

TITLE: DOMESTIC AND FIRE WATERLINE SYSTEM REPLACEMENT AT PIER 31A

LOCATION: HONOLULU HARBOR, OAHU, HAWAII

JOB P10904

JOB P10904



DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

APPROVED BY:



DIRECTOR OF TRANSPORTATION

for

05/19/2026
DATE

SHEET

[-1

OF 22 SHEETS

INDEX TO DRAWINGS

DWG.	SHEET	TITLE
		CIVIL DRAWINGS
1	T-1	TITLE SHEET, LOCATION MAP & VICINITY MAP
2	C-1	INDEX & CONSTRUCTION NOTES - 1
3	C-2	CONSTRUCTION NOTES - 2
4	C-3	CONSTRUCTION NOTES - 1
5	C-4	EXISTING CONDITIONS PLAN & SURVEY CONTROL PLAN
6	C-5	DEMOLITION PLAN
7	C-6	GENERAL PLAN
8	C-7	BEST MANAGEMENT PRACTICES
9	C-8	WATER LINE PLAN - 1
10	C-9	WATER LINE PLAN - 2
11	C-10	WATER LINE PLAN - 3
12	C-11	WATER LINE PLAN - 4
13	C-12	PROFILE - WATERLINE B
14	C-13	PROFILE - WATERLINE C
15	C-14	PROFILE - WATERLINE D
16	C-15	PROFILE - WATERLINE E & WATERLINE F
17	C-16	PROFILE - WATERLINE G & WATERLINE H
18	C-17	WATER LATERAL PROFILES
19	C-18	MISCELLANEOUS DETAILS - 1
20	C-19	MISCELLANEOUS DETAILS - 2
21	C-20	MISCELLANEOUS DETAILS - 3
22	C-21	MISCELLANEOUS DETAILS - 4

CONSTRUCTION NOTES:

1. UNLESS OTHERWISE NOTED, ALL APPLICABLE CONSTRUCTION WORK OUTSIDE OF THE CITY & COUNTY OF HONOLULU RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH THE HAWAII STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND PUBLIC WORKS CONSTRUCTION, 2005, AND STANDARD PLANS, 1986, OF THE DEPARTMENT OF TRANSPORTATION, STATE OF HAWAII, AS AMENDED.
2. THE UNDERGROUND PIPES, CABLES OR DUCTLINES KNOWN TO EXIST BY THE DESIGN ENGINEER FROM HIS SEARCH OF RECORDS ARE INDICATED ON THE PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATIONS AND DEPTHS OF THE FACILITIES AND EXERCISE PROPER CARE IN EXCAVATING IN THE AREA. WHEREVER CONNECTIONS OF NEW UTILITIES TO EXISTING UTILITIES ARE SHOWN ON THE PLANS, THE CONTRACTOR SHALL EXPOSE THE EXISTING LINES AT THE PROPOSED CONNECTIONS TO VERIFY THEIR LOCATIONS AND DEPTHS PRIOR TO EXCAVATION FOR THE NEW LINES.
3. THE EXISTING UTILITIES HAVE BEEN SHOWN ON THESE PLANS INSOFAR AS IT IS POSSIBLE TO DO SO. THEIR LOCATIONS AS SHOWN ARE APPROXIMATE ONLY AND THE CONTRACTOR SHALL MAKE AN INDEPENDENT CHECK ON THE GROUND BY PROBING AND WITH THE VARIOUS UTILITY COMPANIES AND GOVERNMENTAL AGENCIES TO ASCERTAIN THEIR EXACT LOCATIONS.
4. NO CONTRACTOR SHALL PERFORM ANY CONSTRUCTION OPERATION SO AS TO CAUSE FALLING ROCKS, SOIL OR DEBRIS IN ANY FORM TO FALL, SLIDE OR FLOW INTO EXISTING CITY OR STATE DRAINAGE SYSTEMS, OR ADJOINING PROPERTIES, STREETS, OCEAN, OR NATURAL WATERCOURSES. SHOULD SUCH VIOLATIONS OCCUR, THE CONTRACTOR MAY BE CITED AND THE CONTRACTOR SHALL IMMEDIATELY MAKE ALL REMEDIAL ACTIONS NECESSARY. IN THE EVENT THAT THE STATE PERFORMS THE REMEDIAL ACTIONS NECESSARY, THE COSTS INCURRED BY THE STATE SHALL BE PAYABLE BY THE CONTRACTOR.
5. THE GENERAL CONTRACTOR/DEVELOPER/OWNER OF THE PROJECT SHALL BE RESPONSIBLE FOR CONFORMANCE WITH APPLICABLE PROVISIONS OF THE HAWAII ADMINISTRATIVE RULES, TITLE 11, CHAPTER 54, "WATER QUALITY STANDARDS," TITLE 11, CHAPTER 55, "WATER POLLUTION CONTROL," CHAPTER 14 OF THE REVISED ORDINANCES OF HONOLULU, AS AMENDED, AND THE DEPARTMENT OF TRANSPORTATION - HARBORS DIVISION'S "CONSTRUCTION SITE RUNOFF CONTROL PROGRAM." BEST MANAGEMENT PRACTICES SHALL BE EMPLOYED AT ALL TIMES DURING CONSTRUCTION.

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

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

IN ACCORDANCE WITH STATE LAW, ALL DISCHARGES RELATED TO PROJECT CONSTRUCTION OR OPERATIONS ARE REQUIRED TO COMPLY WITH STATE WATER QUALITY STANDARDS (HAWAII ADMINISTRATIVE RULES, CHAPTER 11-54). BEST MANAGEMENT PRACTICES SHALL BE USED TO MINIMIZE OR PREVENT DISCHARGE OF SEDIMENT, DEBRIS, AND OTHER POLLUTANTS TO STATE WATERS. PERMIT COVERAGE IS AVAILABLE FROM THE DEPARTMENT OF HEALTH, CLEAN WATER BRANCH AT [HTTP://HEALTH.HAWAII.GOV/CWB](http://health.hawaii.gov/cwb). THE OWNER/DEVELOPER/CONTRACTOR IS RESPONSIBLE FOR OBTAINING OTHER FEDERAL, STATE, OR LOCAL AUTHORIZATIONS AS REQUIRED BY LAW.

THIS PROJECT IS SUBJECT TO HARBORS FORMAL BMP INSPECTION REQUIREMENTS. PLEASE KEEP HARBORS CONSTRUCTION ENGINEER AND ENVIRONMENTAL OFFICE INFORMED WHEN THIS PROJECT IS READY FOR THE INITIAL BMP INSPECTION. THIS PROJECT WILL THEN BE INSPECTED ONCE EVERY TWO MONTHS FROM APRIL TO SEPTEMBER AND ONCE EVERY TWO WEEKS OTHERWISE. A FINAL BMP INSPECTION WILL ALSO BE CONDUCTED AT THE END OF CONSTRUCTION PHASE.

6. FOR NON-CITY PROJECTS, THE CONTRACTOR SHALL NOTIFY THE CIVIL ENGINEERING BRANCH, D.P.P. AT 768-8084 TO ARRANGE FOR INSPECTIONAL SERVICES AND SUBMIT TWO (2) SETS OF APPROVED CONSTRUCTION PLANS SEVEN (7) DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION WORK. FOR CITY PROJECTS, THE CONTRACTOR SHALL COORDINATE INSPECTIONAL SERVICES WITH THE RESPONSIBLE CITY AGENCY.
7. FOR PROJECTS ABUTTING THE STATE HIGHWAYS' RIGHTS-OF-WAY, THE OWNER OR HIS AUTHORIZED REPRESENTATIVE SHALL NOTIFY THE STATE DEPARTMENT OF TRANSPORTATION, HIGHWAYS DIVISION, OAHU DISTRICT, DRAINAGE DISCHARGE UNIT AT 831-6793 FOR AN ASSESSMENT OF STATE HIGHWAYS PERMIT REQUIREMENTS.
8. ELEVATIONS SHOWN ON THE PLANS ARE BASED ON MEAN LOWER LOW WATER (MLLW) DATUM.
9. THE CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES WHETHER SHOWN ON THE PLANS OR NOT. BEFORE DISRUPTING SERVICE OF ANY UTILITY, THE CONTRACTOR SHALL CONTACT THE CONSTRUCTION ENGINEER AND THE RESPONSIBLE UTILITY AUTHORITY. DAMAGE TO EXISTING UTILITIES AS A RESULT OF CONSTRUCTION ACTIVITIES SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE STATE, AND AT NO COST TO THE AFFECTED UTILITY AUTHORITY.
10. THE CONTRACTOR SHALL SUBMIT A DETAILED PROJECT SCHEDULE FOR APPROVAL BY THE STATE WITHIN 2 WEEKS AFTER THE AWARD OF CONTRACT.
11. NORMAL WORKING HOURS WITHIN THE PROJECT SITE ARE FROM 7:00 AM TO 3:30 PM MONDAY TO FRIDAY, EXCEPT STATE HOLIDAYS. WORKING HOURS FOR CONSTRUCTION WITHIN THE CITY AND COUNTY OF HONOLULU OR DEPARTMENT OF TRANSPORTATION - HIGHWAYS DIVISION RIGHTS-OF-WAY SHALL CONFORM TO THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION. THE CONTRACTOR SHALL COORDINATE WITH THE HARBORS CONSTRUCTION ENGINEER FOR WORKING HOURS OUTSIDE OF NORMAL WORKING HOURS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL OF THEIR OVERTIME COSTS AND EXPENSES, AS WELL AS THE DEPARTMENT OF TRANSPORTATION (DOT) INSPECTORS.
12. THE CONTRACTOR SHALL COORDINATE UTILITY WORK SO AS NOT TO AFFECT EXISTING USERS. SEE CONSTRUCTION PHASING/COORDINATION NOTES AND UTILITY SERVICE NOTES ON SHT. C-2.

CONSTRUCTION NOTES: (CONT.)

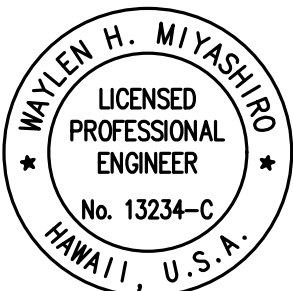
13. **CONFINED SPACE**
FOR ENTRY BY CITY PERSONNEL, INCLUDING INSPECTORS, INTO A PERMIT REQUIRED CONFINED SPACE AS DEFINED IN 29 CFR PART 1910.146(B), THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING:
 - I. ALL SAFETY EQUIPMENT REQUIRED BY THE CONFINED SPACE REGULATIONS APPLICABLE TO ALL PARTIES OTHER THAN THE CONSTRUCTION INDUSTRY, TO INCLUDE, BUT NOT LIMITED TO, THE FOLLOWING:
 - A. FULL BODY HARNESSES FOR UP TO TWO PERSONNEL.
 - B. LIFELINE AND ASSOCIATED CLIPS.
 - C. INGRESS/EGRESS AND FALL PROTECTION EQUIPMENT.
 - D. TWO-WAY RADIOS (WALKIE-TALKIES) IF OUT OF LINE-OF-SIGHT.
 - E. EMERGENCY (ESCAPE) RESPIRATOR (10 MINUTE DURATION).
 - F. CELLULAR TELEPHONE TO CALL FOR EMERGENCY ASSISTANCE.
 - G. CONTINUOUS GAS DETECTOR (CALIBRATED) TO MEASURE OXYGEN, HYDROGEN SULFIDE, CARBON MONOXIDE AND FLAMMABLES (CAPABLE OF MONITORING AT A DISTANCE AT LEAST 20- FEET AWAY).
 - H. PERSONAL MULTI-GAS DETECTOR TO BE CARRIED BY INSPECTOR.
 - II. CONTINUOUS FORCED AIR VENTILATION ADEQUATE TO PROVIDE SAFE ENTRY CONDITIONS.
 - III. ONE ATTENDANT/RESCUE PERSONNEL TOPSIDE (TWO, IF CONDITIONS WARRANT IT).
14. PURSUANT TO CHAPTER 6E, HRS, IN THE EVENT ANY ARTIFACTS OR HUMAN REMAINS ARE UNCOVERED DURING CONSTRUCTION OPERATIONS, THE CONTRACTOR SHALL IMMEDIATELY SUSPEND WORK AND NOTIFY THE HONOLULU POLICE DEPARTMENT AND THE STATE DEPARTMENT OF LAND AND NATURAL RESOURCES-HISTORIC PRESERVATION DIVISION (692-8015). IN ADDITION, FOR NON-CITY PROJECTS, THE CONTRACTOR SHALL INFORM THE CIVIL ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING (768-8084); AND FOR CITY PROJECTS, NOTIFY THE RESPONSIBLE CITY AGENCY.
15. THE CONTRACTOR SHALL MAKE ARRANGEMENTS FOR UTILITIES SUCH AS ELECTRICITY, ETC. REQUIRED FOR HIS OPERATIONS, AND ALL COSTS FOR THESE UTILITIES SHALL BE BORNE BY THE CONTRACTOR.
16. ALL EXISTING UTILITIES TO REMAIN IN USE, WHETHER OR NOT SHOWN ON THE PLANS, SHALL BE PROTECTED AT ALL TIMES BY THE CONTRACTOR DURING CONSTRUCTION UNLESS SPECIFIED ON THE PLANS TO BE ABANDONED. ANY DAMAGE TO THE EXISTING UTILITIES SHALL BE REPAIRED AND PAID FOR BY THE CONTRACTOR.
17. UNLESS RELOCATION IS CALLED FOR ON THE PLANS, EXISTING UTILITIES SHALL REMAIN IN-SERVICE AND IN PLACE. IF RELOCATION OF EXISTING UTILITIES IS REQUIRED FOR THE CONTRACTOR'S CONVENIENCE, INTERRUPTION OF SERVICE SHALL BE KEPT TO A MINIMUM AND SHALL BE DONE AT THE CONTRACTOR'S EXPENSE, AND ONLY WITH THE APPROVAL OF THE CONSTRUCTION ENGINEER. PRIOR TO RELOCATING EXISTING UTILITIES, THE CONTRACTOR SHALL COORDINATE THE WORK WITH HARBORS DIVISION IN ORDER TO MINIMIZE DISRUPTION TO EXISTING USERS.
18. THE CONTRACTOR SHALL VERIFY AND CHECK ALL DIMENSIONS AND DETAILS SHOWN ON THE DRAWINGS PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCY SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE CONSTRUCTION ENGINEER FOR CLARIFICATION.
19. THE CONTRACTOR SHALL OBSERVE AND COMPLY WITH ALL FEDERAL, STATE AND LOCAL LAWS REQUIRED FOR THE PROTECTION OF PUBLIC HEALTH, SAFETY, AND ENVIRONMENTAL QUALITY.
20. THE CONTRACTOR SHALL PROVIDE, INSTALL AND MAINTAIN ALL NECESSARY SIGNS, BARRICADES AND OTHER PROTECTIVE FACILITIES AND SHALL TAKE ALL NECESSARY PRECAUTIONS FOR THE PROTECTION, CONVENIENCE AND SAFETY OF THE PUBLIC.
21. THE CONTRACTOR SHALL APPLY FOR A PERMIT WITH REQUIRED POLLUTION CONTROL PLANS.
22. IF THERE ARE ANY FUEL SPILLAGES, EXISTING LEAKS, ETC. FOUND DURING CONSTRUCTION, REPORT THE FOREGOING TO THE HAZARD EVALUATION AND EMERGENCY RESPONSE UNIT (PH. NO. 586-4249) OF THE DEPARTMENT OF HEALTH. FOR NON-WORKING HOURS, CALL THE STATE HOSPITAL OPERATOR (PH. NO. 247-2191).

CONSTRUCTION NOTES: (CONT.)

20. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION ENGINEER AND STATE HISTORIC PRESERVATION DIVISION UPON UNCOVERING AND POTENTIAL HISTORICAL ARTIFACTS OR ITEMS OF ARCHAEOLOGICAL SIGNIFICANCE.
21. FOR BENCHMARK, SEE SHEET C-4.
22. ALL EXISTING IMPROVEMENTS THAT ARE DISTURBED AND NOT PLANNED TO BE DEMOLISHED SHALL BE REPLACED OR RESTORED TO THEIR ORIGINAL OR BETTER CONDITION.
23. THE CONTRACTOR SHALL COORDINATE THE WORK WITH STATE HARBORS DIVISION CONSTRUCTION ENGINEER AND HARBORS OAHU DISTRICT MANAGER.
24. FOR STRUCTURAL UPGRADES TO TRENCH DRAIN GRATE, INLET BOXES, VALVE BOXES, STORM DRAIN MANHOLES, ELECTRIC AND TELEPHONE HANDHOLES, AND OTHER APPURTENANCES, SEE STRUCTURAL DRAWINGS.
25. THE CONTRACTOR SHALL ENSURE THAT ALL WORK IS COORDINATED WITH THE HARBORS CONSTRUCTION ENGINEER AND OAHU DISTRICT MANAGER. ACTIVITIES BY TENANTS/USERS WILL TAKE PRECEDENCE OVER THE CONTRACTOR'S ACTIVITIES. THE EXACT SCHEDULING OF THE WORK AND RESTRICTIONS ON THE CONTRACTOR'S ACTIVITIES WILL BE ESTABLISHED AT THE PRE-CONSTRUCTION MEETING. PHASING AND CAREFUL COORDINATION OF THE WORK WILL BE REQUIRED TO ALLOW CONTINUOUS USE OF THE PROJECT LOCATION AND ADJACENT AREAS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH ALL TENANTS/USERS OF THE AREA AND THE HARBORS OAHU DISTRICT OPERATIONS STAFF ON A DAILY BASIS REGARDING SCHEDULING OF ALL WORK AT NO ADDITIONAL COST TO THE STATE.
26. THE CONTRACTOR SHALL FOLLOW APPROPRIATE PROCEDURES FOR HANDLING ASBESTOS-CONTAINING MATERIALS AS INDICATED IN THE SPECIFICATIONS, AND SHALL CONFORM TO ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS REGARDING ASBESTOS-CONTAINING MATERIALS, WHEN TAPPING, CUTTING, HANDLING OR OTHERWISE DISTURBING PIPES OR DUCTS CONTAINING ASBESTOS MATERIAL.
27. THE CONTRACTOR WILL NOT BE ALLOWED TO DISCHARGE DEWATERING EFFLUENT DIRECTLY IN TO THE DRAINAGE SYSTEM. DEWATERING REQUIRED FOR CONSTRUCTION SHALL BE IN ACCORDANCE WITH HAWAII ADMINISTRATIVE RULES, CHAPTER 11-54, WATER QUALITY STANDARDS, AND THE APPROVED NOTICE OF GENERAL PERMIT COVERAGE (NGPC) FOR THIS PROJECT.
28. THE CONTRACTOR SHALL FOLLOW APPROPRIATE PROCEDURES FOR THE REMOVAL OF EXISTING FUEL AND OIL PIPELINES AS INDICATED IN THE SPECIFICATIONS.
29. THE CONTRACTOR SHALL FOLLOW APPROPRIATE PROCEDURES FOR THE REMOVAL OF UNSUITABLE MATERIAL, AS IDENTIFIED BY THE CONSTRUCTION ENGINEER OR HIS AUTHORIZED REPRESENTATIVE, IN ACCORDANCE WITH THE SPECIFICATIONS. THE CONSTRUCTION ENVIRONMENTAL HAZARD MANAGEMENT PLAN FOR THE PROJECT SITE IS INCLUDED IN THE PROJECT SPECIFICATIONS.
30. IN THE EVENT THAT UNFORESEEN ENVIRONMENTAL CONDITIONS ARE ENCOUNTERED, THE CONTRACTOR, UPON APPROVAL OF THE STATE DOT-HARBORS DIVISION, MAY BE GRANTED AN EXTENSION IN THE CONSTRUCTION SCHEDULE FOR THE WORK NECESSARY TO PROPERLY HANDLE THE SITUATION IN ACCORDANCE WITH THE SPECIFICATIONS. THE HANDLING OF UNFORESEEN ENVIRONMENTAL CONDITIONS SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT AMOUNT AND ADDITIONAL COMPENSATION WILL NOT BE GRANTED.
31. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHENEVER CONSTRUCTION CROSSES OR IN CLOSE PROXIMITY OF UNDERGROUND LINES (INCLUDING BUT NOT LIMITED TO ELECTRIC UNDERGROUND LINES, FUEL OIL PIPELINES, ETC). FOR VERIFICATION OF UNDERGROUND LINES, THE CONTRACTOR SHALL CALL THE HAWAII ONE-CALL-CENTER AT 866-423-7287 MINIMUM OF FIVE (5) WORKING DAYS IN ADVANCE.

REVISION	DATE	DESCRIPTION	BY	APPROVED

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HARBORS DIVISION			
JOB TITLE		DOMESTIC AND FIRE WATERLINE SYSTEM REPLACEMENT AT PIER 51A HONOLULU HARBOR, OAHU, HAWAII	
SHEET TITLE			
INDEX & CONSTRUCTION NOTES – 1			
DESIGNED BY: WM, CL, JS, MB	JOB NUMBER P10904		SHEET
DRAWN BY: WM, CL, JS, MB			C-1
CHECKED BY: WM			
DATE: MARCH 2026			
SCALE: AS SHOWN			
		2 OF 22 SHEETS	



THIS WORK WAS PREPARED BY ME OR UNDER MY
SUPERVISION AND CONSTRUCTION OF THIS PROJECT
WILL BE UNDER MY OBSERVATION. "OBSERVATION OF
CONSTRUCTION" IS DEFINED IN CHAPTER 16-115, HAWAII
ADMINISTRATIVE RULES, ENTITLED "PROFESSIONAL ENGINEERS,
ARCHITECTS, SURVEYORS AND LANDSCAPE ARCHITECTS."


R.M. TOWILL CORPORATION

APRIL 30, 2026
LICENSE EXPIRATION DATE

STATE-OWNED (NON-BWS) WATER SYSTEM NOTES:

1. TEST PRESSURE SHALL BE 200 PSI.
2. AFTER INSTALLATION OF TAPPING SLEEVE AND VALVE PRIOR TO ACTUAL TAPPING OPERATIONS, THE ASSEMBLY SHALL BE TESTED AT 200 PSI ON BOTH SIDES OF THE VALVE.
3. PRIOR TO INSTALLATION, THE CONTRACTOR SHALL SUBMIT FOR APPROVAL BY THE CONSTRUCTION ENGINEER, THE MANUFACTURER'S CERTIFICATION THAT ALL FITTINGS FOR THE PROJECT CONFORM IN ALL RESPECTS TO THE PROJECT SPECIFICATIONS.
4. POLYGON SHAPE FOR MECHANICAL JOINT GLANDS AS DESCRIBED IN AWWA STANDARD C111 SHALL BE "STRAIGHT-SIDED" OR AN APPROVED EQUAL ON A JOB TO JOB BASIS.
5. THE CONTRACTOR SHALL CUT AND PLUG ALL EXISTING UNUSED LATERALS AT THE MAIN WHETHER OR NOT SHOWN ON THE PLANS. THE DAMAGED AREA SHALL BE REPAIRED TO AN EQUAL OR BETTER CONDITION THAN THE IMMEDIATE AREA. ALL WORK SHALL BE DONE AT THE EXPENSE OF THE CONTRACTOR.
6. HYDROTESTING EFFLUENT REQUIRED FOR CONSTRUCTION SHALL BE IN ACCORDANCE WITH HAWAII ADMINISTRATIVE RULES, CHAPTER 11-54, WATER QUALITY STANDARDS. HYDROTESTING EFFLUENT SHALL BE DISPOSED OF VIA BACKTRENCHING.
7. PIPE CUSHION AND BACKFILL MATERIAL SHALL CONTAIN NO HAZARDOUS SUBSTANCES ABOVE REGULATORY ACTION LEVELS INCLUDING BUT NOT LIMITED TO LEAD, ASBESTOS, MERCURY, CHROMIUM, CADMIUM, ZINC, STRONTIUM, AND POLYCHLORINATED BIPHENYLS (PCB).
8. CLEANING SHALL BE BY THE USE OF "PIGS" INTRODUCED INTO THE PIPELINE AND RUN COMPLETELY THROUGH ALL INSTALLED PIPELINES AND ALL BRANCH LINES FOR FIRE HYDRANTS. "PIGGING" OF SERVICE LATERALS IS NOT REQUIRED. BARE FOAM "PIGS" SHALL BE USED TO SWAB PIPING CLEAN AS EACH LENGTH OF PIPELINE IS INSTALLED. EACH "PIG" SHALL CONSIST OF A CYLINDRICAL PIECE OF POLYURETHANE FOAM WITH A DENSITY OF 3 - 7 POUNDS PER CUBIC FOOT AND A VINYL-COATED NOSE. OUTSIDE DIAMETER OF THE "PIG" SHALL BE EQUAL TO 1-1/4 TO 1-1/2 TIMES THE INSIDE DIAMETER OF THE PIPE BEING INSTALLED. THE LENGTH OF THE "PIG" SHALL BE 1-1/2 TO 2 TIMES ITS DIAMETER. PRIOR TO USE, THE "PIG" SHALL BE SUBMERGED IN A CHLORINE SOLUTION OF 1 OZ. OF 5% CHLORINE BLEACH IN 5 GALLONS OF WATER. "PIGGING" OF THE PIPELINE SHALL BE CONSIDERED INCIDENTAL TO THE INSTALLATION OF THE NEW PIPELINE.
9. BALL CORP AND BALL STOP SHALL BE USED IN LIEU OF A CORPORATION STOP AND STOPCOCK, RESPECTIVELY.
10. THE CONTRACTOR SHALL FOLLOW THE CHLORINATION AND WATER SAMPLING PROCEDURES AS SHOWN IN THE CONTRACT SPECIFICATIONS.
11. PIPE AND FITTINGS SHALL CONFORM TO THE STANDARDS SET FORTH IN THE SPECIFICATIONS.
12. ALL PIPE DEFLECTIONS SHALL BE APPROVED BY THE CONSTRUCTION ENGINEER, AND SHALL CONFORM TO THE MANUFACTURER'S RECOMMENDATIONS, UNLESS OTHERWISE SPECIFIED.
13. THE CONTRACTOR SHALL FURNISH AND INSTALL DIELECTRIC COUPLINGS AT ALL TAPS AFTER METERS FOR ALL SERVICE CONNECTIONS.
14. ALL SECTIONS OF THE WATER MAIN REQUIRING REINFORCED CONCRETE JACKETING SHALL BE DUCTILE IRON PIPE WITH DUCTILE IRON FITTINGS AND SHALL CONFORM TO THE BWS EXTERNAL CORROSION CONTROL STANDARDS.
15. UNLESS OTHERWISE INDICATED, ALL PORTIONS OF THE EXISTING WATER SYSTEM, INCLUDING FIRE HYDRANTS, SHALL REMAIN OPERATIONAL AND IN SERVICE UNTIL THE NEW WATER SYSTEM IMPROVEMENTS ARE COMPLETELY IN-PLACE AND READY TO BE PLACED IN SERVICE.
16. THE CONTRACTOR SHALL CHLORINATE THE ENTIRE INSIDE SURFACE OF EACH PIPE AND FITTING WITH DISINFECTION SOLUTION OF 5 OUNCES OF SODIUM HYPOCHLORITE MIXED WITH 10 GALLONS OF WATER.
17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL WATER LINES DURING CONSTRUCTION. THE CONTRACTOR SHALL BE ESPECIALLY CAREFUL WHEN EXCAVATING BEHIND WATER LINES, TEES AND BENDS WHEREVER THERE IS A POSSIBILITY OF WATER LINE MOVEMENT DUE TO THE REMOVAL OF THE SUPPORTING EARTH BEYOND THE EXISTING REACTION BLOCKS. THE CONTRACTOR SHALL TAKE WHATEVER MEASURES NECESSARY TO PROTECT THE WATER LINES, SUCH AS CONSTRUCTING SPECIAL REACTION BLOCKS (WITH DOT HARBORS APPROVAL) AND/OR MODIFYING HIS CONSTRUCTION METHOD.
18. THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITIES AND STRUCTURES AS SHOWN ON THE PLANS ARE FROM THE LATEST DATA THAT COULD BE OBTAINED BUT IS NOT GUARANTEED AS TO THE ACCURACY OR THE ENCOUNTERING OF OTHER OBSTACLES DURING THE COURSE OF THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE AND SHALL PAY FOR ALL THE DAMAGES TO EXISTING UTILITIES. THE CONTRACTOR SHALL NOT ASSUME THAT WHERE NO UTILITIES ARE SHOWN, THAT NONE EXIST.

STATE-OWNED (NON-BWS) WATER SYSTEM NOTES (CONTINUED):

19. BEFORE FINAL INSPECTION IS MADE, THE CONTRACTOR IN THE PRESENCE OF THE CONSTRUCTION ENGINEER, WILL FLOW TEST THE MOST CRITICAL HYDRANTS (HYDRANTS WITH THE LEAST FLOW EXPECTED). THE CONSTRUCTION ENGINEER WILL FURNISH TO THE HONOLULU FIRE DEPARTMENT (WITH A COPY TO THE BOARD OF WATER SUPPLY, CONSTRUCTION SECTION) THE FOLLOWING FLOW DATA: STATIC AND RESIDUAL PRESSURES IN PSI; PITOT AND FLOW IN GPM; GENERAL LAYOUT DRAWING SHOWING LOCATION OF HYDRANTS; AND MANUFACTURER OF HYDRANTS.
- CHLORINATION OF STATE-OWNED WATER SYSTEMS (NON-BWS):
1. LIQUID CHLORINE CONFORMING TO AWWA B301 STANDARDS, OR CALCIUM HYPOCHLORITE CONFORMING TO AWWA B300 STANDARDS SHALL BE USED FOR THE CHLORINATION OF THE PROJECT.
2. PRIOR TO CHLORINATION, THE PROJECT SHALL BE THOROUGHLY FLUSHED.
3. THE INTERIOR SURFACES OF THE PROJECT SHALL BE EXPOSED TO THE CHLORINATING SOLUTION FOR A MINIMUM OF 24 HOURS AND THE CHLORINE RESIDUAL SHALL NOT BE LESS THAN 10 PPM AFTER SUCH TIME.
4. SHOULD CALCIUM HYPOCHLORITE BE USED, NO SOLID AND/OR UNDISSOLVED PORTION OF THE COMPOUND SHALL BE INTRODUCED INTO ANY SECTION OF THE PROJECT TO BE CHLORINATED.
5. AT THE END OF THE 24-HOUR DISINFECTION PERIOD, REPRESENTATIVE SAMPLES SHALL BE TAKEN AND ANALYZED TO ASSURE A CHLORINE RESIDUAL OF AT LEAST 10 PPM.
6. SHOULD THE RESULTS INDICATE ADEQUATE CHLORINATION, THE PROJECT SHALL BE THOROUGHLY FLUSHED AND FILLED WITH WATER FROM THE EXISTING SYSTEM AND AGAIN TESTED FOR CHLORINE RESIDUAL. THE FLUSHING SHALL BE CONSIDERED ADEQUATE IF THE TEST RESULTS INDICATE THAT THE WATER IN THE PROJECT HAS A COMPARABLE CHLORINE RESIDUAL AS THE WATER IN THE EXISTING SYSTEM.
7. 24 HOURS FOLLOWING THE ACCEPTABLE FLUSHING OF THE PROJECT, SAMPLES FROM REPRESENTATIVE POINTS IN THE PROJECT SHALL BE TAKEN AND SUBJECTED TO MICROBIOLOGICAL TESTS. POSITIVE RESULTS WILL NOT BE ACCEPTABLE AND THE PROCESS WILL BE REPEATED.
8. ANALYSIS FOR RESIDUAL CHLORINE SHALL BE MADE IN ACCORDANCE WITH "STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER," AMERICAN PUBLIC HEALTH ASSOCIATION, 13TH EDITION, PP. 117-123.
9. MICROBIOLOGICAL TESTS SHALL BE MADE IN ACCORDANCE WITH "STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER," AMERICAN PUBLIC HEALTH ASSOCIATION, 13TH EDITION, PP. 662-688.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS RELATED TO THE CHLORINATION OF THE WATER SYSTEM. ALL MEASUREMENTS FOR CHLORINE RESIDUAL AND MICROBIOLOGICAL TESTS SHALL BE PERFORMED BY A LABORATORY APPROVED BY THE DIRECTOR.

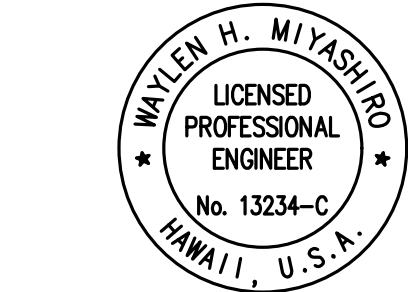
CONSTRUCTION PHASING/COORDINATION NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COORDINATION WORK WITH THE VARIOUS UTILITY COMPANIES AND GOVERNMENT AGENCIES. THE COST TO COORDINATE WORK SHALL BE CONSIDERED INCIDENTAL TO THE VARIOUS ITEMS OF WORK.

UTILITY SERVICE

1. THE CONTRACTOR SHALL MAINTAIN CONTINUOUS WATER, SEWER, POWER, TELEPHONE, AND CABLE SERVICE TO EXISTING HARBORS USERS AND AFFECTED ADJACENT PROPERTIES. TEMPORARY UTILITY ROUTING REQUIRED TO MAINTAIN CONTINUOUS SERVICE WILL BE CONSIDERED INCIDENTAL TO THE VARIOUS ITEMS OF WORK.
2. THE CONTRACTOR SHALL COORDINATE WITH THE HARBORS CONSTRUCTION ENGINEER, HARBORS OAHU DISTRICT, AND ALL USERS AND TENANTS AT LEAST TWO WEEKS PRIOR TO ALL UTILITY CONNECTIONS/INTERRUPTIONS.

REVISION	DATE	DESCRIPTION	BY	APPROVED
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HARBORS DIVISION				
JOB TITLE DOMESTIC AND FIRE WATERLINE SYSTEM REPLACEMENT AT PIER 51A HONOLULU HARBOR, OAHU, HAWAII				
SHEET TITLE CONSTRUCTION NOTES - 2				
DESIGNED BY: WM, CL, JS, MB		JOB NUMBER P10904		SHEET C-2 3 of 22 SHTS.
DRAWN BY: WM, CL, JS, MB				
CHECKED BY: WM				
DATE: MARCH 2026				
SCALE: AS SHOWN				



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. PRESERVATION OF CONSTRUCTION IS DEFINED IN CHAPTER 100-15, HAWAII ADMINISTRATIVE RULES, ENTITLED "PROFESSIONAL ENGINEERS, ARCHITECTS, SURVEYORS AND LANDSCAPE ARCHITECTS."

Wayne M. Towill
R.M. TOWILL CORPORATION
APRIL 30, 2026
LICENSE EXPIRATION DATE

BMP NOTES:

TEMPORARY EROSION CONTROL MEASURES:

1. PRIOR TO CLEARING AND GRUBBING, TEMPORARY EROSION CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAILS ON SHT. C-19.
2. THE CONTRACTOR SHALL COMPLY WITH NPDES PERMIT REQUIREMENTS FOR THE PROJECT.
3. THE CONTRACTOR SHALL SUBMIT NPDES, SITE SPECIFIC BMP PLANS IMMEDIATELY AFTER NOTICE OF AWARD. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING APPROVAL OF SITE SPECIFIC BMP PLAN FROM THE HARBORS CONSTRUCTION ENGINEER.

PERMANENT EROSION CONTROL MEASURES:

1. FINISHED NON-PAVED AREAS TO BE STABILIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
2. THE CONTRACTOR SHALL COMPLY WITH NPDES PERMIT REQUIREMENTS FOR THE PROJECT.
3. PERMANENT BMP'S SHALL BE INSTALLED UPON THE COMPLETION OF CONSTRUCTION OF DRAINAGE STRUCTURES.

EROSION CONTROL BEST MANAGEMENT PRACTICES (BMP'S)

1. PRIOR TO CONSTRUCTION, ALL EROSION CONTROL MEASURES SHALL BE INSTALLED.
2. AT THE END OF EACH WORK DAY, THE CONTRACTOR SHALL COLLECT AND REMOVE/DISPOSE OF TRASH AND DEBRIS THAT HAS ACCUMULATED AROUND THE SURROUNDING CONSTRUCTION AREA.
3. THE CONTRACTOR, AT HIS OWN EXPENSE, SHALL PROVIDE EFFECTIVE MEASURES FOR THE CONTROL OF FUGITIVE DUST EMISSIONS FROM THE PROJECT AND SURROUNDING AREAS CAUSED BY HIS OPERATIONS. THESE MEASURES SHALL MEET THE REQUIREMENTS OF STATE ADMINISTRATIVE RULES, DEPARTMENT OF HEALTH, AIR POLLUTION CONTROL (11-60.1)

WATER POLLUTION AND GOOD HOUSEKEEPING NOTES:

1. MATERIALS POLLUTION PREVENTION PLAN

A. APPLICABLE MATERIALS OR SUBSTANCES LISTED BELOW ARE EXPECTED TO BE PRESENT ONSITE DURING CONSTRUCTION. OTHER MATERIALS AND SUBSTANCES NOT LISTED BELOW SHALL BE ADDED TO THE INVENTORY.

CONCRETE	FERTILIZERS	METAL STUDS
DETERGENTS	PETROLEUM BASED PRODUCTS	WOOD
PAINTS (ENAMEL AND LATEX)	CLEANING SOLVENTS	MASONRY BLOCK

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

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

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

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

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

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

H. THE CONTRACTOR SHALL CONDUCT A DAILY INSPECTION TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS ONSITE.
2. ONSITE AND OFFSITE PRODUCTS SPECIFIC PLAN

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

(1) 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.

(2) FERTILIZERS: FERTILIZERS USED SHALL BE APPLIED ONLY IN THE MINIMUM AMOUNTS RECOMMENDED BY THE MANUFACTURER. ONCE APPLIED, FERTILIZER SHALL BE WORKED INTO THE SOIL TO LIMIT EXPOSURE TO STORM WATER. STORAGE SHALL BE IN A COVERED SHED. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER SHALL BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.

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

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

B. OFFSITE VEHICLE TRACKING: STABILIZED CONSTRUCTION ENTRANCE SHALL BE PROVIDED TO HELP REDUCE VEHICLE TRACKING OF SEDIMENTS. THE PAVED STREET ADJACENT TO THE SITE ENTRANCE SHALL BE CLEANED DAILY OR AS REQUIRED TO REMOVE ANY EXCESS MUD, COLD PLANED MATERIALS, DIRT OR ROCK TRACKED FROM THE SITE. DUMP TRUCKS HAULING MATERIAL TO/OR FROM THE CONSTRUCTION SITE SHALL BE COVERED WITH A TARPULIN.
- NOTES FOR ENVIRONMENTAL PROTECTION:
1. THE CONTRACTOR, AT HIS OWN EXPENSE, SHALL PROVIDE EFFECTIVE MEASURES FOR THE CONTROL OF FUGITIVE DUST EMISSIONS FROM THE PROJECT AND SURROUNDING AREAS CAUSED BY HIS OPERATIONS. THESE MEASURES SHALL MEET THE REQUIREMENTS OF STATE ADMINISTRATIVE RULES, DEPARTMENT OF HEALTH, AIR POLLUTION CONTROL (11-60.1)

2. ALL GRADING OPERATIONS SHALL BE PERFORMED IN CONFORMANCE WITH THE APPLICABLE PROVISIONS OF THE GRADING ORDINANCE TO PREVENT VIOLATION OF THE STATE ADMINISTRATIVE RULES, DEPARTMENT OF HEALTH, WATER POLLUTION CONTROL AND WATER QUALITY STANDARDS. (11-54, 11-55) DUE TO EROSION AND RUNOFF TO STATE WATERS.

3. ALL SLOPES AND EXPOSED AREAS SHALL BE SODDED OR PLANTED IMMEDIATELY AFTER THE GRADING WORK HAS BEEN COMPLETED.

4. GRUB MATERIAL, DEMOLITION WASTES, AND CONSTRUCTION WASTES SHALL BE DISPOSED OF AT AN AUTHORIZED SITE HAVING A DEPARTMENT OF HEALTH SOLID WASTE MANAGEMENT PERMIT. OPEN BURNING IS PROHIBITED. THE CONTRACTOR SHALL INFORM THE COUNTY ENGINEER OF THE LOCATION OF THE DISPOSAL SITES. THE DISPOSAL SITE MUST ALSO FULFILL THE REQUIREMENTS OF THE GRADING ORDINANCES.
- NOTES FOR ENVIRONMENTAL PROTECTION (CONTINUED):
5. ALL EXCESS MATERIAL SHALL BE REMOVED FROM THE PROJECT SITE.

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

7. THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS SO THAT EXCAVATION, EMBANKMENT AND IMPORTED MATERIAL SHALL BE DAMPENED WITH WATER DURING THE GRADING OPERATION.

8. AFTER THE SITE HAS BEEN BARED OF VEGETATION OR AFTER GRADING HAS BEGUN, IF FINAL GRADING OF THE SITE IS ANTICIPATED TO BE SUSPENDED FOR MORE THAN 30 CALENDAR DAYS, TEMPORARY VEGETATIVE COVER SHALL BE PLANTED IMMEDIATELY. TEMPORARY VEGETATIVE COVER SHALL CONSIST OF 40 LBS. COMMON RYE GRASS SEED PER ACRE AND 400 LBS. PER ACRE OF 10-10-10 OR EQUIVALENT FERTILIZER WORKED INTO SEED BED BEFORE PLANTING. PLANTING AND MAINTENANCE OF GRASS SHALL CONFORM TO THE "HAWAII STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND PUBLIC WORKS CONSTRUCTION", 2005, AS AMENDED.

9. ALL CONSTRUCTION ACTIVITIES SHALL BE CONDUCTED IN COMPLIANCE WITH THE DEPARTMENT OF TRANSPORTATION - HARBORS DIVISION'S "CONSTRUCTION SITE RUNOFF CONTROL PROGRAM."

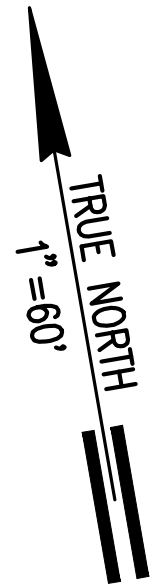
10. THE CONTRACTOR SHALL COMPLY WITH THE CLEAN WATER ACT AND THE STATE HARBORS STORMWATER MANAGEMENT PROGRAM. NO POLLUTANTS ARE ALLOWED TO BE DISCHARGED DIRECTLY OR INDIRECTLY INTO ADJACENT HARBOR WATER, VIA HARBORS SMALL MS4 OR OTHER POTENTIAL PATHWAYS.

11. THE CONTRACTOR SHALL SUBMIT STORMWATER POLLUTION PREVENTION PLAN (SWPPP) OR A SITE-SPECIFIC BEST MANAGEMENT PRACTICES PLAN TO HARBORS CONSTRUCTION ENGINEER PRIOR TO THE START OF ANY CONSTRUCTION WORK. THIS PLAN SHALL COMPLY WITH HAR 11-54 AND 11-55 AND HARBORS CORRESPONDING SPECIFICATIONS.

12. IN CASE OF SPILL, LEAK, OR OTHER RELEASE CONTAINING A HAZARDOUS SUBSTANCE OR OIL, THE CONTRACTOR SHALL NOTIFY APPROPRIATE FACILITY PERSONNEL, EMERGENCY RESPONSE AGENCIES, AND REGULATORY AGENCIES FOLLOWING NOTIFICATION PROCEDURES, AND SHALL NOTIFY HARBORS CONSTRUCTION ENGINEER AND ENVIRONMENTAL OFFICE IMMEDIATELY (I.E., WITHIN 24-HOURS). SUCH CONTACT INFORMATION MUST BE POSTED AT LOCATIONS THAT ARE READILY ACCESSIBLE AND VISIBLE.
- Fri, 15 May 2026 - 10:09am
K:\Cvix\24403 Pier 51A Waterlines\Drawings\Construction Drawings\C-3 Construction Notes - 3.dwg

HONOLULU HARBOR

PIER 51A



BENCHMARK
STA. "20"
1,678,773.88 N
53,085.67 E
ELEV.=12.16
MAG. NAIL

STA. "18"
1,678,944.81 N
53,353.28 E
ELEV.=8.17
MAG. NAIL

STA. "22"
1,678,900.81 N
53,190.94 E
ELEV.=13.24
MAG. NAIL

STA. "49"
1,679,506.15 N
52,500.43 E
ELEV.=10.57
MAG. NAIL

EXISTING FIRE
PROTECTION
WATER SYSTEM

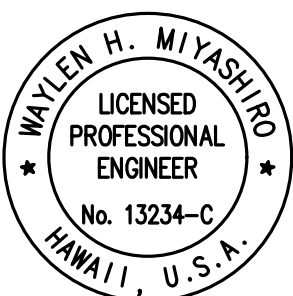
EXISTING DOMESTIC
SERVICE WATER SYSTEM

SAND ISLAND ACCESS ROAD (STATE)

EXISTING CONDITIONS PLAN & SURVEY CONTROL PLAN
SCALE: 1"=60'

GRAPHIC SCALE:

1" = 60' 60' 30' 0 30' 60'



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. OBSERVATION OF CONSTRUCTION IS DEFINED IN CHAPTER 100-15, HAWAII ADMINISTRATIVE RULES, ENTITLED "PROFESSIONAL ENGINEERS, ARCHITECTS, SURVEYORS AND LANDSCAPE ARCHITECTS."

Maylen H. Miyashiro
R.M., TOWELL CORPORATION
APRIL 30, 2026
LICENSE EXPIRATION DATE

REVISION	DATE	DESCRIPTION	BY	APPROVED
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HARBORS DIVISION				
JOB TITLE		DOMESTIC AND FIRE WATERLINE SYSTEM REPLACEMENT AT PIER 51A HONOLULU HARBOR, OAHU, HAWAII		
SHEET TITLE		EXISTING CONDITIONS & SURVEY CONTROL PLAN		
DESIGNED BY: WM, CL, JS, MB DRAWN BY: WM, CL, JS, MB CHECKED BY: WM DATE: MARCH 2026 SCALE: AS SHOWN				SHEET C-4 5 of 22 SHTS.
JOB NUMBER P10904				

HONOLULU HARBOR

PIER 51A

✓ DEMOLISH AND REMOVE
EXIST. FH (TYP.)

DEMOLISH AND REMOVE
EXIST. WATER LINES (TYP.)

CUT & PLUG
E/W6

✓ DEMOLISH AND REMOVE
EXIST. FLUSH MOUNTED
FH (TYP.)

ADDITIVE ITEM NO. 1
DEMOLISH AND REMOVE
EXISTING W1-1/2"

DEMOLITION PLAN
SCALE: 1"=60'

GRAPHIC SCALE:

1" = 60' 

NOTES:

1. THE CONTRACTOR SHALL DEMOLISH AND REMOVE EXISTING WATER SYSTEM.
2. THE CONTRACTOR SHALL PHASE CONSTRUCTION TO ENSURE THE EXISTING WATER SYSTEM IS "LIVE" AT ALL TIMES (WITH EXCEPTION TO TIE-IN POINTS).
3. WATER LINE "DOWN TIMES" SHALL BE LIMITED TO 8-HOURS MAX. ANY DOWN TIMES LONGER THAN 8-HOURS SHALL REQUIRE THE ENGINEERS WRITTEN APPROVAL.

LEGEND

EXISTING WATERLINE & SIZE

—W8—

EXISTING FIRE HYDRANT

EXISTING FLUSH

MOUNTED FIRE HYDRANT

✱

EXISTING WATERLINE TO BE
DEMOLISHED AND REMOVED

XXXXXXXXXXXXXXXXXXXXXXXXXXXX

CUT & PLUG

BENCHMARK
STA. "20"
1,678,773.88 N
53,085.67 E
ELEV.=12.16
MAG. NAIL

SAND ISLAND ACCESS ROAD (STATE)



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. "OBSERVATION OF CONSTRUCTION" IS DEFINED IN CHAPTER 16-115, HAWAII ADMINISTRATIVE RULES, ENTITLED "PROFESSIONAL ENGINEERS, ARCHITECTS, SURVEYORS AND LANDSCAPE ARCHITECTS."

Wayne Myer
R.M. TOWILL CORPORATION
APRIL 30 2026

REVISION	DATE	DESCRIPTION		BYP	APPROVED
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HARBORS DIVISION JOB TITLE DOMESTIC AND FIRE WATERLINE SYSTEM REPLACEMENT AT PIER 51A HONOLULU HARBOR, OAHU, HAWAII					
SHEET TITLE DEMOLITION PLAN					
DESIGNED BY: WM, CL, JS, MB		JOB NUMBER P10904		SHEET	C-5
DRAWN BY: WM, CL, JS, MB					
CHECKED BY: WM					
DATE: MARCH 2026					
SCALE: AS SHOWN				6	OF 22 SHEETS

HONOLULU HARBOR

PIER 51A

CONSTRUCT
FH (TYP.)

CONNECT TO
EXIST W8

CONNECT TO
EXIST W1-1/2

CONNECT TO
EXIST W1-1/2

CONNECT TO
EXIST W8

GENERAL PLAN
SCALE: 1"=60'

GRAPHIC SCALE

1" = 60' 

NOTES:

1. THE CONTRACTOR SHALL DEMOLISH AND REMOVE EXISTING WATER SYSTEM.
2. THE CONTRACTOR SHALL PHASE CONSTRUCTION TO ENSURE THE EXISTING WATER SYSTEM IS "LIVE" AT ALL TIMES (WITH EXCEPTION TO TIE-IN POINTS).
3. WATER LINE "DOWN TIMES" SHALL BE LIMITED TO 8-HOURS MAX. ANY DOWN TIMES LONGER THAN 8-HOURS SHALL REQUIRE THE ENGINEER'S WRITTEN APPROVAL.

LEGEND

WATERLINE & SIZE

FIRE HYDRANT

EXISTING FLUSH

MOUNTED |

GATE VALVE
EXISTING WATERLINE TO BE
DEMOLISHED AND REMOVED

-W8-

⊖

BENCHMARK
STA. "20"
1,678,773.88 N
53,085.67 E
ELEV.=12.16
MAG. NAIL

SAND ISLAND ACCESS ROAD (STATE)

TRUE NORTH
1"=60'

TRUE NORTH
4°-60'

R/V

R/W



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. "OBSERVATION OF CONSTRUCTION" IS DEFINED IN CHAPTER 16-115, HAWAII ADMINISTRATIVE RULES, ENTITLED "PROFESSIONAL ENGINEER, ARCHITECT, SURVEYOR AND LANDSCAPE ARCHITECT."

Wayne May

APRIL 30, 2026

REVISION	DATE	DESCRIPTION						BY	APPROVED
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HARBORS DIVISION									
JOB TITLE	DOMESTIC AND FIRE WATERLINE SYSTEM REPLACEMENT AT PIER 51A HONOLULU HARBOR, OAHU, HAWAII								
SHEET TITLE	GENERAL PLAN								
DESIGNED BY: WM, CL, JS, MB	JOB NUMBER P10904							SHEET C-6	
DRAWN BY: WM, CL, JS, MB								7 OF 22 SHEETS	
CHECKED BY: WM DATE: MARCH 2026 SCALE: AS SHOWN									

Fri, 15 May 2026 - 10:09am
K:\civil\24405 Pier 51A Waterlines\Drawings\Construction Drawings\C-6 General Plan.dwg

PIER 51A

1. THE CONTRACTOR SHALL STRICTLY FOLLOW THE NGPC FORM C AND THE HDOT HARBORS DIVISION "CONSTRUCTION SITE RUNOFF CONTROL PROGRAM" FOR THIS PROJECT. SEE ENVIRONMENTAL SPECIFICATION SECTIONS.

TRUE NORTH
1" = 60'

EXISTING DRAIN INLET FITTED
WITH BIOCLEAN FILTER
CONTRACTOR SHALL NOT
PROVIDE INLET PROTECTION
UNLESS DIRECTED BY THE
CONSTRUCTION ENGINEER

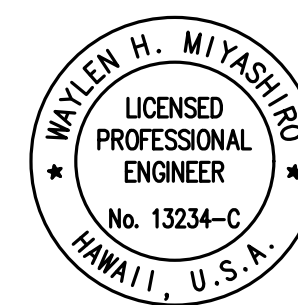
EXISTING DRAIN INLET FITTED
WITH BIOCLEAN FILTER
CONTRACTOR SHALL NOT
PROVIDE INLET PROTECTION
UNLESS DIRECTED BY THE
CONSTRUCTION ENGINEER

EXISTING DRAIN INLET FITTED
WITH BIOCLEAN FILTER
CONTRACTOR SHALL NOT
PROVIDE INLET PROTECTION
UNLESS DIRECTED BY THE
CONSTRUCTION ENGINEER

SAND ISLAND ACCESS ROAD (STATE)

GRAPHIC SCALE:

1" = 60'



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. OBSERVATION OF CONSTRUCTION IS DEFINED IN CHAPTER 16-115, HAWAII ADMINISTRATIVE RULES, ENTITLED "PROFESSIONAL ENGINEERS, ARCHITECTS, SURVEYORS AND LANDSCAPE ARCHITECTS."

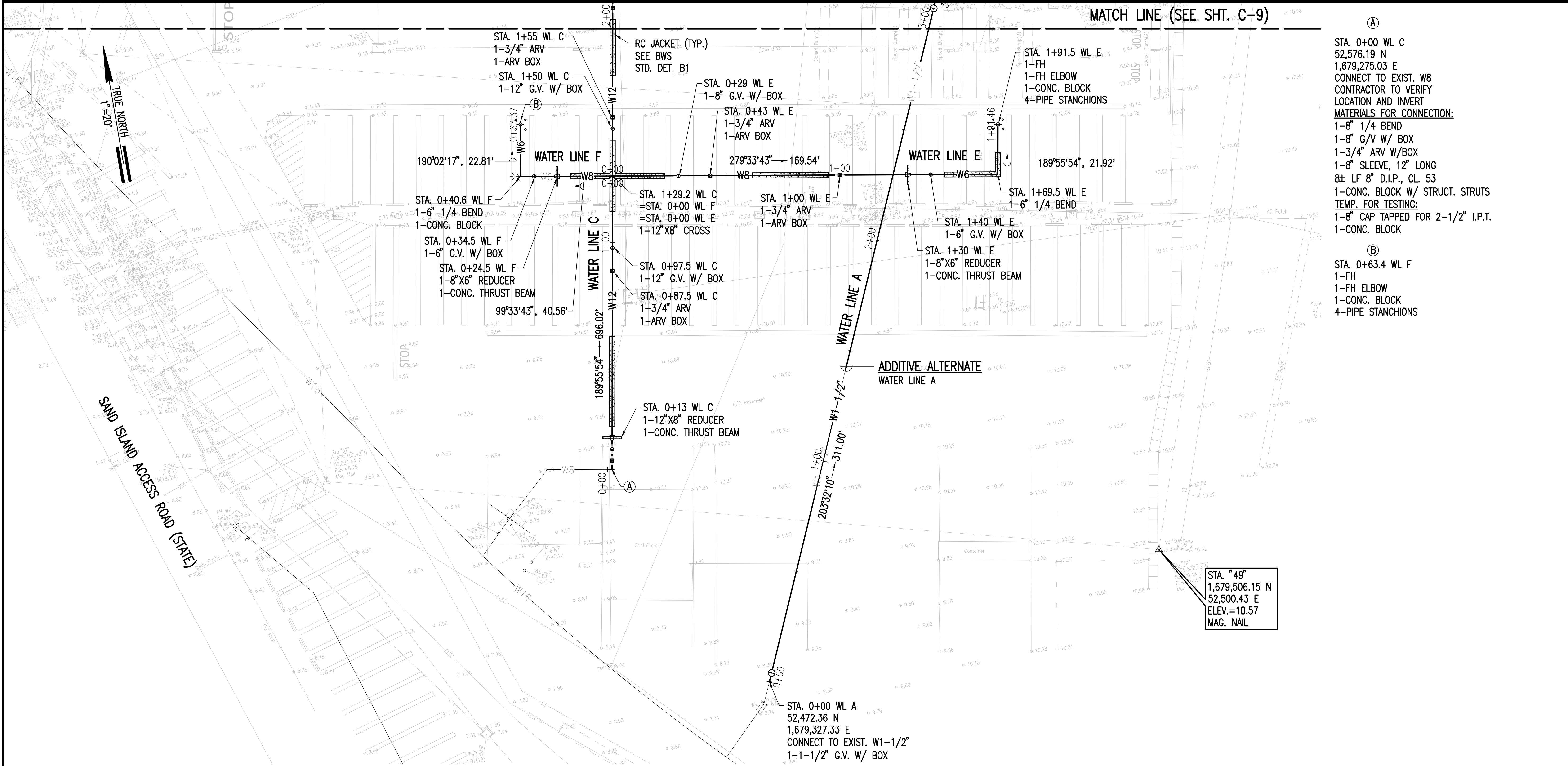
Wayne Myer

R.M. TOWILL CORPORATION

APRIL 30, 2026

LICENSE EXPIRATION DATE

REVISION	DATE	DESCRIPTION			BY APPROVED
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HARBORS DIVISION					
JOB TITLE		DOMESTIC AND FIRE WATERLINE SYSTEM REPLACEMENT AT PIER 51A HONOLULU HARBOR, OAHU, HAWAII			
SHEET TITLE		GENERAL BEST MANAGEMENT PRACTICES			
DESIGNED BY: WM, CL, JS, MB		JOB NUMBER P10904		SHEET C-7	
DRAWN BY: WM, CL, JS, MB					
CHECKED BY: WM					
DATE: MARCH 2026					
SCALE: AS SHOWN				8 OF 22 SHEETS	



WATER LINE PLAN - 1
SCALE: 1"=20'

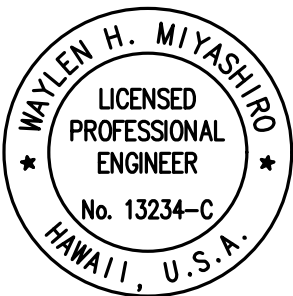
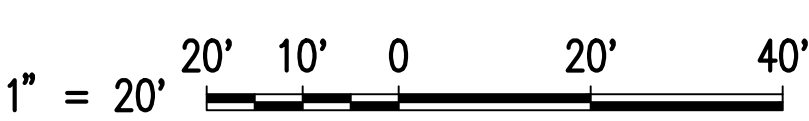
NOTES:

1. THE CONTRACTOR SHALL DEMOLISH AND REMOVE EXISTING WATER SYSTEM.

LEGEND

WATERLINE & SIZE	W8
FIRE HYDRANT	+
GATE VALVE	o
AIR RELIEF VALVE	■

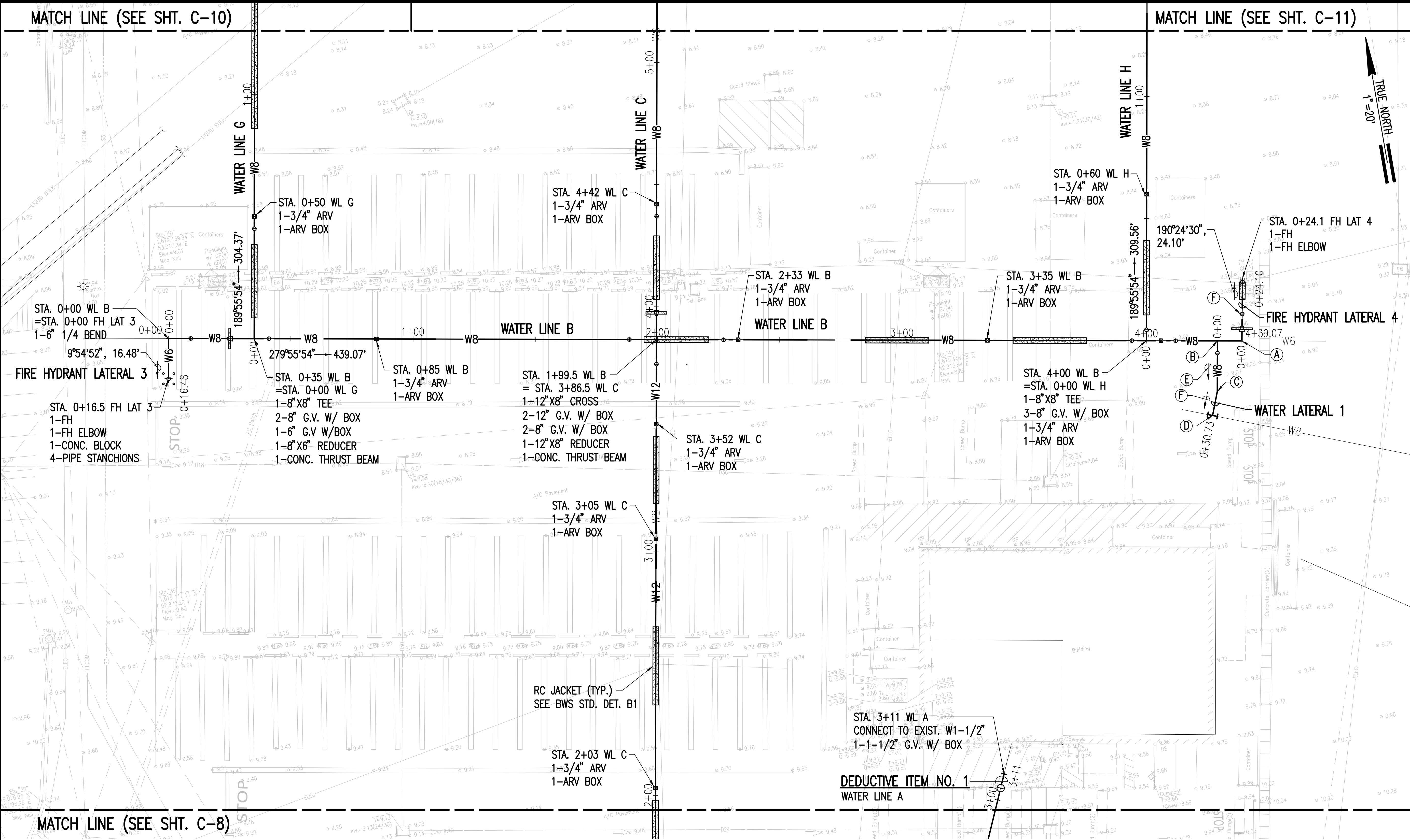
GRAPHIC SCALE:



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. PRESERVATION OF CONSTRUCTION IS DEFINED IN CHAPTER 100-1.5, HAWAII ADMINISTRATIVE RULES, ENTITLED "PROFESSIONAL ENGINEERS, ARCHITECTS, SURVEYORS AND LANDSCAPE ARCHITECTS."

Waiyen H. Miyashiro
R.M., TOWELL CORPORATION
APRIL 30, 2026
LICENSE EXPIRATION DATE

REVISION	DATE	DESCRIPTION	BY	APPROVED
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HARBORS DIVISION				
JOB TITLE DOMESTIC AND FIRE WATERLINE SYSTEM REPLACEMENT AT PIER 51A HONOLULU HARBOR, OAHU, HAWAII				
SHEET TITLE WATER LINE PLAN - 1				
DESIGNED BY: WM, CL, JS, MB DRAWN BY: WM, CL, JS, MB CHECKED BY: WM DATE: MARCH 2026 SCALE: AS SHOWN			JOB NUMBER P10904	SHEET C-8 9 of 22 SHTS.



WATER LINE PLAN - 2
SCALE: 1"=20'

NOTES:

1. THE CONTRACTOR SHALL DEMOLISH AND REMOVE EXISTING WATER SYSTEM.

(A)

STA. 4+39.1 WL B
= STA. 0+00 FH LAT 4
1-6" 1/4 BEND
1-6" G.V. W/BOX
1-CONC. BLOCK
1-8"x6" REDUCER
1-CONC. THRUST BEAM

(B)

STA. 4+29.1 WL B
=STA. 0+00 WLAT 1
1-8"x8" TEE
1-8" G.V. W/ BOX
1-CONC. BLOCK

(C)

STA. 0+20.7 WLAT 1
=STA. 4+29.1 WL B, O/S 20.7' RT.
1-8" 1/32 BEND
1-CONC. BLOCK

(D)

STA. 0+30.7 WLAT 1
=STA. 4+27.2 WL B, O/S 30.6' RT.
CONNECT TO EXIST. W8
CONTRACTOR TO VERIFY LOCATION
AND INVERT
MATERIALS FOR CONNECTION:
1-8" X8" TAPPING TEE
1-8" TAPPING VALVE
1-VALVE BOX & COVER
1-8" SLEEVE, 12" LONG
8± LF 8" D.I.P., CL. 53
1-CONC. BLOCK W/ STRUCT. STRUTS
TEMP. FOR TESTING:
1-8" CAP TAPPED FOR 2-1/2" I.P.T.
1-CONC. BLOCK

(E)

9°57'45", 20.73'

(F)

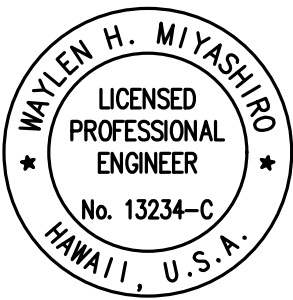
20°59'24", 10.00'

LEGEND

WATERLINE & SIZE	W8
FIRE HYDRANT	+
GATE VALVE	o
AIR RELIEF VALVE	■

GRAPHIC SCALE:

1" = 20' 20' 10' 0 20' 40'



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. PRESERVATION OF CONSTRUCTION IS DEFINED IN CHAPTER 100-1.5, HAWAII ADMINISTRATIVE RULES, ENTITLED "PROFESSIONAL ENGINEERS, ARCHITECTS, SURVEYORS AND LANDSCAPE ARCHITECTS."

W. H. Miyashiro
R.M., TOWILL CORPORATION
APRIL 30, 2026
LICENSE EXPIRATION DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HARBORS DIVISION
JOB TITLE
DOMESTIC AND FIRE WATERLINE SYSTEM
REPLACEMENT AT PIER 51A
HONOLULU HARBOR, OAHU, HAWAII

SHEET TITLE
WATER LINE PLAN - 2

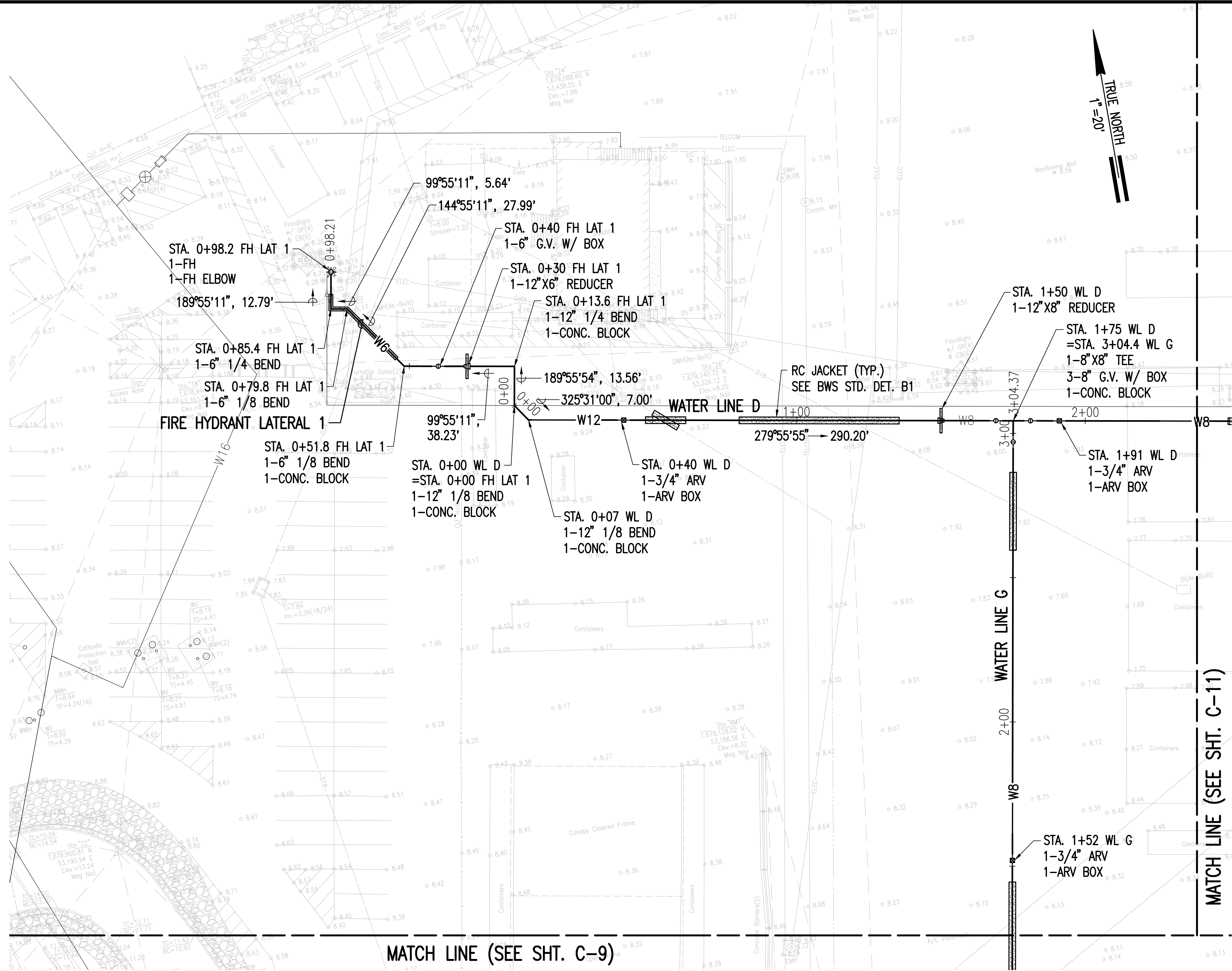
DESIGNED BY: WM, CL, JS, MB
DRAWN BY: WM, CL, JS, MB
CHECKED BY: WM
DATE: MARCH 2026
SCALE: AS SHOWN

JOB NUMBER
P10904

SHEET

C-9

10 of 22 SHTS.



MATCH LINE (SEE SHT. C-9)

MATCH LINE (SEE SHT. C-11)

WATER LINE PLAN - 3
SCALE: 1"=20'

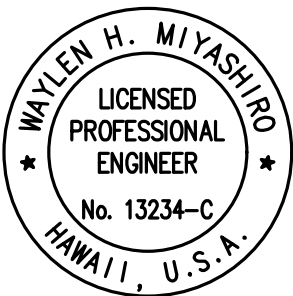
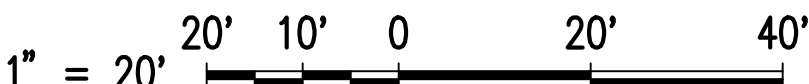
NOTES:

1. THE CONTRACTOR SHALL DEMOLISH AND REMOVE EXISTING WATER SYSTEM.

LEGEND

WATERLINE & SIZE	W8
FIRE HYDRANT	⬇
GATE VALVE	⊙
AIR RELIEF VALVE	⊠

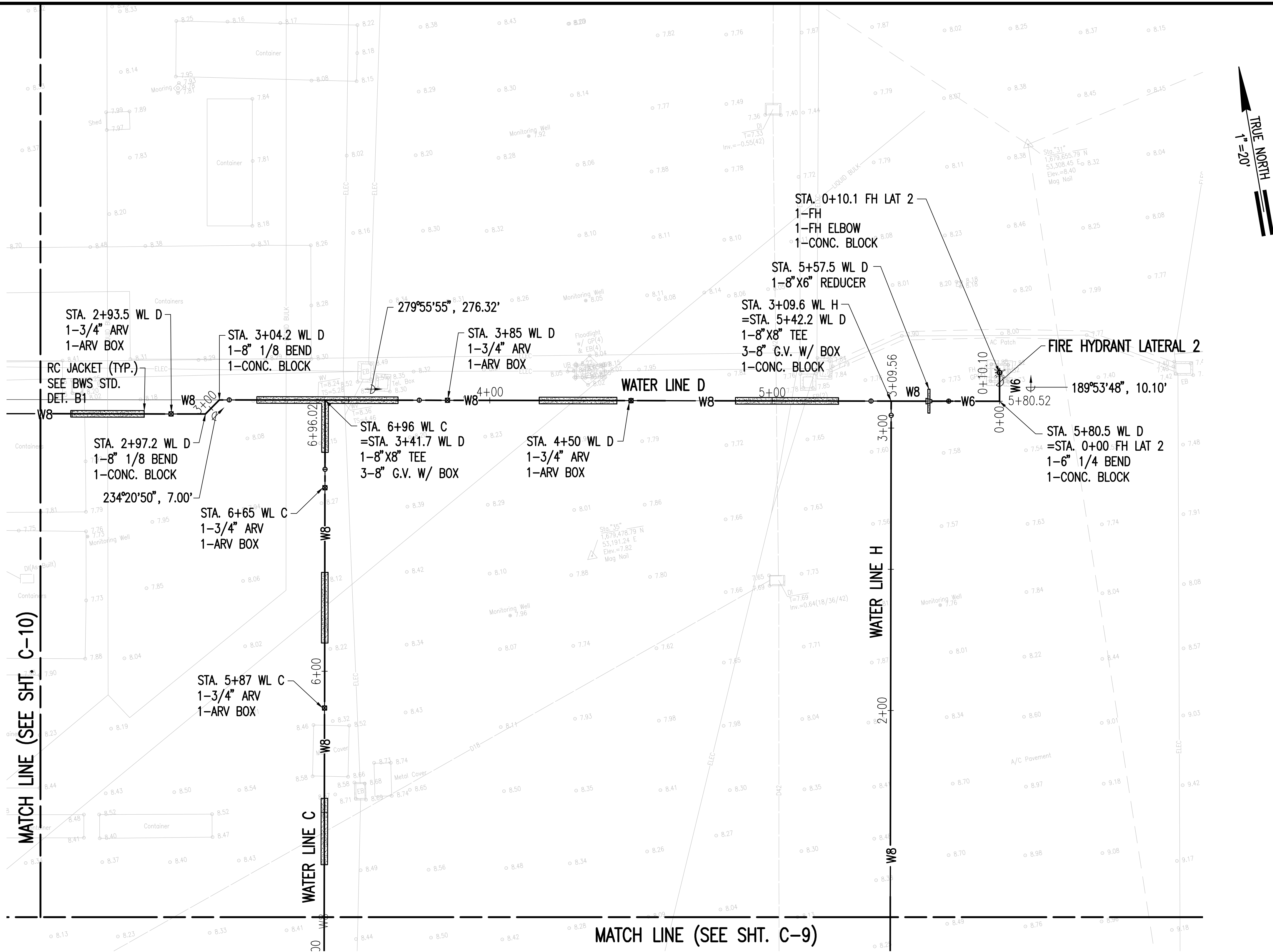
GRAPHIC SCALE:



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. OBSERVATION OF CONSTRUCTION IS DEFINED IN CHAPTER 10-1.5, HAWAII ADMINISTRATIVE RULES, ENTITLED "PROFESSIONAL ENGINEERS, ARCHITECTS, SURVEYORS AND LANDSCAPE ARCHITECTS."

Wayne M. ...
R.M. TOWILL CORPORATION
APRIL 30, 2026
LICENSE EXPIRATION DATE

REVISION	DATE	DESCRIPTION	BY	APPROVED
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HARBORS DIVISION				
JOB TITLE		DOMESTIC AND FIRE WATERLINE SYSTEM REPLACEMENT AT PIER 51A HONOLULU HARBOR, OAHU, HAWAII		
SHEET TITLE		WATER LINE PLAN - 3		
DESIGNED BY: WM, CL, JS, MB DRAWN BY: WM, CL, JS, MB CHECKED BY: WM DATE: MARCH 2026 SCALE: AS SHOWN				SHEET C-10 11 OF 22 SHTS.
JOB NUMBER P10904				



WATER LINE PLAN - 4
SCALE: 1"=20'

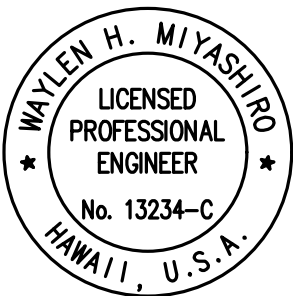
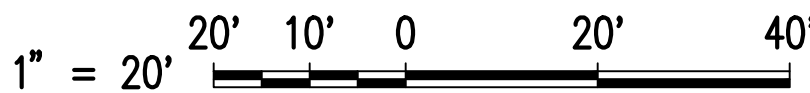
NOTES:

1. THE CONTRACTOR SHALL DEMOLISH AND REMOVE EXISTING WATER SYSTEM.

LEGEND

WATERLINE & SIZE	W8
FIRE HYDRANT	+
GATE VALVE	o
AIR RELIEF VALVE	■

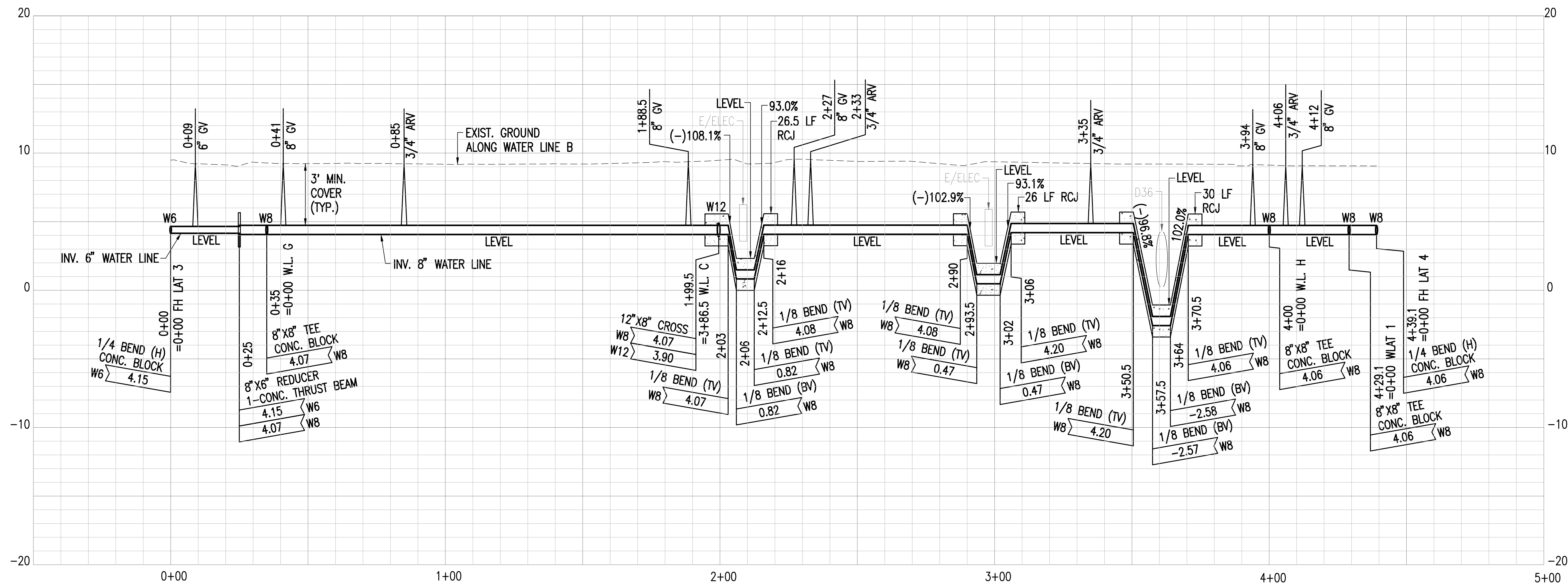
GRAPHIC SCALE:



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. OBSERVATION OF CONSTRUCTION IS DEFINED IN CHAPTER 104-1.5, HAWAII ADMINISTRATIVE RULES, ENTITLED "PROFESSIONAL ENGINEERS, ARCHITECTS, SURVEYORS AND LANDSCAPE ARCHITECTS."

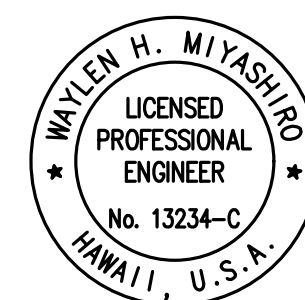
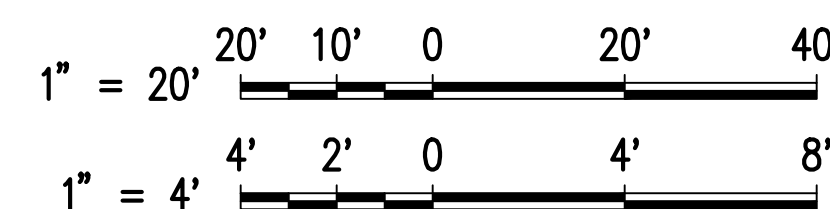
Maylen H. Miyashiro
R.M., TOWILL CORPORATION
APRIL 30, 2026
LICENSE EXPIRATION DATE

REVISION	DATE	DESCRIPTION	BY	APPROVED
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HARBORS DIVISION				
JOB TITLE		DOMESTIC AND FIRE WATERLINE SYSTEM REPLACEMENT AT PIER 51A HONOLULU HARBOR, OAHU, HAWAII		
SHEET TITLE		WATER LINE PLAN - 4		
DESIGNED BY: WM, CL, JS, MB DRAWN BY: WM, CL, JS, MB CHECKED BY: WM DATE: MARCH 2026 SCALE: AS SHOWN				SHEET C-11 12 OF 22 SHTS.
JOB NUMBER P10904				



PROFILE -- WATERLINE B
SCALES: HORZ. 1"=20'
VERT. 1"=4'

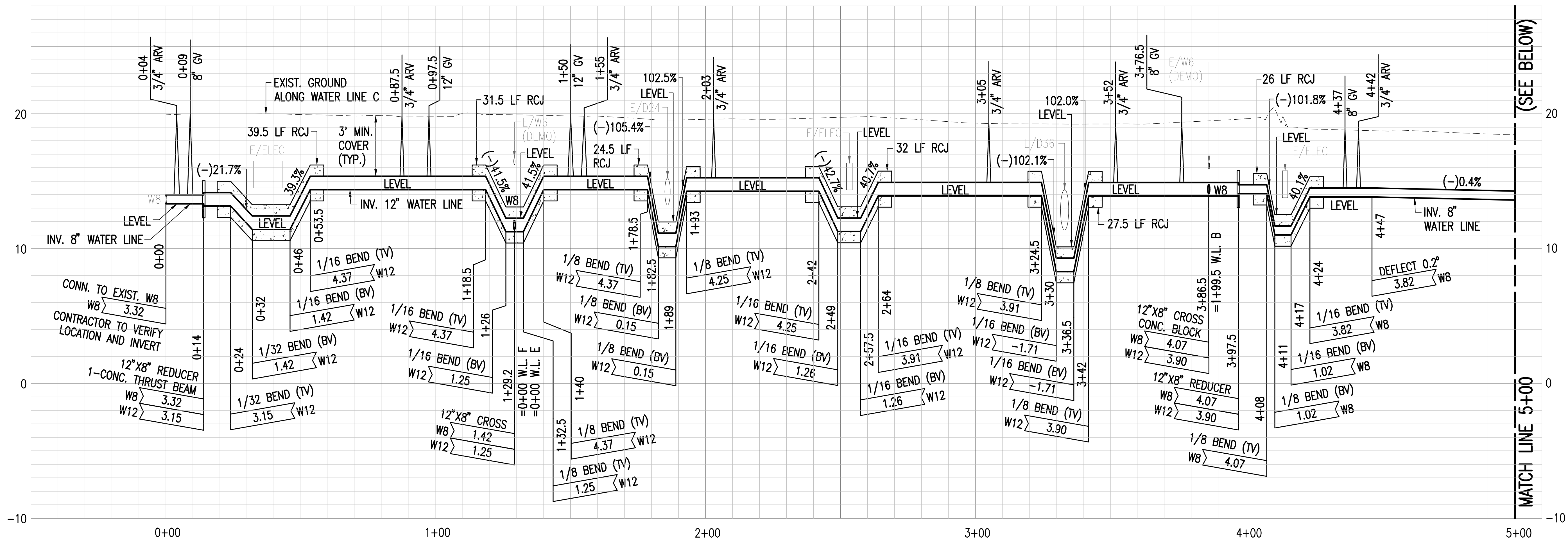
GRAPHIC SCALES:



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. OBSERVATION OF CONSTRUCTION IS DEFINED IN CHAPTER 100-1.5, HAWAII ADMINISTRATIVE RULES, ENTITLED "PROFESSIONAL ENGINEERS, ARCHITECTS, SURVEYORS AND LANDSCAPE ARCHITECTS."

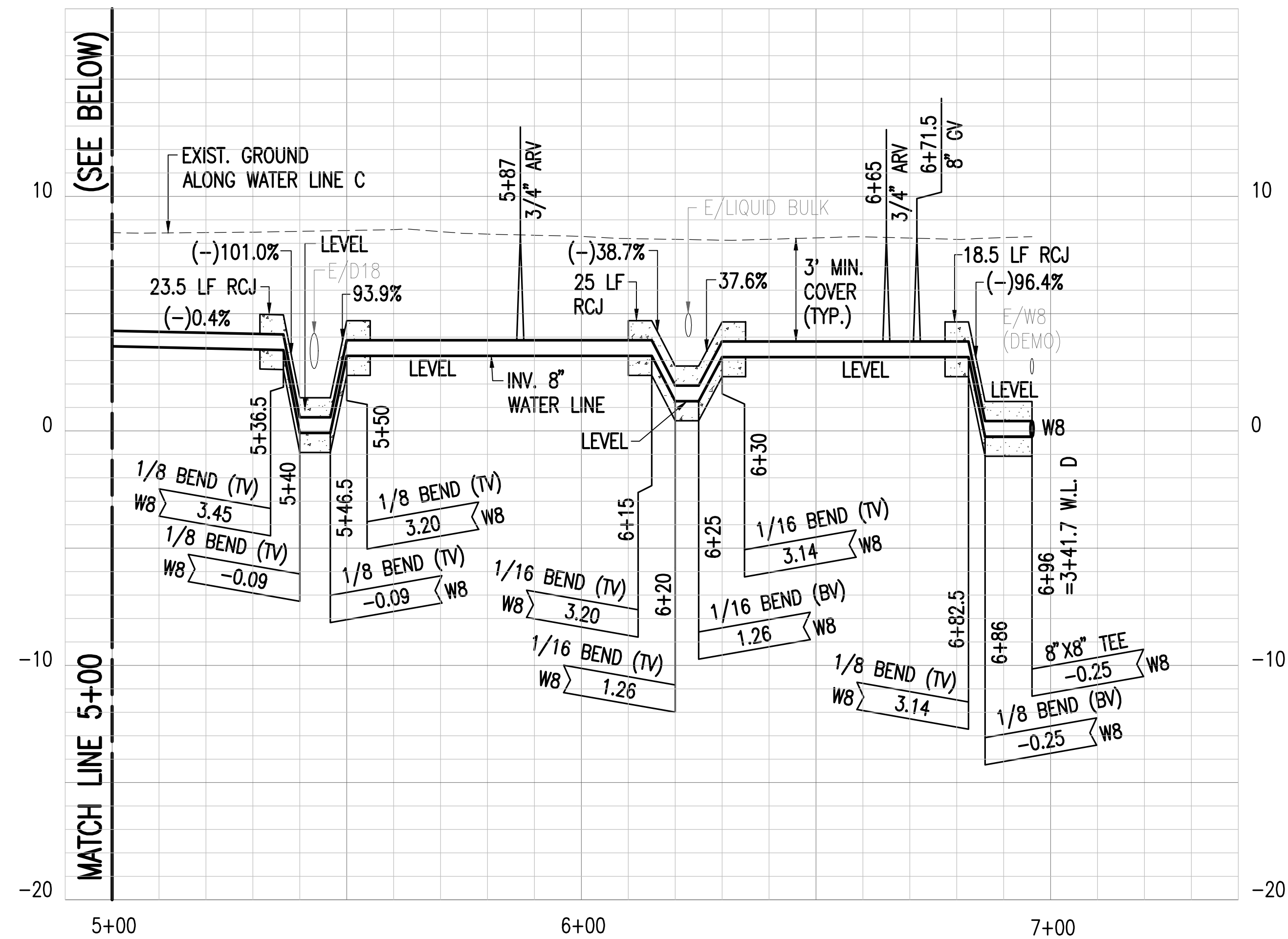
Wayne M. ...
R.M., TOWILL CORPORATION
APRIL 30, 2026
LICENSE EXPIRATION DATE

REVISION	DATE	DESCRIPTION	BY	APPROVED
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HARBORS DIVISION				
JOB TITLE DOMESTIC AND FIRE WATERLINE SYSTEM REPLACEMENT AT PIER 51A HONOLULU HARBOR, OAHU, HAWAII				
SHEET TITLE PROFILE – WATERLINE B				
DESIGNED BY: WM, CL, JS, MB DRAWN BY: WM, CL, JS, MB CHECKED BY: WM DATE: MARCH 2026 SCALE: AS SHOWN		JOB NUMBER P10904		SHEET C-12 13 OF 22 SHTS.



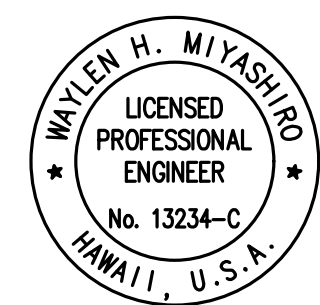
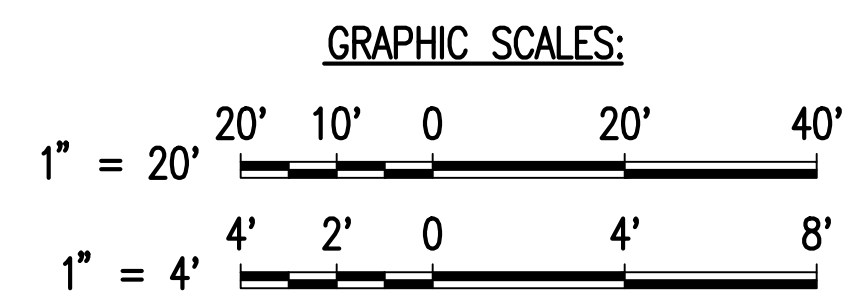
PROFILE – WATERLINE C (STA. 0+00 TO STA. 5+00)

SCALES: HORZ. 1"=20'
VERT. 1"=4'



PROFILE – WATERLINE C (STA. 5+00 TO END)

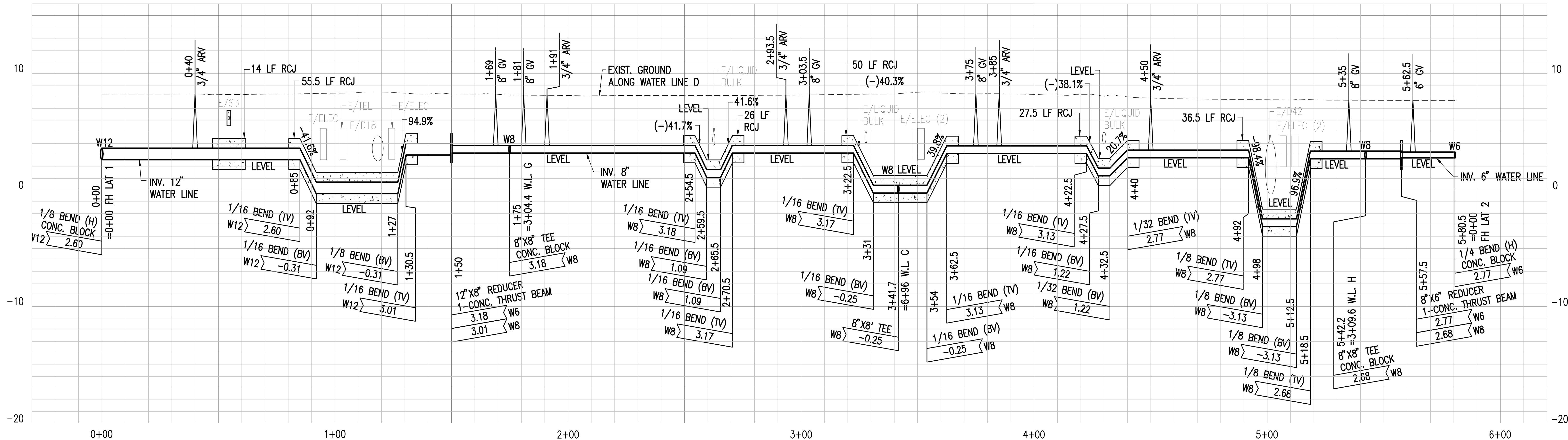
SCALES: HORZ. 1"=20'
VERT. 1"=4'



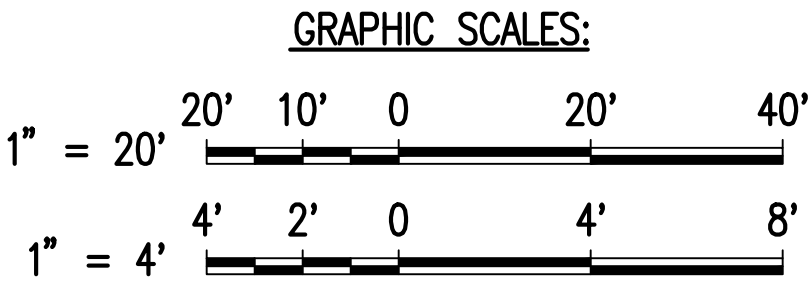
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. OBSERVATION OF CONSTRUCTION IS DEFINED IN CHAPTER 10A-1.5, HAWAII ADMINISTRATIVE RULES, ENTITLED "PROFESSIONAL ENGINEERS, ARCHITECTS, SURVEYORS AND LANDSCAPE ARCHITECTS."

Maylen H. Miyashiro
R.M. TOWILL CORPORATION
APRIL 30, 2026
LICENSE EXPIRATION DATE

REVISION	DATE	DESCRIPTION	BY	APPROVED
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HARBORS DIVISION				
JOB TITLE DOMESTIC AND FIRE WATERLINE SYSTEM REPLACEMENT AT PIER 51A HONOLULU HARBOR, OAHU, HAWAII				
SHEET TITLE PROFILE – WATERLINE C				
DESIGNED BY: WM, CL, JS, MB DRAWN BY: WM, CL, JS, MB CHECKED BY: WM DATE: MARCH 2026 SCALE: AS SHOWN			JOB NUMBER P10904	SHEET C-13 14 OF 22 SHEETS



PROFILE - WATERLINE D
SCALES: HORZ. 1"=20'
VERT. 1"=4'

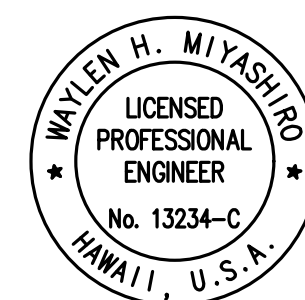


MAIYEN H. MIYASHIRO
LICENSED PROFESSIONAL ENGINEER
No. 13234-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. OBSERVATION OF CONSTRUCTION IS DEFINED IN CHAPTER 10-1.5, HAWAII ADMINISTRATIVE RULES, ENTITLED "PROFESSIONAL ENGINEERS, ARCHITECTS, SURVEYORS AND LANDSCAPE ARCHITECTS."

Wayne M. ...
R.M. TOWILL CORPORATION
APRIL 30, 2026
LICENSE EXPIRATION DATE

REVISION	DATE	DESCRIPTION	BY	APPROVED
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HARBORS DIVISION				
JOB TITLE DOMESTIC AND FIRE WATERLINE SYSTEM REPLACEMENT AT PIER 51A HONOLULU HARBOR, OAHU, HAWAII				
SHEET TITLE PROFILE - WATERLINE D				
DESIGNED BY: WM, CL, JS, MB		CHECKED BY: WM		SHEET C-14 15 OF 22 SHTS.
DRAWN BY: WM, CL, JS, MB		DATE: MARCH 2026		
JOB NUMBER P10904		SCALE: AS SHOWN		



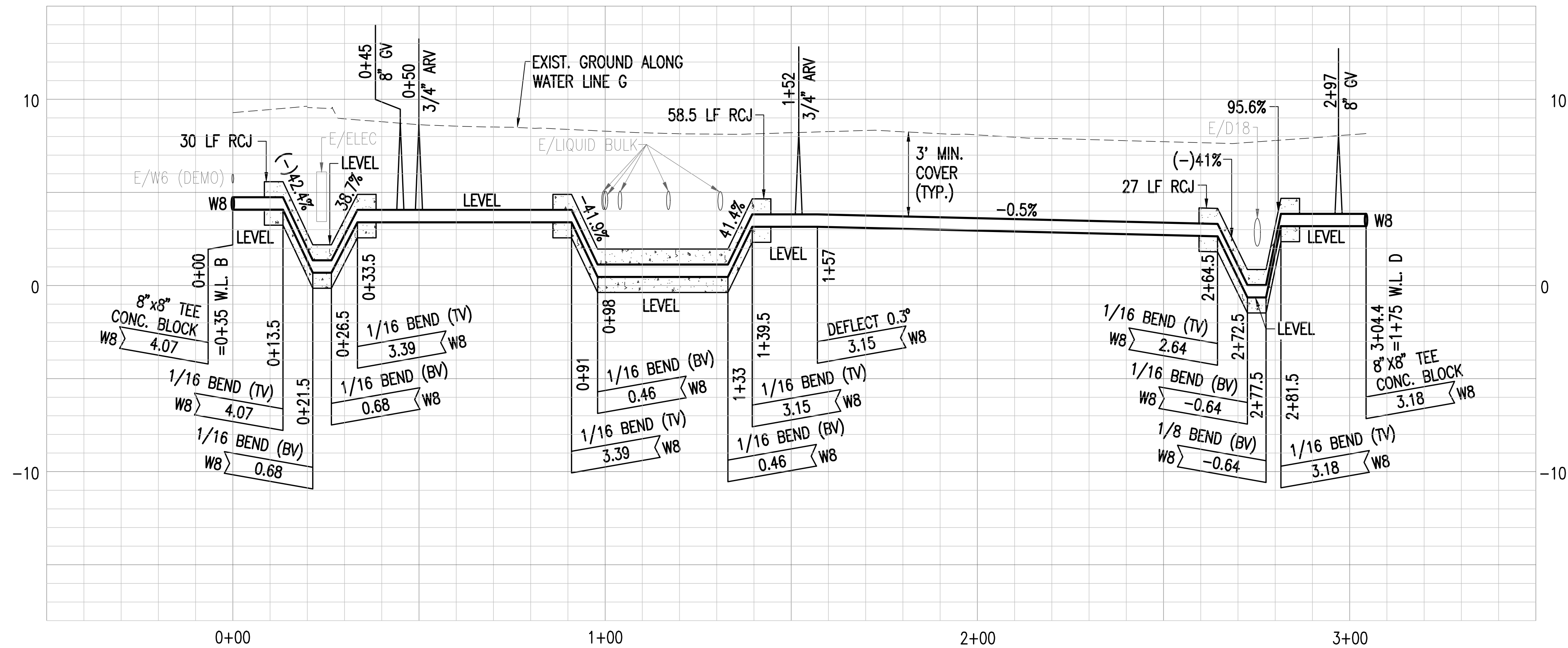
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. "OBSERVATION OF CONSTRUCTION" IS DEFINED IN CHAPTER 16-115, HAWAII ADMINISTRATIVE RULES, ENTITLED "PROFESSIONAL ENGINEERS, ARCHITECTS, SURVEYORS AND LANDSCAPE ARCHITECTS."

Wash Myia

R.M. TOWILL CORPORATION

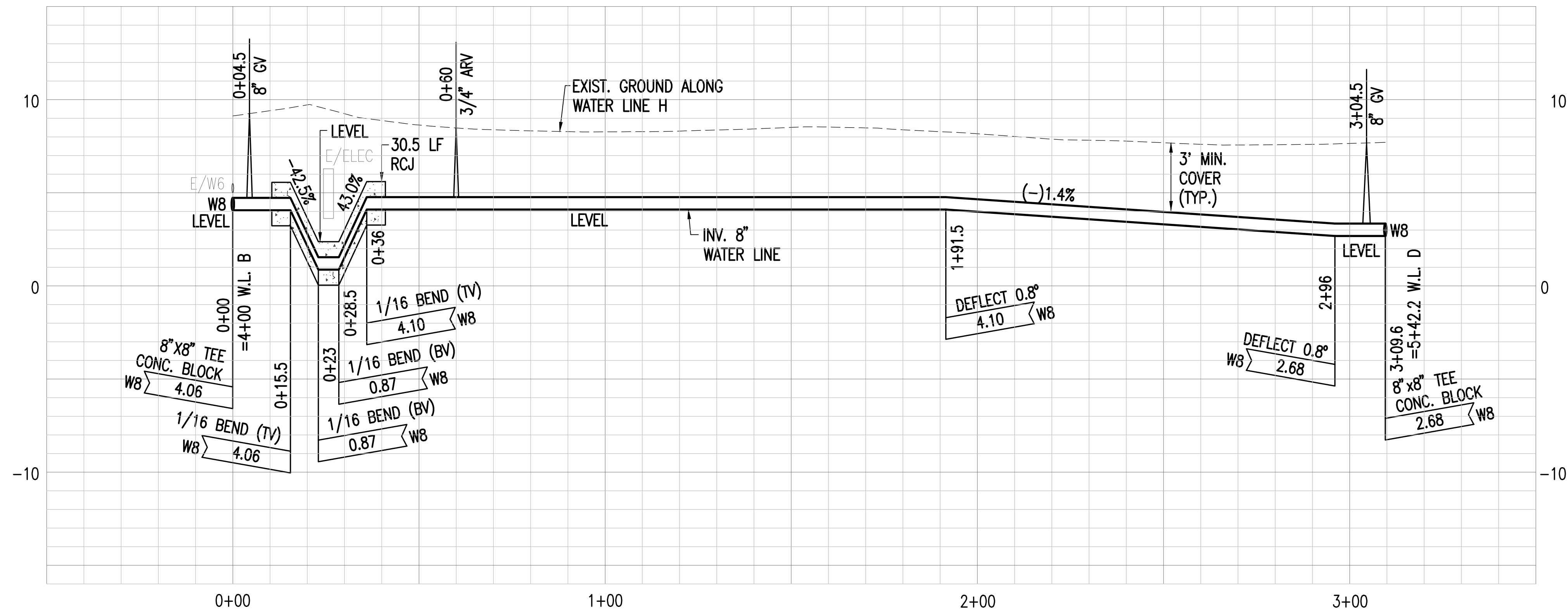
APRIL 30, 2026

C-15



PROFILE – WATERLINE G

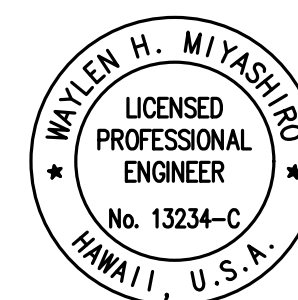
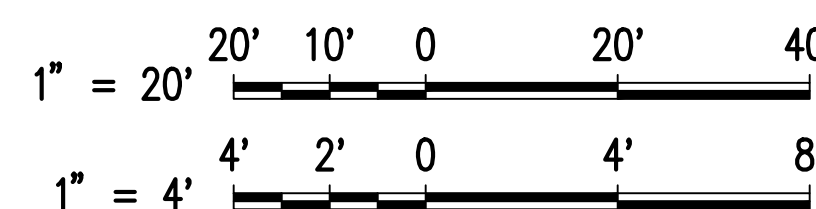
SCALES: HORZ. 1"=20'
VERT. 1"=4'



PROFILE – WATERLINE H

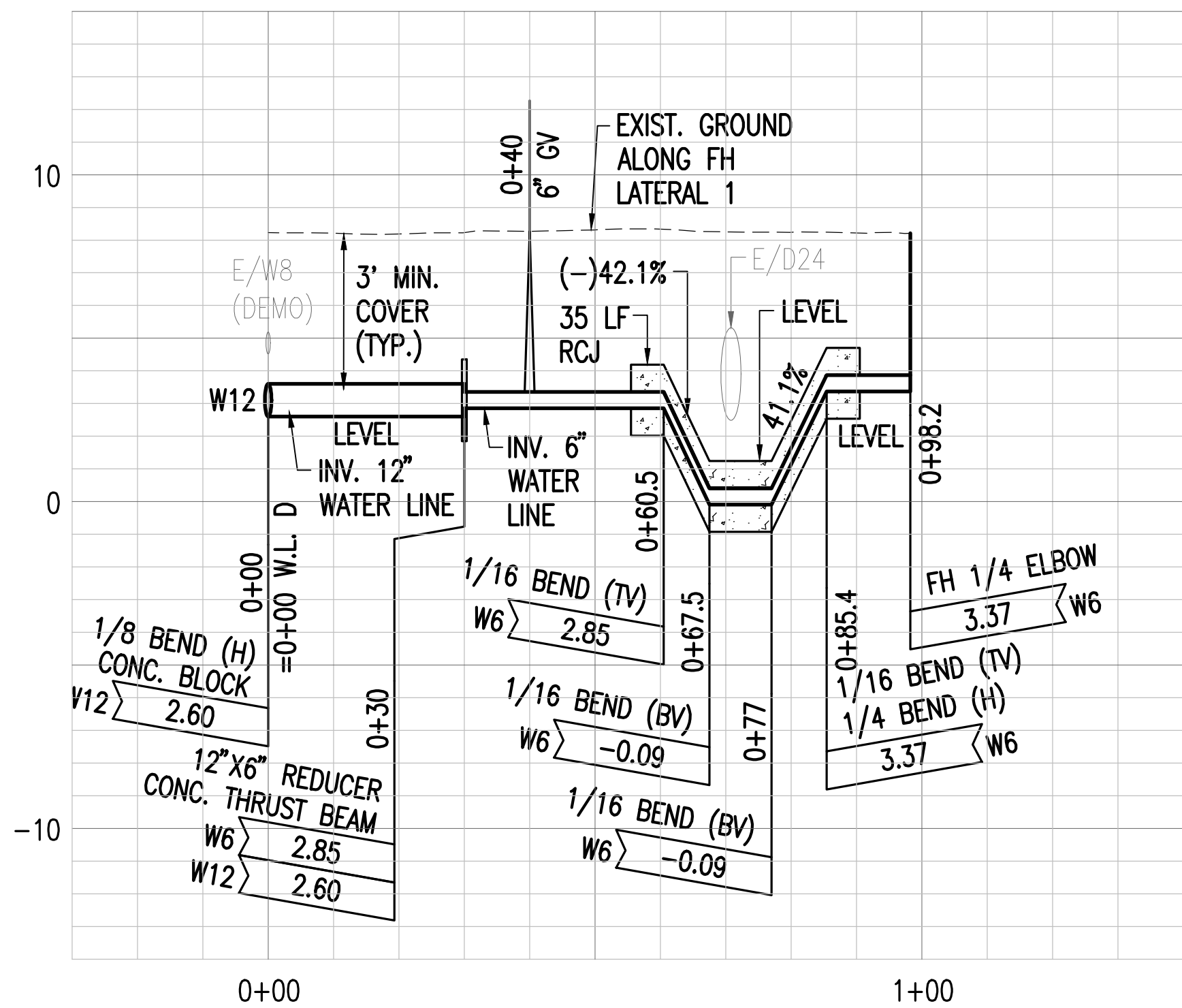
SCALES: HORZ. 1"=20'
VERT. 1"=4'

GRAPHIC SCALES:

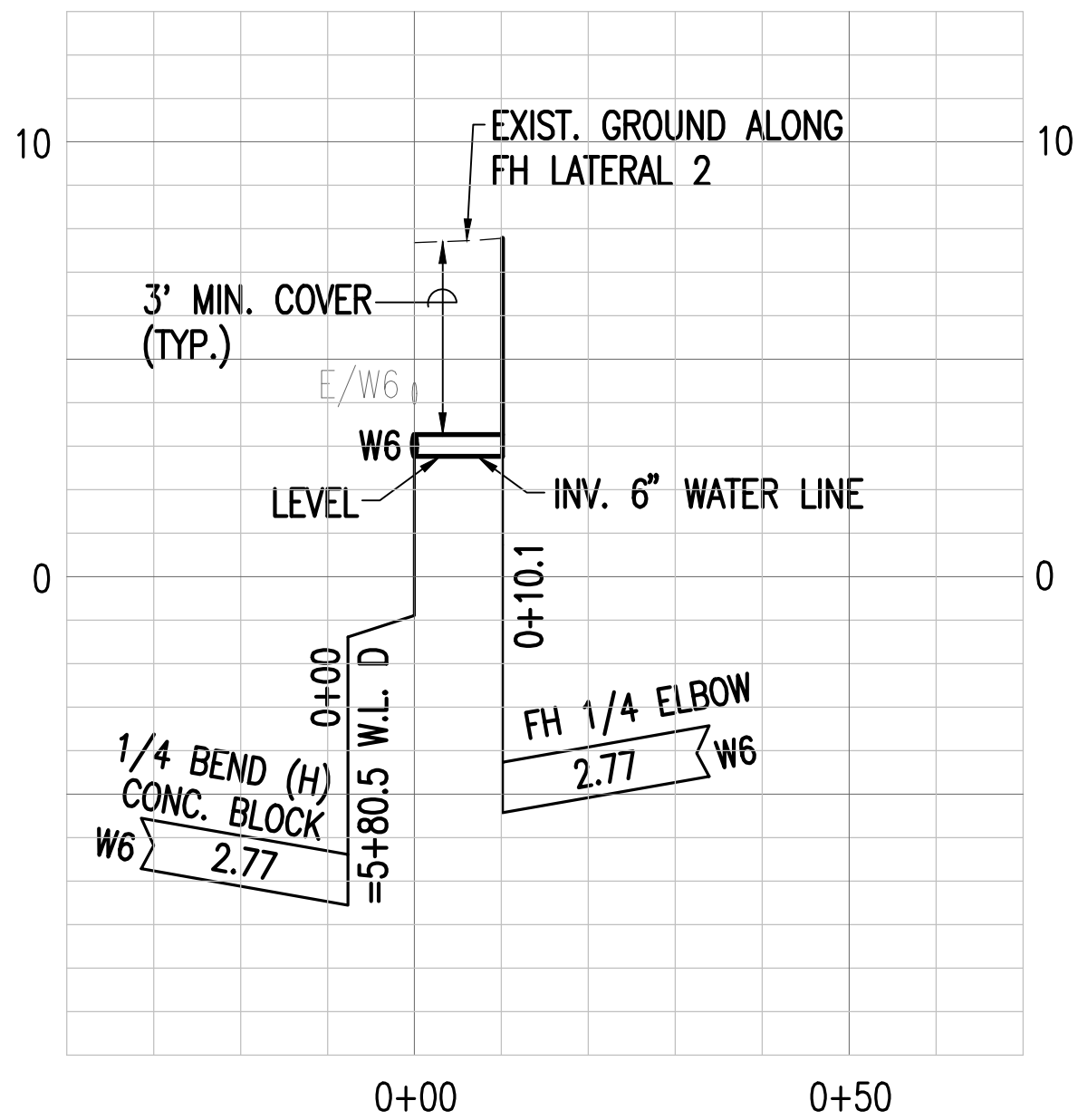


THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. OBSERVATION OF CONSTRUCTION IS DEFINED IN CHAPTER 10-15, HAWAII ADMINISTRATIVE RULES, ENTITLED "PROFESSIONAL ENGINEERS, ARCHITECTS, SURVEYORS AND LANDSCAPE ARCHITECTS."

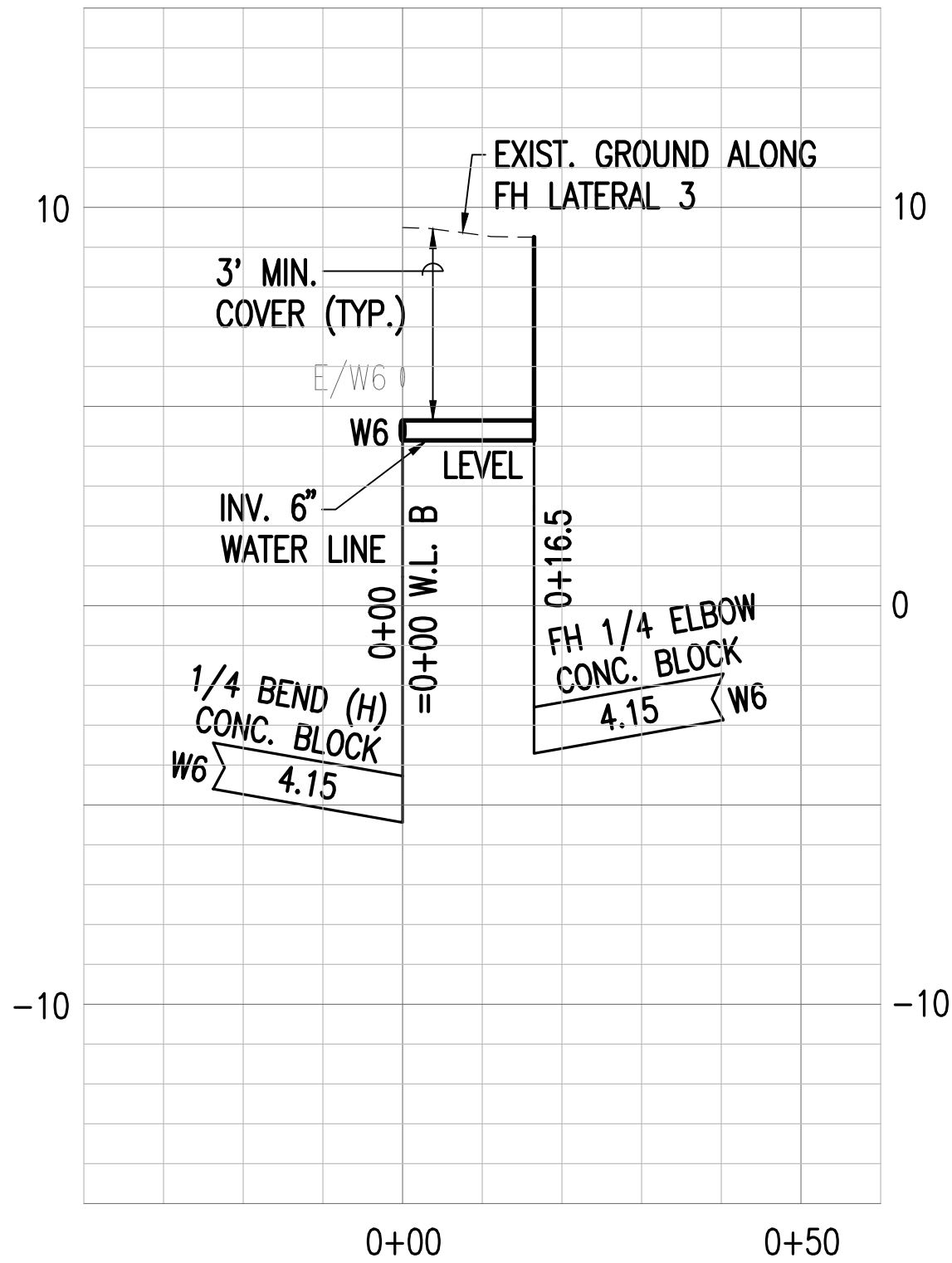
REVISION	DATE	DESCRIPTION	BY	APPROVED
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HARBORS DIVISION				
JOB TITLE DOMESTIC AND FIRE WATERLINE SYSTEM REPLACEMENT AT PIER 51A HONOLULU HARBOR, OAHU, HAWAII				
SHEET TITLE PROFILE – WATERLINE G & WATERLINE H				
DESIGNED BY: WM, CL, JS, MB			SHEET	
DRAWN BY: WM, CL, JS, MB			C-16	
CHECKED BY: WM			17 OF 22 SHTS.	
DATE: MARCH 2026				
SCALE: AS SHOWN				
JOB NUMBER P10904				



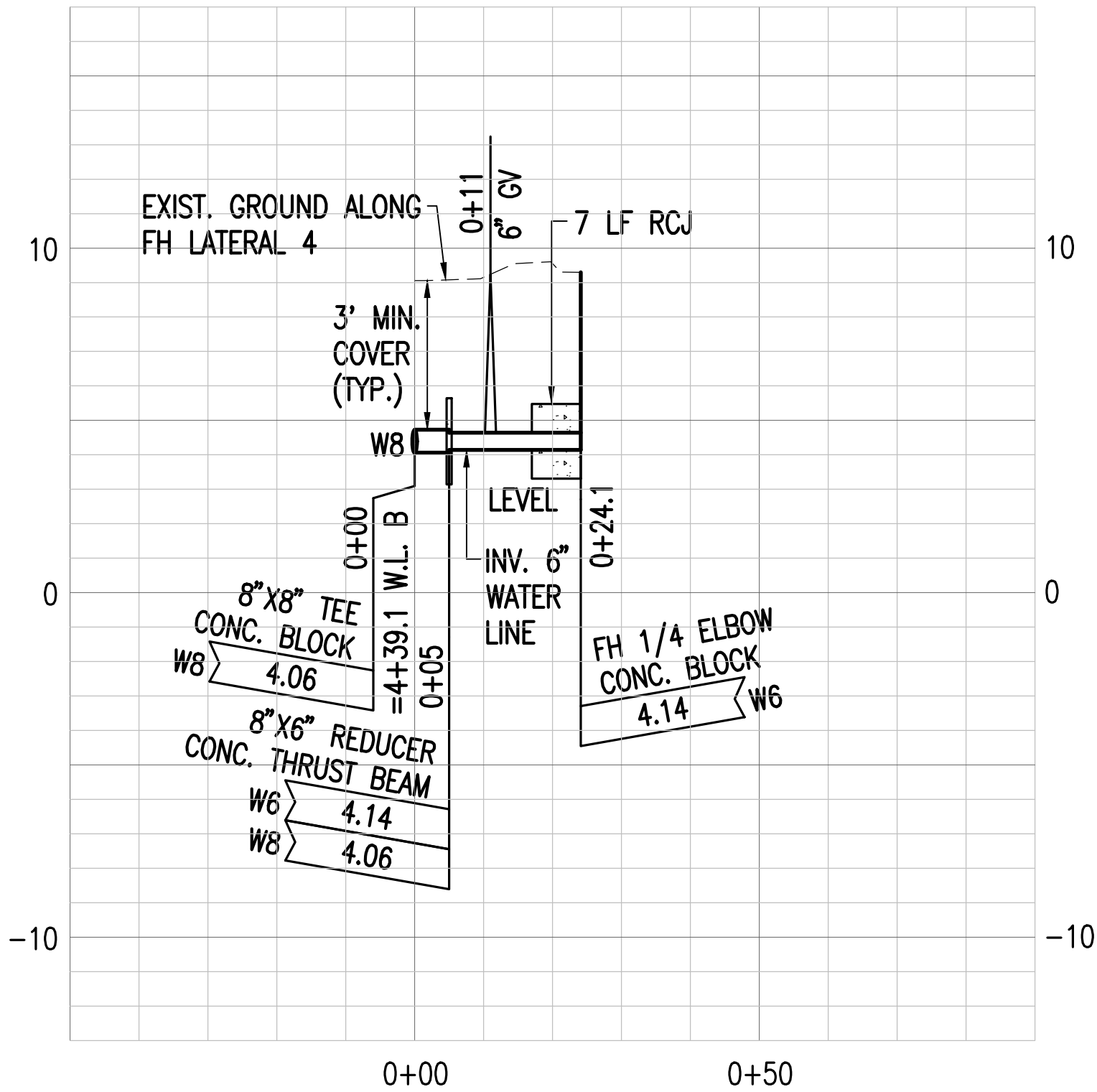
PROFILE – FH 1 (STA. 0+00 WATERLINE D)
 SCALES: HORZ. 1"=20'
 VERT. 1"=4'



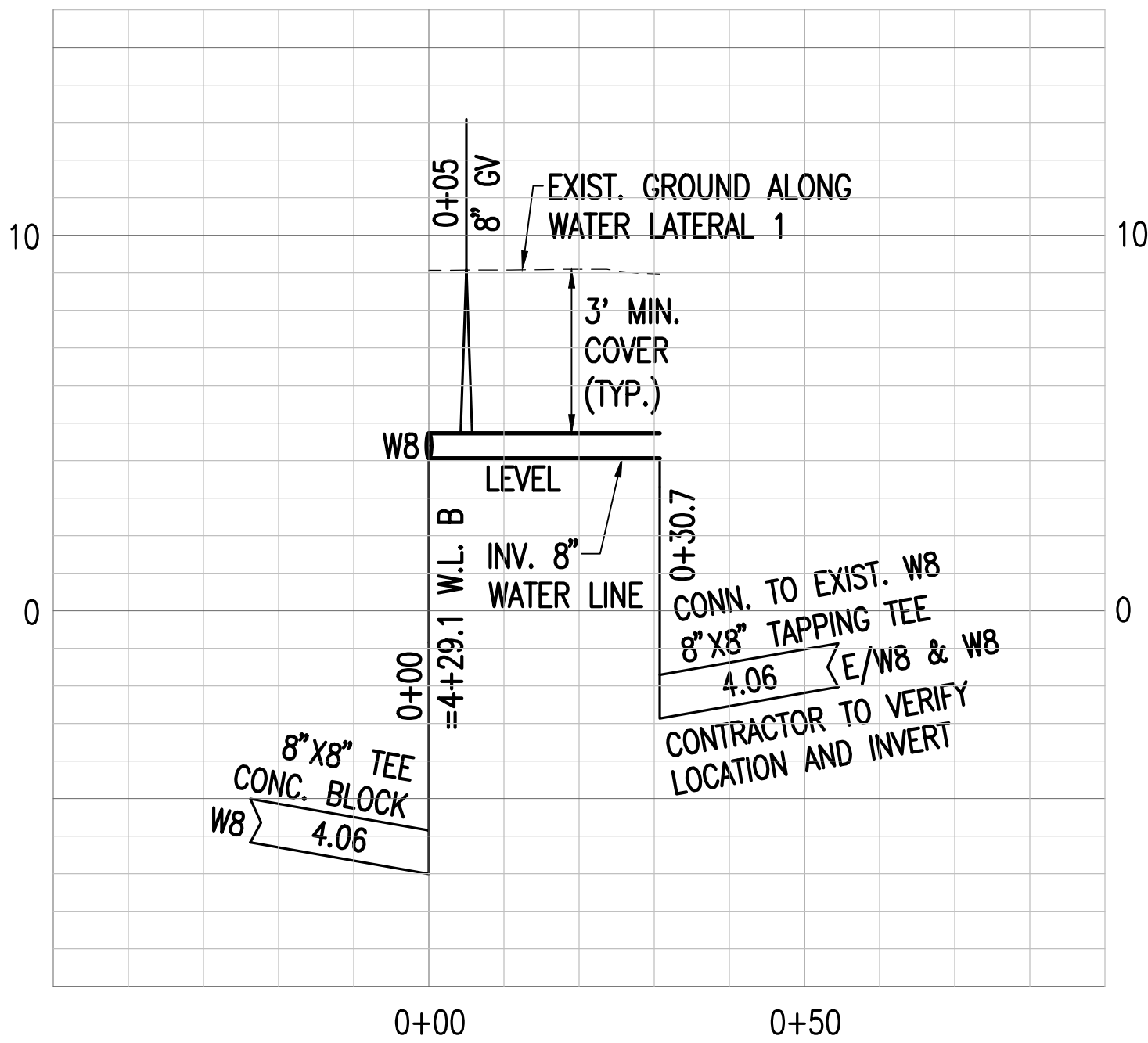
PROFILE – FH 2 (STA. 5+80.5 WATERLINE D)
 SCALES: HORZ. 1"=20'
 VERT. 1"=4'



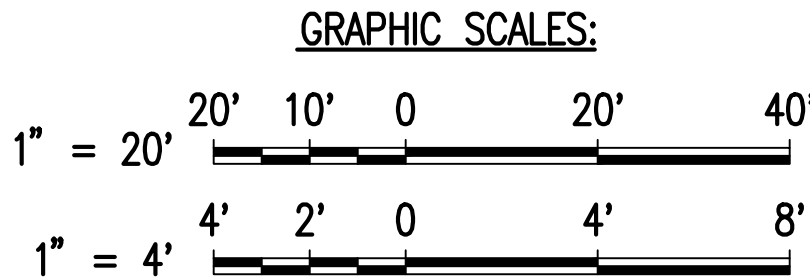
PROFILE – FH 3 (STA. 0+00 WATERLINE B)
 SCALES: HORZ. 1"=20'
 VERT. 1"=4'



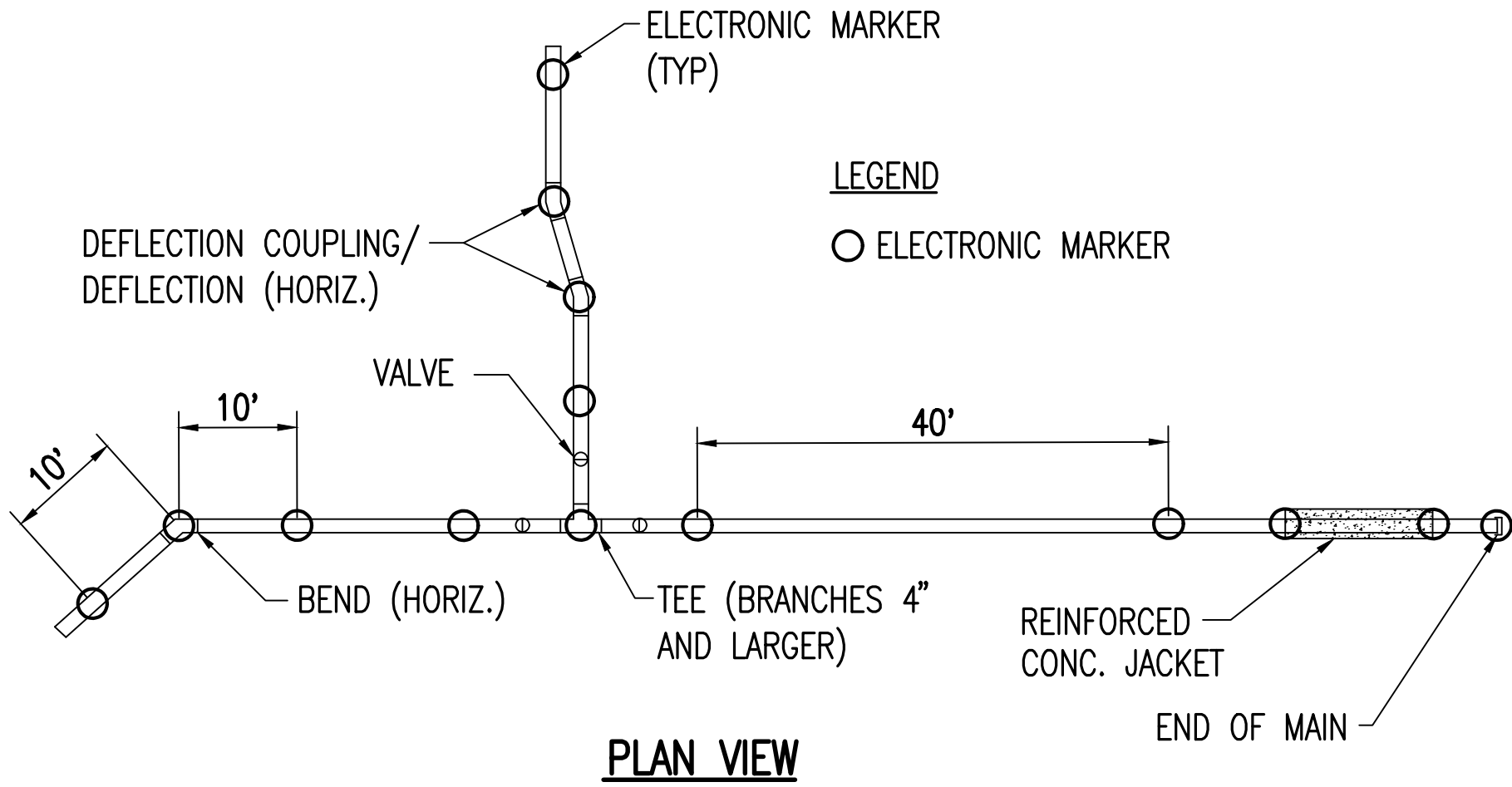
PROFILE – FH 4 (STA. 4+39.1 WATERLINE B)
 SCALES: HORZ. 1"=20'
 VERT. 1"=4'



PROFILE – WATER LATERAL 1 (STA. 4+29.1 WATERLINE B)
 SCALES: HORZ. 1"=20'
 VERT. 1"=4'



REVISION		DATE	DESCRIPTION	BY	APPROVED
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HARBORS DIVISION					
JOB TITLE DOMESTIC AND FIRE WATERLINE SYSTEM REPLACEMENT AT PIER 51A HONOLULU HARBOR, OAHU, HAWAII					
SHEET TITLE WATER LATERAL PROFILES					
DESIGNED BY: WM, CL, JS, MB DRAWN BY: WM, CL, JS, MB CHECKED BY: WM DATE: MARCH 2026 SCALE: AS SHOWN				SHEET C-17 18 OF 22 SHTS.	
JOB NUMBER P10904					

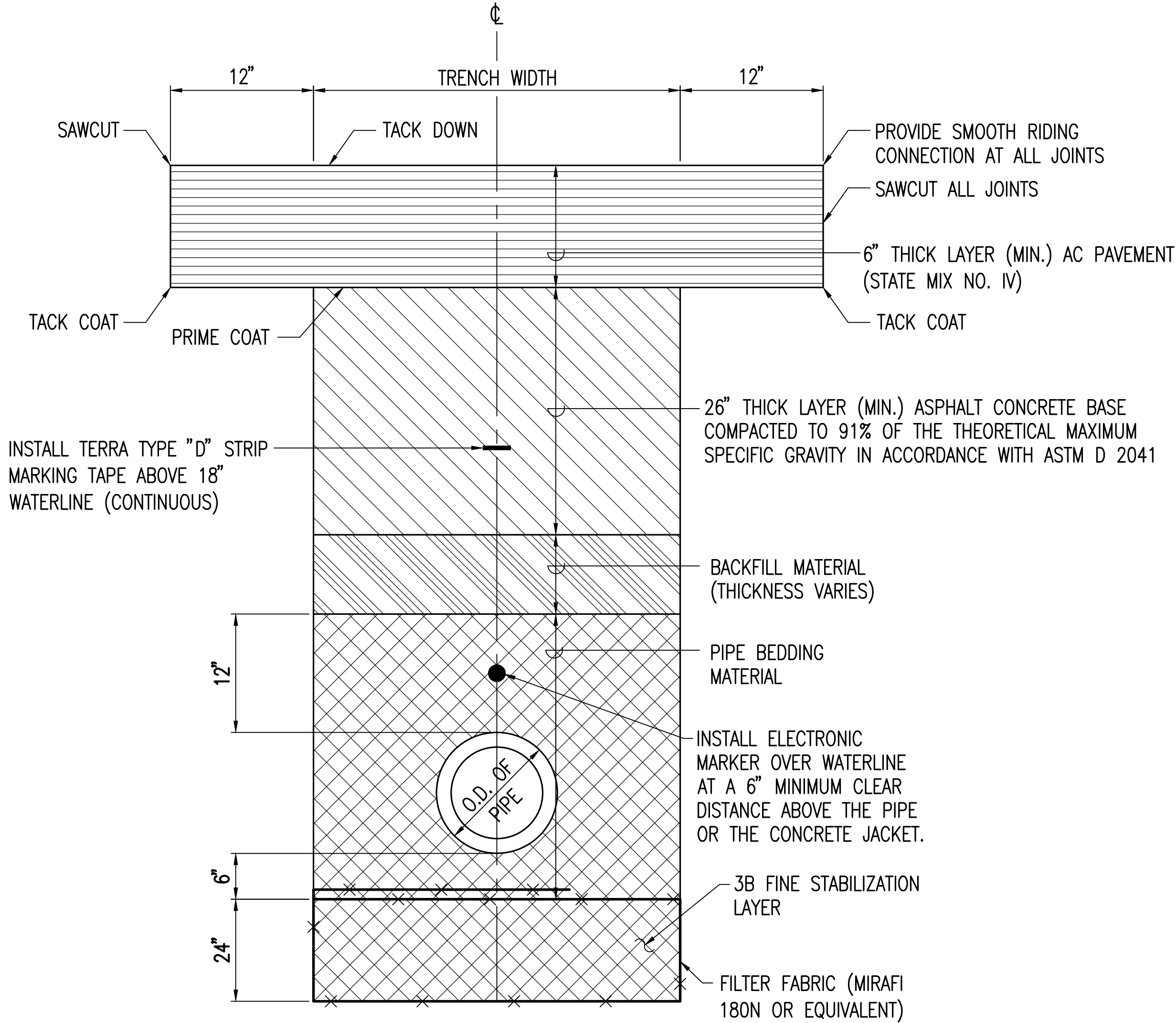
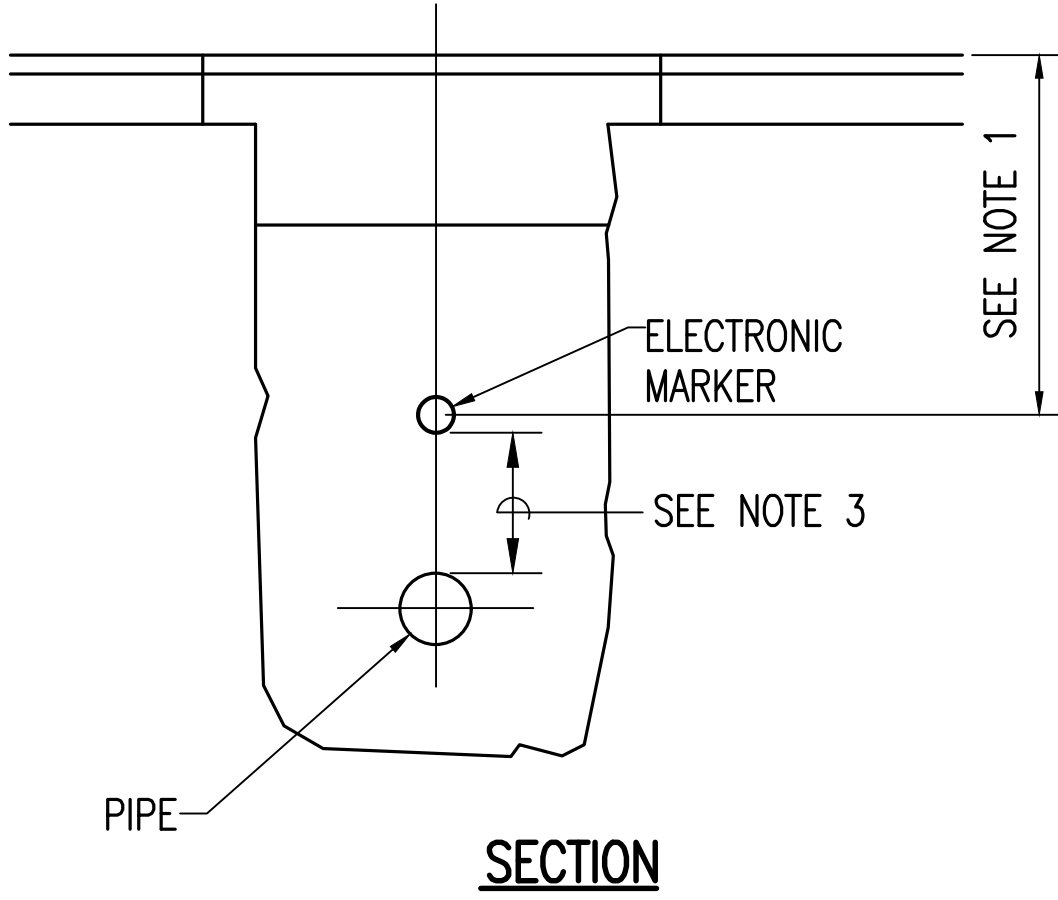


NOTES:

1. INSTALL ELECTRONIC MARKER OVER CENTER LINE OF PIPE AT A MINIMUM DEPTH OF 2 FEET AND A MAXIMUM DEPTH OF 3 FEET FROM FINISH GRADE.
2. INSTALL TRENCH BACKFILL AND PIPE CUSHION MATERIAL IN ACCORDANCE TO THE PLANS AND SPECIFICATIONS.
3. INSTALL ELECTRONIC MARKER AT A MINIMUM CLEARANCE OF 6-INCHES ABOVE THE PIPE OR CONCRETE JACKET.

TYPICAL ELECTRONIC MARKER INSTALLATION

NOT TO SCALE



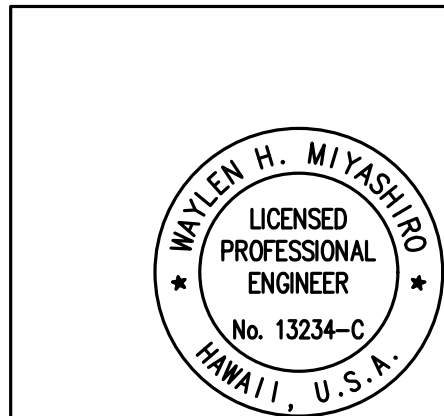
TYPICAL UTILITY TRENCH SECTION

NOT TO SCALE

NOTES:

1. THE PAVEMENT SUBGRADE SOILS SHALL BE PREPARED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
2. THE 3B STABILIZATION LAYER AND MARIFI 180N FABRIC IS REQUIRED IN SOFT/YIELDING AREAS IN ACCORDANCE WITH THE SPECIFICATIONS. THE GEOTECHNICAL ENGINEER RETAINED BY THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE LOCATIONS WHERE THE 3B FINE STABILIZATION IS REQUIRED.

REVISION	DATE	DESCRIPTION	BY	APPROVED
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HARBORS DIVISION				
JOB TITLE		DOMESTIC AND FIRE WATERLINE SYSTEM REPLACEMENT AT PIER 51A HONOLULU HARBOR, OAHU, HAWAII		
SHEET TITLE		MISCELLANEOUS DETAILS - 1		
DESIGNED BY: WM, CL, JS, MB			SHEET	
DRAWN BY: WM, CL, JS, MB			C-18	
CHECKED BY: WM			19 OF 22 SHTS.	
DATE: MARCH 2026				
SCALE: AS SHOWN				
JOB NUMBER				
P10904				

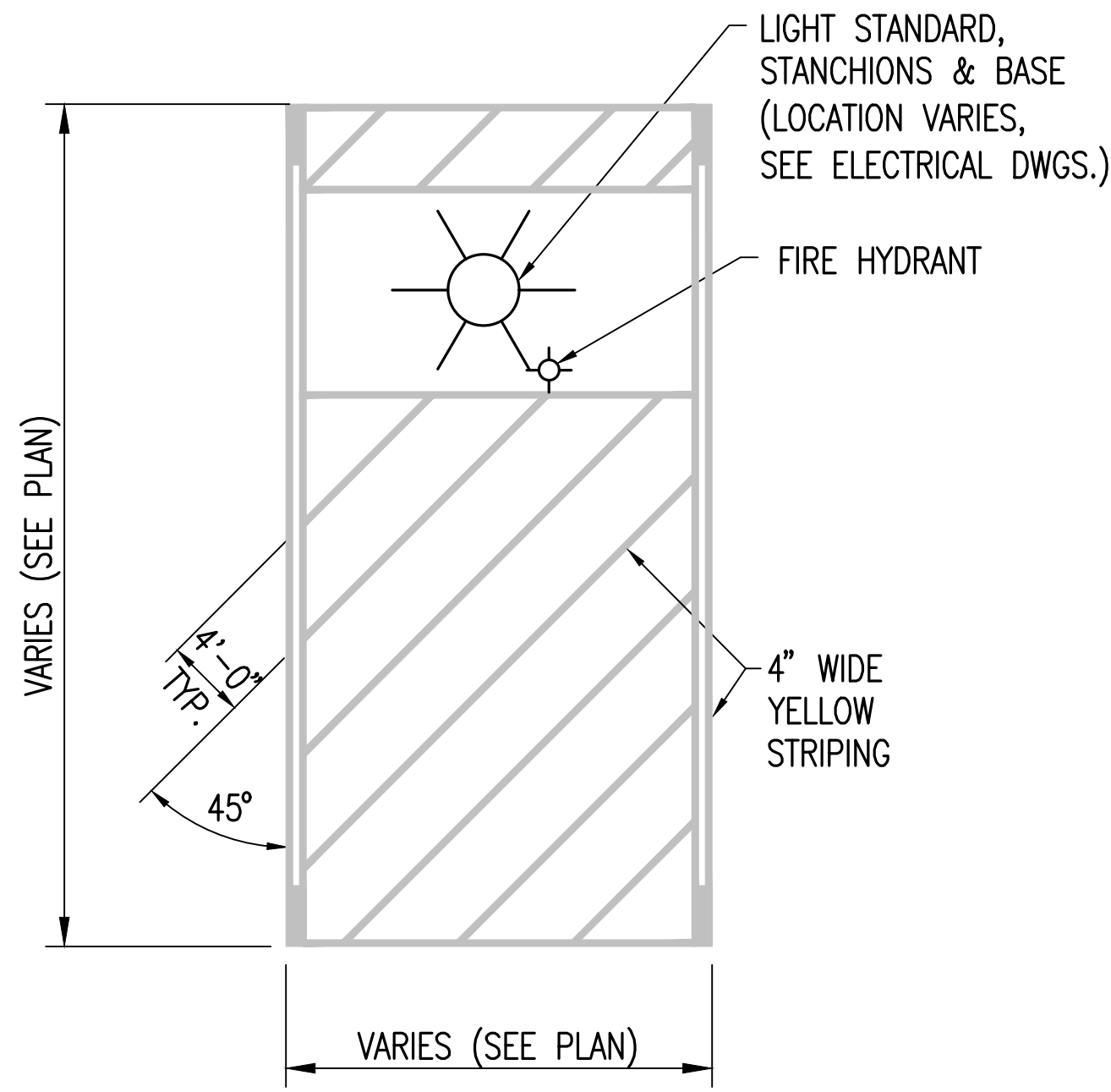


THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. OBSERVATION OF CONSTRUCTION IS DEFINED IN CHAPTER 10-115, HAWAII ADMINISTRATIVE RULES, ENTITLED "PROFESSIONAL ENGINEERS, ARCHITECTS, SURVEYORS AND LANDSCAPE ARCHITECTS."

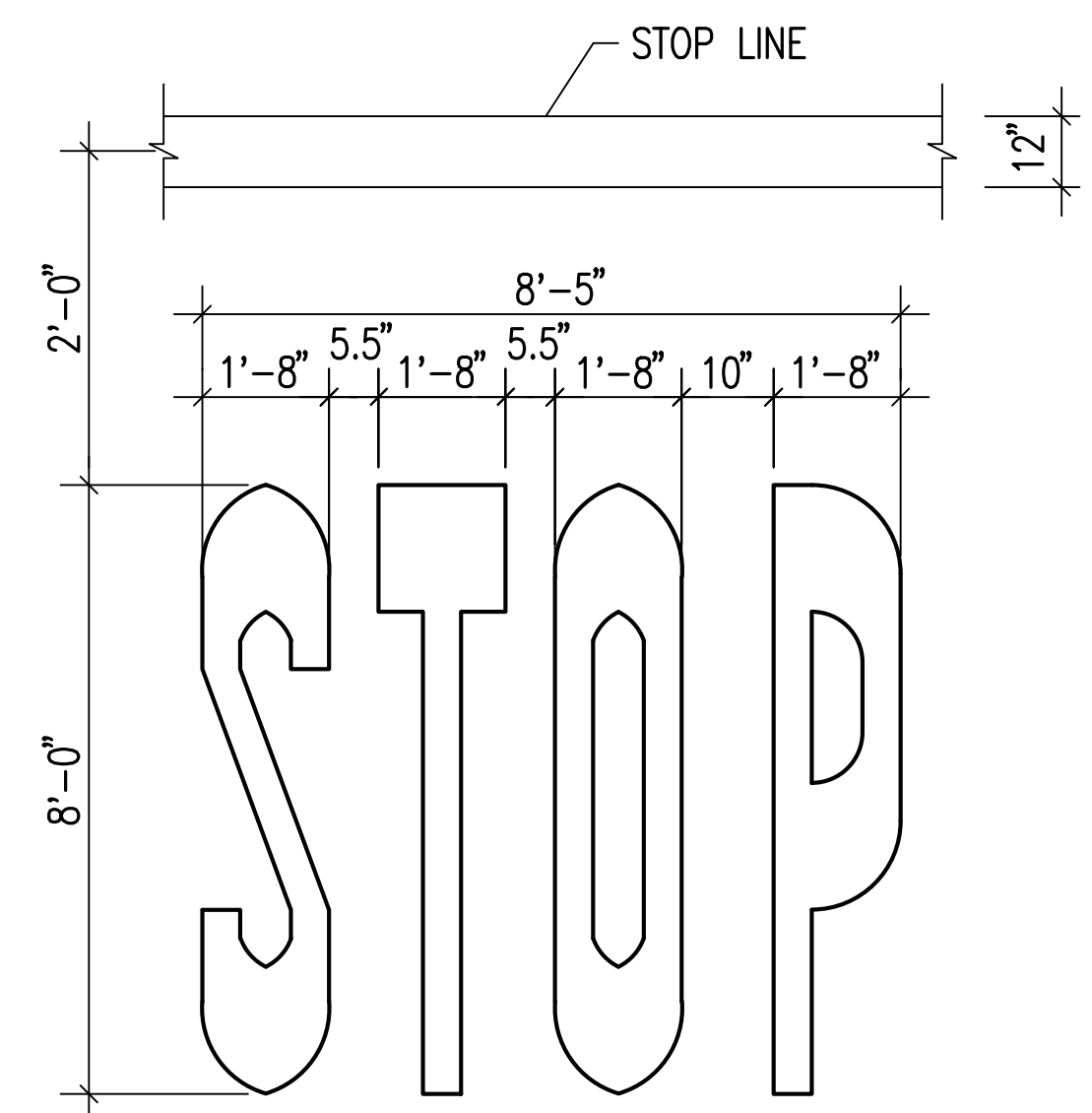
R.M. TOWILL CORPORATION

APRIL 30, 2026

LICENSE EXPIRATION DATE

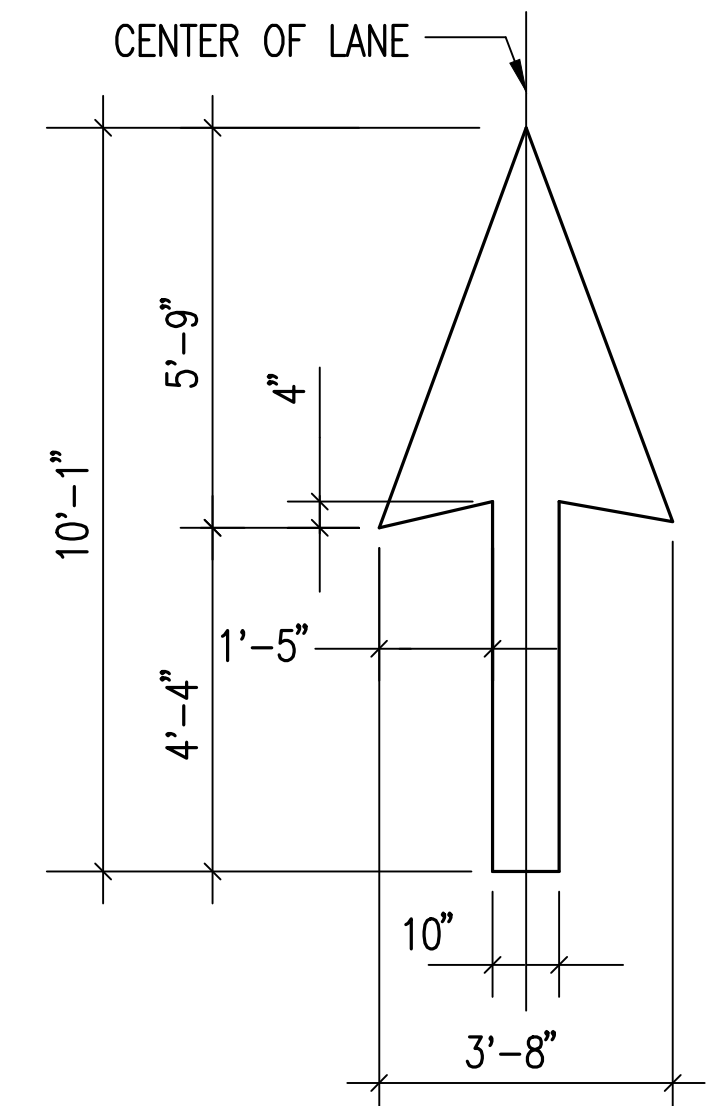


UNUSABLE STALL STRIPING
NOT TO SCALE



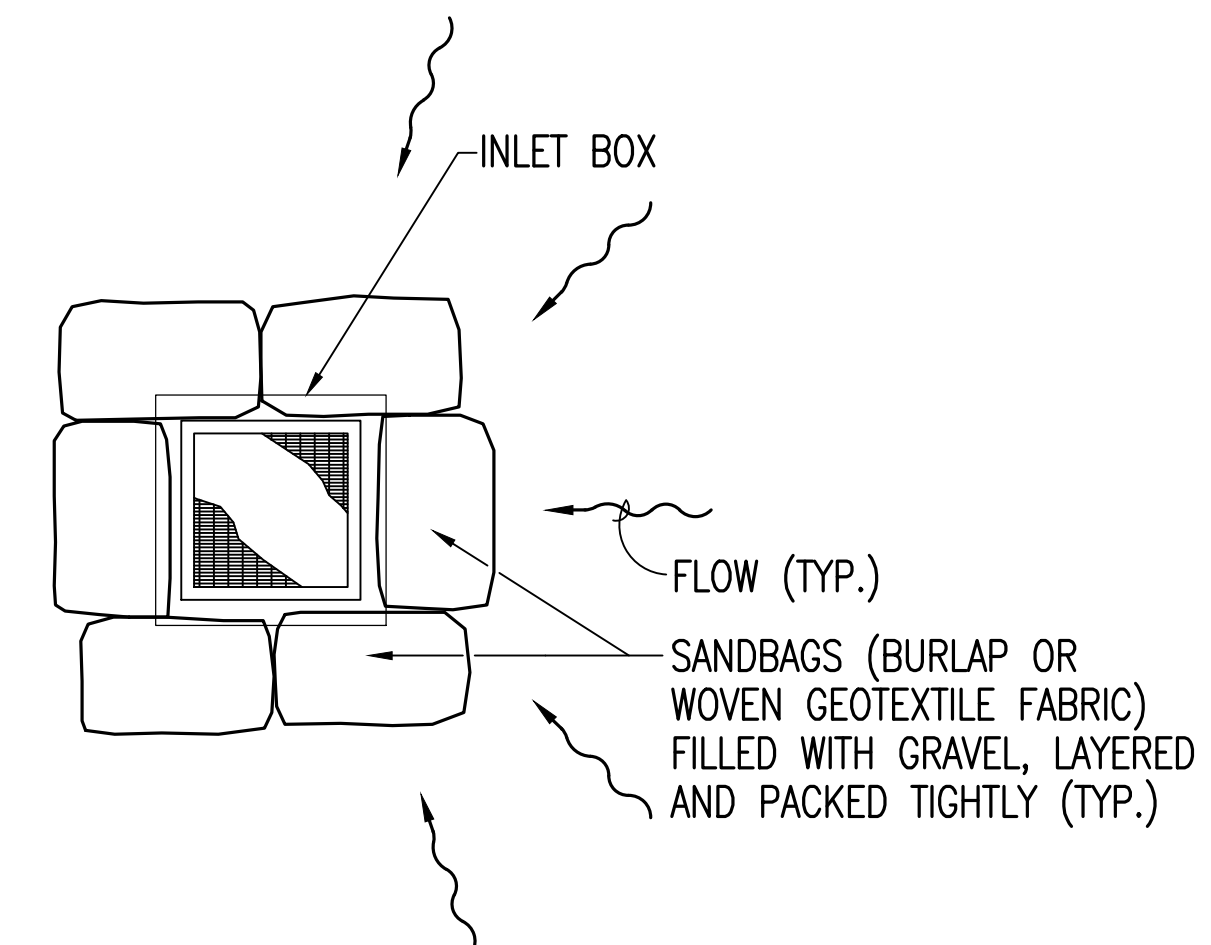
NOTE:
YELLOW STOP MARKER ON CONCRETE PAVEMENT SHALL BE OUTLINED WITH A 1" THICK BLACK BORDER ON ALL SIDES.

YELLOW STOP MARKER
NOT TO SCALE

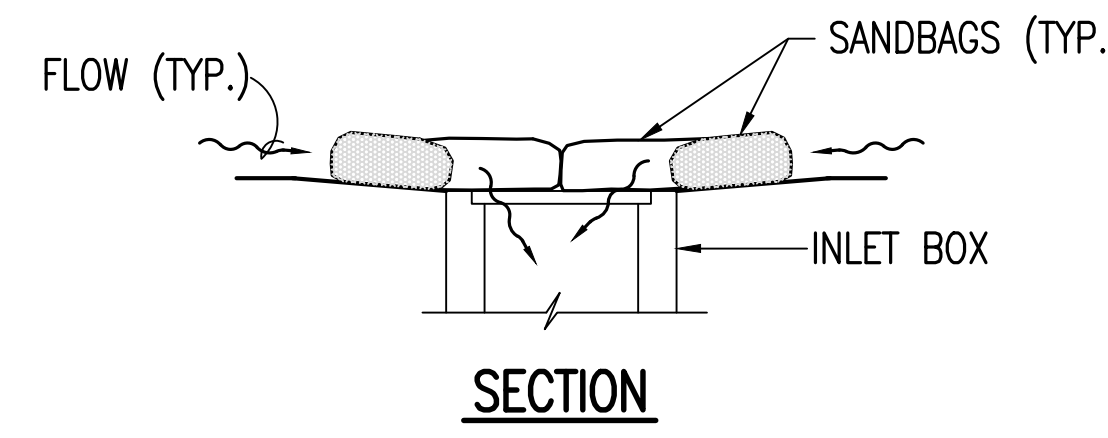


NOTE:
YELLOW PAVEMENT ARROW MARKING ON CONCRETE PAVEMENT SHALL BE OUTLINED WITH A 1" THICK BLACK BORDER ON ALL SIDES.

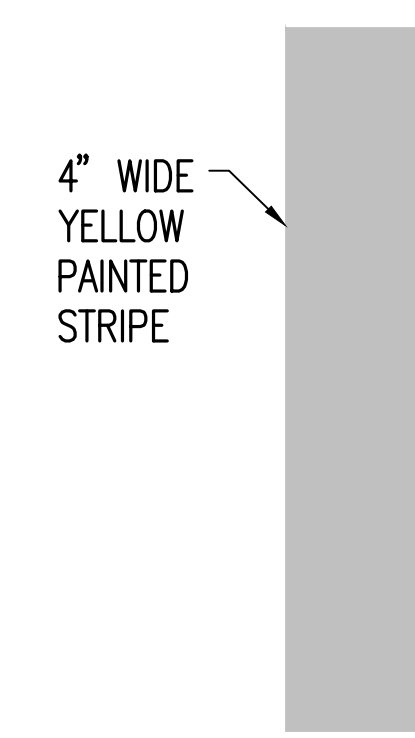
YELLOW PAVEMENT ARROW MARKING
NOT TO SCALE



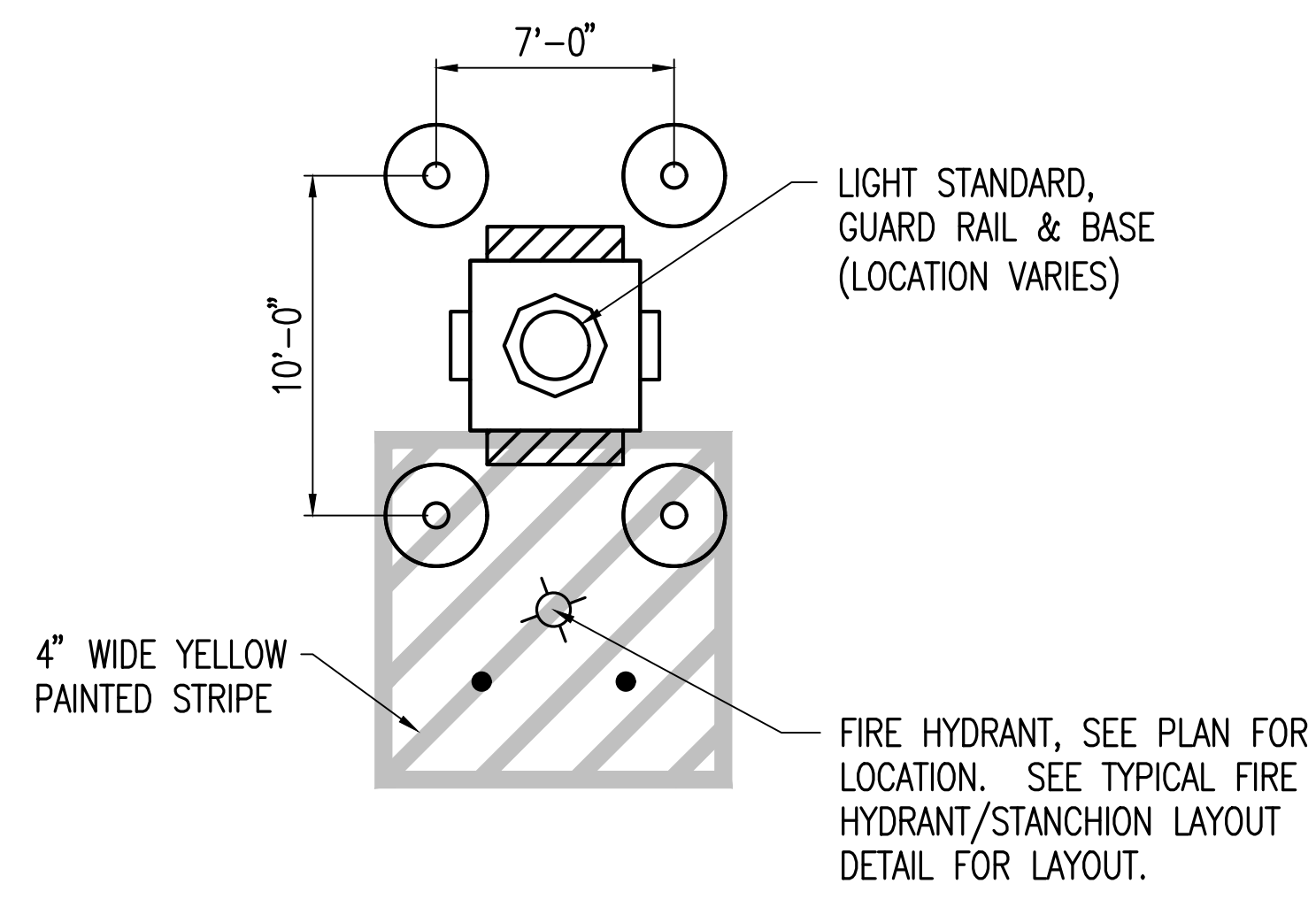
PLAN



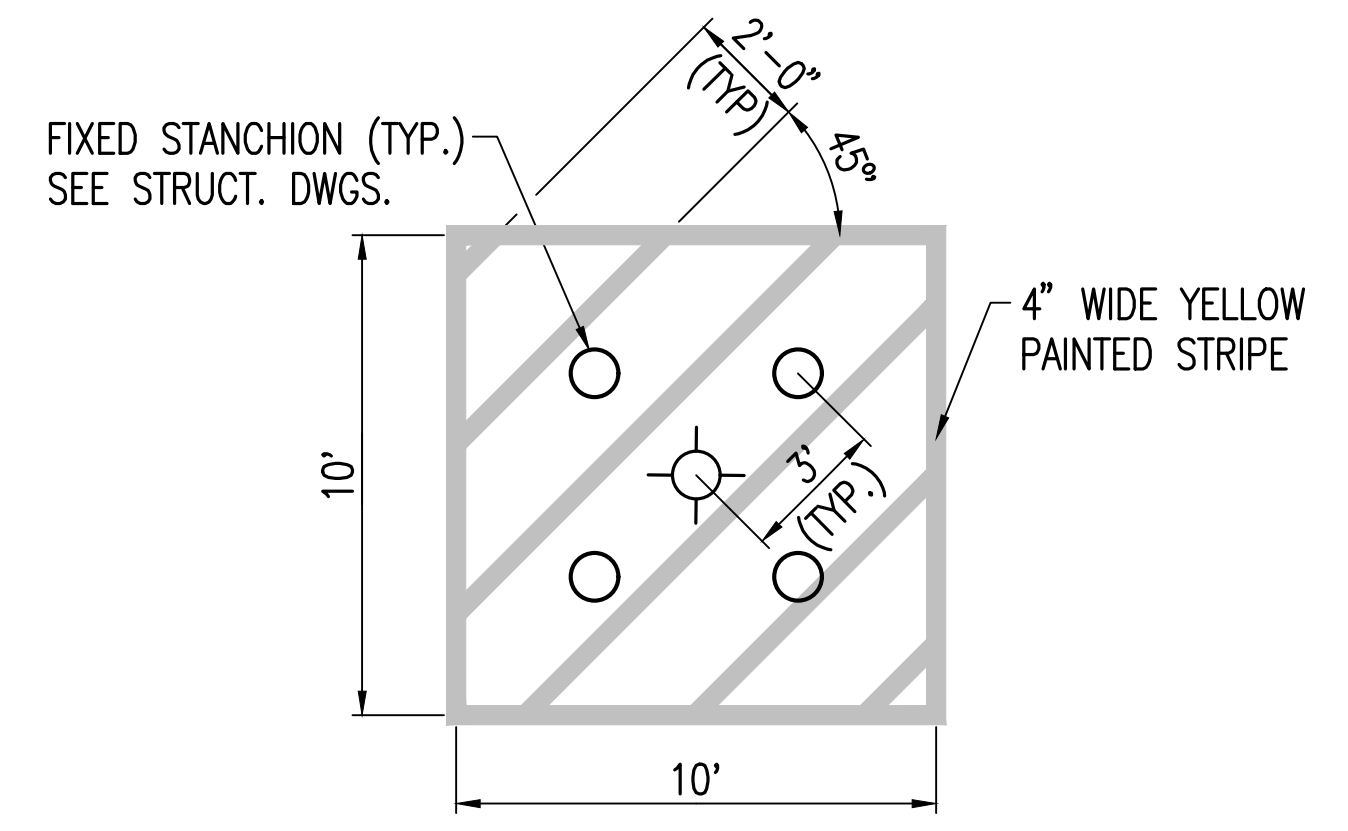
SECTION



TYPICAL STRIPE ON AC PAVEMENT
NOT TO SCALE



STRIPING AT FIRE HYDRANT AND LIGHT STANDARD
NOT TO SCALE



TYPICAL FIRE HYDRANT/STANCHION LAYOUT
NOT TO SCALE

- NOTES:**
- STRIPING/MARKINGS AT LIGHT STANDARDS, AS WELL AS AT FIRE HYDRANT/LIGHT STANDARDS MUST ALL BE THERMOPLASTIC.
 - FOR ALL OTHER PAVEMENT MARKINGS, CONTRACTOR WILL INSTALL PAINT OR STRIPING, TO BE DETERMINED AT HARBORS' DISCRETION, PER CONSULTATION WITH PIER USER. CONTRACTOR WILL FURNISH EITHER MATERIAL WITH NO INCREASE IN COST.

- NOTES:**
- DETAIL SHALL APPLY TO ALL WORK AREAS WHERE EXISTING PAVEMENT IS REMOVED, INCLUDING TRENCHED AREAS.
 - GEOFABRIC SHALL BE "MIRAFI 100X" OR APPROVED EQUAL.
 - INSTALL SEDIMENT BARRIER AT ALL EXISTING/NEW DRAIN INLETS WITHIN THE PROJECT LIMITS AND AT THE NEAREST EXISTING DRAIN INLETS LOCATED OUTSIDE OF THE PROJECT LIMITS.

DRAIN INLET SEDIMENT BARRIER
NOT TO SCALE

REVISION		DATE	DESCRIPTION	BY	APPROVED
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HARBORS DIVISION					
JOB TITLE		DOMESTIC AND FIRE WATERLINE SYSTEM REPLACEMENT AT PIER 51A HONOLULU HARBOR, OAHU, HAWAII			
SHEET TITLE		MISCELLANEOUS DETAILS - 2			
DESIGNED BY: WM, CL, JS, MB		DRAWN BY: WM, CL, JS, MB		CHECKED BY: WM	
DATE: MARCH 2026		SCALE: AS SHOWN		JOB NUMBER: P10904	
SHEET: C-19		20 OF 22 SHTS.			

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. OBSERVATION OF CONSTRUCTION IS DEFINED IN CHAPTER 104-1.5, HAWAII ADMINISTRATIVE RULES, ENTITLED "PROFESSIONAL ENGINEERS, ARCHITECTS, SURVEYORS AND LANDSCAPE ARCHITECTS."

WAYLEN H. MIYASHIRO
LICENSED PROFESSIONAL ENGINEER
No. 13234-C
HAWAII, U.S.A.

APRIL 30, 2026
LICENSE EXPIRATION DATE

GENERAL:

- A. WORKMANSHIP AND MATERIALS SHALL CONFORM TO HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2005, DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION, HONOLULU, HAWAII. HOWEVER, WHERE REFERENCE IS MADE TO PERFORMANCE CONFORMING TO OTHER STANDARDS THE MORE STRINGENT SHALL APPLY.
- B. THE CONTRACTOR SHALL COMPARE ALL THE CONTRACT DOCUMENTS WITH EACH OTHER AND REPORT IN WRITING TO THE ENGINEER ALL INCONSISTENCIES AND OMISSIONS.
- C. THE CONTRACTOR SHALL TAKE FIELD MEASUREMENTS AND VERIFY FIELD CONDITIONS AND SHALL COMPARE SUCH FIELD MEASUREMENTS AND CONDITIONS WITH THE DRAWINGS BEFORE COMMENCING WORK. REPORT IN WRITING TO THE ENGINEER ALL INCONSISTENCIES AND OMISSIONS.
- D. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE WORK OF ALL TRADES.
- E. THE CONTRACTOR SHALL BE RESPONSIBLE FOR METHODS OF CONSTRUCTION, WORKMANSHIP AND JOB SAFETY. THE CONTRACTOR SHALL PROVIDE TEMPORARY SHORING AND BRACING AS REQUIRED FOR STABILITY OF STRUCTURAL MEMBERS AND SYSTEMS.
- F. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF THE ADJACENT PROPERTIES, STRUCTURES, STREETS AND UTILITIES DURING THE CONSTRUCTION PERIOD.
- G. DETAILS NOTED AS TYPICAL ON THE STRUCTURAL DRAWINGS SHALL APPLY IN ALL CONDITIONS UNLESS SPECIFICALLY SHOWN OR NOTED.

DESIGN CRITERIA:

- A. SEISMIC: ----- Ss(0.2s PERIOD) .60g
S (1.0s PERIOD) .16g
DESIGN CATEGORY C
- B. BASIC WIND SPEED AND EXPOSURE: ----- 105 MPH, EXPOSURE C
- C. ALLOWABLE BEARING FOR
BELOW GRADE STRUCTURES: ----- 1500 PSF
- D. ALLOWABLE BEARING FOR RETAINING WALLS-----3000 PSF
- E. DESIGN LIVE LOADS:
HYSTER H150E
1. MAXIMUM AXLE CAPACITY----- 213.8 K
2. MAXIMUM SINGLE WHEEL LOAD----- 53.5 K
- F. DESIGN GROUNDWATER LEVEL----- +30 MSL

FOUNDATION:

- A. FOUNDATION DESIGN IS BASED ON GEOTECHNICAL ENGINEERING EXPLORATION REPORT BY GEOLABS, INC. W.O. 5331-00, DATED DECEMBER 9, 2004
- GEOTECHNICAL ENGINEERING CONSULTANT: GEOLABS, INC. (808) 841-5064
CONTACT: MR. JOHN CHEN (johnc@geolabs.net)
- B. CONTRACTOR TO MARK LAYOUT OF LIGHTPOLE FOUNDATIONS AND OBTAIN ENGINEER’S APPROVAL PRIOR TO BEGINNING EXCAVATION OR PAVEMENT REMOVAL.
- C. CONTRACTOR SHALL PROVIDE FOR DE-WATERING OF EXCAVATION FROM SURFACE WATER, GROUND WATER OR SEEPAGE.
- D. CONTRACTOR SHALL PROVIDE FOR DESIGN AND INSTALLATION OF ALL CRIBBING, SHEETING, AND SHORING NECESSARY TO PRESERVE EXCAVATIONS. CONTRACTOR SHALL PROVIDE CASING FOR POLE FOOTINGS, SEE GEOTECHNICAL REPORT.
- E. FOOTINGS SHALL BEAR ON UNDISTURBED IN-SITU FIRM SOILS. BOTTOM OF FOOTINGS SHALL BE COMPACTED TO PROVIDE A RELATIVELY FIRM AND SMOOTH BEARING SURFACE PRIOR TO PLACEMENT OF REINFORCING STEEL AND CONCRETE. IF SOFT AND/OR LOOSE MATERIALS ARE ENCOUNTERED AT THE BOTTOM OF FOOTING EXCAVATIONS, THEY SHALL BE OVER-EXCAVATED TO EXPOSE THE UNDERLYING FIRM MATERIALS. THE OVER-EXCAVATION SHALL BE BACKFILLED WITH SELECT GRANULAR MATERIAL COMPACTED TO A MINIMUM OF 95% RELATIVE COMPACTION OR THE FOOTING BOTTOM MAY BE EXTENDED DOWN TO THE UNDERLYING COMPETENT MATERIAL.
- F. EXCAVATIONS FOR FOOTINGS SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF CONCRETE AND REINFORCING. GEOTECHNICAL ENGINEER SHALL SUBMIT LETTER OF COMPLIANCE TO THE ENGINEER.
- G. ALL COSTS ASSOCIATED WITH CONTRACTING A GEOTECHNICAL ENGINEER FOR FIELD CONSULTATION SHALL BE PAID BY THE CONTRACTOR.

FOUNDATION (CONT):

- H. FOR BELOW GRADE STRUCTURES THE STABILIZATION LAYER CONSISTS OF AT LEAST 2 FEET OF 3B FINE GRAVEL (ASTM C33 NO. 67 GRADATION) WRAPPED IN A FILTER FABRIC, SUCH AS MIRAFI 180N OR APPROVED EQUAL.

CONCRETE:

- A. CONCRETE CONSTRUCTION SHALL CONFORM TO AMERICAN CONCRETE INSTITUTE ACI 318-05.
- B. CONCRETE FOR STRUCTURES AND FOUNDATIONS SHALL BE REGULAR WEIGHT HARD ROCK CONCRETE AND SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTHS:
1. STRUCTURES ----- 4,500 PSI
2. PIPE STANCHIONS----- 3,000 PSI
- IF CONCRETE IS TO BE PLACED TREMIE METHOD INTO WATER, ‘SEAL’ CLASS CONCRETE SHALL BE USED. USE TYPE V CEMENT FOR CONCRETE WITH SPECIFIED COMPRESSIVE STRENGTH OF 4,500 PSI OR GREATER. TYPE II CEMENT MAY BE USED FOR ALL OTHER CONCRETE.
- C. CONCRETE DELIVERY TICKETS SHALL RECORD ALL FREE WATER IN THE MIX: AT BATCHING BY PLANT, FOR CONSISTENCY BY DRIVER, AND ANY ADDITIONAL REQUEST BY CONTRACTOR IF PERMITTED BY THE MIX DESIGN.
- D. ALL INSERTS, ANCHOR BOLTS, PLATES, AND OTHER ITEMS TO BE CAST IN THE CONCRETE SHALL BE HOT-DIPPED GALVANIZED ACCORDING TO ASTM A153 UNLESS OTHERWISE NOTED.
- E. REINFORCING BARS, ANCHOR BOLTS, INSERTS, AND OTHER ITEMS TO BE CAST IN THE CONCRETE SHALL BE SECURED IN POSITION PRIOR TO PLACEMENT OF CONCRETE.
- F. CONDUITS, PIPES, AND SLEEVES PASSING THROUGH A SLAB OR FOOTING AND NOT CONFORMING TO TYPICAL DETAILS SHALL BE LOCATED AND SUBMITTED TO THE ENGINEER FOR APPROVAL.
- G. THE CONTRACTOR SHALL LOCATE CONSTRUCTION JOINTS SO AS NOT TO IMPAIR THE STRENGTH OF THE STRUCTURE AND TO MINIMIZE SHRINKAGE STRESSES. SUBMIT LOCATION OF CONSTRUCTION JOINTS TO THE ENGINEER FOR APPROVAL, UNLESS OTHERWISE NOTED.
- H. SEE CIVIL AND ELECTRICAL DRAWINGS FOR CHAMFERS, EDGE RADII, DRIPS, FINISHES AND OTHER NON-STRUCTURAL ITEMS NOT SHOWN OR SPECIFIED ON THE STRUCTURAL DRAWINGS.
- I. NON-SHRINK GROUT SHALL BE A PREMIXED NON-METALLIC FORMULA, CAPABLE OF DEVELOPING A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI IN 1 DAY AND 5,000 PSI IN 28 DAYS.

REINFORCING STEEL:

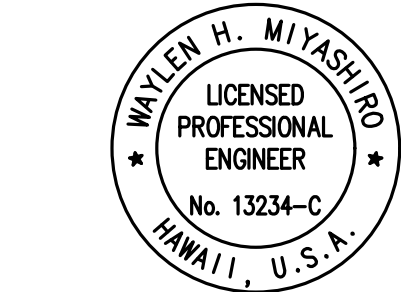
- A. REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A615, GRADE 60. ALL REINFORCING BARS SHALL BE EPOXY-COATED IN ACCORDANCE WITH ASTM A775.
- B. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185, GALVANIZED.
- C. CLEAR CONCRETE COVER FOR REINFORCING BARS SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED:
1. FOOTINGS CAST AGAINST EARTH: ----- 3”
2. FOOTINGS FORMED AND EXPOSED TO EARTH OR WEATHER: ----- 3”
3. WALLS/PEDESTALS
FACES EXPOSED TO EARTH OR WEATHER: ----- 3”
- D. REINFORCING STEEL SHALL BE SPLICED WHERE INDICATED ON PLANS. PROVIDE LAP SPLICE LENGTH PER TYPICAL DETAILS AND SCHEDULE, UNLESS OTHERWISE NOTED.
- E. WELDED WIRE FABRIC SHALL BE LAPPED 8 INCHES OR ONE FULL MESH PLUS 2 INCHES, WHICHEVER IS GREATER.
- F. MECHANICAL SPLICE CONNECTORS SHALL DEVELOP IN TENSION 125 PERCENT OF THE SPECIFIED MINIMUM YIELD STRENGTH OF REINFORCING BAR AND HAVE A CURRENT ICC RESEARCH REPORT.
- G. BAR BENDS AND HOOKS SHALL BE "STANDARD HOOKS" IN ACCORDANCE WITH ACI 318.

STAINLESS STEEL WATERSTOPS:

- A. WATERSTOPS SHALL BE STAINLESS STEEL (TYPE 316) WITH A MINIMUM THICKNESS OF 20 GAUGE MANUFACTURED SPECIFICALLY AS A WATERSTOP AND IN CONFORMANCE WITH ASTM A240 WITH A PROFILE AS INDICATED IN THESE PROJECT DRAWINGS.
- B. SEE PROJECT SPECIFICATIONS FOR REQUIRED PHYSICAL PROPERTIES.
- C. ALL SPLICES WHERE THE WATERSTOP CHANGES DIRECTION, SHALL BE FABRICATED BY THE MANUFACTURER IN THEIR FABRICATION SHOP AS SHIPPED TO THE SITE WITH MITERED, WELDED JOINTS. ONLY BUTT JOINT SPLICES ARE PERMITTED TO BE FABRICATED IN THE FIELD.
- D. SECURE WATERSTOP IN POSITION PRIOR TO PLACING CONCRETE. THE WATERSTOP SHALL BE EMBEDDED APPROXIMATELY EQUALLY INTO BOTH CONCRETE POURS.
- E. WATERSTOPS SHALL BE PROVIDED IN TWO PROFILES, STANDARD WHEN BOTH ENDS OF WATERSTOP WILL BE EMBEDDED IN NEW CONCRETE CONSTRUCTION AND A RETROFIT PROFILE WHEN ONLY ONE END IS EMBEDDED IN NEW CONCRETE CONSTRUCTION. SEE WATERSTOP DETAIL ON SHEET S-2 FOR PROFILE DIMENSIONS.

ABBREVIATIONS			
@	AT	MAX	MAXIMUM
AB	ANCHOR BOLT	MB	MACHINE BOLT
ACI	AMERICAN CONCRETE INSTITUTE	MH	MANHOLE
APPROX.	APPROXIMATE	MECH	MECHANICAL
BLKG	BLOCKING	MIN	MINIMUM
BM	BEAM	MISC	MISCELLANOUS
BOT	BOTTOM	MPH	MILES PER HOUR
BTWN	BETWEEN	NO OR #	NUMBER
BWS	BOARD OF WATER SUPPLY	NTS	NOT TO SCALE
CLR	CLEAR	OC	ON CENTER
CLSM	CONTROLLED LOW-STRENGTH MATERIAL	OD	OUTSIDE DIAMETER
COL	COLUMN	OPNG	OPENING
CONC	CONCRETE	OPP	OPPOSITE
CONT	CONTINUOUS	OSHA	OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION
CL	CLOSED	PAV'T	PAVEMENT
DBL	DOUBLE	PL	PLATE
DIA	DIAMETER	PREFAB	PRE-FABRICATED
DWG	DRAWING	PVC	POLYVINYL CHLORIDE
EA	EACH	REF	REFERENCE
EF	EACH FACE	REINF	REINFORCED OR REINFORCING
EL OR ELEV	ELEVATION	REQD	REQUIRED
ELEC	ELECTRICAL	SCHED	SCHEDULE
EQ	EQUAL	SHT	SHEET
EW	EACH WAY	SIM	SIMILAR
EXIST OR (E)	EXISTING	SPECS	SPECIFICATIONS
EXT	EXTERIOR	SQ	SQUARE
FIN	FINISH	SS	STAINLESS STEEL
FLR	FLOOR	STD	STANDARD
FT	FOOT	SYM	SYMMETRICAL
FTG	FOOTING	THK	THICK
GA	GAUGE	TRANS.	TRANSVERSE
GALV	GALVANIZE	TYP	TYPICAL
HORIZ	HORIZONTAL	T&B	TOP AND BOTTOM
ID	INSIDE DIAMETER	UON	UNLESS OTHERWISE NOTED
INV	INVERT	VERT	VERTICAL
L	LONG	W/	WITH
LLH	LONG LEG HORIZONTAL	W/O	WITHOUT
LLV	LONG LEG VERTICAL	WP	WORKING POINT
LONGIT	LONGITUDINAL	WWF	WELDED WIRE FABRIC

REVISION	DATE	DESCRIPTION		BY APPROVED
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HARBORS DIVISION				
JOB TITLE	DOMESTIC AND FIRE WATERLINE SYSTEM REPLACEMENT AT PIER 51A HONOLULU HARBOR, OAHU, HAWAII			
SHEET TITLE		MISCELLANEOUS DETAILS – 3		
DESIGNED BY: WM, CL, JS, MB		JOB NUMBER P10904		SHEET C-20 21 of 22 SHTS.
DRAWN BY: WM, CL, JS, MB				
CHECKED BY: WM				
DATE: MARCH 2026				
SCALE: AS SHOWN				



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. PRESERVATION OF CONSTRUCTION IS DEFINED IN CHAPTER 100-1 TO HAWAII ADMINISTRATIVE RULES, ENTITLED "PROFESSIONAL ENGINEERS, ARCHITECTS, SURVEYORS AND LANDSCAPE ARCHITECTS."

Wayne M. ...
R.M. TOWILL CORPORATION
APRIL 30, 2026
LICENSE EXPIRATION DATE

