

MARCH 2026

KALAELOA DEVELOPMENT DISTRICT SARATOGA AVE. ELECTRICAL UPGRADES

Planning • Engineering • Environmental Services • Photogrammetry • Surveying • Construction Management



NOT TO SCALE

DATE _____

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CONSTRUCTION NOTES (FOR WORK WITHIN CITY R/W)

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

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

A. STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES THAT DISTURB ONE (1) ACRE OR MORE, AND

B. DISCHARGES OF HYDROTESTING EFFLUENT, DEWATERING EFFLUENT, AND WELL DRILLING EFFLUENT TO STATE WATERS.

IN ACCORDANCE WITH STATE LAW, ALL DISCHARGES RELATED TO PROJECT CONSTRUCTION OR OPERATIONS ARE REQUIRED TO COMPLY WITH STATE WATER QUALITY STANDARDS (HAWAII ADMINISTRATIVE RULES, CHAPTER 11-54). BEST MANAGEMENT PRACTICES SHALL BE USED TO MINIMIZE OR PREVENT THE DISCHARGE OF SEDIMENT, DEBRIS, AND OTHER POLLUTANTS TO STATE WATERS. PERMIT COVERAGE IS AVAILABLE FROM THE DEPARTMENT OF HEALTH, CLEAN WATER BRANCH AT <http://health.hawaii.gov/cwb>. THE OWNER/DEVELOPER/CONTRACTOR IS RESPONSIBLE FOR OBTAINING OTHER FEDERAL, STATE, OR LOCAL AUTHORIZATIONS AS REQUIRED BY LAW.
- FOR NON-CITY PROJECTS, THE CONTRACTOR SHALL NOTIFY THE CIVIL ENGINEERING BRANCH, D.P.P. AT (808)768-8084 TO ARRANGE FOR INSPECTIONAL SERVICES AND SUBMIT TWO (2) SETS OF APPROVED CONSTRUCTION PLANS SEVEN (7) DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION WORK. FOR CITY PROJECTS, THE CONTRACTOR SHALL COORDINATE INSPECTIONAL SERVICES WITH THE RESPONSIBLE CITY AGENCY.
- CONFINED SPACE FOR ENTRY BY CITY PERSONNEL, INCLUDING INSPECTORS, INTO A PERMIT REQUIRED CONFINED SPACE AS DEFINED IN 29 CFR PART 1910.146(B), THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING:

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

a. FULL BODY HARNESSES FOR UP TO TWO PERSONNEL.

b. LIFELINE AND ASSOCIATED CLIPS.

c. INGRESS/EGRESS AND FALL PROTECTION EQUIPMENT.

d. TWO-WAY RADIOS (WALKIE-TALKIES) IF OUT OF LINE-OF-SIGHT.

e. EMERGENCY (ESCAPE) RESPIRATOR (10 MINUTE DURATION).

f. CELLULAR TELEPHONE TO CALL FOR EMERGENCY ASSISTANCE.

g. CONTINUOUS GAS DETECTOR (CALIBRATED) TO MEASURE OXYGEN, HYDROGEN, SULFIDE, CARBON MONOXIDE AND FLAMMABLES (CAPABLE OF MONITORING AT A DISTANCE OF AT LEAST 20- FEET AWAY).

h. PERSONAL MULTI-GAS DETECTOR TO BE CARRIED BY INSPECTOR.

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

III. ONE ATTENDANT/RESCUE PERSONNEL TOPSIDE (TWO, IF CONDITIONS WARRANT IT).
- PURSUANT TO CHAPTER 6E, HRS, IN THE EVENT ANY ARTIFACTS OR HUMAN REMAINS ARE UNCOVERED DURING CONSTRUCTION OPERATIONS, THE CONTRACTOR SHALL IMMEDIATELY SUSPEND WORK AND NOTIFY THE HONOLULU POLICE DEPARTMENT, THE STATE DEPARTMENT OF LAND AND NATURAL RESOURCES-HISTORIC PRESERVATION DIVISION (808-692-8015). IN ADDITION, FOR NON-CITY PROJECTS, THE CONTRACTOR SHALL INFORM THE CIVIL ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING (808-768-8084); AND FOR CITY PROJECTS, NOTIFY THE RESPONSIBLE CITY AGENCY.
- FOR PROJECTS ABUTTING STATE HIGHWAYS' RIGHTS-OF-WAY, THE OWNER OR HIS AUTHORIZED REPRESENTATIVE SHALL NOTIFY THE STATE DEPARTMENT OF TRANSPORTATION, HIGHWAYS DIVISION, OAHU DISTRICT, DRAINAGE DISCHARGE UNIT AT (808)831-6793 FOR AN ASSESSMENT OF STATE HIGHWAYS PERMIT REQUIREMENTS.
- FOR BENCH MARK, SEE SHEET C04.

ARCHAEOLOGICAL NOTES

- IN THE UNLIKELY EVENT THAT SUBSURFACE HISTORIC RESOURCES, INCLUDING: HUMAN SKELETAL REMAINS, STRUCTURAL REMAINS, CULTURAL DEPOSITS, ARTIFACTS, SAND DEPOSITS, OR SNAIL HOLES ARE IDENTIFIED DURING THE DEMOLITION AND/OR CONSTRUCTION WORK, CEASE WORK IN THE IMMEDIATE VICINITY OF THE FIND, PROTECT THE FIND FROM ADDITIONAL DISTURBANCE, AND CONTACT THE STATE HISTORIC PRESERVATION DIVISION, AT (808) 692-8015
- ALL TRENCHING AND EXCAVATION WORK IN THE ARCHAEOLOGICAL SITE(S) SHALL BE MONITORED BY AN ARCHAEOLOGIST RETAINED BY THE OWNER FOR THIS PROJECT.

WATER POLLUTION AND EROSION CONTROL NOTES

A. GENERAL:

- SEE SPECIAL PROVISIONS SECTION 209 - WATER POLLUTION AND EROSION CONTROL. SECTION 209 DESCRIBES BUT IS NOT LIMITED TO: SUBMITTAL REQUIREMENTS; SCHEDULING OF A WATER POLLUTION AND EROSION CONTROL CONFERENCE WITH THE ENGINEER; CONSTRUCTION REQUIREMENTS; METHOD OF MEASUREMENT; AND BASIS OF PAYMENT. IN ADDITION, APPENDIX A LISTS POTENTIAL POLLUTANT SOURCES AND CORRESPONDING BMPs USED TO MITIGATE THE POLLUTANTS.
- FOLLOW THE GUIDELINES IN THE CURRENT HDOT CONSTRUCTION BEST MANAGEMENT PRACTICES FIELD MANUAL IN DEVELOPING, INSTALLING AND MAINTAINING THE BEST MANAGEMENT PRACTICES (BMP) FOR THE PROJECT. FOR ANY CONFLICTING REQUIREMENTS BETWEEN THE MANUAL AND APPLICABLE BID DOCUMENTS, THE APPLICABLE BID WILL GOVERN. SHOULD A REQUIREMENT NOT BE CLEARLY DESCRIBED WITHIN THE APPLICABLE BID DOCUMENTS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY FOR INTERPRETATION. FOR THE PURPOSES OF CLARIFICATION UNDER NOTE A.2, "APPLICABLE BID DOCUMENTS" INCLUDE THE CONSTRUCTION PLANS, STANDARD SPECIFICATIONS, SPECIAL PROVISIONS, PERMITS, AND THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) WHEN APPLICABLE.
- FOLLOW THE GUIDELINES IN THE HONOLULU'S CITY & COUNTY "RULES RELATING TO SOIL EROSION STANDARDS AND GUIDELINES" ALONG WITH APPLICABLE SOIL EROSION GUIDELINES FOR PROJECTS ON MAUI, MOLOKAI, KAUAI, AND HAWAII.
- THE ENGINEER MAY ASSESS LIQUIDATED DAMAGES OF UP TO \$27,500 FOR NON-COMPLIANCE OF EACH BMP REQUIREMENT AND EACH REQUIREMENT STATED IN SECTION 209 AND SPECIAL PROVISIONS, FOR EVERY DAY OF NON-COMPLIANCE. THERE IS NO MAXIMUM LIMIT ON THE AMOUNT ASSESSED PER DAY.
- THE ENGINEER WILL DEDUCT THE COST FROM THE PROGRESS PAYMENT FOR ALL CITATIONS RECEIVED BY THE DEPARTMENT FOR NON-COMPLIANCE, OR THE CONTRACTOR SHALL REIMBURSE THE STATE FOR THE FULL AMOUNT OF THE OUTSTANDING COST INCURRED BY THE STATE.
- IF NECESSARY, INSTALL A RAIN GAGE PRIOR TO ANY FIELD WORK INCLUDING THE INSTALLATION OF ANY SITE-SPECIFIC BEST MANAGEMENT PRACTICES. THE RAIN GAGE SHALL HAVE A TOLERANCE OF AT LEAST 0.05 INCHES OF RAINFALL. INSTALL THE RAIN GAGE ON THE PROJECT SITE IN AN AREA THAT WILL NOT DETER RAINFALL FROM ENTERING THE GAGE OPENING. DO NOT INSTALL IN A LOCATION WHERE RAIN WATER MAY SPLASH INTO RAIN GAGE. THE RAIN GAGE INSTALLATION SHALL BE STABLE AND PLUMBED. DO NOT BEGIN FIELD WORK UNTIL THE RAIN GAGE IS INSTALLED AND SITE-SPECIFIC BEST MANAGEMENT PRACTICES ARE IN-PLACE.
- SUBMIT SITE-SPECIFIC BMP PLAN TO THE ENGINEER ALONG WITH A COMPLETED SITE-SPECIFIC BMP REVIEW CHECKLIST WITHIN 21 CALENDAR DAYS OF AWARD. THE SITE-SPECIFIC BMP REVIEW CHECKLIST MAY BE OBTAINED FROM [HTTP://WWW.STORMWATERHAWAII.COM](http://www.stormwaterhawaii.com).

B. WASTE DISPOSAL:

- WASTE MATERIALS
COLLECT AND STORE ALL WASTE MATERIALS IN A SECURELY LIDDED METAL DUMPSTER OR ROLL OFF CONTAINER WITH COVER TO KEEP RAIN OUT OR LOSS OF WASTE DURING WINDY CONDITIONS. THE DUMPSTER SHALL MEET ALL LOCAL AND STATE SOLID WASTE MANAGEMENT REGULATIONS. DEPOSIT ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE IN THE DUMPSTER. EMPTY THE DUMPSTER WEEKLY OR WHEN THE CONTAINER IS TWO-THIRDS FULL, WHICHEVER IS SOONER. DO NOT BURY CONSTRUCTION WASTE MATERIALS ONSITE. THE CONTRACTOR'S SUPERVISORY PERSONNEL SHALL BE INSTRUCTED REGARDING THE CORRECT PROCEDURE FOR WASTE DISPOSAL. POST NOTICES STATING THESE PRACTICES IN THE OFFICE TRAILER, ON A WEATHERPROOF BULLETIN BOARD, OR OTHER ACCESSIBLE LOCATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SEEING THAT THESE PROCEDURES ARE FOLLOWED. SUBMIT THE SOLID WASTE DISCLOSURE FORM FOR CONSTRUCTION SITES TO THE ENGINEER WITHIN 30 CALENDAR DAYS OF CONTRACT EXECUTION. PROVIDE A COPY OF ALL THE DISPOSAL RECEIPTS FROM THE FACILITY PERMITTED BY THE DEPARTMENT OF HEALTH TO RECEIVE SOLID WASTE TO THE ENGINEER MONTHLY. THIS SHOULD ALSO INCLUDE DOCUMENTATION FROM ANY INTERMEDIARY FACILITY WHERE SOLID WASTE IS HANDLED OR PROCESSED.
- HAZARDOUS WASTE
DISPOSE ALL HAZARDOUS WASTE MATERIALS IN THE MANNER SPECIFIED BY LOCAL OR STATE REGULATIONS AND BY THE MANUFACTURER. THE CONTRACTOR'S SITE PERSONNEL SHALL BE INSTRUCTED IN THESE PRACTICES AND SHALL BE RESPONSIBLE FOR SEEING THAT THESE PRACTICES ARE FOLLOWED.
- SANITARY WASTE
COLLECT ALL SANITARY WASTE FROM THE PORTABLE UNITS A MINIMUM OF ONCE PER WEEK, OR AS REQUIRED. POSITION SANITARY FACILITIES WHERE THEY ARE SECURE AND WILL NOT BE TIPPED OVER OR KNOCKED DOWN.

C. EROSION AND SEDIMENT CONTROL INSPECTION AND MAINTENANCE PRACTICES:

- FOR PROJECTS WITH AN NPDES PERMIT FOR CONSTRUCTION ACTIVITIES, INSPECT AT THE FOLLOWING INTERVALS. FOR CONSTRUCTION AREAS DISCHARGING TO NUTRIENT OR SEDIMENT IMPAIRED WATERS, INSPECT ALL CONTROL MEASURES AT LEAST ONCE EACH WEEK AND WITHIN 24 HOURS OF ANY RAINFALL EVENT OF 0.25 INCHES OR GREATER WITHIN A 24 HOUR PERIOD. FOR CONSTRUCTION AREAS DISCHARGING TO WATERS NOT IMPAIRED FOR NUTRIENT OR SEDIMENTS, INSPECT ALL CONTROL MEASURES WEEKLY. INSPECTIONS ARE ONLY REQUIRED DURING THE PROJECT'S NORMAL WORKING HOURS. THE DISCHARGE POINT WATER CLASSIFICATION MAY BE FOUND IN THE SWPPP.
- FOR PROJECTS WITHOUT AN NPDES PERMIT FOR CONSTRUCTION ACTIVITIES, INSPECT ALL CONTROL MEASURES WEEKLY.
- MAINTAIN ALL EROSION AND SEDIMENT CONTROL MEASURES IN GOOD WORKING ORDER. IF REPAIR IS NECESSARY, INITIATE REPAIR IMMEDIATELY AND COMPLETE BY THE CLOSE OF THE NEXT WORK DAY IF THE PROBLEM DOES NOT REQUIRE SIGNIFICANT REPAIR OR REPLACEMENT, OR IF THE PROBLEM CAN BE CORRECTED THROUGH ROUTINE MAINTENANCE. WHEN INSTALLATION OF A NEW EROSION OR SEDIMENT CONTROL OR A SIGNIFICANT REPAIR IS NEEDED, INSTALL THE NEW OR MODIFIED CONTROL OR COMPLETE THE REPAIR NO LATER THAN 7 CALENDAR DAYS FROM THE TIME OF DISCOVERY. "IMMEDIATELY" MEANS THE CONTRACTOR SHALL TAKE ALL REASONABLE MEASURES TO MINIMIZE OR PREVENT DISCHARGE OF POLLUTANTS UNTIL A PERMANENT SOLUTION IS INSTALLED AND MADE OPERATIONAL. IF A PROBLEM IS IDENTIFIED AT A TIME IN THE DAY IN WHICH IT IS TOO LATE TO INITIATE REPAIR, INITIATION OF REPAIR SHALL BEGIN ON THE FOLLOWING WORK DAY.
- REMOVE BUILT-UP SEDIMENT FROM SILT FENCE WHEN IT HAS REACHED ONE-THIRD THE HEIGHT OF THE FENCE. REMOVE SEDIMENT FROM OTHER PERIMETER SEDIMENT CONTROL DEVICES WHEN IT HAS REACHED ONE-HALF THE HEIGHT OF THE DEVICE.
- INSPECT SILT SCREEN OR FENCE FOR DEPTH OF SEDIMENT, TEARS, TO VERIFY THAT THE FABRIC IS SECURELY ATTACHED TO THE FENCE POSTS OR CONCRETE SLAB AND TO VERIFY THAT THE FENCE POSTS ARE FIRMLY IN THE GROUND. INSPECT AND VERIFY THE BOTTOM OF THE SILT SCREEN IS BURIED A MINIMUM OF 6 INCHES BELOW THE EXISTING GROUND.
- INSPECT TEMPORARY AND PERMANENT SEEDING AND PLANTING FOR BARE SPOTS, WASHOUTS AND HEALTHY GROWTH.
- COMPLETE AND SUBMIT TO THE ENGINEER A MAINTENANCE INSPECTION REPORT WITHIN 24 HOURS AFTER EACH INSPECTION.

- PROVIDE A STABILIZED CONSTRUCTION ENTRANCE AT ALL POINTS OF EXIT ONTO PAVED ROADS TO REDUCE VEHICLE TRACKING OF SEDIMENTS. INCLUDE STABILIZED CONSTRUCTION ENTRANCE IN THE WATER POLLUTION, DUST, AND EROSION CONTROL SUBMITTALS. MINIMUM LENGTH SHOULD BE 50 FEET. MINIMUM WIDTH SHOULD BE 30 FEET. MINIMUM DEPTH SHOULD BE 12 INCHES OR AS RECOMMENDED BY THE SOILS ENGINEER AND UNDERLAIN WITH GEO-TEXTILE FABRIC. IF MINIMUM DIMENSIONS CANNOT BE MET, PROVIDE OTHER STABILIZATION TECHNIQUES THAT REMOVE SEDIMENT PRIOR TO EXIT. CLEAN THE PAVED STREET ADJACENT TO THE SITE ENTRANCE DAILY OR AS REQUIRED TO REMOVE ANY EXCESS MUD, COLD-PLAINED MATERIALS, DIRT OR ROCK TRACKED FROM THE SITE. DO NOT HOSE DOWN THE STREET WITHOUT CONTAINING OR VACUUMING WASH WATER. COVER DUMP TRACKS HAULING MATERIAL FROM THE CONSTRUCTION SITE WITH A TARPAILIN. REMOVE SEDIMENT TRACKED ONTO THE STREET, SIDEWALK, OR OTHER PAVED AREA BY THE END OF THE DAY IN WHICH THE TRACK-OUT OCCURS.
- INCLUDE DESIGNATED CONCRETE WASHOUT AREA(S) IN THE WATER POLLUTION, DUST, AND EROSION CONTROL SUBMITTALS.
- SUBMIT THE NAME OF A SPECIFIC INDIVIDUAL DESIGNATED RESPONSIBLE FOR INSPECTIONS MAINTENANCE AND REPAIR ACTIVITIES AND FILLING OUT THE INSPECTION AND MAINTENANCE REPORT.
- PERSONNEL SELECTED FOR THE INSPECTION AND MAINTENANCE RESPONSIBILITIES SHALL RECEIVE TRAINING FROM THE CONTRACTOR. THEY SHALL BE TRAINED IN ALL THE INSPECTION AND MAINTENANCE PRACTICES NECESSARY FOR KEEPING THE EROSION AND SEDIMENT CONTROLS USED ONSITE IN GOOD WORKING ORDER.
- CONTAIN, REMOVE, AND DISPOSE SLURRY GENERATED FROM SAW CUTTING OF PAVEMENT IN ACCORDANCE WITH APPROVED BMP PRACTICES. DO NOT ALLOW DISCHARGE INTO THE DRAINAGE SYSTEM OR STATE WATERS.
- FOR PROJECTS WITH AN NPDES PERMIT FOR CONSTRUCTION ACTIVITIES, IMMEDIATELY INITIATE STABILIZING EXPOSED SOIL AREAS UPON COMPLETION OF EARTH-DISTURBING ACTIVITIES FOR AREAS WHERE EARTH-DISTURBING ACTIVITIES HAVE PERMANENTLY OR TEMPORARILY CEASED. EARTH-DISTURBING ACTIVITIES HAVE PERMANENTLY CEASED WHEN CLEARING AND EXCAVATION WITHIN ANY AREA OF THE CONSTRUCTION SITE THAT WILL NOT INCLUDE PERMANENT STRUCTURES HAS BEEN COMPLETED. EARTH-DISTURBING ACTIVITIES HAVE TEMPORARILY CEASED WHEN CLEARING, GRADING, AND EXCAVATION WITHIN ANY AREA OF THE SITE THAT WILL NOT INCLUDE PERMANENT STRUCTURES WILL NOT RESUME (I.E., THE LAND WILL BE IDLE) FOR A PERIOD OF 14 OR MORE CALENDAR DAYS, BUT SUCH ACTIVITIES WILL RESUME IN THE FUTURE. FOR CONSTRUCTION AREAS DISCHARGING INTO WATERS NOT IMPAIRED FOR NUTRIENTS SEDIMENTS, COMPLETE INITIAL STABILIZATION WITHIN 14 CALENDAR DAYS AFTER THE TEMPORARY OR PERMANENT CESSATION OF EARTH-DISTURBING ACTIVITIES. FOR CONSTRUCTION AREAS TEMPORARY OR PERMANENT CESSATION OF EARTH-DISTURBING ACTIVITIES. FOR CONSTRUCTION AREAS DISCHARGING INTO NUTRIENT OR SEDIMENT IMPAIRED WATERS, COMPLETE INITIAL STABILIZATION WITHIN 7 CALENDAR DAYS AFTER THE TEMPORARY OR PERMANENT CESSATION OF EARTH-DISTURBING ACTIVITIES. CLASSIFICATION OF WATER AT THE DISCHARGE POINT MAY BE FOUND IN THE SWPPP.
- FOR PROJECTS WITHOUT AN NPDES PERMIT FOR CONSTRUCTION ACTIVITIES, COMPLETE INITIAL STABILIZATION WITHIN 14 CALENDAR DAYS AFTER THE TEMPORARY OR PERMANENT CESSATION OF EARTH-DISTURBING ACTIVITIES.

D. GOOD HOUSEKEEPING BEST MANAGEMENT PRACTICES:

- MATERIALS POLLUTION PREVENTION PLAN
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.

CONCRETE	CLEANING SOLVENTS	ADHESIVE
DETERGENTS	WOOD	TAR
PAINTS (ENAMEL AND LATEX)	MASONRY BLOCK	FERTILIZER
METAL STUDS	HERBICIDES AND PESTICIDES	
PETROLEUM BASED PRODUCTS	CURBING COMPOUNDS	

B. USE MATERIAL MANAGEMENT PRACTICES TO REDUCE THE RISK OF SPILLS FOR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES TO STORM WATER RUNOFF. MAKE AN EFFORT TO STORE ONLY ENOUGH PRODUCT AS IS REQUIRED TO DO THE JOB.

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

D. KEEP PRODUCTS IN THEIR ORIGINAL CONTAINERS WITH THE ORIGINAL MANUFACTURER'S LABEL.

E. DO NOT MIX SUBSTANCES WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER.

F. WHENEVER POSSIBLE, USE A PRODUCT UP COMPLETELY BEFORE DISPOSING OF THE CONTAINER.

G. FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR PROPER USE AND DISPOSAL.

H. CONDUCT A DAILY INSPECTION TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS ONSITE.
- HAZARDOUS MATERIAL POLLUTION PREVENTION PLAN
A. KEEP PRODUCTS IN ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEAL-ABLE.
B. RETAIN ORIGINAL LABELS AND SAFETY DATA SHEETS (SDS), FORMERLY MATERIAL SAFETY DATA SHEETS (MSDS).
C. DISPOSE OF SURPLUS PRODUCTS ACCORDING TO MANUFACTURERS' INSTRUCTIONS AND LOCAL AND STATE REGULATIONS.
- ONSITE AND OFFSITE PRODUCT SPECIFIC PLAN THE FOLLOWING PRODUCT SPECIFIC PRACTICES SHALL BE FOLLOWED ONSITE:

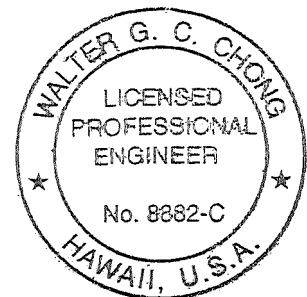
A. PETROLEUM BASED PRODUCTS:
MONITOR ALL ONSITE VEHICLES FOR LEAKS AND PERFORM REGULAR PREVENTIVE MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE. STORE PETROLEUM PRODUCTS IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. APPLY ASPHALT SUBSTANCES USED ONSITE ACCORDING TO THE MANUFACTURER'S RECOMMENDATION.

B. FERTILIZERS:
APPLY FERTILIZERS USED ONLY IN THE MINIMUM AMOUNTS RECOMMENDED BY THE MANUFACTURER AND FEDERAL, STATE, AND LOCAL REQUIREMENTS. AVOID APPLYING JUST BEFORE A HEAVY RAIN EVENT. APPLY AT THE APPROPRIATE TIME OF YEAR FOR G. LOCATION, AND PREFERABLY TIMED TO COINCIDE AS CLOSELY AS POSSIBLE TO THE PERIOD OF MAXIMUM VEGETATION UPTAKE AND GROWTH. ONCE APPLIED, WORK FERTILIZER INTO THE SOIL TO LIMIT EXPOSURE TO STORM WATER. DO NOT APPLY TO STORM CONVEYANCE CHANNELS WITH FLOWING WATER. STORAGE SHALL BE IN A COVERED SHED OR IN AN AREA WHERE FERTILIZER WILL NOT COME INTO CONTACT WITH PRECIPITATION OR STORM WATER. TRANSFER THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER TO A SEAL-ABLE PLASTIC BIN TO AVOID SPILLS.

C. PAINTS:
SEAL AND STORE ALL CONTAINERS WHEN NOT REQUIRED FOR USE. DO NOT DISCHARGE EXCESS PAINT TO THE DRAINAGE SYSTEM, SANITARY SEWER SYSTEM, OR STATE WATERS. DISPOSE PROPERLY ACCORDING TO MANUFACTURERS' INSTRUCTIONS AND STATE AND LOCAL REGULATIONS.

APPROVED:

Chief, Civil Engineering Branch, DPP DATE



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THE PROJECT WILL BE UNDER MY OBSERVATION.
Walter G. C. Orlando 04/30/28
EXPIRATION DATE OF THE LICENSE

REVISION	DATE	BRIEF	BY
HAWAII COMMUNITY DEVELOPMENT AUTHORITY STATE OF HAWAII KALAELOA DEVELOPMENT DISTRICT SARATOGA AVE ELECTRICAL UPGRADES CONSTRUCTION NOTES - 1 ENGINEER: <u>WGC</u> CHECKED BY: <u>TL</u> DRAFTSMAN: <u>KK</u> DATE: <u>MARCH 2026</u> APPROVED: _____ EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY			

FILE	POCKET	FOLDER	NO.

TRENCHING NOTES

- PERFORM ALL WORK IN A NEAT AND WORKMANLIKE MANNER AND IN CONFORMITY WITH THE PROVISIONS OF CHAPTER 14, REVISED ORDINANCE OF HONOLULU 1990, AS AMENDED, OR AS MANY BE SUBSEQUENTLY AMENDED.
- BEFORE PAVEMENT RESTORATION MAY COMMENCE, NOTIFY THE DIRECTOR OF PLANNING AND PERMITTING OR AN AUTHORIZED REPRESENTATIVE AND FURNISH DATA ON TESTS PERFORMED UNDER THE SUPERVISION OF A REGISTERED CIVIL ENGINEER SUBSTANTIATING THAT THE BACKFILL HAS BEEN COMPACTED TO THE DENSITY SPECIFIED IN THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION FOR ALL TRENCHES THAT ARE OVER 2 FEET IN DEPTH IN MAJOR AND SECONDARY STREETS AND FOR ALL TRENCHES OVER FIFTY FEET IN LENGTH OVER 2 FEET IN DEPTH IN MINOR AND DEAD END STREETS. THE DIRECTOR MAY ALSO REQUIRE COMPACTION TESTS OF BACKFILL FOR HOLES AND FOR TRENCHES OF LESS THAN 2 FEET IN DEPTH AND ADDITIONAL COMPACTION TESTS ON TRENCHES FOR WHICH THE PERMITTEE HAS FURNISHED DATA.
- CONTACT THE DEPARTMENT OF PLANNING AND PERMITTING, SITE DEVELOPMENT DIVISION, CIVIL ENGINEERING BRANCH, PERMITTING AND INSPECTION SECTION TO SCHEDULE A FINAL INSPECTION OF PAVEMENT RESTORATION WORK. THE BOND FILED WITH THE CITY WILL BE RELEASED ONE (1) YEAR AFTER THE DATE OF THE FINAL INSPECTION. (PHONE NUMBER: (808)768-8084)
- PROVIDE SHORING AND TEMPORARY TRENCH COVERS ADEQUATE TO SUPPORT LEGAL TRAFFIC LOADS.
- ACCOMPLISH EMERGENCY WORK INCLUDING BUT NOT LIMITED TO PATCHING HOLES, REPAIRING TEMPORARY TRENCH COVERS AND INSTALLATION OF WARNING LIGHTS OR BARRICADES WHEN THE "CONTACT FOR EMERGENCY REPAIRS" FURNISHED BY THE APPLICANT IS NOTIFIED. IF THE EMERGENCY WORK IS NOT MADE IN A REASONABLE TIME WHEN NOTIFIED OR UPON FAILURE OF THE "CONTACT FOR EMERGENCY REPAIRS," RESPOND AND PAY THE COST OF THE EMERGENCY WORK MADE BY THE DEPARTMENT OF FACILITY MAINTENANCE, DIVISION OF ROAD MAINTENANCE.
- PURSUANT FOR CHAPTER 6E, HRS, IN THE EVENT ANY ARTIFACTS OR HUMAN REMAINS ARE UNCOVERED DURING CONSTRUCTION OPERATIONS, IMMEDIATELY SUSPEND WORK AND NOTIFY THE HONOLULU POLICE DEPARTMENT, THE STATE DEPARTMENT OF LAND AND NATURAL RESOURCES-HISTORIC PRESERVATION DIVISION ((808)692-8015). IN ADDITION, FOR THE NON-CITY PROJECTS, INFORM THE CIVIL ENGINEERING BRANCH, D.P.P. ((808)768-8084); AND FOR CITY PROJECTS, NOTIFY THE RESPONSIBLE CITY AGENCY.
- UNDERTAKE, FOR A PERIOD OF ONE (1) YEAR AFTER THE SATISFACTORY COMPLETION AND APPROVAL OF RESTORATION WORK, ANY NECESSARY REPAIRS TO THE RESTORED WORK OR FACILITIES DISTURBED AND/OR BY THE WORK PERFORMED UNDER THIS PERMIT.
- REMOVE, RELOCATE, REPLACE, RECONSTRUCT, OR ADJUST, AT HIS/HER OWN EXPENSE, ANY OF HIS/HER FACILITIES THAT MAY EXIST ON OR UNDER THE RIGHT OF WAY WHENEVER AND AS OFTEN AS MAY BE REQUIRED BY THE DIRECTOR OR AN AUTHORIZED REPRESENTATIVE IN ORDER TO UNDERTAKE THE CONSTRUCTION, RECONSTRUCTION OR MAINTENANCE OF SAID RIGHT OF WAY.
- KEEP ALL FACILITIES INSTALLED UNDER THE SAID PERMIT IN GOOD REPAIR SO THAT THE PRESENCE OF SUCH FACILITY ON OR UNDER THE RIGHT OF WAY WILL IN NO WAY IMPAIR THE USE OR USEFULNESS OF ANY IMPROVEMENT WHICH MAY NOW EXIST OR HEREAFTER COME INTO EXISTENCE.
- PROCURE, AT HIS/HER OWN EXPENSE, AND KEEP IN FORCE AT ALL TIME INSURANCE NAMING THE CITY AS AN ADDITIONAL INSURED AS REQUIRED BY CHAPTER 14 AFORESAID AND SUPPLY EVIDENCE SATISFACTORY TO THE CITY THAT THE REQUIRED INSURANCE HAS BEEN PROCURED AND IS IN FORCE PRIOR TO ISSUANCE OF THE PERMIT.
- KEEP A COPY OF PERMIT AND A COPY OF THE PLANS IN THE HANDS OF THE WORKING CREW FOR EXHIBIT UPON REQUEST OF ANY AUTHORIZED REPRESENTATIVE OF THE CITY.
- SUBMIT AS-BUILT DRAWINGS TO THE DIRECTOR SHOWING THE ACTUAL CONSTRUCTION PERFORMED. AS-BUILT DRAWINGS ARE NOT REQUIRED FOR EMERGENCY REPAIRS AND SERVICE CONNECTIONS.
- THE PERMIT FEE IS NOT REFUNDABLE UNDER ANY CONDITION.

PUBLIC HEALTH, SAFETY AND CONVENIENCE

- THE CONTRACTOR SHALL OBSERVE AND COMPLY WITH ALL FEDERAL, STATE AND LOCAL LAWS REQUIRED FOR THE PROTECTION OF PUBLIC HEALTH AND SAFETY AND ENVIRONMENTAL QUALITY.
- THE CONTRACTOR AT HIS/HER OWN EXPENSE, SHALL KEEP THE PROJECT AND ITS SURROUNDING AREAS FREE FROM RUBBISH, DUST, NOISE, EROSION, ETC. THE WORK SHALL BE DONE IN CONFORMANCE WITH THE AIR AND WATER POLLUTION CONTROL STANDARDS AND REGULATIONS OF THE STATE DEPARTMENT OF HEALTH.
- NO CONTRACTOR SHALL PERFORM ANY CONSTRUCTION OPERATIONS SO AS TO CAUSE FALLING ROCKS, SOIL OR DEBRIS IN ANY FORM TO FALL, SLIDE, OR FLOW INTO EXISTING STATE OR CITY DRAINAGE SYSTEMS, OR ADJOINING PROPERTIES, STREETS OR NATURAL WATERCOURSES. SHOULD SUCH VIOLATION OCCUR, THE CONTRACTOR MAY BE CITED AND THE CONTRACTOR SHALL IMMEDIATELY MAKE ALL REMEDIAL ACTIONS NECESSARY. THE COSTS INCURRED FOR ANY REMEDIAL ACTION SHALL BE PAYABLE BY THE CONTRACTOR
- THE CONTRACTOR SHALL PROVIDE, INSTALL AND MAINTAIN ALL NECESSARY SIGNS, LIGHTS, FLARES, BARRICADES, MARKERS, CONES, AND OTHER PROTECTIVE FACILITIES AND SHALL TAKE ALL NECESSARY PRECAUTIONS FOR THE PROTECTION, CONVENIENCE, AND SAFETY OF THE PUBLIC.
- THE CONTRACTOR'S ATTENTION IS DIRECTED TO CHAPTER 46, PUBLIC HEALTH REGULATIONS, DEPARTMENT OF HEALTH, STATE OF HAWAII, "COMMUNITY NOISE CONTROL," IN WHICH MAXIMUM PERMISSIBLE NOISE LEVELS HAVE BEEN SET. IF THE CONSTRUCTION WORK REQUIRES A PERMIT FROM THE DIRECTOR OF HEALTH, THE CONTRACTOR SHALL OBTAIN A COPY OF CHAPTER 46 AND BECOME FAMILIAR WITH THE NOISE LEVEL RESTRICTIONS AND THE PROCEDURES FOR OBTAINING A PERMIT FOR THE CONSTRUCTION ACTIVITIES. APPLICATION AND INFORMATION ON VARIANCES AREA AVAILABLE FROM THE ENVIRONMENTAL PROTECTION AND HEALTH SERVICES DIVISION, 1250 PUNCHBOWL ST., HONOLULU, HI 96813 OR BY TELEPHONE ((808)548-6455).

WATER NOTES (PRIVATE)

- UNLESS OTHERWISE SPECIFIED, ALL MATERIALS AND CONSTRUCTION OF WATER SYSTEM FACILITIES AND APPURTENANCES SHALL BE IN ACCORDANCE WITH THE CITY AND COUNTY OF HONOLULU BOARD OF WATER SUPPLY'S "WATER SYSTEM STANDARDS" DATED 2002, THE "WATER SYSTEM EXTERNAL CORROSION CONTROL STANDARDS", VOLUME 3, DATED 2021, AND ALL SUBSEQUENT AMENDMENTS AND ADDITIONS.
- ALL PLANS APPROVED BY THE BOARD OF WATER SUPPLY ARE BASED SOLELY ON THE ADEQUACY OF THE WATER SUPPLY AND/OR IF WORK IS TO BE DONE ON/OR NEAR THE WATER SYSTEM.
- THE CONTRACTOR SHALL NOTIFY CAPITAL PROJECTS DIVISION, CONSTRUCTION SECTION IN WRITING OR CALL (808)748-5730 ONE WEEK PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES.
- THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITIES AND STRUCTURES AS SHOWN ON THE PLANS ARE FROM THE LATEST AVAILABLE DATA BUT IS NOT GUARANTEED AS TO THE ACCURACY OR THE ENCOUNTERING OF OTHER OBSTACLES DURING THE COURSE OF THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE AND PAY FOR ALL DAMAGES TO EXISTING UTILITIES. THE CONTRACTOR SHALL NOT ASSUME THAT WHERE NO UTILITIES ARE SHOWN, THAT NONE EXIST.
- RE-APPROVAL SHALL BE REQUIRED IF THIS PROJECT IS NOT UNDER CONSTRUCTION WITHIN A PERIOD OF TWO (2) YEARS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL WATER LINES DURING CONSTRUCTION. THE CONTRACTOR SHALL BE ESPECIALLY CAREFUL WHEN EXCAVATING BEHIND WATER LINES, TEES, AND BENDS WHEREVER THERE IS A POSSIBILITY OF WATER LINE MOVEMENT DUE TO THE REMOVAL OF THE SUPPORTING EARTH BEYOND THE EXISTING REACTION BLOCKS. THE CONTRACTOR SHALL TAKE WHATEVER MEASURE NECESSARY TO PROTECT THE WATER LINES, SUCH AS CONSTRUCTING SPECIAL REACTION BLOCKS (WITH BOARD OF WATER SUPPLY APPROVAL) AND/OR MODIFYING HIS CONSTRUCTION METHOD.
- PRIOR TO ANY EXCAVATING, THE CONTRACTOR SHALL VERIFY IN THE FIELD THE LOCATION OF EXISTING WATER MAINS AND APPURTENANCES.
- THE CONTRACTOR SHALL ADJUST ALL MANHOLE FRAMES/VALVE BOXES/METER BOXES WITHIN THE RESURFACED AREA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR "REFERENCING" THESE MANHOLES/VALVE BOXES/METER BOXES TO FACILITATE THE ADJUSTMENTS.
- ANY ADJUSTMENTS TO THE EXISTING WATER SYSTEM REQUIRED DURING CONSTRUCTION TO MEET REQUIREMENTS OF BOARD OF WATER SUPPLY STANDARDS, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE DONE BY THE CONTRACTOR AT NO COST TO THE BOARD OF WATER SUPPLY.
- NO DEVIATION TO THE BOARD OF WATER SUPPLY 2002 WATER SYSTEM STANDARDS SHALL BE ALLOWED WITHOUT THE MANAGER AND CHIEF ENGINEERS' APPROVAL.
- WHEN A UTILITY (GAS, SEWER, ELECTRICAL DUCT LINE, FIBER OPTIC, DRAINAGE, ETC.) CROSSES BELOW A BOARD OF WATER SUPPLY WATER MAIN, THE DESIGNER OF RECORD AND THEIR CONSTRUCTION ENGINEER SHALL BE RESPONSIBLE FOR DETERMINING THE ADEQUATE WATER MAIN STRUCTURAL SUPPORT AND SUBMIT THE CONSTRUCTION METHOD AND SHOP DRAWING, STAMPED BY A LICENSED ENGINEER AND REVIEWED AND ACCEPTED BY THE DESIGNER OF RECORD, TO THE BOARD OF WATER SUPPLY FOR REVIEW AND APPROVAL. ALL WORK SHALL BE AT NO COST TO THE BOARD OF WATER SUPPLY.
- AT UTILITY CROSSINGS WHERE PROPER COMPACTION UNDER A WATER MAIN IS DIFFICULT TO ACHIEVE, CLSM SHALL BE INSTALLED IN PLACE OF BACKFILL MATERIAL AND PIPE CUSHION MATERIAL. CLSM MIXTURE TO BE FURNISHED SHALL BE IN ACCORDANCE WITH DIVISION 200 - MATERIALS, SECTION 209.06 CONTROLLED LOW STRENGTH MATERIAL (CLSM) OF THE WATER SYSTEM STANDARDS AS AMENDED.
- AT THE ELECTRICAL/CABLE/SIGNAL DUCT LINE WATER CROSSINGS, ADJUST ALL ELECTRICAL/CABLE/SIGNAL DUCT LINE ELEVATIONS TO MAINTAIN THE REQUIRED VERTICAL CLEAR SEPARATION FORM ALL WATER MAINS. CONFORMANCE TO THE BOARD OF WATER SUPPLY 2002 WATER SYSTEM STANDARDS AS AMENDED SHALL BE AT NO COST AND ADHERED TO.
- MAINTAIN THE REQUIRED MINIMUM HORIZONTAL CLEAR SEPARATION BETWEEN ALL WATER MAINS, AND THE NEAREST ELECTRICAL/CABLE/SIGNAL DUCT LINES PARALLELING THE WATER SYSTEM. CONFORMANCE TO THE BOARD OF WATER SUPPLY 2002 WATER SUPPLY AS AMENDED SHALL BE AT NO COST AND ADHERED TO.
- MAINTAIN THE REQUIRED MINIMUM HORIZONTAL CLEAR SEPARATION BETWEEN ELECTRICAL/CABLE/SIGNAL APPURTENANCES, (INCLUDING ANY MODULAR UNITS) AND THE NEAREST WATER MAINS OR WATER APPURTENANCE. CONTRACTOR SHALL FIELD VERIFY FOR ANY CONFLICTS AT EACH ELECTRICAL/CABLE/SIGNAL APPURTENANCE LOCATION. WHERE CONFLICTS OCCUR, THE CONTRACTOR SHALL COORDINATE WITH THE PROJECT ENGINEER TO REVISE THE ELECTRICAL/CABLE/SIGNAL APPURTENANCE TO PROVIDE THE REQUIRED CLEARANCES. CONFORMANCE TO THE BOARD OF WATER SUPPLY 2002 WATER SYSTEM STANDARDS AS AMENDED SHALL BE AT NO COST AND ADHERED TO.

SIGNS & MARKINGS NOTES

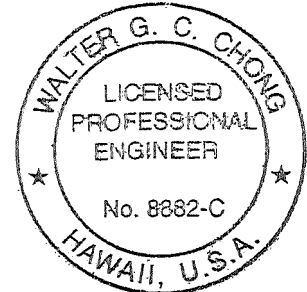
- ALL TRAFFIC SIGN AND PAVEMENT MARKING INSTALLATIONS SHALL BE DONE IN ACCORDANCE WITH THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS," 2009 EDITION, AS AMENDED, THE LATEST SPECIFICATIONS FROM THE TRAFFIC REVIEW BRANCH, DEPARTMENT OF PLANNING AND PERMITTING, AND AS SHOWN ON THE PLANS.
- THE CONTRACTOR SHALL NOTIFY THE CIVIL ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING, AT (808)768-8084 TO ARRANGE FOR INSPECTIONAL SERVICES AND SUBMIT FOUR (4) SETS OF APPROVED CONSTRUCTION PLANS SEVEN (7) DAYS PRIOR TO COMMENCEMENT OF WORK.
- THE CONTRACTOR SHALL SUBMIT MATERIAL BROCHURES FOR ALL SIGNS AND PAINT MATERIALS TO THE PERMITTING AND INSPECTION SECTION OF CIVIL ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING.
- THE SIGNING AND/OR STRIPING CONTRACTOR SHALL KEEP ONE (1) SET OF APPROVED PLANS AT THE PROJECT SITE AT ALL TIMES DURING CONSTRUCTION WORK.
- THE CONTRACTOR SHALL PAINT TEMPORARY GUIDELINES AND OUTLINE OF ARROWS, LEGENDS, AND CROSSWALKS WITH A TWO (2) INCH WIDE BRUSHED LINE ON THE DAY THE ROADWAY IS OPENED TO TRAFFIC. THESE MARKINGS MUST BE APPROVED BY THE INSPECTOR FROM THE CIVIL ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING.
- THE CONTRACTOR SHALL NOTIFY THE CIVIL ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING AT (808)768-8084, THREE (3) DAYS IN ADVANCE OF FINAL INSPECTION.
- THE CONTRACTOR SHALL MEET WITH THE INSPECTOR FROM THE CIVIL ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING DURING THE FINAL INSPECTION.
- WITHIN TEN (10) DAYS FOLLOWING NOTIFICATION OF AWARD OF CONTRACT, THE CONTRACTOR SHALL SUBMIT TO THE PERMITTING AND INSPECTION SECTION, CIVIL ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING ((808)768-8084) FOR APPROVAL, A LIST OF ANY SIGNING AND PAVEMENT MARKING MATERIAL, WHICH HE PROPOSES TO INSTALL. THE LIST SHALL BE COMPLETE AS TO THE NAME OF MANUFACTURER, CATALOG NUMBER AND SHALL BE SUPPLEMENTED WITH MATERIAL BROCHURES.
- UPON FINAL INSPECTION OF THE PROJECT, THE CONTRACTOR SHALL SUBMIT A LETTER OF CERTIFICATION FOR ALL TRAFFIC SIGNING AND PAVEMENT MARKING MATERIALS INSTALLED.
- SIGNS SHALL BE ATTACHED TO BRACKETS WITH 5/16" ZINC PLATED STEEL BOLTS, NUTS AND WASHERS. SIGNS 48" WIDE OR LARGER THAN 10 SQUARE FEET IN AREA SHALL BE MOUNTED ON TWO-2" GALVANIZED PIPE POST. THE SIGN SHALL BE INSTALLED WITH AT LEAST (1) ONE FOOT CLEARANCE FROM THE SIGN EDGE TO THE CURB FACE.
- ALL TRAFFIC SIGNS SHALL BE REFLECTORIZED.
- RAISED PAVEMENT MARKERS SHALL BE INSTALLED IN ACCORDANCE WITH THE DEPARTMENT OF PLANNING AND PERMITTING STANDARDS.
- LOCATION OF "STOP" SIGN:
 - INSTALL "STOP" SIGN AT CURB TANGENT POINT.
 - INSTALL "STOP" SIGN ON METAL STREET LIGHT STANDARD IF A STANDARD IS LOCATED WITHIN 10 FEET OF CURB RETURN.
 - INSTALL "STOP" SIGN IN FRONT OF UTILITY POLE IF A POLE IS LOCATED WITHIN 10 FEET OF CURB RETURN.
- PAVEMENT WORD AND SYMBOL MARKINGS SHALL BE IN ACCORDANCE WITH THE DEPARTMENT OF PLANNING AND PERMITTING STANDARDS.
- THE CONTRACTOR SHALL USE THERMOPLASTIC MATERIAL, APPROVED BY THE PERMITTING AND INSPECTION SECTION OF THE CIVIL ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING, FOR ALL CROSSWALKS, STOP BARS, PAVEMENT ARROWS, CENTER LINES, LANE LINES, ARC LINES, CHANNELIZED TRAFFIC ISLANDS, AND LEGENDS.

TRAFFIC SIGNAL AND TECHNOLOGY DIVISION NOTES

- THE CONTRACTOR SHALL NOTIFY THE TRAFFIC SIGNALS AND TECHNOLOGY DIVISION, DEPARTMENT OF TRANSPORTATION SERVICES, THREE (3) WORKING DAYS PRIOR TO COMMENCING WORK ON THE TRAFFIC SIGNAL SYSTEM (PHONE: (808)768-8387).
- THE TRAFFIC SIGNAL SYSTEM SHALL BE KEPT OPERATIONAL DURING CONSTRUCTION. ANY RELOCATION REQUIRED SHALL BE APPROVED BY THE TRAFFIC SIGNAL AND TECHNOLOGY DIVISION, DEPARTMENT OF TRANSPORTATION SERVICES, AND PAID FOR BY THE CONTRACTOR.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES TO THE EXISTING TRAFFIC SIGNAL FACILITIES, INCLUDING BUT NOT LIMITED TO THE TRAFFIC SIGNAL FIBER OPTIC CABLE SYSTEM, AND INTERCONNECTION SYSTEM. ANY AND ALL DAMAGES TO THE FACILITIES SHALL BE REPAIRED BY THE CONTRACTOR AT THEIR COST IN ACCORDANCE WITH THE REQUIREMENTS OF THE TRAFFIC SIGNALS AND TECHNOLOGY DIVISION, DEPARTMENT OF TRANSPORTATION SERVICES.

APPROVED:

Chief, Civil Engineering Branch, DPP DATE



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

Walter G. C. Orlando 04/30/28 EXPIRATION DATE OF THE LICENSE

REVISION	DATE	BRIEF	BY
HAWAII COMMUNITY DEVELOPMENT AUTHORITY STATE OF HAWAII KALAELOA DEVELOPMENT DISTRICT SARATOGA AVE ELECTRICAL UPGRADES CONSTRUCTION NOTES - 2 ENGINEER: WGC DRAFTSMAN: KK CHECKED BY: TL DATE: MARCH 2026 EXPIRATION DATE OF THE LICENSE EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY			

FILE	POCKET	FOLDER	NO.

GOOD HOUSEKEEPING BMP NOTES:

1. STREET SWEEPING AND VACUUMING.

ALL POLLUTANTS DISCHARGED FROM CONSTRUCTION SITE TO OFF-SITE AREAS MUST BE SWEEPED OR VACUUMED EACH DAY BEFORE LEAVING THE JOB SITE.

2. MATERIALS DELIVERY, STORAGE AND USE MANAGEMENT.

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

3. SPILL PREVENTION AND CONTROL.

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

4. HAZARDOUS MATERIALS.

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

5. VEHICLE AND EQUIPMENT CLEANING.

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

6. VEHICLE AND EQUIPMENT FUELING.

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

7. VEHICLE AND EQUIPMENT MAINTENANCE.

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

8. SOLID WASTE MANAGEMENT.

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

9. SANITARY/SEPTIC WASTE MANAGEMENT.

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

10. STOCKPILE MANAGEMENT.

STOCKPILES SHALL NOT BE LOCATED IN DRAINAGE WAYS, WITHIN 50 FEET FROM AREAS OF CONCENTRATED FLOWS, AND ARE NOT ALLOWED IN THE CITY OR HDOT RIGHT-OF-WAY. SEDIMENT BARRIERS OR SILT FENCES SHALL BE USED AROUND THE BASE OF ALL STOCKPILES. STOCKPILES SHALL NOT EXCEED 15 FEET IN HEIGHT. STOCKPILES GREATER THAN 15 FEET IN HEIGHT SHALL REQUIRE 8 FOOT WIDE BENCHING IN ACCORDANCE WITH ROH CHAPTER 14, ARTICLE 15. STOCKPILES MUST BE COVERED WITH PLASTIC SHEETING OR A COMPARABLE MATERIAL IF THEY WILL NOT BE ACTIVELY USED WITHIN 7 DAYS.

11. LIQUID WASTE MANAGEMENT.

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

12. CONCRETE WASTE MANAGEMENT.

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

GOOD HOUSEKEEPING BMP NOTES (CONTINUED):

13. CONTAMINATED SOIL MANAGEMENT.

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

14. DUST CONTROL

DUST FROM THE PROJECT SITE SHALL NOT BE TRANSPORTED OR DISCHARGED TO OFF-SITE AREAS.

15. DEWATERING OPERATIONS

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

EROSION AND SEDIMENT CONTROL PLAN
SCHEDULE AND RAIN RESPONSE PLAN NOTES:

PROJECT SEQUENCE:

- INSTALL STABILIZED INLET PROTECTION, AND PERIMETER CONTROLS AROUND STAGING AREAS AND MATERIAL STOCKPILES AS NEEDED.
- PROCEED WITH CONSTRUCTION WITH LEAST POSSIBLE DISTURBANCE OF VEGETATIVE AREAS AND TEMPORARY STRUCTURES.
- INSTALL PERIMETER CONTROLS AROUND ACTIVE WORK AREAS AT THE END OF EACH BUSINESS DAY IF NOT STABILIZED.
- PLANT PERMANENT GROUND COVER ACCORDING TO THE LANDSCAPING PLAN AS SOON AS POSSIBLE.
- REMOVE OR DISMANTLE TEMPORARY EROSION CONTROL STRUCTURES AFTER FULL ESTABLISHMENT OF PERMANENT VEGETATIVE COVER.

RAIN RESPONSE PLAN:

THE FOLLOWING WILL BE PERFORMED WHEN RAIN IS IMMINENT OR IS FORECASTED IN THE NEXT 48 HOURS:

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

EROSION PREVENTION / SEDIMENT

CONTROL NOTES:

1. THE CONTRACTOR SHALL FOLLOW THE GUIDELINES IN THE CITY AND COUNTY OF HONOLULU'S "RULES RELATING TO WATER QUALITY."
 2. MEASURES TO CONTROL EROSION AND OTHER POLLUTANTS SHALL BE IN PLACE BEFORE ANY EARTHWORK IS INITIATED.
 3. REGULARLY INSPECT AND MAINTAIN ALL EROSION AND SEDIMENT CONTROLS TO ENSURE CONTINUED PERFORMANCE.
 4. PERMANENT STABILIZATION
- ALL DISTURBED AREAS SHALL BE PERMANENTLY STABILIZED USING VEGETATIVE COVERING, PAVEMENT, OR EQUIVALENT, PRIOR TO REMOVING EROSION AND SEDIMENT MEASURES. TRAPPED SEDIMENT AND AREAS OF DISTURBED SOIL WHICH RESULT FROM THE REMOVAL OF THE TEMPORARY MEASURES SHALL BE IMMEDIATELY AND PERMANENTLY STABILIZED.

5. PERIMETER CONTROLS

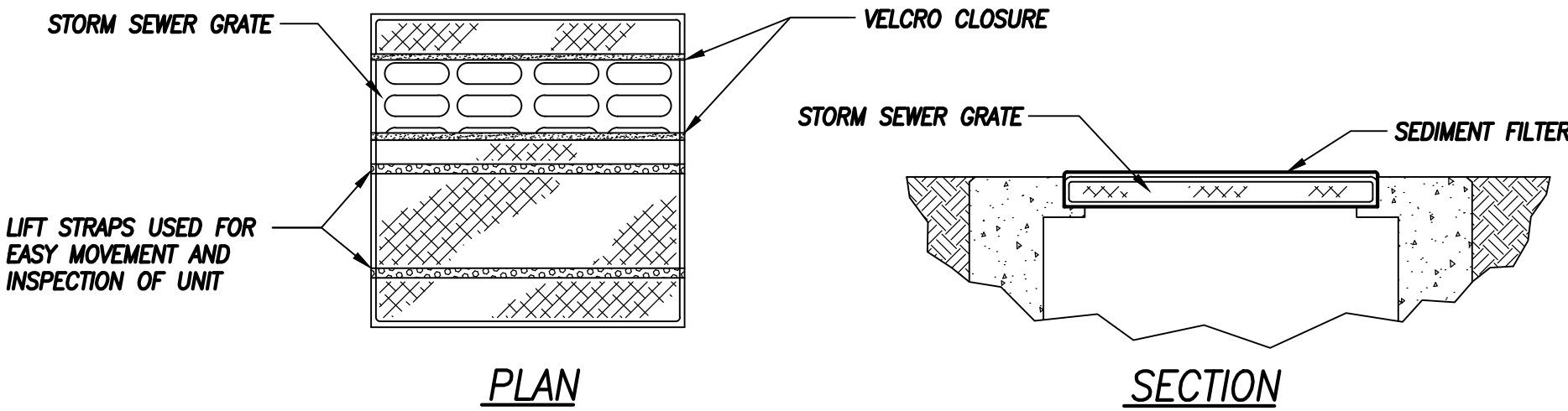
PERIMETER CONTROLS ARE REQUIRED DOWNSLOPE OF EQUIPMENT/VEHICLE STAGING AREAS AT THE END OF EACH BUSINESS DAY AND AROUND MATERIAL STOCKPILES THAT ARE NOT ACTIVELY BEING USED. STOCKPILES ARE NOT ALLOWED IN THE RIGHT-OF-WAY.

6. INLET PROTECTION

- ALL STORM DRAIN INLETS ONSITE AND THOSE OFFSITE WHICH MAY RECEIVE RUNOFF FROM THE SITE SHALL USE AN INLET PROTECTION DEVICE UNLESS THEY ARE DIRECTED TO A SEDIMENT BASIN.
- SEDIMENT LEVELS MAY NOT EXCEED ONE THIRD OF THE HEIGHT OF A SEDIMENT BARRIER OR INLET PROTECTION DEVICE AT ANY POINT ALONG THE LENGTH OF THE SEDIMENT BARRIER OR THE INLET PROTECTION DEVICE.
- SEDIMENT BARRIERS AND INLET PROTECTION DEVICES MUST BE UNCLOGGED AND CLEANED WHEN PERFORMANCE IS COMPROMISED.
- TORN, WEATHERED OR SAGGING SEDIMENT BARRIERS OR INLET PROTECTION DEVICES MUST BE REPAIRED OR REPLACED IMMEDIATELY.

7. TRACKING CONTROL

- MINIMIZE SEDIMENT TRACK-OUT ONTO OFF-SITE STREETS, OTHER PAVED AREAS, AND SIDEWALKS FROM VEHICLES EXITING THE CONSTRUCTION SITE BY RESTRICTING VEHICLE TRAFFIC TO PROPERLY DESIGNATED AREAS AND USING ADDITIONAL CONTROLS TO REMOVE SEDIMENT FROM VEHICLE TIRES PRIOR TO EXITING THE SITE.
 - VEHICULAR PARKING AND MOVEMENTS ON PROJECT SITES MUST BE CONFINED TO PAVED SURFACES OR PREDEFINED PARKING AREAS AND VEHICLE PATHS, WHICH SHALL BE MARKED WITH FLAGS OR BOUNDARY FENCING.
 - ALL POLLUTANTS AND MATERIALS THAT ARE DROPPED, WASHED, TRACKED, SPILLED, OR OTHERWISE DISCHARGED FROM A PROJECT SITE TO OFF-SITE STREETS, OTHER PAVED AREAS, SIDEWALKS OR THE MS4 MUST BE CLEANED USING DRY METHODS SUCH AS SWEEPING OR VACUUMING.
 - WASHING POLLUTANTS AND MATERIALS THAT ARE DISCHARGED FROM THE PROJECT SITE TO THE MS4 INTO DRAIN INLETS OR CATCH BASINS IS PROHIBITED UNLESS THE MATERIAL IS SEDIMENT AND THE INLETS ARE DIRECTED TO A SEDIMENT BASIN OR SEDIMENT TRAP.
8. BEST MANAGEMENT PRACTICES (BMPS'S) SHALL NOT BE REMOVED UNTIL FINAL STABILIZATION IS COMPLETE FOR THAT PHASE.
9. THE FOLLOWING BMPS WERE DETERMINED TO BE NOT APPLICABLE BASED ON THE SPECIFIC SITE CONDITIONS. AS CONSTRUCTION PROGRESSES, REVISIONS MAY BE NECESSARY AND WILL BE PROVIDED TO DPP INSPECTORS.
- NONE
10. AN ESCP COORDINATOR MUST BE DESIGNATED USING THE FORM IN APPENDIX "A" TO THE RULES RELATING TO WATER QUALITY PRIOR TO PERMITTING.
11. NOTIFY DPW IN WRITING OF PROJECT START DATE TWO WEEKS PRIOR TO STARTING WORK.
12. PRACTICE GOOD HOUSEKEEPING MEASURES THROUGHOUT THE DURATION OF CONSTRUCTION.
13. INSPECTIONS WILL BE PERFORMED WEEKLY.

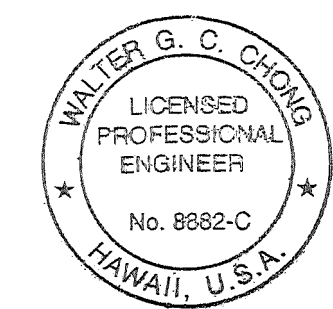


MECHANICAL PROPERTIES	TEST METHOD	UNITS	MARV
GRAB TENSILE STRENGTH	ASTM D 4632	kN (lbs)	1.62 (365) X 0.89 (200)
GRAB TENSILE ELONGATION	ASTM D 4632	%	24 X 10
PUNCTURE STRENGTH	ASTM D 4833	kN (lbs)	0.40 (90)
MULLEN BURST STRENGTH	ASTM D 3786	kPa (psi)	3097 (450)
TRAPEZOID TEAR STRENGTH	ASTM D 4533	kN (lbs)	0.51 (115) X 0.33 (75)
UV RESISTANCE	ASTM D 4355	%	90
APPARENT OPENING SIZE	ASTM D 4751	Mm (US Std Sieve)	0.425 (40)
FLOW RATE	ASTM D 4491	1/min/m ² (gal/min/ft) ²	5907 (145)
PERMITTIVITY	ASTM D 4491	Sec -1	2.1

SEDIMENT FILTER FOR DRAIN INLETS
NOT TO SCALE

APPROVED:

Chief, Civil Engineering Branch, DPP DATE

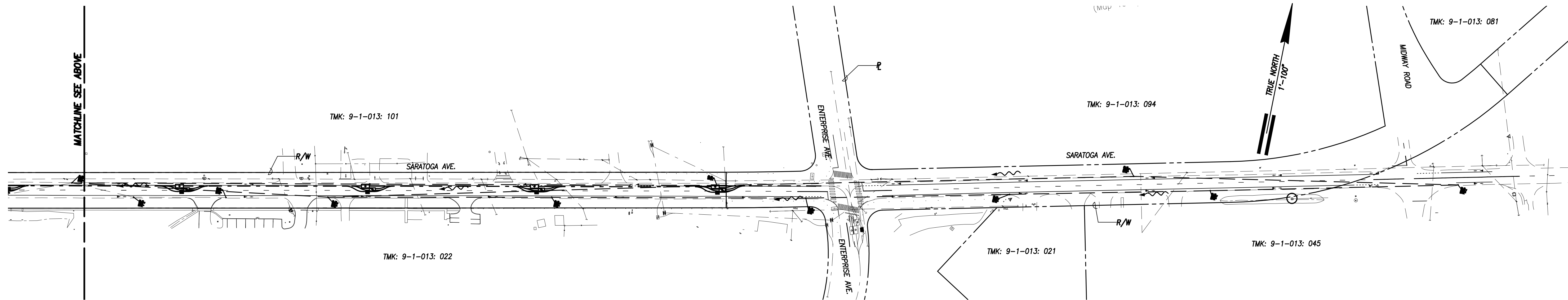
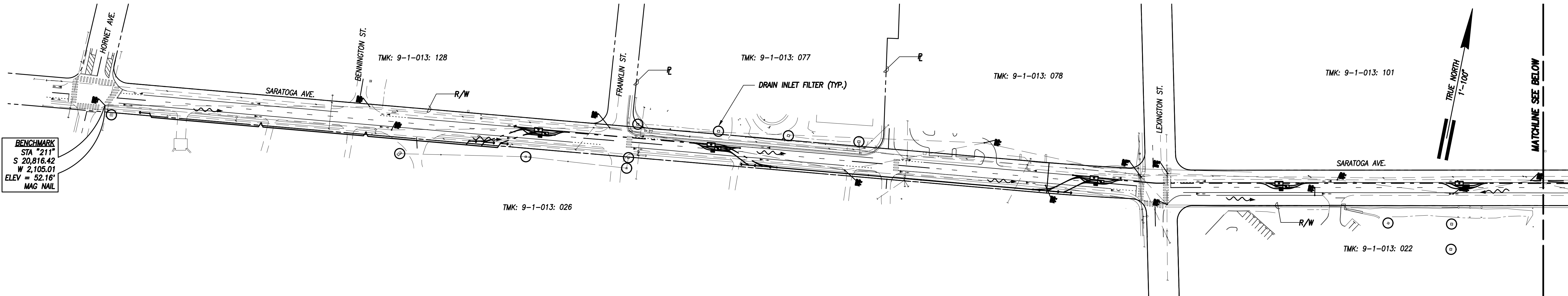


THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THE PROJECT WILL BE UNDER MY OBSERVATION.

Walter G. C. Orlando 04/30/28
EXPIRATION DATE OF THE LICENSE

REVISION	DATE	BRIEF	BY
HAWAII COMMUNITY DEVELOPMENT AUTHORITY STATE OF HAWAII KALAELOA DEVELOPMENT DISTRICT SARATOGA AVE ELECTRICAL UPGRADES ESCP NOTES – 1 ENGINEER: WGC DRAFTSMAN: KK CHECKED BY: TL DATE: MARCH 2026 APPROVED: _____ EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY			

FILE	POCKET	FOLDER	NO.



GENERAL SITE, EROSION AND SEDIMENT CONTROL PLAN (TRENCHING)

SCALE: 1"=100'

LEGEND

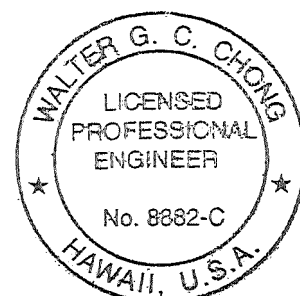
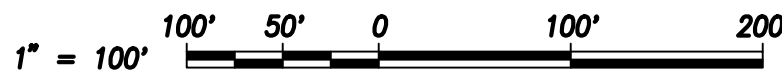
- PROPOSED ELECTRICAL IMPROVEMENTS
- DRAIN INLET FILTER
- ~ FLOW ARROWS

NOTES:
REFER TO SHT C03 FOR EROSION CONTROL NOTES AND DETAIL
CONTRACTOR SHALL INSTALL SEDIMENT FILTERS AT THE NEAREST DRAIN INLETS DOWNSTREAM OF WORK AREA

APPROVED:

Chief, Civil Engineering Branch, DPP DATE

GRAPHICS SCALE



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ME OR UNDER MY SUPERVISION
AND CONSTRUCTION OF THE
PROJECT WILL BE UNDER MY
OBSERVATION.
Walter G. C. Chong 04/30/28
EXPIRATION DATE OF THE LICENSE

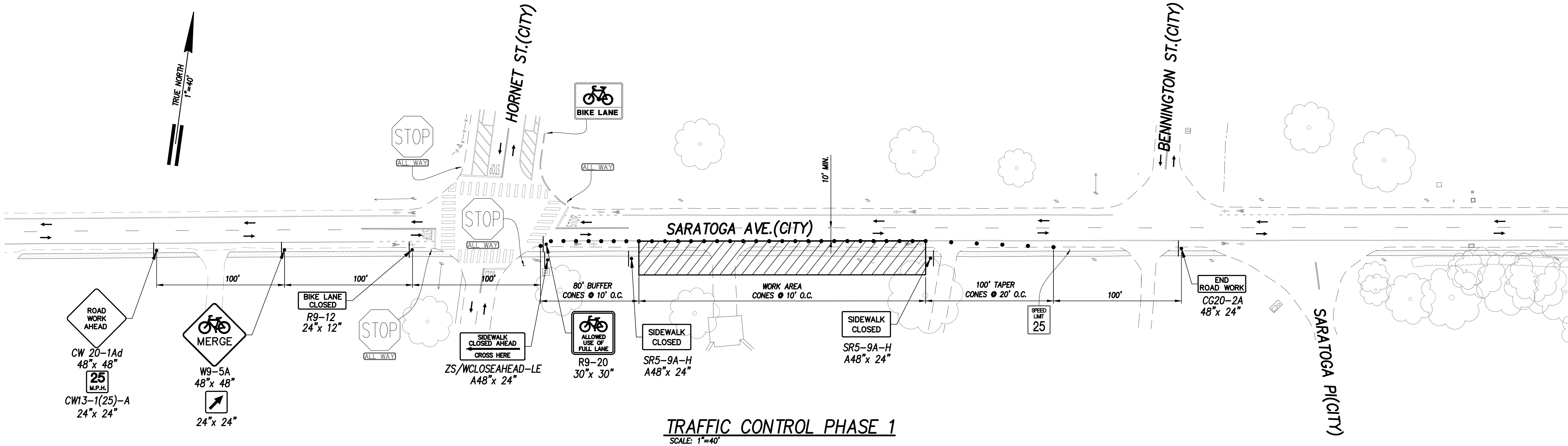
REVISION	DATE	BRIEF	BY
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HAWAII COMMUNITY DEVELOPMENT AUTHORITY
STATE OF HAWAII
KALAELOA
DEVELOPMENT DISTRICT
SARATOGA AVE
ELECTRICAL UPGRADES
GENERAL SITE, EROSION
AND SEDIMENT
CONTROL PLAN (TRENCHING)

ENGINEER: WGC
DRAFTSMAN: KK
CHECKED BY: TL
DATE: MARCH 2026

EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY

FILE	POCKET	FOLDER	NO.
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TRAFFIC CONTROL NOTES

1. THE PERMITTEE SHALL MAKE MINOR ADJUSTMENTS AT INTERSECTIONS, DRIVEWAYS, STRUCTURES, ETC., TO FIT FIELD CONDITIONS.
2. CONES OR DELINEATORS SHALL BE EXTENDED TO A POINT WHERE THEY ARE VISIBLE TO APPROACHING TRAFFIC.
3. TRAFFIC CONTROL DEVICES SHALL BE INSTALLED SUCH THAT THE SIGN OR DEVICE FARTHEST FROM THE WORK AREA SHALL BE PLACED FIRST. THE OTHERS SHALL THEN BE PLACED PROGRESSIVELY TOWARD THE WORK AREA.
4. REGULATORY AND WARNING SIGNS WITHIN THE CONSTRUCTION ZONE THAT ARE IN CONFLICT WITH THE TRAFFIC CONTROL PLANS SHALL BE REMOVED OR COVERED. ALL SIGNS SHALL BE RESTORED UPON COMPLETION OF THE WORK.
5. POLICE OFFICERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES.
6. WHEN REQUIRED BY THE ISSUING OFFICE, THE PERMITTEE SHALL INSTALL A FLASHING ARROW SIGNAL AS SHOWN ON THE TRAFFIC CONTROL PLANS.
7. ALL TRAFFIC LANES SHALL BE A MINIMUM OF 10 FEET WIDE.
8. ALL CONSTRUCTION WARNING SIGNS SHALL BE PROMPTLY REMOVED OR COVERED WHENEVER THE MESSAGE IS NOT APPLICABLE OR NOT IN USE.
9. THE BACKS OF ALL SIGNS USED FOR TRAFFIC CONTROL SHALL BE APPROPRIATELY COVERED TO PRECLUDE THE DISPLAY OF INAPPLICABLE SIGN MESSAGES (I.E., WHEN SIGNS HAVE MESSAGES ON BOTH FACES).
10. LANE CLOSURE SHALL BE LIMITED ONLY TO THE EXTENT OF ACCOMPLISHING EACH DAY'S WORK. AS SOON AS EACH DAY'S WORK IS COMPLETED, THE PERMITTEE SHALL REMOVE ALL TRAFFIC CONTROL DEVICES NO LONGER NEEDED TO PERMIT FREE AND SAFE PASSAGE OF PUBLIC TRAFFIC. REMOVAL SHALL BE IN THE REVERSE ORDER OF INSTALLATION. EXISTING FADED OR OBLITERATED PAVEMENT MARKINGS THAT ARE NECESSARY FOR SAFE TRAFFIC FLOW IN THE CONSTRUCTION AREA SHALL BE REPLACED WITH TEMPORARY OR PERMANENT MARKINGS BEFORE OPENING THE ROADWAY TO PUBLIC TRAFFIC EACH DAY.
11. PERMANENT PAVEMENT MARKINGS AND TRAFFIC SIGNS SHALL BE REPLACED UPON COMPLETION OF EACH PHASE OF WORK.
12. CONES AND DELINEATORS SHALL BE SPACED AT A MAXIMUM OF 20 FEET APART. A MINIMUM OF SIX CHANNELIZING DEVICES SHALL BE USED FOR EACH TAPER LENGTH.
13. DRIVEWAYS SHALL BE KEPT OPEN UNLESS THE OWNERS OF THE PROPERTY USING THE RIGHT-OF-WAY ARE OTHERWISE PROVIDED FOR SATISFACTORILY. FURTHER, PERMITTEE SHALL CONTROL TRAFFIC GOING IN AND OUT OF DRIVEWAYS.
14. BUFFER AND TAPER AREAS ON APPROACH TO ANY WORK AREA SHALL BE KEPT CLEAR OF VEHICLES AND EQUIPMENT.
15. A HIGH LEVEL WARNING DEVICE (FLAG TREE) SHALL BE INSTALLED ON APPROACH TO ALL WORK AREAS.
16. "NO PARKING" SIGNS SHALL BE POSTED WITHIN ANY WORK AREA AND FOR THE BUFFER AND TAPER AREAS APPROACHING THE WORK AREA.
17. WHERE AN ACCESSIBLE PEDESTRIAN ROUTE IS CLOSED OR BLOCKED DURING CONSTRUCTION, CONTRACTOR TO PROVIDE TEMPORARY, ACCESSIBLE PEDESTRIAN ROUTE.
18. TRAFFIC CONTROL PLANS ARE APPROVED FOR WORK ON ANY CITY STREET AREA ONLY BETWEEN THE HOURS OF 8:30 A.M. AND 3:30 P.M. MONDAY THRU FRIDAY.
19. COORDINATION MUST BE DONE WITH THE DEPARTMENT OF FACILITY MAINTENANCE (DFM) ON THE TRAFFIC CONTROL MEASURES AFTER THE MORNING CONTRA-FLOW CONING TAKE-DOWN ON KAPIOLANI BOULEVARD, AND ALSO BEFORE THE AFTERNOON CONTRA-FLOW CONING SET-UP.

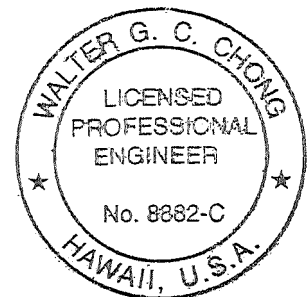
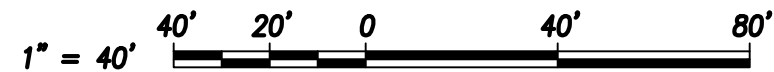
NOTES:

1. 6' WIDE TEMPORARY PEDESTRIAN PATHWAY DEMOLITION AND RECONSTRUCTION SHALL BE AFTER CONSTRUCTION COMPLETION OF GENERAL AREA.
2. PROVIDE TEMPORARY DRIVEWAY AND 6' WIDE PED. ACCESS PATH TO BUSINESSES. CONTRACTOR TO PHASE WORK TO MINIMIZE DISRUPTION OF BUSINESS OPERATION. COORDINATE WITH AFFECTED BUSINESSES BEFORE COMMENCING WORK.
3. COORDINATE WITH ALL PROJECTS IN AFFECTED AREAS.
4. CONSTRUCTION OF THIS PROJECT SHALL NOT AFFECT TRANSIT OPERATIONS. BUS ROUTES AND BUS STOPS SHALL REMAIN OPEN AND ACCESSIBLE AT ALL TIMES. ANY WORK AFFECTING BUS OPERATIONS, ROUTES, OR STOPS MUST BE SUBMITTED TO DTS-TMD FOR REVIEW NO LESS THAN 30 DAYS PRIOR TO THE START DATE.

LEGEND

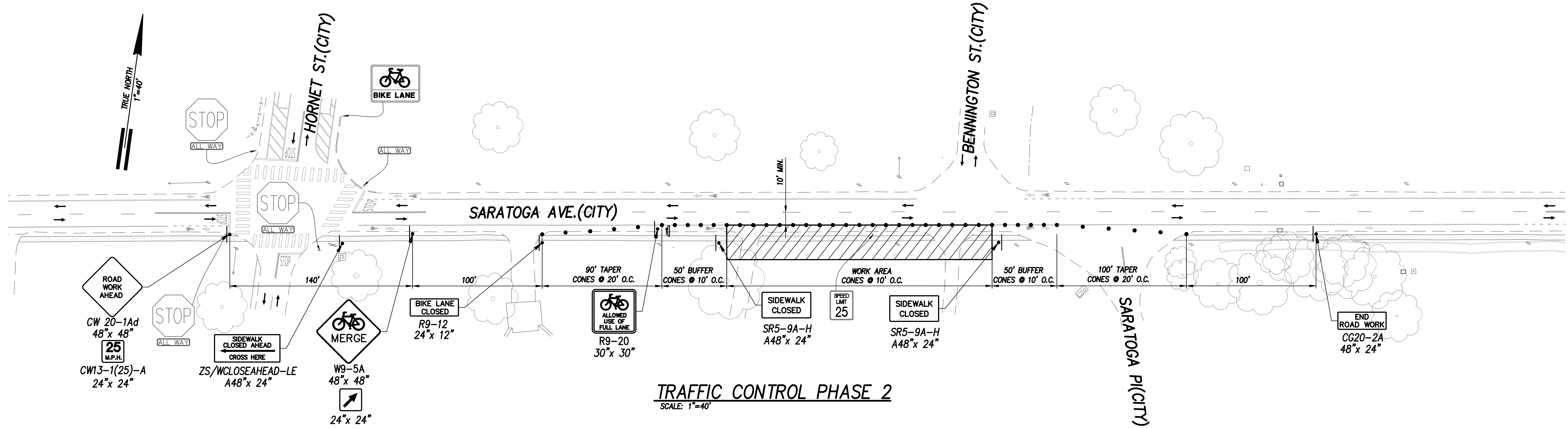
- SIGN
- CONE OR DELINEATOR
- ➔ DIRECTION OF TRAFFIC
- ▨ WORK AREA
- ⏏ FLASHING ARROW BOARD
- ⊗ POLICE OFFICER

GRAPHICS SCALE:

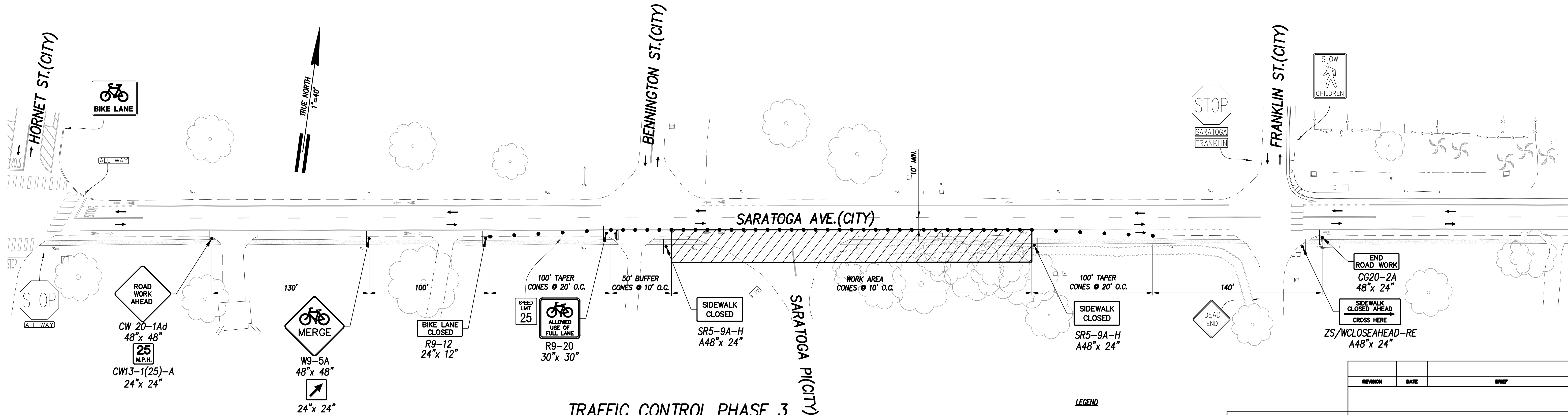


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Walter G. C. Orsini 04/30/28
EXPIRATION DATE OF THE LICENSE

REVISION	DATE	BY	BY
HAWAII COMMUNITY DEVELOPMENT AUTHORITY STATE OF HAWAII KALAELOA DEVELOPMENT DISTRICT SARATOGA AVE ELECTRICAL UPGRADES TRAFFIC CONTROL PHASE 1 ENGINEER: WGC DRAFTSMAN: KK CHECKED BY: TL DATE: MARCH 2026 APPROVED: EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY			



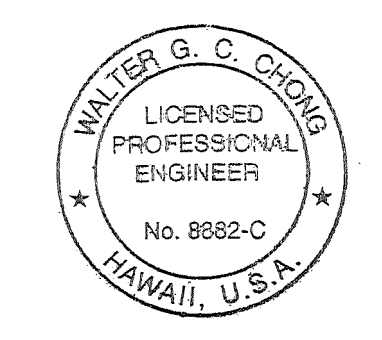
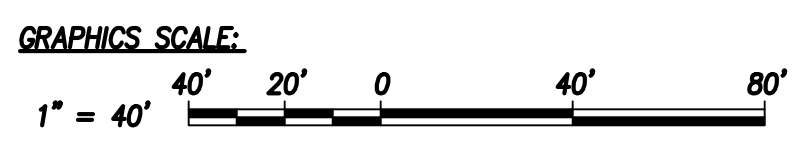
TRAFFIC CONTROL PHASE 2
SCALE: 1"=40'



TRAFFIC CONTROL PHASE 3
SCALE: 1"=40'

- NOTES:
- 6" WIDE TEMPORARY PEDESTRIAN PATHWAY DEMOLITION AND RECONSTRUCTION SHALL BE AFTER CONSTRUCTION COMPLETION OF GENERAL AREA.
 - PROVIDE TEMPORARY DRIVEWAY AND 6" WIDE PED. ACCESS PATH TO BUSINESSES. CONTRACTOR TO PHASE WORK TO MINIMIZE DISRUPTION OF BUSINESS OPERATION. COORDINATE WITH AFFECTED BUSINESSES BEFORE COMMENCING WORK.

- LEGEND
- SIGN
 - CONE OR DELINEATOR
 - ➔ DIRECTION OF TRAFFIC
 - ▨ WORK AREA
 - ⬇ FLASHING ARROW BOARD
 - ⊗ POLICE OFFICER



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Walter G. C. Orsini 04/30/28
EXPIRATION DATE OF THE LICENSE

REVISION	DATE	BRIEF	BY

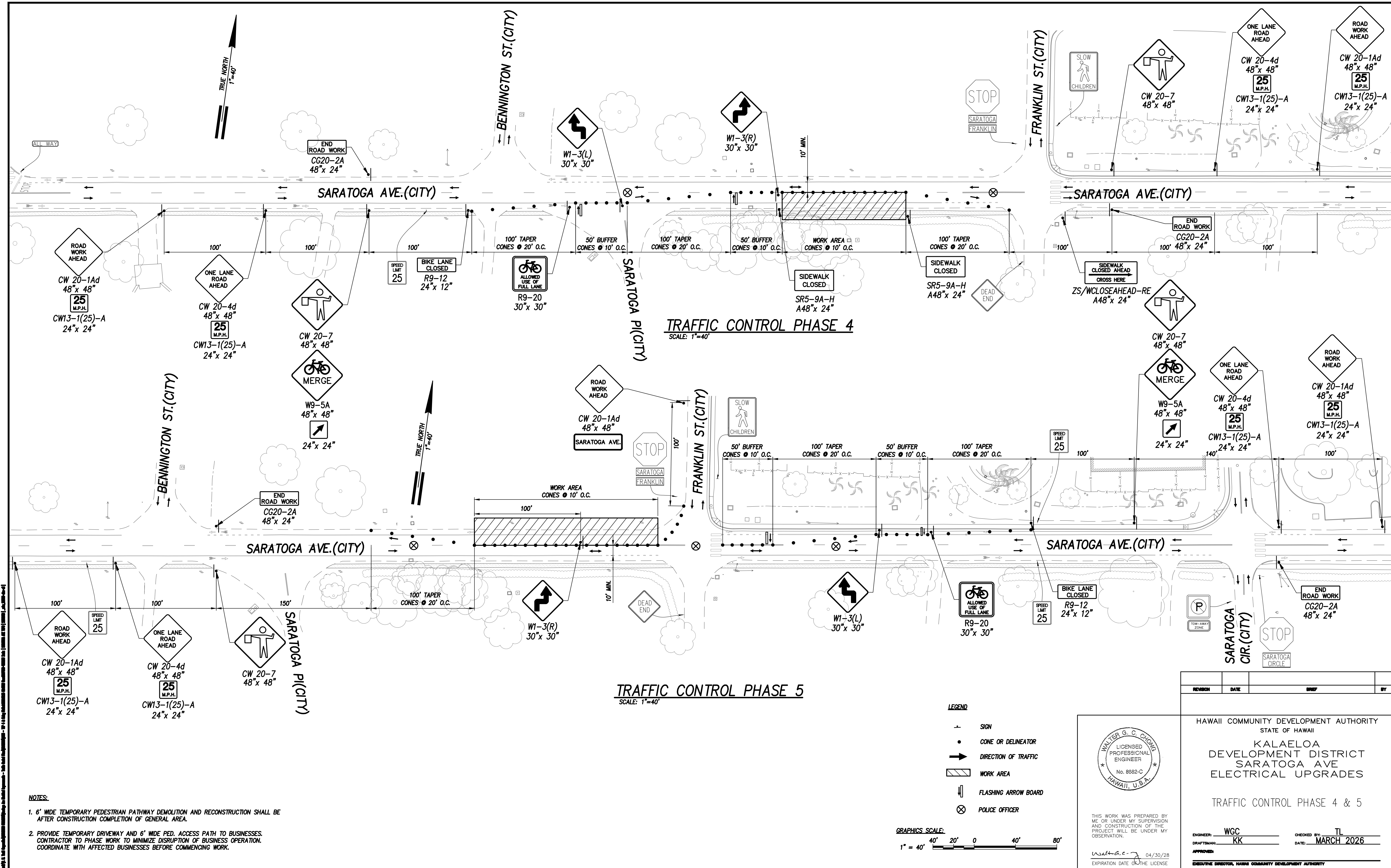
HAWAII COMMUNITY DEVELOPMENT AUTHORITY
STATE OF HAWAII

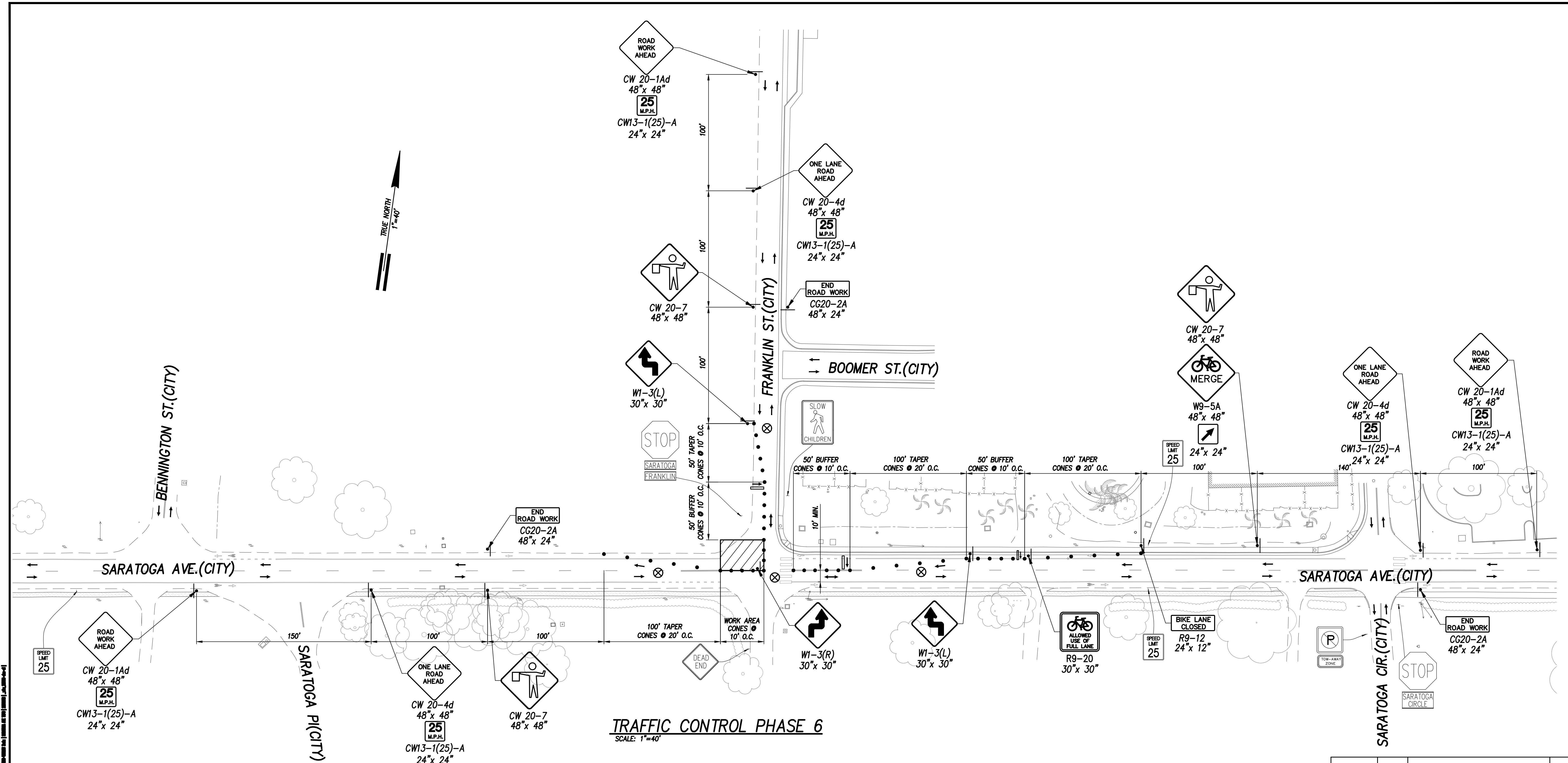
KALAELOA
DEVELOPMENT DISTRICT
SARATOGA AVE
ELECTRICAL UPGRADES

TRAFFIC CONTROL PHASE 2 & 3

ENGINEER: WGC
DRAFTSMAN: KK
CHECKED BY: TL
DATE: MARCH 2026

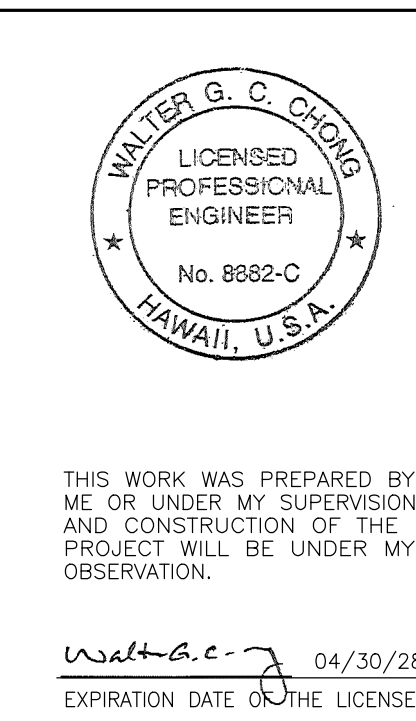
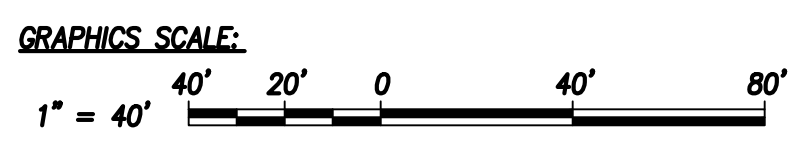
APPROVED: _____
EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY





- NOTES:
- 6' WIDE TEMPORARY PEDESTRIAN PATHWAY DEMOLITION AND RECONSTRUCTION SHALL BE AFTER CONSTRUCTION COMPLETION OF GENERAL AREA.
 - PROVIDE TEMPORARY DRIVEWAY AND 6' WIDE PED. ACCESS PATH TO BUSINESSES. CONTRACTOR TO PHASE WORK TO MINIMIZE DISRUPTION OF BUSINESS OPERATION. COORDINATE WITH AFFECTED BUSINESSES BEFORE COMMENCING WORK.

- LEGEND
- SIGN
 - CONE OR DELINEATOR
 - DIRECTION OF TRAFFIC
 - ▨ WORK AREA
 - ⬇ FLASHING ARROW BOARD
 - ⊗ POLICE OFFICER



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Walter G. C. Orsini 04/30/28

EXPIRATION DATE OF THE LICENSE

REVISION	DATE	BRIEF	BY

HAWAII COMMUNITY DEVELOPMENT AUTHORITY
STATE OF HAWAII

KALAELOA
DEVELOPMENT DISTRICT
SARATOGA AVE
ELECTRICAL UPGRADES

TRAFFIC CONTROL PHASE 6

ENGINEER: WGC
DRAFTSMAN: KK
CHECKED BY: TL
DATE: MARCH 2026

APPROVED: _____

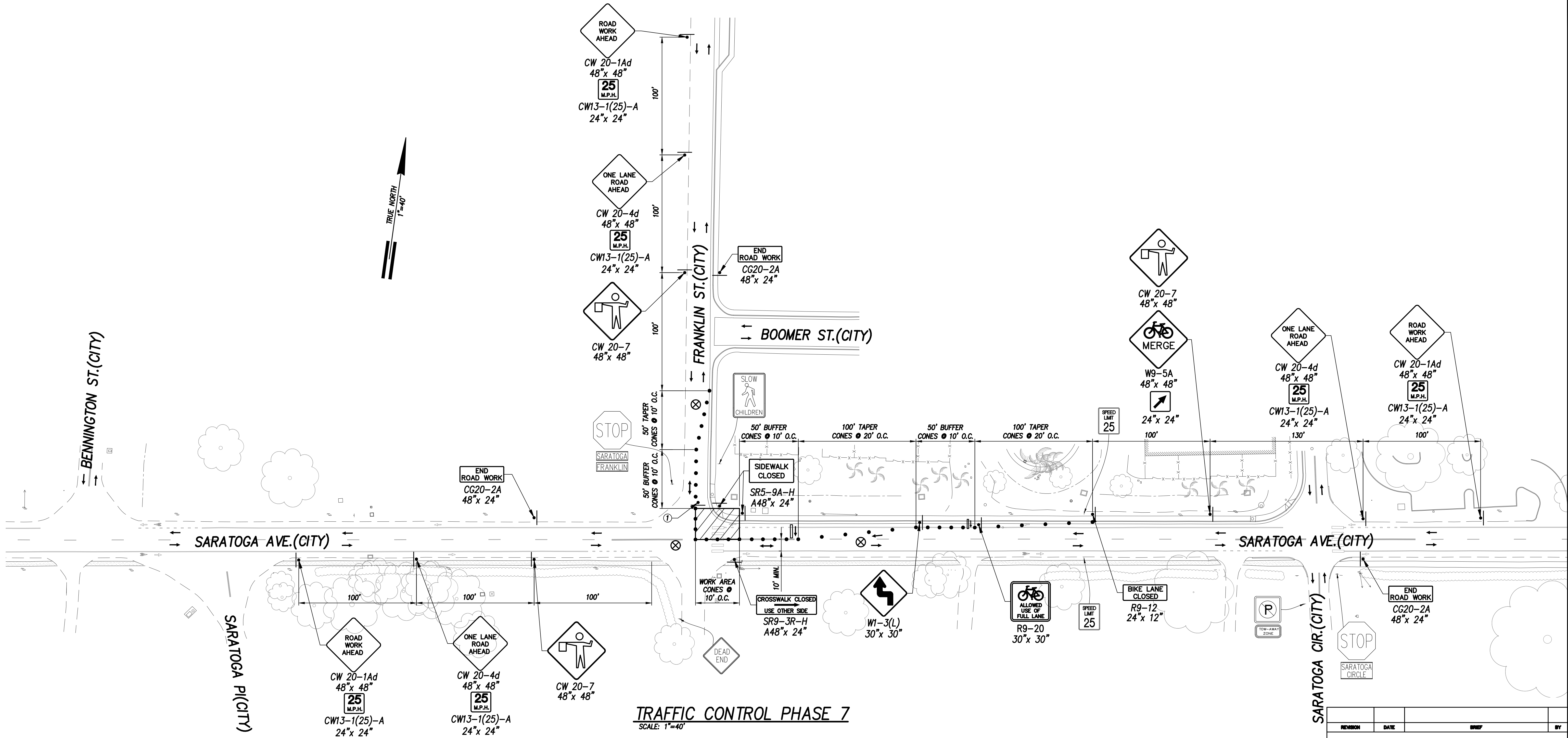
EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY

FILE	POCKET	FOLDER	NO.

WALT G. C. ORLANDO
LICENSED PROFESSIONAL ENGINEER
No. 8882-C
HAWAII, U.S.A.
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THE PROJECT WILL BE UNDER MY OBSERVATION.
WALT G. C. 04/30/28
EXPIRATION DATE OF THE LICENSE

NOTES:

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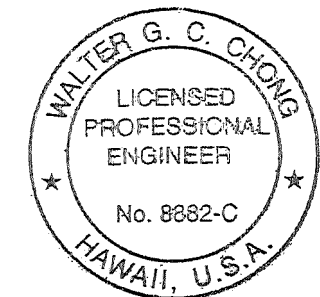
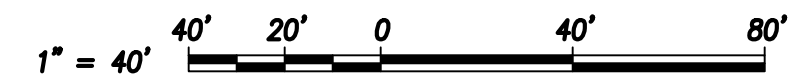


TRAFFIC CONTROL PHASE 7
SCALE: 1"=40'

LEGEND

- SIGN
- CONE OR DELINEATOR
- DIRECTION OF TRAFFIC
- ▨ WORK AREA
- ⏏ FLASHING ARROW BOARD
- ⊗ POLICE OFFICER

GRAPHICS SCALE:



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WALT G. C. 04/30/28
EXPIRATION DATE OF THE LICENSE

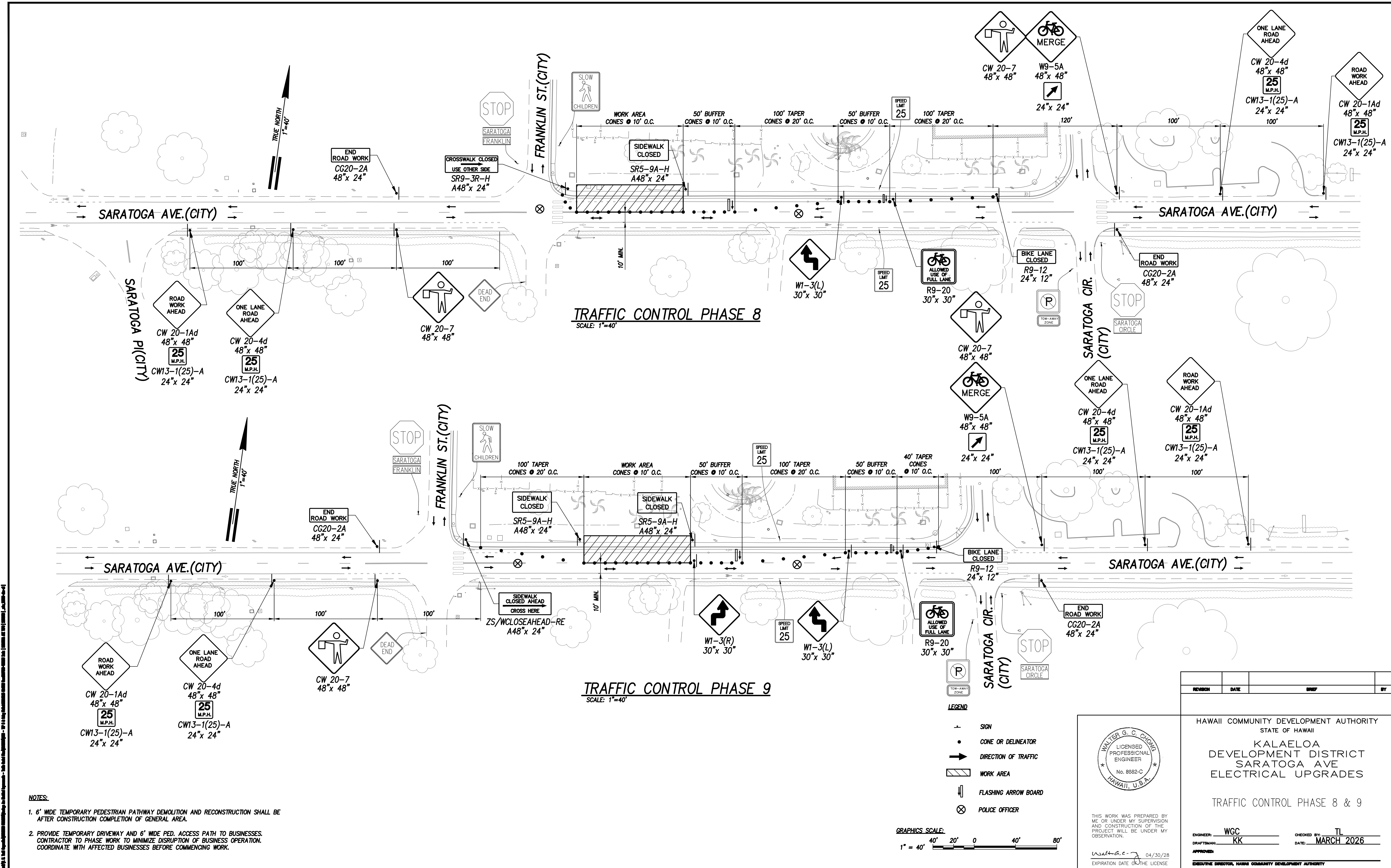
HAWAII COMMUNITY DEVELOPMENT AUTHORITY
STATE OF HAWAII
KALAELOA
DEVELOPMENT DISTRICT
SARATOGA AVE
ELECTRICAL UPGRADES

TRAFFIC CONTROL PHASE 7

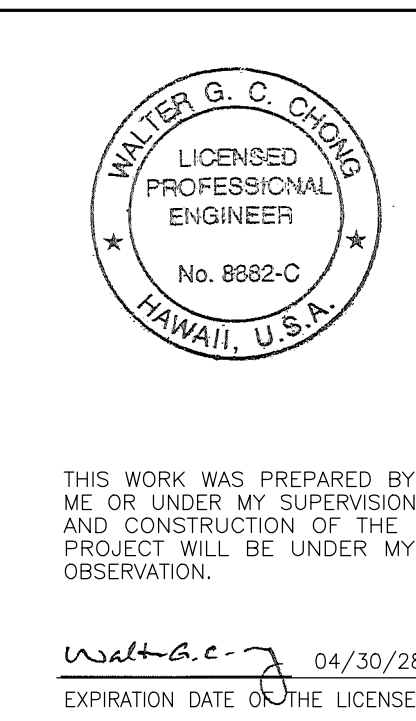
ENGINEER: WGC
DRAFTSMAN: KK
CHECKED BY: TL
DATE: MARCH 2026

EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY

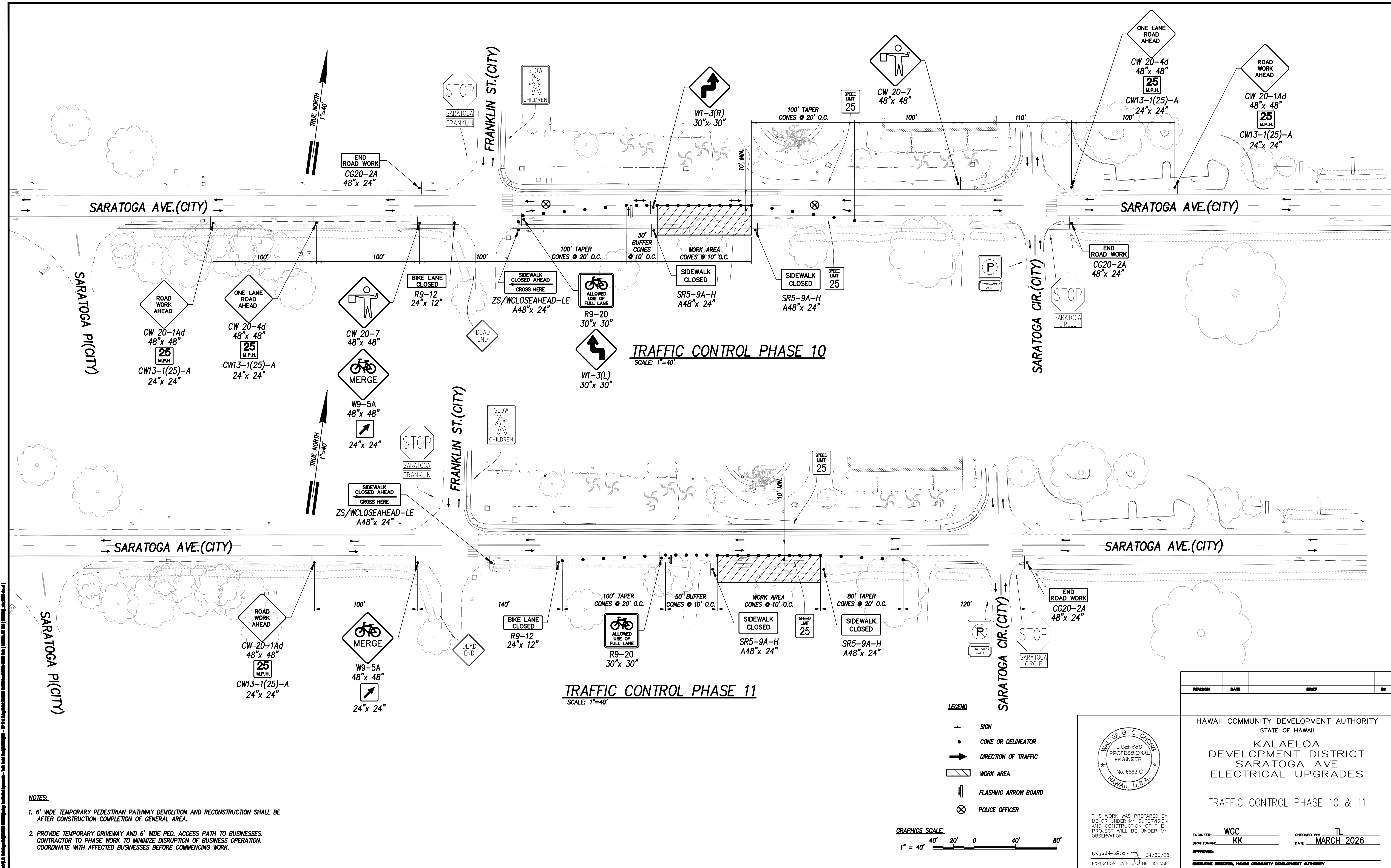
FILE	POCKET	FOLDER	NO.



- NOTES:**
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REVISION	DATE	DRAWN	BY
HAWAII COMMUNITY DEVELOPMENT AUTHORITY			
STATE OF HAWAII			
KALAELOA			
DEVELOPMENT DISTRICT			
SARATOGA AVE			
ELECTRICAL UPGRADES			
TRAFFIC CONTROL PHASE 8 & 9			
ENGINEER: WGC	CHECKED BY: TL		
DRAFTSMAN: KK	DATE: MARCH 2026		
APPROVED: _____			
EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY			
FILE	POCKET	FOLDER	NO.

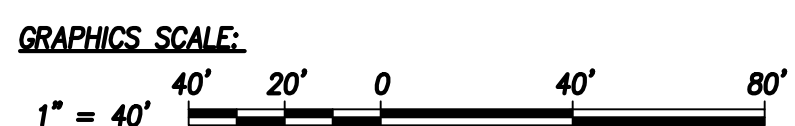


NOTES:

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- LEGEND
- SIGN
 - CONE OR DELINEATOR
 - ➔ DIRECTION OF TRAFFIC
 - ▨ WORK AREA
 - ⬇ FLASHING ARROW BOARD
 - ⊗ POLICE OFFICER



WALTER G. C. CHONG
LICENSED PROFESSIONAL ENGINEER
No. 8882-C
HAWAII, U.S.A.

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Walter G. C. Chong 04/30/28
EXPIRATION DATE OF THE LICENSE

REVISION	DATE	BY

HAWAII COMMUNITY DEVELOPMENT AUTHORITY
STATE OF HAWAII

KALAELOA
DEVELOPMENT DISTRICT
SARATOGA AVE
ELECTRICAL UPGRADES

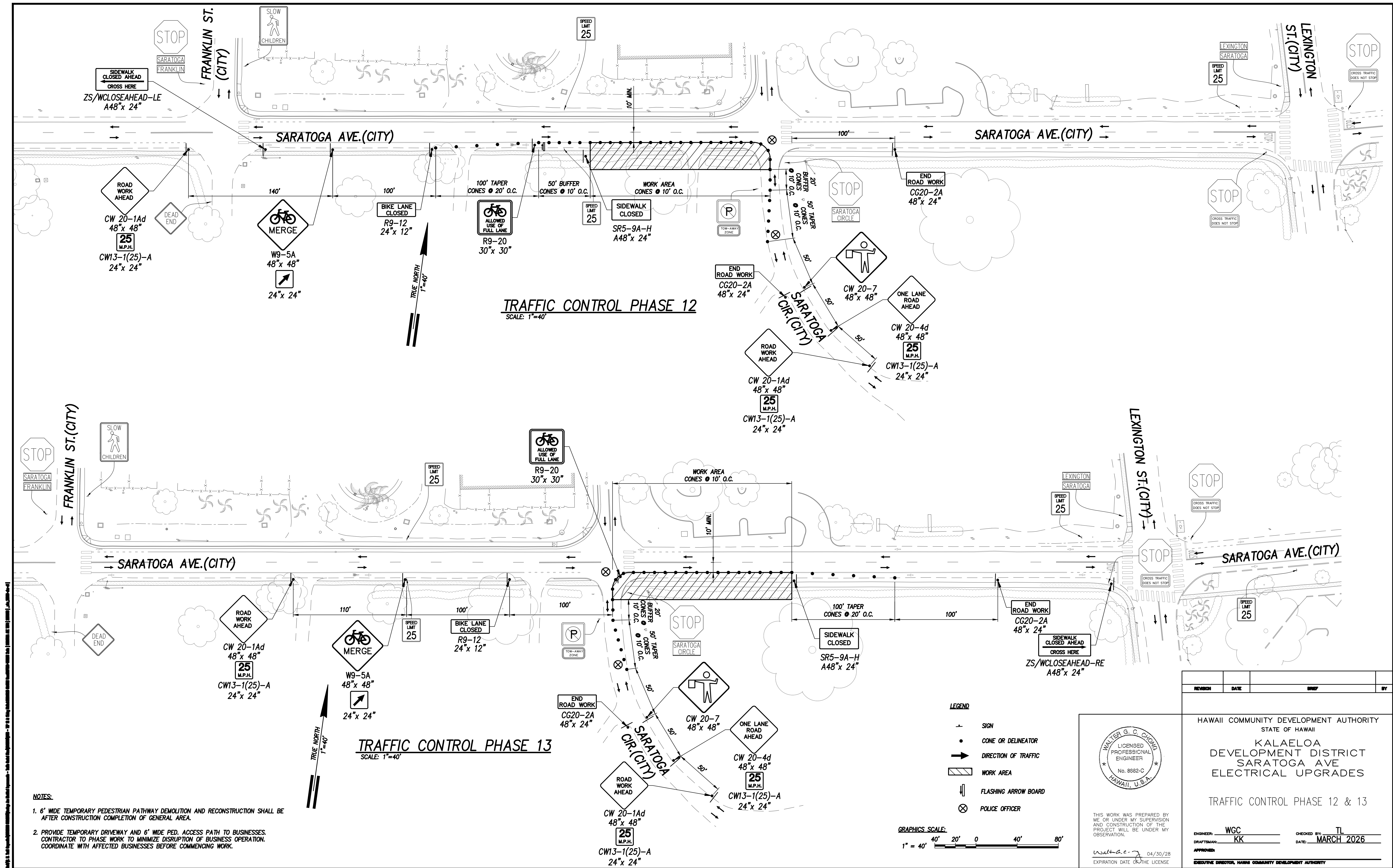
TRAFFIC CONTROL PHASE 10 & 11

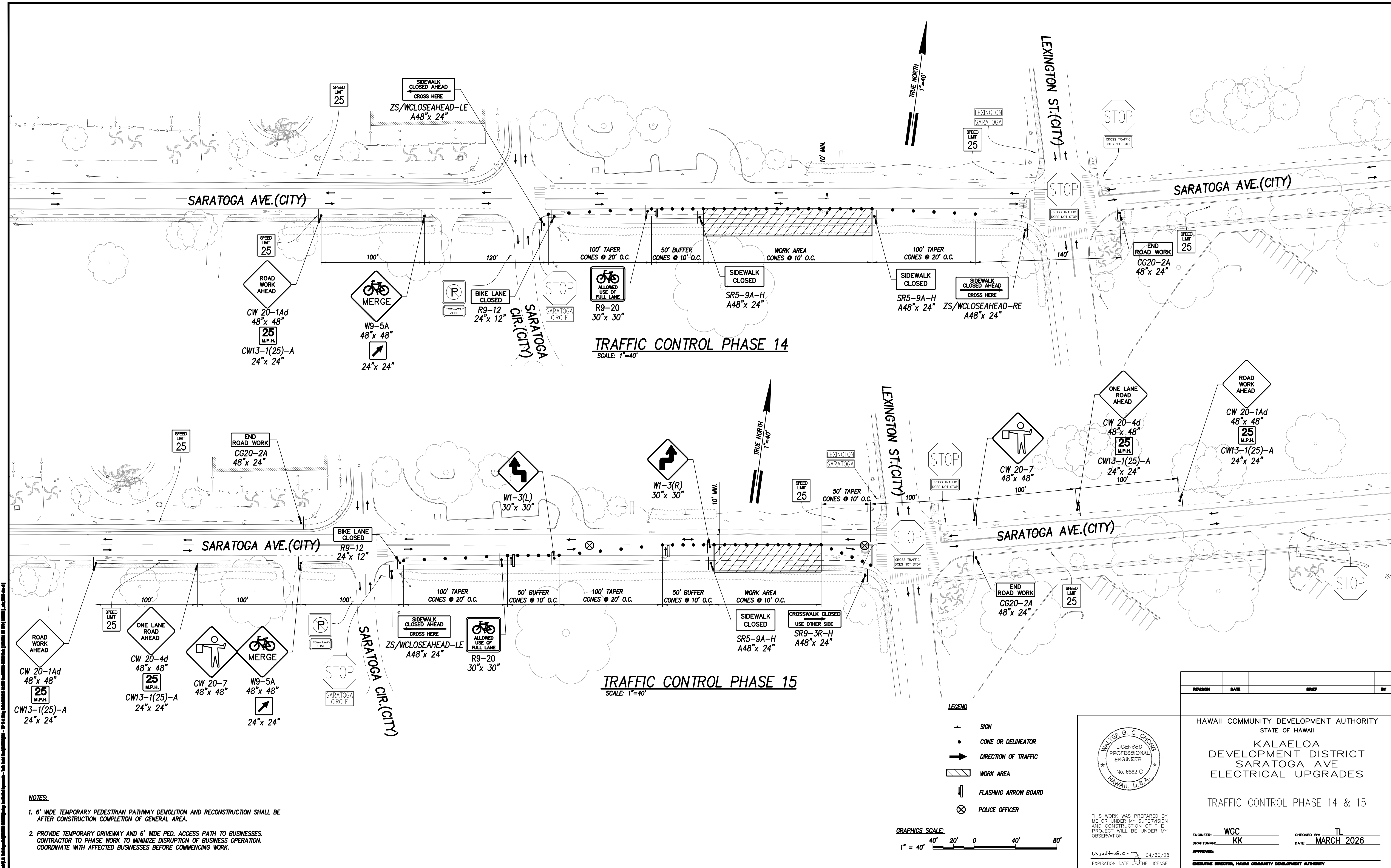
ENGINEER: WGC
DRAFTSMAN: KK
CHECKED BY: TL
DATE: MARCH 2026

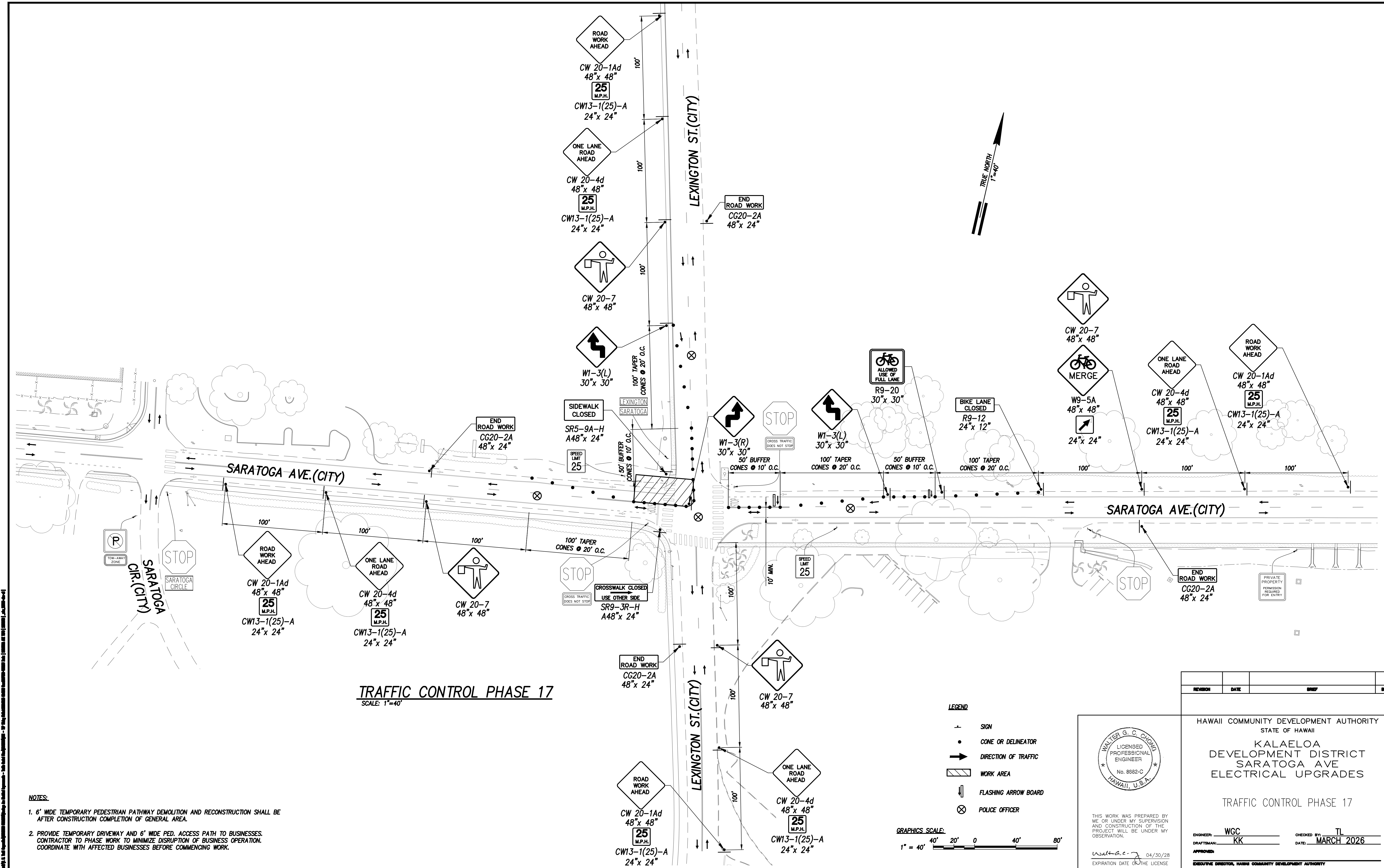
APPROVED: _____

EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY

FILE	POCKET	FOLDER	NO.







NOTES:

- 1. 6' WIDE TEMPORARY PEDESTRIAN PATHWAY DEMOLITION AND RECONSTRUCTION SHALL BE AFTER CONSTRUCTION COMPLETION OF GENERAL AREA.
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TRAFFIC CONTROL PHASE 17
SCALE: 1"=40'

- LEGEND
- SIGN
 - CONE OR DELINEATOR
 - DIRECTION OF TRAFFIC
 - ▨ WORK AREA
 - ⬇ FLASHING ARROW BOARD
 - ⊗ POLICE OFFICER



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REVISION	DATE	BY

HAWAII COMMUNITY DEVELOPMENT AUTHORITY
STATE OF HAWAII

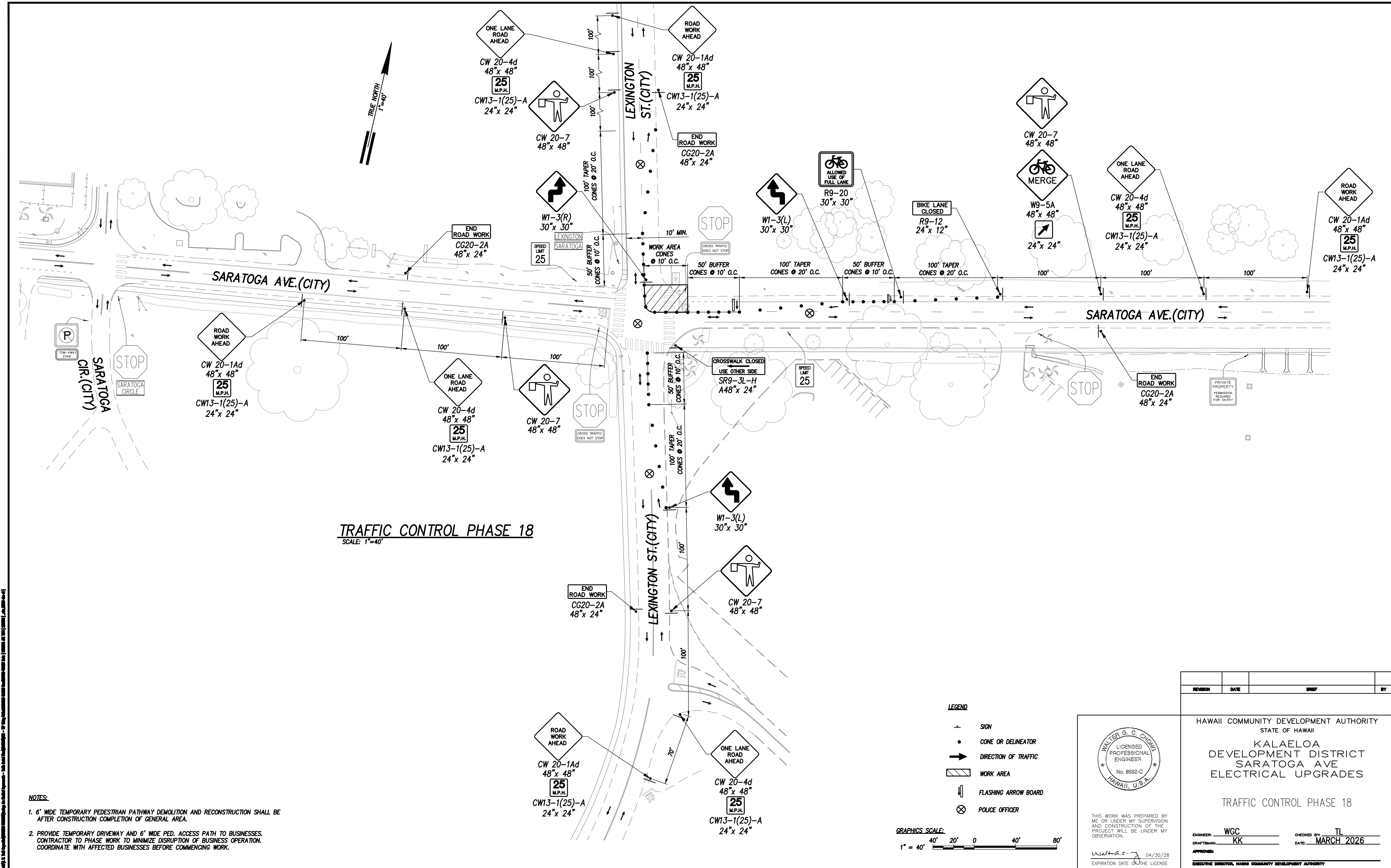
KALAELOA
DEVELOPMENT DISTRICT
SARATOGA AVE
ELECTRICAL UPGRADES

TRAFFIC CONTROL PHASE 17

ENGINEER: WGC
DRAFTSMAN: KK
CHECKED BY: TL
DATE: MARCH 2026

APPROVED: _____
EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY

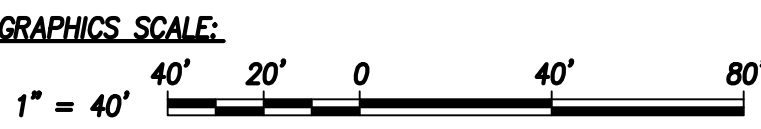
FILE	POCKET	FOLDER	NO.



TRAFFIC CONTROL PHASE 18
SCALE: 1"=40'

- NOTES:
- 6' WIDE TEMPORARY PEDESTRIAN PATHWAY DEMOLITION AND RECONSTRUCTION SHALL BE AFTER CONSTRUCTION COMPLETION OF GENERAL AREA.
 - PROVIDE TEMPORARY DRIVEWAY AND 6' WIDE PED. ACCESS PATH TO BUSINESSES. CONTRACTOR TO PHASE WORK TO MINIMIZE DISRUPTION OF BUSINESS OPERATION. COORDINATE WITH AFFECTED BUSINESSES BEFORE COMMENCING WORK.

- LEGEND
- SIGN
 - CONE OR DELINEATOR
 - DIRECTION OF TRAFFIC
 - ▨ WORK AREA
 - ⏏ FLASHING ARROW BOARD
 - ⊗ POLICE OFFICER



WALTER G. C. ORLOFF
LICENSED PROFESSIONAL ENGINEER
No. 8882-C
HAWAII, U.S.A.

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

Walter G. C. Orloff 04/30/28
EXPIRATION DATE OF THE LICENSE

REVISION	DATE	BRIEF	BY

HAWAII COMMUNITY DEVELOPMENT AUTHORITY
STATE OF HAWAII

KALAELOA
DEVELOPMENT DISTRICT
SARATOGA AVE
ELECTRICAL UPGRADES

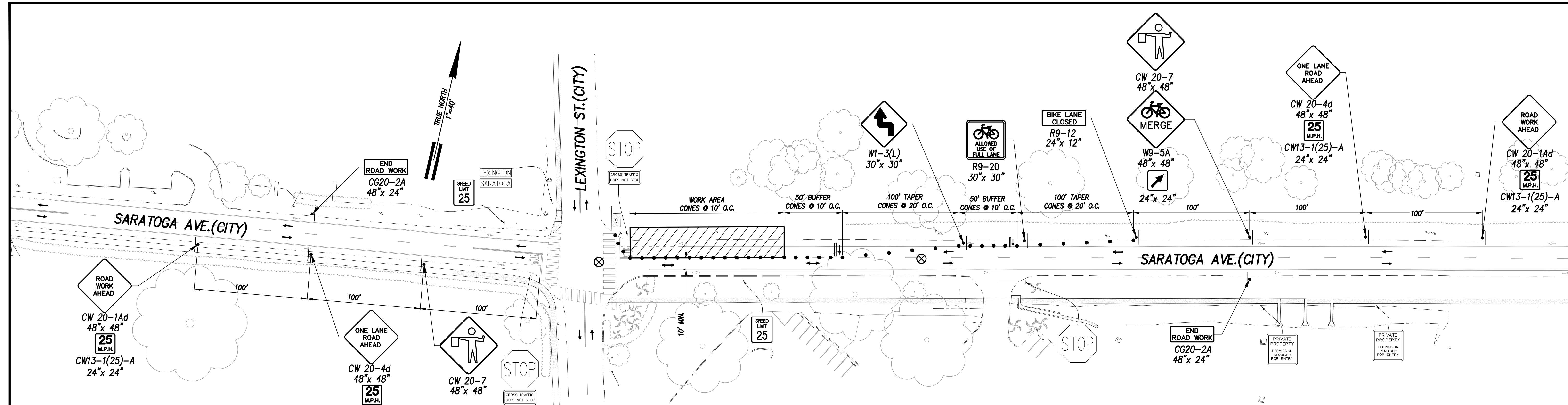
TRAFFIC CONTROL PHASE 18

ENGINEER: WGC
DRAFTSMAN: KK
CHECKED BY: TL
DATE: MARCH 2026

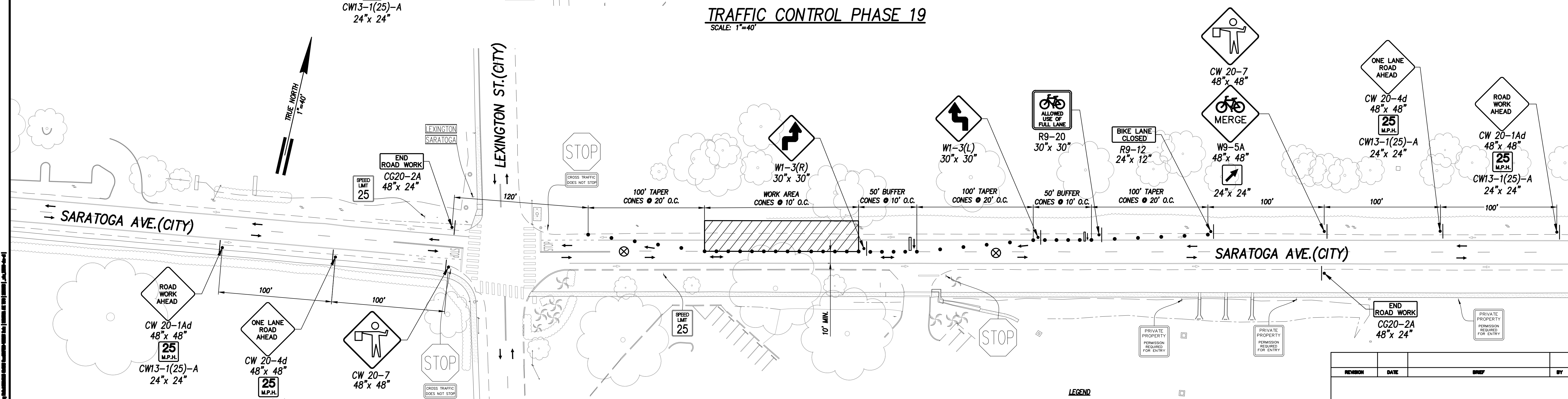
APPROVED: _____

EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY

FILE	POCKET	FOLDER	NO.



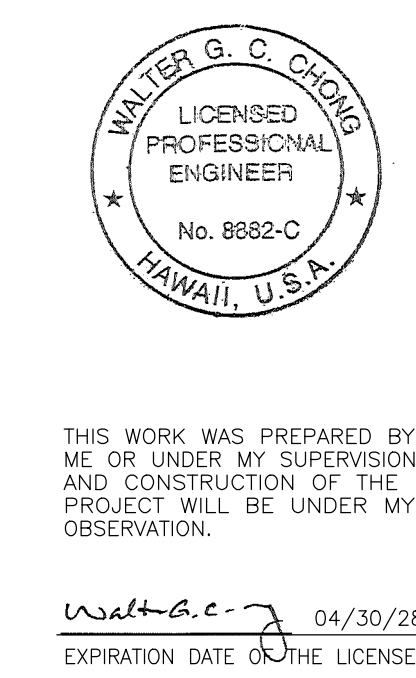
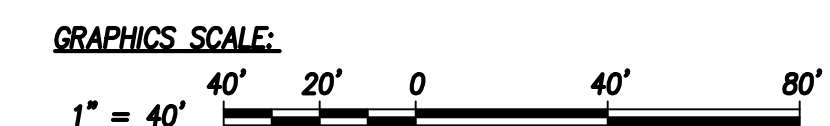
TRAFFIC CONTROL PHASE 19
SCALE: 1"=40'



TRAFFIC CONTROL PHASE 20
SCALE: 1"=40'

- NOTES:**
- 6' WIDE TEMPORARY PEDESTRIAN PATHWAY DEMOLITION AND RECONSTRUCTION SHALL BE AFTER CONSTRUCTION COMPLETION OF GENERAL AREA.
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- LEGEND**
- SIGN
 - CONE OR DELINEATOR
 - DIRECTION OF TRAFFIC
 - ▨ WORK AREA
 - ⏏ FLASHING ARROW BOARD
 - ⊗ POLICE OFFICER



REVISION	DATE	BY

HAWAII COMMUNITY DEVELOPMENT AUTHORITY
STATE OF HAWAII

KALAELOA
DEVELOPMENT DISTRICT
SARATOGA AVE
ELECTRICAL UPGRADES

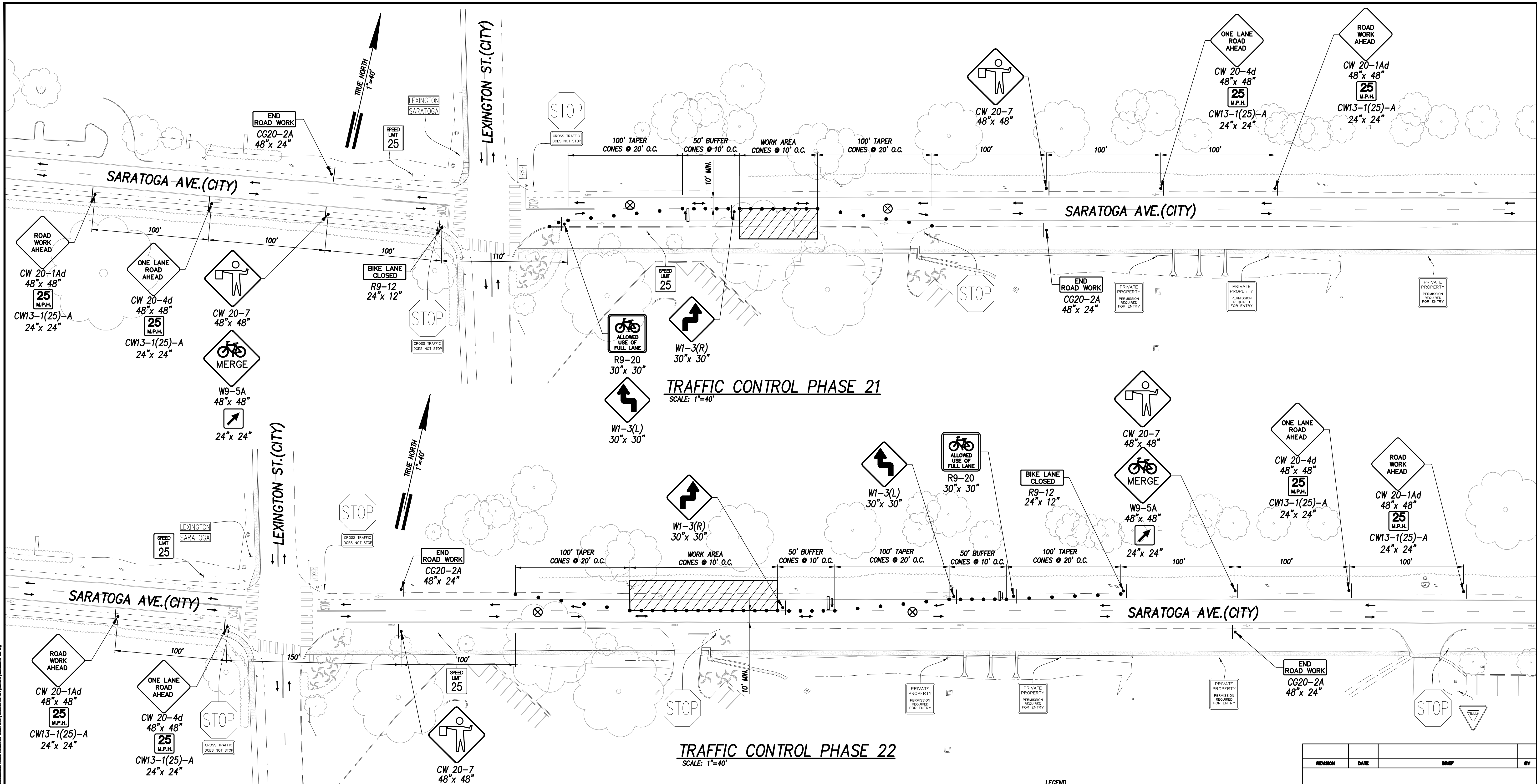
TRAFFIC CONTROL PHASE 19 & 20

ENGINEER: WGC
DRAFTSMAN: KK
CHECKED BY: TL
DATE: MARCH 2026

APPROVED: _____

EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY

FILE	POCKET	FOLDER	NO.

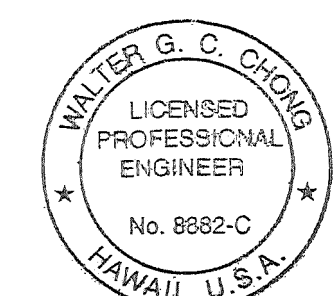


- NOTES:
1. 6' WIDE TEMPORARY PEDESTRIAN PATHWAY DEMOLITION AND RECONSTRUCTION SHALL BE AFTER CONSTRUCTION COMPLETION OF GENERAL AREA.
 2. PROVIDE TEMPORARY DRIVEWAY AND 6' WIDE PED. ACCESS PATH TO BUSINESSES. CONTRACTOR TO PHASE WORK TO MINIMIZE DISRUPTION OF BUSINESS OPERATION. COORDINATE WITH AFFECTED BUSINESSES BEFORE COMMENCING WORK.

- LEGEND
- SIGN
 - CONE OR DELINEATOR
 - DIRECTION OF TRAFFIC
 - ▨ WORK AREA
 - ⬇ FLASHING ARROW BOARD
 - ⊗ POLICE OFFICER

GRAPHICS SCALE:
1" = 40'

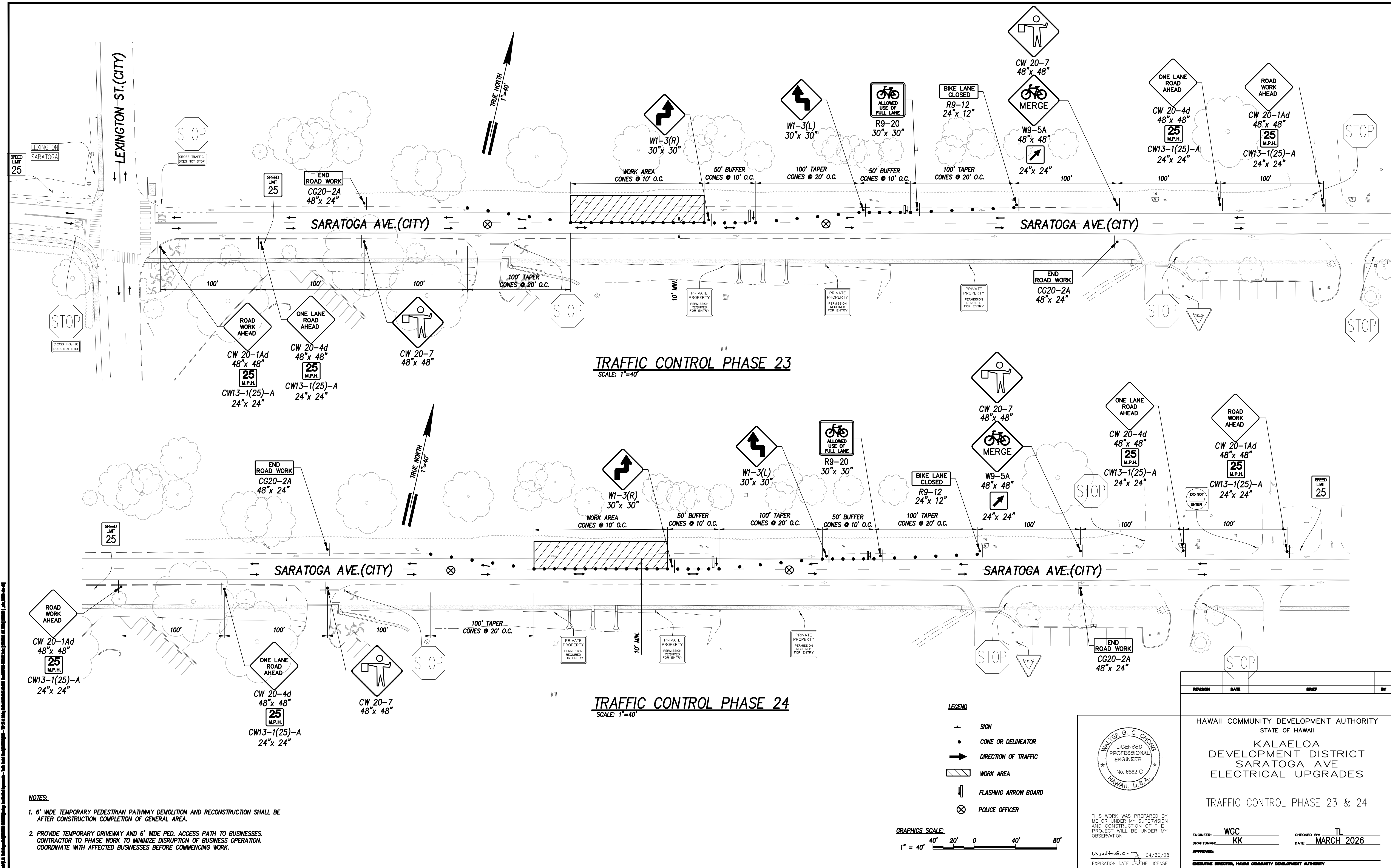
40' 20' 0 40' 80'



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Walter G. C. Orsini 04/30/28
EXPIRATION DATE OF THE LICENSE

REVISION	DATE	BRIEF	BY
HAWAII COMMUNITY DEVELOPMENT AUTHORITY			
STATE OF HAWAII			
KALAELOA			
DEVELOPMENT DISTRICT			
SARATOGA AVE			
ELECTRICAL UPGRADES			
TRAFFIC CONTROL PHASE 21 & 22			
ENGINEER	WGC	CHECKED BY	TL
DRAFTSMAN	KK	DATE	MARCH 2026
APPROVED			
EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY			
FILE	POCKET	FOLDER	NO.

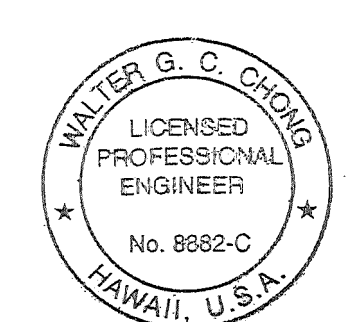
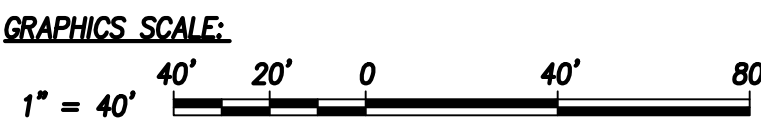


TRAFFIC CONTROL PHASE 23
SCALE: 1"=40'

TRAFFIC CONTROL PHASE 24
SCALE: 1"=40'

- NOTES:
- 6' WIDE TEMPORARY PEDESTRIAN PATHWAY DEMOLITION AND RECONSTRUCTION SHALL BE AFTER CONSTRUCTION COMPLETION OF GENERAL AREA.
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- LEGEND
- SIGN
 - CONE OR DELINEATOR
 - DIRECTION OF TRAFFIC
 - ▨ WORK AREA
 - ⏏ FLASHING ARROW BOARD
 - ⊗ POLICE OFFICER



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Walter G. C. Orsini 04/30/28
EXPIRATION DATE OF THE LICENSE

REVISION	DATE	BY

HAWAII COMMUNITY DEVELOPMENT AUTHORITY
STATE OF HAWAII

KALAELOA
DEVELOPMENT DISTRICT
SARATOGA AVE
ELECTRICAL UPGRADES

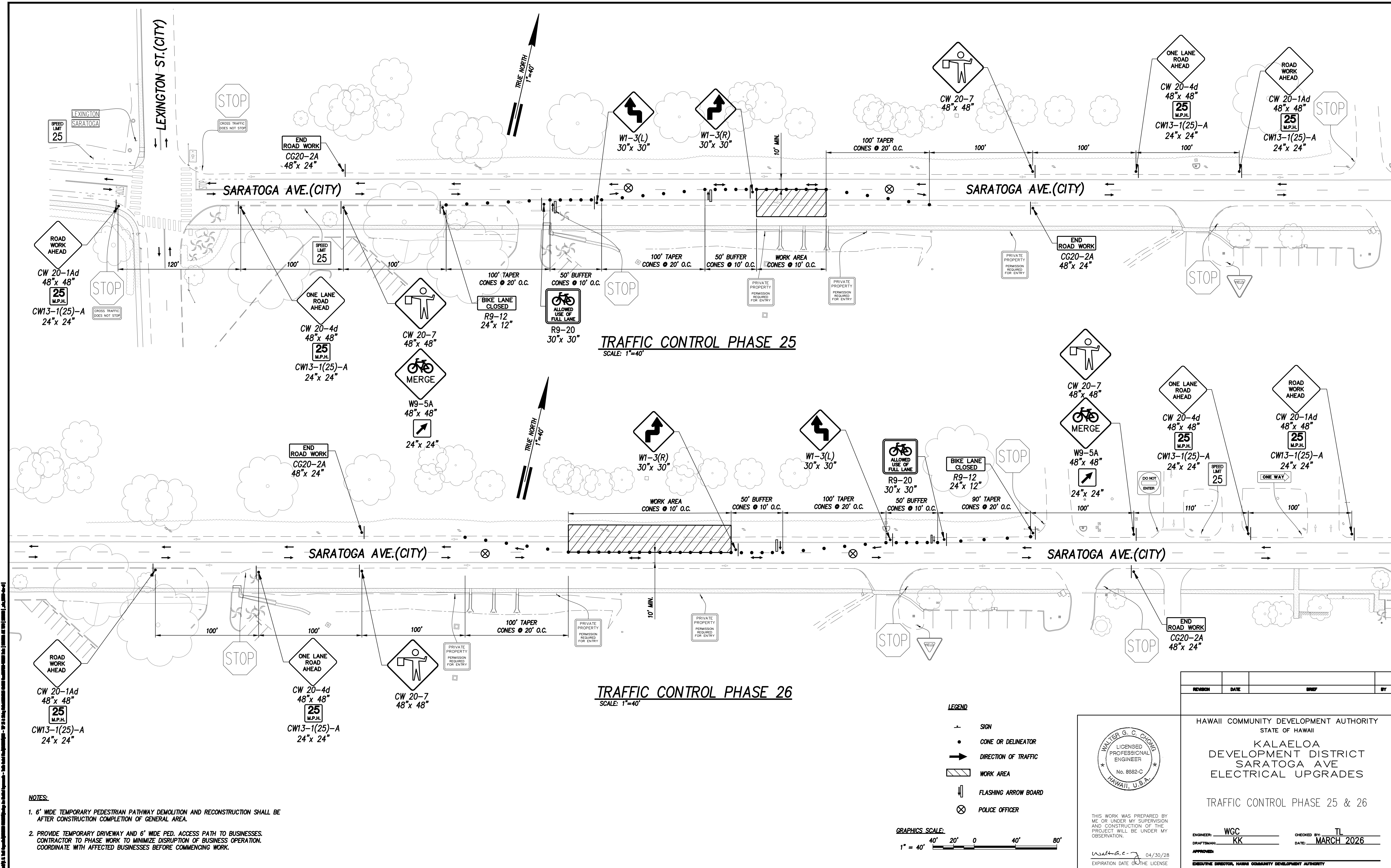
TRAFFIC CONTROL PHASE 23 & 24

ENGINEER: WGC
DRAFTSMAN: KK
CHECKED BY: TL
DATE: MARCH 2026

APPROVED: _____

EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY

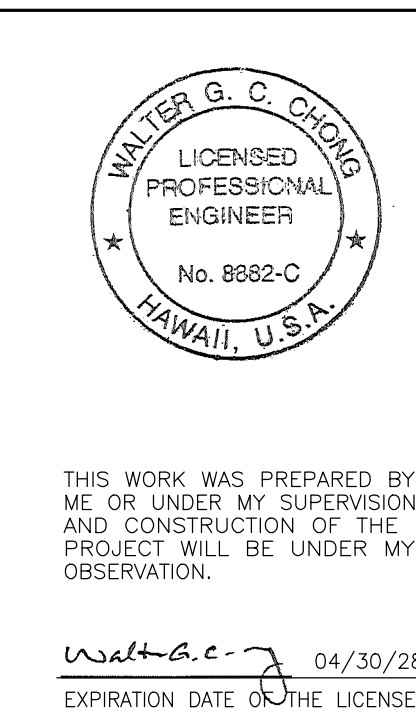
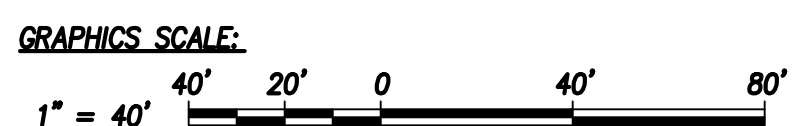
FILE	POCKET	FOLDER	NO.



NOTES:

- 6" WIDE TEMPORARY PEDESTRIAN PATHWAY DEMOLITION AND RECONSTRUCTION SHALL BE AFTER CONSTRUCTION COMPLETION OF GENERAL AREA.
- PROVIDE TEMPORARY DRIVEWAY AND 6" WIDE PED. ACCESS PATH TO BUSINESSES. CONTRACTOR TO PHASE WORK TO MINIMIZE DISRUPTION OF BUSINESS OPERATION. COORDINATE WITH AFFECTED BUSINESSES BEFORE COMMENCING WORK.

- LEGEND**
- SIGN
 - CONE OR DELINEATOR
 - DIRECTION OF TRAFFIC
 - ▨ WORK AREA
 - ⬇ FLASHING ARROW BOARD
 - ⊗ POLICE OFFICER



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Walter G. C. Orsini 04/30/28
EXPIRATION DATE OF THE LICENSE

REVISION	DATE	BRIEF	BY

HAWAII COMMUNITY DEVELOPMENT AUTHORITY
STATE OF HAWAII

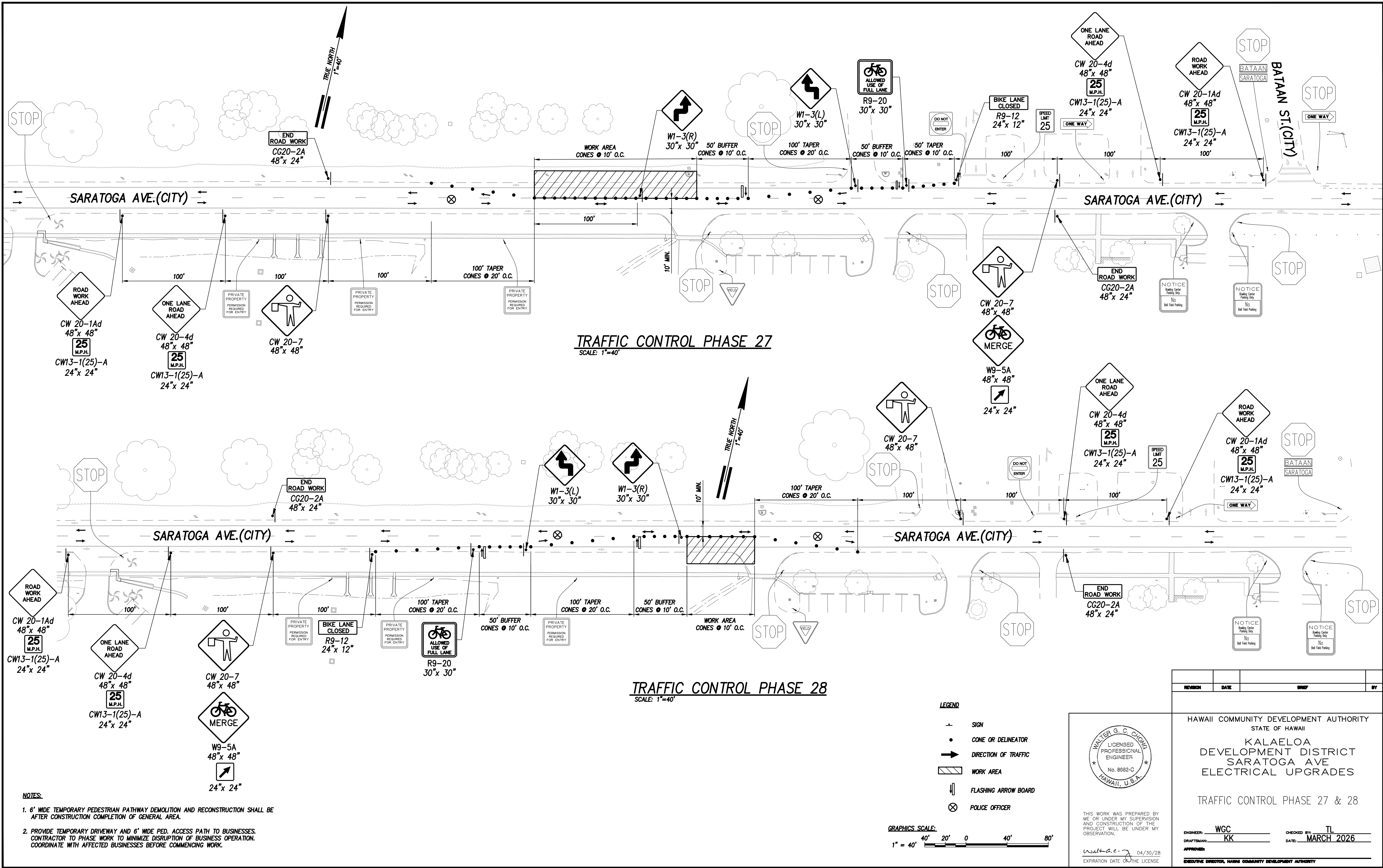
KALAELOA
DEVELOPMENT DISTRICT
SARATOGA AVE
ELECTRICAL UPGRADES

TRAFFIC CONTROL PHASE 25 & 26

ENGINEER: WGC
DRAFTSMAN: KK
CHECKED BY: TL
DATE: MARCH 2026

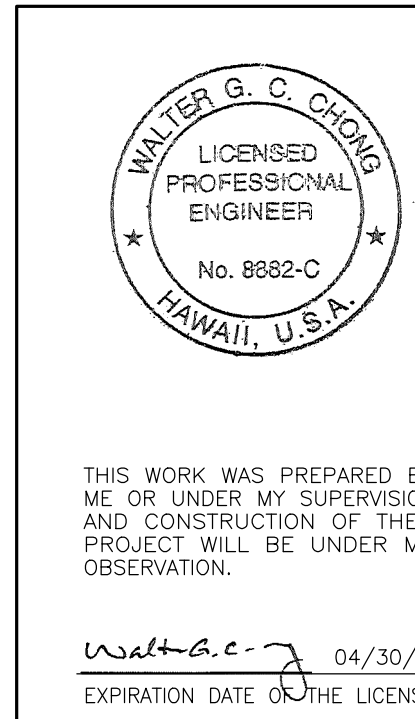
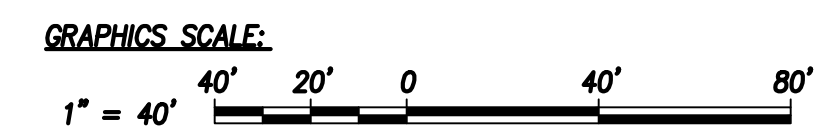
APPROVED: _____
EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY

FILE	POCKET	FOLDER	NO.



- NOTES:
- 6" WIDE TEMPORARY PEDESTRIAN PATHWAY DEMOLITION AND RECONSTRUCTION SHALL BE AFTER CONSTRUCTION COMPLETION OF GENERAL AREA.
 - PROVIDE TEMPORARY DRIVEWAY AND 6" WIDE PED. ACCESS PATH TO BUSINESSES. CONTRACTOR TO PHASE WORK TO MINIMIZE DISRUPTION OF BUSINESS OPERATION. COORDINATE WITH AFFECTED BUSINESSES BEFORE COMMENCING WORK.

- LEGEND
- SIGN
 - CONE OR DELINEATOR
 - DIRECTION OF TRAFFIC
 - ▨ WORK AREA
 - ⏏ FLASHING ARROW BOARD
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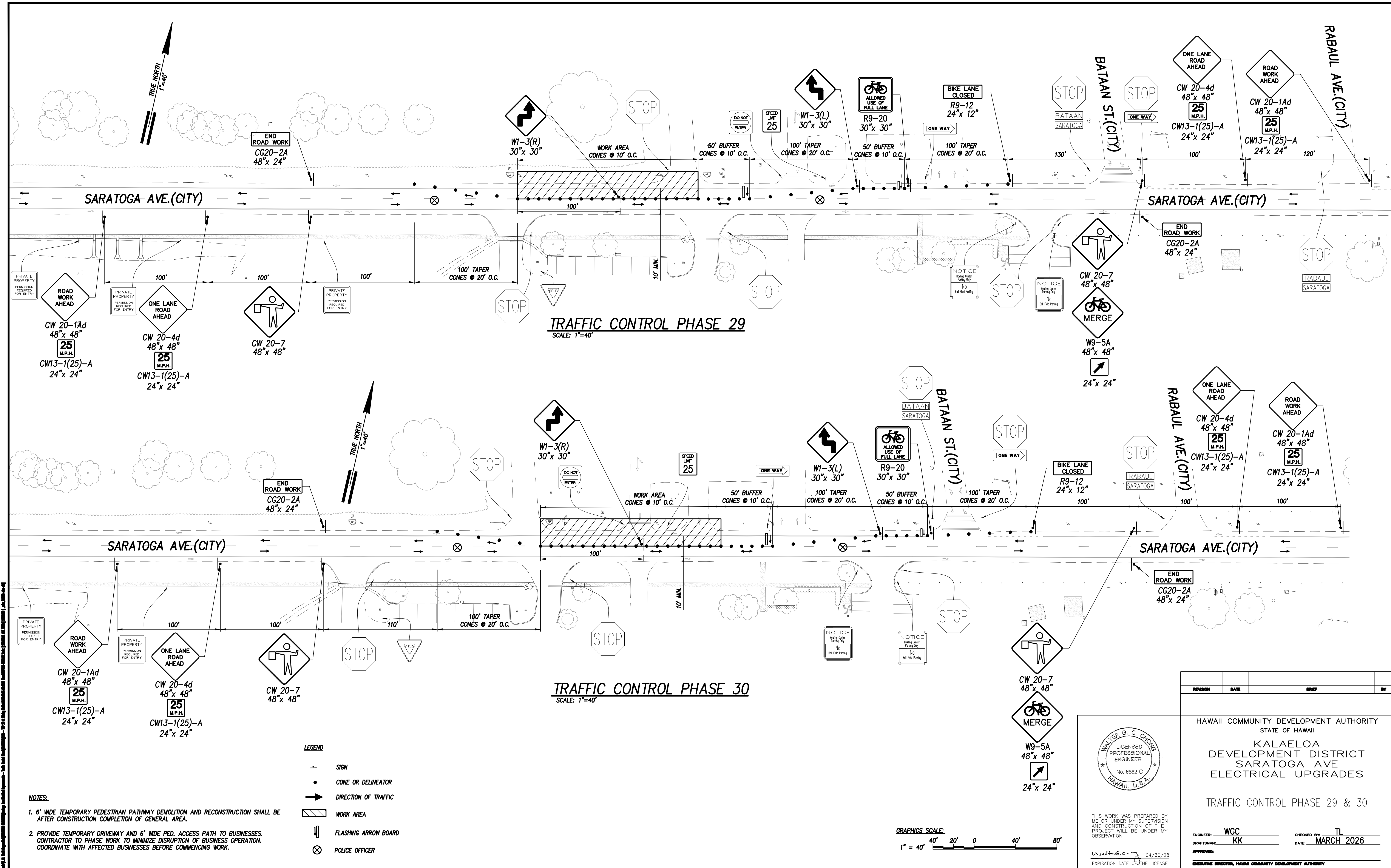


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Walter G. C. Orsini 04/30/28

EXPIRATION DATE OF THE LICENSE

REVISION	DATE	BRIEF	BY
HAWAII COMMUNITY DEVELOPMENT AUTHORITY STATE OF HAWAII KALAELOA DEVELOPMENT DISTRICT SARATOGA AVE ELECTRICAL UPGRADES TRAFFIC CONTROL PHASE 27 & 28			
ENGINEER:	WGC	CHECKED BY:	TL
DRAFTSMAN:	KK	DATE:	MARCH 2026
APPROVED:			
EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY			
FILE	POCKET	FOLDER	NO.

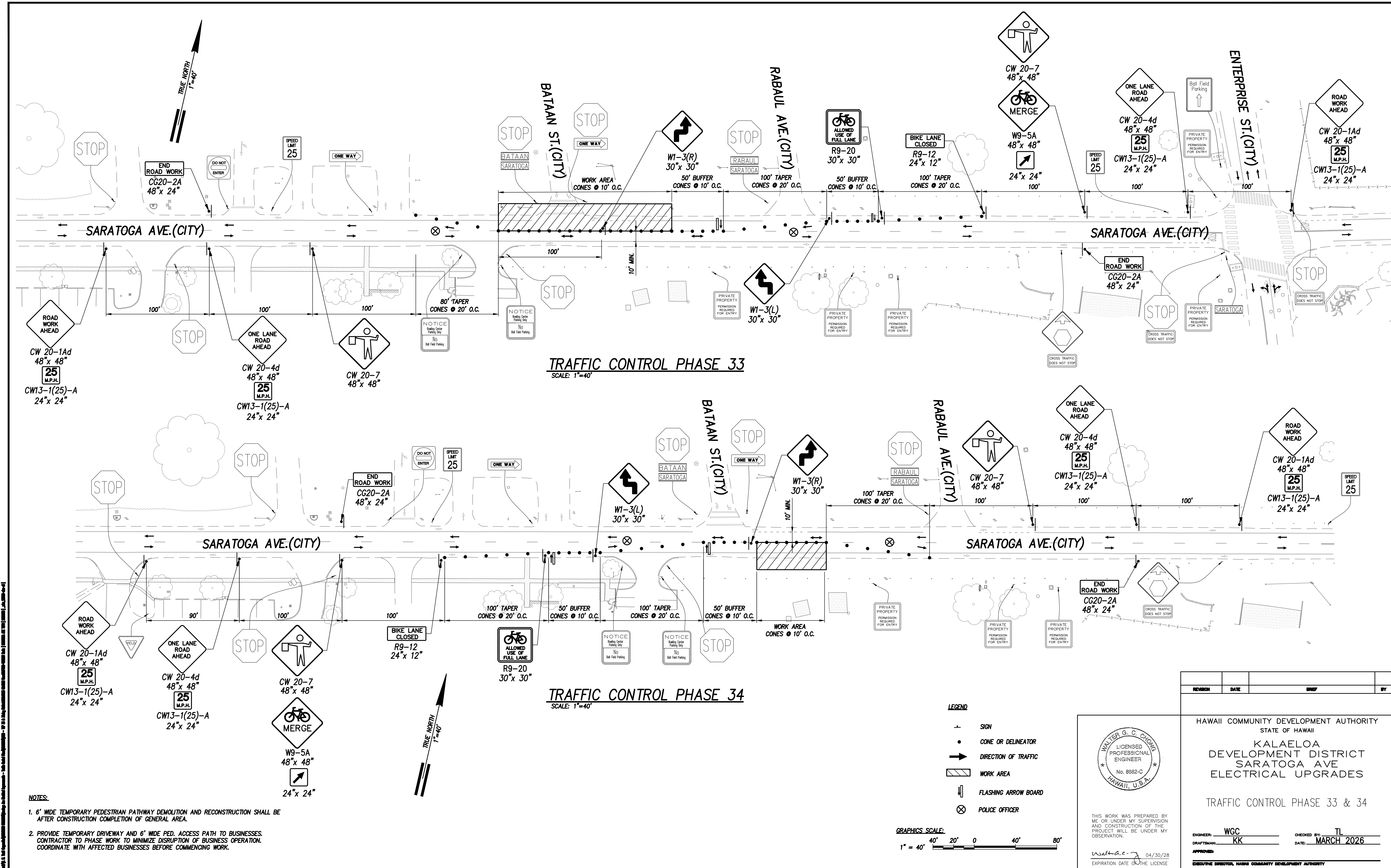


WALTER G. C. CHONG
LICENSED PROFESSIONAL ENGINEER
No. 8882-C
HAWAII, U.S.A.

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

Walter G. C. Chong 04/30/28
EXPIRATION DATE OF THE LICENSE

REVISION	DATE	DESCRIPTION	BY
HAWAII COMMUNITY DEVELOPMENT AUTHORITY STATE OF HAWAII KALAELOA DEVELOPMENT DISTRICT SARATOGA AVE ELECTRICAL UPGRADES TRAFFIC CONTROL PHASE 29 & 30			
ENGINEER:	WGC	CHECKED BY:	TL
DRAFTSMAN:	KK	DATE:	MARCH 2026
APPROVED:			
EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY			
FILE	POCKET	FOLDER	NO.



NOTES:

1. 6' WIDE TEMPORARY PEDESTRIAN PATHWAY DEMOLITION AND RECONSTRUCTION SHALL BE AFTER CONSTRUCTION COMPLETION OF GENERAL AREA.

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REVISION

DATE

BRIEF

BY

HAWAII COMMUNITY DEVELOPMENT AUTHORITY

STATE OF HAWAII

KALAELOA

DEVELOPMENT DISTRICT

SARATOGA AVE

ELECTRICAL UPGRADES

TRAFFIC CONTROL PHASE 33 & 34

ENGINEER: WGC

DRAFTSMAN: KK

CHECKED BY: TL

DATE: MARCH 2026

APPROVED:

EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY

WALTER G. C. CHONG

LICENSED PROFESSIONAL ENGINEER

No. 8882-C

HAWAII, U.S.A.

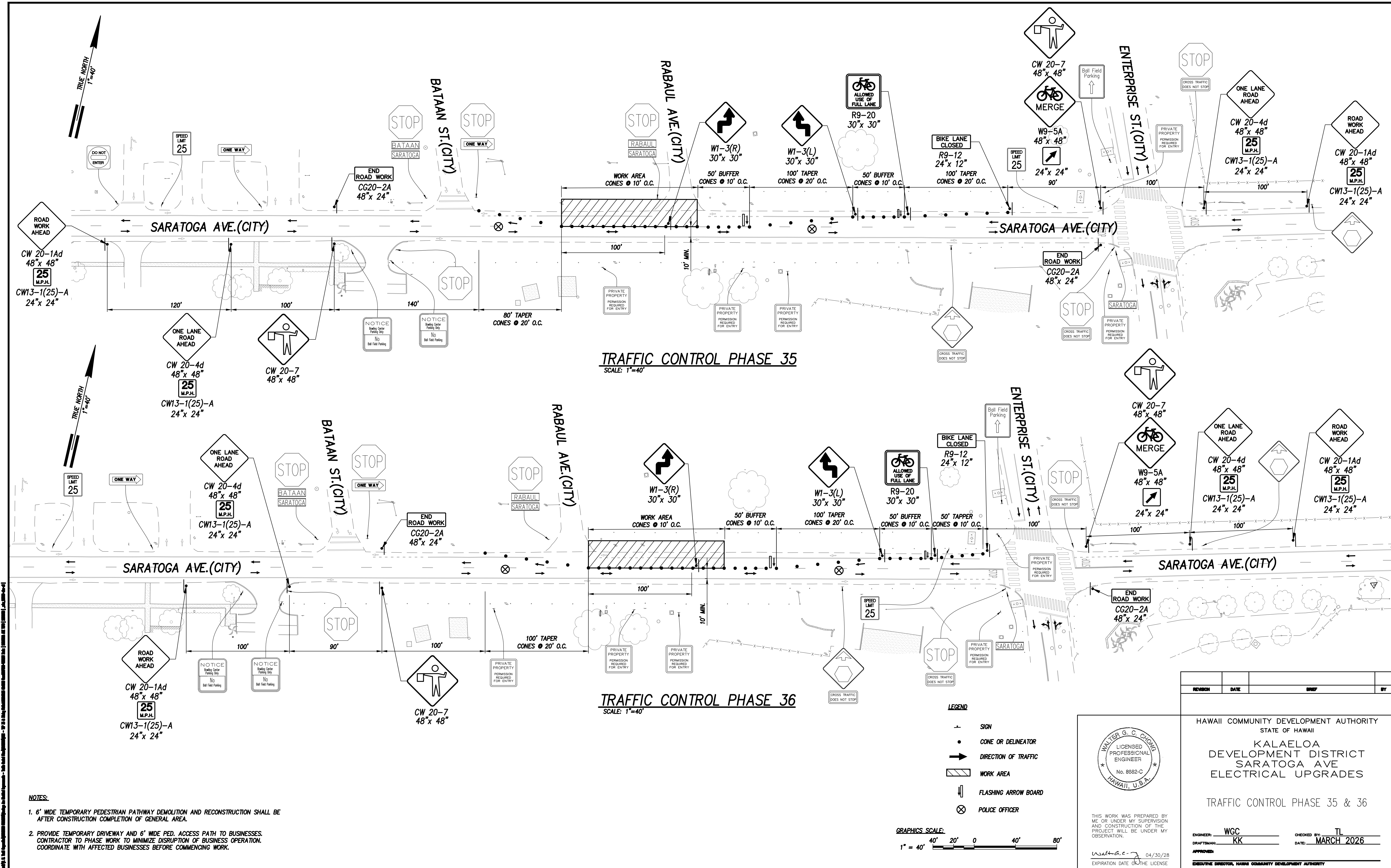
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THE PROJECT WILL BE UNDER MY OBSERVATION.

Walt G. C. 04/30/28

EXPIRATION DATE OF THE LICENSE

C120 SHEET 25 OF 71 SHEETS

FILE	POCKET	FOLDER	NO.
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NOTES:

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REVISION

DATE

BRIEF

BY

HAWAII COMMUNITY DEVELOPMENT AUTHORITY

STATE OF HAWAII

KALAELOA

DEVELOPMENT DISTRICT

SARATOGA AVE

ELECTRICAL UPGRADES

TRAFFIC CONTROL PHASE 35 & 36

ENGINEER: WGC

DRAFTSMAN: KK

CHECKED BY: TL

DATE: MARCH 2026

APPROVED:

EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY

WALTER G. C. ORLANDO

LICENSED PROFESSIONAL ENGINEER

No. 8882-C

HAWAII, U.S.A.

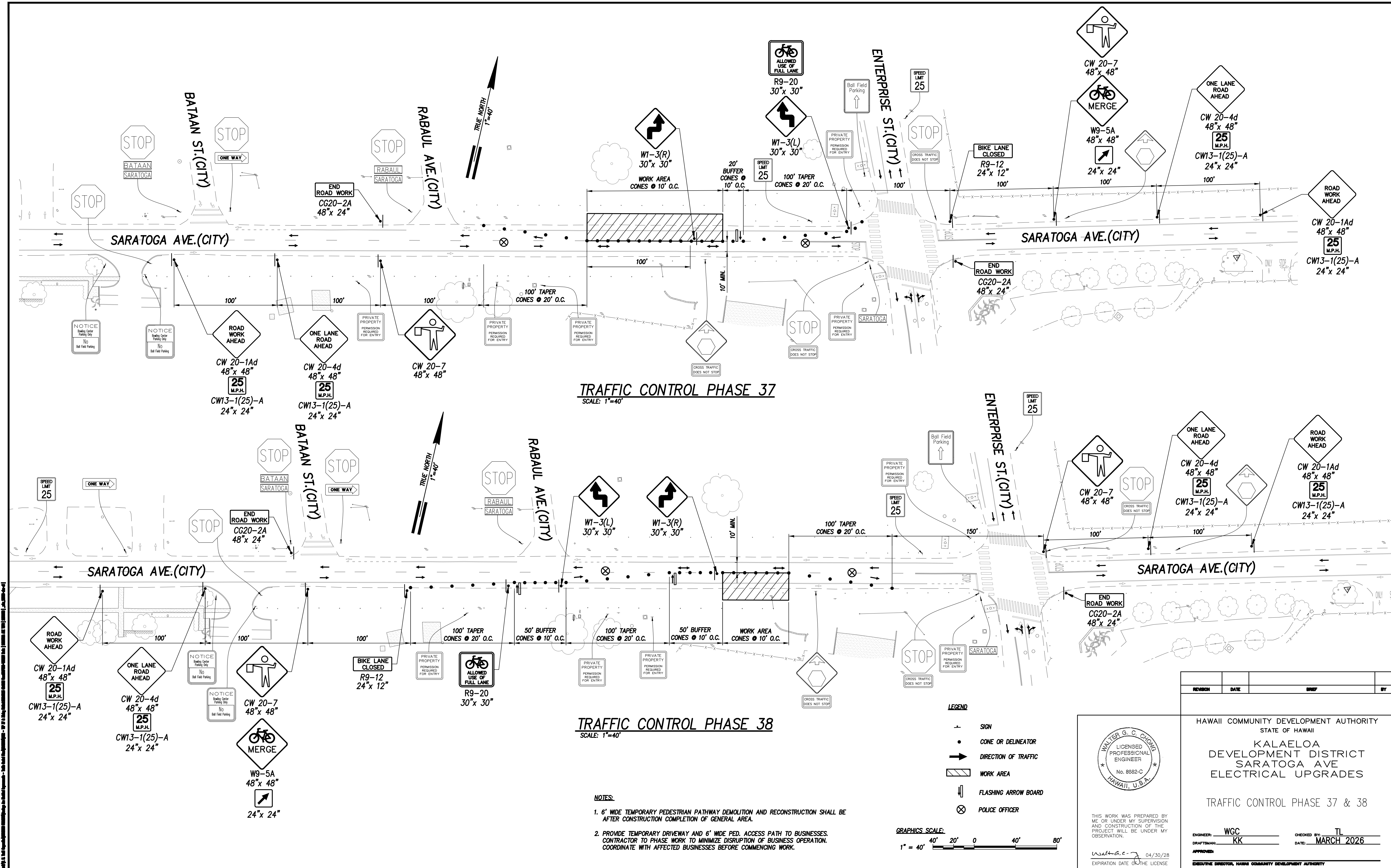
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THE PROJECT WILL BE UNDER MY OBSERVATION.

Walt G. C. 04/30/28

EXPIRATION DATE OF THE LICENSE

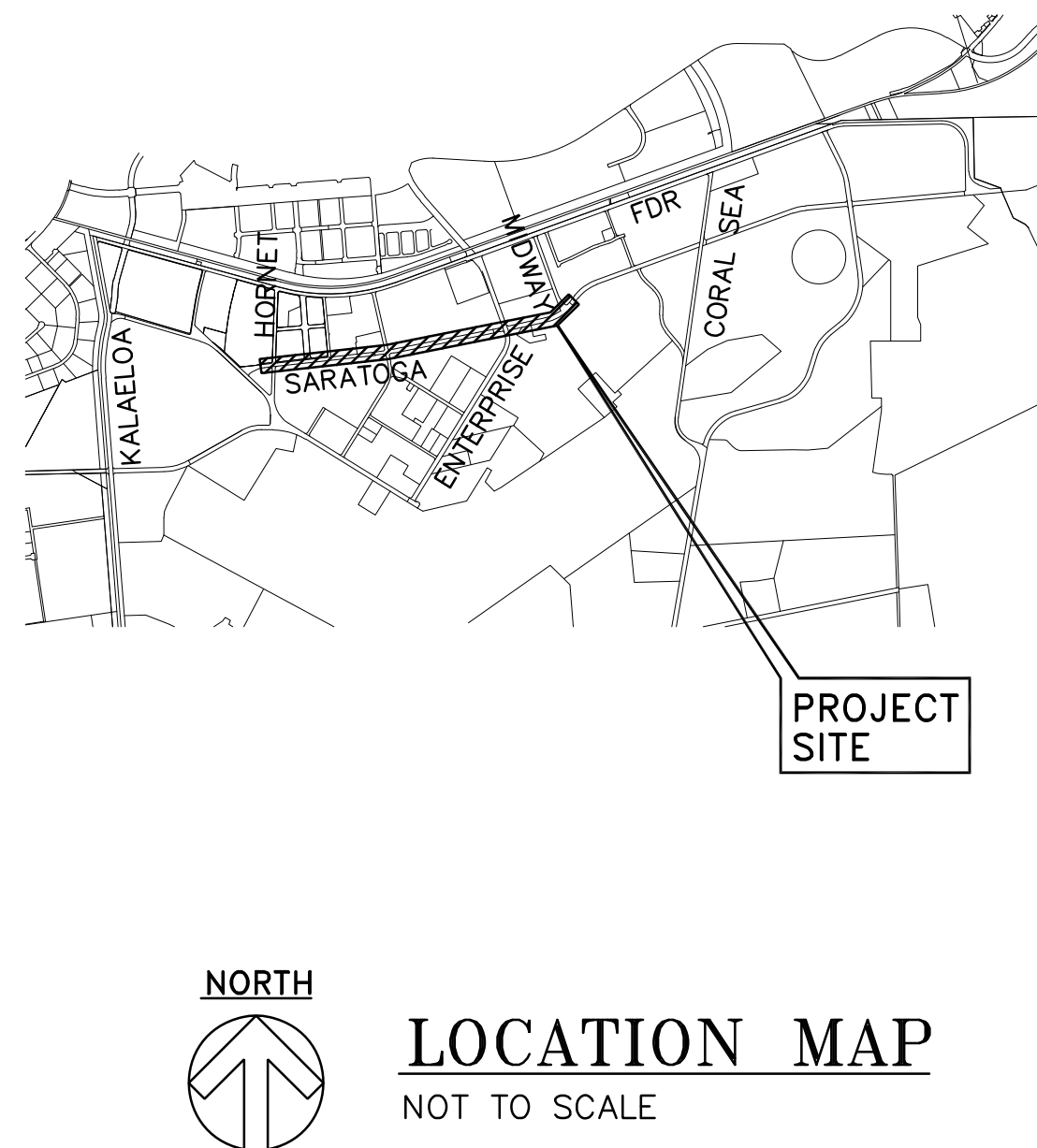
C121 SHEET 26 OF 71 SHEETS

FILE	POCKET	FOLDER	NO.
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ELECTRICAL SYMBOLS	
SYMBOL	DESCRIPTION
	EXIST STREET LIGHT, BRACKET ARM. NAVY OWNED
	BREAKLINE TO BEGIN & END DUCT SECTION TYPE
	ELECTRIC/SIGNAL DUCTLINE WITH DESIGNATORS; INDICATES TYPE "A" DUCT SECTION WITH "2-2" DUCTS. SEE SHEETS ED01 & ED02 FOR DUCT SECTIONS AND ED01 FOR THE CONDUIT SCHEDULE
	STUB, CAP, & MARK CONDUIT(S) WITH CONCRETE MARKER, SEE DETAIL C/ED01
	SAWCUT EXST. A.C. PAVEMENT, CONC. SIDEWALK, CURB & GUTTER PRIOR TO TRENCH EXCAVATION. RESTORE SUBBASE, BASECOURSE, PAVEMENT, CONC. SIDEWALK, CURB & GUTTER PER CITY REQUIREMENTS, THICKNESS SHALL MATCH EXST ROAD DESIGN
	EXIST UNDERGROUND HECO DUCTS & CABLES
	EXIST UNDERGROUND TELEPHONE DUCTS & CABLES
	EXIST UNDERGROUND CATV DUCTS & CABLES
	EXIST UNDERGROUND NAVY DUCTS & CABLES
	UNDERGROUND HECO DUCTS & CABLES
	UNDERGROUND TELEPHONE DUCTS & CABLES
	UNDERGROUND CATV DUCTS & CABLES
	EXIST HTCO 2' X 4' HANDHOLE, UNLESS OTHERWISE NOTED
	EXIST HTCO 4' X 6' MANHOLE, UNLESS OTHERWISE NOTED
	HTCO 5' X 10' MANHOLE
	CATV 4' X 6' MANHOLE
	EXIST HECO 2' X 4' HANDHOLE
	EXIST HECO 3' X 5' HANDHOLE, UNLESS OTHERWISE NOTED
	EXIST HECO 4' X 6' MANHOLE, UNLESS OTHERWISE NOTED
	HECO 6' X 14' MANHOLE
	EXIST PULLBOX/HANDHOLE
	EXIST OVERHEAD NAVY LINE, VOLTAGE AS NOTED
	EXIST OVERHEAD HECO LINE, VOLTAGE AS NOTED
	EXIST OVERHEAD HTCO LINE
	EXIST OVERHEAD CATV LINE
	EXIST OVERHEAD GUY WIRES
	OVERHEAD CONDUCTORS BY HECO
	OVERHEAD CABLES BY HTCO
	OVERHEAD CABLES BY CATV
	UTILITY POLE BY UTILITY COMPANY, UNLESS OTHERWISE NOTED
	ANCHOR BY UTILITY COMPANY, UNLESS OTHERWISE NOTED
	EXIST UTILITY POLE
	EXIST ANCHOR
	EXIST OVERHEAD TRANSFORMER (1-PH)
	EXIST OVERHEAD TRANSFORMER BANK (3-PH)
	EXIST METERING EQUIPMENT
	CONCRETE STUB OUT MARKER, SEE DETAIL C/ED01
	NOTE SYMBOL, SEE PLAN FOR NOTES

1. SOLID ITEM DENOTES "NEW"; DASHED ITEM DENOTES "EXISTING".
2. "X" THRU DASHED ITEM DENOTES "EXISTING ITEM TO BE REMOVED".



THE HAWAIIAN ELECTRIC Co. (HECO) & HAWAIIAN TELCOM (HTCO) PULLBOXES, HANDHOLES AND MANHOLES SHALL BE CONSTRUCTED BY THE CONTRACTOR AS SHOWN IN THESE DRAWINGS & IN ACCORDANCE WITH THE FOLLOWING STANDARD DRAWINGS:

NOTES:
IF DUCTS ENTER HANDHOLE/MANHOLE OUTSIDE OF THE APPROVED HANDHOLE/MANHOLE WINDOW, SUBMIT THE HANDHOLE/MANHOLE SHOP DRAWING TO THE RESPECTIVE UTILITY COMPANY FOR APPROVAL.

HECO HANDHOLES & MANHOLES SIZED 3'X5' AND LARGER SHALL BE REVIEWED BY HECO PRIOR TO ORDERING AND FABRICATION.

- A. THE LOCATION OF OVERHEAD AND UNDERGROUND FACILITIES SHOWN ON THE PLANS ARE FROM EXISTING RECORDS WITH VARYING DEGREES OF ACCURACY AND ARE NOT GUARANTEED AS SHOWN. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHENEVER CONSTRUCTION CROSSES OR IS IN PROXIMITY OF UNDERGROUND LINES AND WHENEVER CONSTRUCTION CROSSES OR IS IN PROXIMITY OF UNDERGROUND LINES AND SHALL MAINTAIN ADEQUATE CLEARANCE WHEN OPERATING EQUIPMENT UNDER ANY OVERHEAD LINES.
- B. THE CONTRACTOR IS TO COMPLY WITH THE DIRECTIONS OF THE STATE OF HAWAII OCCUPATIONAL SAFETY AND HEALTH LAW (HIOSH).
- C. WHEN TRENCH EXCAVATION IS ADJACENT TO EXISTING STRUCTURES OR FACILITIES, THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SHEETING AND BRACING THE EXCAVATION AND STABILIZING THE EXISTING GROUND TO RENDER IT SAFE AND SECURE FROM POSSIBLE SLIDES, CAVE-INS AND SETTLEMENT, AND FOR PROPERLY SUPPORTING EXISTING STRUCTURES AND FACILITIES WITH BEAMS, STRUTS OR UNDERPINNING TO FULLY PROTECT IT FROM DAMAGE.
- D. AS REQUIRED BY THE CITY AND COUNTY OF HONOLULU, THE CONTRACTOR SHALL PROVIDE OFF-DUTY POLICE OFFICERS TO CONTROL THE FLOW OF TRAFFIC.
- E. WHERE PEDESTRIAN WALKWAYS EXIST, SUCH WALKWAYS SHALL BE MAINTAINED IN PASSABLE CONDITION OR OTHER FACILITIES FOR PEDESTRIANS SHALL BE PROVIDED.
- F. DRIVEWAYS SHALL BE KEPT OPEN UNLESS THE OWNERS OF THE PROPERTY USING THESE RIGHT-OF-WAYS ARE OTHERWISE PROVIDED FOR SATISFACTORILY.
- G. THE UNDERGROUND PIPES, CABLES OR DUCTLINES KNOWN BY THE ENGINEER TO EXIST FROM HIS SEARCH OF RECORDS ARE INDICATED ON THE PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF THE FACILITIES AND EXERCISE PROPER CARE IN EXCAVATING THE AREA. WHEREVER CONNECTIONS OF NEW UTILITIES TO EXISTING UTILITIES ARE SHOWN ON THE PLANS, THE CONTRACTOR SHALL EXPOSE THE EXISTING LINES AT THE PROPOSED CONNECTIONS TO VERIFY THEIR LOCATIONS AND DEPTHS PRIOR TO EXCAVATION FOR THE NEW LINES.

1. CONTRACTOR SHALL BE RESPONSIBLE TO ARRANGE WITH THE GENERAL CONTRACTOR TO IDENTIFY THE LOCATIONS OF CIVIL SITE UTILITIES, DRIVEWAYS, ETC. PRIOR TO ELECTRICAL CONTRACTORS LAYOUT OF ELECTRIC, TELEPHONE, STREET LIGHT, TRAFFIC SIGNAL, AND CATV SYSTEMS.
2. PROVIDE 5' MINIMUM CLEAR BETWEEN STREET LIGHT POLES & SEWER LATERALS.
3. PROVIDE 3' MINIMUM CLEAR BETWEEN PULLBOXES & SEWER LATERALS.
4. PROVIDE 6' MINIMUM CLEAR BETWEEN TRANSFORMER PADS & SEWER LATERALS (DO NOT STRADDLE).
5. PROVIDE 3' MINIMUM CLEAR BETWEEN DUCTLINES & SEWER LINES.
6. CONTRACTOR SHALL VERIFY SEWER LATERAL LOCATIONS WITH CIVIL SHEETS.
7. PROVIDE 3' MINIMUM HORIZONTAL CLEAR & 6" VERTICAL CLEAR BETWEEN WATER LINES & ALL ELECTRICAL SYSTEMS. PROVIDE 12" MINIMUM VERTICAL CLEAR BETWEEN BWS WATER LINES & ALL ELECTRICAL SYSTEMS
8. PROVIDE 6" MINIMUM VERTICAL CLEARANCE BETWEEN DUCTLINES & DRAINLINES.
9. PROVIDE 12" MINIMUM HORIZONTAL CLEARANCE BETWEEN DUCTLINES & DRAINLINES/DRAINAGE STRUCTURES.

HAWAIIAN TELCOM	DATE
SPECTRUM OCEANIC	DATE

RONALD N. S. HO & ASSOCIATES, INC.
Electrical Engineers

DUSTIN Y. NAKAMOTO
★ LICENSED PROFESSIONAL ENGINEER ★
No. 14287-E
HAWAII U.S.A.

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

[Signature] 04/30/28
EXPIRATION DATE OF THE LICENSE

REVISION	DATE	BRIEF	BY
HAWAII COMMUNITY DEVELOPMENT AUTHORITY STATE OF HAWAII KALAELOA DEVELOPMENT DISTRICT SARATOGA AVE ELECTRICAL UPGRADES ELECTRIC SYMBOLS, GENERAL NOTES AND EQUIPMENT SCHDULE			
ENGINEER: <u>DN</u>	CHECKED BY: <u>SS</u>		
DRAFTSMAN: <u>CAD</u>	DATE: <u>MARCH 2026</u>		
APPROVED: _____			
EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY			

FILE	POCKET	FOLDER	NO.

1 LOCATION OF HECO FACILITIES

THE LOCATION OF HECO'S OVERHEAD AND UNDERGROUND FACILITIES SHOWN ON THE PLANS ARE FROM EXISTING RECORDS WITH VARYING DEGREES OF ACCURACY AND ARE NOT GUARANTEED AS SHOWN. THE CONTRACTOR SHALL VERIFY IN THE FIELD THE LOCATIONS OF THE FACILITIES AND SHALL EXERCISE PROPER CARE IN EXCAVATING AND WORKING IN THE AREA. WHEREVER CONNECTIONS OF NEW UTILITIES TO EXISTING UTILITIES AND UTILITY CROSSINGS ARE SHOWN, THE CONTRACTOR SHALL EXPOSE THE EXISTING LINES AT THE PROPOSED CONNECTIONS AND CROSSINGS TO VERIFY THE DEPTHS PRIOR TO EXCAVATION FOR THE NEW LINES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES TO HECO'S FACILITIES WHETHER SHOWN OR NOT SHOWN ON THE PLANS.

2 COMPLIANCE WITH ALL APPLICABLE HAWAII OCCUPATIONAL SAFETY AND HEALTH LAWS

THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE OCCUPATIONAL SAFETY AND HEALTH LAWS AND REGULATIONS, INCLUDING WITHOUT LIMITATION, THOSE RELATED TO WORKING ON OR NEAR EXPOSED OR ENERGIZED POWER LINES AND EQUIPMENT.

3 EXCAVATION CLEARANCE

THE CONTRACTOR SHALL OBTAIN AN EXCAVATION CLEARANCE FROM HECO'S PLANNING AND DESIGN SECTION OF THE CUSTOMER ENGINEERING DEPARTMENT (543-7086), A MINIMUM OF TEN (10) WORKING DAYS PRIOR TO STARTING CONSTRUCTION. REQUESTS SHOULD BE EMAILED TO CLEARANCETOEXCAVATE@HAWAIIANELECTRIC.COM.

4 CAUTION: ELECTRICAL HAZARD!!!

EXISTING HECO OVERHEAD AND UNDERGROUND LINES ARE ENERGIZED AND WILL REMAIN ENERGIZED DURING CONSTRUCTION UNLESS PRIOR SPECIAL ARRANGEMENTS HAVE BEEN MADE WITH HECO. ONLY HECO PERSONNEL ARE TO HANDLE THESE ENERGIZED LINES AND ERECT TEMPORARY GUARDS TO PROTECT THESE LINES FROM DAMAGE. THE CONTRACTOR SHALL WORK CAUTIOUSLY AT ALL TIMES TO AVOID ACCIDENTS AND DAMAGE TO EXISTING HECO FACILITIES, WHICH CAN RESULT IN ELECTROCUTION.

5 OVERHEAD POWER LINES

OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REQUIRES THAT A WORKER AND THE LONGEST OBJECT THEY MAY CONTACT CANNOT COME CLOSER THAN A SPECIFIED MINIMUM RADIAL CLEARANCE WHEN WORKING CLOSE TO OR UNDER ANY OVERHEAD POWER LINES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BE INFORMED OF AND COMPLY WITH ALL APPLICABLE LAWS.

AT ANY TIME SHOULD THE CONTRACTOR ANTICIPATE THAT THEIR WORK WILL RESULT IN THE NEED TO ENCR OACH WITHIN THE MINIMUM REQUIRED CLEARANCE AS STATED IN THE LAW, THE CONTRACTOR SHALL NOTIFY HECO AT LEAST THREE (3) MONTHS PRIOR TO THE PLANNED ENCR OACHMENT BY SUBMITTING AN APPLICATION THROUGH HAWAIIANELECTRIC.COM SO THAT, IF FEASIBLE, THE NECESSARY PROTECTIONS (E.G. RELOCATE OR DE-ENERGIZE HECO'S POWER LINES) CAN BE INVESTIGATED. HECO MAY ALSO BE ABLE TO BLANKET ITS DISTRIBUTION (12KV AND BELOW) POWER LINES TO PROVIDE A VISUAL AID IN PREVENTING ACCIDENTAL CONTACT. HECO'S COST OF SAFEGUARDING OR IDENTIFYING ITS POWER LINES WILL BE CHARGED TO THE CONTRACTOR.

FOR ASSISTANCE IN IDENTIFYING OVERHEAD POWER LINES, EMAIL CIO@HAWAIIANELECTRIC.COM.

6 POLE BRACING

- a) CONTRACTOR SHALL NOT EXCAVATE WITHIN 10 FEET OF HECO'S UTILITY POLES OR ANY ANCHOR SYSTEM SUPPORTING THE UTILITY POLE. IF CONTRACTOR MUST EXCAVATE AN AREA MORE THAN 12 INCHES DEEP BY 12 INCHES WIDE, AND CLOSER THAN 10 FEET FROM A UTILITY POLE OR ITS ANCHOR SYSTEM, EXCEPT WHEN EXCAVATING FOR RISERS IN A RISERS IN A SINGLE TRENCH NOT WIDER THAN 12 INCHES AND NOT DEEPER THAN 3 FEET, CONTRACTOR WILL BE RESPONSIBLE FOR PROTECTING, SUPPORTING, SECURING AND TAKING ALL PRECAUTIONS TO PREVENT DAMAGE TO OR LEANING OF EXISTING POLES. BEFORE COMMENCING SUCH EXCAVATION, CONTRACTOR MUST NOTIFY HECO WHICH MAY LEAD TO IMPLEMENTING POLE BRACING REQUIREMENTS. HECO REQUIRES A MINIMUM OF TEN (10) WORKING DAYS TO CONDUCT A REVIEW OF THE CONTRACTOR'S SUBMITTAL. CONTRACTOR SHALL SUBMIT AN APPLICATION THROUGH HAWAIIANELECTRIC.COM AND INCLUDE BRACING CALCULATIONS AND DRAWINGS, PREPARED AND STAMPED BY A LICENSED STRUCTURAL ENGINEER LICENSED IN THE STATE OF HAWAII, FOR REVIEW. CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, INSTALLATION, AND REMOVAL OF THE TEMPORARY POLE BRACING SYSTEM, AS WELL AS ALL COSTS INCURRED BY HECO TO REVIEW CONTRACTOR'S DRAWINGS AND TO REPAIR OR STRAIGHTEN POLES IMPACTED BY CONTRACTOR'S ACTIVITIES, INCLUDING RESPONSE AND RESTORATION COSTS INCURRED BY HECO ARISING OUT OF OR RELATED TO OUTAGES CAUSED BY CONTRACTOR'S FAILURE TO MEET THE FOREGOING REQUIREMENTS. HECO'S RECEIPT OF POLE BRACING CALCULATION OR DRAWING SUBMITTALS OF ANY CONTRACTOR, INCLUDING WORK PROCEDURE, SHALL NOT RELIEVE CONTRACTOR FROM ANY LIABILITY RESULTING FROM CONTRACTOR'S EXCAVATION NEAR OR AROUND HECO'S UTILITY POLES.
- b) HECO MAY PROVIDE TO THE CUSTOMER INFORMATION RELATED TO POLE BRACING, INCLUDING CALCULATIONS AND OTHER BASIC ENGINEERING. HOWEVER, HECO PROVIDES THIS INFORMATION FOR INFORMATIONAL PURPOSES ONLY AND DOES NOT WARRANT ANY OF THE INFORMATION PROVIDED TO CUSTOMER. HECO HEREBY DISCLAIMS ANY LIABILITY ASSOCIATED WITH THE CUSTOMER'S USE OF INFORMATION PROVIDED TO THE CUSTOMER FROM HECO. IT IS THE CUSTOMER'S DUTY TO OBTAIN ENGINEERING FROM ITS OWN ENGINEER OR CONTRACTOR IN ORDER TO BRACE POLES AND THE USE OF HECO'S INFORMATION DOES NOT EXCUSE THE CUSTOMER FROM PERFORMING ITS OWN EVALUATION OF THE BRACING NEEDS. SHOULD THE CUSTOMER INSTALL BRACING AT ANY POLE LOCATION, CUSTOMER SHALL DEFEND, INDEMNIFY AND HOLD HARMLESS HECO FROM ANY THIRD PARTY CLAIMS ASSOCIATED WITH THE CUSTOMER'S BRACING OF A POLE. SHOULD THE WORK CUSTOMER PERFORM AT OR NEAR THE POLE LOCATION COMPROMISE THE POLE OR ITS SURROUNDINGS IN ANY WAY, CUSTOMER SHALL RESTORE OR REPLACE THE POLE SO THAT IT IS NO LONGER COMPROMISED.

7 UNDERGROUND POWER LINES

THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHENEVER CONSTRUCTION CROSSES OR IS IN CLOSE PROXIMITY OF UNDERGROUND POWER LINES. HECO'S EXISTING ELECTRICAL CABLES ARE ENERGIZED AND WILL REMAIN ENERGIZED DURING CONSTRUCTION. ONLY HECO PERSONNEL ARE TO BREAK INTO EXISTING HECO FACILITIES, HANDLE THESE CABLES, AND ERECT TEMPORARY GUARDS TO PROTECT THESE CABLES FROM DAMAGE. THE COST OF HECO'S ASSISTANCE IN PROVIDING PROPER SUPPORT AND PROTECTION OF ITS UNDERGROUND LINES WILL BE CHARGED TO THE CONTRACTOR. FOR ASSISTANCE/COORDINATION IN PROVIDING PROPER SUPPORT AND PROTECTION OF THESE POWER LINES, THE CONTRACTOR SHALL SUBMIT AN APPLICATION THROUGH HAWAIIANELECTRIC.COM A MINIMUM OF TEN (10) WORKING DAYS IN ADVANCE.

SPECIAL PRECAUTIONS ARE REQUIRED WHEN EXCAVATING NEAR HECO'S 138KV OR 46KV UNDERGROUND POWER LINES (SEE HECO INSTRUCTIONS TO CONSULTANTS/CONTRACTORS ON "EXCAVATION NEAR HECO'S UNDERGROUND 138KV AND/OR 46KV LINES" FOR DETAILED REQUIREMENTS).

FOR VERIFICATION OF UNDERGROUND POWER LINES, THE CONTRACTOR SHALL CALL THE HAWAII ONE CALL CENTER AT 866-423-7287 MINIMUM OF FIVE (5) WORKING DAYS IN ADVANCE.

8 UNDERGROUND FUEL PIPELINES

THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHENEVER CONSTRUCTION CROSSES OR IS IN CLOSE PROXIMITY OF HECO'S UNDERGROUND FUEL OIL PIPELINES. SPECIAL PRECAUTIONS ARE REQUIRED WHEN EXCAVATING NEAR HECO'S UNDERGROUND FUEL OIL PIPELINES (SEE HECO'S SPECIFIC FUEL PIPELINE "GUIDELINES" TO CONSULTANTS/CONTRACTORS ON EXCAVATION NEAR HECO'S UNDERGROUND FUEL PIPELINES FOR DETAILED REQUIREMENTS).

9 EXCAVATIONS

WHEN TRENCH EXCAVATION IS ADJACENT TO OR BENEATH HECO'S EXISTING STRUCTURES OR FACILITIES, THE CONTRACTOR IS RESPONSIBLE FOR:

- a) ARRANGING FOR HECO STANDBY PERSONNEL TO OBSERVE WORK AT CONTRACTOR'S COST.
- b) SHEETING, BRACING, OR OTHERWISE SUPPORTING THE EXCAVATION AND STABILIZING THE EXISTING GROUND TO RENDER IT SAFE AND SECURE AND TO PREVENT POSSIBLE SLIDES, CAVE-INS, AND SETTLEMENTS.
- c) PROPERLY SUPPORTING EXISTING STRUCTURES OR FACILITIES WITH BEAMS, STRUTS, UNDER-PINNINGS, OR OTHER NECESSARY METHODS TO FULLY PROTECT IT FROM DAMAGE.
- d) BACKFILLING WITH PROPER BACKFILL MATERIAL INCLUDING SPECIAL THERMAL BACKFILL WHERE EXISTING (REFER TO ENGINEERING DIVISION FOR THERMAL BACKFILL SPECIFICATIONS).

10 RELOCATION OF HECO FACILITIES

ANY WORK REQUIRED TO RELOCATE OR MODIFY HECO FACILITIES SHALL BE DONE BY HECO, OR BY THE CONTRACTOR UNDER HECO'S SUPERVISION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COORDINATION, AND SHALL PROVIDE NECESSARY SUPPORT FOR HECO'S WORK, WHICH MAY INCLUDE, BUT NOT BE LIMITED TO, STAKING OF POLE/ANCHOR LOCATIONS, IDENTIFYING RIGHT OF WAY AND PROPERTY LINES, EXCAVATION AND BACKFILL, PERMITS AND TRAFFIC CONTROL, BARRICADING, AND RESTORATION OF PAVEMENT, SIDEWALKS, AND OTHER FACILITIES.

ALL COSTS ASSOCIATED WITH ANY RELOCATION OR MODIFICATION (EITHER TEMPORARY OR PERMANENT) FOR THE CONVENIENCE OF THE CONTRACTOR, OR TO ENABLE THE CONTRACTOR TO PERFORM HIS WORK IN A SAFE AND EXPEDITIOUS MANNER IN FULFILLING HIS CONTRACT OBLIGATIONS SHALL BE BORNE BY THE CONTRACTOR.

11 CONFLICTS

ANY REDESIGN OR RELOCATION OF HECO'S FACILITIES NOT SHOWN ON THE PLANS MAY BE CAUSE FOR LENGTHY DELAYS. THE CONTRACTOR ACKNOWLEDGES THAT HECO IS NOT RESPONSIBLE FOR ANY DELAY OR DAMAGE THAT MAY ARISE AS A RESULT OF ANY CONFLICTS DISCOVERED OR IDENTIFIED WITH RESPECT TO THE LOCATION OR CONSTRUCTION OF HECO'S ELECTRICAL FACILITIES IN THE FIELD, REGARDLESS OF WHETHER THE CONTRACTOR HAS MET THE REQUESTED MINIMUM ADVANCE NOTICES. IN ORDER TO MINIMIZE ANY DELAY OR IMPACT ARISING FROM SUCH CONFLICTS, HECO SHOULD BE NOTIFIED IMMEDIATELY UPON DISCOVERY OR IDENTIFICATION OF SUCH CONFLICT.

12 DAMAGE TO HECO FACILITIES

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL HECO SURFACE AND SUBSURFACE UTILITIES AND SHALL BE RESPONSIBLE FOR ANY DAMAGES TO HECO'S FACILITIES AS A RESULT OF THEIR OPERATIONS. THE CONTRACTOR SHALL IMMEDIATELY REPORT SUCH DAMAGES OR ANY HAZARDOUS CONDITIONS RELATED TO HECO'S LINES TO HECO'S AT 855-304-1212 AND PRESS 1. REPAIR WORK SHALL BE DONE BY HECO OR BY THE CONTRACTOR UNDER HECO'S SUPERVISION. COSTS FOR DAMAGES TO HECO'S FACILITIES SHALL BE BORNE BY THE CONTRACTOR.

IN CASE OF DAMAGE OR SUSPECTED DAMAGE TO HECO'S FUEL PIPELINE, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY HECO'S SECURITY COMMAND CENTER AT 808-543-7685 (A 24-HOUR NUMBER) SO HECO PERSONNEL CAN SECURE THE DAMAGED SECTION AND REPORT ANY OIL SPILLS TO THE PROPER AUTHORITIES. ALL COSTS ASSOCIATED WITH THE DAMAGE, REPAIR, AND OIL SPILL CLEANUP SHALL BE BORNE BY THE CONTRACTOR.

13 HECO STAND-BY PERSONNEL

THE CONTRACTOR MAY REQUEST HECO TO PROVIDE AN INSPECTOR TO STAND-BY DURING CONSTRUCTION NEAR HECO'S FACILITIES. THE COST OF SUCH INSPECTION WILL BE CHARGED TO THE CONTRACTOR.

THE CONTRACTOR SHALL SUBMIT AN APPLICATION THROUGH HAWAIIANELECTRIC.COM A MINIMUM OF THREE (3) MONTHS IN ADVANCE TO ARRANGE FOR HECO STANDBY PERSONNEL.

14 CLEARANCE BETWEEN UNDERGROUND FACILITIES

THE FOLLOWING CLEARANCES SHALL BE MAINTAINED BETWEEN HECO'S DUCTLINE AND ALL ADJACENT STRUCTURES (CHARTED AND UNCHARTED) IN THE TRENCH: (SEE TABLES)

THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER & HECO OF ANY HEAT SOURCES (POWER CABLE DUCT BANK, STEAMLINE, ETC.) ENCOUNTERED THAT ARE NOT PROPERLY IDENTIFIED ON THE DRAWING.

15 INDEMNITY

THE CONTRACTOR SHALL INDEMNIFY, DEFEND AND HOLD HARMLESS HECO FROM AND AGAINST ALL LOSSES, DAMAGES, CLAIMS, AND ACTIONS, INCLUDING BUT NOT LIMITED TO REASONABLE ATTORNEY'S FEES AND COSTS BASED UPON OR ARISING OUT OF DAMAGE TO PROPERTY OR INJURIES TO PERSONS, OR OTHER TORTIOUS ACTS CAUSED OR CONTRIBUTED TO BY CONTRACTOR OR ANYONE ACTING UNDER ITS DIRECTION OR CONTROL OR ON ITS BEHALF; PROVIDED CONTRACTOR'S INDEMNITY SHALL NOT BE APPLICABLE TO ANY LIABILITY BASED UPON THE SOLE NEGLIGENCE OF HECO.

ADDITIONAL NOTES WHEN WORK INVOLVES CONSTRUCTION OF HECO FACILITIES

16 SCHEDULE

CONTRACTOR SHALL FURNISH THEIR CONSTRUCTION SCHEDULE SIX (6) MONTHS PRIOR TO STARTING WORK ON HAWAIIAN ELECTRIC FACILITIES. CONTRACTOR SHALL GIVE HECO, IN WRITING, THREE (3) MONTHS NOTICE TO PROCEED WITH HECO'S PORTION OF WORK.

17 AUTHORITY

ALL CONSTRUCTION, RESTORATION WORK, AND INSPECTION SHALL BE SUBJECT TO WHICHEVER GOVERNMENTAL AGENCY HAS AUTHORITY OVER THE WORK.

18 SPECIFICATIONS

CONSTRUCTION OF HECO'S UNDERGROUND FACILITIES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST REVISIONS OF HECO SPECIFICATIONS CS7001, CS7003, CS7202, CS9301, AND CS9401 AND APPLICABLE HECO STANDARDS.

19 CONSTRUCTION

CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, EQUIPMENT, AND SERVICES TO PROPERLY PERFORM AND FULLY COMPLETE ALL WORK SHOWN ON THE CONTRACT, DRAWINGS, AND SPECIFICATIONS. ALL MATERIALS SHALL BE NEW AND MANUFACTURED IN THE UNITED STATES OF AMERICA. ALL MANHOLE, HANDHOLE, AND DUCTLINE INSTALLATIONS SHALL BE INSPECTED AND APPROVED BY HECO PRIOR TO EXCAVATION AND PRIOR TO PLACING CONCRETE. CONTRACTOR SHALL NOTIFY HECO'S INSPECTION GROUP AT 543-2567 AT LEAST FIVE (5) WORKING DAYS PRIOR TO INSTALLING FACILITIES OR PLACING CONCRETE.

CONTRACTOR TO COORDINATE WORK TO BREAK INTO HECO'S EXISTING ELECTRICAL FACILITIES WITH HECO'S INSPECTION GROUP AT 543-2567 AT LEAST TEN (10) WORKING DAYS IN ADVANCE.

20 STAKEOUT

THE CONTRACTOR SHALL ARRANGE FOR TONEOUTS OF ALL UNDERGROUND FACILITIES AND SHALL STAKEOUT ALL PROPOSED HECO FACILITIES WITHIN THE PROJECT AREA SO AS TO NOT CONFLICT WITH ANY UTILITY (EXISTING OR PROPOSED) AND ANY PROPOSED CONSTRUCTION OR IMPROVEMENT WORK FOR VERIFICATION BY HECO BEFORE PROCEEDING WITH HECO WORK.

21 DUCTLINES

ALL DUCTLINE INSTALLATIONS SHALL BE PVC SCHEDULE 40 ENCASED IN CONCRETE, UNLESS OTHERWISE NOTED. ALL COMPLETED DUCTLINES SHALL BE MANDREL TESTED BY THE CONTRACTOR IN THE PRESENCE OF HECO'S INSPECTOR USING HECO'S STANDARD PRACTICE. THE CONTRACTOR SHALL INSTALL 1800# TENSILE STRENGTH MULETAPE PULL LINE IN ALL COMPLETED DUCTLINES AFTER MANDREL TESTING IS COMPLETE.

22 JOINT POLE REMOVAL

POLES SHALL BE REMOVED IN ACCORDANCE WITH THE APPLICABLE JOINT POLE AGREEMENT OR OPERATING AGREEMENT.

23 AS-BUILT PLANS

THE CONTRACTOR SHALL PROVIDE HECO WITH A SET OF ELECTRONIC AND HARD COPY PLANS OF EACH SHEET SHOWING THE OFFSETS, STATIONING, AND VERTICAL ELEVATION OF THE DUCT LINE(S) CONSTRUCTED.

GUIDELINES FOR MINIMUM HORIZONTAL (PARALLEL) CLEARANCES BETWEEN HECO AND OTHER UNDERGROUND UTILITIES					GUIDELINES FOR MINIMUM VERTICAL (CROSSING) CLEARANCES HECO AND OTHER UNDERGROUND UTILITIES				
UNDERGROUND UTILITY	HECO DIRECT BURIED CABLE	HECO DIRECT BURIED IN CONDUIT (NO CONCRETE ENCASEMENT)	HECO 3' (MINIMUM) CONCRETE ENCASEMENT	APPLICABLE NOTES:	UNDERGROUND UTILITY	HECO DIRECT BURIED CABLE	HECO DIRECT BURIED IN CONDUIT (NO CONCRETE ENCASEMENT)	HECO 3' (MINIMUM) CONCRETE ENCASEMENT	APPLICABLE NOTES:
HECO DB CONDUITS	12"	3"	0"		HECO ELECTRIC DB CONDUITS	6"	3"	0"	
HECO 3" ENCASEMENT	0"	0"	0"		HECO 3" ENCASEMENT	0"	0"	0"	
TELEPHONE/CATV DB	12"	12"	6"		TELEPHONE/CATV DB	12"	12"	6"	
TELEPHONE/CATV DB DUCTS	12"	12"	6"		TELEPHONE/CATV DB DUCTS	12"	12"	6"	
TELEPHONE/CATV 3" ENCASEMENT	0"	0"	0"	5	TELEPHONE/CATV 3" ENCASEMENT	0"	0"	0"	3
TRAFFIC SIGNAL	12"	12"	12"		TRAFFIC SIGNAL	12"	12"	6"	
WATER DB (BWS OWNED)	36"	36"	36"	1, 4	WATER DB (BWS OWNED)	12"	12"	12"	5
CUSTOMER OWNED WATER SERVICE LATERALS	12"	12"	12"		CUSTOMER OWNED WATER SERVICE LATERALS	6"	6"	6"	
WATER (CONCRETE JACKETED) (BWS OWNED)	36"	36"	36"	1, 4	WATER (CONCRETE JACKETED) (BWS OWNED)	12"	12"	12"	5
GAS DB	12"	12"	12"	1	GAS DB	12"	12"	12"	
GAS (CONCRETE JACKETED)	12"	12"	12"	1	GAS (CONCRETE JACKETED)	12"	12"	12"	
SEWER DB	36"	36"	36"	1, 2	SEWER DB	24"	24"	24"	1
SEWER (CONCRETE JACKETED)	36"	36"	36"	1, 2	SEWER (CONCRETE JACKETED)	24"	24"	24"	1
DRAIN	12"	12"	12"	1	DRAIN	12"	12"	6"	
FUEL PIPELINES				3	FUEL PIPELINES				2
NOTES:					NOTES:				
1. WHERE SPACE IS AVAILABLE, PARALLEL CLEARANCE TO OTHER UTILITIES, OR FOREIGN STRUCTURES OTHER THAN COMMUNICATION OR TRAFFIC SIGNAL SHALL BE 36"					1. IF CLEARANCE CANNOT BE MET: - IF CLEARANCE IS LESS THAN 12", JACKET SEWER LINE WITH REINFORCED CONCRETE (PER HECO'S STD. 30-1030) FOR A DISTANCE OF 5' PLUS PIPE DIAMETER. - IF CLEARANCE IS BETWEEN 12" AND 24", JACKET SEWER LINE WITH PLAIN CONCRETE.				
2. IF 36" CLEARANCE CANNOT BE MET: - IF CLEARANCE IS LESS THAN 12", JACKET SEWER LINE WITH REINFORCED CONCRETE (PER HECO'S STD. 30-1030) FOR A DISTANCE OF 5' PLUS PIPE DIAMETER. - IF CLEARANCE IS BETWEEN 12" AND 36", JACKET SEWER LINE WITH PLAIN CONCRETE.					2. ALL FUEL PIPELINE CROSSINGS SHALL BE REVIEWED AND APPROVED BY THE COMPANY THAT OWNS AND MAINTAINS IT.				
3. ALL FUEL PIPELINE CROSSINGS SHALL BE REVIEWED AND APPROVED BY THE COMPANY THAT OWNS AND MAINTAINS IT.					3. FOR SITUATIONS WITH 0" MINIMUM SEPARATION, A 6" SEPARATION IS RECOMMENDED.				
4. 5 FEET CLEAR TO WATER MAINS 16" OR LARGER.					4. CLEARANCES MEASURED FROM OUTER EDGES OR DIAMETERS OF UTILITIES. WHENEVER CONCRETE JACKETS ARE INVOLVED, CLEARANCES SHALL BE TOTAL CLEAR DISTANCE BETWEEN THE CONCRETE JACKET AND UTILITY CONCERNED.				
5. FOR SITUATIONS WITH 0" MINIMUM SEPARATION, A 6" SEPARATION IS RECOMMENDED.					5. 36" CLEARANCE IS REQUIRED FOR TRENCHLESS INSTALLATION WORK.				
6. CLEARANCES MEASURED FROM OUTER EDGES OR DIAMETERS OF UTILITIES. WHENEVER CONCRETE JACKETS ARE INVOLVED, CLEARANCES SHALL BE TOTAL CLEAR DISTANCE BETWEEN THE CONCRETE JACKET AND UTILITY CONCERNED.									

DRAWING REVIEW

Reviewed for Hawaiian Electric Company Facilities Only

Final Review By: _____

First Review: _____ Second Review: _____

Customer Installation Division

Hawaiian Electric

6138044

3131451

Hawaiian Electric's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on the Customer's behalf from the responsibility for engineering, design, materials and any other liability associated with this project including revisions made beyond the reviewed date.

RONALD N. S. HO & ASSOCIATES, INC.
Electrical Engineers



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

 4/30/28

EXPIRATION DATE OF THE LICENSE

REVISION	DATE	BRIEF	BY

HAWAII COMMUNITY DEVELOPMENT AUTHORITY
STATE OF HAWAII
KALAELOA
DEVELOPMENT DISTRICT
SARATOGA AVE
ELECTRICAL UPGRADES

HECO NOTES

ENGINEER: DN CHECKED BY: SS

DRAFTSMAN: CAD DATE: MARCH 2026

APPROVED: _____

EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY

FILE	POCKET	FOLDER	NO.

HAWAIIAN TELCOM (HTCO) GENERAL CONSTRUCTION / DESIGN NOTES (JANUARY 2025):

1. THE CONTRACTOR SHALL PROCURE AND PAY FOR ALL LICENSES AND PERMITS FROM THE CITY OR STATE, AND SHALL GIVE ALL NOTICES NECESSARY AND INCIDENT TO THE DUE AND LAWFUL PROSECUTION OF THE WORK.
2. THE CONTRACTOR SHALL PROVIDE ALL TELECOM DRAWINGS TO HT-PLANREVIEWS@HAWAIIANTEL.COM FOR REVIEW & APPROVAL AT LEAST 3 MONTHS AHEAD OF THE START OF CONSTRUCTION.
3. THE CONTRACTOR SHALL SUBMIT AN EXCAVATION PERMIT AND TONING REQUEST TO HAWAIIAN TELCOM'S EXCAVATION PERMIT TEAM AT HT-EXCAVATIONS@HAWAIIANTEL.COM OR AT HTTP://WWW.HAWAIIANTEL.COM/EXCAVATION.
4. PRIOR TO THE EXCAVATION OF THE DUCT LINE, THE CONTRACTOR SHALL REQUEST HAWAIIAN TELCOM TO LOCATE EXISTING DUCT LINE WHEREVER REQUIRED. CALL ONE-CALL AT #811 FOR UNDERGROUND CABLE LOCATING AND MARKING, FIVE (5) CALENDAR DAYS ADVANCE NOTICE IS REQUIRED. THE LOCATIONS OF EXISTING UTILITIES ARE APPROXIMATE ONLY.
5. CONTRACTOR SHALL EXERCISE EXTREME CAUTION AND SHALL MAINTAIN PROPER CLEARANCES WHENEVER CONSTRUCTION CROSSES OR IS IN CLOSE PROXIMITY OF HAWAIIAN TELCOM FACILITIES. THE CONTRACTOR SHALL VERIFY THEIR LOCATIONS AND SHALL BE LIABLE FOR ANY DAMAGES TO HAWAIIAN TELCOM FACILITIES. ANY DAMAGES SHALL BE REPORTED IMMEDIATELY TO HAWAIIAN TELCOM'S REPAIR SECTION AT 808-643-3456. AS A RESULT OF THEIR OPERATIONS, ADJUSTMENTS TO THE NEW DUCT LINE ALIGNMENT, IF REQUIRED, SHALL BE MADE TO PROVIDE THE REQUIRED CLEARANCES.
6. THE CONTRACTOR SHALL TAKE NECESSARY PRECAUTION NOT TO DAMAGE EXISTING CABLES OR DUCTS. A HAWAIIAN TELCOM INSPECTOR OR DESIGNATED REPRESENTATIVE IS REQUIRED TO BE AT ANY JOB SITE WHENEVER THERE WILL BE A BREAKAGE INTO OR ENTRY INTO ANY STRUCTURE THAT CONTAIN HAWAIIAN TELCOM FACILITIES. TEMPORARY CABLE AND DUCT SUPPORTS SHALL BE PROVIDED WHEREVER NECESSARY.
7. THE CONTRACTOR SHALL NOTIFY HAWAIIAN TELCOM'S INSPECTOR OR DESIGNATED REPRESENTATIVE A MINIMUM OF FIVE (5) CALENDAR DAYS PRIOR TO EXCAVATION, BRACING, OR BACKFILLING OF HAWAIIAN TELCOM'S STRUCTURES OR FACILITIES. EMAIL HT-INSPECTORS@HAWAIIANTEL.COM TO FIND AN INSPECTOR IN YOUR AREA.
8. ALL APPLICABLE CONSTRUCTION WORK SHALL BE DONE IN ACCORDANCE WITH THE HAWAIIAN TELCOM STANDARD SPECIFICATIONS FOR PLACING COMMUNICATIONS SYSTEMS. ALL SUBSEQUENT AMENDMENTS AND ADDITIONS, AND ALL OTHER PERTINENT STANDARDS FOR TELECOMMUNICATION CONSTRUCTION. CONTRACTOR SHALL FAMILIARIZE THEIR PERSONNEL BY OBTAINING APPLICABLE SPECIFICATIONS.
9. WHEN EXCAVATION IS ADJACENT TO OR BENEATH HAWAIIAN TELCOM'S EXISTING STRUCTURES OR FACILITIES, THE CONTRACTOR SHALL:

A. SHEET AND/OR BRACE THE EXCAVATION TO PREVENT SLIDES, CAVE-INS, OR SETTLEMENTS TO ENSURE NO MOVEMENT TO HAWAIIAN TELCOM'S STRUCTURES OR FACILITIES.

B. PROTECT EXISTING STRUCTURES AND/OR FACILITIES WITH BEAMS, STRUTS, OR UNDERPINNING WHILE EXCAVATING BENEATH THEM TO ENSURE NO MOVEMENT TO HAWAIIAN TELCOM'S STRUCTURES OR FACILITIES.
10. THE CONTRACTOR SHALL BRACE ALL POLES OR LIGHT STANDARDS NEAR THE NEW DUCT LINE, MAINTENANCE HOLE, OR HANDHOLE DURING THEIR OPERATIONS.
11. THE CONTRACTOR SHALL SAW-CUT A.C. PAVEMENT AND CONCRETE GUTTER WHEREVER NEW MAINTENANCE HOLES, HANDHOLES, OR DUCT LINES ARE TO BE PLACED AND SHALL RESTORE TO EXISTING CONDITION OR BETTER.
12. THE CONTRACTOR SHALL COMPLY WITH THE POLICY ADOPTED BY THE DEPARTMENT OF PUBLIC WORKS, CITY AND COUNTY, CONCERNING THE REPLACEMENT OF CONCRETE SIDEWALKS AFTER EXCAVATION WORK.
13. THE UNDERGROUND PIPES, CABLES, OR DUCT LINES KNOWN TO EXIST BY THE ENGINEER FROM THEIR SEARCH OF RECORDS ARE INDICATED ON THE PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATIONS AND DEPTHS OF THE FACILITIES AND EXERCISE PROPER CARE IN EXCAVATING IN THE AREA. WHEREVER CONNECTIONS OF NEW UTILITIES TO EXISTING UTILITIES ARE SHOWN ON THE PLANS, THE CONTRACTOR SHALL EXPOSE THE EXISTING LINES AT THE PROPOSED CONNECTIONS TO VERIFY THEIR LOCATIONS AND DEPTHS PRIOR TO EXCAVATION FOR THE NEW LINES.
14. WHEREVER CONNECTIONS TO EXISTING UTILITIES ARE SHOWN ON THE PLANS, THE CONTRACTOR SHALL EXPOSE THE EXISTING LINES PRIOR TO EXCAVATION OF THE MAIN TRENCHES TO VERIFY THEIR LOCATIONS AND DEPTHS.
15. TRENCH SHALL HAVE A FLAT SURFACE AND SHALL BE DEEP ENOUGH TO OBTAIN MINIMUM COVER (SEE TRENCH DETAIL DRAWING 34028 IN SECTION 12).

A. 12" BACKFILL ABOVE CONCRETE ENCASED OR DIRECT BURIED CONDUITS MUST BE SOFT EARTH OR SAND AND FREE OF ROCKS. FILL MUST BE ABLE TO PASS THROUGH A 1/2" SCREEN.
16. THE CONTRACTOR, AT THEIR OWN EXPENSE, SHALL KEEP THE PROJECT AND SURROUNDING AREA FREE FROM DUST NUISANCE. THE COST FOR SUPPLEMENTARY MEASURES, WHICH WILL BE REQUIRED BY THE FEDERAL, STATE, OR COUNTY, SHALL BE BORNE BY THE CONTRACTOR.
17. THE CONTRACTOR SHALL PUMP ALL MAINTENANCE HOLES DRY DURING FINAL INSPECTION.
18. THE CONTRACTOR SHALL NOTIFY HAWAIIAN TELCOM INSPECTOR 5 CALENDAR DAYS PRIOR TO THE POURING OF CONCRETE OR BACKFILLING.
19. WHEN CONNECTING TO MAINTENANCE HOLES WALLS, ALL EXISTING REINFORCING BARS SHALL BE LEFT INTACT. DUCTS SHALL BE ADJUSTED IN THE FIELD IN ORDER TO CLEAR REINFORCING BARS.
20. IN JOINT TRENCH APPLICATIONS, HT DUCTS SHOULD NOT BE COVERED BY OTHER DUCTS IN PARALLEL. HT DUCTS CANNOT CROSS UNDER POWER FACILITIES.

21. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LAYING OUT ALL REQUIRED LINES AND GRADES AND SHALL PRESERVE ALL BENCH MARKS AND WORKING POINTS NECESSARY TO LAY OUT THE WORK CORRECTLY. THE NEW DUCT LINE SHALL BE ADJUSTED BY THE CONTRACTOR TO SUIT THE EXISTING CONDITIONS AND THE DETAILS AS DESCRIBED IN THE PLANS.
22. MINIMUM CONCRETE STRENGTH (PER BICSI OSPDRM6 C-3) SHALL BE:

FOR DUCT LINE & CONCRETE PADS 3000 PSI AT 28 DAYS

FOR MAINTENANCE HOLE 4000 - 4500 PSI AT 28 DAYS OR AS SPECIFIED IN APPROVED DRAWING
23. BENDS IN THE DUCT ALIGNMENT, SHALL HAVE A MINIMUM RADIUS OF 25 FEET FOR A CHANGE OF DIRECTION OF MORE THAN 5 DEGREES, EITHER HORIZONTALLY OR VERTICALLY, BUT THE MAXIMUM VERTICAL CURVE SHALL BE 30 DEGREES. THE MAXIMUM NUMBER OF 30 DEGREE BENDS SHOULD NOT ADD UP TO OVER 180 DEGREES.

A. ALL 90 DEGREE C-BENDS AT A POLE OR AT THE BUILDING FLOOR SLAB PENETRATION, SHALL HAVE A BEND RADIUS OF TEN TIMES THE DIAMETER OF THE DUCT OR GREATER. MANUFACTURED 90 DEGREE DUCT BENDS MAY BE USED ONLY FOR SERVICE POLE, EQUIPMENT RISERS, OR BUILDING ENTRY, UNLESS SPECIFICALLY INDICATED AS ACCEPTABLE.

B. LIMIT RUNS TO (2) 90 DEGREE BENDS, AND U-BENDS NOT ALLOWED.
24. CONDUIT RISER ON SERVICE POLE SHALL TERMINATE AT LEAST 6" ABOVE GRADE WITH RISER ENDS CAPPED WITH WEATHER HEAD OR PLUGGED WITH DUCT SEAL.

A. WHEN TELEPHONE AND ELECTRIC SERVICE CONDUITS TERMINATE ON THE SAME SERVICE POLE, PREFERABLY, THE TWO CONDUITS SHOULD BE PLACED OPPOSITE EACH OTHER ON THE SERVICE POLE. HOWEVER, IT IS PERMISSIBLE TO PLACE CONDUITS WITH LESS SEPARATION BUT NOT LESS THAN 1/4 OF THE CIRCUMFERENCE OF THE POLE (CLIMBING SPACE MUST BE MAINTAINED).

B. RISER CONDUIT SHALL BE PROPERLY STRAPPED.

C. MULETAPE OR APPROVED EQUIVALENT SHALL BE INSTALLED IN ALL CONDUITS.
25. SUGGESTED MAXIMUM LENGTHS BETWEEN MAINTENANCE HOLES ARE 450', 350' BETWEEN 3X5 OR 4X6 HANDHOLES, 250' BETWEEN 2X4 PULLBOXES, AND 150' BETWEEN METER BOXES; SUBJECT TO ENGINEERING APPROVAL.
26. RECOMMEND 18" UNDER SIDEWALK BUT NOT LESS THAN 12" ON PRIVATE PROPERTY, AND 36" MINIMUM IN THE RIGHT OF WAY OR UNDER PAVED AREAS.
27. CLEARANCE FROM POWER OR FOREIGN CONDUIT - 3" WHEN ENCASED IN CONCRETE; 4" WHEN SEPARATED WITH BRICK OR MASON; OR 12" OF WELL TAMPED EARTH. 6" WHEN CROSSING OR 12" WHEN PARALLEL TO FOREIGN OBJECTS, I.E., POWER, WATER OR SEWER PIPE, ETC.

A. 6" WHEN CONCRETE ENCASED FROM LOCAL POWER COMPANY.

B. TELECOM SHOULD BE ABOVE ELECTRICAL WHEN UNDERGROUND.

C. BWS REQUIRES A 3' MINIMUM CLEARANCE TO WATER MAINS (OR 5' MINIMUM TO WATER MAINS 16" AND LARGER) ON OAHU ONLY.

D. CHECK WITH LOCAL UTILITIES FOR ANY CHANGES TO THEIR SPACING REQUIREMENTS AS WELL.
28. MINIMUM PROTECTION REQUIREMENTS FOR FACILITIES SUBJECTED TO VEHICULAR TRAFFIC:

CONDUIT SIZE 2" OR 4"

TYPE PVC SCHEDULE 40

METHOD OF CONSTRUCTION CONCRETE ENCASED PREFERRED OR REQUIRED IF LESS THAN 36" BELOW GRADE OR OTHER APPLICABLE NESC REQUIREMENTS (WHICHEVER IS SMALLER)
29. STRONGLY RECOMMEND THAT TREES WITH AGGRESSIVE ROOT SYSTEMS ARE NOT PLANTED NEAR CONDUIT SYSTEM.
30. AFTER DUCT LINE HAS BEEN COMPLETED, A MANDREL WITH A SQUARE FRONT NOT LESS THAN 12" LONG AND HAVING A DIAMETER OF 1/4" LESS THAN THE INSIDE DIAMETER OF THE DUCT, SHALL BE PULLED THROUGH EACH DUCT AFTER WHICH A BRUSH WITH STIFF BRISTLES SHALL BE PULLED THROUGH TO MAKE CERTAIN THAT NO PARTICLES OF EARTH, SAND, OR GRAVEL HAVE BEEN LEFT INSIDE. DUCTS SHALL BE COMPLETELY DRY AND CLEAN.
31. ALL DUCTS AND CONDUITS SHALL HAVE AN 1800# POLYESTER MULE-TAPE (NEPTCO, WP1800P, HAWAIIAN TELCOM MATERIAL CODE NO. 571154) INSTALLED THROUGHOUT ITS ENTIRE LENGTH. ALL DUCTS SHALL BE CAPPED TO PREVENT ENTRY OF FOREIGN MATERIAL DURING CONSTRUCTION AND AT THE COMPLETION OF INSTALLATION.

APPROVED BY

HAWAIIAN TELCOM
DATE

RONALD N. S. HO & ASSOCIATES, INC.
Electrical Engineers



DUSTIN Y. NAKAMOTO
★ LICENSED PROFESSIONAL ENGINEER No. 14287-E HAWAII, U.S.A. ★

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

4/30/28
EXPIRATION DATE OF THE LICENSE

REVISION	DATE	BRIEF	BY
HAWAII COMMUNITY DEVELOPMENT AUTHORITY STATE OF HAWAII KALAELOA DEVELOPMENT DISTRICT SARATOGA AVE ELECTRICAL UPGRADES HTCO NOTES ENGINEER: <u>DN</u> CHECKED BY: <u>SS</u> DRAFTSMAN: <u>CAD</u> DATE: <u>MARCH 2026</u> APPROVED: _____ EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY			

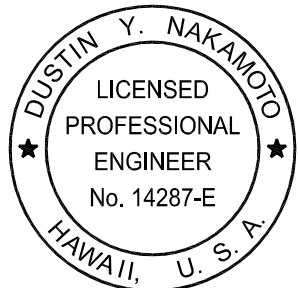
FILE	POCKET	FOLDER	NO.

SPECTRUM OCEANIC (CATV) NOTES (3/27/2025):

- | | | | | | |
|-----|--|-----|---|-----|--|
| 1. | THE CONTRACTOR SHALL PROCURE AND PAY FOR ALL LICENSES AND PERMITS AND SHALL GIVE ALL NOTICES NECESSARY AND INCIDENT TO THE DUE AND LAWFULL PROSECUTION OF THE WORK. | 23. | SMOOTH FINISH INSIDE WALL OF EXISTING PULLBOXES AND HAND-HOLES TO ITS ORIGINAL CONDITION OR BETTER. | 40. | TRENCHING TO BE CONDUCTED BY HAND DIGGING NEAR AND ACROSS EXISTING UTILITY LINES. |
| 2. | THE LOCATIONS OF EXISTING UTILITIES ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL VERIFY THEIR LOCATIONS AND SHALL BE RESPONSIBLE FOR ANY DAMAGES TO THESE UTILITIES AS A RESULT OF THEIR OPERATIONS. ADJUSTMENTS TO THE NEW DUCTLINE ALIGNMENT, IF REQUIRED, SHALL BE MADE TO PROVIDE THE REQUIRED CLEARANCES. | 22. | COORDINATE ALL PENETRATION OF TELEPHONE PULLBOXES WITH HAWAIIAN TEL INSPECTOR. | 41. | MINIMUM CLEARANCE BETWEEN STREET LIGHT STAND AND FIRE HYDRANTS SHALL BE THREE FEET. |
| 3. | THE CONTRACTOR SHALL BRACE ALL POLES OR LIGHT STANDARDS NEAR THE NEW DUCTLINE, MANHOLE OR HANDHOLE DURING ITS OPERATIONS. | 24. | ALL NEW CONCRETE ENCASED CONDUIT SHALL BE PVC PIPE-SCHEDULE 40. ALL NEW DIRECT-BURIED CONDUIT SHALL BE PVC PIPE-SCHEDULE 80. USE OF ANY OTHER MATERIAL TYPE (GTS, ETC.) SHALL BE LIMITED TO MATCHING EXISTING FACILITIES. CONNECTION OF DISSIMILAR MATERIALS TO REQUIRE APPROVAL FROM SPECTRUM OCEANIC COORDINATOR AND ENGINEERING DEPT. | 42. | UNDERGROUND UTILITIES SHOWN HEREON IS FOR INFORMATION ONLY. NO GUARANTEE IS MADE ON THE ACCURACY OR COMPLETENESS OF SAID INSTALLATION. |
| 4. | THE CONTRACTOR SHALL SAW-CUT A.C. PAVEMENT, CONCRETE GUTTER, AND CONCRETE SIDEWALK WHEREVER NEW MANHOLES, HANDHOLES, PULLBOXES OR DUCTLINES ARE TO BE PLACED AND SHALL RESTORE TO EXISTING CONDITION OR BETTER. | 25. | THE CONTRACTOR SHALL PLACE POLY CORD THROUGH OUT PROJECT, AND SECURE IN MANHOLES, HANDHOLES, AND PULLBOXES. | 43. | FOR UNDERGROUND CABLE LOCATING AND MARKING, FIVE WORKING DAYS ADVANCE NOTICE IS REQUIRED. THREE WORKING DAYS ADVANCE NOTICE IS REQUIRED FOR ANY INSPECTION BY A DESIGNATED REPRESENTATIVE. CONTRACTOR SHALL TAKE NECESSARY PRECAUTION NOT TO DAMAGE ANY EXISTING CABLES OR DUCTS. SPECTRUM OCEANIC'S INSPECTOR OR DESIGNATED REPRESENTATIVE IS REQUIRED TO BE AT ANY JOB SITE WHENEVER THERE WILL BE A BREAKAGE INTO OR ENTRY INTO ANY STRUCTURE THAT CONTAIN SPECTRUM OCEANIC'S FACILITIES. |
| 5. | THE UNDERGROUND PIPES, CABLES, OR DUCTLINES KNOWN TO EXIST BY THE ENGINEER FROM THEIR SEARCH OF RECORDS ARE INDICATED ON THE PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATIONS AND DEPTHS OF THE FACILITIES AND EXERCISE PROPER CARE IN EXCAVATING IN THE PLANS. WHEREVER CONNECTIONS OF NEW UTILITIES TO EXISTING UTILITIES ARE SHOWN ON THE PLANS, THE CONTRACTOR SHALL EXPOSE THE EXISTING LINES AT THE PROPOSED CONNECTIONS TO VERIFY THEIR LOCATIONS AND DEPTHS PRIOR TO EXCAVATION FOR THE NEW LINES. | 26. | FOR 3" CONDUITS OR LARGER, THE CONTRACTOR SHALL INSTALL NEPTCO WP1800 MULETAPE OR APPROVED EQUAL IN ALL DUCTLINES, LEAVE MULETAPE IN PLACE FOR FUTURE USE AS A PULL OR FISH LINE, UNLESS OTHERWISE NOTED. REFERENCE GTE MATERIAL CODE NO. 571154. ALL DUCTS SHALL BE CAPPED TO PREVENT ENTRY OF FOREIGN MATERIAL DURING CONSTRUCTION AND AT COMPLETION OF INSTALLATION. ENDBELLS ARE REQUIRED FOR CONDUITS 2" AND LARGER. | 44. | CONCRETE STRENGTH SHALL BE 3000 PSI IN 28 DAYS. |
| 6. | THE CONTRACTOR, AT THEIR OWN EXPENSE, SHALL KEEP THE PROJECT AND SURROUNDING AREA FREE FROM DUST NUISANCE. THE COST FOR SUPPLEMENTARY MEASURES, WHICH WILL BE REQUIRED BY THE CITY AND COUNTY, SHALL BE BORNE BY THE CONTRACTOR. | 27. | PENETRATION INTO PULLBOXES IF NECESSARY TO BE FROM FACTORY INSTALLED OPENING OR FROM BRICKS POSITION. PENETRATION FROM PULLBOX WALLS IS NOT ACCEPTABLE. | 45. | CURING AND BACKFILLING. MAINTAIN CONCRETE IN A MOIST CONDITION FOR 24 HOURS MINIMUM FOR 3,000 PSI AND 48 HOURS MINIMUM FOR 2,500 PSI BEFORE COMPACTED. BACKFILLING: 72 HOURS MINIMUM BEFORE PERMITTING MOTOR TRAFFIC LOAD ON DUCTLINE. CURING METHOD SHALL MEET SPECTRUM OCEANIC COORDINATOR'S APPROVAL. |
| 7. | THE CONTRACTOR, AT THEIR OWN EXPENSE, SHALL KEEP THE PROJECT AREA FREE FROM DUST NUISANCE. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION CONTROL STANDARDS AND REGULATIONS OF THE STATE OF HAWAII, DEPARTMENT OF HEALTH. | 28. | BENDS IN THE DUCT ALIGNMENT, DUE TO CHANGES IN GRADE SHALL HAVE A MINIMUM RADIUS OF 20- FEET. ALL 90-DEGREE C-BENDS AT A POLE OR AT THE BUILDING FLOOR SLAB PENETRATION, SHALL HAVE A BEND RADIUS OF 10 TIMES THE DIAMETER OF THE DUCT OR GREATER. | 46. | INSTALL 4-MIL. THICK ORANGE COLOR WARNING TAPE 4-INCH WIDE ENTIRE LENGTH OF TRENCH WHEN PLACING CATV CONDUITS. TAPE SHOULD READ "CAUTION BURIED CABLE LINE BELOW". MANUFACTURED BY HARRIS INDUSTRIES, INC. CATALOG NUMBER UT-43 OR EQUIVALENT TAPE. TAPE TO BE INSTALLED 12-INCHES ABOVE CONDUIT OR IF CONCRETE JACKET INVOLVED THEN 12-INCHES ABOVE JACKET. |
| 8. | PRIOR TO THE EXCAVATION OF THE DUCTLINE, THE CONTRACTOR SHALL REQUEST THAT SPECTRUM OCEANIC CABLE COMPANY TO LOCATE EXISTING DUCTLINE WHEREVER REQUIRED. | 29. | MINIMUM LENGTH OF CONDUIT USED SHALL NOT BE LESS THAN 5- FEET IN PLANS. USE OF PARTIAL CONDUIT SECTIONS ALLOWABLE IS AT SPECTRUM OCEANIC COORDINATOR(S) DISCRETION. | 47. | AFTER DUCTLINE HAS BEEN COMPLETED, A MANDREL WITH A SQUARE FRONT NOT LESS THAN 12-INCH LONG AND HAVING A DIAMETER OF ¼-INCH LESS THAN THE INSIDE DIAMETER OF DUCT, SHALL BE PULLED THROUGH EACH DUCT AFTER WHICH A BRUSH WITH STIFF BRISTLES SHALL BE PULLED THROUGH TO MAKE CERTAIN THAT NO PARTICLES OF EARTH, SAND, OR GRAVEL HAVE BEEN LEFT INSIDE. DUCTS SHALL BE COMPLETELY DRY AND CLEAN. |
| 9. | THE CONTRACTOR SHALL TAKE NECESSARY PRECAUTION NOT TO DAMAGE EXISTING CABLES OR DUCTS. ANY WORK INVOLVING EXISTING CABLES OR DUCTS SHALL BE DONE IN THE PRESENCE OF THE SPECTRUM OCEANIC COORDINATOR OR THEIR REPRESENTATIVE. TEMPORARY CABLE AND DUCT SUPPORT SHALL BE PROVIDED WHEREVER NECESSARY. | 30. | ALL CONDUITS SHALL ENTER THROUGH THE END "SHORT WALL" OF THE PULL-BOX. ENTRY SHALL BE AT 90 DEGREES (PERPENDICULAR) TO WALL FACE WITH BENDS NO LESS THAN 12" FROM EXTERIOR WALL. | 48. | METALLIC ENTRANCE CONDUITS SHALL BE GROUNDED. |
| 10. | THE CONTRACTOR SHALL NOTIFY FOR SPECTRUM OCEANIC INSPECTION 72 HOURS PRIOR TO THE START OF WORK ON CATV INFRASTRUCTURE, POURING CONCRETE, OR BACKFILLING. FOR SCHEDULING CONTACT JEFF MAEDA: JEFF.MAEDA@CHARTER.COM, 808-625-8520. | 31. | A MINIMUM OF (2) PRECAST SECTIONS MUST BE USED ON ALL 2X4 OR 2X6 PULLBOXES. | 49. | ALL CONDUITS WITHIN A BUILDING SHALL: |
| 11. | WHEREVER CONNECTIONS TO EXISTING UTILITIES ARE SHOWN ON THE PLANS, THE CONTRACTOR SHALL EXPOSE THE EXISTING LINES PRIOR TO EXCAVATION OF THE MAIN TRENCHES TO VERIFY THEIR LOCATIONS AND DEPTHS. | 32. | ALL NEW CONSTRUCTION SHALL UTILIZE CONCRETE PRECAST BASE UNLESS OTHERWISE APPROVED OR SPECIFIED BY SPECTRUM OCEANIC COORDINATOR(S). | A. | BE INSTALLED IN THE SHORTEST AND STRAIGHTEST POSSIBLE RUN. |
| 12. | CONTRACTOR SHALL PROVIDE ALL MATERIALS AND FURNISH ALL LABOR AND EQUIPMENT NECESSARY TO INSTALL THE DUCTLINE IN PLACE COMPLETE. | 33. | FOR PULL-BOX LOCATIONS WHERE VEHICULAR INTRUSION POSSIBLE, CONCRETE COLLAR REQUIRED PER SPECTRUM OCEANIC STANDARDS AND SPECIFICATIONS MANUAL. EXAMPLES INCLUDE, BUT NOT LIMITED TO, ROLLED/RIBBON CURBS, CURB / HEADERS LESS THAN 5" IN HEIGHT, VEHICLE TRAVELWAYS WITH NO DEFINED CURB / HEADER, ETC. | B. | HAVE NO SECTION LONGER THAN 100- FEET NOR CONTAIN MORE THAN TWO 90-DEGREE BENDS. AN APPROVED SIZED JUNCTION BOX OR GUTTER BOX SHALL BE PLACED IF THIS IS EXCEEDED. |
| 13. | THE CONTRACTOR SHALL BE RESPONSIBLE FOR LAYING OUT ALL REQUIRED LINES AND GRADES AND SHALL PRESERVE ALL BENCHMARKS AND WORKING POINTS NECESSARY TO LAY OUT THE WORK CORRECTLY. THE NEW DUCTLINE SHALL BE ADJUSTED BY THE CONTRACTOR TO SUIT THE EXISTING CONDITIONS AND THE DETAILS AS DESCRIBED IN THE PLANS. | 34. | WHEN THREE (3) OR MORE 4" CONDUITS ENTER ONE END WALL OF ANY PULLBOX, ONLY BRICK BASES WILL BE ALLOWED UNLESS OTHERWISE INSTRUCTED/APPROVED BY SPECTRUM OCEANIC COORDINATOR(S). | C. | ALL BENDS SHALL BE LONG SWEEP-RADIUS BENDS BUT THE INSIDE RADIUS OF THE BEND MUST NEVER BE LESS THAN TEN TIMES THE DIAMETER OF THE CONDUIT. |
| 14. | THE LOCATION OF CATV FACILITIES SHOWN ON PLANS ARE FROM EXISTING RECORDS WITH VARYING DEGREES OF ACCURACY AS TO ITS ACTUAL FIXED LOCATION. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING IN CLOSE PROXIMITY OF CATV FACILITIES. | 35. | TWO MINIMUM LAYERS OF BRICKS TO BE USED LOWER THAN THE LOWEST DUCT ENTERING THE PULLBOX. TOP LAYER OF BRICK TO BE FLUSH WITH TOP OF CONDUIT OR HIGHER. | 50. | ALL CONSTRUCTION MUST BE INSPECTED AND APPROVED BY SPECTRUM OCEANIC PRIOR TO THE INSTALLATION OF ANY OF ITS FACILITIES AND THE ENERGIZING OF ITS SYSTEM. |
| 15. | THE CONTRACTOR SHALL OBTAIN EXCAVATION PERMIT CLEARANCE FROM SPECTRUM OCEANIC'S ENGINEERING SECTION LOCATED AT 200 AKAMAINU ST., MILILANI TECH PARK. | 36. | FOR UPGRADE/REPAIRS TO EXISTING PULL-BOXES, BRICKS MAY BE USED AND SHALL ALWAYS BE AT LEAST TWO LAYERS LOWER THAN THE LOWEST DUCT ENTERING THE PULLBOX. | 51. | CONTRACTOR AND/OR CUSTOMER SHALL PROVIDE SPECTRUM OCEANIC WITH SUFFICIENT INSTALLATION TIME IN THEIR OCCUPANCY TIME TABLE. |
| 16. | FOR ANY FIELD ASSISTANCE OR VERIFICATION OF CATV FACILITIES, THE CONTRACTOR SHALL EMAIL SPECTRUM ENGINEERING & CONSTRUCTION AT HAW.ENGINEERING.RESEARCH@CHARTER.COM | 37. | AT NO TIME SHALL CEMENT MORTAR, WOOD, OR ANY OTHER MATERIAL BE USED BETWEEN PRECAST SECTIONS. | | |
| 17. | ANY WORK REQUIRED TO RELOCATE CATV FACILITIES SHALL BE DONE BY SPECTRUM OCEANIC CABLE AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COORDINATION REQUIREMENTS AND ASSOCIATED COSTS. | 38. | LEVELING OR RAISING OF BOXES TO GRADE MUST BE DONE: | | |
| 18. | ANY DAMAGE TO SPECTRUM OCEANIC'S FACILITIES SHALL BE REPORTED TO SPECTRUM OCEANIC'S TOC DEPARTMENT AT 625-8169. | A. | PRE-CAST BASE(S) - USING GRAVEL LAYER UNDER BASE (TYPE 3B OR EQUIVALENT APPROVED BY SPECTRUM OCEANIC COORDINATOR) | | |
| 19. | THE CONTRACTOR SHALL TUNNEL UNDER EXISTING CONCRETE CURB AND GUTTER AS NECESSARY TO EXTEND CONDUIT INTO EXISTING CATV PULLBOX AND INTO THE PROPOSED POWER SUPPLY PULLBOX. | B. | BRICK BASE(S) - ADJUSTMENTS TO BRICKWORK SECTION. THE PERMANENT INSTALLATION OF WOODEN WEDGES TO ACCOMPLISH THIS PURPOSE WILL NOT BE ACCEPTED. | | |
| 20. | ALL EXISTING IMPROVEMENTS THAT ARE DISTURBED DURING THE CONSTRUCTION PHASE SHALL BE RESTORED TO ITS ORIGINAL OR BETTER CONDITION AT NO COST TO THE CITY IN ACCORDANCE WITH CITY'S STANDARDS. | 39. | ¾" x 8' COPPER GROUND RODS SHALL BE PLACED IN ALL PULLBOXES UNLESS OTHERWISE DIRECTED BY SPECTRUM OCEANIC CABLE. GROUND RODS WILL BE PLACED IN THE CORNER 3" TO 4" FROM THE WALL AND AWAY FROM ANY CONDUIT WITH NO MORE THAN 8" STICKING UP ABOVE | | |

REVISION	DATE	BRIEF	BY

RONALD N. S. HO & ASSOCIATES, INC.
Electrical Engineers



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

HAWAII COMMUNITY DEVELOPMENT AUTHORITY
STATE OF HAWAII

KALAELOA
DEVELOPMENT DISTRICT
SARATOGA AVE
ELECTRICAL UPGRADES

CATV NOTES

ENGINEER: DN CHECKED BY: SS
DRAFTSMAN: CAD DATE: MARCH 2026

APPROVED: _____
EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY

APPROVED BY

SPECTRUM OCEANIC

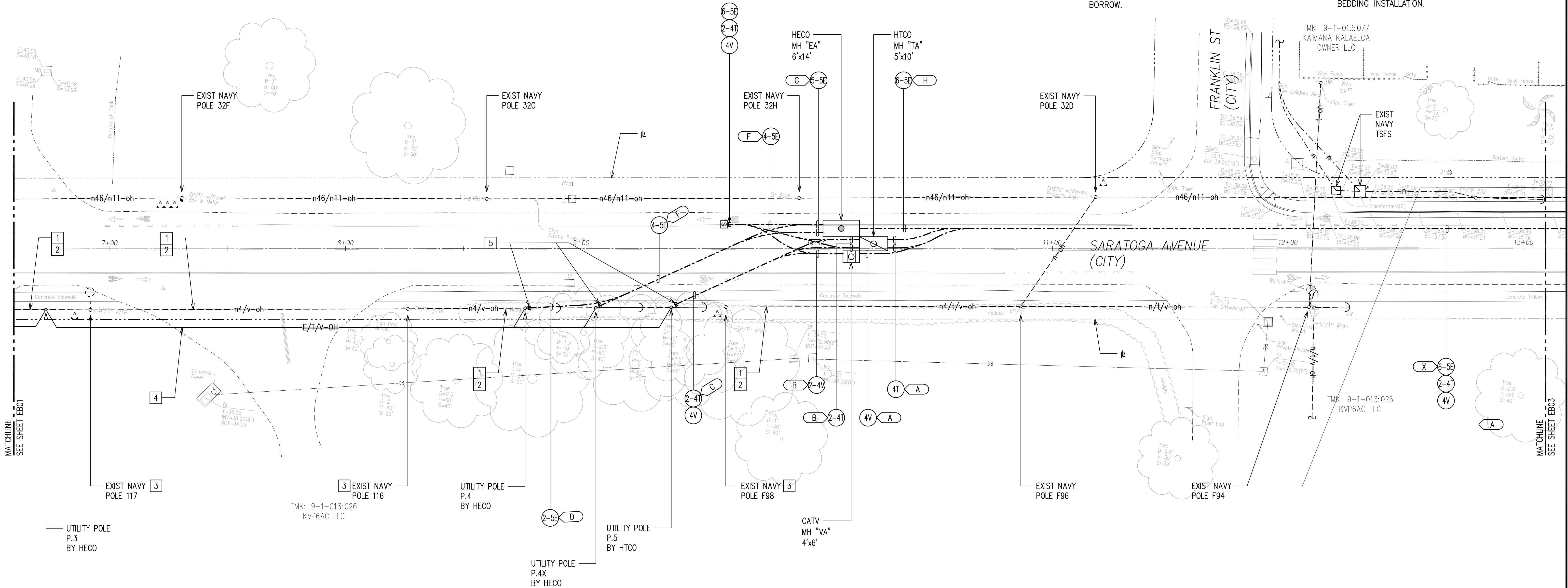
NOTES FOR BEDDING BENEATH UNDERGROUND STRUCTURES:

1.

BOXES AND STRUCTURES WITHOUT BOTTOM SLABS (OPEN BASE): 4" MINIMUM THICKNESS OF NO. 3 FINE GRAVEL; ASTM C-33-03, #67.
2.

BOXES AND STRUCTURES WITH BOTTOM SLABS (CLOSED BASE): 4" MINIMUM THICKNESS OF CLEAN, WELL-GRADED GRANULAR MATERIAL WITH A MAXIMUM PARTICLE SIZE OF THREE (3) INCHES, AND LESS THAN THREE (3) PERCENT PASSING THE NO. 200 SIEVE OR SELECT BORROW.
3.

PROVIDED BEDDING BENEATH MANHOLES, HANDHOLES AND PULLBOXES IN RELATIVELY UNIFORM LIFTS NO GREATER THAN SIX (6) INCHES IN LOOSE THICKNESS, MOISTURE CONDITIONED TO WITHIN THREE (3) PERCENT OF THEIR OPTIMUM MOISTURE CONTENT, AND UNIFORMLY COMPACTED TO AT LEAST NINETY (90) PERCENT OF THE MAXIMUM DRY DENSITY (ASTM D1557-02). CONTRACTOR TO SCHEDULE WITH CITY INSPECTORS FOR COMPACTION AND BEDDING INSTALLATION.



GENERAL NOTES:

1.
- CAUTION!!! ELECTRICAL HAZARD!!! EXIST NAVY OVERHEAD AND UNDERGROUND LINES, ARE ENERGIZED AND WILL REMAIN ENERGIZED DURING CONSTRUCTION UNLESS PRIOR SPECIAL ARRANGEMENTS HAVE BEEN MADE WITH THE NAVY. THE CONTRACTOR SHALL WORK CAUTIOUSLY AT ALL TIMES TO AVOID ACCIDENTS AND DAMAGE TO EXISTING NAVY FACILITIES, WHICH CAN RESULT IN ELECTROCUTION.
2.
- ALL ELECTRICAL DUCTS SHALL MAINTAIN A MINIMUM 12" HORIZONTAL CLEARANCE FROM ALL DRAINAGE STRUCTURES.
3.
- ALL HANDHOLE & MANHOLE STRUCTURES SHALL CLEAR THE CONCRETE CURB AND GUTTER.

NOTES:

- 1
- NAVY OVERHEAD LINES DE-ENERGIZED.
- 2
- NAVY OVERHEAD LINES TO BE REMOVED BY OTHERS.
- 3
- NAVY UTILITY POLES TO BE TOPPED TO COMMUNICATION LEVEL OR REMOVED BY OTHERS.
- 4
- OVERHEAD LINES BY RESPECTIVE UTILITY COMPANY.
- 5
- PROVIDE CONDUIT RISER(S) UP POLE PER RESPECTIVE UTILITY COMPANY REQUIREMENTS.



ELECTRICAL PARTIAL PLAN 2

SCALE: 1"=20'

APPROVED BY

HAWAIIAN TELCOM _____ DATE _____

SPECTRUM OCEANIC _____ DATE _____

CHIEF, CIVIL ENGINEERING BRANCH, DPP (FOR CONSTRUCTION WITHIN CITY R/W ONLY) _____ DATE _____

DRAWING REVIEW

Reviewed for Hawaiian Electric Company Facilities Only

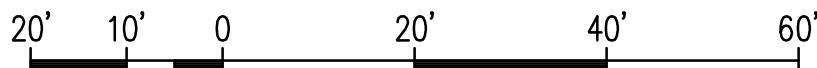
Final Review By: _____
First Review: _____ Second Review: _____

Customer Installation Division
Hawaiian Electric

6138044

3131451

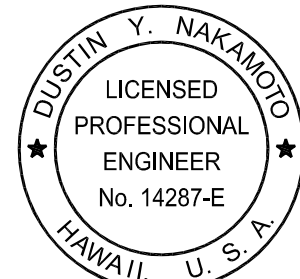
Hawaiian Electric's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on the Customer's behalf from the responsibility for engineering, design, materials and any other liability associated with this project including revisions made beyond the reviewed date.



SCALE: 1"=20'

GRAPHIC SCALE

RONALD N. S. HO & ASSOCIATES, INC.
Electrical Engineers



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

DATE: 04/30/28
EXPIRATION DATE OF THE LICENSE

HAWAII COMMUNITY DEVELOPMENT AUTHORITY
STATE OF HAWAII

KALAELOA
DEVELOPMENT DISTRICT
SARATOGA AVE
ELECTRICAL UPGRADES

ELECTRICAL PARTIAL PLANS 2

ENGINEER: DN
DRAFTSMAN: CAD
CHECKED BY: SS
DATE: MARCH 2026

APPROVED: _____

EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY

FILE	POCKET	FOLDER	NO.

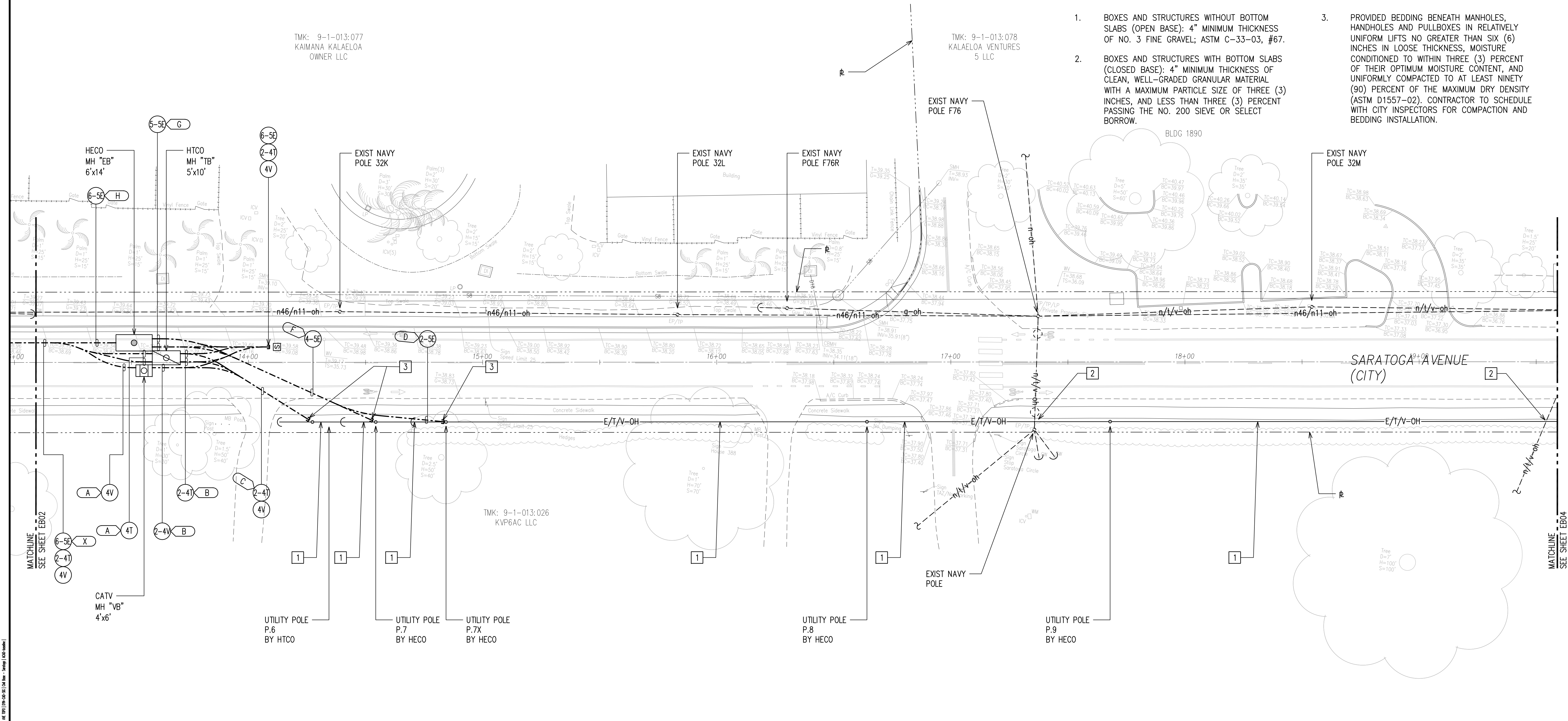
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TMK: 9-1-013:077
KAIMANA KALAELOA
OWNER LLC

TMK: 9-1-013:078
KALAELOA VENTURES
5 LLC

NOTES FOR BEDDING BENEATH UNDERGROUND STRUCTURES:

- BOXES AND STRUCTURES WITHOUT BOTTOM SLABS (OPEN BASE): 4" MINIMUM THICKNESS OF NO. 3 FINE GRAVEL; ASTM C-33-03, #67.
- BOXES AND STRUCTURES WITH BOTTOM SLABS (CLOSED BASE): 4" MINIMUM THICKNESS OF CLEAN, WELL-GRADED GRANULAR MATERIAL WITH A MAXIMUM PARTICLE SIZE OF THREE (3) INCHES, AND LESS THAN THREE (3) PERCENT PASSING THE NO. 200 SIEVE OR SELECT BORROW.
- PROVIDED BEDDING BENEATH MANHOLES, HANDHOLES AND PULLBOXES IN RELATIVELY UNIFORM LIFTS NO GREATER THAN SIX (6) INCHES IN LOOSE THICKNESS, MOISTURE CONDITIONED TO WITHIN THREE (3) PERCENT OF THEIR OPTIMUM MOISTURE CONTENT, AND UNIFORMLY COMPACTED TO AT LEAST NINETY (90) PERCENT OF THE MAXIMUM DRY DENSITY (ASTM D1557-02). CONTRACTOR TO SCHEDULE WITH CITY INSPECTORS FOR COMPACTION AND BEDDING INSTALLATION.



GENERAL NOTES:

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- ALL ELECTRICAL DUCTS SHALL MAINTAIN A MINIMUM 12" HORIZONTAL CLEARANCE FROM ALL DRAINAGE STRUCTURES.
- ALL HANDHOLE & MANHOLE STRUCTURES SHALL CLEAR THE CONCRETE CURB AND GUTTER.

NOTES:

- OVERHEAD LINES BY RESPECTIVE UTILITY COMPANY.
- OVERHEAD LINES TO BE DESIGNED & CONSTRUCTED BY RESPECTIVE UTILITY COMPANY TO CLEAR EXISTING NAVY OVERHEAD LINES PER HAR CHAPTER 6-73.
- PROVIDE CONDUIT RISER(S) UP POLE PER RESPECTIVE UTILITY COMPANY REQUIREMENTS.



ELECTRICAL PARTIAL PLAN 3
SCALE: 1"=20'

APPROVED BY

HAWAIIAN TELCOM _____ DATE _____

SPECTRUM OCEANIC _____ DATE _____

CHIEF, CIVIL ENGINEERING BRANCH, DPP
(FOR CONSTRUCTION WITHIN CITY R/W ONLY) _____ DATE _____

DRAWING REVIEW

Reviewed for Hawaiian Electric Company Facilities Only

Final Review By: _____

First Review: _____ Second Review: _____

Customer Installation Division
Hawaiian Electric

6138044
3131451

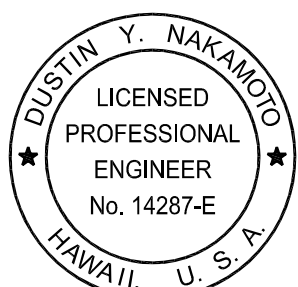
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20' 10' 0 20' 40' 60'

SCALE: 1"=20'

GRAPHIC SCALE

RONALD N. S. HO & ASSOCIATES, INC.
Electrical Engineers



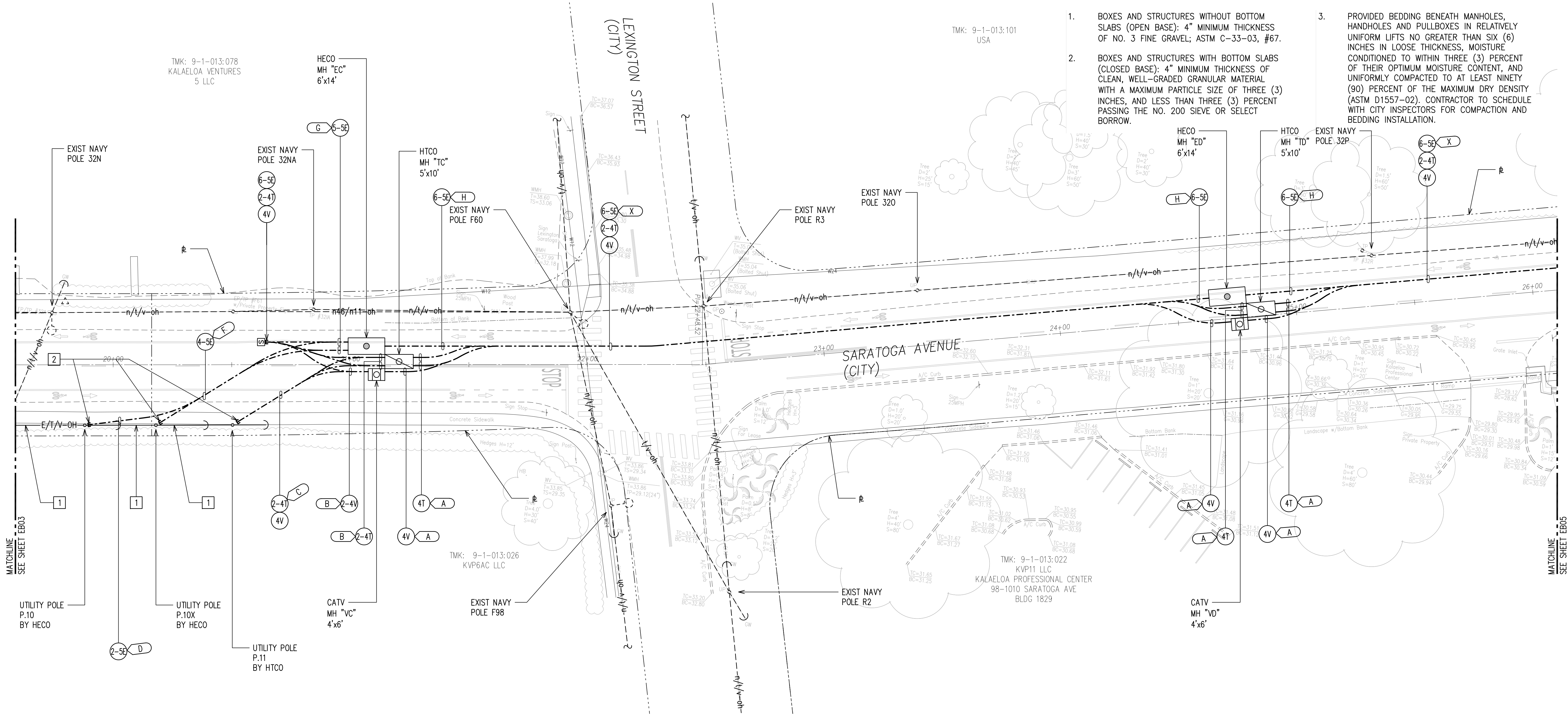
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THE PROJECT WILL BE UNDER MY OBSERVATION.

DATE: 2/30/28
EXPIRATION DATE OF THE LICENSE

REVISION	DATE	BRIEF	BY
HAWAII COMMUNITY DEVELOPMENT AUTHORITY STATE OF HAWAII KALAELOA DEVELOPMENT DISTRICT SARATOGA AVE ELECTRICAL UPGRADES ELECTRICAL PARTIAL PLANS 3			
ENGINEER:	DN	CHECKED BY:	SS
DRAFTSMAN:	CAD	DATE:	MARCH 2026
APPROVED:			
EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY			
FILE	POCKET	FOLDER	NO.

NOTES FOR BEDDING BENEATH UNDERGROUND STRUCTURES:

- BOXES AND STRUCTURES WITHOUT BOTTOM SLABS (OPEN BASE): 4" MINIMUM THICKNESS OF NO. 3 FINE GRAVEL; ASTM C-33-03, #67.
- BOXES AND STRUCTURES WITH BOTTOM SLABS (CLOSED BASE): 4" MINIMUM THICKNESS OF CLEAN, WELL-GRADED GRANULAR MATERIAL WITH A MAXIMUM PARTICLE SIZE OF THREE (3) INCHES, AND LESS THAN THREE (3) PERCENT PASSING THE NO. 200 SIEVE OR SELECT BORROW.
- PROVIDED BEDDING BENEATH MANHOLES, HANDHOLES AND PULLBOXES IN RELATIVELY UNIFORM LIFTS NO GREATER THAN SIX (6) INCHES IN LOOSE THICKNESS, MOISTURE CONDITIONED TO WITHIN THREE (3) PERCENT OF THEIR OPTIMUM MOISTURE CONTENT, AND UNIFORMLY COMPACTED TO AT LEAST NINETY (90) PERCENT OF THE MAXIMUM DRY DENSITY (ASTM D1557-02). CONTRACTOR TO SCHEDULE WITH CITY INSPECTORS FOR COMPACTION AND BEDDING INSTALLATION.



GENERAL NOTES:

- CAUTION!!! ELECTRICAL HAZARD!!! EXIST NAVY OVERHEAD AND UNDERGROUND LINES, ARE ENERGIZED AND WILL REMAIN ENERGIZED DURING CONSTRUCTION UNLESS PRIOR SPECIAL ARRANGEMENTS HAVE BEEN MADE WITH THE NAVY. THE CONTRACTOR SHALL WORK CAUTIOUSLY AT ALL TIMES TO AVOID ACCIDENTS AND DAMAGE TO EXISTING NAVY FACILITIES, WHICH CAN RESULT IN ELECTROCUTION.
- ALL ELECTRICAL DUCTS SHALL MAINTAIN A MINIMUM 12" HORIZONTAL CLEARANCE FROM ALL DRAINAGE STRUCTURES.
- ALL HANDHOLE & MANHOLE STRUCTURES SHALL CLEAR THE CONCRETE CURB AND GUTTER.

NOTES:

- OVERHEAD LINES BY RESPECTIVE UTILITY COMPANY.
- PROVIDE CONDUIT RISER(S) UP POLE PER RESPECTIVE UTILITY COMPANY REQUIREMENTS.



ELECTRICAL PARTIAL PLAN 4
SCALE: 1"=20'

APPROVED BY

HAWAIIAN TELCOM _____ DATE _____

SPECTRUM OCEANIC _____ DATE _____

CHIEF, CIVIL ENGINEERING BRANCH, DPP
(FOR CONSTRUCTION WITHIN CITY R/W ONLY) _____ DATE _____

DRAWING REVIEW

Reviewed for Hawaiian Electric Company Facilities Only

Final Review By: _____

First Review: _____ Second Review: _____

Customer Installation Division
Hawaiian Electric

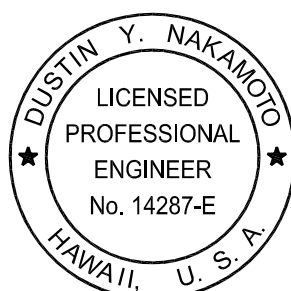
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3131451

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20' 10' 0 20' 40' 60'
SCALE: 1"=20'

GRAPHIC SCALE

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Electrical Engineers



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DATE: 4/30/28
EXPIRATION DATE OF THE LICENSE

REVISION DATE BRIEF BY

HAWAII COMMUNITY DEVELOPMENT AUTHORITY
STATE OF HAWAII

KALAELOA
DEVELOPMENT DISTRICT
SARATOGA AVE
ELECTRICAL UPGRADES

ELECTRICAL PARTIAL PLANS 4

ENGINEER: DN CHECKED BY: SS
DRAFTSMAN: CAD DATE: MARCH 2026

APPROVED: EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY

FILE POCKET FOLDER NO.

NOTES FOR BEDDING BENEATH UNDERGROUND STRUCTURES:

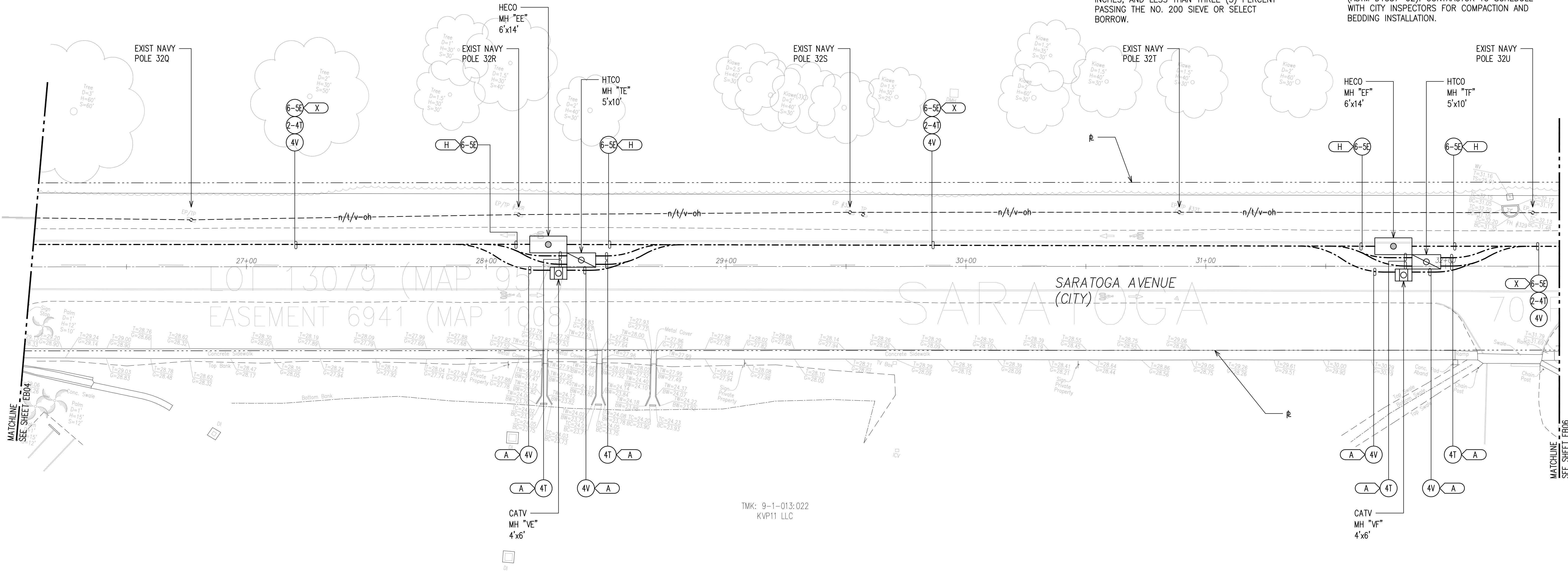
1.

BOXES AND STRUCTURES WITHOUT BOTTOM
SLABS (OPEN BASE): 4" MINIMUM THICKNESS
OF NO. 3 FINE GRAVEL; ASTM C-33-03, #67.
2.

BOXES AND STRUCTURES WITH BOTTOM SLABS
(CLOSED BASE): 4" MINIMUM THICKNESS OF
CLEAN, WELL-GRADED GRANULAR MATERIAL
WITH A MAXIMUM PARTICLE SIZE OF THREE (3)
INCHES, AND LESS THAN THREE (3) PERCENT
PASSING THE NO. 200 SIEVE OR SELECT
BORROW.
3.

PROVIDED BEDDING BENEATH MANHOLES,
HANDHOLES AND PULLBOXES IN RELATIVELY
UNIFORM LIFTS NO GREATER THAN SIX (6)
INCHES IN LOOSE THICKNESS, MOISTURE
CONDITIONED TO WITHIN THREE (3) PERCENT
OF THEIR OPTIMUM MOISTURE CONTENT, AND
UNIFORMLY COMPACTED TO AT LEAST NINETY
(90) PERCENT OF THE MAXIMUM DRY DENSITY
(ASTM D1557-02). CONTRACTOR TO SCHEDULE
WITH CITY INSPECTORS FOR COMPACTION AND
BEDDING INSTALLATION.

TMK: 9-1-013:101
USA



TMK: 9-1-013:022
KVP11 LLC

GENERAL NOTES:

1.
- CAUTION!!! ELECTRICAL HAZARD!!! EXIST NAVY OVERHEAD AND UNDERGROUND LINES, ARE ENERGIZED AND WILL REMAIN ENERGIZED DURING CONSTRUCTION UNLESS PRIOR SPECIAL ARRANGEMENTS HAVE BEEN MADE WITH THE NAVY. THE CONTRACTOR SHALL WORK CAUTIOUSLY AT ALL TIMES TO AVOID ACCIDENTS AND DAMAGE TO EXISTING NAVY FACILITIES, WHICH CAN RESULT IN ELECTROCUTION.

APPROVED BY

HAWAIIAN TELCOM _____ DATE _____

SPECTRUM OCEANIC _____ DATE _____

CHIEF, CIVIL ENGINEERING BRANCH, DPP
(FOR CONSTRUCTION WITHIN CITY R/W ONLY) _____ DATE _____

DRAWING REVIEW

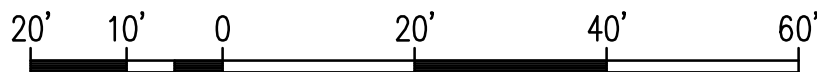
Reviewed for Hawaiian Electric Company Facilities Only

Final Review By: _____
First Review: _____ Second Review: _____

Customer Installation Division
Hawaiian Electric

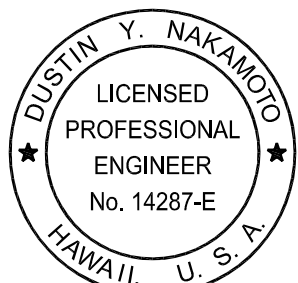
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GRAPHIC SCALE

RONALD N. S. HO & ASSOCIATES, INC.
Electrical Engineers



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24/30/28
EXPIRATION DATE OF THE LICENSE

HAWAII COMMUNITY DEVELOPMENT AUTHORITY
STATE OF HAWAII

KALAELOA
DEVELOPMENT DISTRICT
SARATOGA AVE
ELECTRICAL UPGRADES

ELECTRICAL PARTIAL PLANS 5

ENGINEER: DN
DRAFTSMAN: CAD

CHECKED BY: SS
DATE: MARCH 2026

APPROVED: _____

EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY

FILE	POCKET	FOLDER	NO.

1.	BOXES AND STRUCTURES WITHOUT BOTTOM SLABS (OPEN BASE): 4" MINIMUM THICKNESS OF NO. 3 FINE GRAVEL; ASTM C-33-03, #67.	3.	PROVIDED BEDDING BENEATH MANHOLES, HANDHOLES AND PULLBOXES IN RELATIVELY UNIFORM LIFTS NO GREATER THAN SIX (6) INCHES IN LOOSE THICKNESS, MOISTURE CONDITIONED TO WITHIN THREE (3) PERCENT OF THEIR OPTIMUM MOISTURE CONTENT, AND UNIFORMLY COMPACTED TO AT LEAST NINETY (90) PERCENT OF THE MAXIMUM DRY DENSITY (ASTM D1557-02). CONTRACTOR TO SCHEDULE WITH CITY INSPECTORS FOR COMPACTION AND BEDDING INSTALLATION.
2.	BOXES AND STRUCTURES WITH BOTTOM SLABS (CLOSED BASE): 4" MINIMUM THICKNESS OF CLEAN, WELL-GRADED GRANULAR MATERIAL WITH A MAXIMUM PARTICLE SIZE OF THREE (3) INCHES, AND LESS THAN THREE (3) PERCENT PASSING THE NO. 200 SIEVE OR SELECT BORROW.		

TMK: 9-1-013:101
USA



1. CAUTION!!! ELECTRICAL HAZARD!!! EXIST NAVY OVERHEAD AND UNDERGROUND LINES, ARE ENERGIZED AND WILL REMAIN ENERGIZED DURING CONSTRUCTION UNLESS PRIOR SPECIAL ARRANGEMENTS HAVE BEEN MADE WITH THE NAVY. THE CONTRACTOR SHALL WORK CAUTIOUSLY AT ALL TIMES TO AVOID ACCIDENTS AND DAMAGE TO EXISTING NAVY FACILITIES, WHICH CAN RESULT IN ELECTROCUTION.
2. ALL ELECTRICAL DUCTS SHALL MAINTAIN A MINIMUM 12" HORIZONTAL CLEARANCE FROM ALL DRAINAGE STRUCTURES.
3. ALL HANDHOLE & MANHOLE STRUCTURES SHALL CLEAR THE CONCRETE CURB AND GUTTER.



DRAWING REVIEW

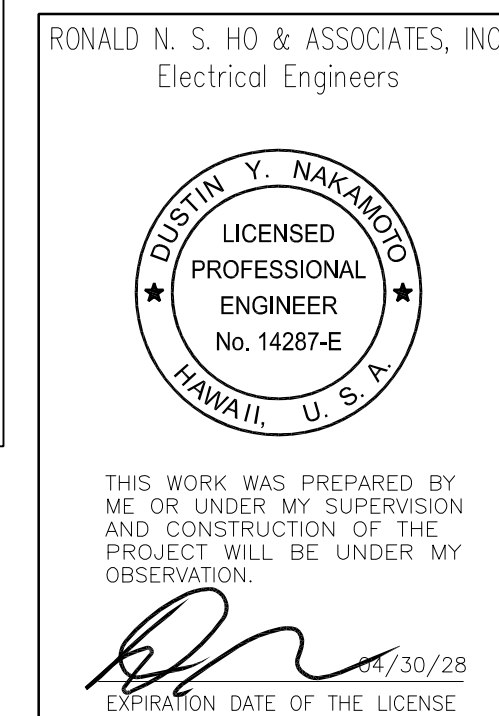
Reviewed for Hawaiian Electric Company Facilities Only

Final Review By: _____
First Review: _____ Second Review: _____

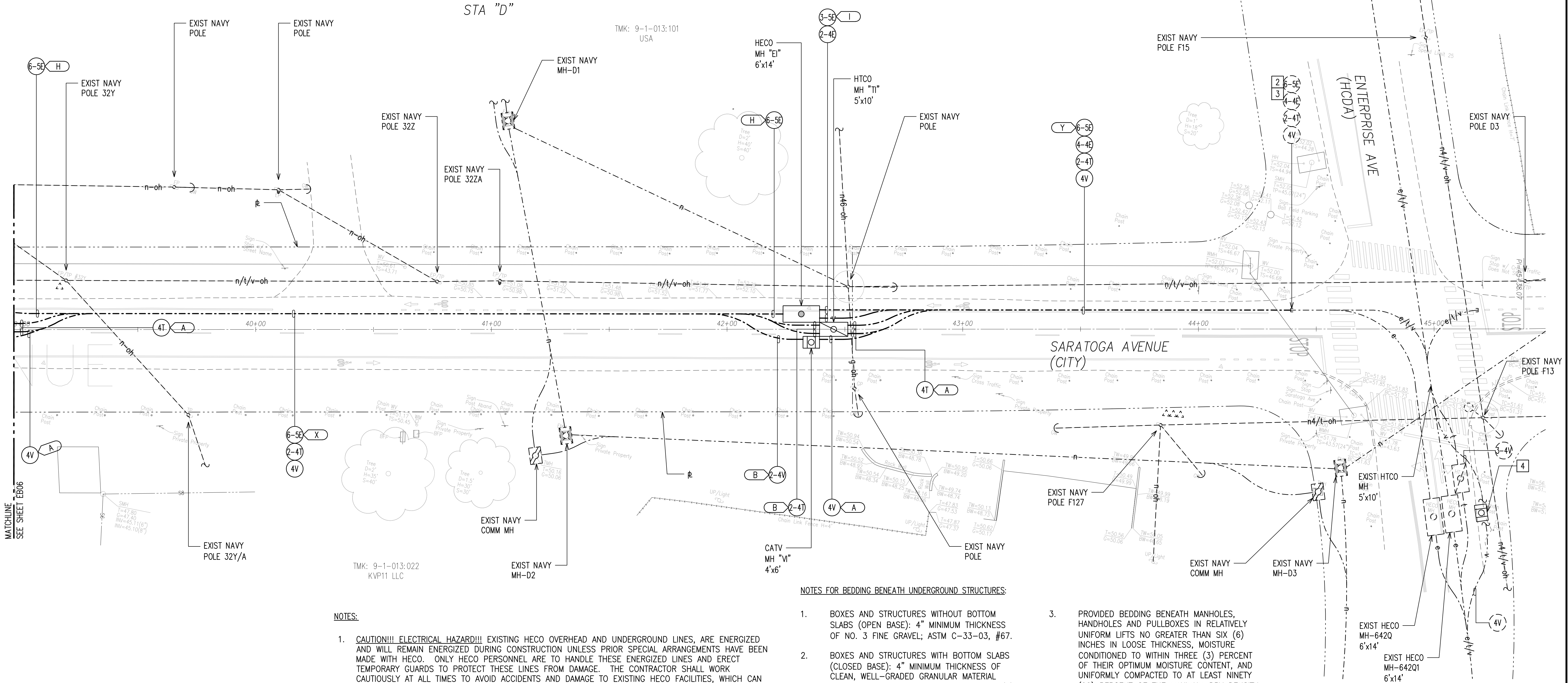
Customer Installation Division
Hawaiian Electric

6138044
3131451

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REVISION	DATE	BRIEF
HAWAII COMMUNITY DEVELOPMENT AUTHORITY STATE OF HAWAII KALAELOA DEVELOPMENT DISTRICT SARATOGA AVE ELECTRICAL UPGRADES ELECTRICAL PARTIAL PLANS 6		
ENGINEER: <u>DN</u> DRAFTSMAN: <u>CAD</u> APPROVED: _____	CHECKED BY: <u>SS</u> DATE: <u>MARCH 2026</u>	
EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY		



NOTES:

- CAUTION!!! ELECTRICAL HAZARD!!! EXISTING HECO OVERHEAD AND UNDERGROUND LINES, ARE ENERGIZED AND WILL REMAIN ENERGIZED DURING CONSTRUCTION UNLESS PRIOR SPECIAL ARRANGEMENTS HAVE BEEN MADE WITH HECO. ONLY HECO PERSONNEL ARE TO HANDLE THESE ENERGIZED LINES AND ERECT TEMPORARY GUARDS TO PROTECT THESE LINES FROM DAMAGE. THE CONTRACTOR SHALL WORK CAUTIOUSLY AT ALL TIMES TO AVOID ACCIDENTS AND DAMAGE TO EXISTING HECO FACILITIES, WHICH CAN RESULT IN ELECTROCUTION.
- CAUTION!!! ELECTRICAL HAZARD!!! ONLY HECO PERSONNEL SHALL BREAK & REMOVE EXISTING CONDUITS, SHIFT CABLES, & CONSTRUCT DUCT ENTRY(S). COORDINATE & SCHEDULE WORK WITH HECO PRIOR TO COMMENCING WITH EXCAVATION. THE COST OF HECO'S ASSISTANCE IN PROVIDING PROPER SUPPORT & PROTECTION WILL BE CHARGED TO THE CONTRACTOR.
- EXCAVATE & EXPOSE EXIST DUCT(S). PROVIDE COUPLINGS AS REQUIRED, & EXTEND EXIST DUCT(S). REPAIR TO MATCH EXISTING.
- EXCAVATE & EXPOSE EXIST DUCT(S) AND INTERCEPT WITH CATV MANHOLE "Vx" (4'x6"). EXTEND EXIST DUCT(S) IF REQUIRED. REPAIR TO MATCH EXISTING.

NOTES FOR BEDDING BENEATH UNDERGROUND STRUCTURES:

- BOXES AND STRUCTURES WITHOUT BOTTOM SLABS (OPEN BASE): 4" MINIMUM THICKNESS OF NO. 3 FINE GRAVEL; ASTM C-33-03, #67.
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GENERAL NOTES:

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- ALL HANDHOLE & MANHOLE STRUCTURES SHALL CLEAR THE CONCRETE CURB AND GUTTER.



ELECTRICAL PARTIAL PLAN 7

SCALE: 1"=20'

APPROVED BY

HAWAIIAN TELCOM _____ DATE _____

SPECTRUM OCEANIC _____ DATE _____

CHIEF, CIVIL ENGINEERING BRANCH, DPP (FOR CONSTRUCTION WITHIN CITY R/W ONLY) _____ DATE _____

DRAWING REVIEW

Reviewed for Hawaiian Electric Company Facilities Only

Final Review By: _____

First Review: _____ Second Review: _____

Customer Installation Division
Hawaiian Electric

6138044

3131451

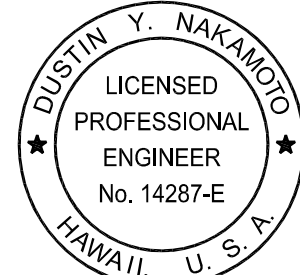
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20' 10' 0 20' 40' 60'

SCALE: 1"=20'

GRAPHIC SCALE

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Electrical Engineers



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4/30/28

EXPIRATION DATE OF THE LICENSE

HAWAII COMMUNITY DEVELOPMENT AUTHORITY
STATE OF HAWAII

KALAELOA
DEVELOPMENT DISTRICT
SARATOGA AVE
ELECTRICAL UPGRADES

ELECTRICAL PARTIAL PLANS 7

ENGINEER: DN

DRAFTSMAN: CAD

APPROVED: _____

CHECKED BY: SS

DATE: MARCH 2026

EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY

FILE POCKET FOLDER NO.

GENERAL DUCT SECTION NOTES:

1. FOR TRENCH RESTORATION DETAIL REQUIREMENTS, SEE CIVIL SHEETS.

THE METAL DETECTABLE RED PLASTIC WARNING TAPE SHALL BE A MINIMUM 5 MILS THICK AND 4" WIDE WITH A CONTINUOUS METALLIC BACKING AND CORROSION RESISTANT .35 MIL MIN THICK FOIL CORE.

A. FOR THE RESPECTIVE UTILITY COMPANY DUCTS, PROVIDE METAL DETECTABLE WARNING TAPE OVER RESPECTIVE UTILITY COMPANY DUCTS PER RESPECTIVE UTILITY COMPANY REQUIREMENTS AND APPROVAL.

B. FOR HECO, PROVIDE WARNING TAPE PER HECO SPECIFICATION M0302-1.

C. FOR HTCO:

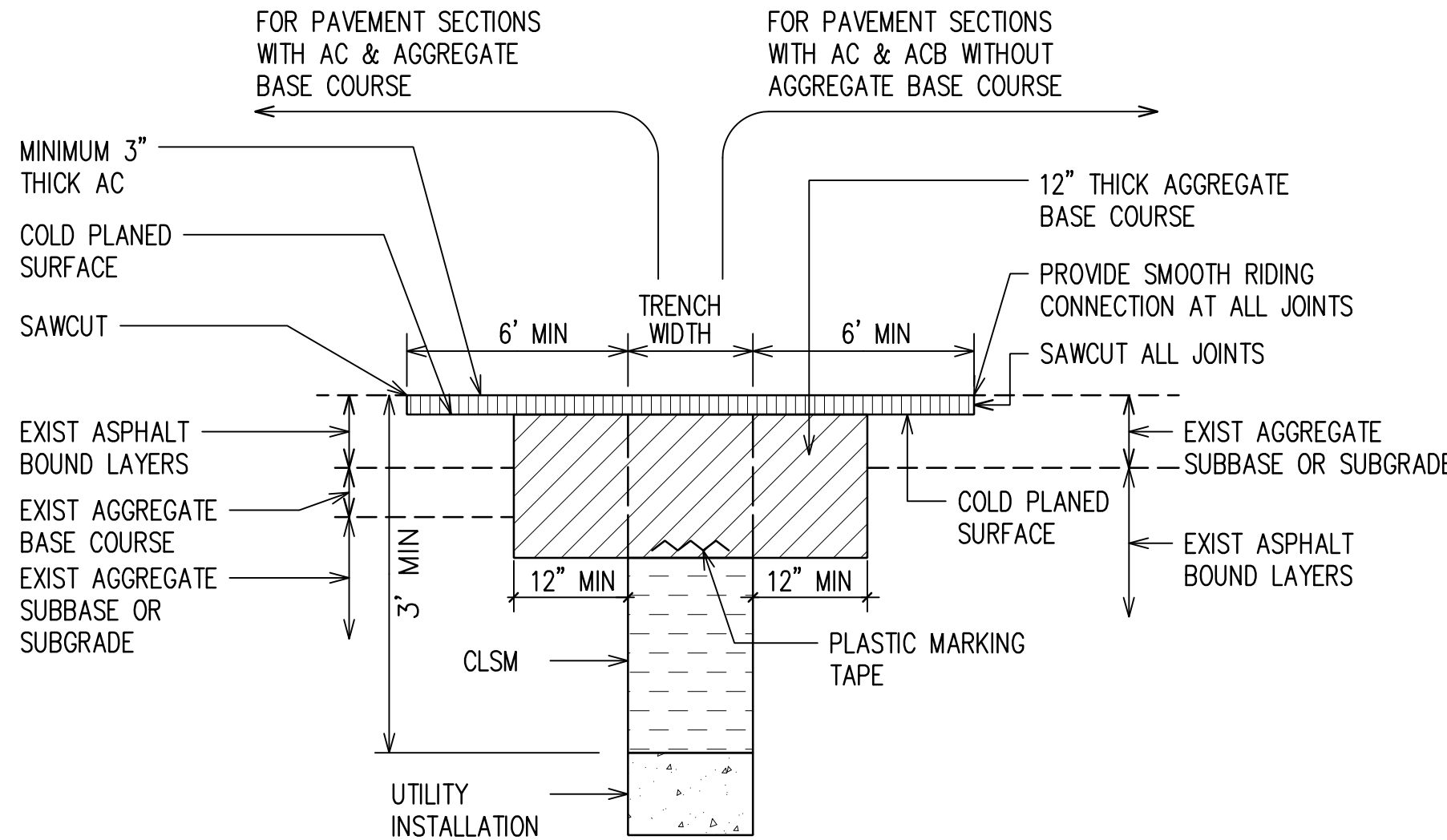
- CONTRACTOR SHALL PLACE MULETAPE (SP 1800P) IN EACH DUCT THROUGHOUT ITS ENTIRE LENGTH WITH PROTRUSIONS OF 2 FEET IN MANHOLES AND HANDHOLES AT EACH END, AND 1 FOOT IN PULLBOXES. MULETAPE IS RATED FOR 1800 LB PULL AND HAS FOOTAGE MARKINGS FOR MEASURING DUCT LENGTHS.
- CONTRACTOR SHALL PLACE 8-MIL ORANGE COLORED PLASTIC WARNING TAPE, NOT LESS THAN 4" WIDE, ENTIRE LENGTH OF TRENCH FOR ALL UNDERGROUND INSTALLATIONS. TAPE SHOULD READ "WARNING-STOP DIGGING-CALL HTCO, COMMUNICATIONS ABLE BURIED BELOW, FAILURE TO COMPLY COULD RESULT IN LEGAL ACTION".

D. FOR THE CITY AND COUNTY OF HONOLULU'S STREET LIGHTING SYSTEM: TRACEABLE WARNING TAPE SHALL HAVE "CAUTION: ELECTRIC CABLE BELOW" PRINTED ON IT. THE TAPE MUST BE PLACED OVER THE ENTIRE LIGHT OF THE DUCT.

2. THE CONTRACTOR MAY BEGIN BACKFILLING THE CONDUIT TRENCH WHEN THE CONCRETE REACHES 500 PSI COMPRESSIVE STRENGTH OR AFTER 3 DAYS, WHICHEVER IS LATER.

3. CLEARANCES: REFER TO HECO NOTE NO. 14 FOR CLEARANCE REQUIREMENTS BETWEEN ALL DUCTLINES AND ALL ADJACENT STRUCTURES (CHARTED AND UNCHARTED) NEAR THE TRENCH.

4. FOR TRENCHES IN NON-PAVED AREAS, PROVIDE 4" OF TOP SOIL AND GRASS TO MATCH EXISTING.

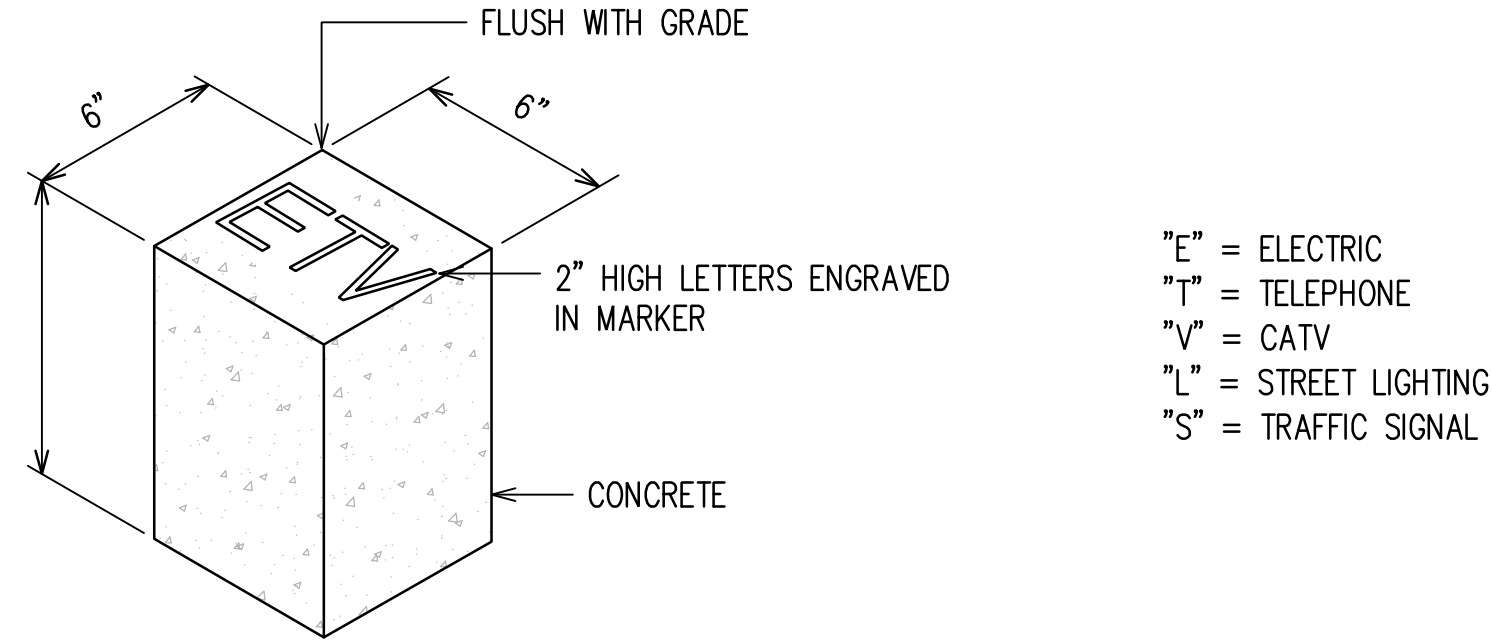


NOTES:

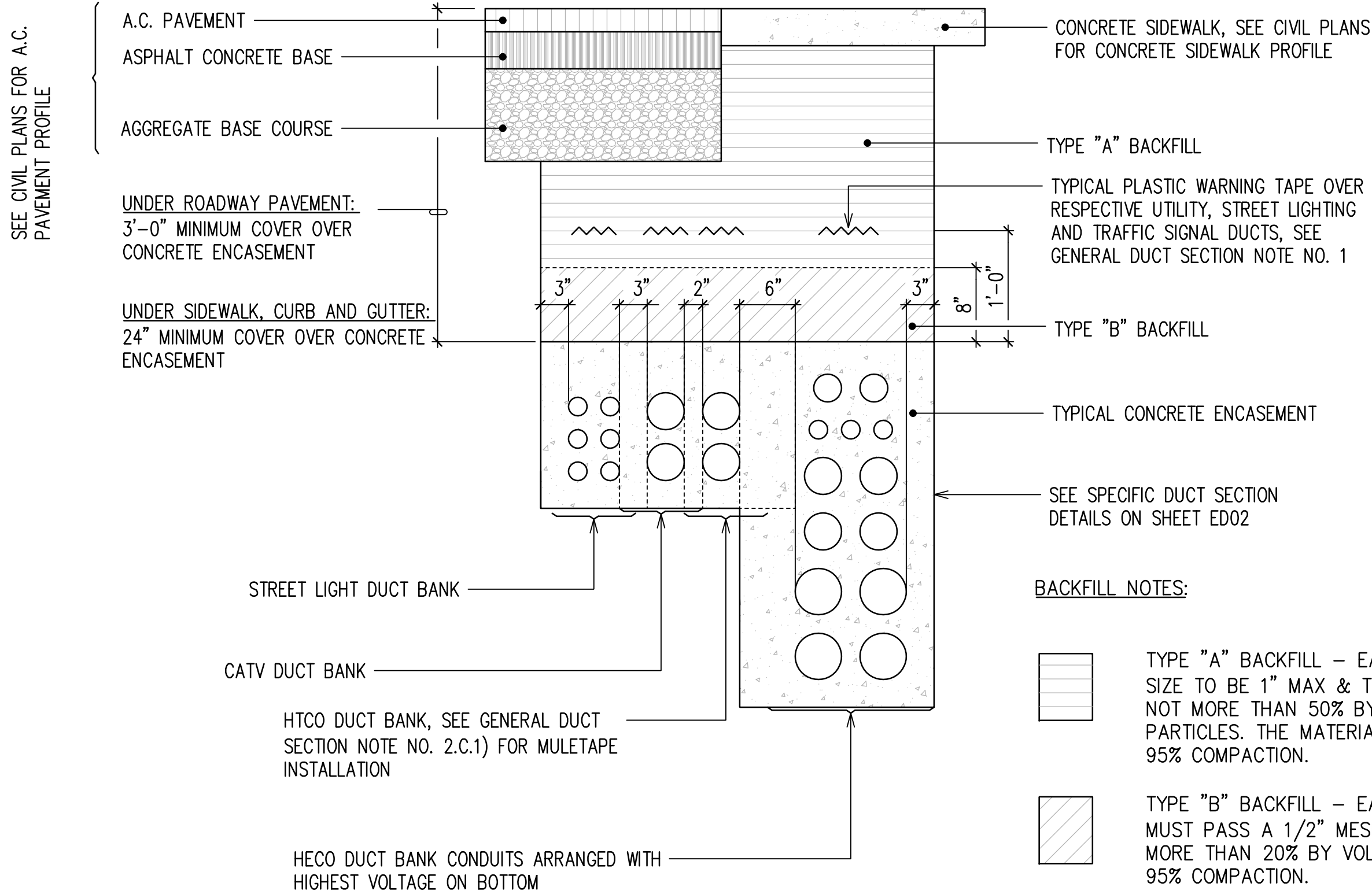
- TACK COAT FACES OF EXISTING ASPHALT BOUND OF ALL MATERIALS PRIOR TO FILLING EXCAVATION WITH NEW ASPHALT BOUND MATERIALS.
- TRENCHING SHALL COMPLY WITH STATE DEPARTMENT OF TRANSPORTATION "REQUIREMENTS FOR ASPHALT PAVEMENT RESTORATION OVER TRENCH EXCAVATIONS FOR EXISTING PAVEMENTS WITHOUT PERMEABLE BASE" DATED 11/08/01.
- PAVEMENT STRUCTURE SHALL BE EQUAL OR BETTER THAN EXISTING IN THICKNESS AND QUALITY.

CONDUIT SCHEDULE			
ITEM	DESCRIPTION	ITEM	DESCRIPTION
(4-4E)	HECO 4-4" CONDUITS	(4T)	HTCO 4" CONDUIT
(2-5E)	HECO 2-5" CONDUITS	(2-4T)	HTCO 2-4" CONDUITS
(3-5E)	HECO 3-5" CONDUITS		
(4-5E)	HECO 4-5" CONDUITS	(4V)	CATV 4" CONDUIT
(5-5E)	HECO 5-5" CONDUITS	(2-4V)	CATV 2-4" CONDUITS
(6-5E)	HECO 6-5" CONDUITS		
PROVIDE PULL-STRING IN ALL NEW CONDUITS.			

B TRENCH/PAVEMENT RESTORATION DETAILS (STATE)
ED01 NOT TO SCALE



C CONCRETE CONDUIT STUB-OUT MARKER
ED01 NOT TO SCALE



BACKFILL NOTES:

- TYPE "A" BACKFILL - EARTH & GRAVEL. ROCK SIZE TO BE 1" MAX & THE MIXTURE TO CONTAIN NOT MORE THAN 50% BY VOLUME OF ROCK PARTICLES. THE MATERIAL SHALL BE NONEXPANSIVE. 95% COMPACTION.
- TYPE "B" BACKFILL - EARTH & GRAVEL. MIXTURE MUST PASS A 1/2" MESH SCREEN & CONTAIN NOT MORE THAN 20% BY VOLUME OF ROCK PARTICLES. 95% COMPACTION.
- NOTE - IF NORMAL MATERIAL AT BOTTOM OF TRENCH IS NOT TYPE "B", AN ADDITIONAL 3" SHALL BE EXCAVATED & TYPE "B" BACKFILL PROVIDED.
- CONCRETE - 3" ENCASEMENT, 2500 PSI COMPRESSIVE STRENGTH @ 28 DAYS. WITH A MAXIMUM AGGREGATE SIZE OF 3/4".

MINIMUM DUCT SEPARATION DIMENSION BETWEEN DUCT SYSTEMS (CONCRETE ENCASED):

ELEC - ELEC: 1.5"
ELEC - OTHER SYSTEMS: 6"

TEL - TEL: 1.5"
TEL - ELEC: 6"
TEL - CATV: 2"

CATV - CATV: 1.5"
CATV - ELEC: 6"
CATV - TEL: 2"

MINIMUM OF 3" CONCRETE ENCASEMENT SHALL BE PROVIDED AROUND DUCTBANK

A TYPICAL CONCRETE ENCASED DUCT SECTION DETAILS
ED01 NOT TO SCALE

APPROVED BY

HAWAIIAN TELCOM DATE

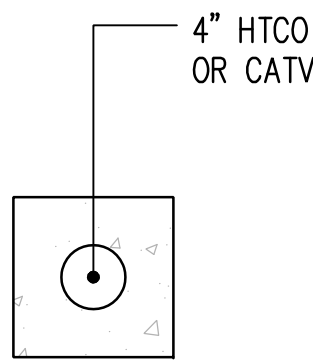
SPECTRUM OCEANIC DATE

CHIEF, CIVIL ENGINEERING BRANCH, DPP
(FOR CONSTRUCTION WITHIN CITY R/W ONLY) DATE

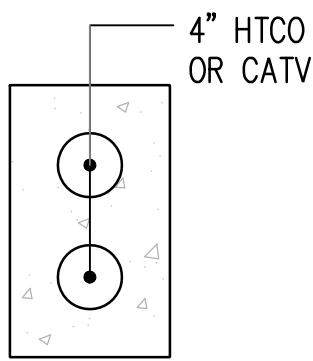
DRAWING REVIEW	
Reviewed for Hawaiian Electric Company Facilities Only	
Final Review By: _____	Second Review: _____
Customer Installation Division Hawaiian Electric	
6138044 3131451	
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RONALD N. S. HO & ASSOCIATES, INC. Electrical Engineers	
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	4/30/28
EXPIRATION DATE OF THE LICENSE	

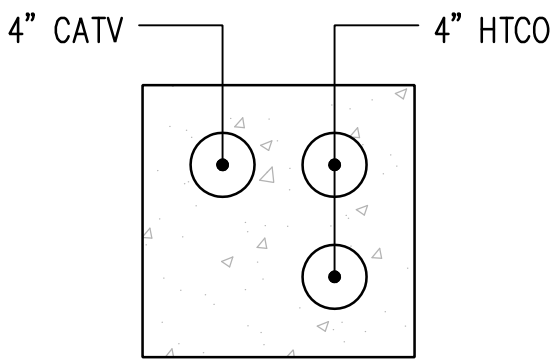
REVISION	DATE	BRIEF	BY
HAWAII COMMUNITY DEVELOPMENT AUTHORITY STATE OF HAWAII KALAELOA DEVELOPMENT DISTRICT SARATOGA AVE ELECTRICAL UPGRADES GENERAL DUCT SECTION, NOTES AND CONDUIT SCHEDULE			
ENGINEER: DN	CAD	CHECKED BY: SS	DATE: MARCH 2026
APPROVED: _____			
EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY			
FILE	POCKET	FOLDER	NO.



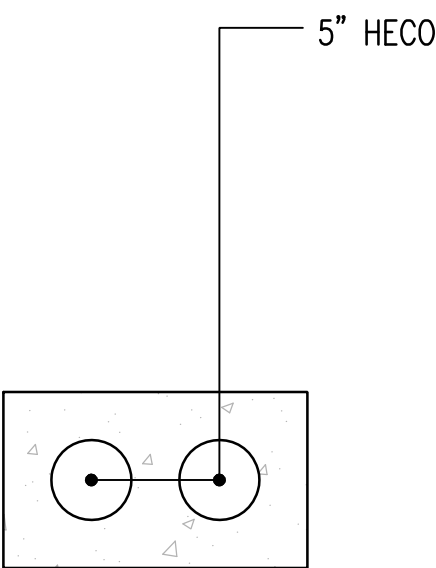
SECTION (A)



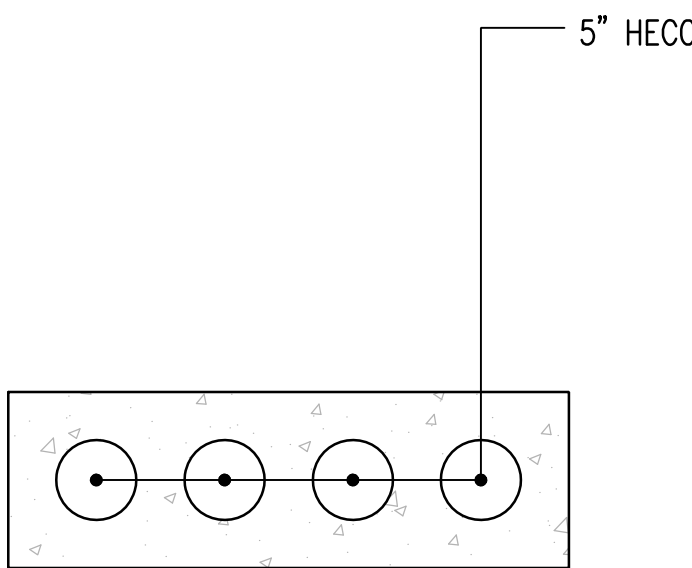
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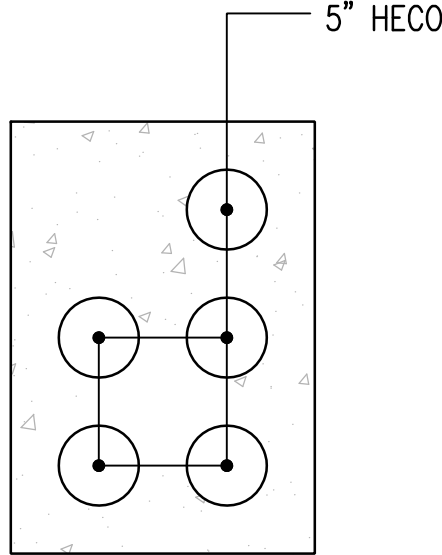
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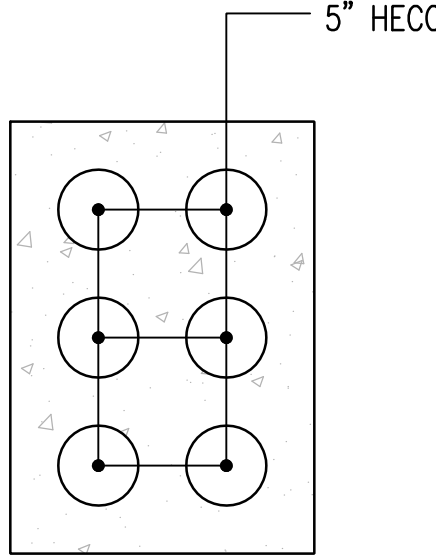
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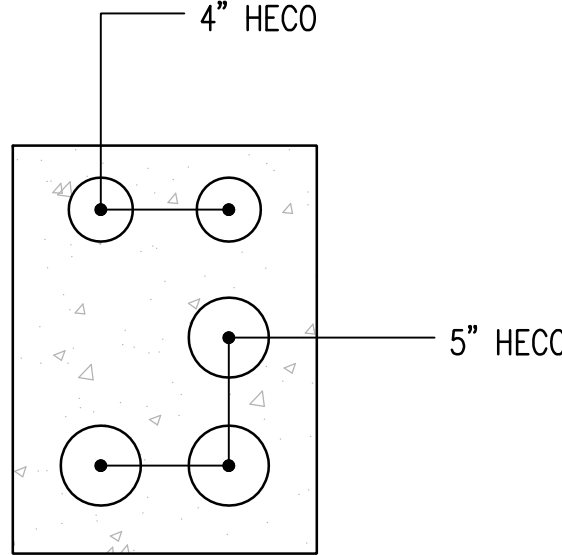
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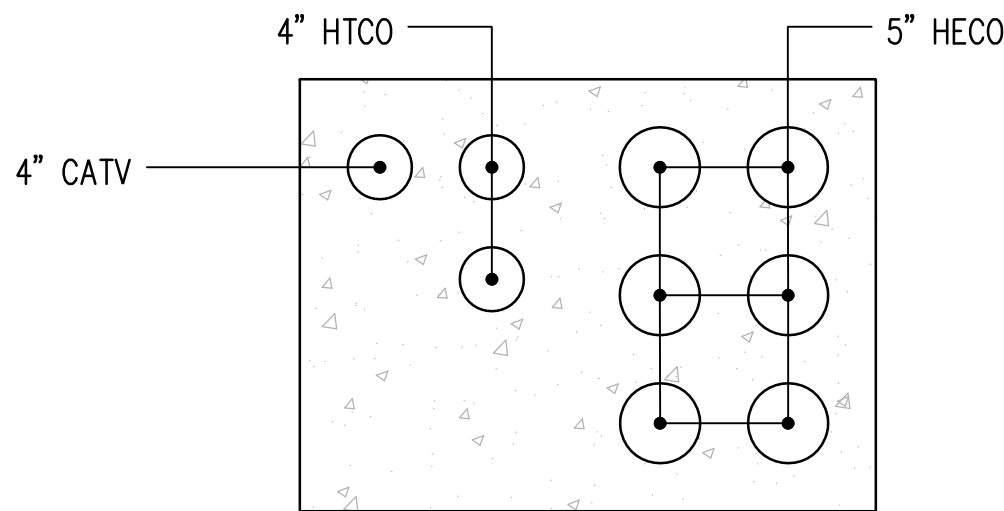
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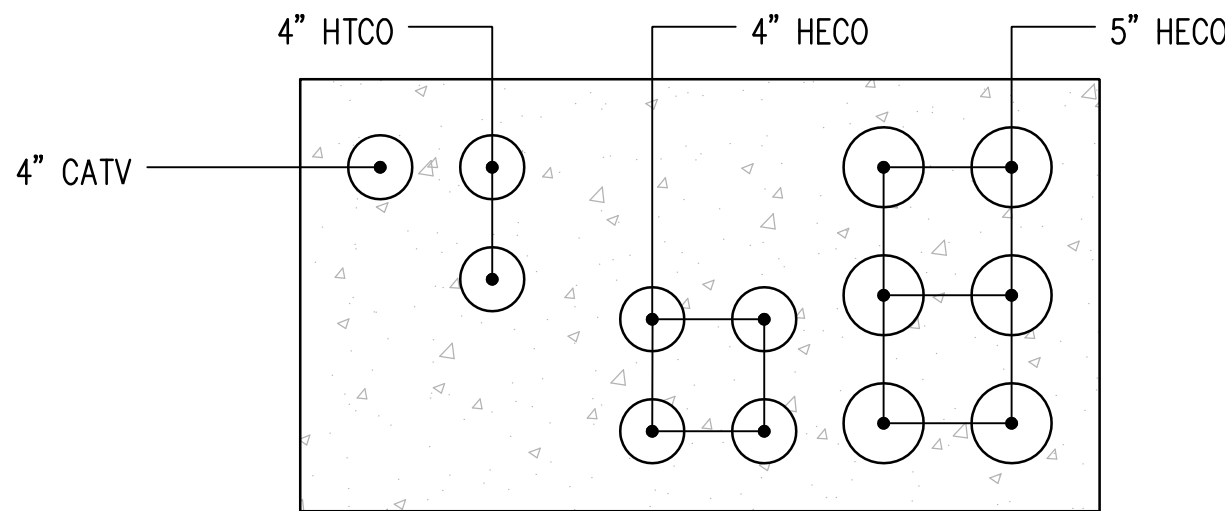
SECTION (G)



SECTION (H)



SECTION (I)



SECTION (J)

TYPICAL CONCRETE ENCASED DUCT SECTION DETAILS
NOT TO SCALE

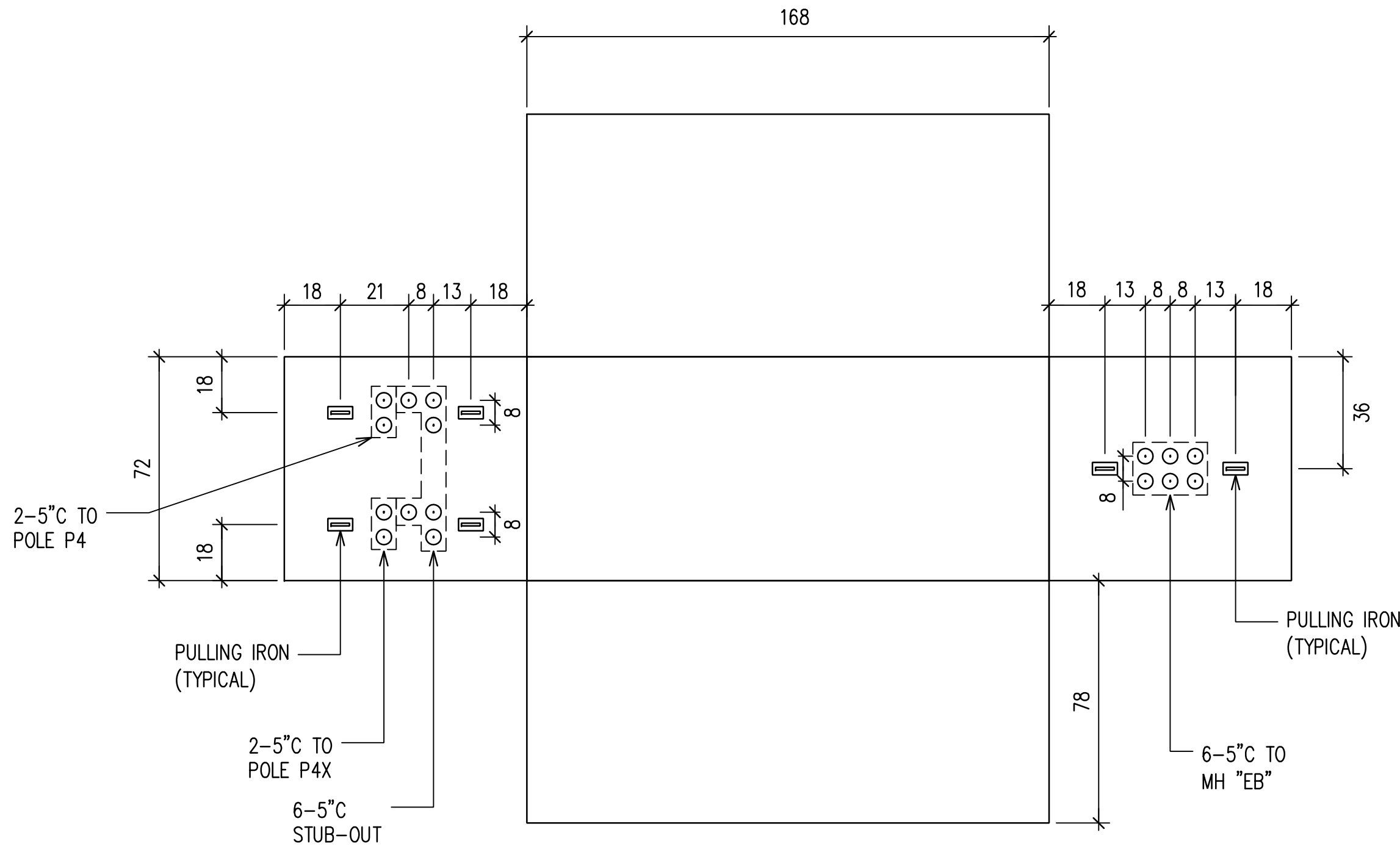
APPROVED BY
HAWAIIAN TELCOM
SPECTRUM OCEANIC
DATE
DATE

DRAWING REVIEW
Reviewed for Hawaiian Electric Company Facilities Only
Final Review By: _____
First Review: _____ Second Review: _____
Customer Installation Division
Hawaiian Electric
6138044
3131451
Hawaiian Electric's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on the Customer's behalf from the responsibility for engineering, design, materials and any other liability associated with this project including revisions made beyond the reviewed date.

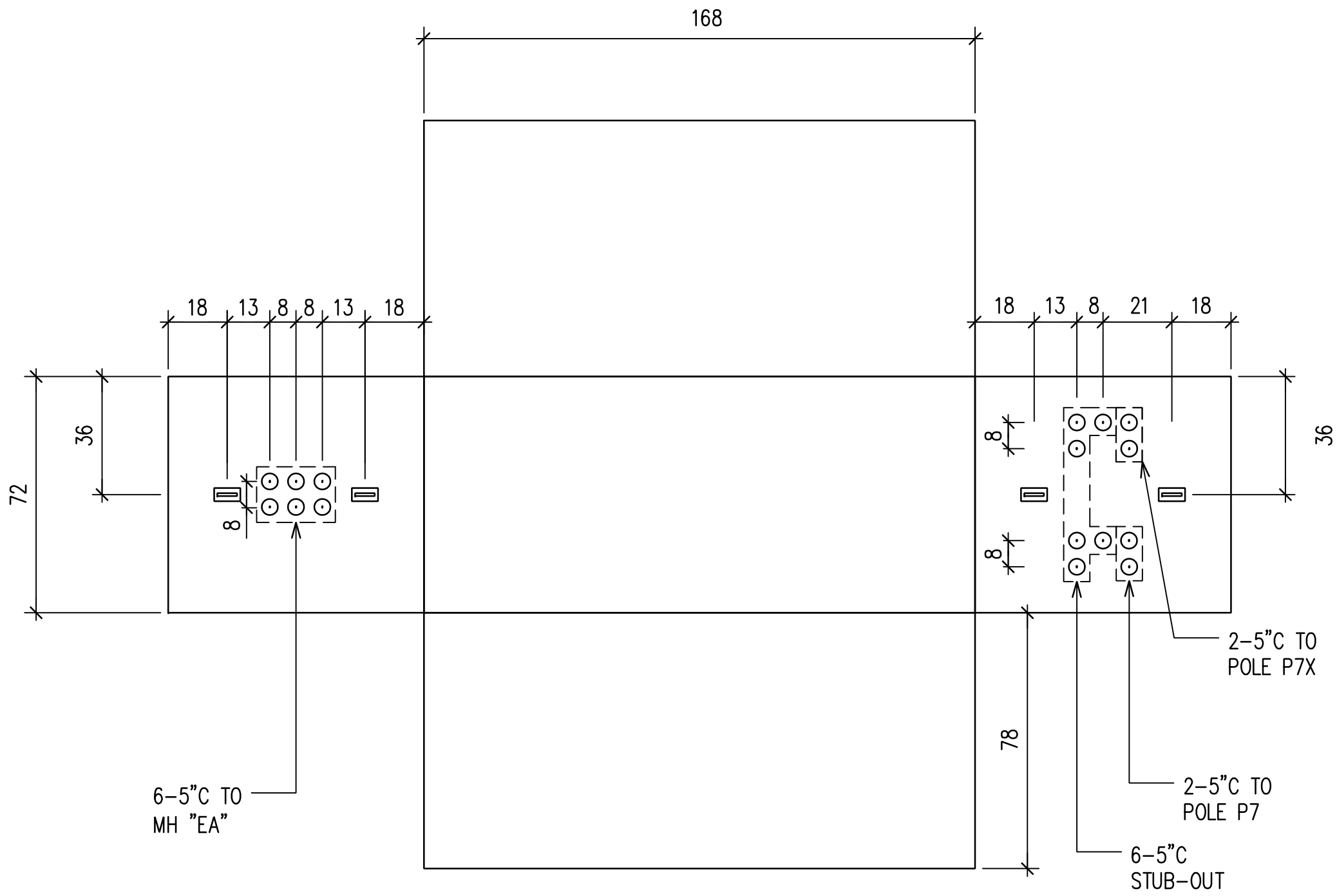
RONALD N. S. HO & ASSOCIATES, INC.
Electrical Engineers
DUSTIN Y. NAKAMOTO
LICENSED PROFESSIONAL ENGINEER
No. 14287-E
HAWAII, U.S.A.
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4/30/28
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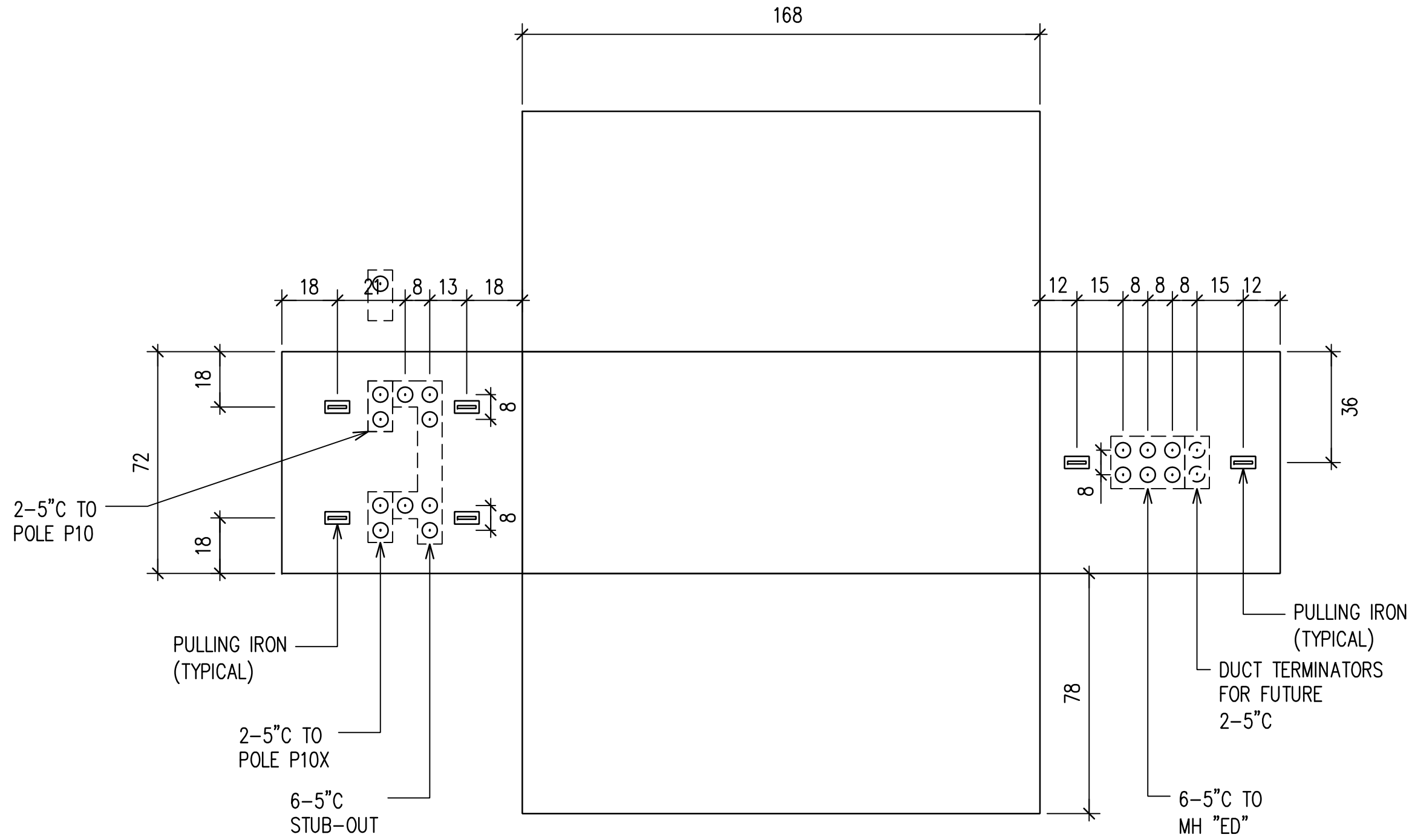
HAWAII COMMUNITY DEVELOPMENT AUTHORITY
STATE OF HAWAII
KALAELOA
DEVELOPMENT DISTRICT
SARATOGA AVE
ELECTRICAL UPGRADES
DUCT SECTIONS
ENGINEER: DN
DRAFTSMAN: CAD
CHECKED BY: SS
DATE: MARCH 2026
APPROVED: _____
EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY



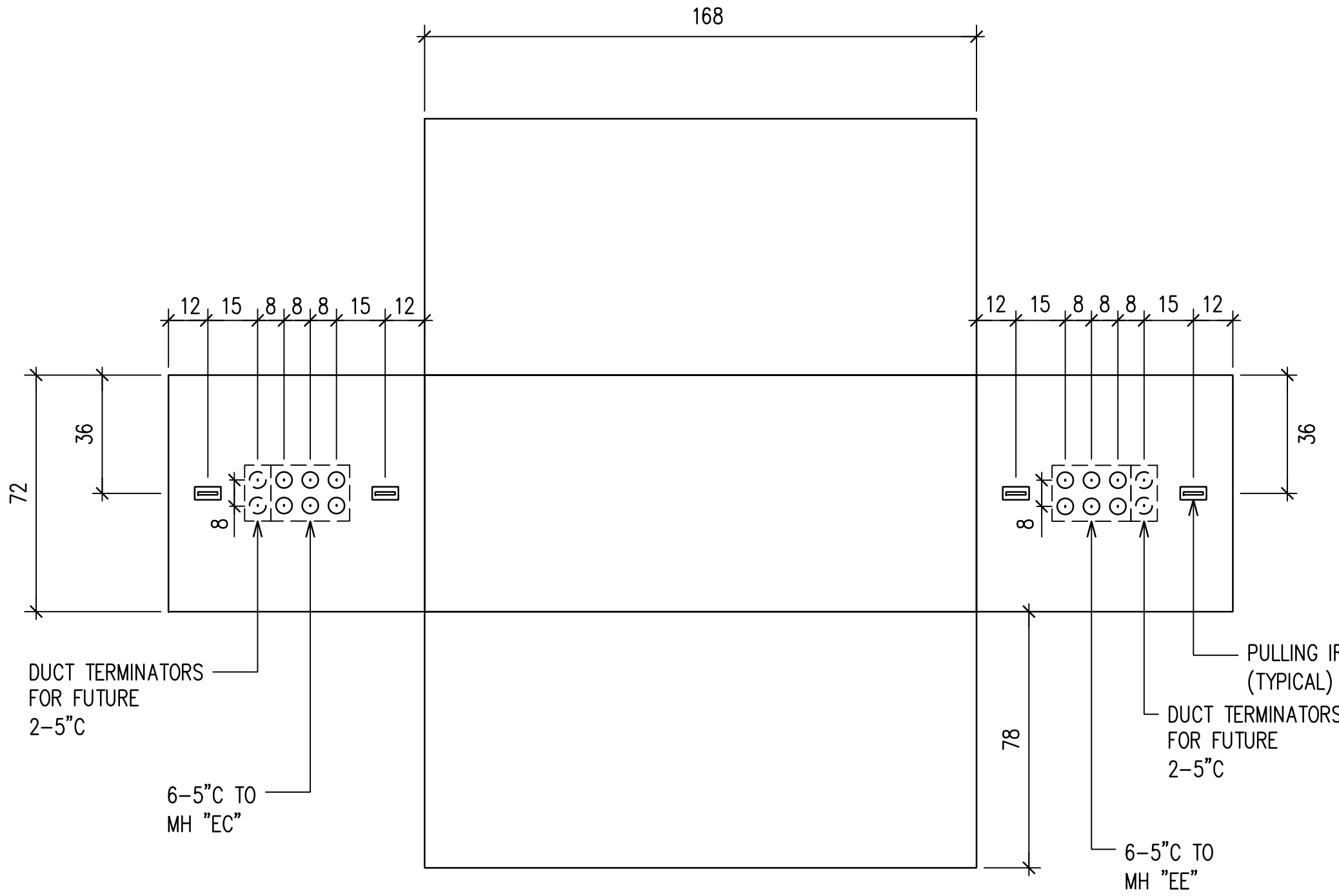
HECO 6' X 14' MANHOLE "EA"
NOT TO SCALE



HECO 6' X 14' MANHOLE "EB"
NOT TO SCALE



HECO 6' X 14' MANHOLE "EC"
NOT TO SCALE



HECO 6' X 14' MANHOLE "ED"
NOT TO SCALE

HANDHOLE/MANHOLE NOTES:

1. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.
2. HANDHOLE/MANHOLE SHOP DRAWINGS AND STRUCTURAL CALCULATIONS SHALL BE SUBMITTED TO UTILITY COMPANY FOR REVIEW AND APPROVAL PRIOR TO FABRICATION AND/OR CONSTRUCTION.
3. MANHOLES SHALL BE CONSTRUCTED WITH 12" MINIMUM AND 18" MAXIMUM NECK DIMENSION.
4. VERIFY ALL DIMENSIONS ON EXISTING HANDHOLES & MANHOLES.

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Customer Installation Division

Hawaiian Electric

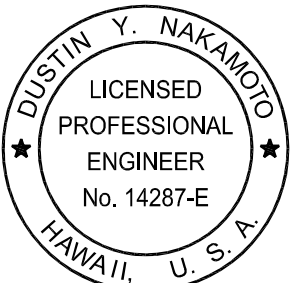
6138044

3131451

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REVISION	DATE	BRIEF	BY
HAWAII COMMUNITY DEVELOPMENT AUTHORITY STATE OF HAWAII KALAELOA DEVELOPMENT DISTRICT SARATOGA AVE ELECTRICAL UPGRADES HECO MANHOLE BUTTERFLY DIAGRAMS 1			
ENGINEER: <u>DN</u>	CHECKED BY: <u>SS</u>		
DRAFTSMAN: <u>CAD</u>	DATE: <u>MARCH 2026</u>		
APPROVED: _____			
EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY			

RONALD N. S. HO & ASSOCIATES, INC.
Electrical Engineers

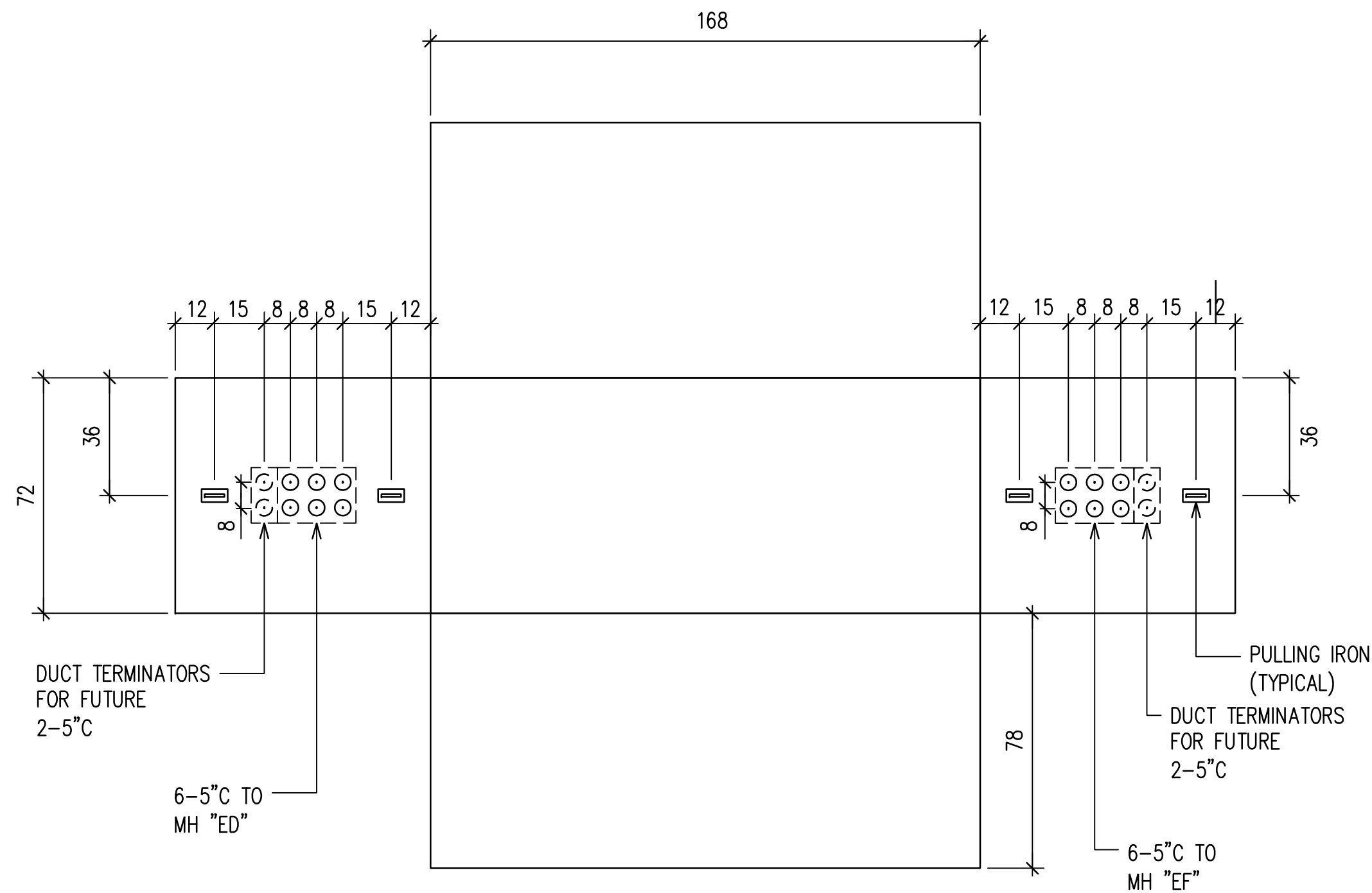


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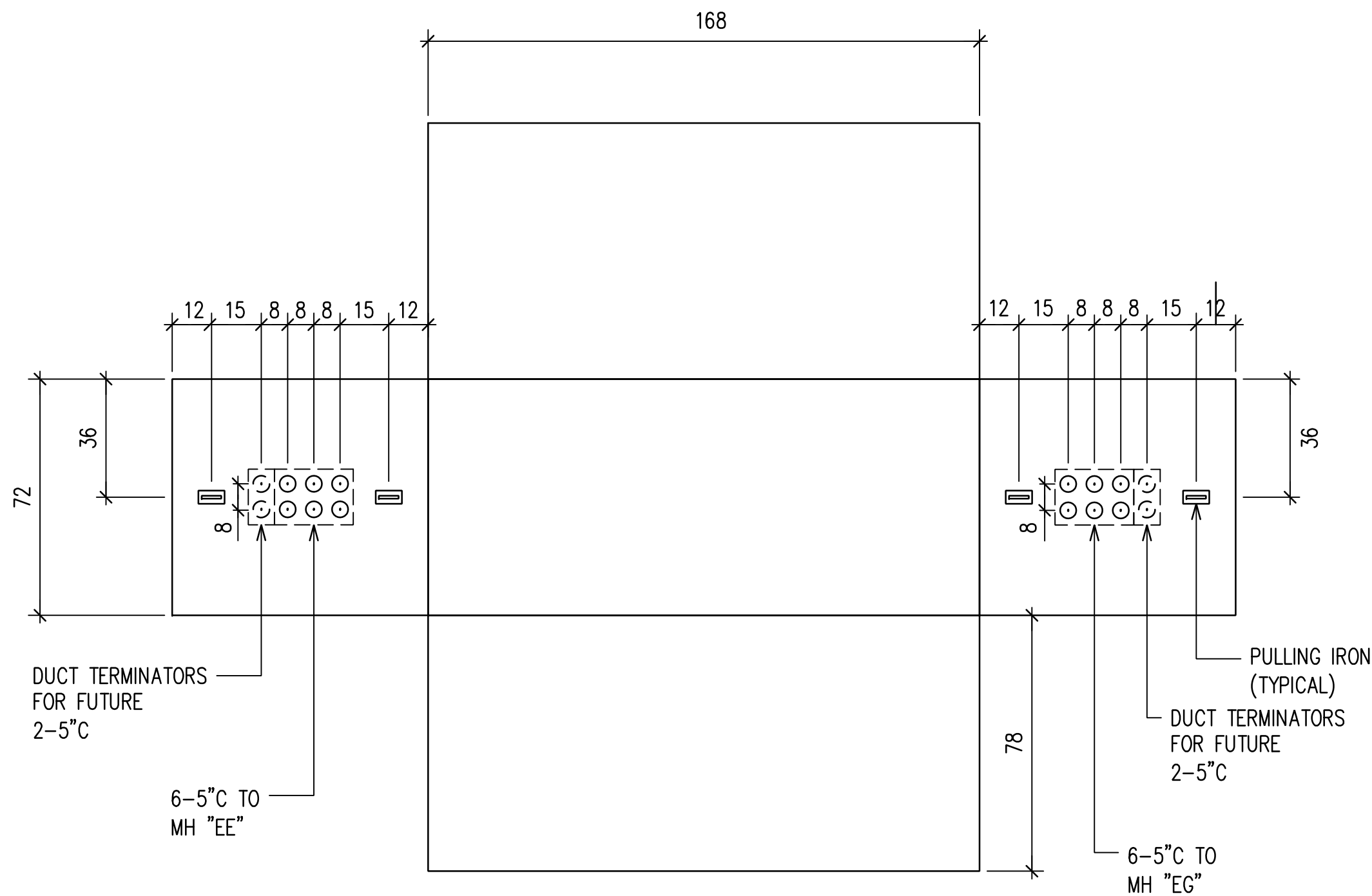
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EXPIRATION DATE OF THE LICENSE: 04/30/28

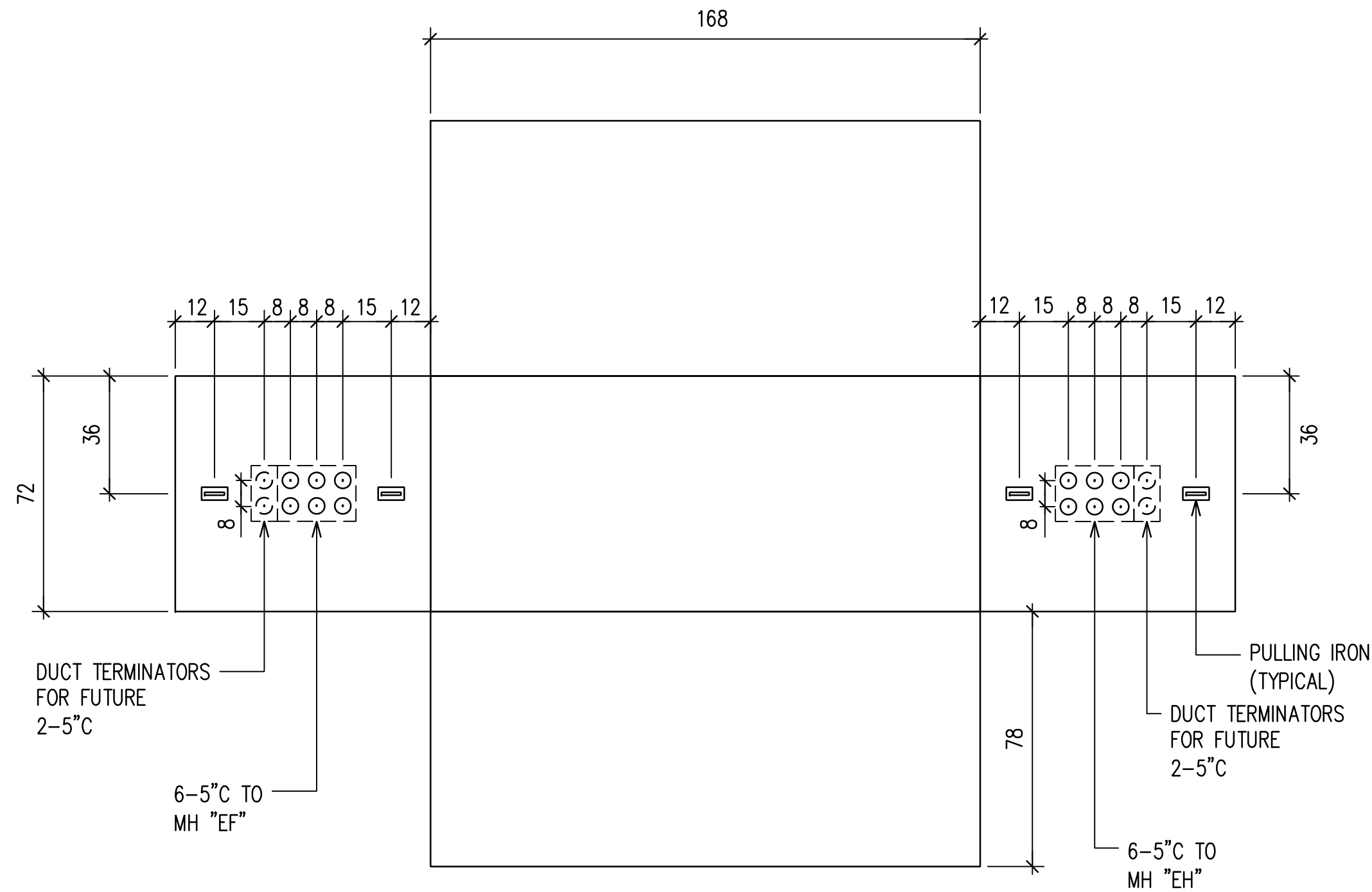
FILE	POCKET	FOLDER	NO.



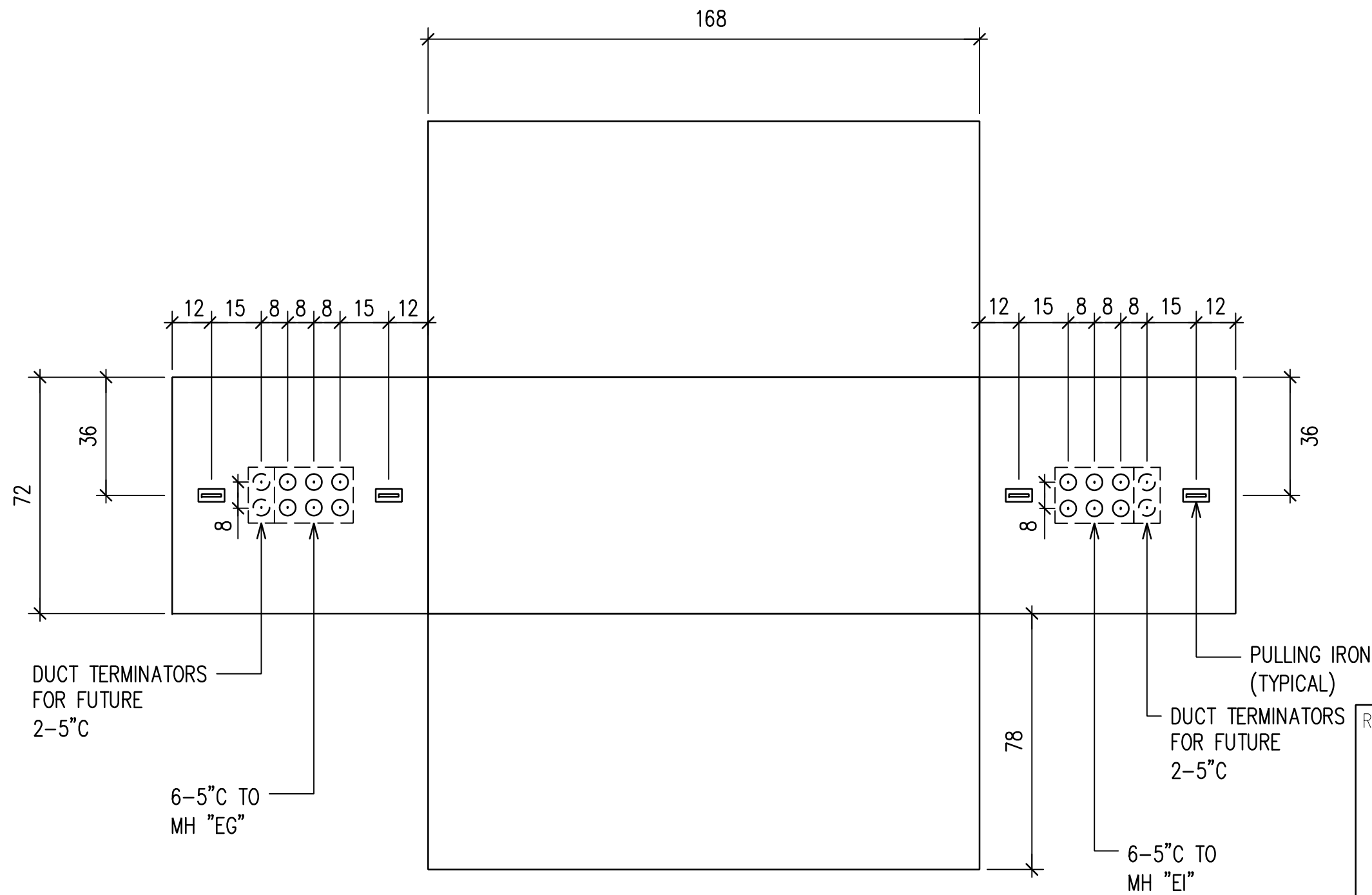
HECO 6' X 14' MANHOLE "EE"
NOT TO SCALE



HECO 6' X 14' MANHOLE "EF"
NOT TO SCALE



HECO 6' X 14' MANHOLE "EG"
NOT TO SCALE



HECO 6' X 14' MANHOLE "EH"
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Customer Installation Division		Hawaiian Electric	
6138044		3131451	
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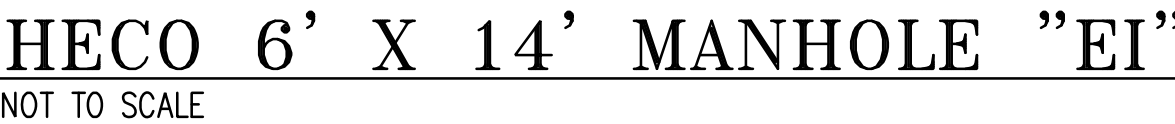
REVISION	DATE	BRIEF	BY
HAWAII COMMUNITY DEVELOPMENT AUTHORITY STATE OF HAWAII KALAELOA DEVELOPMENT DISTRICT SARATOGA AVE ELECTRICAL UPGRADES HECO MANHOLE BUTTERFLY DIAGRAMS 2			
ENGINEER: DN	CAD	CHECKED BY: SS	DATE: MARCH 2026
APPROVED: _____			
EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY			

RONALD N. S. HO & ASSOCIATES, INC.
Electrical Engineers

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		BY

HAWAII COMMUNITY DEVELOPMENT AUTHORITY

STATE OF HAWAII

KALAELOA

DEVELOPMENT DISTRICT

SARATOGA AVE

ELECTRICAL UPGRADES

HECO MANHOLE

BUTTERFLY DIAGRAMS 3

ENGINEER: <u>DN</u> DRAFTSMAN: <u>CAD</u> APPROVED: _____	CHECKED BY: <u>SS</u> DATE: <u>MARCH 2026</u>
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EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY

RONALD N. S. HO & ASSOCIATES, INC.
Electrical Engineers

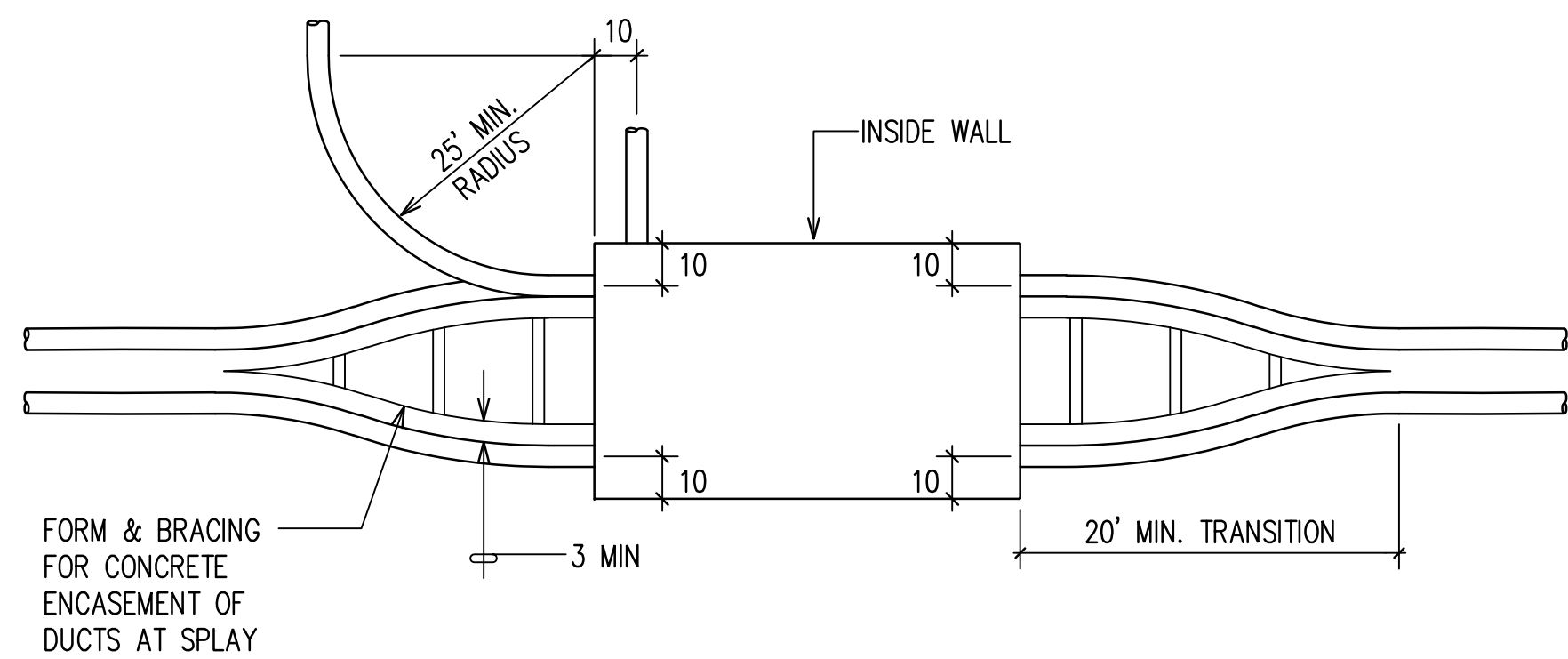
DUSTIN Y. NAKAMOTO
★ ★
LICENSED
PROFESSIONAL
ENGINEER
No. 14287-E
★ ★
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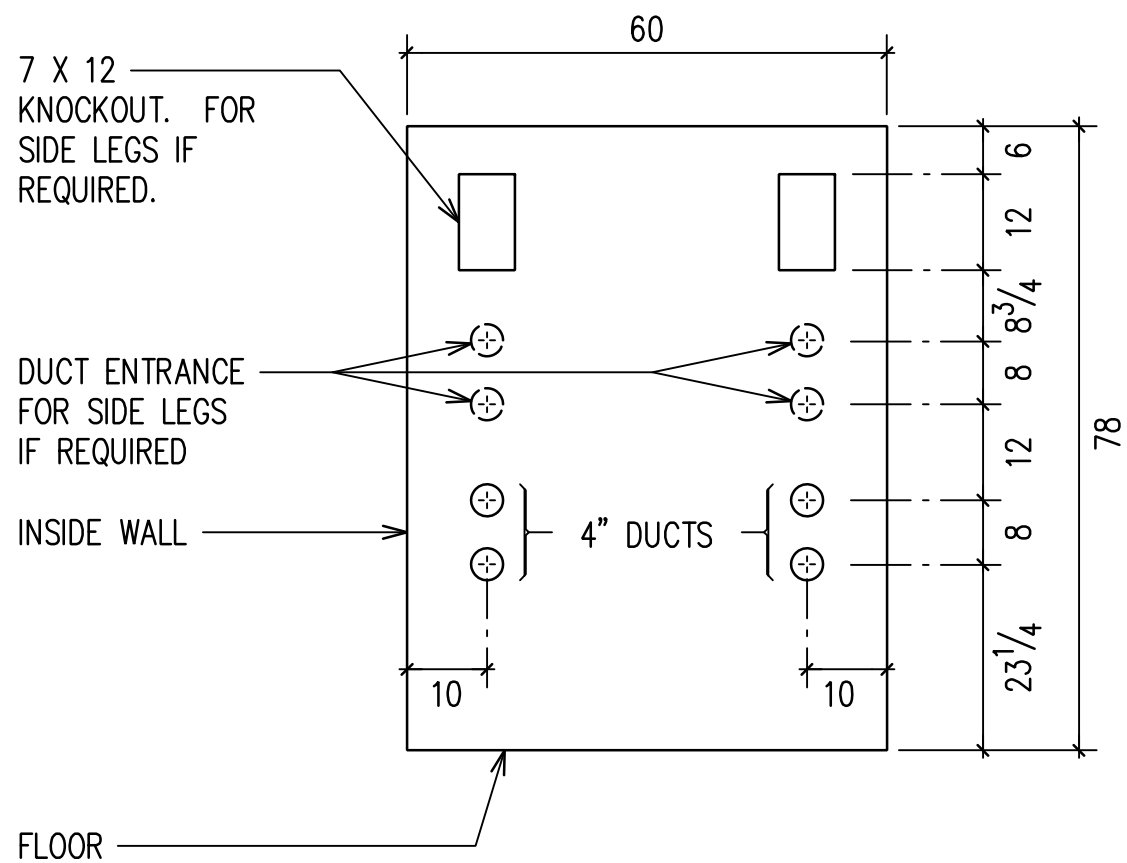
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08/30/28
EXPIRATION DATE OF THE LICENSE

FILE	POCKET	FOLDER	NO.

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TYPICAL DUCT TRANSITION TO SPLAY DUCTS AT MANHOLE/HANDHOLE



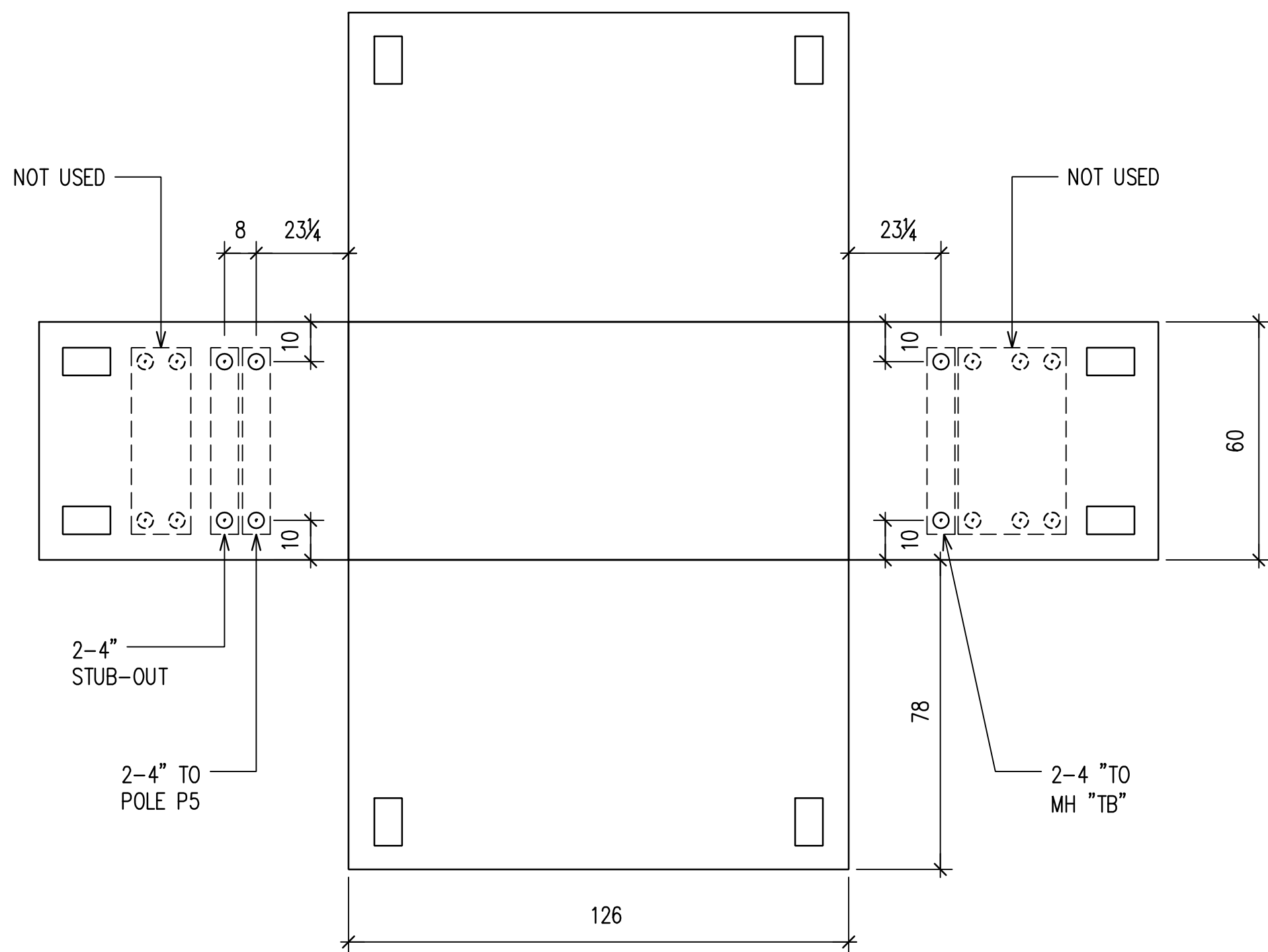
TYPICAL END WALL SECTION

HANDHOLE/MANHOLE NOTES:

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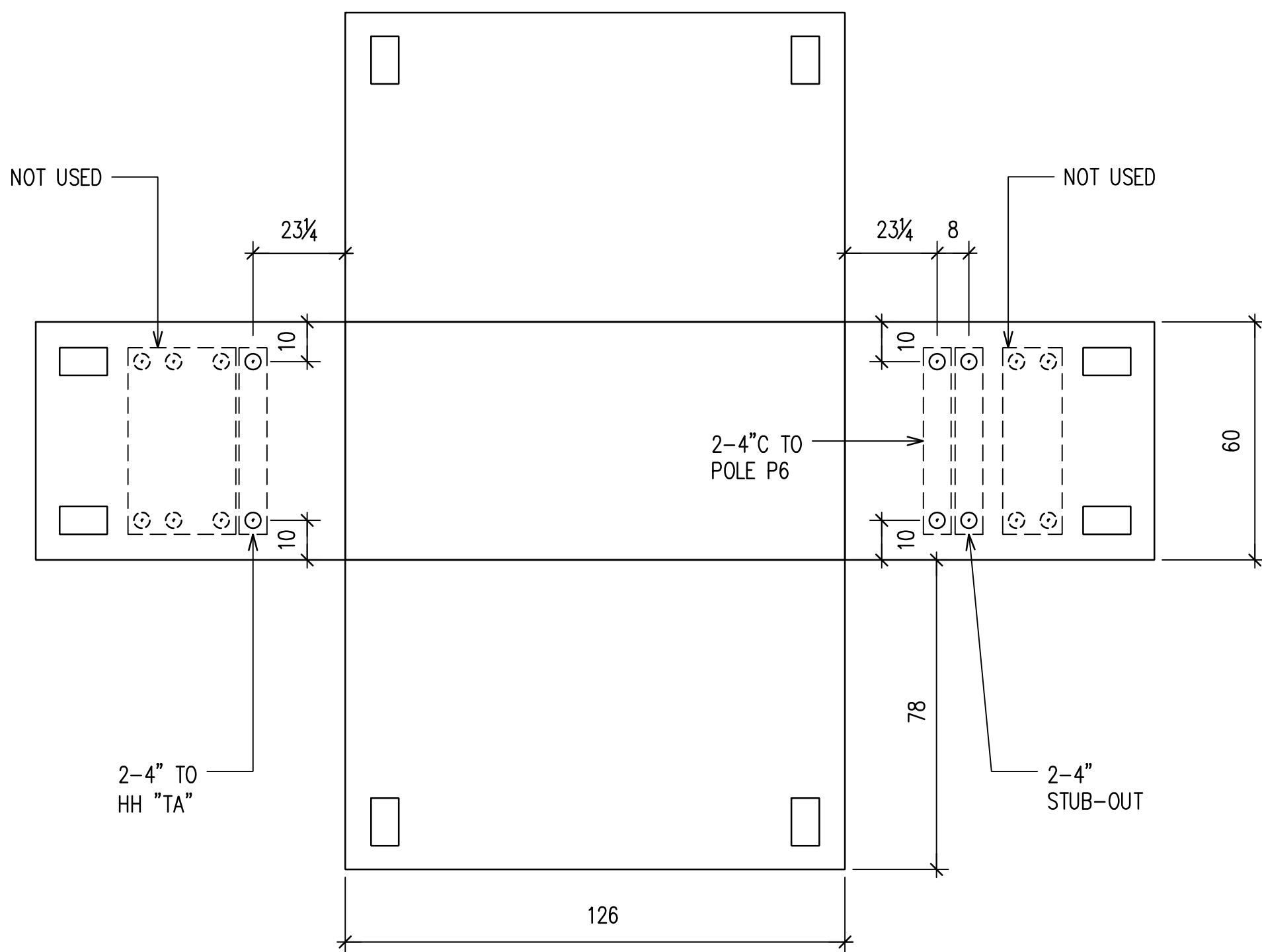
TYPICAL HTCO MANHOLE/HANDHOLE DETAILS

NOT TO SCALE



HTCO 5' X 10' MANHOLE "TA"

NOT TO SCALE



HTCO 5' X 10' MANHOLE "TB"

NOT TO SCALE

APPROVED BY
HAWAIIAN TELCOM
DATE

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Electrical Engineers

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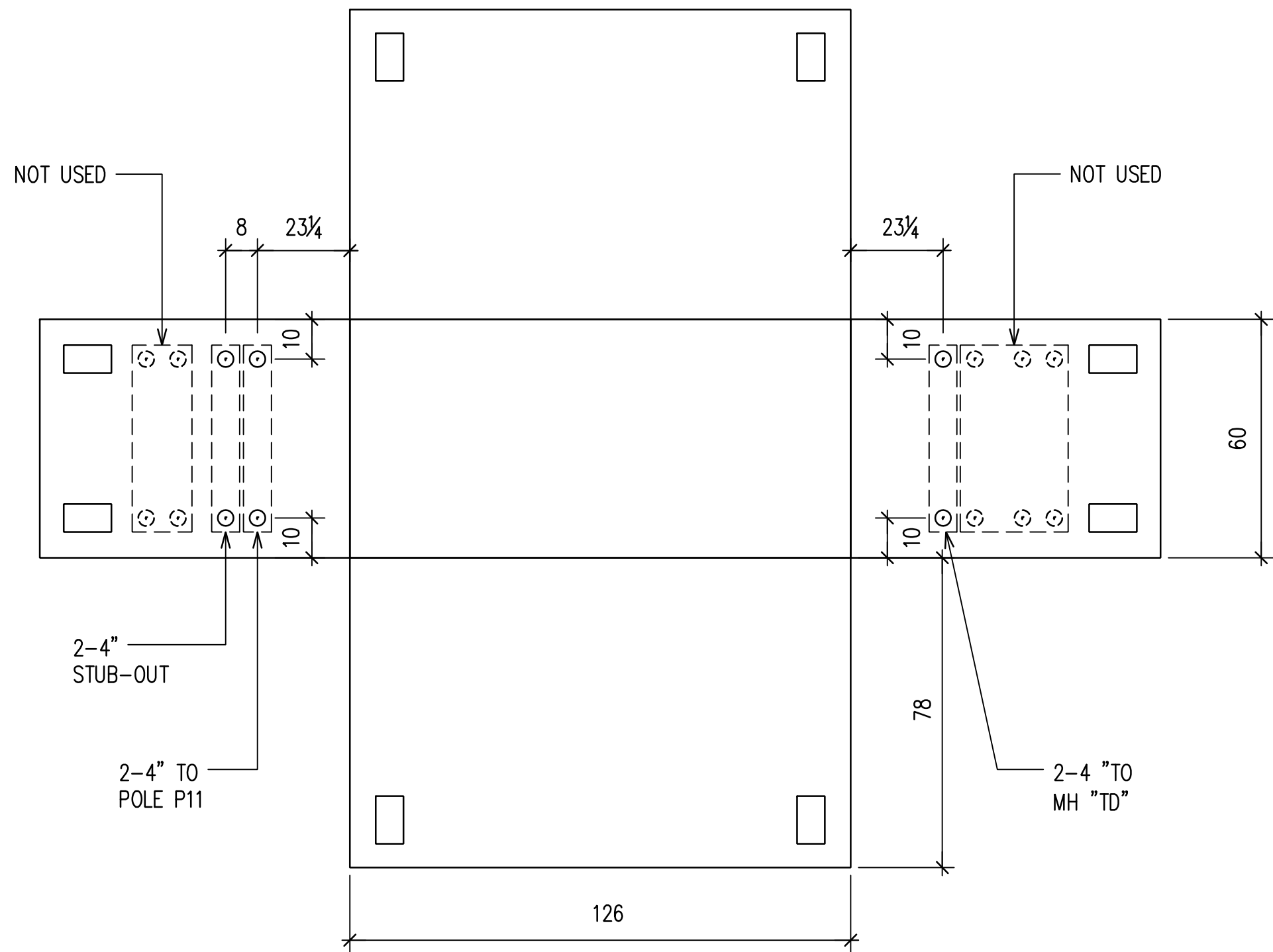
4/30/28
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STATE OF HAWAII

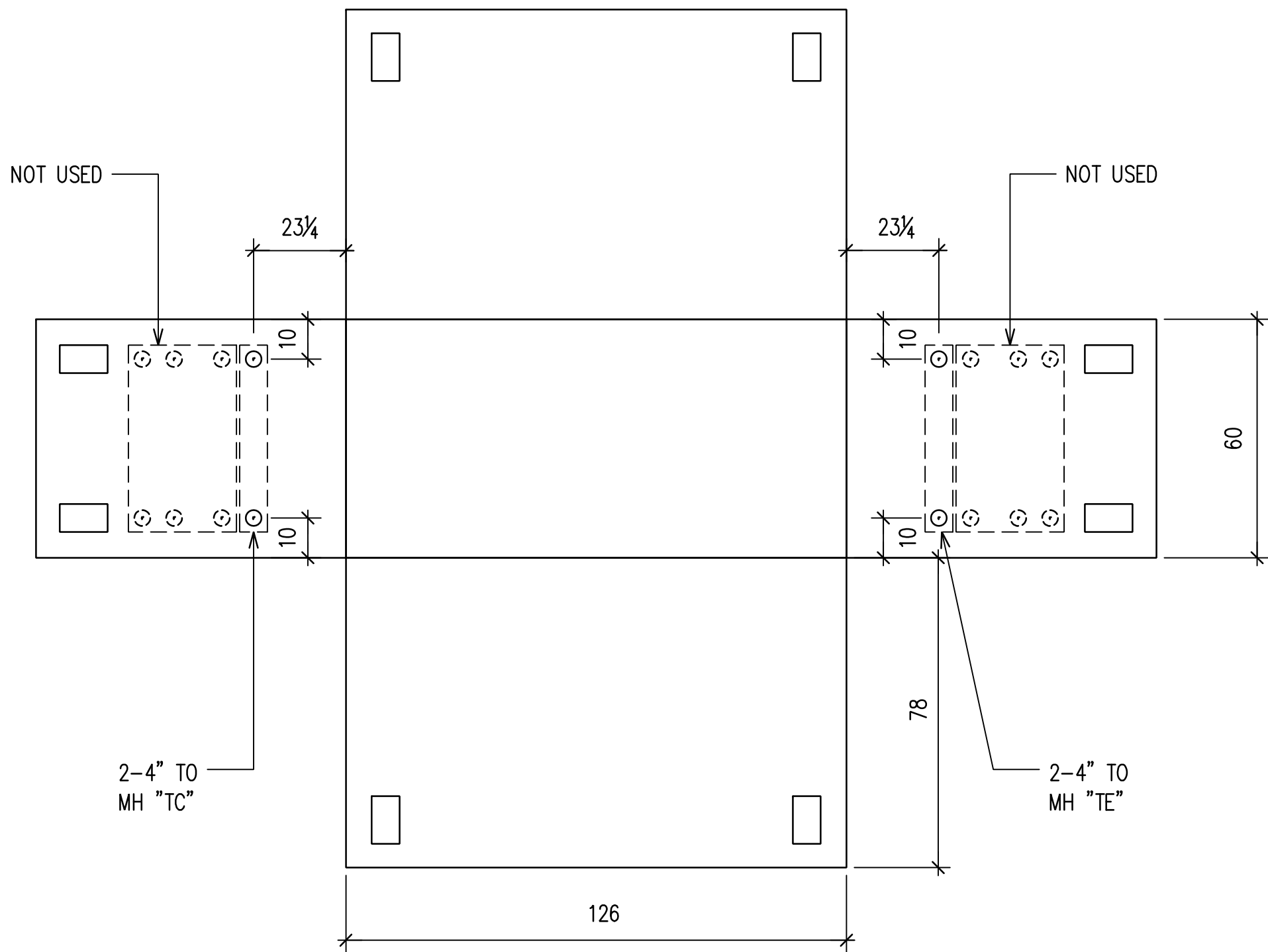
KALAELOA
DEVELOPMENT DISTRICT
SARATOGA AVE
ELECTRICAL UPGRADES
HTCO MANHOLE
BUTTERFLY DIAGRAMS 1

ENGINEER: DN
DRAFTSMAN: CAD
CHECKED BY: SS
DATE: MARCH 2026

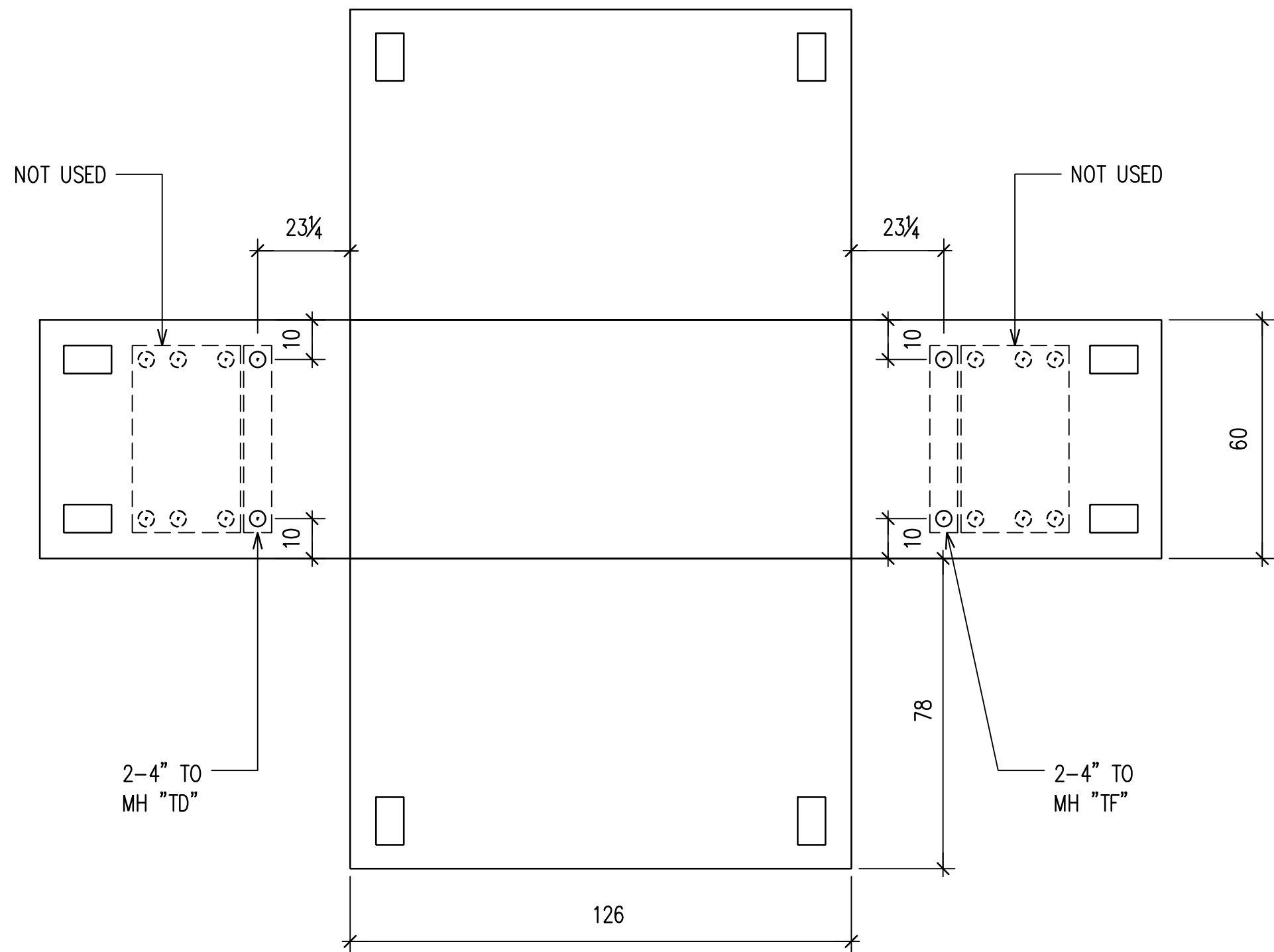
EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY



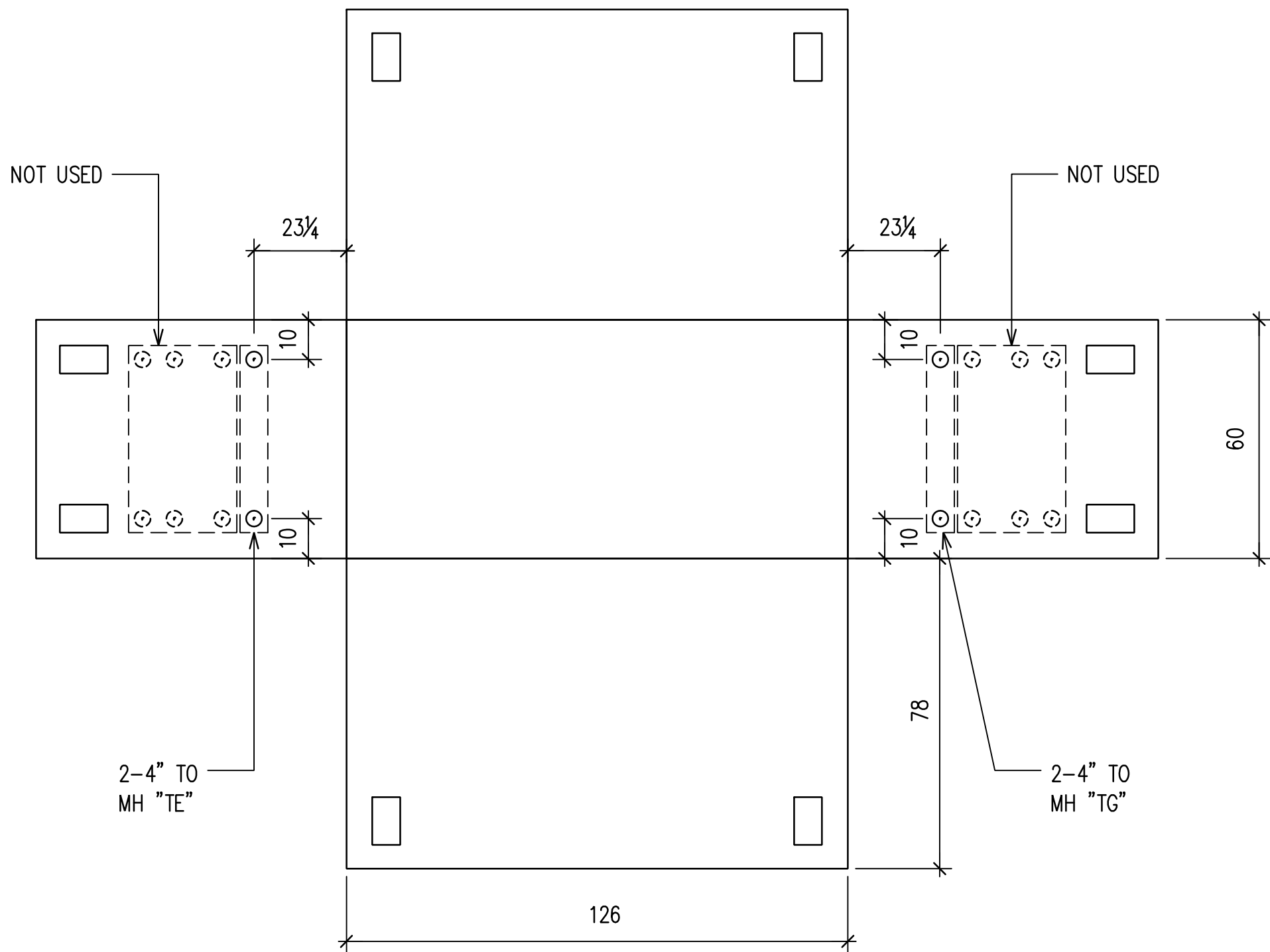
HTCO 5' X 10'-6" MANHOLE "TC"
NOT TO SCALE



HTCO 5' X 10'-6" MANHOLE "TD"
NOT TO SCALE



HTCO 5' X 10'-6" MANHOLE "TE"
NOT TO SCALE



HTCO 5' X 10'-6" MANHOLE "TF"
NOT TO SCALE

- HANDHOLE/MANHOLE NOTES:**
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APPROVED BY
HAWAIIAN TELCOM _____ DATE _____

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Electrical Engineers

DUSTIN Y. NAKAMOTO

LICENSED PROFESSIONAL ENGINEER

No. 14287-E

HAWAII, U.S.A.

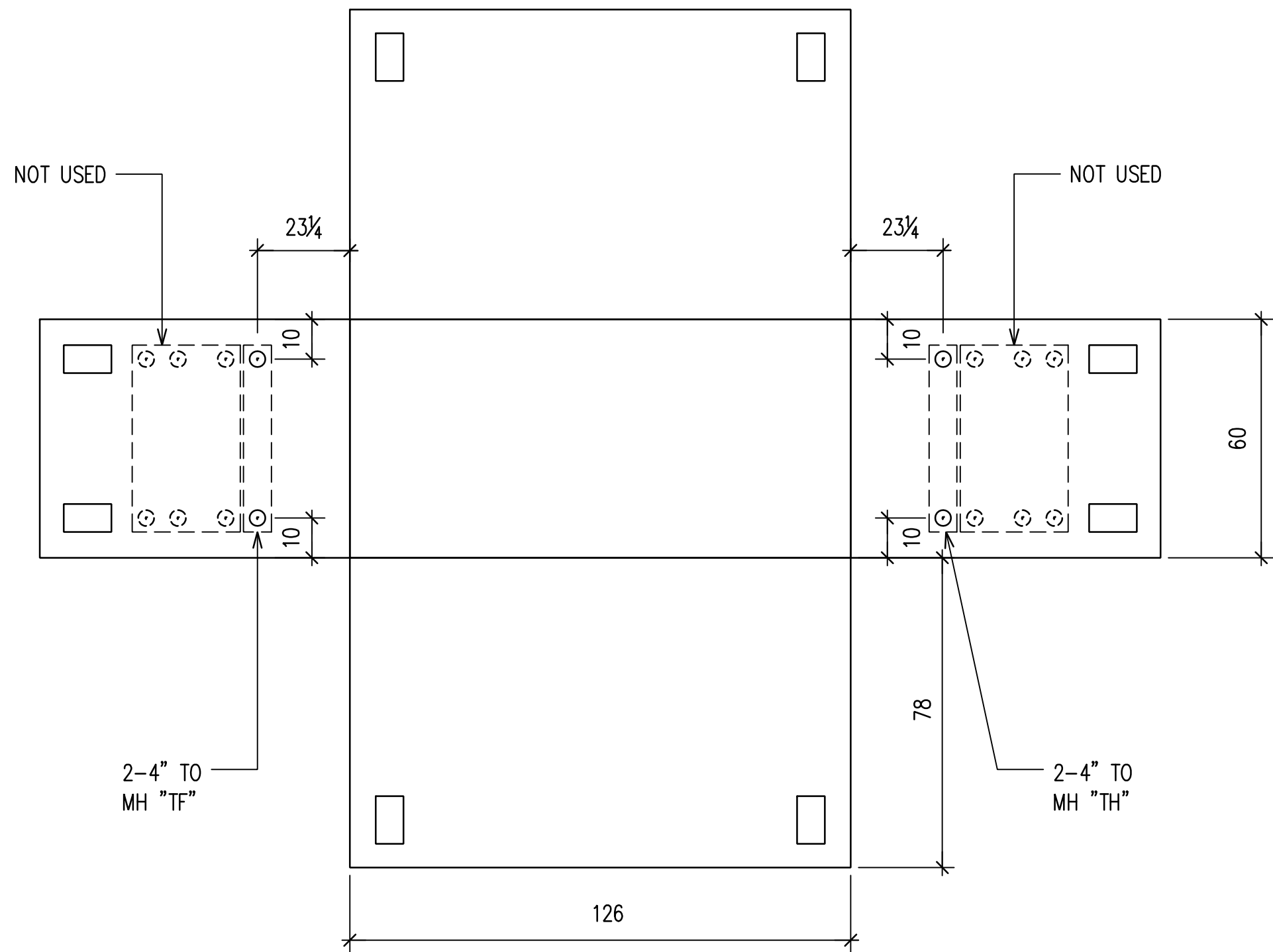
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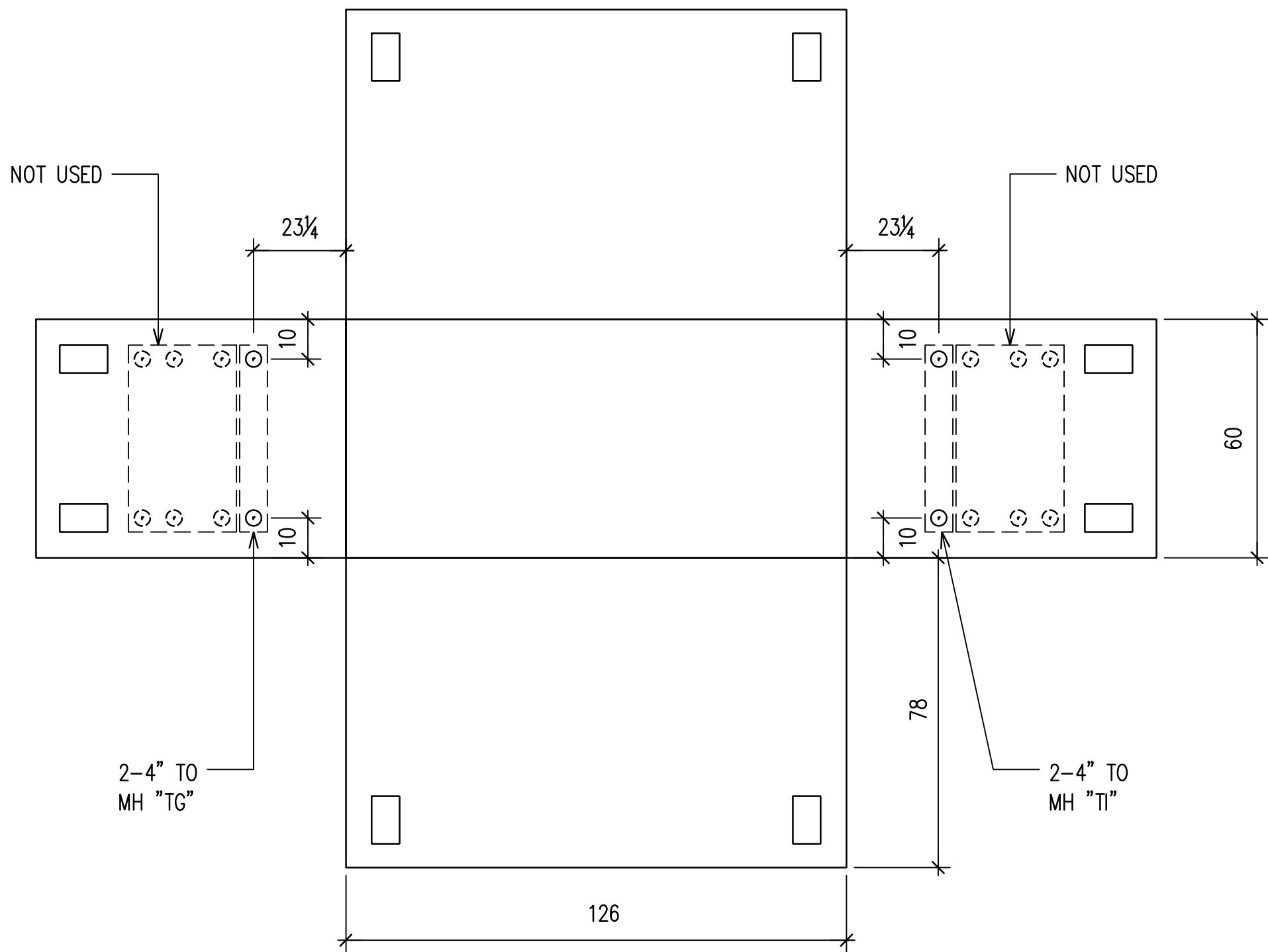
REVISION	DATE	BRIEF	BY
HAWAII COMMUNITY DEVELOPMENT AUTHORITY STATE OF HAWAII KALAELOA DEVELOPMENT DISTRICT SARATOGA AVE ELECTRICAL UPGRADES HTCO MANHOLE BUTTERFLY DIAGRAMS 2			
ENGINEER: <u>DN</u>		CHECKED BY: <u>SS</u>	
DRAFTSMAN: <u>CAD</u>		DATE: <u>MARCH 2026</u>	
APPROVED: _____			
EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY			

FILE	POCKET	FOLDER	NO.



HTCO 5' X 10'-6" MANHOLE "TG"

NOT TO SCALE

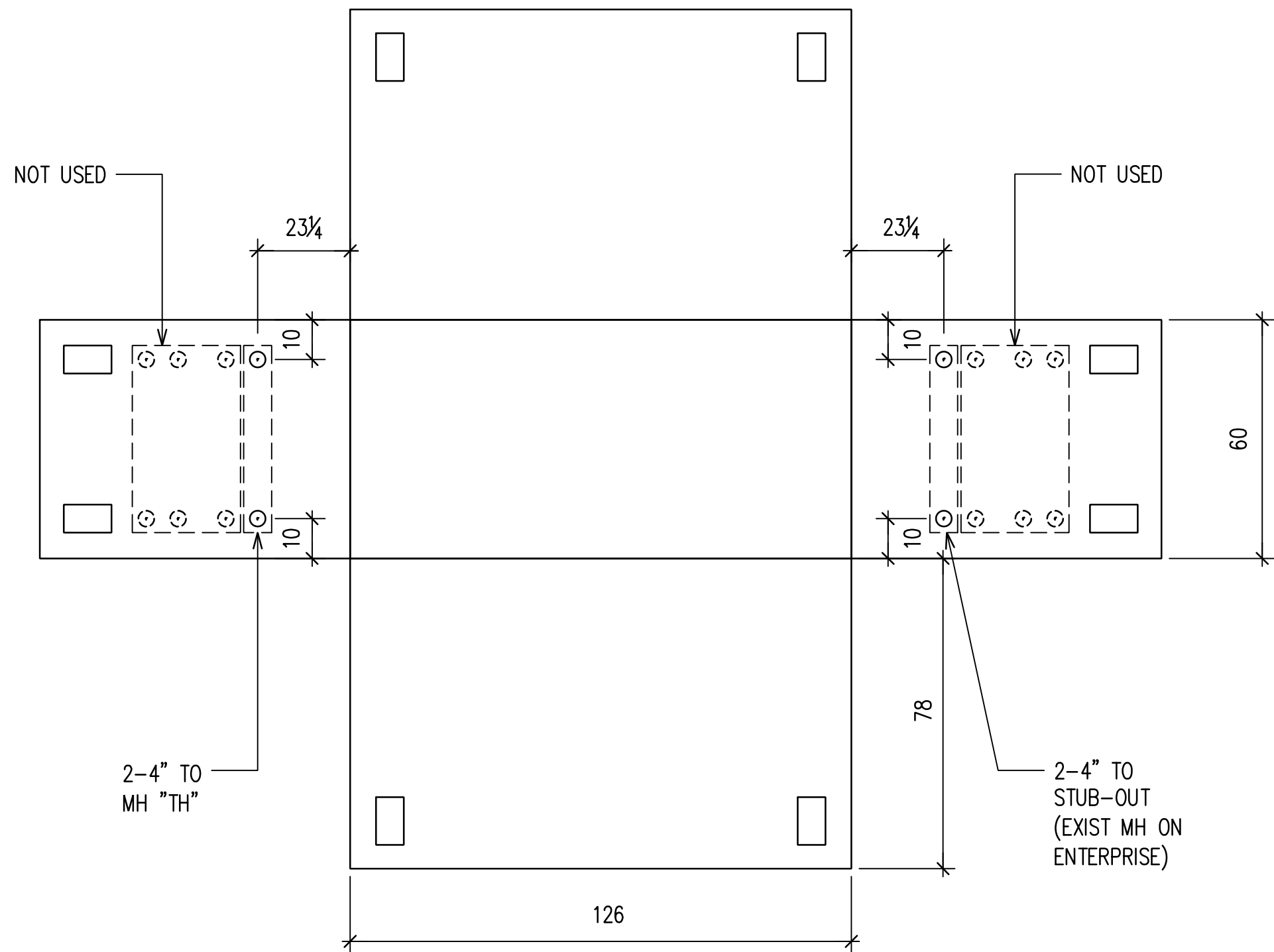


HTCO 5' X 10'-6" MANHOLE "TH"

NOT TO SCALE

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HTCO 5' X 10'-6" MANHOLE "TI"

NOT TO SCALE

APPROVED BY

HAWAIIAN TELCOM

DATE

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Electrical Engineers



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HAWAII COMMUNITY DEVELOPMENT AUTHORITY
STATE OF HAWAII

KALAELOA
DEVELOPMENT DISTRICT
SARATOGA AVE
ELECTRICAL UPGRADES

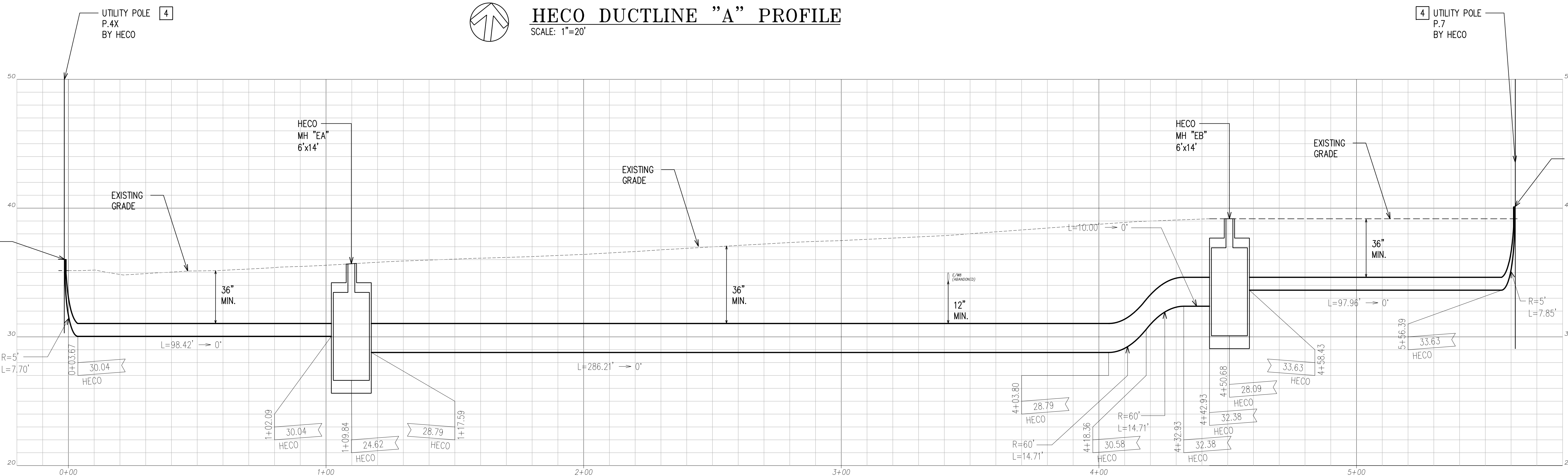
HTCO MANHOLE
BUTTERFLY DIAGRAMS 3

ENGINEER: DN CHECKED BY: SS
DRAFTSMAN: CAD DATE: MARCH 2026

APPROVED:

EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY

FILE	POCKET	FOLDER	NO.



SCALE: 1"=20'



SCALE: HORIZ. 1"=20'

VERT. 1"=4

4 COORDINATE WITH RESPECTIVE
UTILITY COMPANY FOR POLE
BURIAL DEPTH.

CURVE DATA						
ID	Δ	$\Delta / 2$	RADIUS	T	C	Lc
①	24°30'20"	12°15'10.2"	60.00'	13.03'	25.47'	25.66'
②	24°26'58"	12°13'29.0"	60.00'	13.00'	25.41'	25.60'

APPROVED BY _____

CHIEF, CIVIL ENGINEERING BRANCH, DPP DATE
(FOR CONSTRUCTION WITHIN CITY R/W ONLY)

DRAWING REVIEW

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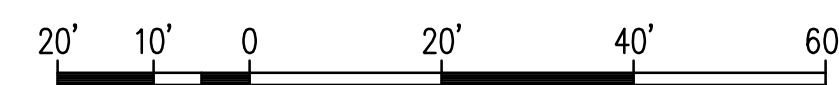
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First Review: _____ Second Review: _____

Customer Installation Division

6138044
3131451

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SCALE: 1"=20'



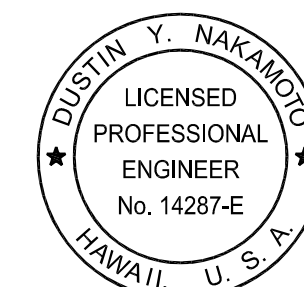
SCALE: 1"=4'

GRAPHIC SCALES

1. SEE CIVIL DRAWINGS FOR ALL CONCRETE JACKETING, CLSM INSTALLATION, RELOCATION, REMOVAL & CAPPING OF WET UTILITIES.
2. AT UTILITY CROSSINGS WHERE PROPER COMPACTION UNDER A WATER MAIN IS DIFFICULT TO ACHIEVE, PROVIDE CLSM IN PLACE OF BACKFILL MATERIAL AND PIPE CUSHION MATERIAL.

- 3 RISER UP A MINIMUM OF 6" ABOVE FINISHED GRADE PER RESPECTIVE UTILITY COMPANY REQUIREMENTS.

RONALD N. S. HO & ASSOCIATES, INC.
Electrical Engineers



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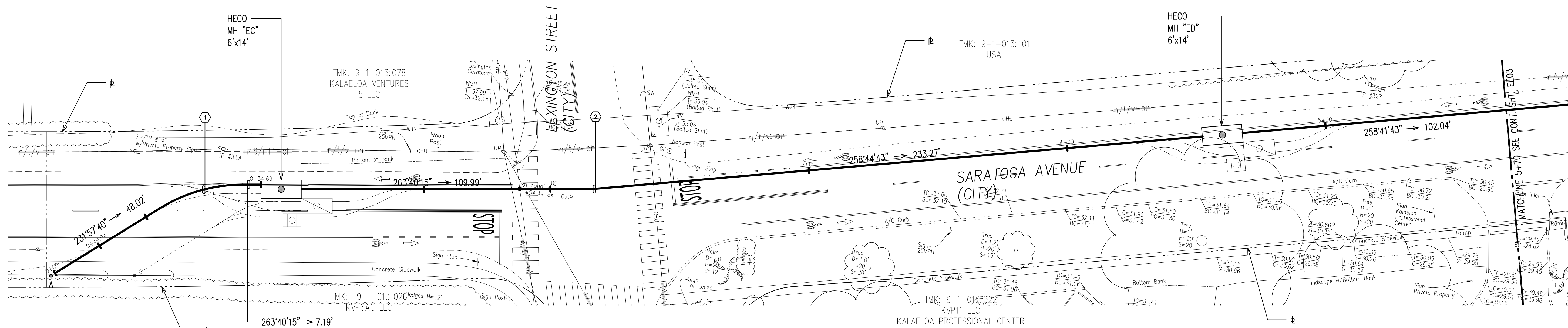
HAWAII COMMUNITY DEVELOPMENT AUTHORITY
STATE OF HAWAII

KALAELOA
DEVELOPMENT DISTRICT
SARATOGA AVE
ELECTRICAL UPGRADES
HECO DUCTLINE A PROFILE

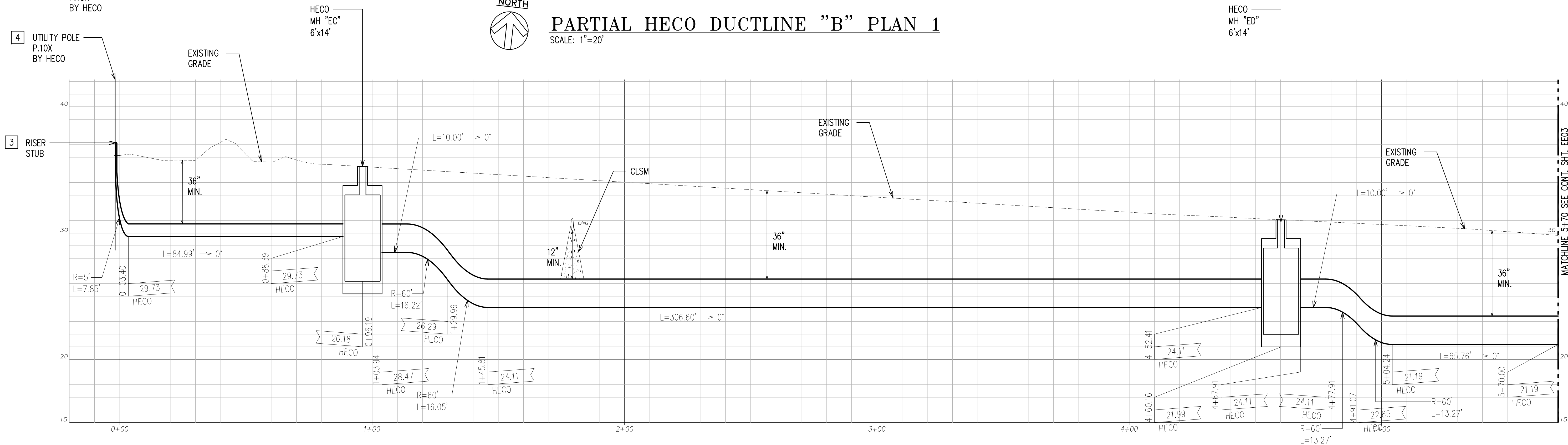
ENGINEER: DN CHECKED BY: SS
DRAFTSMAN: CAD DATE: MARCH 2026

APPROVED:

FILE	POCKET	FOLDER	NO.



PARTIAL HECO DUCTLINE "B" PLAN 1
SCALE: 1"=20'



PARTIAL HECO DUCTLINE "B" PROFILE 1
SCALE: HORIZ. 1"=20'
VERT. 1"=4'

NOTES:

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HECO DUCTLINE "B"

CURVE DATA						
ID	Δ	Δ / 2	RADIUS	T	C	Lc
①	31°42'35"	15°51'17.6"	60.00'	17.04'	32.78'	33.21'
②	4°55'32"	2°27'46.0"	60.00'	2.58'	5.16'	5.16'

NOTES CONTINUED:

- COORDINATE WITH RESPECTIVE UTILITY COMPANY FOR POLE BURIAL DEPTH.

APPROVED BY

CHIEF, CIVIL ENGINEERING BRANCH, DPP
(FOR CONSTRUCTION WITHIN CITY R/W ONLY)

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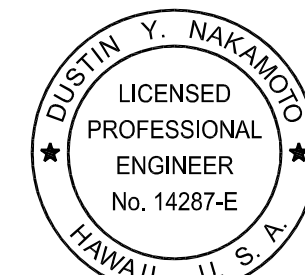
SCALE: 1"=20'



SCALE: 1"=4'

GRAPHIC SCALES

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HAWAII COMMUNITY DEVELOPMENT AUTHORITY
STATE OF HAWAII

KALAELOA
DEVELOPMENT DISTRICT
SARATOGA AVE
ELECTRICAL UPGRADES
PARTIAL HECO DUCTLINE B
PLAN AND PROFILE 1

ENGINEER: **DN** CHECKED BY: **SS**
DRAFTSMAN: **CAD** DATE: **MARCH 2026**

APPROVED: _____

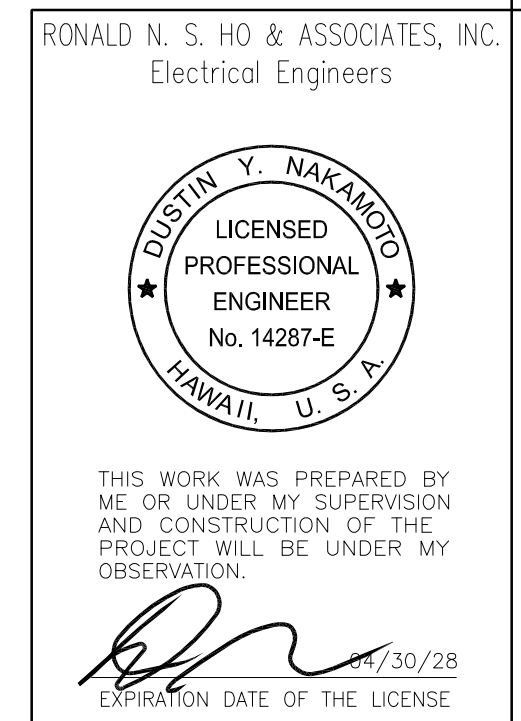
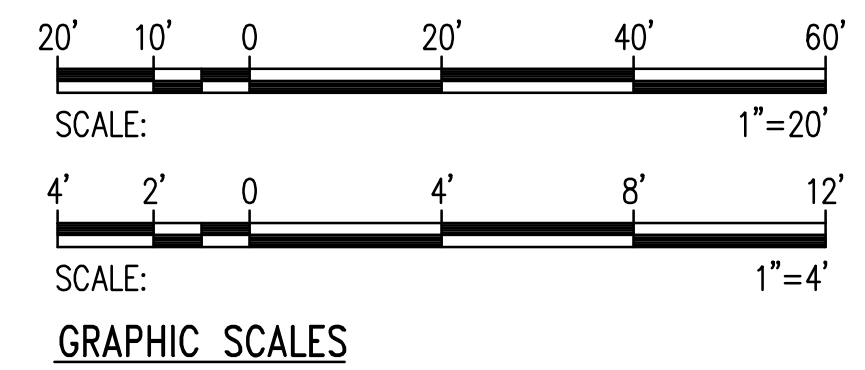
EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY

SCALE: HORIZ. 1"=20'
VERT. 1"=4'

2. AT UTILITY CROSSINGS WHERE PROPER COMPACTION UNDER A WATER MAIN IS DIFFICULT TO ACHIEVE, PROVIDE CLSM IN PLACE OF BACKFILL MATERIAL AND PIPE CUSHION MATERIAL.

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DEVELOPMENT DISTRICT

SARATOGA AVE

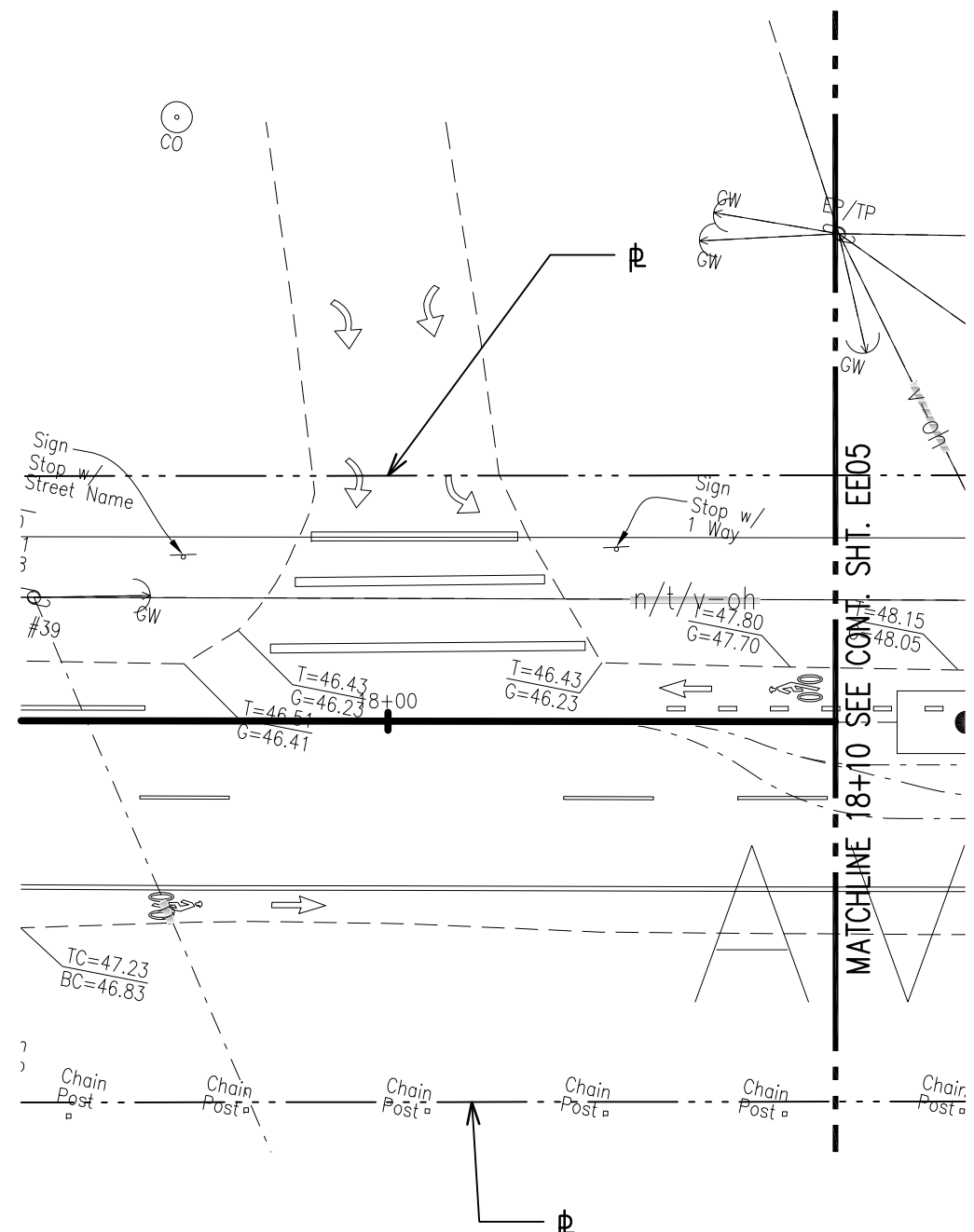
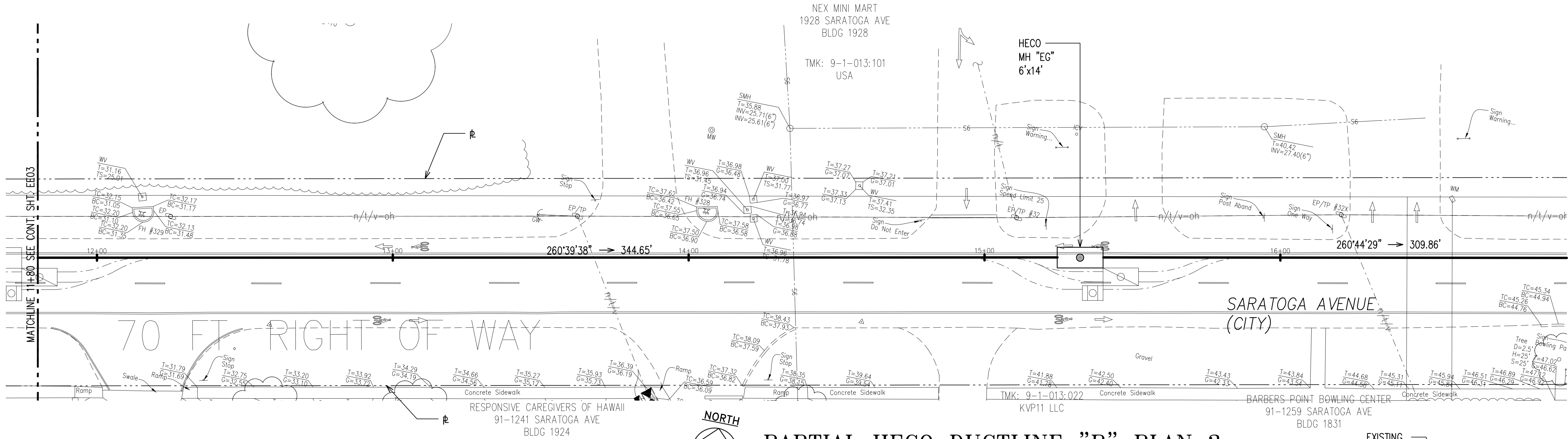
ELECTRICAL UPGRADES

PARTIAL HECO DUCTLINE B

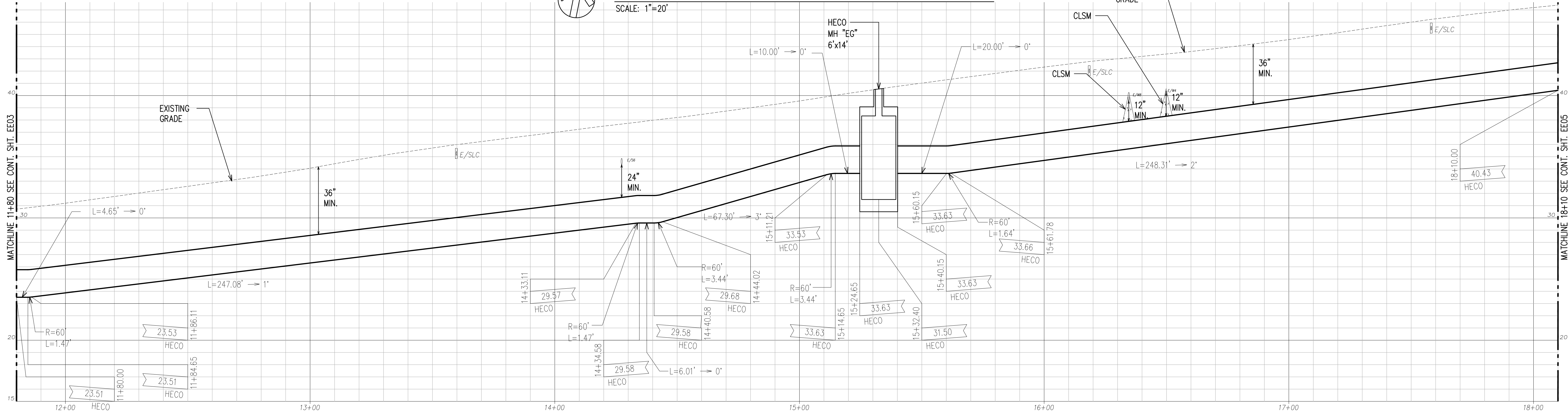
PLAN AND PROFILE 2

ENGINEER: <u>DN</u>	CHECKED BY: <u>SS</u>
DRAFTSMAN: <u>CAD</u>	DATE: <u>MARCH 2026</u>
APPROVED: _____	

EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY



PARTIAL HECO DUCTLINE "B" PLAN 3
SCALE: 1"=20'



NOTES:

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PARTIAL ELECTRIC DUCTLINE "B" PROFILE 3
SCALE: HORIZ. 1"=20'
VERT. 1"=4'

APPROVED BY

CHIEF, CIVIL ENGINEERING BRANCH, DPP
(FOR CONSTRUCTION WITHIN CITY R/W ONLY)

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First Review: _____ Second Review: _____

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3131451

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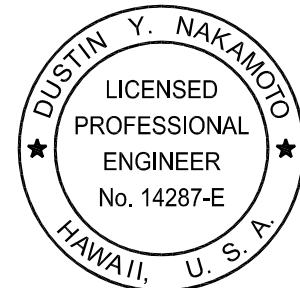
SCALE: 1"=20'



SCALE: 1"=4'

GRAPHIC SCALES

RONALD N. S. HO & ASSOCIATES, INC.
Electrical Engineers



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4/30/28
EXPIRATION DATE OF THE LICENSE

HAWAII COMMUNITY DEVELOPMENT AUTHORITY
STATE OF HAWAII

KALAELOA
DEVELOPMENT DISTRICT
SARATOGA AVE
ELECTRICAL UPGRADES
PARTIAL HECO DUCTLINE B
PLAN AND PROFILE 3

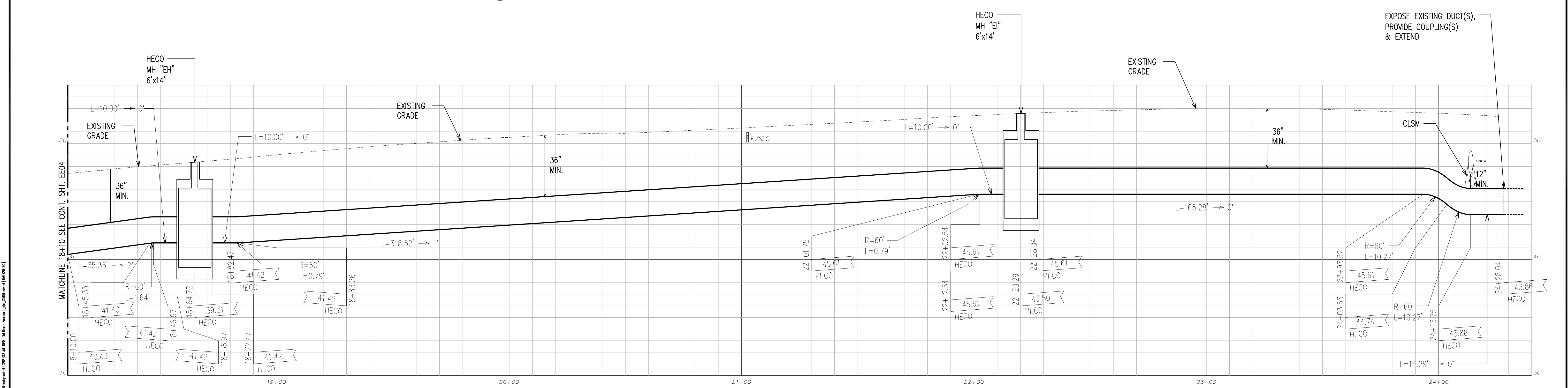
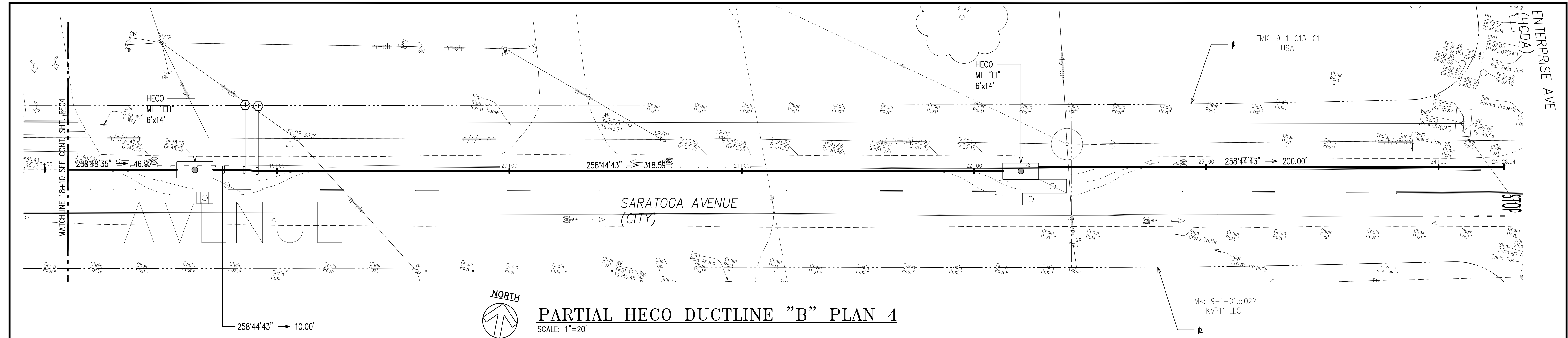
ENGINEER: DN
DRAFTSMAN: CAD

CHECKED BY: SS
DATE: MARCH 2026

APPROVED: _____

EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY

FILE	POCKET	FOLDER	NO.



PARTIAL HECO DUCTLINE "B" PROFILE 4
SCALE: HORIZ. 1"=20'
VERT. 1"=4'

NOTES:

- SEE CIVIL DRAWINGS FOR ALL CONCRETE JACKETING, CLSM INSTALLATION, RELOCATION, REMOVAL & CAPPING OF WET UTILITIES.
- AT UTILITY CROSSINGS WHERE PROPER COMPACTION UNDER A WATER MAIN IS DIFFICULT TO ACHIEVE, PROVIDE CLSM IN PLACE OF BACKFILL MATERIAL AND PIPE CUSHION MATERIAL.

HECO DUCTLINE "B"

CURVE DATA					
ID	Δ	Δ / 2	RADIUS	T	C
1	5°26'1"	2°43'0.4"	60.00'	2.85'	5.69'

APPROVED BY

CHIEF, CIVIL ENGINEERING BRANCH, DPP
(FOR CONSTRUCTION WITHIN CITY R/W ONLY)

DATE

DRAWING REVIEW

Reviewed for Hawaiian Electric Company Facilities Only

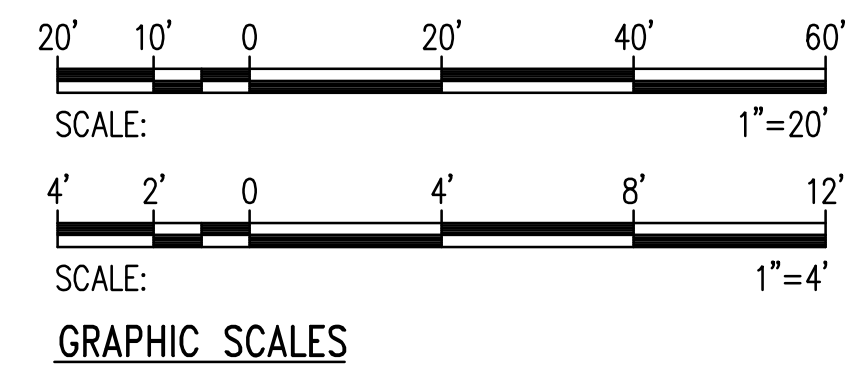
Final Review By: _____

First Review: _____ Second Review: _____

Customer Installation Division
Hawaiian Electric

6138044
3131451

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RONALD N. S. HO & ASSOCIATES, INC.
Electrical Engineers

DUSTIN Y. NAKAMOTO
LICENSED PROFESSIONAL ENGINEER
No. 14287-E
HAWAII, U.S.A.

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4/30/28
EXPIRATION DATE OF THE LICENSE

REVISION	DATE	BRIEF	BY

HAWAII COMMUNITY DEVELOPMENT AUTHORITY
STATE OF HAWAII

KALAELOA
DEVELOPMENT DISTRICT
SARATOGA AVE
ELECTRICAL UPGRADES
PARTIAL HECO DUCTLINE B
PLAN AND PROFILE 4

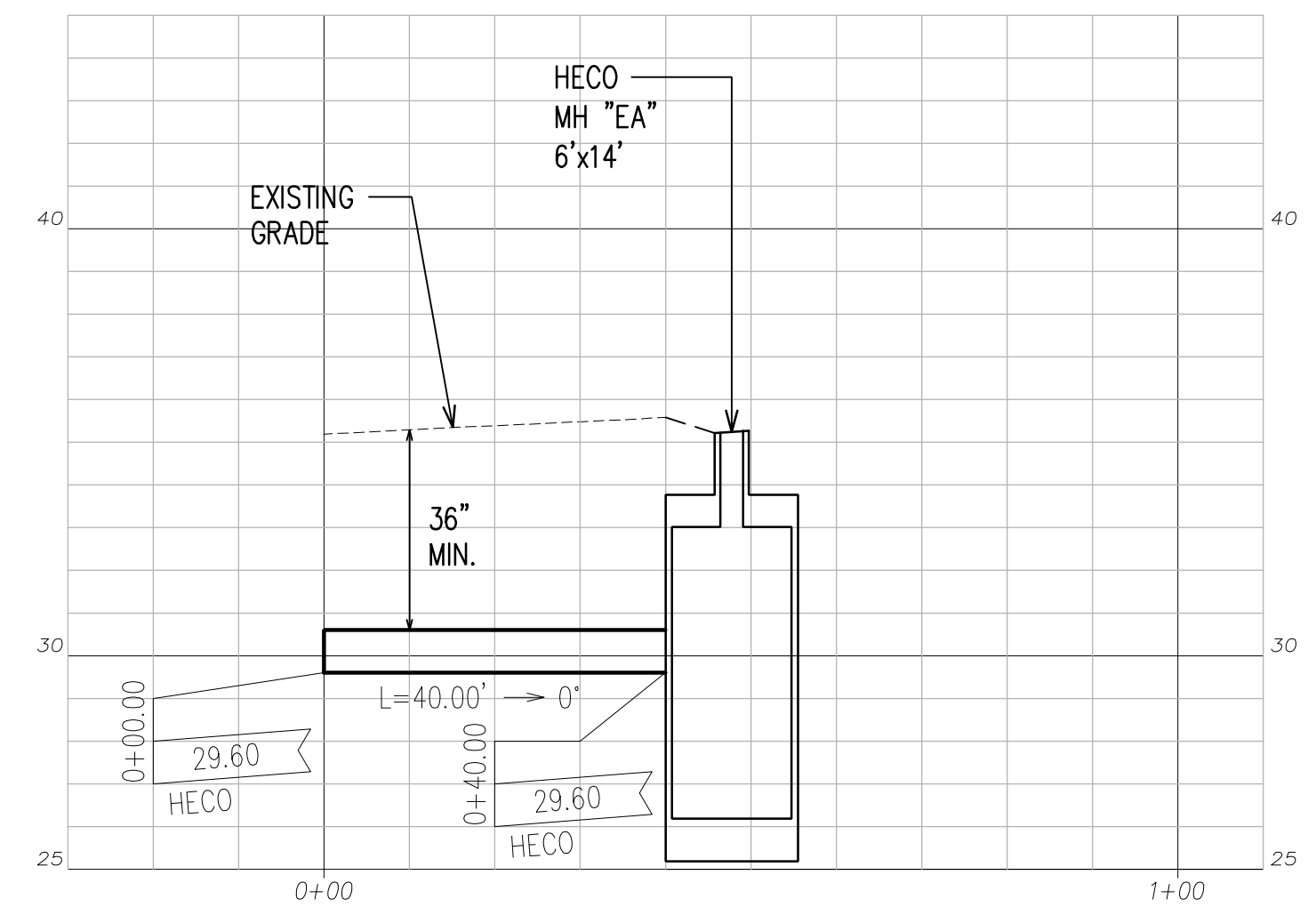
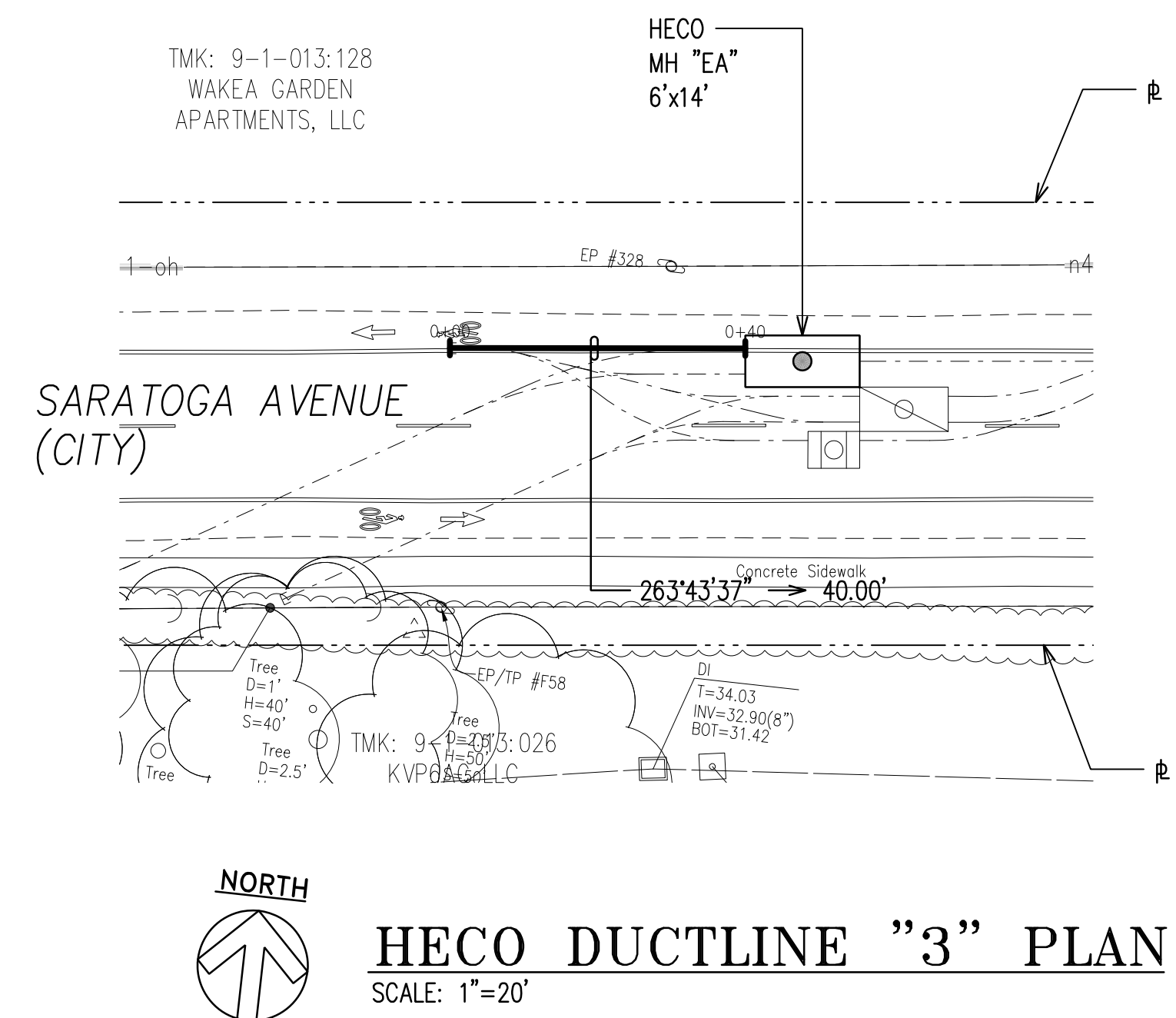
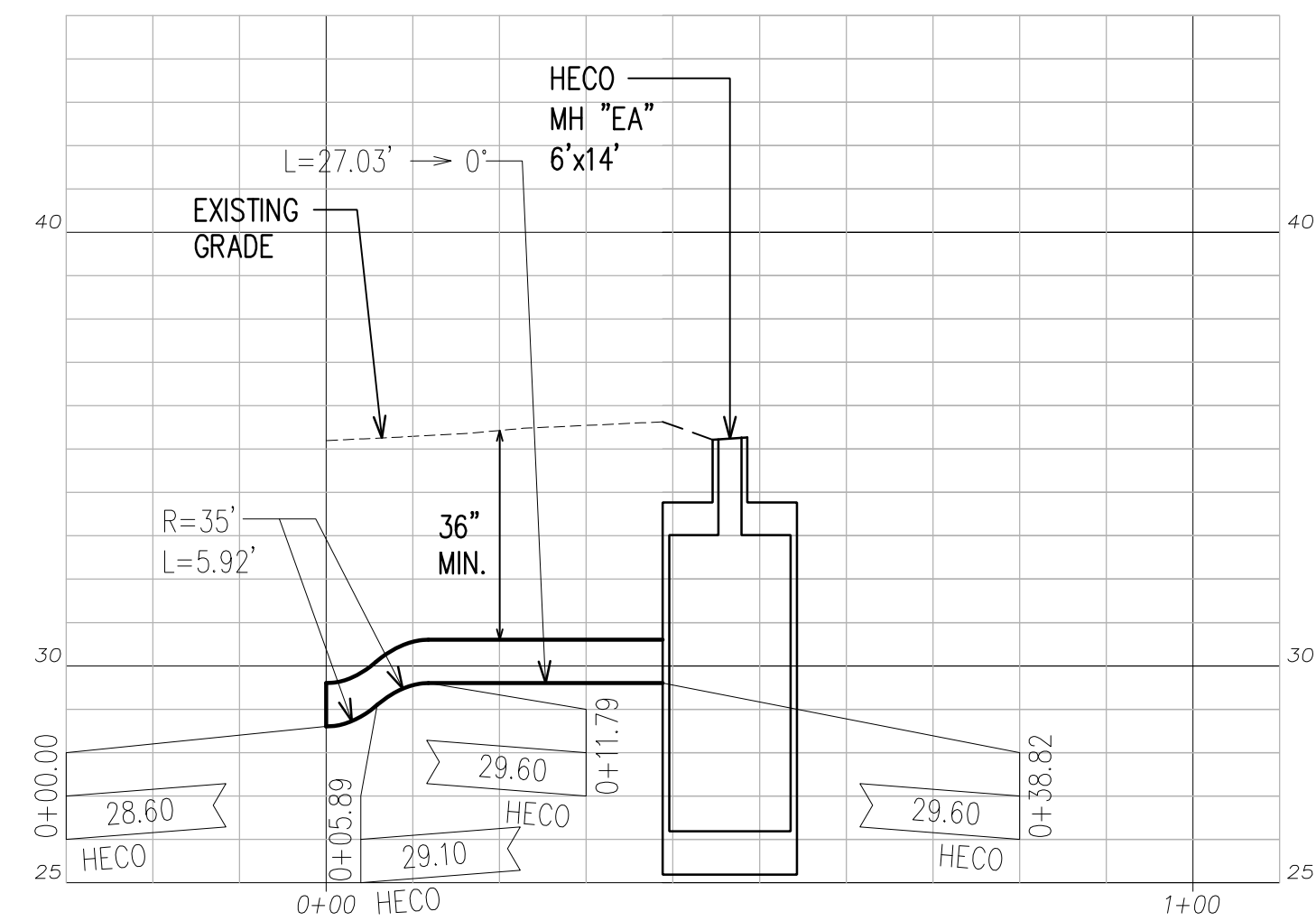
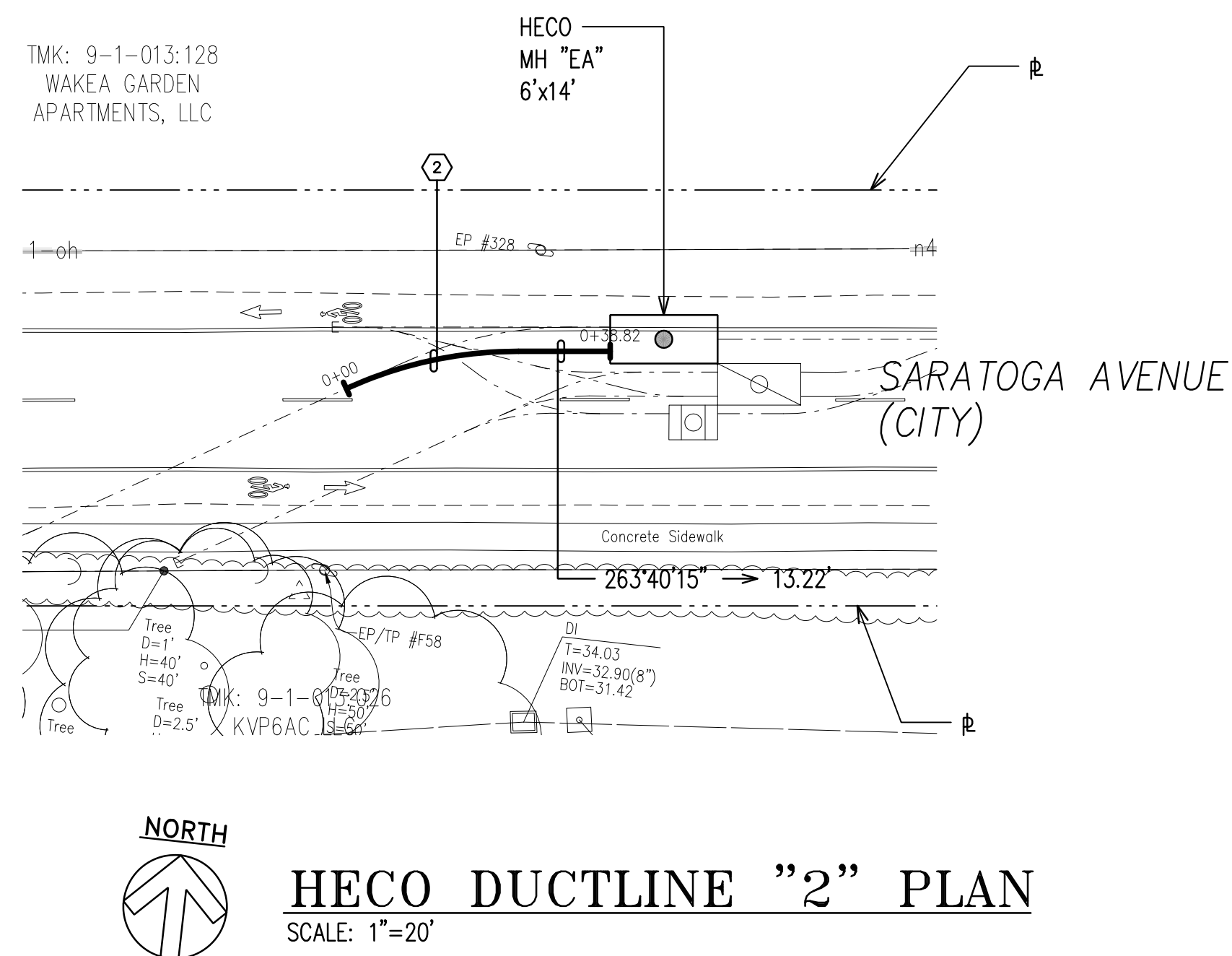
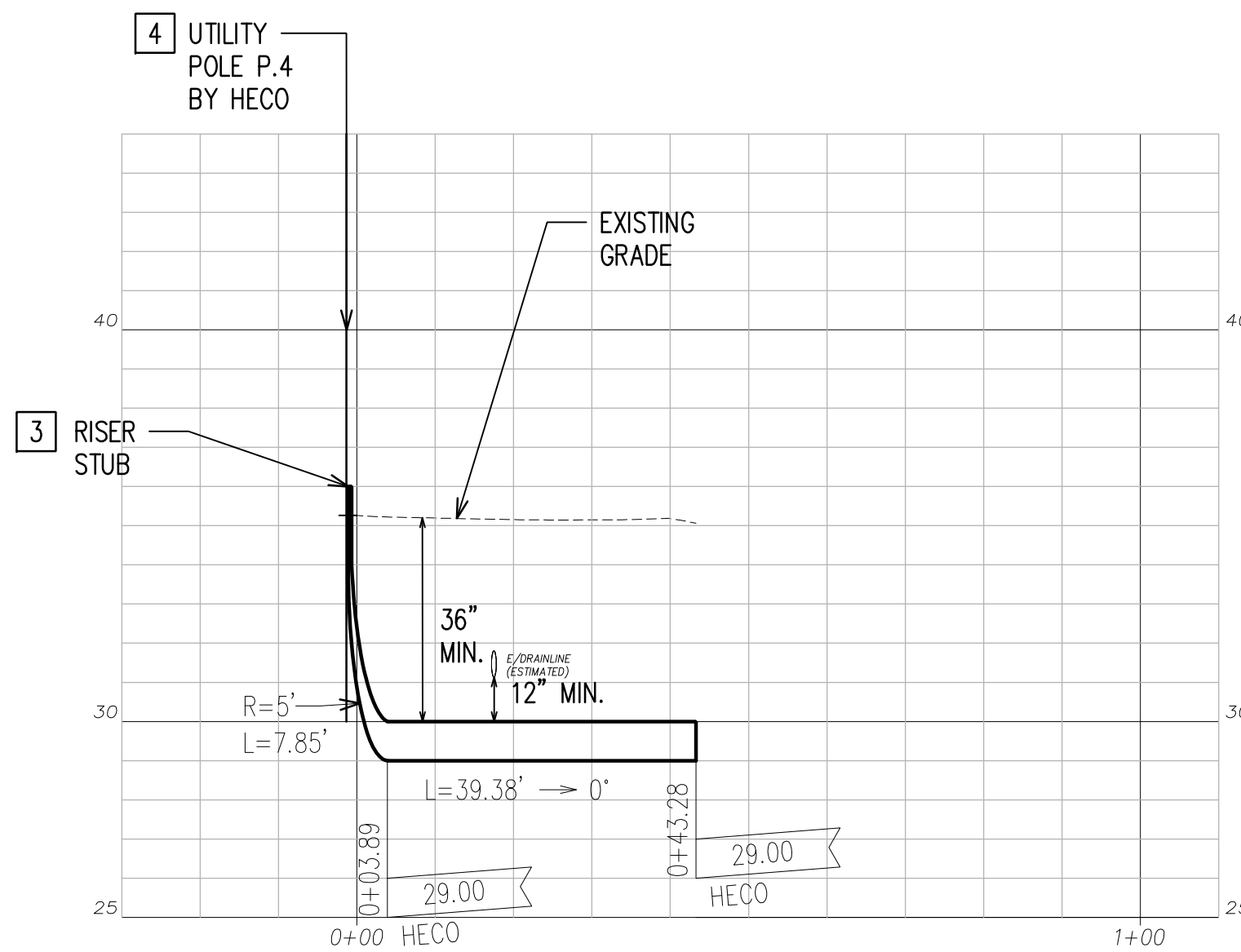
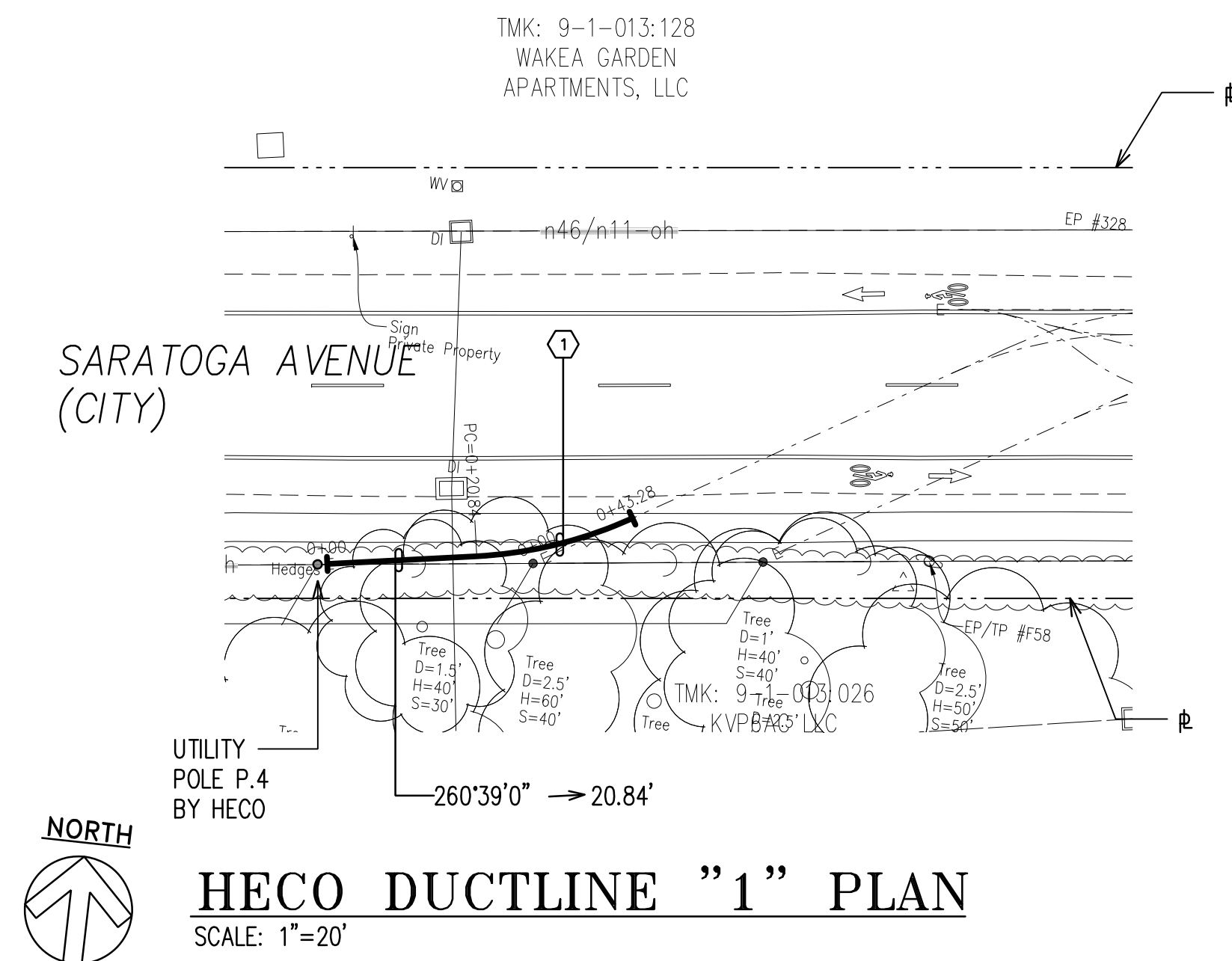
ENGINEER: **DN**
DRAFTSMAN: **CAD**

CHECKED BY: **SS**
DATE: **MARCH 2026**

APPROVED: _____

EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY

FILE	POCKET	FOLDER	NO.



NOTES :

1. SEE CIVIL DRAWINGS FOR ALL CONCRETE JACKETING, CLSM INSTALLATION, RELOCATION, REMOVAL & CAPPING OF WET UTILITIES.
2. AT UTILITY CROSSINGS WHERE PROPER COMPACTION UNDER A WATER MAIN IS DIFFICULT TO ACHIEVE, PROVIDE CLSM IN PLACE OF BACKFILL MATERIAL AND PIPE CUSHION MATERIAL.
3. RISER UP A MINIMUM OF 6" ABOVE FINISHED GRADE PER RESPECTIVE UTILITY COMPANY REQUIREMENTS.

HECO DUCTLINES

CURVE DATA						
ID	Δ	$\Delta / 2$	RADIUS	T	C	Lc
①	21°25'43"	10°42'51.4"	60.00'	11.35'	22.31'	22.44'
②	24°26'58"	12°13'29.0"	60.00'	13.00'	25.41'	25.60'

NOTES CONTINUED:

- 4 COORDINATE WITH RESPECTIVE
UTILITY COMPANY FOR POLE
BURIAL DEPTH.

APPROVED BY _____

CHIEF, CIVIL ENGINEERING BRANCH, DPP DATE
(FOR CONSTRUCTION WITHIN CITY R/W ONLY)

DRAWING REVIEW

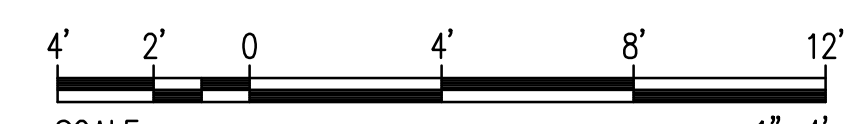
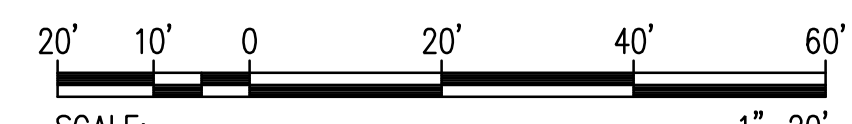
Reviewed for Hawaiian Electric Company Facilities Only

Final Review By: _____

First Review:_____ Second Review:_____

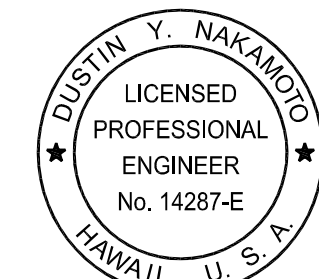
Customer Installation Division
Hawaiian Electric

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GRAPHIC SCALES

RONALD N. S. HO & ASSOCIATES, INC.
Electrical Engineers



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AND CONSTRUCTION OF THE
PROJECT WILL BE UNDER MY
OBSERVATION.

84/30/28
EXPIRATION DATE OF THE LICENSE

HAWAII COMMUNITY DEVELOPMENT AUTHORITY
STATE OF HAWAII

KALAELOA
DEVELOPMENT DISTRICT
SARATOGA AVE
ELECTRICAL UPGRADES
HECO DUCTLINES 1, 2 AND 3
PLANS AND PROFILES

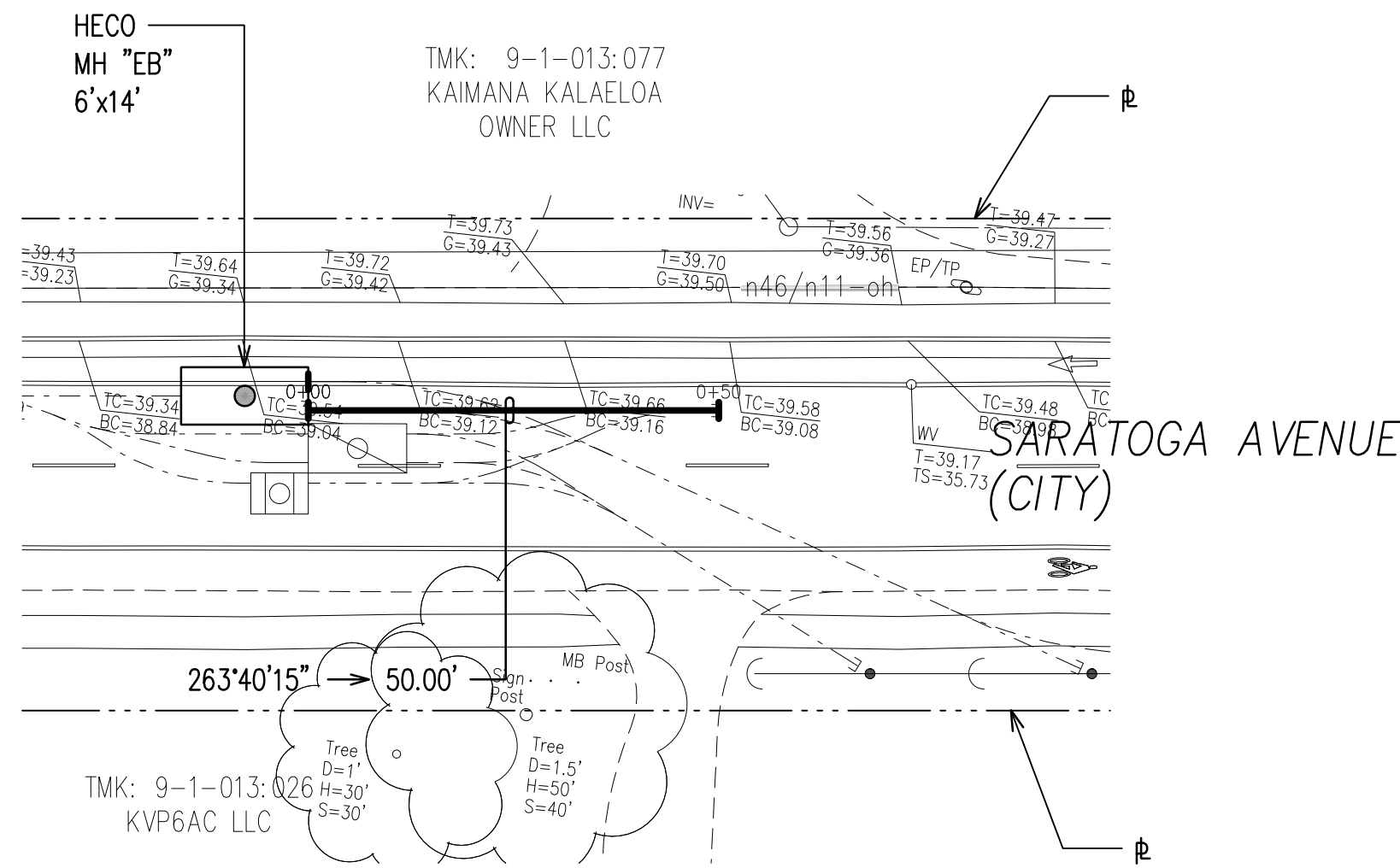
ENGINEER: DN CHECKED BY: SS
DRAFTSMAN: CAD DATE: MARCH 2026

APPROVED: _____

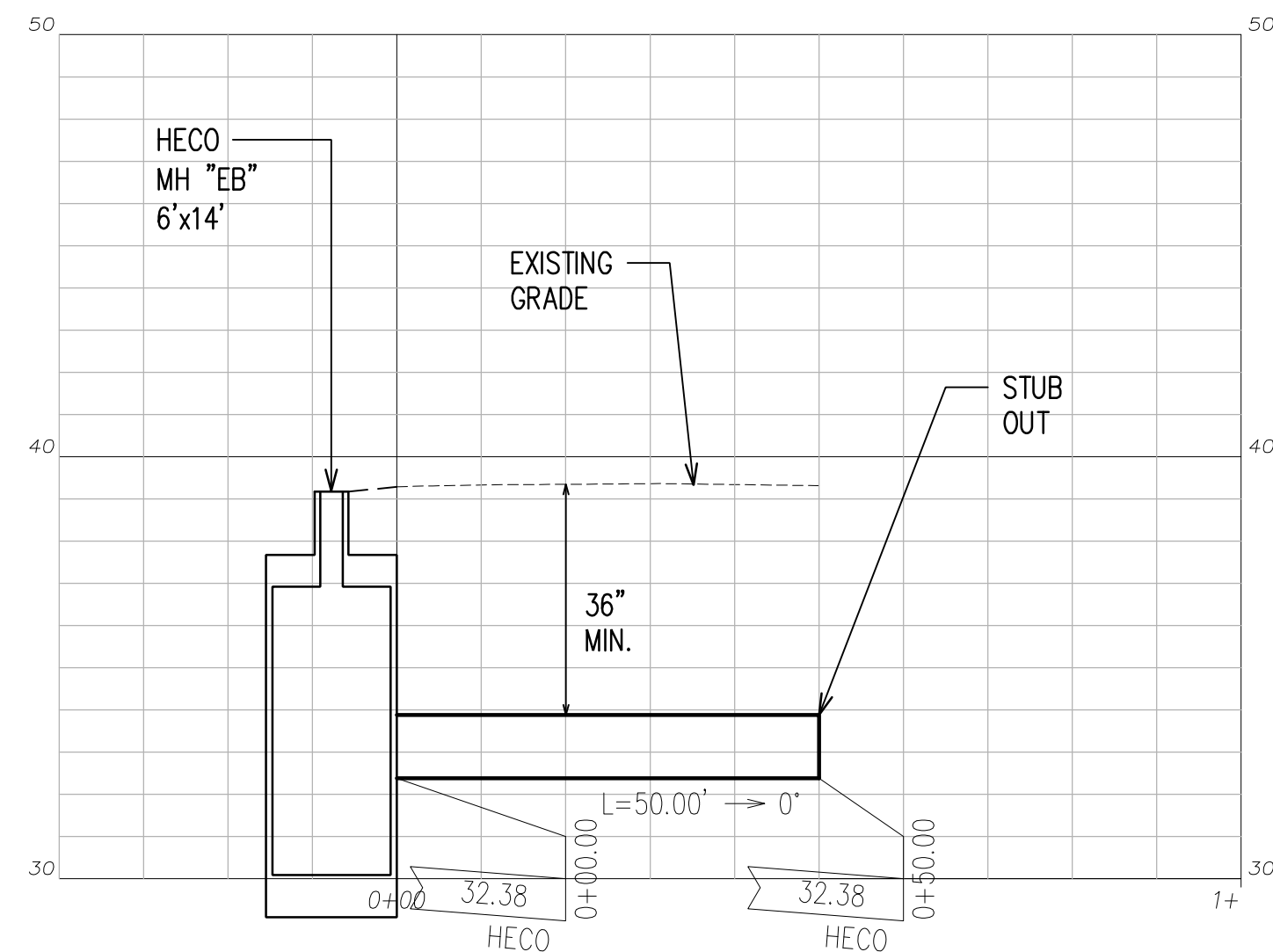
APPROVED: _____

EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY

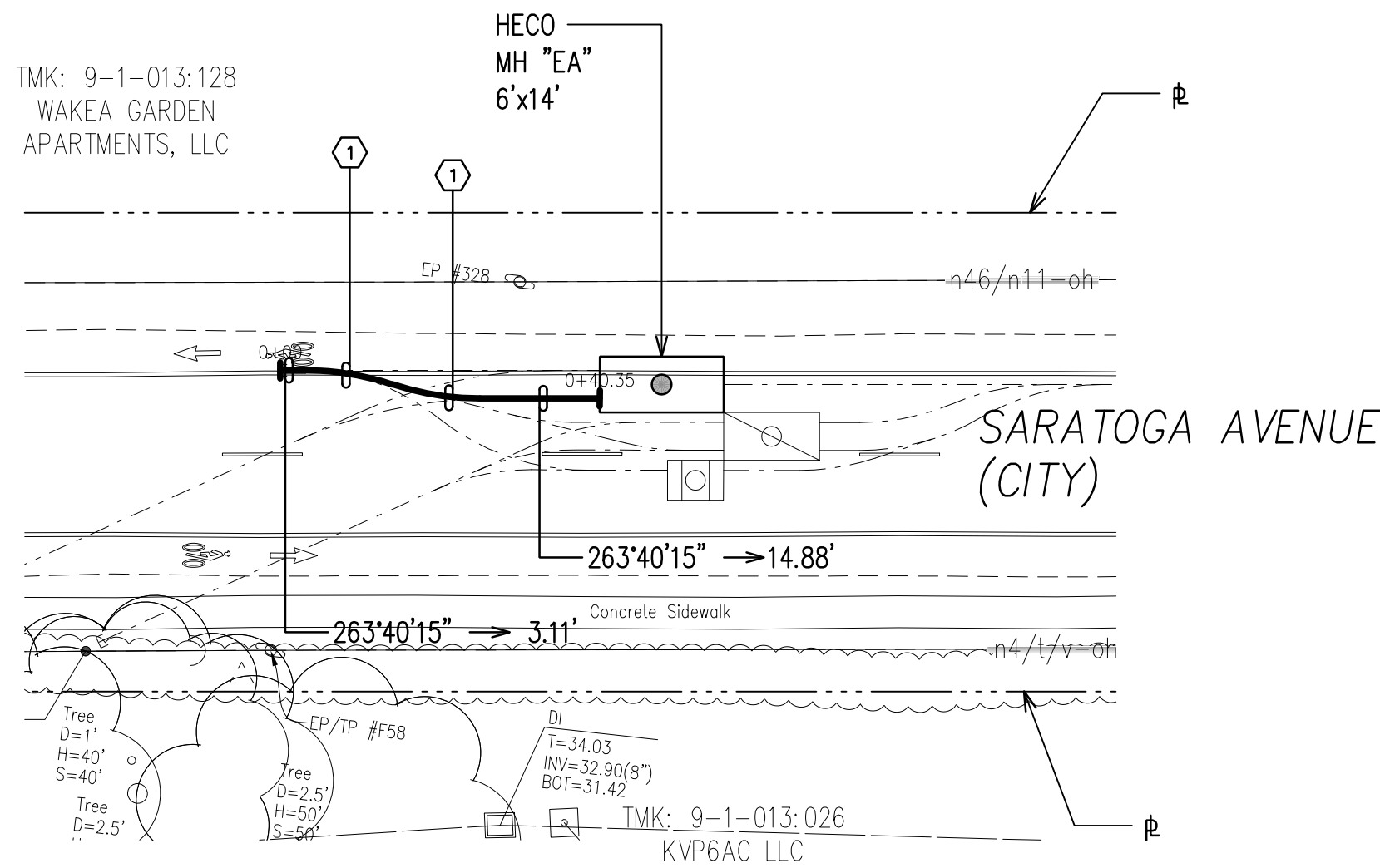
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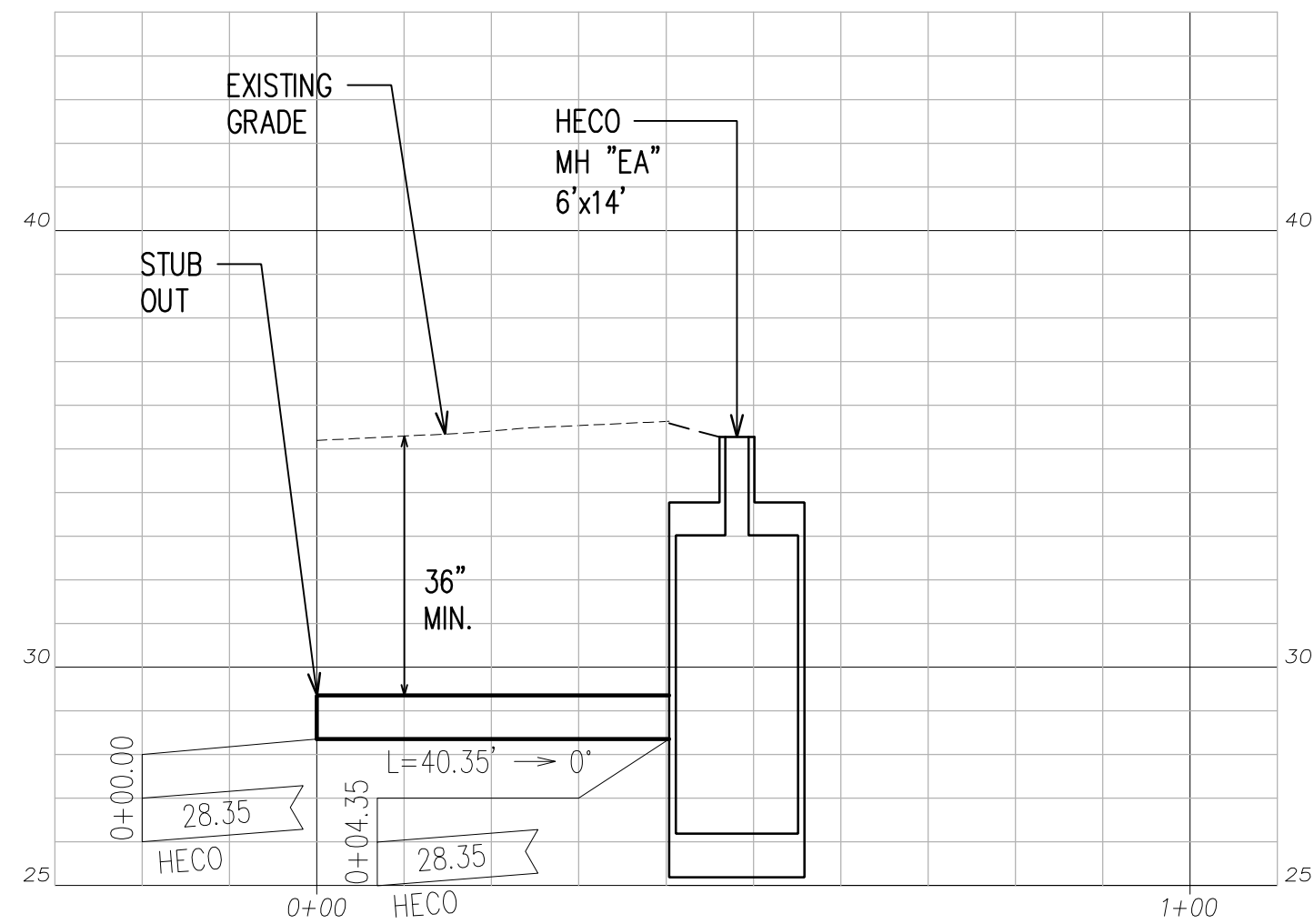
HECO DUCTLINE "4" PLAN
SCALE: 1"=20'



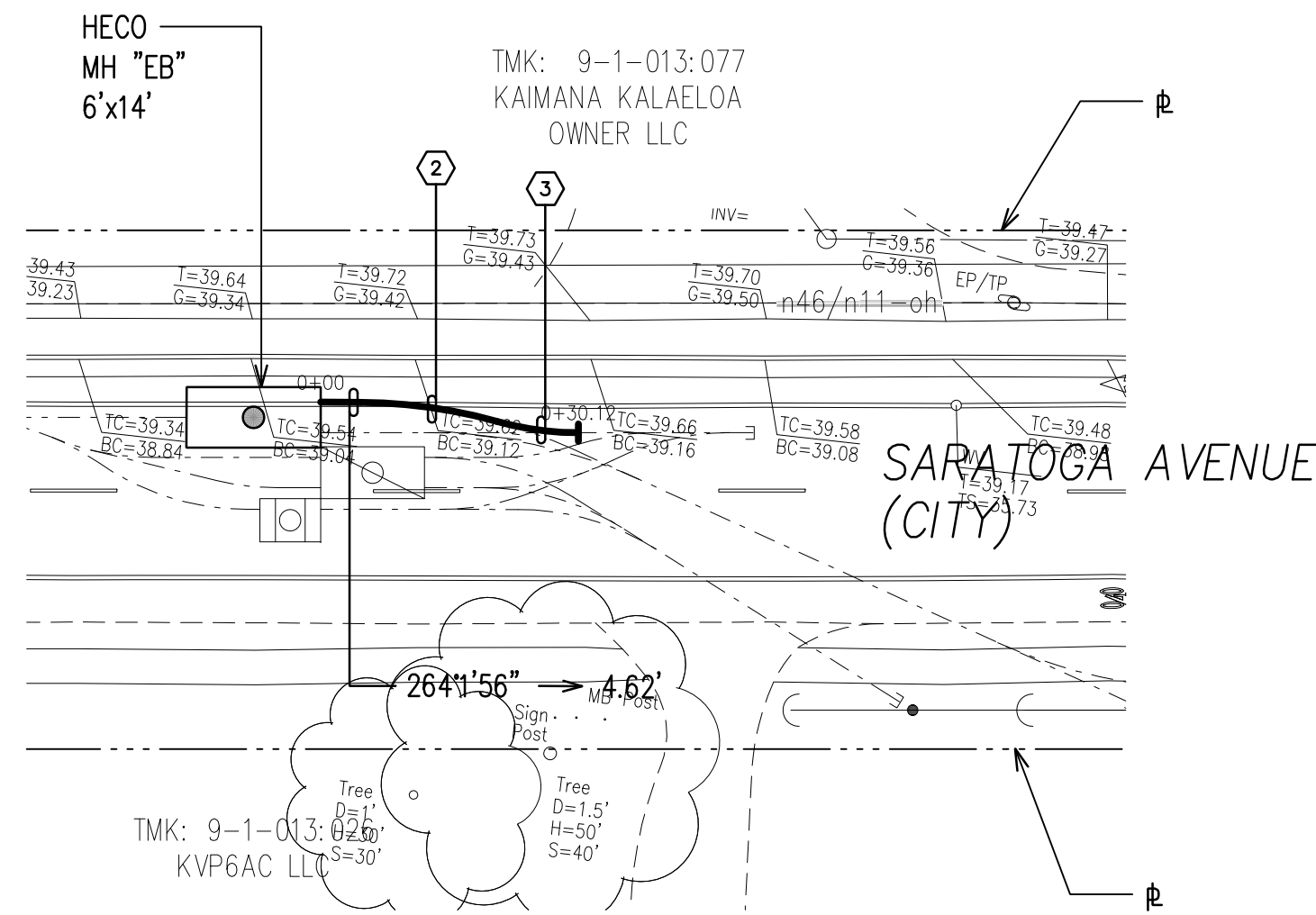
HECO DUCTLINE "4" PROFILE
SCALE: HORIZ. 1"=20'
VERT. 1"=4'



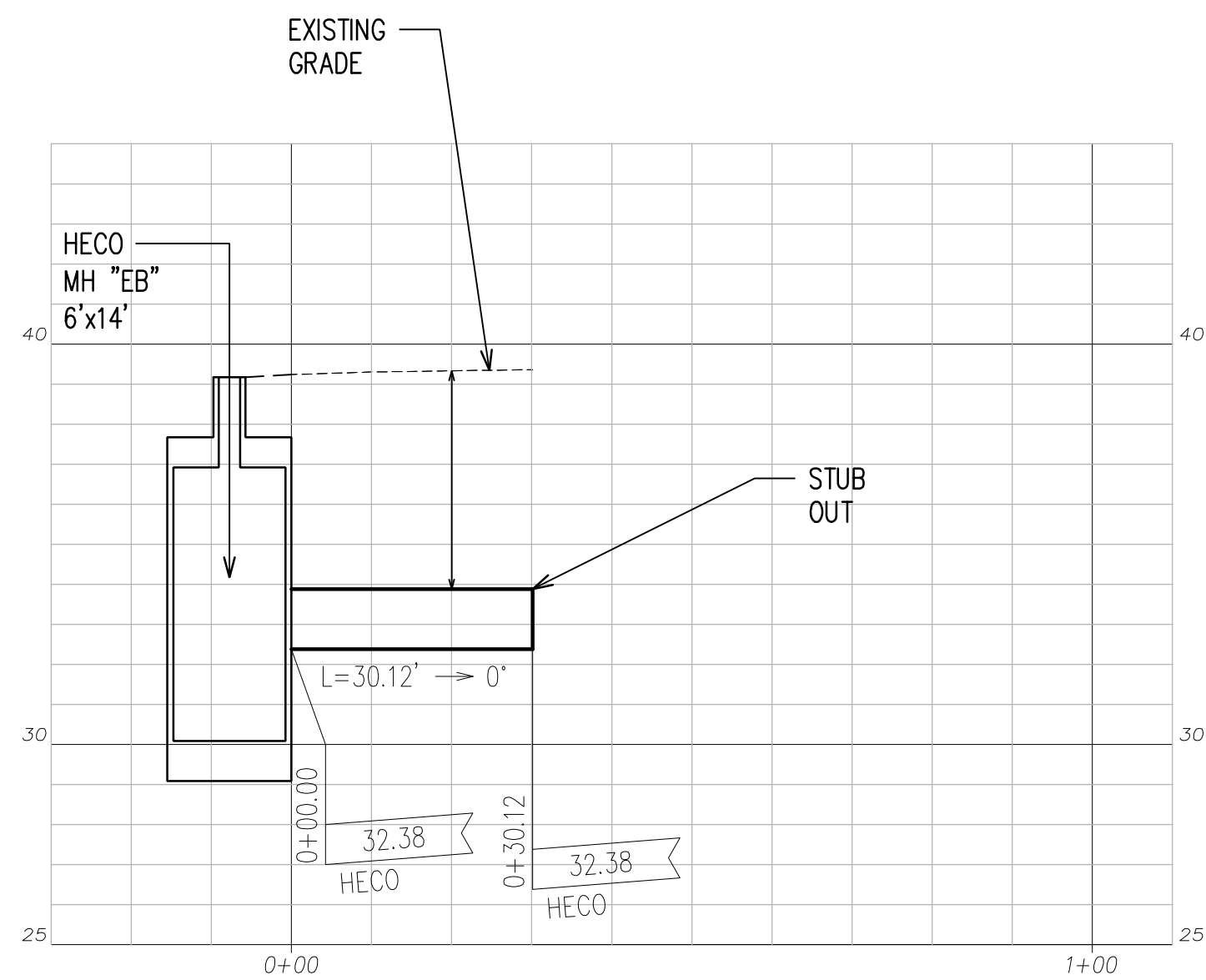
HECO DUCTLINE "5" PLAN
SCALE: 1"=20'



HECO DUCTLINE "5" PROFILE
SCALE: HORIZ. 1"=20'
VERT. 1"=4'



HECO DUCTLINE "6" PROFILE
SCALE: 1"=20'



HECO DUCTLINE "6" PROFILE
SCALE: HORIZ. 1"=20'
VERT. 1"=4'

NOTES:

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- AT UTILITY CROSSINGS WHERE PROPER COMPACTION UNDER A WATER MAIN IS DIFFICULT TO ACHIEVE, PROVIDE CLSM IN PLACE OF BACKFILL MATERIAL AND PIPE CUSHION MATERIAL.

HECO DUCTLINES

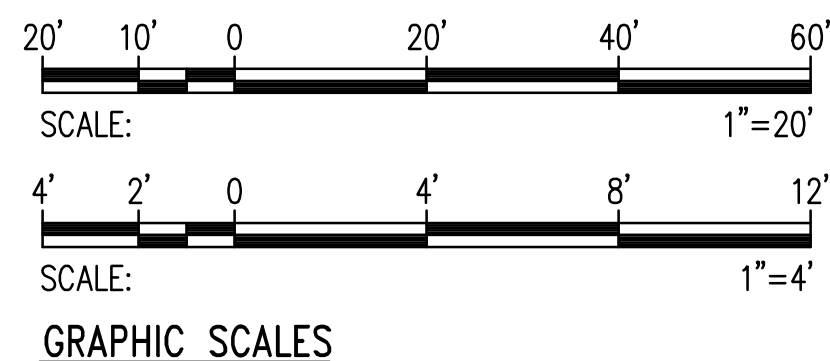
CURVE DATA						
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②	15°14'14"	7°37'6.9"	60.00'	8.03'	15.91'	15.96'
③	15°37'51"	7°48'55.6"	35.00'	4.80'	9.52'	9.55'

APPROVED BY

CHIEF, CIVIL ENGINEERING BRANCH, DPP
(FOR CONSTRUCTION WITHIN CITY R/W ONLY)

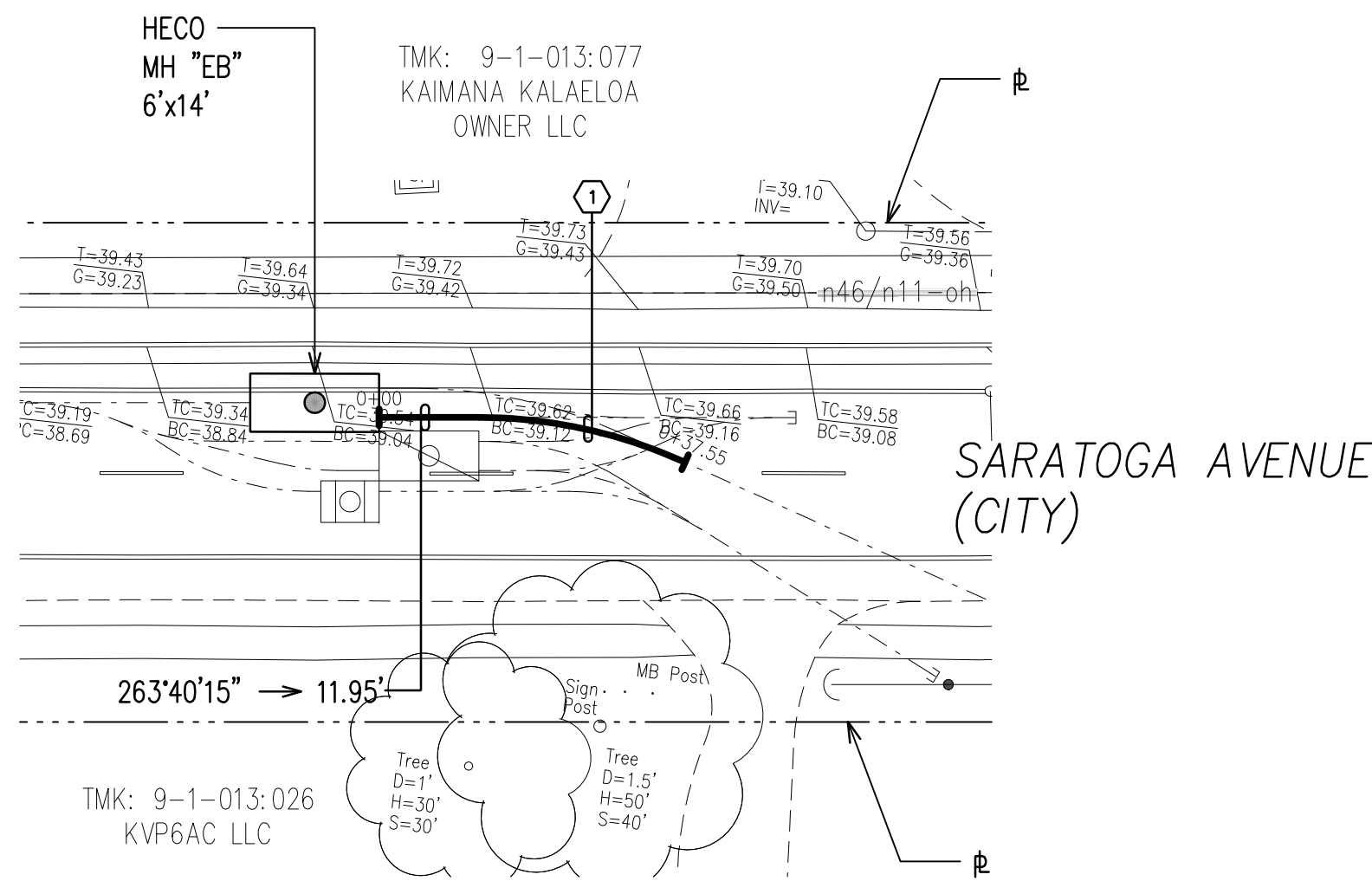
DATE

DRAWING REVIEW	
Reviewed for Hawaiian Electric Company Facilities Only	
Final Review By: _____	First Review: _____ Second Review: _____
Customer Installation Division Hawaiian Electric	
6138044 3131451	
Hawaiian Electric's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on the Customer's behalf from the responsibility for engineering, design, materials and any other liability associated with this project including revisions made beyond the reviewed date.	

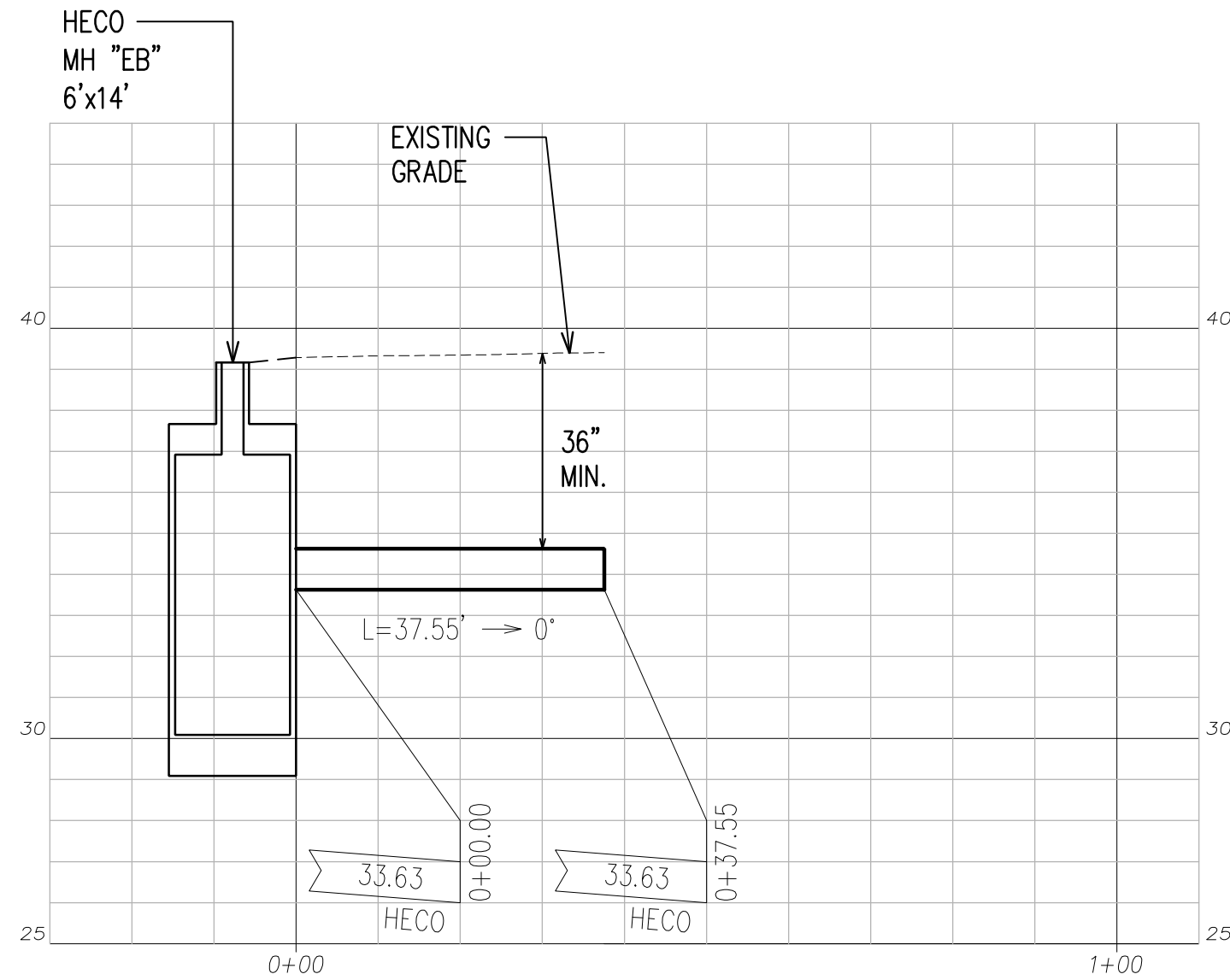


RONALD N. S. HO & ASSOCIATES, INC. Electrical Engineers	
DUSTIN Y. NAKAMOTO LICENSED PROFESSIONAL ENGINEER No. 14287-E HAWAII, U.S.A.	
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THE PROJECT WILL BE UNDER MY OBSERVATION.	
4/30/28 EXPIRATION DATE OF THE LICENSE	

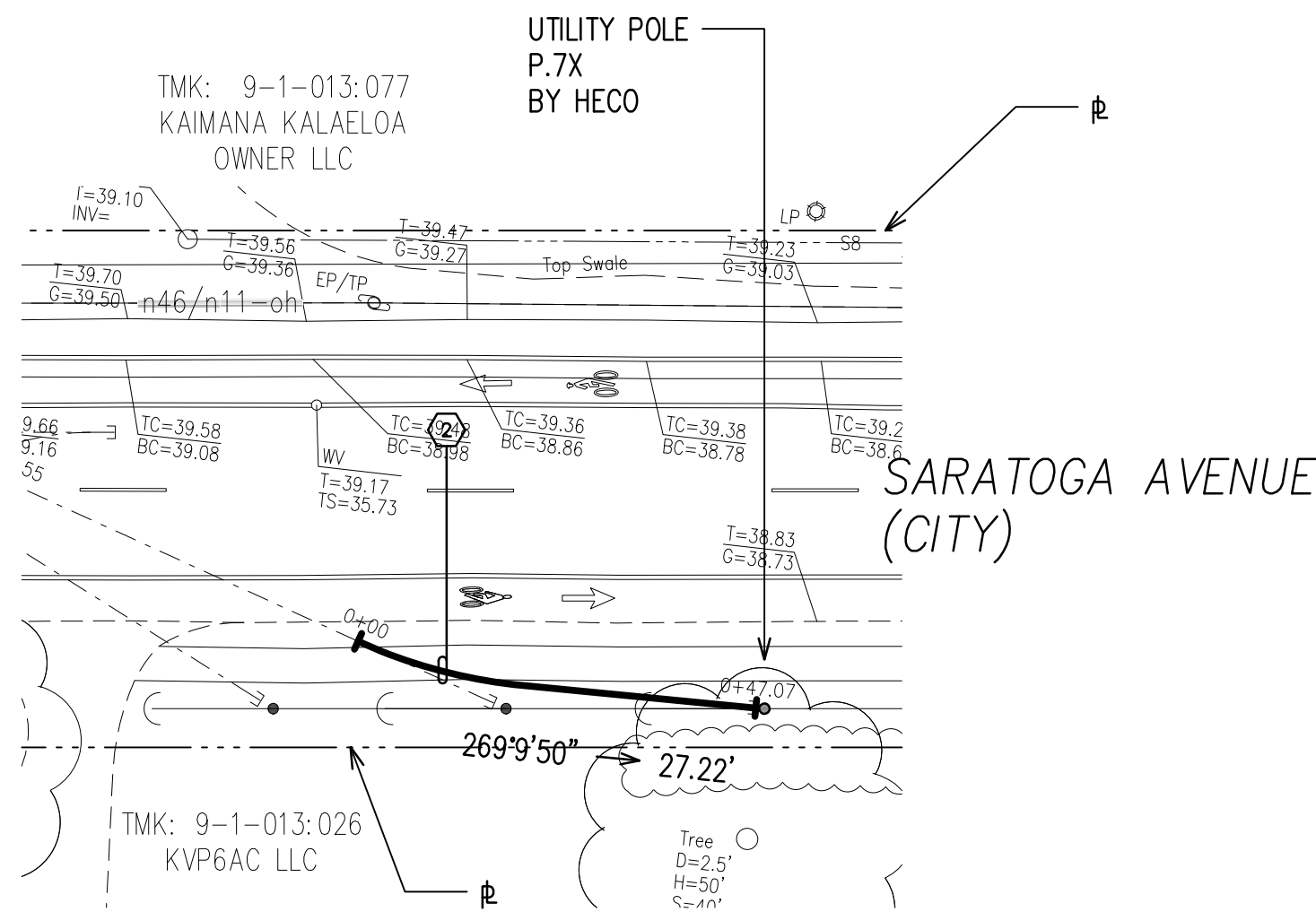
REVISION	DATE	BRIEF	BY
HAWAII COMMUNITY DEVELOPMENT AUTHORITY STATE OF HAWAII KALAELOA DEVELOPMENT DISTRICT SARATOGA AVE ELECTRICAL UPGRADES HECO DUCTLINES 4, 5 AND 6 PLANS AND PROFILES			
ENGINEER: DN	CHECKED BY: SS		
DRAFTSMAN: CAD	DATE: MARCH 2026		
EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY			



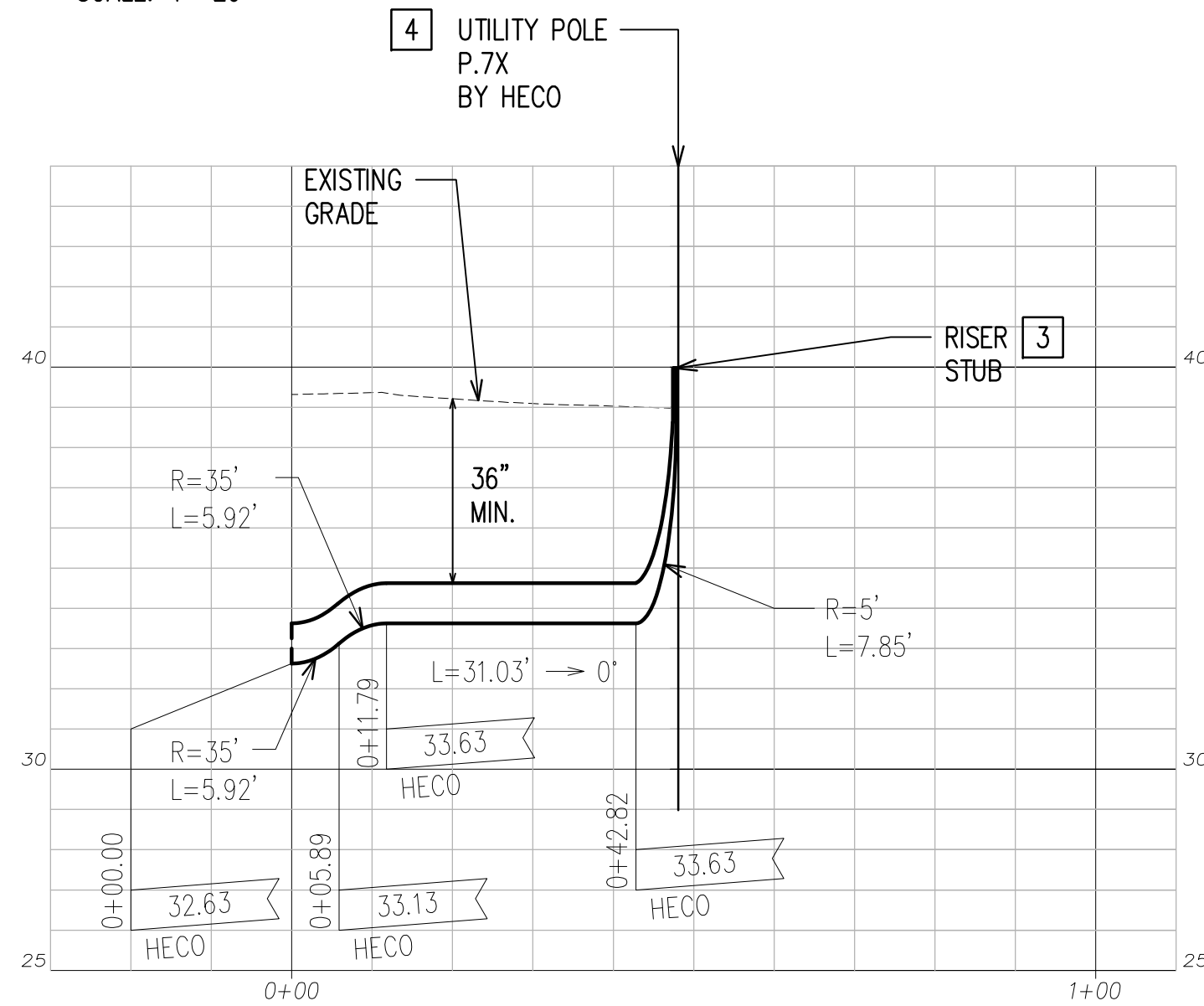
HECO DUCTLINE "7" PLAN
SCALE: 1"=20'



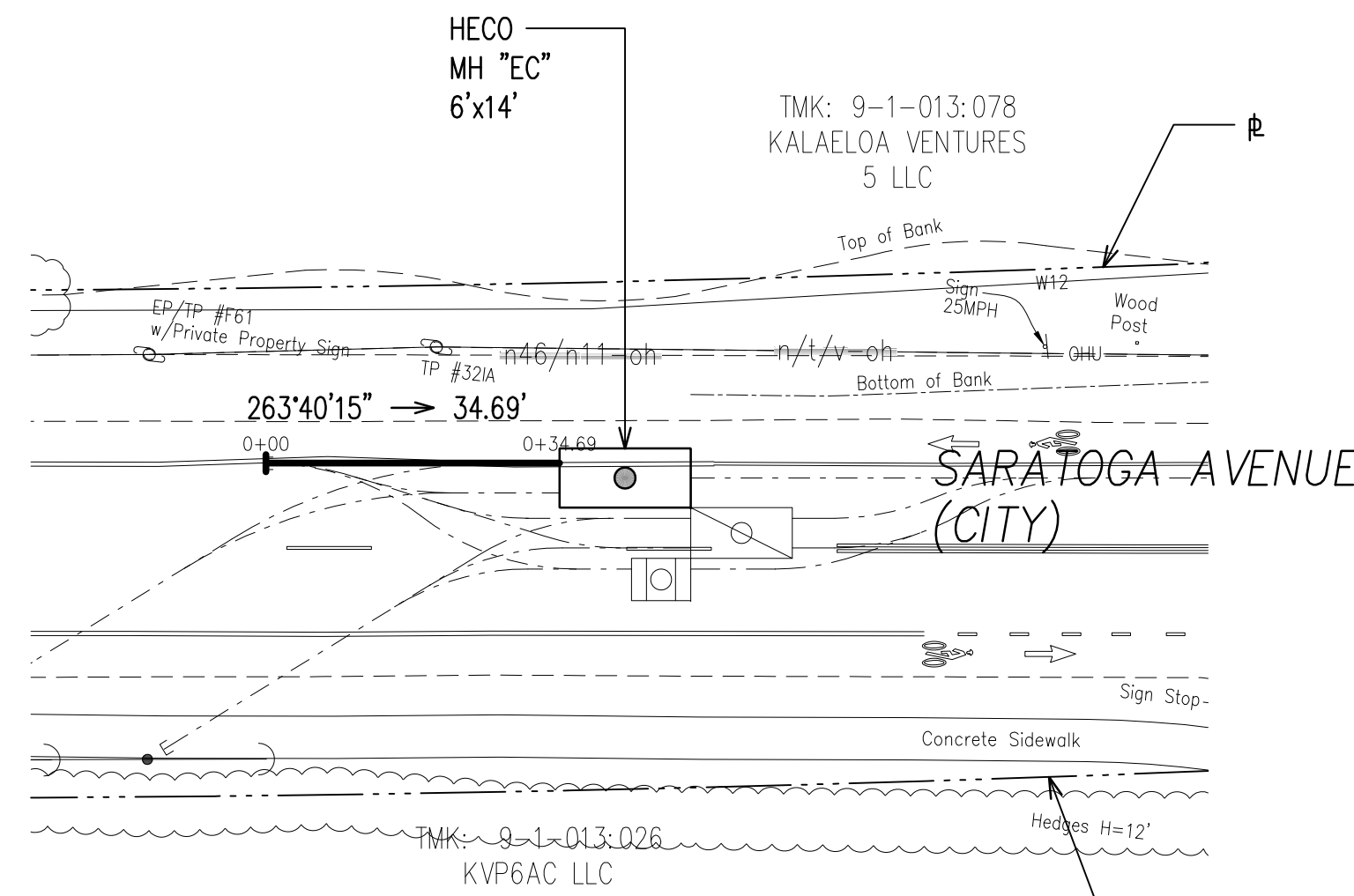
HECO DUCTLINE "7" PROFILE
SCALE: HORIZ. 1"=20'
VERT. 1"=4'



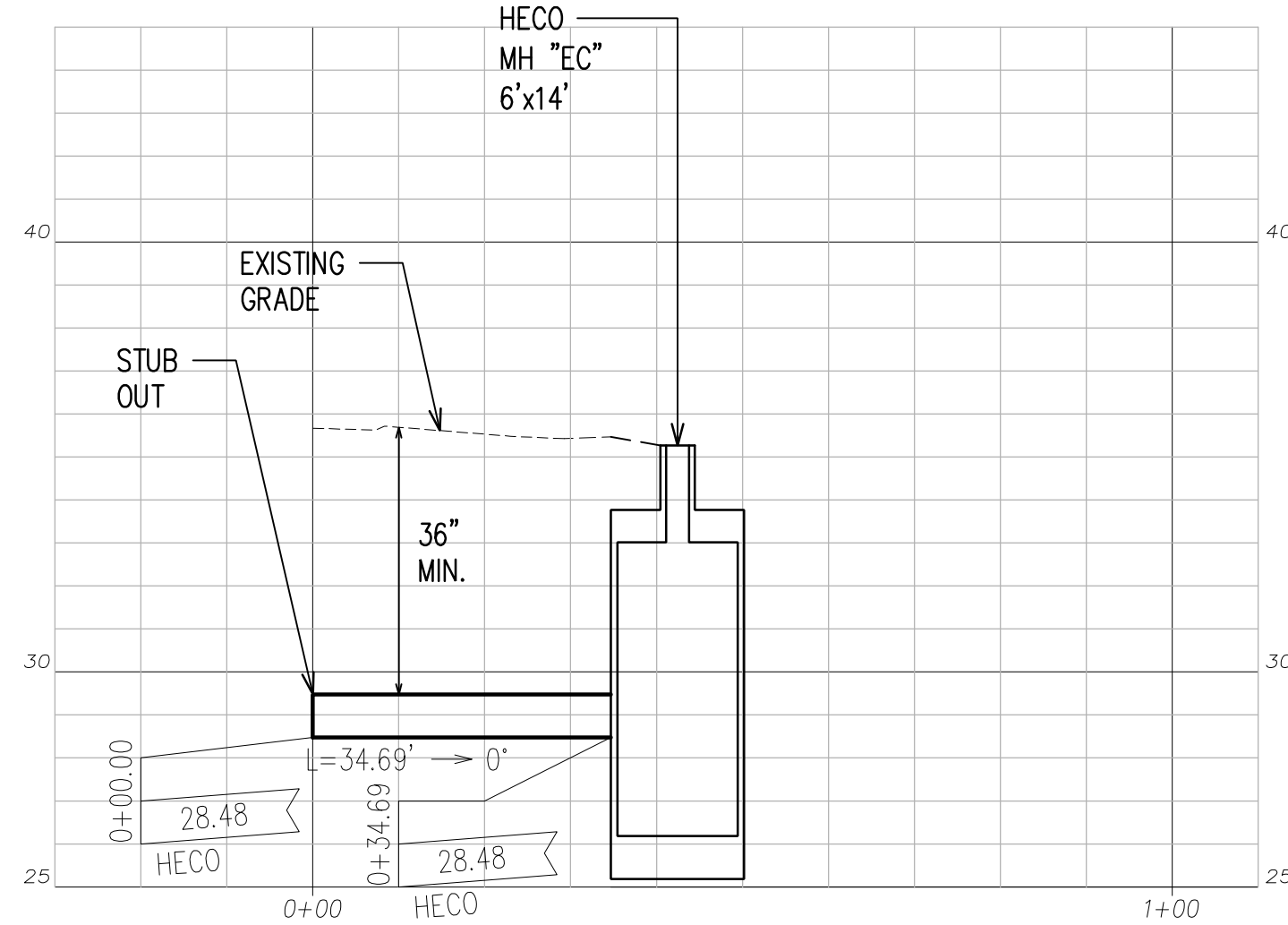
HECO DUCTLINE "8" PLAN
SCALE: 1"=20'



HECO DUCTLINE "8" PROFILE
SCALE: HORIZ. 1"=20'
VERT. 1"=4'



HECO DUCTLINE "9" PLAN
SCALE: 1"=20'



HECO DUCTLINE "9" PROFILE
SCALE: HORIZ. 1"=20'
VERT. 1"=4'

NOTES:

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3 RISER UP A MINIMUM OF 6" ABOVE FINISHED GRADE PER RESPECTIVE UTILITY COMPANY REQUIREMENTS.

HECO DUCTLINES

CURVE DATA						
ID	Δ	Δ / 2	RADIUS	T	C	Lc
1	24°26'58"	12°13'29.0"	60.00'	13.00'	25.41'	25.60'
2	18°57'23"	9°28'41.7"	60.00'	10.02'	19.76'	19.85'

NOTES CONTINUED:

- COORDINATE WITH RESPECTIVE UTILITY COMPANY FOR POLE BURIAL DEPTH.

APPROVED BY

CHIEF, CIVIL ENGINEERING BRANCH, DPP DATE
(FOR CONSTRUCTION WITHIN CITY R/W ONLY)

DRAWING REVIEW

Reviewed for Hawaiian Electric Company Facilities Only

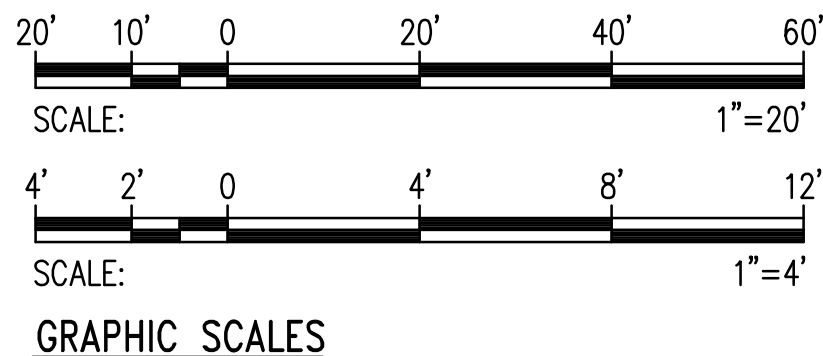
Final Review By: _____

First Review: _____ Second Review: _____

Customer Installation Division
Hawaiian Electric

6138044
3131451

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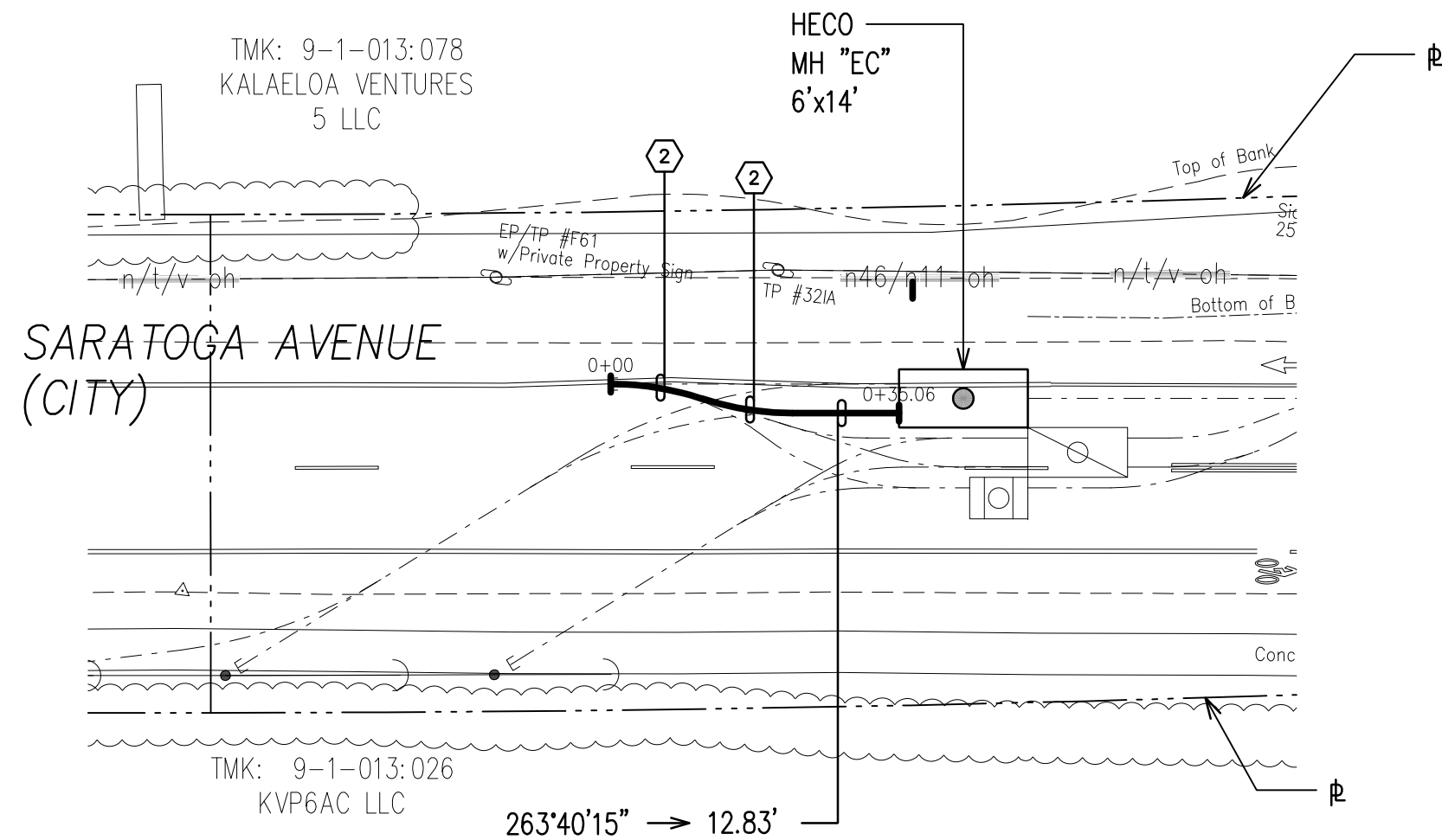
RONALD N. S. HO & ASSOCIATES, INC.
Electrical Engineers

DUSTIN Y. NAKAMOTO
LICENSED PROFESSIONAL ENGINEER
No. 14287-E
HAWAII, U.S.A.

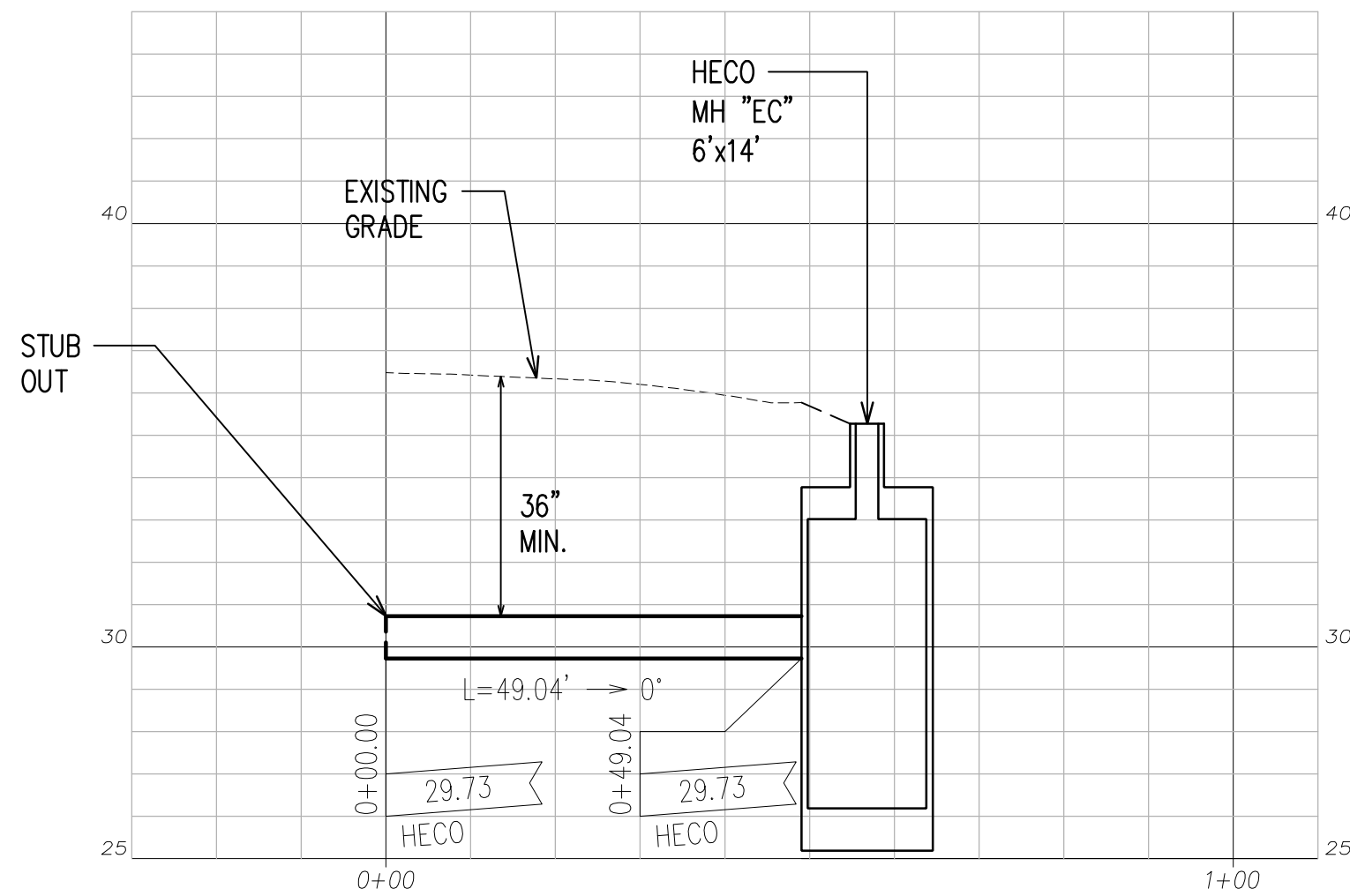
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THE PROJECT WILL BE UNDER MY OBSERVATION.

4/30/28
EXPIRATION DATE OF THE LICENSE

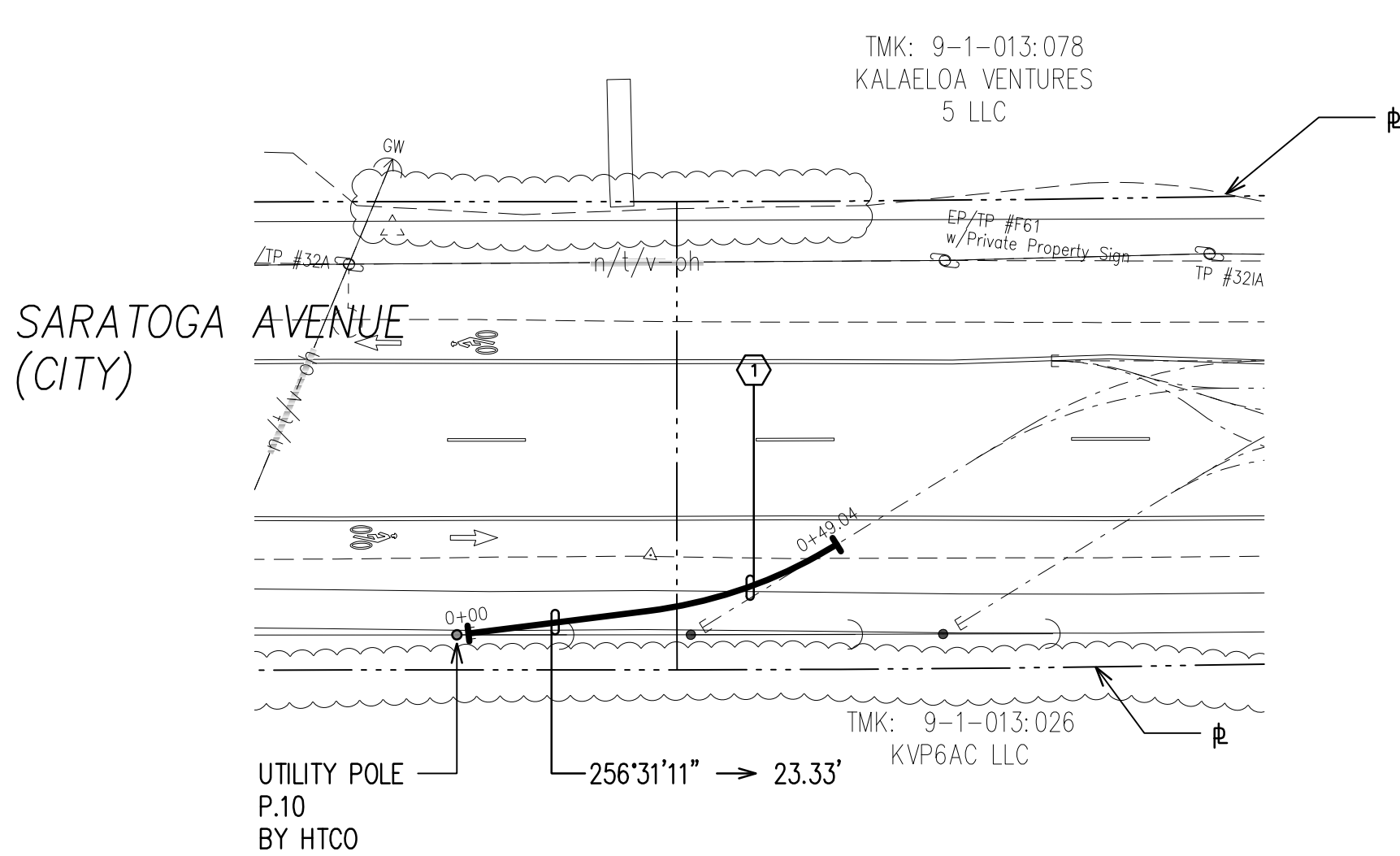
REVISION	DATE	BRIEF	BY
HAWAII COMMUNITY DEVELOPMENT AUTHORITY STATE OF HAWAII KALAELOA DEVELOPMENT DISTRICT SARATOGA AVE ELECTRICAL UPGRADES HECO DUCTLINES 7, 8 AND 9 PLANS AND PROFILES			
ENGINEER: DN	CHECKED BY: SS		
DRAFTSMAN: CAD	DATE: MARCH 2026		
EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY			



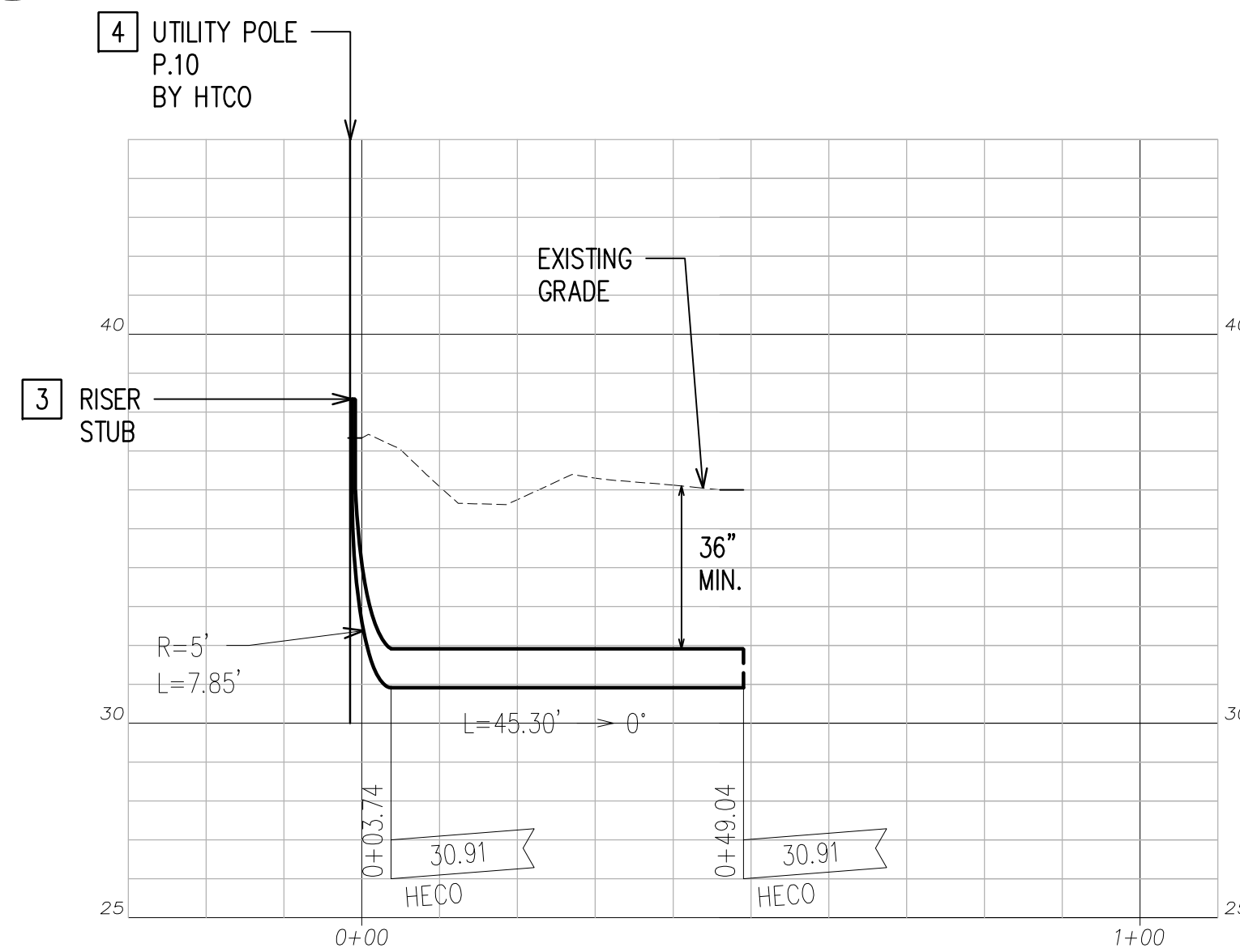
HECO DUCTLINE "10" PLAN
SCALE: 1"=20'



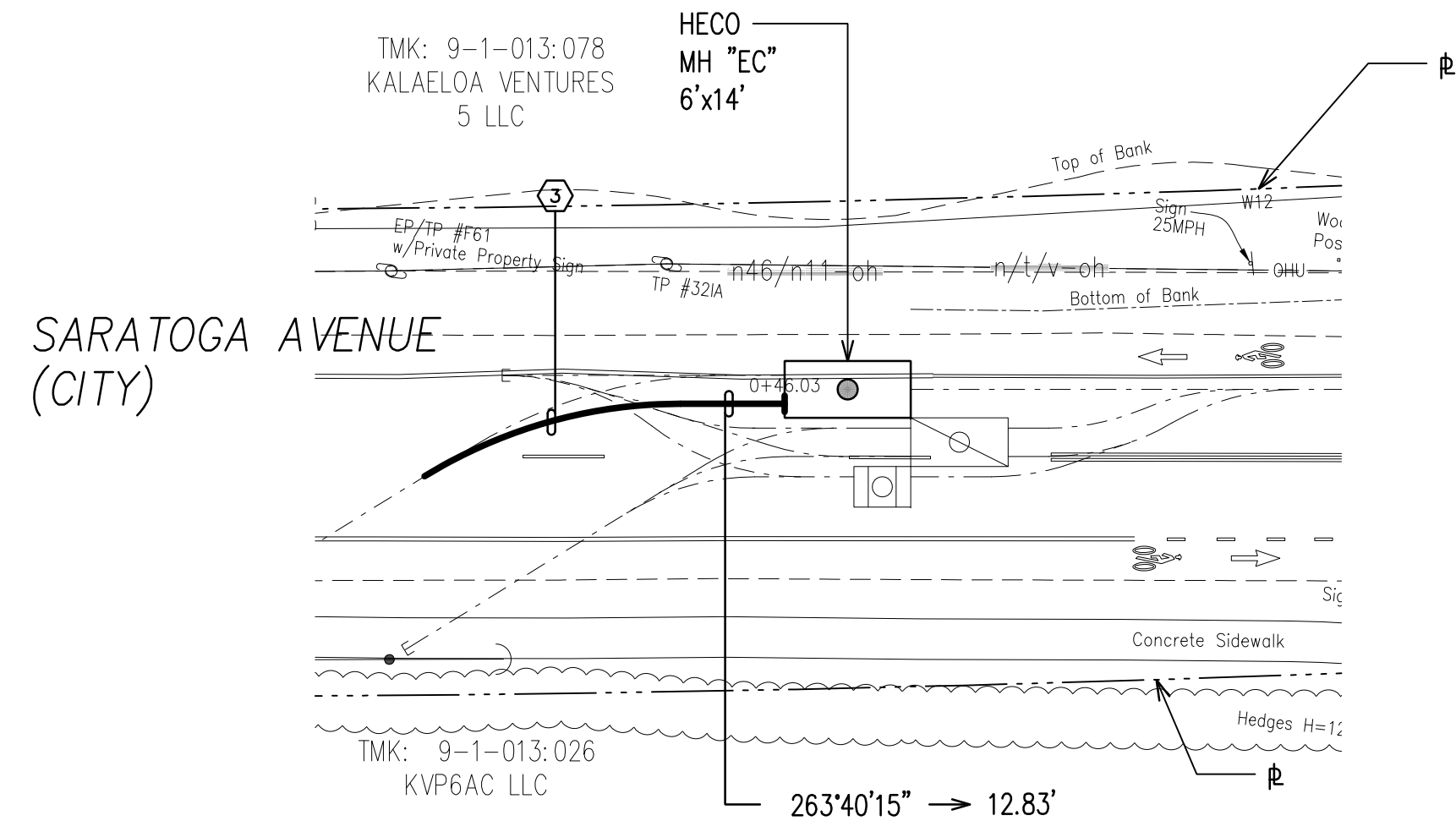
HECO DUCTLINE "10" PROFILE
SCALE: HORIZ. 1"=20'
VERT. 1"=4'



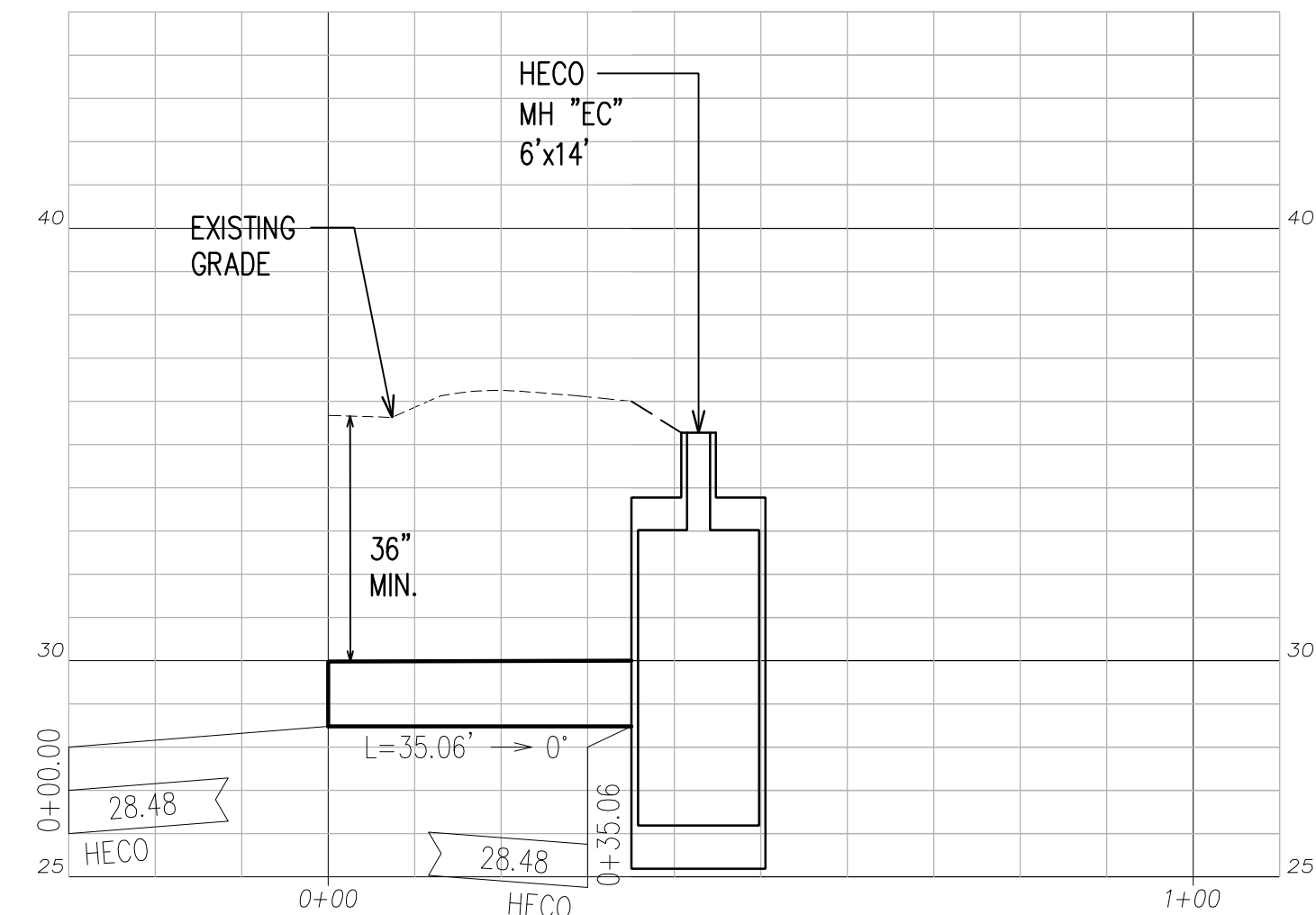
HECO DUCTLINE "11" PLAN
SCALE: 1"=20'



HECO DUCTLINE "11" PROFILE
SCALE: HORIZ. 1"=20'
VERT. 1"=4'



HECO DUCTLINE "12" PLAN
SCALE: 1"=20'



HECO DUCTLINE "12" PROFILE
SCALE: HORIZ. 1"=20'
VERT. 1"=4'

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- 3 RISER UP A MINIMUM OF 6" ABOVE FINISHED GRADE PER RESPECTIVE UTILITY COMPANY REQUIREMENTS.

HECO DUCTLINES

CURVE DATA						
ID	Δ	Δ / 2	RADIUS	T	C	Lc
①	24°32'39"	12°16'19.6"	60.00'	13.05'	25.51'	25.70'
②	18°11'42"	9°5'50.8"	35.00'	5.60'	11.07'	11.11'
③	31°41'44"	15°50'51.8"	60.00'	17.03'	32.77'	33.19'

NOTES CONTINUED:

- 4 COORDINATE WITH RESPECTIVE UTILITY COMPANY FOR POLE BURIAL DEPTH.

APPROVED BY

CHIEF, CIVIL ENGINEERING BRANCH, DPP
(FOR CONSTRUCTION WITHIN CITY R/W ONLY)

DATE

DRAWING REVIEW

Reviewed for Hawaiian Electric Company Facilities Only

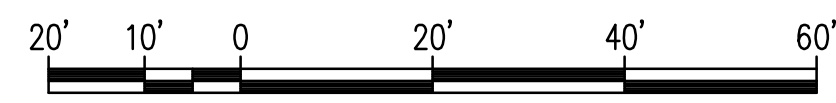
Final Review By: _____

First Review: _____ Second Review: _____

Customer Installation Division
Hawaiian Electric

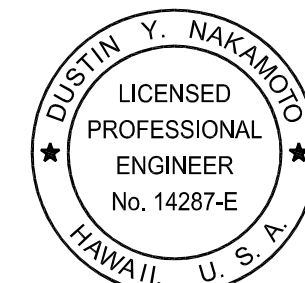
6138044
3131451

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GRAPHIC SCALES

RONALD N. S. HO & ASSOCIATES, INC.
Electrical Engineers



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3/30/28
EXPIRATION DATE OF THE LICENSE

HAWAII COMMUNITY DEVELOPMENT AUTHORITY
STATE OF HAWAII

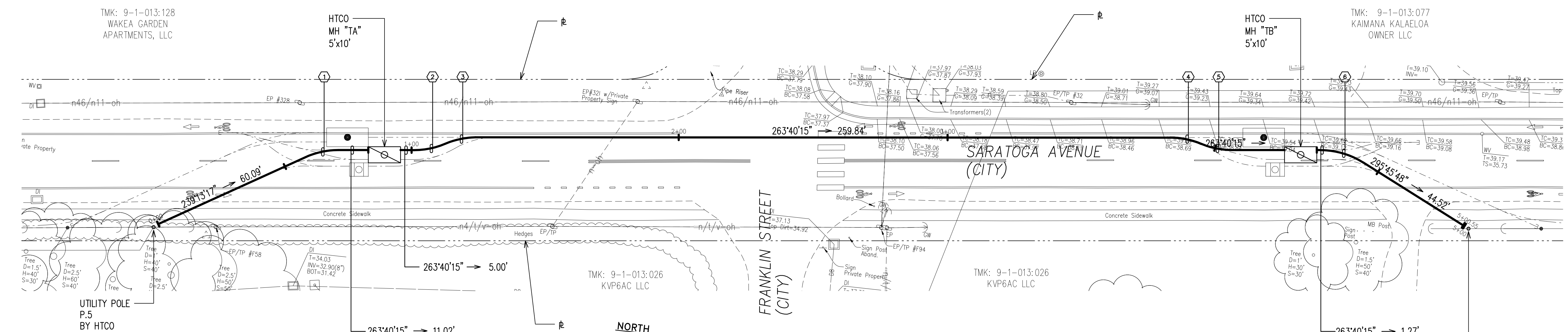
KALAELOA
DEVELOPMENT DISTRICT
SARATOGA AVE
ELECTRICAL UPGRADES
HECO DUCTLINES 10, 11 AND 12
PLANS AND PROFILES

ENGINEER: DN
DRAFTSMAN: CAD

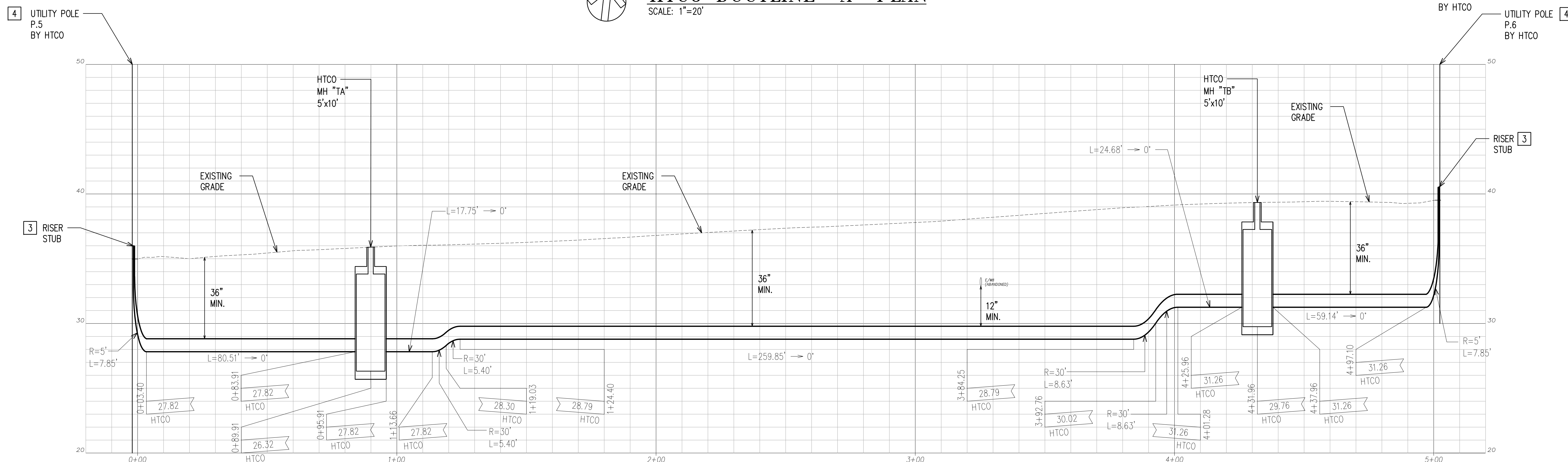
CHECKED BY: SS
DATE: MARCH 2026

APPROVED: _____
EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY

FILE	POCKET	FOLDER	NO.



HTCO DUCTLINE "A" PLAN
SCALE: 1"=20'



HTCO DUCTLINE "A" PROFILE
SCALE: HORIZ. 1"=20'
VERT. 1"=4'

NOTES:

- SEE CIVIL DRAWINGS FOR ALL CONCRETE JACKETING, CLSM INSTALLATION, RELOCATION, REMOVAL & CAPPING OF WET UTILITIES.
- AT UTILITY CROSSINGS WHERE PROPER COMPACTION UNDER A WATER MAIN IS DIFFICULT TO ACHIEVE, PROVIDE CLSM IN PLACE OF BACKFILL MATERIAL AND PIPE CUSHION MATERIAL.
- RISER UP A MINIMUM OF 6" ABOVE FINISHED GRADE PER RESPECTIVE UTILITY COMPANY REQUIREMENTS.

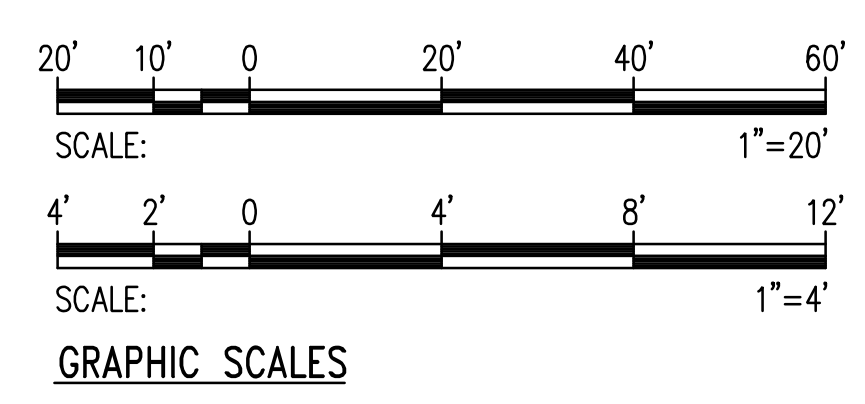
HTCO DUCTLINE "A"

CURVE DATA						
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②	22°57'52"	11°28'55.8"	30.00'	6.09'	11.94'	12.02'
③	21°54'22"	10°57'11.0"	30.00'	5.81'	11.40'	11.47'
④	22°39'15"	11°19'37.7"	30.00'	6.01'	11.78'	11.86'
⑤	22°38'49"	11°19'24.7"	30.00'	6.01'	11.78'	11.86'
⑥	32°5'33"	16°2'46.5"	30.00'	8.63'	16.58'	16.80'

NOTES CONTINUED:

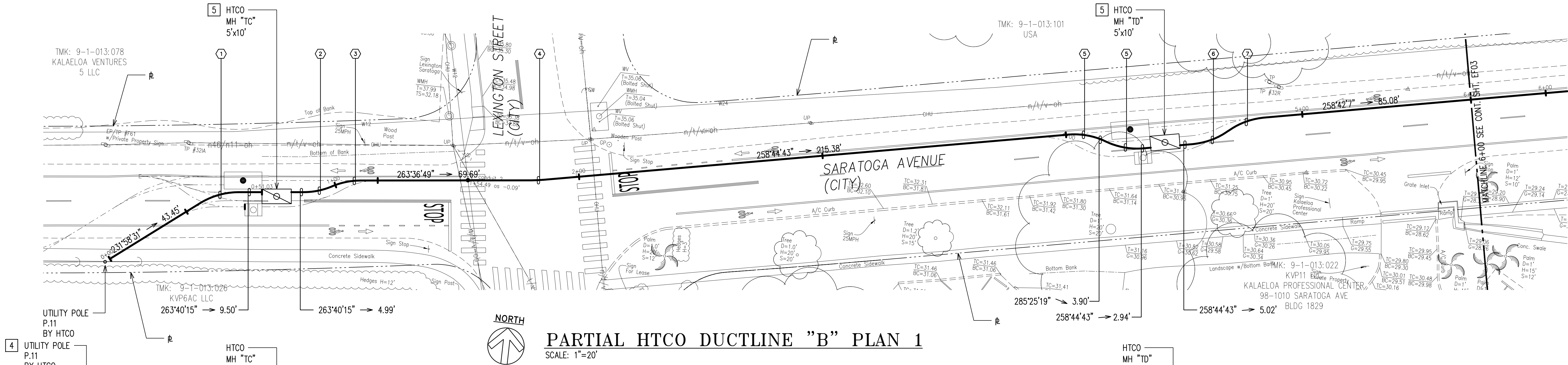
- COORDINATE WITH RESPECTIVE UTILITY COMPANY FOR POLE BURIAL DEPTH.

APPROVED BY
HAWAIIAN TELCOM
CHIEF, CIVIL ENGINEERING BRANCH, DPP
(FOR CONSTRUCTION WITHIN CITY R/W ONLY)

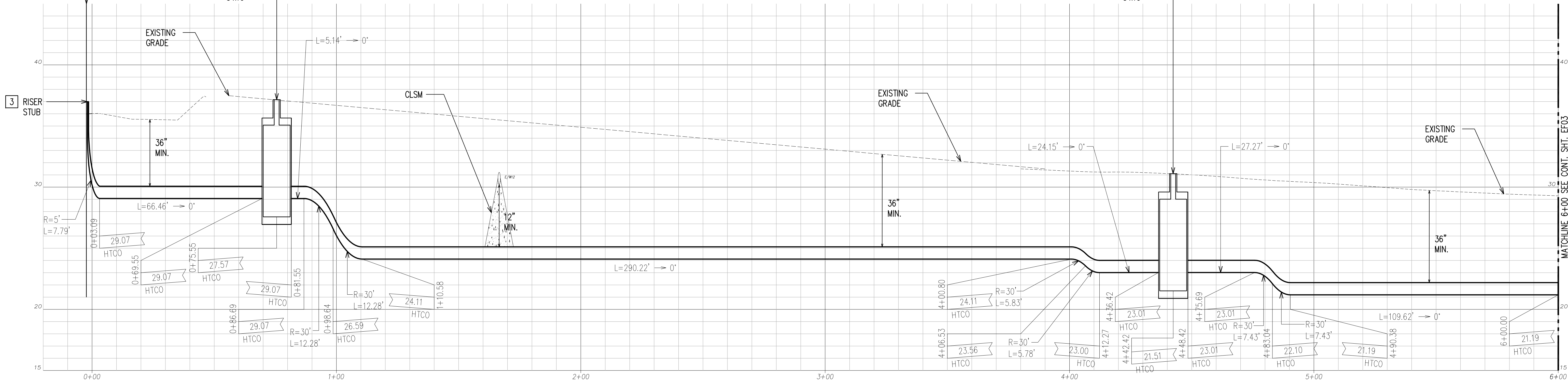


RONALD N. S. HO & ASSOCIATES, INC.
Electrical Engineers
DUSTIN Y. NAKAMOTO
LICENSED PROFESSIONAL ENGINEER
No. 14287-E
HAWAII, U.S.A.
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4/30/28
EXPIRATION DATE OF THE LICENSE

REVISION	DATE	BRIEF	BY
HAWAII COMMUNITY DEVELOPMENT AUTHORITY STATE OF HAWAII KALAELOA DEVELOPMENT DISTRICT SARATOGA AVE ELECTRICAL UPGRADES HTCO DUCTLINE A PLAN AND PROFILE			
ENGINEER:	DN	CHECKED BY:	SS
DRAFTSMAN:	CAD	DATE:	MARCH 2026
EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY			



PARTIAL HTCO DUCTLINE "B" PLAN 1
SCALE: 1"=20'



PARTIAL HTCO DUCTLINE "B" PROFILE 1
SCALE: HORIZ. 1"=20'
VERT. 1"=4'

NOTES:

- SEE CIVIL DRAWINGS FOR ALL CONCRETE JACKETING, CLSM INSTALLATION, RELOCATION, REMOVAL & CAPPING OF WET UTILITIES.
- AT UTILITY CROSSINGS WHERE PROPER COMPACTION UNDER A WATER MAIN IS DIFFICULT TO ACHIEVE, PROVIDE CLSM IN PLACE OF BACKFILL MATERIAL AND PIPE CUSHION MATERIAL.
- RISER UP A MINIMUM OF 6" ABOVE FINISHED GRADE PER RESPECTIVE UTILITY COMPANY REQUIREMENTS.

HTCO DUCTLINE "B"

CURVE DATA						
ID	Δ	Δ / 2	RADIUS	T	C	Lc
1	31°41'44"	15°50'51.8"	30.00'	8.52'	16.38'	16.60'
2	22°57'33"	11°28'46.5"	30.00'	6.09'	11.94'	12.02'
3	22°57'6"	11°28'33.2"	30.00'	6.09'	11.94'	12.02'
4	4°55'32"	2°27'46.0"	60.00'	2.58'	5.16'	5.16'
5	30°24'6"	15°12'2.8"	30.00'	8.15'	15.73'	15.92'
6	30°28'58"	15°14'29.0"	30.00'	8.17'	15.77'	15.96'
7	29°49'41"	14°54'50.3"	30.00'	7.99'	15.44'	15.62'

NOTES CONTINUED:

- COORDINATE WITH RESPECTIVE UTILITY COMPANY FOR POLE BURIAL DEPTH.
- MATCH PROFILE FOR SPLAY DUCT(S).

APPROVED BY

HAWAIIAN TELCOM

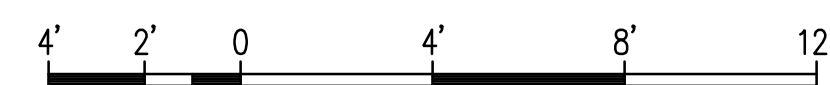
DATE

CHIEF, CIVIL ENGINEERING BRANCH, DPP
(FOR CONSTRUCTION WITHIN CITY R/W ONLY)

DATE



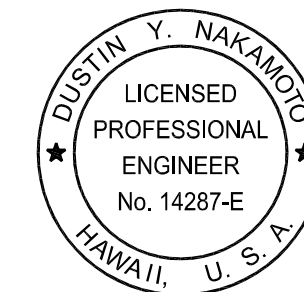
SCALE: 1"=20'



SCALE: 1"=4'

GRAPHIC SCALES

RONALD N. S. HO & ASSOCIATES, INC.
Electrical Engineers



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4/30/28
EXPIRATION DATE OF THE LICENSE

REVISION	DATE	BRIEF	BY
----------	------	-------	----

HAWAII COMMUNITY DEVELOPMENT AUTHORITY
STATE OF HAWAII
KALAELOA
DEVELOPMENT DISTRICT
SARATOGA AVE
ELECTRICAL UPGRADES
PARTIAL HTCO DUCTLINE B
PLAN AND PROFILE 1

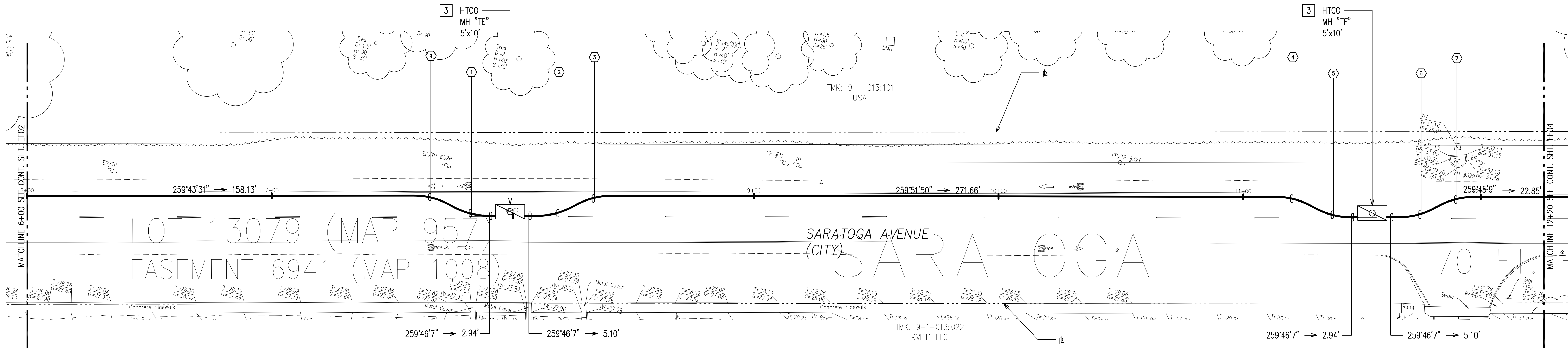
ENGINEER: DN
DRAFTSMAN: CAD

CHECKED BY: SS
DATE: MARCH 2026

APPROVED:

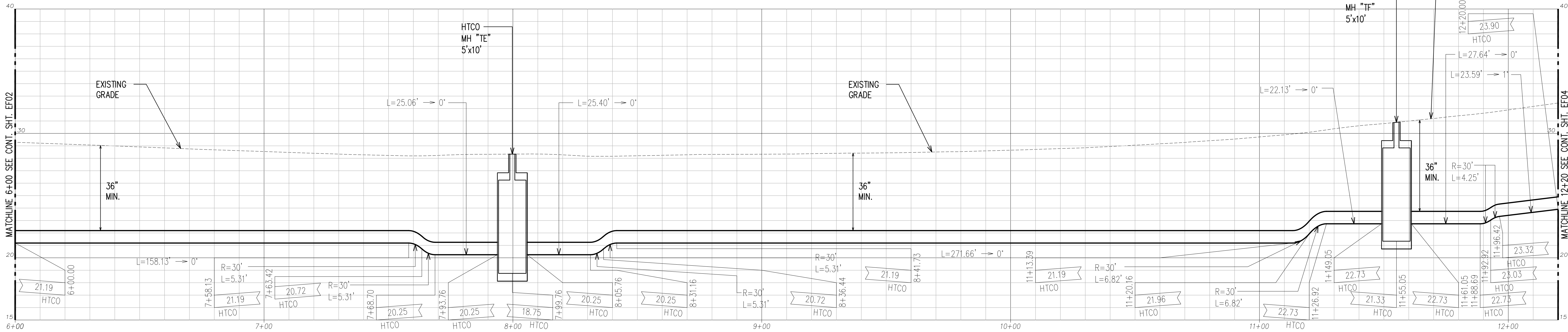
EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY

FILE	POCKET	FOLDER	NO.
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PARTIAL HTCO DUCTLINE "B" PLAN 2

SCALE: 1"=20'



PARTIAL HTCO DUCTLINE "B" PROFILE 2

SCALE: HORIZ. 1"=20'
VERT. 1"=4'

NOTES:

- SEE CIVIL DRAWINGS FOR ALL CONCRETE JACKETING, CLSM INSTALLATION, RELOCATION, REMOVAL & CAPPING OF WET UTILITIES.
- AT UTILITY CROSSINGS WHERE PROPER COMPACTION UNDER A WATER MAIN IS DIFFICULT TO ACHIEVE, PROVIDE CLSM IN PLACE OF BACKFILL MATERIAL AND PIPE CUSHION MATERIAL.

3 MATCH PROFILE FOR SPLAY DUCT(S).

HTCO DUCTLINE "B"

CURVE DATA						
ID	Δ	Δ / 2	RADIUS	T	C	Lc
1	30°24'6"	15°12'2.8"	30.00'	8.15'	15.73'	15.92'
2	30°15'11"	15°7'35.4"	30.00'	8.11'	15.66'	15.84'
3	30°20'54"	15°10'26.8"	30.00'	8.14'	15.71'	15.89'
4	30°21'45"	15°10'52.5"	30.00'	8.14'	15.71'	15.90'
5	30°27'28"	15°13'43.9"	30.00'	8.17'	15.76'	15.95'
6	30°25'37"	15°12'48.4"	30.00'	8.16'	15.74'	15.93'
7	30°24'38"	15°12'19.2"	30.00'	8.15'	15.74'	15.92'

APPROVED BY

HAWAIIAN TELCOM

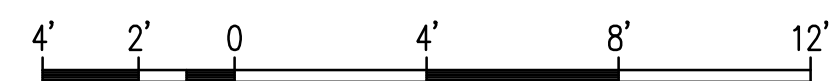
DATE

CHIEF, CIVIL ENGINEERING BRANCH, DPP
(FOR CONSTRUCTION WITHIN CITY R/W ONLY)

DATE



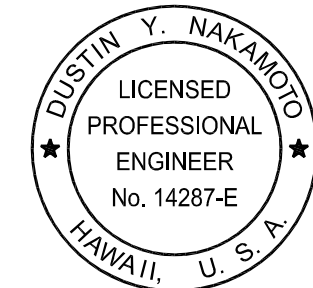
SCALE: 1"=20'



SCALE: 1"=4'

GRAPHIC SCALES

RONALD N. S. HO & ASSOCIATES, INC.
Electrical Engineers



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4/30/28
EXPIRATION DATE OF THE LICENSE

HAWAII COMMUNITY DEVELOPMENT AUTHORITY
STATE OF HAWAII

KALAELOA
DEVELOPMENT DISTRICT
SARATOGA AVE
ELECTRICAL UPGRADES
PARTIAL HTCO DUCTLINE B
PLAN AND PROFILE 2

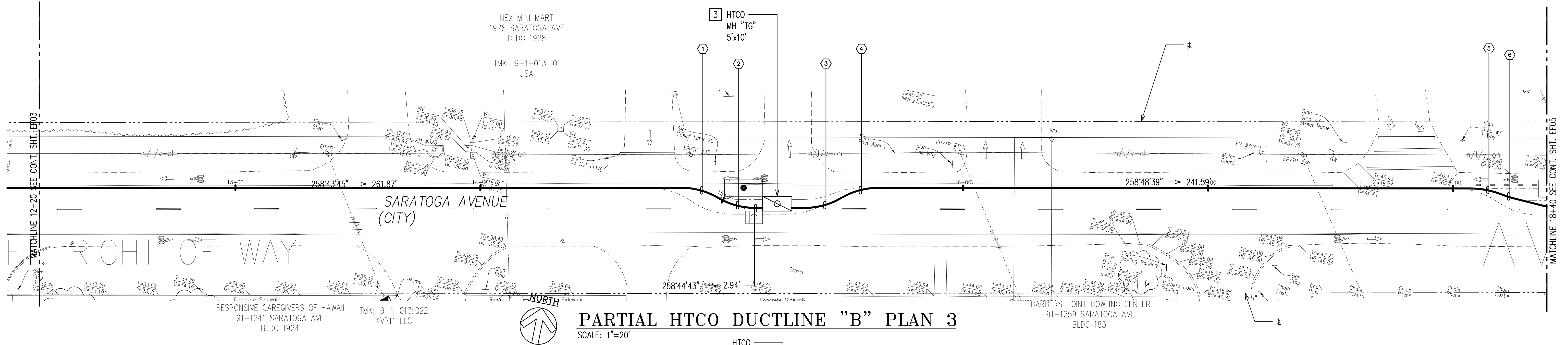
ENGINEER: DN
DRAFTSMAN: CAD

CHECKED BY: SS
DATE: MARCH 2026

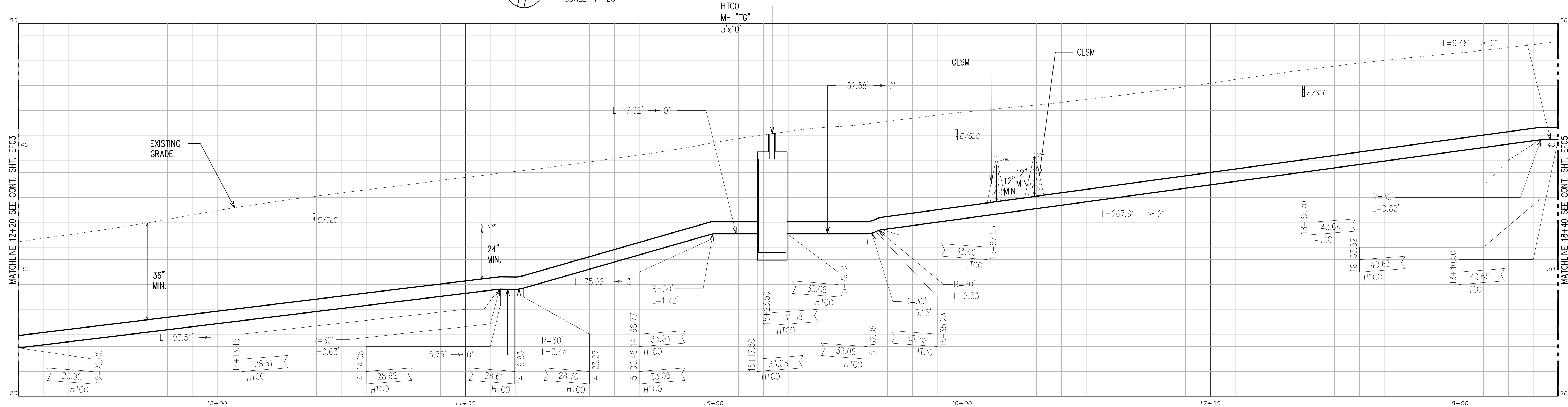
APPROVED:

EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY

FILE	POCKET	FOLDER	NO.



PARTIAL HTCO DUCTLINE "B" PLAN 3
SCALE: 1"=20'



PARTIAL HTCO DUCTLINE "B" PROFILE 3
SCALE: HORIZ. 1"=20'
VERT. 1"=4'

NOTES:

- SEE CIVIL DRAWINGS FOR ALL CONCRETE JACKETING, CLSM INSTALLATION, RELOCATION, REMOVAL & CAPPING OF WET UTILITIES.
- AT UTILITY CROSSINGS WHERE PROPER COMPACTION UNDER A WATER MAIN IS DIFFICULT TO ACHIEVE, PROVIDE CLSM IN PLACE OF BACKFILL MATERIAL AND PIPE CUSHION MATERIAL.

3 MATCH PROFILE FOR SPLAY DUCT(S).

HTCO DUCTLINE "B"

CURVE DATA						
ID	Δ	Δ / 2	RADIUS	T	C	Lc
1	30°50'7"	15°25'3.3"	30.00'	8.27'	15.95'	16.15'
2	29°57'34"	14°58'47.1"	30.00'	8.03'	15.51'	15.69'
3	30°18'23"	15°9'11.7"	30.00'	8.12'	15.68'	15.87'
4	30°22'3"	15°11'1.4"	30.00'	8.14'	15.71'	15.90'
5	22°2'56"	11°1'27.9"	35.00'	6.82'	13.39'	13.47'
6	8°4'30"	4°2'14.9"	30.00'	2.12'	4.22'	4.23'

APPROVED BY

HAWAIIAN TELCOM

DATE

CHIEF, CIVIL ENGINEERING BRANCH, DPP
(FOR CONSTRUCTION WITHIN CITY R/W ONLY)

DATE



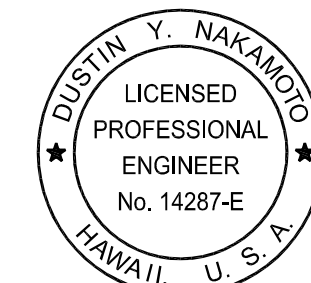
SCALE: 1"=20'



SCALE: 1"=4'

GRAPHIC SCALES

RONALD N. S. HO & ASSOCIATES, INC.
Electrical Engineers



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4/30/28
EXPIRATION DATE OF THE LICENSE

REVISION	DATE	BRIEF	BY
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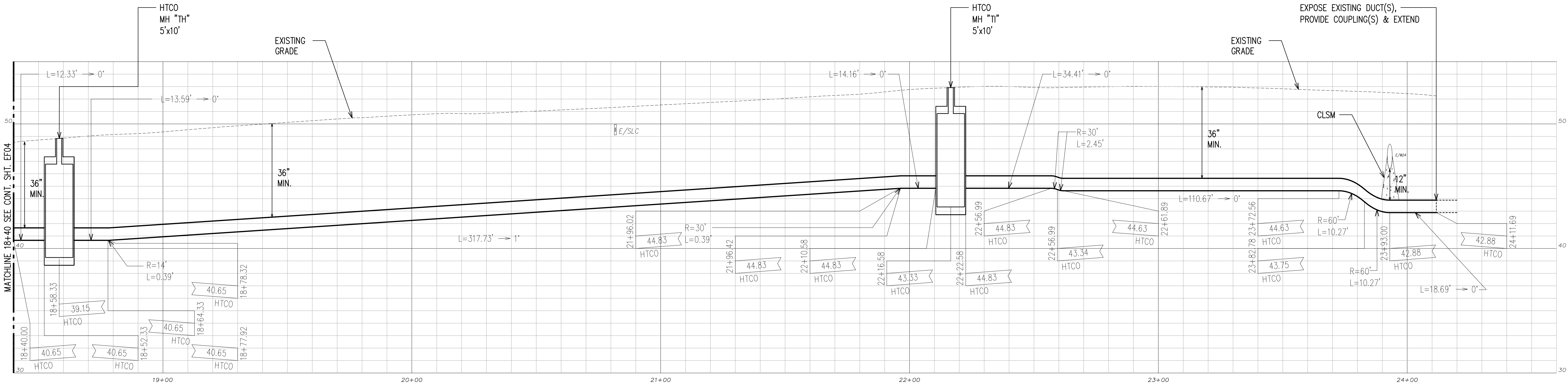
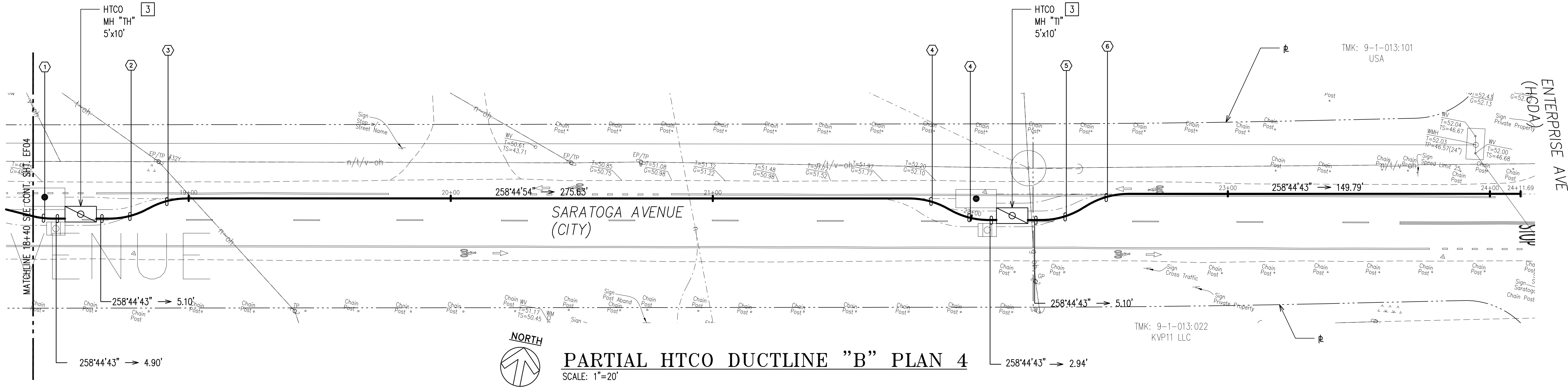
HAWAII COMMUNITY DEVELOPMENT AUTHORITY
STATE OF HAWAII

KALAELOA
DEVELOPMENT DISTRICT
SARATOGA AVE
ELECTRICAL UPGRADES
PARTIAL HTCO DUCTLINE B
PLAN AND PROFILE 3

ENGINEER: DN
DRAFTSMAN: CAD
CHECKED BY: SS
DATE: MARCH 2026

APPROVED: EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY

FILE	POCKET	FOLDER	NO.
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PARTIAL HTCO DUCTLINE "B" PROFILE 4
SCALE: HORIZ. 1"=20'
VERT. 1"=4'

NOTES:

- SEE CIVIL DRAWINGS FOR ALL CONCRETE JACKETING, CLSM INSTALLATION, RELOCATION, REMOVAL & CAPPING OF WET UTILITIES.
 - AT UTILITY CROSSINGS WHERE PROPER COMPACTION UNDER A WATER MAIN IS DIFFICULT TO ACHIEVE, PROVIDE CLSM IN PLACE OF BACKFILL MATERIAL AND PIPE CUSHION MATERIAL.
- 3** MATCH PROFILE FOR SPLAY DUCT(S).

HTCO DUCTLINE "B"

CURVE DATA						
ID	Δ	Δ / 2	RADIUS	T	C	Lc
①	14°2'10"	7°1'5.2"	30.00'	3.69'	7.33'	7.35'
②	29°21'57"	14°40'58.4"	30.00'	7.86'	15.21'	15.38'
③	29°22'7"	14°41'3.7"	30.00'	7.86'	15.21'	15.38'
④	30°24'6"	15°12'2.8"	30.00'	8.15'	15.73'	15.92'
⑤	33°25'0"	16°42'30.1"	30.00'	9.01'	17.25'	17.50'
⑥	33°33'27"	16°46'43.4"	30.00'	9.05'	17.32'	17.57'

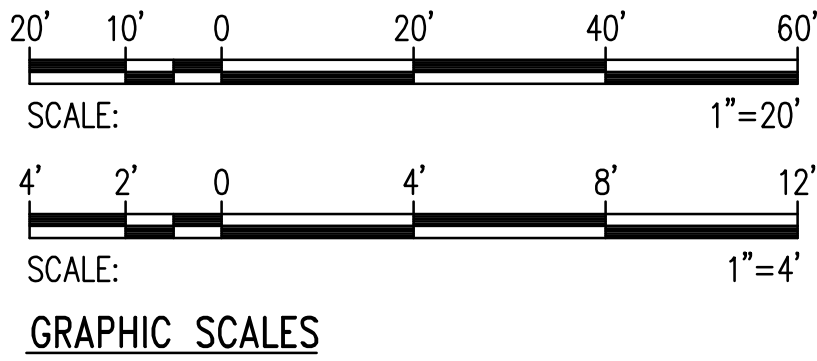
APPROVED BY

HAWAIIAN TELCOM

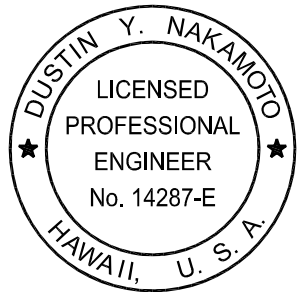
DATE

CHIEF, CIVIL ENGINEERING BRANCH, DPP
(FOR CONSTRUCTION WITHIN CITY R/W ONLY)

DATE



RONALD N. S. HO & ASSOCIATES, INC.
Electrical Engineers



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4/30/28
EXPIRATION DATE OF THE LICENSE

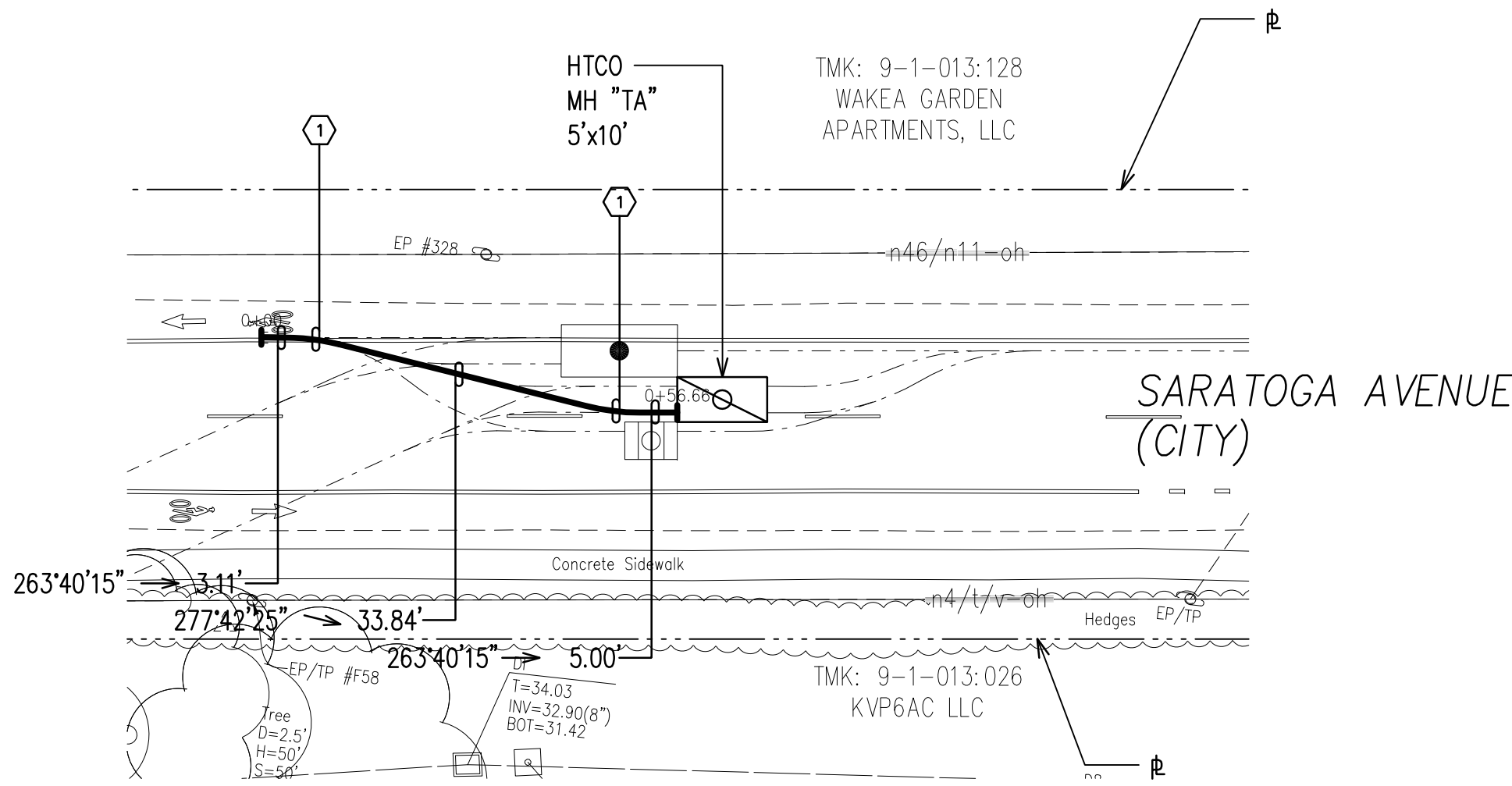
HAWAII COMMUNITY DEVELOPMENT AUTHORITY
STATE OF HAWAII

KALAELOA
DEVELOPMENT DISTRICT
SARATOGA AVE
ELECTRICAL UPGRADES
PARTIAL HTCO DUCTLINE B
PLAN AND PROFILE 4

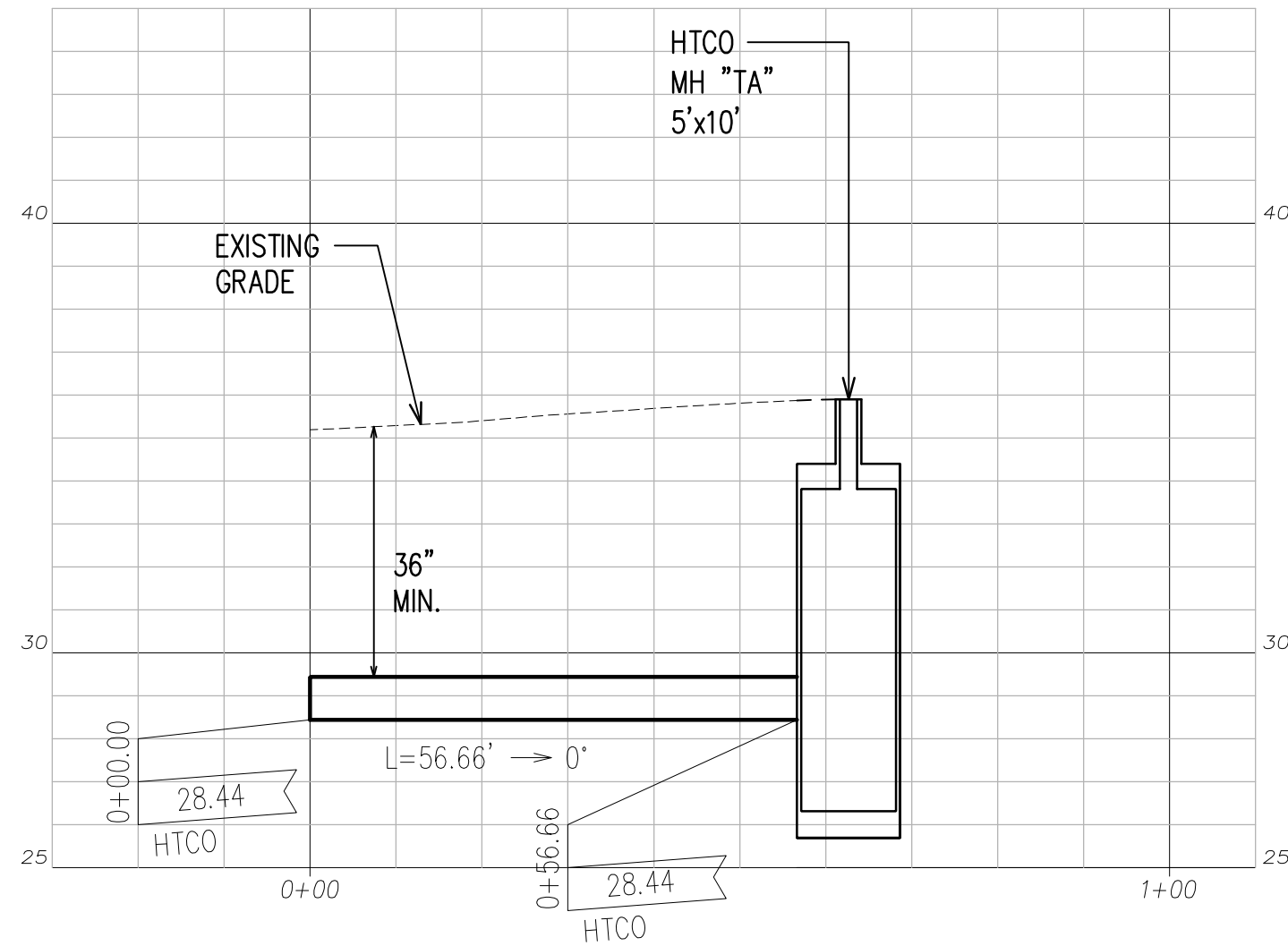
ENGINEER: **DN** CHECKED BY: **SS**
DRAFTSMAN: **CAD** DATE: **MARCH 2026**

APPROVED: EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY

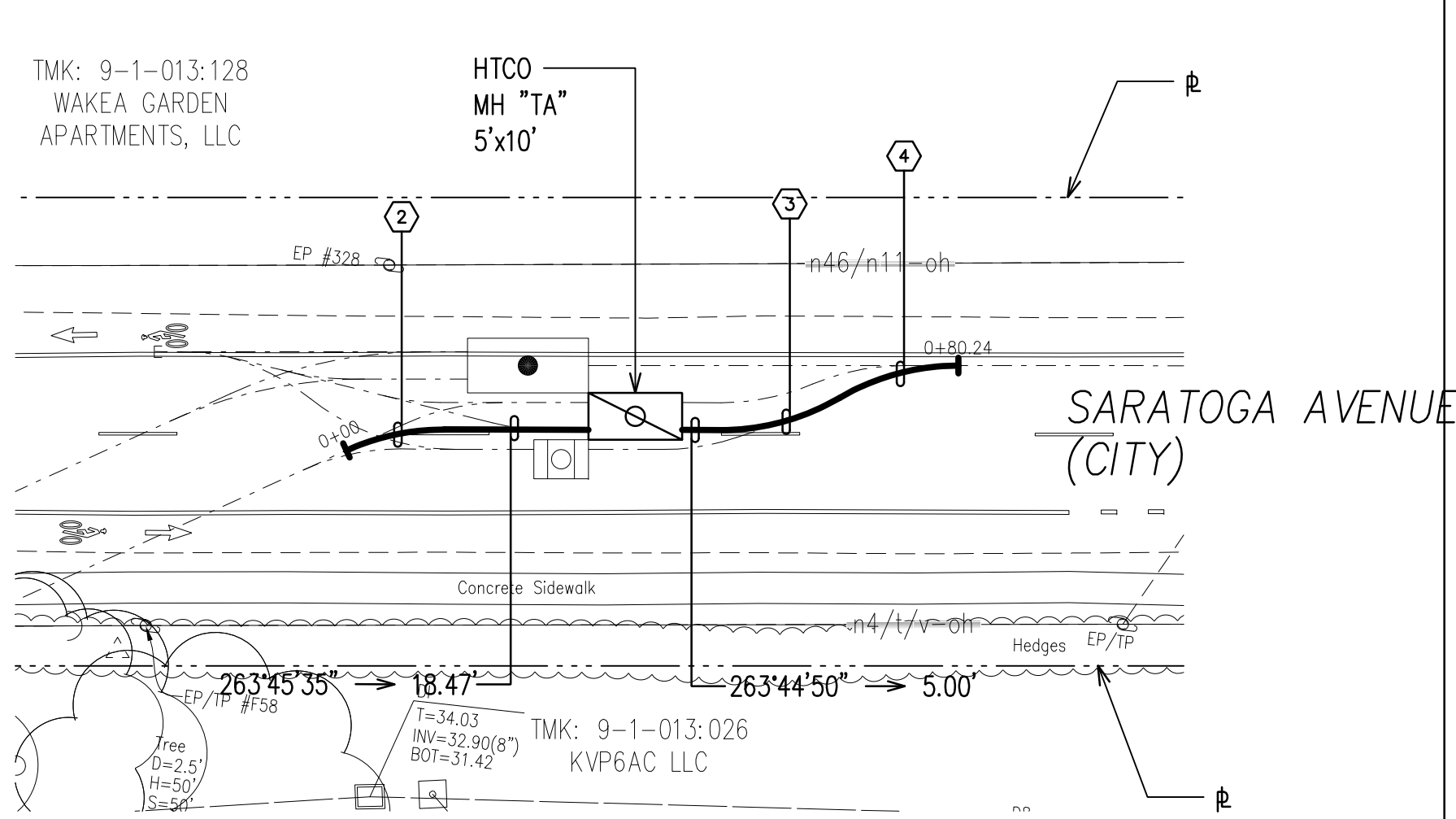
FILE	POCKET	FOLDER	NO.



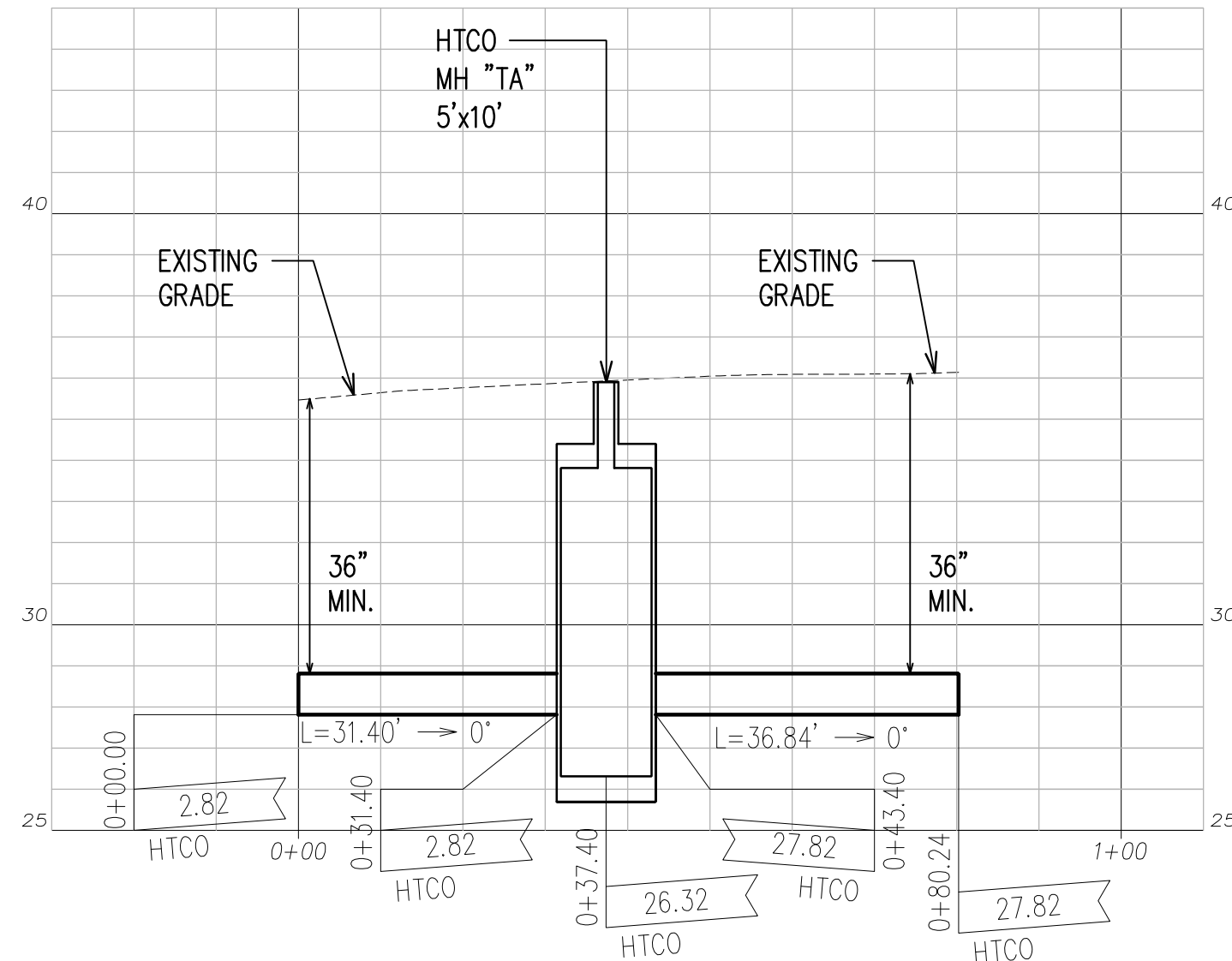
HTCO DUCTLINE "1" PLAN
SCALE: 1"=20'



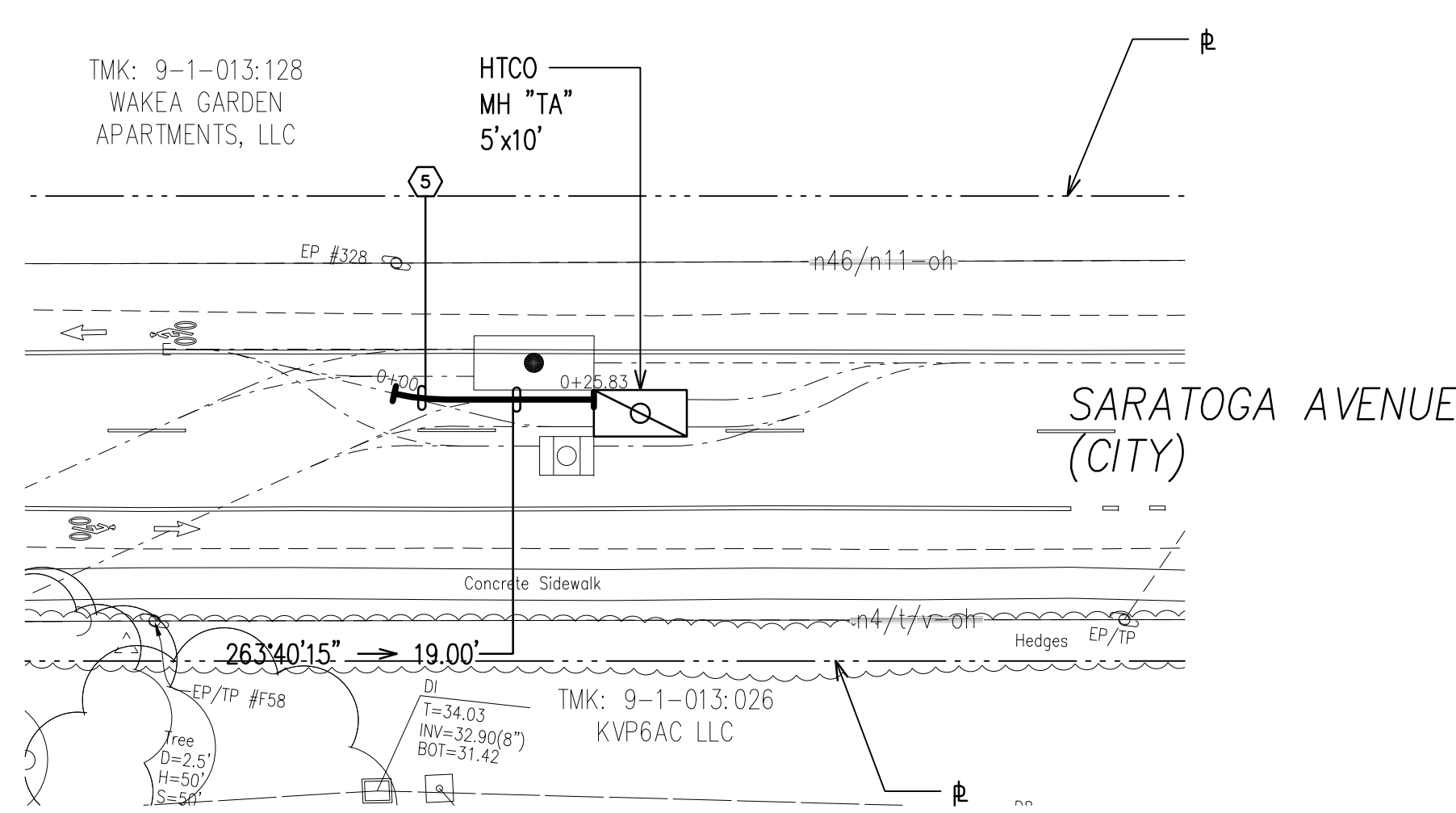
HTCO DUCTLINE "1" PROFILE
SCALE: HORIZ. 1"=20'
VERT. 1"=4'



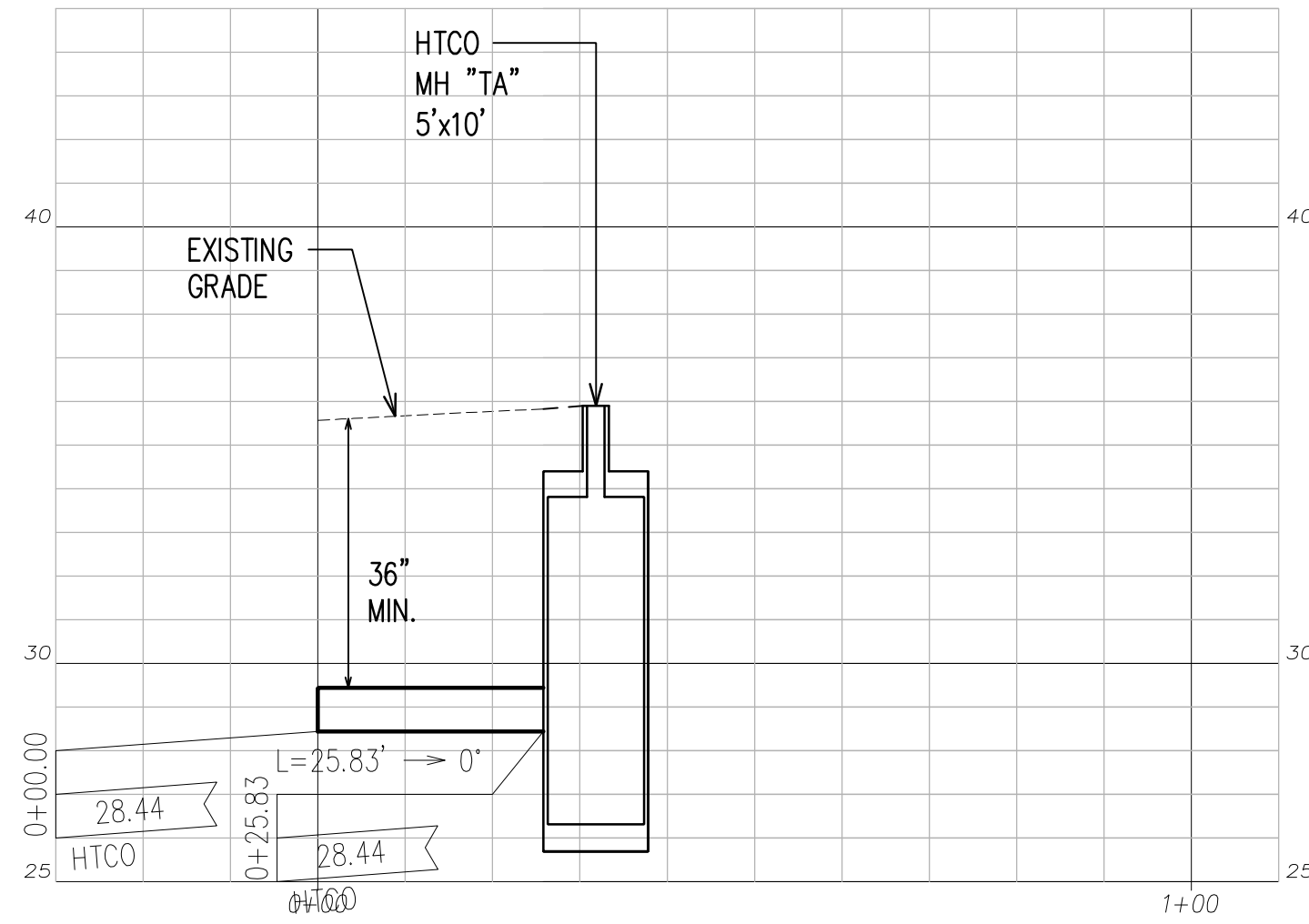
HTCO DUCTLINE "2" PLAN
SCALE: 1"=20'



HTCO DUCTLINE "2" PROFILE
SCALE: HORIZ. 1"=20'
VERT. 1"=4'



HTCO DUCTLINE "3" PLAN
SCALE: 1"=20'



HTCO DUCTLINE "3" PROFILE
SCALE: HORIZ. 1"=20'
VERT. 1"=4'

NOTES:

- SEE CIVIL DRAWINGS FOR ALL CONCRETE JACKETING, CLSM INSTALLATION, RELOCATION, REMOVAL & CAPPING OF WET UTILITIES.
- AT UTILITY CROSSINGS WHERE PROPER COMPACTION UNDER A WATER MAIN IS DIFFICULT TO ACHIEVE, PROVIDE CLSM IN PLACE OF BACKFILL MATERIAL AND PIPE CUSHION MATERIAL.

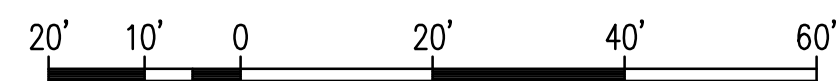
HTCO DUCTLINES

CURVE DATA						
ID	Δ	Δ / 2	RADIUS	T	C	Lc
①	14°2'10"	7°1'5.2"	30.00'	3.69'	7.33'	7.35'
②	24°41'2"	12°20'30.9"	30.00'	6.56'	12.82'	12.92'
③	30°24'46"	15°12'23.2"	30.00'	8.15'	15.74'	15.92'
④	30°24'20"	15°12'10.1"	30.00'	8.15'	15.73'	15.92'
⑤	13°2'26"	6°31'13.1"	30.00'	3.43'	6.81'	6.83'

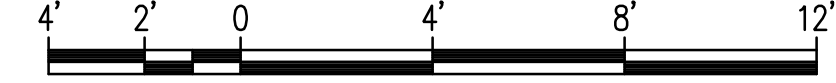
APPROVED BY

HAWAIIAN TELCOM DATE

CHIEF, CIVIL ENGINEERING BRANCH, DPP
(FOR CONSTRUCTION WITHIN CITY R/W ONLY)



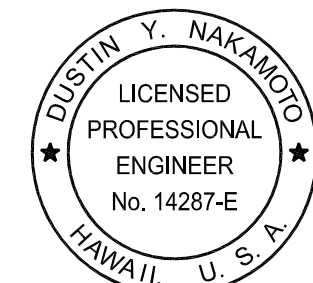
SCALE: 1"=20'



SCALE: 1"=4'

GRAPHIC SCALES

RONALD N. S. HO & ASSOCIATES, INC.
Electrical Engineers



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AND CONSTRUCTION OF THE
PROJECT WILL BE UNDER MY
OBSERVATION.

3/30/28
EXPIRATION DATE OF THE LICENSE

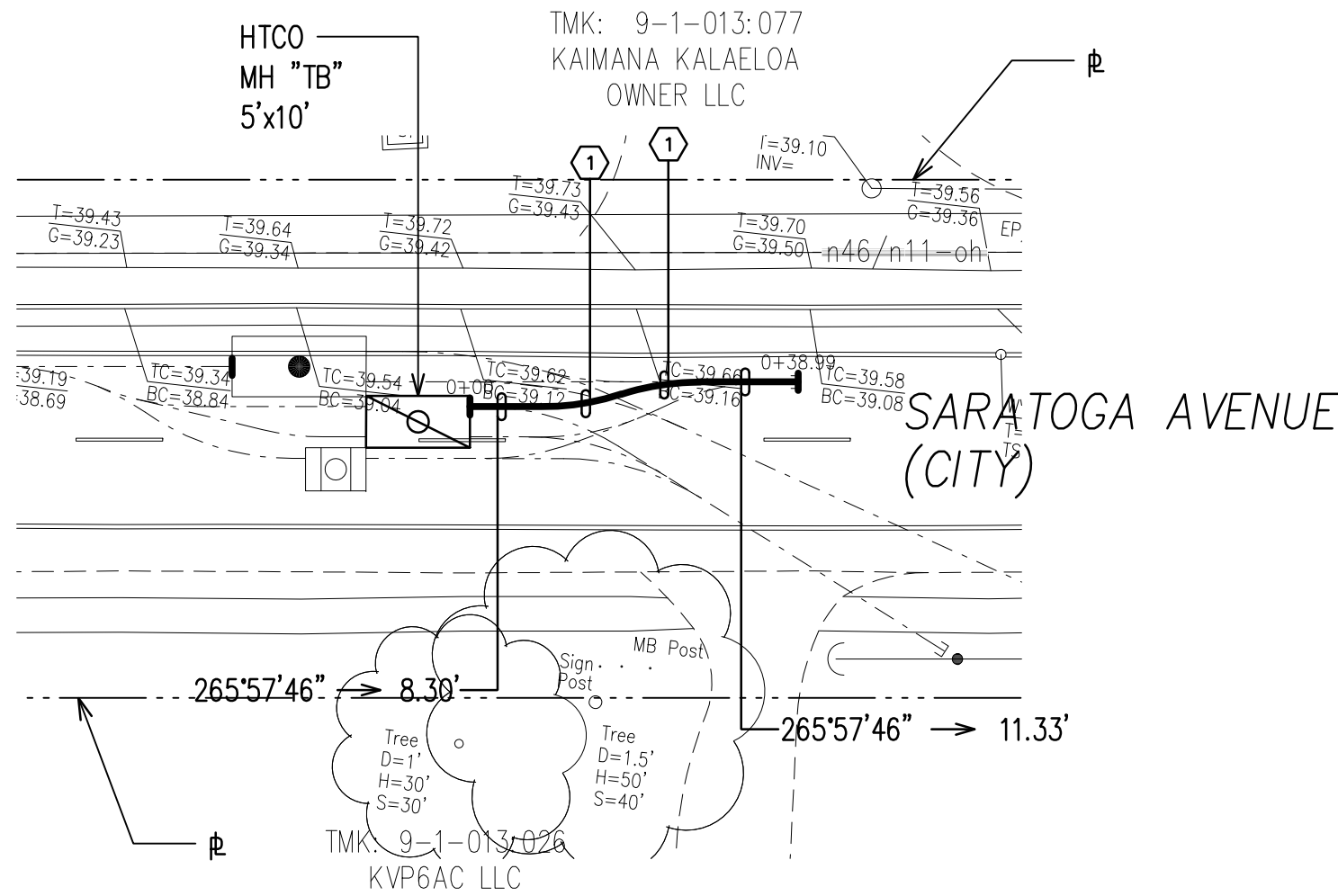
HAWAII COMMUNITY DEVELOPMENT AUTHORITY
STATE OF HAWAII

KALAELOA
DEVELOPMENT DISTRICT
SARATOGA AVE
ELECTRICAL UPGRADES
HTCO DUCTLINES 1, 2 AND 3
PLANS AND PROFILES

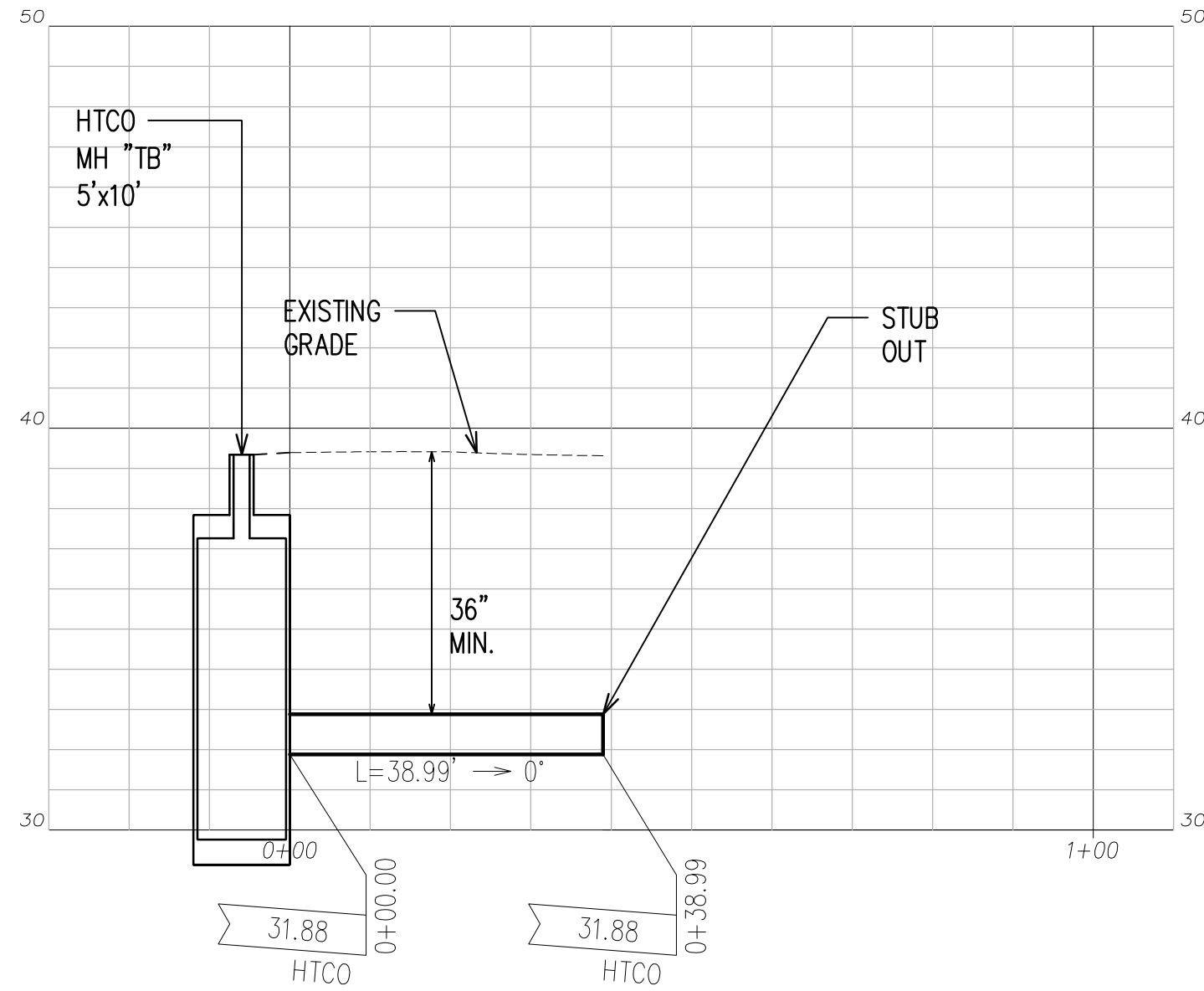
ENGINEER: DN
DRAFTSMAN: CAD
CHECKED BY: SS
DATE: MARCH 2026

APPROVED: EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY

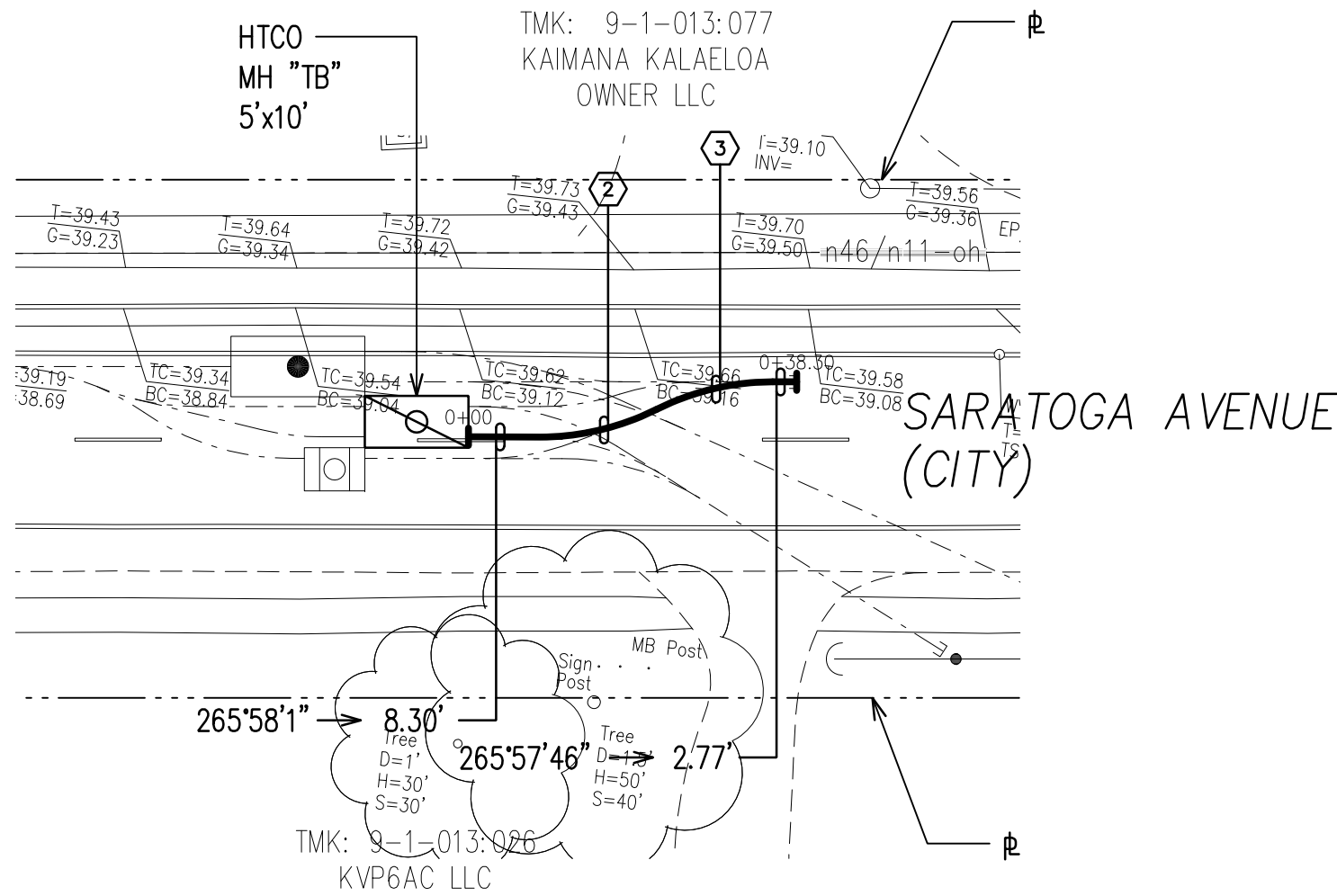
FILE	POCKET	FOLDER	NO.



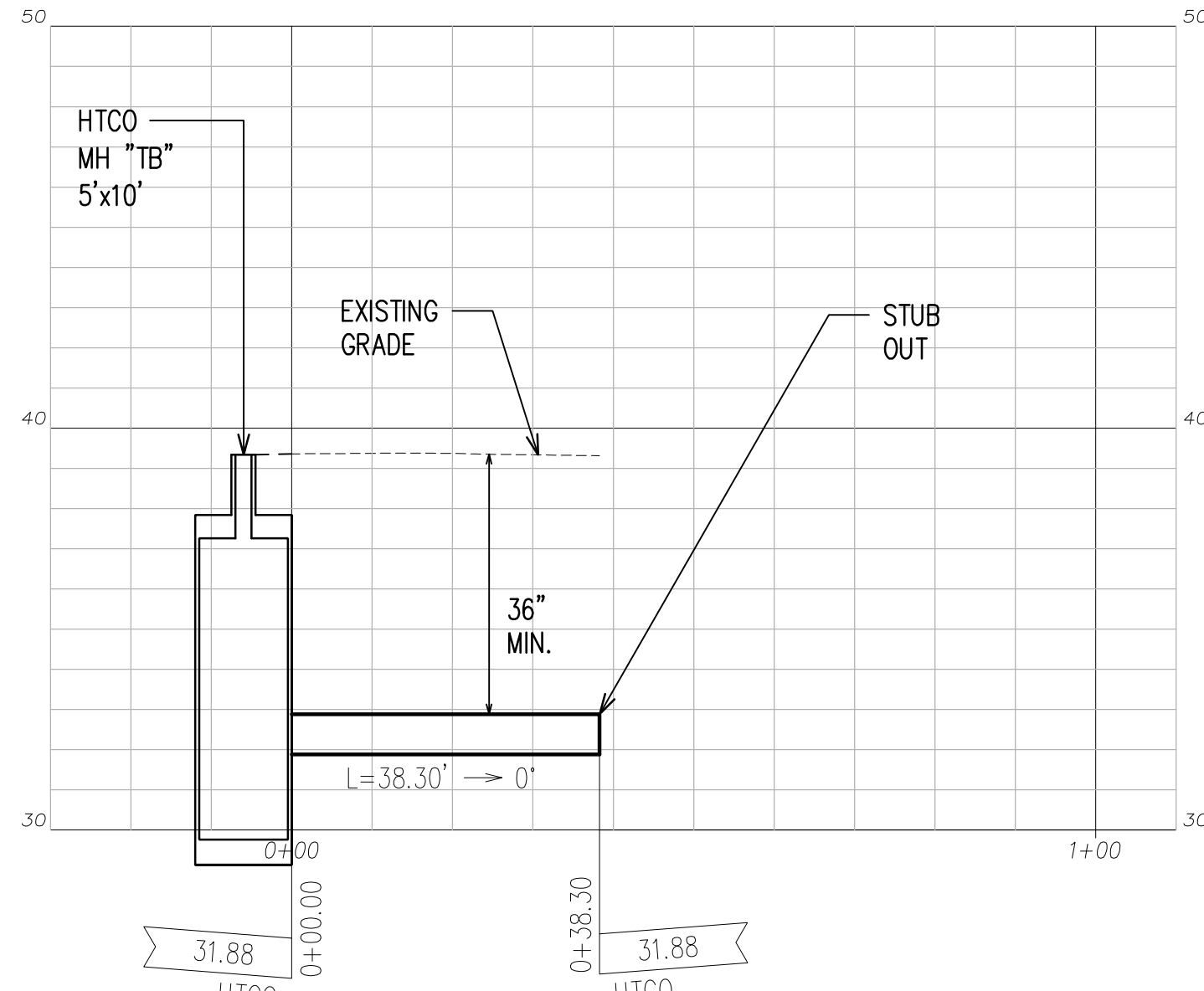
HTCO DUCTLINE "4" PLAN
SCALE: 1"=20'



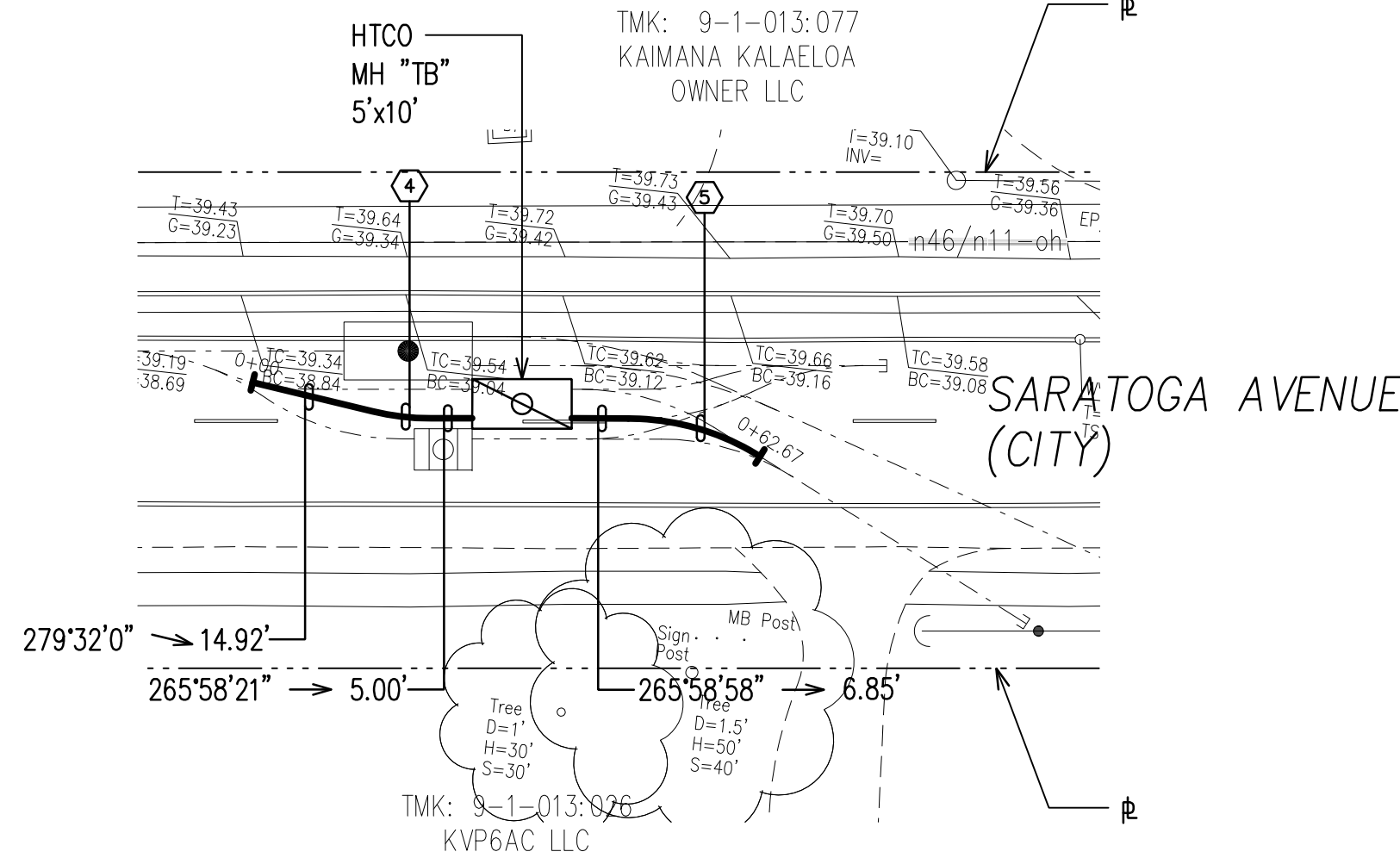
HTCO DUCTLINE "4" PROFILE
SCALE: HORIZ. 1"=20'
VERT. 1"=4'



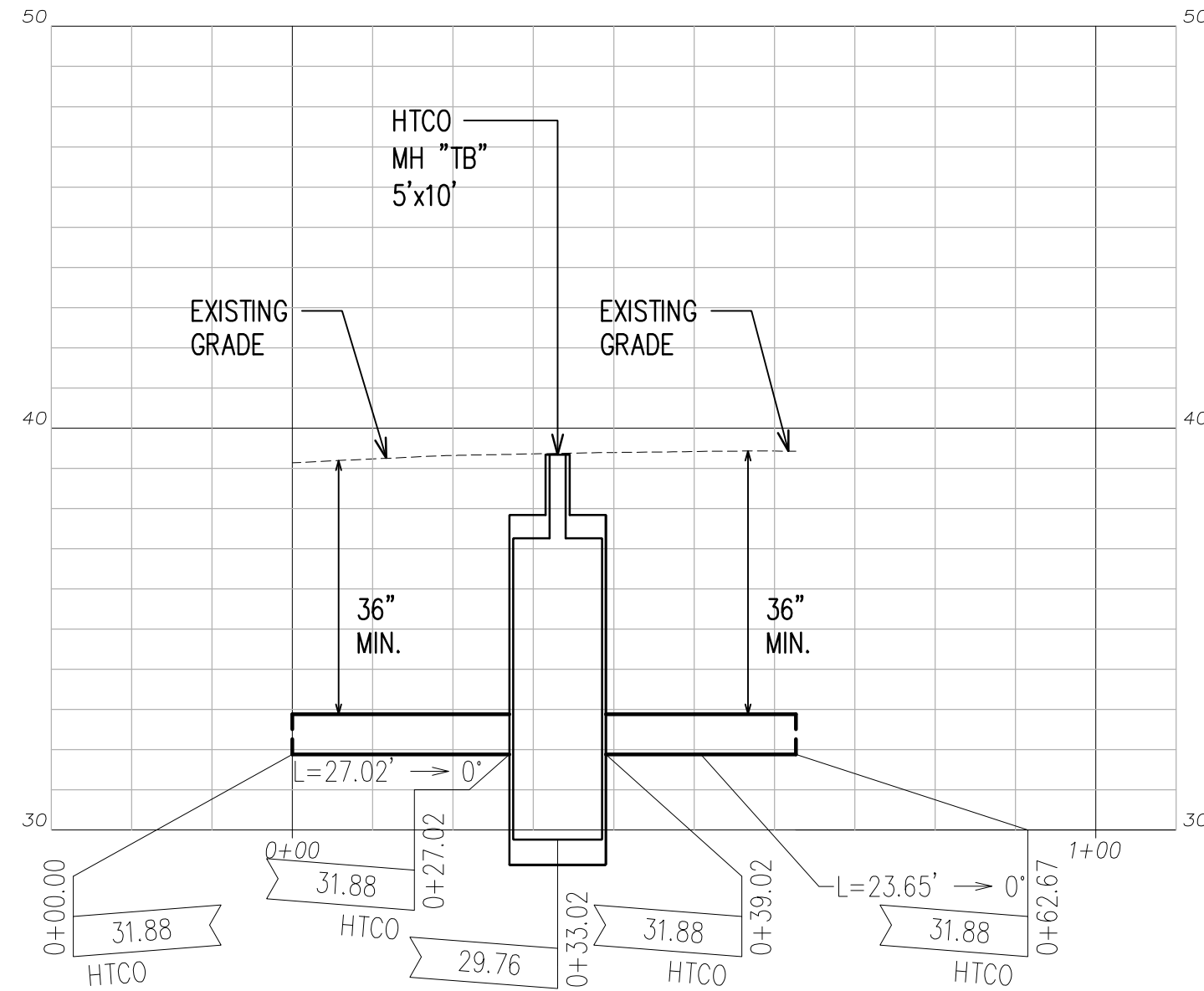
HTCO DUCTLINE "5" PLAN
SCALE: 1"=20'



HTCO DUCTLINE "5" PROFILE
SCALE: HORIZ. 1"=20'
VERT. 1"=4'



HTCO DUCTLINE "6" PLAN
SCALE: 1"=20'



HTCO DUCTLINE "6" PROFILE
SCALE: HORIZ. 1"=20'
VERT. 1"=4'

NOTES:

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- AT UTILITY CROSSINGS WHERE PROPER COMPACTION UNDER A WATER MAIN IS DIFFICULT TO ACHIEVE, PROVIDE CLSM IN PLACE OF BACKFILL MATERIAL AND PIPE CUSHION MATERIAL.

HTCO DUCTLINES

CURVE DATA						
ID	Δ	Δ / 2	RADIUS	T	C	Lc
①	17°49'25"	8°54'42.3"	30.00'	4.70'	9.29'	9.33'
②	26°40'2"	13°20'0.8"	30.00'	7.11'	13.84'	13.96'
③	26°39'47"	13°19'53.5"	30.00'	7.11'	13.84'	13.96'
④	13°34'14"	6°47'6.8"	30.00'	3.57'	7.09'	7.11'
⑤	32°5'33"	16°2'46.5"	30.00'	8.63'	16.58'	16.80'

APPROVED BY

HAWAIIAN TELCOM DATE

CHIEF, CIVIL ENGINEERING BRANCH, DPP
(FOR CONSTRUCTION WITHIN CITY R/W ONLY) DATE



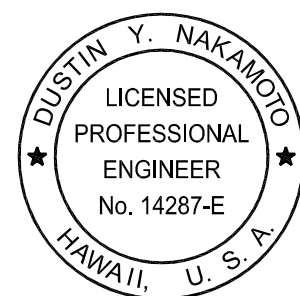
SCALE: 1"=20'



SCALE: 1"=4'

GRAPHIC SCALES

RONALD N. S. HO & ASSOCIATES, INC.
Electrical Engineers



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4/30/28
EXPIRATION DATE OF THE LICENSE

HAWAII COMMUNITY DEVELOPMENT AUTHORITY
STATE OF HAWAII

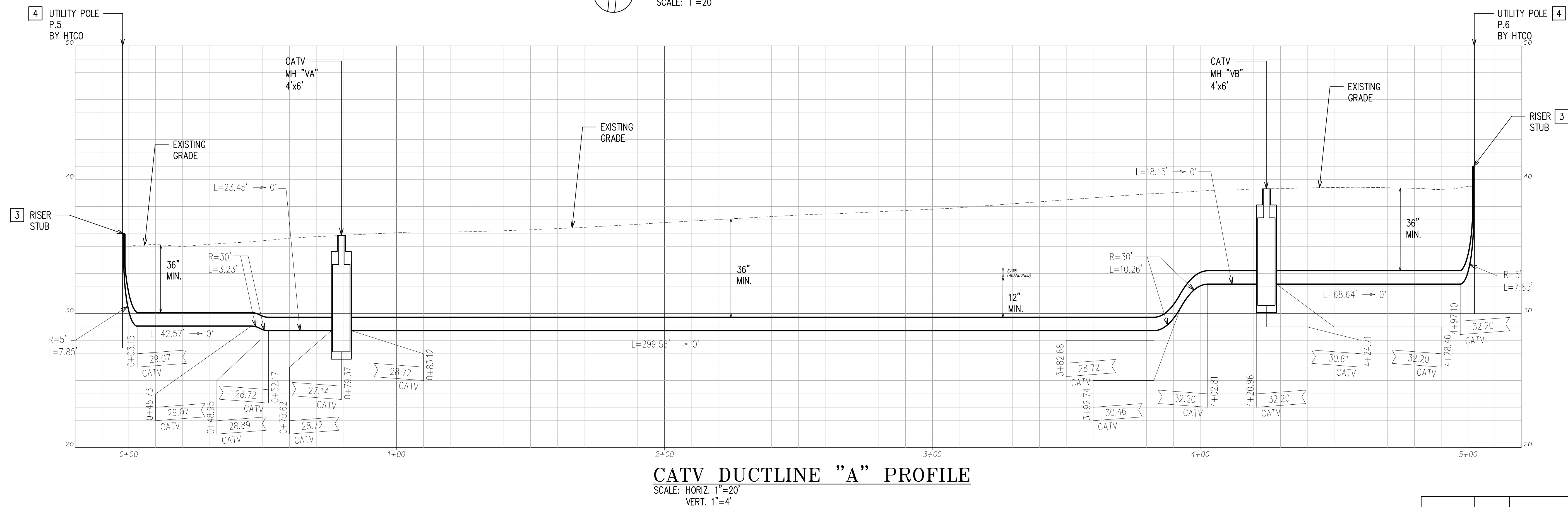
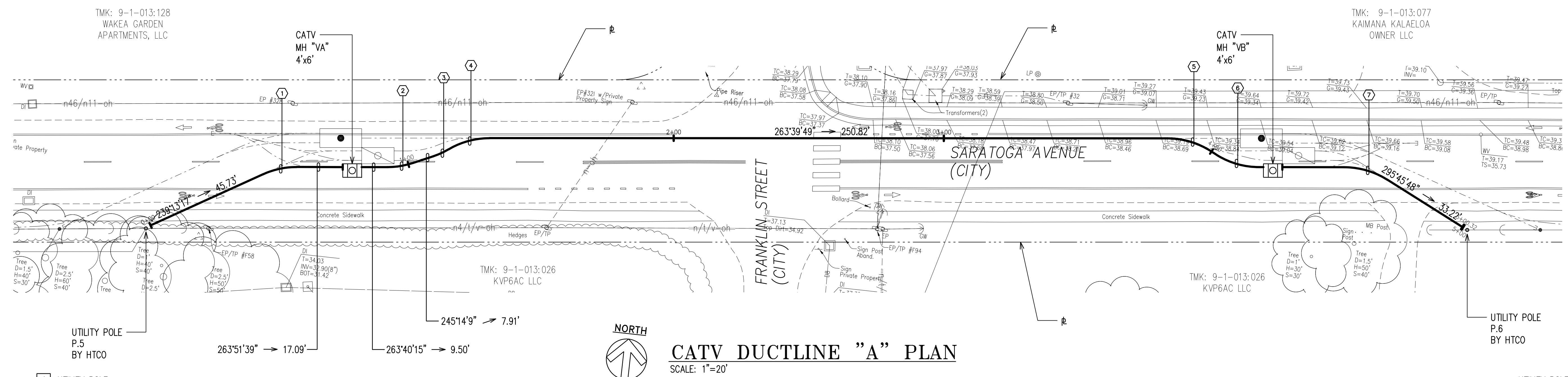
KALAELOA
DEVELOPMENT DISTRICT
SARATOGA AVE
ELECTRICAL UPGRADES
HTCO DUCTLINES 4, 5 AND 6
PLANS AND PROFILES

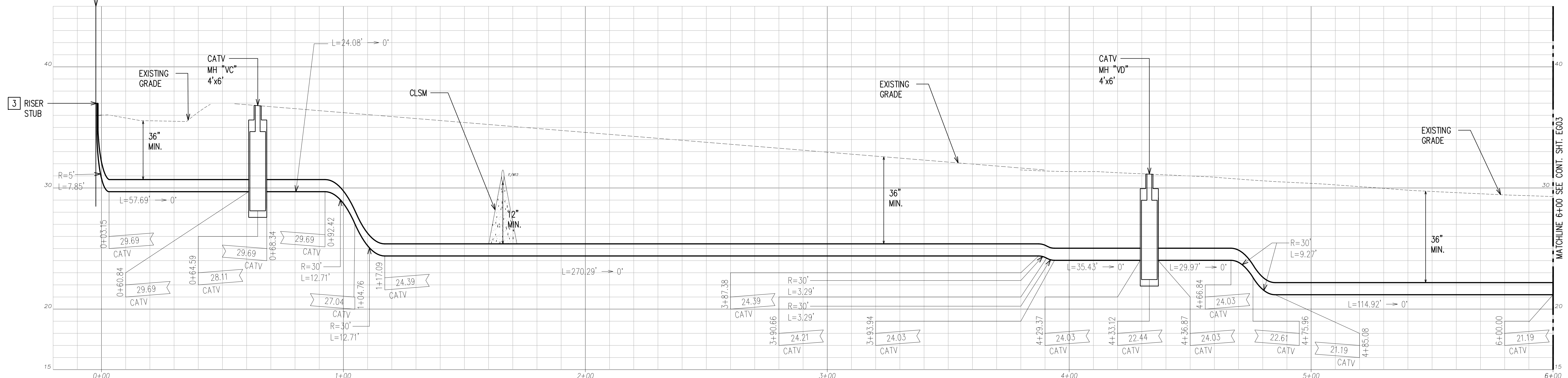
ENGINEER: DN
DRAFTSMAN: CAD

CHECKED BY: SS
DATE: MARCH 2026

APPROVED: EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY

FILE	POCKET	FOLDER	NO.





SCALE: HORIZ. 1"=20'
VERT. 1"=4'

4

CURVE DATA						
ID	Δ	$\Delta / 2$	RADIUS	T	C	Lc
①	31°41'44"	15°50'51.8"	30.00'	8.52'	16.38'	16.60'
②	19°37'16"	9°48'38.1"	30.00'	5.19'	10.22'	10.27'
③	30°24'6"	15°12'2.8"	30.00'	8.15'	15.73'	15.92'
④	4°51'41"	2°25'50.4"	60.00'	2.55'	5.09'	5.09'
⑤	34°49'54"	17°24'57.1"	30.00'	9.41'	17.96'	18.24'
⑥	19°48'56"	9°54'28.2"	30.00'	5.24'	10.32'	10.38'
⑦	10°40'2"	5°20'0.8"	30.00'	2.80'	5.58'	5.59'
⑧	30°25'46"	15°12'53.1"	30.00'	8.16'	15.75'	15.93'

1. SEE CIVIL DRAWINGS FOR ALL CONCRETE JACKETING, CLSM INSTALLATION, RELOCATION, REMOVAL & CAPPING OF WET UTILITIES.
2. AT UTILITY CROSSINGS WHERE PROPER COMPACTION UNDER A WATER MAIN IS DIFFICULT TO ACHIEVE, PROVIDE CLSM IN PLACE OF BACKFILL MATERIAL AND PIPE CUSHION MATERIAL.

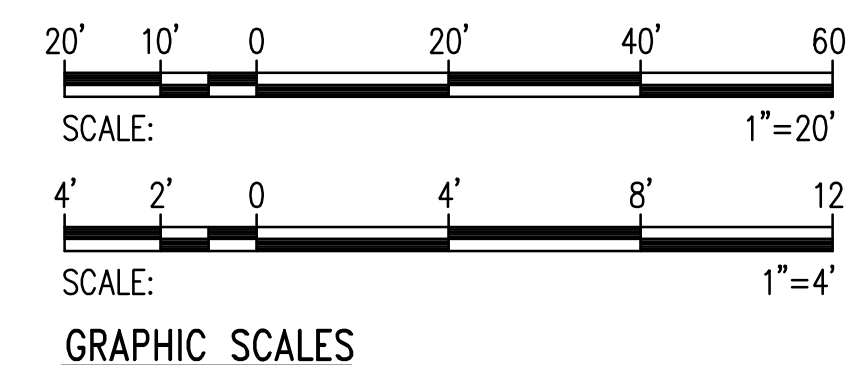
3 RISER UP A MINIMUM OF 6" ABOVE FINISHED GRADE PER RESPECTIVE UTILITY COMPANY REQUIREMENTS.

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ME OR UNDER MY SUPERVISION
AND CONSTRUCTION OF THE
PROJECT WILL BE UNDER MY
OBSERVATION.

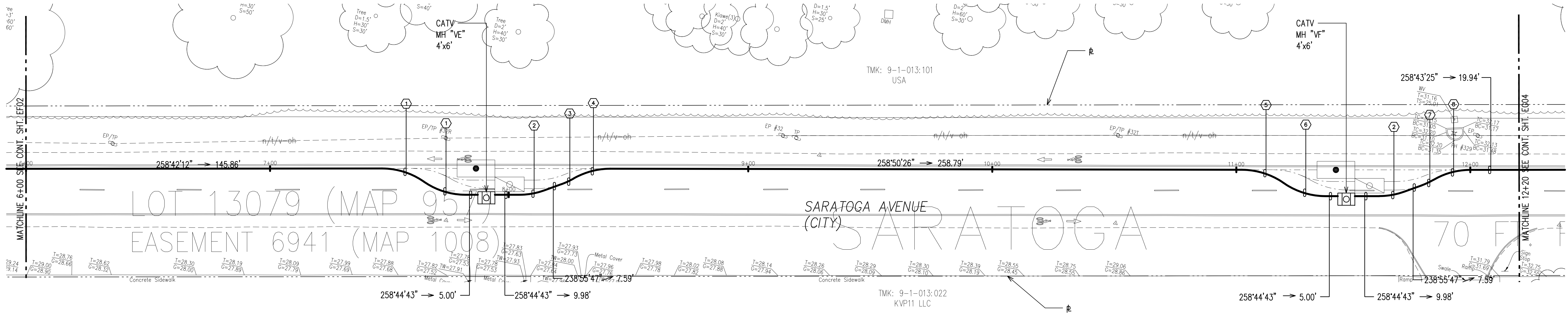
 04/30/20

EXPIRATION DATE OF THE LICENSE

EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY

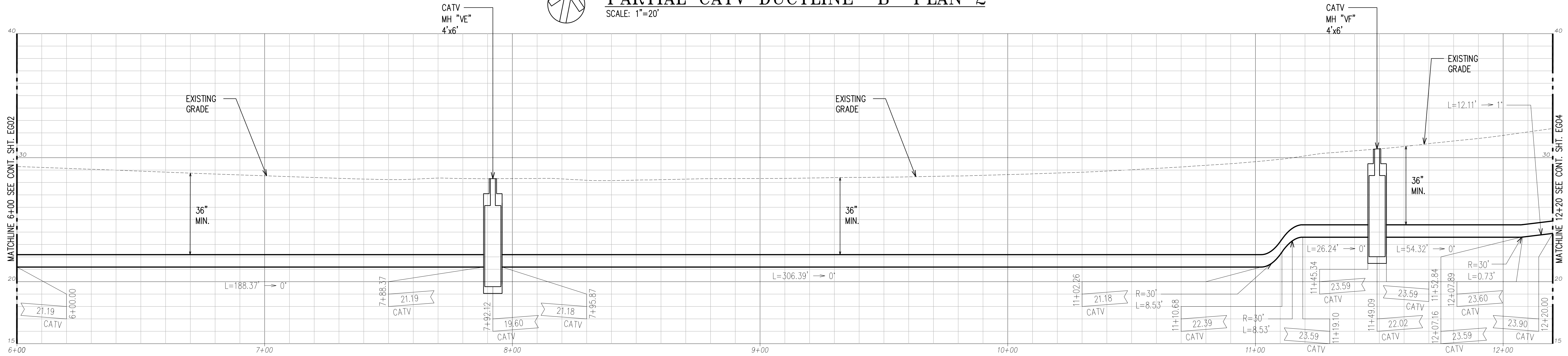


CHIEF, CIVIL ENGINEERING BRANCH, DPP
(FOR CONSTRUCTION WITHIN CITY R/W ONLY)



PARTIAL CATV DUCTLINE "B" PLAN 2

SCALE: 1"=20'



PARTIAL CATV DUCTLINE "B" PROFILE 2

SCALE: HORIZ. 1"=20'
VERT. 1"=4'

NOTES:

- SEE CIVIL DRAWINGS FOR ALL CONCRETE JACKETING, CLSM INSTALLATION, RELOCATION, REMOVAL & CAPPING OF WET UTILITIES.
- AT UTILITY CROSSINGS WHERE PROPER COMPACTION UNDER A WATER MAIN IS DIFFICULT TO ACHIEVE, PROVIDE CLSM IN PLACE OF BACKFILL MATERIAL AND PIPE CUSHION MATERIAL.

CATV DUCTLINE "B"

CURVE DATA						
ID	Δ	Δ / 2	RADIUS	T	C	Lc
①	34°49'54"	17°24'57.1"	30.00'	9.41'	17.96'	18.24'
②	19°48'56"	9°54'28.2"	30.00'	5.24'	10.32'	10.38'
③	10°17'51"	5°8'55.6"	30.00'	2.70'	5.38'	5.39'
④	30°12'31"	15°6'15.3"	30.00'	8.10'	15.63'	15.82'
⑤	34°49'19"	17°24'39.6"	30.00'	9.41'	17.95'	18.23'
⑥	34°55'2"	17°27'31.1"	30.00'	9.44'	18.00'	18.28'
⑦	10°28'20"	5°14'9.9"	30.00'	2.75'	5.48'	5.48'
⑧	30°16'18"	15°8'8.9"	30.00'	8.11'	15.67'	15.85'

APPROVED BY

SPECTRUM OCEANIC DATE

CHIEF, CIVIL ENGINEERING BRANCH, DPP
(FOR CONSTRUCTION WITHIN CITY R/W ONLY)

DATE

DATE



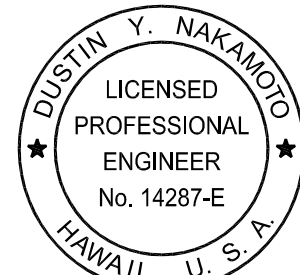
SCALE: 1"=20'



SCALE: 1"=4'

GRAPHIC SCALES

RONALD N. S. HO & ASSOCIATES, INC.
Electrical Engineers



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4/30/28
EXPIRATION DATE OF THE LICENSE

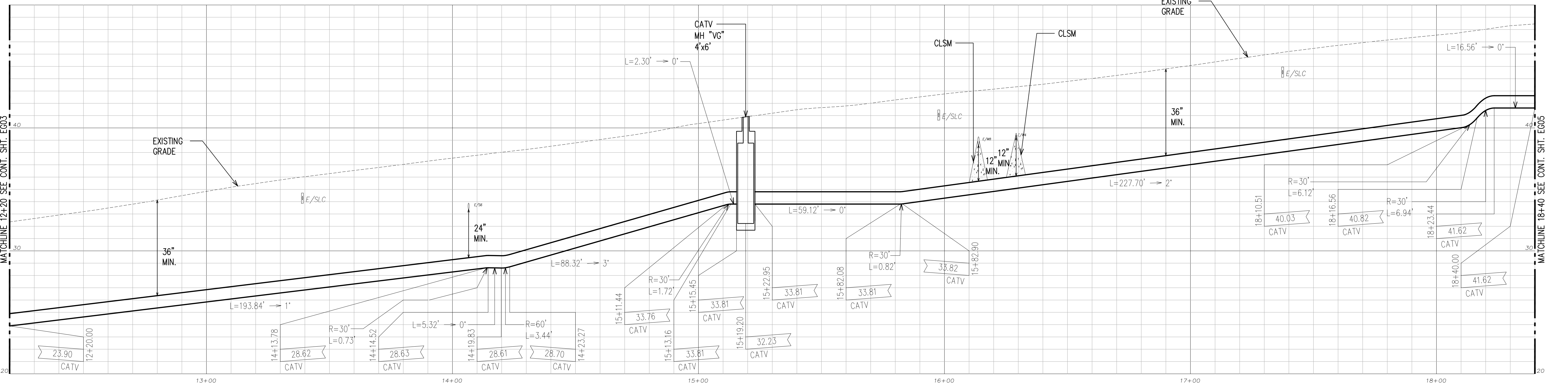
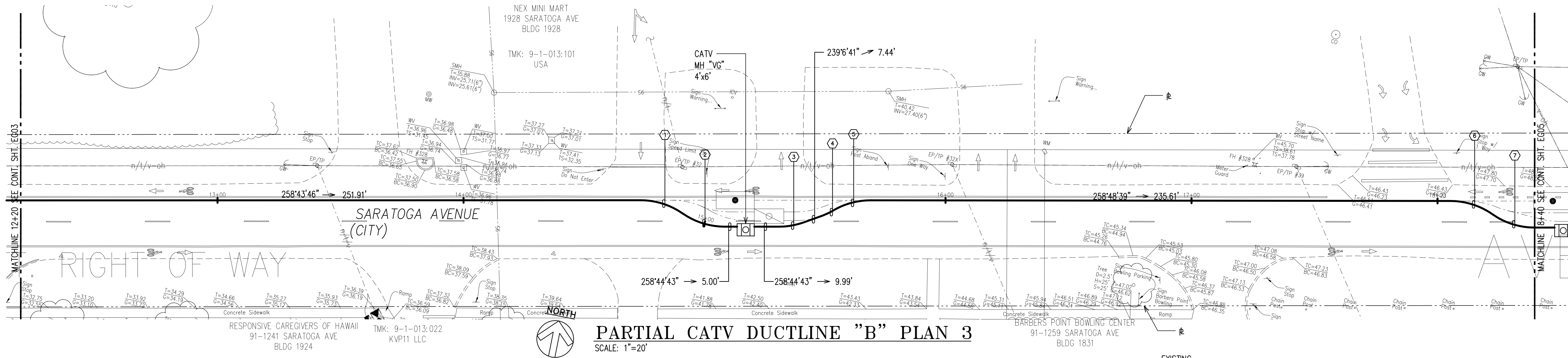
HAWAII COMMUNITY DEVELOPMENT AUTHORITY
STATE OF HAWAII

KALAELOA
DEVELOPMENT DISTRICT
SARATOGA AVE
ELECTRICAL UPGRADES
PARTIAL CATV DUCTLINE B
PLAN AND PROFILE 2

ENGINEER: DN
DRAFTSMAN: CAD
CHECKED BY: SS
DATE: MARCH 2026

APPROVED: EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY

FILE	POCKET	FOLDER	NO.



PARTIAL CATV DUCTLINE "B" PROFILE 3
SCALE: HORIZ. 1"=20'
VERT. 1"=4'

NOTES:

- SEE CIVIL DRAWINGS FOR ALL CONCRETE JACKETING, CLSM INSTALLATION, RELOCATION, REMOVAL & CAPPING OF WET UTILITIES.
- AT UTILITY CROSSINGS WHERE PROPER COMPACTION UNDER A WATER MAIN IS DIFFICULT TO ACHIEVE, PROVIDE CLSM IN PLACE OF BACKFILL MATERIAL AND PIPE CUSHION MATERIAL.

CATV DUCTLINE "B"

CURVE DATA						
ID	Δ	Δ / 2	RADIUS	T	C	Lc
①	34°50'0"	17°25'0.0"	30.00'	9.41'	17.96'	18.24'
②	34°49'2"	17°24'30.8"	30.00'	9.41'	17.95'	18.23'
③	19°38'2"	9°49'0.8"	30.00'	5.19'	10.23'	10.28'
④	10°40'22"	5°20'10.9"	30.00'	2.80'	5.58'	5.59'
⑤	30°22'3"	15°11'1.4"	30.00'	8.14'	15.71'	15.90'
⑥	34°49'40"	17°24'50.0"	30.00'	9.41'	17.96'	18.24'
⑦	34°56'1"	17°28'0.4"	30.00'	9.44'	18.01'	18.29'

APPROVED BY

SPECTRUM OCEANIC

CHIEF, CIVIL ENGINEERING BRANCH, DPP
(FOR CONSTRUCTION WITHIN CITY R/W ONLY)

DATE

DATE



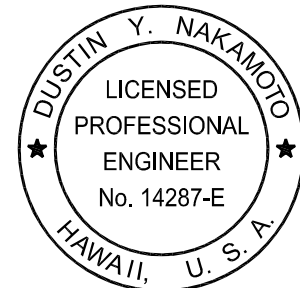
SCALE: 1"=20'



SCALE: 1"=4'

GRAPHIC SCALES

RONALD N. S. HO & ASSOCIATES, INC.
Electrical Engineers



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4/30/28
EXPIRATION DATE OF THE LICENSE

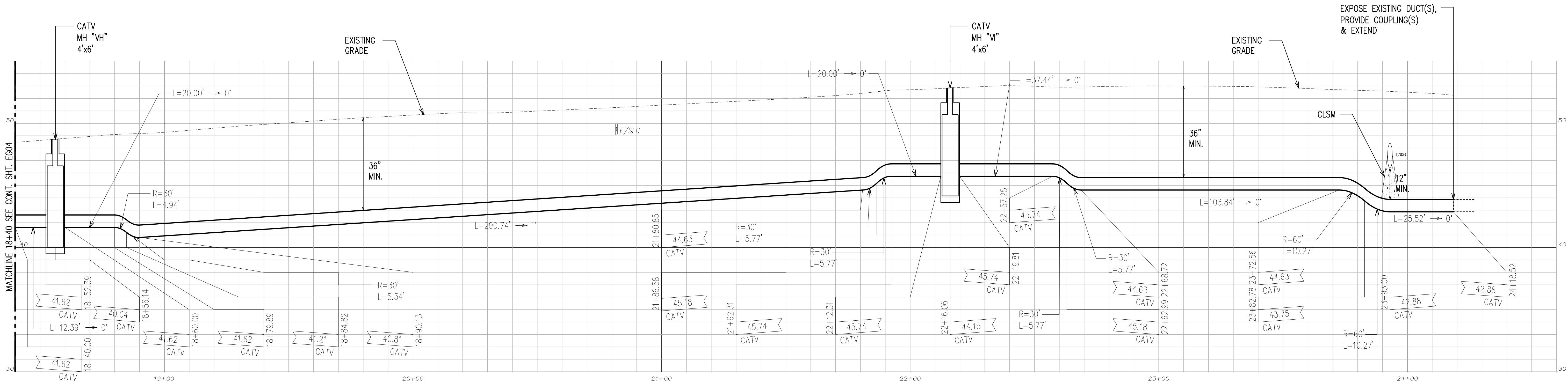
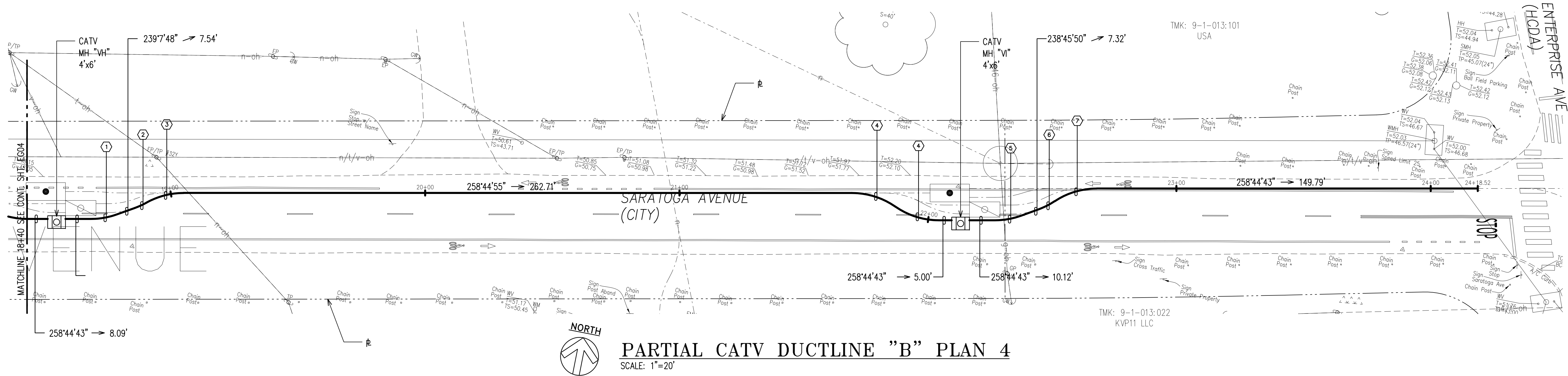
HAWAII COMMUNITY DEVELOPMENT AUTHORITY
STATE OF HAWAII

KALAELOA
DEVELOPMENT DISTRICT
SARATOGA AVE
ELECTRICAL UPGRADES
PARTIAL CATV DUCTLINE B
PLAN AND PROFILE 3

ENGINEER: DN
DRAFTSMAN: CAD
CHECKED BY: SS
DATE: MARCH 2026

APPROVED: EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY

FILE	POCKET	FOLDER	NO.



PARTIAL CATV DUCTLINE "B" PROFILE 4
SCALE: HORIZ. 1"=20'
VERT. 1"=4'

NOTES:

- SEE CIVIL DRAWINGS FOR ALL CONCRETE JACKETING, CLSM INSTALLATION, RELOCATION, REMOVAL & CAPPING OF WET UTILITIES.
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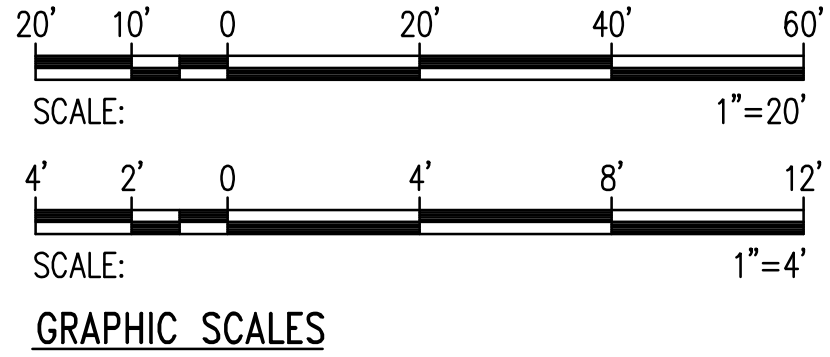
CATV DUCTLINE "B"

CURVE DATA						
ID	Δ	Δ / 2	RADIUS	T	C	Lc
①	19°37'21"	9°48'40.6"	30.00'	5.19'	10.22'	10.27'
②	9°41'30"	4°50'44.9"	30.00'	2.54'	5.07'	5.07'
③	29°18'36"	14°39'18.2"	30.00'	7.85'	15.18'	15.35'
④	34°49'54"	17°24'57.1"	30.00'	9.41'	17.96'	18.24'
⑤	19°51'17"	9°55'38.7"	30.00'	5.25'	10.34'	10.40'
⑥	13°34'33"	6°47'16.6"	30.00'	3.57'	7.09'	7.11'
⑦	33°33'27"	16°46'43.4"	30.00'	9.05'	17.32'	17.57'

APPROVED BY

SPECTRUM OCEANIC DATE

CHIEF, CIVIL ENGINEERING BRANCH, DPP
(FOR CONSTRUCTION WITHIN CITY R/W ONLY)



RONALD N. S. HO & ASSOCIATES, INC.
Electrical Engineers

DUSTIN Y. NAKAMOTO
LICENSED PROFESSIONAL ENGINEER
No. 14287-E
HAWAII, U.S.A.

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4/30/28
EXPIRATION DATE OF THE LICENSE

REVISION	DATE	BRIEF	BY

HAWAII COMMUNITY DEVELOPMENT AUTHORITY
STATE OF HAWAII

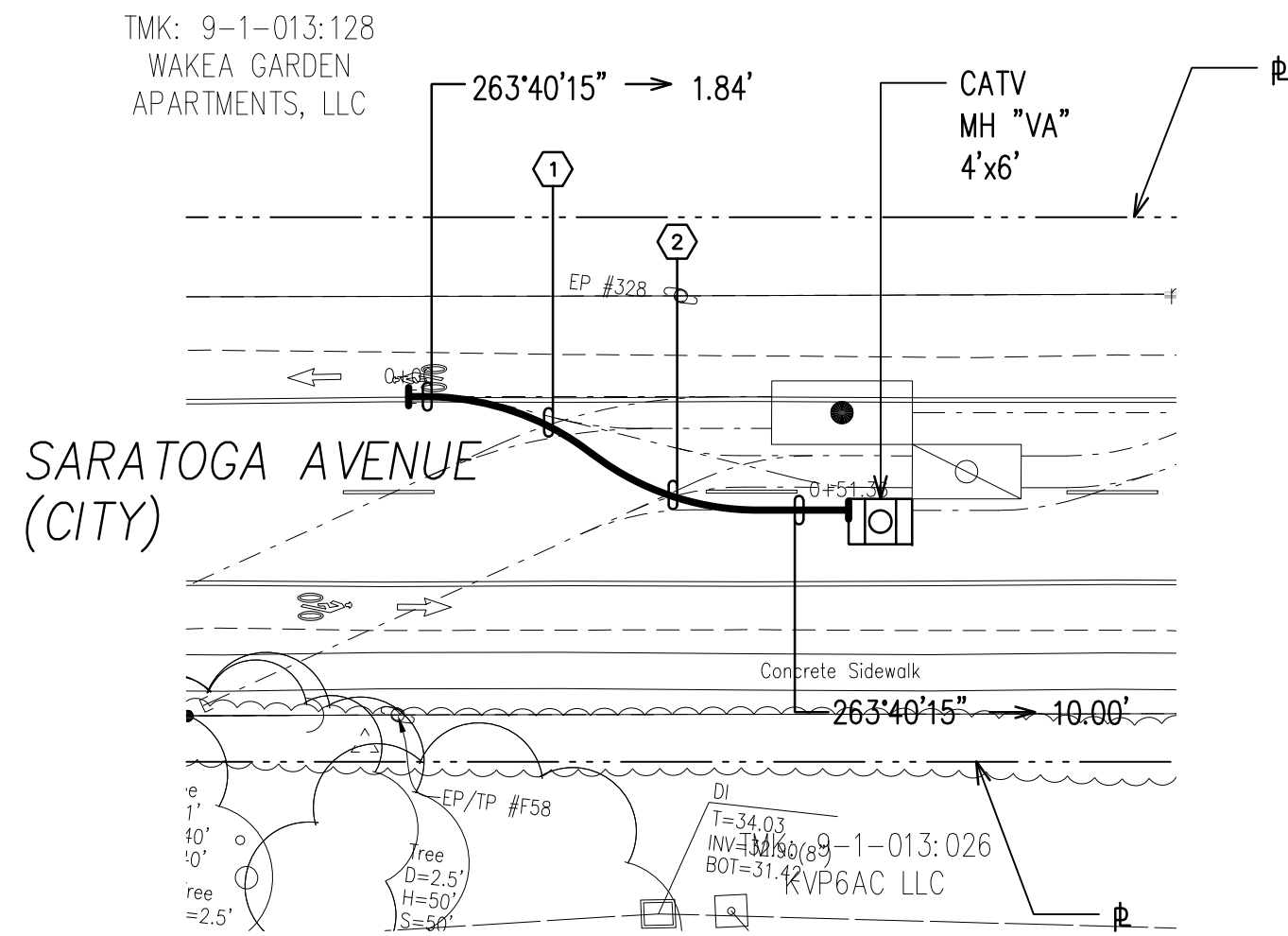
KALAELOA
DEVELOPMENT DISTRICT
SARATOGA AVE
ELECTRICAL UPGRADES

PARTIAL CATV DUCTLINE B
PLAN AND PROFILE 4

ENGINEER: DN CHECKED BY: SS
DRAFTSMAN: CAD DATE: MARCH 2026

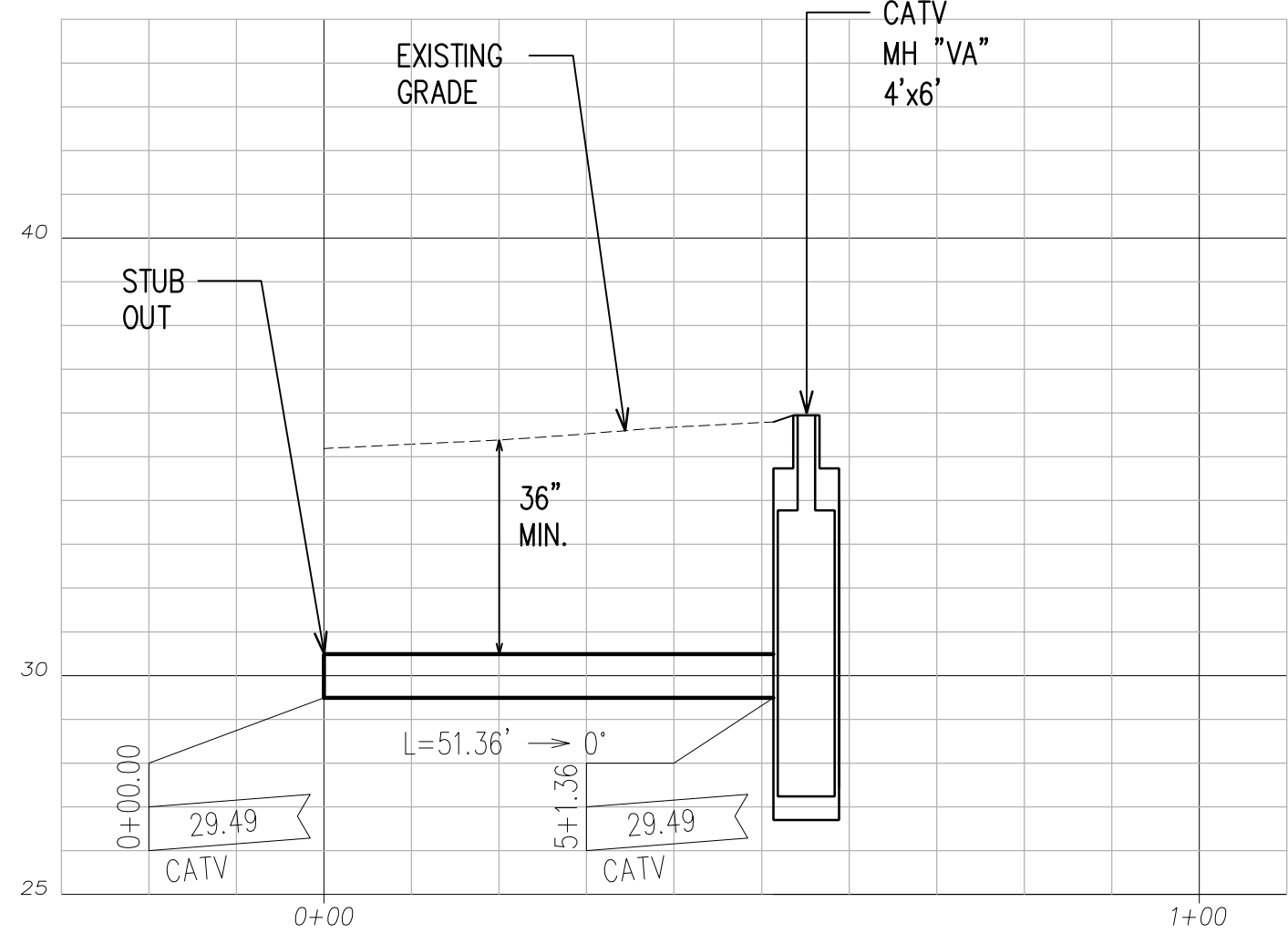
APPROVED: _____

EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY



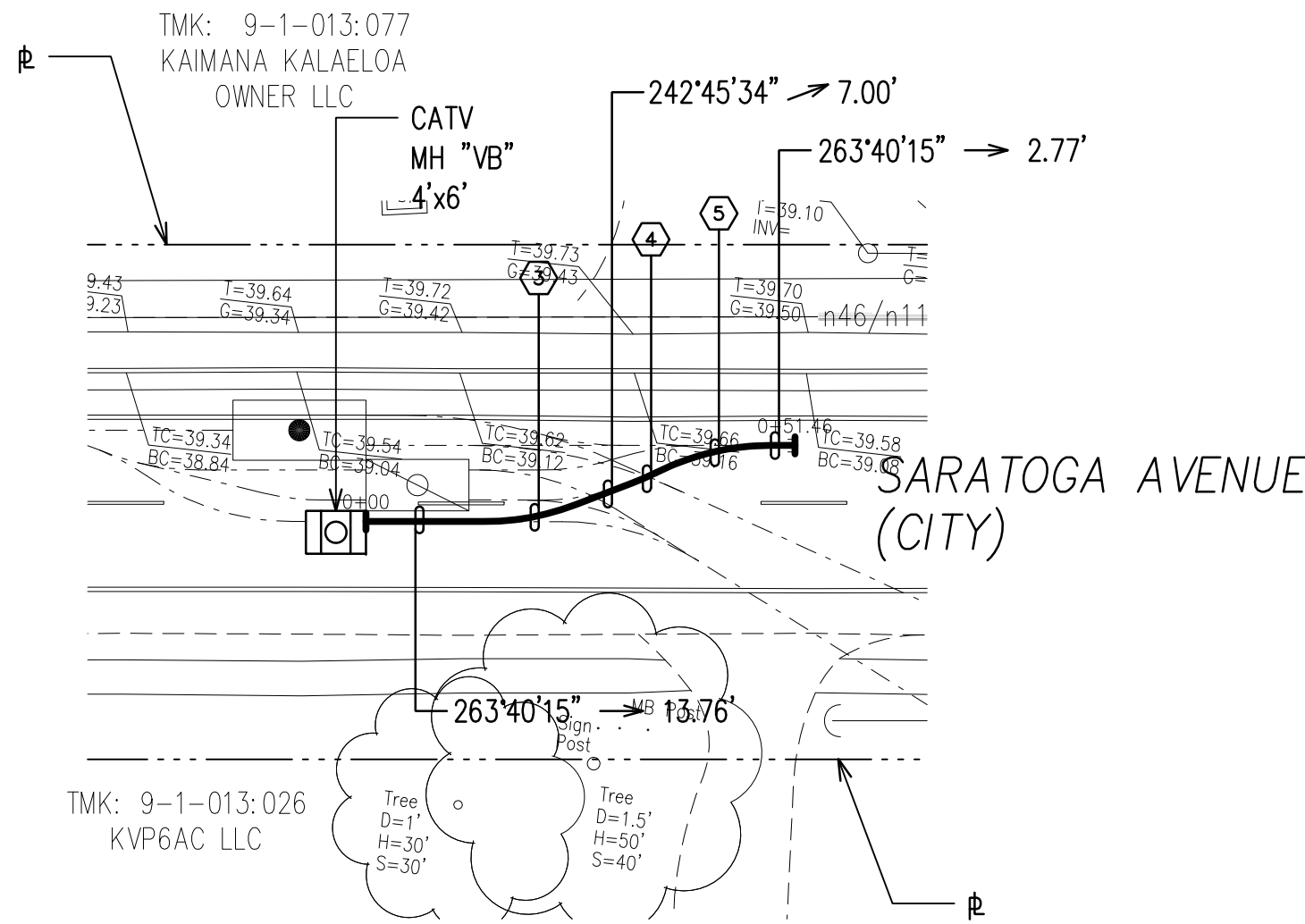
CATV DUCTLINE "1" PLAN

SCALE: 1"=20'



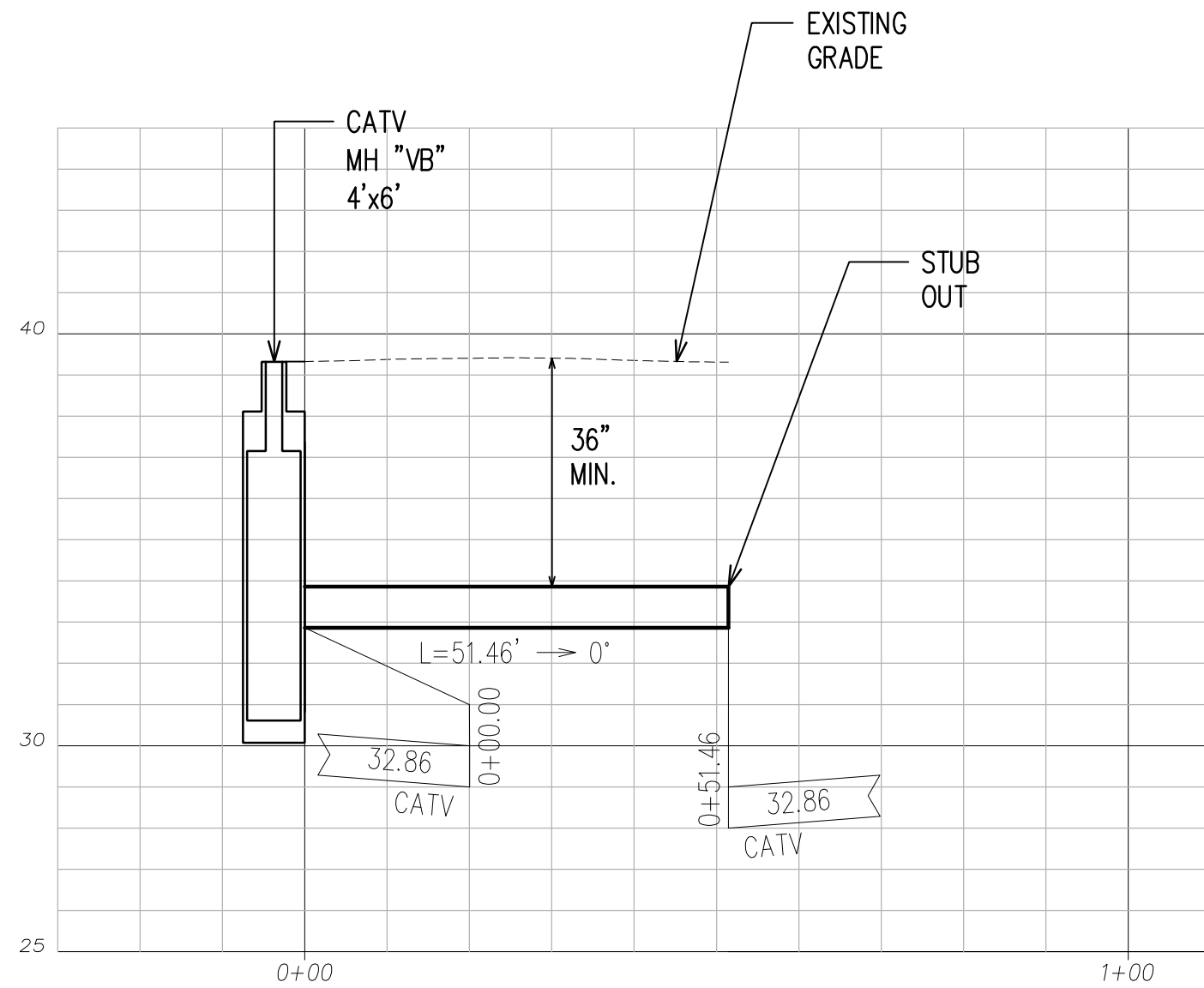
CATV DUCTLINE "1" PROFILE

SCALE: HORIZ. 1"=20'
VERT. 1"=4'



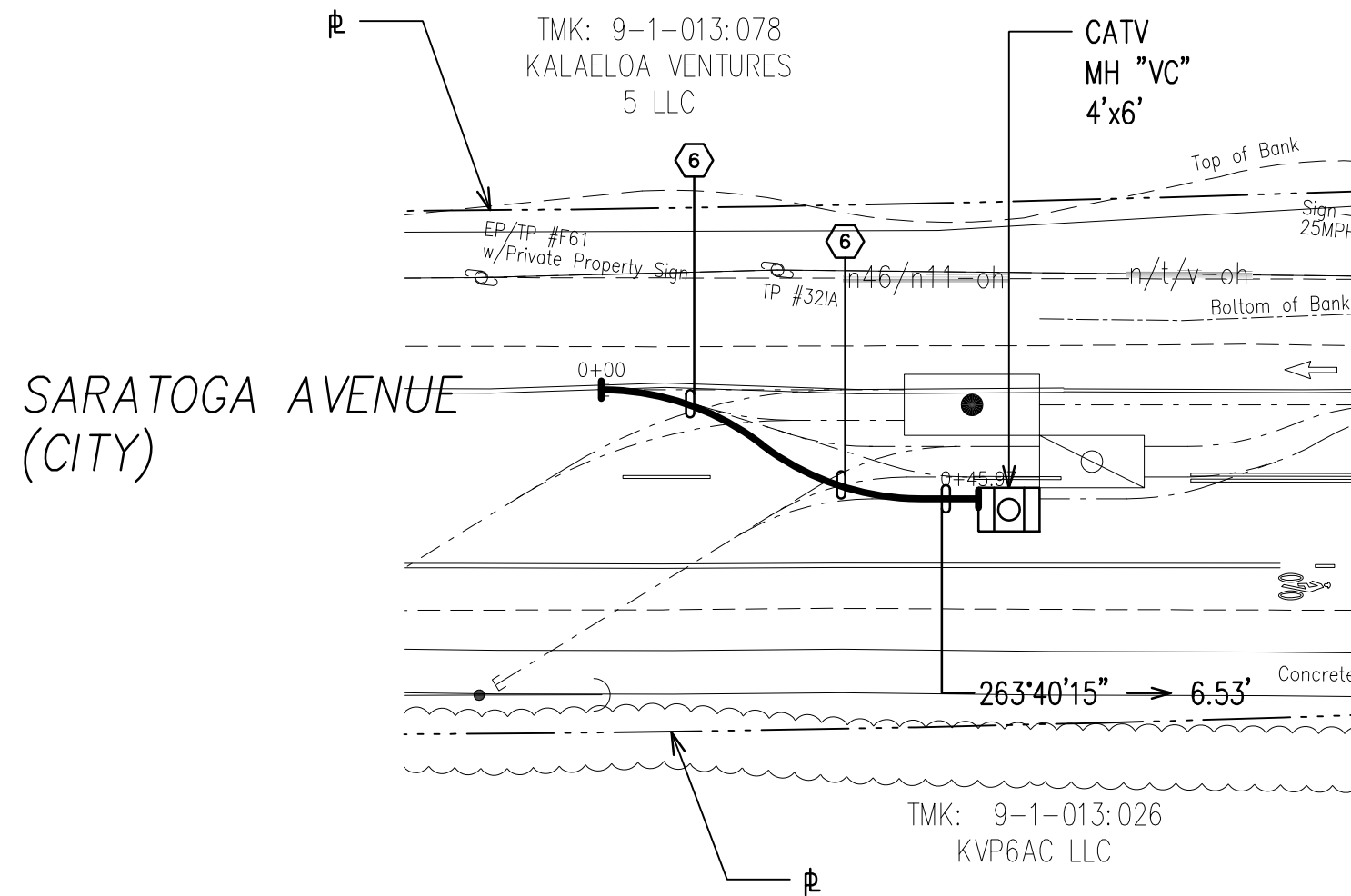
CATV DUCTLINE "2" PLAN

SCALE: 1"=20'



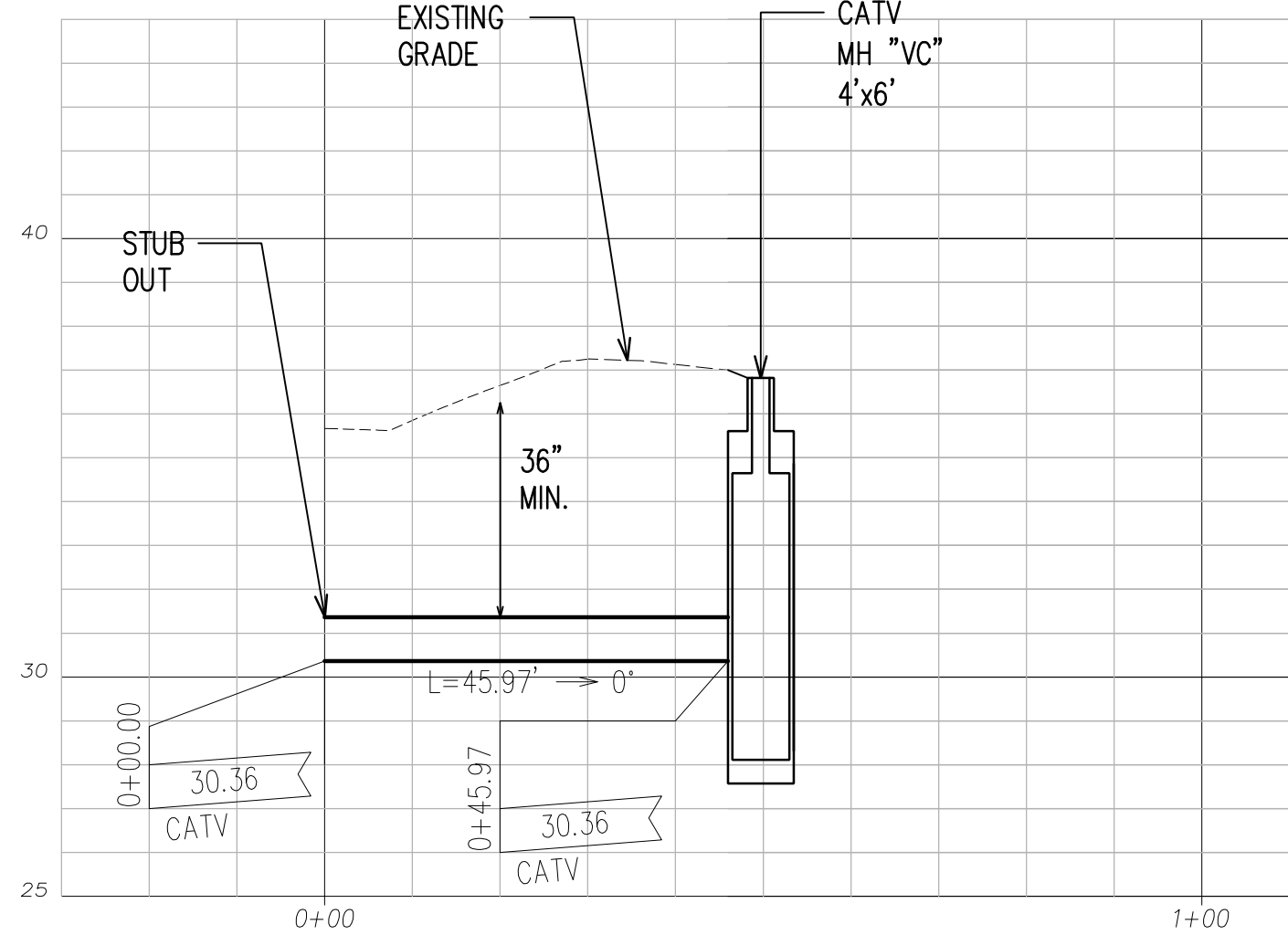
CATV DUCTLINE "2" PROFILE

SCALE: HORIZ. 1"=20'
VERT. 1"=4'



CATV DUCTLINE "3" PLAN

SCALE: 1"=20'



CATV DUCTLINE "3" PROFILE

SCALE: HORIZ. 1"=20'
VERT. 1"=4'

NOTES:

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CATV DUCTLINES

CURVE DATA						
ID	Δ	Δ / 2	RADIUS	T	C	Lc
①	37°39'25"	18°49'42.5"	30.00'	10.23'	19.36'	19.72'
②	37°39'45"	18°49'52.5"	30.00'	10.23'	19.37'	19.72'
③	20°54'41"	10°27'20.3"	30.00'	5.54'	10.89'	10.95'
④	5°45'6"	2°52'33.2"	30.00'	1.51'	3.01'	3.01'
⑤	26°39'47"	13°19'53.5"	30.00'	7.11'	13.84'	13.96'
⑥	37°39'30"	18°49'45.2"	30.00'	10.23'	19.36'	19.72'

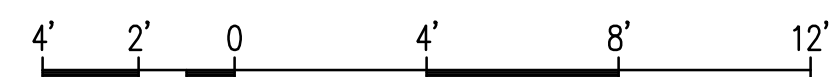
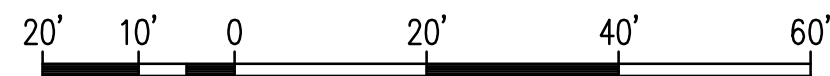
APPROVED BY

SPECTRUM OCEANIC

DATE

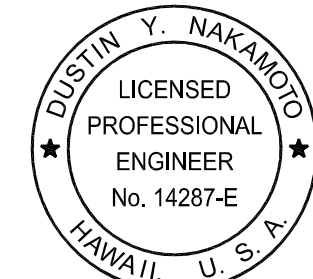
CHIEF, CIVIL ENGINEERING BRANCH, DPP
(FOR CONSTRUCTION WITHIN CITY R/W ONLY)

DATE



GRAPHIC SCALES

RONALD N. S. HO & ASSOCIATES, INC.
Electrical Engineers



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4/30/28
EXPIRATION DATE OF THE LICENSE

HAWAII COMMUNITY DEVELOPMENT AUTHORITY
STATE OF HAWAII

KALAELOA
DEVELOPMENT DISTRICT
SARATOGA AVE
ELECTRICAL UPGRADES
CATV DUCTLINES 1, 2 AND 3
PLANS AND PROFILES

ENGINEER: DN
DRAFTSMAN: CAD

CHECKED BY: SS
DATE: MARCH 2026

APPROVED:

EXECUTIVE DIRECTOR, HAWAII COMMUNITY DEVELOPMENT AUTHORITY

FILE	POCKET	FOLDER	NO.