

DEPARTMENT OF WATER
 COUNTY OF KAUA'I
 JOB NO. 18-03, WP2020 PROJECT NO. PLH-27

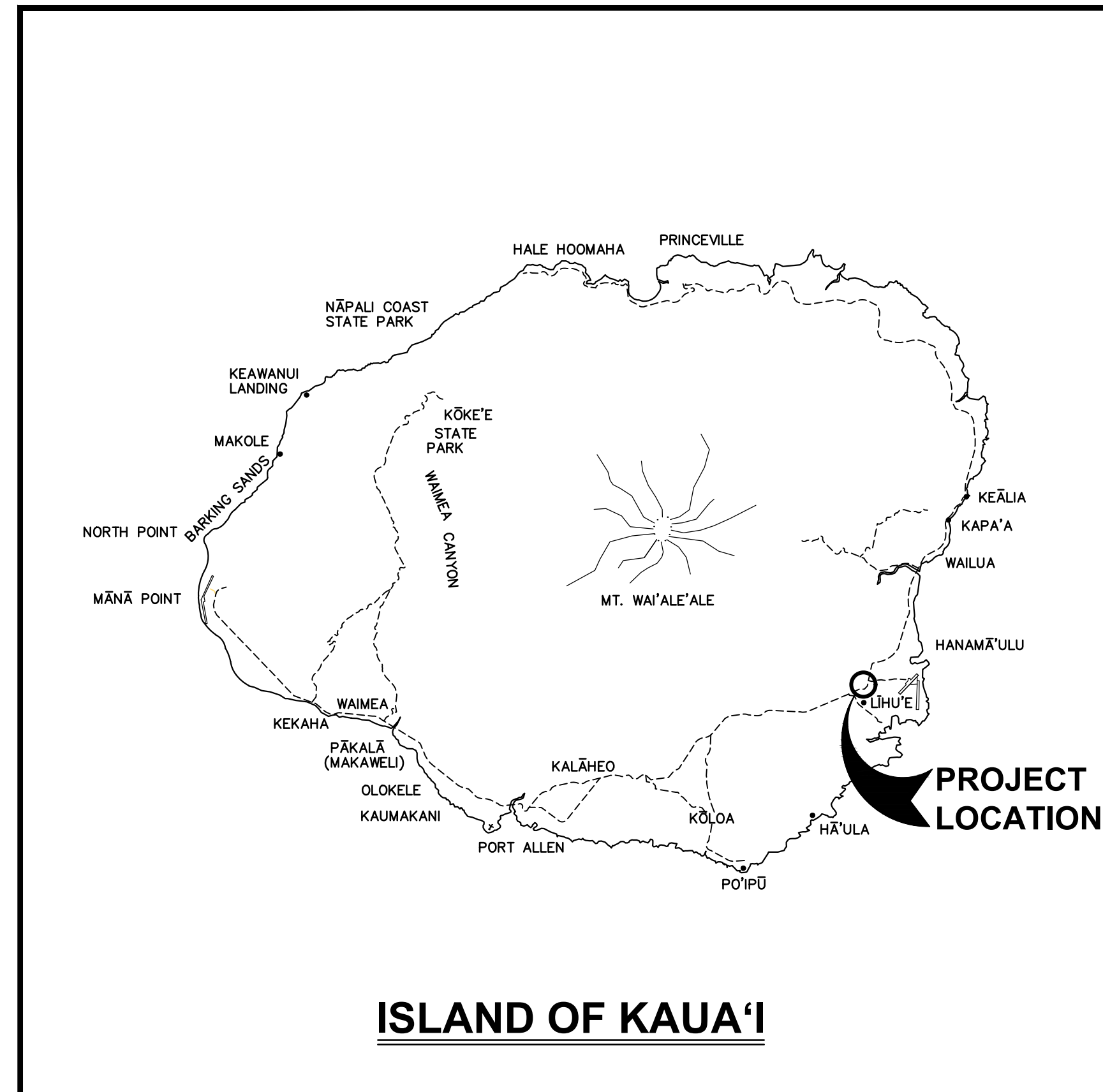
KŪHIŌ HIGHWAY (HARDY-OXFORD) 18" MAIN REPLACEMENT LĪHU'E WATER SYSTEM

PREPARED BY:

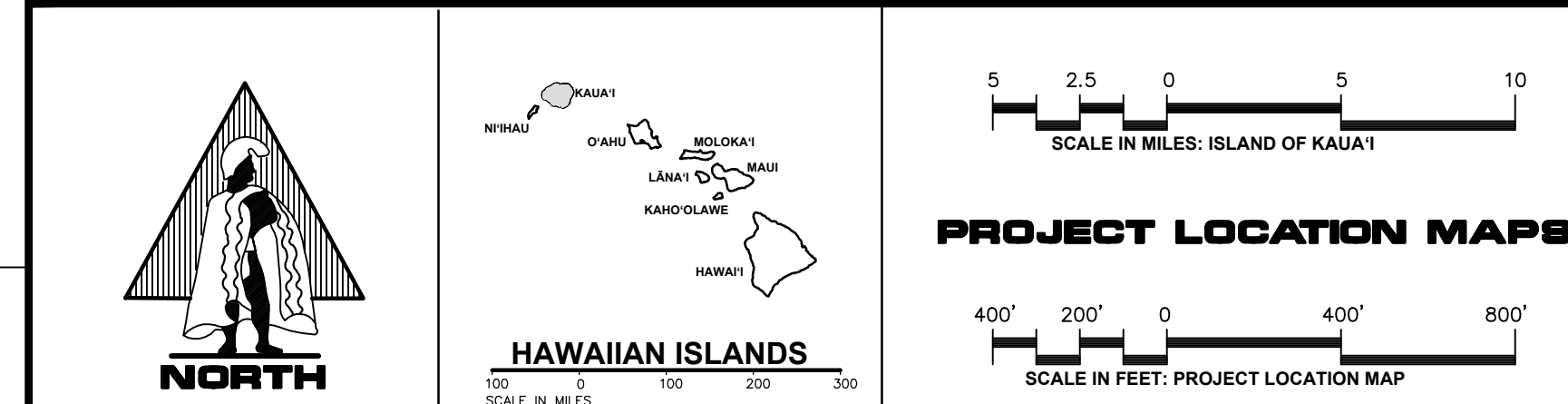


PLANNING • CIVIL ENGINEERING
 ARCHITECTURAL DESIGN
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 ENVIRONMENTAL SERVICES
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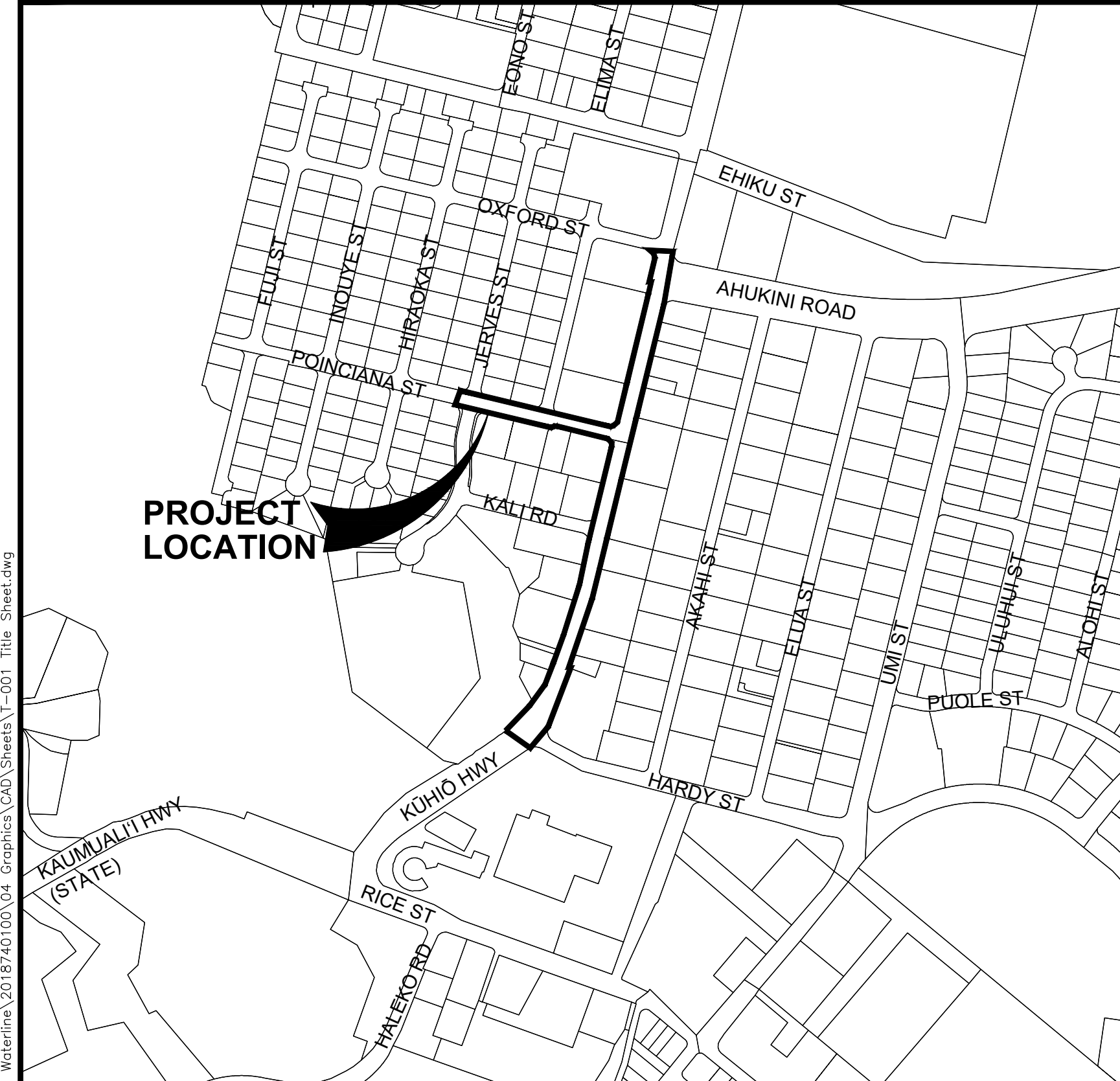
LOCATED AT:
 TMK: (4) 3-8-009 & 014, 3-6-005 & 006
 LĪHU'E, KAUA'I, HAWAII



ISLAND OF KAUA'I



PROJECT LOCATION MAPS



LOCATION MAP
 SCALE: 1"=400'

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APPROVALS

<i>Eric Fujita</i>	Aug 21, 2024	DATE
FOR HIGHWAYS ADMINISTRATOR STATE DEPARTMENT OF TRANSPORTATION, KAUA'I DISTRICT (APPROVAL GRANTED FOR WORK WITHIN STATE R.O.W. ONLY)		
<i>Scott J. Hall</i>	10/24/24	DATE
FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS COUNTY OF KAUA'I (FOR WORK WITHIN COUNTY R/W)		
<i>Jason Kagimoto</i>	16/10/24	DATE
FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER COUNTY OF KAUA'I		
<i>Kasina Hull</i>	October 2, 2024	DATE
FOR PLANNING DIRECTOR COUNTY OF KAUA'I		
<i>Charles Jones</i>	8/19/24	DATE
FOR KAUA'I ISLAND UTILITY COOPERATIVE		
<i>Jamie Sore</i>	10/10/24	DATE
FOR HAWAIIAN TELCOM		
<i>Kenneth K. Kawani</i>	July 17, 2024	DATE
FOR SPECTRUM		
<i>Amey...</i>	18/10/24	DATE
FOR COUNTY ENGINEER, DEPARTMENT OF WASTEWATER COUNTY OF KAUA'I		

DRAWING NO.
 T-001

HALF SIZE TRIM LINE FOR 11X17
 Tue, 27 Aug 2024 - 2:41pm
 T:\Hardy-Oxford Waterline\20187401\04_Graphics\CAD_Sheets\T-001 Title Sheet.dwg

NOTES FOR GENERAL CONSTRUCTION

- ALL CONSTRUCTION WORK IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT VERSIONS OF THE PUBLICATIONS "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", THE "HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION STANDARD PLANS", AND THE "STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION, CITY AND COUNTY OF HONOLULU, AND THE COUNTIES OF KAUAI, MAUI, AND HAWAII." THE STANDARD DETAILS ARE AVAILABLE AT THE COUNTY OF KAUAI CLERK'S OFFICE.
- APPROVAL BY THE COUNTY MUST IN NO WAY RELIEVE THE DESIGN ENGINEER OF THEIR RESPONSIBILITIES AND PROFESSIONAL OBLIGATIONS. THEY MUST BE HELD RESPONSIBLE FOR THE ADEQUACY OF THE DESIGN AND ACCURACY AND COMPLETENESS OF THE PLANS AND SPECIFICATIONS. CHANGES OR REVISIONS TO CORRECT ANY DEFICIENCIES MUST BE MADE BY AND AT THE EXPENSE OF THE DESIGNER. SUCH CHANGES AND REVISIONS MUST REQUIRE APPROVAL BY THE COUNTY.
- NO GRADING BETWEEN 7 P.M. TO 7 A.M. ON ANY GIVEN DAY OR ON SATURDAYS, SUNDAYS, AND HOLIDAYS WITHOUT WRITTEN PERMISSION FROM THE COUNTY ENGINEER AND THE STATE DEPARTMENT OF HEALTH.
- CONTRACTOR TO NOTIFY PUBLIC WORKS DEPARTMENT FIVE (5) BUSINESS DAYS PRIOR TO COMMENCING ANY GRADING WORK. WHEN COMPLETED AND READY FOR FINAL INSPECTION, NOTIFY PUBLIC WORKS DEPARTMENT INSPECTION SECTION.
- CONSTRUCTION PLANS ARE VALID FOR A PERIOD OF ONE YEAR FROM THE DATE OF APPROVAL. IF CONSTRUCTION DOES NOT COMMENCE WITHIN THE ONE-YEAR TIME FROM THE DATE OF APPROVAL, THE CONSTRUCTION PLANS MUST BE RESUBMITTED TO ALL REVIEWING AND APPROVING AGENCIES FOR REVIEW, APPROVAL, AND RECERTIFICATION OF THE PLAN.
- ALL GRADING, GRUBBING, AND STOCKPILING WORK MUST BE PERFORMED IN ACCORDANCE WITH THE COUNTY OF KAUAI ORDINANCE NO. 808.
- AFTER EACH RAINFALL EVENT, THE CONTRACTOR MUST REMOVE ALL SILT AND DEBRIS RESULTING FROM HIS WORK AND DEPOSITED IN DRAINAGE FACILITIES, ROADWAYS, AND OTHER AREAS. THE COST INCURRED FOR ANY NECESSARY REMEDIAL ACTION BY THE COUNTY ENGINEER MUST BE PAYABLE BY THE CONTRACTOR.
- DURING CLEANING OPERATIONS, THE CONTRACTOR MUST SUPPLY A WATER TRUCK FOR DUST CONTROL PURPOSES UNTIL THE VEGETATION HAS RE-ESTABLISHED ITSELF. EXCESS WATER, INCLUDING SILT AND DIRT, MUST NOT BE ALLOWED TO RUN-OFF THE PROPERTY.
- BENCHMARKS THAT ARE DISTURBED OR DESTROYED MUST BE RESTORED UNDER A LICENSED LAND SURVEYOR'S DIRECTION. COPIES OF FIELD NOTES, DESCRIPTIONS AND NEW VALUES OF THE NEW BENCHMARK MUST BE SENT TO THE DEPARTMENT OF PUBLIC WORKS SURVEY SECTION FOR REVIEW AND APPROVAL PRIOR TO FINAL ACCEPTANCE OF THE PROJECT.
- THE CONTRACTOR MUST BE RESPONSIBLE FOR ALL OVERTIME AND/OR NIGHT WORK PAYMENTS FOR THE COUNTY'S STAFF AND INSPECTION PERSONNEL INCLUDING CONSULTANTS, WHEN THE CONTRACT REQUIRES OVERTIME OR NIGHT WORK TO BE PERFORMED, OR DIRECTS THE CONTRACTOR TO WORK ADDITIONAL SHIFTS OR OVERTIME FOR COUNTY'S CONVENIENCE.
- BEST MANAGEMENT PRACTICES (BMP'S) MUST BE EMPLOYED AT ALL TIMES TO THE MAXIMUM EXTENT PRACTICABLE TO PREVENT DAMAGE BY SEDIMENTATION, EROSION OR DUST TO STREAMS, WATERCOURSES, NATURAL AREAS AND THE PROPERTY OF OTHERS.
- SURVEYS, AND ALL CONSTRUCTION STAKE OUT FOR MASS GRADING, FINAL ROADWAY AND SHOULDER IMPROVEMENTS, AND UTILITIES (SEWER, DRAIN, WATER, ELECTRICAL, ETC.) MUST BE DONE UNDER THE SUPERVISION OF A LAND SURVEYOR LICENSED IN THE STATE OF HAWAII. IF THE CONTRACTOR ELECTS TO PERFORM THE SURVEY AND CONSTRUCTION STAKE OUT WITHOUT THE SUPERVISION OF A LAND SURVEYOR, THE CONTRACTOR MUST SUBMIT FINAL AS-BUILT PLANS CERTIFIED BY A LAND SURVEYOR THAT ALL UTILITIES AND ALL GRADING WORK FOR FINAL ROAD AND SHOULDER ELEVATIONS WERE CONSTRUCTED IN THE LOCATION AND ELEVATIONS (INCLUDED BUT NOT LIMITED TO TOP AND INVERTS FOR UTILITIES) AS SHOWN ON THE AS-BUILT PLANS AND CERTIFIED BY THE DESIGN ENGINEER THAT THE AS-BUILT LOCATION AND ELEVATIONS FOR THE IMPROVEMENTS MEETS MINIMUM DESIGN STANDARDS AND REGULATORY REQUIREMENTS.
- IF SYSTEM CONDITIONS REQUIRE NON-EMERGENCY NIGHTTIME WORK DURING THE AUTUMN SEABIRD FALL SEASON (SEPTEMBER 15 THROUGH DECEMBER 15), USE OF LIGHTING MUST BE RESTRICTED BETWEEN 9:00 P.M. TO 4:30 A.M. IF LIGHTING OF THE WORK AREA IS REQUIRED IN SUCH SITUATION, ALL LIGHTS MUST BE SHIELDED (MINIMUM LIGHT SPILL TOWARDS THE SKY) AND DIRECTED DOWNWARDS TO THE MAXIMUM EXTENT PRACTICABLE. MINIMUM REQUIREMENTS FOR LIGHTING BY HIOSH AND OSHA MUST BE PROVIDED AND ASSURED BY THE CONTRACTOR. THE CONTRACTOR MUST TRAIN ALL EMPLOYEES WORKING AT NIGHT (RECORDS RETAINED BY THE CONTRACTOR) ON HOW TO HANDLE ANY RETRIEVED DOWNED BIRDS AND MUST HAVE APPROPRIATE EQUIPMENT AS PROVIDED BY SAVE OUR SHEARWATERS (SOS) ON SITE TO HOLD AND TRANSPORT ANY RETRIEVED BIRDS TO AN SOS FACILITY. THIS REQUIREMENT DOES NOT ALLOW LIGHTING AS MAY BE RESTRICTED BY OTHER GOVERNMENT AGENCIES.
- PRIOR TO STARTING ANY EXCAVATION ACTIVITIES, THE CONTRACTOR MUST CONTACT THE HAWAII ONE CALL CENTER AT 1-866-423-7287.
- PRIOR TO INSTALLATION OF ANY NEW SEWER LINES, DRAIN LINES, MANHOLES, AND STRUCTURES THAT WILL BE TRANSFERRED TO THE COUNTY OR REQUIRED FOR THE SUBDIVISION OF THE PROPERTY, THE CONTRACTOR MUST HAVE ALL IMPROVEMENTS (MAINS, PIPES, APPURTENANCES AND STRUCTURES) SURVEYED AND STAKED OUT BY A LICENSED PROFESSIONAL LAND SURVEYOR AND THE CONTRACTOR MUST EXPOSE, VERIFY, AND BACKFILL ALL EXISTING UNDERGROUND UTILITIES AND STRUCTURES IN CLOSE PROXIMITY TO CROSSINGS AND CONNECTIONS PRIOR TO EXCAVATION OF PIPELINE TRENCH. CONTRACTOR MUST PROVIDE THE LICENSED SURVEYOR CUT SHEET AND PROBING INFORMATION TO THE PUBLIC WORKS ENGINEERING CONSTRUCTION ENGINEER FOR REVIEW AND APPROVAL BEFORE MOVING FORWARD WITH INSTALLATION VIA THE SUBMITTAL REVIEW PROCESS.
- PRIOR TO INSTALLATION OF FINAL ROADWAY IMPROVEMENTS (SUBGRADE, BASE COURSE, AND FINAL CONCRETE OR AC PAVEMENT, CURBS, GUTTERS, SIDEWALK, ETC.) AND/OR ANY NEW RIGHT OF WAY IMPROVEMENTS THAT WILL BE TRANSFERRED TO THE COUNTY OR REQUIRED FOR THE SUBDIVISION OF THE PROPERTY, THE CONTRACTOR MUST HAVE ALL IMPROVEMENTS SURVEYED AND STAKED OUT BY A LICENSED PROFESSIONAL LAND SURVEYOR AND THE CONTRACTOR MUST EXPOSE, VERIFY, AND BACKFILL ALL EXISTING UNDERGROUND UTILITIES AND STRUCTURES IN CLOSE PROXIMITY TO CONNECTIONS PRIOR TO ESTABLISHING ROAD SUBGRADE. CONTRACTOR MUST PROVIDE THE LICENSED SURVEYOR ROAD CENTERLINE (AND/OR CURB OFFSETS) CUT SHEET OF FINAL SUBGRADE TO THE PUBLIC WORKS ENGINEERING CONSTRUCTION ENGINEER FOR REVIEW AND APPROVAL BEFORE MOVING FORWARD WITH THE INSTALLATION VIA THE SUBMITTAL REVIEW PROCESS.
- THE DEPARTMENT OF PUBLIC WORKS MUST BE PROVIDED TWENTY (20) WORKING DAYS FOR ALL SUBMITTAL REVIEWS FROM THE TIME OF SUBMISSION BY THE CONTRACTOR.
- THE DEPARTMENT OF PUBLIC WORKS MUST HAVE ACCESS TO THE WORK AT ALL TIMES DURING CONSTRUCTION AND MUST BE FURNISHED WITH EVERY REASONABLE FACILITY (INCLUDING BUT NOT LIMITED TO LAYOUT UNDER THE SUPERVISION OF A LAND SURVEYOR LICENSED IN THE STATE OF HAWAII) FOR ASCERTAINING THAT THE MATERIALS USED AND THE WORKMANSHIP ARE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CHAPTER 9 SUBDIVISION ORDINANCE, ORDINANCE NO. 808, ARTICLE 7, GRADING, GRUBBING AND STOCKPILING; AND THE STANDARDS ESTABLISHED BY THE DEPARTMENT OF PUBLIC WORKS.
- FOR GRADING WORK EXCEEDING ONE (1) ACRE, WITH EMBANKMENTS IN EXCESS OF FIVE HUNDRED (500) CUBIC YARDS, AND WITH A DEPTH OF MORE THAN FOUR (4) FEET, THE CONTRACTOR MUST RETAIN THE SERVICES OF A GEOTECHNICAL ENGINEER FOR QUALITY CONTROL. CERTIFICATION FROM THE GEOTECHNICAL ENGINEER MUST BE SUBMITTED TO THE DEPARTMENT OF PUBLIC WORKS AT THE COMPLETION OF THE GRADING WORK. THE GEOTECHNICAL ENGINEER MUST CERTIFY THAT THE GRADING WORK MEETS THE REQUIREMENTS OF THE "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2005" AND ITS AMENDMENTS; THE "STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION, COUNTY OF KAUAI, CITY AND COUNTY OF HONOLULU, COUNTY OF MAUI, AND THE COUNTY OF HAWAII DATED SEPTEMBER 1984" OR AS AMENDED, ORDINANCE NO. 808, ARTICLE 7, GRADING GRUBBING, AND STOCKPILING; AND THE APPROVED CONSTRUCTION PLANS. THE GEOTECHNICAL ENGINEER MUST ALSO SUBMIT TEST RESULTS AS REQUESTED BY THE DEPARTMENT OF PUBLIC WORKS.

GENERAL CONSTRUCTION NOTES (CONT)

- UPON COMPLETION OF CONSTRUCTION, THE CONTRACTOR WILL PREPARE AND CERTIFY AS-BUILT DRAWINGS THAT REPRESENT ALL CHANGES TO THE ORIGINAL APPROVED CONSTRUCTION PLANS. THE OWNER'S LICENSED DESIGN ENGINEER WILL CERTIFY THAT ALL OF THE CHANGES SHOWN ON THE AS-BUILT DRAWINGS HAVE BEEN APPROVED BY THE DESIGN ENGINEER AND MEET MINIMUM STANDARDS IN ACCORDANCE WITH THE REQUIREMENTS OF THE ORIGINAL APPROVED CONSTRUCTION PLANS. THE DEPARTMENT OF PUBLIC WORKS MAY REQUIRE EVERY REASONABLE FACILITY TO VERIFY ANY IMPROVEMENT ON THE FINAL AS-BUILT PLANS PRIOR TO THE CERTIFICATION BY THE OWNER'S ENGINEER, INCLUDING BUT NOT LIMITED TO HAVING A LAND SURVEYOR LICENSED IN THE STATE OF HAWAII CONFIRM AND CERTIFY THE FINAL LOCATION AND ELEVATIONS.
- UNLESS OTHERWISE SPECIFIED, ALL MATERIALS AND CONSTRUCTION OF WATER FACILITIES AND APPURTENANCES SHALL BE IN ACCORDANCE WITH THE "WATER SYSTEM STANDARDS, 2002" AS ADOPTED BY THE DEPARTMENT OF WATER, COUNTY OF KAUAI, INCLUDING ALL SUBSEQUENT AMENDMENTS AND ADDITIONS.
- ALL REQUIRED PROJECT SUBMITTALS (MATERIALS, SHOP DRAWINGS, ETC.) SHALL BE APPROVED BY THE DOW'S PROJECT MANAGEMENT SECTION BEFORE A PRE-CONSTRUCTION CONFERENCE CAN BE SCHEDULED. ONCE ALL PROJECT SUBMITTALS HAVE BEEN APPROVED BY DOW CONSTRUCTION ENGINEER, THE DOW CONSTRUCTION ENGINEER WILL NOTIFY THE CONTRACTOR THAT A PRE-CONSTRUCTION CONFERENCE CAN BE ARRANGED. THE CONTRACTOR SHALL ARRANGE A PRE-CONSTRUCTION CONFERENCE AT LEAST TEN (10) CALENDAR DAYS BEFORE CONSTRUCTION AND SHALL NOTIFY THE DEPARTMENT OF WATER AT LEAST THREE (3) WORKING DAYS PRIOR TO START OF CONSTRUCTION.
- THE CONTRACTOR SHALL SUBMIT THE NAMES AND TELEPHONE NUMBERS OF ITS AUTHORIZED JOB SUPERINTENDENT AND AT LEAST THREE (3) ADDITIONAL PERSONS TO CONTACT IN CASE OF AN EMERGENCY DURING NON-WORKING HOURS.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF WATER AT LEAST 24 HOURS PRIOR TO ANY TRENCHING, PIPE LAYING, BACKFILLING, TESTING OR DISINFECTION ACTIVITIES TO ENSURE THAT INSPECTION SERVICES WILL BE AVAILABLE.
- ALL MATERIALS (PIPE, LUBRICANTS, PAINTS, SEALANTS, FORM OIL, CONCRETE ADMIXTURES, ETC.) IN DIRECT CONTACT WITH THE POTABLE WATER SHALL HAVE NATIONAL SANITATION FOUNDATION (NSF) CERTIFICATIONS. THE CONTRACTOR SHALL SUBMIT THESE CERTIFICATIONS TO THE DEPARTMENT OF WATER FOR REVIEW AND APPROVAL PRIOR TO ITS APPLICATION.
- THE LOCATION OF EXISTING WATER MAINS AND APPURTENANCES SHOWN ON THE PLANS ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATIONS IN THE FIELD. EXCAVATION AROUND ANY EXISTING WATER MAIN SHALL BE DONE BY HAND.
- THE CONTRACTOR SHALL PROVIDE UNOBSTRUCTED ACCESS TO EXISTING HYDRANTS, VALVES AND WATER METERS AT ALL TIMES.
- THE CONTRACTOR SHALL SECURE ALL EXCAVATIONS IN ACCORDANCE WITH OSHA REGULATIONS.
- THERE SHALL BE NO PHYSICAL CONNECTION BETWEEN A PUBLIC OR PRIVATE POTABLE WATER SYSTEM AND A NON-POTABLE WATER SYSTEM, SEWER, OR APPURTENANCE THERETO WHICH COULD PERMIT THE PASSAGE OF ANY SEWAGE OR POLLUTED WATER INTO THE POTABLE WATER SUPPLY.
- TRENCH EXCAVATION, BACKFILLING IN LIFTS, AND REPAVING SHALL CONFORM TO THE "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2005" AS AMENDED.
- WARNING TAPE SHALL BE IN ACCORDANCE WITH DIVISION 200, SECTION 212.08 OF THE "WATER SYSTEM STANDARDS." THE WARNING TAPE SHALL BE FOUR MIL THICK, NON-METALLIC, ACID AND ALKALI RESISTANT POLYETHYLENE AND 6-INCHES WIDE WITH MINIMUM STRENGTH OF 1750 PSI LENGTHWISE AND 1500 PSI CROSSWISE. TAPE COLOR SHALL BE "SAFETY PRECAUTION BLUE" AND SHALL BEAR A CONTINUOUS PRINTED INSCRIPTION "CAUTION WATER LINE BURIED BELOW". INSCRIPTION SHALL BE 2-INCHES HIGH, BLACK TEXT.
- ALL HYDRANTS SHALL RECEIVE A MINIMUM SSPC SP3 SURFACE PREPARATION AND COATED IN ACCORDANCE WITH DIVISION 200, SECTION 206.01 OF THE "WATER SYSTEM STANDARDS."
- UNLESS OTHERWISE DIRECTED, PRIOR TO THE CONNECTION OF ANY PIPELINES AND/OR LATERALS TO THE EXISTING MAIN, THE PIPELINES/LATERALS INSTALLED SHALL BE CLEANED, PRESSURE TESTED, CHLORINATED, FLUSHED, AND SAMPLED IN ACCORDANCE WITH DIVISION 300, SECTIONS 302.27 TO 302.29 OF THE "WATER SYSTEM STANDARDS."

WATER SAMPLES SHALL BE TESTED FOR TOTAL COLIFORMS BY A LABORATORY CERTIFIED BY THE STATE OF HAWAII TO PERFORM COLIFORM ANALYSIS. PRESENCE OF COLIFORM BACTERIA IS UNACCEPTABLE.

IN ADDITION TO THE TEST FOR COLIFORMS, A SEPARATE TEST FOR HETEROTROPHIC PLATE COUNT (HPC) SHALL BE CONDUCTED. THE HPC COUNT SHALL BE LESS THAN 300 CFU/ML.

PRIOR TO CHLORINATION, A WATER CHLORINATION AND SANITATION CONTRACTOR WITH A C-37D LICENSE SHALL SUBMIT A CHLORINATION PLAN WITH WATER SOURCE, INJECTION POINTS, SAMPLING POINTS AND PROCEDURE CLEARLY DEFINED FOR APPROVAL BY THE DOW THIRTY (30) CALENDAR DAYS PRIOR TO STARTING ANTICIPATED CHLORINATION OPERATIONS. THE CHLORINATION PLAN MUST BE APPROVED BY THE DOW'S CONSTRUCTION MANAGEMENT SECTION PRIOR TO STARTING CHLORINATION OPERATIONS. ALL CHLORINATION PLANS WILL BE APPROVED BASED ON THE CURRENT DOW REQUIREMENTS AT THE TIME OF CHLORINATION PLAN SUBMITTAL.

THE TESTED PIPELINES AND/OR LATERALS MUST BE CONNECTED TO THE EXISTING DOW SYSTEM WITHIN 14 CALENDAR DAYS OF PULLING THE FIRST DISINFECTION SAMPLE TESTED BY A CERTIFIED LABORATORY. THE DEPARTMENT OF WATER WILL REQUIRE THE CONTRACTOR TO REDO THE CLEANING, PRESSURE TESTING, AND/OR DISINFECTION OF THE PIPELINES AND/OR LATERALS AT THE CONTRACTOR'S EXPENSE IF THE CONNECTION IS NOT COMPLETED WITHIN THESE 14 CALENDAR DAYS.

FOR DISINFECTION OF WATER LATERALS (SERVICE AND FIRE) THAT ARE TO BE CONNECTED DIRECTLY TO EXISTING DOW WATER LINES, SERVICE AND FIRE LATERALS SHALL BE DISINFECTED WITH A 1% (MINIMUM) FREE CHLORINE (LIQUID SODIUM HYPOCHLORITE) SOLUTION BY SWABBING AND/OR SOAKING, UNLESS OTHERWISE APPROVED BY THE ENGINEER.

FOR RESERVOIRS, SECTION 303-10 SUBSECTION B.3.e.2, IS REPLACED WITH "TOTAL BACTERIAL COUNT IS LESS THAN 300 CFU/ML."

- POLYURETHANE FOAM "PIGS" SHALL BE "PUSHED" THROUGH THE LENGTH OF THE INSTALLED PIPELINE USING PRESSURIZED WATER.
- ALL CONNECTIONS SHALL BE SCHEDULED IN COORDINATION WITH THE DEPARTMENT OF WATER.

- AN ADVANCE DEPOSIT IS REQUIRED FOR OPERATING VALVES, FLUSHING LINES AND NOTIFYING CONSUMERS AFFECTED BY A WATER SHUTDOWN DURING CONNECTIONS. THE CONTRACTOR WILL BE CHARGED THE ACTUAL COST.
- THE CONTRACTOR SHALL PLACE THE DEPOSIT PRIOR TO SCHEDULING THE CONNECTION DATE.
- SHUTDOWN CONNECTIONS SHALL BE SCHEDULED ON TUESDAYS THROUGH THURSDAYS. NO CONNECTIONS SHALL BE SCHEDULED ON MONDAYS, FRIDAYS, WEEKENDS, AND HOLIDAYS, OR FROM DECEMBER 18 - JANUARY 8 OF EACH YEAR.
- ALL MATERIALS SHALL BE ON HAND AND APPROVED BY THE ENGINEER PRIOR TO SCHEDULING THE CONNECTION DATE.
- PUMPS USED TO DE-WATER THE CONNECTION AREA SHALL BE OPERATED IN THE PRESENCE OF THE ENGINEER PRIOR TO SCHEDULING THE CONNECTION DATE.

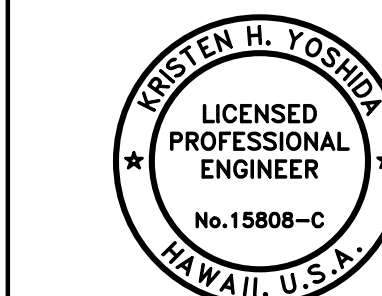
WATER CONSTRUCTION NOTES (CONT)

- ALL CONNECTIONS SHALL BE PERFORMED IN THE PRESENCE OF THE ENGINEER.
- NO LIVE TAPS SHALL BE SCHEDULED FROM DECEMBER 24 - DECEMBER 31 OF EACH YEAR.
- IN ORDER TO PREVENT DAMAGE TO THE POLYETHYLENE ENCASEMENT FROM EXCESSIVE HANDLING, THE POLYETHYLENE ENCASEMENT SHALL BE INSTALLED AROUND THE BARREL OF THE DUCTILE IRON PIPE AT ITS FINAL LOCATION ALONG THE TRENCHLINE. THE POLYETHYLENE ENCASED PIPE SHALL BE LIFTED USING A FABRIC TYPE SLING OR A SUITABLY PADDED CABLE OR CHAIN TO PREVENT DAMAGE TO THE POLYETHYLENE.
- THE CONTRACTOR SHALL TAKE ALL NECESSARY COMPACTION TESTS WHILE THE WATERLINE TRENCH IS BEING BACKFILLED AND WHILE THE SUBBASE/ BASECOURSE IS BEING PLACED. IF THE TEST RESULTS INDICATE THAT ADDITIONAL COMPACTION IS REQUIRED, THE CORRECTIVE WORK SHALL BE COMPLETED BEFORE ANY ADDITIONAL TRENCH EXCAVATION OR PLACING OF SUBBASE/ BASECOURSE IS ALLOWED.
- THE CONTRACTOR SHALL RETAIN THE SERVICES OF A REGISTERED GEOTECHNICAL ENGINEER FOR QUALITY CONTROL. THE COMPACTION TEST RESULTS SHALL BE CERTIFIED BY THE GEOTECHNICAL ENGINEER AND SUBMITTED TO THE DEPARTMENT OF WATER, STATE HIGHWAYS DIVISION (FOR WORK DONE WITHIN STATE RW) AND THE DEPARTMENT OF PUBLIC WORKS (FOR WORK DONE WITHIN COUNTY RW). THE GEOTECHNICAL ENGINEER SHALL CERTIFY THAT THE COMPACTION RESULTS MET THE REQUIREMENTS OF THE CURRENT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
- THE CONTRACTOR SHALL CONNECT ALL EXISTING CONSUMER PIPING TO THE NEW SERVICE LATERALS. THE DEPARTMENT OF WATER WILL TRANSFER THE EXISTING WATER METERS ONLY.
- ALL FITTINGS SHALL BE MECHANICAL JOINT (MJ) AT EACH END UNLESS OTHERWISE NOTED. "MEGALUG" RETAINER GLANDS SHALL BE USED WITH ALL MECHANICAL JOINT FITTINGS AND VALVES USED IN CONNECTING NEW WATER MAINS TO EXISTING WATER MAINS UNLESS OTHERWISE NOTED.
- ALL WATER VALVES THAT WILL BE ABANDONED IN PLACE SHALL BE PLACED IN THE "CLOSED" POSITION. REMOVE TOP SECTION OF VALVE BOX AND CONCRETE SETTLEMENT SLAB. FILL REMAINDER OF VALVE BOX WITH CONCRETE. PLACE BACKFILL AND REPAIR PAVEMENT SECTION TO APPLICABLE STATE OR COUNTY STANDARDS. BACKFILL TO FINISH GRADE IN ROAD SHOULDER AREA.
- THE CONTRACTOR SHALL OBTAIN ALL APPLICABLE DEPARTMENT OF HEALTH PERMITS PRIOR TO THE START OF CONSTRUCTION. PERMITS INCLUDE, BUT ARE NOT LIMITED TO, HYDROSTATIC TEST, DEWATERING, AND FOR CONSTRUCTION ACTIVITIES, INCLUDING CLEARING, GRADING, AND EXCAVATION, THAT RESULT IN THE DISTURBANCE OF EQUAL TO OR GREATER THAN ONE (1) ACRE OF TOTAL LAND AREA.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER DISPOSAL OF STORM WATER DISCHARGES AND EFFLUENT ASSOCIATED WITH CONSTRUCTION ACTIVITIES INCLUDING HYDROTESTING AND DISINFECTION OPERATIONS, TO SAFEGUARD PUBLIC HEALTH AND SAFETY IN ACCORDANCE WITH APPLICABLE DEPARTMENT OF HEALTH REQUIREMENTS. ALL PERMITS AND LICENSES FOR STORM WATER AND CONSTRUCTION WATER DISPOSAL, INCLUDING ALL APPLICATION, CHARGES, FEES, AND TAXES, ARE THE RESPONSIBILITY OF THE CONTRACTOR.
- THE CONTRACTOR IS RESPONSIBLE FOR DEWATERING TRENCH AS NECESSARY WHERE GROUNDWATER IS ENCOUNTERED. ALL ASSOCIATED COSTS FOR DEWATERING SHALL BE BORNE BY THE CONTRACTOR.
- THE USE OF KNOWN SEWER PUMP TRUCKS IS PROHIBITED FOR DOW PROJECTS FOR ANY USE, INCLUDING BUT NOT LIMITED TO DEWATERING AND TESTING OF NEW FACILITIES.
- THE CONTRACTOR SHALL VERIFY OUTSIDE DIAMETER OF ALL EXISTING ASBESTOS-CEMENT (AC) WATERLINES TO BE CONNECTED. CONTRACTOR SHALL VERIFY USE OF PROPER GASKETS PRIOR TO CONNECTION. AC PIPE AND GASKET INFORMATION SHALL BE SUBMITTED TO ENGINEER FOR APPROVAL.
- ALL REMOVAL, DISPOSAL AND CONNECTION WORK THAT INVOLVES ASBESTOS PIPE/MATERIAL SHALL BE DONE IN THE PRESENCE OF OR BY A LICENSED ASBESTOS CONTRACTOR.
- THE LICENSED ASBESTOS CONTRACTOR SHALL SUBMIT THEIR PLAN FOR ALL ASSOCIATED REMOVAL, DISPOSAL AND CONNECTION WORK FOR THE PROJECT TO DOW FOR REVIEW AND APPROVAL PRIOR TO CONDUCTING THE WORK.
- ALL CONNECTIONS TO EXISTING AC PIPE SHALL BE AT THE NEAREST AC PIPE JOINT. AC PIPE SHALL BE REMOVED BY ENTIRE LENGTH(S) TO FACILITATE THE CONNECTION. CUTTING OF AC PIPE IS PROHIBITED.
- THE CONTRACTOR SHALL FOLLOW ALL APPLICABLE OSHA, HIOSH AND FEDERAL REGULATIONS IN HANDLING AND DISPOSAL OF ASBESTOS-CEMENT PIPE. DISPOSAL OF THE PIPE SHALL BE AT AN APPROVED ASBESTOS MATERIAL DISPOSAL SITE.
- ALL WATERWORKS BRASS FITTINGS SHALL BE IN COMPLIANCE WITH THE AMENDED SECTION 1417 OF SAFE DRINKING WATER ACT (SDWA) WHICH TAKES EFFECT ON JANUARY 4, 2014. THE AMENDMENT INCLUDES A CHANGE TO THE DEFINITION OF "LEAD-FREE" BY REDUCING LEAD CONTENT FROM 8% TO A WEIGHTED AVERAGE OF NOT MORE THAN 0.25% IN THE WETTED SURFACE MATERIAL. ALL WATERWORKS BRASS FITTINGS INSTALLED FOR POTABLE WATER SERVICE ON JANUARY 4, 2014 AND BEYOND SHALL CONFORM TO THE AMENDED DEFINITION OF "LEAD-FREE."
- AS INDICATED IN SECTION 211 OF WATER SYSTEM STANDARDS - BRASS PRODUCTS, ALL BRASS FITTINGS SHALL CONFORM TO NSF STANDARD 61 AND SECTION 1417 OF THE SAFE DRINKING WATER ACT (SDWA), IN ADDITION, ALL BRASS FITTINGS SHALL CONFORM TO NSF STANDARD 372.
- CONTRACTOR SHALL INSTALL WATER FACILITIES ONLY AFTER REACHING FINAL SUBGRADE OR HIGHER. THE DEPARTMENT OF WATER WILL NOT ALLOW INSTALLATION OF ANY WATER FACILITIES UNTIL THE FINAL SUBGRADE LAYER AT MINIMUM HAS BEEN ACHIEVED.
- PRIOR TO INSTALLATION OF NEW WATER LINES AND /OR FACILITIES, THE CONTRACTOR SHALL HAVE ALL FACILITIES SURVEYED AND STAKED OUT BY A LICENSED SURVEYOR AND THE CONTRACTOR SHALL EXPOSE, VERIFY, AND BACKFILL ALL EXISTING UNDERGROUND UTILITIES AND STRUCTURES IN CLOSE PROXIMITY TO CROSSINGS AND CONNECTIONS PRIOR TO EXCAVATION OF PIPELINE TRENCH. CONTRACTOR SHALL PROVIDE THE LICENSED SURVEYOR CUT SHEET AND THE PROBING INFORMATION TO THE DOW CONSTRUCTION ENGINEER FOR REVIEW AND APPROVAL BEFORE MOVING FORWARD WITH INSTALLATION VIA THE SUBMITTAL REVIEW PROCESS.
- THE DEPARTMENT SHALL BE PROVIDED TWENTY (20) WORKING DAYS FOR ALL SUBMITTAL REVIEWS FROM THE TIME OF SUBMISSION BY THE CONTRACTOR.
- UNLESS OTHERWISE SPECIFIED, ALL DUCTILE IRON PIPES, VALVES, AND FITTINGS, SHALL BE ENCASED IN ONE LAYER OF 8 MIL MINIMUM THICKNESS POLYETHYLENE MATERIAL IN ACCORDANCE WITH ANSI A-21.5 AND AWWA C105. THE POLYETHYLENE ENCASEMENT FILM SHALL BE MANUFACTURED FROM VIRGIN POLYETHYLENE AND SHALL CONSIST OF THREE LAYERS OF CO-EXTRUDED LINEAR LOW DENSITY POLYETHYLENE (LLDPE), FUSED INTO A SINGLE THICKNESS OF NOT LESS THAN 8 MILS. THE INSIDE SURFACE OF THE POLYETHYLENE WRAP TO BE IN CONTACT WITH THE PIPE EXTERIOR SHALL BE INFUSED WITH A BLEND OF AN ANTIMICROBIAL TO MITIGATE MICROBIOLOGICALLY INFLUENCED CORROSION AND A VOLATILE CORROSION INHIBITOR TO CONTROL GALVANIC CORROSION. POLYETHYLENE MATERIAL SHALL HAVE PERMANENT MARKINGS PER AWWA C105.
- COPPER SERVICE LATERALS SHALL BE ENCASED WITH POLYETHYLENE WRAP FROM THE CONNECTION TO THE WATER MAIN TO THE ANGLE BALL VALVE LOCATED IN THE WATER METER BOX.

ADDITIONAL WATER NOTES

- THE RIGHT OF WAY, EASEMENT AND RELEVANT PROPERTY CORNERS OR EASEMENTS AT THE PROPOSED WATER METER LOCATION(S) SHALL BE SURVEYED BY A LICENSED SURVEYOR PRIOR TO CONSTRUCTION. THE SURVEYED POINTS SHALL BE PRESERVED THROUGHOUT THE PROJECT'S CONSTRUCTION.
- THE NEW SERVICE LATERAL PIPING MAY BE TAPPED AND INSTALLED HORIZONTALLY FROM THE EXISTING WATER LINE IF THERE ARE NO CONCRETE ENCASED UTILITY DUCTS TO CLEAR AT THE PROPERTY LINE.

DRAWING NO.
G-001



APPROVED:
Kristen H. Yoshida
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.
APRIL 30, 2026
EXPIRATION DATE OF THE LICENSE

REVISION	DATE	DESCRIPTION	APPROVED
BOWERS + KUBOTA CONSULTING 2183 North King Street, Suite 200 Honolulu, Hawaii 96819 JOB NO. 18-03, WP2020 JOB NO. PLH-27 KŪHIŌ HIGHWAY (HARDY-OXFORD) 18" MAIN REPLACEMENT LIHŪ'E WATER SYSTEM LIHŪ'E, KAUAI, HAWAII			
CONSTRUCTION NOTES - 1			
			DATE 10/24/24
			DATE 16/10/24
FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS COUNTY OF KAUAI (FOR WORK WITHIN COUNTY RW) <i>Jason Kaganoto</i> FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER COUNTY OF KAUAI			

WATER POLLUTION AND EROSION CONTROL NOTES

- GENERAL:**
 - THE CONTRACTOR IS REMINDED OF THE REQUIREMENTS OF SECTION 209-WATER POLLUTION AND EROSION CONTROL AND SECTION 620-DUST CONTROL, IN THE "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2005" AND ITS AMENDMENTS. SECTION 209 DESCRIBES BUT IS NOT LIMITED TO: SUBMITTAL REQUIREMENTS; SCHEDULING OF A WATER POLLUTION AND EROSION CONTROL CONFERENCE WITH THE COUNTY; CONSTRUCTION REQUIREMENTS; METHOD OF MEASUREMENT; AND BASIS OF PAYMENT. NO WORK SHALL COMMENCE WITHOUT A BMP PLAN APPROVED BY THE DEPARTMENT OF HEALTH.
 - THE CONTRACTOR SHALL FOLLOW THE GUIDELINES IN THE "INTERIM BEST MANAGEMENT PRACTICES MANUAL FOR CONSTRUCTION SITES FOR COUNTY OF KAUAI" APRIL 2004 IN DEVELOPING, INSTALLING AND MAINTAINING THE BEST MANAGEMENT PRACTICES (BMPs) FOR THE PROJECT. THE CONTRACTOR MAY SUBMIT ALTERNATE METHODS TO THE COUNTY ENGINEER FOR ACCEPTANCE.
 - THE CONTRACTOR SHALL KEEP A COPY OF THE APPROVED BMP PLAN, NOI, ETC. ON THE PROJECT SITE. THE BMP PLAN SHALL BE UPDATED TO REFLECT ANY CHANGES MADE DURING THE COURSE OF CONSTRUCTION FOR THE DURATION OF THE PROJECT.
 - THE CONTRACTING OFFICER MAY ASSESS LIQUIDATED DAMAGES OF UP TO \$27,500 FOR NON-COMPLIANCE OF EACH BMP REQUIREMENT AND EACH REQUIREMENT STATED IN SPECIFICATION SECTION 209. FOR EVERY DAY OF NON-COMPLIANCE. THERE IS NO MAXIMUM LIMIT ON THE AMOUNT ASSESSED PER DAY.
 - THE COUNTY ENGINEER MAY DEDUCT THE COST FROM THE PROGRESS PAYMENT FOR ALL CITATIONS RECEIVED BY THE DEPARTMENT FOR NON-COMPLIANCE. OR THE CONTRACTOR / OWNER SHALL REIMBURSE THE STATE, AND/OR COUNTY FOR THE FULL AMOUNT OF THE OUTSTANDING COST INCURRED BY THE STATE AND/OR COUNTY.
- WASTE DISPOSAL:**
 - WASTE MATERIALS: ALL WASTE MATERIALS SHALL BE COLLECTED AND STORED IN A SECURELY LIDDED METAL DUMPSTER THAT DOES NOT LEAK. THE DUMPSTER SHALL MEET ALL LOCAL AND STATE SOLID WASTE MANAGEMENT REGULATIONS. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE SHALL BE DEPOSITED IN THE DUMPSTER. THE DUMPSTER SHALL BE EMPTIED A MINIMUM OF TWICE PER WEEK OR AS OFTEN AS IS DEEMED NECESSARY. NO CONSTRUCTION WASTE MATERIALS SHALL BE BURIED ONSITE. THE CONTRACTOR'S SUPERVISORY PERSONNEL SHALL BE INSTRUCTED REGARDING THE CORRECT PROCEDURE FOR WASTE DISPOSAL. NOTICES STATING THESE PRACTICES SHALL BE POSTED IN THE OFFICE TRAILER AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR SEEING THAT THESE PROCEDURES ARE FOLLOWED.
 - HAZARDOUS WASTE: ALL HAZARDOUS WASTE MATERIALS SHALL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL OR STATE REGULATION OR 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: ALL SANITARY WASTE SHALL BE COLLECTED FROM THE PORTABLE UNITS A MINIMUM OF ONCE PER WEEK, OR AS REQUIRED.
- EROSION AND SEDIMENT CONTROL INSPECTION AND MAINTENANCE PRACTICES:**
 - ALL CONTROL MEASURES SHALL BE INSPECTED AT LEAST ONCE EACH WEEK AND WITHIN 24 HOURS FOLLOWING ANY RAINFALL EVENT OF 0.5 INCHES OR GREATER.
 - ALL MEASURES SHALL BE MAINTAINED IN GOOD WORKING ORDER. IF REPAIR IS NECESSARY, IT SHALL BE INITIATED WITHIN 24 HOURS AFTER THE INSPECTION.
 - BUILT UP SEDIMENT SHALL BE REMOVED FROM SILT FENCE WHEN IT HAS REACHED ONE-THIRD THE HEIGHT OF THE FENCE.
 - SILT SCREEN OR FENCE SHALL BE INSPECTED FOR DEPTH OF SEDIMENT AND 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.
 - TEMPORARY AND PERMANENT SEEDING AND PLANTING SHALL BE INSPECTED FOR BARE SPOTS, WASH OUTS AND HEALTHY GROWTH.
 - THE CONTRACTOR SHALL SUBMIT TO THE COUNTY ENGINEER A MAINTENANCE INSPECTION REPORT PROMPTLY AFTER EACH WEEKLY INSPECTION.
 - THE CONTRACTOR SHALL SELECT A MINIMUM OF THREE PERSONNEL WHO SHALL BE RESPONSIBLE FOR INSPECTIONS, MAINTENANCE AND REPAIR ACTIVITIES AND FILLING OUT THE INSPECTION AND MAINTENANCE REPORT.
 - 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.
 - ALL SLOPES AND EXPOSED AREAS SHALL BE GRASSED AS FINAL GRADES HAVE BEEN ESTABLISHED. GRADING TO FINAL GRADE SHALL BE CONTINUOUS, AND ANY AREA IN WHICH WORK HAS BEEN INTERRUPTED OR DELAYED OR EXPOSED FOR MORE THAN 14 DAYS SHALL BE GRASSED IN ORDER TO PREVENT DUST EMISSION, EROSION AND SILT RUNOFF. AREAS WITH IMPORTED SOILS SHALL BE GRASSED NOT MORE THAN 5 WORKING DAYS AFTER FINAL GRADES HAVE BEEN ESTABLISHED.
 - TEMPORARY EROSION CONTROLS SHALL NOT BE REMOVED BEFORE PERMANENT EROSION CONTROLS ARE IN-PLACE AND ESTABLISHED.
- GOOD HOUSEKEEPING BEST MANAGEMENT PRACTICES:**

MATERIALS POLLUTION PREVENTION PLAN:

- APPLICABLE MATERIALS OR SUBSTANCES LISTED BELOW ARE EXPECTED TO BE PRESENT ONSITE DURING CONSTRUCTION. OTHER MATERIALS AND SUBSTANCES NOT LISTED BELOW SHALL BE ADDED TO THE INVENTORY OF THE CONTRACTOR'S SITE-SPECIFIC BMP PLAN.

CONCRETE DETERGENTS PAINTS (ENAMEL AND LATEX) METAL STUDS TAR MASONRY	FERTILIZERS PETROLEUM BASED PRODUCTS CLEANING SOLVENTS WOOD BLOCK
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- MATERIAL MANAGEMENT PRACTICES SHALL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES TO STORM WATER RUNOFF. AN EFFORT SHALL BE MADE TO STORE ONLY ENOUGH PRODUCTS AS IS REQUIRED TO DO THE JOB.
- ALL MATERIALS STORED ONSITE SHALL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR APPROPRIATE CONTAINERS AND IF POSSIBLE UNDER A ROOF OR OTHER ENCLOSURE.
- PRODUCTS SHALL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH THE ORIGINAL MANUFACTURER'S LABEL.
- SUBSTANCES SHALL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER.
- A PRODUCT SHALL BE USED UP COMPLETELY BEFORE DISPOSING OF THE CONTAINER.
- MANUFACTURER'S RECOMMENDATIONS FOR PROPER USE AND DISPOSAL SHALL BE FOLLOWED.
- THE CONTRACTOR SHALL CONDUCT A DAILY INSPECTION TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS ONSITE.

HAZARDOUS MATERIAL POLLUTION PREVENTION PLAN:

- PRODUCTS SHALL BE KEPT IN ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE.
- ORIGINAL LABELS AND MATERIAL SAFETY DATA SHEETS (MSDS) SHALL BE RETAINED AND MADE AVAILABLE TO THE COUNTY ENGINEER UPON REQUEST.
- SURPLUS PRODUCTS SHALL BE DISPOSSED OF ACCORDING TO MANUFACTURER'S INSTRUCTIONS OR LOCAL AND STATE RECOMMENDED ACTIONS.

WATER POLLUTION AND EROSION CONTROL NOTES (CONT)

ONSITE AND OFFSITE PRODUCTS SPECIFIC PLANS: THE FOLLOWING PRODUCT SPECIFIC PRACTICES SHALL BE FOLLOWED ONSITE:

- PETROLEUM BASED PRODUCTS: ALL ONSITE VEHICLES SHALL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTIVE MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE. PETROLEUM PRODUCTS SHALL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT SUBSTANCES USED ONSITE SHALL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATION.
- FERTILIZERS: APPLY FERTILIZERS USED ONLY IN THE MINIMUM AMOUNTS RECOMMENDED BY THE MANUFACTURER. ONCE APPLIED, WORK FERTILIZER INTO THE SOIL TO LIMIT EXPOSURE TO STORM WATER. STORAGE SHALL BE IN A COVERED SHED. TRANSFER THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.
- PAINTS: SEAL AND STORE ALL CONTAINERS WHEN NOT REQUIRED FOR USE. DO NOT DISCHARGE EXCESS PAINT TO THE ROADWAY DRAINAGE SYSTEM. DISPOSE PROPERLY ACCORDING TO MANUFACTURER'S INSTRUCTION OR STATE AND LOCAL REGULATIONS.
- CONCRETE TRUCKS: WASH OUT OR DISCHARGE CONCRETE TRUCK DRUM WITH WATER ONLY AT A DESIGNATED SITE. DO NOT DISCHARGE WATER IN THE LOCAL DRAINAGE SYSTEM OR WATERS OF THE UNITED STATES. CONTACT DRINKING WATER BRANCH, DEPARTMENT OF HEALTH AT (808) 586-4258 TO RECEIVE PERMISSION TO DESIGNATE A DISPOSAL SITE. CLEAN DISPOSAL SITE AS REQUIRED BY THE OWNER'S REPRESENTATIVE.

SPILL CONTROL PLAN:

- POST A SPILL PREVENTION PLAN TO INCLUDE MEASURES TO PREVENT AND CLEAN UP EACH SPILL.
- THE CONTRACTOR SHALL BE THE SPILL PREVENTION AND CLEAN UP COORDINATOR. DESIGNATE AT LEAST THREE SITE PERSONNEL WHO SHALL RECEIVE SPILL PREVENTION AND CLEAN UP TRAINING. THESE INDIVIDUALS SHALL EACH BECOME RESPONSIBLE FOR A PARTICULAR PHASE OF PREVENTION AND CLEAN UP. POST THE NAMES OF RESPONSIBLE SPILL PERSONNEL IN THE MATERIAL STORAGE AREA AND IN THE OFFICE TRAILER ONSITE.
- CLEARLY POST MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEAN UP. MAKE SITE PERSONNEL AWARE OF THE PROCEDURES AND THE LOCATION OF INFORMATION AND CLEAN UP SUPPLIES.
- KEEP MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEAN UP IN THE MATERIAL STORAGE AREA ONSITE.
- CLEAN UP ALL SPILLS IMMEDIATELY AFTER DISCOVERY.
- KEEP THE SPILL AREA WELL VENTILATED. PERSONNEL SHALL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.
- REPORT SPILLS OF TOXIC HAZARDOUS MATERIAL TO THE APPROPRIATE STATE OR LOCAL GOVERNMENT AGENCY, REGARDLESS OF THE SIZE.
- NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) REQUIREMENTS:**
 - THE CONTRACTOR SHALL COMPLY WITH THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) REQUIREMENTS FOR KAUAI DISTRICT PERMIT PROJECTS. DOW HAS OBTAINED A NPDES PERMIT FOR STORM WATER. CONTRACTOR TO OBTAIN NEW NPDES PERMIT IF PROPOSING ANY CHANGES FROM PERMIT OBTAINED BY DOW. THIS IS AVAILABLE AT THE KAUAI DISTRICT OFFICE AT 3040 UMI STREET, SUITE 205. DUE TO POTENTIAL COSTS AND IMPACTS, THE CONTRACTOR NEEDS TO BE AWARE OF THESE REQUIREMENTS.
 - THE CONTRACTOR SHALL OBTAIN, IF PROPOSING CHANGES TO THE NPDES PERMIT OBTAINED BY DOW, AND COMPLY WITH NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT REQUIREMENTS FOR ALL PROJECTS WHICH WILL DISTURB ONE (1) ACRE OR MORE OF LAND. THE CONTRACTOR SHALL NOT START CONSTRUCTION UNTIL NOTICE OF GENERAL PERMIT COVERAGE (NGPC) IS RECEIVED FROM THE DEPARTMENT OF HEALTH, STATE OF HAWAII AND HAS SATISFIED ANY OTHER APPLICABLE REQUIREMENTS OF THE NPDES PERMIT PROGRAM.
 - THE CONTRACTOR SHALL COMPLETE AND SUBMIT A CONTRACTOR'S CERTIFICATION OF NPDES COMPLIANCE, INCLUDING COMPLETION OF THE BEST MANAGEMENT PRACTICE (BMP) CHECKLIST AND SUBMITTAL OF A WRITTEN BMP PLAN AND DRAWINGS, PRIOR TO ISSUANCE OF THE PERMIT TO PERFORM WORK UPON COUNTY ROADWAYS.

KAUAI ISLAND AND UTILITY COOPERATIVE (KIUC) NOTES

- THE LOCATION OF EXISTING KAUAI ISLAND UTILITIES COOPERATIVE FACILITIES ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATIONS IN THE FIELD.
- THE CONTRACTOR SHALL CALL BEFORE YOU DIG NUMBER AT 1-866-423-7287 FOR UNDERGROUND UTILITY LOCATES TEN DAYS BEFORE START OF CONSTRUCTION.
- MAINTAIN MINIMUM 5'-0" HORIZONTAL CLEARANCE BETWEEN WATERLINES AND KIUC POLES.
- WATERLINE SHALL NOT RUN DIRECTLY UNDER OVERHANGING POWERLINES.
- THE CONTRACTOR SHALL NOTIFY THE KIUC'S CONSTRUCTION COORDINATOR AT 246-4343 AT LEAST FIVE DAYS IN ADVANCE, IF KIUC FACILITIES WILL BE AFFECTED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COST TO ADJUST OR RELOCATE KIUC'S FACILITIES AND TO TEMPORARILY RELOCATE FACILITIES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES TO KIUC FACILITIES. ANY DAMAGES SHALL BE REPORTED IMMEDIATELY TO KIUC TROUBLE CALL AT 246-8200.
- A MINIMUM OF 15 FEET RADIAL CLEARANCE IS REQUIRED WHEN WORKING WITHIN THE VICINITY OF ENERGIZED OVERHEAD ELECTRICAL LINES.

HAWAIIAN TELCOM NOTES

- THE CONTRACTOR SHALL EXERCISE CAUTION AND MAINTAIN PROPER CLEARANCES WHENEVER CONSTRUCTION CROSSES OR IS IN CLOSE PROXIMITY OF HAWAIIAN TELCOM FACILITIES INCLUDING OVERHEAD CABLES AND SERVICE WIRES. THE CONTRACTOR SHALL BE LIABLE FOR ANY DAMAGE TO HAWAIIAN TELCOM FACILITIES. ANY DAMAGES SHALL BE REPORTED IMMEDIATELY TO HAWAIIAN TELCOM'S REPAIR SECTION AT 611. AS A RESULT OF HIS OPERATIONS, ADJUSTMENTS IN THE NEW CONSTRUCTION, IF REQUIRED, SHALL BE MADE TO PROVIDE THE REQUIRED CLEARANCES.
- THE CONTRACTOR SHALL BRACE ALL EXISTING POLES THAT MAY BE COMPROMISED BY THE OPERATIONS. IF IN DOUBT, CONTACT HT ENGINEER JIMMY SONE AT 241-5052 OR HT CONSTRUCTION SUPERVISOR DUKE SARDINHA AT 371-2962.
- THE CONTRACTOR SHALL NOTIFY DUCK SARDINHA, HAWAIIAN TELCOM'S INSPECTOR AT 371-2962, SHOULD ANY HAWAIIAN TELCOM FACILITIES BE AFFECTED BY THE PROPOSED WORK.

NOTES FOR CONSTRUCTION WITHIN COUNTY RIGHT-OF-WAY

- ALL DAMAGED PAVEMENT SHALL BE RESTORED TO ITS ORIGINAL CONDITION IN ACCORDANCE WITH COUNTY OF KAUAI, "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2005" AND ITS AMENDMENTS AND THE "STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION, SEPTEMBER 1984" AS AMENDED BY THE DEPARTMENT OF PUBLIC WORKS. CITY AND COUNTY OF HONOLULU, AND THE COUNTIES OF KAUAI, MAUI AND HAWAII, WITH 2" MINIMUM HOT MIXED ASPHALT CONCRETE PAVEMENT (STATE DESIGN MIX V) AND 8" MINIMUM BASE COURSE.
- THE CONTRACTOR SHALL PROVIDE, INSTALL, MAINTAIN ALL NECESSARY SIGNS, LIGHTS, FLARES, BARRICADES, MARKERS, CONES, AND OTHER PROTECTIVE FACILITIES AND SHALL TAKE ALL NECESSARY PRECAUTIONS FOR THE PROTECTION AND FOR THE CONVENIENCE AND SAFETY OF THE PUBLIC TRAFFIC. ALL SUCH PROTECTIVE FACILITIES AND PRECAUTIONS TO BE TAKEN SHALL CONFORM WITH RULES AND REGULATIONS GOVERNING THE USE OF TRAFFIC CONTROL DEVICES AT WORK SITES OR ADJACENT TO PUBLIC STREETS AND HIGHWAYS ADOPTED BY THE HIGHWAY SAFETY COORDINATOR AND U.S. FEDERAL HIGHWAY ADMINISTRATION MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS DATED 2009 AND ITS AMENDMENTS.
- THE CONTRACTOR SHALL, WHENEVER NECESSARY, PROPERLY SHEET AND BRACE ALL EXCAVATIONS TO RENDER IT SECURE AND SHALL REMOVE ALL SUCH SHEETING AND BRACING BEFORE COMPLETION OF THE BACKFILL FOR WATER MAINS. THE MINIMUM COVER REQUIREMENTS (FROM TOP OF PIPE TO FINISHED GRADE OVER PIPE) IS THREE (3) FEET.
 - PERMIT SHALL BE OBTAINED BY THE CONTRACTOR FROM THE DEPARTMENT OF PUBLIC WORKS, COUNTY OF KAUAI BEFORE WORK ON A PUBLIC STREET OR HIGHWAY MAY BEGIN. PERMIT FEES SHALL BE AT THE CONTRACTOR'S EXPENSE.
 - DRIVEWAYS SHALL BE KEPT OPEN UNLESS OWNERS OF THE ABUTTING LOTS USING THESE RIGHT-OF-WAY ARE OTHERWISE PROVIDED FOR SATISFACTORILY.
 - ALL WORK INCLUDING REPAIR OF DAMAGED PAVEMENT AND SHOULDERS SHALL BE INSPECTED AND APPROVED BY THE DEPARTMENT OF PUBLIC WORKS. ALL UNAPPROVED WORK SHALL BE CONSIDERED UNACCEPTABLE AND SHALL BE REWORKED AND CORRECTED AS DIRECTED BY THE DEPARTMENT OF PUBLIC WORKS, AT THE CONTRACTOR'S EXPENSE.
 - DAMAGED SHOULDERS SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN EXISTING CONDITION.
 - WORK ON A PUBLIC STREET AREA MAY BE PERFORMED ONLY BETWEEN THE HOURS OF 8:00 A.M. TO 3:30 P.M. MONDAY THROUGH FRIDAY, EXCEPT ON HOLIDAYS RECOGNIZED BY THE COUNTY OF KAUAI, UNLESS OTHERWISE PERMITTED IN WRITING BY THE COUNTY ENGINEER.
 - DURING NON-WORKING HOURS, ALL TRENCHES SHALL BE COVERED WITH A SAFE NON-SKID BRIDGING MATERIAL AND ALL LANES SHALL BE OPENED TO PUBLIC VEHICULAR AND PEDESTRIAN TRAFFIC.
 - NO MATERIAL AND/OR EQUIPMENT SHALL BE STOCKPILED OR OTHERWISE STORED WITHIN COUNTY RIGHT-OF-WAY EXCEPT AT LOCATIONS DESIGNATED IN WRITING AND APPROVED BY THE COUNTY ENGINEER.
 - THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS SO AS TO OFFER THE LEAST POSSIBLE OBSTRUCTIONS AND INCONVENIENCE TO THE PUBLIC AND HE SHALL HAVE UNDER CONSTRUCTION NO GREATER LENGTH OR AMOUNT OF WORK THAT HE CAN EXECUTE PROPERLY WITH DUE REGARD TO THE RIGHTS OF THE PUBLIC.
 - ALL EXISTING DRAINAGE FLOW CONDITIONS SHALL BE MAINTAINED.
- THE CONTRACTOR SHALL RETAIN THE SERVICES OF A GEOTECHNICAL ENGINEER FOR QUALITY CONTROL. CERTIFICATION FROM THE REGISTERED GEOTECHNICAL ENGINEER SHALL BE SUBMITTED TO THE DEPARTMENT OF PUBLIC WORKS AT THE COMPLETION OF THE CONSTRUCTION WORK. THE GEOTECHNICAL ENGINEER SHALL CERTIFY THAT THE CONSTRUCTION WORK MEETS "STANDARD SPECIFICATIONS". THE GEOTECHNICAL ENGINEER SHALL ALSO SUBMIT TEST RESULTS AS REQUESTED BY THE DEPARTMENT OF PUBLIC WORKS.
- THE CONTRACTOR SHALL HOLD A PRE-CONSTRUCTION MEETING WITH THE CONSTRUCTION-DESIGN SECTION OF THE DEPARTMENT OF PUBLIC WORKS BEFORE COMMENCING ANY WORK.
- THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION TO PRESERVE BENCHMARKS (SURVEY MONUMENTS) WHENEVER THE CENTER OF A SURVEY MONUMENT IS LESS THAN THREE (3) FEET FROM THE EDGE OF CONSTRUCTION. THE CONTRACTOR SHALL RETAIN A LICENSED SURVEYOR TO REFERENCE THE LOCATION OF SAID SURVEY MONUMENT.
- BENCHMARKS THAT ARE DISTURBED OR DESTROYED SHALL BE RESTORED UNDER A LICENSED LAND SURVEYOR'S DIRECTION. COPIES OF FIELD NOTES, DESCRIPTIONS AND NEW VALUES OF THE NEW BENCHMARK SHALL BE SENT TO THE DEPARTMENT OF PUBLIC WORKS SURVEY SECTION FOR REVIEW AND APPROVAL PRIOR TO FINAL ACCEPTANCE OF THE PROJECT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL OVERTIME OR NIGHT WORK PAYMENTS FOR COUNTY'S STAFF AND INSPECTION PERSONNEL INCLUDING CONSULTANTS WHEN THE CONTRACT REQUIRES OVERTIME OR NIGHT WORK TO BE PERFORMED, OR DIRECTS THE CONTRACTOR TO WORK ADDITIONAL SHIFTS OR OVERTIME FOR COUNTY'S CONVENIENCE.
- IF SYSTEM CONDITIONS REQUIRE NON-EMERGENCY NIGHTTIME WORK DURING THE AUTUMN SEABIRD FALL SEASON (SEPTEMBER 15 THROUGH DECEMBER 15), USE OF LIGHTING SHALL BE RESTRICTED BETWEEN 9:00 P.M. TO 4:30 A.M. IF LIGHTING OF THE WORK AREA IS REQUIRED IN SUCH SITUATION, ALL LIGHTS SHALL BE SHIELDED (MINIMUM LIGHT SPILL TOWARDS THE SKY) AND DIRECTED DOWNWARDS TO THE MAXIMUM EXTENT PRACTICABLE. MINIMUM REQUIREMENTS FOR LIGHTING BY HIOSH AND OSHA SHALL BE PROVIDED AND ASSURED BY THE CONTRACTOR. THE CONTRACTOR SHALL TRAIN ALL EMPLOYEES WORKING AT NIGHT (RECORDS RETAINED BY THE CONTRACTOR) IN HOW TO HANDLE ANY RETRIEVED DOWNED BIRDS AND SHALL HAVE APPROPRIATE EQUIPMENT AS APPROVED BY SAVE OUR SHEARWATERS (SOS) ON SITE TO HOLD AND TRANSPORT ANY RETRIEVED BIRDS TO A SOS FACILITY. THIS REQUIREMENT DOES NOT ALLOW LIGHTING AS MAY BE RESTRICTED BY OTHER GOVERNMENT AGENCIES.


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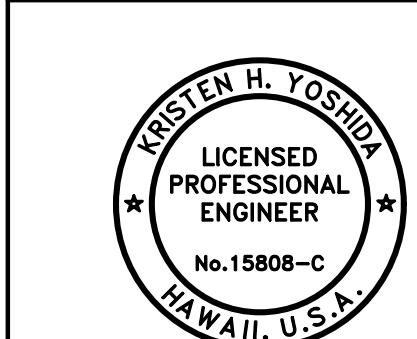
ENVIRONMENTAL NOTES

- IN ACCORDANCE WITH CHAPTER 11-60.1, AIR POLLUTION CONTROL TITLE 11, STATE ADMINISTRATIVE RULES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT EFFECTIVE CONTROL MEASURES ARE PROVIDED TO MINIMIZE OR PREVENT ANY VISIBLE DUST EMISSION CAUSED BY THE CONSTRUCTION WORK FROM IMPACTING THE SURROUNDING AREAS INCLUDING THE OFF-SITE ROADWAYS USED TO ENTER/EXIT THE PROJECT. THESE MEASURES INCLUDE BUT ARE NOT LIMITED TO THE USE OF WATER WAGONS, SPRINKLER SYSTEMS, DUST FENCES, ETC.
- IN ACCORDANCE WITH CHAPTER 11-55, WATER POLLUTION CONTROL AND CHAPTER 11-54, WATER QUALITY STANDARDS, TITLE 11, STATE ADMINISTRATIVE RULES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT THE BEST MANAGEMENT PRACTICE (BMP) TO MINIMIZE OR PREVENT THE DISCHARGE OF SEDIMENTS, DEBRIS AND OTHER WATER POLLUTANT INTO STATE WATERS IS PROVIDED AT ALL TIMES.
- IN ACCORDANCE WITH CHAPTER 11-58, SOLID WASTE MANAGEMENT CONTROL TITLE 11, STATE ADMINISTRATIVE RULES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT GRUB MATERIAL DEMOLITION WASTE AND CONSTRUCTION WASTE GENERATED BY THE PROJECT ARE DISPOSED OF IN A MANNER OR AT A SITE APPROVED BY THE STATE DEPARTMENT OF HEALTH. DISPOSAL OF ANY OF THESE WASTES BY BURNING IS PROHIBITED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND PAYING FOR ALL APPLICABLE PERMITS FROM THE DEPARTMENT OF HEALTH INCLUDING BUT NOT LIMITED TO NOTICE OF INTENT AND GENERAL PERMIT FOR STORM WATER, HYDROSTATIC TEST AND DEWATERING DISCHARGES PRIOR TO COMMENCING CONSTRUCTION. DOW HAS OBTAINED A NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT FOR STORM WATER. CONTRACTOR TO OBTAIN NEW NPDES PERMIT IF PROPOSING ANY CHANGES FROM PERMIT OBTAINED BY DOW. NPDES PERMIT SHALL BE REQUIRED PRIOR TO GRADING OR GRUBBING WORK OVER AN AREA OF ONE ACRE OR MORE.
- AFTER EACH RAINFALL EVENT, THE CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS RESULTING FROM THIS WORK AND DEPOSITED IN DRAINAGE FACILITIES, ROADWAYS AND OTHER AREAS. THE COST INCURRED FOR ANY NECESSARY REMEDIAL ACTION BY THE COUNTY ENGINEER SHALL BE PAYABLE BY THE CONTRACTOR.
- BEST MANAGEMENT PRACTICES (BMP'S) SHALL BE EMPLOYED AT ALL TIMES TO THE MAXIMUM EXTENT PRACTICABLE TO PREVENT DAMAGE BY SEDIMENTATION, EROSION OR DUST TO STREAMS, WATERCOURSES, NATURAL AREAS AND THE PROPERTY OF OTHERS.
- THE CONTRACTOR SHALL OBTAIN AND COMPLY WITH NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT REQUIREMENTS FOR ALL PROJECTS WHICH WILL DISTURB ONE (1) ACRE OR MORE OF LAND. THE CONTRACTOR SHALL NOT START CONSTRUCTION UNTIL NOTICE OF GENERAL PERMIT COVERAGE (NGPC) IS RECEIVED FROM THE DEPARTMENT OF HEALTH, STATE OF HAWAII AND HAS SATISFIED ANY OTHER PERMITTING REQUIREMENTS OF THE NPDES PERMIT PROGRAM.
- IN ACCORDANCE WITH CHAPTER 11-46, COMMUNITY NOISE, HAWAII ADMINISTRATIVE RULES, THE CONTRACTOR AND THE PROPERTY OWNER/DEVELOPER SHALL BE RESPONSIBLE FOR PROVIDING EFFECTIVE CONTROL MEASURES TO MINIMIZE OR PREVENT CONSTRUCTION RELATED NOISE FROM IMPACTING THE RESIDENTS IN THE IMMEDIATE AREA. IF REQUIRED, NOISE REDUCTION MEASURES SHALL BE IMPLEMENTED BY THE CONTRACTOR DURING THE CONSTRUCTION WORK.
- THE PROPERTY MAY HARBOR RODENTS WHICH WILL BE DISPERSED TO THE SURROUNDING AREAS WHEN THE SITE IS CLEARED. IN ACCORDANCE WITH CHAPTER 11-26, ENTITLED VECTOR CONTROL OF TITLE 11, HAR, THE CONTRACTOR SHALL ASCERTAIN THE PRESENCE OR ABSENCE OF RODENTS ON THE PROPERTY. SHOULD THE PRESENCE OF RODENTS BE DETERMINED, THE CONTRACTOR SHALL ERADICATE THE RODENTS PRIOR TO CLEARING THE SITE.
- A COPY OF THE PLANS, CONSTRUCTION SCHEDULE AND/OR WRITTEN MEASURES THAT IS REQUIRED TO BE SUBMITTED BY THE CONTRACTOR (DUST CONTROL MEASURES/PLANS) SHOULD ALSO BE SENT TO THE DEPARTMENT OF HEALTH FOR MONITORING PURPOSES.
- NOISE WILL BE GENERATED DURING THE CLEARING, GRADING AND CONSTRUCTION PHASES OF THIS PROJECT. THE APPLICABLE MAXIMUM PERMISSIBLE SOUND LEVELS AS STATED IN TITLE 11, HAWAII ADMINISTRATIVE RULES, CHAPTER 11-46, COMMUNITY NOISE, SHALL NOT BE EXCEEDED, UNLESS A NOISE PERMIT IS OBTAINED FROM THE HAWAII STATE DEPARTMENT OF HEALTH.


HISTORICAL PRESERVATION NOTES

- SHOULD HISTORIC REMAINS SUCH AS ARTIFACTS, BURIALS, CONCENTRATION OF SHELL OR CHARCOAL BE ENCOUNTERED DURING CONSTRUCTION ACTIVITIES, WORK SHALL CEASE IMMEDIATELY IN THE IMMEDIATE VICINITY OF THE FIND AND THE FIND SHALL BE PROTECTED FROM FURTHER DAMAGE. THE CONTRACTOR SHALL CORDON OFF THE AREA AND IMMEDIATELY NOTIFY THE PLANNING DEPARTMENT AT (808) 241-4050 AND STATE HISTORIC PRESERVATION DIVISION AT (808) 892-8015, WHICH WILL ASSESS THE SIGNIFICANCE OF THE FIND AND RECOMMEND THE APPROPRIATE MITIGATION MEASURES, IF NECESSARY. IN ADDITION, IF HUMAN BURIALS ARE FOUND, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE COUNTY OF KAUAI POLICE DEPARTMENT.

APPROVED: 	8/19/24
FOR KAUAI ISLAND UTILITY COOPERATIVE	DATE
FOR HAWAIIAN TELCOM	10/10/24
	DATE



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.
APRIL 30, 2026
EXPIRATION DATE OF THE LICENSE

REVISION	DATE	DESCRIPTION	APPROVED
BOWERS + KUBOTA CONSULTING 2183 North King Street, Suite 200 Honolulu, Hawaii 96819			
JOB NO. 18-03, WP2020 JOB NO. PLH-27 KŪHIŌ HIGHWAY (HARDY-OXFORD) 18" MAIN REPLACEMENT LIHŪ'E WATER SYSTEM LIHŪ'E, KAUAI, HAWAII			
CONSTRUCTION NOTES - 2			
APPROVED: 			10/24/24
FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS COUNTY OF KAUAI (FOR WORK WITH COUNTY RW)			DATE
FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER COUNTY OF KAUAI			16/10/24
			DATE
FILE	POCKET	FOLDER	NO.

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NOTES FOR CONSTRUCTION WITHIN STATE RIGHT-OF-WAY

- APPROVAL OF PERMIT CONSTRUCTION PLANS SHALL BE VALID FOR A PERIOD OF ONE YEAR THEREOF FROM THE DATE OF NOTIFICATION OF APPROVAL TO THE APPLICANT. IN THE EVENT CONSTRUCTION DOES NOT COMMENCE WITHIN THIS ONE-YEAR PERIOD, THE APPLICANT WILL BE REQUIRED TO RESUBMIT HIS CONSTRUCTION PLANS FOR DIVISION'S REVIEW AND APPROVAL.
- NO CONSTRUCTION WITHIN THE STATE HIGHWAY RIGHT-OF-WAY SHALL COMMENCE UNTIL AN APPLICATION FOR A "PERMIT TO PERFORM WORK UPON STATE HIGHWAYS" HAS BEEN COMPLETED, AND PERMIT ISSUED TO THE AGENCY, AND/OR, ITS CONTRACTOR.
[HTTPS://HIDOT.HAWAII.GOV/HIGHWAYS/HOME/DOING-BUSINESS/GUIDE-TO-PERMITS/](https://hidot.hawaii.gov/highways/home/doing-business/guide-to-permits/)
 (PH. 808-241-3000).
- THE CONTRACTOR SHALL NOTIFY THE STATE HIGHWAYS DIVISION, KAUAI DISTRICT OFFICE, CONSTRUCTION ENGINEER TWO (2) WEEKS PRIOR TO COMMENCING WORK.
- CONSTRUCTION AND RESTORATION OF ALL EXISTING HIGHWAY FACILITIES WITHIN STATE RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH ALL APPLICABLE SECTIONS OF THE CURRENT "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION 2005," AND THE "SPECIFICATION FOR INSTALLATION OF MISCELLANEOUS IMPROVEMENTS WITHIN STATE HIGHWAYS" OF THE STATE HIGHWAY DIVISION.
- AT THE END OF EACH DAY'S WORK, THE CONTRACTOR SHALL REMOVE ALL EQUIPMENT AND OTHER OBSTRUCTION TO PERMIT FREE PASSAGE OF PUBLIC TRAFFIC AND PEDESTRIANS.
- ALL LANES SHALL BE OPEN TO TRAFFIC DURING MORNING PEAK HOURS FROM 6:30 A.M. TO 8:30 A.M., AND DURING AFTERNOON PEAK HOURS FROM 3:00 P.M. TO 6:00 P.M., AND DURING OFF WORK HOURS.
- WORK MAY BE PERFORMED FROM 7:00 AM MONDAY TO 5:30 PM FRIDAY, EXCEPT STATE HOLIDAYS, UNLESS OTHERWISE PERMITTED BY THE DISTRICT ENGINEER.
- ALL WORK ON STATE HIGHWAYS THAT REQUIRES LANE CLOSURES SHALL BE DONE AT NIGHT. THE CONTRACTOR SHALL CONDUCT NIGHT WORK ONLY AS FOLLOWS:

SUNDAY THRU THURSDAY	9:00 P.M. - 12:00 MIDNIGHT
MONDAY THRU FRIDAY	12:00 MIDNIGHT - 5:00 A.M.

THE CONTRACTOR SHALL NOT DO WORK ON FRIDAY NIGHTS AND SATURDAYS OR AS ORDERED BY THE ENGINEER. SUNDAY'S WORK WILL BE PART OF MONDAY'S WORKING DAY. THE CONTRACTOR SHALL OBTAIN A NOISE VARIANCE PERMIT (SUBMIT COPY TO STATE HIGHWAYS) AND ALL OTHER REQUIRED PERMITS BEFORE BEGINNING NIGHT WORK.

- NIGHT WORK SHALL NOT BE PERFORMED DURING THE PERIOD FROM SEPTEMBER 15 TO DECEMBER 31 OF EACH YEAR.
- CONTRACTOR SHALL COMPLETE AND SUBMIT A WEEKLY LANE CLOSURE REQUEST FORM TO THE STATE HIGHWAYS OFFICE AT LEAST 14 DAYS PRIOR TO ANY ROADWORK ON STATE HIGHWAYS.
- THE CONTRACTOR SHALL COMPLY WITH THE ATTACHED TRAFFIC CONTROL PLANS AND SIGN SPACING TABLE.
- ALL WORKERS WITHIN THE STATE RIGHT-OF-WAY WHO ARE EXPOSED TO EITHER VEHICLES USING THE ROADWAY OR TO CONSTRUCTION EQUIPMENT SHALL WEAR HIGH VISIBILITY SAFETY APPAREL THAT MEETS THE PERFORMANCE CLASS 2 OR 3 REQUIREMENTS OF ANSI/SEA 107-2004. "WORKERS" IS DEFINED AS PEOPLE ON FOOT WHOSE DUTIES PLACE THEM WITHIN THE STATE RIGHT-OF-WAY SUCH AS BUT NOT LIMITED TO CONSTRUCTION AND MAINTENANCE FORCES, EQUIPMENT OPERATORS, SURVEY CREWS, UTILITY CREWS, RESPONDERS TO INCIDENTS (E.G. EMT AND FIREMEN) AND LAW ENFORCEMENT PERSONNEL DIRECTING TRAFFIC, INVESTIGATING ACCIDENTS, AND HANDLING LANE CLOSURES AND OBSTRUCTED ROADWAYS.
- NO MATERIAL AND/OR EQUIPMENT SHALL BE STOCKPILED OR OTHERWISE STORED WITHIN HIGHWAY RIGHTS-OF-WAY EXCEPT AT LOCATIONS DESIGNED IN WRITING AND APPROVED BY THE CONSTRUCTION ENGINEER.
- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL CONTACT THE VARIOUS AGENCIES FOR LOCATION OF EXISTING UTILITIES WITHIN THE PROJECT LIMITS. THE CONTRACTOR SHALL LOCATE AND PROTECT ALL EXISTING UTILITIES WHETHER OR NOT SHOWN ON THE PLANS. ANY COSTS INCURRED BY DAMAGES TO EXISTING UTILITIES WILL BE BORNE BY THE CONTRACTOR. CONTRACTOR SHALL REQUEST TONING OF UTILITIES FROM ONE-CALL CENTER, PHONE: 1-866-423-7287. THE CONTRACTOR SHALL ALSO CALL THE COUNTY OF KAUAI DEPARTMENT OF WATER, PHONE 245-5411 AND THE WASTEWATER DIVISION, PHONE 241-6642 FOR TONING OF WATERLINES AND SEWER LINES, RESPECTIVELY.
- THE CONTRACTOR SHALL PROVIDE ACCESS TO AND FROM ALL EXISTING DRIVEWAYS, SIDEWALKS AND ADA ACCESS ROUTES, AND SIDE STREETS AND CROSS STREETS AT ALL TIMES.
- THE CONTRACTOR SHALL REFERENCE TO THE SATISFACTION OF THE DISTRICT ENGINEER, ALL EXISTING TRAFFIC SIGNS, POSTS, AND PAVEMENT MARKINGS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. THE CONTRACTOR SHALL REPLACE OR REPAIR ALL TRAFFIC SIGNS, POSTS, AND PAVEMENT MARKINGS DISTURBED BY HIS ACTIVITIES UNLESS DIRECTED OTHERWISE BY THE DISTRICT ENGINEER OR HIS REPRESENTATIVE.
- CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES (BMP) FOR EROSION AND SILT CONTROL FOR WORK WITHIN THE STATE R/W. SITE-SPECIFIC BMP PLAN SHALL BE SUBMITTED TO THE CONSTRUCTION ENGINEER FOR REVIEW AND ACCEPTANCE.
- THE CONTRACTOR SHALL PROVIDE, INSTALL, AND MAINTAIN ALL NECESSARY SIGNS, LIGHT, FLARES, BARRICADES, MARKERS, CONES, AND OTHER PROTECTIVE FACILITIES AND SHALL TAKE ALL NECESSARY PRECAUTIONS FOR THE PROTECTION AND FOR THE CONVENIENCE AND SAFETY OF PUBLIC TRAFFIC. ALL SUCH PROTECTIVE FACILITIES AND PRECAUTIONS TO BE TAKEN SHALL CONFORM WITH THE "ADMINISTRATIVE RULES OF HAWAII GOVERNING THE USE OF TRAFFIC CONTROL DEVICES AT WORK SITES ON OR ADJACENT TO PUBLIC STREETS AND HIGHWAYS" ADOPTED BY THE DIRECTOR OF TRANSPORTATION, AND THE CURRENT U.S. FEDERAL HIGHWAY ADMINISTRATION "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, PART VI - TRAFFIC CONTROL FOR HIGHWAY CONSTRUCTION AND MAINTENANCE OPERATIONS". IF LANE CLOSURES ARE REQUIRED DURING CONSTRUCTION, A TRAFFIC CONTROL PLAN SHALL BE INCORPORATED INTO THE CONSTRUCTION PLANS AND MUST BE APPROVED BY THE DIVISION PRIOR TO THE ISSUANCE OF THE PERMIT.
- ALL REGULATORY, GUIDE AND CONSTRUCTION SIGNS AND BARRICADES SHALL BE OF HIGH INTENSITY REFLECTIVE SHEETING.
- EXISTING DRAINAGE SYSTEM WILL BE FUNCTIONAL AT ALL TIMES DURING CONSTRUCTION. THE CONTRACTOR SHALL FURNISH MATERIALS, EQUIPMENT, LABOR, AND TOOLS TO MAINTAIN FLOW.
- THE MINIMUM PAVEMENT STRUCTURE SHALL CONSIST OF:
 - COMMERCIAL DRIVEWAYS, SIDE ROADS AND UTILITY INSTALLATIONS ON STATE HIGHWAYS
 - 4" HMA PAVEMENT, MIX NO. IV OVER 8" AGGREGATE BASE OVER 12" AGGREGATE SUBBASE; OR 4" HMA PAVEMENT MIX NO. IV OVER 8" ASPHALT CONCRETE BASE OR HMA PAVEMENT MIX NO. IV.
 - 6" OF CLASS "A" CONCRETE REINFORCED WITH 6"x6" - 6/8 WIRE MESH OVER 12" AGGREGATE SUBBASE, IF DEEMED NECESSARY BY THE ENGINEER.
 - RESIDENTIAL DRIVEWAYS
 - 2" HMA PAVEMENT MIX NO. IV OVER 6" AGGREGATE BASE; OR 2" HMA PAVEMENT MIX NO. IV OVER 2-1/2" ASPHALT CONCRETE BASE OR HMA PAVEMENT MIX NO. IV.
 - 4" OF CLASS "A" CONCRETE REINFORCED WITH 6"x6" - 6/8 WIRE MESH OVER 12" AGGREGATE SUBBASE, IF DEEMED NECESSARY BY THE ENGINEER.

NOTES FOR CONSTRUCTION WITHIN STATE RIGHT-OF-WAY (CONT)

- COMPACTION TESTS SHALL BE TAKEN IN ACCORDANCE WITH THE SPECIFICATIONS FOR INSTALLATION OF MISCELLANEOUS IMPROVEMENTS WITHIN STATE HIGHWAYS, AS FOLLOWS:
 - SUBBASE: ONE (1) COMPACTION TEST(S) PER LIFT, FOR EVERY 300 LINEAL FEET OF TRAVEL WAY.
 - BASE COURSE: ONE (1) COMPACTION TEST(S) PER LIFT, FOR EVERY 300 LINEAL FEET OF TRAVEL WAY.
 - ONE (1) COMPACTION TEST(S) PER LIFT, FOR EACH 300 LINEAL FEET OF TRENCH.
 - COPY OF ALL TEST RESULTS SHALL BE PROVIDED TO THE CONSTRUCTION ENGINEER FOR REVIEW AND ACCEPTANCE.
- SMOOTH RIDING CONNECTIONS SHALL BE CONSTRUCTED AT ALL LIMITS OF NEW PAVEMENT, INCLUDING THE BEGINNING AND END OF PROJECT, CONNECTING APPROACHES, SIDE STREETS, AND DRIVEWAYS AS SHOWN ON THE PLANS.
- PRIOR TO COMMENCING TRENCH EXCAVATION WORK, THE CONTRACTOR SHALL TAKE A PROFILE ALONG THE NEW CENTERLINE OF UTILITY TRENCH AND THAT SUCH INFORMATION SHALL BE USED IN THE VERIFICATION OF RESTORING THE ROADWAY TO ITS ORIGINAL CONDITION. A COPY OF THE PROFILE SHALL BE SUBMITTED TO THE CONSTRUCTION ENGINEER.
- THE CONTRACTOR SHALL THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE ADEQUATE, SAFE, NONSKID BRIDGING MATERIAL OVER THE TRENCH, INCLUDING SHORING, WHEN TRENCHING IN PAVEMENT AREAS TO HANDLE ALL TYPES OF VEHICULAR TRAFFIC.
- NO TRENCH SHALL BE OPENED MORE THAN 200 FEET IN ADVANCE OF THE INSTALLED AND TESTED PIPE AND/OR DUCT LINE.
- THE CONTRACTOR SHALL EXERCISE CARE WHEN EXCAVATING IN AREAS WITH UTILITIES, STREETLIGHTS, SIGNALS, ETC. DAMAGE TO THESE EXISTING FACILITIES SHALL BE IMMEDIATELY REPORTED TO THE RESPECTIVE UTILITY COMPANIES, COUNTY, OR STATE AGENCY. THE REPAIR WORK SHALL BE DONE AT THE CONTRACTOR'S EXPENSE.
- PAVEMENT STRIPING AND MARKING SHALL BE PERFORMED BY CONTRACTOR AT NO COST TO THE STATE. THERMOPLASTIC EXTRUSION ONLY IS ACCEPTABLE FOR STRIPING.
- THE CONTRACTOR SHALL MAKE EVERY EFFORT TO MINIMIZE THE USE AND DURATION OF STEEL PLATES. ALL STEEL PLATES SHALL HAVE A NON-SKID SURFACE. THE STATE MAY REQUIRE THE BACKFILLING AND PATCHING OF THE TRENCH DUE TO THE EXCESSIVE USE OF STEEL PLATES. WHEN PERMITTED, ONLY ONE STEEL PLATE SHALL BE USED WITHIN THE TRAVEL WAY AT ANY TIME.
- ANY WORK THAT DISRUPTS, DAMAGES, OR DESTROYS EXISTING TRAFFIC LOOP DETECTORS SHALL BE FOLLOWED WITH RE-ESTABLISHMENT OF THE TRAFFIC LOOPS BEFORE REOPENING THE LANES TO TRAFFIC. THE CONTRACTOR MAY ALSO USE TEMPORARY POLE MOUNTED PRESENCE DETECTORS TO REPLACE ANY LOOPS TAKEN OUT OF SERVICE. THE COST FOR THE TEMPORARY DETECTORS SHALL BE BORNE BY THE CONTRACTOR.
- BENCHMARKS THAT ARE DISTURBED OR DESTROYED SHALL BE RESTORED UNDER A LICENSED LAND SURVEYOR'S DIRECTION. COPIES OF FIELD NOTES, DESCRIPTIONS AND NEW VALUES OF THE NEW BENCHMARK SHALL BE SENT TO THE STATE HIGHWAYS DIVISION FOR REVIEW AND APPROVAL PRIOR TO FINAL ACCEPTANCE OF THE PROJECT.
- THE CONTRACTOR SHALL PROVIDE THE DISTRICT ENGINEER WITH AS-BUILT PLANS UPON COMPLETION OF THE WORK DONE IN THE STATE RIGHT OF WAY. THIS SHALL BE DONE PRIOR TO THE DEPARTMENT'S RELEASE OF THE PERFORMANCE BOND.
- THE PERMIT TO PERFORM WORK UPON THE STATE HIGHWAYS MAY BE REVOKED BECAUSE OF DEFAULT IN ANY OF THE FOLLOWING:
 - WORK PERFORMED BEFORE OR AFTER PERMITTED HOURS;
 - FAILURE TO MAINTAIN ROADWAY SURFACES IN A SMOOTH AND SAFE CONDITION;
 - FAILURE TO CLEAN UP CONSTRUCTION DEBRIS GENERATED FROM PROJECT WORK;
 - FAILURE TO PROVIDE PROPER TRAFFIC CONTROL;
 - FAILURE TO REPLACE DAMAGED PAVEMENT MARKERS, MARKINGS, AND SIGNS.

ABBREVIATIONS

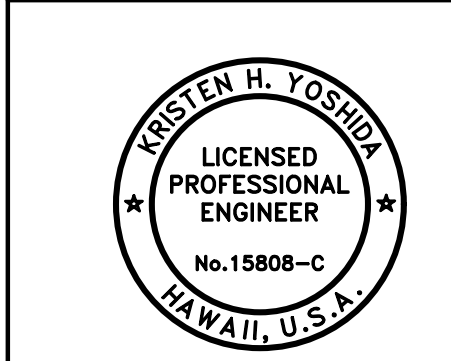
Δ	ANGLE	JRS	JOINT RESTRAINT SYSTEM
Δ/2	HALF ANGLE	KDOW	KAUAI DEPARTMENT OF WATER
@	AT	KSI	KIPS PER SQUARE INCH
ABAND	ABANDONED	KUIC	KAUAI ISLAND UTILITY COOPERATIVE
AC	ASPHALTIC CONCRETE, ASBESTOS CEMENT	L	LENGTH
A/CME	ASBESTOS CEMENT	Lc	LENGTH OF CURVE
ALT	ALTITUDE	LF	LINEAL FEET
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	LT	LEFT
APPROX	APPROXIMATE	LP	LOW POINT
ARV	AIR RELIEF VALVE	MAX	MAXIMUM
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS	MB	MAILBOX
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	MG	MILLION GALLON
B	BOTTOM	MH	MANHOLE
BC	BOTTOM OF CURB	MIL, MM	MILLIMETER
BL	BASE LINE	MIN	MINIMUM
BLK	BLOCK	MIPT	MALE IRON PIPE THREAD
BLDG	BUILDING	MJ	MECHANICAL JOINT
BMP	BEST MANAGEMENT PRACTICE	MPH	MILES PER HOUR
BOT	BOTTOM	MPT	MALE PIPE THREAD
BS	BOTTOM OF SWALE	MSL	MEAN SEA LEVEL / MULTIPLE SERVICE LATERAL
BV	BOTTOM VERTICAL	N	NORTHING
BVC	BEGIN VERTICAL CURVE	N/A	NOT APPLICABLE
BW	BOTTOM OF WALL	NC	NORMALLY CLOSED
CB	CATCH BASIN	NGPC	NOTICE OF GENERAL PERMIT COVERAGE
CC	COMPRESSION COUPLING	NO, #	NUMBER
CFU/ML	COLONY FORMING UNITS PER MILLILITER	NOI	NOTICE OF INTENT
Ch, Ch	CHORD	NPDES	NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
CI	CAST IRON	NSF	NATIONAL SANITATION FOUNDATION
CIG	CHANGE IN GRADE	OC	ON CENTER
C.J.	CONSTRUCTION JOINT, CONTROL JOINT	OD	OUTSIDE DIAMETER
C	CENTER LINE	o/s	OFFSET
CL	CENTER LINE, CLASS, CLEAR	OHW	OVERHEAD WIRE
CLSM	CONTROLLED LOW STRENGTH CONCRETE	OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
CLR	CLEAR	PC	POINT OF CURVATURE
CMU	CONCRETE MASONRY UNIT	PE	PLAIN END
CMP	CORRUGATED METAL PIPE	PVC	POINT OF INTERSECTION
CO	CLEANOUT	PL	PROPERTY LINE
COI	CURB OPENING INLET	POC	POINT OF CONNECTION
CONC	CONCRETE	PRV	PRESSURE REDUCING VALVE
CONN	CONNECT, CONNECTION	PSI	POUNDS PER SQUARE INCH
CONN	CONTINUATION	PVC	POLYVINYL CHLORIDE
CONT	CORPORATION	PT	POINT OF TANGENCY
CORP	CONCRETE RUBBLE MASONRY	R	RADIUS
CRM	CENTER	RC	REINFORCED CONCRETE
CTR	CONTROL VALVE	RCP	REINFORCED CONCRETE PIPE
CV	CUBIC YARD	RD	ROAD
CY	DEFLECTION	REINF	REINFORCED
DEFL	DUCTILE IRON	REQ'D	REQUIRED
DI	DUCTILE IRON PIPE	ROW, R/W	RIGHT-OF-WAY
DIP	DIAMETER	RP	RADIUS POINT
DIA, DIAM, Ø	DISTANCE	RPM	REFLECTIVE PAVEMENT MARKERS
DIST	DEPARTMENT OF WATER	RT	RIGHT
DOW	DEPARTMENT OF PUBLIC WORKS	RW	RESILIENT WEDGE
DPW	DOOR	S	SLOPE, SOCKET
DR	DOUBLE SERVICE LATERAL	SF, SQ FT	SQUARE FEET
DSL	DETAIL	S/W	SIDEWALK
DTL	DRAWINGS	SDMH	STORM DRAIN MANHOLE
DWGS	DEPARTMENT OF WATER SUPPLY	SDWA	SAFE DRINKING WATER ACT
DWS	DRIVEWAY	SHT	SHEET
DWY	EASTING	SMH	SEWER MANHOLE
E	EACH FACE	SOS	SAVE OUR SHEARWATERS SPECIFICATIONS
EF	ELEVATION	SPEC	STANDARD PENETRATION TESTS
ELEV, EL	EMERGENCY MEDICAL TECHNICIAN	SQ	SQUARE
EMT	EDGE OF PAVEMENT	SS	STAINLESS STEEL
EOP, EP	EQUAL	SSL	SINGLE SERVICE LATERAL
EQ	END VERTICAL CURVE	SST	SOCIETY FOR PROTECTIVE COATINGS
EVC	EACH WAY	ST	STREET
EW	EXISTING	STA	STATION
EXIST, E/	EXISTING UNDERGROUND ELECTRICAL	STD	STANDARD
E-UG	FLANGED CONNECTION	STRUCT	STRUCTURAL
FC	FLANGED END	SXS	SOCKET X SOCKET
FE	FINISHED FLOOR ELEVATION	SXSXS	SOCKET X SOCKET X SOCKET
FFE	FIRE HYDRANT	SXT	SOCKET X THREAD
FH	FEMALE IRON PIPE THREAD	SYMM	SYMMETRIC
FIPT	FLANGED	T	TOP, TANGENT
FL	FEET	TC	TOP OF CURB
FT	FOOTING	TG	TOP OF GROUND
FTG	GAUGE	THK	THICK
GA	GALVANIZED	TMK	TAX MAP KEY
GALV	GRATED DRAIN INLET	TP	TOP OF PAVEMENT
GDI	GALVANIZED IRON	TRANS	TRANSITION
GI	GROUTED RUBBLE PAVEMENT	TS	TRAFFIC SIGNAL
GRP	GATE VALVE	TV	TOP VERTICAL
GV	HEIGHT, HORIZONTAL	TW	TOP OF WALL
H	HAWAII ADMINISTRATIVE RULES	TYP	TYPICAL
HAR	HOSE BIBB	UP	UTILITY POLE
HB	HAWAII DEPT. OF TRANSPORTATION	V	VENT
HDOT	HAWAII OCCUPATIONAL SAFETY AND HEALTH	VB	VALVE BOX
HIOSSH	HOT MIX ASPHALT	VC	VERTICAL CURVE
HMA	HORIZONTAL	VERT	VERTICAL
HORIZ	HIGH POINT	W	WIDE
HP	HETEROTROPHIC PLATE COUNT	W/	WITH
HPC	HAWAIIAN TELCOM	W1"	WATER LINE WITH DIAMETER SHOWN
HTCO, HT	HYDRANT	WL	WATER LATERAL
HYD	INTERNATIONAL BUILDING CODE	WM	WATER METER
IBC	IRRIGATION CONTROL VALVE	WMH	WATER MANHOLE
ICV	INSIDE DIAMETER, IDENTIFICATION	WT	WEIGHT
ID	INCHES	WV	WATER VALVE
IN	INVERT		
INV	IRON PIPE THREAD		
IPT	IRRIGATION		
IRR	INTERNATIONAL SAFETY EQUIPMENT ASSOCIATION		
ISEA			

LEGEND

---1088---	EXISTING CONTOUR AND ELEVATION
---E/W6"---	EXISTING WATER LINE
	EXISTING WATER VALVE
	EXISTING WATER METER AND LATERAL
	EXISTING HYDRANT
	EXISTING UTILITY POLE
	EXISTING CHAIN-LINK FENCE
	EXISTING CMU WALL
	EXISTING VEGETATION
	EXISTING MAILBOX
	EXISTING SIGN
	EXISTING WL TO BE ABANDONED IN PLACE
	EXISTING WL TO BE REMOVED
	BENCH MARK
	EDGE OF PAVEMENT
	PROPERTY LINE
	EASEMENT LINE
	NEW WATER LINE
	NEW WATER METER BOX AND LATERAL
	NEW AIR RELIEF VALVE
	NEW CLEANOUT
	NEW HYDRANT
	NEW GATE VALVE
	NEW REDUCER
	NEW TEE
	NEW CONCRETE JACKET

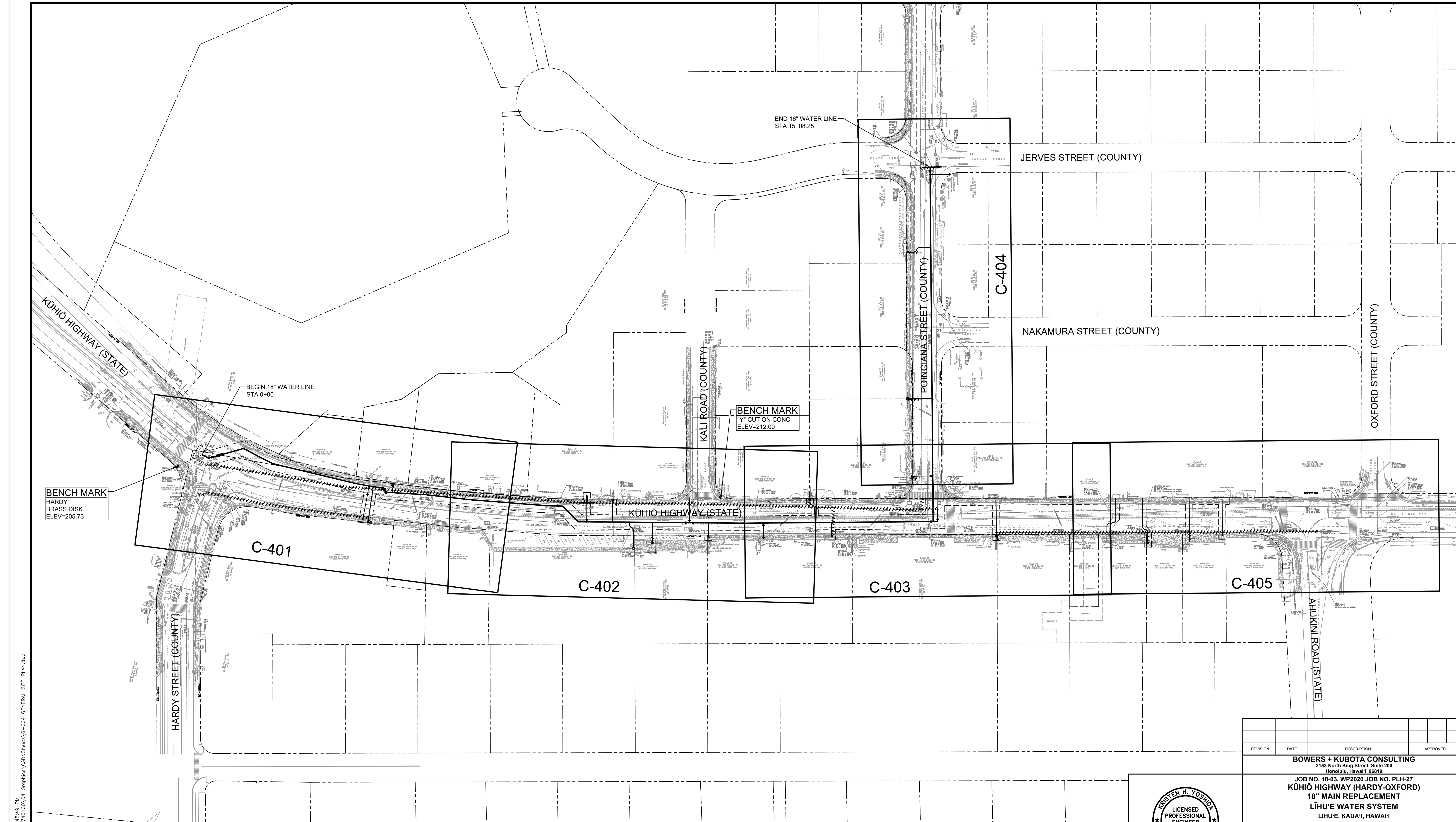
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DRAWING NO.
G-003



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.
 APRIL 30, 2026
 EXPIRATION DATE OF THE LICENSE

REVISION	DATE	DESCRIPTION	APPROVED
BOWERS + KUBOTA CONSULTING 2183 North King Street, Suite 200 Honolulu, Hawaii 96819			
JOB NO. 18-03, WP2020 JOB NO. PLH-27 KŪHIŌ HIGHWAY (HARDY-OXFORD) 18" MAIN REPLACEMENT LIHŪ'E WATER SYSTEM LIHŪ'E, KAUAI'I, HAWAII'			
CONSTRUCTION NOTES - 3, LEGEND, AND ABBREVIATIONS			
APPROVED:			
N/A		DATE	
FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS COUNTY OF KAUAI (FOR WORK WITHIN COUNTY RW)		DATE	
FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER COUNTY OF KAUAI		DATE	
		16/10/24	



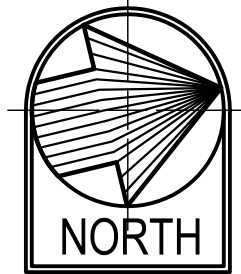
BENCH MARK
HARDY
BRASS DISK
ELEV=205.73

BENCH MARK
'Y' CUT ON CONC
ELEV=212.00

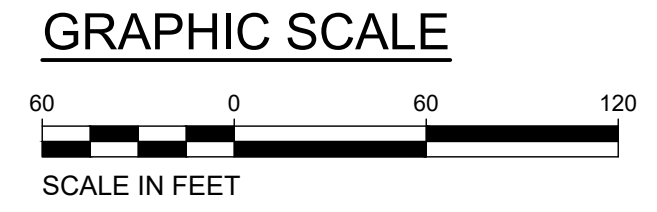
END 16" WATER LINE
STA 15+08.25

BEGIN 18" WATER LINE
STA 0+00

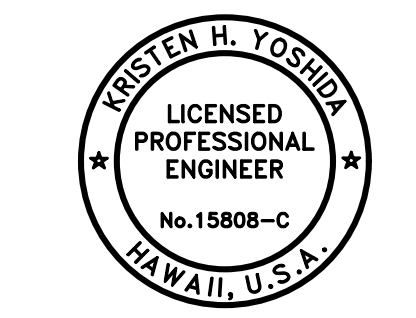
CONNECTION POINT			
WATER LINE (WL)	STATION	SHUTDOWN TIME	SHEET
KUHIŌ WL	0+00	6 HOURS	C-401
KALI CONN	6+96.83	6 HOURS	C-402
POINCIANA CONN	10+33.24	6 HOURS	C-403
POINCIANA WL	15+08.25	6 HOURS	C-404



GENERAL SITE PLAN
SCALE: 1"=60'



DRAWING NO.
G-004



APPROVED: *Kristen H. Yoshida*
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.
APRIL 30, 2026
EXPIRATION DATE OF THE LICENSE

REVISION	DATE	DESCRIPTION	APPROVED

BOWERS + KUBOTA CONSULTING
2183 North King Street, Suite 200
Honolulu, Hawaii 96819

JOB NO. 18-03, WP2020 JOB NO. PLH-27
**KUHIŌ HIGHWAY (HARDY-OXFORD)
18" MAIN REPLACEMENT
LIHU'E WATER SYSTEM
LIHU'E, KAUAI, HAWAII**

GENERAL SITE PLAN

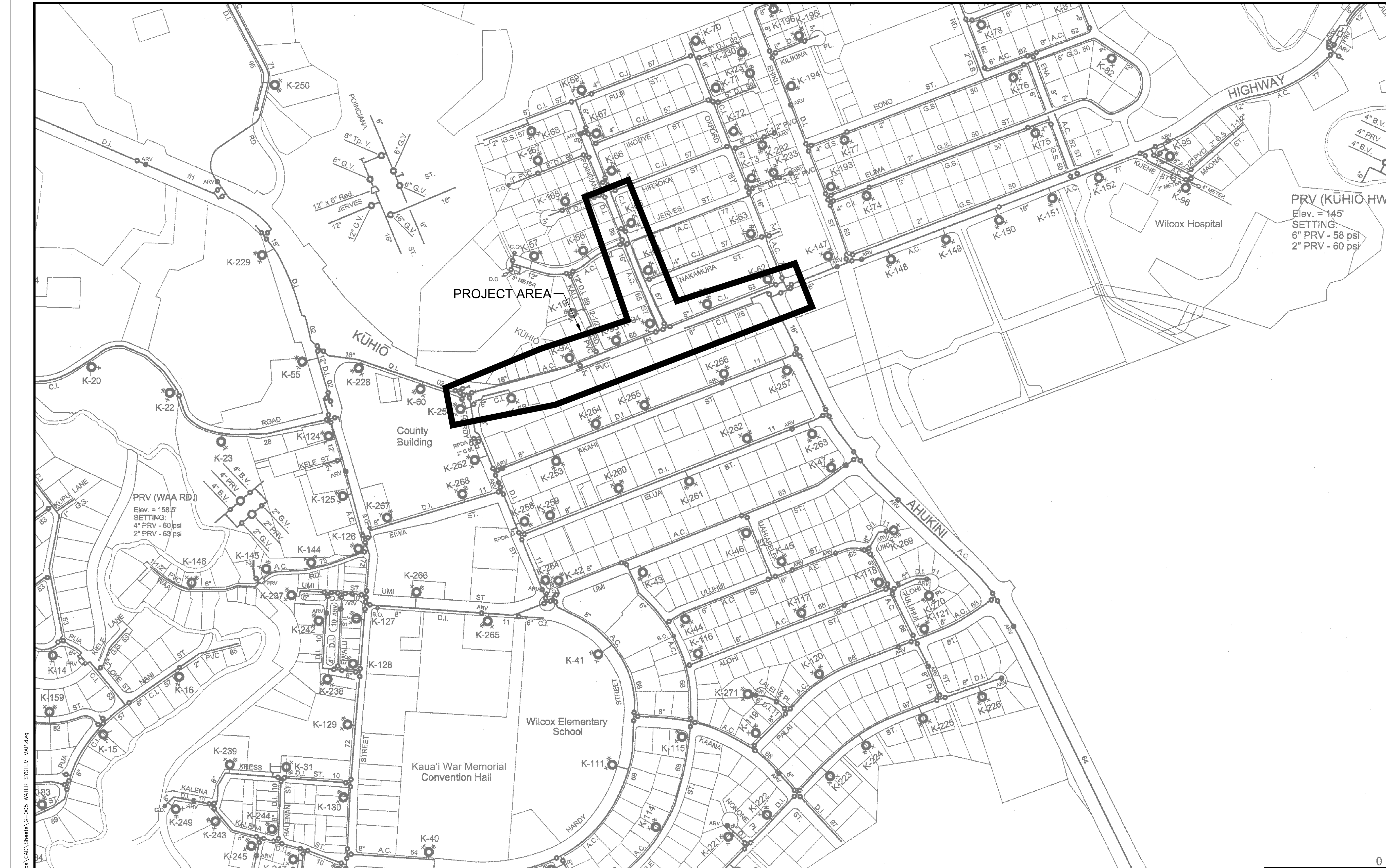
APPROVED: *[Signature]* 10/24/24
DATE

FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS
COUNTY OF KAUAI (FOR WORK WITH COUNTY RW)

[Signature] 16/10/24
DATE

FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER
COUNTY OF KAUAI

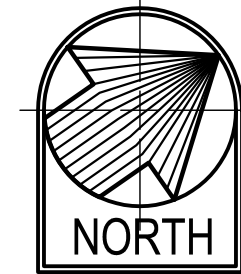
Wednesday, August 14, 2024, 3:08:09 PM
 T:\Village\Oxford\Waterline\2018\740100\04_Graphics\CAD\Sheets\C-004_GENERAL_SITE_PLAN.dwg
 HALF SIZE TRIMLINE FOR 11" x 17"



PRV (KŪHIO HW)
Elev. = 145'
SETTING:
6" PRV - 58 psi
2" PRV - 60 psi

PRV (WAA RD.)
Elev. = 158.5'
SETTING:
4" PRV - 60 psi
2" PRV - 63 psi

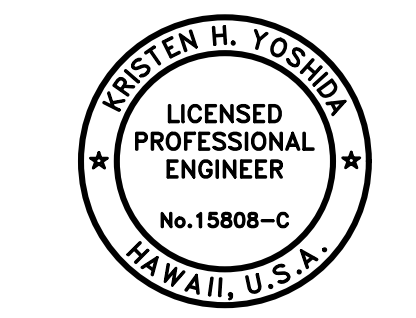
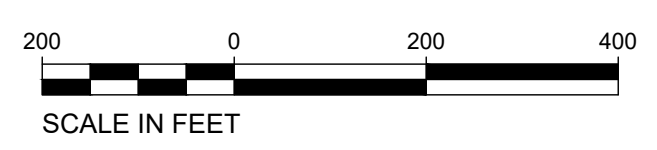
PROJECT AREA



LĪHU'E WATER SYSTEM MAP

SCALE: 1"=200'

GRAPHIC SCALE



Kristen H. Yoshida
APPROVED:

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.
APRIL 30, 2026
EXPIRATION DATE OF THE LICENSE

DRAWING NO.
G-005

REVISION	DATE	DESCRIPTION	APPROVED

BOWERS + KUBOTA CONSULTING
2183 North King Street, Suite 200
Honolulu, Hawaii 96819

JOB NO. 18-03, WP2020 JOB NO. PLH-27
**KŪHIO HIGHWAY (HARDY-OXFORD)
18" MAIN REPLACEMENT
LĪHU'E WATER SYSTEM
LĪHU'E, KAUAI, HAWAII**

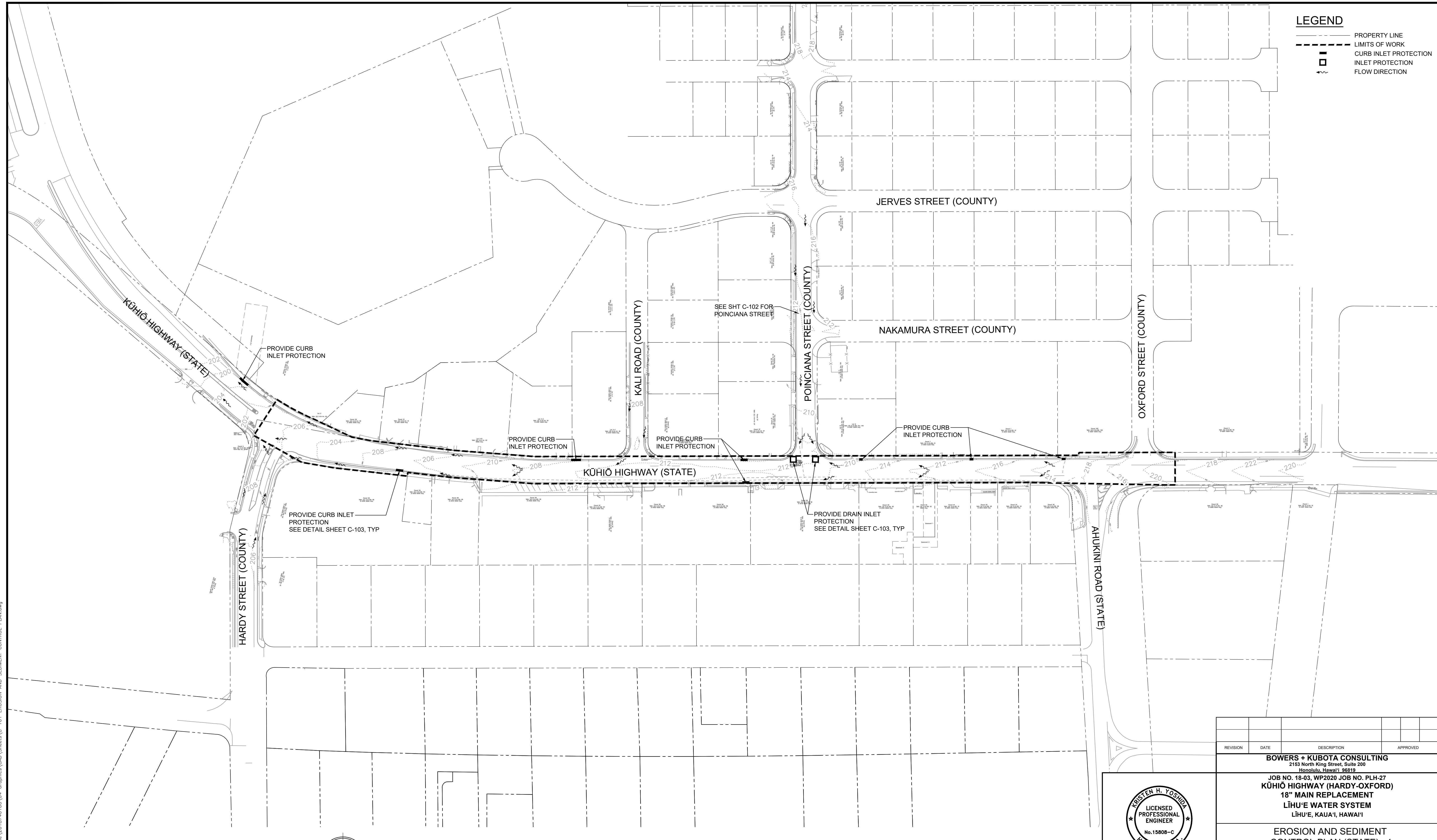
LĪHU'E WATER SYSTEM MAP

APPROVED:	10/24/24
FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS COUNTY OF KAUAI (FOR WORK WITH COUNTY RW)	DATE
<i>Jason Reynolds</i> FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER COUNTY OF KAUAI	16/10/24 DATE

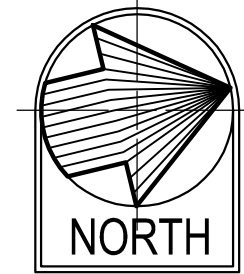
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 T:\Vary-Order\Hawaii\2018\240100\04_Graphics\CAD\Sheets\G-005_WATER_SYSTEM_MAP.dwg
 HALF SIZE TRIMLINE FOR 11" x 17"

LEGEND

- PROPERTY LINE
- - - LIMITS OF WORK
- ▣ CURB INLET PROTECTION
- ▣ INLET PROTECTION
- FLOW DIRECTION



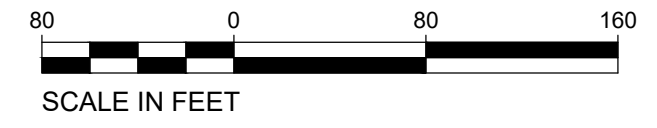
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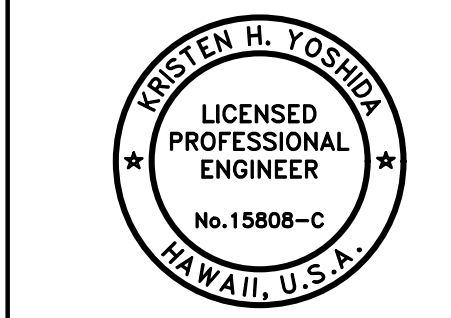
EROSION AND SEDIMENT CONTROL PLAN (STATE) - 1

SCALE: 1"=80'

GRAPHIC SCALE



DRAWING NO.
C-101



Kristen H. Yoshida
 THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.
 APRIL 30, 2026
 EXPIRATION DATE OF THE LICENSE

REVISION	DATE	DESCRIPTION	APPROVED

BOWERS + KUBOTA CONSULTING
 2183 North King Street, Suite 200
 Honolulu, Hawaii 96819

JOB NO. 18-03, WP2020 JOB NO. PLH-27
KŪHIŌ HIGHWAY (HARDY-OXFORD)
18" MAIN REPLACEMENT
LĪHU'E WATER SYSTEM
 LĪHU'E, KAUA'I, HAWAII

EROSION AND SEDIMENT CONTROL PLAN (STATE) - 1

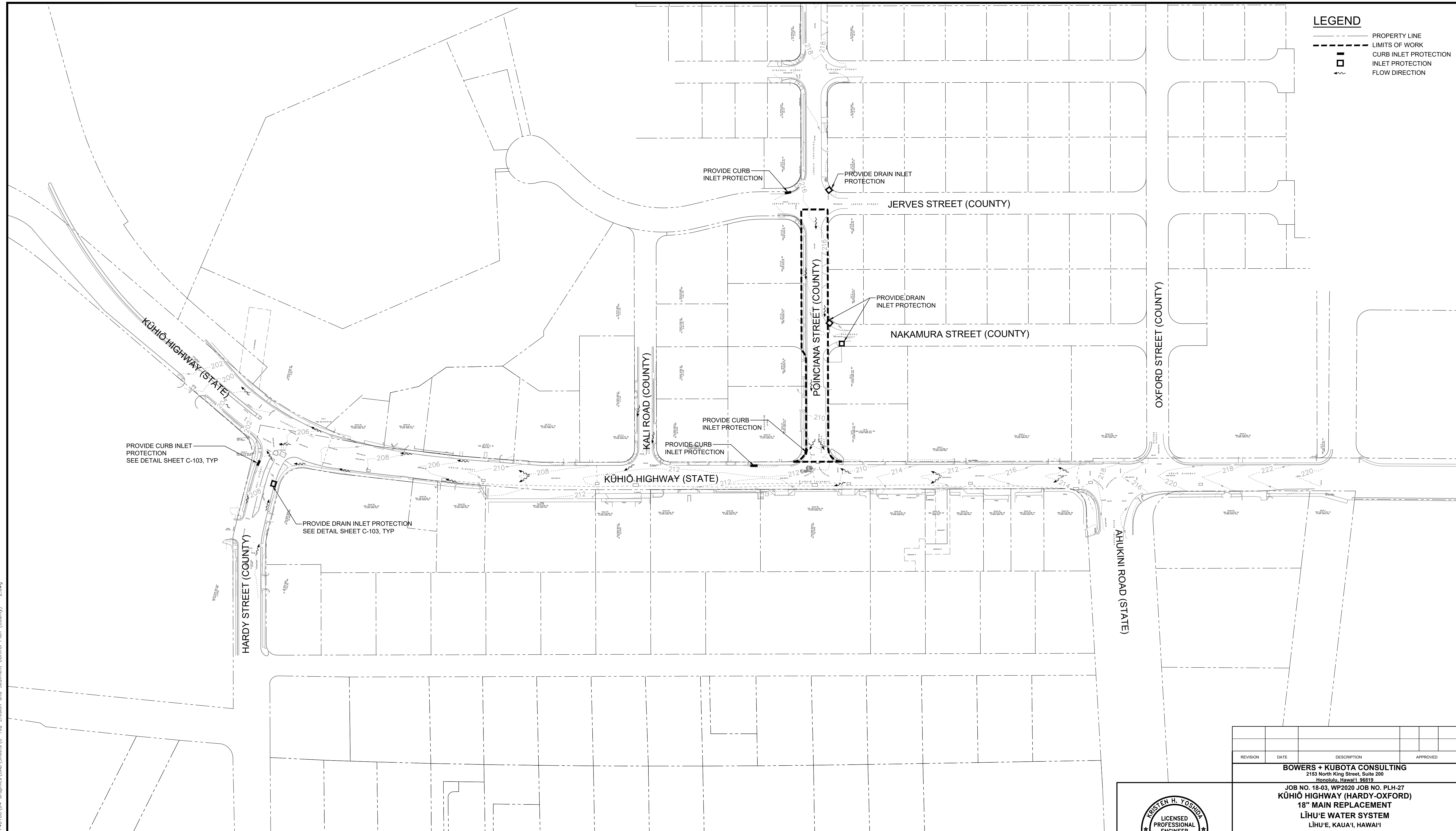
APPROVED: N/A
 FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS, COUNTY OF KAUAI (FOR WORK WITH COUNTY RAW) DATE

Joanna Kaganato
 FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER, COUNTY OF KAUAI DATE **16/10/24**

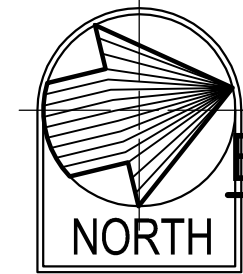
FILE	POCKET	FOLDER	NO.

LEGEND

- PROPERTY LINE
- - - LIMITS OF WORK
- ▣ CURB INLET PROTECTION
- ▣ INLET PROTECTION
- FLOW DIRECTION



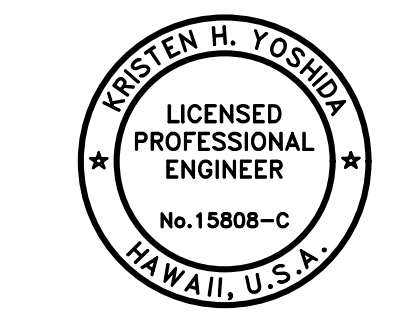
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 T:\Energy-Source\Water\2018\740100\04_Graphics\CAD_Sheets\C-102_Erosion and Sediment Control Plan (County) - 2.dwg



EROSION AND SEDIMENT CONTROL PLAN (COUNTY) - 2

SCALE: 1"=80'

GRAPHIC SCALE



APPROVED: *Kristen H. Yoshida*
 THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.
 APRIL 30, 2026
 EXPIRATION DATE OF THE LICENSE

DRAWING NO.
C-102

REVISION	DATE	DESCRIPTION	APPROVED

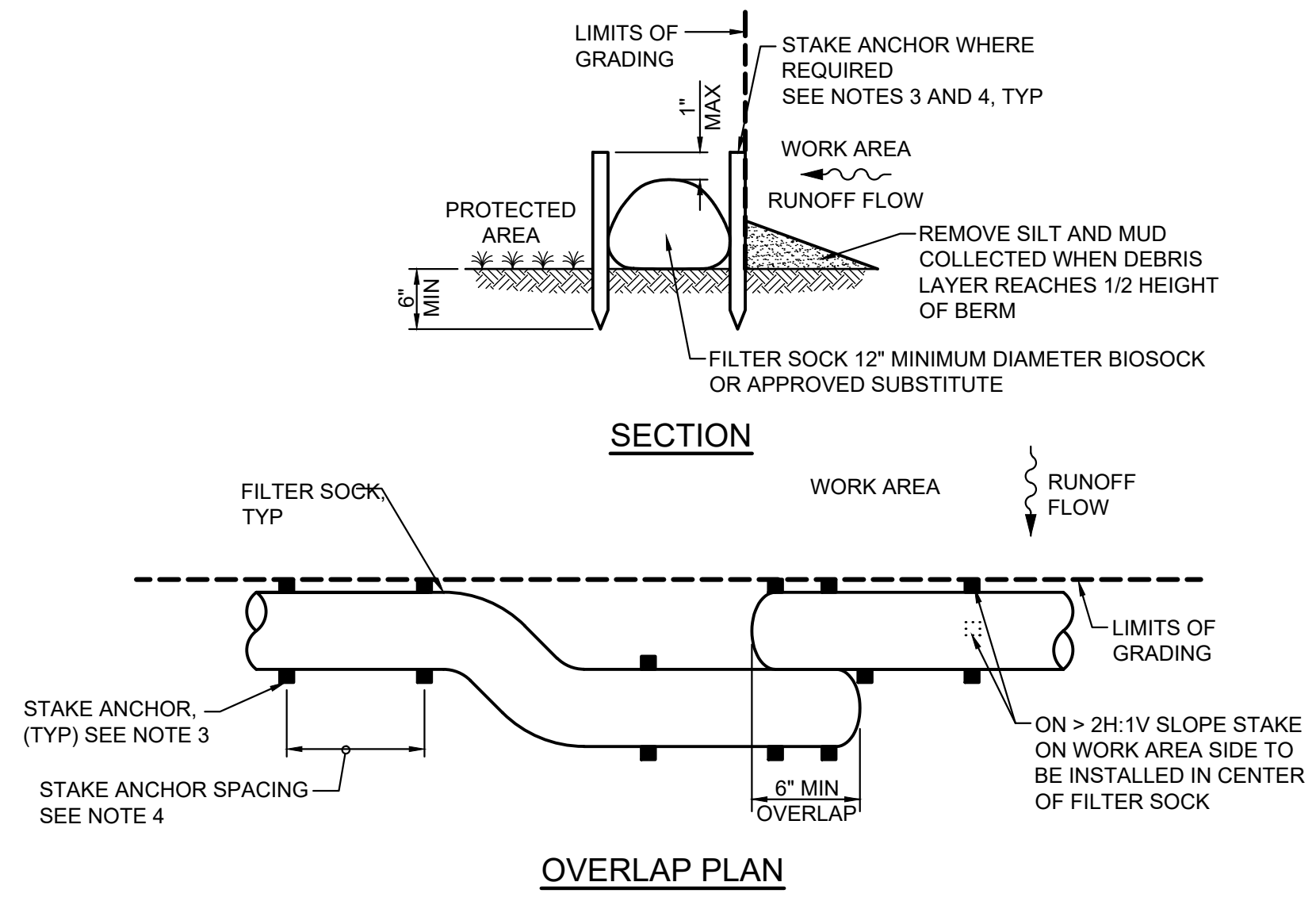
BOWERS + KUBOTA CONSULTING
 2183 North King Street, Suite 200
 Honolulu, Hawaii 96819
JOB NO. 18-03, WP2020 JOB NO. PLH-27
KŪHIŌ HIGHWAY (HARDY-OXFORD)
18" MAIN REPLACEMENT
LĪHU'E WATER SYSTEM
 LĪHU'E, KAUAI, HAWAII

EROSION AND SEDIMENT CONTROL PLAN (COUNTY) - 2

APPROVED: <i>[Signature]</i>	10/24/24
FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS COUNTY OF KAUAI (FOR WORK WITH COUNTY RAW)	DATE
FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER COUNTY OF KAUAI	DATE

EROSION CONTROL/BMP NOTES

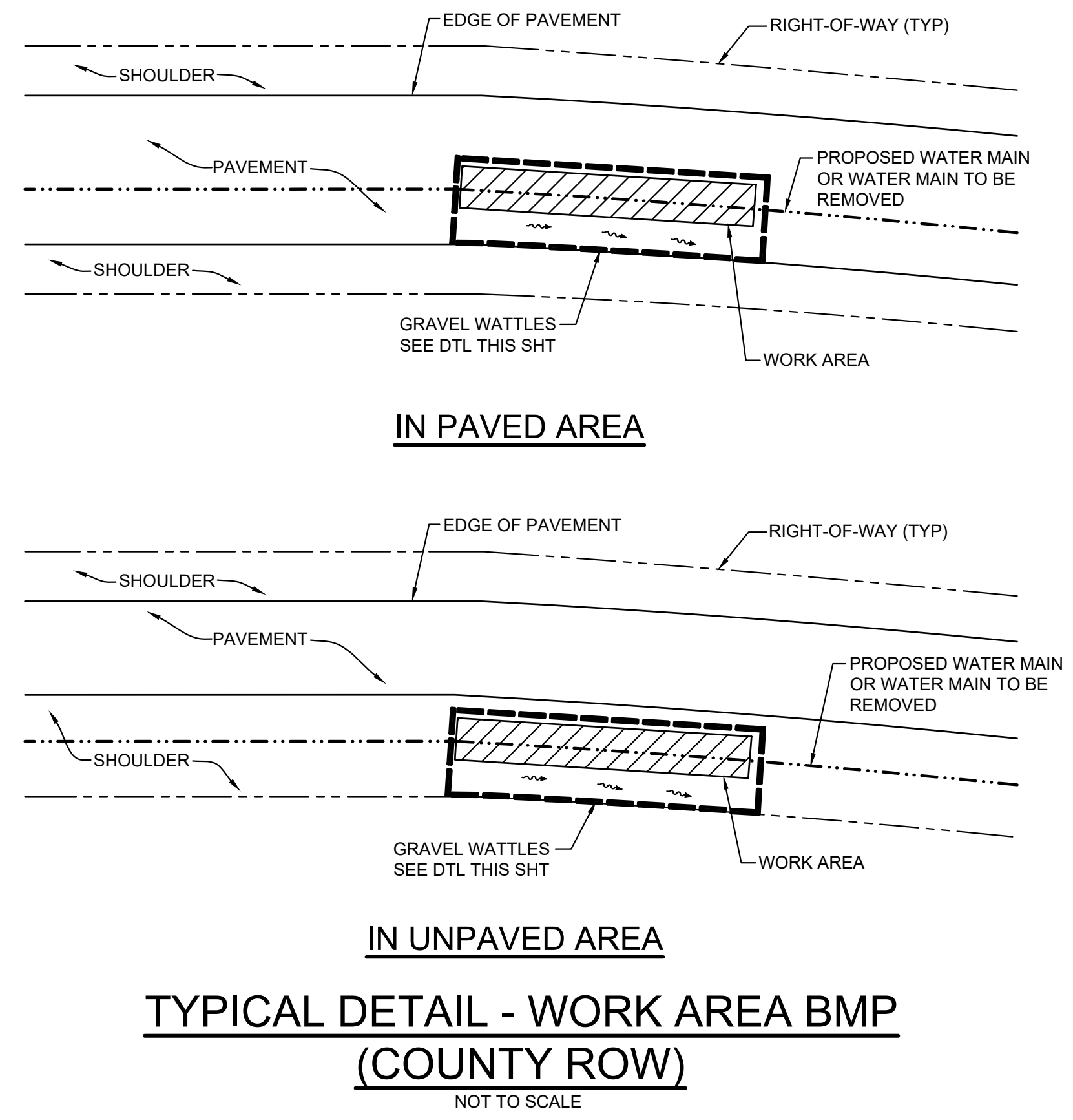
- MEASURES TO CONTROL EROSION AND OTHER POLLUTANTS SHALL BE IN PLACE BEFORE ANY CONSTRUCTION WORK IS INITIATED. THESE MEASURES SHALL BE PROPERLY CONSTRUCTED AND MAINTAINED THROUGHOUT THE ENTIRE PROJECT.
- ALL CONTROL MEASURES SHALL BE CHECKED AND REPAIRED AS NECESSARY.
- INSTALL CURB INLET PROTECTION (GRAVEL WATTLES AND COMPOST FILTER SOCK) AS SHOWN ON THE PLANS. TEMPORARY BMPs MAY BE ADJUSTED TO FIT THE CONTRACTOR'S OPERATIONS.
- ALL STORM DRAIN INLETS THAT MAY RECEIVE RUNOFF AS A RESULT OF THE CONSTRUCTION WORK SHALL USE AN INLET FILTER DEVICE. INLET FILTERS SHALL REMAIN UNTIL COMPLETION OF CONSTRUCTION WORK. CONTRACTOR SHALL PERIODICALLY INSPECT INLET FILTERS, ESPECIALLY DURING HEAVY RAINFALL, TO ENSURE DRAINAGE THROUGH MATERIAL IS MAINTAINED.
- AT THE END OF THE CONSTRUCTION, EXISTING STORM DRAIN INLETS SURROUNDING THE PROJECT SITE SHALL BE INSPECTED AND ANY ACCUMULATED SEDIMENT AND DEBRIS FOUND IN THE STORM DRAIN INLETS SHALL BE REMOVED. FLUSHING INTO THE STORM DRAINS IS PROHIBITED.
- GOOD HOUSEKEEPING SHALL BE UTILIZED TO ENSURE PROTECTION OF ROADWAYS FROM MUD, DIRT, AND DEBRIS.
- THE CONTRACTOR SHALL ENSURE THAT ALL TIRES OF CONSTRUCTION VEHICLES ARE SUFFICIENTLY CLEANED OFF SO THAT DIRT OR DEBRIS IS NOT TRACKED OFF THE CONSTRUCTION SITE. WASHING OF TIRES WITH WATER WILL NOT BE ACCEPTABLE UNLESS THE RUNOFF IS CONTAINED AND DOES NOT ENTER THE STORM DRAIN SYSTEM OR ONTO THE COUNTY'S ROW.
- THE CONTRACTOR SHALL ENSURE THAT EXISTING ROADWAYS USED TO ACCESS THE PROJECT ARE CLEANED OF ALL DEBRIS, TRASH, DIRT, MUD, ETC., THROUGHOUT THE WORK DAY.
- THE FINAL LIFT OF EACH DAY'S WORK SHALL BE COMPACTED TO PREVENT EROSION OF FILL MATERIAL.
- ANY DIRT OR GRASSED AREA DISTURBED SHALL BE RESTORED BY SEEDED HYDRO-MULCH. CONTRACTOR TO ENSURE GRASS IS FULLY ESTABLISHED.
- CONSTRUCT TEMPORARY STABILIZED CONSTRUCTION EGRESS/INGRESS AS SHOWN ON THE PLANS. ALL VEHICLES EXITING THE SITE ARE TO BE SUFFICIENTLY CLEANED OFF SUCH THAT DIRT OR DEBRIS IS NOT TRACKED OFF THE CONSTRUCTION SITE. CONSTRUCTION EGRESS/INGRESS MAY BE ADJUSTED TO FIT THE CONTRACTOR'S OPERATIONS.
- SEE EROSION CONTROL NOTES ON SHEET G-002 AND ENVIRONMENTAL NOTES. TEMPORARY DUST CONTROL MEASURES FOR GRADING, TEMPORARY EROSION CONTROL MEASURES FOR GRADING, ENVIRONMENTAL CONTROL NOTES FOR GRADING, AND PERMANENT EROSION CONTROL MEASURES FOR GRADING ON SHEET G-002 FOR ADDITIONAL REQUIREMENTS.
- THE EROSION CONTROL MEASURES AND BMPs THAT ARE REFLECTED ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR THE PROJECT. THE CONTRACTOR MAY INSTALL AND IMPLEMENT NEWER/BETTER PRODUCTS TO CONTROL AND PREVENT EROSION AND POLLUTANT LOSS FROM THE SITE.



- NOTES:**
- FILTER SOCK SHALL NOT CONTAIN BIOSOLIDS, SHALL BE BIO-DEGRADABLE AND SHALL COMPLY WITH EPA GUIDELINES AND BE CONSISTENT WITH THE CITY & COUNTY OF HONOLULU STORM WATER BEST MANAGEMENT PRACTICE MANUAL CONSTRUCTION, NOV. 2011.
 - REMOVE SEDIMENT FROM THE UP SLOPE SIDE OF THE FILTER SOCK WHEN ACCUMULATION HAS REACHED 1/2 OF THE EFFECTIVE HEIGHT OF THE FILTER SOCK.
 - 3/4"x3/4"x16" MINIMUM WOODEN STAKE ANCHOR.
 - ON < 4H:1V SLOPE, NO STAKE ANCHOR REQUIRED.
ON 4H:1V TO 3H:1V SLOPE, STAKE AT 10 FT ON CENTER.
ON > 3H:1V TO 2H:1V SLOPE, STAKE AT 5 FT TO 10 FT ON CENTER.
ON > 2H:1V SLOPE, STAKE AT 5 FT ON CENTER, STAKES ON WORK AREA SIDE SHALL BE INSTALLED IN CENTER OF FILTER SOCK.

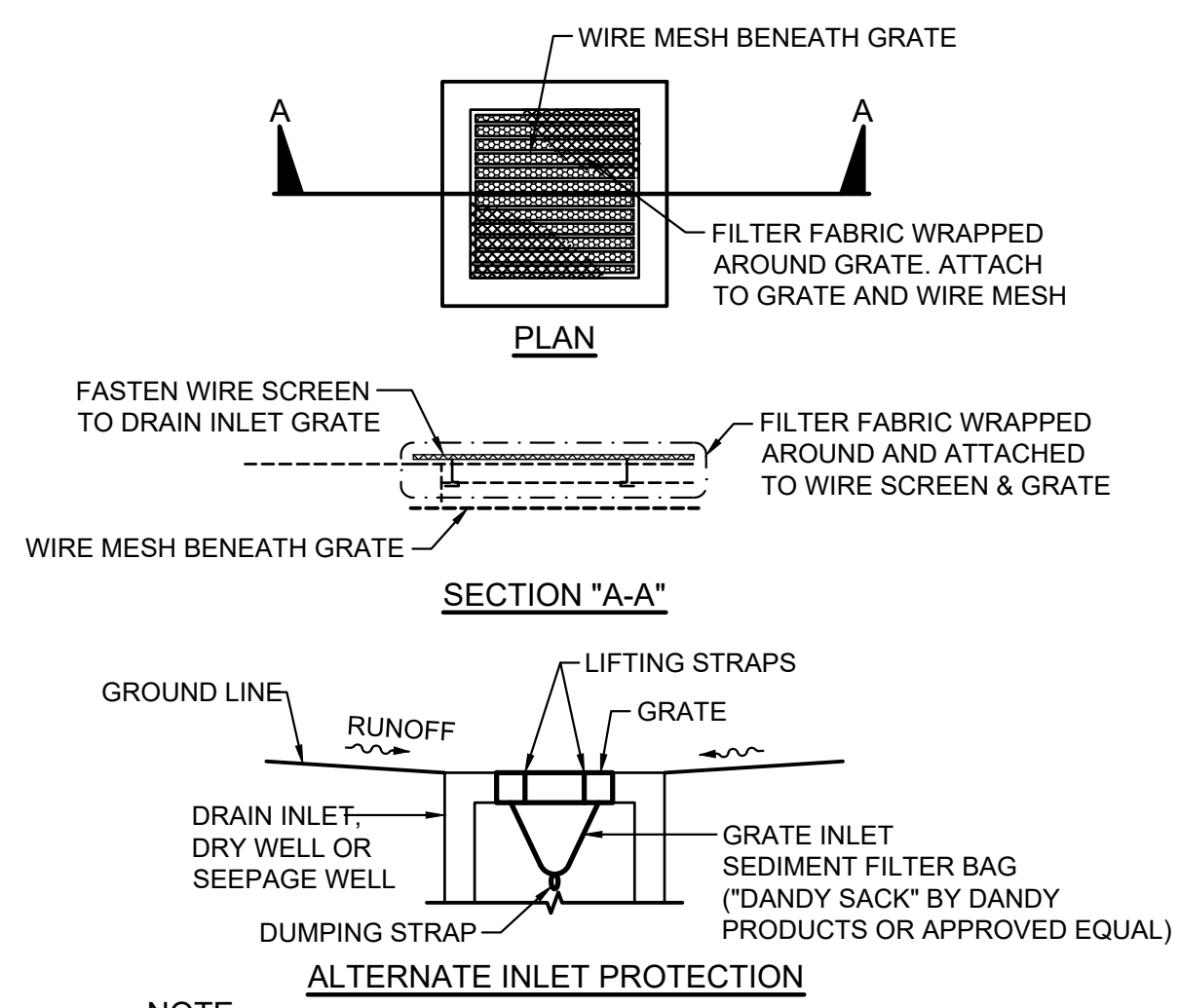
FILTER SOCK DETAIL

NOT TO SCALE



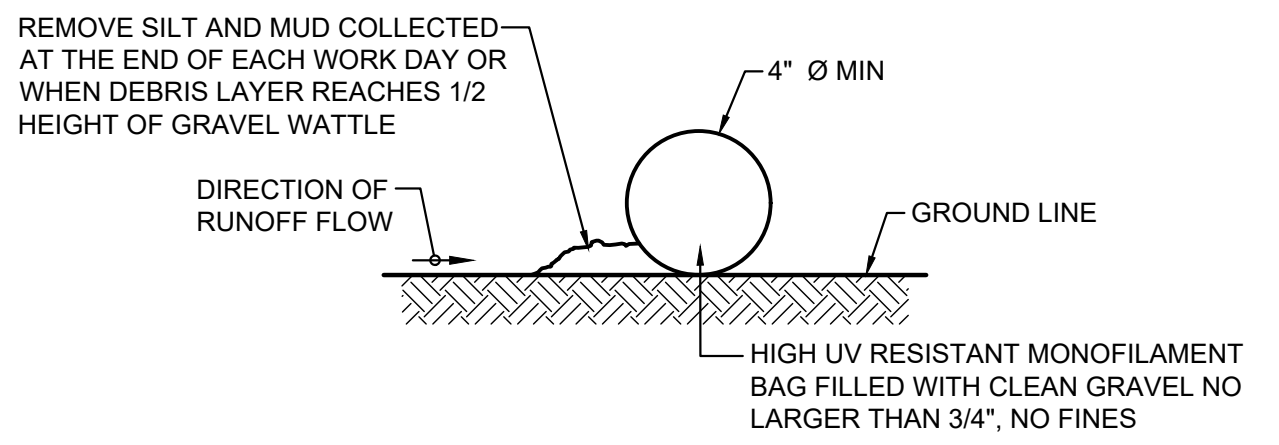
TYPICAL DETAIL - WORK AREA BMP (COUNTY ROW)

NOT TO SCALE



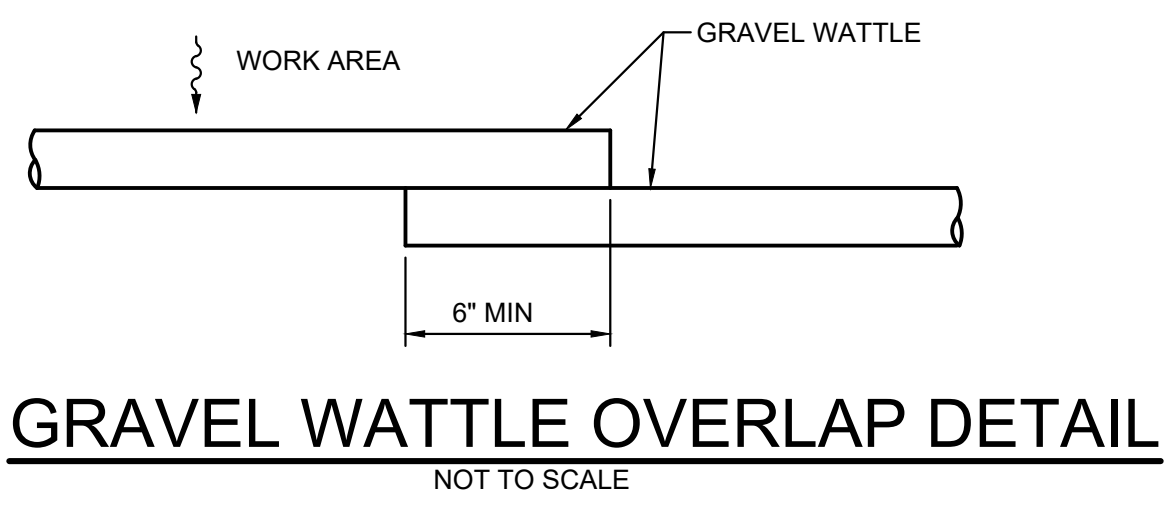
DRAIN INLET PROTECTION DETAIL

NOT TO SCALE



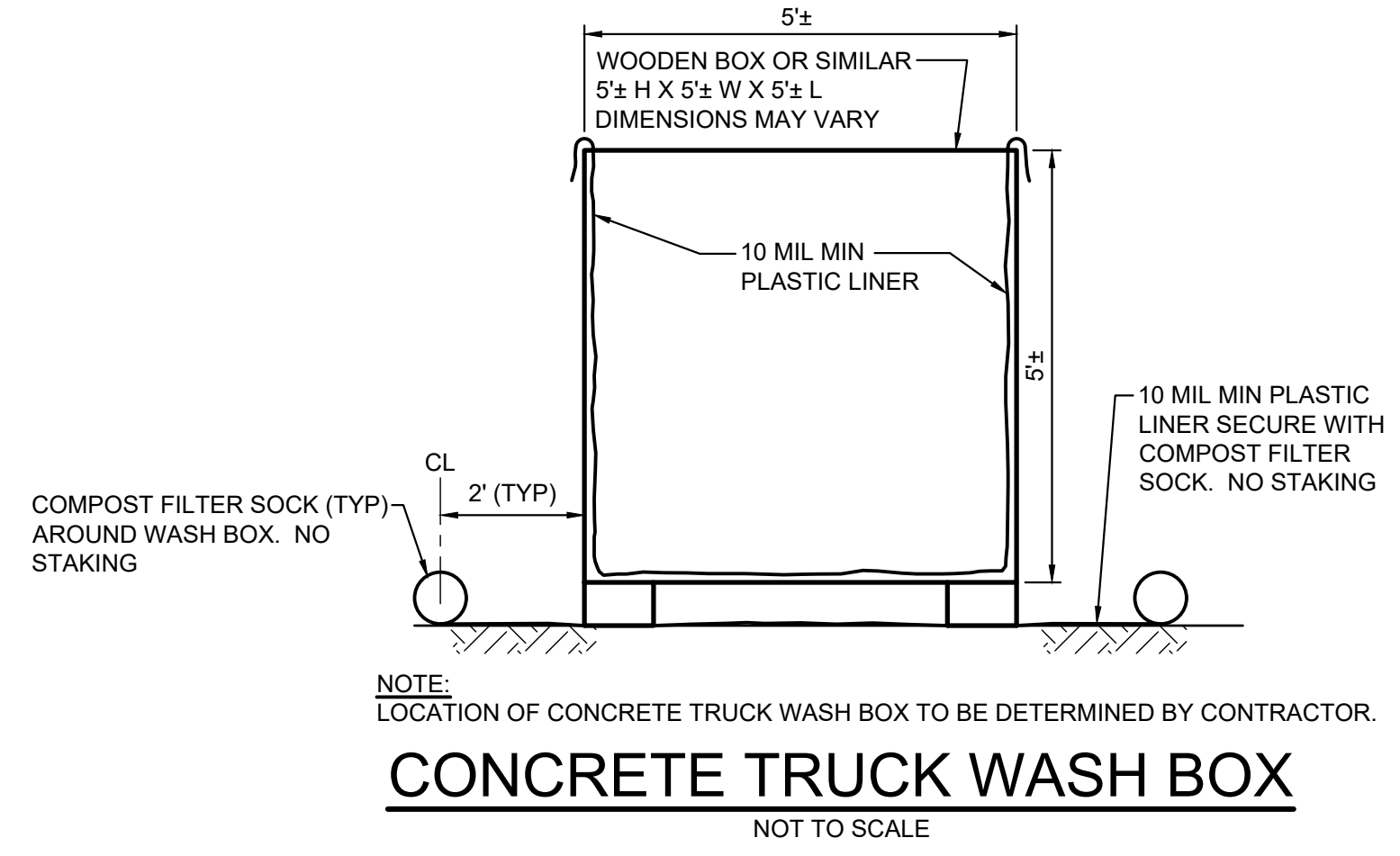
GRAVEL WATTLE DETAIL

NOT TO SCALE



GRAVEL WATTLE OVERLAP DETAIL

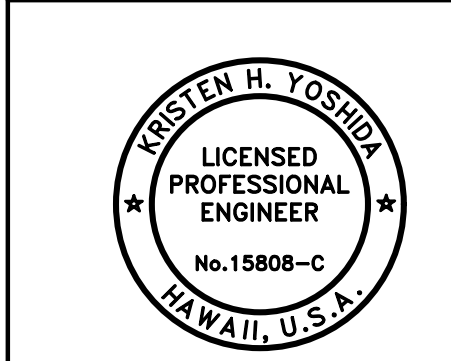
NOT TO SCALE



CONCRETE TRUCK WASH BOX

NOT TO SCALE

Wednesday, August 14, 2024, 3:50:08 PM
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 HALF SIZE TRIMLINE FOR 11" x 17"

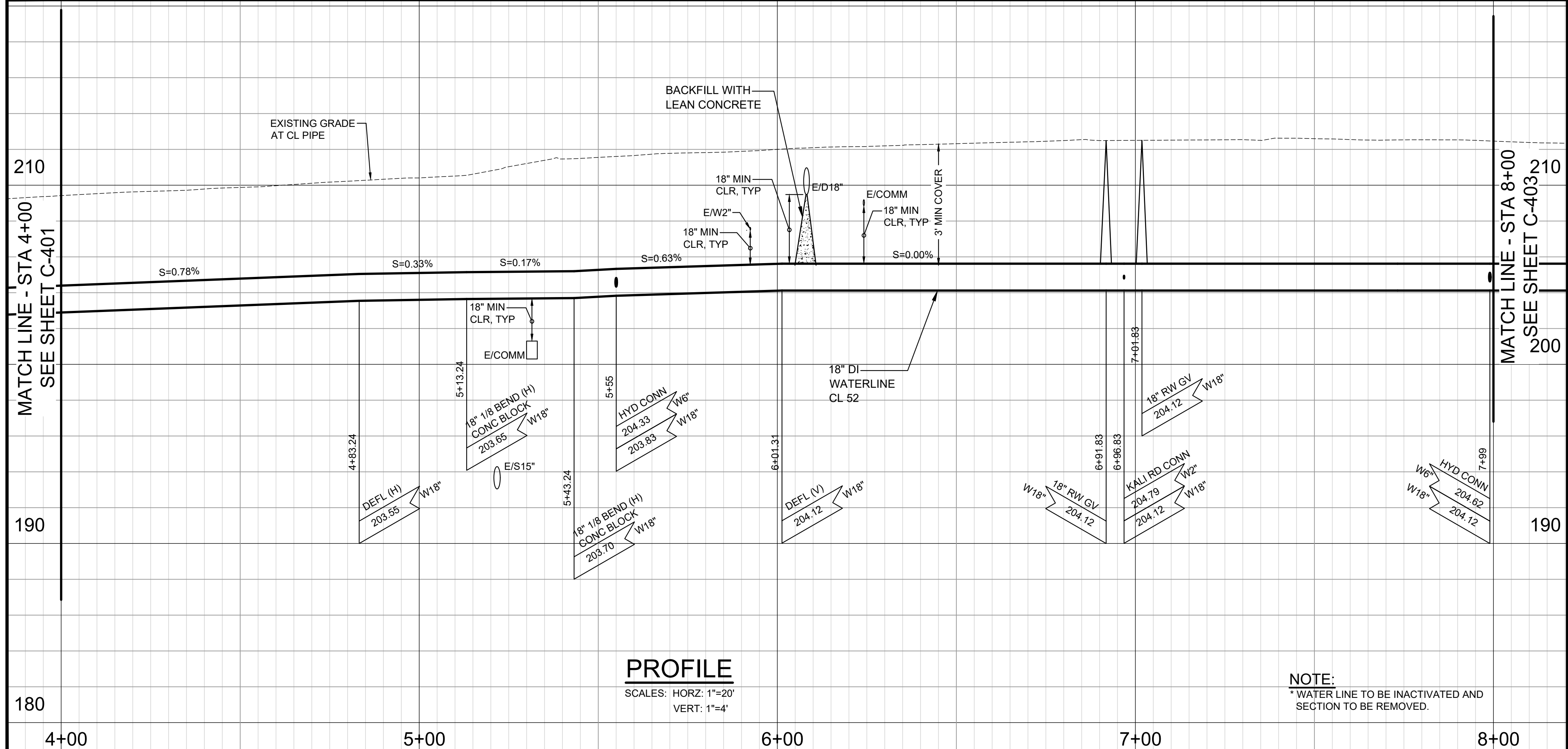
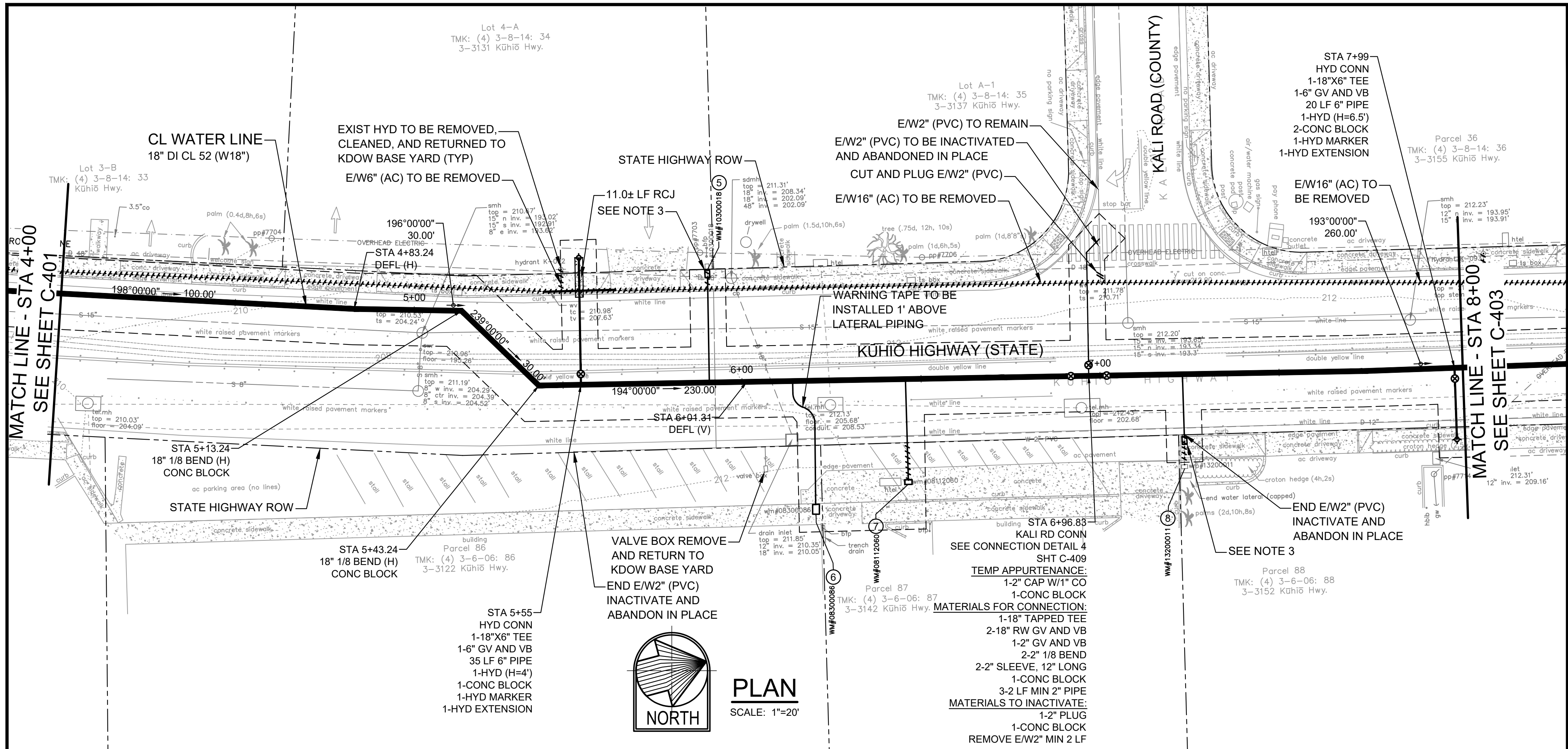


APPROVED: *Kristen H. Yoshida*
 FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS
 COUNTY OF KAUAI (FOR WORK WITHIN COUNTY ROW)
 DATE: 10/24/24

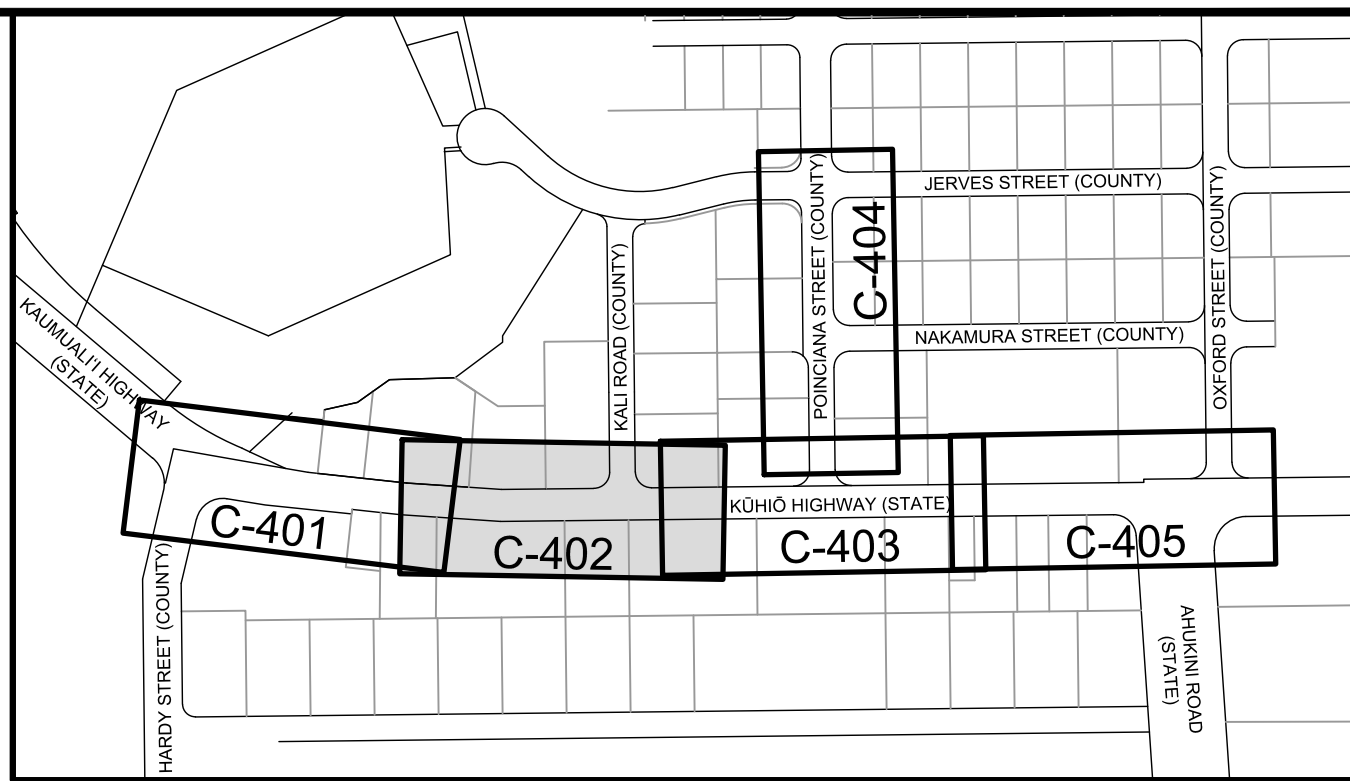
DRAWING NO.
C-103

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.
 APRIL 30, 2026
 EXPIRATION DATE OF THE LICENSE

REVISION	DATE	DESCRIPTION	APPROVED
BOWERS + KUBOTA CONSULTING 2183 North King Street, Suite 200 Honolulu, Hawaii 96819			
JOB NO. 18-03, WP2020 JOB NO. PLH-27 KŪHIŌ HIGHWAY (HARDY-OXFORD) 18" MAIN REPLACEMENT LĪHU'E WATER SYSTEM LĪHU'E, KAUAI, HAWAII			
EROSION CONTROL NOTES AND DETAILS			
APPROVED: <i>[Signature]</i>			DATE: 10/24/24
FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS COUNTY OF KAUAI (FOR WORK WITHIN COUNTY ROW)			DATE: 16/10/24
FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER COUNTY OF KAUAI			DATE:



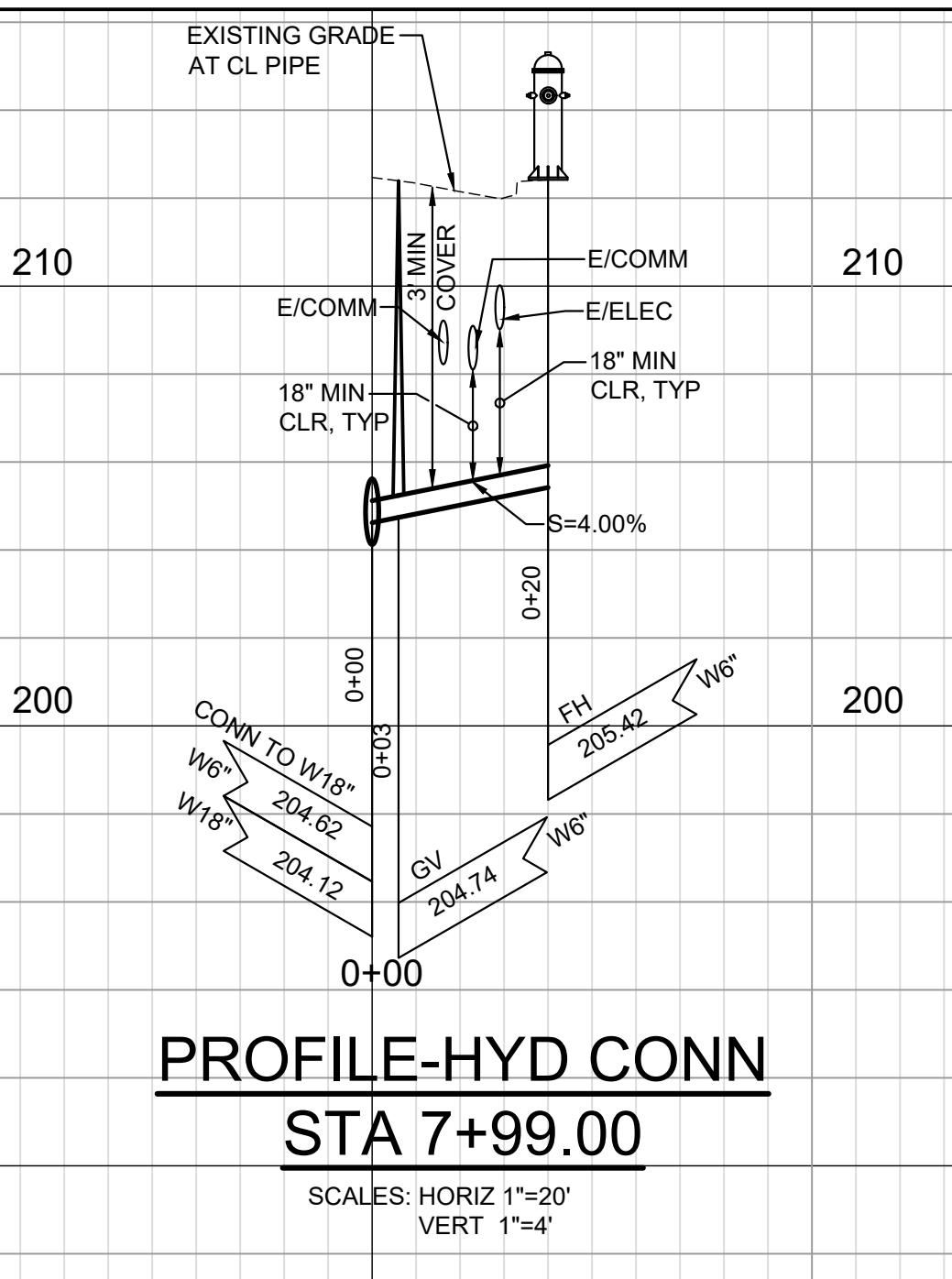
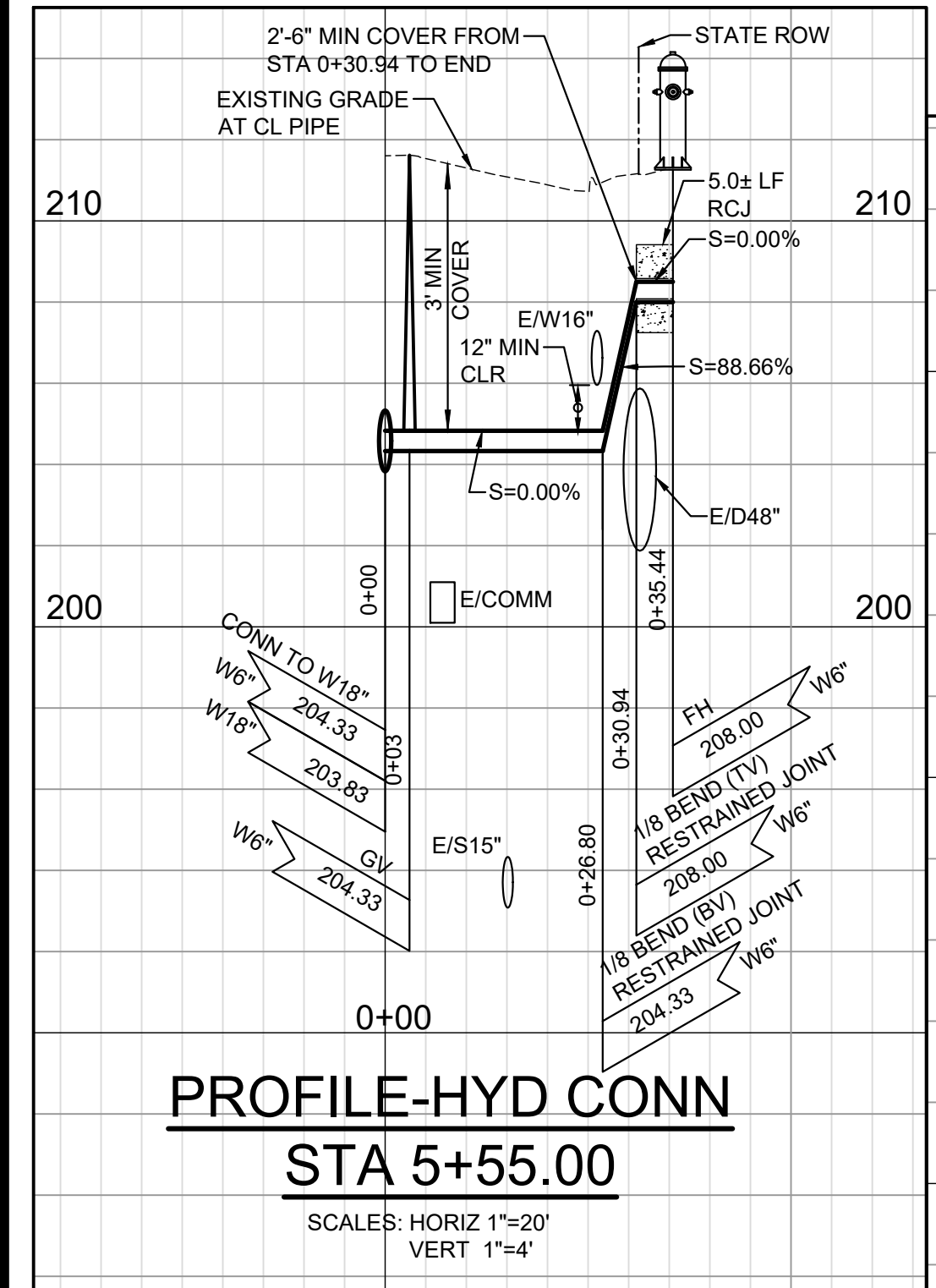
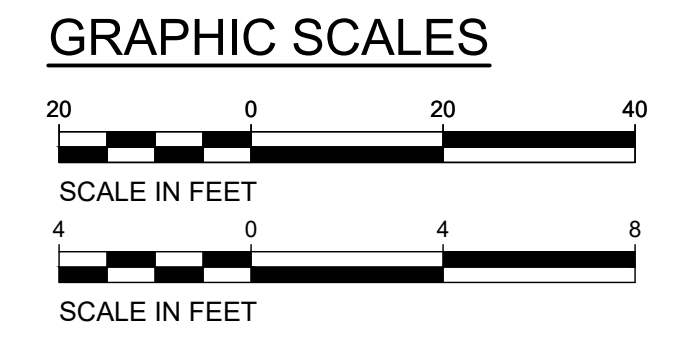
- NOTES:**
- AFTER EACH RAINFALL EVENT, THE CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS RESULTING FROM HIS/HER WORK AND DEPOSITED IN DRAINAGE FACILITIES, ROADWAYS, AND OTHER AREAS. THE COST INCURRED FOR ANY NECESSARY REMEDIAL ACTION BY THE COUNTY ENGINEER SHALL BE PAYABLE BY THE CONTRACTOR.
 - SEE EXISTING SERVICE LINE CONNECTION DETAIL, SHEET C-409, AND SERVICE LATERAL DETAILS, SHEET C-503. SEE SHEET C-406 AND C-407 FOR LATERAL PROFILES.
 - CONTRACTOR SHALL RELOCATE EXISTING WATER METERS THAT ARE IN PRIVATE PROPERTY TO THE COUNTY OR STATE HIGHWAY RIGHTS-OF-WAY. RECONNECT INTERIOR WATERLINES TO THE NEW LATERALS.
 - ALL INVERTS AND LOCATIONS OF EXISTING WATER LINES ARE APPROXIMATE ONLY BASED ON AVAILABLE RECORDS. THE CONTRACTOR IS RESPONSIBLE TO VERIFY CONNECTION POINTS AND INVERTS AND TO ADJUST ALIGNMENT AND/OR INVERT OF NEW WATERLINE AS NEEDED TO CONNECT TO EXISTING WATERLINES. ALL FIELD CHANGES MUST BE ACCURATELY REFLECTED IN THE CONTRACTOR'S AS-BUILT DRAWINGS.
 - METERS REMAINING IN PUBLIC ACCESS AREAS (SIDEWALK) OUTSIDE OF THE ROW SHALL BE MAINTAINED BY OWNER.



WATER METER TABLE

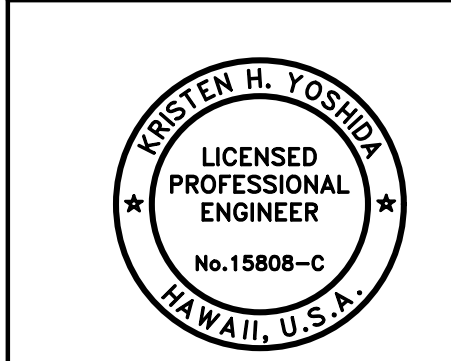
NO.	METER NO.	LATERAL	METER	SSL, DSL, OR MSL	LOCATION	STATION & O/S*
5	10300018	1"		SSL	RELOCATED TO STATE ROW	STA 5+90.87 o/s 30.30' LT
6	08300086	1 1/2"	1"	SSL	RELOCATED TO STATE ROW	STA 6+14.13 o/s 18.60' RT
7	08112060	1"	5/8"	SSL	RELOCATED TO STATE ROW	STA 6+45.63 o/s 28.76' RT
8	13200011	1"	3/4"	SSL	RELOCATED TO STATE ROW	STA 7+23.00 o/s 18.53' RT

* WM STATIONS AND OFFSETS TO CENTER OF WM BOX.



NOTE:
 * WATER LINE TO BE INACTIVATED AND SECTION TO BE REMOVED.

DRAWING NO.
C-402



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.
 APRIL 30, 2026
 EXPIRATION DATE OF THE LICENSE

REVISION	DATE	DESCRIPTION	APPROVED

BOWERS + KUBOTA CONSULTING
 2183 North King Street, Suite 200
 Honolulu, Hawaii 96819

JOB NO. 18-03, WP2020 JOB NO. PLH-27
KŪHIŌ HIGHWAY (HARDY-OXFORD)
18" MAIN REPLACEMENT
LIHŪ'E WATER SYSTEM
 LIHŪ'E, KAUA'I, HAWAII

PLAN AND PROFILE - KŪHIŌ HIGHWAY - 2

APPROVED: *[Signature]* 10/24/24
 DATE

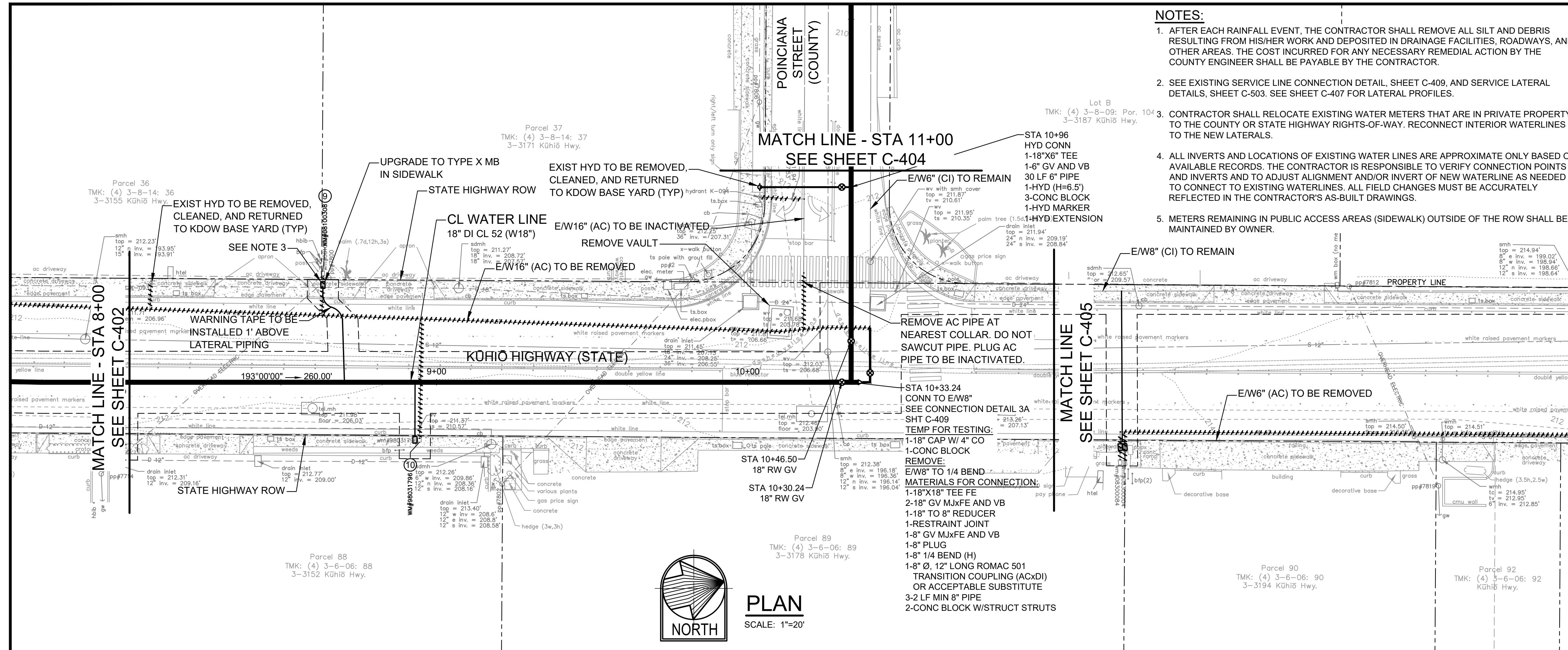
FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS
 COUNTY OF KAUAI (FOR WORK WITHIN COUNTY R/W)

FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER
 COUNTY OF KAUAI

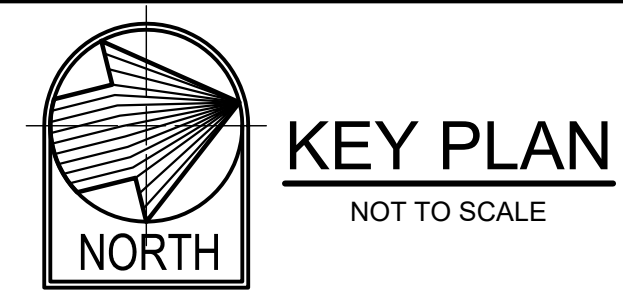
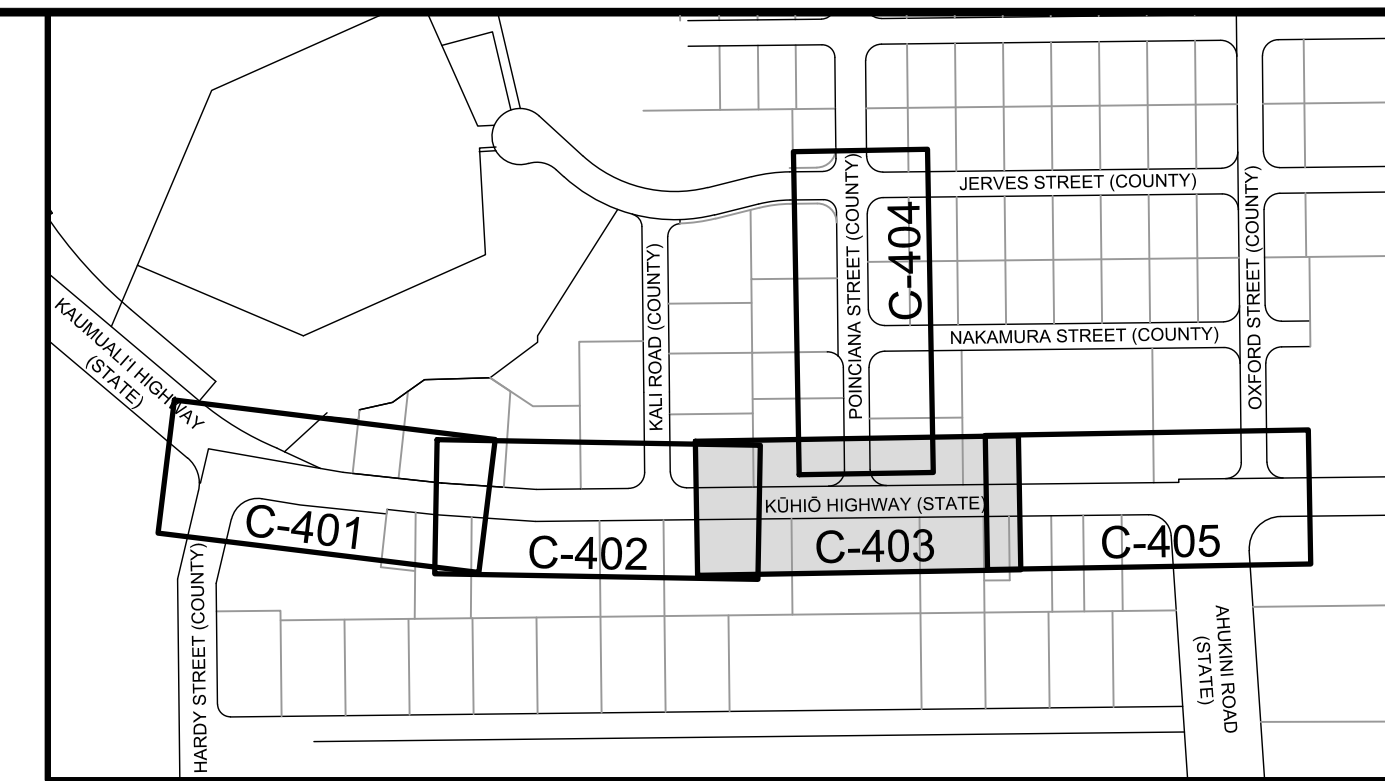
16/10/24
 DATE

Wednesday, August 14, 2024, 3:51:27 PM
 T:\Vary-Order-Materials\2018\40100\04_Graphics\CAD_Sheets\C-402_Plan and Profile - Kūhiō Highway - 2.dwg
 HALF SIZE TRIMLINE FOR 11" x 17"

Wednesday, August 14, 2024, 3:56:01 PM
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 HALF SIZE TRIMLINE FOR 11" x 17"



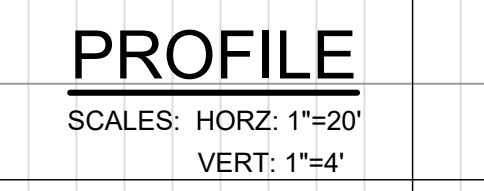
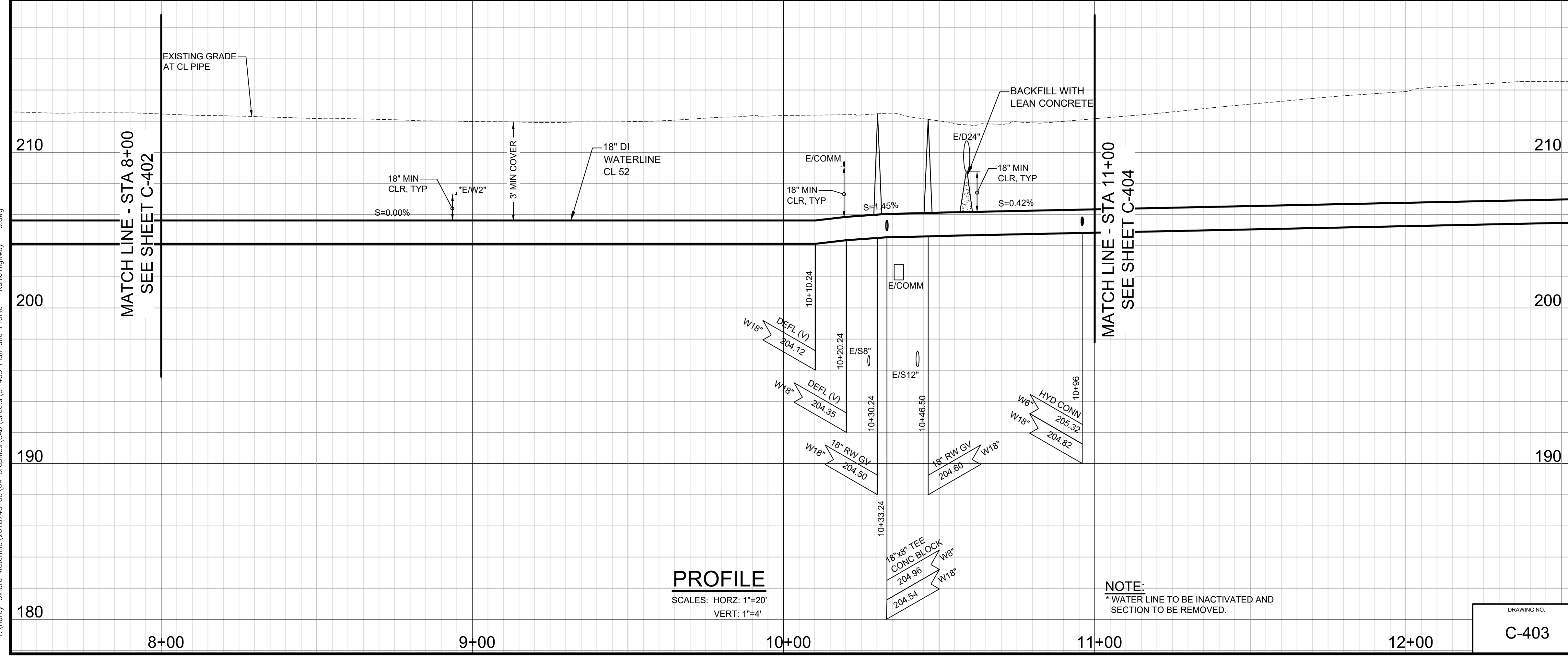
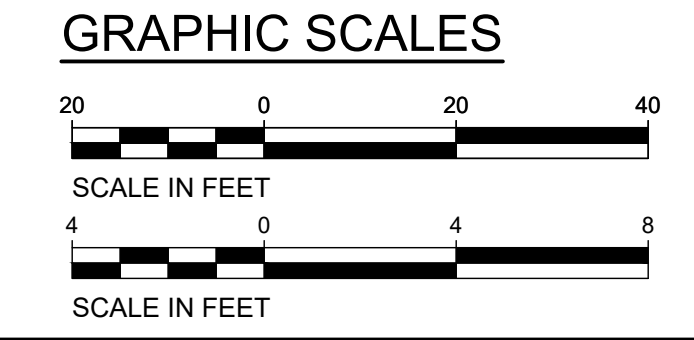
- NOTES:**
- AFTER EACH RAINFALL EVENT, THE CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS RESULTING FROM HIS/HER WORK AND DEPOSITED IN DRAINAGE FACILITIES, ROADWAYS, AND OTHER AREAS. THE COST INCURRED FOR ANY NECESSARY REMEDIAL ACTION BY THE COUNTY ENGINEER SHALL BE PAYABLE BY THE CONTRACTOR.
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 - METERS REMAINING IN PUBLIC ACCESS AREAS (SIDEWALK) OUTSIDE OF THE ROW SHALL BE MAINTAINED BY OWNER.



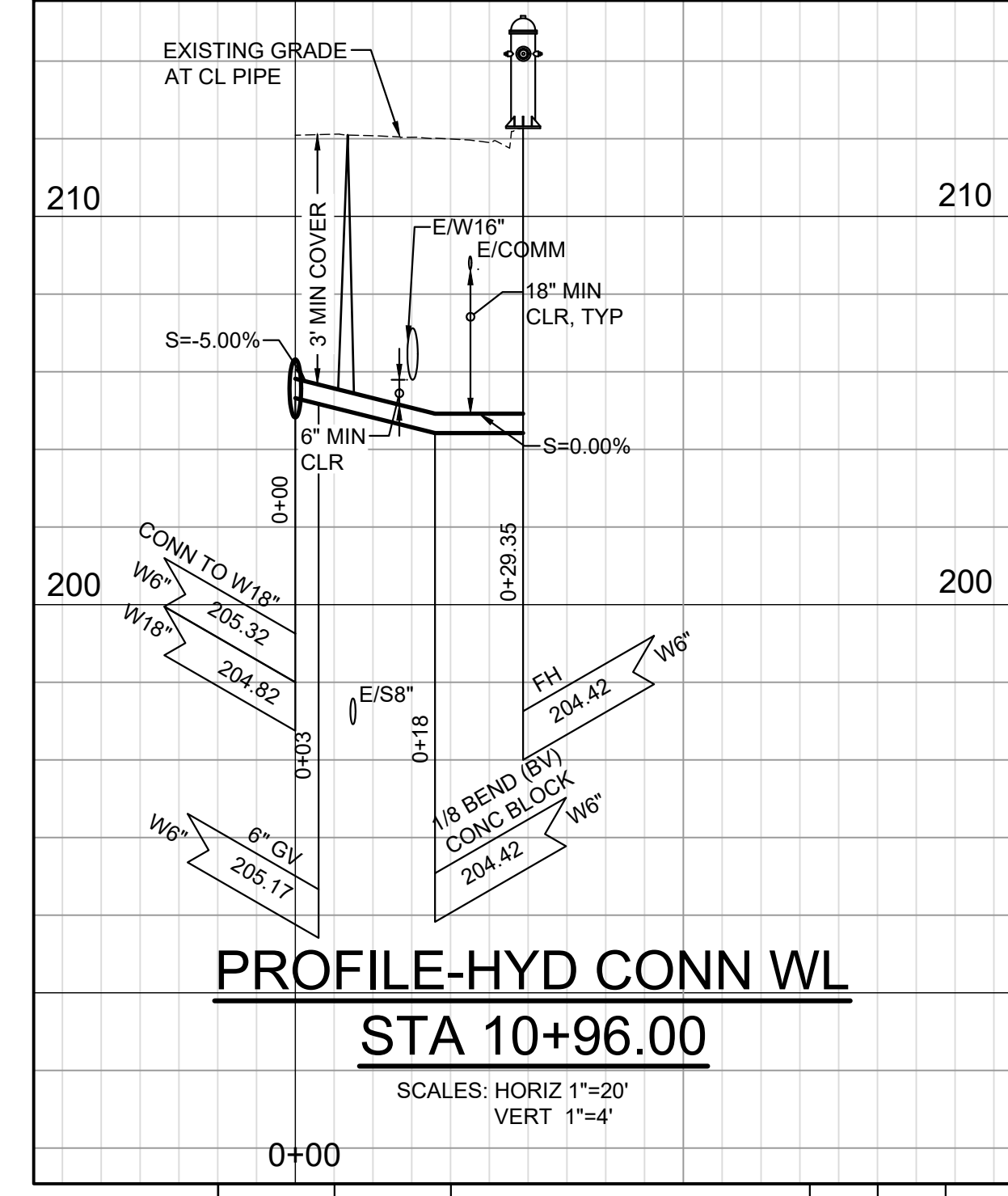
WATER METER TABLE

NO.	METER NO.	LATERAL	METER	SSL, DSL, OR MSL	LOCATION	STATION & O/S*
9	08100308	1"	5/8"	SSL	RELOCATE TO STATE ROW	STA 8+70.39 o/s 34.15' LT
10	98031796	1"	3/4"	SSL	RELOCATE TO STATE ROW	STA 8+93.10 o/s 18.53' RT

* WM STATIONS AND OFFSETS TO CENTER OF WM BOX.

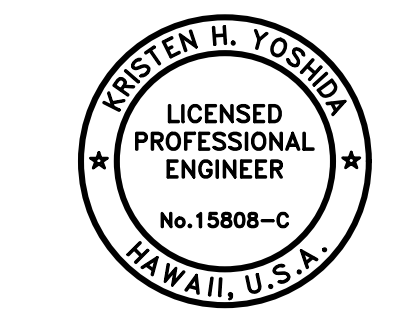


NOTE:
 * WATER LINE TO BE INACTIVATED AND SECTION TO BE REMOVED.



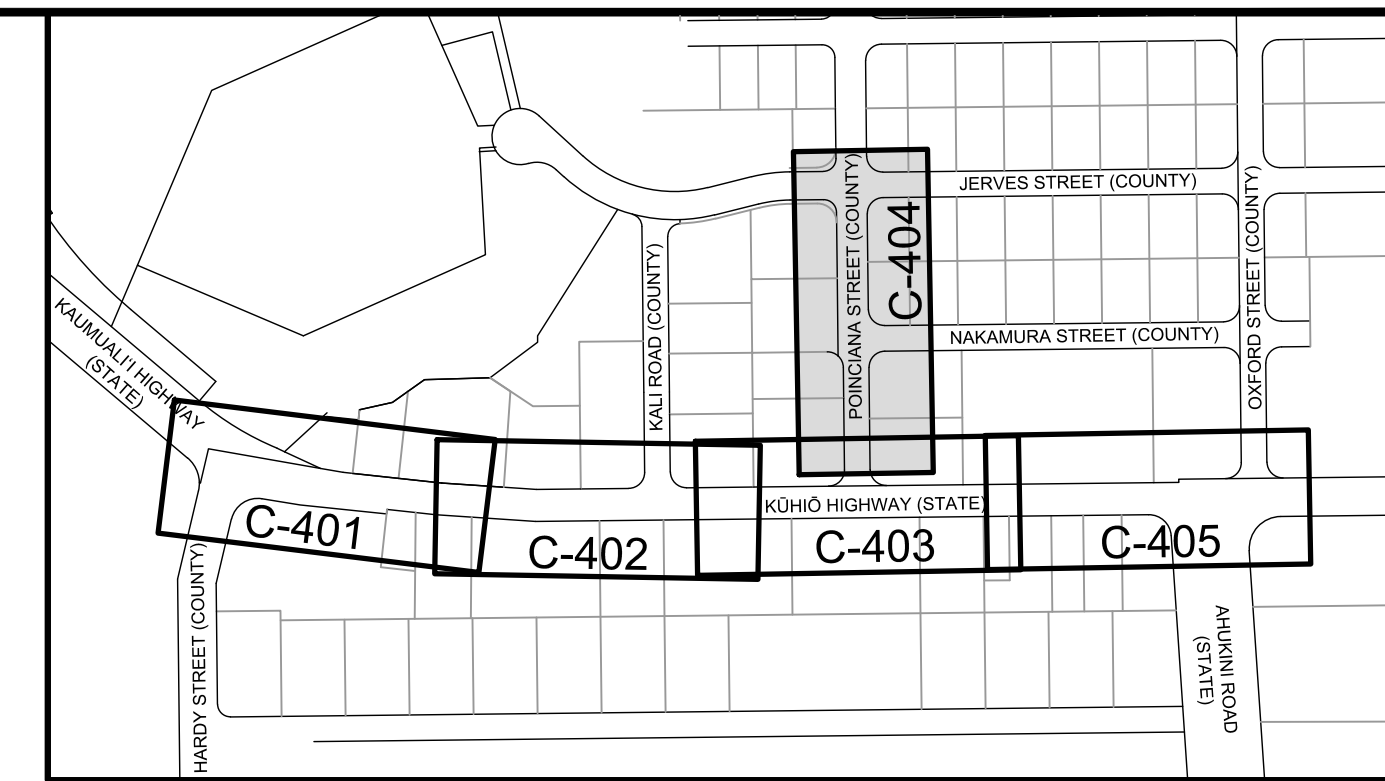
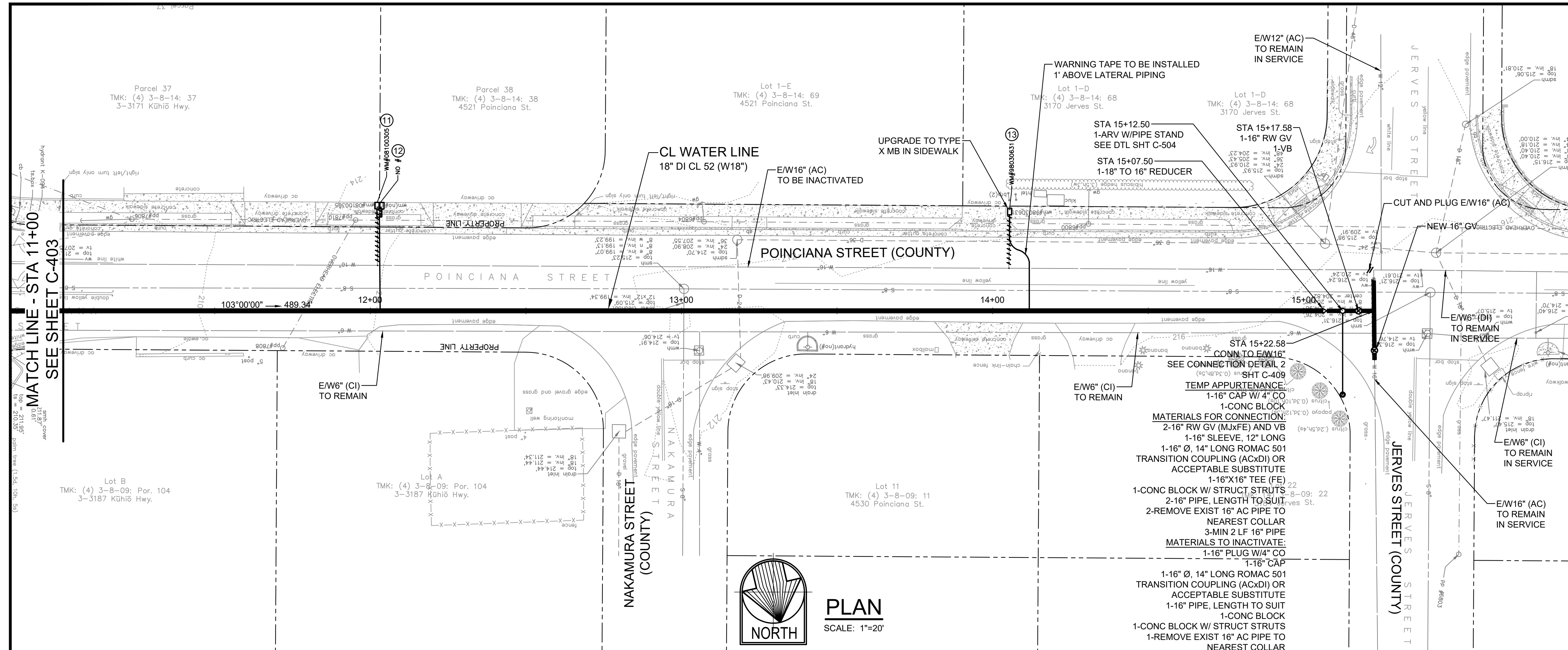
PROFILE-HYD CONN WL
STA 10+96.00
 SCALES: HORIZ 1"=20'
 VERT 1"=4'

DRAWING NO.
C-403



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.
 APRIL 30, 2026
 EXPIRATION DATE OF THE LICENSE

REVISION	DATE	DESCRIPTION	APPROVED
BOWERS + KUBOTA CONSULTING 2183 North King Street, Suite 200 Honolulu, Hawaii 96819			
JOB NO. 18-03, WP2020 JOB NO. PLH-27 KŪHIŌ HIGHWAY (HARDY-OXFORD) 18" MAIN REPLACEMENT LIHU'E WATER SYSTEM LIHU'E, KAUAI, HAWAII			
PLAN AND PROFILE - KŪHIŌ HIGHWAY - 3			
APPROVED: <i>Kristen H. Yoshida</i>			10/24/24
FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS COUNTY OF KAUAI (FOR WORK WITHIN COUNTY ROW)			DATE
FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER COUNTY OF KAUAI			DATE
APPROVED: <i>Deane Kaganaka</i>			16/10/24
EXPIRATION DATE OF THE LICENSE			DATE

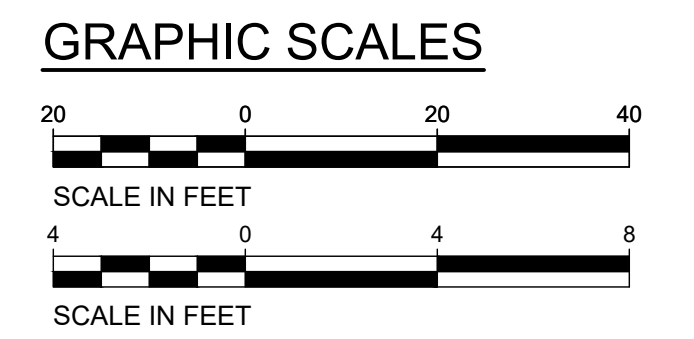
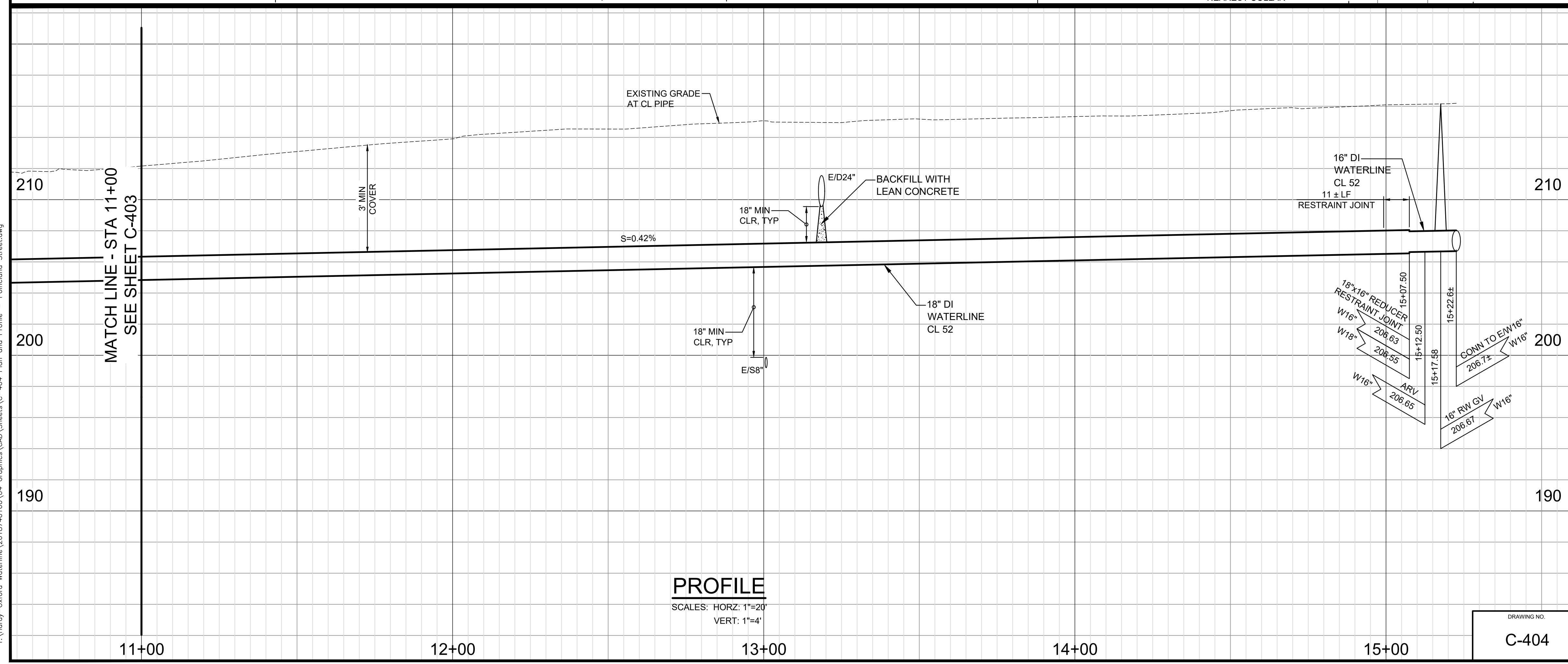


WATER METER TABLE

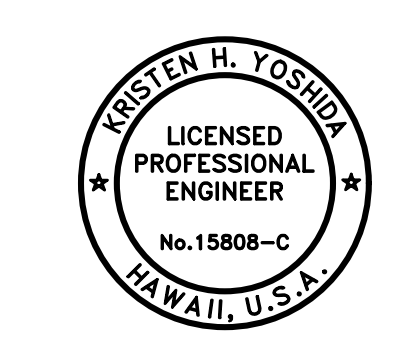
NO.	METER NO.	LATERAL	METER	SSL, DSL, OR MSL	LOCATION	STATION & O/S*
11	08100305	1 1/2"	5/8"	DSL	COUNTY ROW	STA 12+02.11 o/s 33.83' LT
12	VERIFY	1 1/2"	DSL	DSL	COUNTY ROW	STA 12+03.73 o/s 33.83' LT
13	98030631	1"	5/8"	SSL	COUNTY ROW	STA 14+11.79 o/s 31.93' LT

* WM STATIONS AND OFFSETS TO CENTER OF WM BOX.

- NOTES:
- AFTER EACH RAINFALL EVENT, THE CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS RESULTING FROM HIS/HER WORK AND DEPOSITED IN DRAINAGE FACILITIES, ROADWAYS, AND OTHER AREAS. THE COST INCURRED FOR ANY NECESSARY REMEDIAL ACTION BY THE COUNTY ENGINEER SHALL BE PAYABLE BY THE CONTRACTOR.
 - SEE EXISTING SERVICE LINE CONNECTION DETAIL, SHEET C-409, AND SERVICE LATERAL DETAILS, SHEET C-503. SEE SHEET C-407 FOR LATERAL PROFILES.
 - CONTRACTOR SHALL RELOCATE EXISTING WATER METERS THAT ARE IN PRIVATE PROPERTY TO THE COUNTY OR STATE HIGHWAY RIGHTS-OF-WAY. RECONNECT INTERIOR WATERLINES TO THE NEW LATERALS.
 - ALL INVERTS AND LOCATIONS OF EXISTING WATER LINES ARE APPROXIMATE ONLY BASED ON AVAILABLE RECORDS. THE CONTRACTOR IS RESPONSIBLE TO VERIFY CONNECTION POINTS AND INVERTS AND TO ADJUST ALIGNMENT AND/OR INVERT OF NEW WATERLINE AS NEEDED TO CONNECT TO EXISTING WATERLINES. ALL FIELD CHANGES MUST BE ACCURATELY REFLECTED IN THE CONTRACTOR'S AS-BUILT DRAWINGS.
 - METERS REMAINING IN PUBLIC ACCESS AREAS (SIDEWALK) OUTSIDE OF THE ROW SHALL BE MAINTAINED BY OWNER.



REVISION	DATE	DESCRIPTION	APPROVED



BOWERS + KUBOTA CONSULTING
2183 North King Street, Suite 200
Honolulu, Hawaii 96819

JOB NO. 18-03, WP2020 JOB NO. PLH-27
**KŪHIŌ HIGHWAY (HARDY-OXFORD)
18" MAIN REPLACEMENT
LIHŪ'E WATER SYSTEM
LIHŪ'E, KAUA'I, HAWAII**

PLAN AND PROFILE - POINCIANA STREET

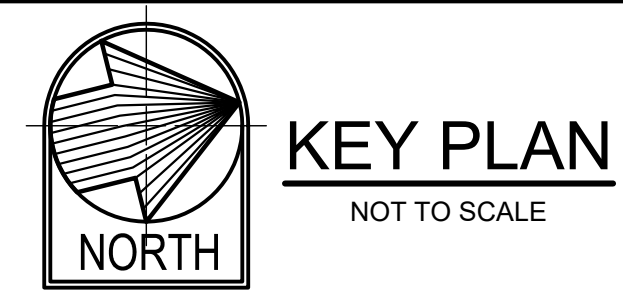
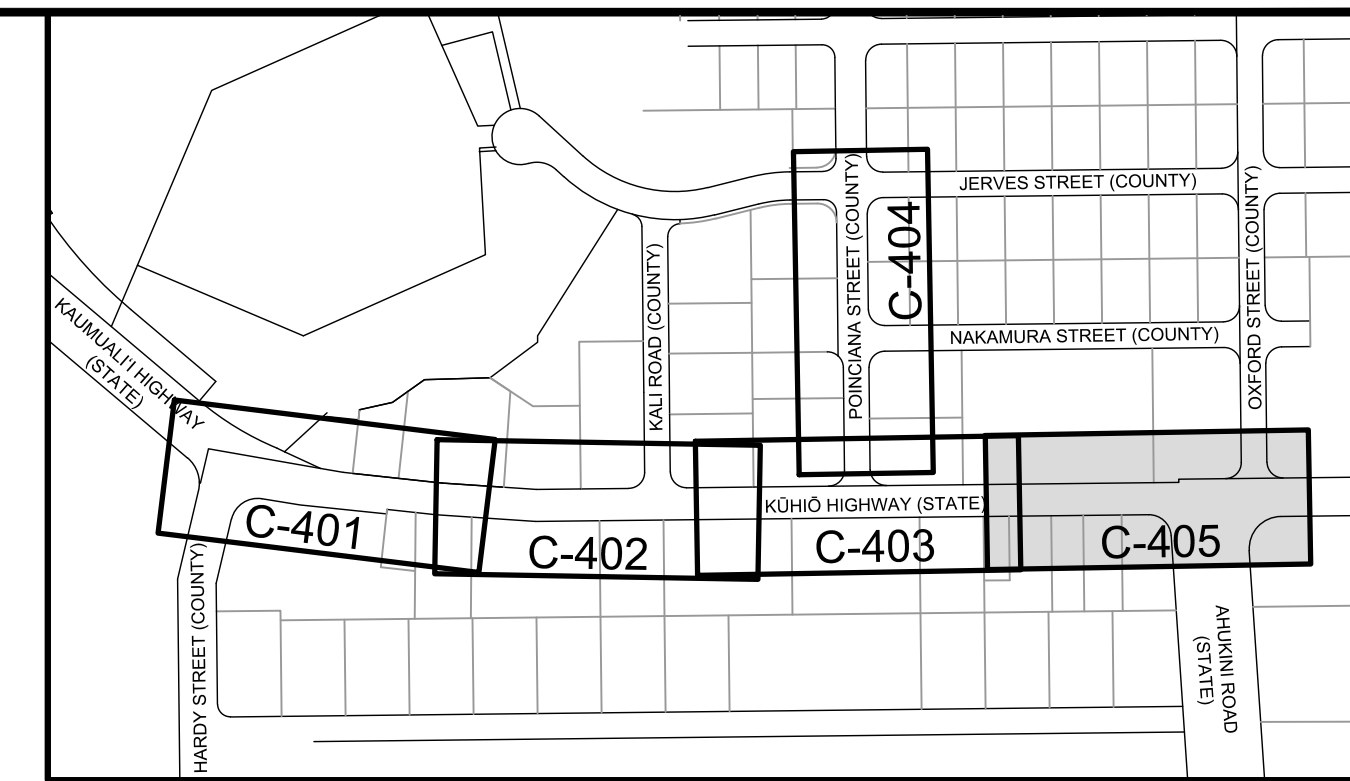
APPROVED: *Kristen H. Yoshida* 10/24/24
DATE

FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS
COUNTY OF KAUAI (FOR WORK WITH COUNTY ROW)

Jason Paganotto 16/10/24
DATE

FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER
COUNTY OF KAUAI

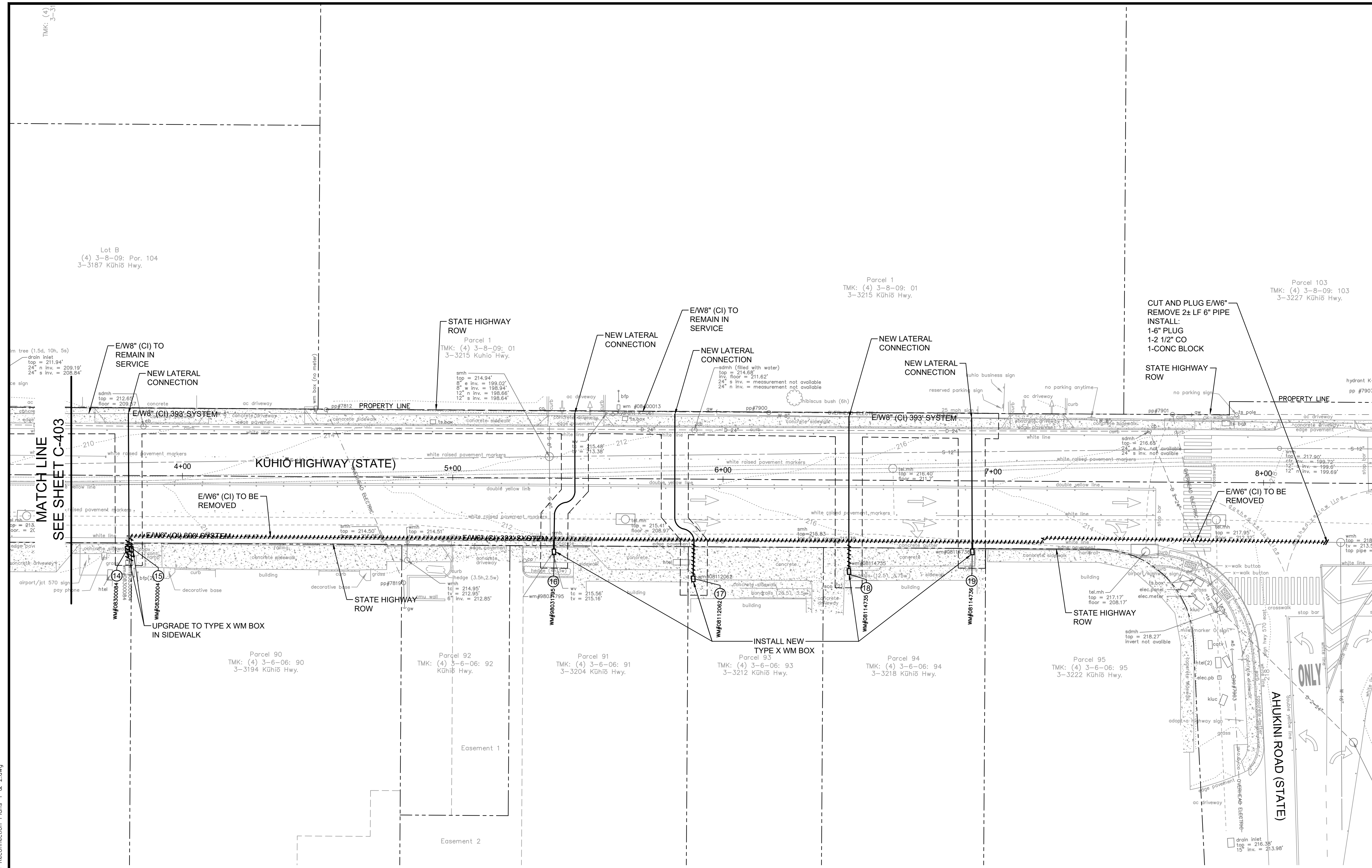
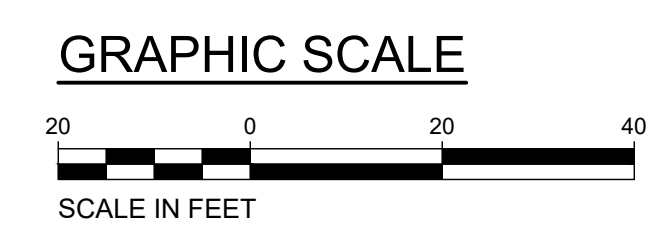
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 HALF SIZE TRIMLINE FOR 11" x 17"



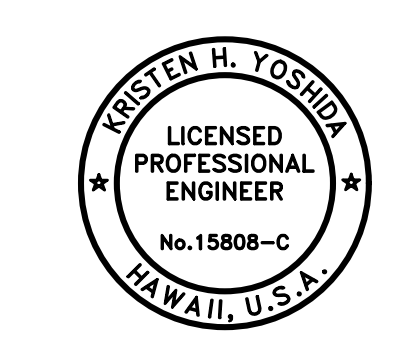
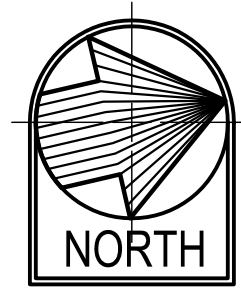
- NOTES:**
- AFTER EACH RAINFALL EVENT, THE CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS RESULTING FROM HIS/HER WORK AND DEPOSITED IN DRAINAGE FACILITIES, ROADWAYS, AND OTHER AREAS. THE COST INCURRED FOR ANY NECESSARY REMEDIAL ACTION BY THE COUNTY ENGINEER SHALL BE PAYABLE BY THE CONTRACTOR.
 - SEE SHEET C-409 FOR CONNECTION DETAILS. SEE SHEET C-503 FOR SERVICE LATERAL DETAILS. SEE SHEET C-408 FOR LATERAL PROFILES.
 - CONTRACTOR SHALL RELOCATE ALL EXISTING WATER METERS THAT ARE IN PRIVATE PROPERTY TO THE COUNTY OR STATE HIGHWAY RIGHTS-OF-WAY. RECONNECT INTERIOR WATERLINES TO THE NEW LATERALS.
 - ALL INVERTS AND LOCATIONS OF EXISTING WATER LINES ARE APPROXIMATE ONLY BASED ON AVAILABLE RECORDS. THE CONTRACTOR IS RESPONSIBLE TO VERIFY CONNECTION POINTS AND INVERTS AND TO ADJUST ALIGNMENT AND/OR INVERT OF NEW WATERLINE AS NEEDED TO CONNECT TO EXISTING WATERLINES. ALL FIELD CHANGES MUST BE ACCURATELY REFLECTED IN THE CONTRACTOR'S AS-BUILT DRAWINGS.
 - METERS REMAINING IN PUBLIC ACCESS AREAS (SIDEWALK) OUTSIDE OF THE ROW SHALL BE MAINTAINED BY OWNER.

WATER METER TABLE						
NO.	METER NO.	LATERAL	METER	SSL, DSL, OR MSL	LOCATION	STATION & O/S*
14	08300084	1 1/4"	1"	SSL	SIDEWALK	STA 3+79.69 o/s 26.18' RT
15	08300004	1 1/4"	1"	SSL	SIDEWALK	STA 3+81.21 o/s 26.19' RT
16	98031795	1"	3/4"	SSL	SIDEWALK	STA 5+37.57 o/s 26.23' RT
17	08112062	1"	5/8"	SSL	SIDEWALK	STA 5+89.16 o/s 35.89' RT
18	08114735	1"	5/8"	SSL	SIDEWALK	STA 6+46.75 o/s 32.78' RT
19	08114736	1"	5/8"	SSL	SIDEWALK	STA 6+92.36 o/s 25.24' RT

* WM STATIONS AND OFFSETS TO CENTER OF WM BOX.



LATERAL & DEMOLITION PLAN
SCALE: 1"=20'



APPROVED: *Kristen H. Yoshida*

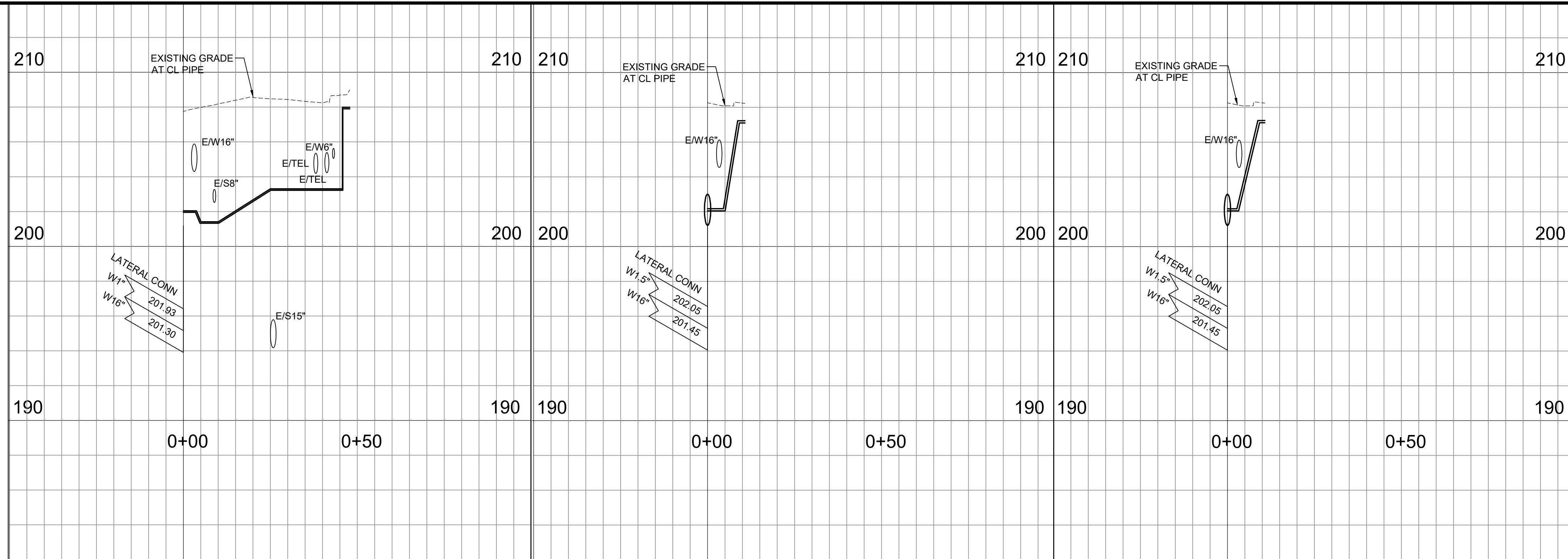
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.
APRIL 30, 2026
EXPIRATION DATE OF THE LICENSE

APPROVED: _____ DATE _____
FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS
COUNTY OF KAUAI (FOR WORK WITHIN COUNTY ROW)
Jane Kaganato
FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER
COUNTY OF KAUAI
16/10/24

DRAWING NO.
C-405

FILE	POCKET	FOLDER	NO.

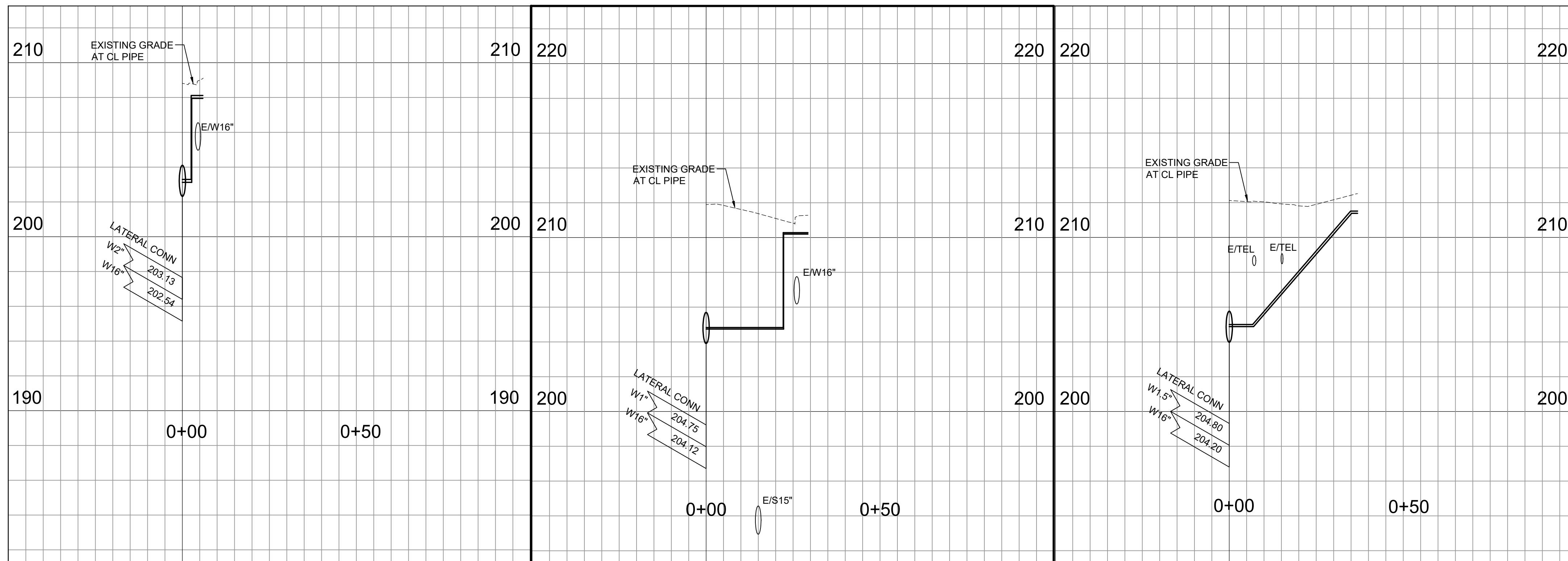
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 HALF SIZE TRIMLINE FOR 11" x 17"



① **KŪHIŌ WM1 PROFILE**
 SCALES: HORIZ 1"=20'-0"
 VERT 1"=4'-0"

② **KŪHIŌ WM2 PROFILE**
 SCALES: HORIZ 1"=20'-0"
 VERT 1"=4'-0"

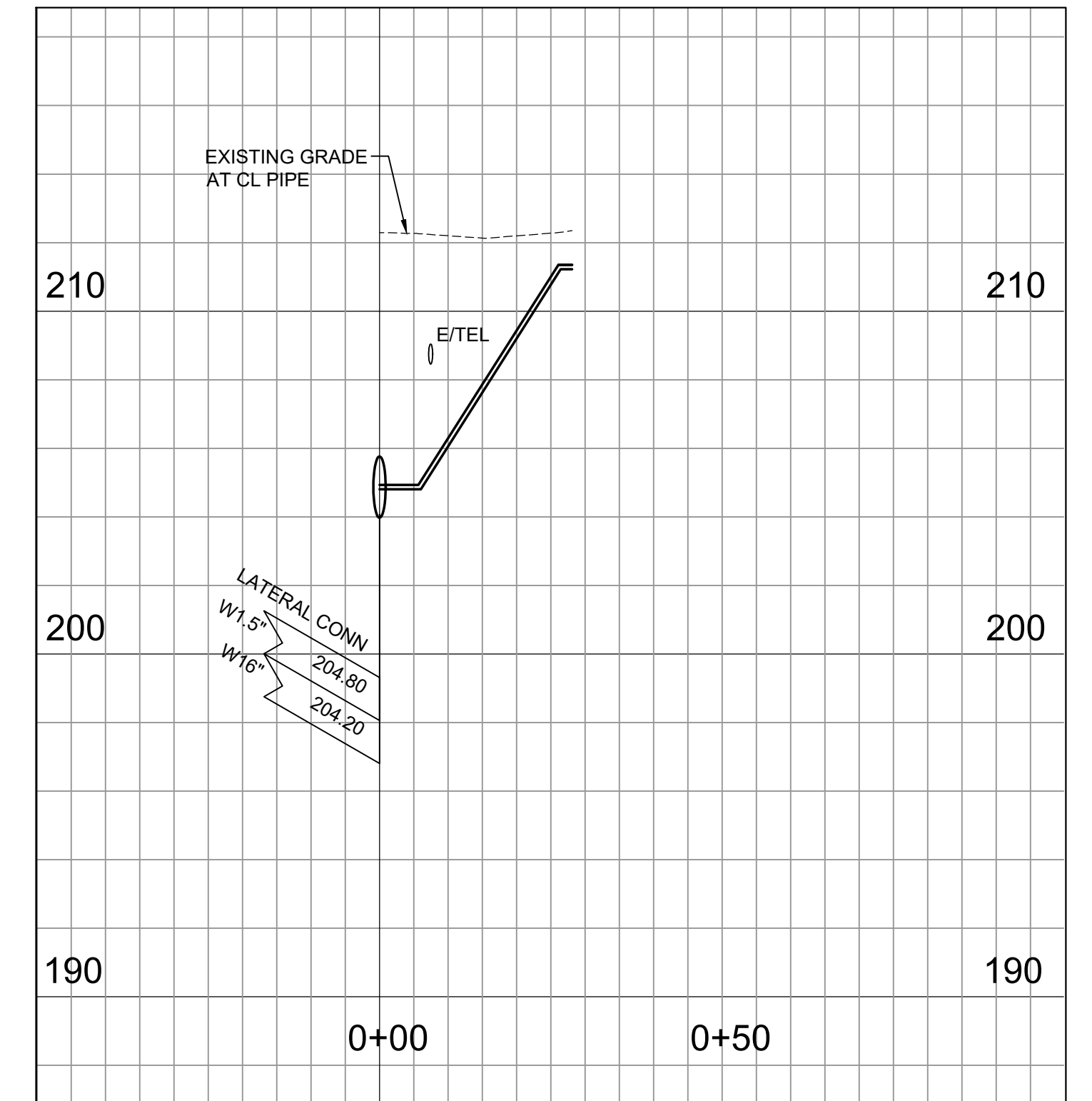
③ **KŪHIŌ WM3 PROFILE**
 SCALES: HORIZ 1"=20'-0"
 VERT 1"=4'-0"



④ **KŪHIŌ WM4 PROFILE**
 SCALES: HORIZ 1"=20'-0"
 VERT 1"=4'-0"

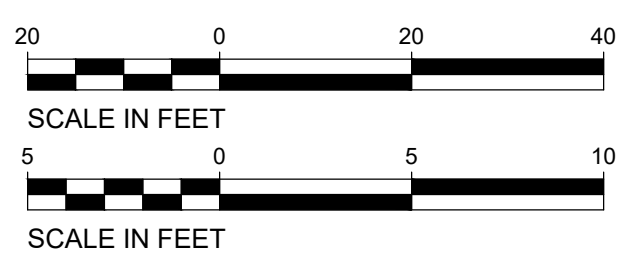
⑤ **KŪHIŌ WM5 PROFILE**
 SCALES: HORIZ 1"=20'-0"
 VERT 1"=4'-0"

⑥ **KŪHIŌ WM6 PROFILE**
 SCALES: HORIZ 1"=20'-0"
 VERT 1"=4'-0"



⑦ **KŪHIŌ WM7 PROFILE**
 SCALES: HORIZ 1"=20'-0"
 VERT 1"=4'-0"

GRAPHIC SCALES



REVISION	DATE	DESCRIPTION	APPROVED

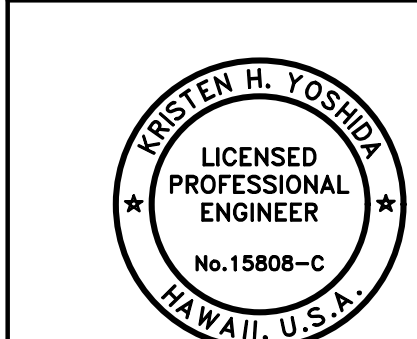
BOWERS + KUBOTA CONSULTING
 2153 North King Street, Suite 200
 Honolulu, Hawaii 96819

JOB NO. 18-03, WP2020 JOB NO. PLH-27
**KŪHIŌ HIGHWAY (HARDY-OXFORD)
 18" MAIN REPLACEMENT
 LIHU'E WATER SYSTEM
 LIHU'E, KAUAI, HAWAII**

LATERAL PROFILE - 1

APPROVED:

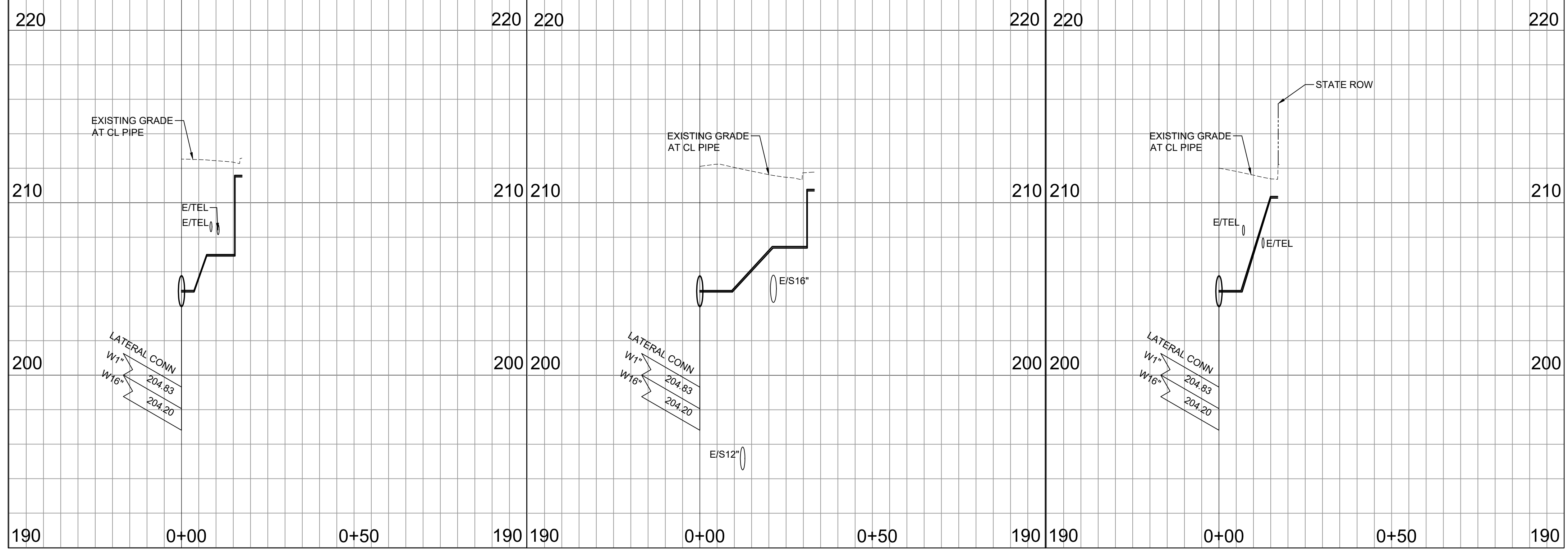
N/A	DATE
FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS COUNTY OF KAUAI (FOR WORK WITH COUNTY RW)	DATE
<i>Jason Kagimoto</i> FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER COUNTY OF KAUAI	16/10/24



Kristen H. Yoshida

DRAWING NO.
C-406

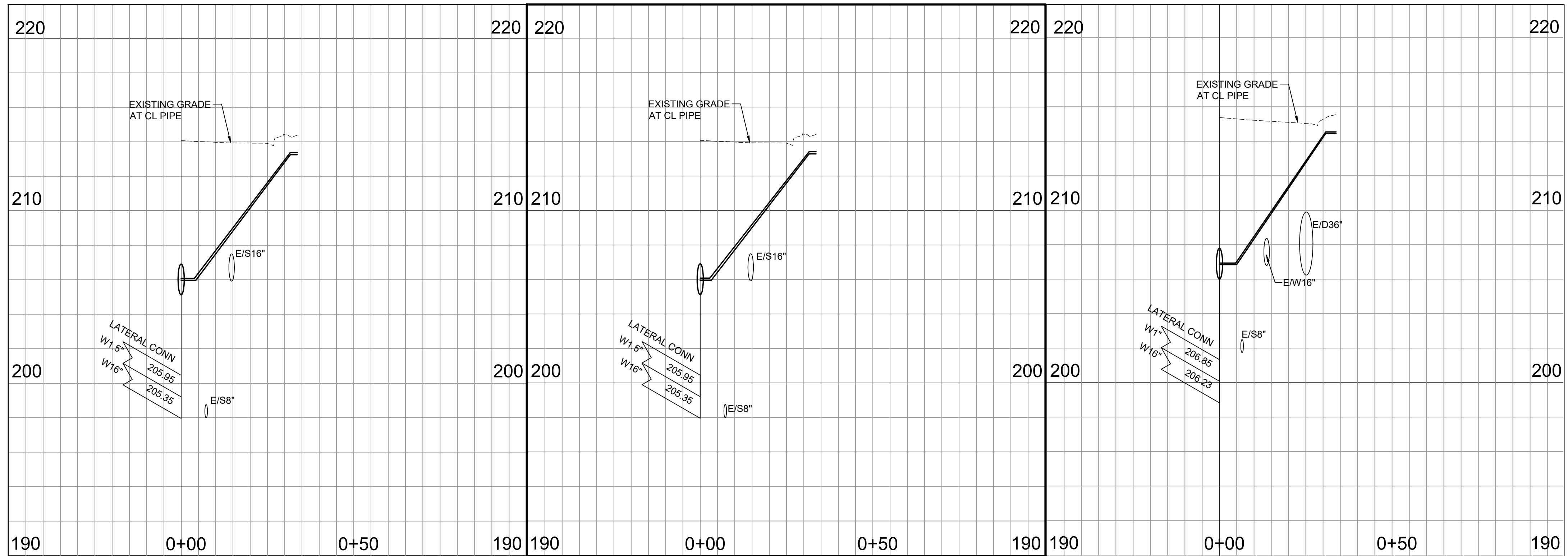
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.
 APRIL 30, 2026
 EXPIRATION DATE OF THE LICENSE



8 KŪHIŌ WM8 PROFILE
 SCALES: HORIZ 1"=20'-0"
 VERT 1"=4'-0"

9 KŪHIŌ WM9 PROFILE
 SCALES: HORIZ 1"=20'-0"
 VERT 1"=4'-0"

10 KŪHIŌ WM10 PROFILE
 SCALES: HORIZ 1"=20'-0"
 VERT 1"=4'-0"

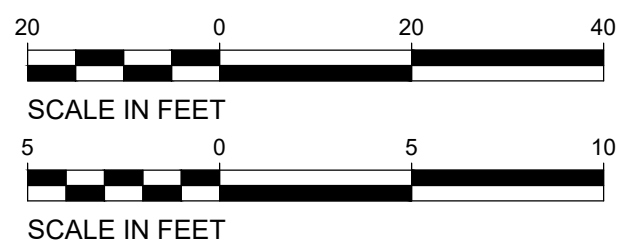


11 POINCIANA WM11 PROFILE
 SCALES: HORIZ 1"=20'-0"
 VERT 1"=4'-0"

12 POINCIANA WM12 PROFILE
 SCALES: HORIZ 1"=20'-0"
 VERT 1"=4'-0"

13 POINCIANA WM13 PROFILE
 SCALES: HORIZ 1"=20'-0"
 VERT 1"=4'-0"

GRAPHIC SCALES



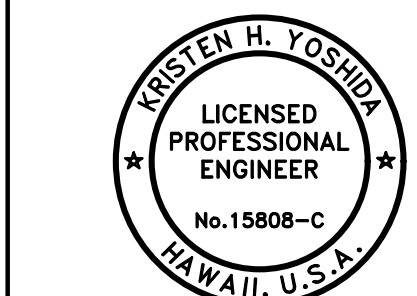
REVISION	DATE	DESCRIPTION	APPROVED

BOWERS + KUBOTA CONSULTING
 2153 North King Street, Suite 200
 Honolulu, Hawaii 96819

JOB NO. 18-03, WP2020 JOB NO. PLH-27
**KŪHIŌ HIGHWAY (HARDY-OXFORD)
 18" MAIN REPLACEMENT
 LIHU'E WATER SYSTEM
 LIHU'E, KAUAI, HAWAII**

LATERAL PROFILE - 2

APPROVED:



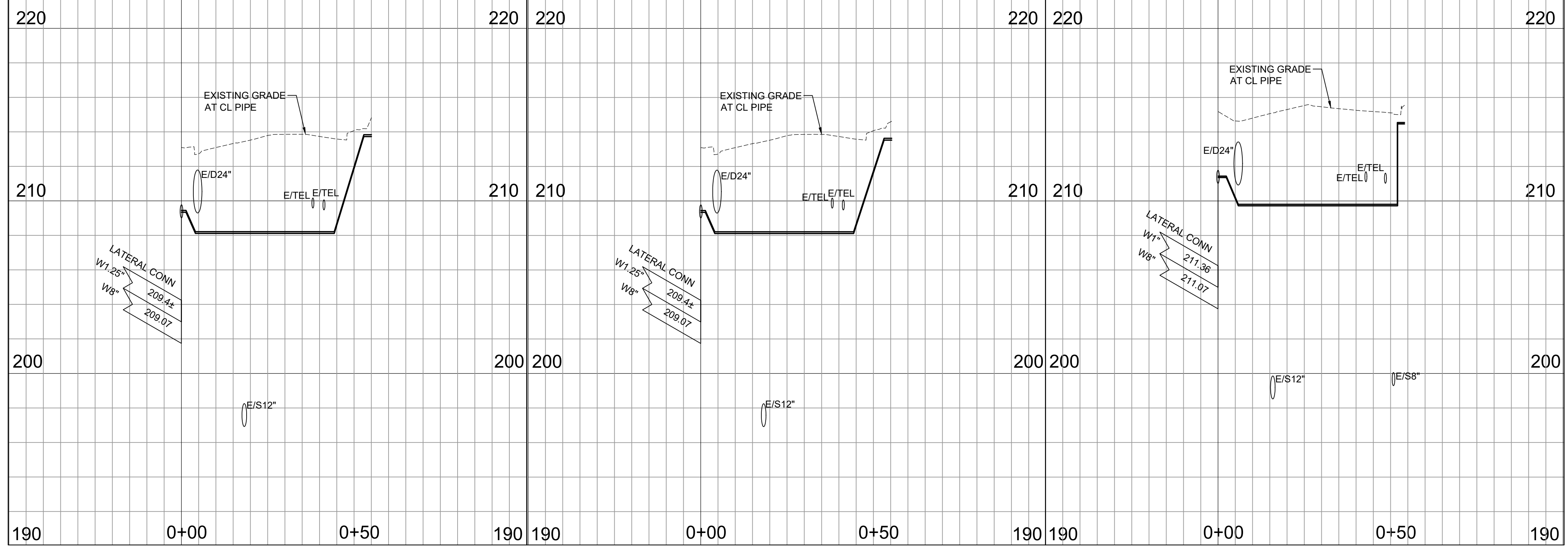
Kristen H. Yoshida

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.
 APRIL 30, 2026
 EXPIRATION DATE OF THE LICENSE

N/A
 FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS
 COUNTY OF KAUAI (FOR WORK WITHIN COUNTY RW)
 FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER
 COUNTY OF KAUAI
 DATE: 16/10/24

DRAWING NO.
C-407

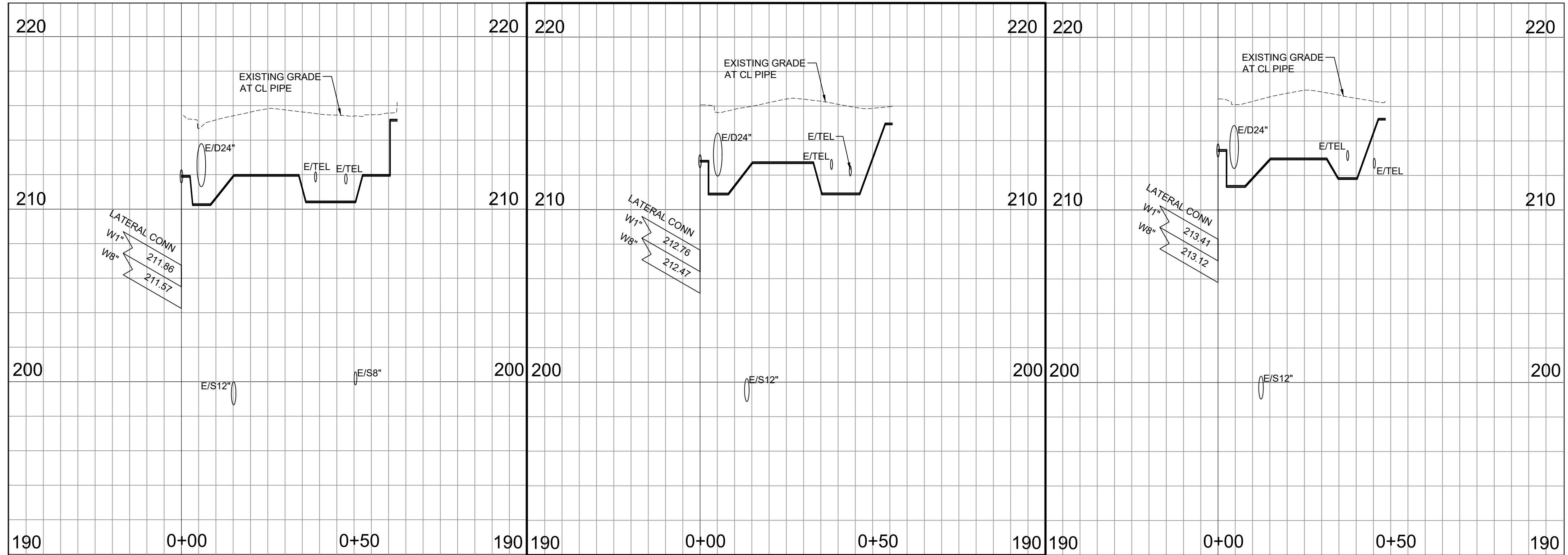
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 HALF SIZE TRIMLINE FOR 11" x 17"



14 KŪHIŌ WM14 PROFILE
 SCALES: HORIZ 1"=20'-0"
 VERT 1"=4'-0"

15 KŪHIŌ WM15 PROFILE
 SCALES: HORIZ 1"=20'-0"
 VERT 1"=4'-0"

16 KŪHIŌ WM16 PROFILE
 SCALES: HORIZ 1"=20'-0"
 VERT 1"=4'-0"

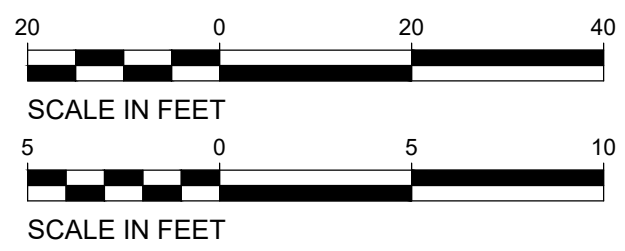


17 KŪHIŌ WM17 PROFILE
 SCALES: HORIZ 1"=20'-0"
 VERT 1"=4'-0"

18 KŪHIŌ WM18 PROFILE
 SCALES: HORIZ 1"=20'-0"
 VERT 1"=4'-0"

19 KŪHIŌ WM19 PROFILE
 SCALES: HORIZ 1"=20'-0"
 VERT 1"=4'-0"

GRAPHIC SCALES



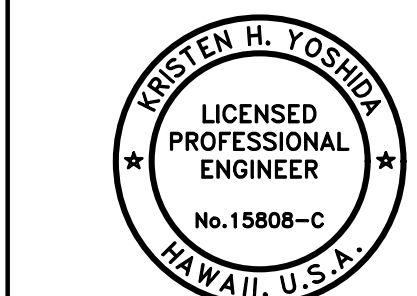
REVISION	DATE	DESCRIPTION	APPROVED

BOWERS + KUBOTA CONSULTING
 2153 North King Street, Suite 200
 Honolulu, Hawaii 96819

JOB NO. 18-03, WP2020 JOB NO. PLH-27
**KŪHIŌ HIGHWAY (HARDY-OXFORD)
 18" MAIN REPLACEMENT
 LIHU'E WATER SYSTEM
 LIHU'E, KAUAI, HAWAII**

LATERAL PROFILE - 3

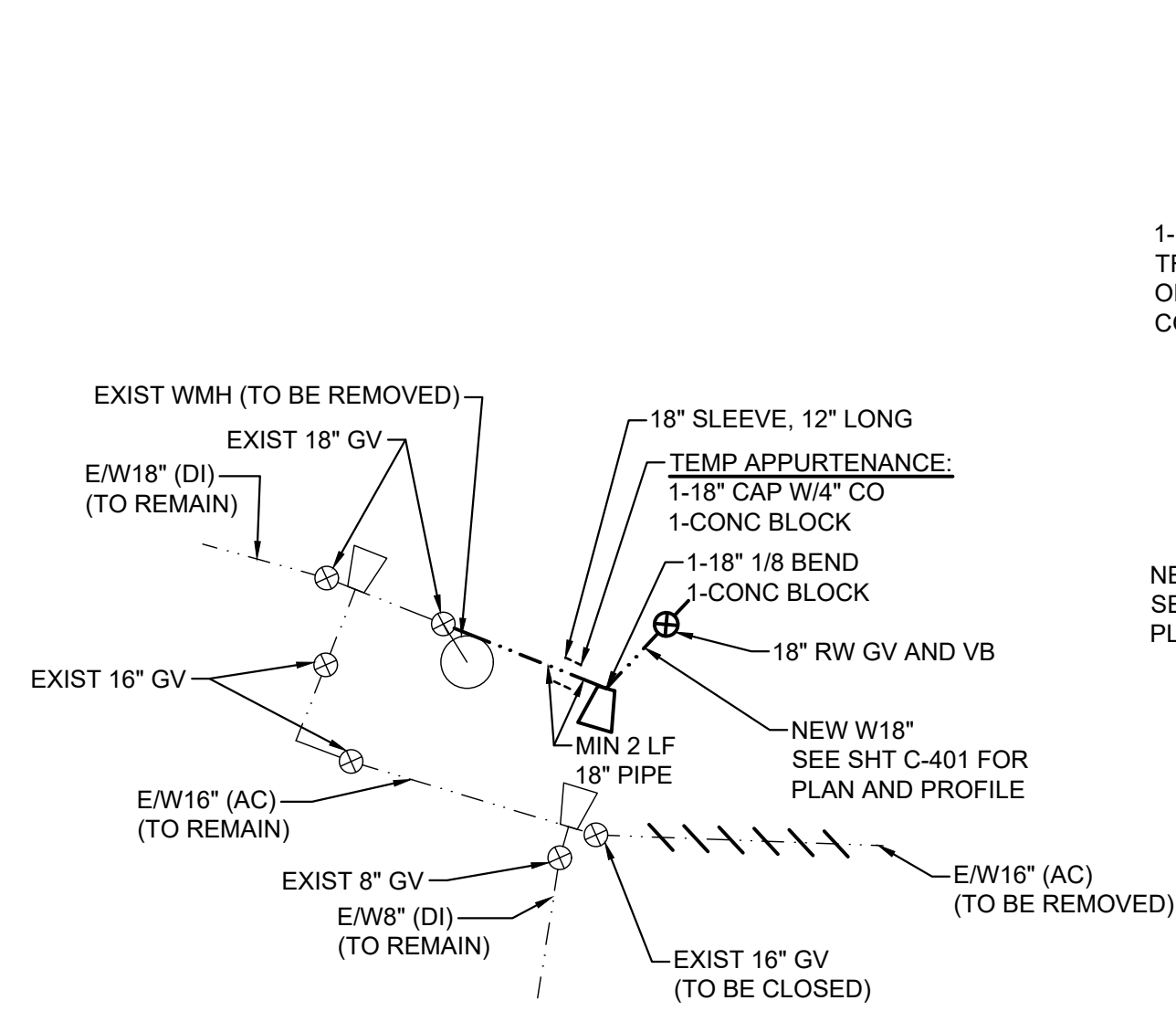
APPROVED: _____ DATE _____
 N/A
 FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS
 COUNTY OF KAUAI (FOR WORK WITH COUNTY RW)
 _____ DATE _____
 FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER
 COUNTY OF KAUAI



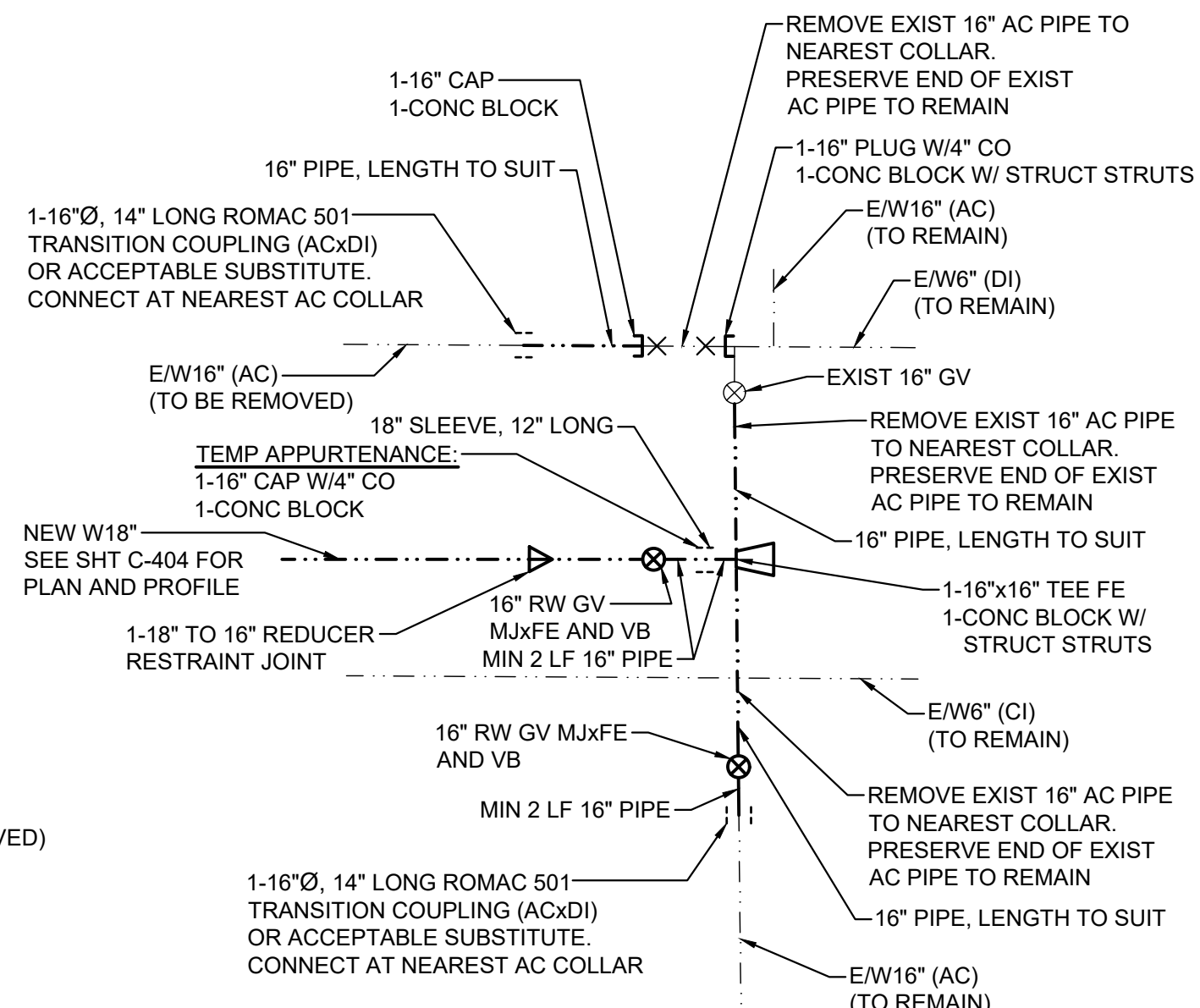
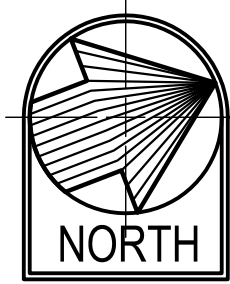
THIS WORK WAS PREPARED BY ME
 OR UNDER MY SUPERVISION
 AND CONSTRUCTION OF THIS PROJECT WILL BE
 UNDER MY OBSERVATION.
 APRIL 30, 2026
 EXPIRATION DATE OF THE LICENSE

DRAWING NO.
C-408

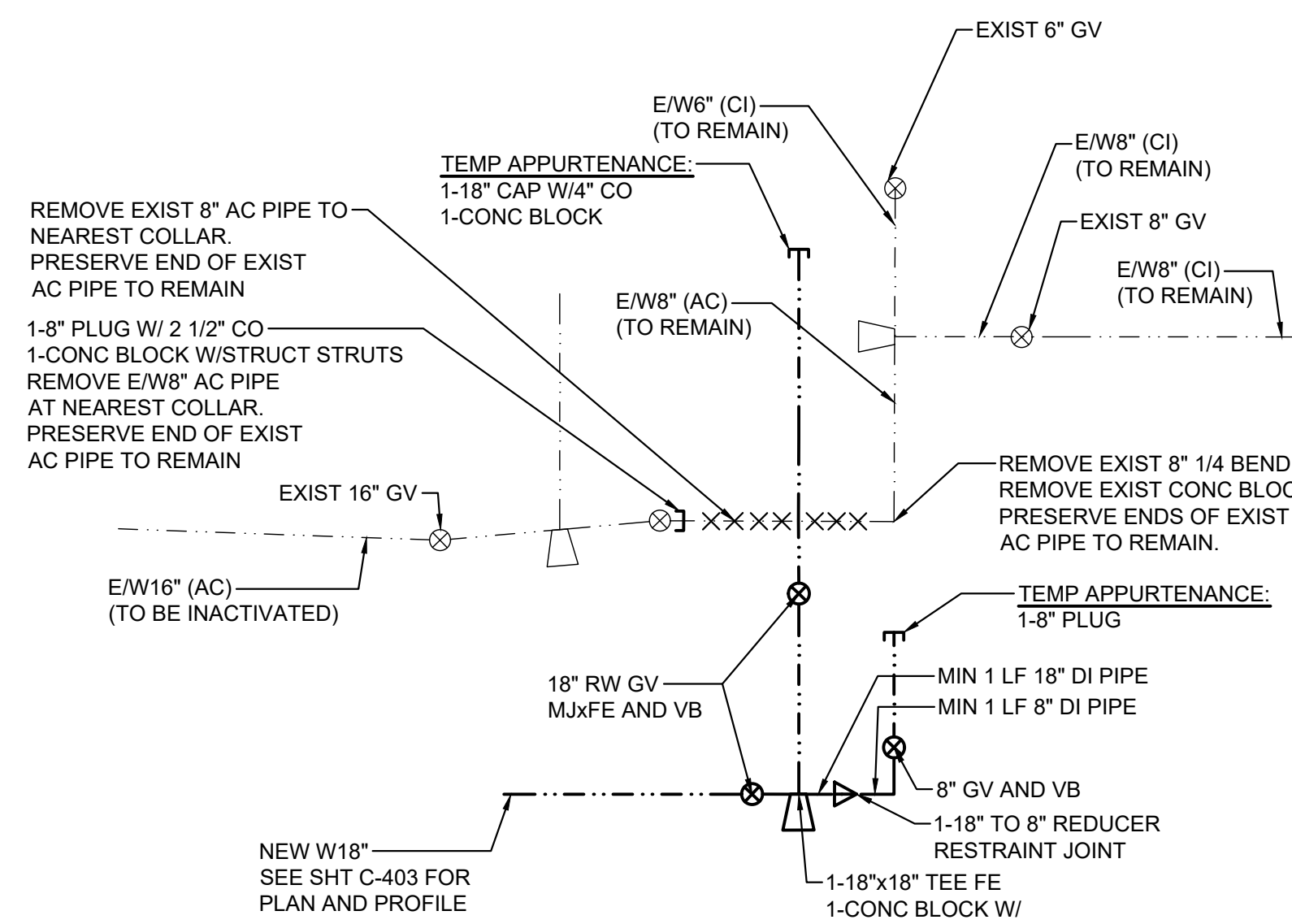
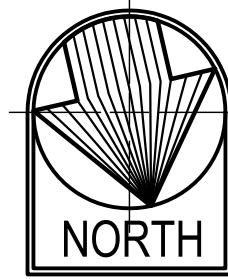
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 HALF SIZE TRIMLINE FOR 11" x 17"



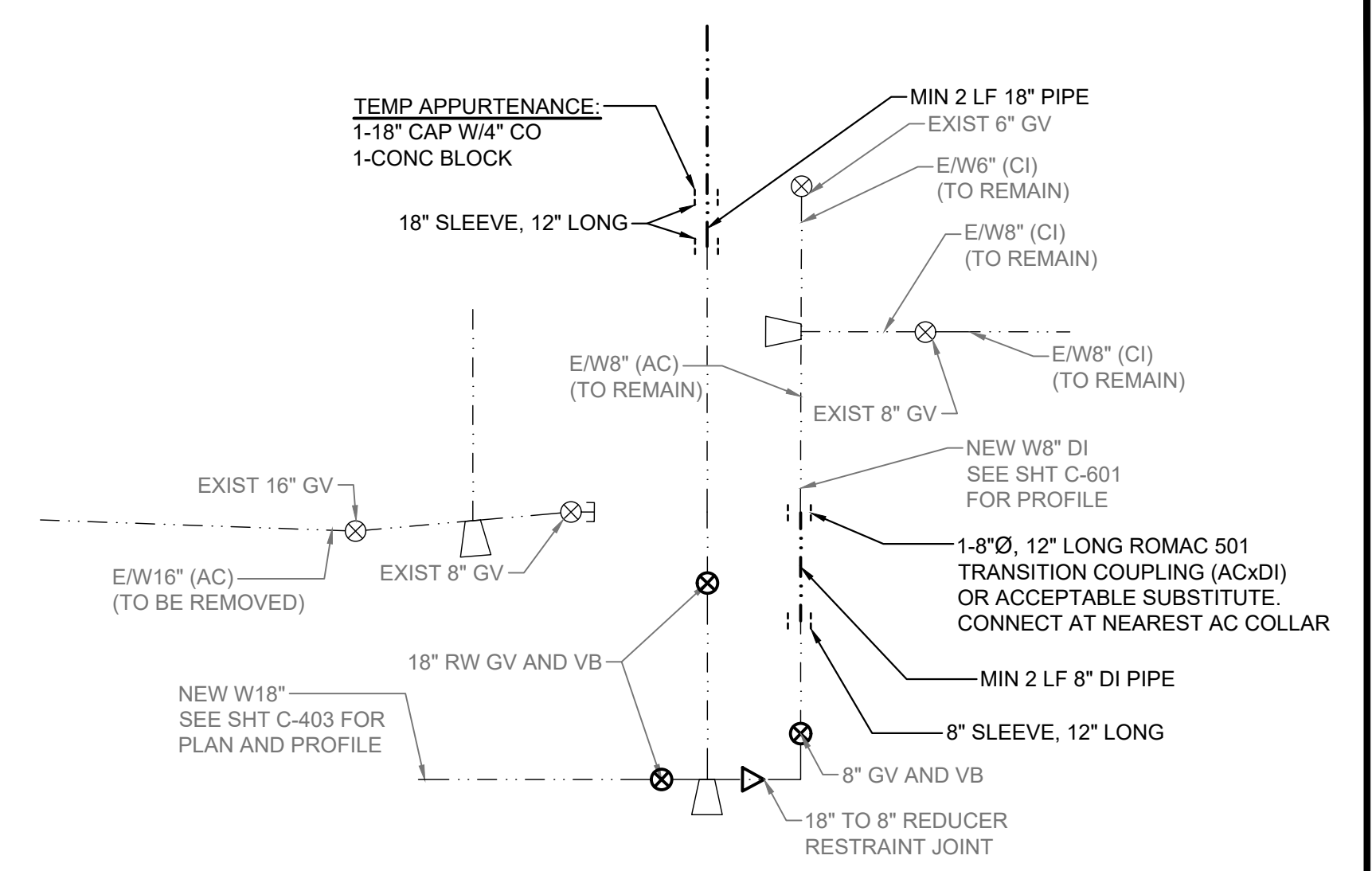
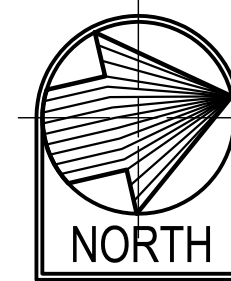
CONNECTION DETAIL 1
KŪHIŌ HIGHWAY
STA 0+00±
 NOT TO SCALE



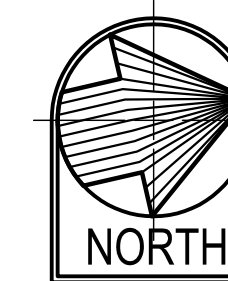
CONNECTION DETAIL - 2
Poinciana Street
STA 15+21.3±
 NOT TO SCALE



CONNECTION DETAIL - 3A
KŪHIŌ HIGHWAY
STA 10+33.24
 NOT TO SCALE



CONNECTION DETAIL - 3B
KŪHIŌ HIGHWAY
STA 10+60±
 NOT TO SCALE

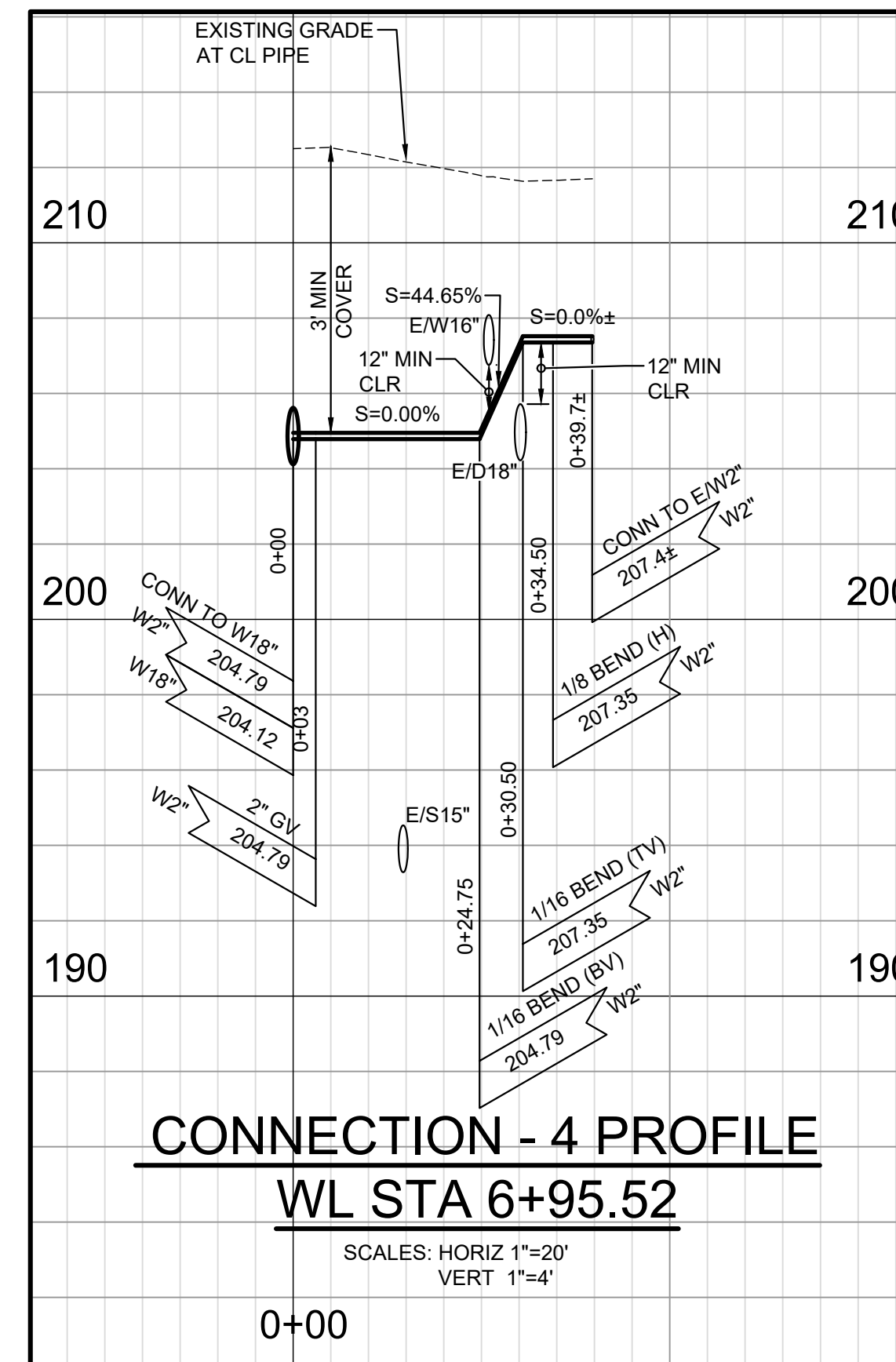


CONSTRUCTION SEQUENCE OF WORK			
STREET	WATERLINE	STATION	DESCRIPTION
KŪHIŌ HIGHWAY	-	0+07 TO 10+50±	INSTALL NEW 18" WATER MAIN
KŪHIŌ HIGHWAY	CONN 1	0+00	CONNECT TO E/W18"
KŪHIŌ HIGHWAY	CONN 3A	10+50±	CONNECT TO E/W8"
KŪHIŌ HIGHWAY	-	-	REMOVE E/16" AC PIPE
KALI ROAD	CONN 4	0+00 TO 0+39±	INSTALL NEW 2" WATER MAIN, CONNECT TO E/W2"
KALI ROAD	-	-	CUT AND PLUG E/W2" (PVC)
KŪHIŌ HIGHWAY	-	-	INSTALL NEW HYDRANTS
KŪHIŌ HIGHWAY	-	-	TRANSFER SERVICES ALONG KŪHIŌ HIGHWAY
KŪHIŌ HIGHWAY / POINCIANA STREET	-	10+50± TO END	INSTALL NEW 18" WATER MAIN
KŪHIŌ HIGHWAY	-	10+50±	CONNECT TO NEW W18" (CONN 3B)
KŪHIŌ HIGHWAY / POINCIANA STREET	-	-	REMOVE E/16" AC PIPE
POINCIANA STREET	-	-	ACTIVATE NEW HYDRANT. REMOVE EXISTING HYDRANT.
POINCIANA STREET	-	-	TRANSFER SERVICES ALONG POINCIANA STREET
POINCIANA STREET	-	-	CAP AND INACTIVATE E/W16" AT INTERSECTION OF JERVES AND POINCIANA
KŪHIŌ HIGHWAY	-	-	CAP AND INACTIVATE E/W6" AT INTERSECTION OF KŪHIŌ HIGHWAY AND AHUKINI ROAD
KŪHIŌ HIGHWAY	-	-	CLOSE GV AT INTERSECTION OF KŪHIŌ HIGHWAY AND HARDY STREET

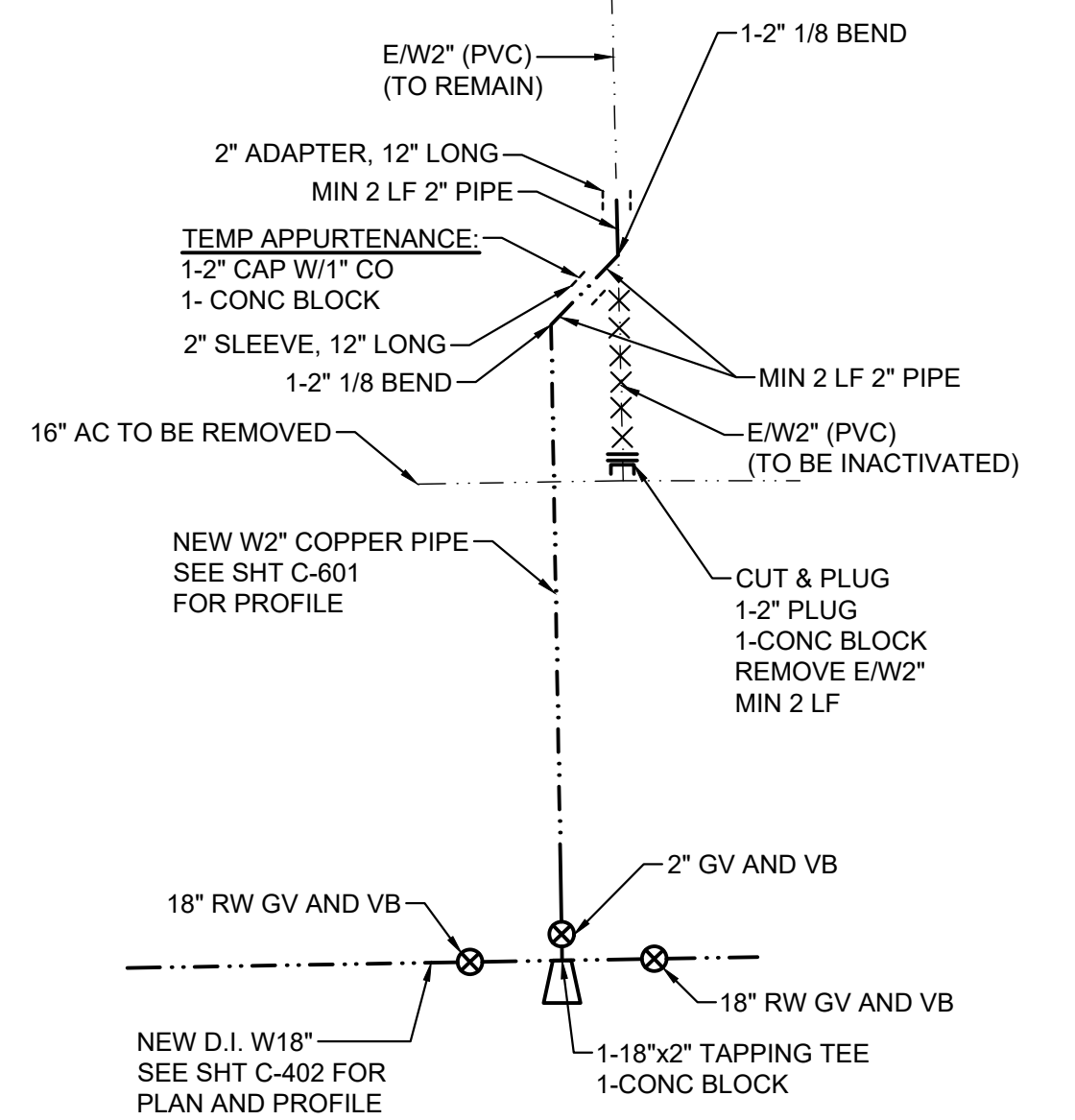
CONNECTION SCHEDULE					
NO.	LOCATION	SHT. NO.	NORMAL WORKING HOURS	AFTER WORKING HOURS	MAXIMUM DOWN TIME
1	KŪHIŌ HIGHWAY, STA 0+00±	C-401		X	6 HRS
2	POINCIANA STREET, STA 15+10.0±	C-404	X		6 HRS
3A	KŪHIŌ HIGHWAY, STA 10+50±	C-403		X	6 HRS
3B	KŪHIŌ HIGHWAY, STA 10+50±	C-403		X	CONN TO NEW STUB-OUT 6 HRS
4	KALI ROAD, STA 6+82.50	C-402	X		6 HRS

NOTE:

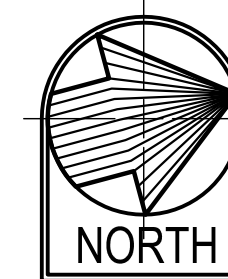
1. ALL INVERTS AND LOCATIONS OF EXISTING WATER LINES ARE BASED ON AVAILABLE RECORDS. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING CONNECTION POINTS AND INVERTS AND TO ADJUST ALIGNMENT AND/OR INVERT OF NEW WATER LINE AS NEEDED TO CONNECT TO EXISTING WATER LINES.



CONNECTION - 4 PROFILE
WL STA 6+95.52
 SCALES: HORIZ 1"=20'
 VERT 1"=4'



CONNECTION DETAIL - 4
KALI ROAD
WL STA 6+95.52
 NOT TO SCALE



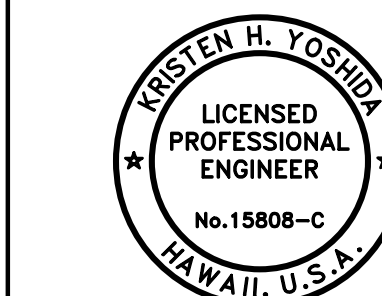
REVISION	DATE	DESCRIPTION	APPROVED

BOWERS + KUBOTA CONSULTING
 2183 North King Street, Suite 200
 Honolulu, Hawaii 96819

JOB NO. 18-03, WP2020 JOB NO. PLH-27
KŪHIŌ HIGHWAY (HARDY-OXFORD)
18" MAIN REPLACEMENT
LĪHU'E WATER SYSTEM
 LĪHU'E, KAUA'I, HAWAII

SCHEMATIC WATER CONNECTION DETAILS

APPROVED: N/A
 FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS
 COUNTY OF KAUAI (FOR WORK WITH COUNTY RW)
 DATE: 16/10/24
 FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER
 COUNTY OF KAUAI

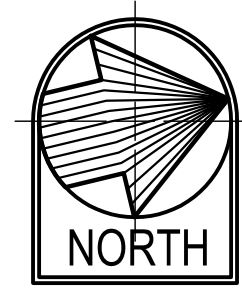
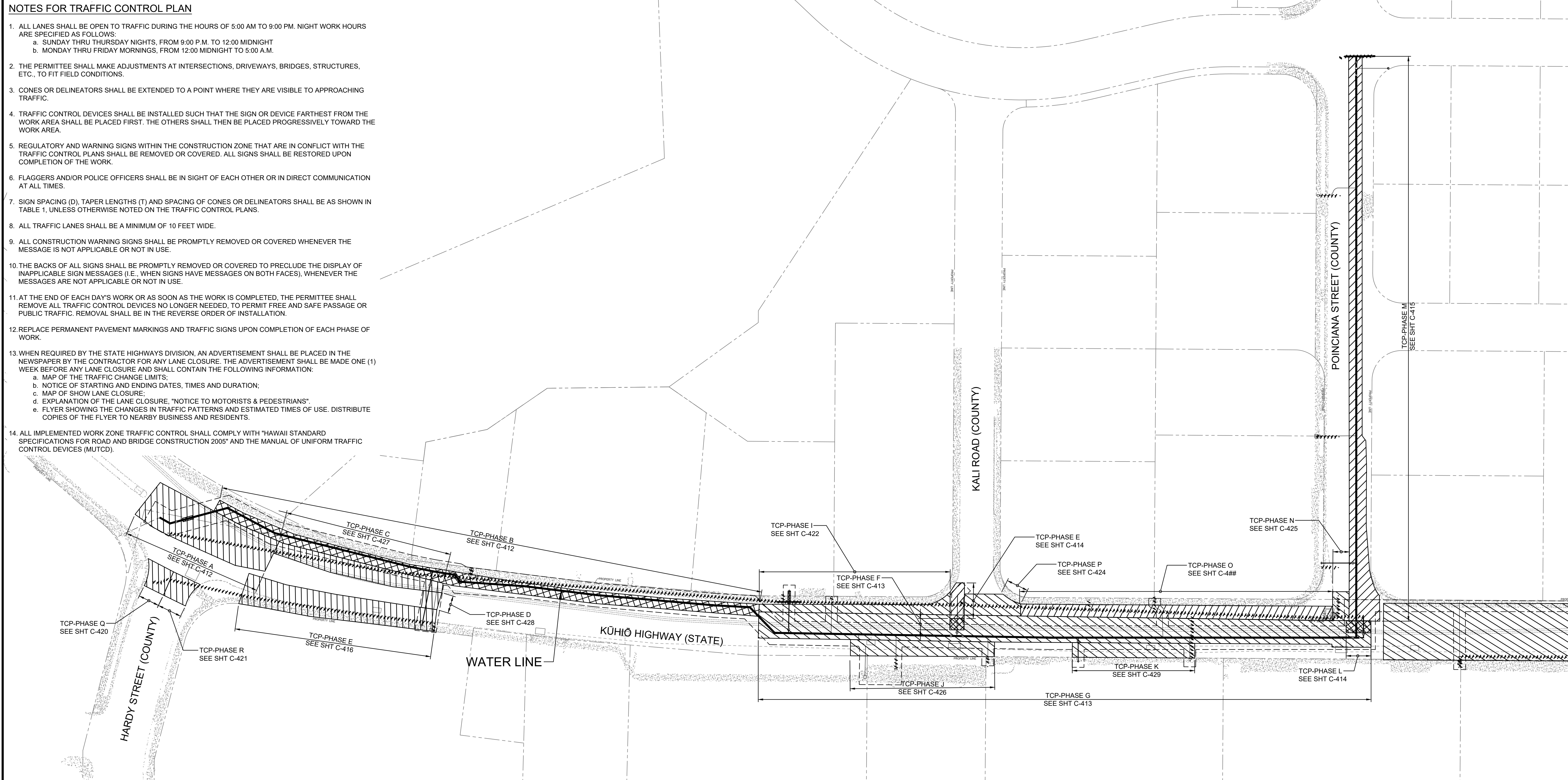


THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.
 APRIL 30, 2025
 EXPIRATION DATE OF THE LICENSE

DRAWING NO.
C-409

NOTES FOR TRAFFIC CONTROL PLAN

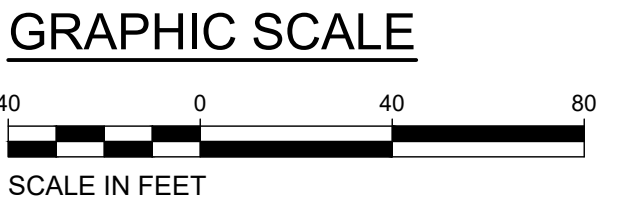
1. ALL LANES SHALL BE OPEN TO TRAFFIC DURING THE HOURS OF 5:00 AM TO 9:00 PM. NIGHT WORK HOURS ARE SPECIFIED AS FOLLOWS:
 - a. SUNDAY THRU THURSDAY NIGHTS, FROM 9:00 P.M. TO 12:00 MIDNIGHT
 - b. MONDAY THRU FRIDAY MORNINGS, FROM 12:00 MIDNIGHT TO 5:00 A.M.
2. THE PERMITTEE SHALL MAKE ADJUSTMENTS AT INTERSECTIONS, DRIVEWAYS, BRIDGES, STRUCTURES, ETC., TO FIT FIELD CONDITIONS.
3. CONES OR DELINEATORS SHALL BE EXTENDED TO A POINT WHERE THEY ARE VISIBLE TO APPROACHING TRAFFIC.
4. 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.
5. 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.
6. FLAGGERS AND/OR POLICE OFFICERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES.
7. SIGN SPACING (D), TAPER LENGTHS (T) AND SPACING OF CONES OR DELINEATORS SHALL BE AS SHOWN IN TABLE 1, UNLESS OTHERWISE NOTED ON THE TRAFFIC CONTROL PLANS.
8. ALL TRAFFIC LANES SHALL BE A MINIMUM OF 10 FEET WIDE.
9. ALL CONSTRUCTION WARNING SIGNS SHALL BE PROMPTLY REMOVED OR COVERED WHENEVER THE MESSAGE IS NOT APPLICABLE OR NOT IN USE.
10. THE BACKS OF ALL SIGNS SHALL BE PROMPTLY REMOVED OR COVERED TO PRECLUDE THE DISPLAY OF INAPPLICABLE SIGN MESSAGES (I.E., WHEN SIGNS HAVE MESSAGES ON BOTH FACES), WHENEVER THE MESSAGES ARE NOT APPLICABLE OR NOT IN USE.
11. AT THE END OF EACH DAY'S WORK OR AS SOON AS THE WORK IS COMPLETED, THE PERMITTEE SHALL REMOVE ALL TRAFFIC CONTROL DEVICES NO LONGER NEEDED, TO PERMIT FREE AND SAFE PASSAGE OR PUBLIC TRAFFIC. REMOVAL SHALL BE IN THE REVERSE ORDER OF INSTALLATION.
12. REPLACE PERMANENT PAVEMENT MARKINGS AND TRAFFIC SIGNS UPON COMPLETION OF EACH PHASE OF WORK.
13. WHEN REQUIRED BY THE STATE HIGHWAYS DIVISION, AN ADVERTISEMENT SHALL BE PLACED IN THE NEWSPAPER BY THE CONTRACTOR FOR ANY LANE CLOSURE. THE ADVERTISEMENT SHALL BE MADE ONE (1) WEEK BEFORE ANY LANE CLOSURE AND SHALL CONTAIN THE FOLLOWING INFORMATION:
 - a. MAP OF THE TRAFFIC CHANGE LIMITS;
 - b. NOTICE OF STARTING AND ENDING DATES, TIMES AND DURATION;
 - c. MAP OF SHOW LANE CLOSURE;
 - d. EXPLANATION OF THE LANE CLOSURE, "NOTICE TO MOTORISTS & PEDESTRIANS";
 - e. FLYER SHOWING THE CHANGES IN TRAFFIC PATTERNS AND ESTIMATED TIMES OF USE. DISTRIBUTE COPIES OF THE FLYER TO NEARBY BUSINESS AND RESIDENTS.
14. ALL IMPLEMENTED WORK ZONE TRAFFIC CONTROL SHALL COMPLY WITH "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION 2005" AND THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).



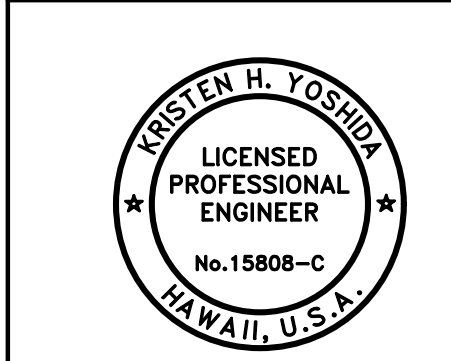
TRAFFIC CONTROL GENERAL PLAN

SCALE: 1"=40'

- NOTES:**
1. FOR ALL OTHER WORK AREAS, SEE TYPICAL TRAFFIC CONTROL PLAN ON SHEET C-508 AND C-509.
 2. HATCHING REPRESENT WORK ZONE AS SHOWN ON TRAFFIC CONTROL PLANS AS INDICATED.



DRAWING NO.
C-410



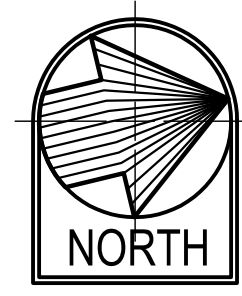
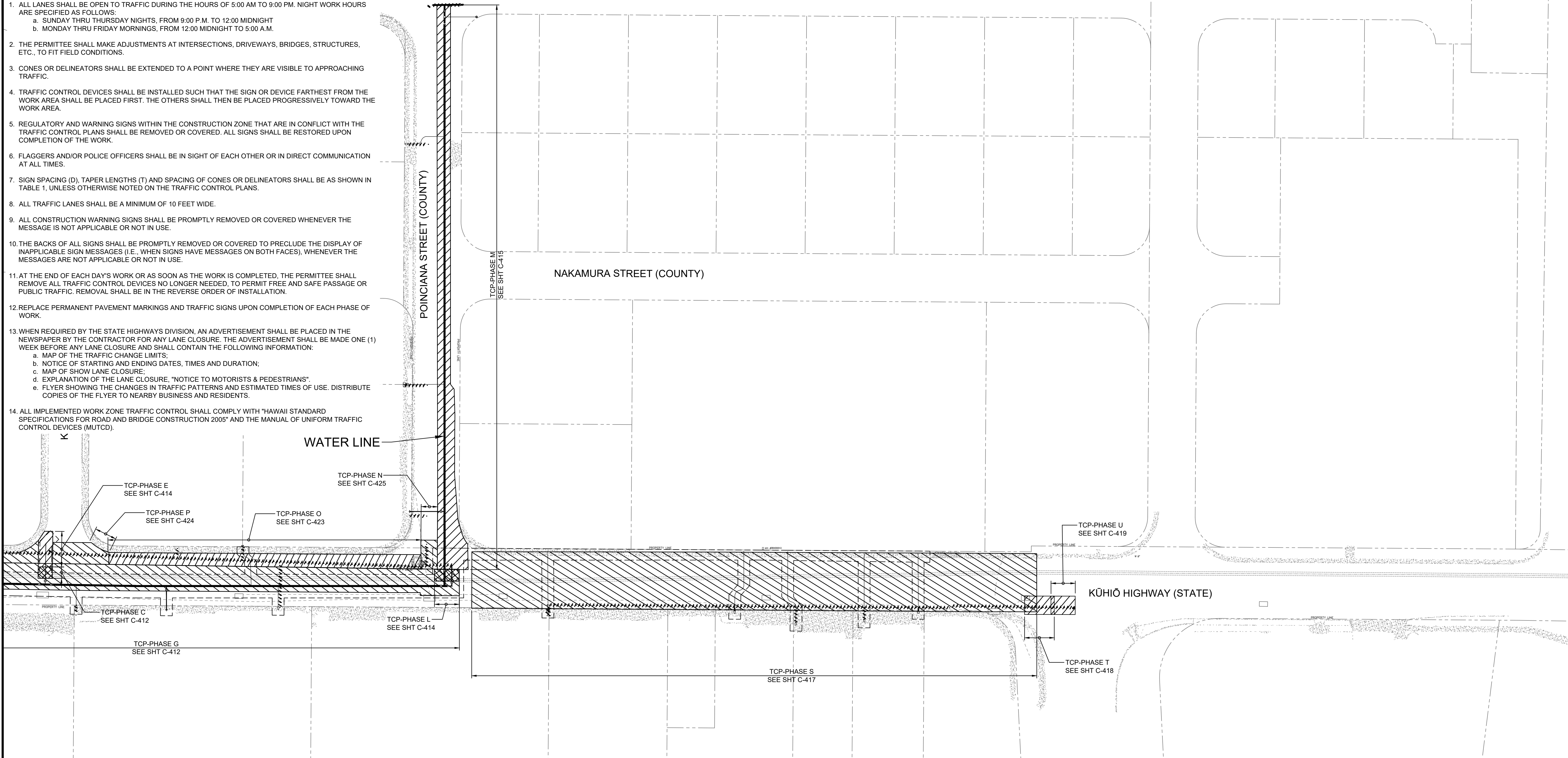
APPROVED: *Kristen H. Yoshida*
FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS
COUNTY OF KAUAI (FOR WORK WITHIN COUNTY RW)
APRIL 30, 2025
EXPIRATION DATE OF THE LICENSE

REVISION	DATE	DESCRIPTION	APPROVED
BOWERS + KUBOTA CONSULTING 2183 North King Street, Suite 200 Honolulu, Hawaii 96819			
JOB NO. 18-03, WP2020 JOB NO. PLH-27 KŪHIŌ HIGHWAY (HARDY-OXFORD) 18" MAIN REPLACEMENT LĪHU'E WATER SYSTEM LĪHU'E, KAUA'I, HAWAII			
TRAFFIC CONTROL GENERAL PLAN			
APPROVED: <i>Jesse Kujawa</i> FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER COUNTY OF KAUAI			DATE 18/10/24
APPROVED: <i>[Signature]</i> FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS COUNTY OF KAUAI (FOR WORK WITHIN COUNTY RW)			DATE 10/24/24
FILE	POCKET	FOLDER	NO.

HALF SIZE TRIMLINE FOR 11" x 17"
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NOTES FOR TRAFFIC CONTROL PLAN

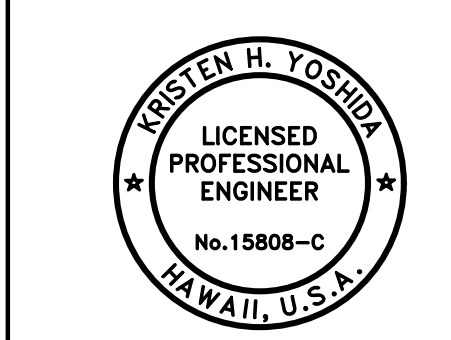
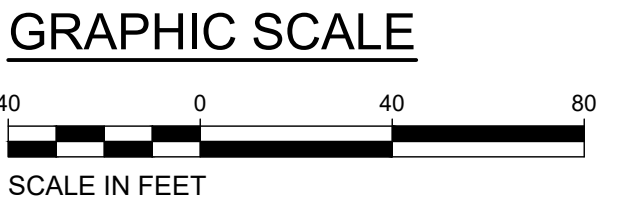
1. ALL LANES SHALL BE OPEN TO TRAFFIC DURING THE HOURS OF 5:00 AM TO 9:00 PM. NIGHT WORK HOURS ARE SPECIFIED AS FOLLOWS:
 - a. SUNDAY THRU THURSDAY NIGHTS, FROM 9:00 P.M. TO 12:00 MIDNIGHT
 - b. MONDAY THRU FRIDAY MORNINGS, FROM 12:00 MIDNIGHT TO 5:00 A.M.
2. THE PERMITTEE SHALL MAKE ADJUSTMENTS AT INTERSECTIONS, DRIVEWAYS, BRIDGES, STRUCTURES, ETC., TO FIT FIELD CONDITIONS.
3. CONES OR DELINEATORS SHALL BE EXTENDED TO A POINT WHERE THEY ARE VISIBLE TO APPROACHING TRAFFIC.
4. 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.
5. 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.
6. FLAGGERS AND/OR POLICE OFFICERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES.
7. SIGN SPACING (D), TAPER LENGTHS (T) AND SPACING OF CONES OR DELINEATORS SHALL BE AS SHOWN IN TABLE 1, UNLESS OTHERWISE NOTED ON THE TRAFFIC CONTROL PLANS.
8. ALL TRAFFIC LANES SHALL BE A MINIMUM OF 10 FEET WIDE.
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12. REPLACE PERMANENT PAVEMENT MARKINGS AND TRAFFIC SIGNS UPON COMPLETION OF EACH PHASE OF WORK.
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 - a. MAP OF THE TRAFFIC CHANGE LIMITS.
 - b. NOTICE OF STARTING AND ENDING DATES, TIMES AND DURATION;
 - c. MAP OF SHOW LANE CLOSURE;
 - d. EXPLANATION OF THE LANE CLOSURE, "NOTICE TO MOTORISTS & PEDESTRIANS".
 - e. FLYER SHOWING THE CHANGES IN TRAFFIC PATTERNS AND ESTIMATED TIMES OF USE. DISTRIBUTE COPIES OF THE FLYER TO NEARBY BUSINESS AND RESIDENTS.
14. ALL IMPLEMENTED WORK ZONE TRAFFIC CONTROL SHALL COMPLY WITH "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION 2005" AND THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).



TRAFFIC CONTROL GENERAL PLAN 2

SCALE: 1"=40'

- NOTES:**
1. FOR ALL OTHER WORK AREAS, SEE TYPICAL TRAFFIC CONTROL PLAN ON SHEET C-508 AND C-509.
 2. HATCHING REPRESENT WORK ZONE AS SHOWN ON TRAFFIC CONTROL PLANS AS INDICATED.



APPROVED: *Kristen H. Yoshida*
 FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS
 COUNTY OF KAUAI (FOR WORK WITHIN COUNTY RW)
 APRIL 30, 2026
 EXPIRATION DATE OF THE LICENSE

DRAWING NO.
C-411

REVISION	DATE	DESCRIPTION	APPROVED
BOWERS + KUBOTA CONSULTING 2183 North King Street, Suite 200 Honolulu, Hawaii 96819			
JOB NO. 18-03, WP2020 JOB NO. PLH-27 KŪHIŌ HIGHWAY (HARDY-OXFORD) 18" MAIN REPLACEMENT LĪHU'E WATER SYSTEM LĪHU'E, KAUAI, HAWAII			
TRAFFIC CONTROL GENERAL PLAN 2			
APPROVED:			10/24/24
FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS COUNTY OF KAUAI (FOR WORK WITHIN COUNTY RW)			DATE
<i>Queen Kiginaka</i> FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER COUNTY OF KAUAI			18/10/24
			DATE
FILE	POCKET	FOLDER	NO.

HALF SIZE TRIMLINE FOR 11" x 17"
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 T:\Vary-Ordor\Hawaii\2018\740100\04_Graphics\CAD\Sheets\C-411_Traffic Control General Plan 2.dwg



LEGEND:

- FLASHING ARROW SIGNAL, DIRECTION(S) OF ARROWS PER PLAN
- CONE OR DELINEATOR
- DIRECTION OF TRAFFIC
- SIGN
- WORK ZONE
- POLICE OFFICER

NOTE: POSTED SPEED = 25 MPH

GRAPHIC SCALE

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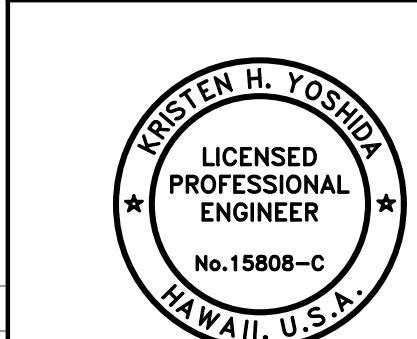
SCALE IN FEET

TCP-PHASE B

SCALE: 1"=100'

TCP-PHASE A

SCALE: 1"=100'



APPROVED: *Kristen H. Yoshida*

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

APRIL 30, 2026

EXPIRATION DATE OF THE LICENSE

REVISION	DATE	DESCRIPTION	APPROVED

BOWERS + KUBOTA CONSULTING
2153 North King Street, Suite 200
Honolulu, Hawaii 96819

JOB NO. 18-03, WP2020 JOB NO. PLH-27
KŪHIŌ HIGHWAY (HARDY-OXFORD)
18" MAIN REPLACEMENT
LĪHU'E WATER SYSTEM
LĪHU'E, KAUA'I, HAWAII

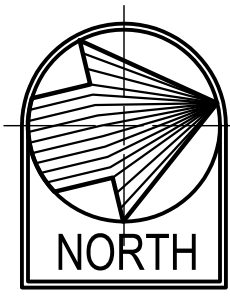
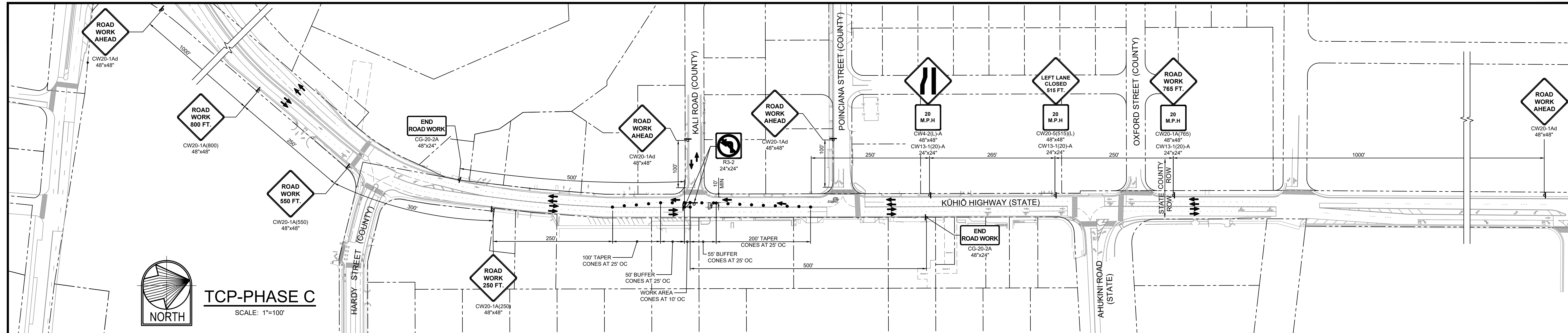
TRAFFIC CONTROL PLAN - 1

APPROVED: *Jason Kaganato* 18/10/24
FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS
COUNTY OF KAUAI (FOR WORK WITHIN COUNTY RW)

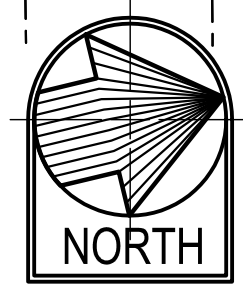
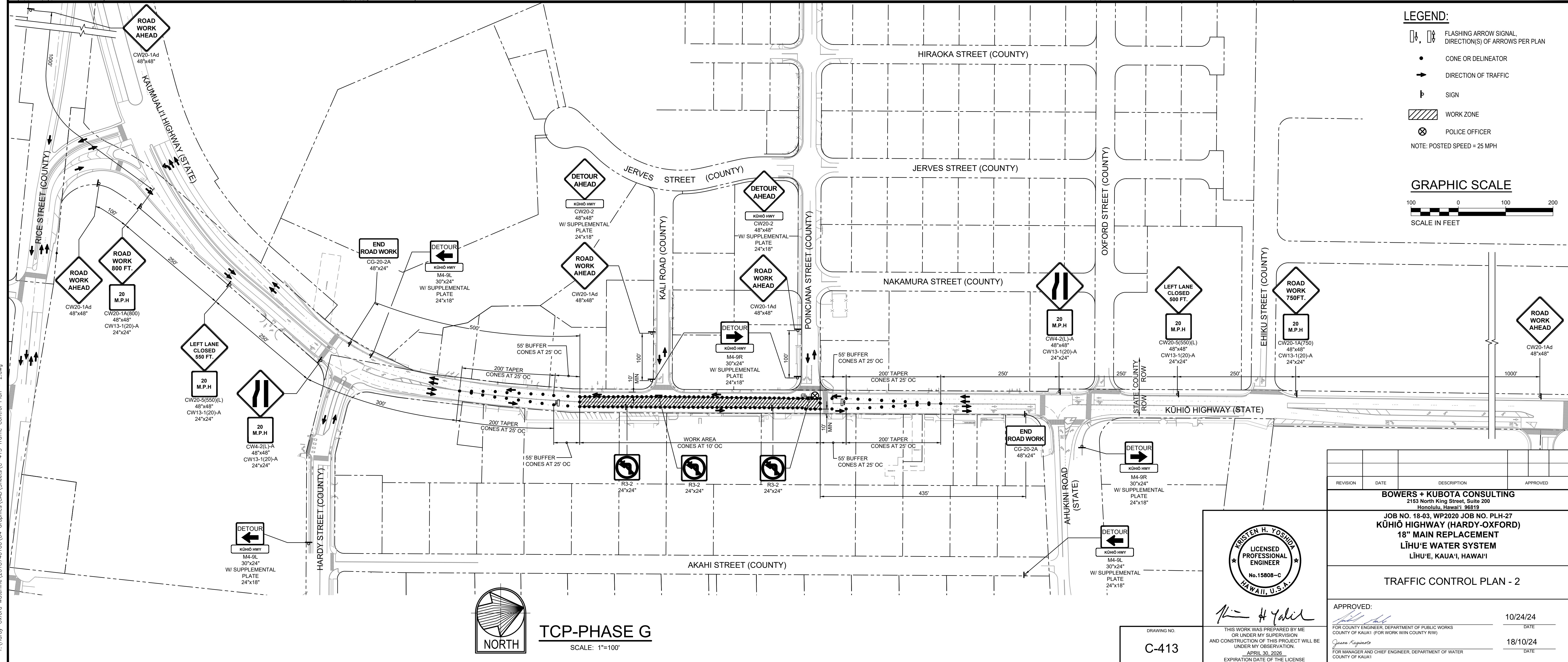
Jason Kaganato 10/24/24
FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER
COUNTY OF KAUAI

DRAWING NO.
C-412

Wednesday, August 14, 2024, 3:56:59 PM
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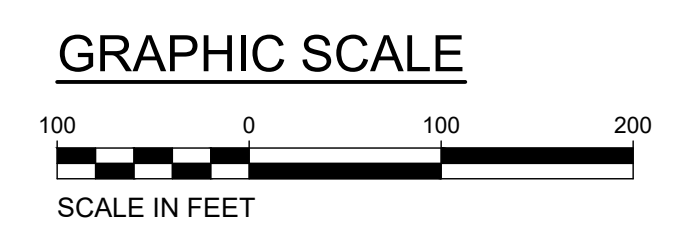


TCP-PHASE C
SCALE: 1"=100'



TCP-PHASE G
SCALE: 1"=100'

- LEGEND:**
- FLASHING ARROW SIGNAL, DIRECTION(S) OF ARROWS PER PLAN
 - CONE OR DELINEATOR
 - DIRECTION OF TRAFFIC
 - SIGN
 - WORK ZONE
 - POLICE OFFICER
- NOTE: POSTED SPEED = 25 MPH



REVISION	DATE	DESCRIPTION	APPROVED

BOWERS + KUBOTA CONSULTING
2183 North King Street, Suite 200
Honolulu, Hawaii 96819

JOB NO. 18-03, WP2020 JOB NO. PLH-27
KŪHIŌ HIGHWAY (HARDY-OXFORD)
18" MAIN REPLACEMENT
LĪHU'E WATER SYSTEM
LĪHU'E, KAUA'I, HAWAII

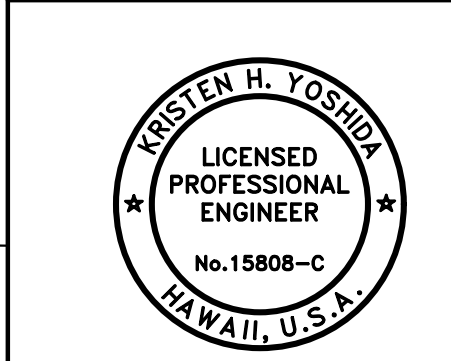
TRAFFIC CONTROL PLAN - 2

APPROVED: *[Signature]* 10/24/24
DATE

FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS
COUNTY OF KAUAI (FOR WORK WITH COUNTY RW)

FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER
COUNTY OF KAUAI

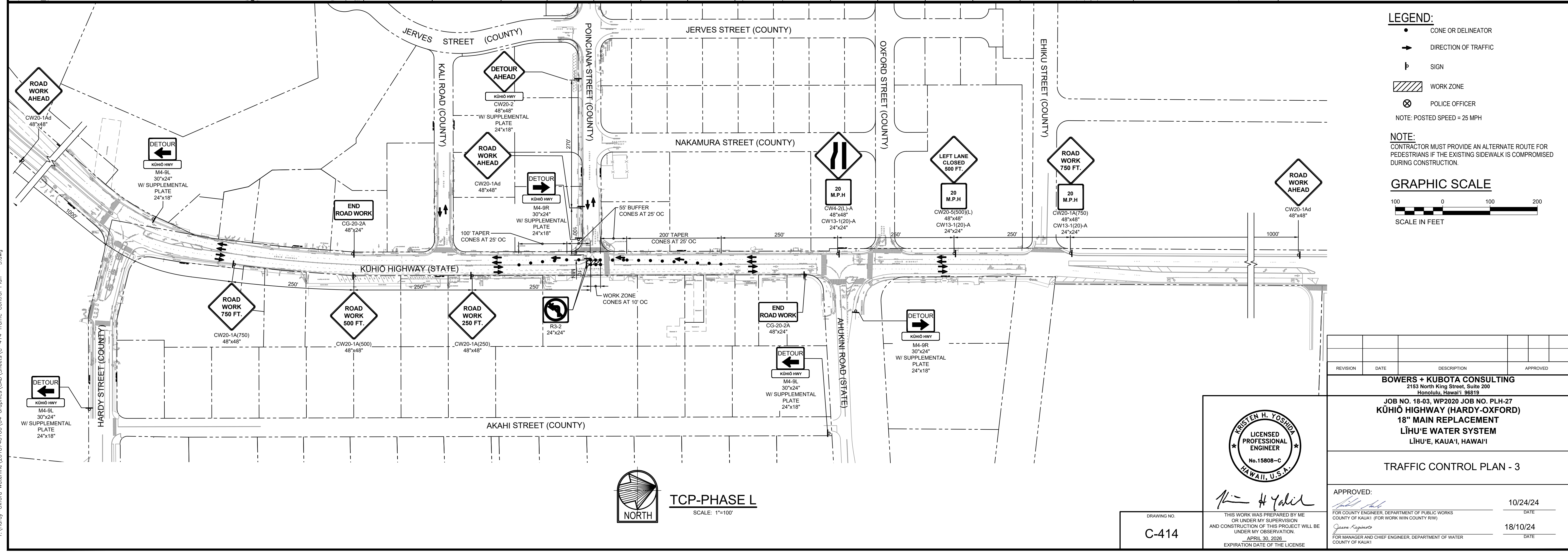
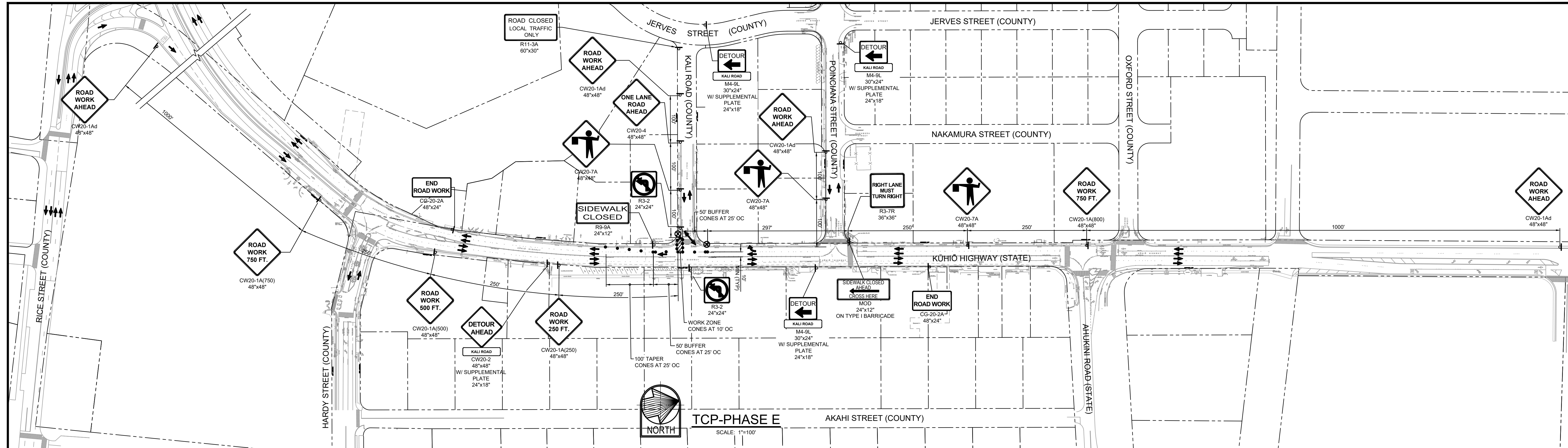
18/10/24
DATE



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APRIL 30, 2026
EXPIRATION DATE OF THE LICENSE

DRAWING NO.
C-413

Wednesday, August 14, 2024, 3:56:50 PM
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 HALF SIZE TRIMLINE FOR 11" x 17"



LEGEND:

- CONE OR DELINEATOR
- ➔ DIRECTION OF TRAFFIC
- ⊥ SIGN
- ▨ WORK ZONE
- ⊗ POLICE OFFICER

NOTE: POSTED SPEED = 25 MPH

NOTE:
CONTRACTOR MUST PROVIDE AN ALTERNATE ROUTE FOR PEDESTRIANS IF THE EXISTING SIDEWALK IS COMPROMISED DURING CONSTRUCTION.

GRAPHIC SCALE



REVISION	DATE	DESCRIPTION	APPROVED

BOWERS + KUBOTA CONSULTING
2183 North King Street, Suite 200
Honolulu, Hawaii 96819

JOB NO. 18-03, WP2020 JOB NO. PLH-27
KŪHIŌ HIGHWAY (HARDY-OXFORD)
18" MAIN REPLACEMENT
LIHŪ'E WATER SYSTEM
LIHŪ'E, KAUA'I, HAWAII

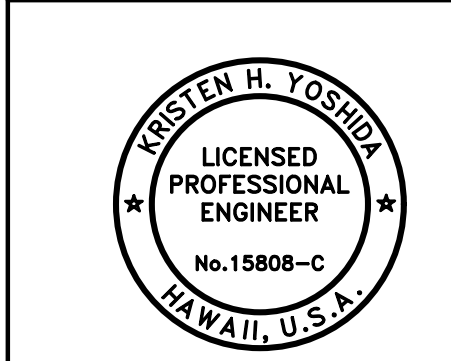
TRAFFIC CONTROL PLAN - 3

APPROVED: _____ DATE: 10/24/24

FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS
COUNTY OF KAUAI (FOR WORK WITH COUNTY RW)

FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER
COUNTY OF KAUAI

DATE: 18/10/24



Kristen H. Yoshida

DRAWING NO.
C-414

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.
APRIL 30, 2025
EXPIRATION DATE OF THE LICENSE

Wednesday, August 14, 2024, 3:56:51 PM
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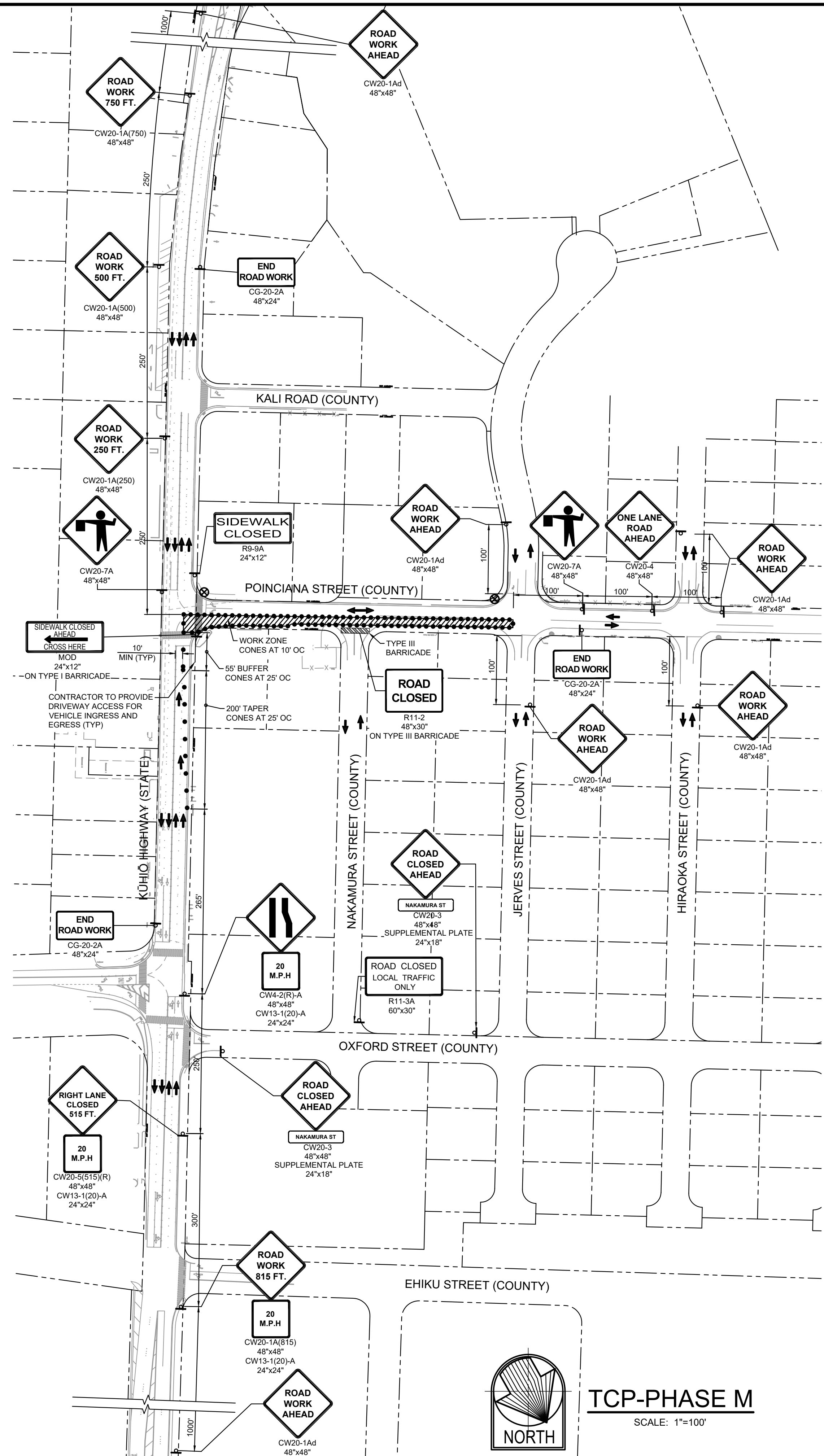
LEGEND:

- CONE OR DELINEATOR
- ➔ DIRECTION OF TRAFFIC
- ⊥ SIGN
- ▨ WORK ZONE
- ⊗ POLICE OFFICER
- ▨ TYPE III BARRICADE

NOTE: POSTED SPEED = 25 MPH

NOTE:
CONTRACTOR MUST PROVIDE AN ALTERNATE ROUTE FOR PEDESTRIANS IF THE EXISTING SIDEWALK IS COMPROMISED DURING CONSTRUCTION.

GRAPHIC SCALE



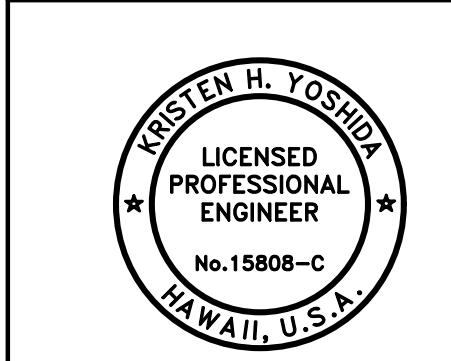
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SCALE: 1"=100'

HALF SIZE TRIMLINE FOR 11" x 17"
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REVISION	DATE	DESCRIPTION	APPROVED

BOWERS + KUBOTA CONSULTING
2183 North King Street, Suite 200
Honolulu, Hawaii 96819

JOB NO. 18-03, WP2020 JOB NO. PLH-27
KŪHIŌ HIGHWAY (HARDY-OXFORD)
18" MAIN REPLACEMENT
LĪHU'E WATER SYSTEM
LĪHU'E, KAUA'I, HAWAII



Kristen H. Yoshida
APPROVED: _____

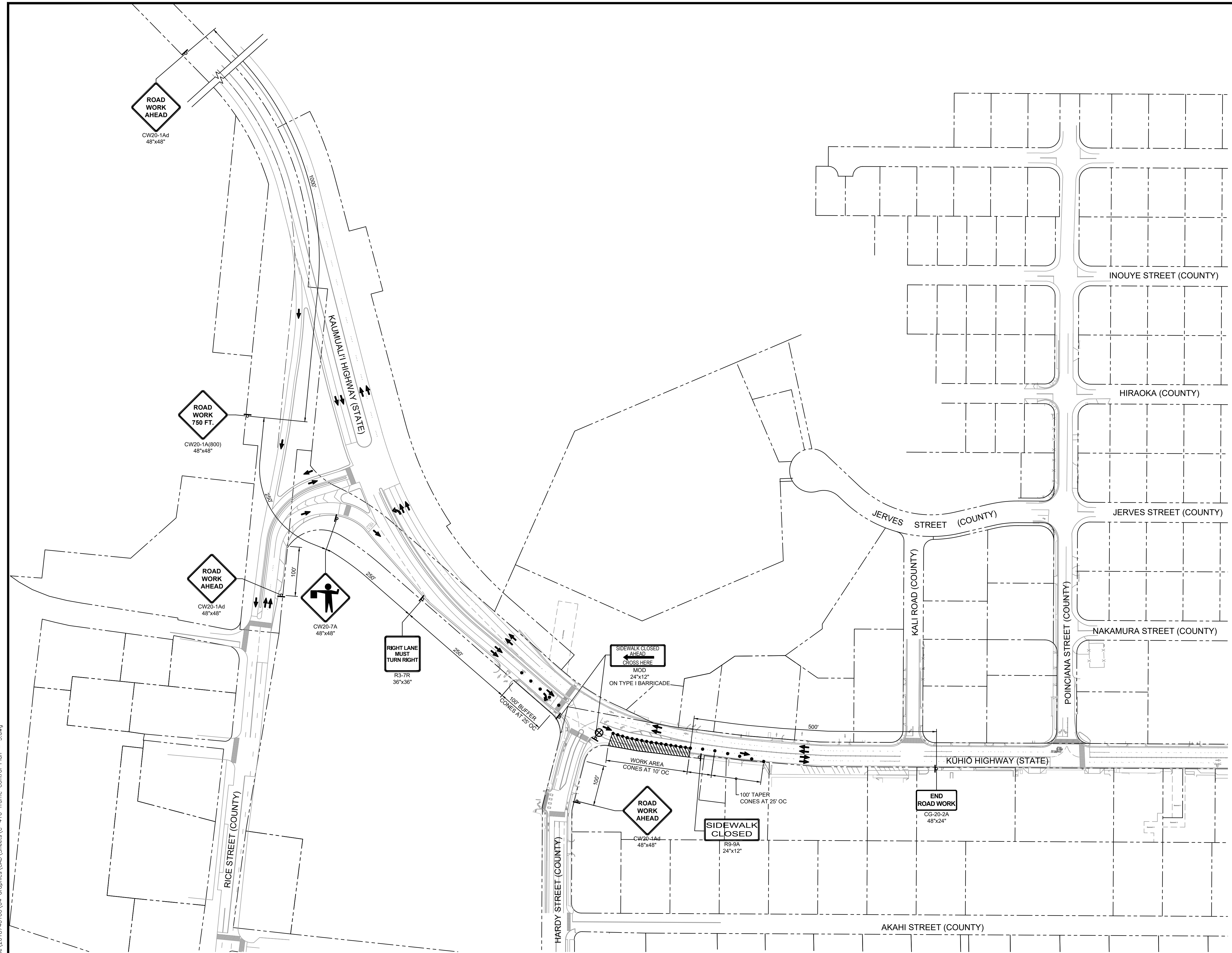
TRAFFIC CONTROL PLAN - 4

FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS COUNTY OF KAUAI (FOR WORK WITHIN COUNTY RW)	DATE
FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER COUNTY OF KAUAI	DATE
10/24/24	18/10/24

DRAWING NO.
C-415

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.
APRIL 30, 2026
EXPIRATION DATE OF THE LICENSE

HAIF SIZE TRIMLINE FOR 11" x 17"
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LEGEND:

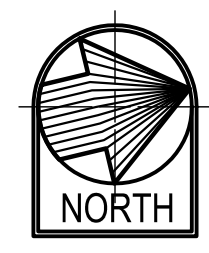
- FLASHING ARROW SIGNAL, DIRECTION(S) OF ARROWS PER PLAN
- CONE OR DELINEATOR
- DIRECTION OF TRAFFIC
- SIGN
- WORK ZONE
- POLICE OFFICER

NOTE: POSTED SPEED = 25 MPH

GRAPHIC SCALE

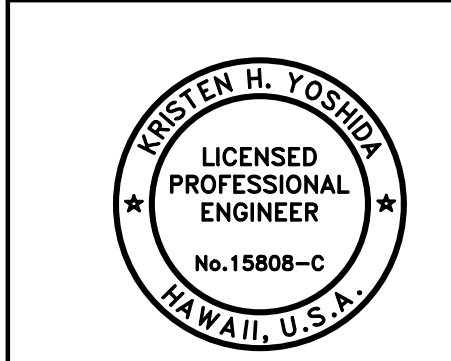
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SCALE IN FEET



TCP-PHASE E
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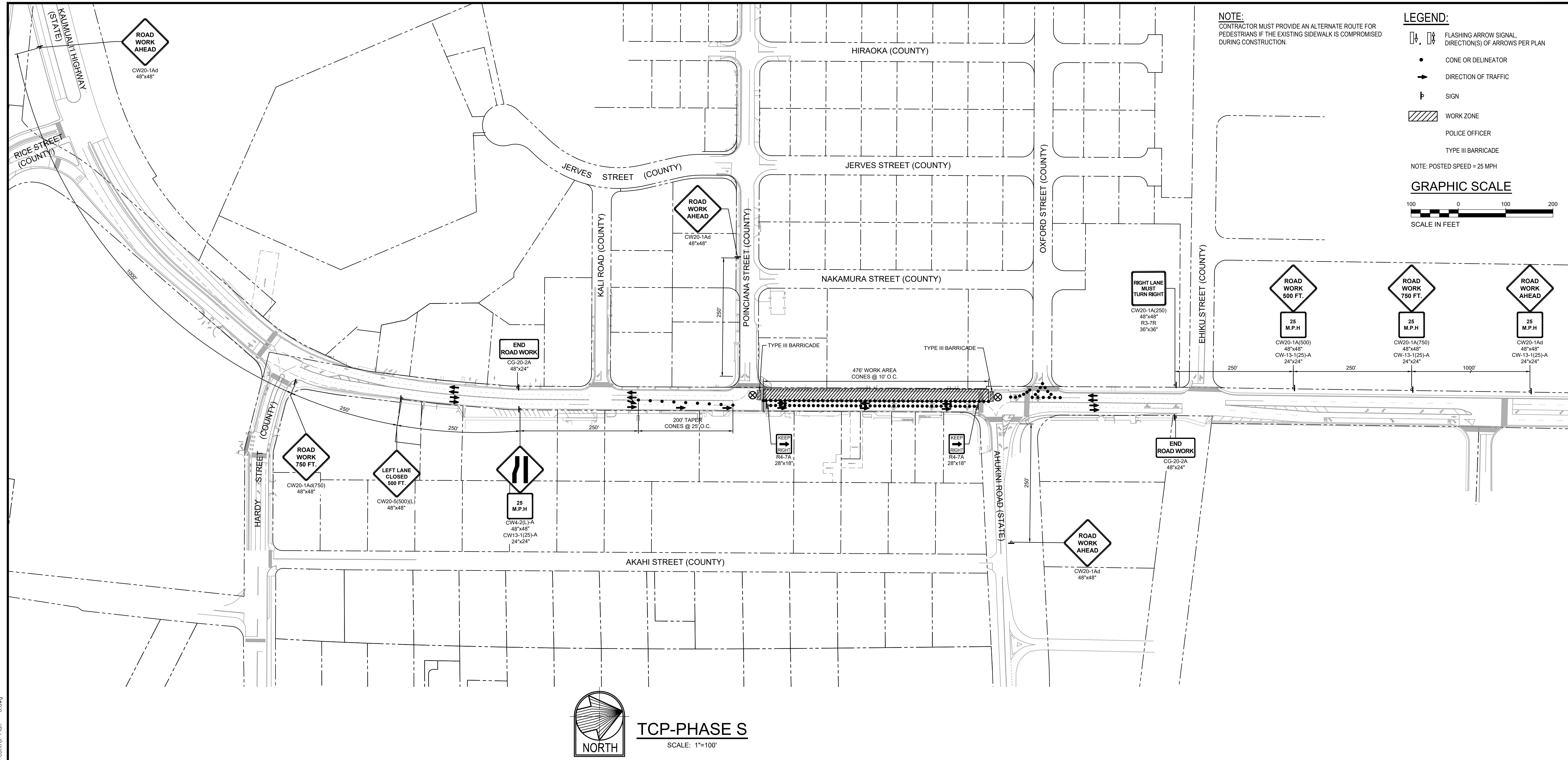
DRAWING NO.
C-416



Kristen H. Yoshida
 LICENSED PROFESSIONAL ENGINEER
 No. 15808-C
 HAWAII, U.S.A.
 THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.
 APRIL 30, 2026
 EXPIRATION DATE OF THE LICENSE

REVISION	DATE	DESCRIPTION	APPROVED
BOWERS + KUBOTA CONSULTING 2183 North King Street, Suite 200 Honolulu, Hawaii 96819			
JOB NO. 18-03, WP2020 JOB NO. PLH-27 KŪHIŌ HIGHWAY (HARDY-OXFORD) 18" MAIN REPLACEMENT LĪHU'E WATER SYSTEM LĪHU'E, KAUA'I, HAWAII			
TRAFFIC CONTROL PLAN - 5			
APPROVED:			10/24/24
FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS COUNTY OF KAUAI (FOR WORK WITH COUNTY RW)			DATE
FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER COUNTY OF KAUAI			DATE
FILE	POCKET	FOLDER	NO.

HAIF SIZE TRIMLINE FOR 11" x 17"
 Wednesday, August 14, 2024, 8:57:55 PM
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NOTE:
 CONTRACTOR MUST PROVIDE AN ALTERNATE ROUTE FOR PEDESTRIANS IF THE EXISTING SIDEWALK IS COMPROMISED DURING CONSTRUCTION.

LEGEND:

- FLASHING ARROW SIGNAL, DIRECTION(S) OF ARROWS PER PLAN
- CONE OR DELINEATOR
- ➔ DIRECTION OF TRAFFIC
- ♣ SIGN
- ▨ WORK ZONE
- POLICE OFFICER
- TYPE III BARRICADE

NOTE: POSTED SPEED = 25 MPH

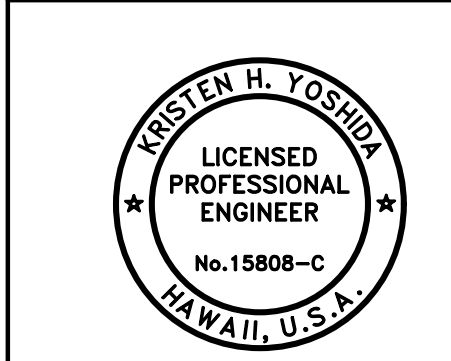
GRAPHIC SCALE
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 SCALE IN FEET

REVISION	DATE	DESCRIPTION	APPROVED

BOWERS + KUBOTA CONSULTING
 2183 North King Street, Suite 200
 Honolulu, Hawaii 96819

JOB NO. 18-03, WP2020 JOB NO. PLH-27
KŪHIŌ HIGHWAY (HARDY-OXFORD)
18" MAIN REPLACEMENT
LĪHU'E WATER SYSTEM
 LĪHU'E, KAUA'I, HAWAII

TRAFFIC CONTROL PLAN - 6



APPROVED:
Kristen H. Yoshida
 FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS
 COUNTY OF KAUAI (FOR WORK WITHIN COUNTY RW)

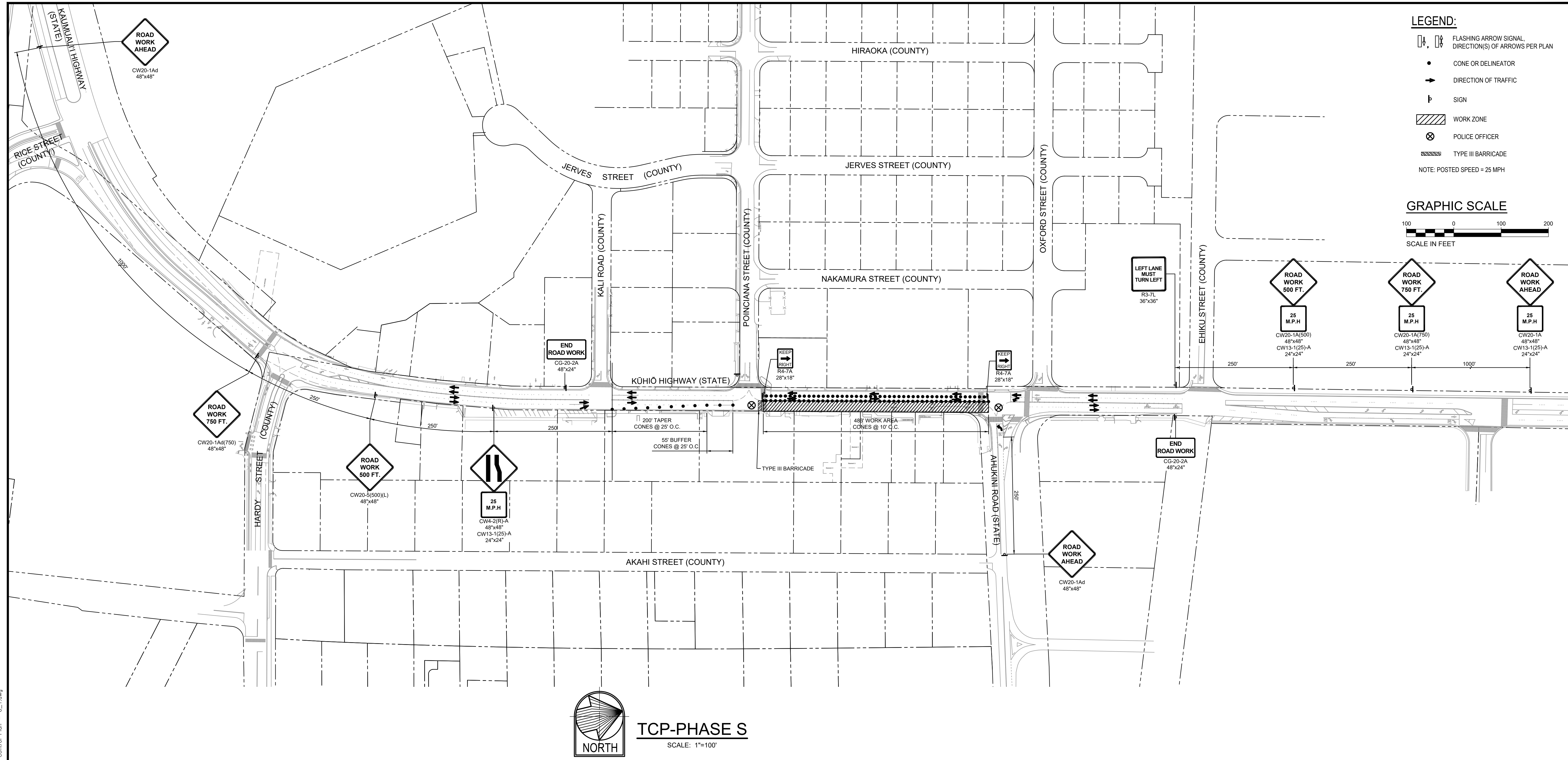
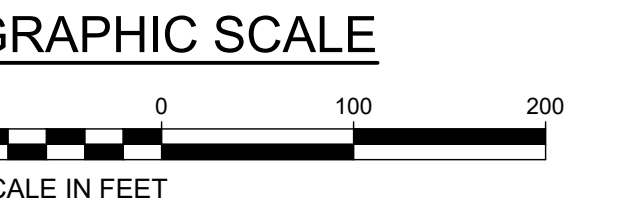
APPROVED:
Jane Reynolds
 FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER
 COUNTY OF KAUAI

10/24/24
 DATE

18/10/24
 DATE

DRAWING NO.
C-417

- LEGEND:**
- FLASHING ARROW SIGNAL DIRECTION(S) OF ARROWS PER PLAN
 - CONE OR DELINEATOR
 - DIRECTION OF TRAFFIC
 - SIGN
 - WORK ZONE
 - POLICE OFFICER
 - TYPE III BARRICADE
- NOTE: POSTED SPEED = 25 MPH



TCP-PHASE S
SCALE: 1"=100'

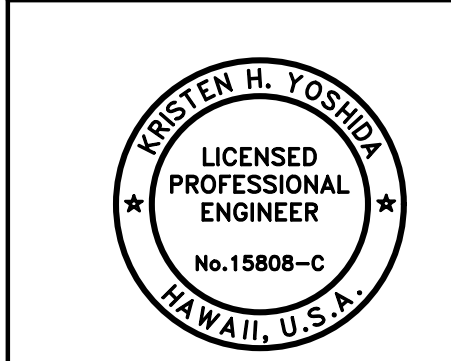
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 Wednesday, August 14, 2024, 3:58:11 PM
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REVISION	DATE	DESCRIPTION	APPROVED

BOWERS + KUBOTA CONSULTING
2183 North King Street, Suite 200
Honolulu, Hawaii 96819

JOB NO. 18-03, WP2020 JOB NO. PLH-27
KŪHIŌ HIGHWAY (HARDY-OXFORD)
18" MAIN REPLACEMENT
LĪHU'E WATER SYSTEM
LĪHU'E, KAUA'I, HAWAII

TRAFFIC CONTROL PLAN - 6.1



Kristen H. Yoshida

DRAWING NO.
C-418

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APRIL 30, 2026
EXPIRATION DATE OF THE LICENSE

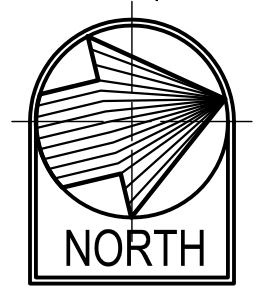
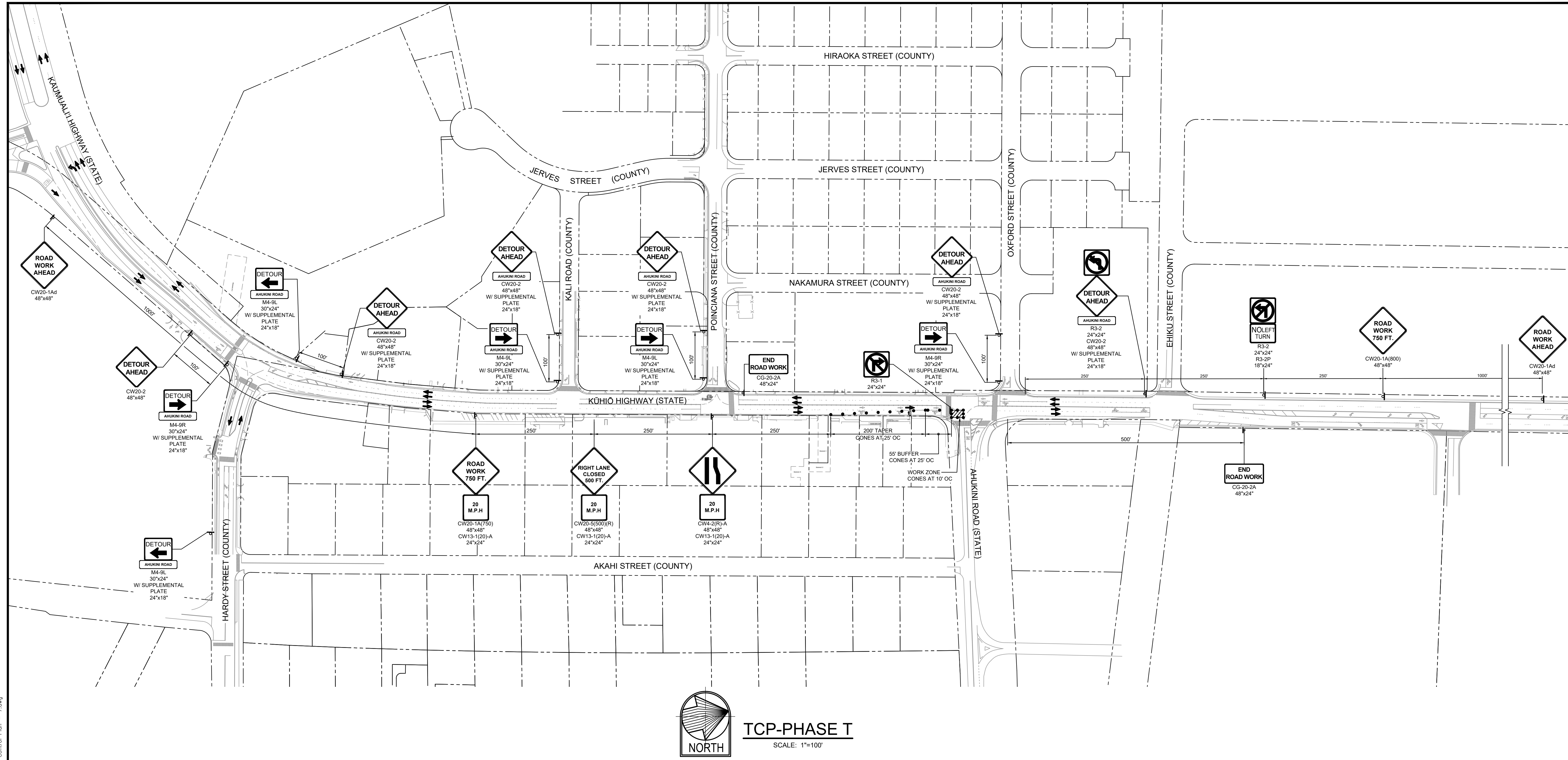
APPROVED:
N/A

FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS
COUNTY OF KAUAI (FOR WORK WITHIN COUNTY RW)

FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER
COUNTY OF KAUAI

DATE
18/10/24

Wednesday, August 14, 2024, 3:58:37 PM
 T:\Vary\Oxford\Watermain\2018740100\04_Graphics\CAD\Sheets\C-419_Traffic Control Plan - 7.dwg
 HALF SIZE TRIMLINE FOR 11" x 17"



TCP-PHASE T
SCALE: 1"=100'

LEGEND:

- FLASHING ARROW SIGNAL
DIRECTION(S) OF ARROWS PER PLAN
 - CONE OR DELINEATOR
 - DIRECTION OF TRAFFIC
 - SIGN
 - WORK ZONE
 - POLICE OFFICER
- NOTE: POSTED SPEED = 25 MPH

GRAPHIC SCALE

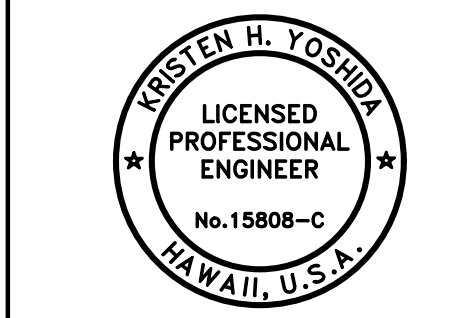


REVISION	DATE	DESCRIPTION	APPROVED

BOWERS + KUBOTA CONSULTING
2183 North King Street, Suite 200
Honolulu, Hawaii 96819

JOB NO. 18-03, WP2020 JOB NO. PLH-27
KŪHIŌ HIGHWAY (HARDY-OXFORD)
18" MAIN REPLACEMENT
LĪHU'E WATER SYSTEM
LĪHU'E, KAUAI, HAWAII

TRAFFIC CONTROL PLAN - 7



Kristen H. Yoshida
APPROVED:

FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS
COUNTY OF KAUAI (FOR WORK WITHIN COUNTY RW)

DATE: 10/24/24

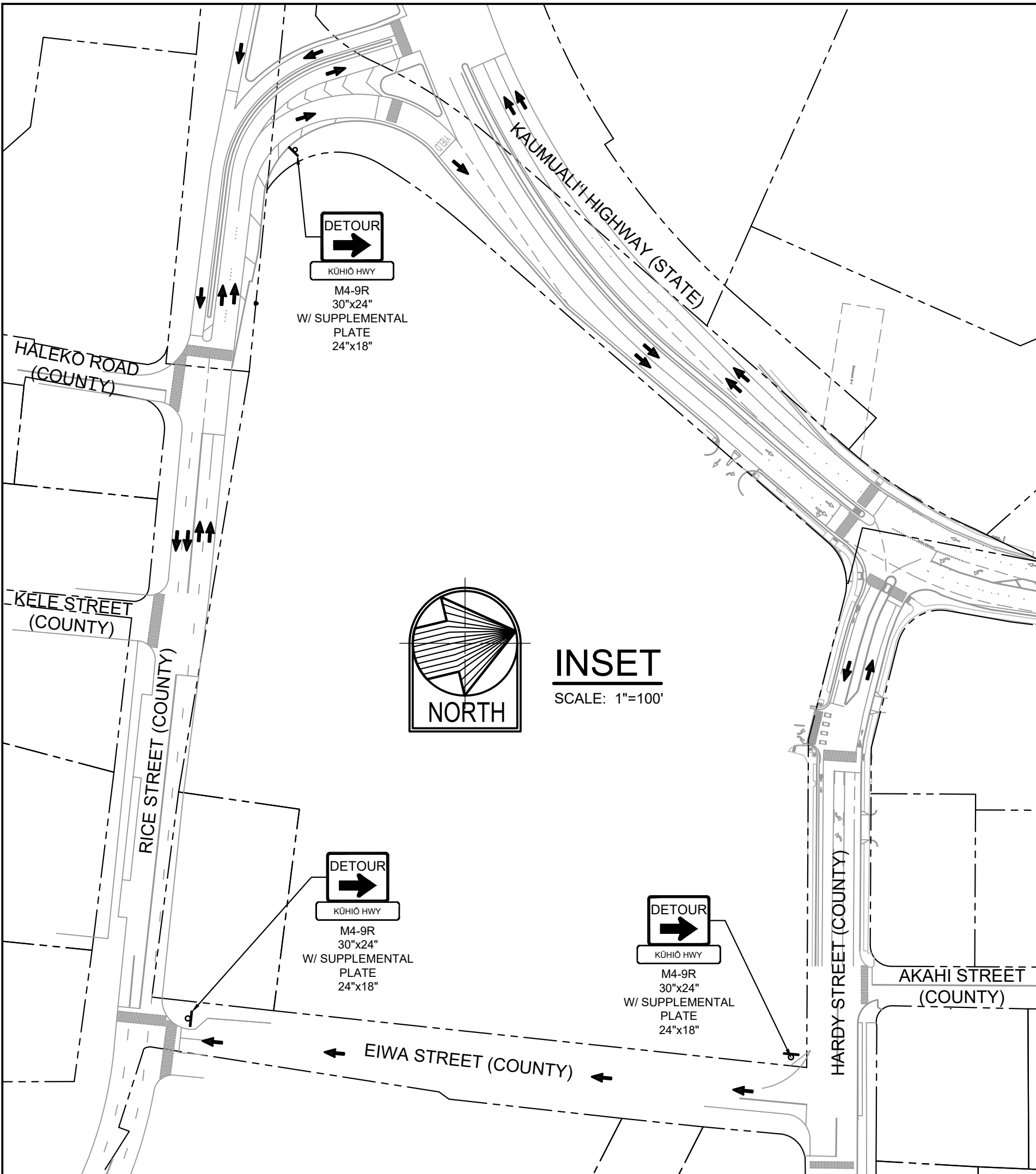
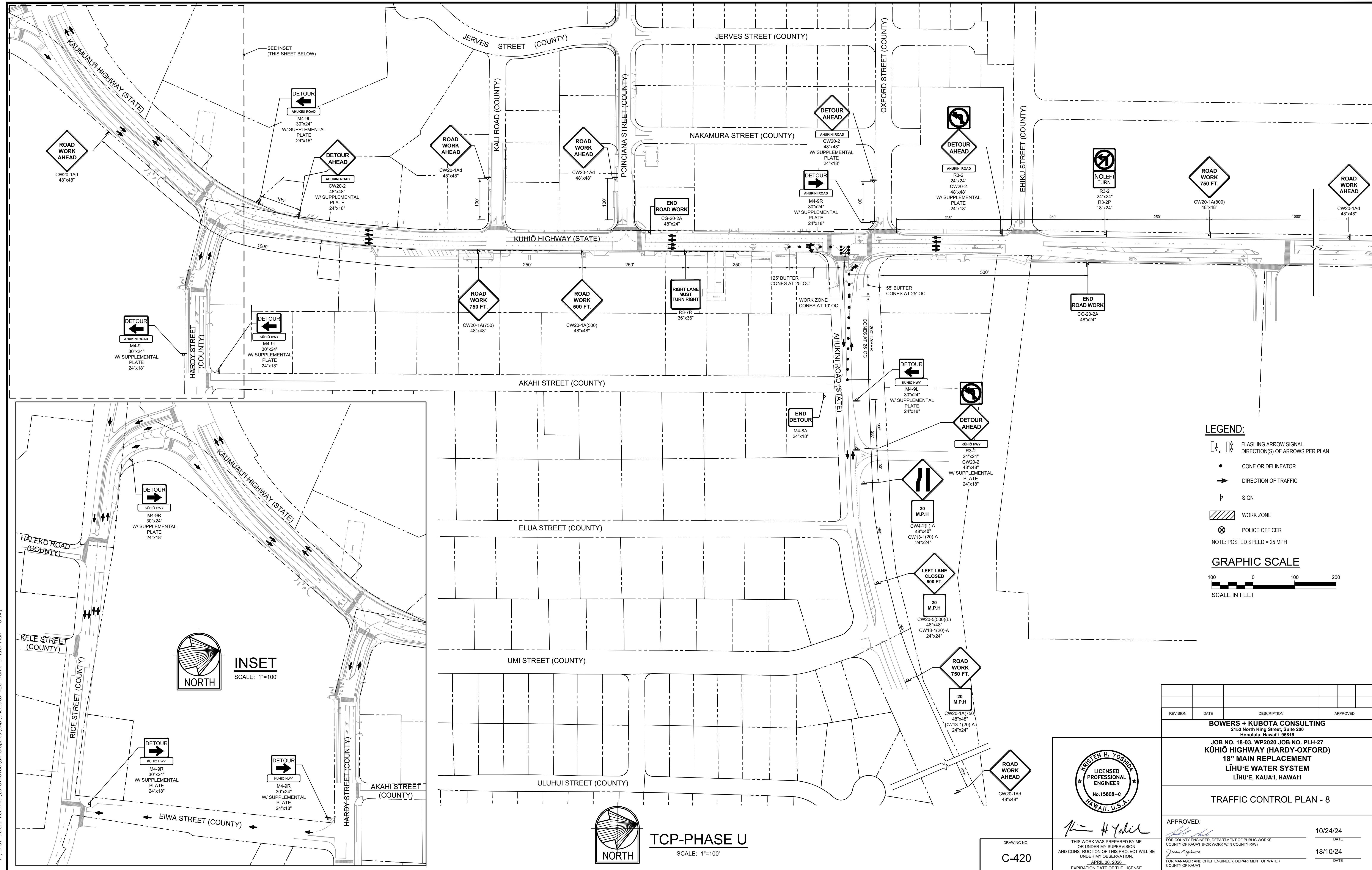
DRAWING NO.
C-419

THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION
AND CONSTRUCTION OF THIS PROJECT WILL BE
UNDER MY OBSERVATION.
APRIL 30, 2026
EXPIRATION DATE OF THE LICENSE

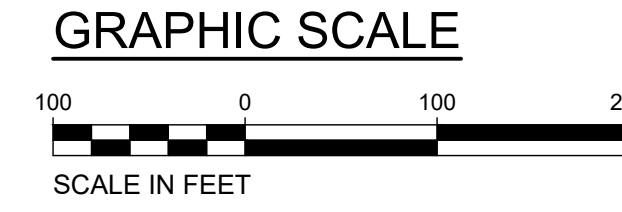
FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER
COUNTY OF KAUAI

DATE: 18/10/24

HAIF SIZE TRIMLINE FOR 11" x 17"
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 T:\Village-Ordov-Honolulu\2018740100\04_Graphics\CAD_Sheets\C-420_Traffic_Control_Plan - 8.dwg



- LEGEND:**
- FLASHING ARROW SIGNAL DIRECTION(S) OF ARROWS PER PLAN
 - CONE OR DELINEATOR
 - DIRECTION OF TRAFFIC
 - SIGN
 - WORK ZONE
 - POLICE OFFICER
- NOTE: POSTED SPEED = 25 MPH



REVISION	DATE	DESCRIPTION	APPROVED

BOWERS + KUBOTA CONSULTING
 2183 North King Street, Suite 200
 Honolulu, Hawaii 96819

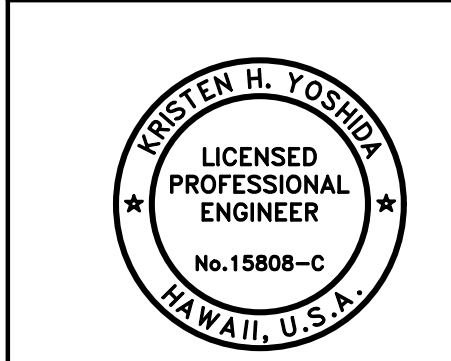
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KŪHIŌ HIGHWAY (HARDY-OXFORD)
18" MAIN REPLACEMENT
LĪHU'E WATER SYSTEM
 LĪHU'E, KAUA'I, HAWAII

TRAFFIC CONTROL PLAN - 8

APPROVED: _____ DATE 10/24/24
 FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS
 COUNTY OF KAUAI (FOR WORK WITHIN COUNTY RW)

 FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER
 COUNTY OF KAUAI

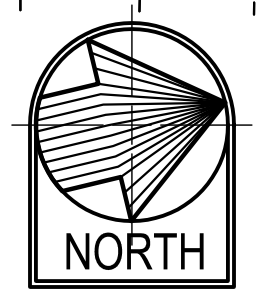
DATE 18/10/24



Kristen H. Yoshida

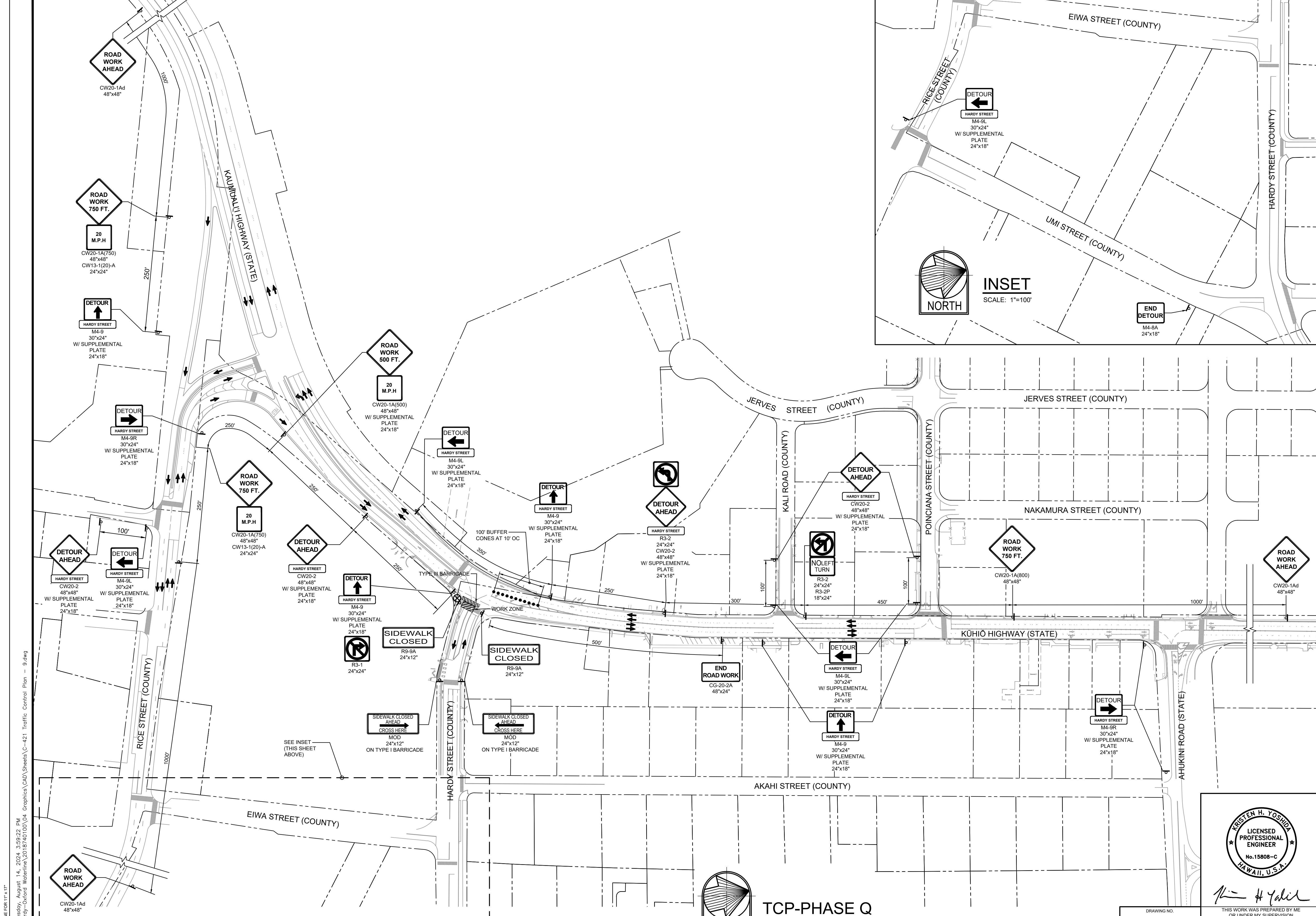
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.
 APRIL 30, 2026
 EXPIRATION DATE OF THE LICENSE

DRAWING NO.
C-420

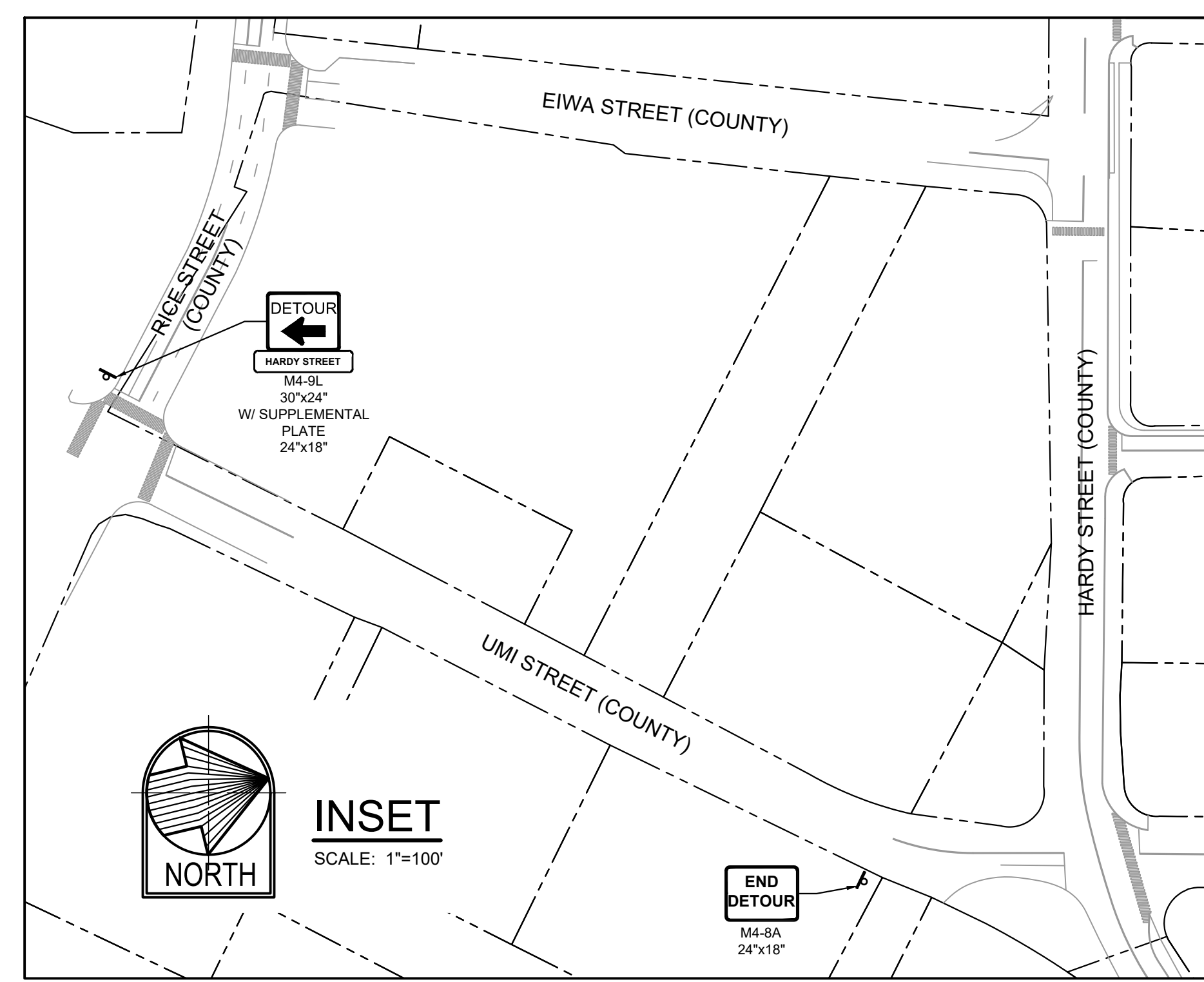
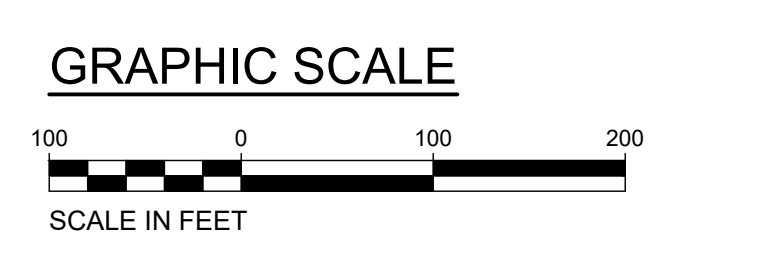


TCP-PHASE U
 SCALE: 1"=100'

FILE	POCKET	FOLDER	NO.



- LEGEND:**
- FLASHING ARROW SIGNAL
DIRECTION(S) OF ARROWS PER PLAN
 - CONE OR DELINEATOR
 - DIRECTION OF TRAFFIC
 - SIGN
 - WORK ZONE
 - POLICE OFFICER
 - TYPE III BARRICADE
- NOTE: POSTED SPEED = 25 MPH
- NOTE:
CONTRACTOR MUST PROVIDE AN ALTERNATE ROUTE FOR PEDESTRIANS IF THE EXISTING SIDEWALK IS COMPROMISED DURING CONSTRUCTION.



HALF SIZE TRIMLINE FOR 11" x 17"
 Wednesday, August 14, 2024, 3:58:57 PM
 T:\Village\Ordov Poterinn\2018740100\04_Graphics\CAD\Sheets\C-421_Traffic Control Plan - 9.dwg

REVISION	DATE	DESCRIPTION	APPROVED

BOWERS + KUBOTA CONSULTING
2183 North King Street, Suite 200
Honolulu, Hawaii 96819

JOB NO. 18-03, WP2020 JOB NO. PLH-27
KŪHIŌ HIGHWAY (HARDY-OXFORD)
18" MAIN REPLACEMENT
LIHUE WATER SYSTEM
LIHUE, KAUA'I, HAWAII

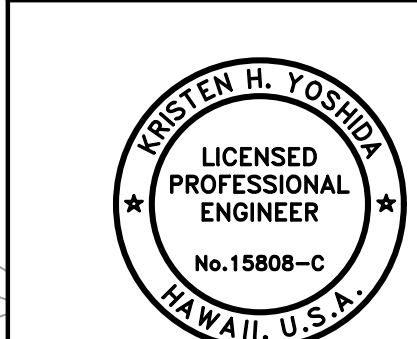
TRAFFIC CONTROL PLAN - 9

APPROVED: 10/24/24
DATE

FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS
COUNTY OF KAUAI (FOR WORK WITHIN COUNTY RW)

18/10/24
DATE

FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER
COUNTY OF KAUAI

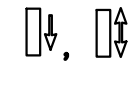








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APRIL 30, 2026
EXPIRATION DATE OF THE LICENSE

DRAWING NO.
C-421

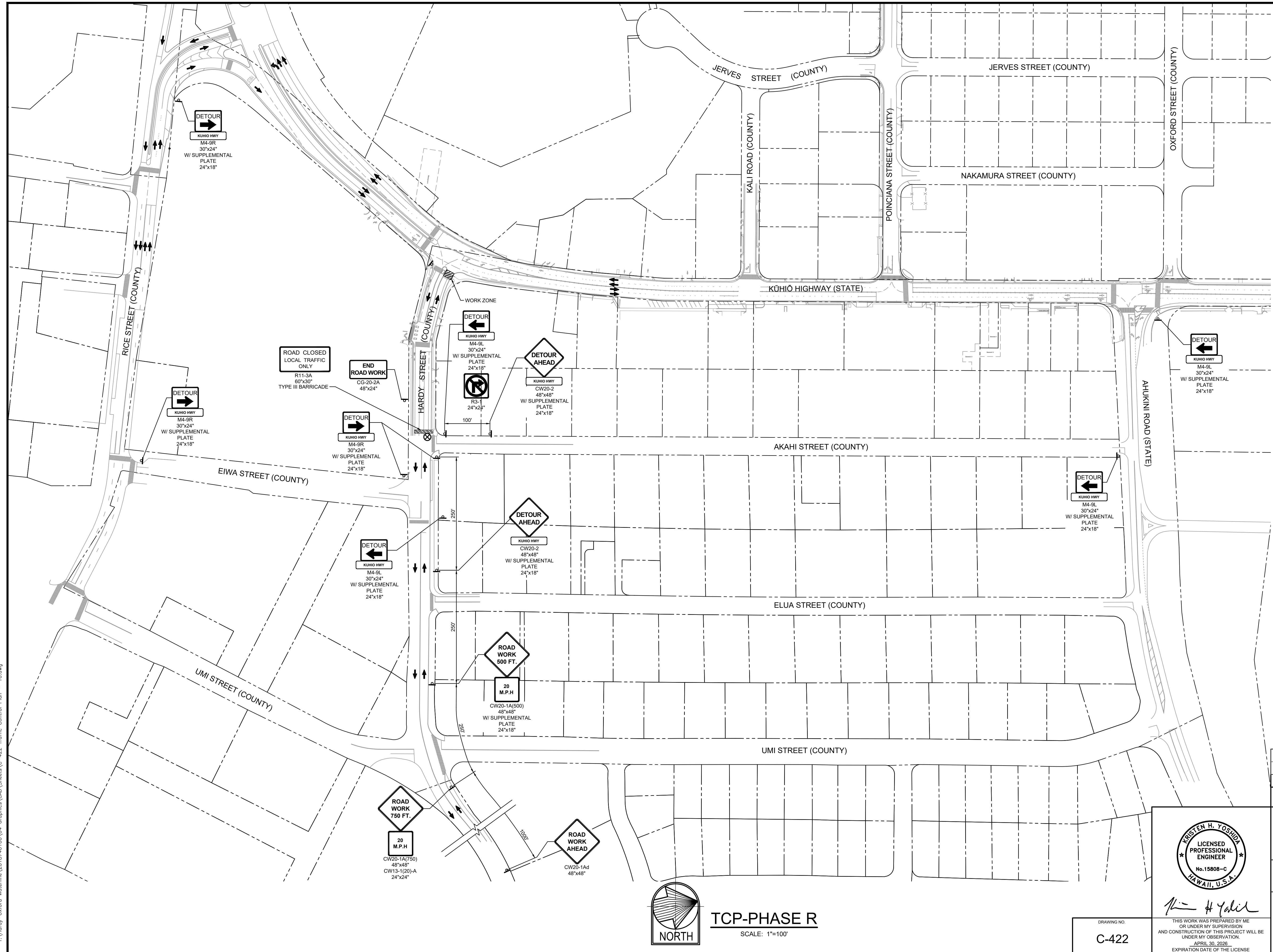
TCP-PHASE Q
SCALE: 1"=100'

LEGEND:

-  FLASHING ARROW SIGNAL
DIRECTION(S) OF ARROWS PER PLAN
 -  CONE OR DELINEATOR
 -  DIRECTION OF TRAFFIC
 -  SIGN
 -  WORK ZONE
 -  POLICE OFFICER
 -  TYPE III BARRICADE
- NOTE: POSTED SPEED = 25 MPH

NOTE:
CONTRACTOR MUST PROVIDE AN ALTERNATE ROUTE FOR PEDESTRIANS IF THE EXISTING SIDEWALK IS COMPROMISED DURING CONSTRUCTION.

GRAPHIC SCALE

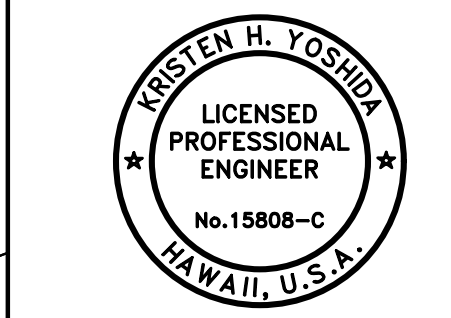


REVISION	DATE	DESCRIPTION	APPROVED

BOWERS + KUBOTA CONSULTING
2183 North King Street, Suite 200
Honolulu, Hawaii 96819

JOB NO. 18-03, WP2020 JOB NO. PLH-27
KŪHIŌ HIGHWAY (HARDY-OXFORD)
18" MAIN REPLACEMENT
LĪHU'E WATER SYSTEM
LĪHU'E, KAUA'I, HAWAII

TRAFFIC CONTROL PLAN - 10

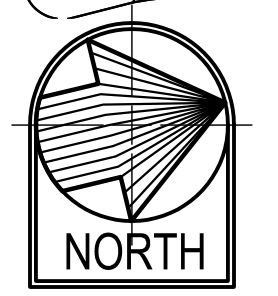


Kristen H. Yoshida
APPROVED: _____

FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS
COUNTY OF KAUAI (FOR WORK WITHIN COUNTY RW)
DATE: 10/24/24

FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER
COUNTY OF KAUAI
DATE: 18/10/24

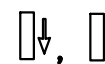





DRAWING NO.
C-422



TCP-PHASE R
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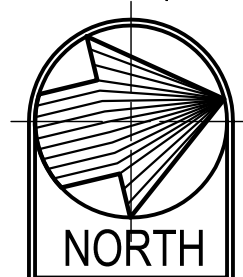
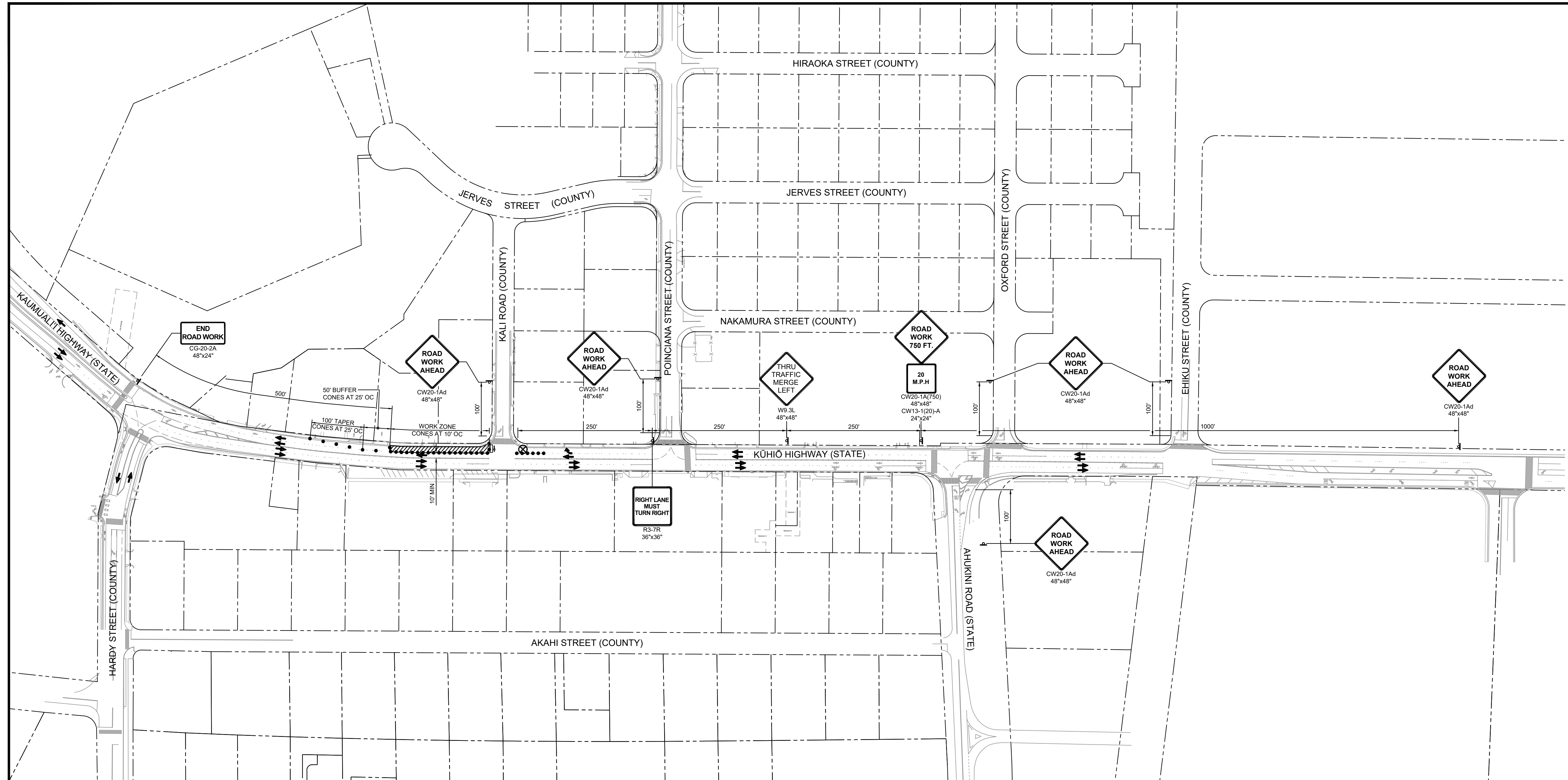
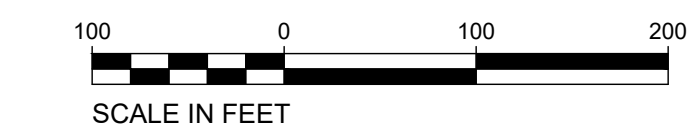
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LEGEND:

-  FLASHING ARROW SIGNAL, DIRECTION(S) OF ARROWS PER PLAN
-  CONE OR DELINEATOR
-  DIRECTION OF TRAFFIC
-  SIGN
-  WORK ZONE
-  POLICE OFFICER

NOTE: POSTED SPEED = 25 MPH

GRAPHIC SCALE



TCP-PHASE I
SCALE: 1"=100'

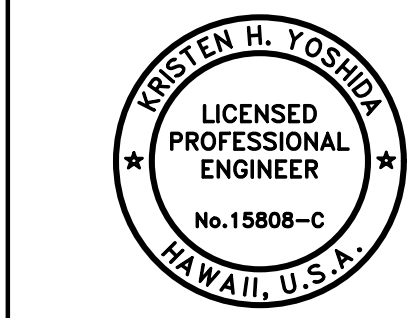
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REVISION	DATE	DESCRIPTION	APPROVED

BOWERS + KUBOTA CONSULTING
2183 North King Street, Suite 200
Honolulu, Hawaii 96819

JOB NO. 18-03, WP2020 JOB NO. PLH-27
**KŪHIŌ HIGHWAY (HARDY-OXFORD)
18" MAIN REPLACEMENT
LIHU'E WATER SYSTEM
LIHU'E, KAUAI, HAWAII**

TRAFFIC CONTROL PLAN - 11



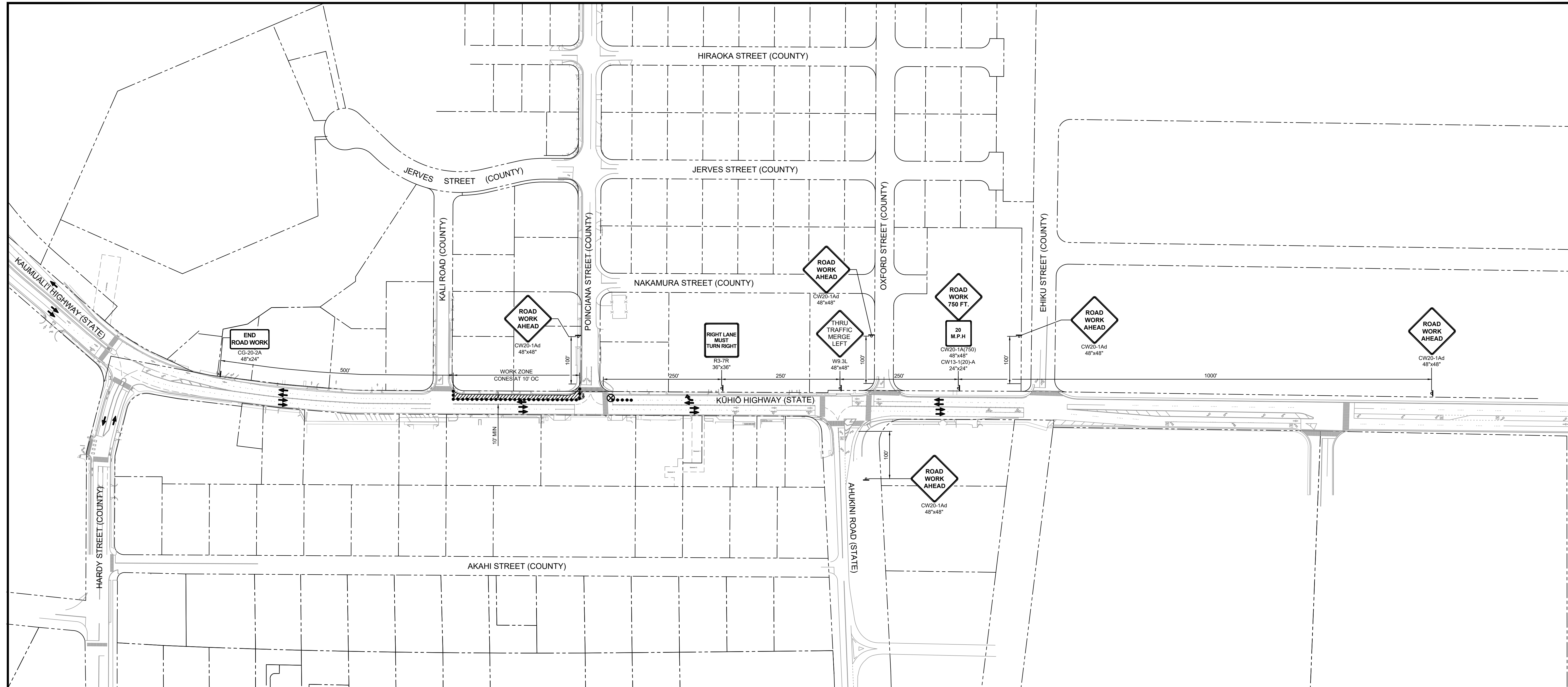
Kristen H. Yoshida

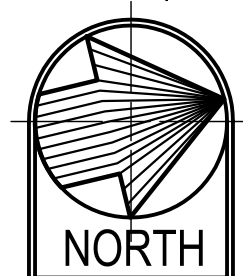
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.
APRIL 30, 2026
EXPIRATION DATE OF THE LICENSE

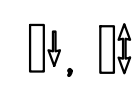


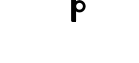
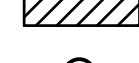
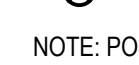
APPROVED:	10/24/24
FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS COUNTY OF KAUAI (FOR WORK WITHIN COUNTY RW)	DATE
<i>Jane Kaganis</i>	18/10/24
FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER COUNTY OF KAUAI	DATE

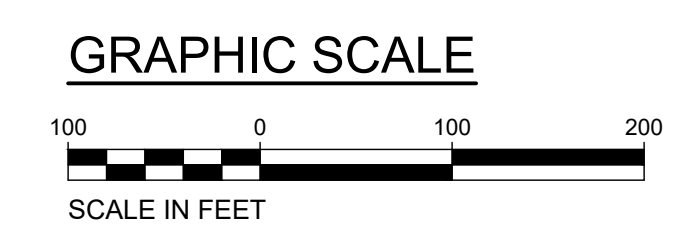
DRAWING NO.
C-423

Wednesday, August 14, 2024, 4:58:59 PM
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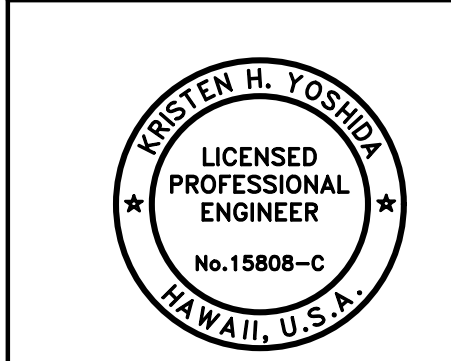



TCP-PHASE 0
 SCALE: 1"=100'

- LEGEND:**
-  FLASHING ARROW SIGNAL, DIRECTION(S) OF ARROWS PER PLAN
 -  CONE OR DELINEATOR
 -  DIRECTION OF TRAFFIC
 -  SIGN
 -  WORK ZONE
 -  POLICE OFFICER
- NOTE: POSTED SPEED = 25 MPH



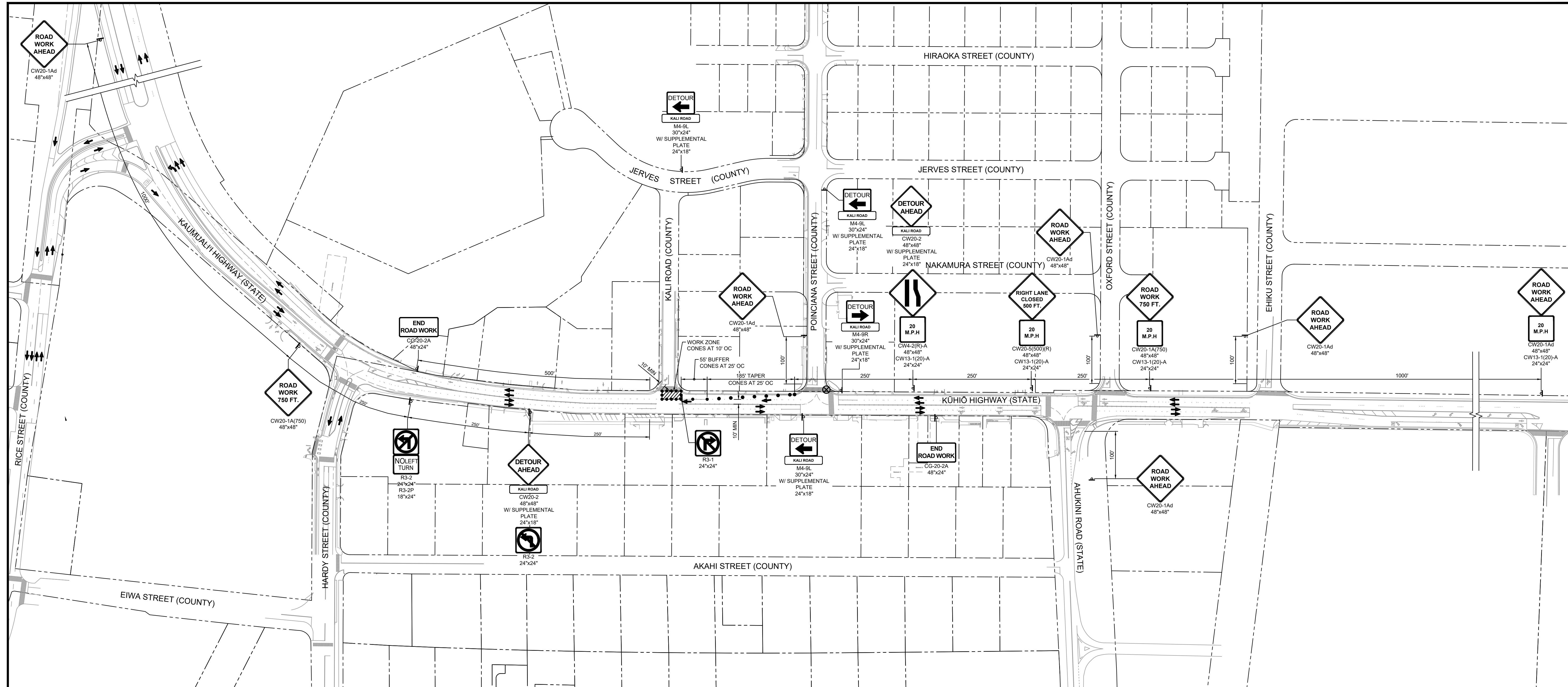
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C-424

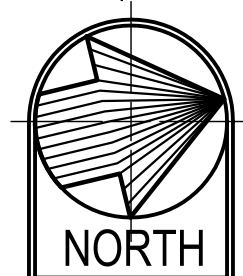


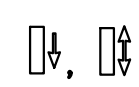

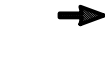



APPROVED:
Kristen H. Yoshida
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 APRIL 30, 2026
 EXPIRATION DATE OF THE LICENSE

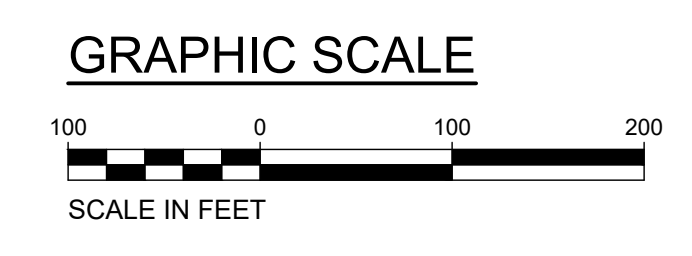
REVISION	DATE	DESCRIPTION	APPROVED
BOWERS + KUBOTA CONSULTING 2183 North King Street, Suite 200 Honolulu, Hawaii 96819			
JOB NO. 18-03, WP2020 JOB NO. PLH-27 KŪHIŌ HIGHWAY (HARDY-OXFORD) 18" MAIN REPLACEMENT LIHU'E WATER SYSTEM LIHU'E, KAUAI, HAWAII			
TRAFFIC CONTROL PLAN - 12			
APPROVED: <i>Jason Kiginoto</i> FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS COUNTY OF KAUAI (FOR WORK WITH COUNTY RW)			10/24/24 DATE
APPROVED: <i>Jason Kiginoto</i> FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER COUNTY OF KAUAI			18/10/24 DATE

Wednesday, August 14, 2024, 4:58:41 PM
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 HALF SIZE TRIMLINE FOR 11" x 17"

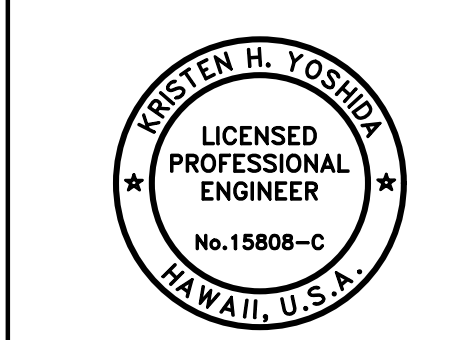



TCP-PHASE P
 SCALE: 1"=100'

- LEGEND:**
-  FLASHING ARROW SIGNAL
DIRECTION(S) OF ARROWS PER PLAN
 -  CONE OR DELINEATOR
 -  DIRECTION OF TRAFFIC
 -  SIGN
 -  WORK ZONE
 -  POLICE OFFICER
- NOTE: POSTED SPEED = 25 MPH



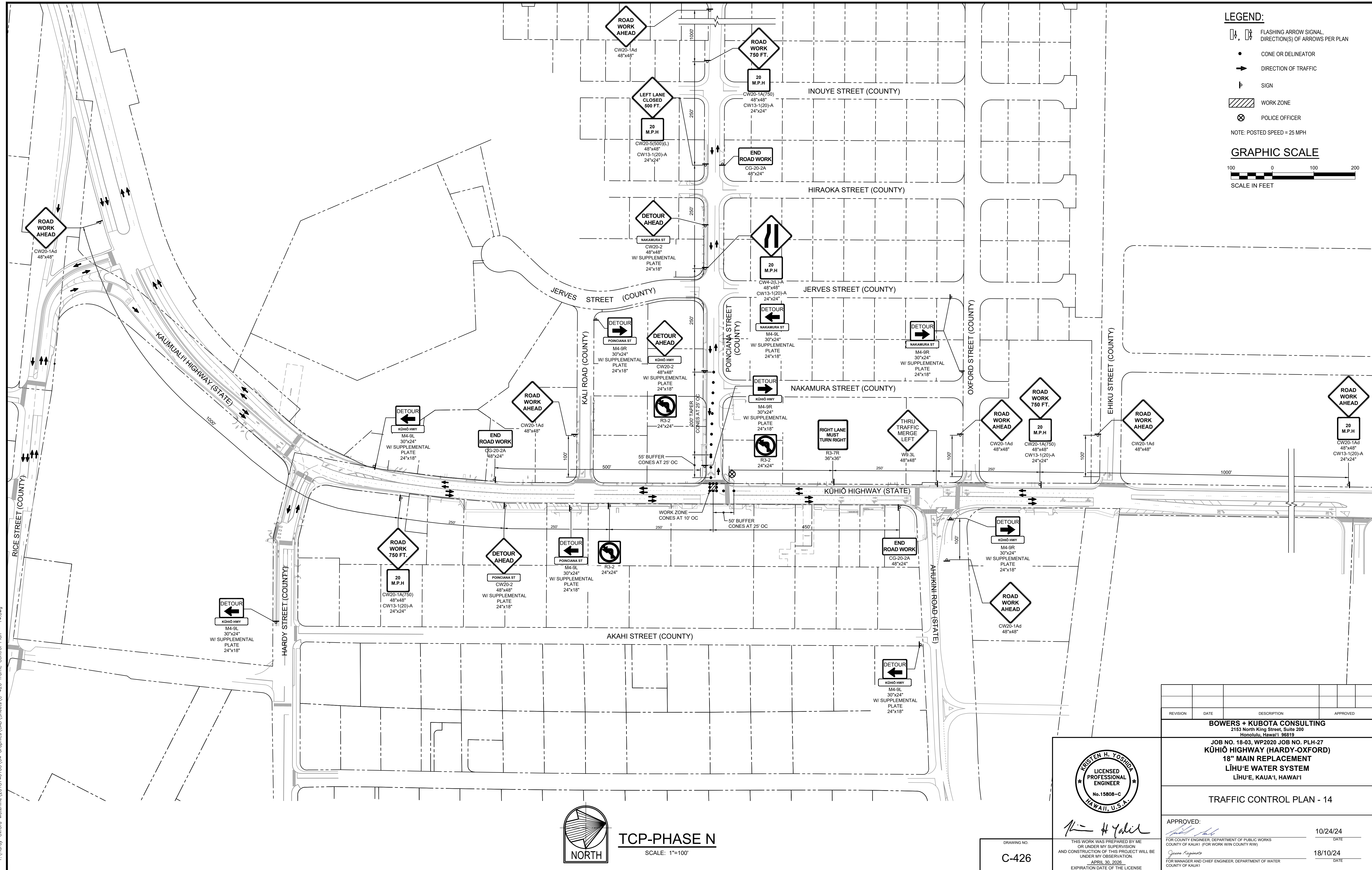
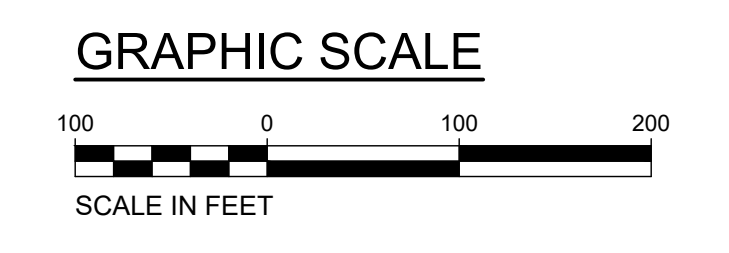
DRAWING NO.
C-425



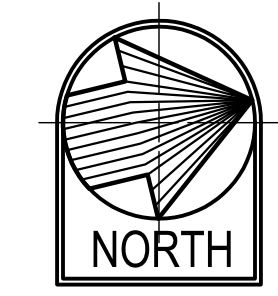
THIS WORK WAS PREPARED BY ME
 OR UNDER MY SUPERVISION
 AND CONSTRUCTION OF THIS PROJECT WILL BE
 UNDER MY OBSERVATION.
 APRIL 30, 2026
 EXPIRATION DATE OF THE LICENSE

REVISION	DATE	DESCRIPTION	APPROVED
BOWERS + KUBOTA CONSULTING 2183 North King Street, Suite 200 Honolulu, Hawaii 96819			
JOB NO. 18-03, WP2020 JOB NO. PLH-27 KŪHIŌ HIGHWAY (HARDY-OXFORD) 18" MAIN REPLACEMENT LĪHU'E WATER SYSTEM LĪHU'E, KAUA'I, HAWAII			
TRAFFIC CONTROL PLAN - 13			
APPROVED:			
		FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS COUNTY OF KAUAI (FOR WORK WITHIN COUNTY RW)	10/24/24 DATE
		FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER COUNTY OF KAUAI	18/10/24 DATE

- LEGEND:**
- FLASHING ARROW SIGNAL, DIRECTION(S) OF ARROWS PER PLAN
 - CONE OR DELINEATOR
 - DIRECTION OF TRAFFIC
 - SIGN
 - WORK ZONE
 - POLICE OFFICER
- NOTE: POSTED SPEED = 25 MPH

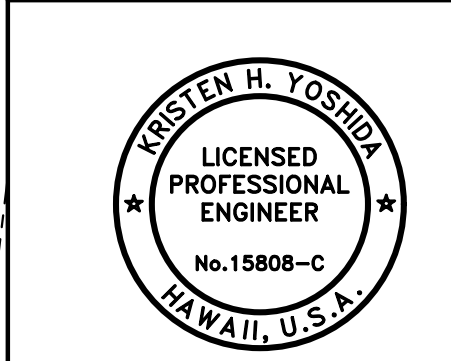


Wednesday, August 14, 2024, 4:51:05 PM
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 HALF SIZE TRIMLINE FOR 11" x 17"



TCP-PHASE N
SCALE: 1"=100'

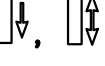



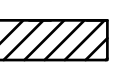

DRAWING NO.
C-426



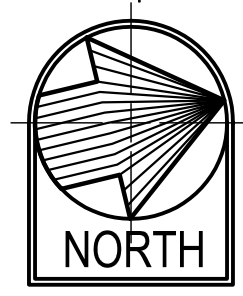
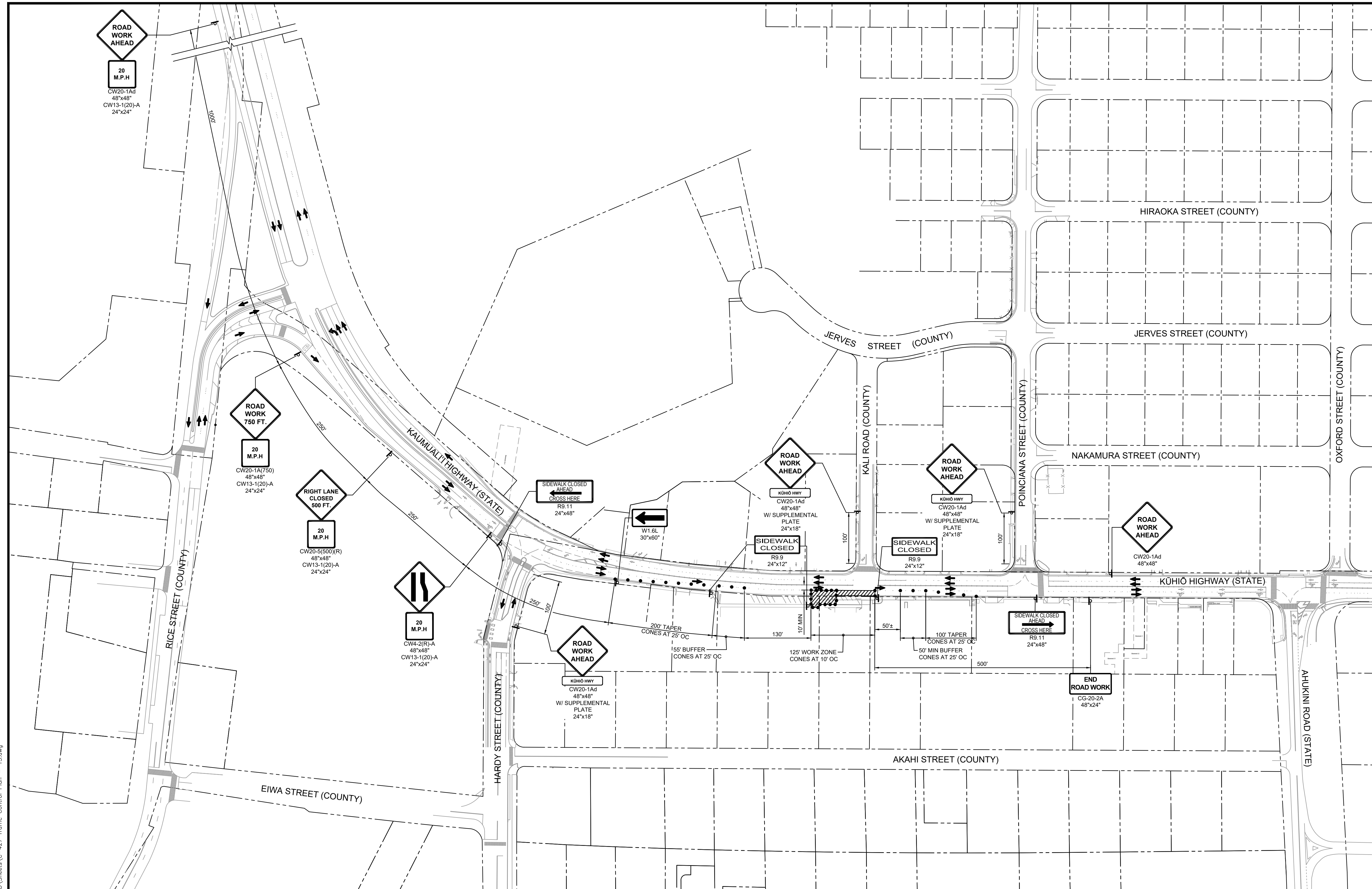
APPROVED: *Kristen H. Yoshida*
 THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.
 APRIL 30, 2026
 EXPIRATION DATE OF THE LICENSE

REVISION	DATE	DESCRIPTION	APPROVED
BOWERS + KUBOTA CONSULTING 2183 North King Street, Suite 200 Honolulu, Hawaii 96819			
JOB NO. 18-03, WP2020 JOB NO. PLH-27 KŪHIŌ HIGHWAY (HARDY-OXFORD) 18" MAIN REPLACEMENT LIHUE WATER SYSTEM LIHUE, KAUAI, HAWAII			
TRAFFIC CONTROL PLAN - 14			
APPROVED: <i>[Signature]</i>			10/24/24 DATE
FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS COUNTY OF KAUAI (FOR WORK WITH COUNTY RW)			18/10/24 DATE
FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER COUNTY OF KAUAI			

LEGEND:

-  FLASHING ARROW SIGNAL
DIRECTION(S) OF ARROWS PER PLAN
 -  CONE OR DELINEATOR
 -  DIRECTION OF TRAFFIC
 -  SIGN
 -  WORK ZONE
 -  POLICE OFFICER
- NOTE: POSTED SPEED = 25 MPH

GRAPHIC SCALE



TCP-PHASE J

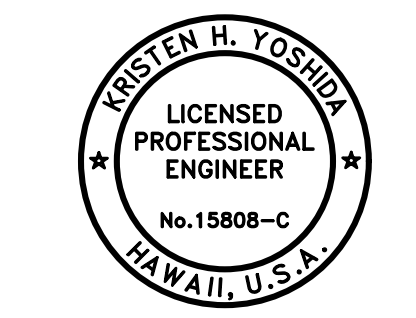
SCALE: 1"=100'

REVISION	DATE	DESCRIPTION	APPROVED

BOWERS + KUBOTA CONSULTING
2183 North King Street, Suite 200
Honolulu, Hawaii 96819

JOB NO. 18-03, WP2020 JOB NO. PLH-27
**KŪHIŌ HIGHWAY (HARDY-OXFORD)
18" MAIN REPLACEMENT
LIHU'E WATER SYSTEM
LIHU'E, KAUA'I, HAWAII**


TRAFFIC CONTROL PLAN - 15



Kristen H. Yoshida

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.
APRIL 30, 2025
EXPIRATION DATE OF THE LICENSE

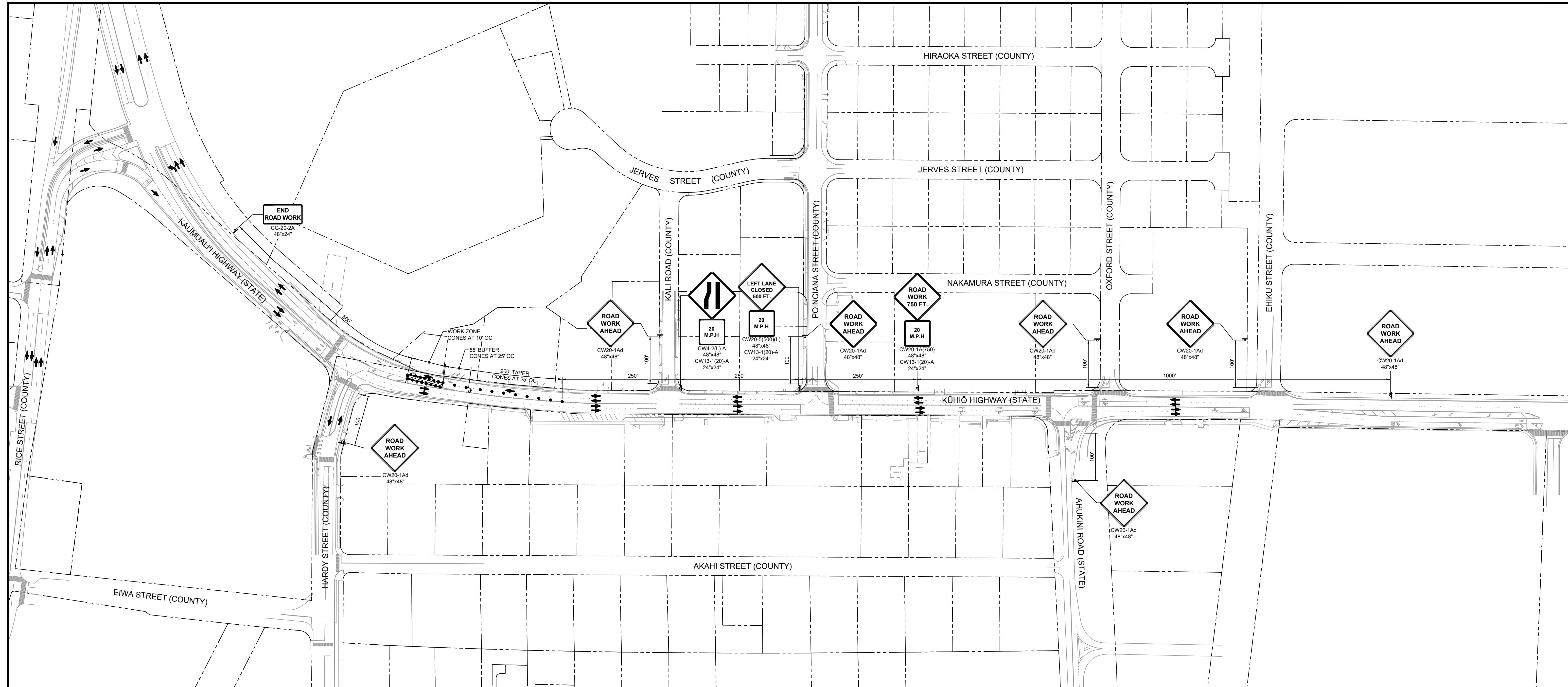
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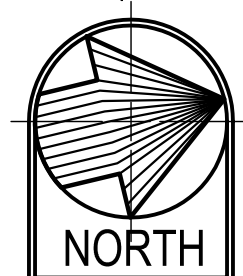
	10/24/24
FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS COUNTY OF KAUAI (FOR WORK WITH COUNTY RW)	DATE
<i>Jason Regan</i>	18/10/24
FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER COUNTY OF KAUAI	DATE

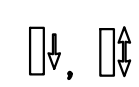


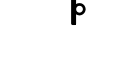

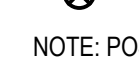
DRAWING NO.
C-427

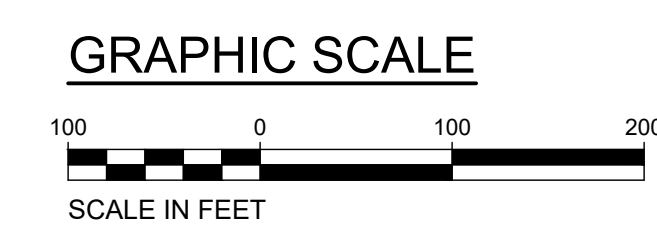
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 HALF SIZE TRIMLINE FOR 11" x 17"




TCP-PHASE C
 SCALE: 1"=100'

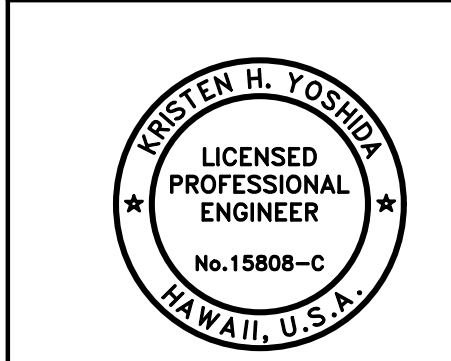
- LEGEND:**
-  FLASHING ARROW SIGNAL
DIRECTION(S) OF ARROWS PER PLAN
 -  CONE OR DELINEATOR
 -  DIRECTION OF TRAFFIC
 -  SIGN
 -  WORK ZONE
 -  POLICE OFFICER
- NOTE: POSTED SPEED = 25 MPH

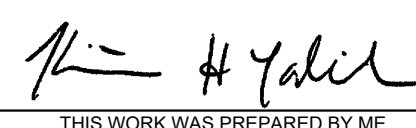


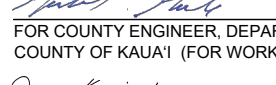

REVISION	DATE	DESCRIPTION	APPROVED

BOWERS + KUBOTA CONSULTING
 2153 North King Street, Suite 200
 Honolulu, Hawaii 96819
JOB NO. 18-03, WP2020 JOB NO. PLH-27
KŪHIŌ HIGHWAY (HARDY-OXFORD)
18" MAIN REPLACEMENT
LIHU'E WATER SYSTEM
 LIHU'E, KAUAI, HAWAII

TRAFFIC CONTROL PLAN - 16



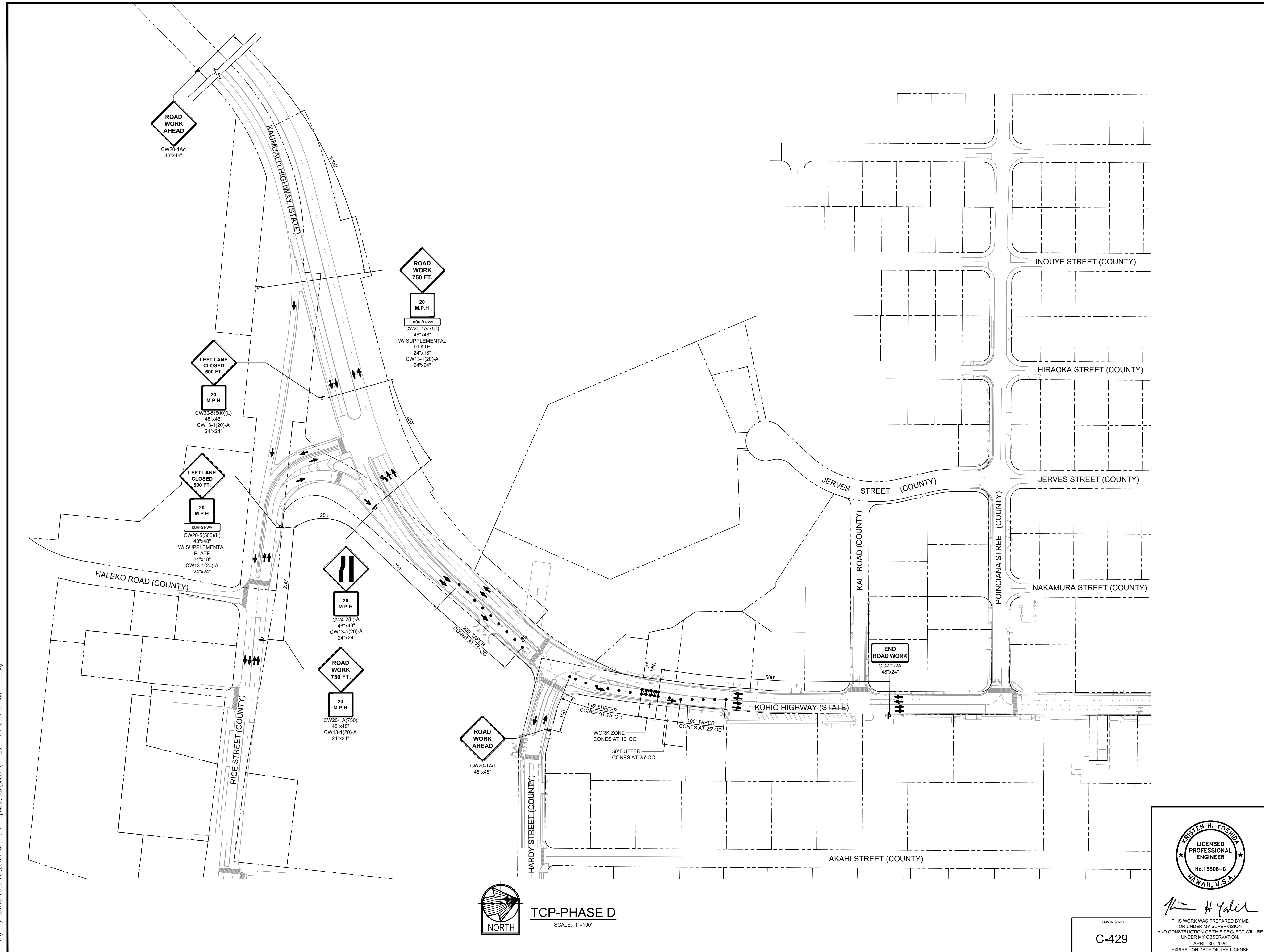
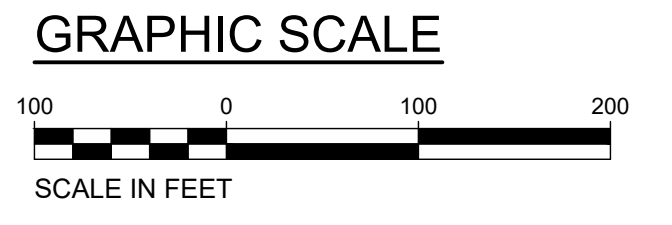

 THIS WORK WAS PREPARED BY ME
 OR UNDER MY SUPERVISION
 AND CONSTRUCTION OF THIS PROJECT WILL BE
 UNDER MY OBSERVATION.
 APRIL 30, 2026
 EXPIRATION DATE OF THE LICENSE

APPROVED:
 10/24/24
 FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS
 COUNTY OF KAUAI (FOR WORK WITH COUNTY RW)
 16/10/24
 FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER
 COUNTY OF KAUAI

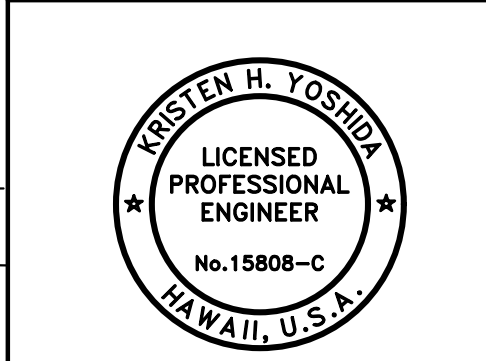
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C-428

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 HALF SIZE TRIMLINE FOR 11" x 17"

- LEGEND:**
- FLASHING ARROW SIGNAL, DIRECTION(S) OF ARROWS PER PLAN
 - CONE OR DELINEATOR
 - DIRECTION OF TRAFFIC
 - SIGN
 - WORK ZONE
 - POLICE OFFICER
- NOTE: POSTED SPEED = 25 MPH



REVISION	DATE	DESCRIPTION	APPROVED
BOWERS + KUBOTA CONSULTING 2183 North King Street, Suite 200 Honolulu, Hawaii 96819			
JOB NO. 18-03, WP2020 JOB NO. PLH-27 KŪHIŌ HIGHWAY (HARDY-OXFORD) 18" MAIN REPLACEMENT LĪHU'E WATER SYSTEM LĪHU'E, KAUA'I, HAWAII			
TRAFFIC CONTROL PLAN - 17			
APPROVED:			10/24/24
FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS COUNTY OF KAUAI (FOR WORK WITHIN COUNTY RW)			DATE
FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER COUNTY OF KAUAI			DATE



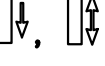



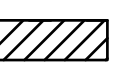

Kristen H. Yoshida
 LICENSED PROFESSIONAL ENGINEER
 No. 15808-C
 HAWAII, U.S.A.

DRAWING NO.
C-429

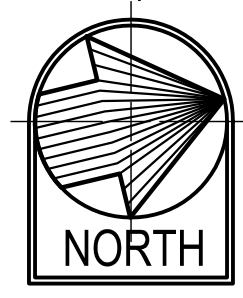
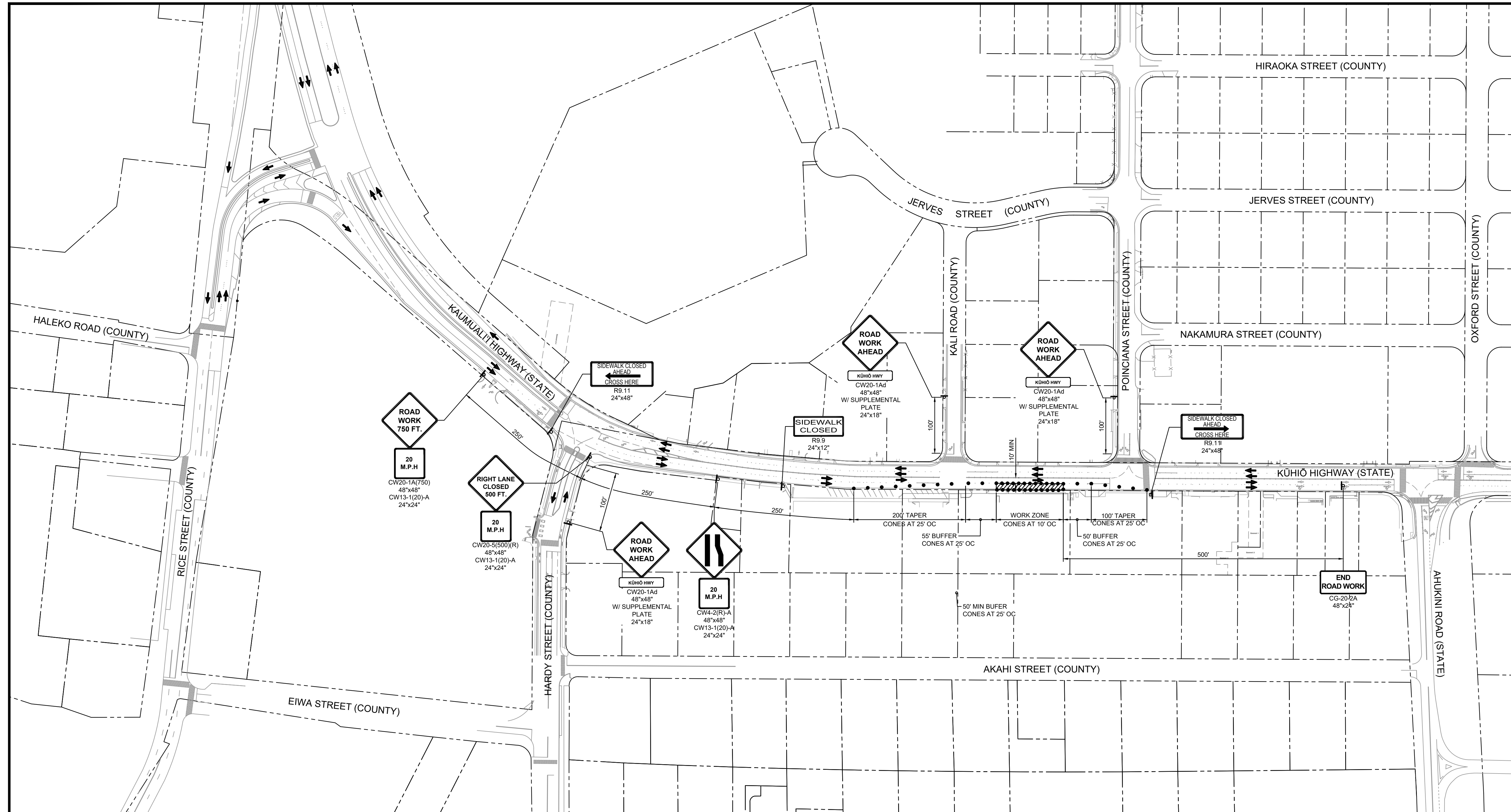
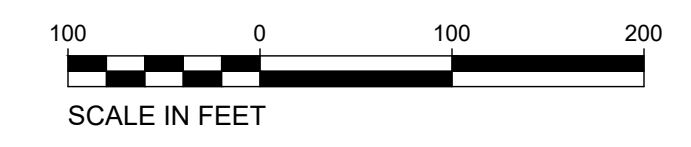
TCP-PHASE D
SCALE: 1"=100'

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 HALF SIZE TRIMLINE FOR 11" x 17"

LEGEND:

-  FLASHING ARROW SIGNAL
DIRECTION(S) OF ARROWS PER PLAN
 -  CONE OR DELINEATOR
 -  DIRECTION OF TRAFFIC
 -  SIGN
 -  WORK ZONE
 -  POLICE OFFICER
- NOTE: POSTED SPEED = 25 MPH

GRAPHIC SCALE



TCP-PHASE K
SCALE: 1"=100'

HALF SIZE TRIMLINE FOR 11" x 17"
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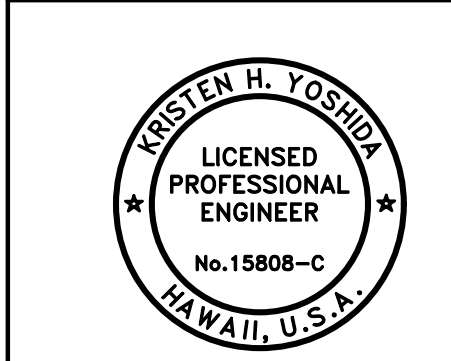
REVISION	DATE	DESCRIPTION	APPROVED

BOWERS + KUBOTA CONSULTING
2183 North King Street, Suite 200
Honolulu, Hawaii 96819

JOB NO. 18-03, WP2020 JOB NO. PLH-27
**KŪHIŌ HIGHWAY (HARDY-OXFORD)
 18" MAIN REPLACEMENT
 LIHU'E WATER SYSTEM
 LIHU'E, KAUAI, HAWAII**

TRAFFIC CONTROL PLAN - 18

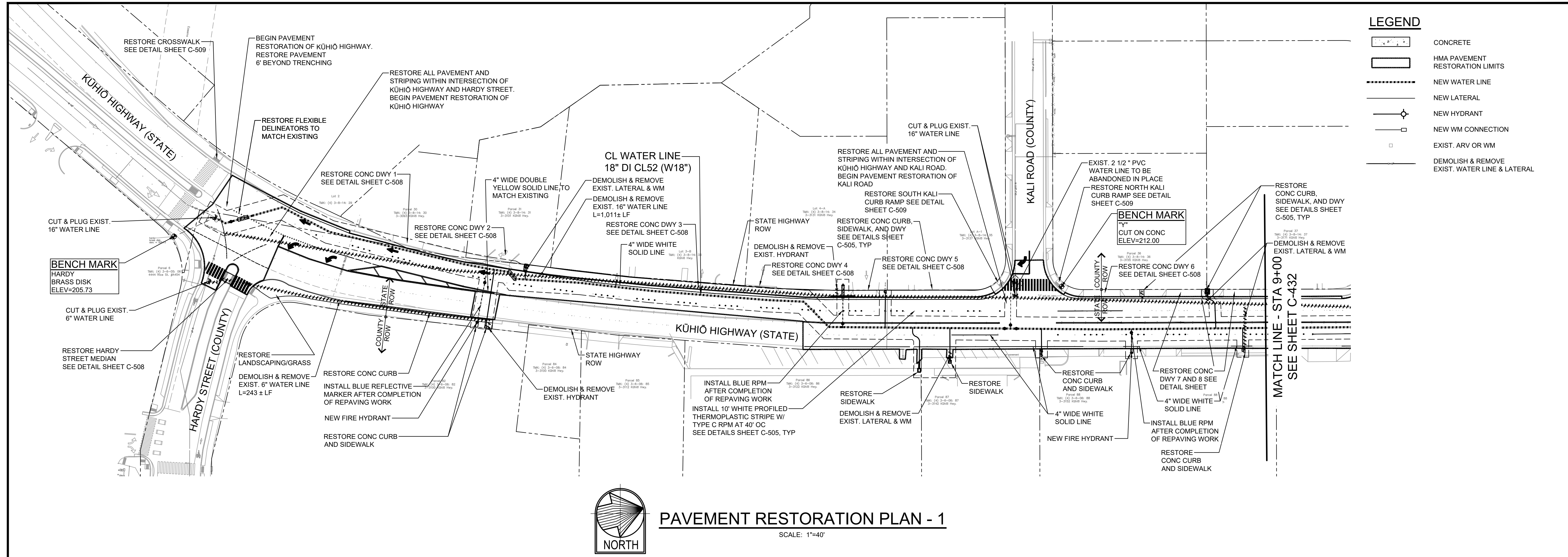
APPROVED: _____ DATE 10/24/24
 FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS
 COUNTY OF KAUAI (FOR WORK WITH COUNTY RW)
 _____ DATE 16/10/24
 FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER
 COUNTY OF KAUAI



Kristen H. Yoshida
 LICENSED PROFESSIONAL ENGINEER
 No. 15808-C
 HAWAII, U.S.A.

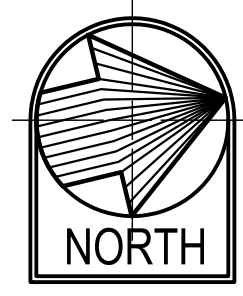
DRAWING NO.
C-430

FILE	POCKET	FOLDER	NO.



LEGEND

	CONCRETE
	HMA PAVEMENT RESTORATION LIMITS
	NEW WATER LINE
	NEW LATERAL
	NEW HYDRANT
	NEW WM CONNECTION
	EXIST. ARV OR WM
	DEMOLISH & REMOVE EXIST. WATER LINE & LATERAL



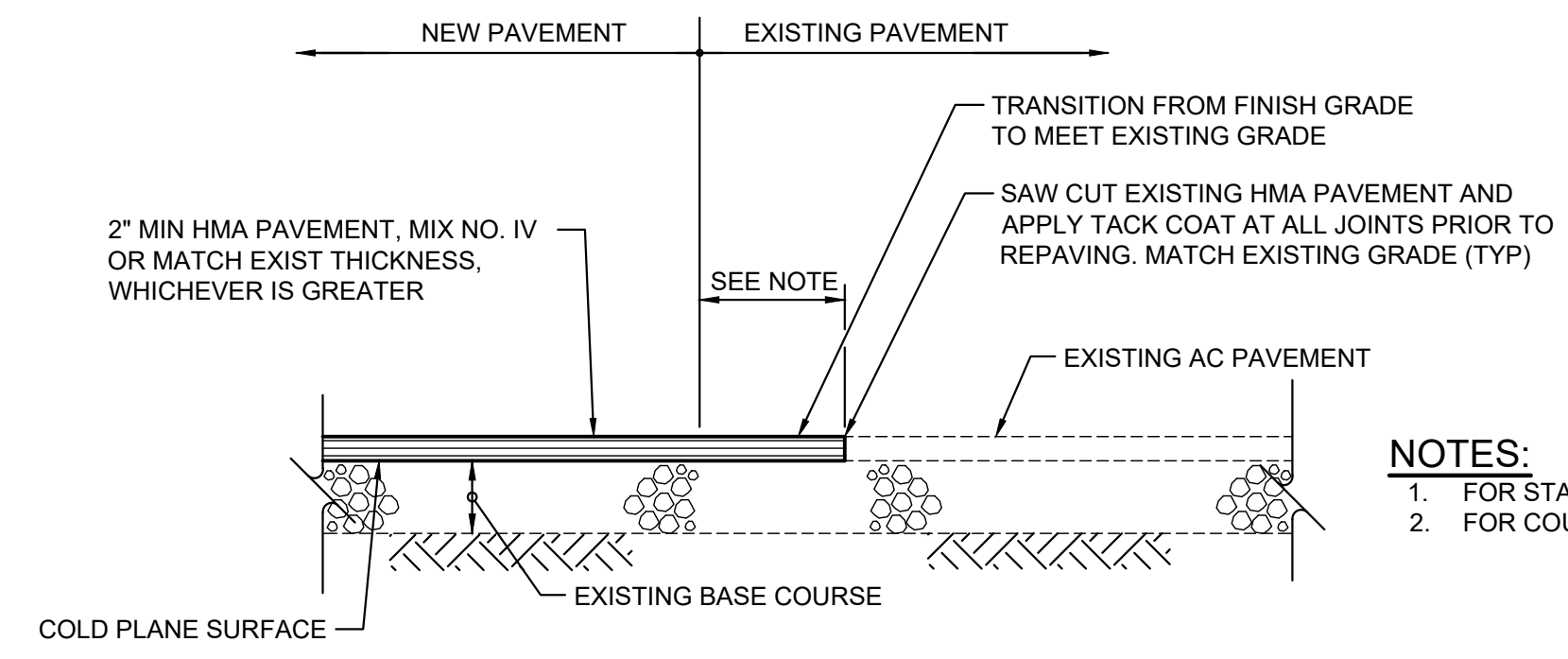
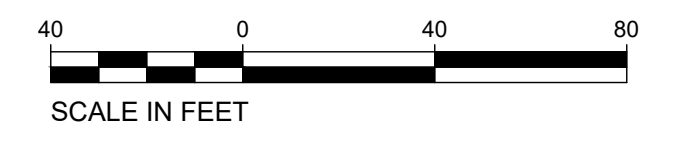
PAVEMENT RESTORATION PLAN - 1

SCALE: 1"=40'

PAVEMENT AND TRENCH RESTORATION NOTES

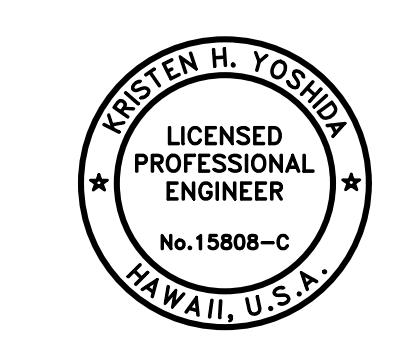
- FOR TRENCHES ALIGNED ALONG LONGITUDINAL DIRECTION OF THE ROADWAY OR SKEWED AT ANGLE OF LESS THAN 45 DEGREES TO THE LONGITUDINAL DIRECTION OF THE ROADWAY, RESTORE THE PAVEMENT IN A MANNER THAT DOES NOT RESULT IN LONGITUDINAL PAVING JOINTS BETWEEN THE LANE MARKINGS OR ON THE PAVED SHOULDERS.
- FOR TRENCHES LOCATED LESS THAN 2 FEET FROM THE EDGE OF PAVEMENT, CURB, OR GUTTER, RESTORE THE PAVEMENT TO THE EDGE OF PAVEMENT, CURB OR GUTTER.
- PLACING THE REPAVING JOINT AT THE CENTERLINE OF THE EXISTING LANE MARKINGS IS ACCEPTABLE. PROVIDE A MINIMUM OF TWO INCHES THICKNESS FOR THE NEW PAVEMENT LAYER. REMOVAL OF THE EXISTING MARKINGS AND INSTALLATION OF THE NEW PAVEMENT MARKINGS.
- FOR TRENCHES ALIGNED TRANSVERSE TO THE LONGITUDINAL DIRECTION OF THE ROADWAY OR SKEWED AT ANGLES OF 45 DEGREES OR GREATER TO THE LONGITUDINAL DIRECTION OF THE ROADWAY, RESTORE THE PAVEMENT FOR A MINIMUM DISTANCE OF 6 FEET AWAY FROM THE EDGES OF THE TRENCH. FOR TRENCHES LESS THAN 30 FEET APART, REPAVE THE ENTIRE AREA BETWEEN THE TRENCHES.
- FOR TRENCHES WITHIN ANY PORTION OF AN INTERSECTION, RESTORE THE PAVEMENT FOR THE ENTIRE INTERSECTION. THE LIMITS OF RESTORATION SHALL BE THE CURVE RETURNS OF THE ROADWAYS OF THE INTERSECTIONS.
- SMOOTHNESS OF PAVED SURFACES: THE DISTANCE OF THE PAVED SURFACE TO THE TESTING EDGE OF A TEN-FOOT STRAIGHT EDGE BETWEEN THE TWO POINTS OF CONTACT SHALL NOT EXCEED 3/16"
- CONTRACTOR SHALL REMOVE COLD MIX PATCH AND PROVIDE HOT MIX TRENCH PATCH WITHIN 14 CALENDAR DAYS OF FINAL TRENCH BACKFILL.
- PAVEMENT JOINT ADHESIVE ON JOINTS
 - USE ON ALL ASPHALT CONSTRUCTION WHERE JOINTS ARE FORMED AT SUCH LOCATIONS BUT NOT LIMITED TO THE FOLLOWING:
 - ADJACENT ASPHALT PAVEMENTS, E.G., TRAFFICKED LANES, SHOULDERS, ETC.
 - ASPHALT PAVEMENT AND ADJACENT CONCRETE PAVEMENT OR CURB AND GUTTER OR ANY OTHER SURFACE WHERE THE BONDING OF THE ASPHALT PAVEMENT AND CONCRETE SURFACE DESIRED.
 - TRANSVERSE JOINTS BETWEEN ASPHALT PAVEMENTS NOT PLACED AT THE SAME TIME OR IF THE PAVEMENT'S TEMPERATURE ON ONE SIDE OF THE JOINT IS BELOW THE MINIMUM TEMPERATURE THE MIX CAN BE AT, DURING ASPHALT PAVEMENT COMPACTION OR INSTALLATION.
 - CUT FACE OF AN EXISTING PAVEMENT WHERE IT WILL HAVE NEW HMA PAVEMENT PLACED AGAINST IT, E.G., UTILITY TRENCHES, PARTIAL OR FULL DEPTH REPAIRS, ETC.
 - PAVEMENT JOINT ADHESIVE IS NOT REQUIRED ON A LONGITUDINAL CONSTRUCTION JOINT BETWEEN ADJACENT HOT MIX ASPHALT PAVEMENTS FORMED BY ECHELON PAVING. ECHELON PAVING IS DEFINED AS PAVING MULTIPLE LANES, SIDE-BY-SIDE WITH ADJACENT PAVERS SLIGHTLY OFFSET AT THE SAME TIME.
 - A LONGITUDINAL CONSTRUCTION JOINT BETWEEN ONE SHIFT'S WORK AND ANOTHER SHALL HAVE PAVEMENT JOINT ADHESIVE APPLIED AT THE JOINT. ANY LONGITUDINAL CONSTRUCTION JOINT FORMED, WITH THE TEMPERATURE ON ONE SIDE OF THE JOINT THAT IS BELOW THE MINIMUM TEMPERATURE THE MIX CAN BE WHEN COMPACTED TO CONTRACT REQUIREMENTS DURING ASPHALT PAVEMENT INSTALLATION, SHALL HAVE PAVEMENT JOINT ADHESIVE APPLIED AT THE JOINT.

GRAPHIC SCALE



SMOOTH RIDING CONNECTION DETAIL
NOT TO SCALE

- NOTES:**
- FOR STATE ROW: VARIES
 - FOR COUNTY ROW: 1'



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APRIL 30, 2026
EXPIRATION DATE OF THE LICENSE

DRAWING NO.
C-431

REVISION	DATE	DESCRIPTION	APPROVED

BOWERS + KUBOTA CONSULTING
2183 North King Street, Suite 200
Honolulu, Hawaii 96819

JOB NO. 18-03, WP2020 JOB NO. PLH-27
KŪHIŌ HIGHWAY (HARDY-OXFORD)
18" MAIN REPLACEMENT
LĪHU'E WATER SYSTEM
LĪHU'E, KAUA'I, HAWAII

PAVEMENT RESTORATION PLAN - 1

APPROVED:

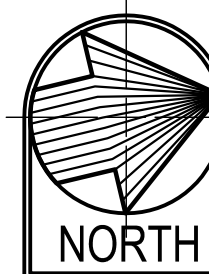
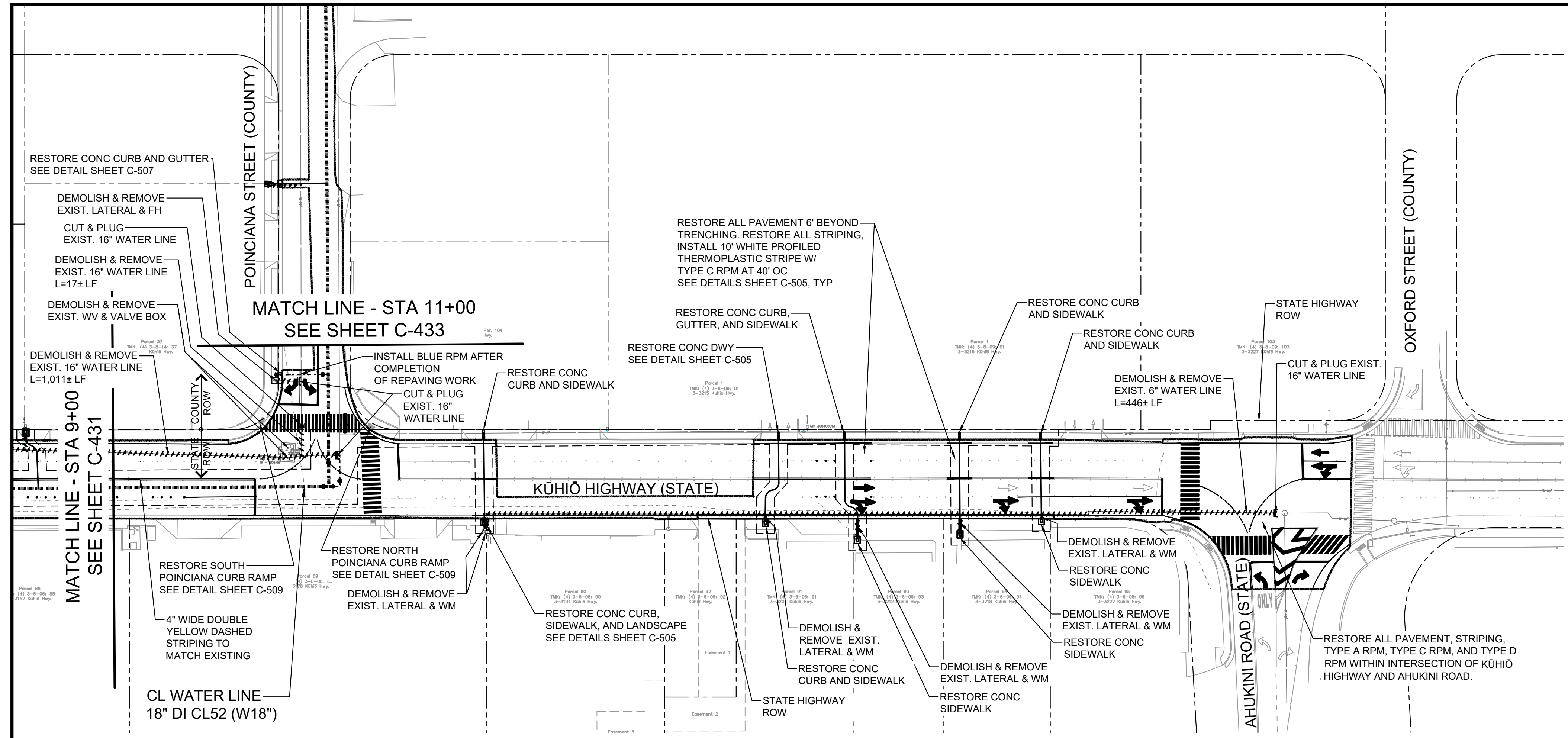
	10/24/24
FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS COUNTY OF KAUAI (FOR WORK WITHIN COUNTY ROW)	DATE
	16/10/24
FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER COUNTY OF KAUAI	DATE

FILE	POCKET	FOLDER	NO.
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HALF SIZE TRIMLINE FOR 11" x 17"
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PAVEMENT AND TRENCH RESTORATION NOTES

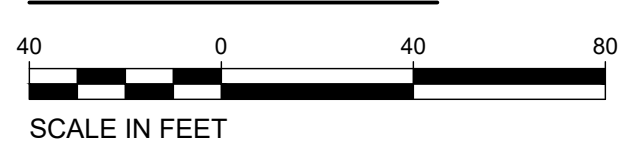
- FOR TRENCHES ALIGNED ALONG LONGITUDINAL DIRECTION OF THE ROADWAY OR SKEWED AT ANGLE OF LESS THAN 45 DEGREES TO THE LONGITUDINAL DIRECTION OF THE ROADWAY, RESTORE THE PAVEMENT IN A MANNER THAT DOES NOT RESULT IN LONGITUDINAL PAVING JOINTS BETWEEN THE LANE MARKINGS OR ON THE PAVED SHOULDERS.
- FOR TRENCHES LOCATED LESS THAN 2 FEET FROM THE EDGE OF PAVEMENT, CURB, OR GUTTER, RESTORE THE PAVEMENT TO THE EDGE OF PAVEMENT, CURB OR GUTTER.
- PLACING THE REPAVING JOINT AT THE CENTERLINE OF THE EXISTING LANE MARKINGS IS ACCEPTABLE. PROVIDE A MINIMUM OF TWO INCHES THICKNESS FOR THE NEW PAVEMENT LAYER. REMOVAL OF THE EXISTING MARKINGS AND INSTALLATION OF THE NEW PAVEMENT MARKINGS.
- FOR TRENCHES ALIGNED TRANSVERSE TO THE LONGITUDINAL DIRECTION OF THE ROADWAY OR SKEWED AT ANGLES OF 45 DEGREES OR GREATER TO THE LONGITUDINAL DIRECTION OF THE ROADWAY, RESTORE THE PAVEMENT FOR A MINIMUM DISTANCE OF 6 FEET AWAY FROM THE EDGES OF THE TRENCH. FOR TRENCHES LESS THAN 30 FEET APART, REPAVE THE ENTIRE AREA BETWEEN THE TRENCHES.
- FOR TRENCHES WITHIN ANY PORTION OF AN INTERSECTION, RESTORE THE PAVEMENT FOR THE ENTIRE INTERSECTION. THE LIMITS OF RESTORATION SHALL BE THE CURVE RETURNS OF THE ROADWAYS OF THE INTERSECTIONS.
- SMOOTHNESS OF PAVED SURFACES: THE DISTANCE OF THE PAVED SURFACE TO THE TESTING EDGE OF A TEN-FOOT STRAIGHT EDGE BETWEEN THE TWO POINTS OF CONTACT SHALL NOT EXCEED 3/16"
- CONTRACTOR SHALL REMOVE COLD MIX PATCH AND PROVIDE HOT MIX TRENCH PATCH WITHIN 14 CALENDAR DAYS OF FINAL TRENCH BACKFILL.
- PAVEMENT JOINT ADHESIVE ON JOINTS
 - USE ON ALL ASPHALT CONSTRUCTION WHERE JOINTS ARE FORMED AT SUCH LOCATIONS BUT NOT LIMITED TO THE FOLLOWING:
 - ADJACENT ASPHALT PAVEMENTS, E.G., TRAFFICKED LANES, SHOULDERS, ETC.
 - ASPHALT PAVEMENT AND ADJACENT CONCRETE PAVEMENT OR CURB AND GUTTER OR ANY OTHER SURFACE WHERE THE BONDING OF THE ASPHALT PAVEMENT AND CONCRETE SURFACE DESIRED.
 - TRANSVERSE JOINTS BETWEEN ASPHALT PAVEMENTS NOT PLACED AT THE SAME TIME OR IF THE PAVEMENT'S TEMPERATURE ON ONE SIDE OF THE JOINT IS BELOW THE MINIMUM TEMPERATURE THE MIX CAN BE AT, DURING ASPHALT PAVEMENT COMPACTION OR INSTALLATION.
 - CUT FACE OF AN EXISTING PAVEMENT WHERE IT WILL HAVE NEW HMA PAVEMENT PLACED AGAINST IT, E.G., UTILITY TRENCHES, PARTIAL OR FULL DEPTH REPAIRS, ETC.
 - PAVEMENT JOINT ADHESIVE IS NOT REQUIRED ON A LONGITUDINAL CONSTRUCTION JOINT BETWEEN ADJACENT HOT MIX ASPHALT PAVEMENTS FORMED BY ECHELON PAVING. ECHELON PAVING IS DEFINED AS PAVING MULTIPLE LANES, SIDE-BY-SIDE WITH ADJACENT PAVERS SLIGHTLY OFFSET AT THE SAME TIME.
 - A LONGITUDINAL CONSTRUCTION JOINT BETWEEN ONE SHIFT'S WORK AND ANOTHER SHALL HAVE PAVEMENT JOINT ADHESIVE APPLIED AT THE JOINT. ANY LONGITUDINAL CONSTRUCTION JOINT FORMED, WITH THE TEMPERATURE ON ONE SIDE OF THE JOINT THAT IS BELOW THE MINIMUM TEMPERATURE THE MIX CAN BE WHEN COMPACTED TO CONTRACT REQUIREMENTS DURING ASPHALT PAVEMENT INSTALLATION, SHALL HAVE PAVEMENT JOINT ADHESIVE APPLIED AT THE JOINT.



PAVEMENT RESTORATION PLAN - 2

SCALE: 1"=40'

GRAPHIC SCALE



LEGEND

- CONCRETE
- HMA PAVEMENT RESTORATION LIMITS
- NEW WATER LINE
- NEW LATERAL
- NEW HYDRANT
- NEW WM CONNECTION
- EXIST. ARV OR WM
- DEMOLISH & REMOVE EXIST. WATER LINE & LATERAL

Wednesday, August 14, 2024, 4:53:50 PM
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 HALF SIZE TRIMLINE FOR 11" x 17"

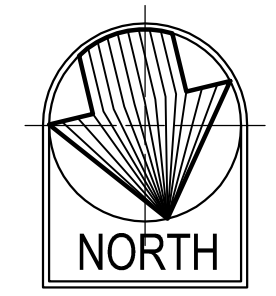
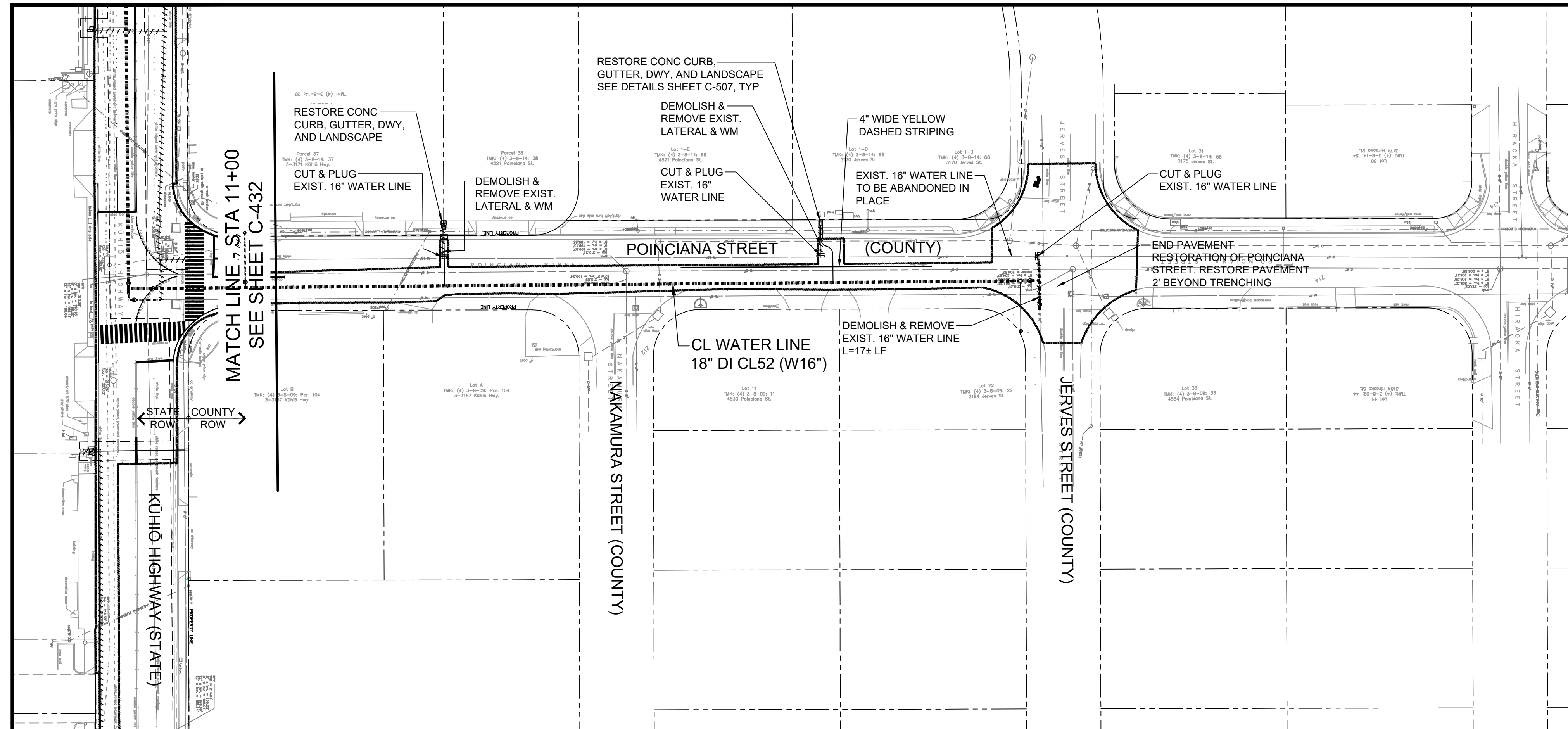
REVISION	DATE	DESCRIPTION	APPROVED
BOWERS + KUBOTA CONSULTING 2183 North King Street, Suite 200 Honolulu, Hawaii 96819			
JOB NO. 18-03, WP2020 JOB NO. PLH-27 KŪHIŌ HIGHWAY (HARDY-OXFORD) 18" MAIN REPLACEMENT LĪHU'E WATER SYSTEM LĪHU'E, KAUA'I, HAWAII			
PAVEMENT RESTORATION PLAN - 2			
APPROVED:		10/24/24 <small>DATE</small>	
<small>FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS COUNTY OF KAUAI (FOR WORK WITHIN COUNTY RW)</small>		16/10/24 <small>DATE</small>	
<small>FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER COUNTY OF KAUAI</small>			

DRAWING NO.
C-432

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.
 APRIL 30, 2026
 EXPIRATION DATE OF THE LICENSE

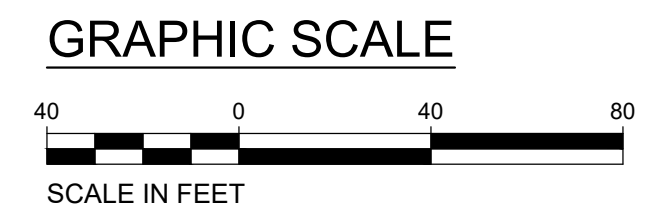
PAVEMENT AND TRENCH RESTORATION NOTES

- FOR TRENCHES ALIGNED ALONG LONGITUDINAL DIRECTION OF THE ROADWAY OR SKEWED AT ANGLE OF LESS THAN 45 DEGREES TO THE LONGITUDINAL DIRECTION OF THE ROADWAY, RESTORE THE PAVEMENT IN A MANNER THAT DOES NOT RESULT IN LONGITUDINAL PAVING JOINTS BETWEEN THE LANE MARKINGS OR ON THE PAVED SHOULDERS.
- FOR TRENCHES LOCATED LESS THAN 2 FEET FROM THE EDGE OF PAVEMENT, CURB, OR GUTTER, RESTORE THE PAVEMENT TO THE EDGE OF PAVEMENT, CURB OR GUTTER.
- PLACING THE REPAVING JOINT AT THE CENTERLINE OF THE EXISTING LANE MARKINGS IS ACCEPTABLE. PROVIDE A MINIMUM OF TWO INCHES THICKNESS FOR THE NEW PAVEMENT LAYER. REMOVAL OF THE EXISTING MARKINGS AND INSTALLATION OF THE NEW PAVEMENT MARKINGS.
- FOR TRENCHES ALIGNED TRANSVERSE TO THE LONGITUDINAL DIRECTION OF THE ROADWAY OR SKEWED AT ANGLES OF 45 DEGREES OR GREATER TO THE LONGITUDINAL DIRECTION OF THE ROADWAY, RESTORE THE PAVEMENT FOR A MINIMUM DISTANCE OF 6 FEET AWAY FROM THE EDGES OF THE TRENCH. FOR TRENCHES LESS THAN 30 FEET APART, REPAVE THE ENTIRE AREA BETWEEN THE TRENCHES.
- FOR TRENCHES WITHIN ANY PORTION OF AN INTERSECTION, RESTORE THE PAVEMENT FOR THE ENTIRE INTERSECTION. THE LIMITS OF RESTORATION SHALL BE THE CURVE RETURNS OF THE ROADWAYS OF THE INTERSECTIONS.
- SMOOTHNESS OF PAVED SURFACES: THE DISTANCE OF THE PAVED SURFACE TO THE TESTING EDGE OF A TEN-FOOT STRAIGHT EDGE BETWEEN THE TWO POINTS OF CONTACT SHALL NOT EXCEED 3/16"
- CONTRACTOR SHALL REMOVE COLD MIX PATCH AND PROVIDE HOT MIX TRENCH PATCH WITHIN 14 CALENDAR DAYS OF FINAL TRENCH BACKFILL.
- PAVEMENT JOINT ADHESIVE ON JOINTS
 - USE ON ALL ASPHALT CONSTRUCTION WHERE JOINTS ARE FORMED AT SUCH LOCATIONS BUT NOT LIMITED TO THE FOLLOWING:
 - ADJACENT ASPHALT PAVEMENTS, E.G., TRAFFICKED LANES, SHOULDERS, ETC.
 - ASPHALT PAVEMENT AND ADJACENT CONCRETE PAVEMENT OR CURB AND GUTTER OR ANY OTHER SURFACE WHERE THE BONDING OF THE ASPHALT PAVEMENT AND CONCRETE SURFACE DESIRED.
 - TRANSVERSE JOINTS BETWEEN ASPHALT PAVEMENTS NOT PLACED AT THE SAME TIME OR IF THE PAVEMENT'S TEMPERATURE ON ONE SIDE OF THE JOINT IS BELOW THE MINIMUM TEMPERATURE THE MIX CAN BE AT, DURING ASPHALT PAVEMENT COMPACTION OR INSTALLATION.
 - CUT FACE OF AN EXISTING PAVEMENT WHERE IT WILL HAVE NEW HMA PAVEMENT PLACED AGAINST IT, E.G., UTILITY TRENCHES, PARTIAL OR FULL DEPTH REPAIRS, ETC.
 - PAVEMENT JOINT ADHESIVE IS NOT REQUIRED ON A LONGITUDINAL CONSTRUCTION JOINT BETWEEN ADJACENT HOT MIX ASPHALT PAVEMENTS FORMED BY ECHELON PAVING. ECHELON PAVING IS DEFINED AS PAVING MULTIPLE LANES, SIDE-BY-SIDE WITH ADJACENT PAVERS SLIGHTLY OFFSET AT THE SAME TIME.
 - A LONGITUDINAL CONSTRUCTION JOINT BETWEEN ONE SHIFT'S WORK AND ANOTHER SHALL HAVE PAVEMENT JOINT ADHESIVE APPLIED AT THE JOINT. ANY LONGITUDINAL CONSTRUCTION JOINT FORMED, WITH THE TEMPERATURE ON ONE SIDE OF THE JOINT THAT IS BELOW THE MINIMUM TEMPERATURE THE MIX CAN BE WHEN COMPACTED TO CONTRACT REQUIREMENTS DURING ASPHALT PAVEMENT INSTALLATION, SHALL HAVE PAVEMENT JOINT ADHESIVE APPLIED AT THE JOINT.



PAVEMENT RESTORATION PLAN - 3

SCALE: 1"=40'

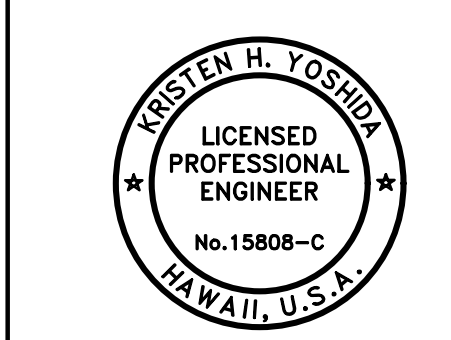


LEGEND

- CONCRETE
- HMA PAVEMENT RESTORATION LIMITS
- NEW WATER LINE
- NEW LATERAL
- NEW HYDRANT
- NEW WM CONNECTION
- EXIST. ARV OR WM
- DEMOLISH & REMOVE EXIST. WATER LINE & LATERAL

Wednesday, August 21, 2024, 10:07:17 AM
 T:\Vary-Ordor\Water\2018\240100\04_Graphics\CAD\Sheets\C-433_Pavement_Restoration_Plan - 3.dwg
 HALF SIZE TRIMLINE FOR 11" x 17"

DRAWING NO.
C-433



Kristen H. Yoshida
APPROVED:

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.
APRIL 30, 2026
EXPIRATION DATE OF THE LICENSE

REVISION	DATE	DESCRIPTION	APPROVED

BOWERS + KUBOTA CONSULTING
2183 North King Street, Suite 200
Honolulu, Hawaii 96819

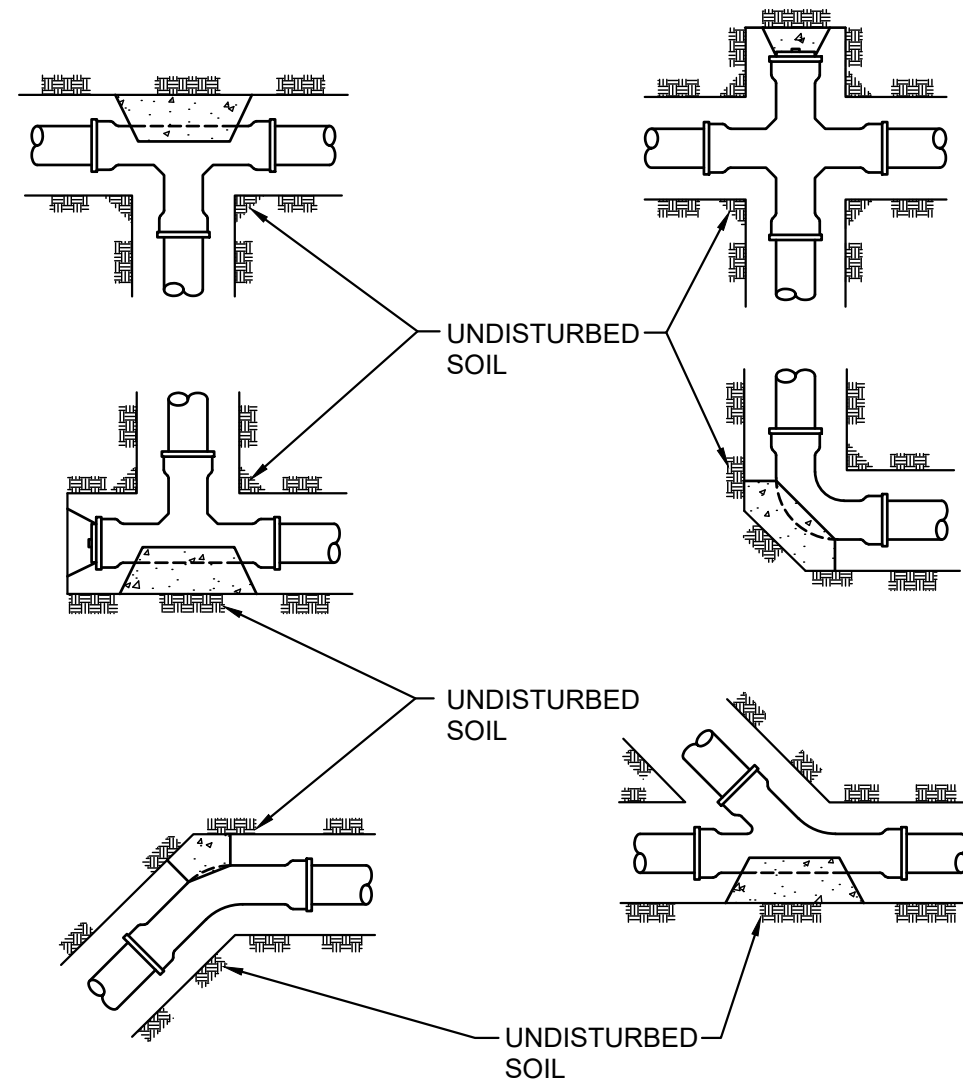
JOB NO. 18-03, WP2020 JOB NO. PLH-27
**KŪHIŌ HIGHWAY (HARDY-OXFORD)
18" MAIN REPLACEMENT
LIHU'E WATER SYSTEM
LIHU'E, KAUAI, HAWAII**

PAVEMENT RESTORATION PLAN - 3

FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS
COUNTY OF KAUAI (FOR WORK WITHIN COUNTY ROW)
Jane Reynolds
FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER
COUNTY OF KAUAI

10/24/24
DATE

16/10/24
DATE



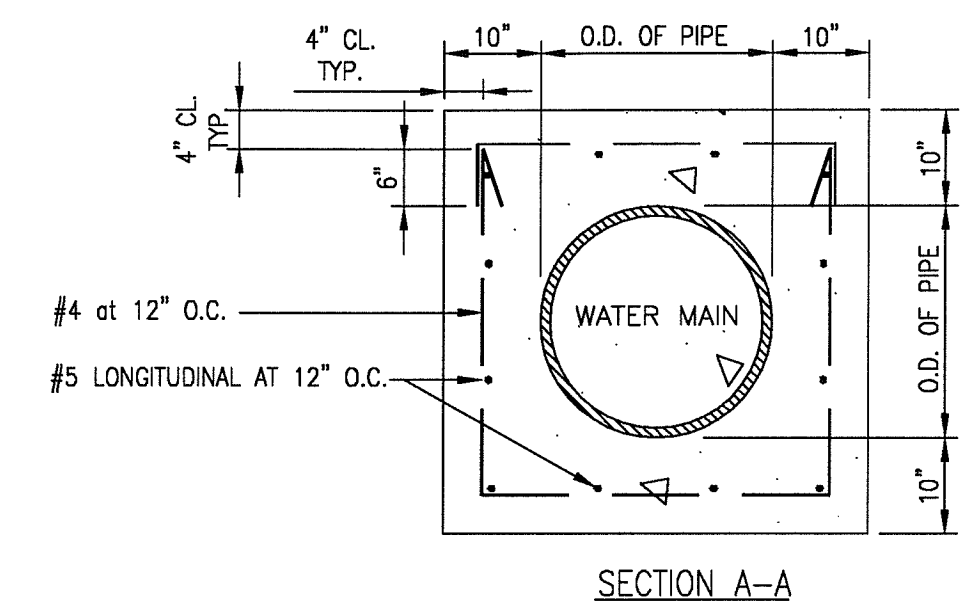
PIPE SIZE	BEND	MINIMUM BEARING AREAS (SQ.FT.) FOR HORIZONTAL THRUST BLOCKS																														
		PRESSURE 250 PSI							PRESSURE 200 PSI							PRESSURE 150 PSI																
		TYPE OF SOIL CONDITION							TYPE OF SOIL CONDITION							TYPE OF SOIL CONDITION																
		A	B	C	D	E	F	G	A	B	C	D	E	F	G	A	B	C	D	E	F	G	A	B	C	D	E	F	G			
4"	1/4"	6.5	3.5	2.0	1.5	1.0	1.0	1.0	USE FIGURES UNDER 250 PSI																							
4"	1/8"	9.0	4.5	3.0	2.5	1.5	1.0	1.0																								
4"	1/8"	5.0	2.5	1.5	1.5	1.0	1.0	1.0																								
4"	1/16"	2.5	1.5	1.0	1.0	1.0	1.0	1.0																								
4"	1/32"	1.5	1.0	1.0	1.0	1.0	1.0	1.0																								
6"	1/4"	14.0	7.0	5.0	3.5	2.5	2.0	1.5																								
6"	1/4"	20.0	10.0	7.0	5.0	3.5	2.5	2.0																								
6"	1/8"	11.0	5.5	3.5	3.0	2.0	1.5	1.0																								
6"	1/16"	5.5	3.0	2.0	1.5	1.0	1.0	1.0																								
6"	1/32"	3.0	1.5	1.0	1.0	1.0	1.0	1.0																								
8"	1/4"	25.0	12.5	8.5	6.5	4.0	3.0	2.5																								
8"	1/4"	35.0	18.0	12.0	9.0	6.0	4.5	3.5																								
8"	1/8"	20.0	9.5	6.5	5.0	3.0	2.5	2.0																								
8"	1/16"	10.0	5.0	3.5	2.5	1.5	1.0	1.0																								
8"	1/32"	5.0	2.5	1.5	1.5	1.0	1.0	1.0																								
12"	1/4"	56.5	28.5	19.0	14.0	9.5	7.0	5.5																								
12"	1/4"	80.0	40.0	26.5	20.0	13.5	10.0	8.0																								
12"	1/8"	43.5	21.5	14.5	11.0	7.0	5.5	4.5																								
12"	1/16"	22.0	11.0	7.5	5.5	3.0	2.5	1.5																								
12"	1/32"	11.5	5.5	4.0	3.0	2.0	1.5	1.0																								
16"	1/4"	101.0	50.5	34.0	25.5	17.0	13.0	10.5																								
16"	1/4"	142.5	71.5	47.5	35.5	24.0	18.0	14.5																								
16"	1/8"	77.0	38.5	26.0	19.5	13.0	10.0	8.0																								
16"	1/16"	39.5	20.0	13.5	10.0	6.5	5.0	4.0																								
16"	1/32"	20.0	10.0	7.0	5.0	3.5	2.5	2.0																								

TYPE OF SOIL CONDITION LATERAL BEARING PRESSURE
 A. SOFT CLAY; FINE LOOSE SAND.....500 LBS. PER SQ. FT.
 B. SAND & CLAY; MIXED OR IN LAYERS; FINE CONFINED SAND.....1000 LBS. PER SQ. FT.
 C. HARD DRY CLAY.....1500 LBS. PER SQ. FT.
 D. COARSE SAND.....2000 LBS. PER SQ. FT.
 E. GRAVEL.....3000 LBS. PER SQ. FT.
 F. SOFT ROCK.....4000 LBS. PER SQ. FT.
 G. HARDPAN.....5000 LBS. PER SQ. FT.

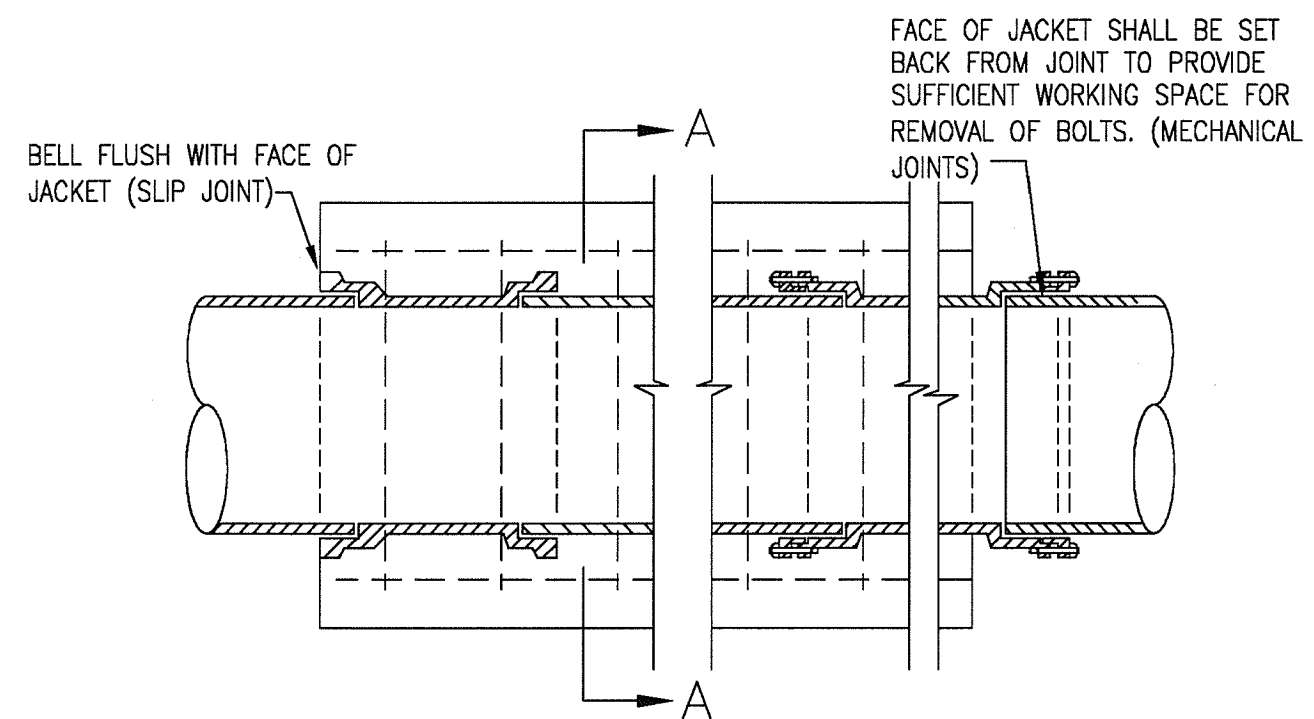
NOTE:
 1. ACTUAL FIELD CONDITIONS AND SOIL TYPE SHALL BE VERIFIED IN THE FIELD. THE SCHEDULE, DIMENSIONS AND DETAILS AS SHOWN ARE PROVIDED AS A GUIDE ONLY. THE CONTRACTOR SHALL SUBMIT THE FINAL DESIGN AND DETAILS TO THE MANAGER FOR REVIEW AND APPROVAL AFTER FIELD VERIFICATION AND PRIOR TO INSTALLATION.

NOTE:
 REFER TO HORIZONTAL THRUST BLOCK SCHEDULE FOR THE SIZE OF REACTION BLOCKS. REACTION BLOCKS SHALL BEAR AGAINST UNDISTURBED SOIL. CONCRETE SHALL BE DWS 2500.

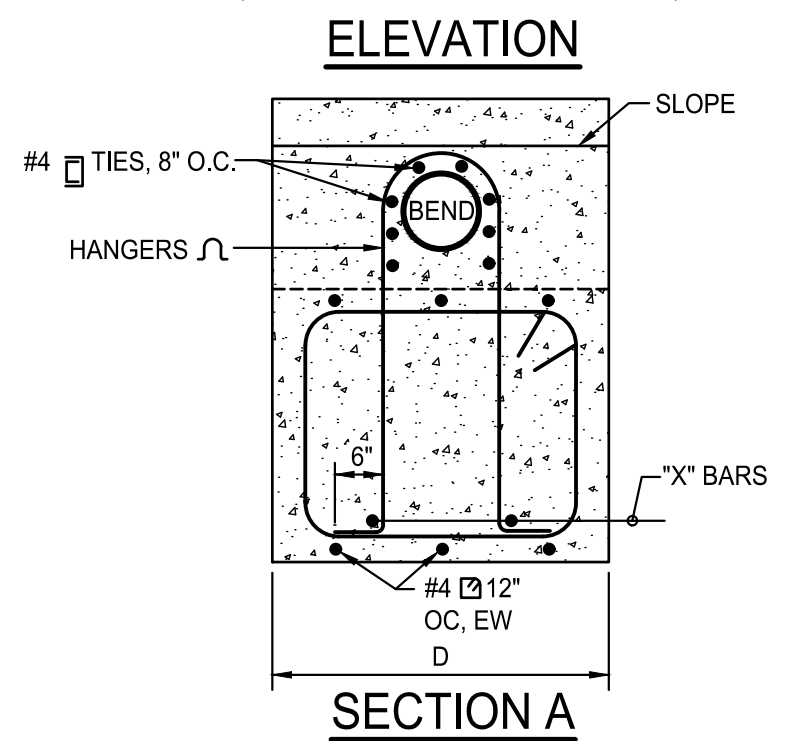
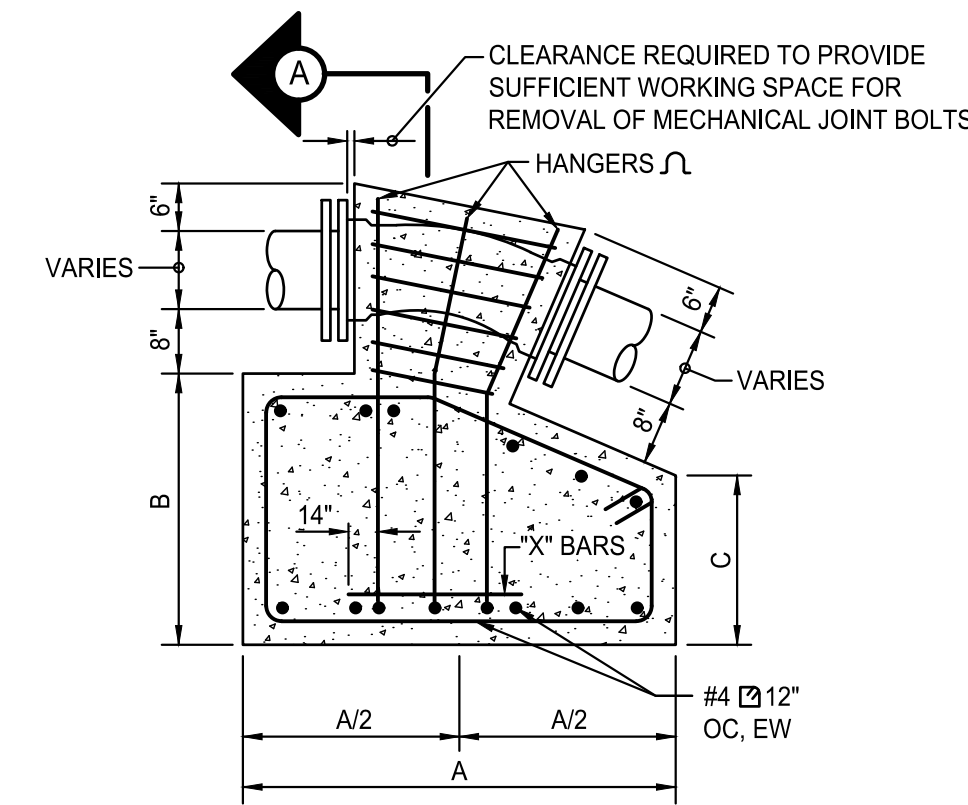
HORIZONTAL THRUST BLOCK SCHEDULE
HORIZONTAL REACTION BLOCK FOR WATER MAINS
 NOT TO SCALE



NOTE:
 1. WHEREVER CONSTRUCTION JOINTS ARE REQUIRED, DWS APPROVED 6" RUBBER OR NEOPRENE WATERSTOPS OR CONCRETE BONDING AGENT APPROVED BY THE MANAGER SHALL BE INSTALLED.
 2. NO CONCRETE JACKETING OF PVC PIPE OR EXISTING AC PIPE WILL BE ALLOWED.
 3. CONCRETE SHALL BE DWS 2500 EXCEPT UNDER RESERVOIR FLOOR SLABS WHERE IT SHALL BE DWS 3500.
 4. REINFORCING DESIGN APPLICABLE FOR STRAIGHT PIPE JACKETED SEGMENT. FOR SIPHON OR OFFSET, SUBMIT SHOP DRAWINGS.
 5. PRECAST JACKETED WATERLINE SEGMENT SHALL BE DESIGNED AND STAMPED BY A LICENSED STRUCTURAL ENGINEER AND APPROVED BY MANAGER.



REINFORCED CONCRETE JACKET DETAIL
 NOT TO SCALE

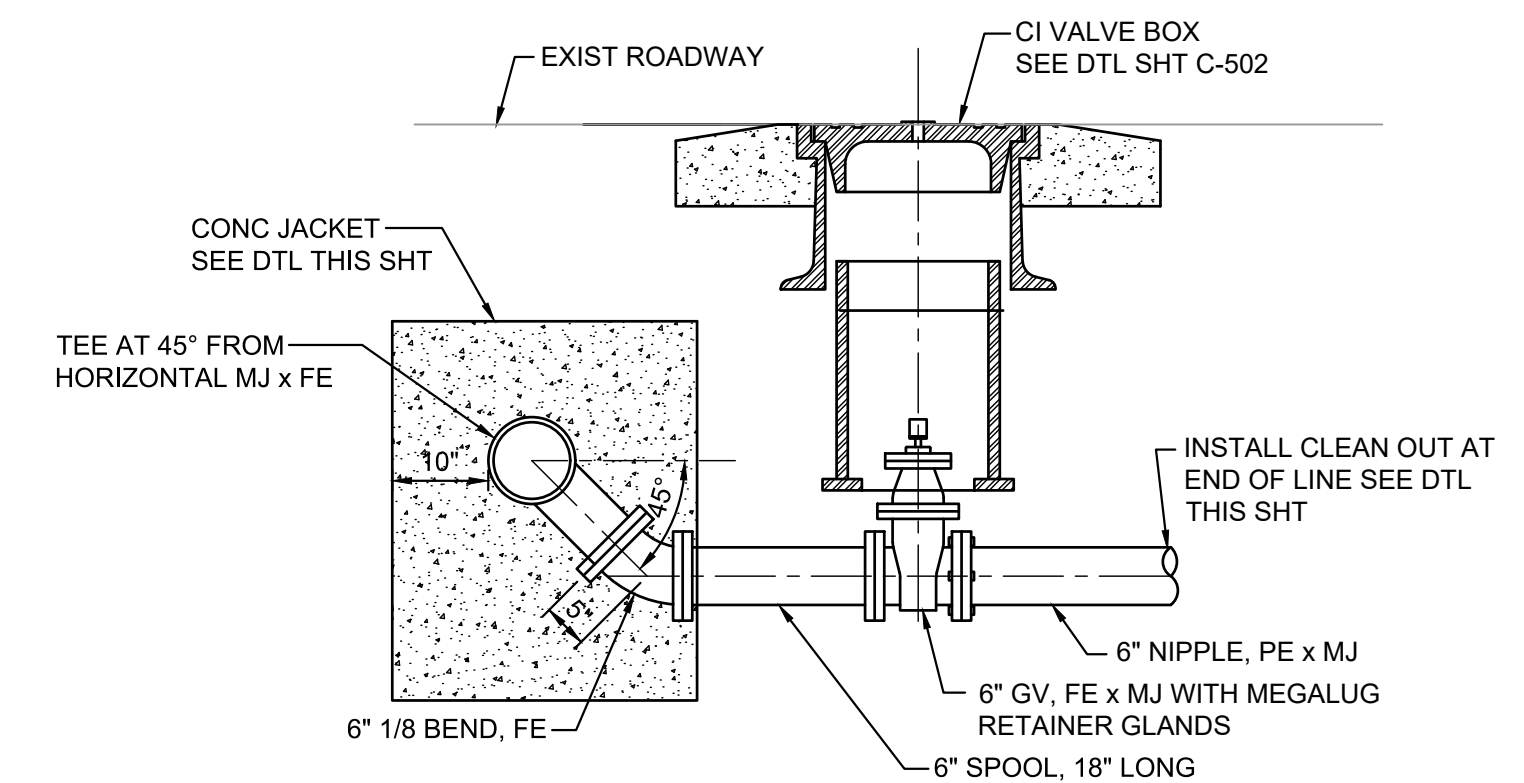


PIPE SIZE	BEND	TOP VERTICAL THRUST BLOCK SCHEDULE																													
		PRESSURE 250 PSI							PRESSURE 200 PSI							PRESSURE 150 PSI															
		CONCRETE BLOCK							CONCRETE BLOCK							CONCRETE BLOCK															
		A	B	C	D	HANGER	"X" BAR	A	B	C	D	HANGER	"X" BAR	A	B	C	D	HANGER	"X" BAR	A	B	C	D	HANGER	"X" BAR						
4"	1/4"	4'-6"	4'-0"	4'-0"	2'-6"	(2)#4	(2)#4	USE FIGURES UNDER 250 PSI																							
4"	1/8"	3'-9"	3'-0"	1'-6"	2'-6"	(2)#3	(2)#3																								
4"	1/16"	2'-6"	2'-3"	1'-9"	2'-6"	(2)#3	(2)#3																								
4"	1/32"	2'-3"	1'-6"	1'-3"	2'-6"	(2)#3	(2)#3																								
6"	1/4"	4'-6"	4'-3"	4'-3"	4'-6"	(2)#5	(2)#5																								
6"	1/8"	5'-0"	3'-9"	1'-6"	3'-0"	(2)#4	(2)#4																								
6"	1/16"	3'-9"	3'-3"	2'-6"	2'-6"	(2)#3	(2)#3																								
6"	1/32"	3'-0"	2'-3"	2'-0"	2'-6"	(2)#3	(2)#3																								
8"	1/4"	5'-3"	5'-0"	5'-0"	5'-3"	(2)#6	(2)#6																								
8"	1/8"	5'-3"	4'-9"	2'-3"	4'-0"	(2)#5	(2)#5																								
8"	1/16"	5'-9"	3'-6"	2'-6"	2'-6"	(2)#4	(2)#4																								
8"	1/32"	3'-6"	2'-9"	2'-6"	2'-6"	(2)#3	(2)#3																								
12"	1/4"	6'-6"	7'-0"	7'-0"	6'-6"	(3)#7	(2)#7																								
12"	1/8"	6'-3"	5'-9"	2'-9"	5'-6"	(2)#7	(2)#7																								
12"	1/16"	5'-6"	4'-6"	3'-6"	4'-6"	(2)#6	(2)#6																								
12"	1/32"	5'-3"	4'-3"	3'-9"	4'-6"	(2)#5	(2)#5																								

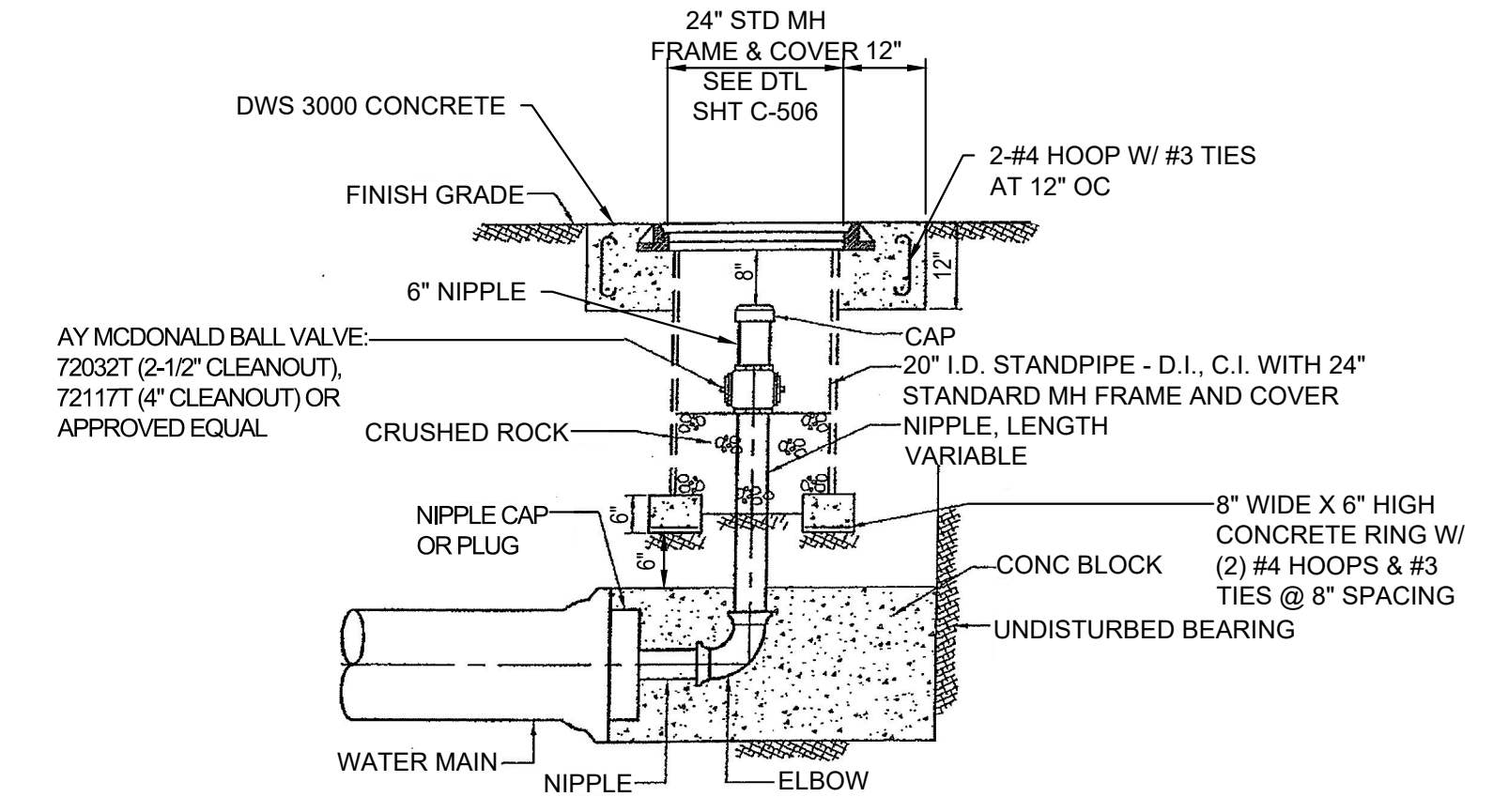
NOTE:
 1. ACTUAL FIELD CONDITIONS SHALL BE VERIFIED IN THE FIELD. THE SCHEDULE, DIMENSIONS AND DETAILS AS SHOWN ARE PROVIDED AS A GUIDE ONLY. THE CONTRACTOR SHALL SUBMIT THE FINAL DESIGN AND DETAILS TO THE MANAGER FOR REVIEW AND APPROVAL AFTER FIELD VERIFICATION AND PRIOR TO INSTALLATION.
 2. SCHEDULE IS NOT APPLICABLE TO BLOCKS FULLY OR PARTLY SUBMERGED IN WATER.
 3. SAFETY FACTOR 1.5 BASED ON PIPE LOCATION MINIMUM 2' BELOW GROUND.

NOTES:
 1. DWS 2500 CONCRETE.
 2. MIN. 2" COVER OVER ALL REINFORCEMENT.
 3. SEE TOP VERTICAL THRUST BLOCK SCHEDULE FOR SCHEDULE AND DIMENSIONS.
 4. AWWA C153 FITTINGS NOT ACCEPTABLE FOR THIS APPLICATION.
 5. UNLESS OTHERWISE NOTED, ALL REINFORCING BARS SHALL BE ASTM A615, GRADE 60.

TYPICAL THRUST BLOCK AT VERTICAL BENDS
 NOT TO SCALE



CLEANOUT CONNECTION DETAIL
 NOT TO SCALE



SCHEDULE OF CLEANOUT		
PIPE SIZE	CLEANOUT SIZE	TYPE OF PIPE
8" & SMALLER	2 1/2"	BRASS
12" TO 20"	4"	BRASS OR COPPER

NOTES:
 1. CLEANOUT SHALL INCLUDE THE CAP, PLUG, AND APPURTENANCES AS SHOWN.
 2. ALL CLEANOUTS INSTALLATION SHALL BE BRASS OR COPPER.

CLEANOUT AND RISER
 NOT TO SCALE

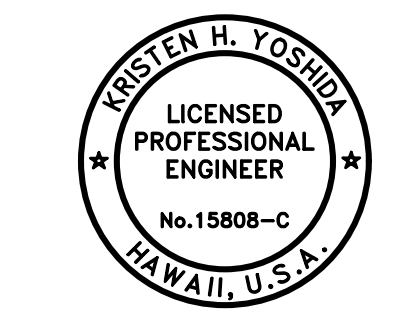
REVISION	DATE	DESCRIPTION	APPROVED

BOWERS + KUBOTA CONSULTING
 2183 North King Street, Suite 200
 Honolulu, Hawaii 96819

JOB NO. 18-03, WP2020 JOB NO. PLH-27
KŪHIŌ HIGHWAY (HARDY-OXFORD)
18" MAIN REPLACEMENT
LĪHU'E WATER SYSTEM
 LĪHU'E, KAUA'I, HAWAII

WATER DETAILS - 1

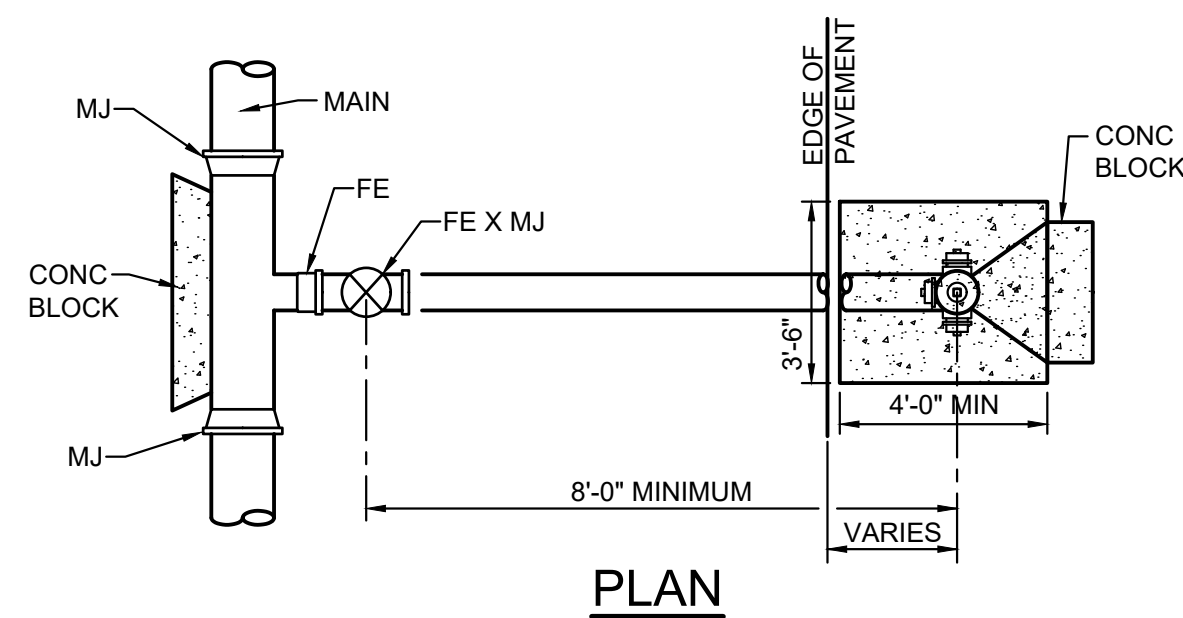
APPROVED: N/A
 FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS
 COUNTY OF KAUAI (FOR WORK WITH COUNTY RW)
 DATE: 16/10/24
 FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER
 COUNTY OF KAUAI



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.
 APRIL 30, 2025
 EXPIRATION DATE OF THE LICENSE

DRAWING NO. C-501

Half Size Trimline for 11" x 17"
 Wednesday, August 14, 2024, 4:56:57 PM
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PLAN

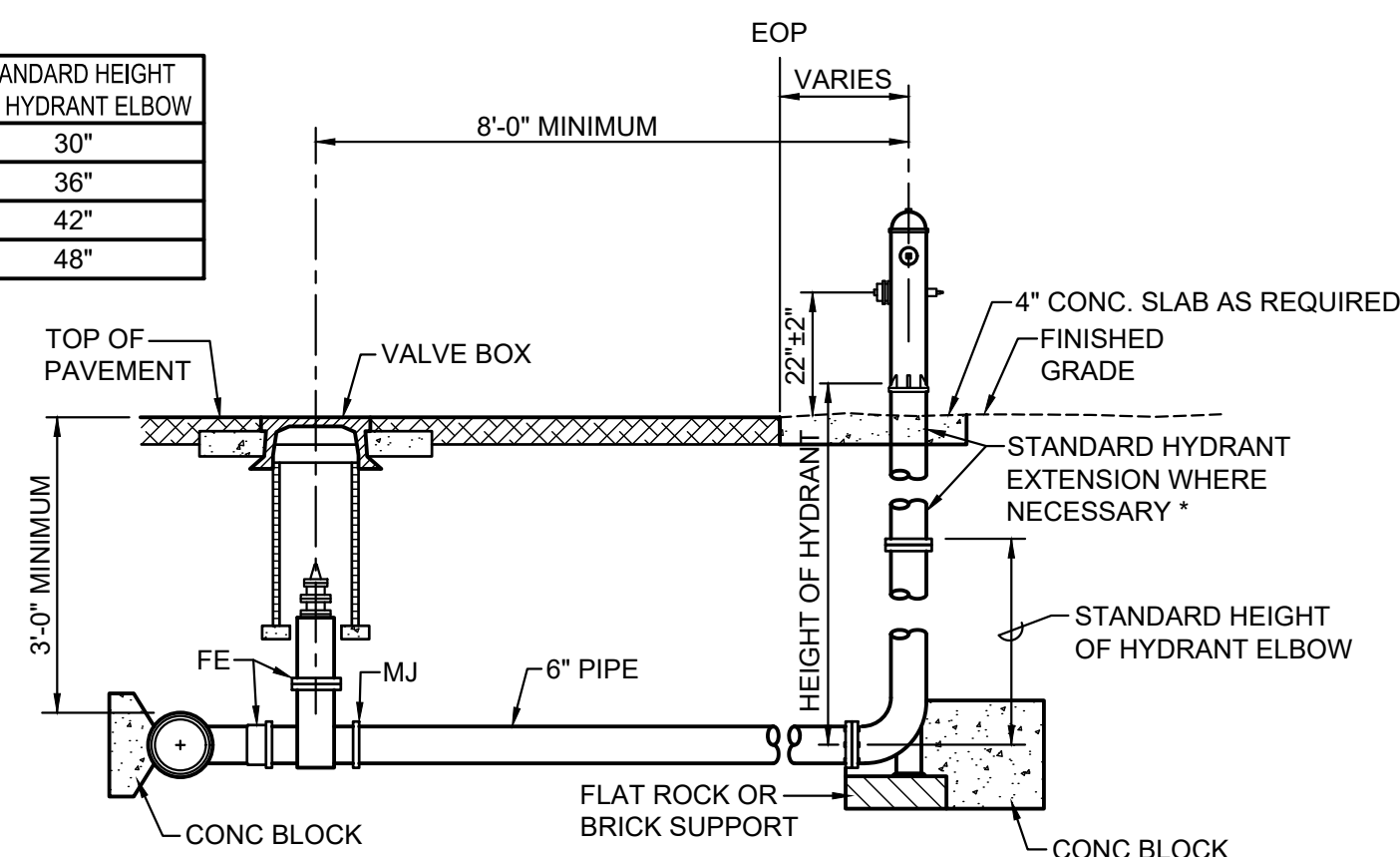
HYDRANT CONNECTION NOTES:

- GASKETS FOR FLANGED JOINTS SHALL BE 18" DUCK-INSERTED RUBBER PACKING GARLOCK NO. 19.
- BOLTS SHALL BE BREAK-OFF TYPE, 5/8" DIA. X 3" LONG MACHINE BOLTS WITH CUT THREADS, AMERICAN STANDARD COARSE HEXAGON HEADS, HOT-DIPPED GALVANIZED STEEL, OR SILICON BRONZE. INSTALL BOLT WITH THREADS FACING UP.
- NUTS SHALL BE AMERICAN STANDARD HEAVY COLD PUNCHED HEXAGON NUTS, HOT-DIPPED GALVANIZED STEEL, OR SILICON BRONZE.
- CONCRETE SHALL BE DWS 2500.
- LUBRICATE HYDRANT NOZZLE THREADS WITH NON-TOXIC GREASE.
- INSTALL HYDRANT MARKERS REFER TO SIGNAGE AND PAVEMENT MARKING PLAN.
- IF MULTIPLE HYDRANT EXTENSIONS ARE USED, A MINIMUM OF THE TOP 3 FLANGE JOINTS SHALL USE BREAK-OFF BOLTS.

HYDRANT CONNECTION-TYPE A

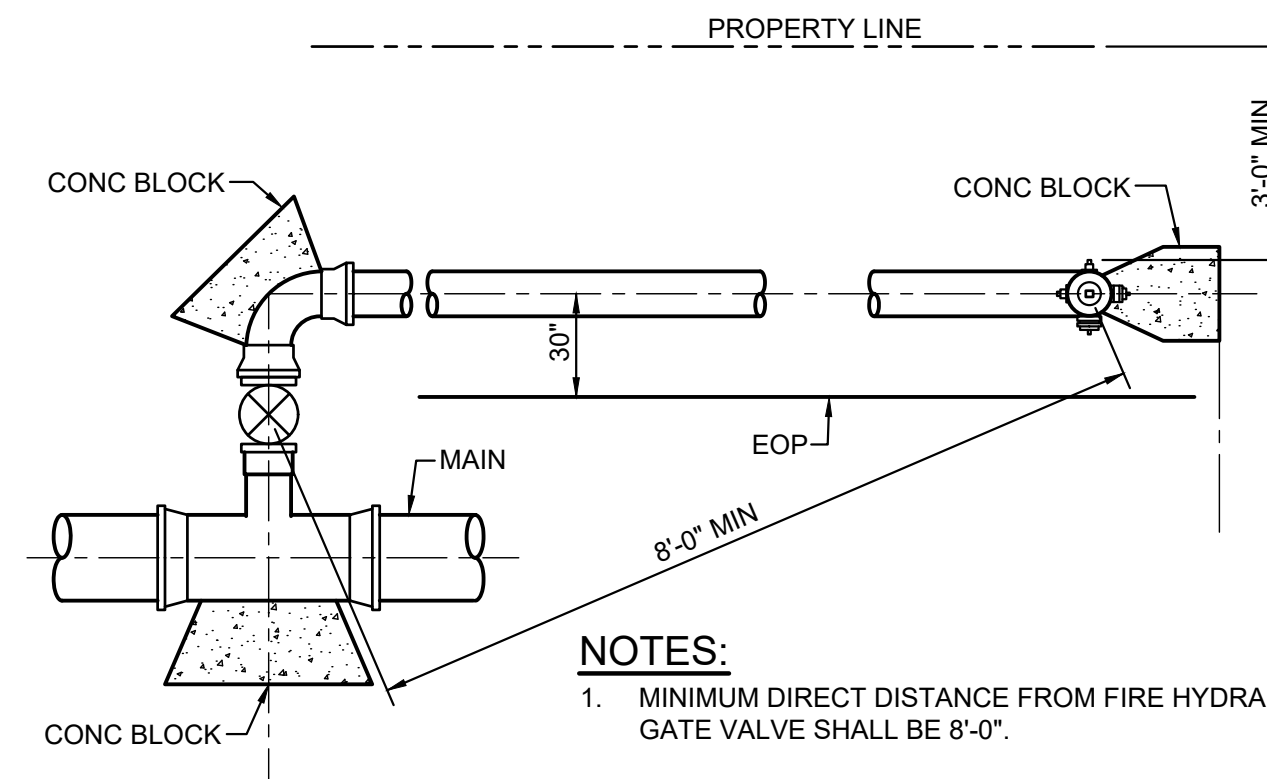
NOT TO SCALE

STANDARD HEIGHT FOR HYDRANT ELBOW
30"
36"
42"
48"



SECTION

IF MULTIPLE HYDRANT EXTENSIONS ARE USED, A MINIMUM OF THE TOP 3 FLANGE JOINTS SHALL USE BREAK-OFF BOLTS.

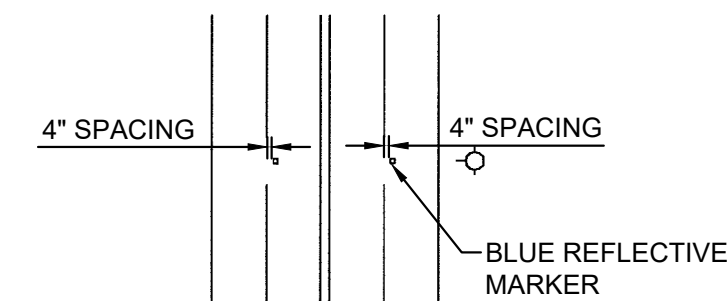


NOTES:

- MINIMUM DIRECT DISTANCE FROM FIRE HYDRANT TO GATE VALVE SHALL BE 8'-0".
- CONCRETE SHALL BE DWS 2500.
- FLANGED OUTLET FOR THE TEE IS MANDATORY.
- TAPPING SLEEVE WITH VALVE MAY BE USED. (SEE HYDRANT CONNECTION NOTES, THIS SHEET.)
- LUBRICATE HYDRANT NOZZLE THREADS WITH NON-TOXIC GREASE.
- INSTALL HYDRANT MARKERS (SEE DETAIL THIS SHEET).
- THE 4-1/2" NOZZLE SHOULD FACE PERPENDICULAR TO THE CURB/ROAD.
- SECTION SIMILAR TO HYDRANT CONNECTION - TYPE A

HYDRANT CONNECTION-TYPE B

NOT TO SCALE



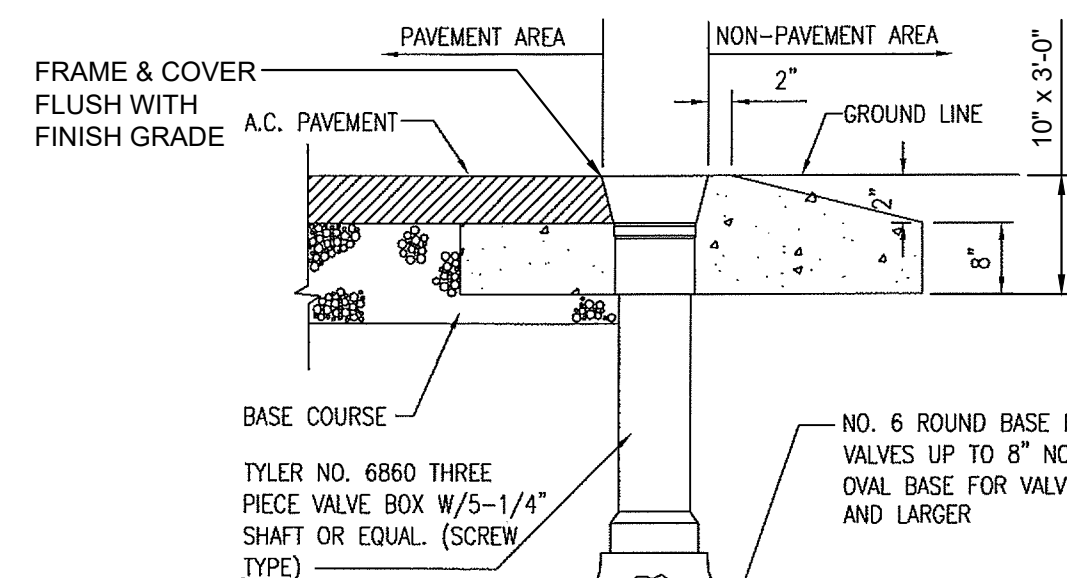
FOUR LANE STREET

HYDRANT MARKER LOCATION

NOT TO SCALE

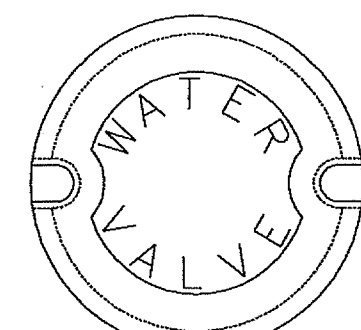
HYDRANT CONNECTION NOTES

- GASKET FOR FLANGED JOINT SHALL BE 1/8" DUCK-INSERTED RUBBER PACKING GARLOCK NO. 19.
- BOLT SHALL BE BREAK-OFF TYPE, 5/8" DIA. X 3" LONG MACHINE BOLTS WITH CUT THREADS, AMERICAN STANDARD COARSE HEXAGON HEADS, HOT-DIPPED GALVANIZED STEEL. INSTALL BOLT WITH THREADS FACING UP.
- NUTS SHALL BE AMERICAN STANDARD HEAVY COLD PUNCHED HEXAGON NUTS, HOT-DIPPED GALVANIZED STEEL.
- CONCRETE SHALL BE DWS 2500.
- REFER TO HYDRANT CONNECTION DETAILS THIS SHEET.
- FLANGED OUTLET FOR THE TEE IS MANDATORY.
- TAPPING SLEEVE WITH TAPPING VALVE ASSEMBLY MAY BE USED FOR CONNECTION TO EXIST MAIN.
- LUBRICATE HYDRANT NOZZLE THREADS WITH NON-TOXIC GREASE.
- INSTALL HYDRANT MARKERS. (SEE HYDRANT MARKER LOCATION DETAIL THIS SHEET.)



PROFILE

FOR GATE VALVE, BEVEL GEARED GATE VALVE AND BUTTERFLY VALVES



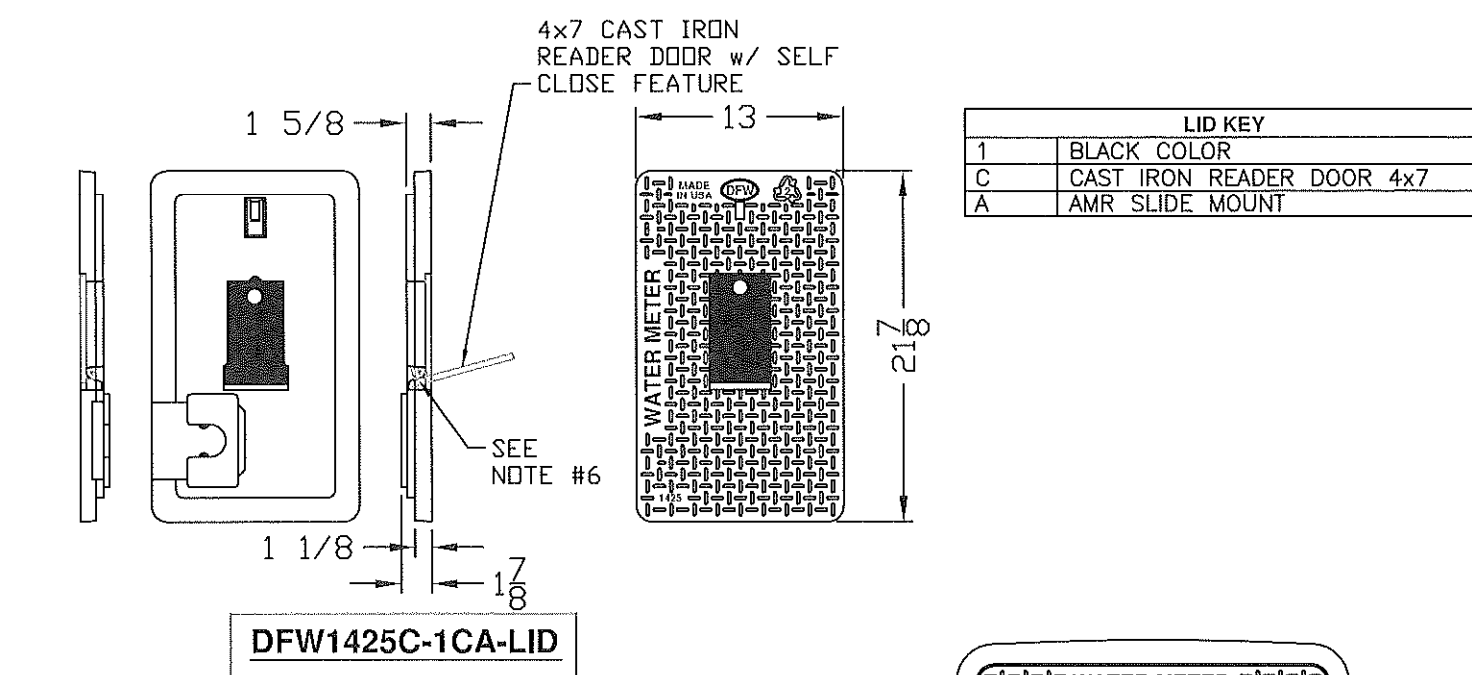
COVER

GENERAL NOTES:

- PAVEMENT AREA: 2'-0" DIA. OR 2'-0" X 2'-0" SQUARE X 8" THICK CONC. SETTLEMENT SLAB.
- NON-PAVEMENT AREA: 3'-0" DIA. OR 3'-0" X 3'-0" SQUARE X 10" THICK CONC. SETTLEMENT SLAB, TAPERED TO 8".
- COVER TO BE DROP LID COVER.
- VALVE BOX SHALL INCLUDE COVER.
- SEE VALVE NUT EXTENSION DTL SHT C-508

CAST IRON VALVE BOX DETAIL

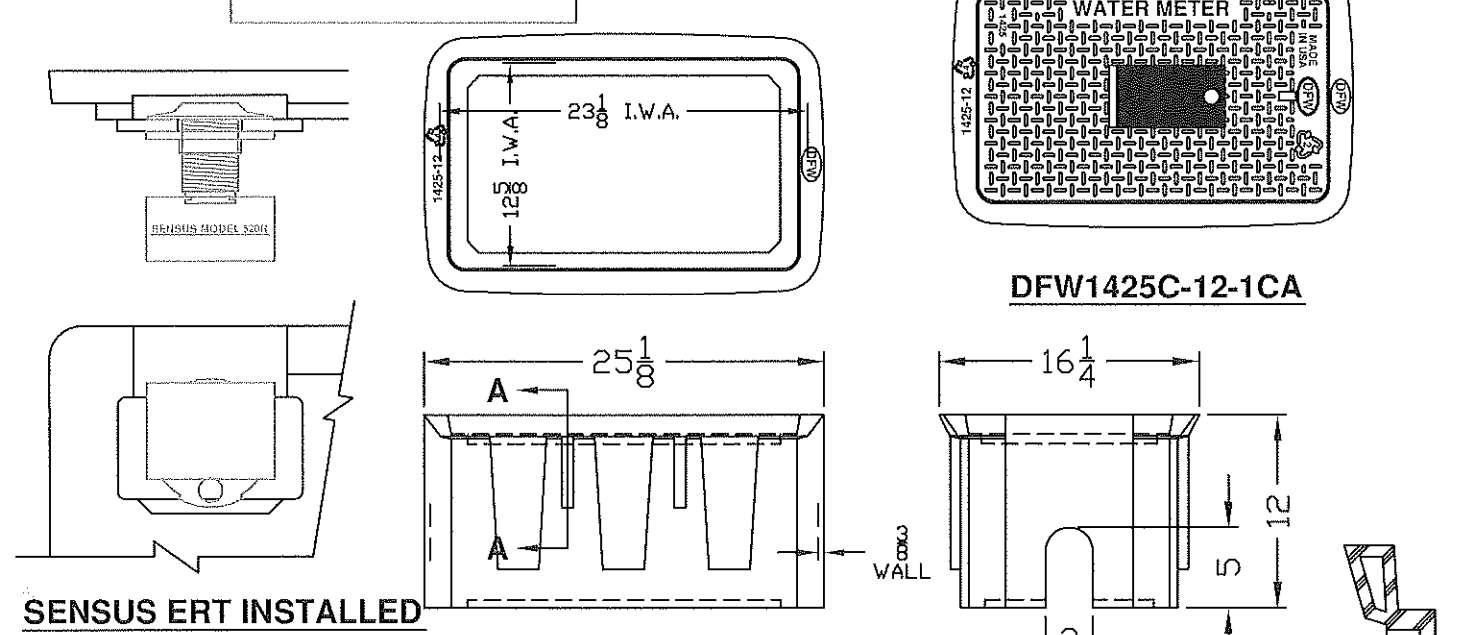
NOT TO SCALE



LID KEY	
1	BLACK COLOR
C	CAST IRON READER DOOR 4x7
A	AMR SLIDE MOUNT

DFW1425C-1CA-LID

DFW1425C-12-1CA



DFW1425C-12-BODY

SECTION A-A

NOTES:

- DIM'S ± 1/8 U.N.O.
- LID MATERIAL: H.D.P.E.
- BODY MATERIAL: L.L.P.E.
- WALL THICKNESS: 3/8 ± 5%
- I.W.A. = INSIDE WORK AREA
- #3/16" x 6" LONG ECO TECH STEEL PIN IMPREGNATED WITH ZINC & ALUMINUM FOR CORROSION RESISTANCE, CHROMIUM FREE.

TYPE "X" METER BOX & COVER

NOT TO SCALE

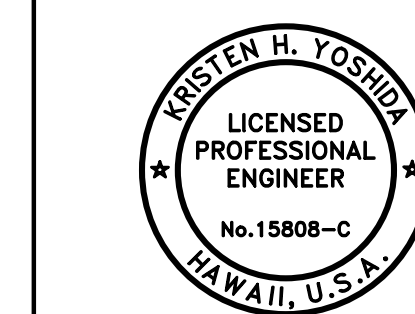
REVISION	DATE	DESCRIPTION	APPROVED
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BOWERS + KUBOTA CONSULTING

2183 North King Street, Suite 200
Honolulu, Hawaii 96819

JOB NO. 18-03, WP2020 JOB NO. PLH-27
KŪHIŌ HIGHWAY (HARDY-OXFORD)
18" MAIN REPLACEMENT
LIHU'E WATER SYSTEM
LIHU'E, KAUAI, HAWAII

WATER DETAILS - 2



APPROVED: *Kristen H. Yoshida*

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.
APRIL 30, 2026
EXPIRATION DATE OF THE LICENSE

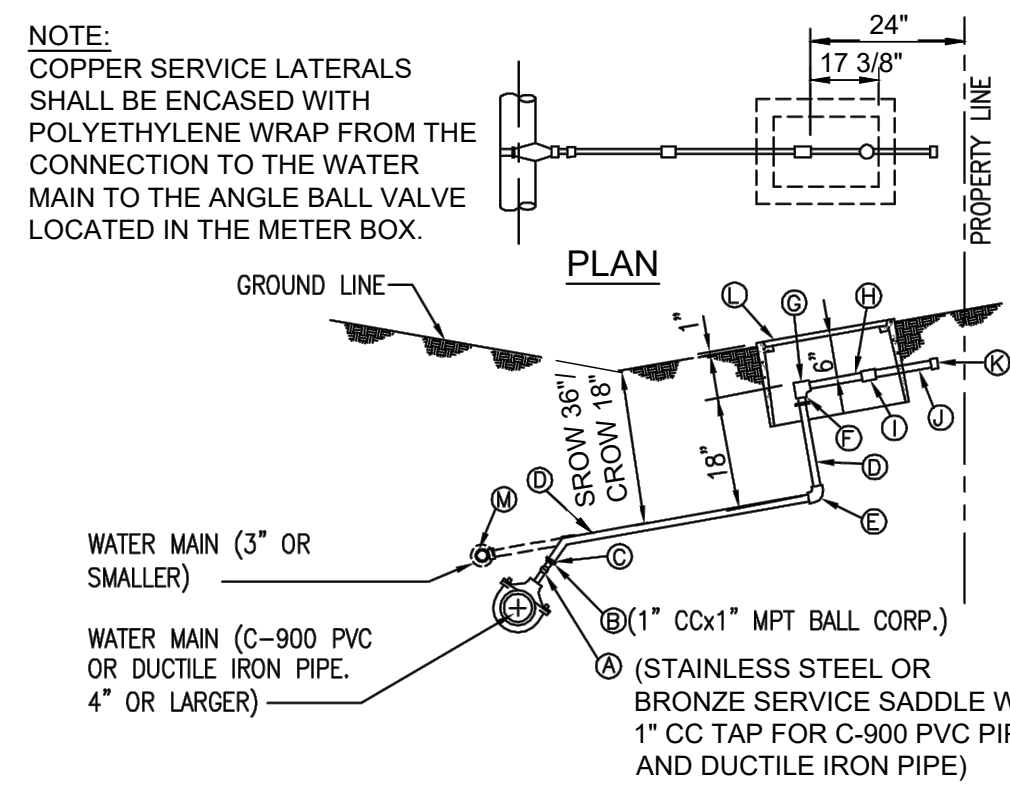
APPROVED: _____ DATE _____
FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS
COUNTY OF KAUAI (FOR WORK WITHIN COUNTY RW)
Jason Reynolds
FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER
COUNTY OF KAUAI
16/10/24
DATE

DRAWING NO.
C-502

HALF SIZE TRIMLINE FOR 11" x 17"
 Wednesday, August 14, 2024, 4:54:57 PM
 T:\Energy-Sector\Water\2018\40100\04_Graphics\CAD_Sheets\C-502_WATER_DETAILS - 2.dwg

SCHEDULE OF FITTINGS		
ITEM	DESCRIPTION	SINGLE SERVICE
A	STAINLESS STEEL OR BRONZE SERVICE SADDLE W/ 1" CC TAP FOR C-900 PVC PIPE & D.I. PIPE	1
B	1" CC x 1" MPT BALL CORPORATION	1
C	PACK JOINT COUPLINGS (FORD C14-44 OR APPROVED EQUAL)	1
D	1" COPPER TUBE, TYPE "K" SOFT	1
E	1" 90° COPPER ELBOW, S x S	1
F	1" COPPER MALE ADAPTER, SXT	1
G	ANGLE BALL VALVE, 1" FEMALE IPT INLET x 3/4" METER COUPLING NUT OUTLET (FORD BA13-342W OR APPROVED EQUAL)	1
H	METER SPACER, SUPPLIED BY DEPT. OF WATER & INSTALLED BY CONTRACTOR	1
I	BALL VALVE W/ HANDLE, 3/4" METER COUPLING NUT INLET x 1" FEMALE IPT OUTLET (FORD B13-342 W/ HT-34 HANDLE OR APPROVED EQUAL)	1
J	LINESETTER, 1" COPPER TUBE, TYPE "K" SOFT, 14" LONG (SEE STD. DET. L3)	1
K	1" PLASTIC THREAD PROTECTOR	1
L	TYPE "X" POLYMER BOX 2/ POLYMER COVER W/ 4x7 CAST IRON READER DOOR DFW1425C-12-1CA OR APPROVED EQUAL	1
M	TEE W/ 1" BUSHING (WHEN CONNECTING TO 3" OR SMALLER PIPE)	1

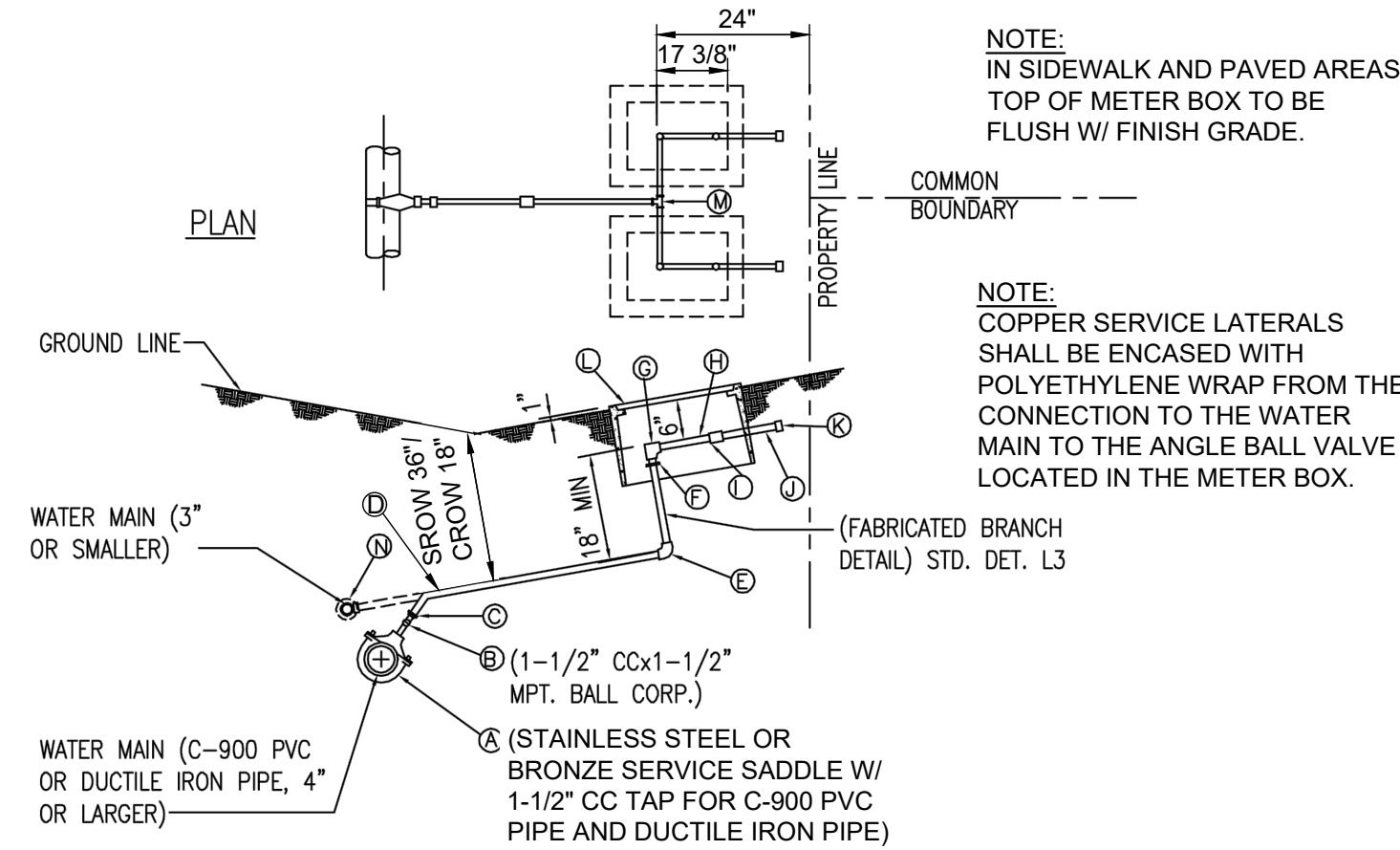
NOTE:
1. CENTER OF METER PIPING AND BOTTOM OF METER BOX SHALL HAVE A 10" CLEARANCE. IF EXISTING LATERAL PIPING NEEDS ADJUSTING, CONTRACTOR SHALL INSTALL NEW LATERAL FROM MAIN AND CUT AND PLUG THE EXISTING LATERAL AT THE MAIN (WATER SYSTEM STANDARD DETAIL L-1 AND L-2).



SINGLE SERVICE LATERAL DETAIL L1
NOT TO SCALE

SCHEDULE OF FITTINGS		
ITEM	DESCRIPTION	DOUBLE SERVICE
A	STAINLESS STEEL OR BRONZE SERVICE SADDLE W/ 1-1/2" CC TAP FOR C-900 PVC PIPE & D.I. PIPE	1
B	1-1/2" CC x 1-1/2" MPT BALL CORPORATION	1
C	PACK JOINT COUPLING (FORD C14-66 OR APPROVED EQUAL)	1
D	1-1/2" COPPER TUBE, TYPE "K" SOFT	2
E	1" 90° COPPER ELBOW, S x S	2
F	1" COPPER MALE ADAPTER, S x T	2
G	ANGLE BALL VALVE, 1" FEMALE IPT INLET x 3/4" METER COUPLING NUT OUTLET (FORD BA13-342W OR APPROVED EQUAL)	2
H	METER SPACER, SUPPLIED BY DEPT. OF WATER & INSTALLED BY CONTRACTOR	2
I	BALL VALVE W/ HANDLE, 3/4" METER COUPLING NUT INLET x 1" FEMALE IPT OUTLET (FORD B13-342 W/ HT-34 HANDLE OR APPROVED EQUAL)	2
J	LINESETTER, 1" COPPER TUBE, TYPE "K" SOFT, 14" LONG (SEE STD. DET. L3)	2
K	1" PLASTIC THREAD PROTECTOR	2
L	TYPE "X" POLYMER BOX W/ POLYMER COVER W/ 4x7 CAST IRON READER DOOR DFW1425C-12-1CA OR APPROVED EQUAL	2
M	1" x 1" x 1-1/2" COPPER TEE, S x S x S	1
N	TEE W/ 1-1/2" BUSHING (WHEN CONNECTING TO 3" OR SMALLER PIPE)	1

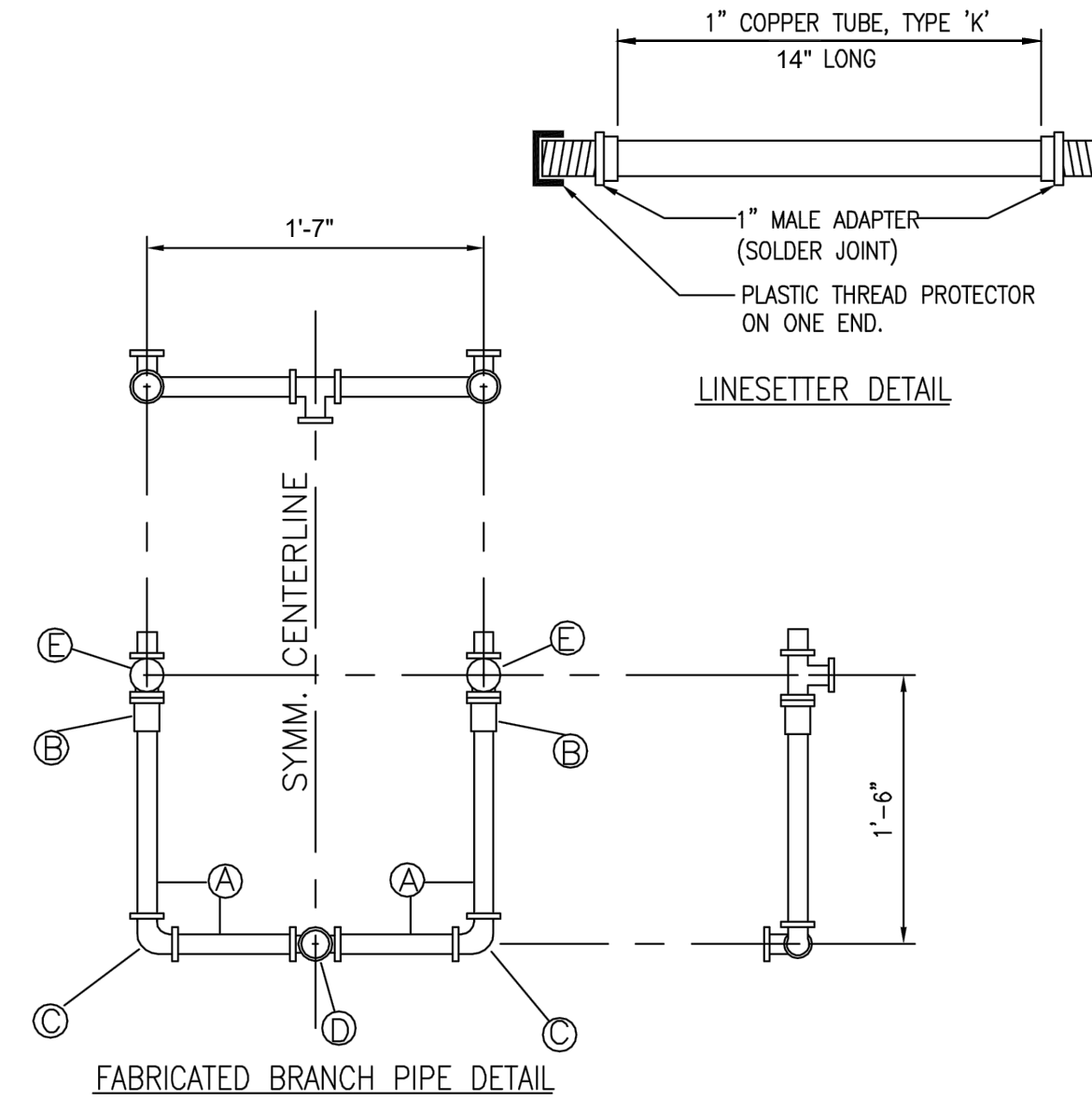
NOTE:
1. CENTER OF METER PIPING AND BOTTOM OF METER BOX SHALL HAVE A 10" CLEARANCE. IF EXISTING LATERAL PIPING NEEDS ADJUSTING, CONTRACTOR SHALL INSTALL NEW LATERAL FROM MAIN AND CUT AND PLUG THE EXISTING LATERAL AT THE MAIN (WATER SYSTEM STANDARD DETAIL L-1 AND L-2).



DOUBLE SERVICE LATERAL DETAIL L2
NOT TO SCALE

SCHEDULE OF COPPER FITTINGS			
NO.	DESCRIPTION	SINGLE SERVICE	DOUBLE SERVICE
A	1" COPPER TUBE, TYPE "K"	1	1
B	1" COPPER MALE ADAPTER	1	2
C	1" x 90° ELBOW (CAST SOLDER)	1	2
D	1" x 1" x 1 1/2" TEE, (CAST SOLDER)		1
E	ANGLE BALL VALVE, 1" FEMALE IPT, INLET 3/4" METER COUPLING NUT OUTLET (FORD KV13-342W OR APPROVED EQUAL)	1	2

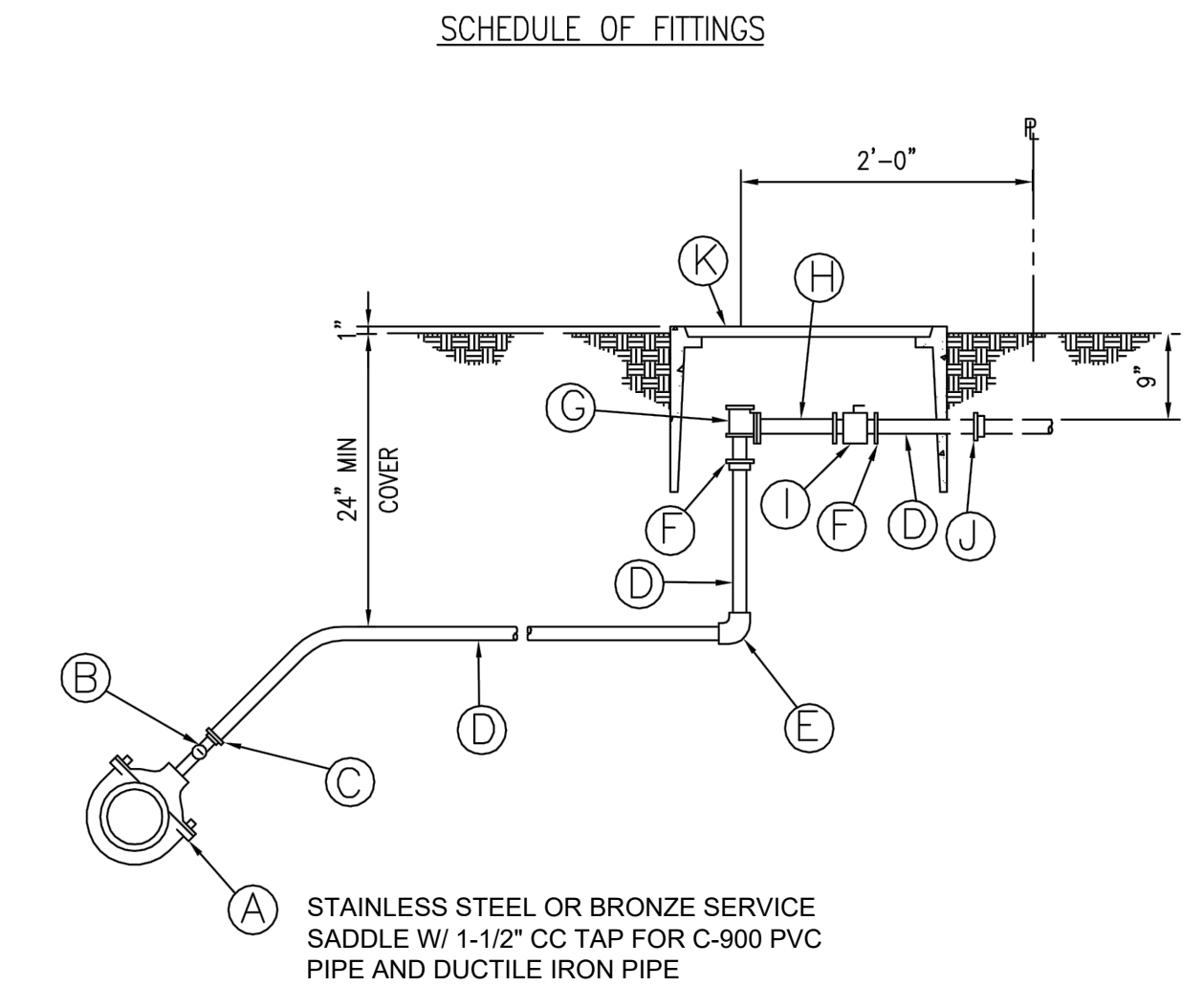
NOTE:
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FABRICATED BRANCH PIPE AND LINESSETTER DETAIL L3
NOT TO SCALE

ITEM	DESCRIPTION	SIZE
A	SERVICE SADDLE (SIZE DEPENDS UPON MAIN)	1 1/2" CC TAP
B	BALL CORPORATION (FORD FB 400 OR APPROVED EQUAL)	1 1/2" CC X 1 1/2" MPT
C	PACK JOINT COUPLING (FORD C14-66 OR APPROVED EQUAL)	1 1/2"
D	COPPER TUBE TYPE "K" SOFT	1 1/2"
E	90° COPPER ELBOW	1 1/2"
F	COPPER MALE ADAPTER	1 1/2" X 1"
G	ANGLE BALL VALVE (FORD BA13-444W OR APPROVED EQUAL)	1"
H	METER SPACER (TO BE SUPPLIED BY THE DEPT. OF WATER & INSTALLED BY CONTRACTOR)	1"
I	BALL VALVE (FORD B13-444W W/HT 34 OR APPROVED EQUAL)	1"
J	COPPER MALE ADAPTER	1 1/2"
K	TYPE "X" CONC. METER BOX W/ C.I. COVER	---

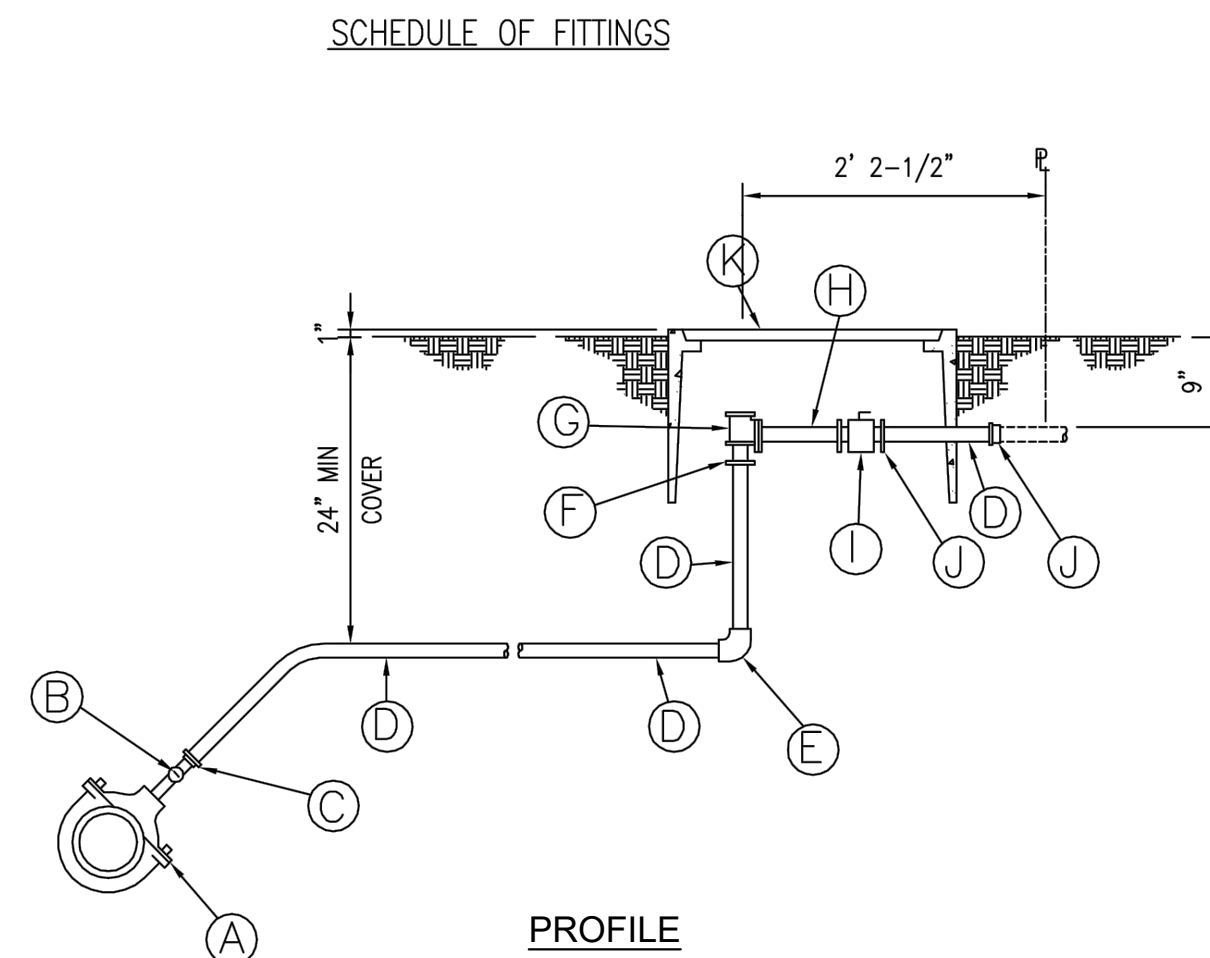
NOTE:
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ONE INCH METER DETAIL L4
NOT TO SCALE

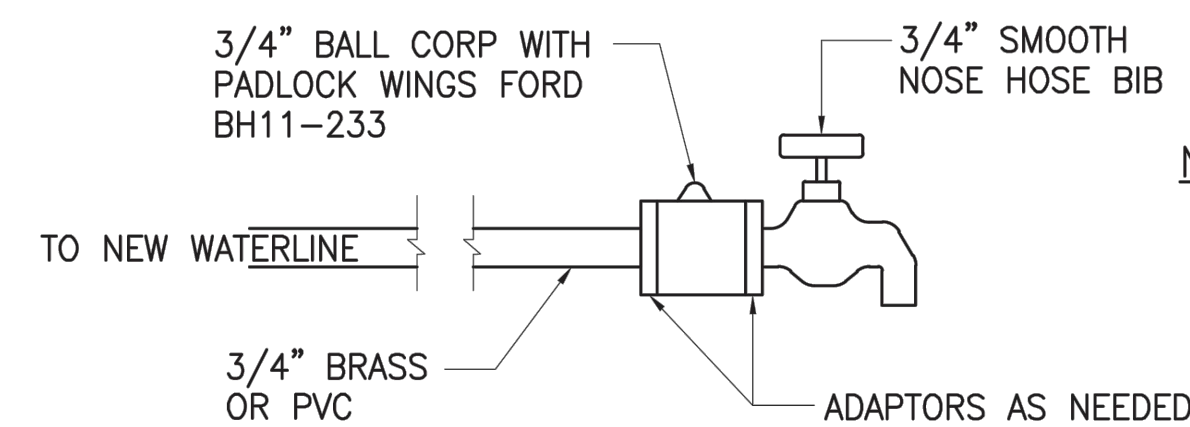
ITEM	DESCRIPTION	SIZE
A	SERVICE SADDLE (SIZE DEPENDS UPON MAIN)	2" CC TAP
B	BALL CORPORATION (FORD FB 400 OR APPROVED EQUAL)	2" CC X MPT
C	PACK JOINT COUPLING (FORD C14-77 OR APPROVED EQUAL)	2"
D	COPPER TUBE TYPE "K" SOFT	2"
E	90° COPPER ELBOW	2"
F	COPPER MALE ADAPTER	2" X 1 1/2"
G	ANGLE BALL VALVE (FORD BFA13-666W OR APPROVED EQUAL)	1 1/2"
H	METER SPACER (TO BE SUPPLIED BY THE DEPT. OF WATER & INSTALLED BY CONTRACTOR)	1 1/2"
I	BALL VALVE (FORD BF13-676W W/ HB67S OR APPROVED EQUAL)	1 1/2"
J	COPPER MALE ADAPTER	2"
K	TYPE "X" CONC. METER BOX W/ C.I. COVER	---

NOTE:
1. CENTER OF METER PIPING AND BOTTOM OF METER BOX SHALL HAVE A 10" CLEARANCE. IF EXISTING LATERAL PIPING NEEDS ADJUSTING, CONTRACTOR SHALL INSTALL NEW LATERAL FROM MAIN AND CUT AND PLUG THE EXISTING LATERAL AT THE MAIN (WATER SYSTEM STANDARD DETAIL L-1 AND L-2).



STAINLESS STEEL OR BRONZE SERVICE SADDLE W/ 2" CC TAP FOR C-900 PVC PIPE AND DUCTILE IRON PIPE)

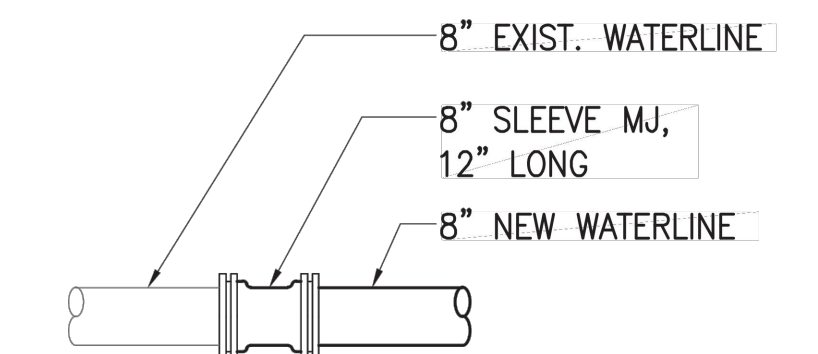
1 1/2" INCH METER DETAIL L5
NOT TO SCALE



NOTES:

SHALL BE USED DURING DISINFECTION RELATED TO WATER NOTES AND PLACED APPROXIMATELY EVERY 1000 FEET OR AS DEEMED BY MANAGER

REQUIRED DEDICATED SAMPLING POINTS
NOT TO SCALE



WATER CONN DETAIL
NOT TO SCALE

REVISION	DATE	DESCRIPTION	APPROVED

BOWERS + KUBOTA CONSULTING

2183 North King Street, Suite 200
Honolulu, Hawaii 96819

JOB NO. 18-03, WP2020 JOB NO. PLH-27

KŪHIŌ HIGHWAY (HARDY-OXFORD)

18" MAIN REPLACEMENT

LĪHU'E WATER SYSTEM

LĪHU'E, KAUA'I, HAWAII

WATER DETAILS - 3

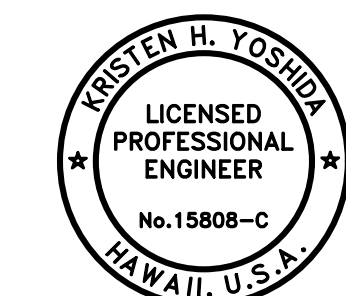
APPROVED:

N/A

FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS
COUNTY OF KAUAI (FOR WORK WITHIN COUNTY RW)

FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER
COUNTY OF KAUAI

16/10/24



Kristen H. Yoshida

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

APRIL 30, 2026

EXPIRATION DATE OF THE LICENSE

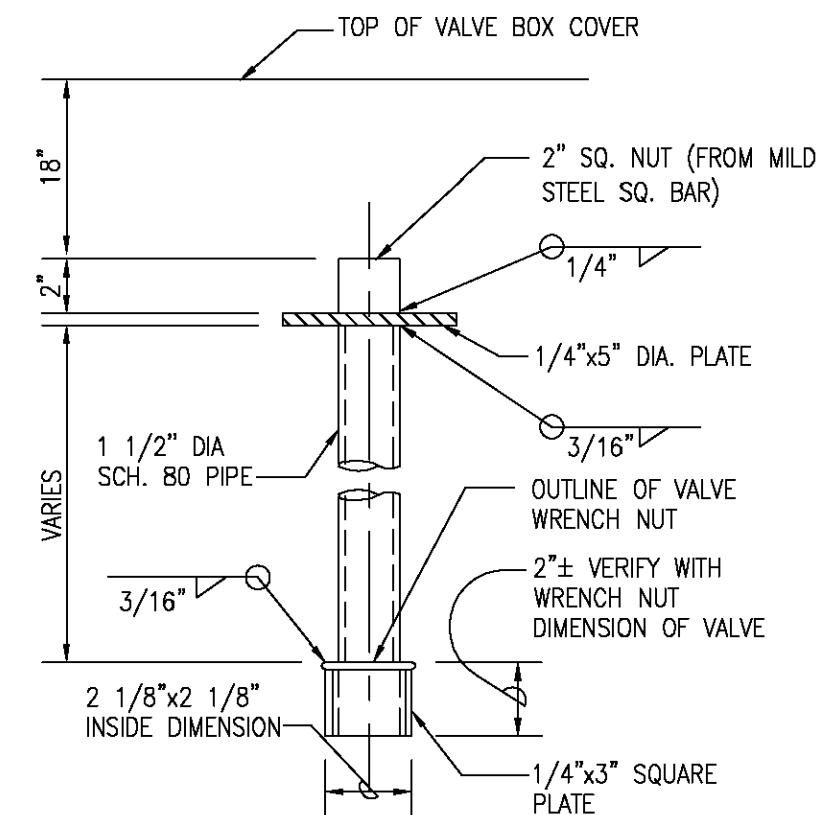
DRAWING NO.
C-503

SCHEDULE OF FITTINGS

NO.	DESCRIPTION	SINGLE SERVICE	DOUBLE SERVICE
A	STAINLESS STEEL SERVICE SADDLE W/TAP FOR C-900 PVC PIPE AND DUCTILE IRON PIPE	1-1" TAP	1-1 1/2" TAP
B	BALL CORPORATION	1-1"	1-1 1/2"
C	PACK JOINT COUPLINGS (FORD C14-44 OR C14-66 OR APPROVED EQUAL)	1-C14-44	1-C14-66
D	COPPER TUBE, TYPE "K" SOFT	1-1"	2-1 1/2"
E	1" 90° COPPER ELBOW S x S	1	2
F	1" COPPER MALE ADAPTER, S x T	1	2
G	ANGLE VALVE, 1" FEMALE IPT, INLET X 3/4" METER COUPLING NUT OUTLET (FORD BA13-342W OR APPROVED EQUAL)	1	2
H	METER SPACER, SUPPLIED BY DOW AND INSTALLED BY CONTRACTOR	1	2
I	BALL VALVE W/HANDLE, 3/4" METER COUPLING NUT INLET X 1" FEMALE IPT OUTLET (FORD B13-342 WHT-34 HANDLE OR APPROVED EQUAL)	1	2
J	LINESETTER - 1" COPPER TUBE, TYPE "K" SOFT, 12" LONG (SEE DETAIL THIS SHEET)	1	2
K	1" PLASTIC THREAD PROTECTOR	1	2
L	TYPE "B" CONCRETE METER BOX W/CAST IRON COVER (SEE DTL THIS SHT)	1	2
M	TEE W/BUSHING (WHEN CONNECTING TO 3" OR SMALLER PVC PIPE)	1-1" BUSHING	1-1 1/2" BUSHING
N	1" x 1" x 1 1/2" COPPER TEE, S x S x S	0	1

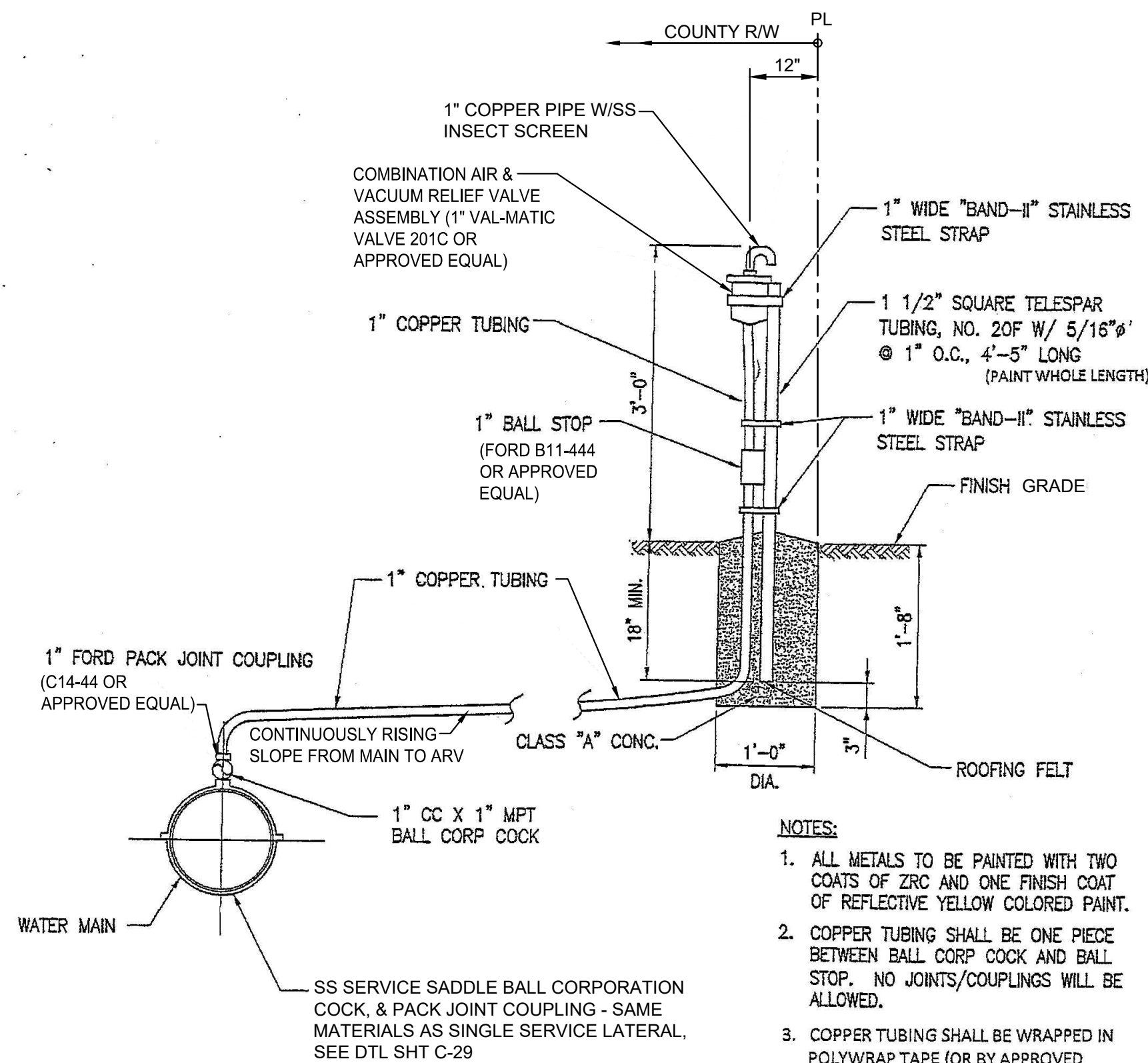
TABLE 1

NO.	DISTANCE BETWEEN LATERAL BRANCH FOR DSL (FT)
C-1 & C-2	5.50
D-1 & D-2	2.00
D-3 & D-4	3.50
D-20 & C-21	3.00



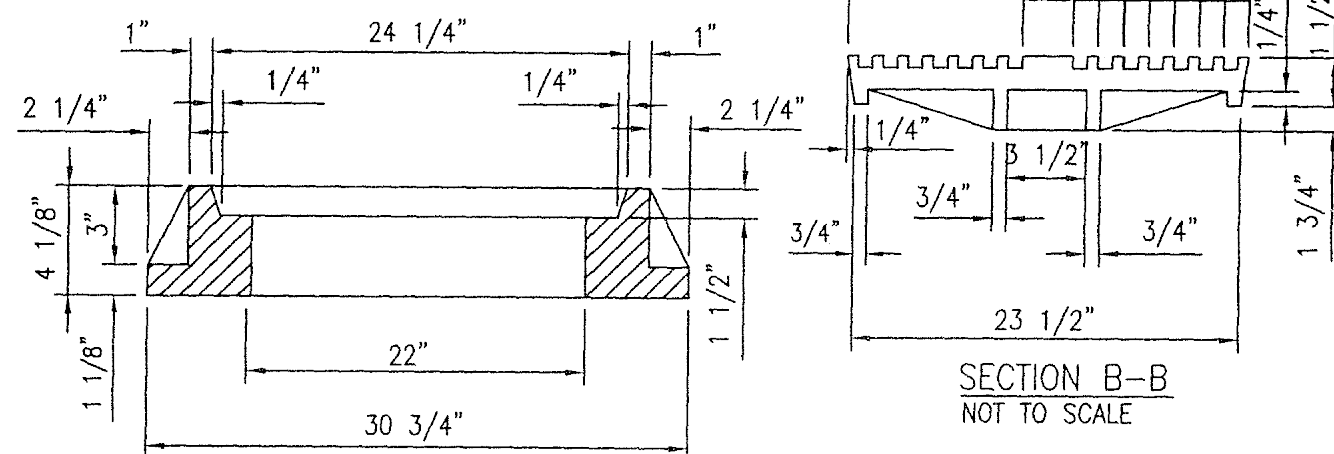
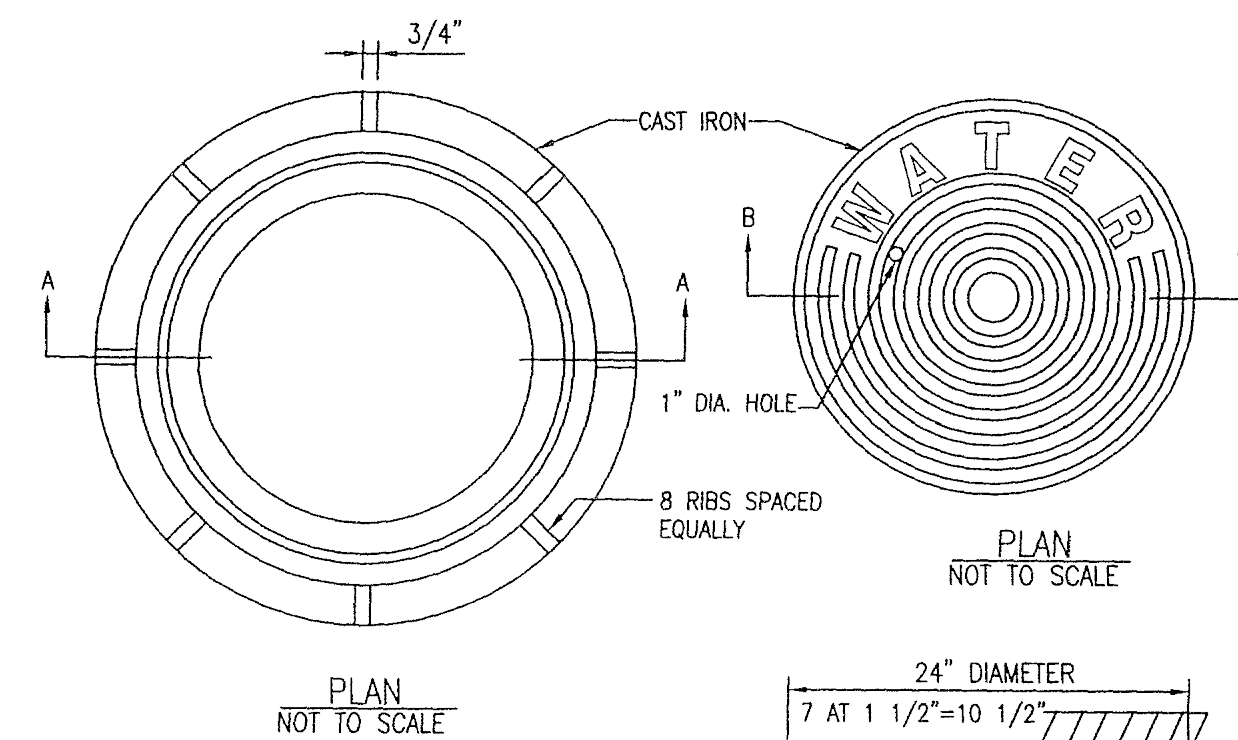
- NOTES:**
- FURNISH AND INSTALL VALVE EXTENSION TO 18" FROM TOP OF VALVE BOX COVER.
 - VALVE EXTENSION SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION.
 - FOR VALVE OPERATORS DEEPER THAN 3.5' TO FINISH GRADE.

VALVE NUT EXTENSION
NOT TO SCALE



- NOTES:**
- ALL METALS TO BE PAINTED WITH TWO COATS OF ZRC AND ONE FINISH COAT OF REFLECTIVE YELLOW COLORED PAINT.
 - COPPER TUBING SHALL BE ONE PIECE BETWEEN BALL CORP COCK AND BALL STOP. NO JOINTS/COUPLINGS WILL BE ALLOWED.
 - COPPER TUBING SHALL BE WRAPPED IN POLYWRAP TAPE (OR BY APPROVED METHOD) IF LOCATED IN CONCRETE OR WHERE IN CONTACT WITH STRAPS.

ARV PIPE STAND DETAIL
NOT TO SCALE



- NOTE:**
- ALL CASTINGS SHALL BE MADE ACCURATELY TO THE DIMENSIONS SHOWN. SEAT AND COVER SHALL BE MACHINED, NOT GRIND TO SECURE FLAT AND TRUE SURFACES. THE COVER SHALL NOT RATTLE IN ANY POSITION.

MANHOLE FRAME & COVER
CAST IRON, 24" SIZE
NOT TO SCALE

MINIMUM WEIGHT FOR MANHOLE COVERS AND FRAMES

MANHOLE/VALVE BOX SIZE	COVER WEIGHT (POUNDS)	FRAME WEIGHT (POUNDS)
24-INCH	140	195

HALF SIZE TRIMLINE FOR 11" x 17"
 Wednesday, August 14, 2024, 4:54:40 PM
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REVISION	DATE	DESCRIPTION	APPROVED

BOWERS + KUBOTA CONSULTING
2183 North King Street, Suite 200
Honolulu, Hawaii 96819

JOB NO. 18-03, WP2020 JOB NO. PLH-27
KŪHIŌ HIGHWAY (HARDY-OXFORD)
18" MAIN REPLACEMENT
LĪHU'E WATER SYSTEM
LĪHU'E, KAUA'I, HAWAII

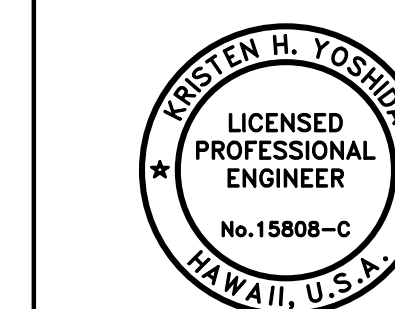
WATER DETAILS - 4

APPROVED: _____ DATE _____

N/A FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS COUNTY OF KAUAI (FOR WORK WITHIN COUNTY RW)

FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER COUNTY OF KAUAI

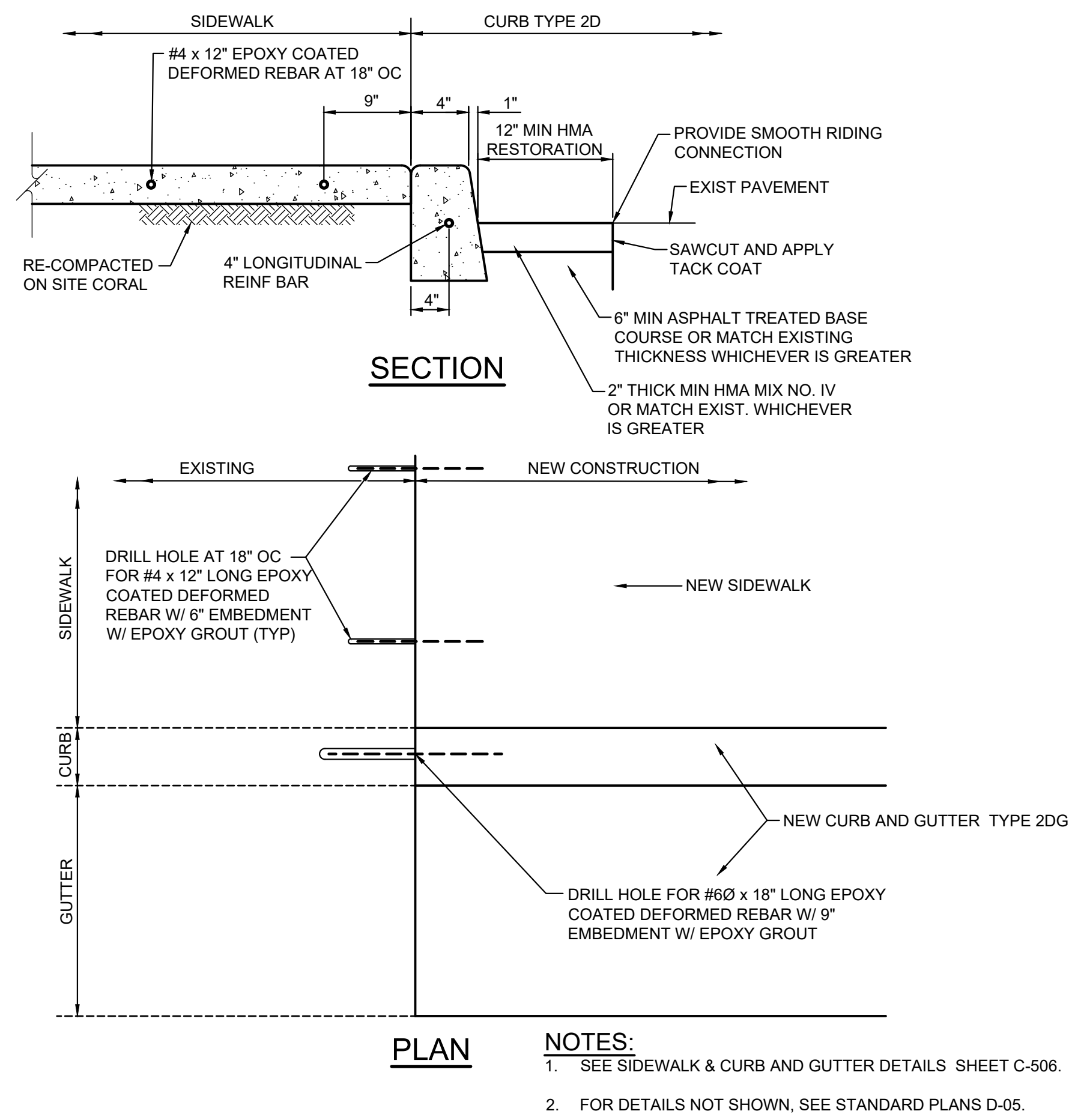
16/10/24



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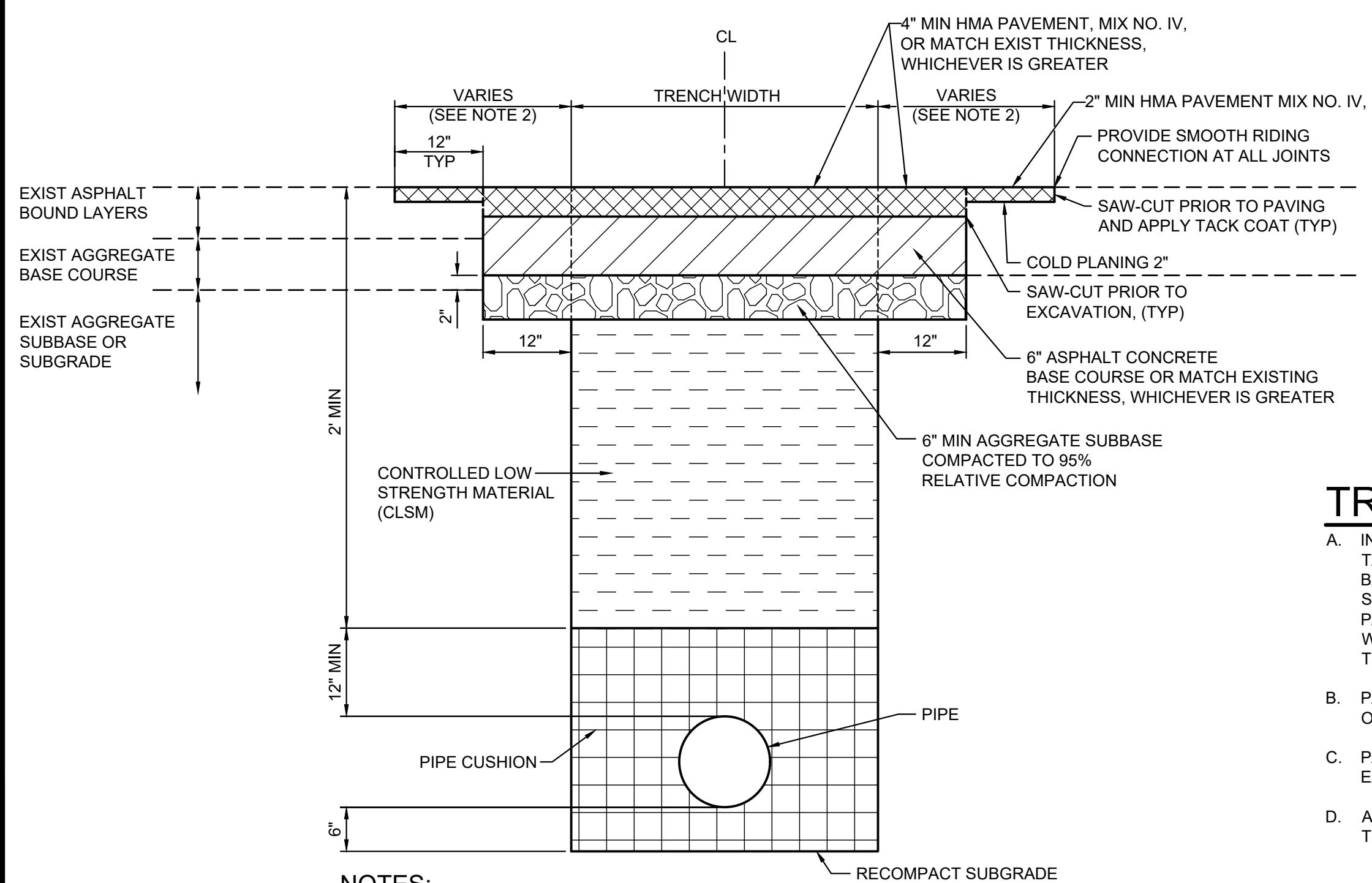
APRIL 30, 2026
EXPIRATION DATE OF THE LICENSE

DRAWING NO. **C-504**



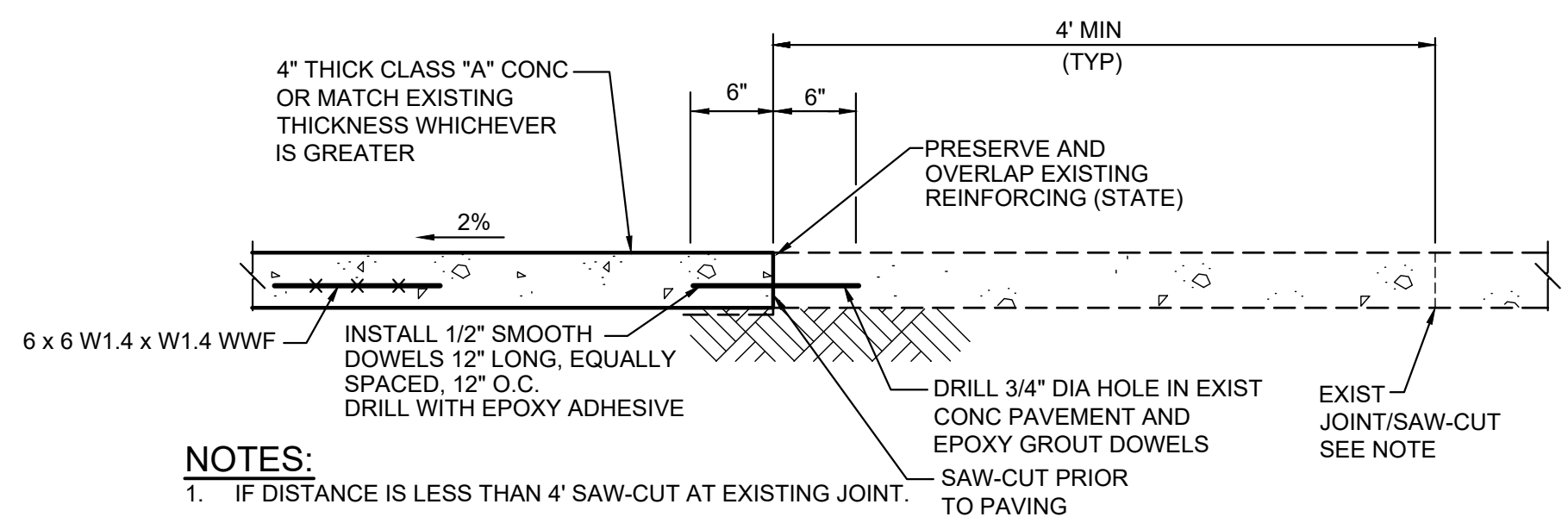
LONGITUDINAL JOINT AT CONC SIDEWALK, CURB AND GUTTER (STATE ROW)

SCALE: 1"=1'-0"



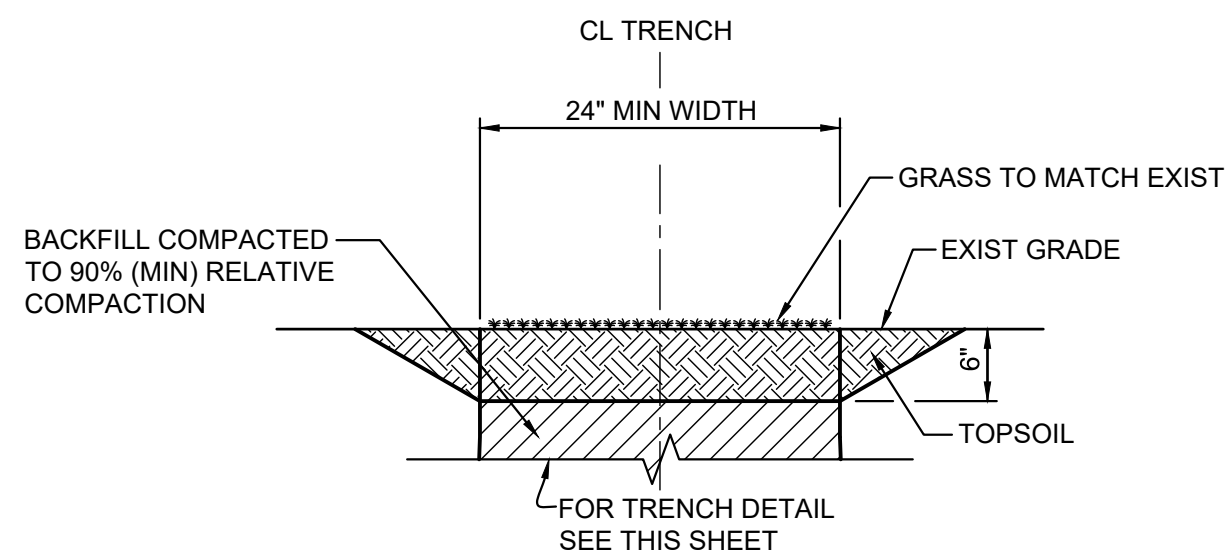
WATER LINE TRENCH SECTION (STATE ROW)

SCALE: 1/16"=1'-0"



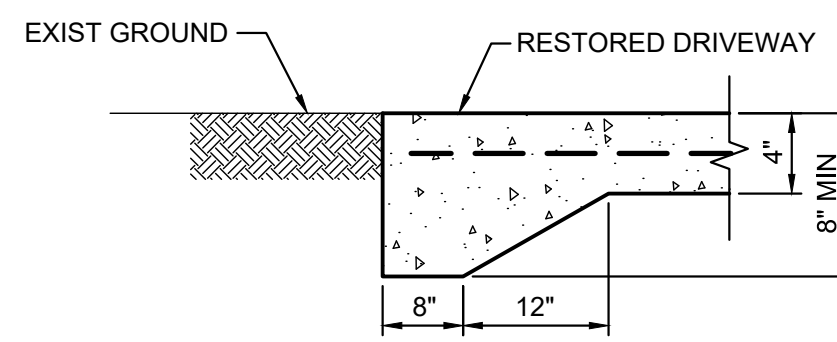
CONCRETE SIDEWALK RESTORATION (STATE ROW)

SCALE: 1"=1'-0"



WATER LINE TRENCH RESTORATION DETAIL - LANDSCAPE (STATE ROW)

NOT TO SCALE



TRANSITION DETAIL AT INTERFACE OF DRIVEWAY AND LANDSCAPED OR BARE SOIL AREAS

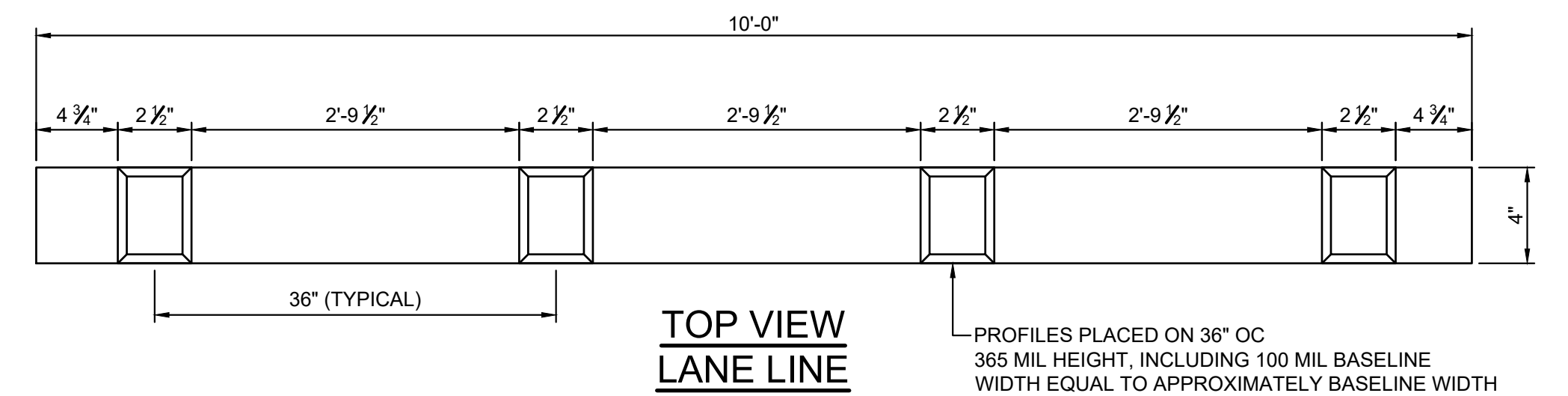
NOT TO SCALE

TRENCH DETAIL NOTES:

- A. INSTALL 4 MIL THICK, NON-METALLIC, BLUE COLORED, WARNING TAPE 6" WIDE OVER CENTERLINE OF THE PIPE AND BELOW THE BASE COURSE ALONG THE ENTIRE LENGTH OF TRENCH. TAPE SHOULD BE MARKED WITH "CAUTION WATER LINE BURIED BELOW". PAYMENT FOR THE FURNISHING AND INSTALLATION OF THE WARNING TAPE SHALL BE INCIDENTAL TO THE UNIT PRICE BID FOR THE PIPE.
- B. PAVEMENT AND BASE COURSE TO MATCH EXISTING THICKNESS OR THE MINIMUM THICKNESS SHOWN, WHICHEVER IS GREATER.
- C. PAVEMENT STRUCTURE SHALL BE EQUAL OR BETTER THAN EXISTING IN THICKNESS AND QUALITY.
- D. AC PAVEMENT SHALL EXTEND 6' BEYOND LONGITUDINAL END OF TRENCH OR AS SHOWN.

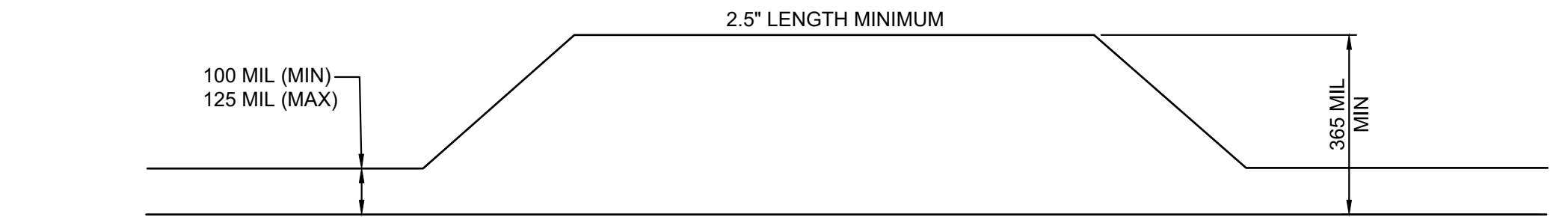
TRENCH WIDTH	
PIPE DIA (IN)	TRENCH WIDTH (IN)
TUBING < 4	12
4 TO 12	24
16	30

REFERENCE: BWS STANDARDS TABLE 300-1

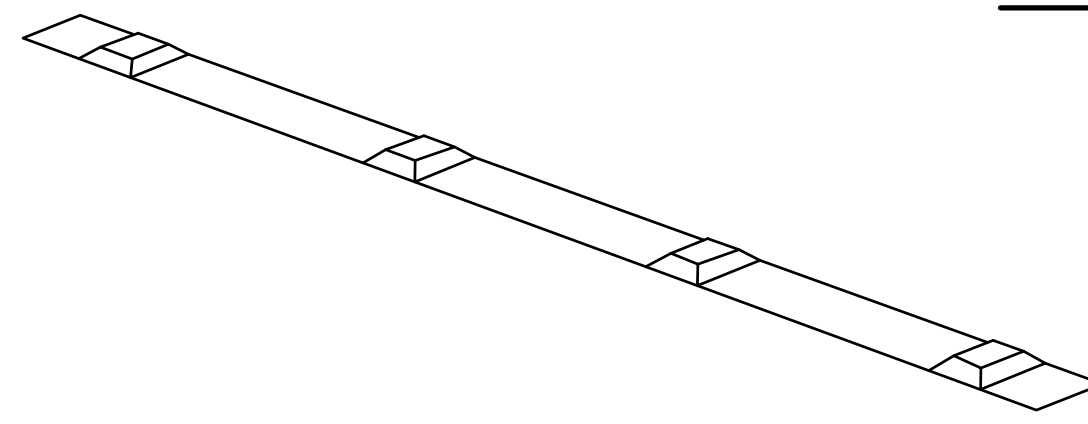


TOP VIEW LANE LINE

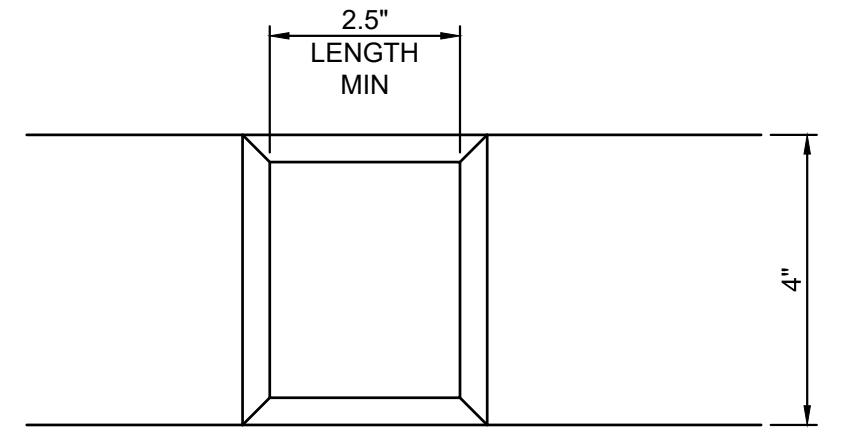
PROFILES PLACED ON 36" OC. 365 MIL HEIGHT, INCLUDING 100 MIL BASELINE WIDTH EQUAL TO APPROXIMATELY BASELINE WIDTH



SIDE VIEW



PERSPECTIVE VIEW



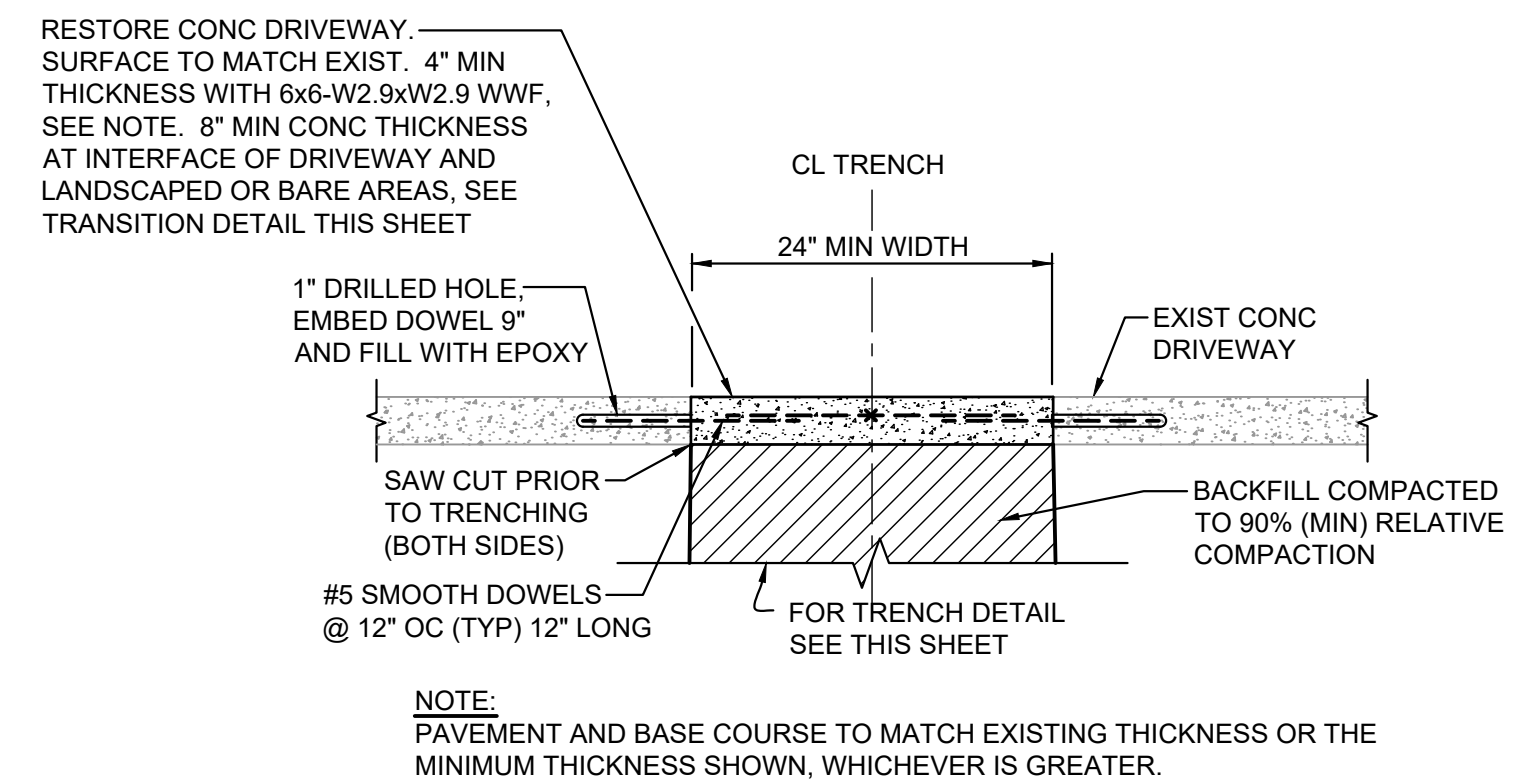
TOP VIEW

NOTES:

- 1. THE THERMOPLASTIC MATERIAL MUST BE A ALKYD-BASED COMPOUND FORMULATED FOR PROFILED PAVEMENT MARKINGS.
- 2. INSTALL WHITE PROFILED THERMOPLASTIC STRIPES AS LANE LINE.
- 3. INSTALL YELLOW PROFILED THERMOPLASTIC STRIPES FOR CENTERLINE PASSING ZONE.
- 4. IN AREAS WITH CENTERLINE MILLED RUMBLE STRIPS, INSTALL STANDARD YELLOW THERMOPLASTIC STRIPES WITHOUT RAISED PROFILES.

PROFILED THERMOPLASTIC STRIPING

NOT TO SCALE



WATER LINE TRENCH RESTORATION DETAIL - CONCRETE DRIVEWAY (STATE ROW)

NOT TO SCALE

REVISION	DATE	DESCRIPTION	APPROVED

BOWERS + KUBOTA CONSULTING

2183 North King Street, Suite 200
Honolulu, Hawaii 96819

JOB NO. 18-03, WP2020 JOB NO. PLH-27

KŪIŌI HIGHWAY (HARDY-OXFORD)

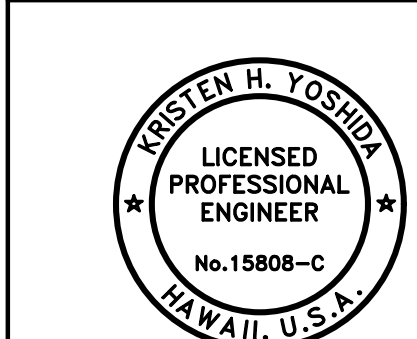
18" MAIN REPLACEMENT

LĪHU'E WATER SYSTEM

LĪHU'E, KAUA'I, HAWAII

STATE ROW MISCELLANEOUS DETAILS - 1

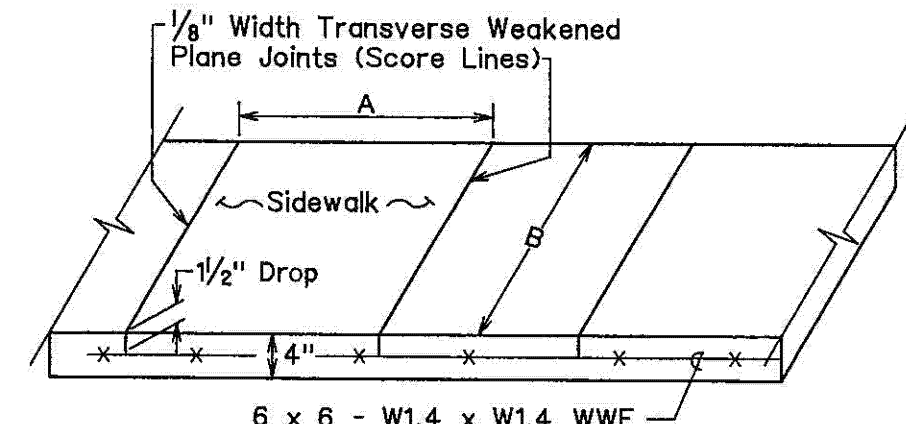
APPROVED:		DATE
N/A	FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS COUNTY OF KAUAI (FOR WORK WITH COUNTY RW)	
<i>Jessie Kaganato</i>	FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER COUNTY OF KAUAI	16/10/24



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EXPIRATION DATE OF THE LICENSE

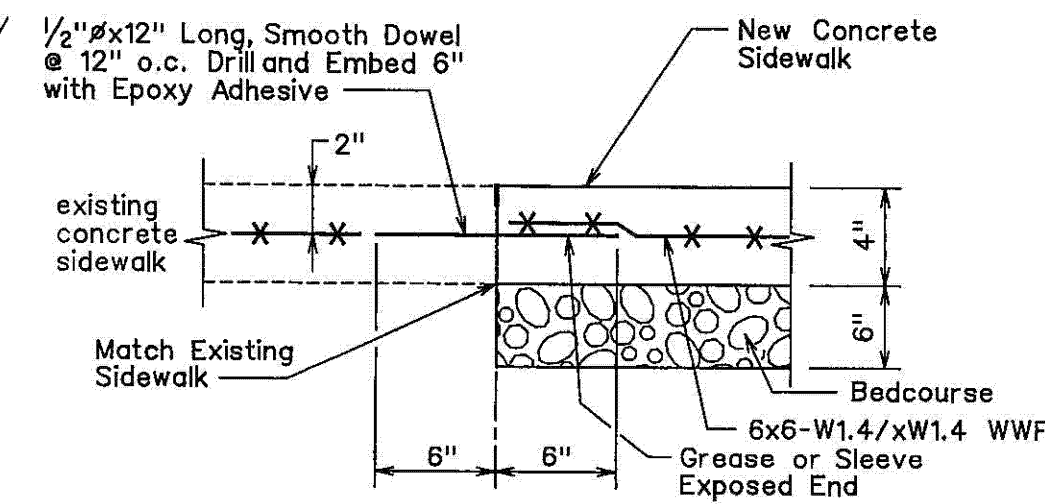
DRAWING NO.
C-505

Wednesday, August 14, 2024, 4:54:54 PM
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 HALF SIZE TRIMLINE FOR 11" x 17"

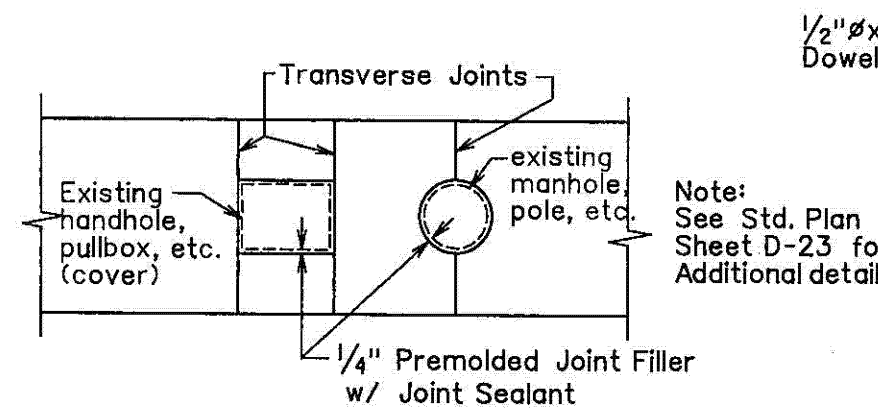


- Notes:**
1. Joint Dimensions or (B/A or A/B) < 1.25 and (A or B) not to exceed 7'-0"
 2. Longitudinal Joints shall be similar to Transverse Joints.
 3. Special Design to be used where A or B > 7'-0"

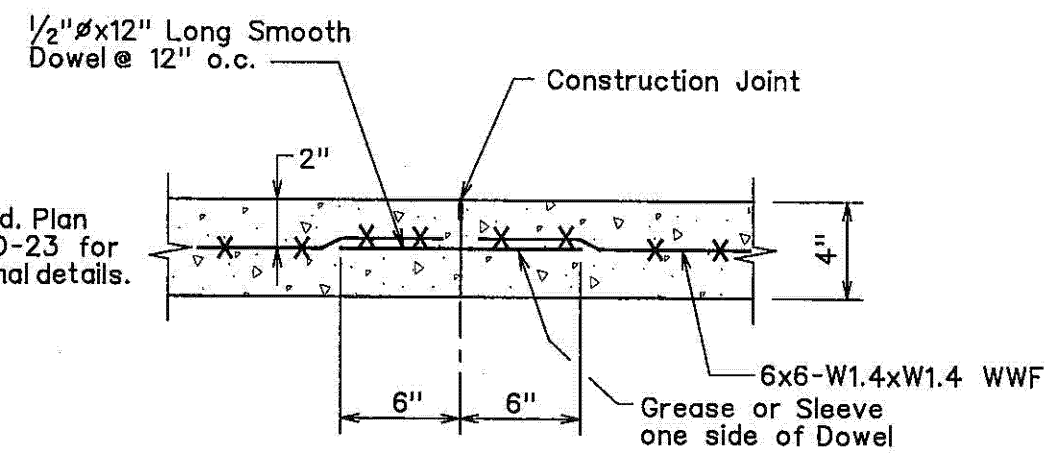
SIDEWALK CONTRACTION JOINT DETAIL



TRANSVERSE JOINT AT EXISTING SIDEWALK

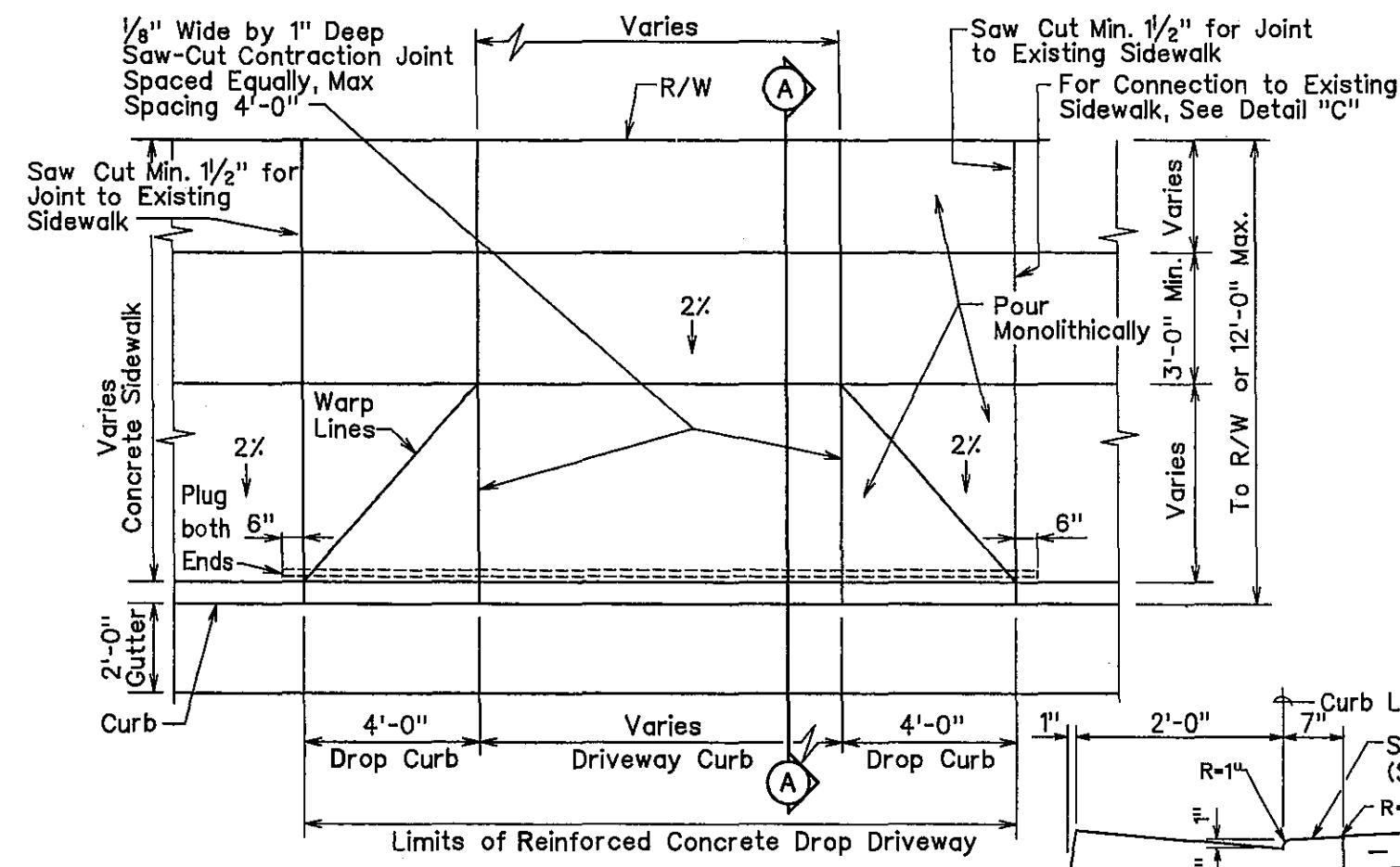


SIDEWALK ISOLATION JOINT DETAIL

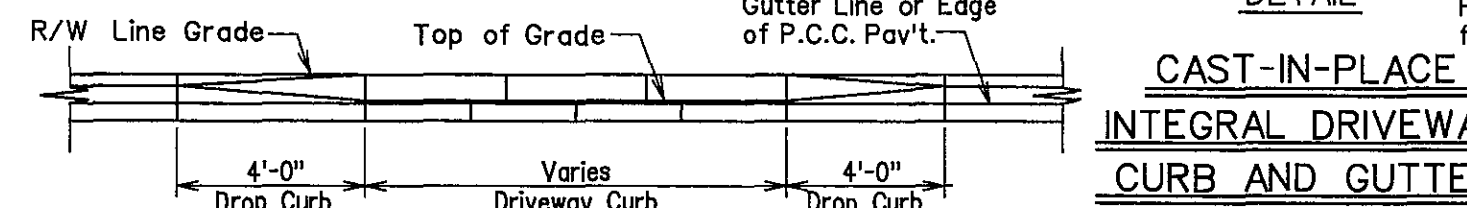


TRANSVERSE CONSTRUCTION JOINT DETAIL

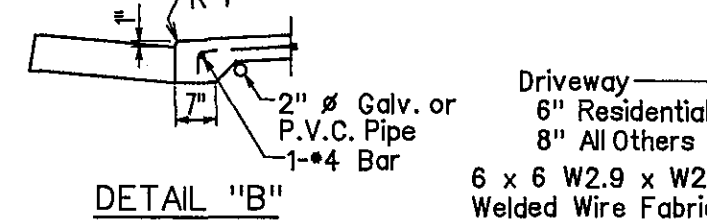
- NOTES:**
1. Dressing of sidewalk shall consist of clearing, grubbing, grading, reshaping and compacting the area adjacent to the improvement with suitable material as shown on the plans and/or as directed by the Engineer. If existing ground is asphalt or concrete surface, dress sidewalk with A.C. pavement, Mix No. V. This work shall be considered incidental to the new sidewalk.
 2. Transverse and longitudinal weakened plane joints for sidewalk shall be considered incidental to the new sidewalk.
 3. Installation of dowels and tie bars, including drilling and epoxy grout, shall be incidental to sidewalk.
 4. Concrete shall be Class "A".



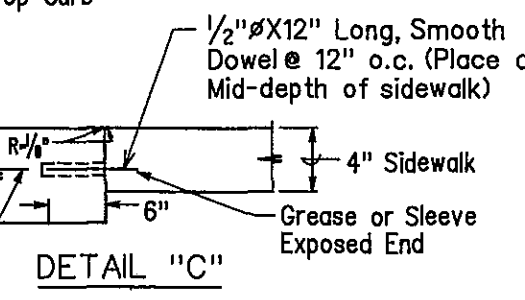
PLAN



DRIVEWAY ELEVATION



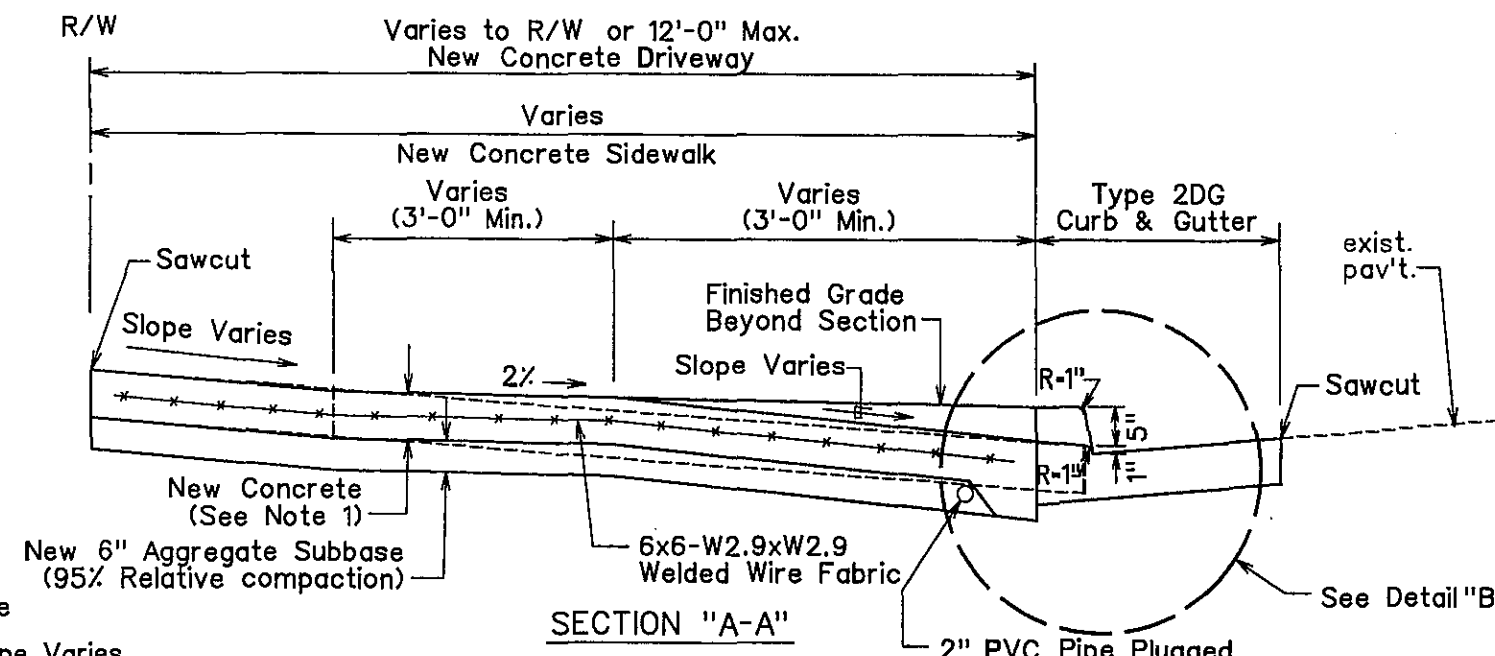
DETAIL "B"



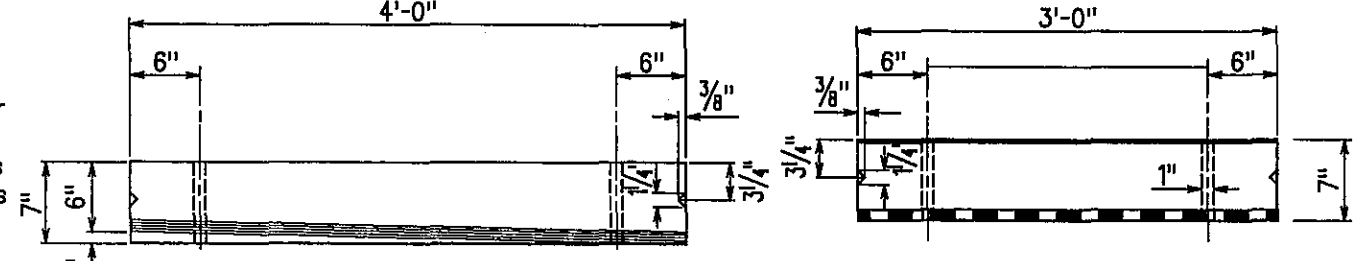
DETAIL "C"

TYPICAL DETAILS OF REINF. CONC. DROP DRIVEWAY

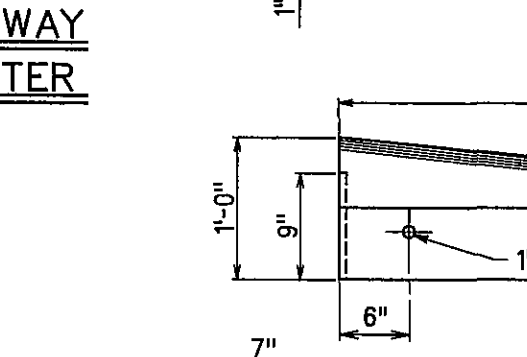
- NOTES:**
1. Minimum Concrete Drop Driveway thickness
 - a. Residential - 6"
 - b. Commercial - 8"
 2. Thickness of Aggregate Subbase course beneath Concrete Pavement may be revised to address expansive or soft soil sub-grades if deemed necessary by the Engineer.
 3. P.C.C. Gutters shall be longitudinally broom finished.
 4. The top of all types of Concrete Curbs, including Driveway Curbs shall be longitudinally broom finished.
 5. Residential Driveway Width:
 - 10' Min. and 20' Max.
 - Commercial Driveway Width:
 - 12' Min. and 20' Max. (One Way)
 - 22' Min. and 35' Max. (Two Way)
 6. For A.C. pavement areas use same thickness as A.C. + A.C. Base but not less than 10". For P.C.C. pavement areas, same thickness as P.C.C. pavement.
 7. Design is based on the following assumption:
 - a. Concrete modulus of rupture - 650 psi at 28 days
 - b. Design life - 20 years
 - c. For stiff clays, subgrade modulus - 100 to 200 pci
 - d. For sands & gravel, subgrade modulus - 200 to 400 pci
 - e. Two-way ADTT between 4 and 10 for residential driveways
 - f. Two-way ADTT between 50 and 200 for commercial driveways
 - g. Load safety factor - 1.0
 - h. Light axle load category used for residential driveway.
 8. Drawings are not to scale.



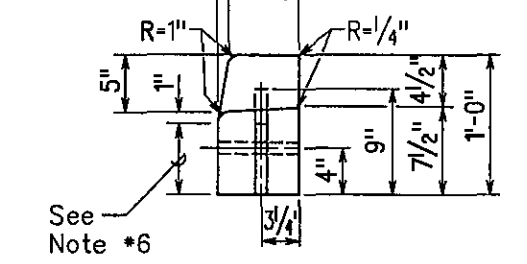
SECTION "A-A"



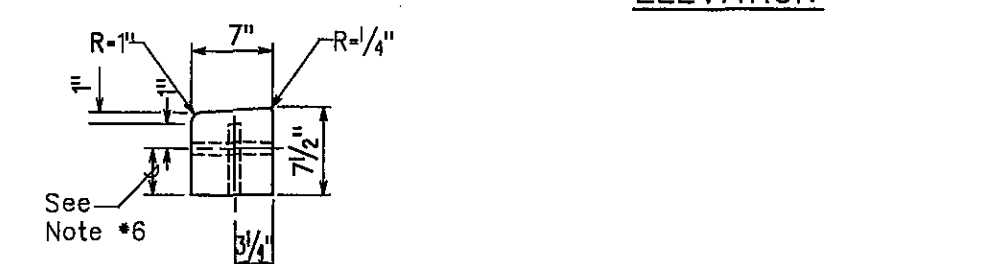
PLAN



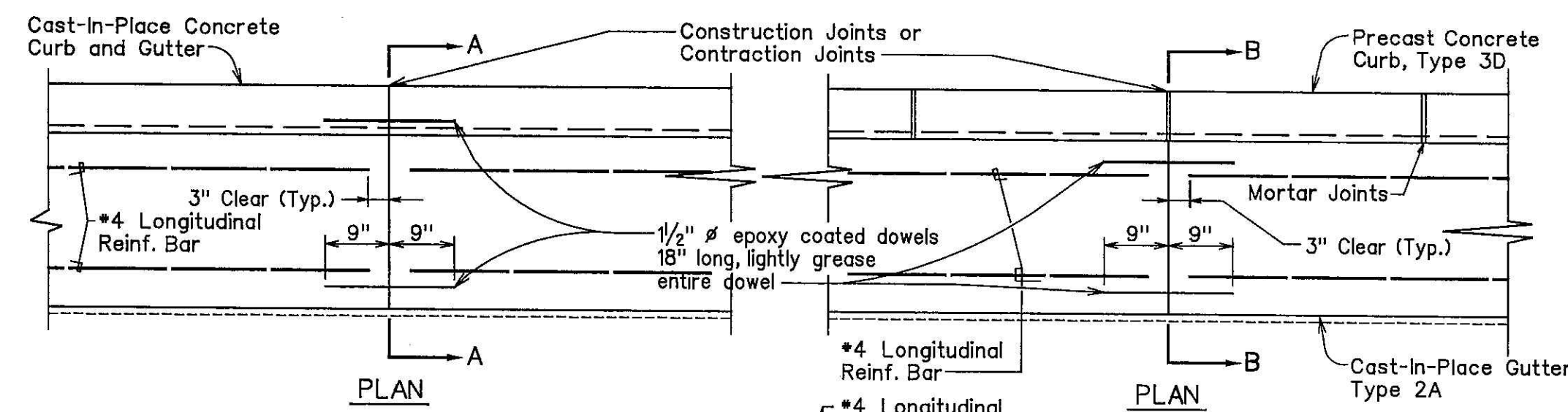
ELEVATION



SECTION "E-E" PRE-CAST CONC. DROP CURB BLOCK

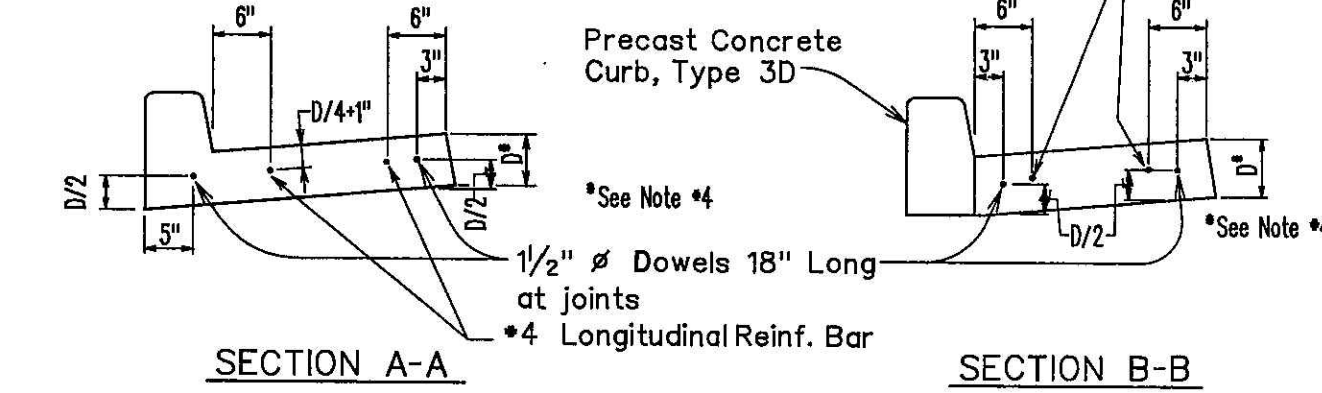


SECTION "F-F" PRE-CAST CONC. DRIVEWAY CURB



PLAN

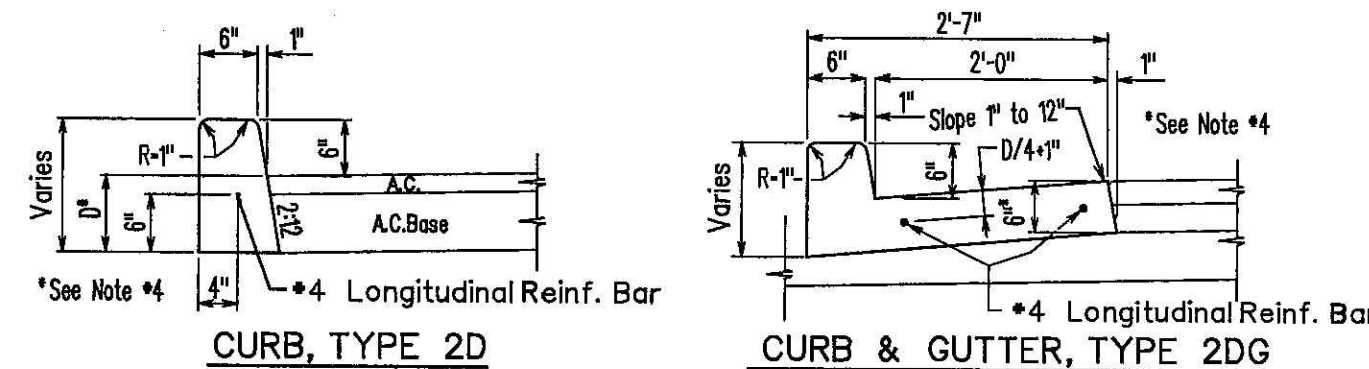
PLAN



SECTION A-A

SECTION B-B

CAST-IN-PLACE CURB & GUTTER CONSTRUCTION AND CONTRACTION JOINT DETAIL



CURB, TYPE 2D

CURB & GUTTER, TYPE 2DG

CAST-IN-PLACE CONCRETE CURBS AND/OR GUTTERS

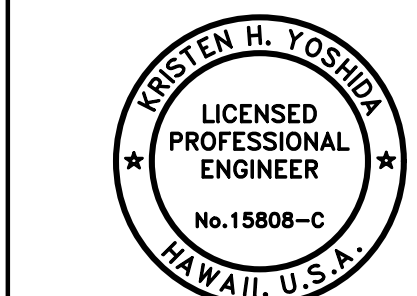
REVISION	DATE	DESCRIPTION	APPROVED

BOWERS + KUBOTA CONSULTING
2183 North King Street, Suite 200
Honolulu, Hawaii 96819

JOB NO. 18-03, WP2020 JOB NO. PLH-27
KŪHIŌ HIGHWAY (HARDY-OXFORD)
18" MAIN REPLACEMENT
LĪHU'E WATER SYSTEM
LĪHU'E, KAUAI, HAWAII

STATE ROW MISCELLANEOUS DETAILS - 2

APPROVED: _____ DATE _____
N/A
FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS
COUNTY OF KAUAI (FOR WORK WITHIN COUNTY ROW)
FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER
COUNTY OF KAUAI



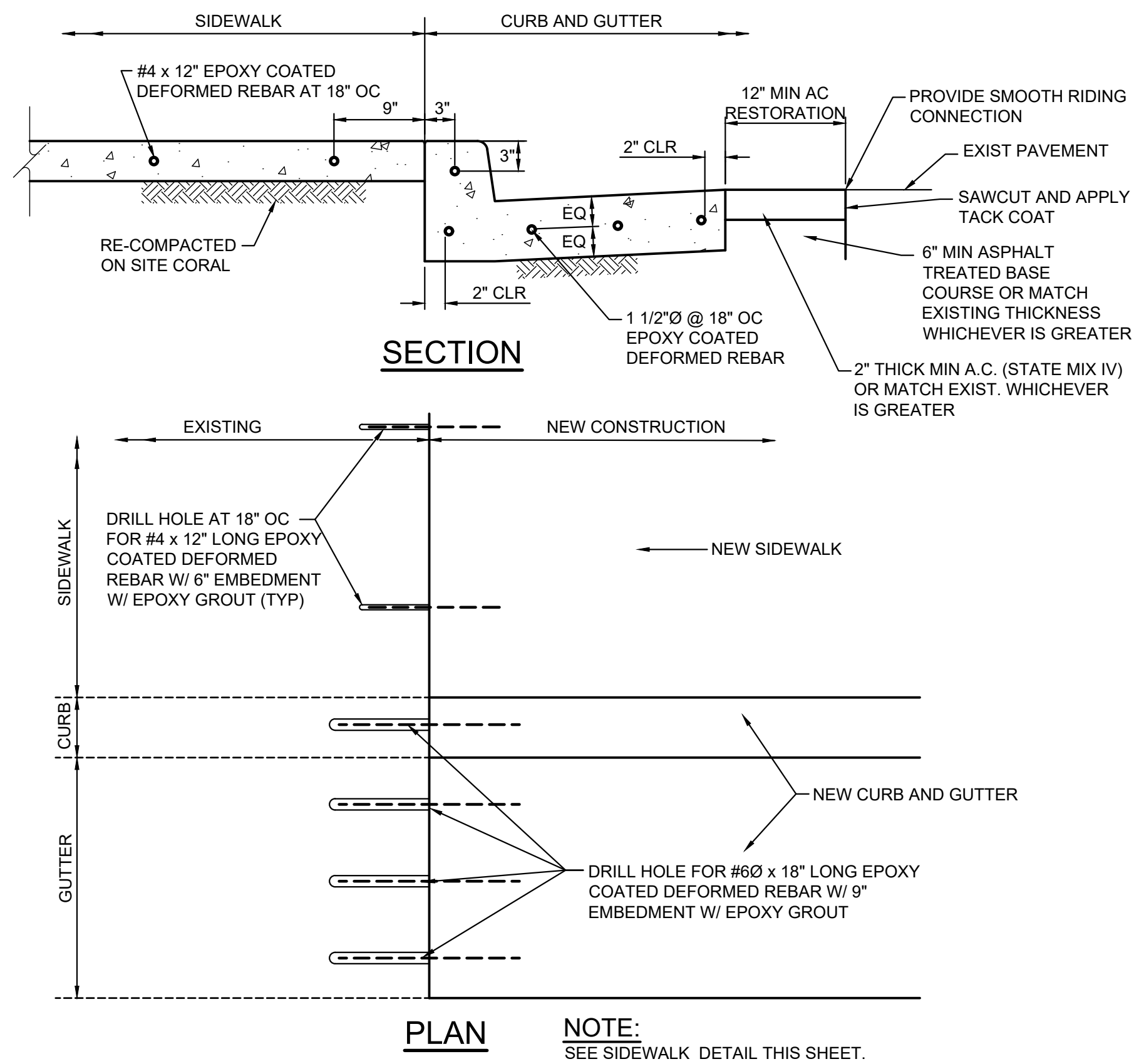
Kristen H. Yoshida

DRAWING NO.
C-506

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APRIL 30, 2026
EXPIRATION DATE OF THE LICENSE

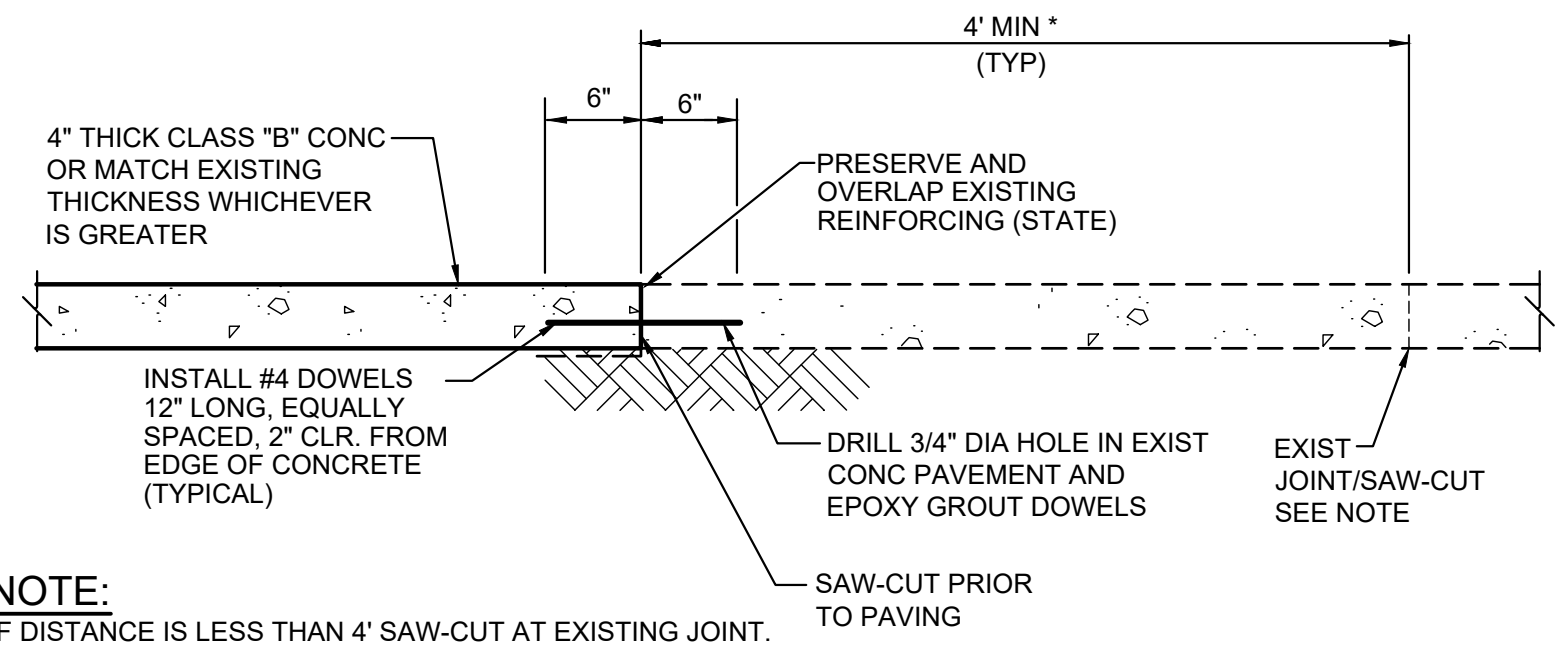
DATE
16/10/24

Wednesday, August 14, 2024, 4:05:05 PM
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 HALF SIZE TRIMLINE FOR 11" x 17"



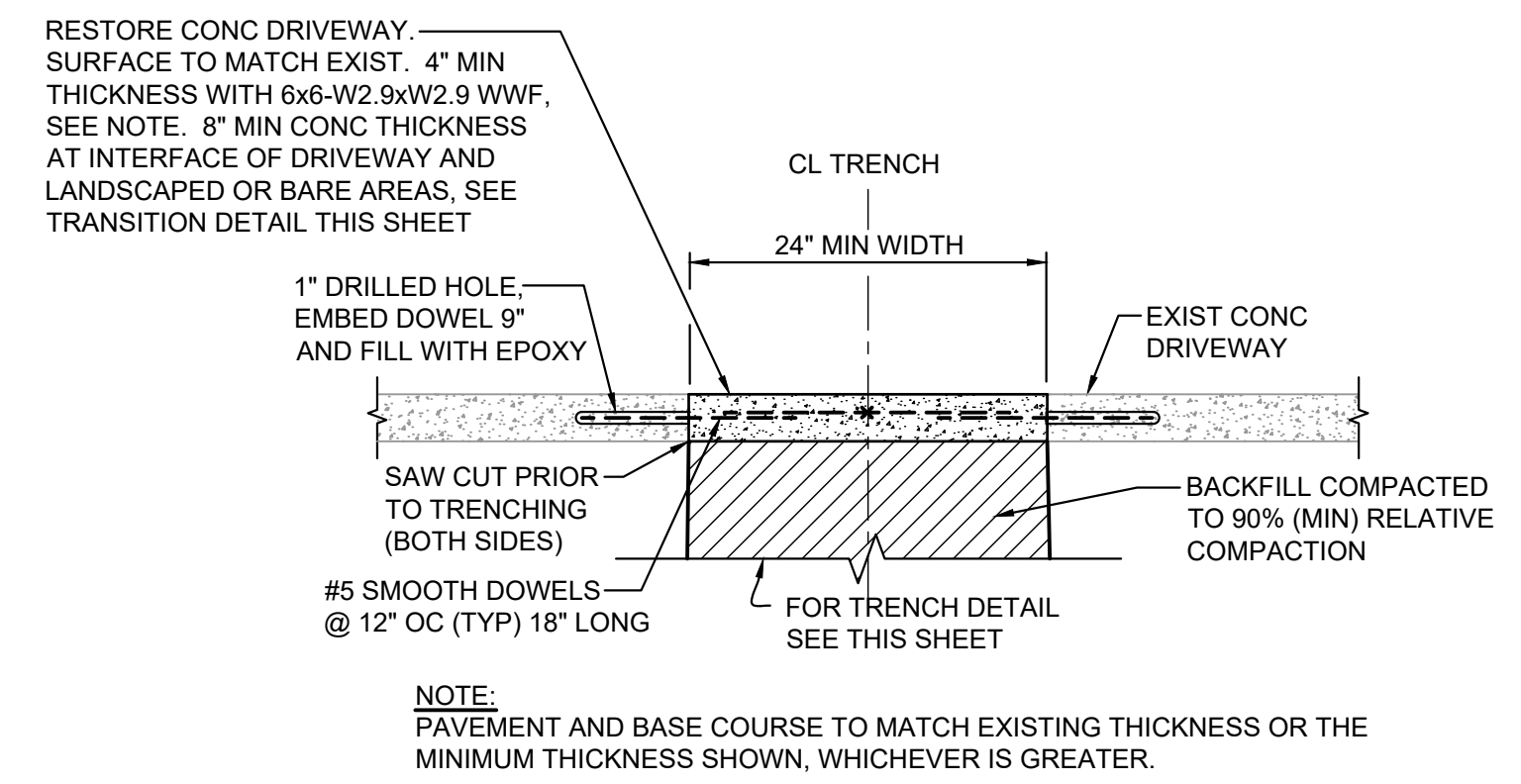
LONGITUDINAL JOINT AT CONC SIDEWALK, CURB AND GUTTER (COUNTY ROW)

SCALE: 1"=1'-0"



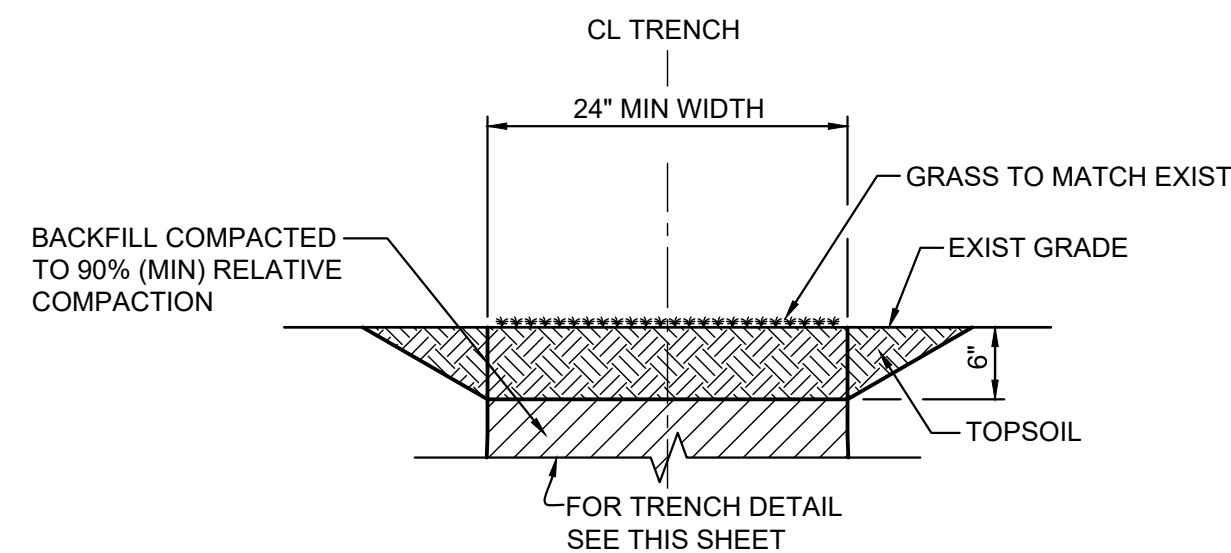
CONCRETE SIDEWALK RESTORATION (COUNTY ROW)

SCALE: 1"=1'-0"



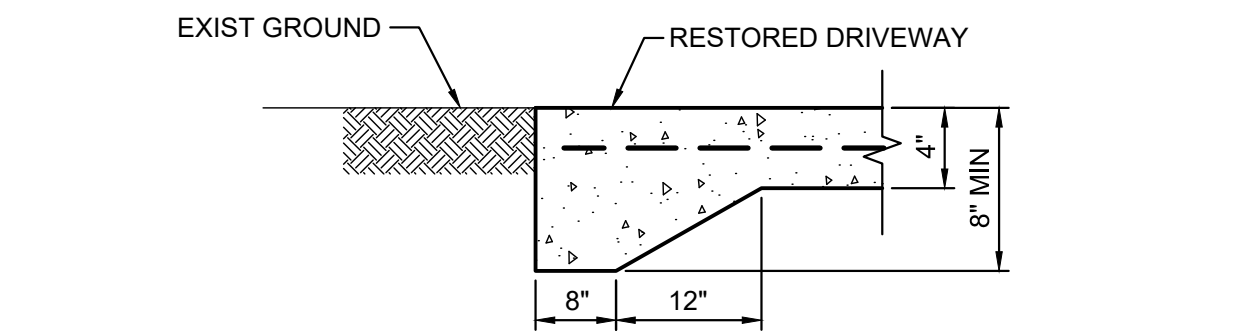
WATER LINE TRENCH RESTORATION DETAIL - CONCRETE DRIVEWAY (COUNTY ROW)

NOT TO SCALE



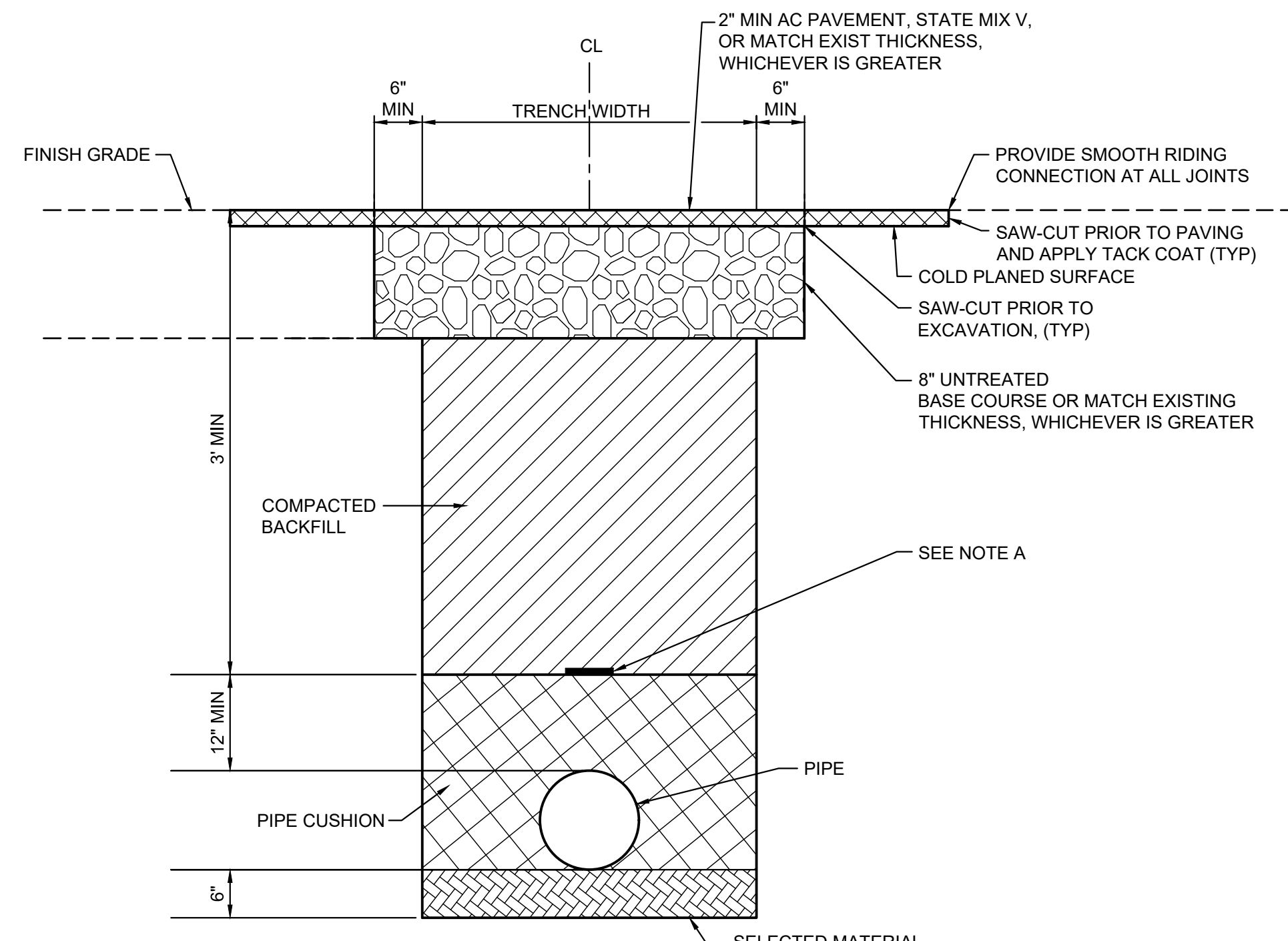
WATER LINE TRENCH RESTORATION DETAIL - LANDSCAPE (COUNTY ROW)

NOT TO SCALE



TRANSITION DETAIL AT INTERFACE OF DRIVEWAY AND LANDSCAPED OR BARE SOIL AREAS

NOT TO SCALE



NOTES:
 1. TACK COAT FACES OF EXISTING ASPHALT BOUND MATERIALS PRIOR TO FILLING EXCAVATION WITH NEW ASPHALT BOUND MATERIALS.
 2. 1' FOR TRANSVERSE TRENCHES.

WATER LINE TRENCH SECTION (COUNTY ROW)

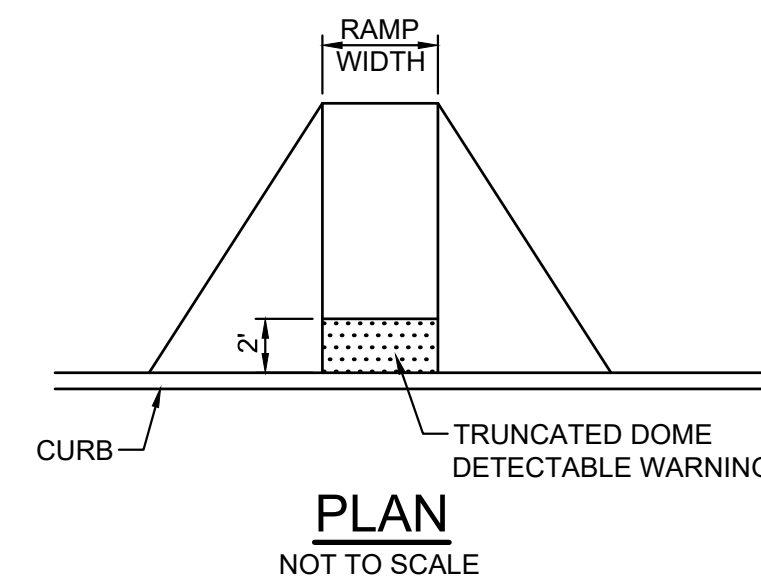
SCALE: 1/16"=1'-0"

TRENCH DETAIL NOTES:

- A. INSTALL 4 MIL THICK, NON-METALLIC, BLUE COLORED, WARNING TAPE 6" WIDE OVER CENTERLINE OF THE PIPE AND BELOW THE BASE COURSE ALONG THE ENTIRE LENGTH OF TRENCH. TAPE SHOULD BE MARKED WITH "CAUTION WATER LINE BURIED BELOW". PAYMENT FOR THE FURNISHING AND INSTALLATION OF THE WARNING TAPE SHALL BE INCIDENTAL TO THE UNIT PRICE BID FOR THE PIPE.
- B. PAVEMENT AND BASE COURSE TO MATCH EXISTING THICKNESS OR THE MINIMUM THICKNESS SHOWN, WHICHEVER IS GREATER.
- C. PAVEMENT STRUCTURE SHALL BE EQUAL OR BETTER THAN EXISTING IN THICKNESS AND QUALITY.
- D. AC PAVEMENT SHALL EXTEND 2' BEYOND LONGITUDINAL END OF TRENCH.

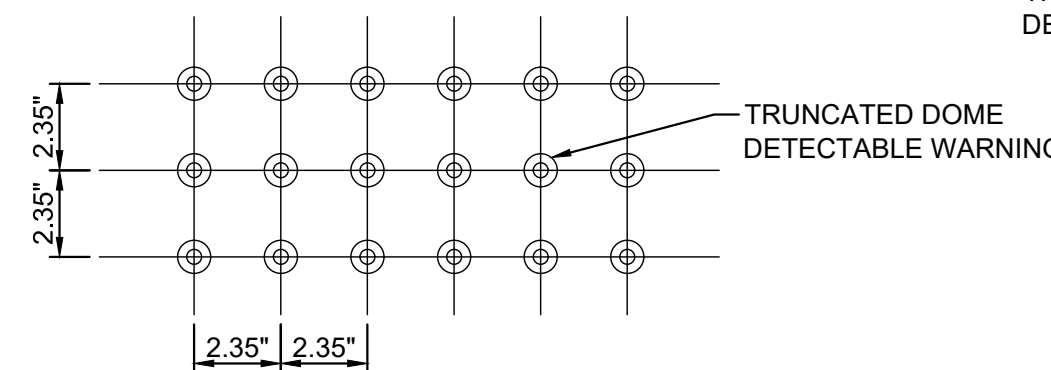
TRENCH WIDTH	
PIPE DIA (IN)	TRENCH WIDTH (IN)
TUBING < 4	12
4 TO 12	24
16	30

REFERENCE: BWS STANDARDS TABLE 300-1



PLAN

NOT TO SCALE

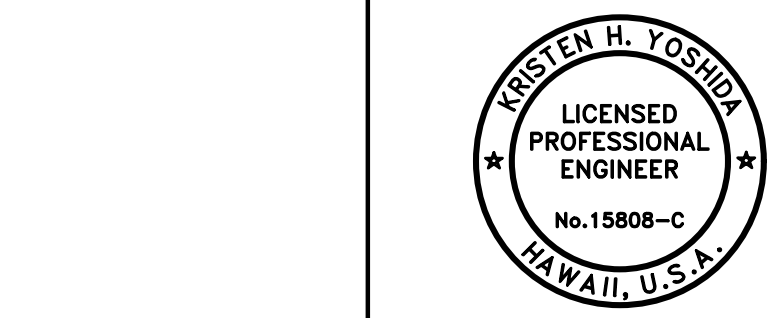


PLAN

SECTION

TRUNCATED DOME DETECTABLE WARNING (TYP @ ALL CURB RAMPS)

SCALE: 3/16"=1'-0"
 LOAD SCALE: 0.015625

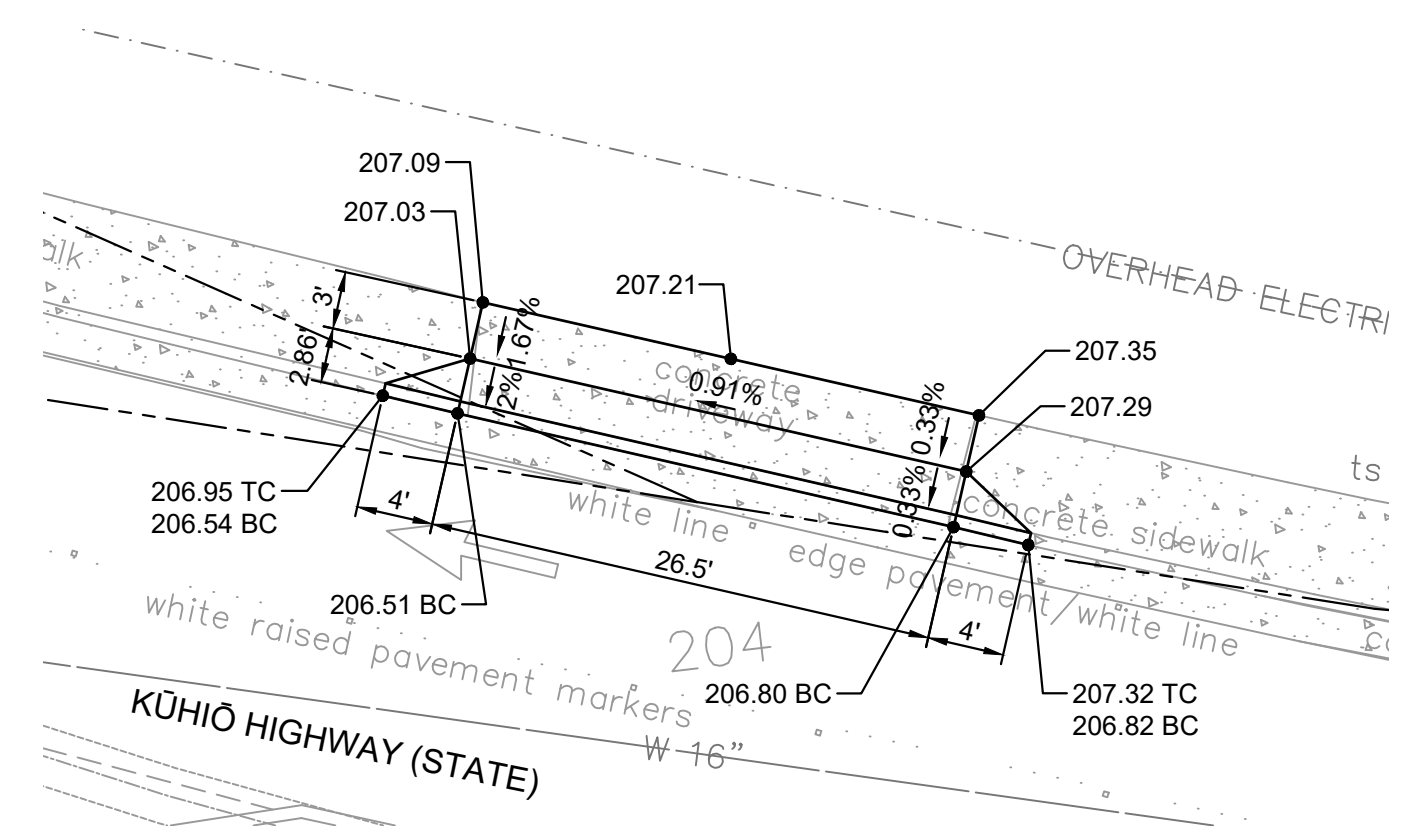


Kristen H. Yoshida

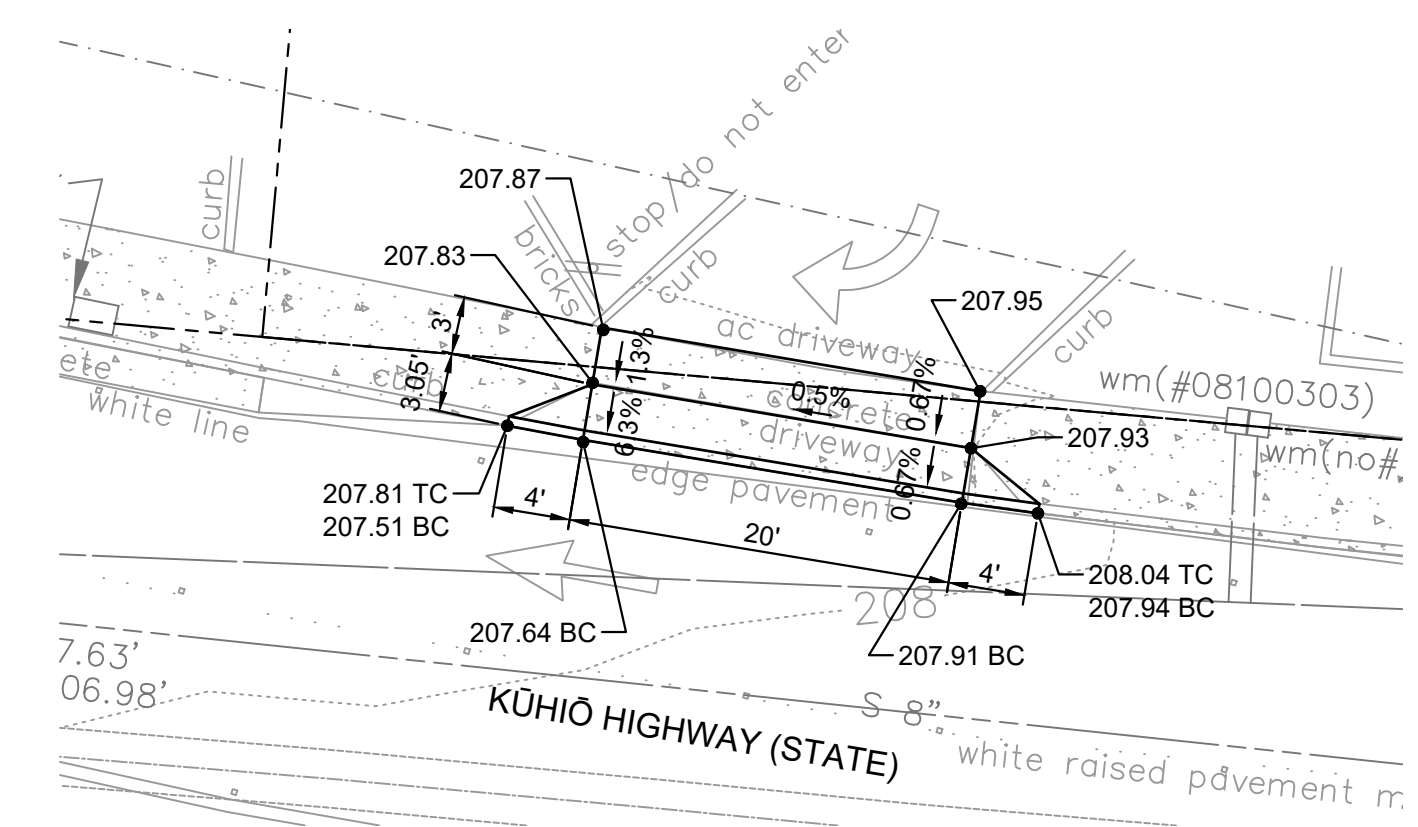
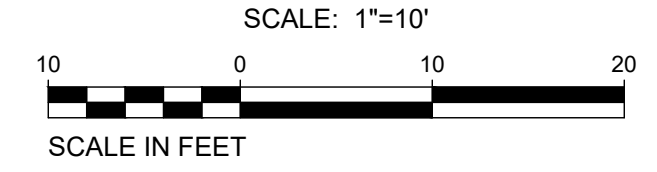
DRAWING NO.
C-507

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 APRIL 30, 2025
 EXPIRATION DATE OF THE LICENSE

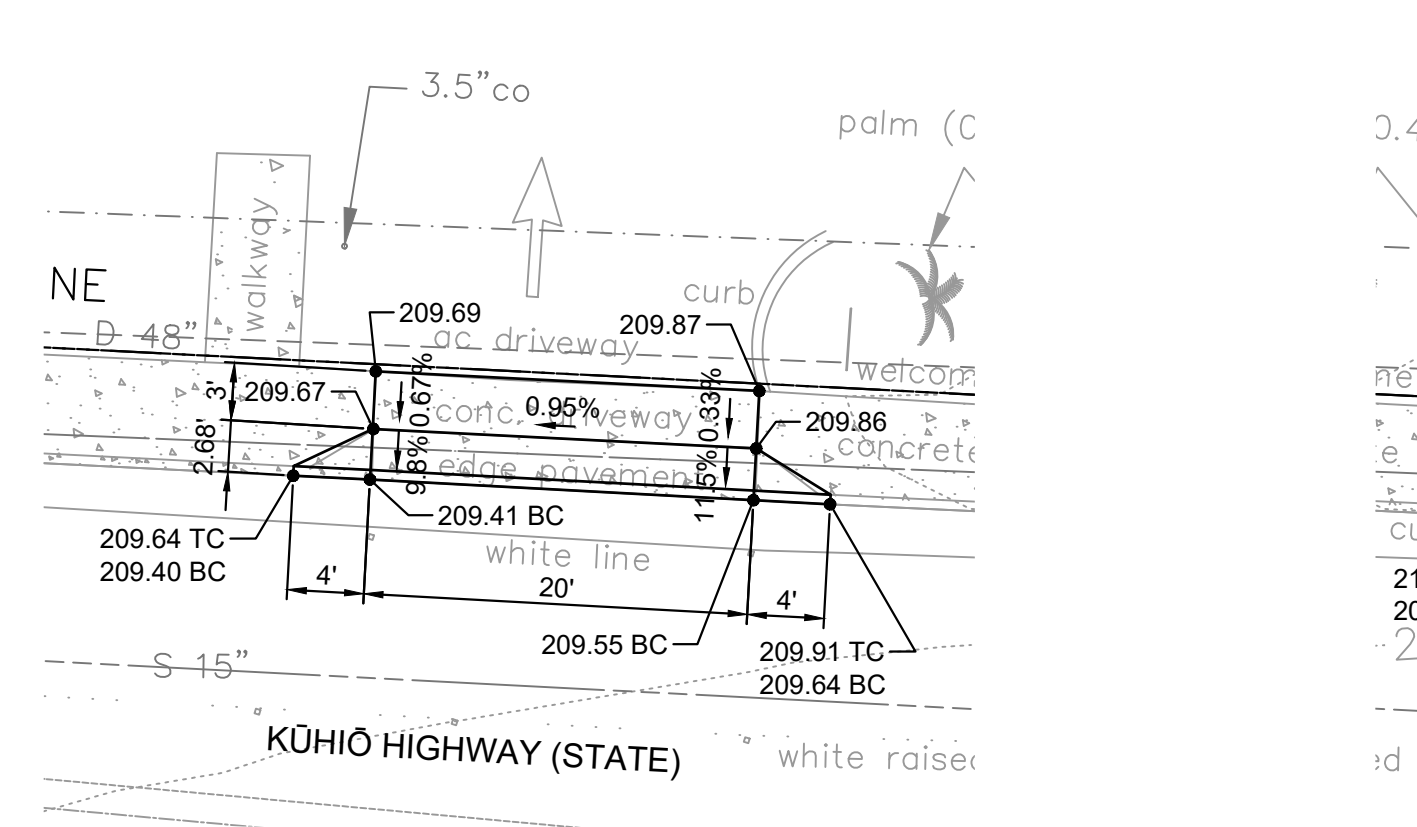
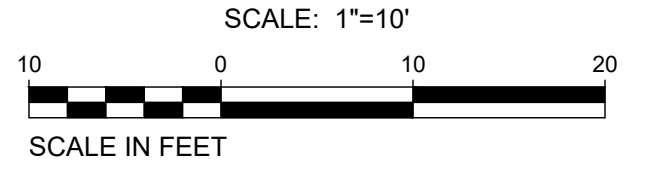
REVISION	DATE	DESCRIPTION	APPROVED
BOWERS + KUBOTA CONSULTING 2183 North King Street, Suite 200 Honolulu, Hawaii 96819			
JOB NO. 18-03, WP2020 JOB NO. PLH-27 KŪHIŌ HIGHWAY (HARDY-OXFORD) 18" MAIN REPLACEMENT LĪHU'E WATER SYSTEM LĪHU'E, KAUA'I, HAWAII			
COUNTY MISCELLANEOUS DETAILS			
APPROVED:			10/24/24
FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS, COUNTY OF KAUAI (FOR WORK WITHIN COUNTY RW)			DATE
FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER, COUNTY OF KAUAI			DATE
16/10/24			DATE



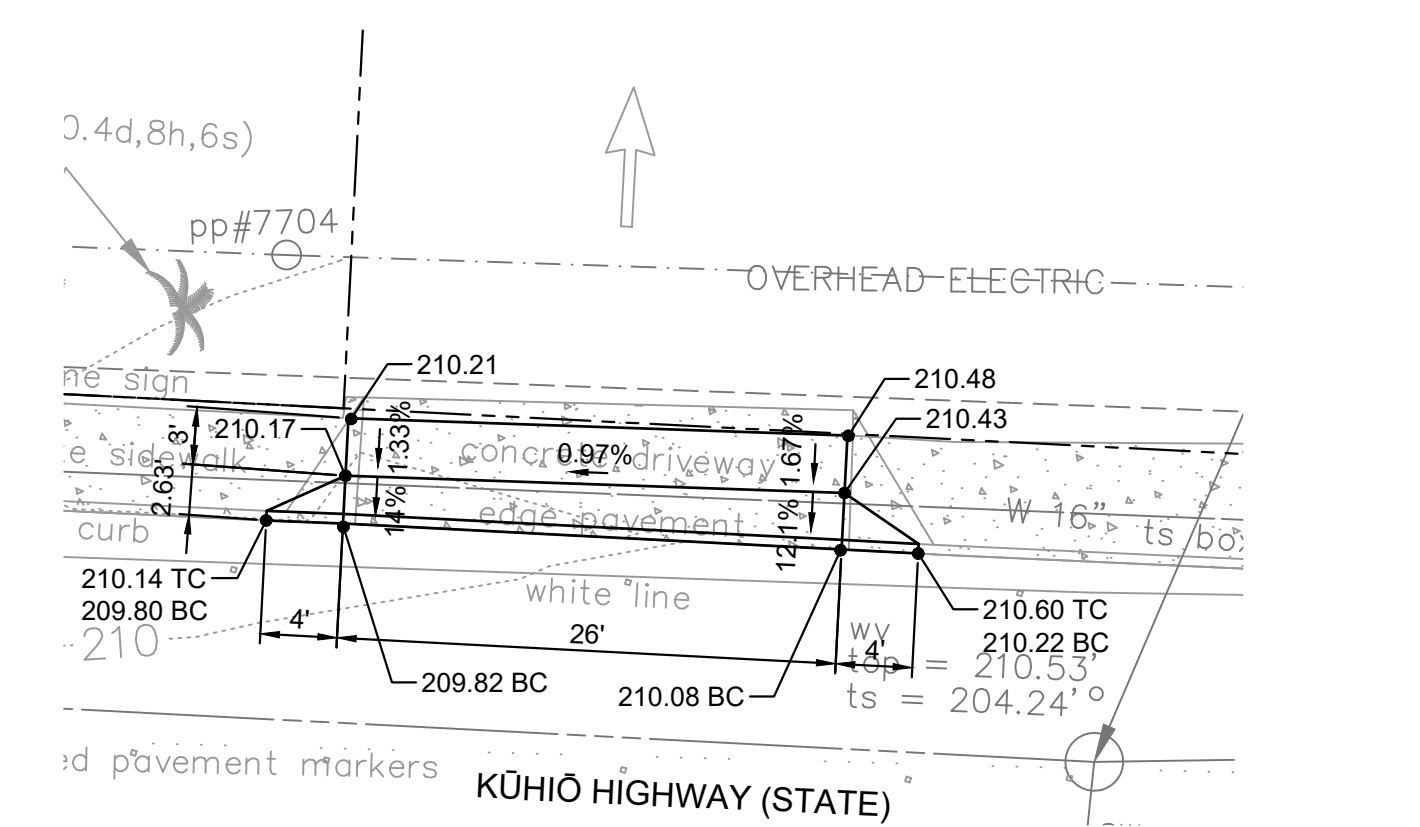
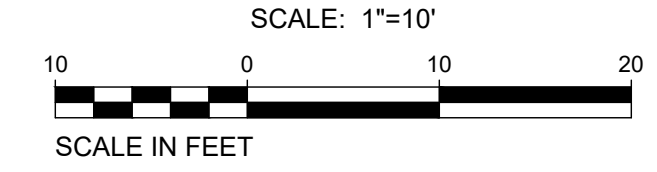
DRIVEWAY 1 DETAIL



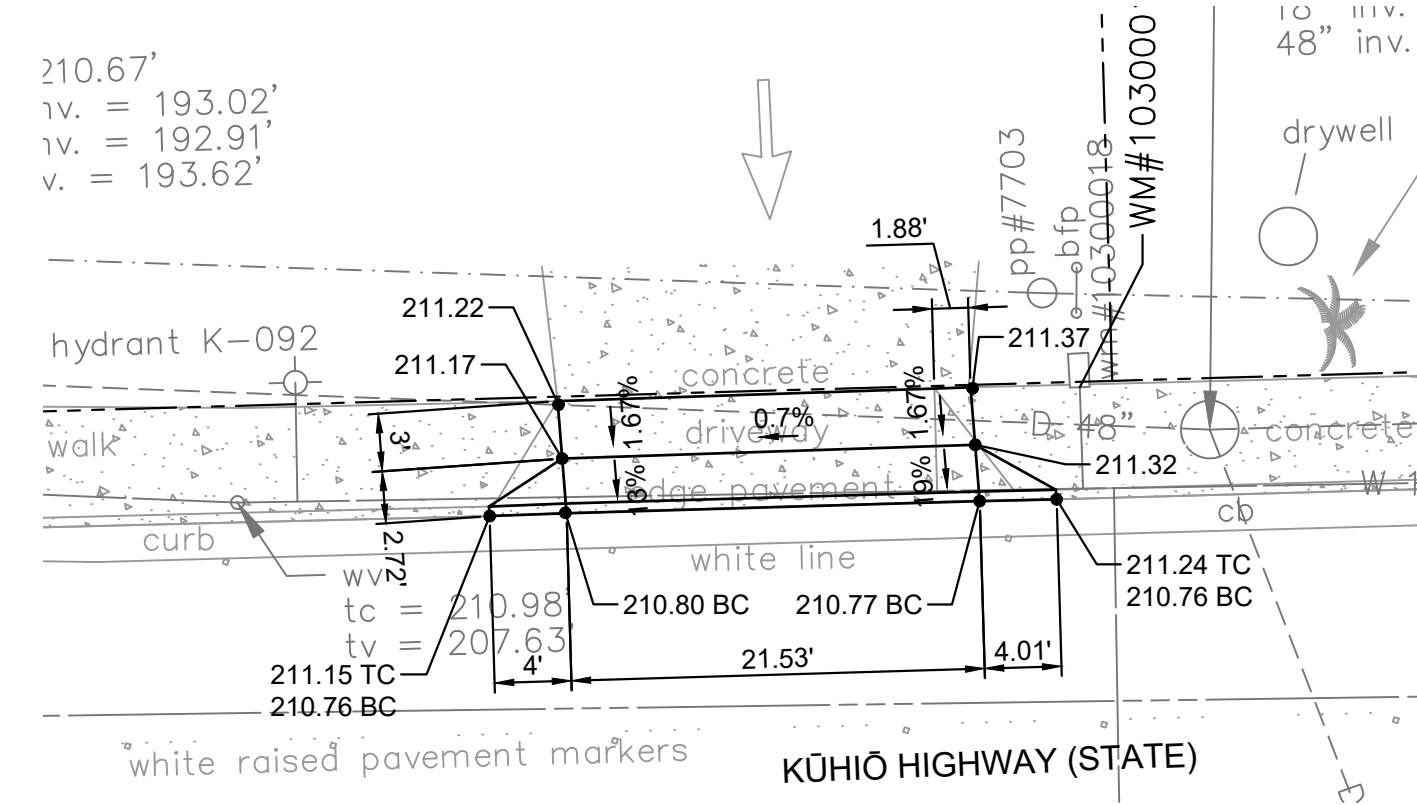
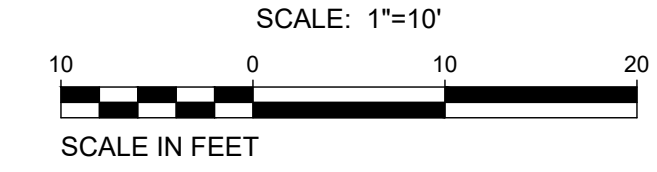
DRIVEWAY 2 DETAIL



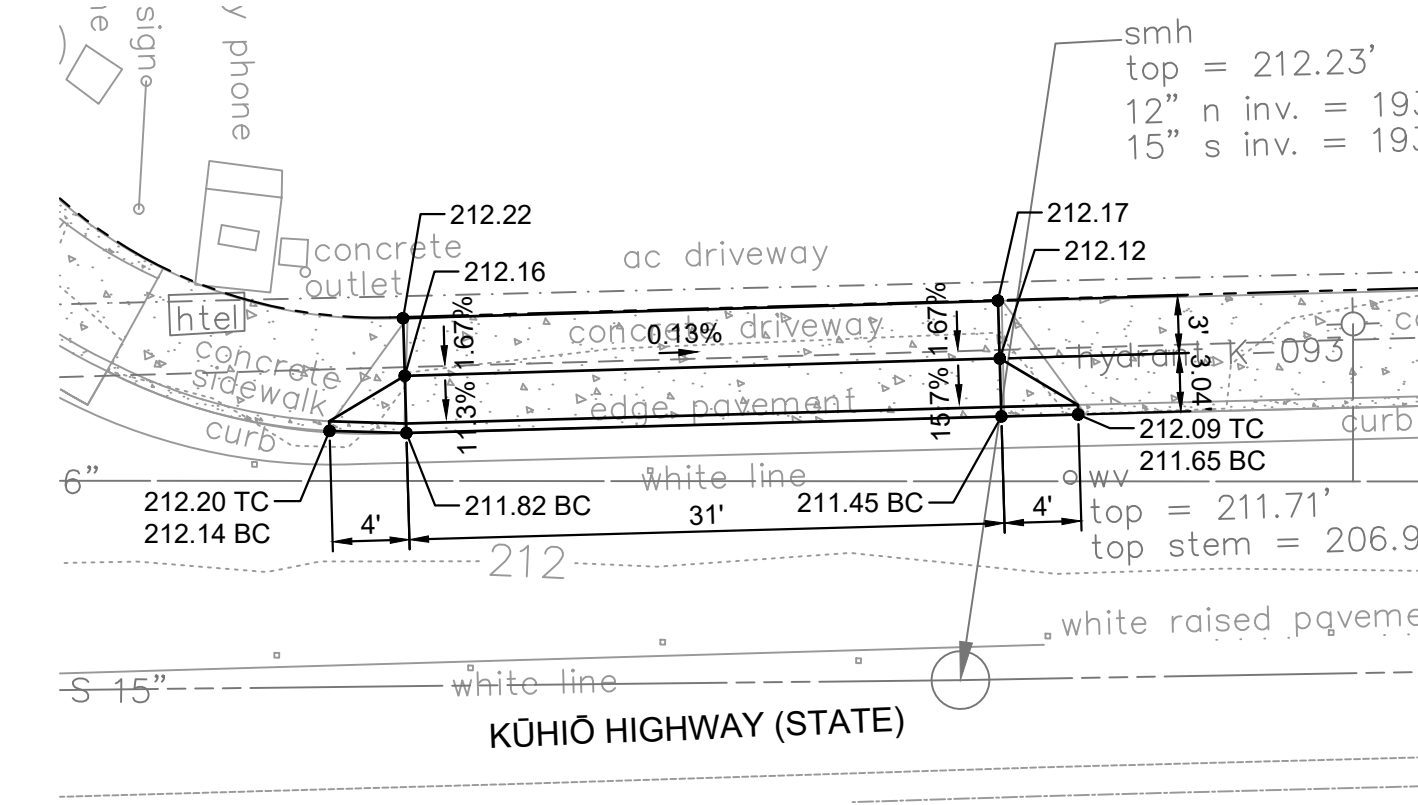
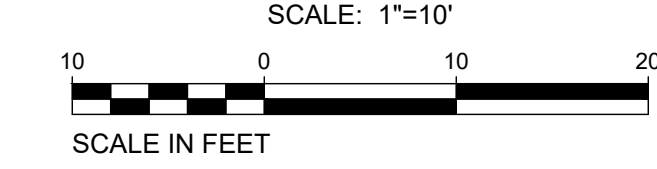
DRIVEWAY 3 DETAIL



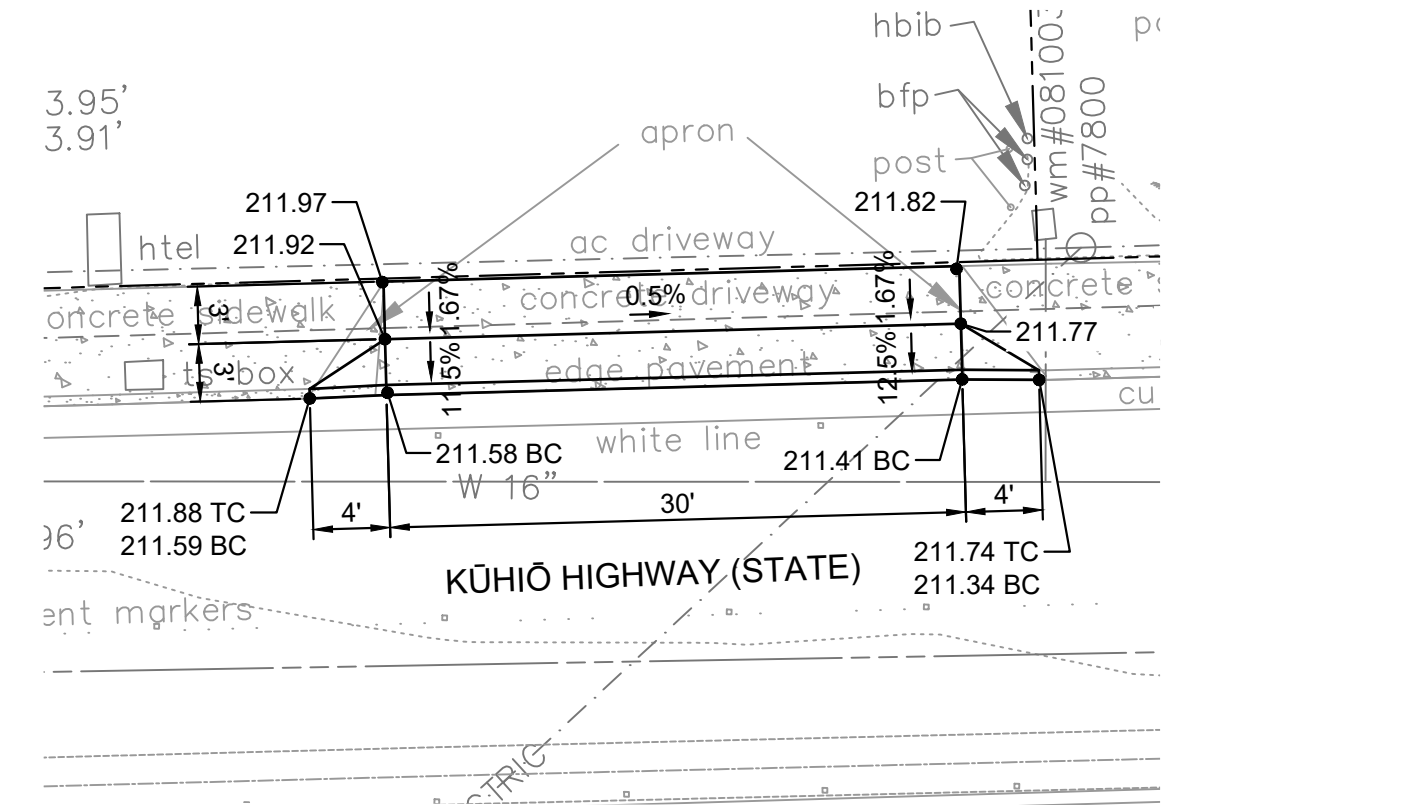
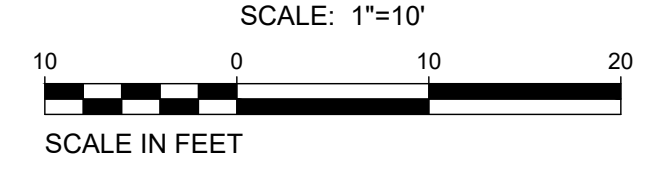
DRIVEWAY 4 DETAIL



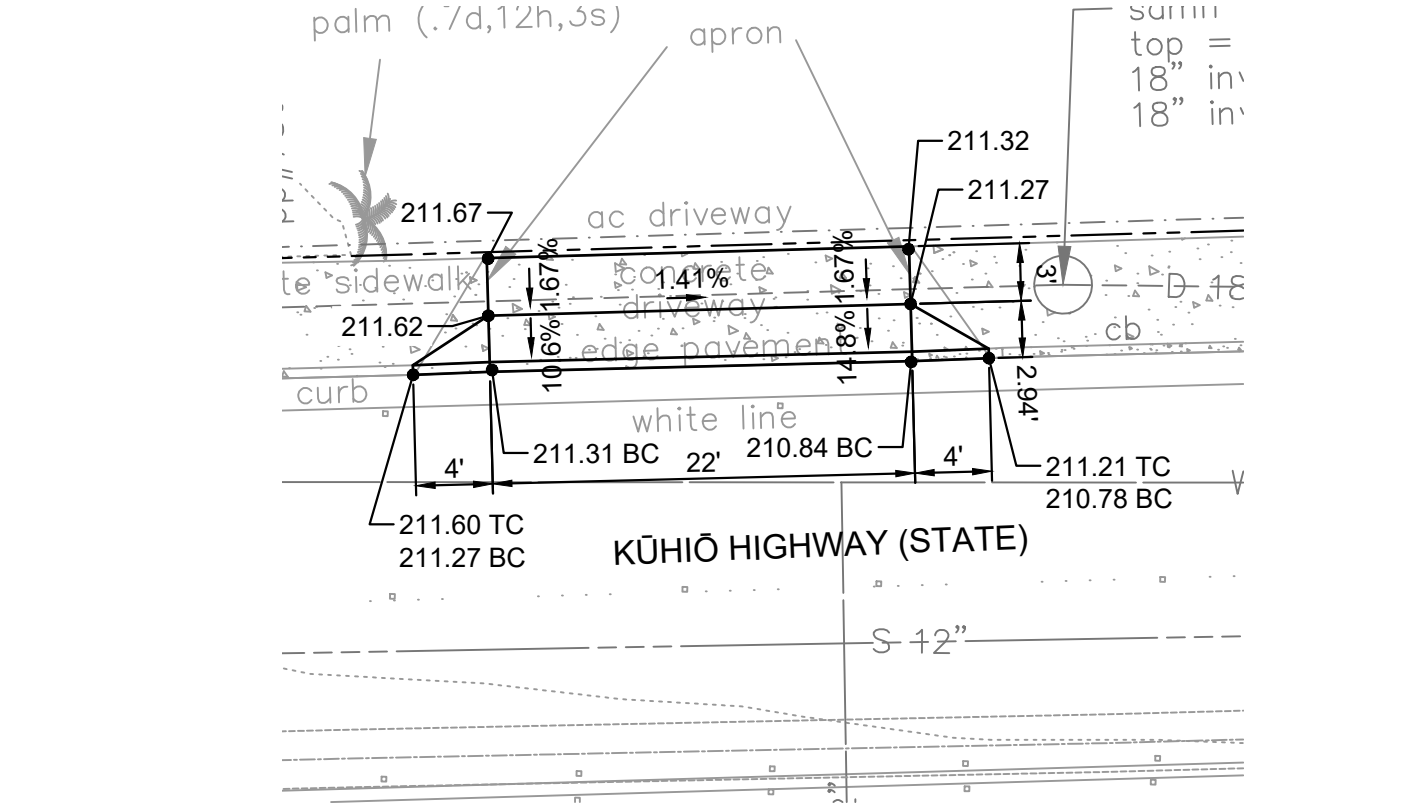
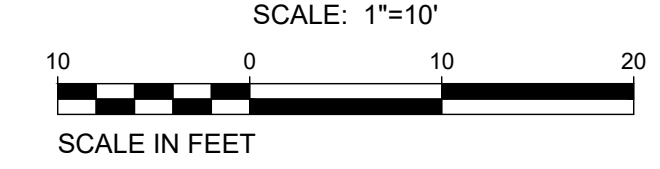
DRIVEWAY 5 DETAIL



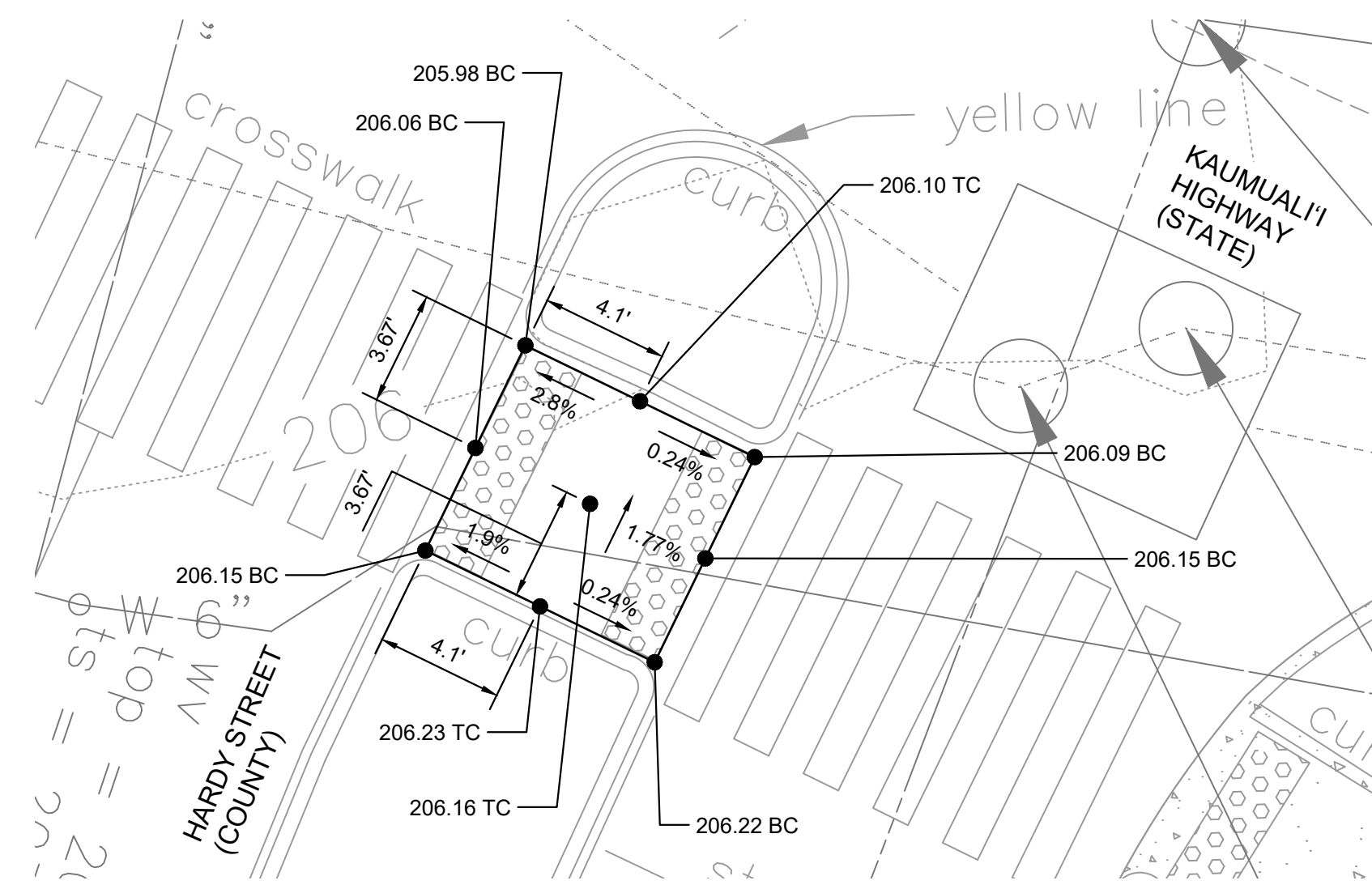
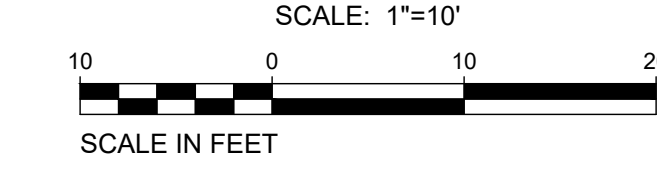
DRIVEWAY 6 DETAIL



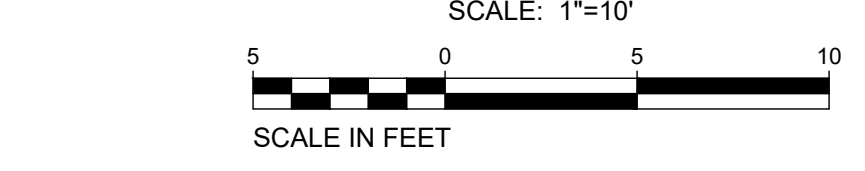
DRIVEWAY 7 DETAIL



DRIVEWAY 8 DETAIL

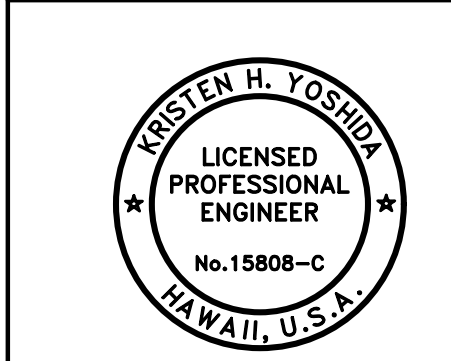


HARDY STREET MEDIAN DETAIL



Wednesday, August 14, 2024, 4:57:05 PM
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 HALF SIZE TRIMLINE FOR 11" x 17"

REVISION	DATE	DESCRIPTION	APPROVED



APPROVED: *Kristen H. Yoshida*

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APRIL 30, 2026
EXPIRATION DATE OF THE LICENSE

DRAWING NO.
C-508

BOWERS + KUBOTA CONSULTING
2183 North King Street, Suite 200
Honolulu, Hawaii 96819

JOB NO. 18-03, WP2020 JOB NO. PLH-27
KŪHIŌ HIGHWAY (HARDY-OXFORD)
18" MAIN REPLACEMENT
LĪHU'E WATER SYSTEM
LĪHU'E, KAUA'I, HAWAII

MISCELLANEOUS DETAILS - 1

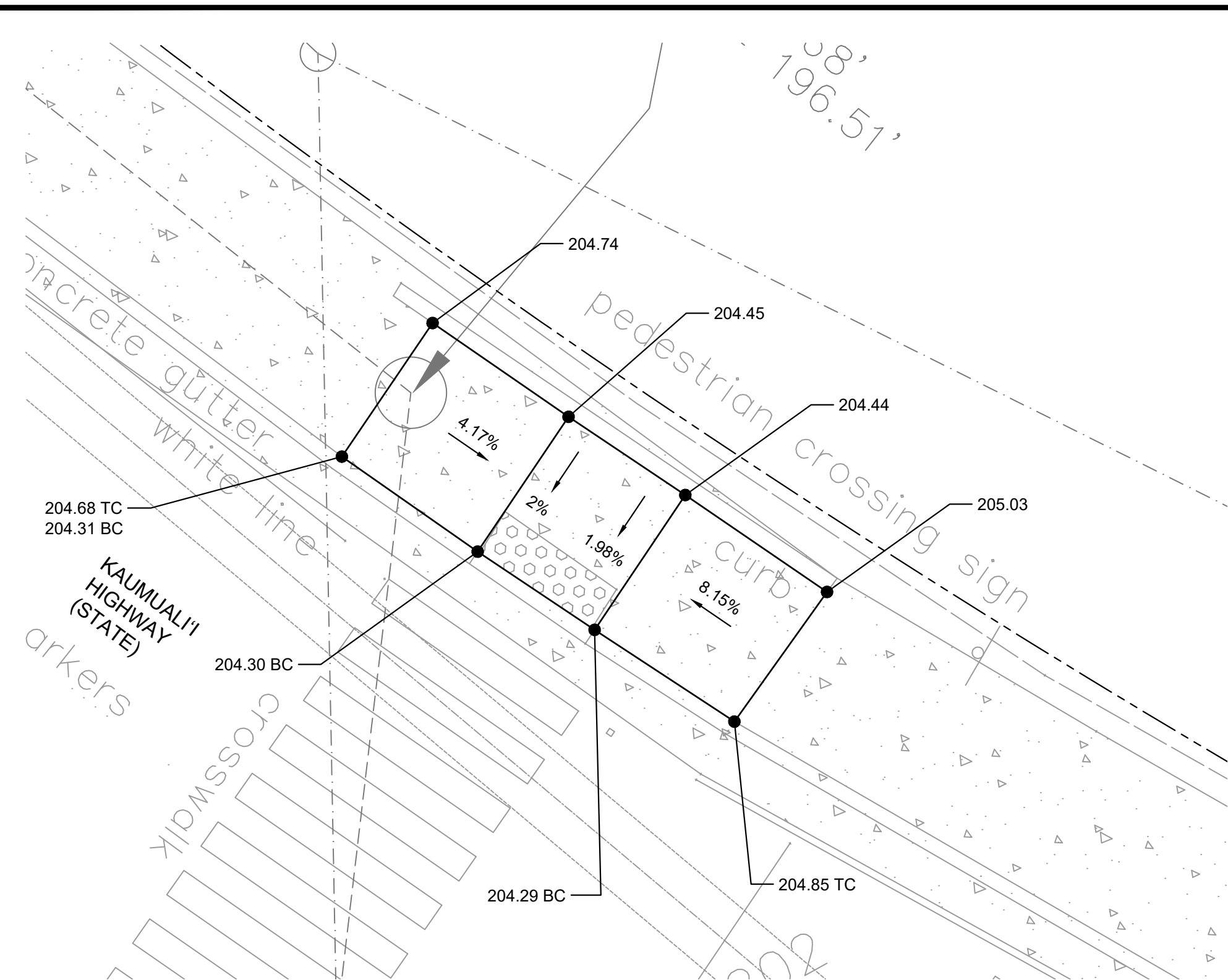
APPROVED: _____ DATE: 10/24/24

FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS
COUNTY OF KAUAI (FOR WORK WITH COUNTY RW)

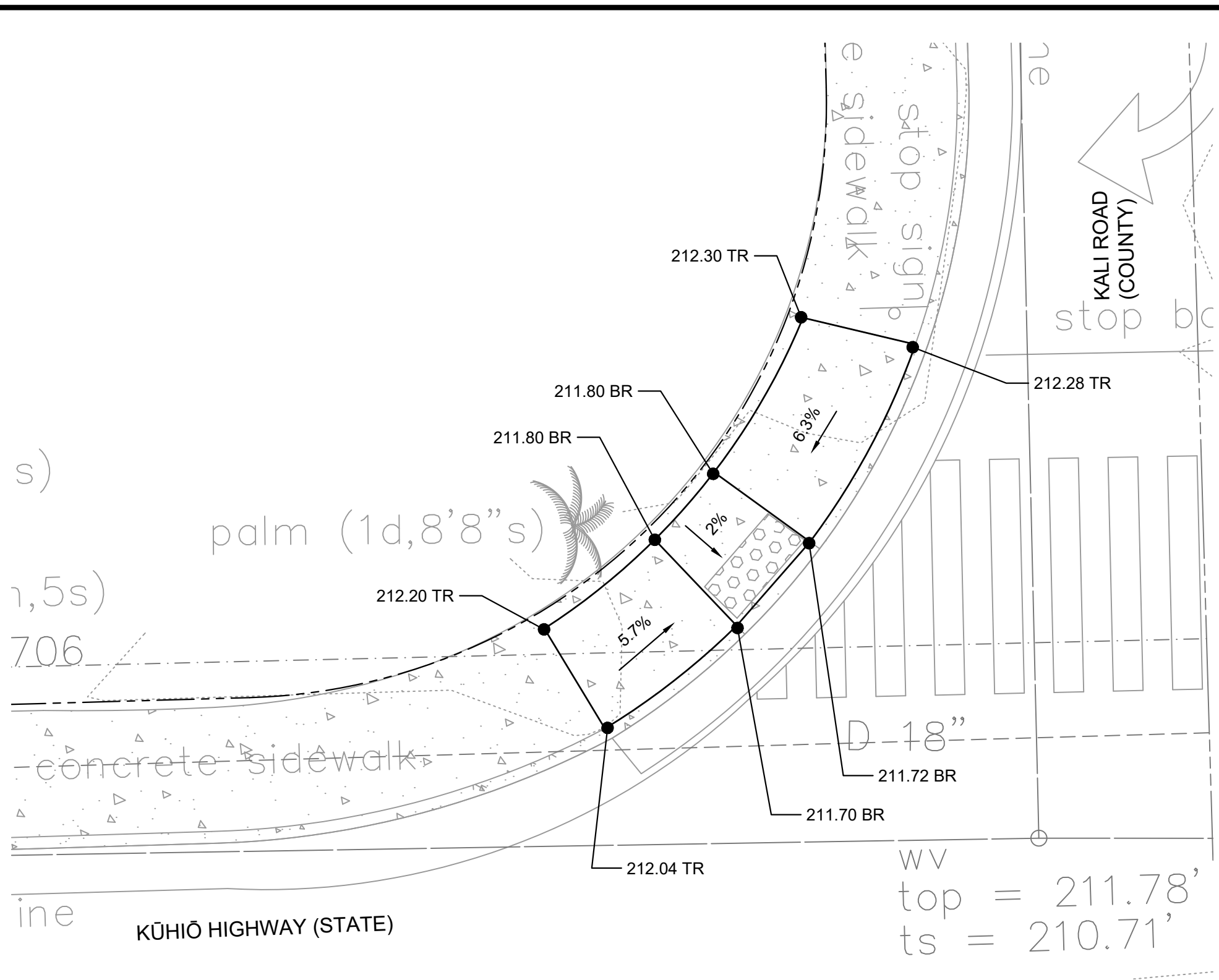
DATE: 16/10/24

FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER
COUNTY OF KAUAI

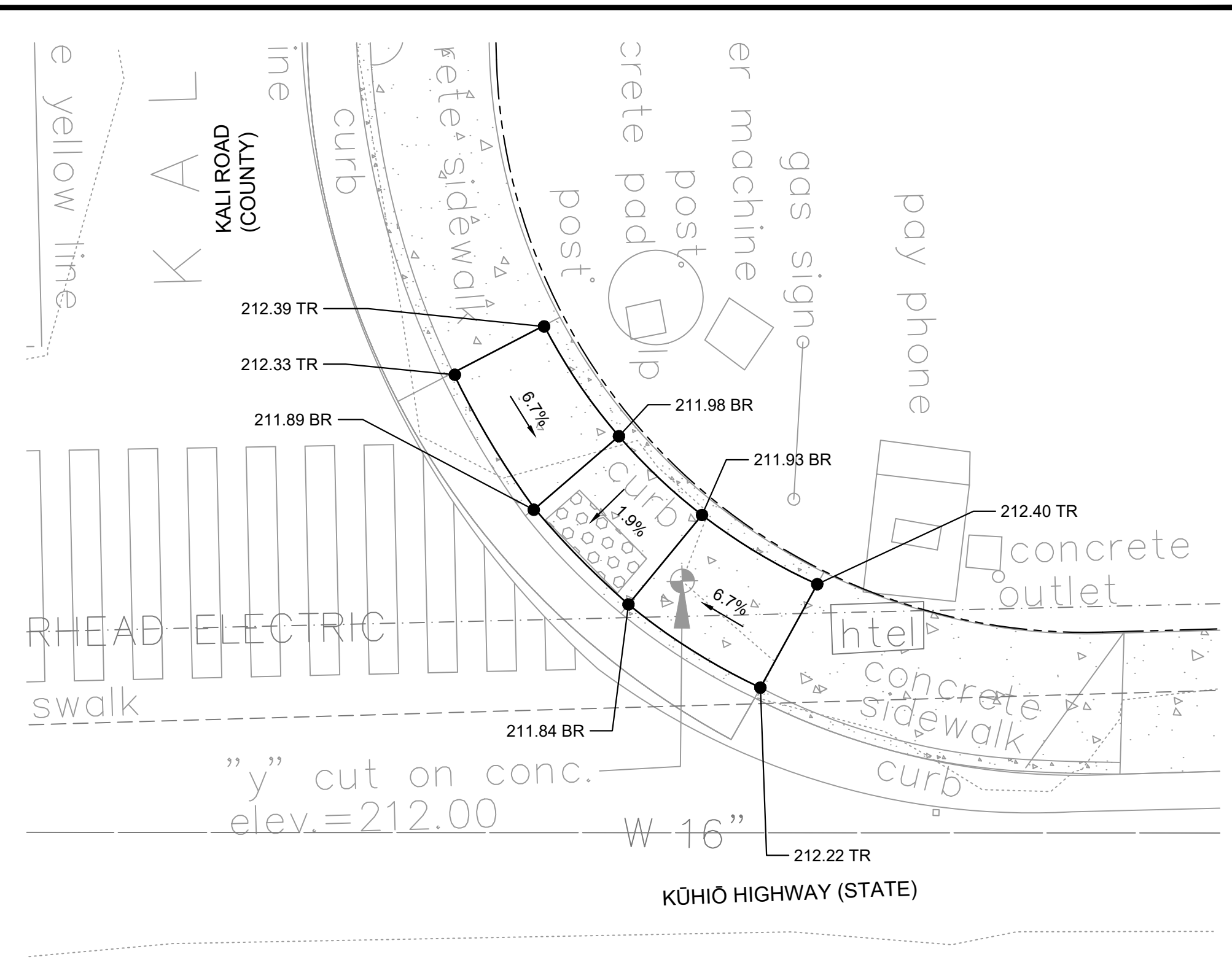
DATE: _____



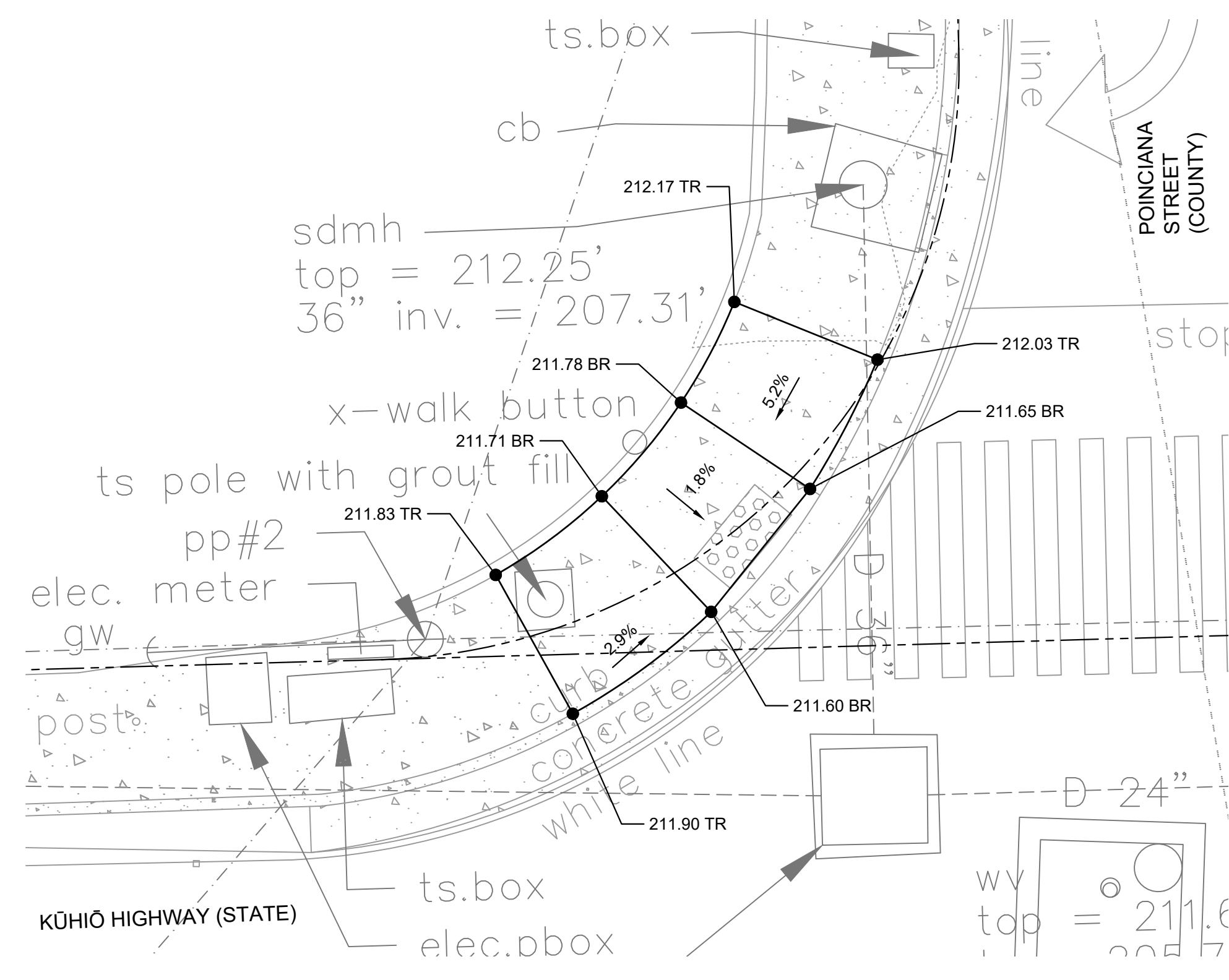
CROSSWALK DETAIL
 SCALE: 1"=10'
 SCALE IN FEET



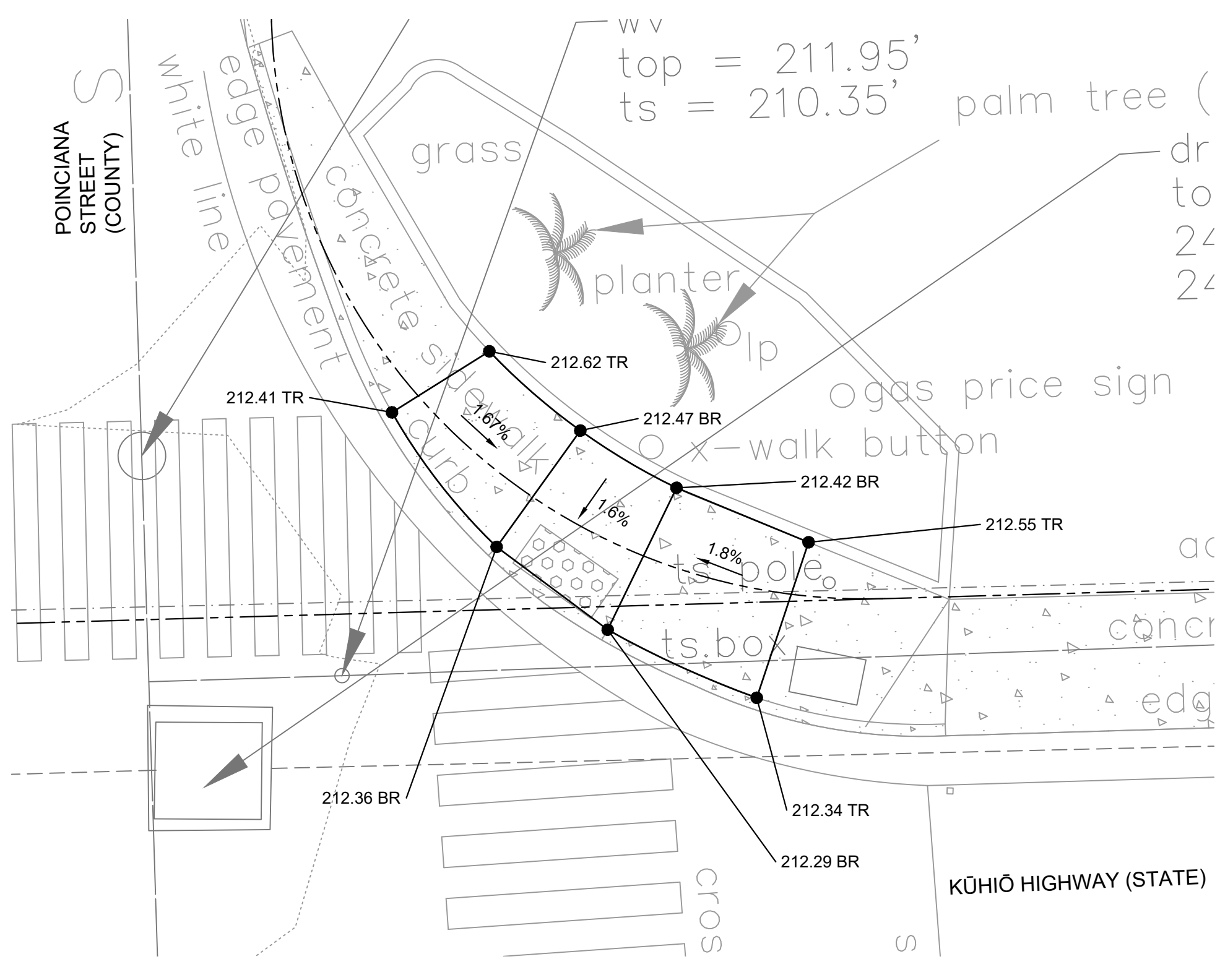
SOUTH KALI CURB RAMP DETAIL
 SCALE: 1"=10'
 SCALE IN FEET



NORTH KALI CURB RAMP DETAIL
 SCALE: 1"=10'
 SCALE IN FEET



SOUTH POINCIANA CURB RAMP DETAIL
 SCALE: 1"=10'
 SCALE IN FEET



NORTH POINCIANA CURB RAMP DETAIL
 SCALE: 1"=10'
 SCALE IN FEET

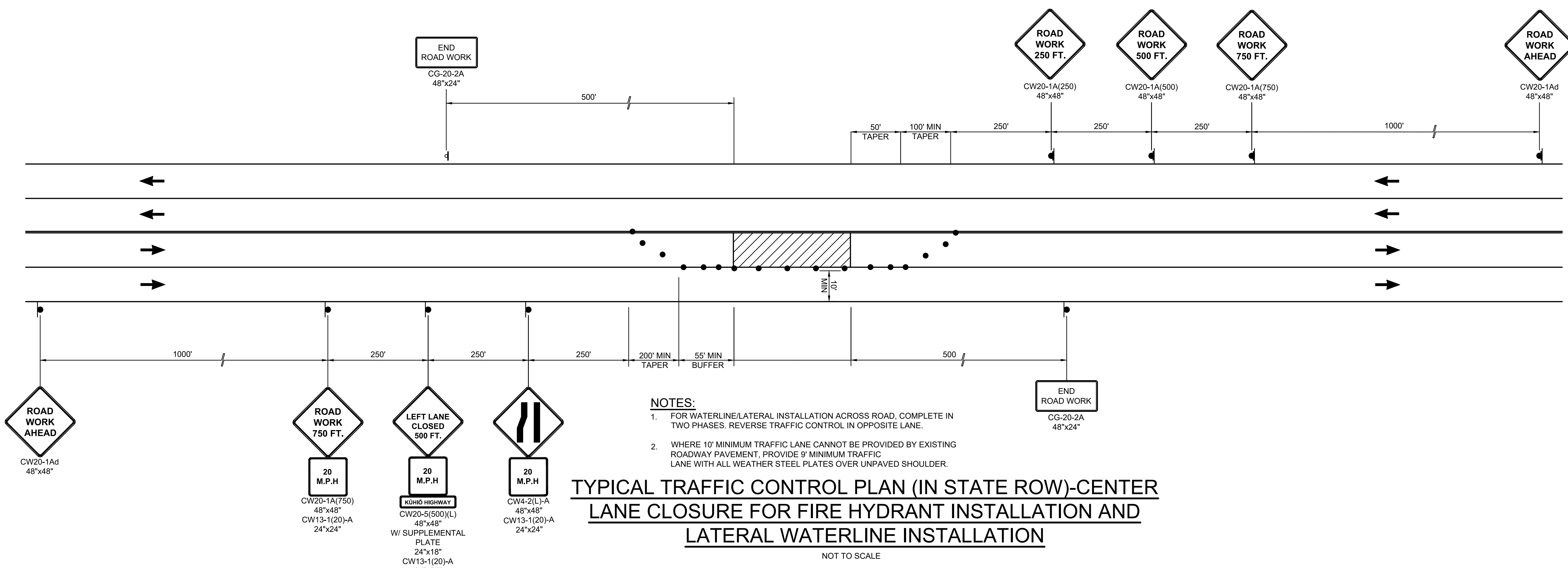
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REVISION	DATE	DESCRIPTION	APPROVED
BOWERS + KUBOTA CONSULTING 2183 North King Street, Suite 200 Honolulu, Hawaii 96819			
JOB NO. 18-03, WP2020 JOB NO. PLH-27 KŪHIŌ HIGHWAY (HARDY-OXFORD) 18" MAIN REPLACEMENT LĪHU'E WATER SYSTEM LĪHU'E, KAUA'I, HAWAII			
MISCELLANEOUS DETAILS - 2			
APPROVED: <i>Kristen H. Yoshida</i> FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS COUNTY OF KAUAI (FOR WORK WITH COUNTY RW)			10/24/24 DATE
APPROVED: <i>Jason Kiginato</i> FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER COUNTY OF KAUAI			16/10/24 DATE

DRAWING NO.
C-509

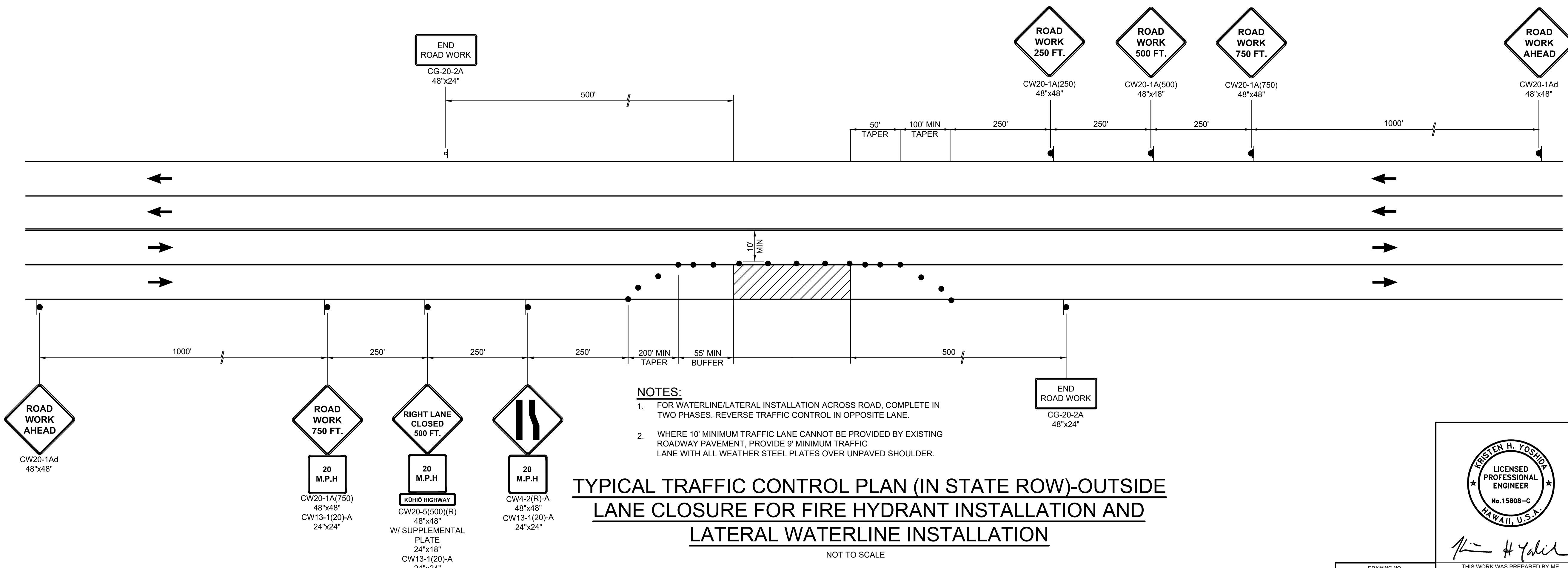
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 APRIL 30, 2026
 EXPIRATION DATE OF THE LICENSE

Wednesday, August 14, 2024, 4:58:57 PM
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 HALF SIZE TRIMLINE FOR 11" x 17"



- NOTES:**
- FOR WATERLINE/LATERAL INSTALLATION ACROSS ROAD, COMPLETE IN TWO PHASES. REVERSE TRAFFIC CONTROL IN OPPOSITE LANE.
 - WHERE 10' MINIMUM TRAFFIC LANE CANNOT BE PROVIDED BY EXISTING ROADWAY PAVEMENT, PROVIDE 9' MINIMUM TRAFFIC LANE WITH ALL WEATHER STEEL PLATES OVER UNPAVED SHOULDER.

**TYPICAL TRAFFIC CONTROL PLAN (IN STATE ROW)-CENTER
 LANE CLOSURE FOR FIRE HYDRANT INSTALLATION AND
 LATERAL WATERLINE INSTALLATION**
 NOT TO SCALE



- NOTES:**
- FOR WATERLINE/LATERAL INSTALLATION ACROSS ROAD, COMPLETE IN TWO PHASES. REVERSE TRAFFIC CONTROL IN OPPOSITE LANE.
 - WHERE 10' MINIMUM TRAFFIC LANE CANNOT BE PROVIDED BY EXISTING ROADWAY PAVEMENT, PROVIDE 9' MINIMUM TRAFFIC LANE WITH ALL WEATHER STEEL PLATES OVER UNPAVED SHOULDER.

**TYPICAL TRAFFIC CONTROL PLAN (IN STATE ROW)-OUTSIDE
 LANE CLOSURE FOR FIRE HYDRANT INSTALLATION AND
 LATERAL WATERLINE INSTALLATION**
 NOT TO SCALE

- LEGEND:**
- CONE OR DELINEATOR
 - ➔ DIRECTION OF TRAFFIC
 - ⊥ SIGN
 - ▨ WORK ZONE
 - ⊗ POLICE OFFICER

REVISION	DATE	DESCRIPTION	APPROVED

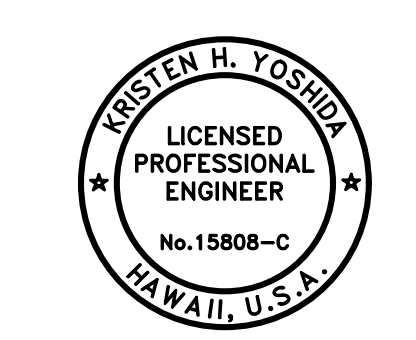
BOWERS + KUBOTA CONSULTING
 2153 North King Street, Suite 200
 Honolulu, Hawaii 96819

**JOB NO. 18-03, WP2020 JOB NO. PLH-27
 KŪHĪO HIGHWAY (HARDY-OXFORD)
 18" MAIN REPLACEMENT
 LIHŪ'E WATER SYSTEM
 LIHŪ'E, KAUA'I, HAWAII**

TRAFFIC CONTROL DETAILS - 1

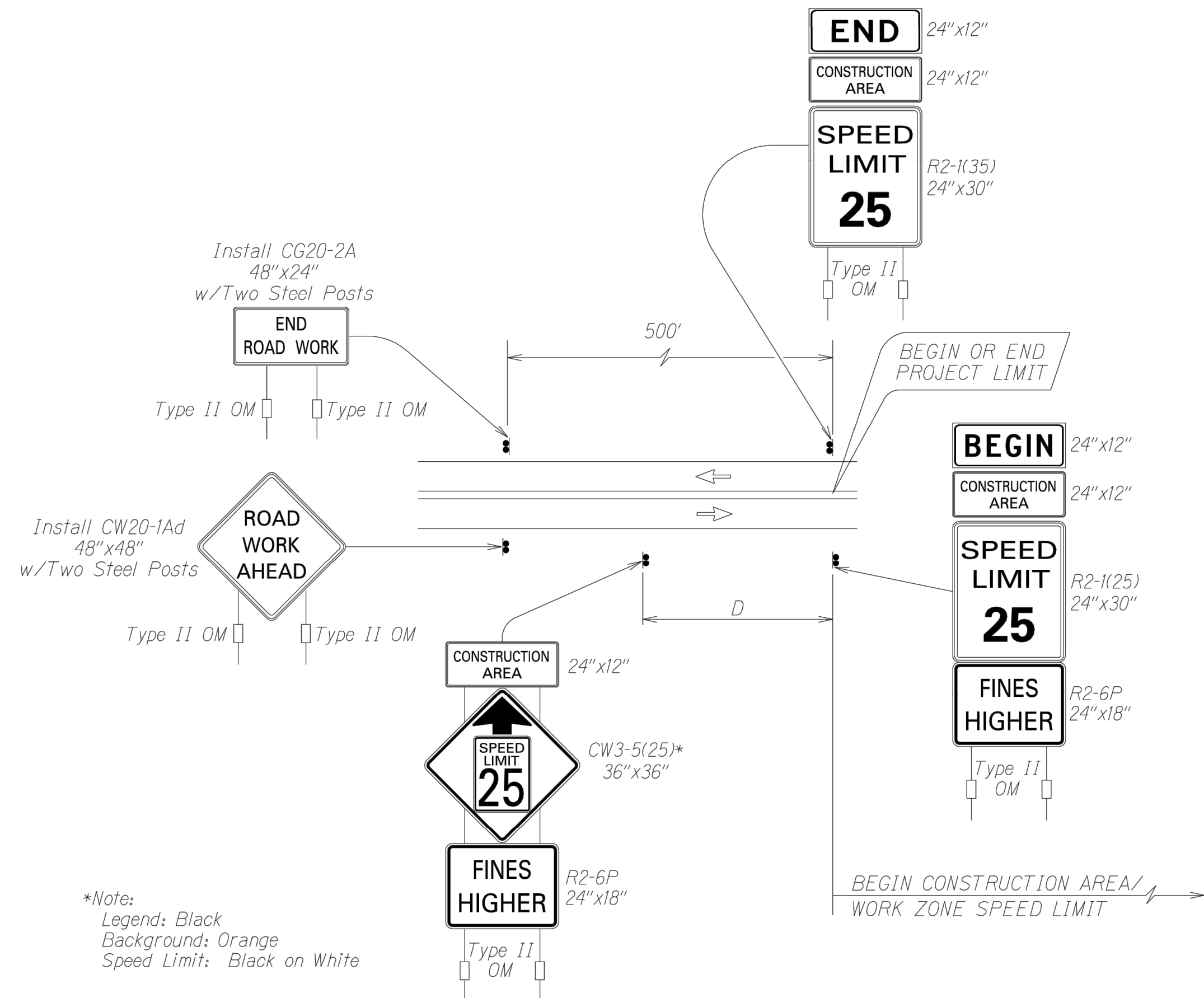
APPROVED: _____ DATE: 10/24/24
 FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS
 COUNTY OF KAUAI (FOR WORK WITHIN COUNTY ROW)

APPROVED: _____ DATE: 16/10/24
 FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER
 COUNTY OF KAUAI



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 OR UNDER MY SUPERVISION
 AND CONSTRUCTION OF THIS PROJECT WILL BE
 UNDER MY OBSERVATION.
 APRIL 30, 2025
 EXPIRATION DATE OF THE LICENSE

DRAWING NO.
C-510

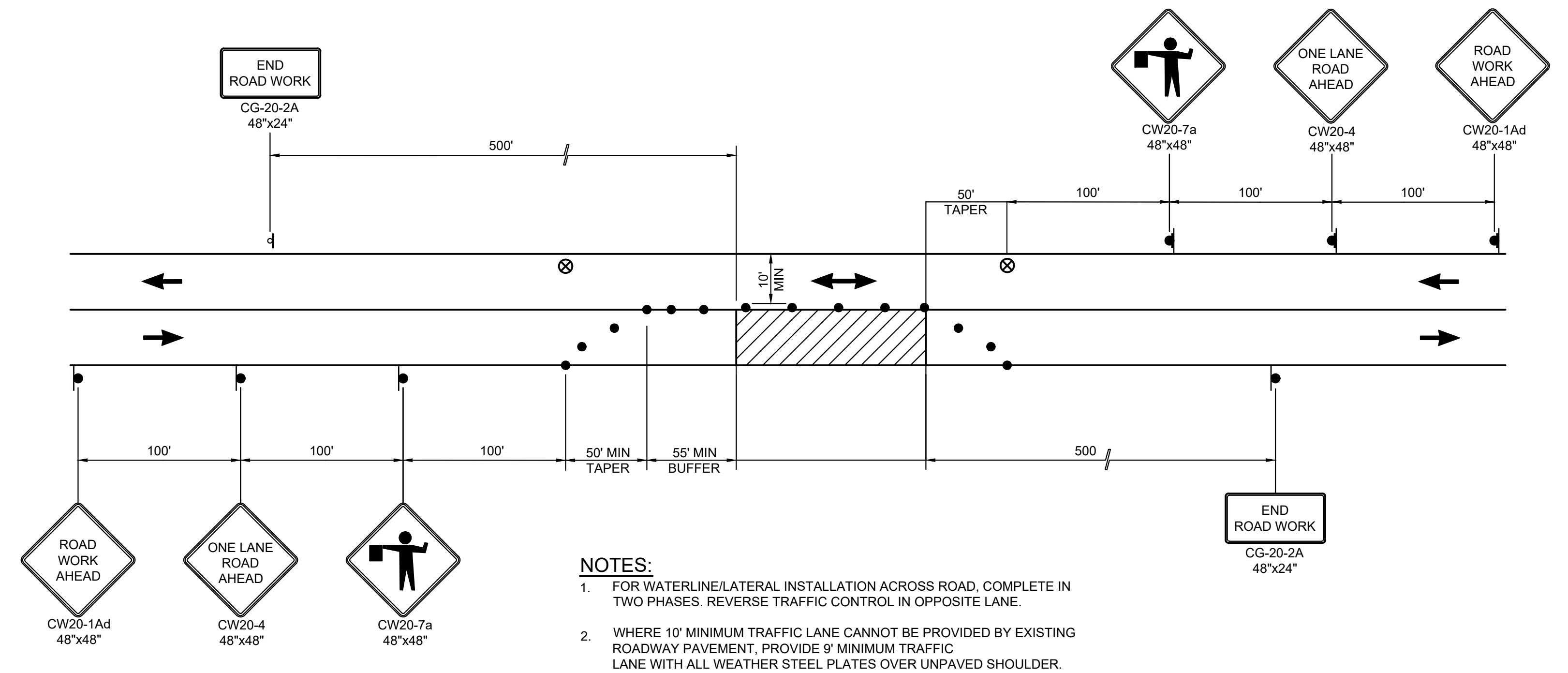


TYPICAL DETAIL FOR CONSTRUCTION SIGNS
ON TWO LANE OR MULTILANE UNDIVIDED LOW SPEED HIGHWAY



Work Zone Notes:

1. This Work Zone Sign Plan is intended for use on long-term stationary work zones/construction phases (3 days or more). All work zones or construction phases less than 3 days duration will use Traffic Control Plans shown in Section 645 of the Special Provisions.
2. All existing regulatory speed limit signs with posts within the work zone/project limits shall be removed and replaced with work zone speed limit sign assemblies (R2-1(25) and CW3-5(25) with "CONSTRUCTION AREA" and R2-6P "FINES HIGHER" Supplemental Signs).
3. Construction sign assemblies shall be installed on both the approaching and trailing ends of each work zone as shown on this plan.
4. Each construction warning sign and work zone speed limit assembly shall have a minimum of two (2) Type II OM.
5. Upon the completion of all physical work or as directed by the Engineer, all construction signs and work zone speed limit assemblies shall be removed. All speed limit signs and posts that were existing at the start of the project within the work zone/project limits shall be restored back to their original locations and configurations. Dates, times, locations and description of work for each sign location shall be provided to the engineer in writing.
6. Placement of construction signs shall not obstruct the path of pedestrians and bicyclists.
7. The removal and restoration of existing regulatory speed limit signs with new posts along with the installation, maintenance and removal of work zone speed limit sign assemblies shall be considered incidental to various pay items and shall not be paid for separately.

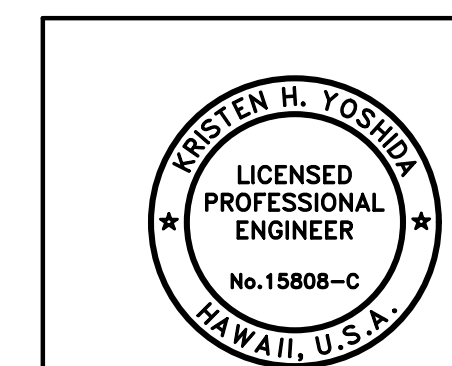


TYPICAL TRAFFIC CONTROL PLAN (IN COUNTY ROW)-ONE LANE CLOSURE FOR FIRE HYDRANT INSTALLATION AND LATERAL WATERLINE INSTALLATION

NOT TO SCALE

LEGEND:

- CONE OR DELINEATOR
- ➔ DIRECTION OF TRAFFIC
- ⊠ SIGN
- ▨ WORK ZONE
- ⊗ POLICE OFFICER



DRAWING NO.
C-511

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.
APRIL 30, 2026
EXPIRATION DATE OF THE LICENSE

REVISION	DATE	DESCRIPTION	APPROVED
BOWERS + KUBOTA CONSULTING 2153 North King Street, Suite 200 Honolulu, Hawaii 96819			
JOB NO. 18-03, WP2020 JOB NO. PLH-27 KŪHIŌ HIGHWAY (HARDY-OXFORD) 18" MAIN REPLACEMENT LĪHU'E WATER SYSTEM LĪHU'E, KAUA'I, HAWAII			
TRAFFIC CONTROL DETAILS - 2			
APPROVED:			DATE
FOR COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS COUNTY OF KAUAI (FOR WORK WITHIN COUNTY ROW)			10/24/24
FOR MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER COUNTY OF KAUAI			16/10/24

Wednesday, August 14, 2024, 4:58:35 PM
 T:\Village\Oxford\Waterline\2018\24\100\04_Graphics\CAD\Sheets\C-511_Traffic Control Details - 2.dwg
 HALF SIZE TRIMLINE FOR 11" x 17"