




HONOLULU WASTEWATER TREATMENT PLANT, PHASE 1B – SECONDARY COMPLIANCE FACILITIES

EWA BEACH, ISLAND OF OAHU, HAWAII

KEY PROJECT ELEMENTS:

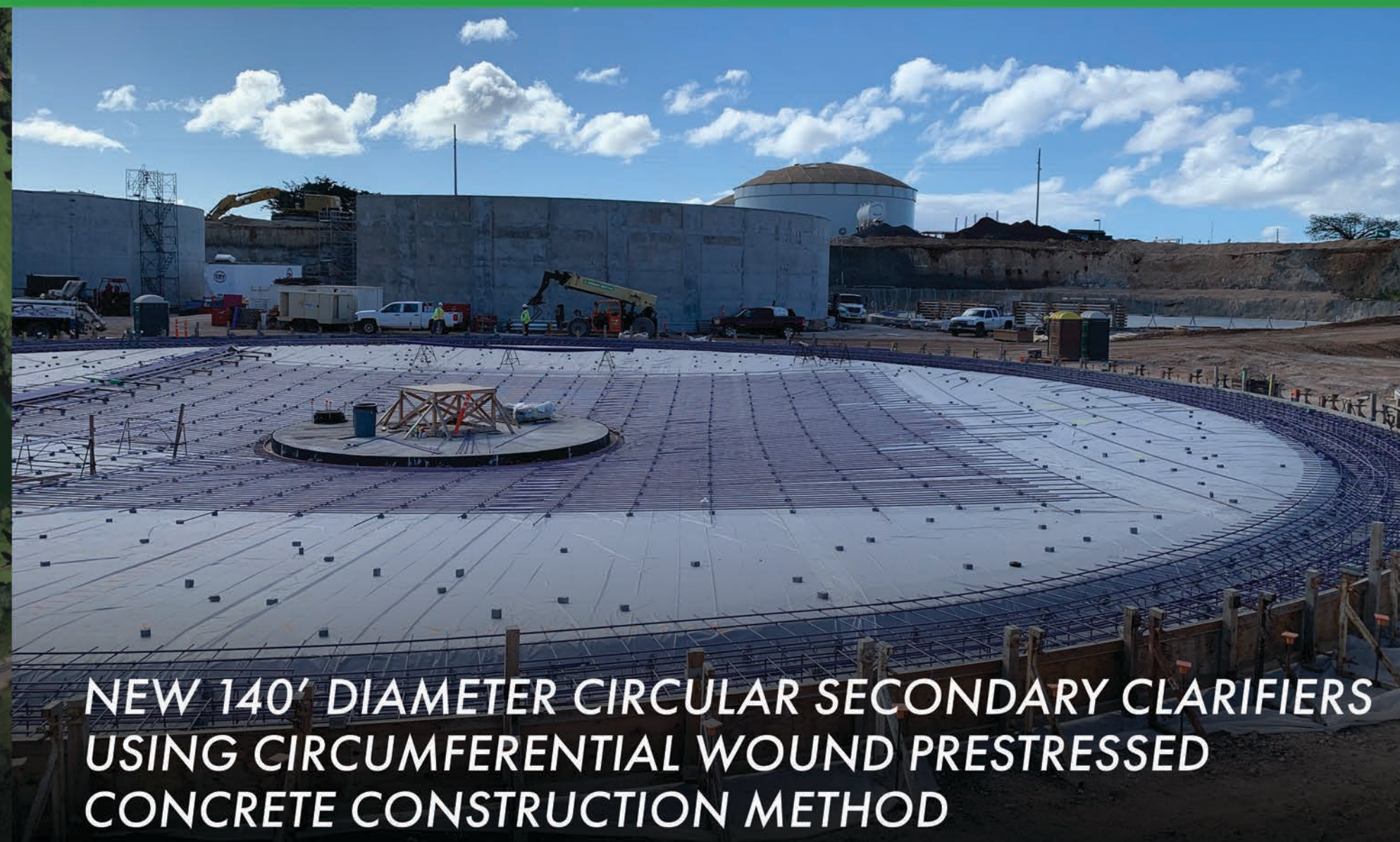
-  UPGRADE OF THE SECOND LARGEST WASTEWATER TREATMENT PLANT IN THE STATE.
-  DESIGN OF FULL SECONDARY TREATMENT FACILITIES.
-  COMPLETED PRIOR TO EPA CONSENT DECREE DEADLINE AND WITHIN CIP BUDGET.



COMPLETED NEW SECONDARY TREATMENT FACILITIES ON 24 ACRES OF UNDEVELOPED LAND



AERIAL DRONE IMAGERY TO DOCUMENT EXISTING CONDITIONS AND HELP WITH OVERALL DESIGN



NEW 140' DIAMETER CIRCULAR SECONDARY CLARIFIERS USING CIRCUMFERENTIAL WOUND PRESTRESSED CONCRETE CONSTRUCTION METHOD



NEW STEP FEED ACTIVATED SLUDGE AERATION BASINS

AS ONE OF THE LARGEST PROJECTS ISSUED AT THE TIME, THE R. M. TOWILL CORPORATION WORKED WITH THE CITY AND COUNTY OF HONOLULU TO MEET EPA CONSENT DECREE REQUIREMENTS AND MODERNIZATION REQUIREMENTS OF THE FACILITY. COMPLIANCE INVOLVED UPGRADING THE SECONDARY TREATMENT FACILITIES FROM A 13 MGD CAPACITY TO THE 2035 TARGET ANNUAL AVERAGE FLOW OF 36.7 MGD.

COMPLEX / INNOVATIVE DESIGN:

- CENTRALIZED EMERGENCY GENERATOR SYSTEM PROVIDING 12 MW EMERGENCY POWER TO THE ENTIRE PLANT.
- PRODUCE HIGH-QUALITY SECONDARY EFFLUENT THAT REDUCES THE ENERGY CONSUMPTION OF THE DOWNSTREAM PROCESSES TO PRODUCE R1/RO RECYCLE WATER.
- PRODUCE LOW BACTERIAL COUNT SECONDARY EFFLUENT TO PROTECT THE RECEIVING WATER (OCEAN) AND, ULTIMATELY, HUMANS.
- SECONDARY EFFLUENT AVERAGE BIOCHEMICAL OXYGEN DEMAND AND TOTAL SUSPENDED SOLIDS WELL BELOW EFFLUENT LIMITS.
- ADVANCED AERATION CONTROL AND BLOWER CONTROL TO MINIMIZE ENERGY CONSUMPTION.
- LOW HEADLOSS DESIGN TO ELIMINATE PUMPING.
- MICROTUNNELING TECHNOLOGY TO CONSTRUCT DUAL 72" STEEL CASING PIPES AND INSTALL DUAL 60" CENTRIFUGALLY CAST, FIBERGLASS REINFORCED, POLYMER MORTAR PIPES WITHIN THE STEEL CASING PIPES.
- LASER SCANNING AND 3-D MODELING DESIGN TO AID IN SURVEYING AND DESIGN EFFORTS.