- UNLESS OTHERWISE SPECIFIED, ALL MATERIALS AND CONSTRUCTION OF WATER SYSTEM FACILITIES AND APPURTENANCES SHALL BE IN ACCORDANCE WITH THE CITY AND COUNTY OF HONOLULU BOARD OF WATER SUPPLY'S "WATER SYSTEM STANDARDS", DATED 2002, THE "WATER SYSTEM EXTERNAL CORROSION CONTROL STANDARDS", VOLUME 3, DATED 2021, AND ALL SUBSEQUENT AMENDMENTS AND ADDITIONS.
- NO DEVIATION TO THE BOARD OF WATER SUPPLY 2002 WATER SYSTEM STANDARDS AS AMENDED, SHALL BE ALLOWED WITHOUT THE MANAGER AND CHIEF ENGINEER'S APPROVAL.
- 3. THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITIES AND STRUCTURES AS SHOWN ON THE PLANS ARE FROM THE LATEST AVAILABLE DATA, BUT ARE NOT GUARANTEED AS TO THEIR ACCURACY OR THE ENCOUNTERING OF OTHER OBSTACLES DURING THE COURSE OF THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE AND PAY FOR ALL DAMAGES TO EXISTING UTILITIES. THE CONTRACTOR SHALL NOT ASSUME THAT WHERE NO UTILITIES ARE SHOWN, THAT NONE EXIST.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL WATERLINES DURING CONSTRUCTION THE CONTRACTOR SHALL BE ESPECIALLY CAREFUL WHEN EXCAVATING BEHIND WATERLINES. TEES. AND BENDS WHEREVER THERE IS A POSSIBILITY OF WATERLINE MOVEMENT DUE TO THE REMOVAL OF THE SUPPORTING EARTH BEYOND THE EXISTING REACTION BLOCKS. THE CONTRACTOR SHALL TAKE WHATEVER MEASURES NECESSARY TO PROTECT THE WATERLINES, SUCH AS CONSTRUCTING SPECIAL REACTION BLOCKS (WITH BOARD OF WATER SUPPLY APPROVAL) AND/OR MODIFYING HIS CONSTRUCTION METHOD.
- 5. WHEN A UTILITY (GAS, SEWER, ELECTRICAL DUCT LINE, FIBER OPTIC, DRAINAGE, ETC.) CROSSES BELOW A BOARD OF WATER SUPPLY WATER MAIN. THE DESIGNER OF RECORD AND THEIR CONSTRUCTION ENGINEER SHALL BE RESPONSIBLE FOR DETERMINING THE ADEQUATE WATER MAIN STRUCTURAL SUPPORT AND SUBMIT THE CONSTRUCTION METHOD AND SHOP DRAWING, STAMPED BY A LICENSED ENGINEER AND REVIEWED AND ACCENTED BY THE DESIGNER OF RECORD. TO THE BOARD OF WATER SUPPLY FOR REVIEW AND APPROVAL. ALL WORK SHALL BE AT NO COST TO THE BOARD OF WATER SUPPLY.
- 6. THE CONTRACTOR SHALL NOTIFY BOARD OF WATER SUPPLY CAPITAL PROJECTS DIVISION. CONSTRUCTION SECTION IN WRITING OR CALL (808) 748-5730, AND SUBMIT SIX (6) SETS OF 24"X 36" APPROVED CONSTRUCTION DRAWINGS, ONE WEEK PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES.
- 7. RE-APPROVAL SHALL BE REQUIRED IF THIS PROJECT IS NOT UNDER CONSTRUCTION WITHIN A PERIOD OF TWO (2) YEARS.
- 8. PRIOR TO ANY EXCAVATION, THE CONTRACTOR SHALL VERIFY IN THE FIELD, THE LOCATION OF EXISTING WATERLINES AND
- 9. ANY ADJUSTMENTS TO THE EXISTING WATER SYSTEM REQUIRED DURING CONSTRUCTION, TO MEET THE REQUIREMENTS OF THE BOARD OF WATER SUPPLY STANDARDS, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE DONE BY THE CONTRACTOR AT NO COST TO THE BOARD OF WATER SUPPLY.
- 10. ALL PLANS APPROVED BY THE BOARD OF WATER SUPPLY ARE BASED SOLELY ON THE ADEQUACY OF THE WATER SUPPLY.
- 11. ALL WATER MAINS AND APPURTENANCES SHALL BE SUBJECT TO HYDROSTATIC TEST PRESSURE OF 200 PSI BY THE CONTRACTOR IN ACCORDANCE WITH DIVISION 300 -- CONSTRUCTION, SECTION 302.28, PIPE PRESSURE TEST OF THE "WATER SYSTEM STANDARDS", DATED 2002. DURING THE 30-MINUTE PRESSURE TEST, THE PRESSURE SHALL NOT DROP MORE THAN 10 PSI.
- 12. AFTER INSTALLATION OF TAPPING SLEEVE AND TAPPING VALVE AND PRIOR TO TAPPING THE EXISTING WATER MAIN, THE ASSEMBLY SHALL BE PRESSURE TESTED AT 200 PSION BOTH SIDES OF THE VALVE AND IN ACCORDANCE WITH THE WATER SYSTEM STANDARDS, DATED 2002
- 13. REQUESTS FOR WATER OUTAGES SHALL BE SUBMITTED TO THE BOARD OF WATER SUPPLY CONSTRUCTION INSPECTOR NOT LESS THAN FOURTEEN (14) CALENDAR DAYS IN ADVANCE. THE REQUEST SHALL INDICATE THE SPECIFIC AREA, DATE, TIME, AND THE ANTICIPATED DURATION OF THE PROPOSED OUTAGE. OUTAGES SHALL BE APPROVED AT THE CONVENIENCE OF THE BOARD OF WATER SUPPLY. THE CONTRACTOR SHALL PLAN ALL WORK TO MINIMIZE THE NUMBER AND DURATION OF OUTAGES. THE CONTRACTOR SHALL NOTIFY THE AFFECTED CONSUMERS (RESIDENTS AND MERCHANTS).
- 14. 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. (FOR CONNECTION ONLY)
- 15. PRIOR TO INSTALLATION, THE CONTRACTOR SHALL SUBMIT FOR APPROVAL BY BOARD OF WATER SUPPLY, THE MANUFACTURER'S CERTIFICATION THAT ALL CAST IRON (GRAY OR DUCTILE) FITTINGS FOR THE PROJECT CONFORM IN ALL RESPECTS TO THE WATER SYSTEM STANDARDS, DATED 2002 AND ADDENDUMS
- 16. POLYGON SHAPE FOR MECHANICAL JOINT GLANDS AS DESCRIBE IN AWWA STANDARD C111 SHALL BE "STRAIGHT—SIDED" OR AN APPROVED EQUAL ON A JOB-TO-JOB BASIS
- 17. CONTRACTOR SHALL CUT AND PLUG AND REMOVE 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.
- 18. PIPE CUSHION SHALL BE OF HIGH RESISTIVITY MATERIAL. THE CONTRACTOR SHALL SUBMIT A SOIL CERTIFICATION THAT HIGH RESISTANT CUSHION MATERIAL HAS A RESISTIVITY GREATER THAN 5,000 OHM—— CM. REMAINDER— OF THE BACKFILL MATERIAL SHALL BE AS SPECIFIED IN THE BOARD OF WATER SUPPLY WATER SYSTEM STANDARDS. 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
- 19. ALL DUCTILE IRON FITTINGS AND METALLIC VALVES SHAFT HAVE A FACTORY APPLIED COATING AND WRAPPED WITH PETROLATUM WAX TAPE.
- 20. ALL DUCTILE IRON PIPE, INCLUDING SECTIONS REQUIRING REINFORCED CONCRETE JACKETING. SHALL BE DUCTILE IRON CLASS 53 WITH A BONDED DIELECTRIC COATING AS PER THE BOARD OF WATER SUPPLY WATER SYSTEM STANDARDS AS
- 21. 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 LATERAL IS NOT REQUIRED. BARE FOAM "PIGS" SHALL BE USED TO SWAB PIPING CLEAN AS EACH LENGTH OF THE PIPELINE IS INSTALLED. THE TYPE. DENSITY. SIZE. DIAMETER AND LENGTH OF THE PIG SHAIL BE SUBMITTED FOR REVIEW AND APPROVAL BY THE MANAGER PRIOR TO PIGGING WORK. "PIG" SHALL BE USED PER MANUFACTURER'S SPECIFICATIONS. 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. MANUAL SWEEPING, HAND CLEANING OR SWABBING MAY BE ALLOWED IN LIEU OF "PIGGING" AS APPROVED BY THE BOARD OF WATER SUPPLY MANAGER.
- 22. ALL FIRE HYDRANTS TO BE ADJUSTED AND/OR RELOCATED SHALL BE REPLACED WITH NEW FIRE HYDRANTS, UNLESS OTHERWISE DIRECTED BY THE BOARD OF WATER SUPPLY.
- 23. TWO-WAY BLUE REFLECTIVE HYDRANT MARKERS TYPE DB SHALL BE INSTALLED AT ALL NEW FIRE HYDRANT INSTALLATIONS. CONTRACTOR SHALL VERIFY THE EXACT LOCATIONS OF HYDRANT MARKERS WITH THE NEAREST HONOLULU FIRE DEPARTMENT BATTALION CHIEF.
- 24. INSTALL 4 MIL THICK, NON-METALLIC, BLUE COLORED, 6 INCHES WIDE WARNING TAPE 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",
- 25. THE CONTRACTOR SHALL INSTALL ELECTRONIC MARKERS TO ALL MAINS AND TEST THE ELECTRONIC MARKERS PRIOR TO INSTALLATIONS TO VERIFY PROPER OPERATION. BOARD OF WATER SUPPLY PERSONNEL SHALL VERIFY THE NUMBER AND LOCATIONS OF PLACED ELECTRONIC MARKERS BEFORE FINAL PAVING OF THE PROJECT.
- 26. ASSUME THE SOIL RESISTIVITY FOR THE SITE HAS A CORROSION RATING OF CATEGORY A (MODERATE TO SEVERELY CORROSIVE). ALL REQUIRED ELECTRICAL ISOLATION PROCEDURES AND CORROSION CONTROL REQUIREMENTS SHALL APPLY.
- 27. THE CONTRACTOR SHALL FURNISH AND INSTALL AN INSULATING CORPORATION STOP AND PETROLATUM WAX TAPE AT ALL TAPS (FOR DI PIPE AND COPPER LATERAL COMBINATION ONLY).

# WATER NOTES CON'T

- 28. ANY ADJUSTMENTS TO THE EXISTING WATER SYSTEM REQUIRED DURING CONSTRUCTION, TO MEET THE REQUIREMENTS OF THE BOARD OF WATER SUPPLY WATER SYSTEM STANDARDS, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE DONE BY THE CONTRACTOR AT NO COST TO THE BOARD OF WATER SUPPLY
- 29. AT UTILITY CROSSINGS WHERE PROPER COMPACTION UNDER A WATER MAIN IS DIFFICULT TO ACHIEVE, CLSM SHALL BE INSTALLED IN PLACE OF BACKFILL MATERIAL AND PIPE CUSHION MATERIAL CLSM MIXTURE TO BE FURNISHED SHALL BE IN ACCORDANCE WITH DIVISION 200 -- MATERIALS, SECTION 209.06 CONTROLLED LOW STRENGTH MATERIAL (CLSM) OF THE WATER SYSTEM STANDARDS AS AMENDED.

## STORM DRAIN NOTES

## 1. SUBMITTALS

- A. PRODUCT WILL NOT BE ACCEPTED UNLESS THE PRECAST REINFORCED CONCRETE MANUFACTURER CAN PROVIDE THE FOLLOWING:
  - 1) SUBMIT PLANT'S CURRENT NPCA CERTIFICATION CERTIFICATE.
  - 2) SUBMIT WHAT PRODUCTS WERE PRODUCED UNDER THE NPCA CERTIFICATION PROCESS.
- 3) SUBMIT A COPY OF THE MOST RECENT ANNUAL UN-ANNOUNCED PLANT INSPECTION REPORT ALONG WITH A COPY OF ALL WRITTEN CORRECTIVE ACTION RESPONSES FOR ALL DEFICIENCIES IN THE REPORT.
- 4) SUBMIT QUALITY CONTROL TEST RECORDS FOR THE UNITS ASSOCIATED WITH THE PRODUCT DELIVERED TO THE PROJECT.

## 2. QUALITY ASSURANCE

- A. NATIONAL PRECAST CONCRETE ASSOCIATION PLANT CERTIFICATION
- 1) THE PRECAST CONCRETE PRODUCER MUST BE CERTIFIED BY THE NATIONAL PRECAST CONCRETE ASSOCIATION PLANT CERTIFICATION PROGRAM PRIOR TO AND DURING PRODUCTION OF THE PRODUCTS FOR THIS PROJECT.

WAIAHOLE WATER SYSTEM **IMPROVEMENTS -WELL SITE** 



R. M. TOWILL CORPORATION 2024 North King Street Suite 209 Honolulu Havaii 96819

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

> > SIGNATURE

APPROVED BY

Manager and Chief Engineer, BWS (For work affecting BWS facilities in City/State R/W and BWS easements only)

ENGINEER DRAFTSMAN CHECKED BY AS SHOWN SCALE MAY 2024 DPP FILE NO. 20XX/CP-XXX

CONSTRUCTION NOTES 2