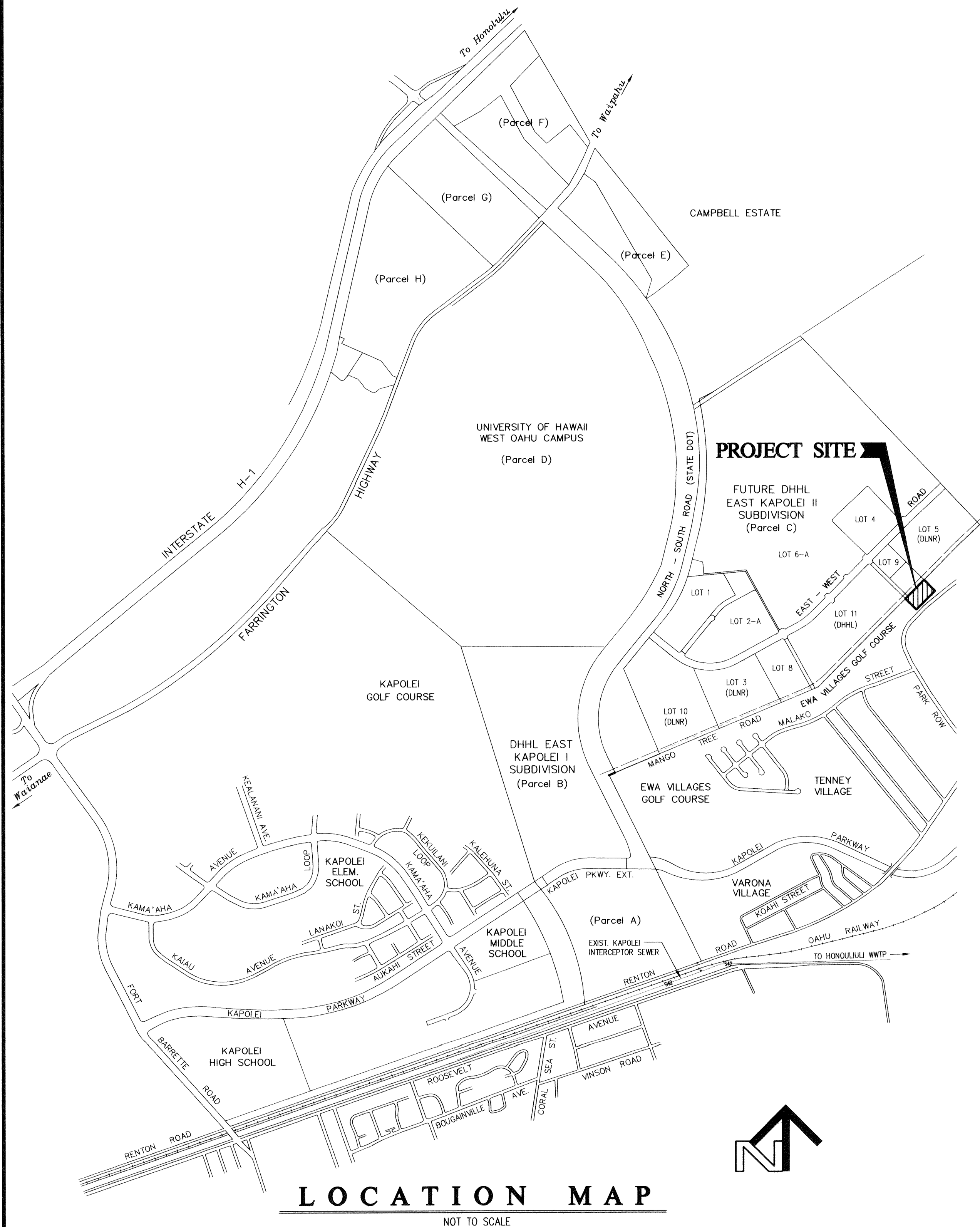
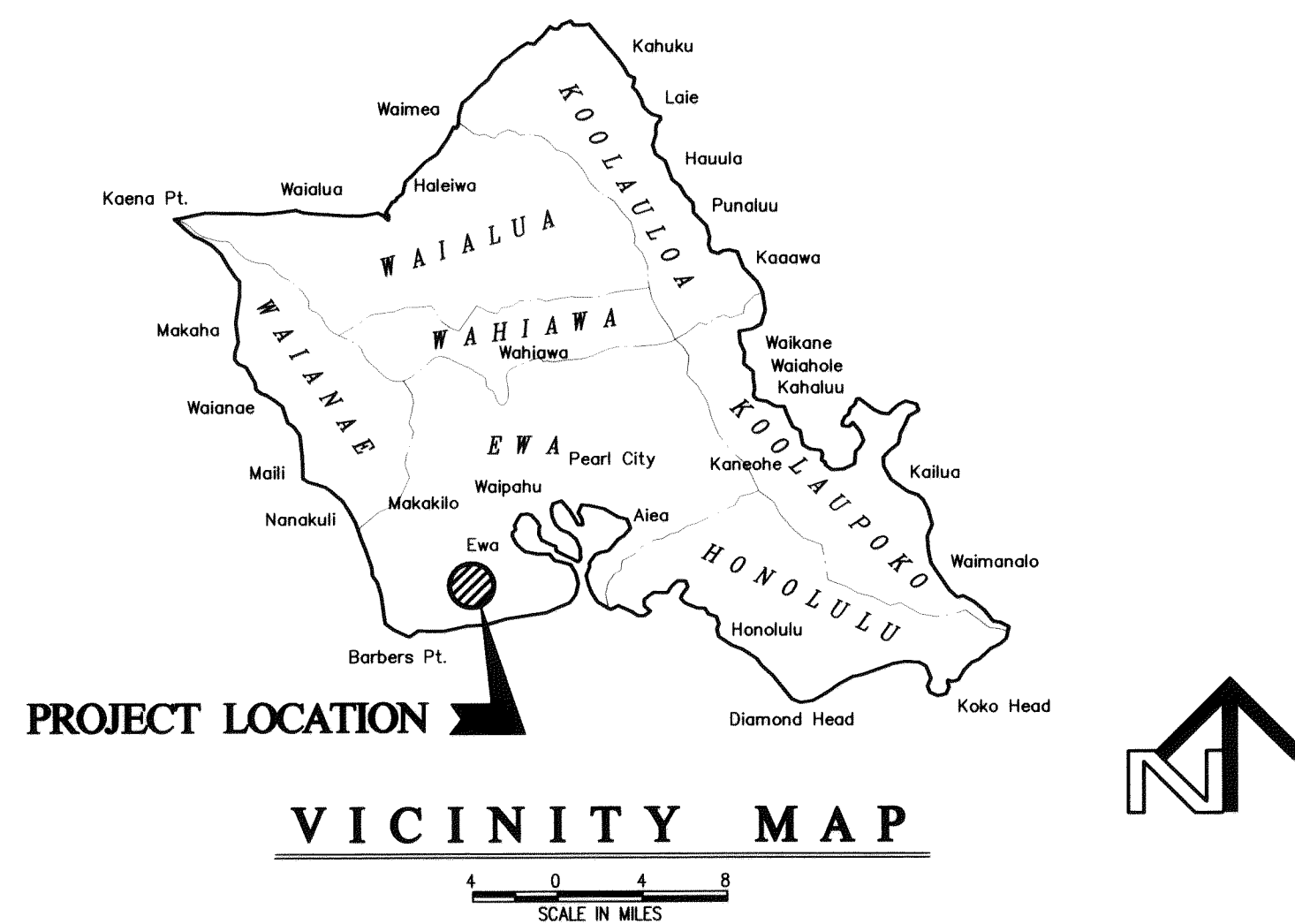


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CONSTRUCTION PLANS
FOR
EAST KAPOLEI II OFFSITE DRAINAGE SYSTEM
**EAST DETENTION BASIN SPILLWAY GRADING AND NON-POTABLE
WATERLINE RELOCATION IN EWA VILLAGES GOLF COURSE**

HONOULIULI, EWA, OAHU, HAWAII
(DPP SUBD. FILE NO. 2008 / SUB-21)

OWNER: DEPARTMENT OF ENTERPRISE SERVICES
DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEY: 9-1-17:75 & PORTION 110



Community Planning and Engineering, Inc.
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INDEX TO DRAWINGS

SHEET NO.	DWG. NO.	DESCRIPTION
1	T-1	TITLE SHEET
2	C-1	GENERAL NOTES
3	C-2	WATER NOTES
4	C-3	GENERAL PLAN
5	C-4	GRADING AND EROSION CONTROL PLAN AND GRP DETAIL
6	C-5	SPILLWAY PLAN AND SECTION A-A
7	C-6	PLAN AND PROFILE - RELOCATION OF EXISTING R1W16
8	C-7	WATER DETAILS

APPROVED

CHAIRMAN, HAWAIIAN HOMES COMMISSION
DEPARTMENT OF HAWAIIAN HOME LANDS
STATE OF HAWAII

8-19-10
DATE

for DIRECTOR, DEPARTMENT OF PLANNING AND PERMITTING
CITY & COUNTY OF HONOLULU
(FOR SITE GRADING ONLY)

9-2-10
DATE

DIRECTOR, DEPARTMENT OF ENTERPRISE SERVICES
CITY & COUNTY OF HONOLULU

8-4-10
DATE

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GRADING NOTES

1.

ALL GRADING WORK SHALL BE IN ACCORDANCE WITH CHAPTER 14, ARTICLES 1.3, 1.4, 1.5 AND 1.6, AS RELATED TO GRADING, SOIL EROSION AND SEDIMENT CONTROL, OF THE REVISED ORDINANCES OF HONOLULU, 1990, AS AMENDED, AND SOILS REPORT BY PSC CONSULTANTS, LLC, ENTITLED "REVISED PRELIMINARY GEOTECHNICAL EXPLORATION REPORT, PROPOSED EAST KAPOLEI II DEVELOPMENT, STUDY AREA I, HONOLULU, EWA, OAHU, HAWAII", DATED MAY 2009.
2.

NO CONTRACTOR SHALL PERFORM ANY GRADING OPERATION SO AS TO CAUSE FALLING ROCKS, SOIL, OR DEBRIS IN ANY FORM TO FALL, SLIDE OR FLOW ONTO ADJOINING PROPERTIES, STREETS OR NATURAL WATERCOURSES. SHOULD SUCH VIOLATIONS OCCUR, THE CONTRACTOR MAY BE CITED AND THE CONTRACTOR SHALL IMMEDIATELY MAKE ALL REMEDIAL ACTIONS NECESSARY.
3.

THE CONTRACTOR, AT HIS OWN EXPENSE, SHALL KEEP THE PROJECT AREA AND SURROUNDING AREA FREE FROM DUST NUISANCE. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION CONTROL STANDARDS CONTAINED IN THE HAWAII ADMINISTRATIVE RULES, TITLE 11, CHAPTER 60.1, "AIR POLLUTION CONTROL".
4.

THE UNDERGROUND PIPES, CABLES OR DUCTLINES KNOWN TO EXIST BY THE ENGINEER FROM HIS SEARCH OF RECORDS ARE INDICATED ON THE PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATIONS AND DEPTHS OF THE FACILITIES AND EXERCISE PROPER CARE IN EXCAVATING IN THE AREA. WHEREVER CONNECTIONS OF NEW UTILITIES 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.
5.

ADEQUATE PROVISIONS SHALL BE MADE TO PREVENT SURFACE WATERS FROM DAMAGING THE CUT FACE OF AN EXCAVATION OR THE SLOPED SURFACES OF A FILL. FURTHERMORE, ADEQUATE PROVISIONS SHALL BE MADE TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE SITE.
6.

ALL SLOPES AND EXPOSED AREAS SHALL BE SODDED OR PLANTED AS SOON AS FINAL GRADES HAVE BEEN ESTABLISHED. PLANTING SHALL NOT BE DELAYED UNTIL ALL GRADING WORK HAS BEEN COMPLETED. GRADING TO FINAL GRADE SHALL BE CONTINUOUS, AND ANY AREA WITHIN WHICH WORK HAS BEEN INTERRUPTED OR DELAYED SHALL BE PLANTED.
7.

FILLS ON SLOPES STEEPER THAN 5:1 SHALL BE KEYED.
8.

THE CITY SHALL BE INFORMED OF THE LOCATION OF THE BORROW/DISPOSAL SITE FOR THE PROJECT WHEN THE APPLICATION FOR A GRADING PERMIT IS MADE. THE BORROW/DISPOSAL SITE MUST ALSO FULFILL THE REQUIREMENTS OF THE GRADING ORDINANCE.
9.

NO GRADING WORK SHALL BE DONE ON SATURDAYS, SUNDAYS AND HOLIDAYS AT ANY TIME WITHOUT PRIOR NOTICE TO THE DIRECTOR, D.P.P., PROVIDED SUCH GRADING WORK IS ALSO IN CONFORMANCE WITH THE COMMUNITY NOISE CONTROL STANDARDS CONTAINED IN THE HAWAII ADMINISTRATIVE RULES, TITLE 11, CHAPTER 46, "COMMUNITY NOISE CONTROL".
10.

THE LIMITS OF THE AREA TO BE GRADED SHALL BE FLAGGED BEFORE THE COMMENCEMENT OF THE GRADING WORK.
11.

ALL GRADING OPERATIONS SHALL BE PERFORMED IN CONFORMANCE WITH THE APPLICABLE PROVISIONS OF THE WATER QUALITY AND WATER POLLUTION CONTROL STANDARDS CONTAINED IN HAWAII ADMINISTRATIVE RULES, TITLE 11, CHAPTER 54, "WATER QUALITY STANDARDS", AND TITLE 11, CHAPTER 55, "WATER POLLUTION CONTROL," AND IF APPLICABLE, THE NPDES PERMIT FOR THE PROJECT.
12.

WHERE APPLICABLE AND FEASIBLE THE MEASURES TO CONTROL EROSION AND OTHER POLLUTANTS SHALL BE IN PLACE BEFORE ANY EARTH MOVING PHASE OF THE GRADING IS INITIATED.
13.

TEMPORARY EROSION CONTROLS SHALL NOT BE REMOVED BEFORE PERMANENT EROSION CONTROLS ARE IN-PLACE AND ESTABLISHED.
14.

TEMPORARY EROSION CONTROL PROCEDURES SHALL BE SUBMITTED FOR APPROVAL PRIOR TO APPLICATION FOR A GRADING PERMIT.
15.

IF THE GRADING WORK INVOLVES CONTAMINATED SOIL, THEN ALL GRADING WORK SHALL BE DONE IN CONFORMANCE WITH APPLICABLE STATE AND FEDERAL REQUIREMENTS.
16.

FOR BENCH MARK, SEE DWG. NO. C-3.
17.

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.
18.

PURSUANT TO CHAPTER 6E, HRS, IN THE EVENT ANY ARTIFACTS OR HUMAN REMAINS ARE UNCOVERED DURING CONSTRUCTION OPERATIONS, THE CONTRACTOR SHALL IMMEDIATELY SUSPEND WORK AND NOTIFY THE HONOLULU POLICE DEPARTMENT, THE STATE DEPARTMENT OF LAND AND NATURAL RESOURCES-HISTORIC PRESERVATION DIVISION (692-8015). IN ADDITION, FOR NON-CITY PROJECTS, THE CONTRACTOR SHALL INFORM THE CIVIL ENGINEERING BRANCH, D.P.P. (768-8084); AND FOR CITY PROJECTS, NOTIFY THE RESPONSIBLE CITY AGENCY.
19.

FOR ALL PROJECTS, WHICH WILL DISTURB ONE (1) ACRE OR MORE OF LAND, THE CONTRACTOR SHALL NOT START CONSTRUCTION UNTIL A 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. ALSO, FOR NON-CITY AND OTHER NON-GOVERNMENTAL AGENCY PROJECTS, THE CONTRACTOR SHALL PROVIDE A WRITTEN COPY OF THE NGPC TO THE PERMITTING AND INSPECTION SECTION, CIVIL ENGINEERING BRANCH, D.P.P., AT LEAST SEVEN (7) CALENDAR DAYS BEFORE THE START OF THE CONSTRUCTION. FOR CITY OR OTHER GOVERNMENTAL PROJECTS, THE CONTRACTOR SHOULD PROVIDE A WRITTEN COPY OF THE NGPC TO THE APPROPRIATE CITY DEPARTMENT OR GOVERNMENTAL AGENCY PER THEIR REQUIREMENTS.
20.

ALL GRADING AND CONSTRUCTION WORK SHALL IMPLEMENT MEASURES TO ENSURE THAT THE DISCHARGE OF POLLUTANTS FROM THE CONSTRUCTION SITE WILL BE REDUCED TO THE MAXIMUM EXTENT PRACTICABLE AND WILL NOT CAUSE OR CONTRIBUTE TO AN EXCEEDANCE OF WATER QUALITY STANDARDS.

NON-COMPLIANCE TO ANY OF THE ABOVE REQUIREMENTS SHALL MEAN IMMEDIATE SUSPENSION OF ALL WORK, AND REMEDIAL WORK SHALL COMMENCE IMMEDIATELY. ALL COSTS INCURRED SHALL BE BILLED TO THE VIOLATOR. FURTHERMORE, VIOLATORS SHALL BE SUBJECTED TO ADMINISTRATIVE, CIVIL AND/OR CRIMINAL PENALTIES.

GENERAL CONSTRUCTION NOTES

1.

THE CONTRACTOR SHALL OBSERVE AND COMPLY WITH ALL FEDERAL, STATE AND LOCAL LAWS REQUIRED FOR THE PROTECTION OF PUBLIC HEALTH, SAFETY AND ENVIRONMENTAL QUALITY.
2.

UTILITIES SHALL BE INSTALLED IN ACCORDANCE WITH REVISED ORDINANCES OF HONOLULU, CHAPTER 22, ARTICLE 5, "UTILITY LINES".
3.

NO CONTRACTOR SHALL PERFORM ANY CONSTRUCTION OPERATION SO AS TO CAUSE FALLING ROCKS, SOIL OR DEBRIS IN ANY FORM TO FALL, SLIDE OR FLOW INTO EXISTING CITY DRAINAGE SYSTEMS, ADJOINING PROPERTIES, STREETS, OR NATURAL WATERCOURSES. SHOULD SUCH VIOLATIONS OCCUR, THE CONTRACTOR MAY BE CITED AND THE CONTRACTOR SHALL IMMEDIATELY MAKE ANY REMEDIAL ACTIONS NECESSARY.
4.

THE CONTRACTOR, AT HIS OWN EXPENSE, SHALL KEEP THE PROJECT AND SURROUNDING AREA FREE FROM DUST NUISANCE. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION CONTROL STANDARDS AND REGULATIONS OF THE STATE DEPARTMENT OF HEALTH.
5.

THE UNDERGROUND PIPES, CABLES OR DUCTLINES KNOWN TO EXIST BY THE ENGINEER FROM HIS SEARCH OF RECORDS ARE INDICATED ON THE PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATIONS AND DEPTHS OF THE FACILITIES AND EXERCISE PROPER CARE IN EXCAVATING IN THE AREA. WHEREVER CONNECTIONS OF NEW UTILITIES TO EXISTING UTILITIES ARE SHOWN ON THE PLANS, THE CONTRACTOR SHALL EXPOSE THE EXISTING LINES AT THE PROPOSED CONNECTIONS TO VERIFY THEIR LOCATIONS AND DEPTHS PRIOR TO EXCAVATION FOR THE NEW LINES.
6.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFORMANCE WITH THE APPLICABLE PROVISIONS OF THE WATER QUALITY AND WATER POLLUTION CONTROL STANDARDS CONTAINED IN HAWAII ADMINISTRATIVE RULES, TITLE 11, CHAPTER 54, "WATER QUALITY STANDARDS", AND TITLE 11, CHAPTER 55, "WATER POLLUTION CONTROL", AS WELL AS CHAPTER 14 OF THE REVISED ORDINANCES OF HONOLULU, AS AMENDED. BEST MANAGEMENT PRACTICES SHALL BE EMPLOYED AT ALL TIMES DURING CONSTRUCTION.
7.

THE CONTRACTOR SHALL PROVIDE, INSTALL AND MAINTAIN ALL NECESSARY SIGNS, LIGHTS, FLARES, BARRICADES, MARKERS, CONES, AND OTHER PROTECTIVE FACILITIES, AND SHALL TAKE ALL NECESSARY PRECAUTIONS FOR THE PROTECTION, CONVENIENCE AND SAFETY OF THE PUBLIC.
8.

THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE HAWAII ADMINISTRATIVE RULES, TITLE 11, CHAPTER 46, "COMMUNITY NOISE CONTROL", IN WHICH MAXIMUM ALLOWABLE NOISE LEVELS HAVE BEEN SET. IF THE CONSTRUCTION ACTIVITIES FOR THIS PROJECT WILL EXCEED THE ALLOWABLE NOISE LEVELS, THE CONTRACTOR WILL BE REQUIRED TO OBTAIN A PERMIT FROM THE DIRECTOR OF THE DEPARTMENT OF HEALTH, STATE OF HAWAII. THE CONTRACTOR SHALL OBTAIN A COPY OF CHAPTER 46 AND BECOME FAMILIAR WITH THE NOISE LEVEL RESTRICTIONS AND THE PROCEDURES FOR OBTAINING A PERMIT FOR CONSTRUCTION ACTIVITIES.
9.

PURSUANT TO CHAPTER 6E, HRS, IN THE EVENT ANY ARTIFACTS OR HUMAN REMAINS ARE UNCOVERED DURING CONSTRUCTION OPERATIONS, THE CONTRACTOR SHALL IMMEDIATELY SUSPEND WORK AND NOTIFY THE HONOLULU POLICE DEPARTMENT, THE STATE DEPARTMENT OF LAND AND NATURAL RESOURCES-HISTORIC PRESERVATION DIVISION (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.
10.

CONTRACTOR TO PROVIDE AS-BUILT DRAWINGS.
11.

FOR BENCH MARK, SEE DWG. NO. C-3.
12.

ALL APPLICABLE CONSTRUCTION WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, SEPTEMBER 1986 AND THE STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION, SEPTEMBER 1984, AS AMENDED, OF THE DEPARTMENT OF PUBLIC WORKS, CITY AND COUNTY OF HONOLULU AND THE COUNTIES OF KAUAI, MAUI, AND HAWAII.
13.

FOR PROJECTS ABUTTING STATE HIGHWAYS' RIGHTS-OF-WAY, THE OWNER OR HIS AUTHORIZED REPRESENTATIVE SHALL NOTIFY THE STATE DEPARTMENT OF TRANSPORTATION, HIGHWAYS DIVISION, OAHU DISTRICT, DRAINAGE DISCHARGE UNIT AT 831-6793 FOR AN ASSESSMENT OF STATE HIGHWAYS PERMIT REQUIREMENTS.
14.

ALL EXISTING UTILITIES WHETHER OR NOT SHOWN ON THE PLANS SHALL BE PROTECTED AT ALL TIMES BY THE CONTRACTOR DURING CONSTRUCTION AND ANY DAMAGE TO THEM SHALL BE REPAIRED AND PAID FOR BY THE CONTRACTOR.
15.

WHEN TRENCH EXCAVATION IS ADJACENT TO OR UNDER EXISTING STRUCTURES OR FACILITIES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPERLY SHEETING AND BRACING THE EXCAVATION AND STABILIZING THE EXISTING GROUND TO RENDER IT SAFE AND SECURE FROM POSSIBLE SLIDES, CAVE-INS AND SETTLEMENT AND FOR PROPERLY SUPPORTING EXISTING STRUCTURES AND FACILITIES WITH BEAMS, STRUTS OR UNDERPINNING TO FULLY PROTECT IT FROM DAMAGE.
16.

BACKFILL UNDER EXISTING STRUCTURES OR FACILITIES SHALL BE SANDY OR GRANULAR MATERIAL COMPLETELY PLACED AS SOON AS THE PIPE IS LAID AND TESTED. THE BACKFILL MATERIAL SHALL BE RAMMED WITH PROPER TOOLS UNTIL COMPACTED FROM 90 PERCENT TO 95 PERCENT OF ITS MAXIMUM DENSITY.
17.

ALL WORK CALLED FOR ON THE PLANS AND NOT ITEMIZED OR NOT CALLED FOR BUT REQUIRED FOR THE CONSTRUCTION OF THIS PROJECT, SHALL BE CONSIDERED INCIDENTAL TO UNCLASSIFIED TRENCH EXCAVATION.
18.

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 DESIGNER FOR CLARIFICATION.
19.

THE LOCATION AND DEPTH OF EXISTING UTILITIES WHETHER OR NOT SHOWN ON THE PLANS SHALL BE VERIFIED BY THE CONTRACTOR. EXERCISE PROPER CARE WHEN EXCAVATING IN THE AREA AND PROTECT EXISTING UTILITIES AT ALL TIMES DURING CONSTRUCTION. ANY DAMAGE TO THEM SHALL BE REPAIRED AND PAID FOR BY THE CONTRACTOR.
20.

THE CONTRACTOR SHALL NOTIFY ALL AGENCIES TO VERIFY THE ACTUAL LOCATION OF ALL UTILITIES IN THE PROJECT AREA PRIOR TO EXCAVATING. THE CONTRACTOR SHALL COORDINATE ALL WORK.
21.

THE CONTRACTOR SHALL NOTIFY THE JOINT POLE COMMITTEE TWO (2) WEEKS IN ADVANCE OF ANY RELOCATION OF UTILITY POLE(S) THAT MAY BE NECESSARY.
22.

HOURS OF OPERATIONS SHALL BE MONDAY THROUGH FRIDAY FROM 7:30 AM TO 3:30 PM. NO WORK SHALL BE DONE ON SATURDAYS, SUNDAYS AND HOLIDAYS AT ANY TIME WITHOUT PRIOR NOTICE TO THE DIRECTOR, DPP AND THE OWNER. ANY OVERTIME WORK SHALL BE IN CONFORMANCE WITH THE HAWAII ADMINISTRATIVE RULES (HAR) 11-4.3, "COMMUNITY NOISE CONTROL FOR OAHU".
23.

THE CONTRACTOR SHALL NOT TRENCH MORE THAN 150 FEET IN ADVANCE OF THE PIPE LAYING UNLESS SPECIFICALLY AUTHORIZED BY THE DIRECTOR, DDC AND THE OWNER.

GENERAL CONSTRUCTION NOTES (CONT.)

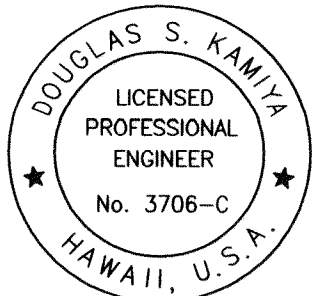
24.

THE CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER AND ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR THE ENGINEER.
25.

TOPOGRAPHIC SURVEY WORK WAS CONDUCTED IN DECEMBER 2005 BY ACE LAND SURVEYING, LLC. ORIGIN OF AZIMUTHS REFERRED TO "KAPUAI NEW". VERTICAL DATUM IS REFERENCED TO MEAN SEA LEVEL. ELEVATION TAKEN FROM CITY AND COUNTY STREET MONUMENT AT INTERSECTION OF KAPOLEI PARKWAY AND KAMAHA AVENUE.

ARCHAEOLOGICAL NOTE

IF DURING CONSTRUCTION, ANY PREVIOUSLY UNIDENTIFIED SITES OR REMAINS (SUCH AS ARTIFACTS, SHELL, BONE, OR CHARCOAL DEPOSITS, HUMAN BURIALS, ROCK OR CORAL ALIGNMENTS, PAVINGS, OR WALLS) ARE ENCOUNTERED, THE CONTRACTOR SHALL IMMEDIATELY SUSPEND WORK AND NOTIFY THE HONOLULU POLICE DEPARTMENT AND THE STATE DEPARTMENT OF LAND AND NATURAL RESOURCES-HISTORIC PRESERVATION DIVISION (693-8015). WORK IN THE IMMEDIATE AREA SHALL BE STOPPED UNTIL THE HISTORIC PRESERVATION DIVISION IS ABLE TO ASSESS THE IMPACT AND MAKE FURTHER RECOMMENDATIONS FOR MITIGATIVE ACTIVITY. IN ADDITION, FOR NON-CITY PROJECTS, THE CONTRACTOR SHALL INFORM THE THE CIVIL ENGINEERING BRANCH, D.P.P. (768-8084); AND FOR CITY PROJECTS, NOTIFY THE RESPONSIBLE CITY AGENCY.



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/12

REVISION DATE	DESCRIPTION	MADE BY	APPROVED
<div><div></div><div>Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1100 Alakea Street, Sixth Floor Honolulu, Hawaii</div></div>			
EAST KAPOLEI II OFFSITE DRAINAGE SYSTEM EAST DETENTION BASIN SPILLWAY GRADING AND NON-POTABLE WATERLINE RELOCATION IN EWA VILLAGES GOLF COURSE HONOLULU, EWA, OAHU, HAWAII (DPP SUBD. FILE NO. 2008/SUB-21) OWNER: DEPARTMENT OF ENTERPRISE SERVICES DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17.75 & PORTION 110			
GENERAL NOTES			
DRAWN BY: LYL	ENGINEER: LYT	CHECKED BY: DSX	
APPROVED:			
<div><div></div><div>8/16/10 DATE</div></div> <div><div>DSX, CIVIL ENGINEERING BRANCH, D.P.P.</div><div>FILE</div></div>			

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“RECYCLED” WATER NOTES

1. 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 1991, AND ALL SUBSEQUENT AMENDMENTS AND ADDITIONS.
2. ALL PLANS APPROVED BY THE BOARD OF WATER SUPPLY ARE BASED SOLELY ON THE ADEQUACY OF THE WATER SUPPLY. ALL OTHER FEATURES OF THE WATER SYSTEM, SUCH AS LINES, GRADES, FITTINGS, DRAINAGE, ETC., AND OTHER FEATURES OF IMPROVEMENTS SHALL NOT BE THE RESPONSIBILITY OF THE BOARD OF WATER SUPPLY.
3. TEST PRESSURE SHALL BE 150 PSI. DURING THE 30-MINUTE PRESSURE TEST, THE PRESSURE SHALL NOT DROP MORE THAN 10 PSI.
4. THE CONTRACTOR SHALL NOTIFY BWS CAPITAL PROJECTS DIVISION, CONSTRUCTION SECTION IN WRITING AND SUBMIT SIX (6) SETS OF APPROVED CONSTRUCTION PLANS ONE WEEK PRIOR TO COMMENCING WORK ON THE WATER SYSTEM.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL WATER LINES DURING CONSTRUCTION. THE CONTRACTOR SHALL BE ESPECIALLY CAREFUL WHEN EXCAVATING BEHIND WATER LINES, TEES AND BENDS WHEREVER THERE IS A POSSIBILITY OF WATER LINE MOVEMENT DUE TO THE REMOVAL OF THE SUPPORTING EARTH BEYOND THE EXISTING REACTION BLOCKS. THE CONTRACTOR SHALL TAKE WHATEVER MEASURE NECESSARY TO PROTECT THE WATER LINES, SUCH AS CONSTRUCTING SPECIAL REACTION BLOCKS (WITH BWS APPROVAL) AND/OR MODIFYING HIS CONSTRUCTION METHOD.
6. THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITIES AND STRUCTURES AS SHOWN ON THE PLANS ARE FROM THE LATEST AVAILABLE DATA BUT IS NOT GUARANTEED AS TO THE ACCURACY OR THE ENCOUNTERING OF OTHER OBSTACLES DURING THE COURSE OF THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE AND SHALL PAY FOR ALL DAMAGES TO EXISTING UTILITIES. THE CONTRACTOR SHALL NOT ASSUME THAT WHERE NO UTILITIES ARE SHOWN, THAT NONE EXIST.
7. 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.
8. 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.
9. RE-APPROVAL SHALL BE REQUIRED IF THIS PROJECT IS NOT UNDER CONSTRUCTION WITHIN A PERIOD OF TWO YEARS.
10. THE CONTRACTOR/DEVELOPER SHALL OBTAIN A NPDES PERMIT PRIOR TO CHLORINATION AND/OR DEWATERING. A COPY OF THE PERMIT SHALL BE SUBMITTED TO THE BOARD OF WATER SUPPLY, CAPITAL PROJECTS DIVISION, CONSTRUCTION SECTION.
11. PIPE CUSHION SHALL BE OF HIGH RESISTIVTY 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 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 (PCB).
12. 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 THE 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 VINLY-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.
13. BALL CORP AND BALL STOP SHALL BE USED IN LIEU OF A CORPORATION STOP AND STOPCOCK RESPECTIVELY.
14. FOR CUT-IN CONNECTION TO EXISTING: "ALL WATERLINE CONSTRUCTION REQUIRING SHUTDOWN CONNECTION SHALL BE SCHEDULED WITH RECYCLED SYSTEM OPERATORS AT SIX (6) HOURS MAXIMUM DOWNTIME"
15. POLYVINYL CHLORIDE (PVC) PIPES SHALL BE CLASS 150. ALL DUCTILE IRON VALVES AND METALLIC FITTINGS SHALL BE WRAPPED WITH TWO LAYERS OF 8 MIL POLYETHYLENE WRAP. NO BENDING OF POLYVINYL CHLORIDE PIPES SHALL BE PERMITTED. THE INSTALLATION OF PVC PIPE, ACCORDING TO THE PLANS AND SPECIFICATIONS AS BID ON BY THE CONTRACTOR, MAY REQUIRE ADDITIONAL DESIGN WORK, ADDITIONAL FITTINGS AND SPECIAL COUPLINGS SHALL BE CONSIDERED INCIDENTAL TO THE UNIT PRICE BID IN THE PROPOSAL FOR PVC PIPE. ANY ADDITIONAL DESIGN WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
16. ALL POLYVINYL CHLORIDE (PVC) PIPE DEFLECTIONS SHALL BE ACCOMPLISHED ONLY BY THE USE OF SPECIAL PVC DEFLECTION COUPLINGS. DEFLECTION AROUND CURVES SHALL BE ACCOMPLISHED ONLY BY THE USE OF PVC DEFLECTION COUPLINGS.
17. THE CONTRACTOR SHALL FURNISH AND INSTALL POLYETHYLENE WRAP, 3 FEET MINIMUM AT ALL TAPS (FOR DI PIPE AND COPPER LATERAL COMBINATION ONLY) AND PLASTIC PIPE (PE TUBING) 3 FEET LONG AFTER METERS FOR ALL SERVICE LATERAL CONNECTIONS.
18. ALL SECTIONS OF THE WATER MAIN REQUIRING REINFORCED CONCRETE JACKETING SHALL BE DUCTILE IRON PIPE CLASS 52 WITH DUCTILE IRON FITTINGS OR CONCRETE CYLINDER PIPE AND FITTINGS.
19. BOSSED TEES REQUIRED FOR ALL LATERAL AND ARV CONNECTIONS TO PVC MAINS.
20. THE CONTRACTOR SHALL INSTALL ELECTRONIC MARKERS TO ALL MAINS AND TEST THE ELECTRONIC MARKERS PRIOR TO INSTALLATIONS TO VERIFY PROPER OPERATION. BWS PERSONNEL SHALL VERIFY THE NUMBER AND LOCATIONS OF PLACED ELECTRONIC MARKERS BEFORE FINAL PAVING OF THE PROJECT.

“RECYCLED” WATER NOTES (CONT.)

21. PRIOR TO THE PVC FITTING INSTALLATION, THE CONTRACTOR SHALL SUBMIT FOR APPROVAL BY THE BWS, THE MANUFACTURER'S CERTIFICATION THAT ALL PVC FITTINGS CONFORM TO AWWA C-907.
22. ALL CLASS 150 PVC PIPES WITH A DIAMETER OF 16" TO 24" SHALL BE IN COMPLIANCE WITH AWWA C-905 AND SHALL HAVE A DIAMETER TO THICKNESS RATIO (DR) OF 18.
23. PIPES AND FITTINGS:

A. PVC PIPE SHALL COMPLY WITH AWWA C900 AND BE DR18 FOR SIZES 4"-12" AND SHALL COMPLY WITH AWWA C905 AND BE DR18 FOR SIZES 14"-30".

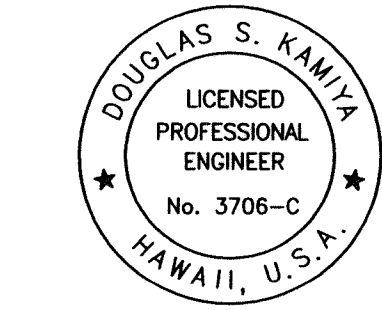
PVC PIPES SHALL BE COLORED PURPLE, PANTONE 522 OR EQUAL. THE PIPES SHALL BE INTEGRALLY STAMPED/MARKED "CAUTION: RECYCLED WATER – DO NOT DRINK". THE STAMPING/MARKING SHALL BE ON THE TOP OF THE PIPE.

PURPLE IDENTIFICATION TAPE, COLOR INDEX 77742 VIOLET #16, PANTONE 512 OR EQUAL SHALL BE INSTALLED ON TOP OF CONCRETE JACKETS LONGITUDINALLY AND SHALL BE CENTERED. THE IDENTIFICATION TAPE SHALL BE PREPARED WITH WHITE OR BLACK PRINTING ON A PURPLE FIELD CONFORMING TO ABOVE COLOR, HAVING THE WORDS "CAUTION – RECYCLED WATER – DO NOT DRINK". THE WIDTH OF THE TAPE SHALL BE AT LEAST THREE (3) INCHES IN WIDTH. THE TAPE SHALL BE CONTINUOUS IN THEIR COVERAGE ON THE PIPE AND SHALL BE FASTENED TO THE PIPE NO MORE THAN TEN (10) FEET APART.

B. VALVES AND FITTINGS: DUCTILE IRON FITTINGS SHALL COMPLY WITH AWWA C110, AWWA C11, AND AWWA C115. VALVES AND FITTINGS SHALL BE COLORED PURPLE, COLOR INDEX 77742, VIOLET #16, PANTONE 512 OR EQUAL. VALVES AND FITTING INTERIORS SHALL BE LINED WITH POLYETHELENE COMPLYING WITH ASTM D 1248. LINING SHALL BE 40 MILS THICK (NOMINAL): 35 MILS MINIMUM.

C. DUCTILE IRON PIPES SHALL BE CLASS 52, DUTILE IRON PIPES SHALL BE COLORED PURPLE, COLOR INDEX 77742, PANTONE 512 OR EQUAL. DUCTILE IRON PIPE INTERIORS SHALL BE LINED WITH POLYETHYLENE COMPLYING WITH ASTM D 1248. LINING SHALL BE 40 MILS THICK (NOMINAL): 35 MILS MINIMUM.

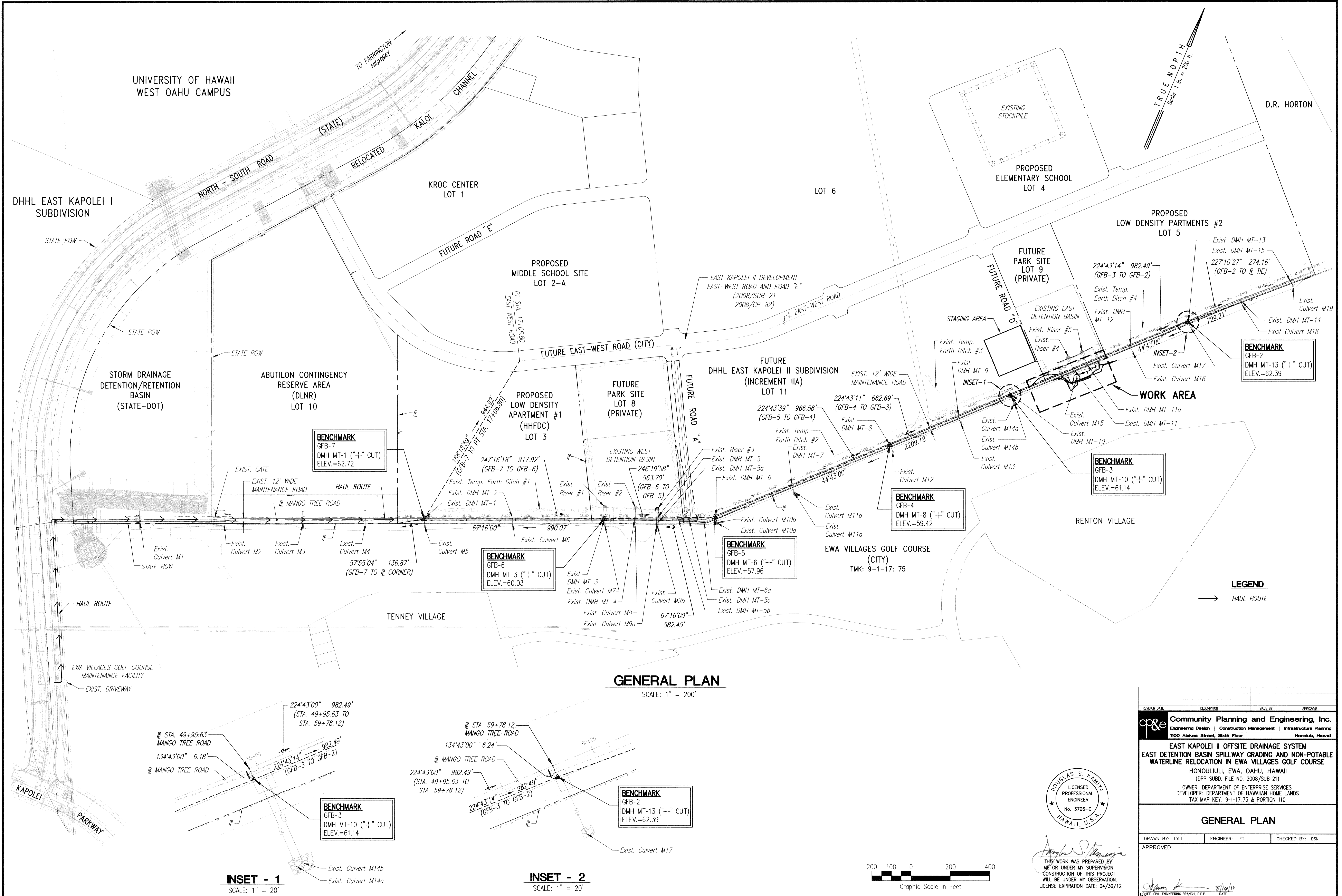
ALL DUCTILE IRON PIPES, VALVES AND FITTINGS SHALL BE WRAPPED WITH TWO LAYERS OF 8 MILS POLYETHYLENE WRAP. POLYWRAP SHALL BE COLORED PURPLE, COLOR INDEX 77742, VIOLET #16, PANTONE 512 OR EQUAL. ATLERNATIVELY, INSTEAD OF PURPLE POLYWRAP, PURPLE IDENTIFICATION TAPE CAN SUPPLEMENT POLYWRAP PROVIDED IT COMPLIES WITH REQUIREMENTS LISTED UNDER PVC PIPE. PAYMENT FOR THE EXTERIOR POLYETHYLENE WRAP SHALL BE INCIDENTAL TO THE PRICE FOR D.I. PIPE, VALVES AND FITTINGS.
24. MATERIALS FOR FRAMES AND COVERS OF MANHOLES AND VALVE BOXES SHALL CONFORM TO THE REQUIREMENTS SPECIFIED IN THE WATER SYSTEM STANDARD. ALL CASTINGS WITH WORDING "WATER" SHALL BE MODIFIED TO READ "RECYCLED WATER". THE COVERS SHALL BE PROVIDED WITH A 24-INCH LONG GALVANIZED STEEL COIL CHAIN, 3/16-INCH WITH 12.5 LINKS PER FOOT, AND WELDED TO THE FRAME AND COVER.
25. ALL ABOVE GROUND ITEMS, INTERIORS OF VAULTS AND BOXES AND ACCESSIBLE ITEMS SHALL BE COLORED PURPLE, COLOR INDEX 77742 VIOLET #16, PANTONE 512 OR EQUAL. THESE ITEMS INCLUDE BUT ARE NOT LIMITED TO: MANHOLE COVERS AND FRAMES, VALVE COVERS AND FRAMES, METER BOX COVERS AND FRAMES, FIRE HYDRANTS, WATER METERS, AND BACKFLOW DEVICES.
26. INTERCONNECTION BETWEEN IRRIGATION/NON-POTABLE AND POTABLE MAINS SHALL NOT BE ALLOWED.
27. HORIZONTAL CLEARANCE OF 3- FEET AND VERTICAL CLEARANCES OF 6 INCHES SHALL BE MAINTAINED BETWEEN IRRIGATION/NON-POTABLE AND OTHER PIPELINES.



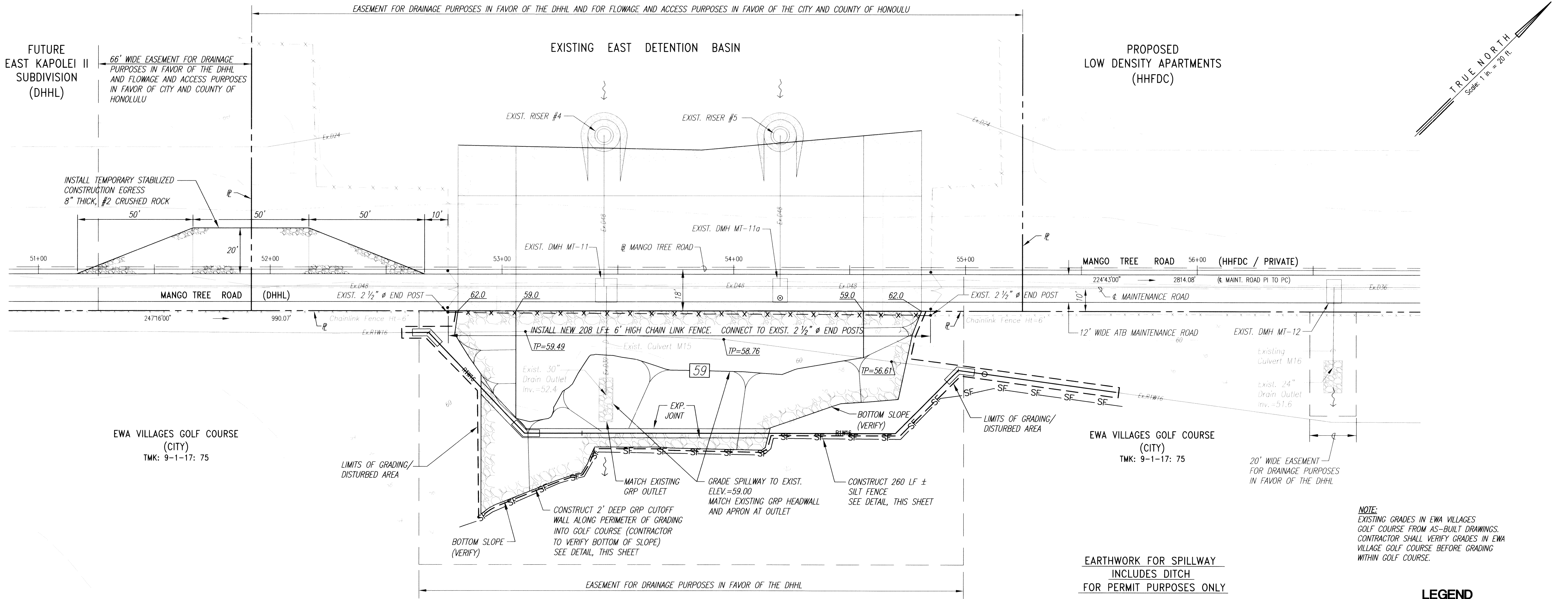
Douglas S. Kanika
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ME OR UNDER MY SUPERVISION.
CONSTRUCTION OF THIS PROJECT
WILL BE UNDER MY OBSERVATION.
LICENSE EXPIRATION DATE: 04/30/12

REVISION DATE	DESCRIPTION	MADE BY	APPROVED
<div><div>cp&e</div><div>Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1100 Alakea Street, Sixth Floor Honolulu, Hawaii</div></div>			
EAST KAPOLEI II OFFSITE DRAINAGE SYSTEM EAST DETENTION BASIN SPILLWAY GRADING AND NON-POTABLE WATERLINE RELOCATION IN EWA VILLAGES GOLF COURSE HONOLULU, EWA, OAHU, HAWAII (DPP SUBD. FILE NO. 2008/SUB-21) OWNER: DEPARTMENT OF ENTERPRISE SERVICES DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17:75 & PORTION 110			
WATER NOTES			
DRAWN BY: LYL	ENGINEER: LYT	CHECKED BY: DSK	
APPROVED: <div><i>Domina K. Pao</i> 8/24/10 CHIEF, CAPITAL PROJECT DIVISION, BWS, DC DATE</div>			
FILE	POCKET	FOLDER	NO.

P:\Land Projects\DHHL East Kapolei II\Construction Drawings\Offsite Drainage\Waterline Relocation\Government Review #2\General Layout Plan - 1.dwg, General Layout Plan - 1, 8/3/2010 8:17:01 AM, 1:1



P:\Land Projects\DHHL East Kapolei II\Construction Drawings\Offsite Drainage\Waterline Relocation\Government Review #2\Grading Plan and GRP Detail (GR42).dwg, Grading Plan, 8/6/2010 2:17:36 PM, 1:1



EARTHWORK FOR SPILLWAY
INCLUDES DITCH
FOR PERMIT PURPOSES ONLY

AREA TO BE GRADED/DISTURBED 0.30 ACS.
EXCAVATION 321 C.Y.
EMBANKMENT 0 C.Y.

NOTE:
EXISTING GRADES IN EWA VILLAGES GOLF COURSE FROM AS-BUILT DRAWINGS. CONTRACTOR SHALL VERIFY GRADES IN EWA VILLAGE GOLF COURSE BEFORE GRADING WITHIN GOLF COURSE.

LEGEND

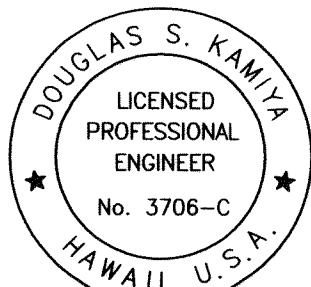
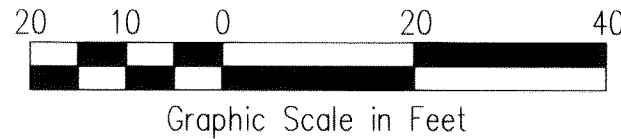
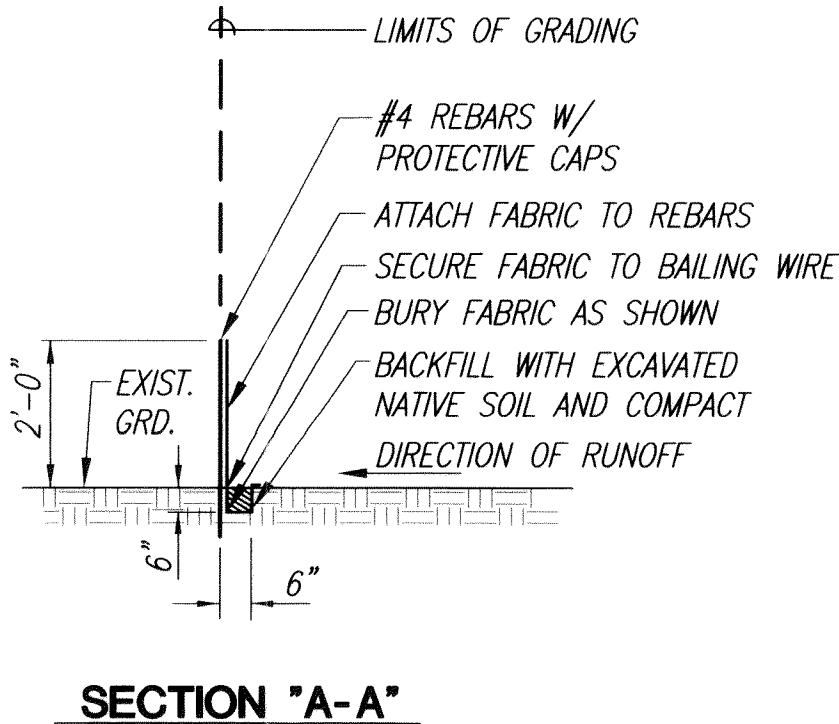
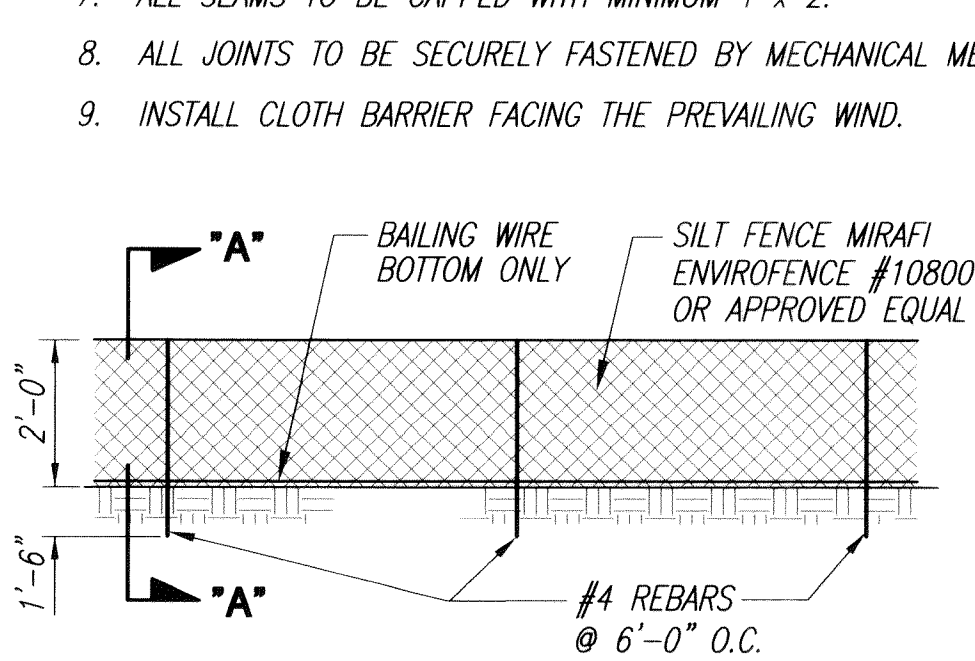
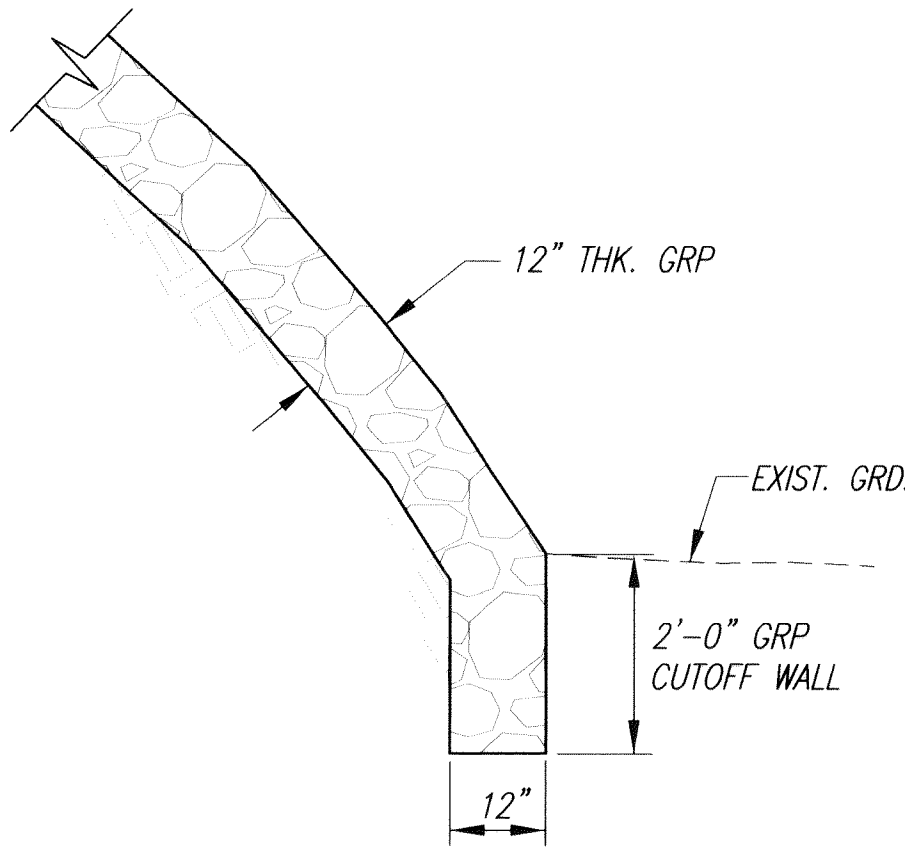
- 65.0 FINISHED SPOT ELEVATION
- 56--- EXISTING CONTOUR
- [59] FINISHED CONTOUR
- ~> SURFACE WATER FLOW
- Ex.D24 EXISTING DRAIN
- Ex.H1W16 EXISTING NON-POTABLE WATER LINE
- H1W16 NEW NON-POTABLE WATER LINE
- LIMITS OF GRADING/DISTURBED AREA
- PROPERTY LINE
- SF SILT FENCE
- TP TOP OF PIPE

NOTES:

- CLOTH BARRIER TO BE MIRAFI 140N OR APPROVED EQUAL.
- LUMBER SIZES ARE NOMINAL INCHES.
- 1 x 2 CLOTH BARRIER CAPS TO BE NAILED 12" O.C.
- BURLAP IS NOT ACCEPTABLE AS THE CLOTH BARRIER.
- CLOTH TO HAVE NO HORIZONTAL SEAMS.
- VERTICAL SEAMS TO BE MADE OVER UPRIGHTS ONLY.
- ALL SEAMS TO BE CAPPED WITH MINIMUM 1 x 2.
- ALL JOINTS TO BE SECURELY FASTENED BY MECHANICAL MEANS.
- INSTALL CLOTH BARRIER FACING THE PREVAILING WIND.

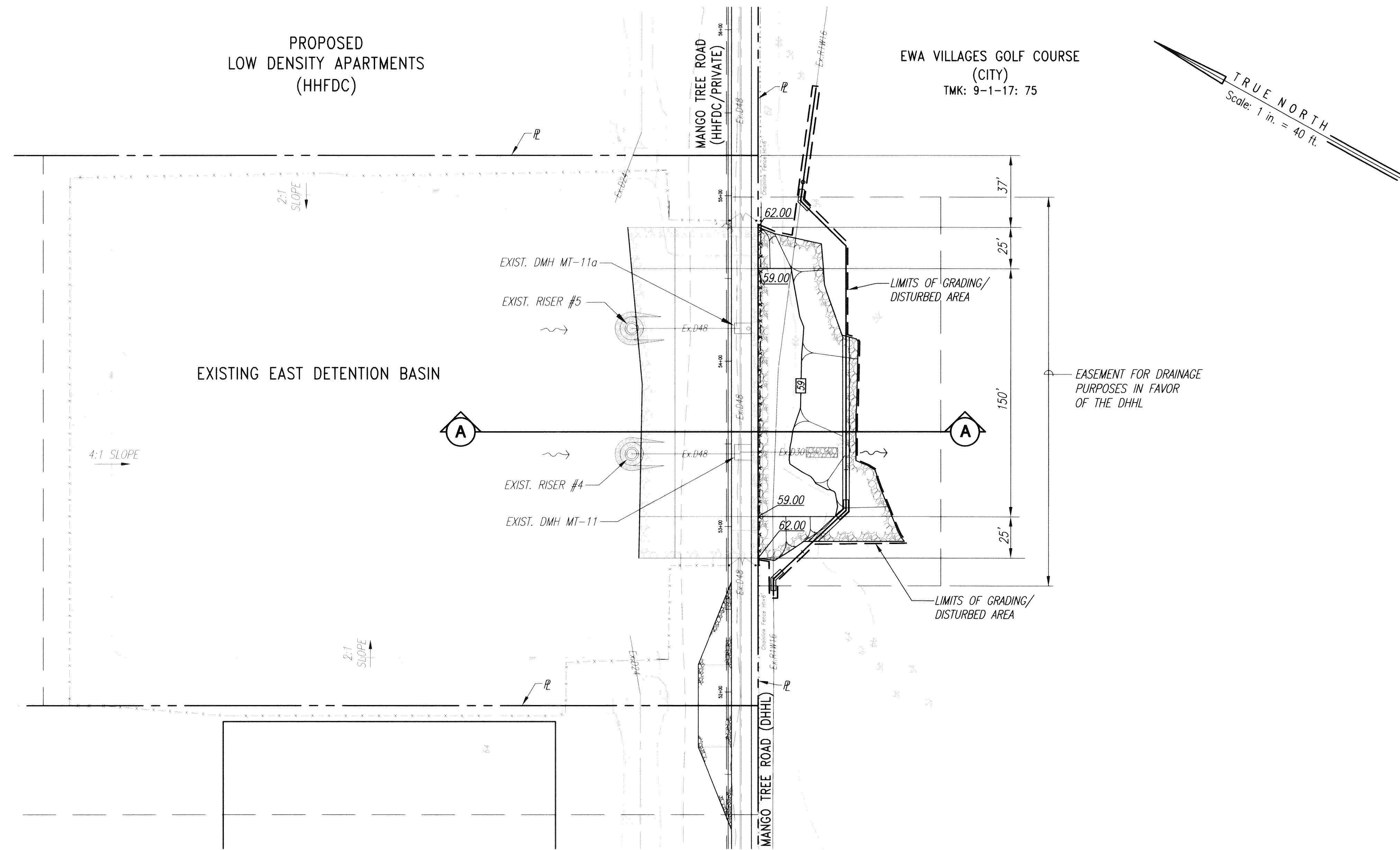
CONSTRUCTION BMPS

- THE FOLLOWING SPECIAL CONDITIONS APPLY TO ALL LAND DISTURBANCE WORK CONDUCTED UNDER THE GENERAL PERMIT:
 - CONSTRUCTION MANAGEMENT TECHNIQUES INCLUDE:
 - ALL CONTROL MEASURES SHALL BE CHECKED AND REPAIRED, AS NECESSARY, WEEKLY IN DRY PERIODS AND WITHIN 24-HOUR PERIOD. DURING PROLONGED RAINFALL, DAILY CHECKING IS NECESSARY. THE PERMITTEE SHALL MAINTAIN RECORDS OF CHECKS AND REPAIRS.
 - A SPECIFIC INDIVIDUAL SHALL BE DESIGNATED TO BE RESPONSIBLE FOR EROSION AND SEDIMENT CONTROLS ON EACH PROJECT SITE.
 - STRUCTURAL CONTROLS INCLUDE:
 - ALL SURFACE WATER FLOWING TOWARD THE CONSTRUCTION AREA SHALL BE DIVERTED BY USING BERMS, CHANNELS, SEDIMENT TRAPS, AND OTHER APPROPRIATE CONTROL MEASURES, AS PRACTICAL.
 - EROSION CONTROL MEASURES SHALL BE DESIGNED ACCORDING TO THE SIZE OF DISTURBED OR DRAINAGE AREAS, TO DETAIN RUNOFF AND TRAP SEDIMENT.
 - WATER MUST BE DISCHARGED THROUGH A PIPE OR LINED CHANNEL SO THAT THE DISCHARGE DOES NOT CAUSE EROSION.
 - GRASS ALL EXPOSED AREAS AT FINISH GRADE.
 - APPLY EARTHGUARD OR APPROVED EQUAL (CHEMICAL STABILIZATION) TO ALL EXPOSED AREAS AFTER EACH DAY OF GRADING.



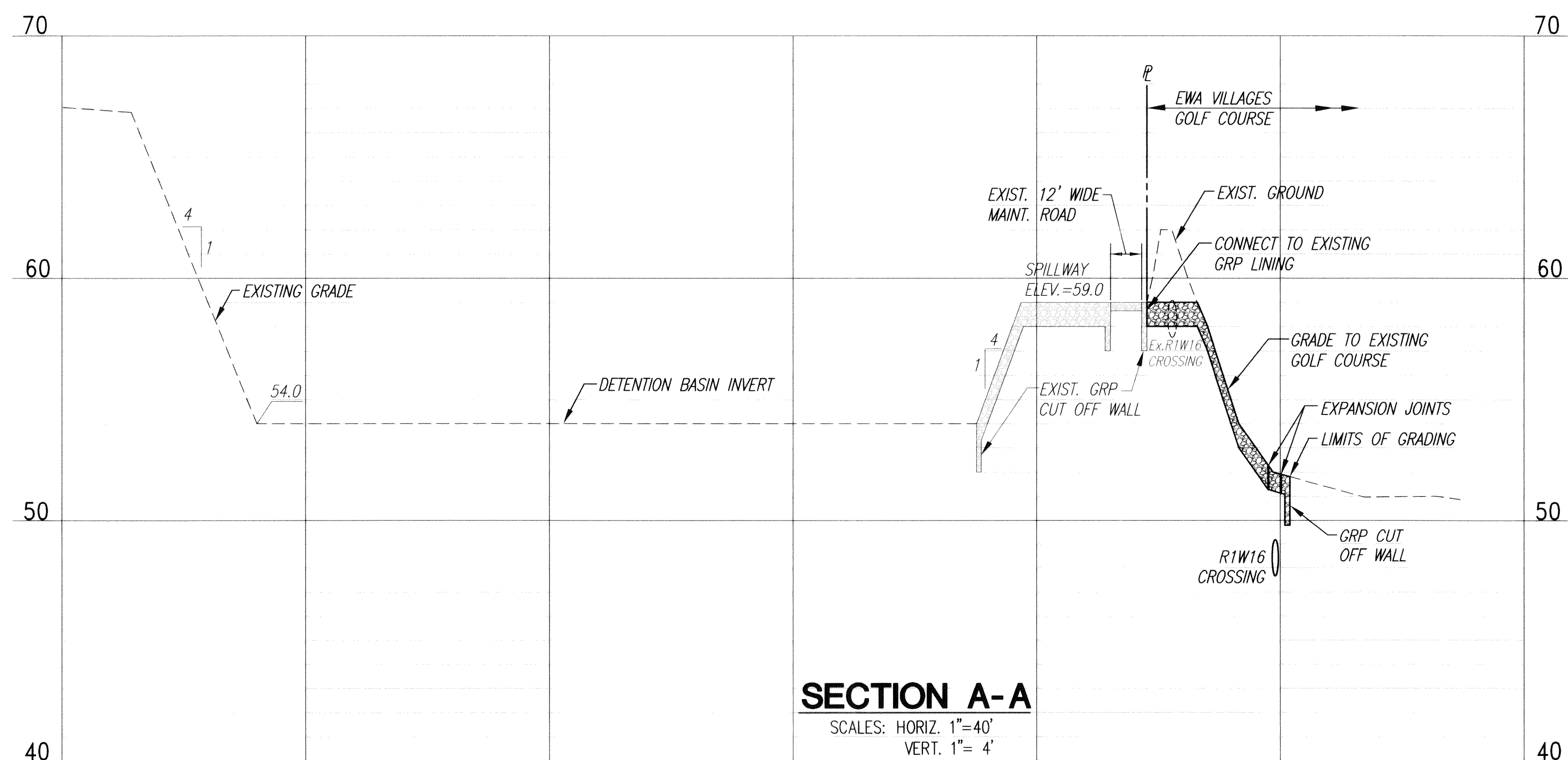
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/12

REVISION DATE:	DESCRIPTION:	MADE BY:	APPROVED:
Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1100 Alakea Street, Sixth Floor Honolulu, Hawaii			
EAST KAPOLEI II OFFSITE DRAINAGE SYSTEM EAST DETENTION BASIN SPILLWAY GRADING AND NON-POTABLE WATERLINE RELOCATION IN EWA VILLAGES GOLF COURSE HONOLULU, EWA, OAHU, HAWAII (DPP SUBD. FILE NO. 2008/SUB-21) OWNER: DEPARTMENT OF ENTERPRISE SERVICES DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: 75 & PORTION 110			
GRADING AND EROSION CONTROL PLAN AND GRP DETAIL			
DRAWN BY: LYL	ENGINEER: LYT	CHECKED BY: DSK	
APPROVED: [Signature] 8/16/10 [Signature] 8/24/10 DATE DATE			
FILE	POCKET	FOLDER	NO.



SPILLWAY PLAN






SCALE: 1"=40'

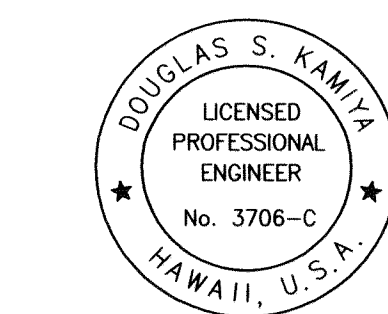


SECTION A-A
 SCALES: HORIZ. 1"=40'
 VERT. 1"= 4'

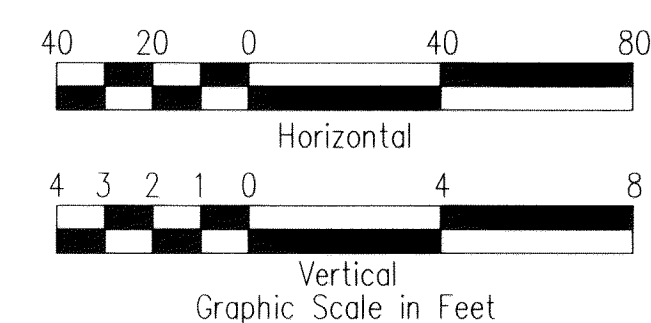
NOTE:
EXISTING GRADES IN EWA VILLAGES
GOLF COURSE FROM AS-BUILT DRAWINGS.
CONTRACTOR SHALL VERIFY GRADES IN EWA
VILLAGE GOLF COURSE BEFORE GRADING
WITHIN GOLF COURSE.

LEGEND

REVISION DATE	DESCRIPTION	MADE BY	APPROVED
 Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1100 Alakea Street, Sixth Floor Honolulu, Hawaii			
EAST KAPOLEI II OFFSITE DRAINAGE SYSTEM EAST TENSION BASIN SPILLWAY GRADING AND NON-POTABLE WATERLINE RELATIONSHIP IN EWA VILLAGES GOLF COURSE			
HONOLULU, EWA, OAHU, HAWAII (DPP SUBD. FILE NO. 2008/SUB-21)			
OWNER: DEPARTMENT OF ENTERPRISE SERVICES DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17:75 & PORTION 110			
SPILLWAY PLAN AND SECTION A-A			
DRAWN BY: LYL.T	ENGINEER: LYT	CHECKED BY: DSK	
APPROVED:			
 			
CHIEF, CIVIL ENGINEERING BRANCH, D.P.P.		DATE	
 			
CHIEF, CAPITAL PROJECT DIVISION, H.B.S.		DATE	

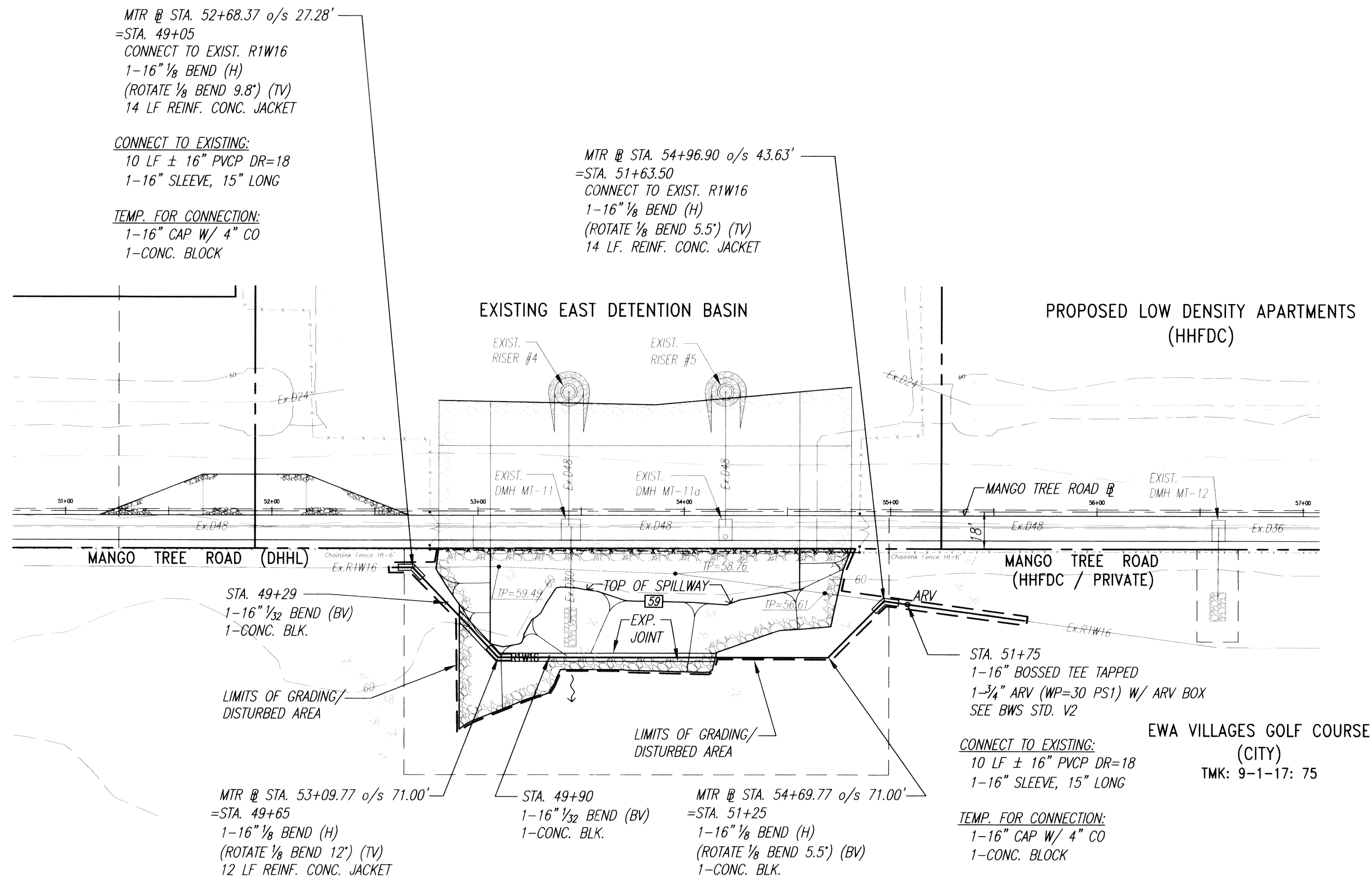
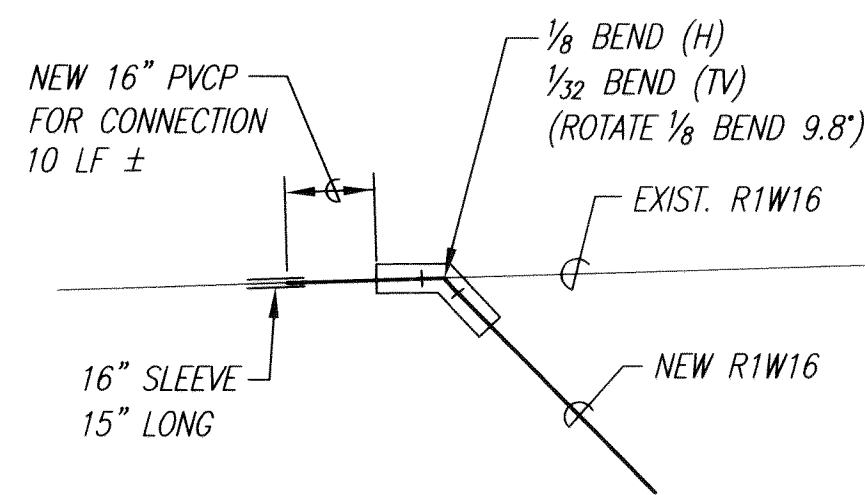


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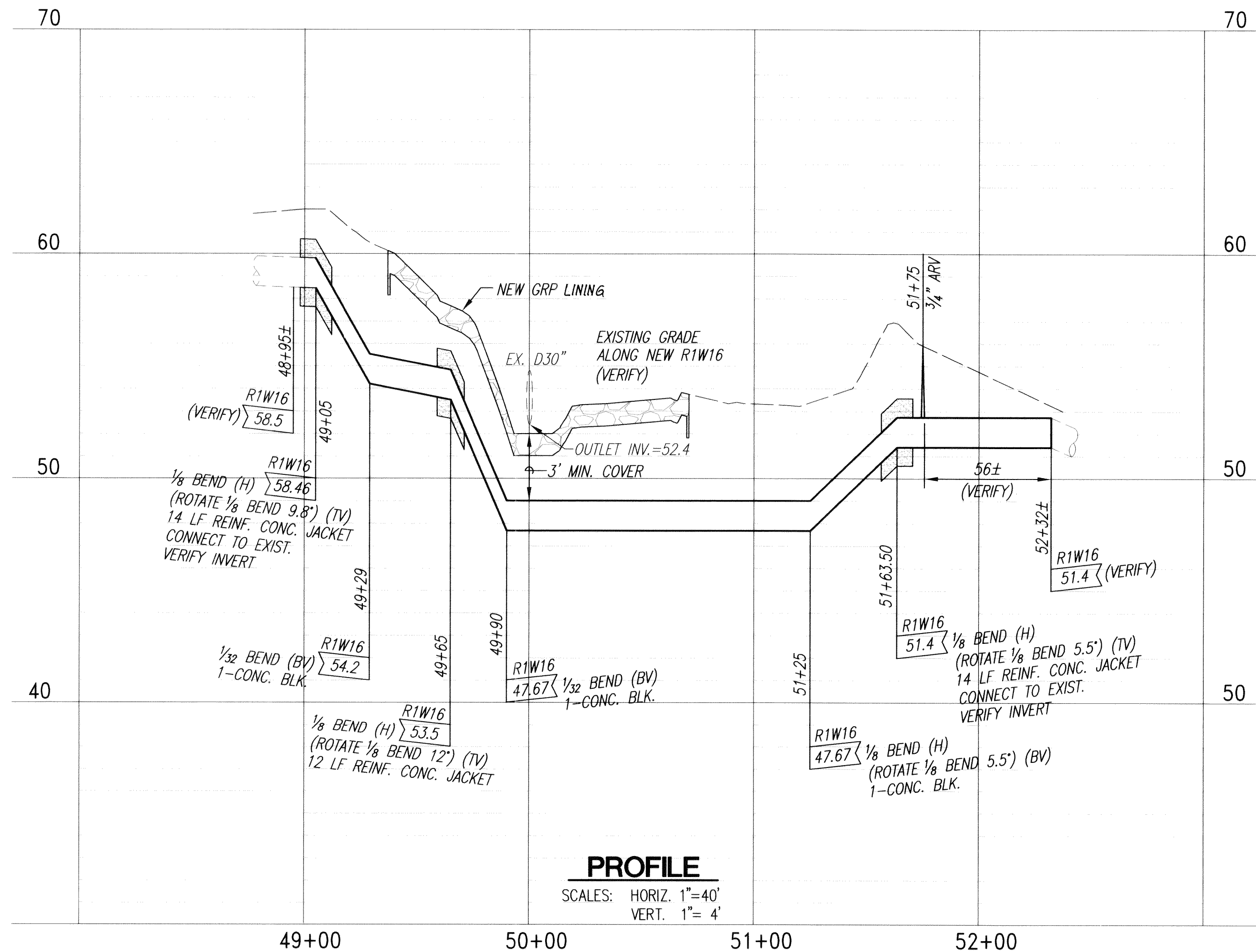


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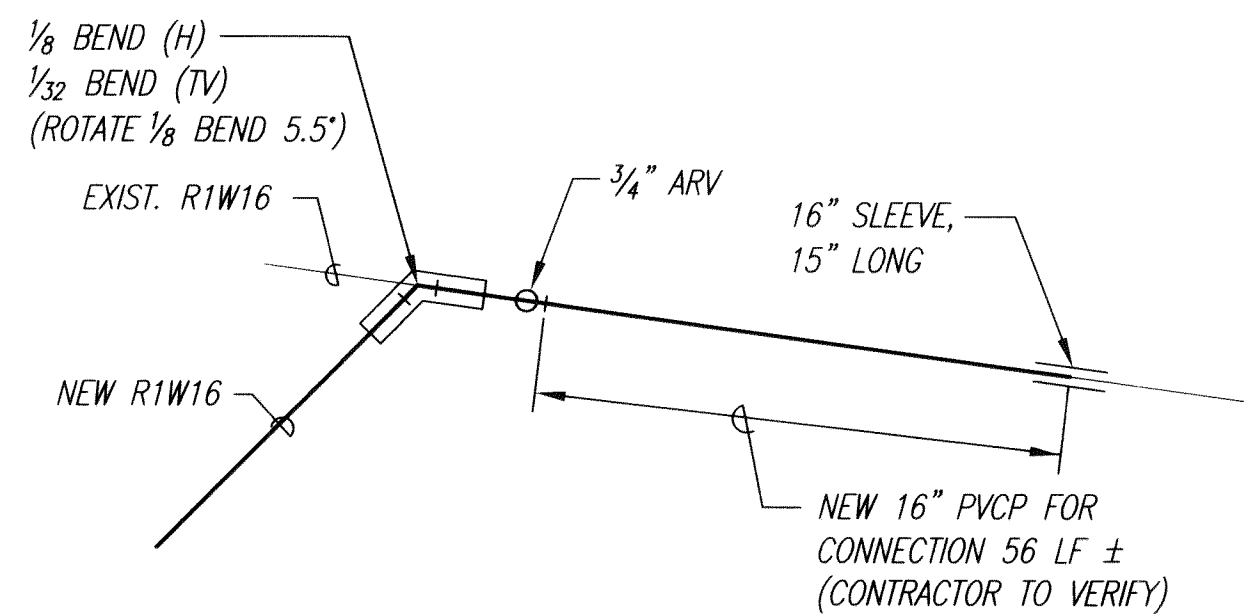
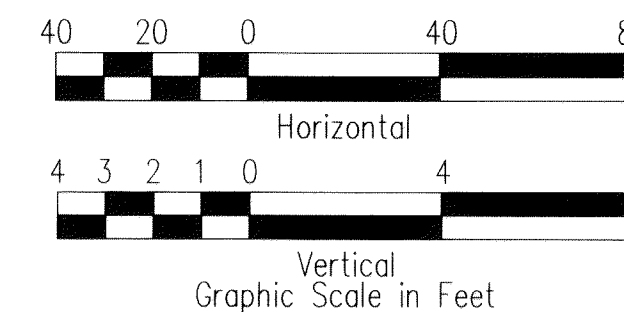
STA. 49+05 CONNECTION SCHEMATIC
NOT TO SCALE



PLAN
SCALE: 1"=40'



PROFILE
SCALES: HORIZ. 1"=40'
VERT. 1"= 4'



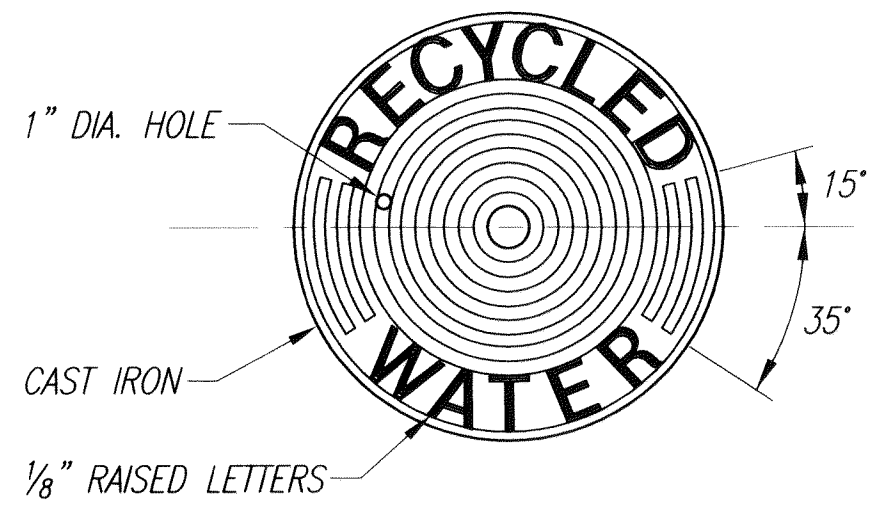
STA. 51+63.50 CONNECTION SCHEMATIC
NOT TO SCALE

NOTE:
EXISTING GRADES IN EWA VILLAGES GOLF COURSE FROM AS-BUILT DRAWINGS. CONTRACTOR SHALL VERIFY GRADES IN EWA VILLAGE GOLF COURSE BEFORE GRADING WITHIN GOLF COURSE.

LEGEND

- 50 --- EXISTING CONTOUR
- 59 --- FINISHED CONTOUR
- SURFACE WATER FLOW
- EX-D24 EXISTING DRAIN
- EX-R1W16 EXISTING NON-POTABLE WATER LINE
- R1W16 NEW NON-POTABLE WATER LINE
- LIMITS OF GRADING/DISTURBED AREA
- PROPERTY LINE
- IP TOP OF PIPE

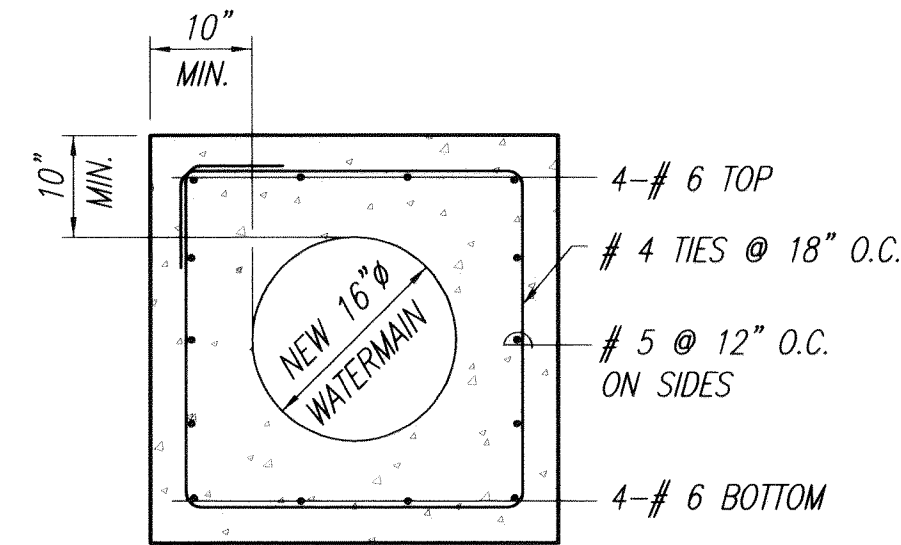
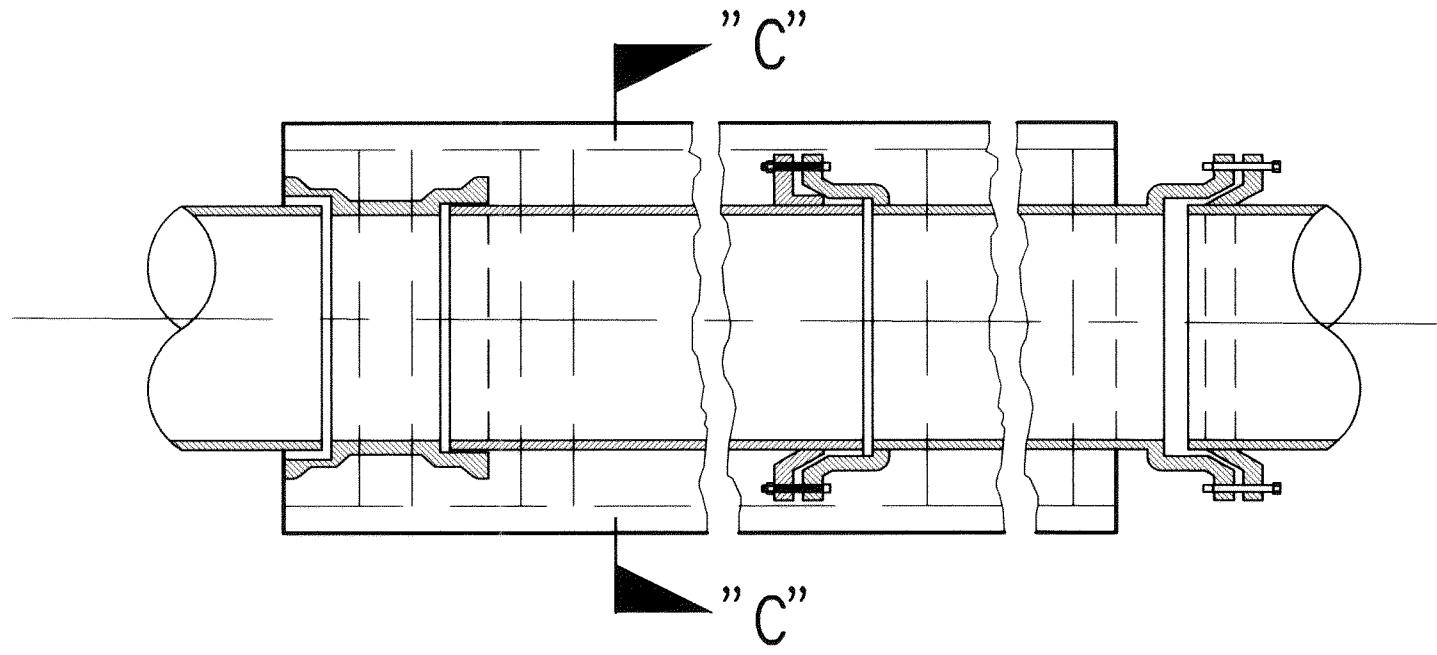
REVISION DATE	DESCRIPTION	MADE BY	APPROVED
Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1100 Alekua Street, Sixth Floor Honolulu, Hawaii			
EAST KAPOLEI II OFFSITE DRAINAGE SYSTEM EAST DETENTION BASIN SPILLWAY GRADING AND NON-POTABLE WATERLINE RELOCATION IN EWA VILLAGES GOLF COURSE HONOLULU, EWA, OAHU, HAWAII (OPP SUBD. FILE NO. 2008/SUB-21) OWNER: DEPARTMENT OF ENTERPRISE SERVICES DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17:75 & PORTION 110			
PLAN AND PROFILE RELOCATION OF EXISTING R1W16			
DRAWN BY: LYL	ENGINEER: DSK, LYT	CHECKED BY: DSK	
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24" MANHOLE COVER

NOT TO SCALE

- NOTES:**
- SEE BWS STANDARD DETAIL MH-17 FOR CASTING DIMENSIONS AND TABLE 200-9 FOR MINIMUM WEIGHTS.
 - ALL MANHOLE AND VALVE BOX COVERS SHALL BE PAINTED PURPLE, COLOR INDEX 77742 VIOLET #16, PANTONE 512 OR EQUAL.

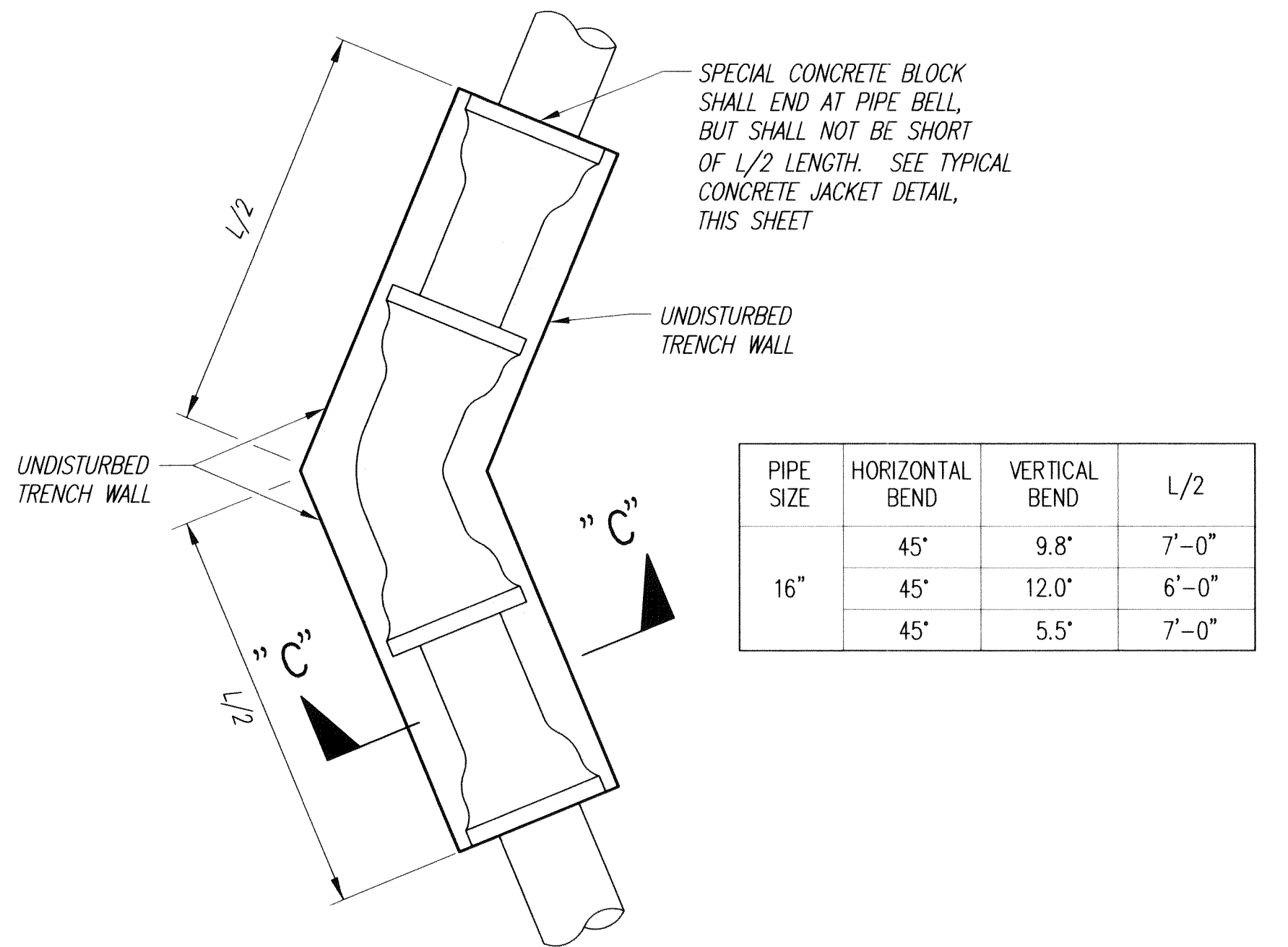


SECTION "C-C"

- NOTES:**
- WHEREVER CONSTRUCTION JOINTS ARE REQUIRED 6" RUBBER OR NEOPRENE WATERSTOPS SHALL BE INSTALLED WATERSTOPS SHALL BE OF THE TYPE SPECIFIED AND MANUFACTURED BE THE KIRKHILL RUBBER COMPANY, OR APPROVED EQUAL.
 - CONCRETE SHALL BE DWS 2500.

TYPICAL CONCRETE JACKET DETAIL

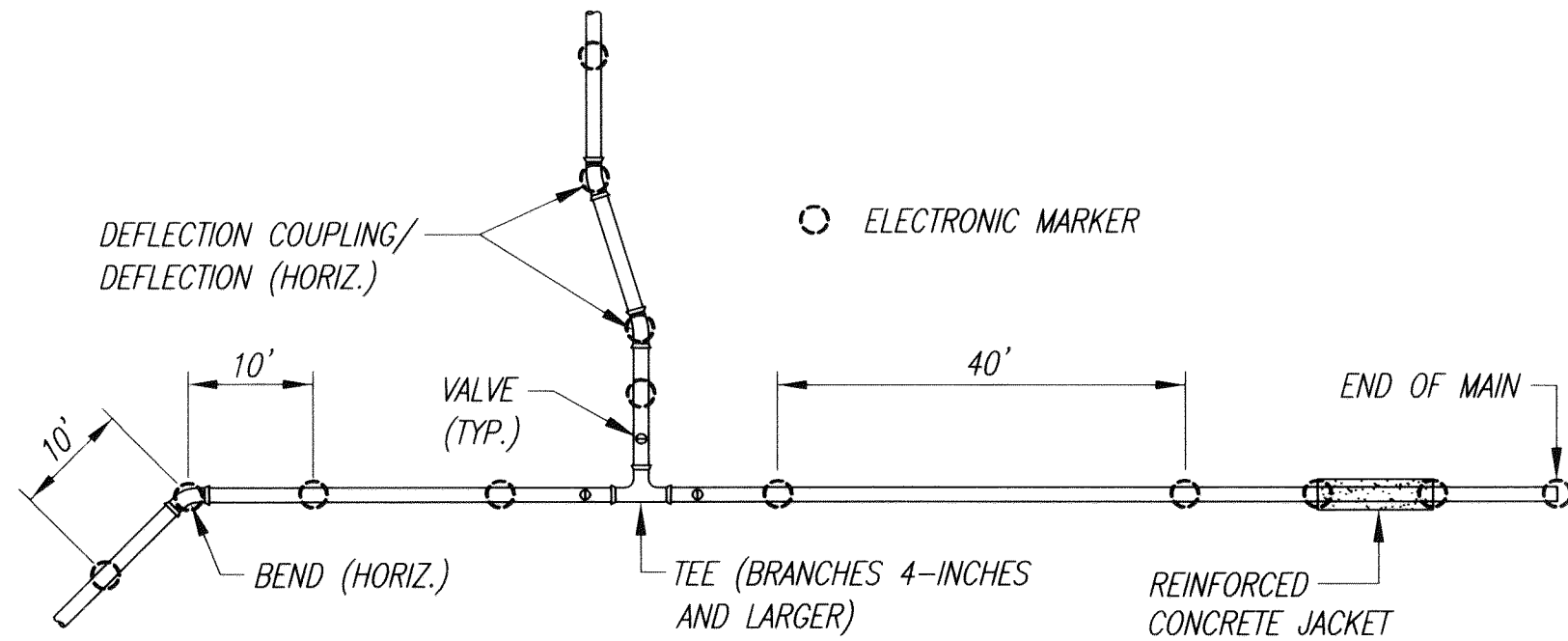
NOT TO SCALE



PLAN

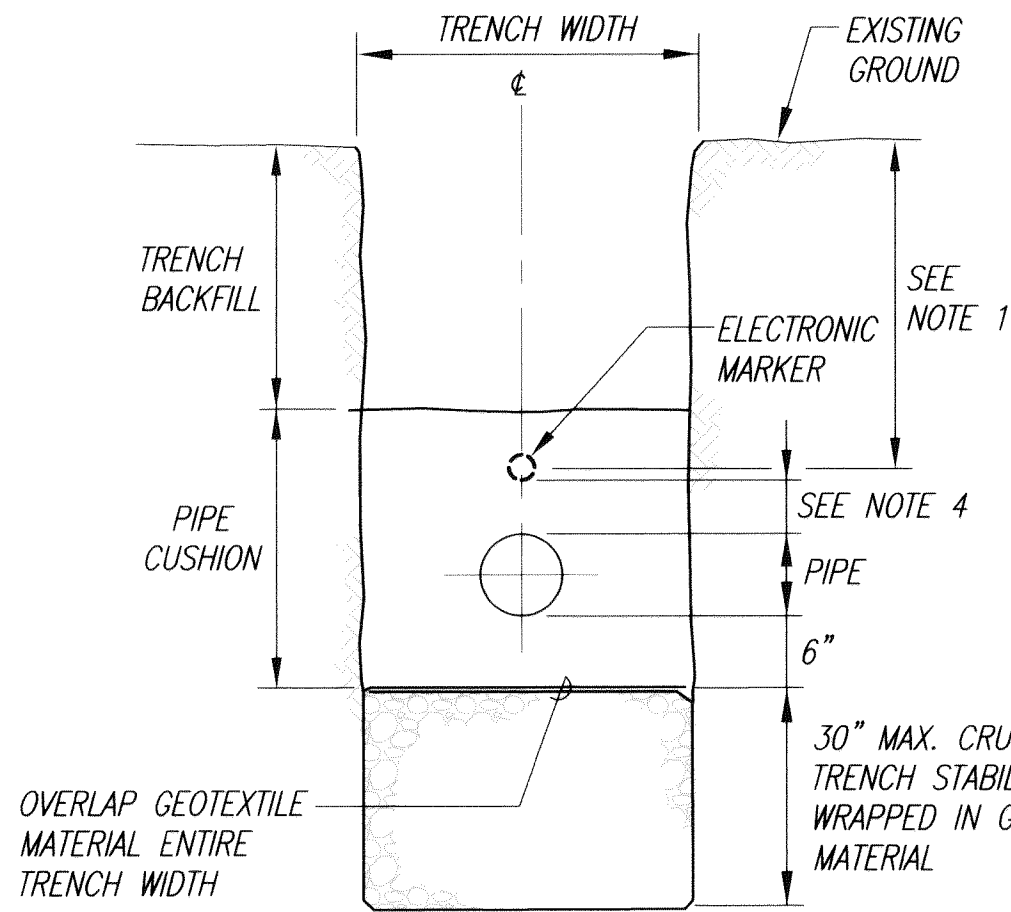
SPECIAL CONCRETE BLOCK @ HORIZONTAL/VERTICAL BENDS

NOT TO SCALE

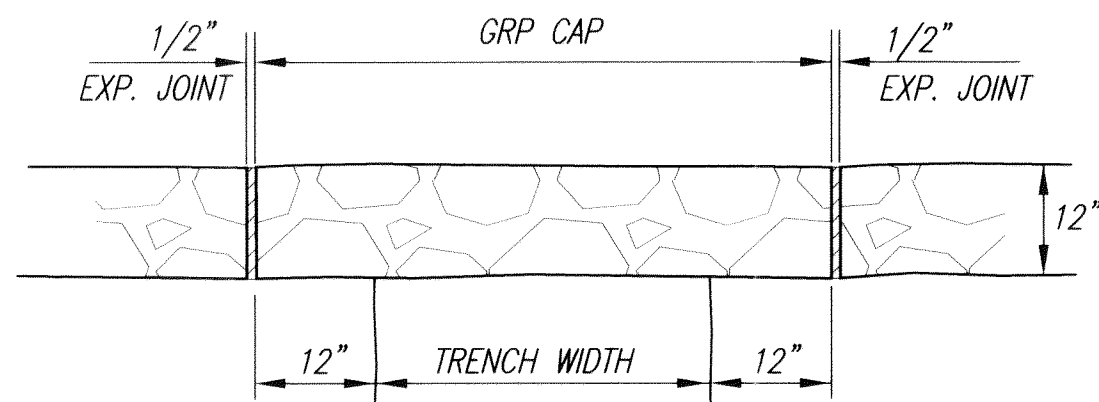


PLAN VIEW

TRENCH WIDTH	
PIPE DIAMETER (INCH)	TRENCH WIDTH (INCH)
20	36
16	30
14	30
12	24
8	24



SECTION VIEW



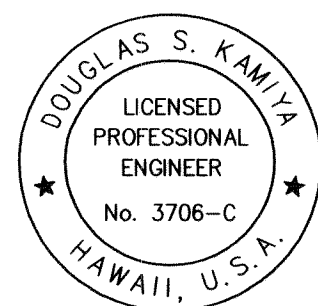
GRP CAP

NOT TO SCALE

- NOTES:**
- INSTALL ELECTRONIC MARKER OVER CENTERLINE OF PIPE AT A MINIMUM DEPTH OF 2 FEET AND A MAXIMUM DEPTH OF 3 FEET FROM FINISH GRADE.
 - INSTALL TRENCH BACKFILL AND PIPE CUSHION MATERIAL IN ACCORDANCE TO THE PLANS AND SPECIFICATIONS.
 - 12" OF CUSHION MATERIAL FOR PIPES 16" OR LARGER. 6" CUSHION MATERIAL FOR PIPES 12" OR SMALLER AT LOCATIONS WHERE INVERT IS ABOVE 4-FOOT ELEVATION.
 - INSTALL ELECTRONIC MARKER AT A MINIMUM CLEARANCE OF 6-INCHES ABOVE THE PIPE OR CONCRETE JACKET.

TYPICAL TRENCH DETAIL AND ELECTRONIC MARKER INSTALLATION

NOT TO SCALE



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WATER DETAILS			
DRAWN BY: LYL	ENGINEER: DSK	CHECKED BY: DSK	
APPROVED: DATE: 8/24/10 CHIEF, CAPITAL PROJECT DIVISION, BWS			