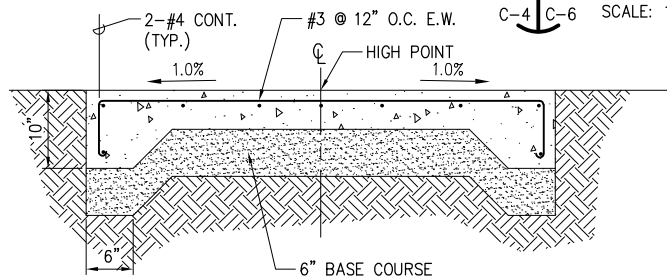


I HEREBY CERTIFY THAT THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.  
Signature: [Signature] 4/30/20 Expiration date of the license

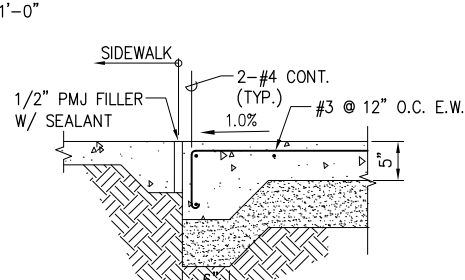
ELEVATION ARE RELATIVE BASED ON AN ELEVATION OF 100.00 AT THE CENTER OF THE SHOWER. USE THE SHOWER CENTER ELEVATION AS SHOWN ON THE GRADING PLAN.



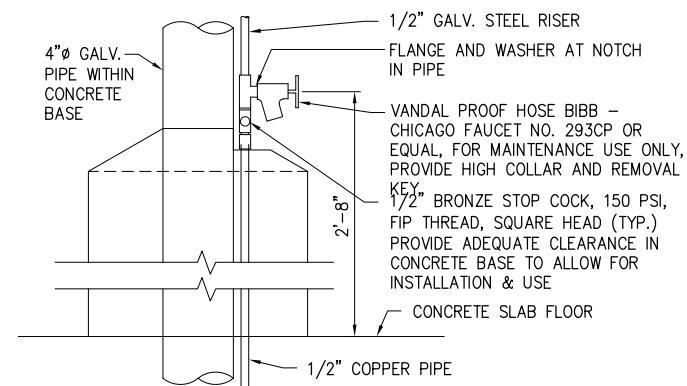
**1 OUTDOOR SHOWER TREE - PLAN**  
SCALE: 1/2" = 1'-0"



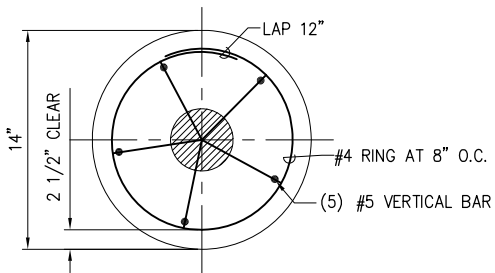
**2 CONCRETE WALK - SECTION B-B**  
SCALE: NOT TO SCALE



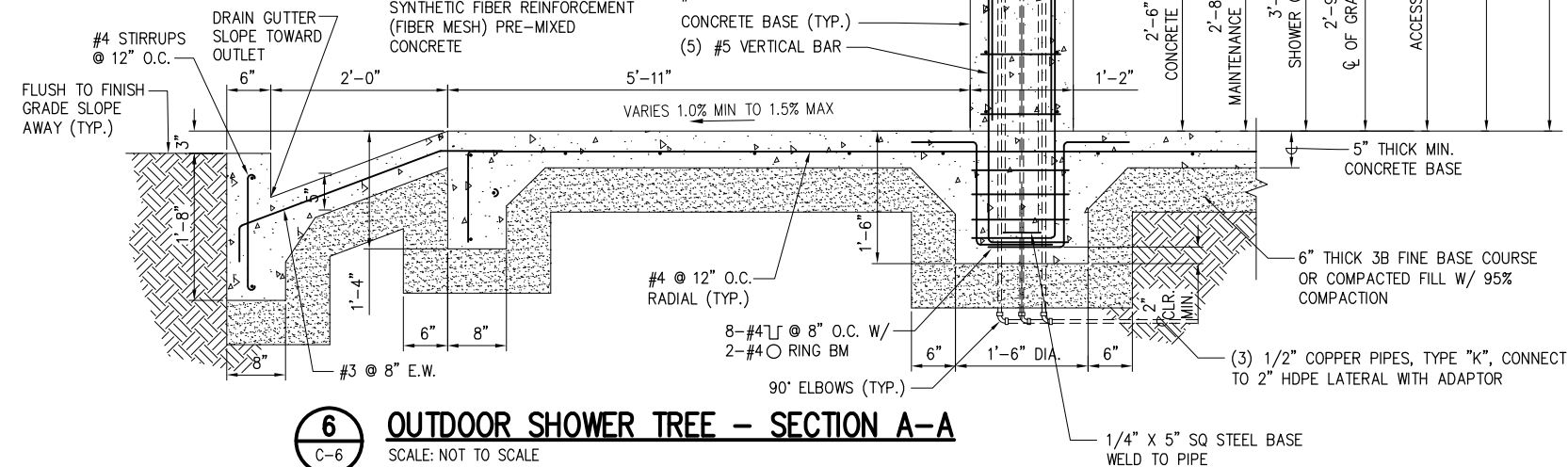
**3 SECTION C-C**  
SCALE: NOT TO SCALE



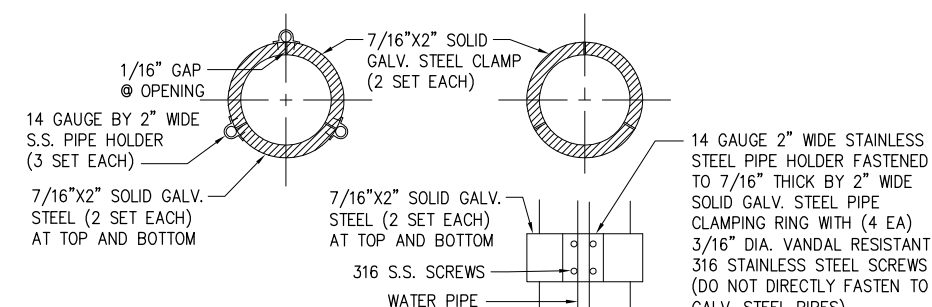
**7 MAINTENANCE HOSE BIBB DETAIL**  
SCALE: NOT TO SCALE



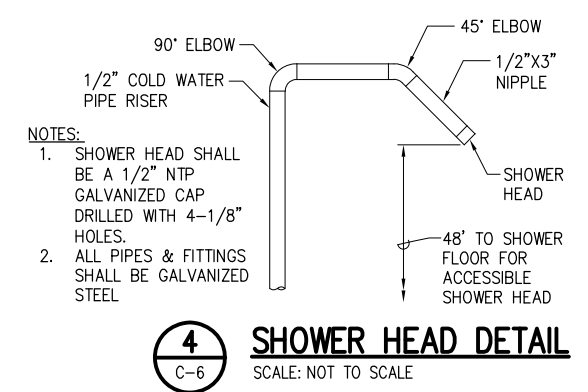
**8 CONCRETE SHOWER BASE SECTION D-D**  
SCALE: NOT TO SCALE



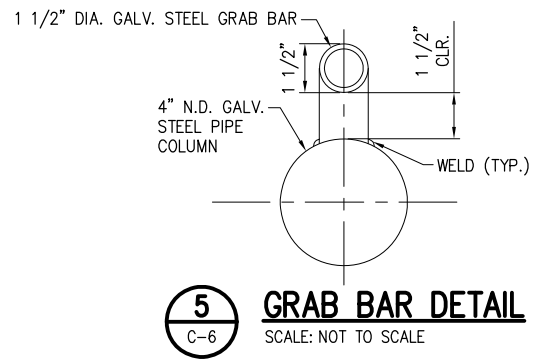
**6 OUTDOOR SHOWER TREE - SECTION A-A**  
SCALE: NOT TO SCALE



**9 GALV. STEEL PIPE HOLDER DETAIL**  
SCALE: NOT TO SCALE

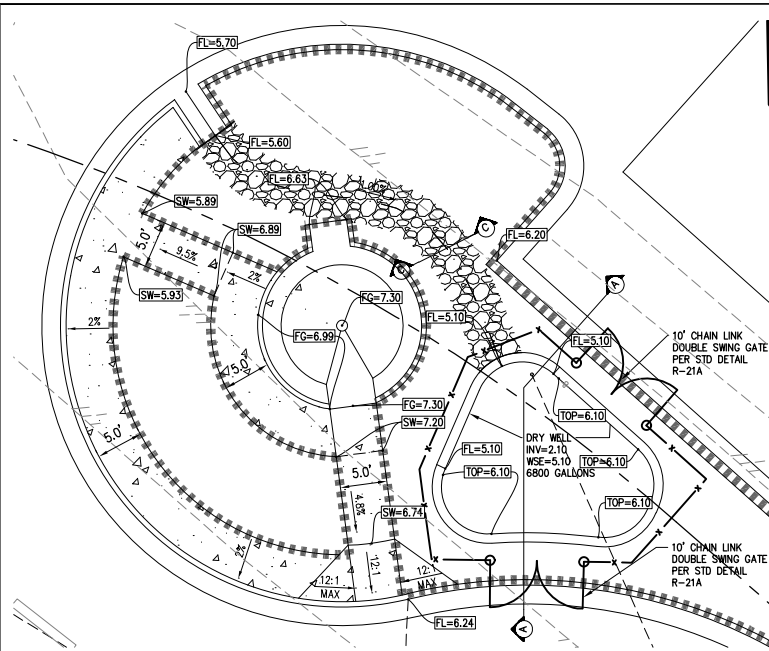


**4 SHOWER HEAD DETAIL**  
SCALE: NOT TO SCALE

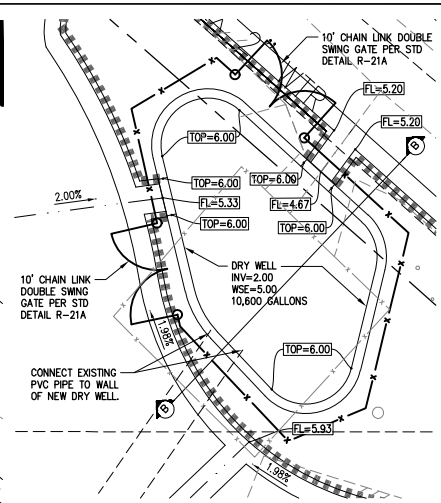


**5 GRAB BAR DETAIL**  
SCALE: NOT TO SCALE

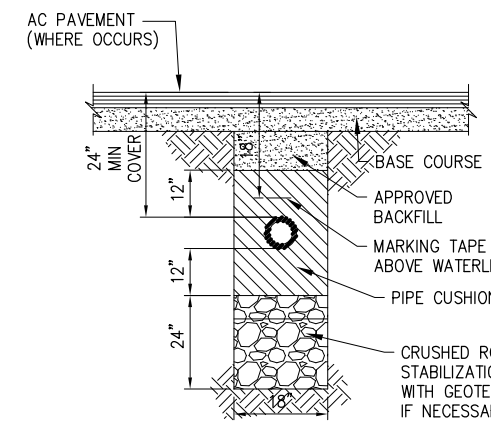
REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES DIVISION OF BOATING AND OCEAN RECREATION					
NORTH KAWAIIAE SMALL BOAT HARBOR INFRASTRUCTURE IMPROVEMENTS					
DETAIL SHEET					
DESIGNED: GT			SUBMITTED:		
DRAWN: GT			DATE: MAY 2020		
CHECKED: CT			SCALE: 1:XX		
APPROVED:			DRAWING NO.		
ADMINISTRATOR			DATE		
					<b>C-6</b>



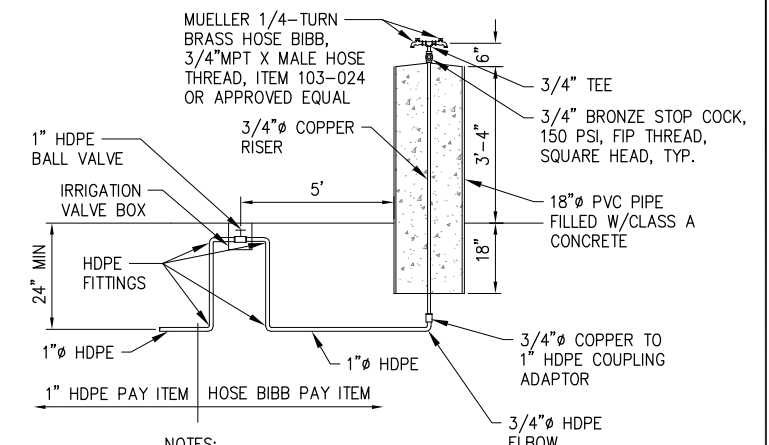
**5 DRY WELL #1**  
C-4 | C-7 SCALE: 1" = 10'



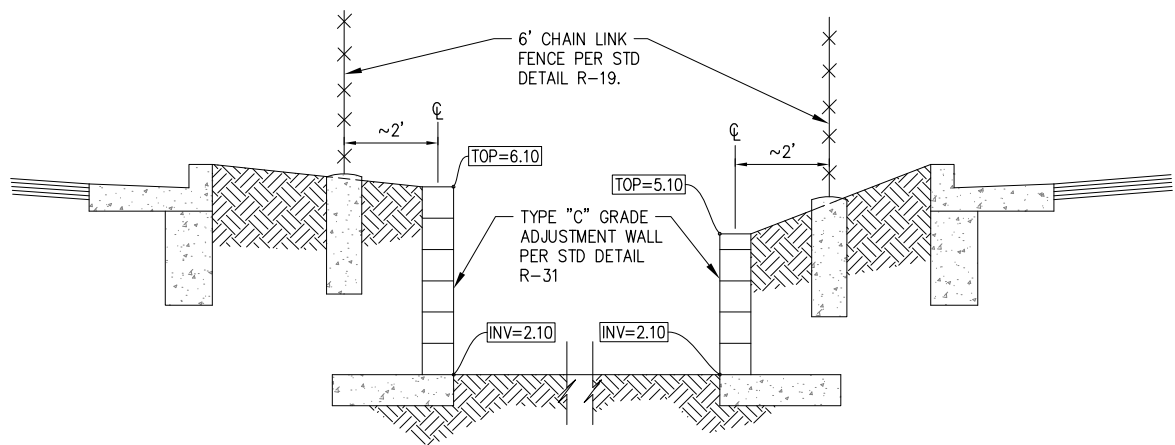
**6 DRY WELL #2**  
C-4 | C-7 SCALE: 1" = 10'



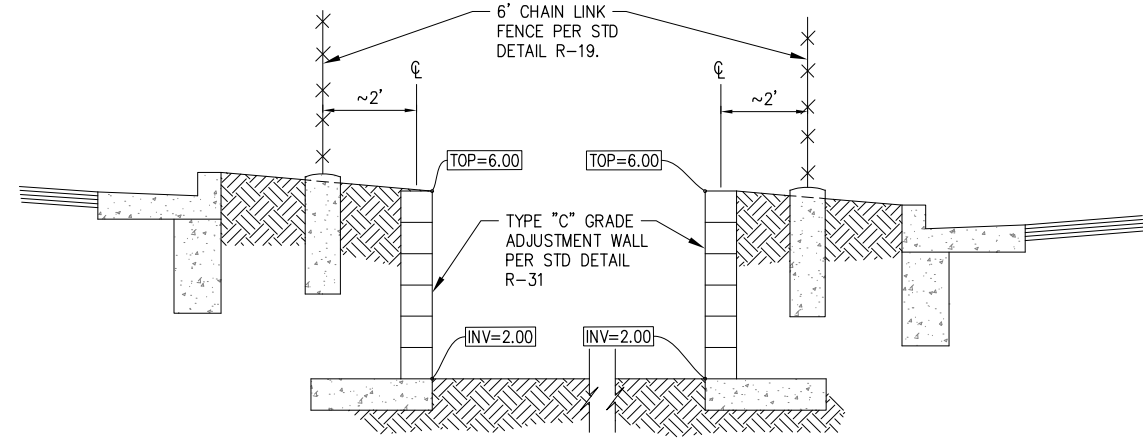
**2 WATER LINE TRENCH DETAIL**  
C-3 | C-7 SCALE: NOT TO SCALE



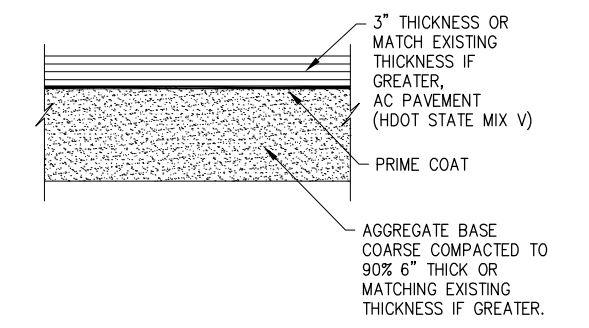
**1 HOSE BIBB DETAIL**  
C-3 | C-7 SCALE: NOT TO SCALE



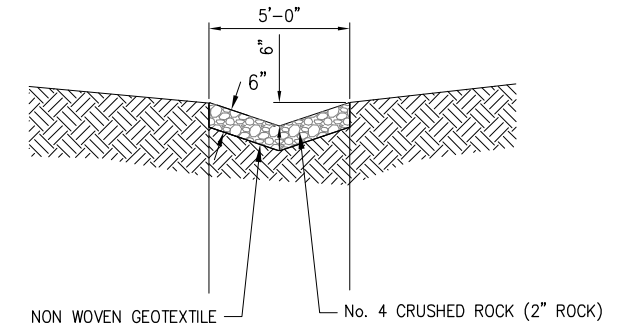
**7 DRY WELL #1 - SECTION A**  
C-7 | C-7 SCALE: NOT TO SCALE



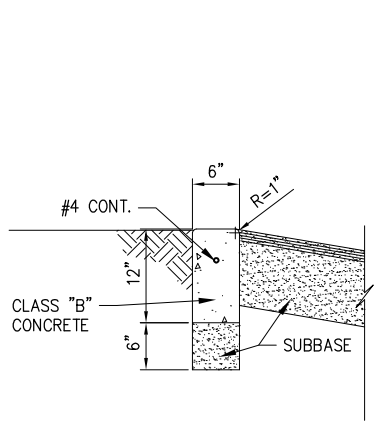
**8 DRY WELL #2 - SECTION B**  
C-7 | C-7 SCALE: NOT TO SCALE



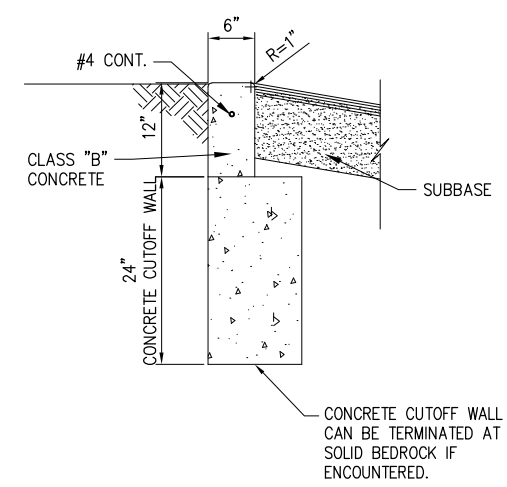
**3 AC PAVEMENT DETAIL**  
C-4 | C-7 SCALE: NOT TO SCALE



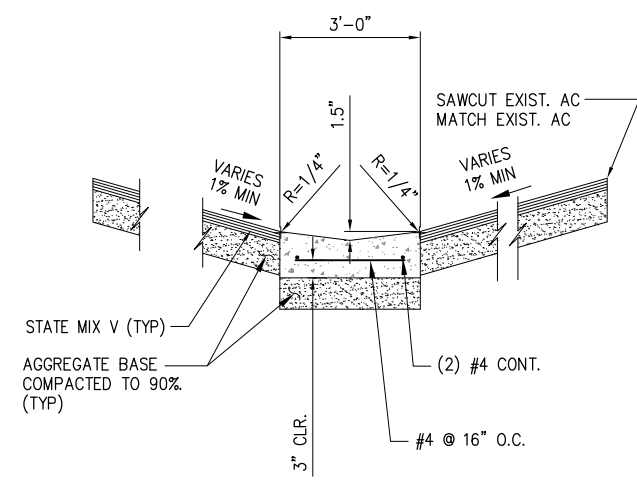
**4 ROCK SWALE - SECTION C**  
C-7 | C-7 SCALE: NOT TO SCALE



**9 0-FACE CONCRETE CURB**  
C-4 | C-7 SCALE: NOT TO SCALE



**10 0-FACE CONCRETE CURB**  
C-4 | C-7 SCALE: NOT TO SCALE

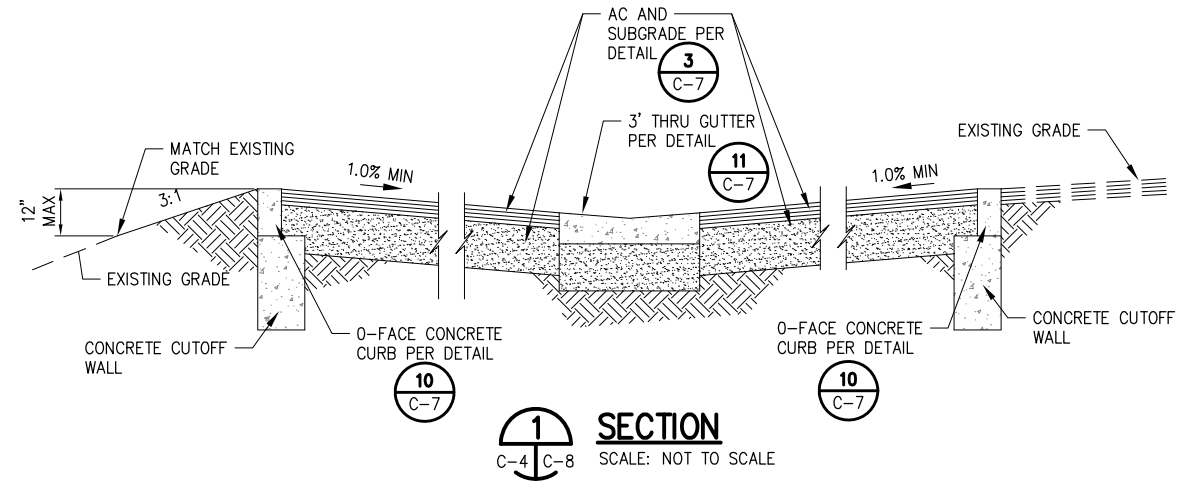


**11 3' THRU GUTTER**  
C-4 | C-7 SCALE: NOT TO SCALE

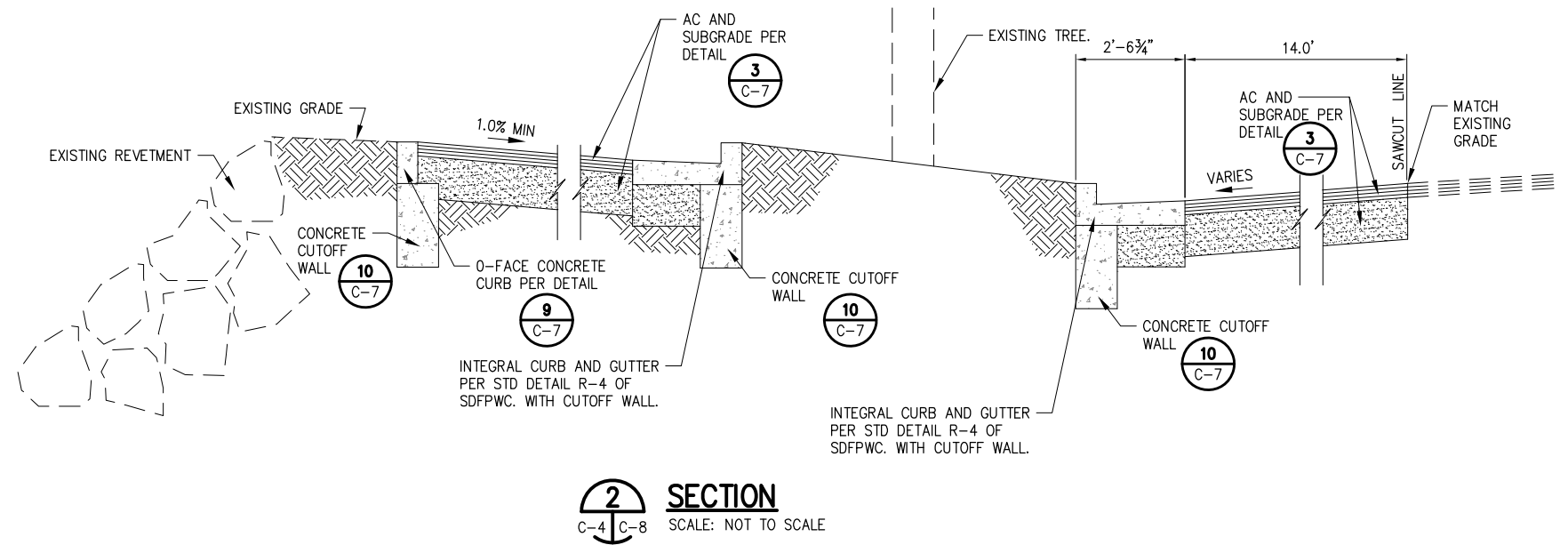
REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES DIVISION OF BOATING AND OCEAN RECREATION					
NORTH KAWAIIAE SMALL BOAT HARBOR INFRASTRUCTURE IMPROVEMENTS					
DETAIL SHEET					
DESIGNED: GT			SUBMITTED:		
DRAWN: GT			DATE: MAY 2020		
CHECKED: CT			SCALE: 1:XX		
APPROVED:			DRAWING NO.		
ADMINISTRATOR			DATE		
					<b>C-7</b>



I HEREBY CERTIFY THAT THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.  
Signature: [Signature] 4/30/20  
Expiration date of the license




**SECTION 1**  
C-4 | C-8 SCALE: NOT TO SCALE

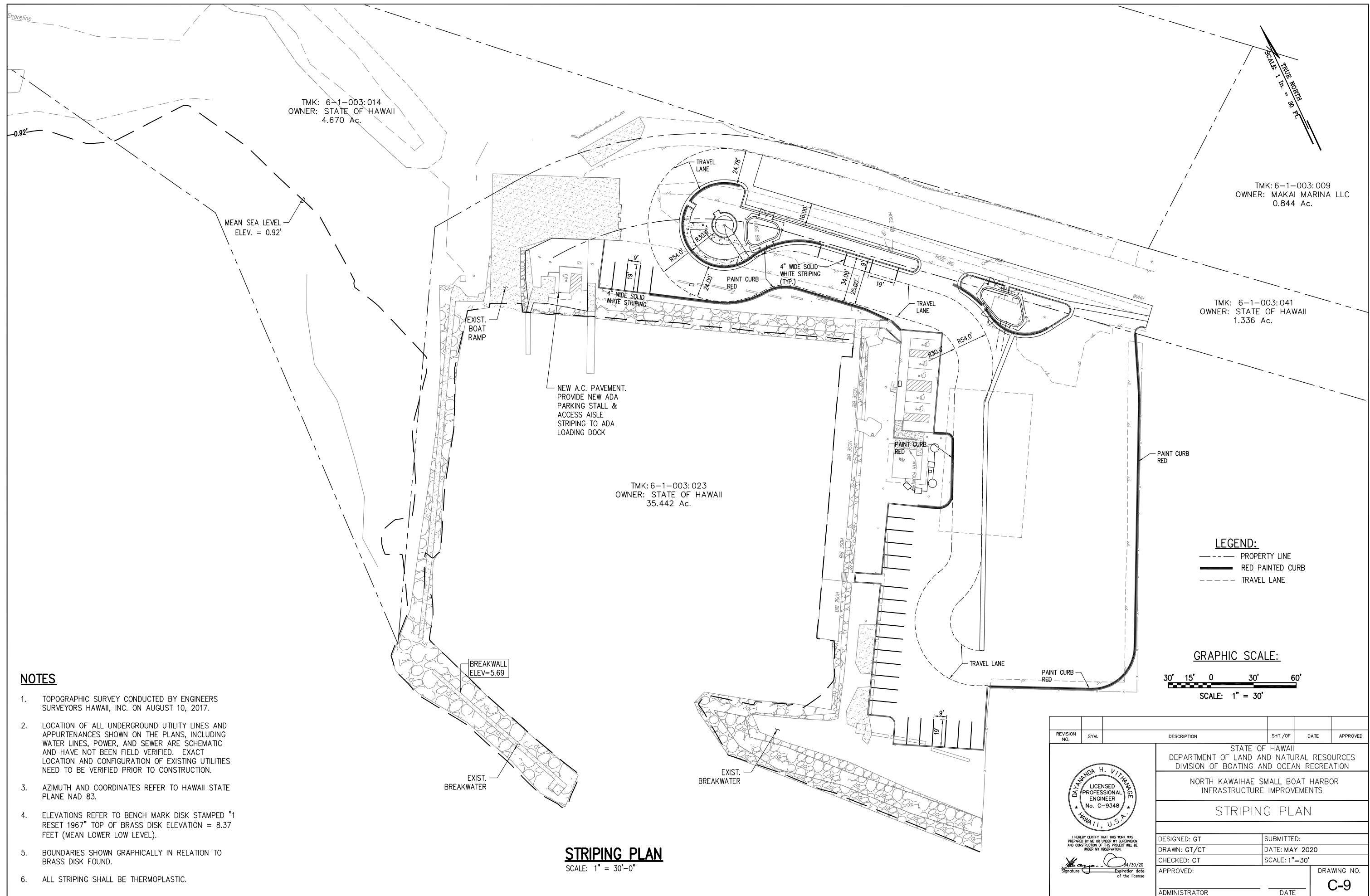


**SECTION 2**  
C-4 | C-8 SCALE: NOT TO SCALE

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES DIVISION OF BOATING AND OCEAN RECREATION					
NORTH KAWAIHAE SMALL BOAT HARBOR INFRASTRUCTURE IMPROVEMENTS					
DETAIL SHEET					
DESIGNED: GT			SUBMITTED:		
DRAWN: GT			DATE: MAY 2020		
CHECKED: CT			SCALE: 1:XX		
APPROVED:					DRAWING NO.
ADMINISTRATOR _____ DATE _____					<b>C-8</b>

  
 DAYANANDA H. VITTHALAK  
 LICENSED PROFESSIONAL ENGINEER  
 No. C-9348  
 HAWAII, U.S.A.

I HEREBY CERTIFY THAT THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.  
 Signature: \_\_\_\_\_ Expiration date of the license: 4/30/20



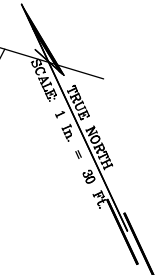
TMK: 6-1-003:014  
OWNER: STATE OF HAWAII  
4.670 Ac.

TMK: 6-1-003:009  
OWNER: MAKAI MARINA LLC  
0.844 Ac.

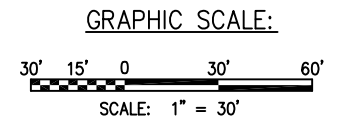
TMK: 6-1-003:041  
OWNER: STATE OF HAWAII  
1.336 Ac.

TMK: 6-1-003:023  
OWNER: STATE OF HAWAII  
35.442 Ac.

MEAN SEA LEVEL  
ELEV. = 0.92'



**LEGEND:**  
 - - - - - PROPERTY LINE  
 ——— RED PAINTED CURB  
 - - - - - TRAVEL LANE



**NOTES**

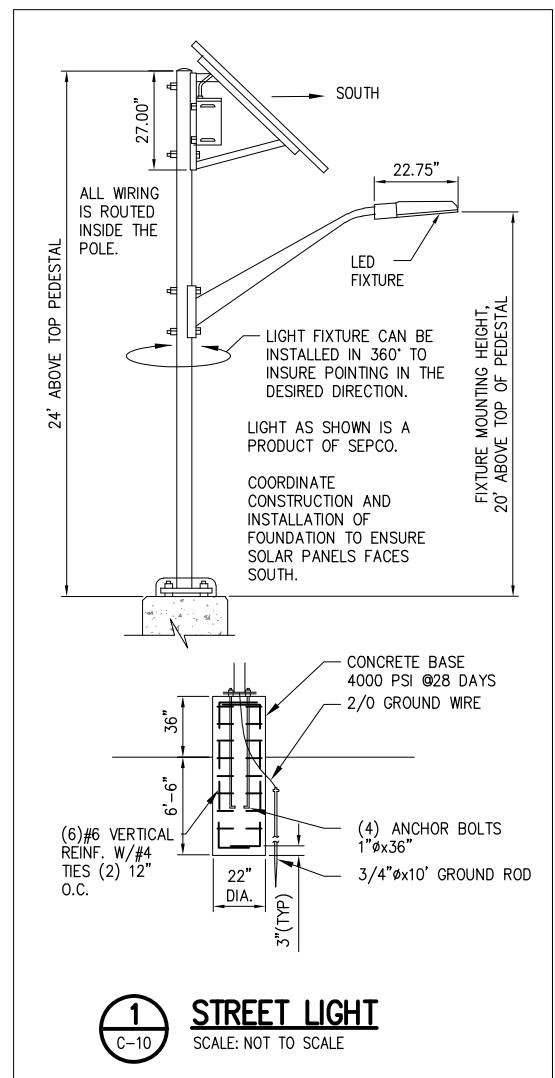
1. TOPOGRAPHIC SURVEY CONDUCTED BY ENGINEERS SURVEYORS HAWAII, INC. ON AUGUST 10, 2017.
2. LOCATION OF ALL UNDERGROUND UTILITY LINES AND APPURTENANCES SHOWN ON THE PLANS, INCLUDING WATER LINES, POWER, AND SEWER ARE SCHEMATIC AND HAVE NOT BEEN FIELD VERIFIED. EXACT LOCATION AND CONFIGURATION OF EXISTING UTILITIES NEED TO BE VERIFIED PRIOR TO CONSTRUCTION.
3. AZIMUTH AND COORDINATES REFER TO HAWAII STATE PLANE NAD 83.
4. ELEVATIONS REFER TO BENCH MARK DISK STAMPED "1 RESET 1967" TOP OF BRASS DISK ELEVATION = 8.37 FEET (MEAN LOWER LOW LEVEL).
5. BOUNDARIES SHOWN GRAPHICALLY IN RELATION TO BRASS DISK FOUND.
6. ALL STRIPING SHALL BE THERMOPLASTIC.

**STRIPING PLAN**  
SCALE: 1" = 30'-0"

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES DIVISION OF BOATING AND OCEAN RECREATION					
NORTH KAWAIIHAE SMALL BOAT HARBOR INFRASTRUCTURE IMPROVEMENTS					
<b>STRIPING PLAN</b>					
DESIGNED: GT		SUBMITTED:			
DRAWN: GT/CT		DATE: MAY 2020			
CHECKED: CT		SCALE: 1"=30'			
APPROVED:					DRAWING NO.
ADMINISTRATOR					<b>C-9</b>

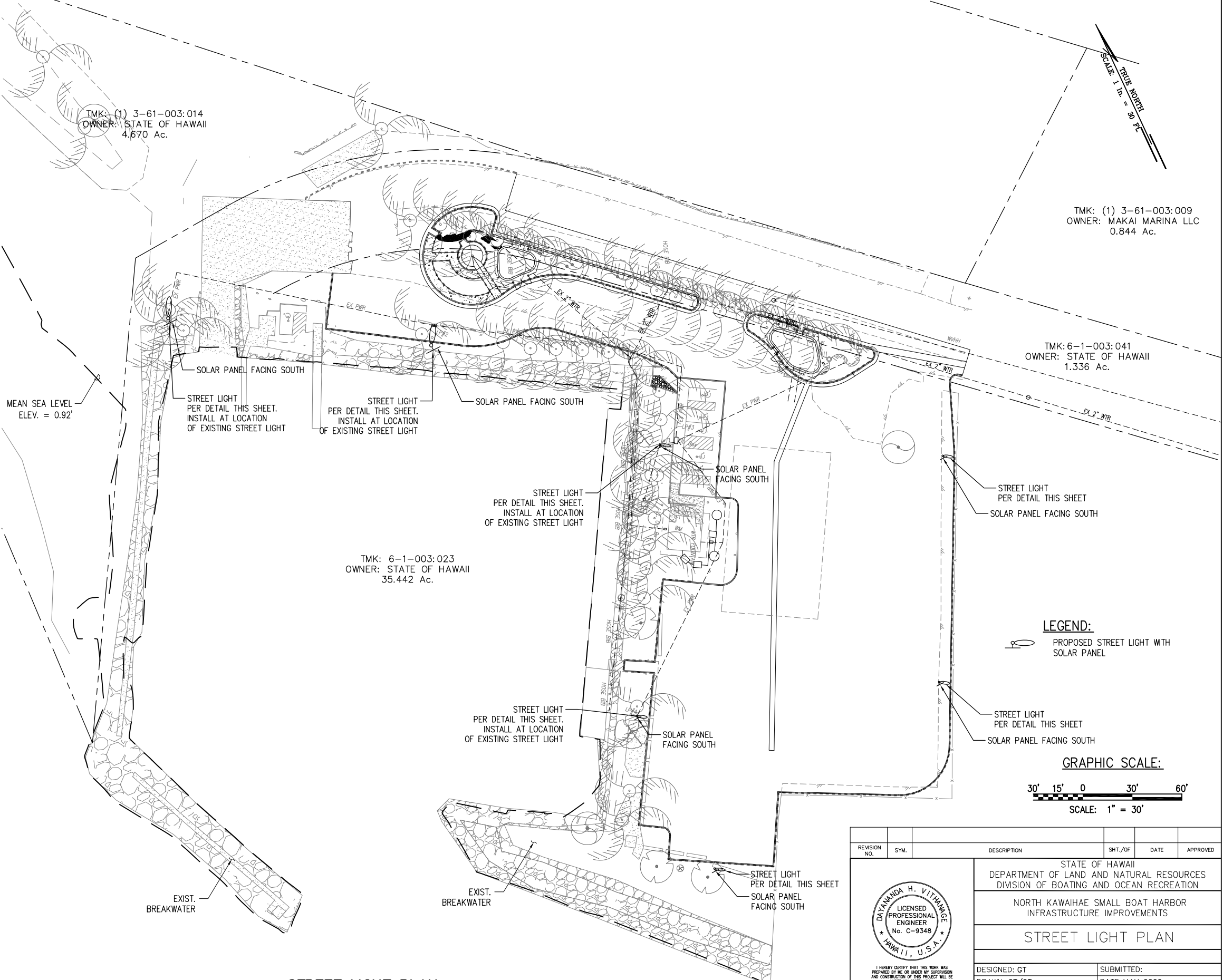


I HEREBY CERTIFY THAT THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.  
 Signature: *[Signature]* Date: 4/30/20  
 Expiration date of the license




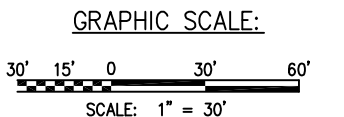
**LED FIXTURE NOTES:**

1. LED LAMPS AND FIXTURES PRODUCING IN EXCESS OF 1200 OUTPUT LUMENS AND/OR HAVING A CORRELATED COLOR TEMPERATURE (CCT) HIGHER THAN 2700 KELVIN ARE PROHIBITED EXCEPT THOSE APPROVED BY THE COUNTY FOR OUTDOOR LIGHTING.
2. LIGHT FIXTURES AND INSTALLATION MUST COMPLY WITH FULLY SHIELDED CRITERIA AT ALL TIMES.
3. FLUORESCENT AND NON-FILTERED LED FIXTURES HOUSING THREE OR MORE LAMPS ARE PROHIBITED.
4. LED LIGHTING PRODUCTS MUST BE MANUFACTURED TO COMPLY WITH COUNTY CRITERIA WHICH INCORPORATES, BUT IS NOT LIMITED TO, THE FOLLOWING:
  - a. METHODOLOGY TO ACHIEVE COUNTY REQUIRED EXTERIOR LIGHTING CRITERIA MUST BE INTEGRAL TO THE LED LIGHT ENGINE AND NOT REMOVABLE FROM AN OPERATIVE LUMINAIRE.
  - b. THE LED LIGHT ENGINE MUST HAVE PERFORMANCE DATA FOR 6000 HOURS OF OPERATION TO ALLOW EXTRAPOLATION OF LIFE TO TEN YEARS.
  - c. THE LUMINAIRE LENS MUST BE MADE OF AN IMPACT RESISTANT MATERIAL.
  - d. THE BLUE LIGHT CONTENT IS NOT A FUNCTION OF CORRELATED COLOR TEMPERATURE. BLUE LIGHT CONTENT MUST NOT EXCEED 1% AS TESTED AND VERIFIED BY A THIRD PARTY, DEPARTMENT OF ENERGY APPROVED, TESTING LABORATORY PER LM79 PROCEDURES USING A SPECTORADIOMETER.
  - e. LIGHTING FIXTURES MUST BE ROHS COMPLIANT.





**STREET LIGHT PLAN**  
SCALE: 1" = 30'-0"

**LEGEND:**  
 PROPOSED STREET LIGHT WITH SOLAR PANEL  
 STREET LIGHT PER DETAIL THIS SHEET  
 SOLAR PANEL FACING SOUTH



REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES DIVISION OF BOATING AND OCEAN RECREATION					
NORTH KAWAIIAE SMALL BOAT HARBOR INFRASTRUCTURE IMPROVEMENTS					
<b>STREET LIGHT PLAN</b>					
DESIGNED: GT		SUBMITTED:			
DRAWN: GT/CT		DATE: MAY 2020			
CHECKED: CT		SCALE: 1"=30'			
APPROVED:					DRAWING NO.
ADMINISTRATOR					<b>C-10</b>

  
 I HEREBY CERTIFY THAT THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.  
 Signature:  4/30/20  
 Expiration date of the license

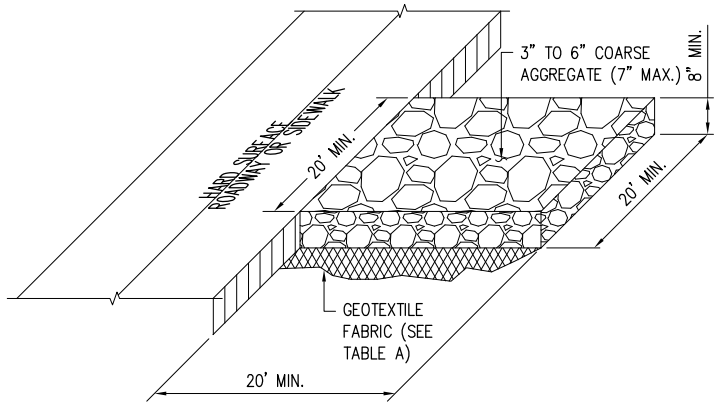
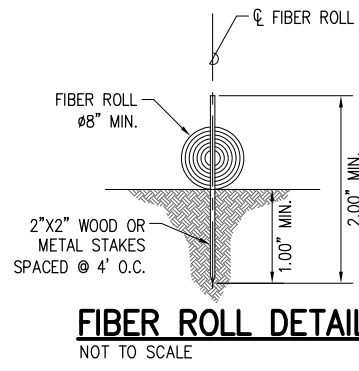
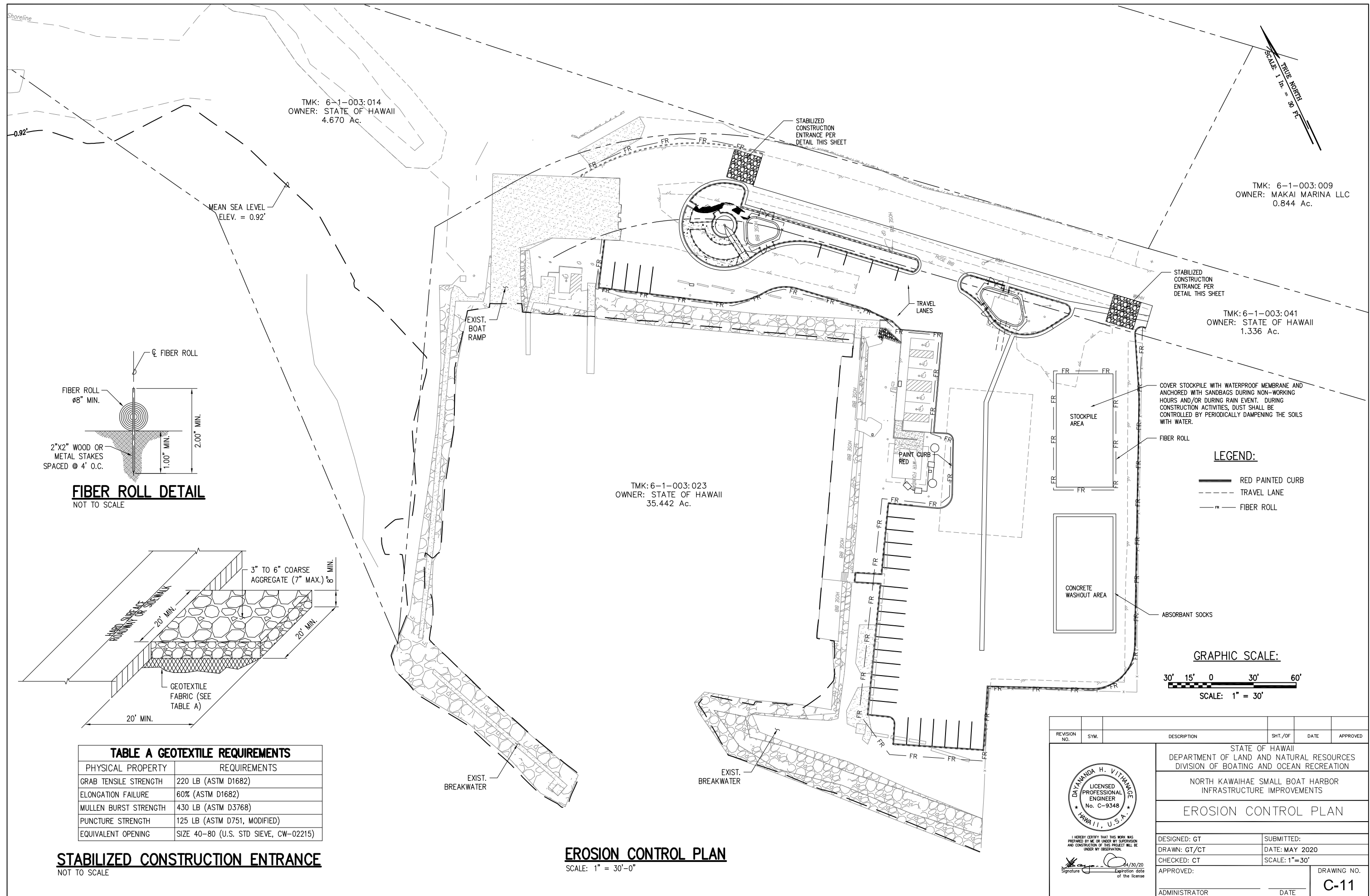
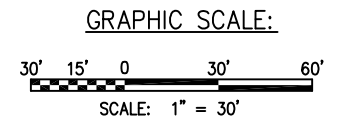


TABLE A GEOTEXTILE REQUIREMENTS	
PHYSICAL PROPERTY	REQUIREMENTS
GRAB TENSILE STRENGTH	220 LB (ASTM D1682)
ELONGATION FAILURE	60% (ASTM D1682)
MULLEN BURST STRENGTH	430 LB (ASTM D3768)
PUNCTURE STRENGTH	125 LB (ASTM D751, MODIFIED)
EQUIVALENT OPENING	SIZE 40-80 (U.S. STD SIEVE, CW-02215)

- LEGEND:**
- RED PAINTED CURB
  - - - TRAVEL LANE
  - FR FIBER ROLL



**EROSION CONTROL PLAN**  
SCALE: 1" = 30'-0"

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED

I HEREBY CERTIFY THAT THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

Signature: *[Signature]* Expiration date of the license: 4/30/20

STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
DIVISION OF BOATING AND OCEAN RECREATION

NORTH KAWAIIHAE SMALL BOAT HARBOR  
INFRASTRUCTURE IMPROVEMENTS

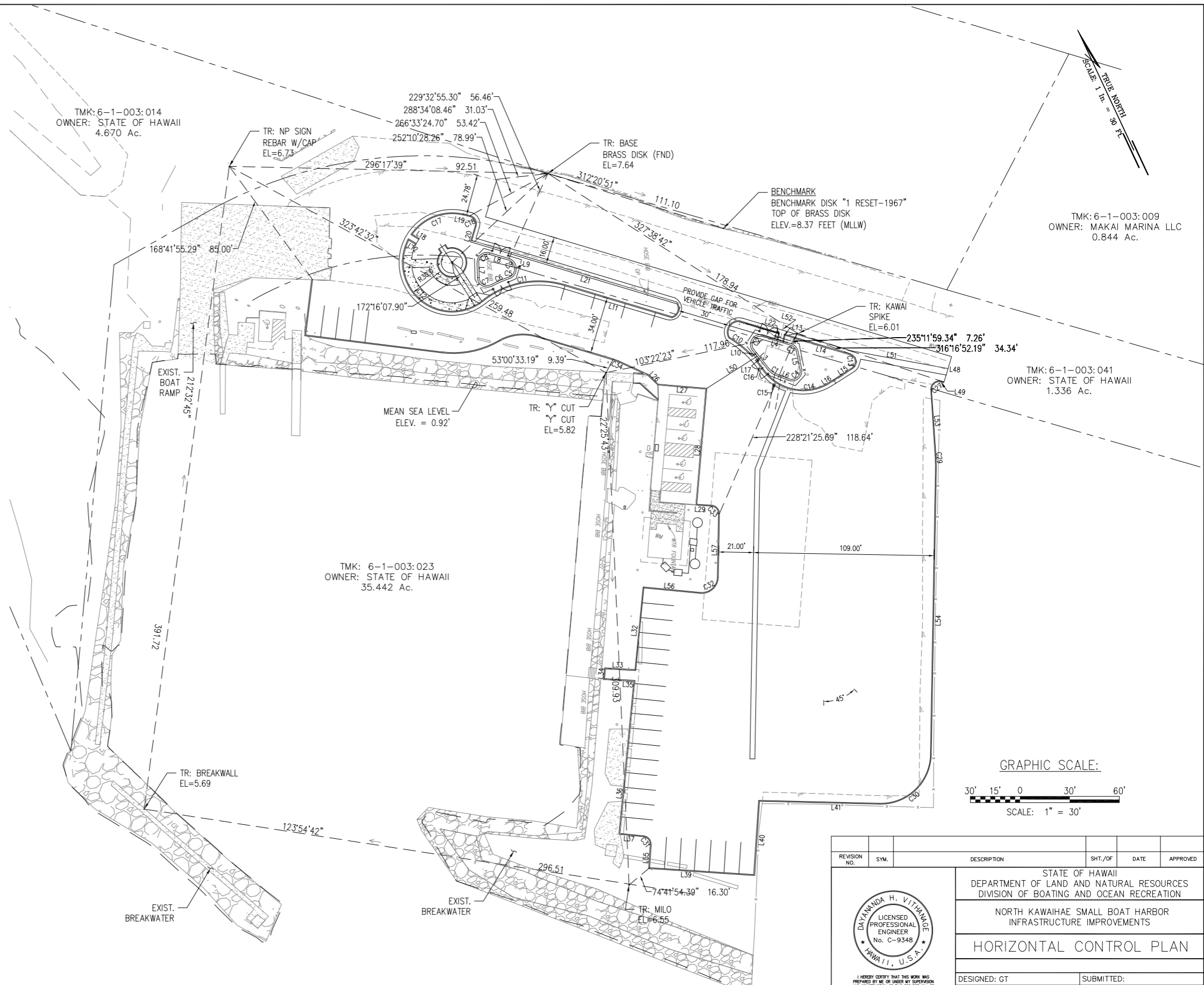
**EROSION CONTROL PLAN**

DESIGNED: GT	SUBMITTED:
DRAWN: GT/CT	DATE: MAY 2020
CHECKED: CT	SCALE: 1"=30'
APPROVED:	DRAWING NO.
ADMINISTRATOR	<b>C-11</b>

LINE TABLE			LINE TABLE			LINE TABLE		
LINE	LENGTH	BEARING	LINE	LENGTH	BEARING	LINE	LENGTH	BEARING
L1	52.28	49°28'04"	L21	126.00	311°41'31"	L47	203.39	311°41'31"
L2	174.88	28°00'02"	L22	4.22	38°25'40"	L48	16.00	41°4'31"
L3	14.63	168°25'59"	L23	33.68	32°05'54"	L49	1.67	131°41'31"
L4	17.66	312°22'52"	L24	93.08	302°00'54"	L50	36.07	82°28'49"
L5	11.02	18°42'52"	L25	8.47	338°53'00"	L51	58.48	129°25'03"
L6	8.42	138°41'37"	L26	29.37	289°52'48"	L52	6.29	302°25'48"
L7	9.08	303°24'10"	L27	70.30	29°54'37"	L53	38.82	201°12'04"
L8	12.11	311°41'31"	L28	9.30	298°22'17"	L54	172.23	208°02'02"
L9	0.73	238°34'47"	L29	90.22	38°54'50"	L55	13.89	284°54'46"
L10	2.50	82°25'46"	L30	18.35	118°21'54"	L56	54.12	128°34'50"
L11	67.85	131°41'31"	L31	6.30	38°10'03"	L57	38.42	28°30'02"
L12	5.83	328°19'02"	L32	18.30	288°21'54"	L58	18.62	318°33'35"
L13	4.22	216°25'48"	L33	92.89	38°54'50"			
L14	41.64	311°41'31"	L34	14.45	300°34'50"			
L15	13.10	32°27'42"	L35	63.00	288°47'46"			
L16	3.02	32°27'42"	L40	44.88	208°47'46"			
L17	2.33	282°23'45"	L41	73.14	286°22'51"			
L18	5.83	148°19'02"	L44	6.32	265°47'17"			
L19	4.29	308°04'19"	L45	10.14	308°48'38"			
L20	9.08	41°41'31"	L46	23.16	4°53'30"			

CURVE TABLE				
CURVE	LENGTH	RADIUS	DELTA	TANGENT
C1	5.71	11.00	25°44'23"	2.92
C2	15.28	6.00	145°58'53"	18.95
C3	6.42	6.00	61°28'00"	3.58
C4	12.86	6.00	122°58'45"	11.85
C5	7.73	6.00	74°18'02"	4.54
C6	11.24	68.58	10°59'27"	5.84
C7	12.26	6.00	117°03'45"	8.88
C8	11.34	6.00	108°17'21"	8.30
C9	7.47	6.00	71°22'18"	4.31
C10	33.19	63.00	38°11'14"	18.89
C11	52.89	54.00	55°18'06"	28.22
C12	82.32	30.00	157°01'40"	147.64
C13	11.43	6.00	138°58'11"	10.86
C14	25.56	30.00	48°48'25"	13.82
C15	20.68	30.00	38°18'35"	18.71
C16	6.73	63.00	8°07'04"	3.37
C17	36.87	30.00	88°53'19"	26.58
C18	8.17	6.00	85°37'12"	5.33
C19	35.61	58.00	37°03'43"	18.45
C20	23.65	28.00	48°43'23"	12.55

CURVE TABLE				
CURVE	LENGTH	RADIUS	DELTA	TANGENT
C27	9.84	5.00	116°23'52"	12.11
C28	115.21	150.00	44°00'18"	68.61
C29	8.38	100.00	47°47'51"	4.13
C30	47.32	30.00	93°22'50"	38.20
C31	7.70	5.00	83°10'56"	4.84
C32	8.51	10.00	84°54'48"	10.83
C33	7.84	5.00	87°33'45"	4.73
C34	3.43	25.00	75°27'04"	1.72
C35	1.85	5.83	153°59'18"	25.25
C36	4.89	6.89	147°28'23"	23.86




**NOTES**

1. TOPOGRAPHIC SURVEY CONDUCTED BY ENGINEERS SURVEYORS HAWAII, INC. ON AUGUST 10, 2017.
2. LOCATION OF ALL UNDERGROUND UTILITY LINES AND APPURTENANCES SHOWN ON THE PLANS, INCLUDING WATER LINES, POWER, AND SEWER ARE SCHEMATIC AND HAVE NOT BEEN FIELD VERIFIED. EXACT LOCATION AND CONFIGURATION OF EXISTING UTILITIES NEED TO BE VERIFIED PRIOR TO CONSTRUCTION.
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5. BOUNDARIES SHOWN GRAPHICALLY IN RELATION TO BRASS DISK FOUND.

**HORIZONTAL CONTROL PLAN**  
SCALE: 1" = 30'-0"

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES DIVISION OF BOATING AND OCEAN RECREATION					
NORTH KAWAIIAE SMALL BOAT HARBOR INFRASTRUCTURE IMPROVEMENTS					
<b>HORIZONTAL CONTROL PLAN</b>					
DESIGNED: GT			SUBMITTED:		
DRAWN: GT			DATE: MAY 2020		
CHECKED: CT			SCALE: 1" = 30'		
APPROVED:			DRAWING NO.		
ADMINISTRATOR			DATE		



DAYANANDA H. VITTHANG  
LICENSED PROFESSIONAL ENGINEER  
No. C-9348  
HAWAII, U.S.A.

I HEREBY CERTIFY THAT THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

*Signature* 04/30/20  
Expiration date of license

**C-12**