CONSTRUCTION PLANS

FOR

KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B

KEOKEA & WAIOHULI, MAKAWAO, MAUI

OWNER AND DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS

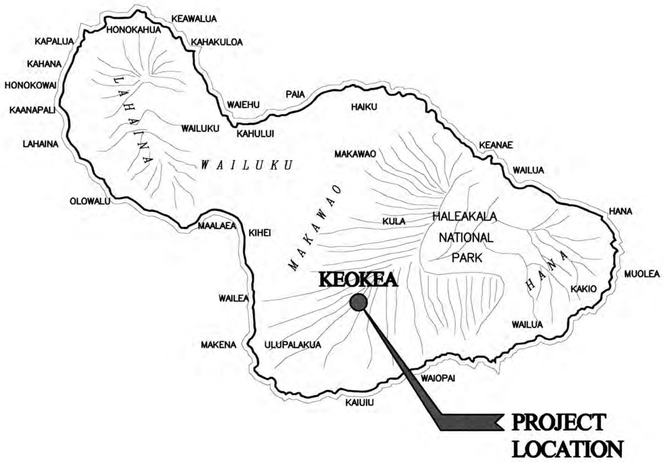
TAX MAP KEYS: (2) 2-2-002:014 AND (2) 2-2-033:023

DSA SUBDIVISION FILE NO. 2.3392 DWS FILE NO. SD 20-032

cp&e Community Planning and Engineering, Inc.

Engineering Design | Construction Management | Infrastructure Planning

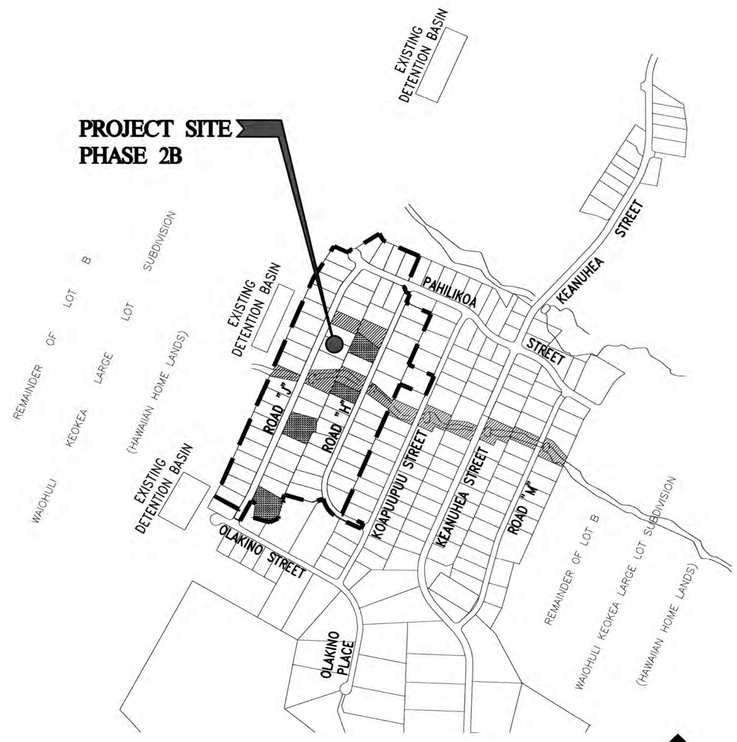
1286 Queen Emma Street Honolulu, Hawaii



VICINITY MAP

4 0 4 8

SCALE IN MILES



LOCATION MAP

NOT TO SCALE

APPROVED

CHAIRMAN, HAWAIIAN HOMES COMMISSION DEPARTMENT OF HAWAIIAN HOME LANDS STATE OF HAWAII	DATE
DIRECTOR, DEPARTMENT OF PUBLIC WORKS COUNTY OF MAUI	DATE
CHIEF, ENVIRONMENTAL MANAGEMENT DIVISION DEPARTMENT OF HEALTH, STATE OF HAWAII	DATE
DIRECTOR, DEPARTMENT OF WATER SUPPLY COUNTY OF MAUI (APPROVAL LIMITED TO IMPROVEMENTS WHICH WILL BE DEDICATED TO THE DEPARTMENT OF WATER SUPPLY)	DATE

KEOKEA - WAIOHULI DEVELOPMENT PHASE 2B

ADDENDUM NO. 3

T-1

FILE	POCKET	FOLDER	NO.

INDEX OF DRAWINGS

SHEET NO.	DWG. NO.	TITLE
		GENERAL
01	T-1	TITLE SHEET
02	C-1	INDEX OF DRAWINGS
03	C-2	GENERAL NOTES – 1 – BASE BID
04	C-3	GENERAL NOTES – 2 – BASE BID
05	C-4	GENERAL NOTES – 3 – BASE BID
06	C-5	GENERAL LAYOUT PLAN – BASE BID
07	C-6	GENERAL LAYOUT PLAN – ADDITIVE ALTERNATE
08	C-7	EROSION CONTROL PLAN – BASE BID
09	C-8	EROSION CONTROL PLAN – ADDITIVE ALTERNATE
10	C-9	EROSION CONTROL DETAIL – BASE BID
		CIVIL
11	C-10	GENERAL GRADING PLAN – BASE BID
12	C-11	GENERAL GRADING PLAN – ADDITIVE ALTERNATE
13	C-12	GRADING PLAN – 1 – BASE BID
14	C-13	GRADING PLAN – 1 – ADDITIVE ALTERNATE
15	C-14	GRADING PLAN – 2 – BASE BID
16	C-15	GRADING PLAN – 2 – ADDITIVE ALTERNATE
17	C-16	GRADING PLAN – 3 – BASE BID
18	C-17	GRADING PLAN – 3 – ADDITIVE ALTERNATE
19	C-18	GRADING PLAN – 4 – ADDITIVE ALTERNATE
20	C-19	GRADING PLAN – 5 – ADDITIVE ALTERNATE
21	C-20	TYPICAL ROAD SECTIONS – BASE BID
22	C-21	PLAN AND PROFILE PAHILIKOA ST. STA. 50+00 TO END – BASE BID
23	C-22	PLAN AND PROFILE DRAINLINE "E" – BASE BID
24	C-23	PLAN AND PROFILE PAHILIKOA ST. STA. 50+00 TO END – ADDITIVE ALTERNATE
25	C-24	PLAN AND PROFILE ROAD "H" STA. 0+00 TO 11+00 – BASE BID
26	C-25	PLAN AND PROFILE ROAD "H" STA. 11+00 TO END – BASE BID
27	C-26	PLAN AND PROFILE ROAD "J" STA. 0+00 TO 10+50 – ADDITIVE ALTERNATE
28	C-27	PLAN AND PROFILE ROAD "J" STA. 10+50 TO END – ADDITIVE ALTERNATE
29	C-28	PLAN AND PROFILE – CULVERT ACCESS ROAD "H1" (A & B) – BASE BID
30	C-29	PLAN AND PROFILE – CULVERT ACCESS ROAD "H2" (A & B) – BASE BID
31	C-30	PLAN AND PROFILE – CULVERT ACCESS ROAD "H3" (A & B) – BASE BID
32	C-31	PLAN AND PROFILE – CULVERT ACCESS ROAD "H4" (A & B) – BASE BID
33	C-32	PLAN AND PROFILE – CULVERT ACCESS ROAD "H5" (A & B) – BASE BID
34	C-33	PLAN AND PROFILE – CULVERT ACCESS ROADS "H6" AND "H7" – BASE BID
35	C-34	PLAN AND PROFILE – CULVERT ACCESS ROAD "J1" (A & B) – ADDITIVE ALTERNATE
36	C-35	PLAN AND PROFILE – CULVERT ACCESS ROAD "J2" (A & B) – ADDITIVE ALTERNATE
37	C-36	PLAN AND PROFILE – CULVERT ACCESS ROAD "J3" (A & B) – ADDITIVE ALTERNATE
38	C-37	PLAN AND PROFILE – CULVERT ACCESS ROAD "J4" (A & B) – ADDITIVE ALTERNATE
39	C-38	PLAN AND PROFILE – CULVERT ACCESS ROAD "J5" (A & B) – ADDITIVE ALTERNATE
40	C-39	PLAN AND PROFILE DRAIN CULVERTS "H1" AND "H2" – BASE BID
41	C-40	PLAN AND PROFILE DRAIN CULVERTS "H3" AND "H4" – BASE BID
42	C-41	PLAN AND PROFILE DRAIN CULVERTS "H5" AND "H6" – BASE BID
43	C-42	PLAN AND PROFILE DRAIN CULVERTS "H7" AND "J1" – BASE BID/ADDITIVE ALTERNATE
44	C-43	PLAN AND PROFILE DRAIN CULVERTS "J2" AND "J3" – ADDITIVE ALTERNATE
45	C-44	PLAN AND PROFILE DRAIN CULVERTS "J4" AND "J5" – ADDITIVE ALTERNATE
46	C-45	PLAN AND PROFILE SWALE NO. 202 & 203C – BASE BID
47	C-46	PLAN AND PROFILE SWALE NO. 206 & 207 – BASE BID
48	C-47	PLAN SWALE NO. 208, 209, 211, 212, 214 & 215 – BASE BID
49	C-48	PLAN AND PROFILE SWALE NO. 210 & 226 – BASE BID
50	C-49	PLAN SWALE NO. 222C, 223C, 224 & 227 – BASE BID
51	C-50	PLAN AND PROFILE SWALE NO. 228 – BASE BID
52	C-51	PLAN SWALE NO. 230, 231, & 235 – BASE BID/ADDITIVE ALTERNATE
53	C-52	PLAN AND PROFILE SWALE NO. 236 – BASE BID
54	C-53	PLAN AND PROFILE SWALE NO. 236 – ADDITIVE ALTERNATE
55	C-54	PLAN AND PROFILE SWALE NO. 238 – BASE BID
56	C-55	PLAN AND PROFILE SWALE NO. 238 – ADDITIVE ALTERNATE
57	C-56	PLAN AND PROFILE SWALE NO. 242 – BASE BID
58	C-57	PLAN AND PROFILE SWALE NO. 242 – ADDITIVE ALTERNATE
59	C-58	PLAN AND PROFILE SWALE NO. 243B – BASE BID
60	C-59	PLAN AND PROFILE SWALE NO. 243B & 252 – ADDITIVE ALTERNATE
61	C-60	PLAN SWALE NO. 246, 247 & 248 – ADDITIVE ALTERNATE
62	C-61	PLAN SWALE NO. 250, 250A, 251, 253, 258, & OFFSITE DIVERSION SWALE – BASE BID/ADDITIVE ALTERNATE
63	C-62	PLAN AND PROFILE SWALE NO. 255 & 257 – ADDITIVE ALTERNATE
64	C-63	PLAN AND PROFILE SWALE NO. 260 & 264 – ADDITIVE ALTERNATE
65	C-64	PLAN SWALE NO. 261, 263A & 263B – ADDITIVE ALTERNATE
66	C-65	PLAN AND PROFILE SWALE NO. 266A, 266B, 267, 268 & 269 – ADDITIVE ALTERNATE
67	C-66	PLAN AND PROFILE SWALE NO. 203 – BASE BID
68	C-67	TRAFFIC SIGNS AND PAVEMENT MARKING PLAN PAHILIKOA STREET – BASE BID
69	C-68	TRAFFIC SIGNS AND PAVEMENT MARKING PLAN ROAD "H" – BASE BID
70	C-69	TRAFFIC SIGNS AND PAVEMENT MARKING PLAN ROAD "J" – ADDITIVE ALTERNATE
71	C-70	TRAFFIC SIGNS AND PAVEMENT MARKING DETAILS – BASE BID
72	C-71	SWALE DETAILS – 1 – BASE BID
73	C-72	SWALE DETAILS – 2 – BASE BID
74	C-73	SWALE DETAILS – 3 – BASE BID
75	C-74	SWALE DETAILS – 4 – BASE BID
76	C-75	DRAINAGE DETAILS – BASE BID
77	C-76	WATER DETAILS – BASE BID
78	C-77	BORING LOGS – BASE BID
		STRUCTURAL
79	S-1	STRUCTURAL GENERAL NOTES AND TYPICAL DETAILS
80	S-2	WEIR STRUCTURE SECTIONS AND DETAILS
81	S-3	PRECAST DRAIN MANHOLE PLANS AND SECTIONS
		ELECTRICAL
82	E-1	ELECTRICAL SYMBOLS, LOCATION MAP, VICINITY MAP, EQUIPMENT SCHEDULE AND NOTES
83	E-2	ELECTRICAL SITE PLAN
84	E-3	MECO NOTES
85	E-4	SANDWICH ISLES COMMUNICATIONS NOTES
86	E-5	ELECTRICAL DISTRIBUTION PARTIAL PLAN I
87	E-6	ELECTRICAL DISTRIBUTION PARTIAL PLAN II
88	E-7	ELECTRICAL DISTRIBUTION PARTIAL PLAN III
89	E-8	TYPICAL DUCT SECTIONS
90	E-9	TYPICAL LOT SERVICE DETAILS
91	E-10	MISCELLANEOUS DETAILS

ANSON M. MURAYAMA
LICENSED PROFESSIONAL ENGINEER
No. 6975-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/26

REVISION DATE	DESCRIPTION	MADE BY	APPROVED

cp&e
Community Planning and Engineering, Inc.
Engineering Design | Construction Management | Infrastructure Planning
1286 Queen Emma Street, Third Floor Honolulu, Hawaii

KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B

KEOKEA & WAIOHULI, MAKAWAO, MAUI
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEYS: (2) 2-2-002:014 AND (2) 2-2-033:023

INDEX OF DRAWINGS

DRAWN BY: HWH	ENGINEER: HWH , FJC	CHECKED BY: AMM

ADDENDUM NO. 3

DWG. NO. **C-1**

SHEET 02 OF 91 SHEETS

FILE	POCKET	FOLDER	NO.

GENERAL NOTES

1. LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE BASED ON AVAILABLE "AS-BUILT" OR RECORD CONSTRUCTION PLANS AND ARE APPROXIMATE ONLY AND THEIR ACCURACY IS NOT GUARANTEED.
2. EXISTING CONTOURS AND FEATURES ARE BASED ON "TOPOGRAPHIC SURVEY OF KEOKEA PHASE 2" PREPARED BY CONTROL POINT SURVEYING, INC. DATED SEPTEMBER 2019.
3. EXISTING GRADES SHALL BE VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WITH GRADING WORK. SHOULD ANY DISCREPANCIES BE DISCOVERED WITH THE EXISTING GRADES OR DIMENSIONS GIVEN ON THE PLANS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER BEFORE PROCEEDING ANY FURTHER WITH THE WORK, OTHERWISE HE WILL BE HELD RESPONSIBLE FOR ANY COST INVOLVED IN THE CORRECTION OF CONSTRUCTION PLACED DUE TO SUCH DISCREPANCIES.
4. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF EXISTING UTILITIES WITHIN PROJECT LIMITS BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR DAMAGES DUE TO THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ALL UNDERGROUND UTILITIES.
5. THE CONTRACTOR SHALL REPORT ANY INCONSISTENCIES WITH THE PROPOSED PLAN TO THE OWNER'S REPRESENTATIVE AND SHALL DEMOLISH, REMOVE, OR RELOCATE ALL EXISTING UTILITIES, IMPROVEMENTS, ETC. INCONSISTENT WITH THE PROPOSED PLAN AS DIRECTED BY THE OWNER'S REPRESENTATIVE AND AT THE CONTRACTOR'S EXPENSE.
6. THE LATEST REVISIONS OF THE "STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION," SEPTEMBER 1984 AND THE "HAWAII STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND PUBLIC WORKS CONSTRUCTION," 1994 SHALL BE INCLUDED AS PART OF THESE CONSTRUCTION PLANS. THE CONTRACTOR SHALL OBTAIN THE LATEST REVISIONS BEFORE COMMENCING CONSTRUCTION.
7. IF HISTORIC SITES SUCH AS WALLS, PLATFORMS, PAVEMENTS AND MOUNDS OR REMAINS SUCH AS ARTIFACTS, BURIALS, CONCENTRATION OF CHARCOAL OR SHELLS ARE ENCOUNTERED DURING CONSTRUCTION WORK, WORK SHALL CEASE IN THE IMMEDIATE VICINITY OF THE FIND AND THE FIND SHALL BE PROTECTED FROM FURTHER DAMAGE. THE CONTRACTOR SHALL IMMEDIATELY CONTACT THE STATE HISTORIC PRESERVATION DIVISION (692-8015), WHICH WILL ASSESS THE SIGNIFICANCE OF THE FIND AND RECOMMEND MITIGATION MEASURES, IF NECESSARY.
8. PURSUANT TO CHAPTER 6E OF THE HAWAII REVISED STATUTES, ALL CONTRACTORS SHALL ENSURE THAT IN THE EVENT THAT ANY HUMAN SKELETAL REMAINS ARE INADVERTENTLY DISCOVERED DURING CONSTRUCTION, THE REMAINS SHALL NOT BE MOVED AND ANY ACTIVITY IN THE IMMEDIATE AREA THAT COULD DAMAGE THE REMAINS OR THE POTENTIAL HISTORIC SITE SHALL CEASE AND THE DEPARTMENT OF LAND AND NATURAL RESOURCES' HISTORIC PRESERVATION DIVISION (TELEPHONE:692-8015), THE APPROPRIATE MEDICAL EXAMINER OR CORONER, AND THE POLICE DEPARTMENT (TELEPHONE:244-6400), SHALL BE CONTACTED.
9. ALL LESSEES USING EXISTING DIRT ROADS TO ACCESS THEIR PROPERTY SHALL CONTINUE TO BE PROVIDED ACCESS TO THEIR PROPERTY AT ALL TIMES DURING CONSTRUCTION ACTIVITIES BY THE CONTRACTOR.
10. PRIOR TO ANY LAND ALTERATION, ALL TASKS OF THE HISTORIC SITES INTERIM PROTECTION PLAN MUST BE IN PLACE FOR THE ISOLATED NON-BURIAL SITES TO BE PRESERVED AND THE HISTORIC PRESERVE. ISOLATED SIGNIFICANT HISTORIC SITES AND THE HISTORIC PRESERVE MUST HAVE PROTECTION MEASURES IN PLACE PRIOR TO ANY LAND ALTERATION. SUCH PROTECTION SHALL INCLUDE PERMANENT FENCING AND TEMPORARY PLASTIC CONSTRUCTION FENCING. THE CONSTRUCTION CREWS MUST BE BRIEFED ON THE IMPORTANCE OF THESE PROTECTIVE MEASURES.

DEPARTMENT OF WATER SUPPLY NOTES

1. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF WATER SUPPLY (DWS), IN WRITING, ONE (1) WEEK PRIOR TO COMMENCEMENT OF WORK.
2. IF CONSTRUCTION OF WATER SYSTEM IMPROVEMENTS WILL AFFECT DWS CONSUMERS, CONTRACTOR SHALL NOTIFY CUSTOMERS BY RADIO/NEWSPAPER TWO (2) DAYS BEFORE AND ON DAY OF CONNECTION. CONTRACTOR SHALL NOTIFY CONSUMERS HOUSE-TO -HOUSE ONE (1) DAY BEFORE CONNECTION WORK.
3. ALL MATERIALS USED AND METHODS OF CONSTRUCTION OF WATER SYSTEM FACILITIES SHALL BE IN ACCORDANCE WITH THE LATEST REVISIONS OF DWS STANDARDS. CONTRACTOR SHALL OBTAIN THE LATEST REVISIONS OF THE DWS WATER SYSTEM STANDARDS BEFORE COMMENCING CONSTRUCTION.
4. ALL WATER SYSTEM WORK SHALL BE PERFORMED BY CONTRACTORS POSSESSING VALID STATE OF HAWAII CONTRACTOR'S LICENSES, REGARDLESS OF THE VALUE OF THE WORK.
5. CONTRACTOR SHALL FOLLOW ALL LOCAL, STATE, FEDERAL LAWS, RULES AND REGULATIONS REGARDING THE HANDLING, REMOVAL AND DISPOSAL OF ASBESTOS PIPE.
6. CONTRACTOR SHALL PROTECT EXISTING WATERLINE DURING COURSE OF CONSTRUCTION AND SUPPORT EXPOSED WATERLINE TO PREVENT ANY MOVEMENT.
7. THE EXACT DEPTH AND LOCATION OF EXISTING WATERLINES, SERVICE LATERALS AND OTHER UTILITIES ARE NOT KNOWN. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE SAME PRIOR TO TRENCHING FOR THE NEW WATERLINE. THE COST OF LOWERING, RELOCATING OR ADJUSTING EXISTING WATERLINES, SERVICE LATERALS AND APPURTENANCES, WHETHER SHOWN OR NOT SHOWN ON THE CONSTRUCTION PLANS AT THE CONTRACTOR'S EXPENSE.
8. PAVEMENT RESURFACING/RESTORATION:
   - A. CONTRACTOR SHALL VERIFY LOCATION OF EXISTING DWS VALVES AND MANHOLES, WHEN AFFECTED BY THE WORK, PRIOR TO START OF CONSTRUCTION.
   - B. ALL WATER VALVE AND WATER MANHOLE CONCRETE COLLARS WITHIN THE PROJECT LIMITS SHALL BE DEMOLISHED AND RECONSTRUCTED PER DWS STANDARD V12 AND V23, RESPECTIVELY, AT THE CONTRACTOR'S EXPENSE.
   - C. THE VALVE BOX RISER AND COVER OF ALL WATER VALVES WITHIN THE PROJECTS LIMITS SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
   - D. CONTRACTOR SHALL ADJUST DWS SLIDING VALVE BOX ASSEMBLY AND MANHOLE FRAME AND COVER TO FINISHED GRADE.

DEPARTMENT OF WATER SUPPLY NOTES (CONT.)

   - E. PRIOR TO PAVEMENT RESURFACING/RESTORATION WORK, THE CONTRACTOR SHALL SCHEDULE INSPECTION WITH DWS.

9. ANY SLIDING VALVE BOX ASSEMBLY, MANHOLE COVER , OR CONCRETE COLLAR, WHETHER DISCOVERED DAMAGED OR NOT SPECIFIED ON THE PLANS TO BE ADJUSTED OR REPLACED, SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
10. CONTRACTOR SHALL ADJUST TO FINISHED GRADES, ALL UTILITIES (I.E., WATER SEWER, DRAIN, ETC.) AFFECTED BY THE WORK WHETHER SHOWN OR NOT ON THE CONSTRUCTION PLANS AT THE CONTRACTOR'S EXPENSE.
11. CONTRACTOR SHALL RESTORE ALL ROAD IMPROVEMENTS DISTURBED OR DAMAGED DURING CONSTRUCTION IN ACCORDANCE WITH THE 2005 "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" AS AMENDED, TO THE SATISFACTION OF THE DEPARTMENT OF PUBLIC WORKS AT THE CONTRACTOR'S EXPENSE. ROAD IMPROVEMENTS INCLUDE, BUT AT NOT LIMITED TO, PAVEMENT, PAVEMENT MARKERS, SHOULDER DRESSING, STRIPING, AND SPEED BUMPS.
12. CONCRETE FOR REACTION LOCKS AND ANCHOR BLOCKS SHALL BE DWS CLASS 2500.
13. THE MAXIMUM DISTANCE BETWEEN VALVE NUT AND TOP OF MANHOLE COVER SHALL BE THREE (3) FEET.
14. CONTRACTOR SHALL SUBMIT A MATERIALS LIST TO DWS FOR APPROVAL PRIOR TO CONSTRUCTION.
15. CONNECTION TO DWS SYSTEM:
   - A. CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING ALL NECESSARY FITTINGS AND OTHER MATERIALS AND EQUIPMENT REQUIRED FOR THE HOOK-UP. CONTRACTOR SHALL VERIFY THE EXACT LOCATION, DEPTH, TYPE, AND CONDITION OF THE EXISTING LINE BEFORE ORDERING MATERIALS FOR THE HOOK-UP. CONTRACTOR SHALL, HOWEVER, CHECK WITH DWS BEFORE EXCAVATING FOR VERIFICATION PURPOSES.
   - B. WHENEVER FEASIBLE, MECHANICAL JOINT FITTINGS SHALL BE USED FOR BURIED APPLICATIONS AND FLANGED JOINT FITTINGS SHALL BE USED FOR EXPOSED APPLICATIONS.
   - C. DWS PERSONNEL MAY BE REQUIRED TO BE PRESENT OR ASSIST WITH CONNECTIONS TO THE EXISTING WATER SYSTEM. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS INCURRED BY DWS FOR SAID WORK.
   - D. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING ALL MATERIAL, EQUIPMENT AND LABOR FOR TRENCH EXCAVATION, BACKFILLING, CLEANING AND CHLORINATION, PAVING, AND OTHER WORK NECESSARY TO COMPLETE THE HOOK-UP, AS DIRECTED BY AND TO THE SATISFACTION OF DWS.
16. MINIMUM COVER OVER WATER MAIN, 6" DIAMETER OR LARGER, SHALL BE 3'-0". MINIMUM COVER FOR 4" DIAMETER SHALL BE 2'-6". MINIMUM COVER FOR DIAMETERS LESS THAN 4" SHALL BE 1'-6".
17. CONTRACTOR SHALL ENSURE INSTALLATION OF WATERLINES, SERVICE LATERALS AND APPURTENANCES HAVE PROPER CLEARANCES FROM EXISTING TREES, WALLS, FENCES, ETC. IN ACCORDANCE WITH CURRENT DWS WATER SYSTEM STANDARDS
18. CONTRACTOR SHALL VERIFY AND MAINTAIN 18" MINIMUM CLEARANCE WITH WATERLINE OR SERVICE LATERAL CROSSING OVER EXISTING SEWERLINE OR SEWER LATERAL. INSTALL REINFORCED CONCRETE JACKET AROUND SEWERLINE WHERE SEWER IS ABOVE WATERLINE OR LESS THAN 18" BELOW WATERLINE. THE LENGTH OF JACKET REQUIRED SHALL BE AS SPECIFIED IN TABLE 100-5 OF THE DWS STANDARDS. PROVIDE 6" MINIMUM CLEARANCE FROM OUTSIDE JACKET TO WATERLINE OR SERVICE LATERAL. STANDARD CONCRETE JACKET DETAILS FOR SEWERLINE AS SPECIFIED BY THE DEPARTMENT OF PUBLIC WORKS STANDARDS SHALL BE FOLLOWED.
19. CONTRACTOR SHALL HAVE LICENSED SURVEYOR STAKE OUT WATERLINE BASELINE STATIONING, RIGHT-OF-WAY LIMITS, PROPERTY LINES, AND EASEMENTS LINES TO ENSURE PROPER LOCATION OF WATER SYSTEM IMPROVEMENTS.
20. BOLTS FOR EXPOSED FLANGED DUCTILE IRON PIPE JOINTS SHALL BE EITHER SILICON BRONZE BOLTS AND NUTS OR 316 STAINLESS STEEL BOLTING WITH THE HEAVY DUTY STAINLESS STEEL NUTS (ONLY) FURNISHED WITH TRIPAC 2000 BLUE COATING SYSTEM. ANTI-SEIZE SHALL NOT BE USED. T-BOLTS FOR DUCTILE IRON MECHANICAL JOINT (MJ) PIPE AND FITTING CONNECTIONS IN UNDERGROUND SITUATIONS SHALL BE ONE OF THE FOLLOWING SYSTEMS:
   - A. 316 STAINLESS STEEL T-BOLTS WITH THE HEAVY DUTY STAINLESS STEEL NUTS (ONLY) FURNISHED WITH TRIPAC 2000 BLUE COATING SYSTEM. ANTI-SEIZE SHALL NOT BE USED.
   - B. COR-TEN T-BOLTS AND NUTS WITH HIGH GRADE ZINC SACRIFICIAL ANODES, EQUIVALENT TO "DURATRON" SACRIFICIAL "SAC-NUT" MODULES, INSTALLED ON THE NUTS FOR ALL STANDARD COR-TEN T-BOLTS.
   - C. COR-TEN T-BOLTS AND NUTS BOTH FACTORY COATED WITH TRIPAC 2000 BLUE COATING SYSTEM BY "TRIPAC FASTENERS".

   ALL HOT FORGED STAINLESS STEEL BOLTS ARE REQUIRED TO BE PASSIVATED PER ASTM A380. MANUFACTURER CERTIFICATES ARE REQUIRED FOR PROOF WITH EACH SHIPMENT.
21. CONTRACTOR SHALL FURNISH AND INSTALL DUCTILE IRON NIPPLES FOR COMPLETE INSTALLATION OF THE WATERLINE, WHETHER SHOWN OR NOT SHOWN ON THE CONSTRUCTION PLANS, AND THE CONTRACTOR'S EXPENSE.
22. CONTRACTOR SHALL FURNISH TEMPORARY CLEANOUTS WHEN NECESSARY TO TEST, FLUSH, AND CHLORINATE THE WATERLINE AT THE CONTRACTOR'S EXPENSE.
23. CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL PORTIONS OF ABANDONED WATERLINES THAT ARE EXPOSED OR WITHIN 12-INCHES BELOW THE GROUND SURFACE AT THE CONTRACTOR'S EXPENSE.
24. ALL BURIED METALS, INCLUDING COPPER PIPES, SHALL BE WRAPPED WITH POLY-WRAP. FOR ALL BURIED INSTALLATIONS OF DUCTILE IRON PIPE AND FITTINGS, POLY-WRAP IS REQUIRED EXCEPT WITHIN CONCRETE JACKETS.
25. LUBRICATE HYDRANT NOZZLE THREADS WITH NON-TOXIC GREASE.
26. CONTRACTOR SHALL PAINT AND NUMBER FIRE HYDRANT(S). NUMBERING TO BE FURNISHED BY DWS.

DEPARTMENT OF WATER SUPPLY NOTES (CONT.)

27. WATER MAINS AND APPURTENANCES SHALL BE SUBJECT TO HYDROSTATIC TESTING IN ACCORDANCE WITH THE LATEST REVISION OF AWWA C600, UNDER THE "HYDROSTATIC TESTING" SECTION, TO A PRESSURE OF AT LEAST 1.5 TIMES THE WORKING PRESSURE. UNLESS OTHERWISE STATED IN THE CONSTRUCTION DOCUMENTS OR LIMITED BY THE PRESSURE RATING OF EQUIPMENT, THE PRESSURE TEST AND LEAKAGE TEST SHALL BE PERFORMED AT 225 POUNDS PER SQUARE INCH PRESSURE.
28. DEVELOPER SHALL SUBMIT A COST LIST ALONG WITH AN AFFIDAVIT FOR THE WATER SYSTEM PRIOR TO ACCEPTANCE.
29. THE CONTRACTOR SHALL SUBMIT ONE (1) SET OF RECORD DRAWINGS VIA A CONSULTANT PRIOR TO ACCEPTANCE OF THE WATER SYSTEM. AN ELECTRONIC IMAGE FILE IN PDF FORMAT AT FULL PAGE SIZE (24"x36") SHALL BE PROVIDED TO THE DWS FOR ALL PROJECTS.

CHLORINATION OF WATER SYSTEMS

1. WATER MAINS AND APPURTENANCES SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA C651. ALL PROCEDURES AND MATERIALS (LIQUID CHLORINE OR CALCIUM HYPOCHLORITE) USED FOR THE CHLORINATION OF THE PROJECT SHALL CONFORM TO AWWA REQUIREMENTS.
2. PRIOR TO CHLORINATION, THE PROJECT PIPELINES SHALL BE THOROUGHLY CLEANED. CLEANING OF LINES 8" AND LARGER SHALL BE BY PIGGING USING FOAM PIGS. SMALLER LINES CAN BE FLUSHED IN ACCORDANCE WITH AWWA REQUIREMENTS IF ADEQUATE WATER SUPPLY IS PROVIDED, OTHERWISE BY PIGGING. THE CONTRACTOR SHALL SUBMIT HIS PLAN OF PIPELINE CLEANING, INCLUDING FITTING REQUIREMENTS FOR PIGGING, FOR APPROVAL PRIOR TO PROCEEDING.
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. MEASUREMENTS FOR CHLORINE RESIDUAL TESTS SHALL BE BY A TRAINED, QUALIFIED TESTER APPROVED BY THE DIRECTOR.
6. SHOULD THE RESULTS INDICATE ADEQUATE CHLORINATION, THE PROJECT SHALL BE THOROUGHLY FLUSHED AND FILLED WITH POTABLE WATER FROM THE EXISTING POTABLE 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. FOLLOWING THE ACCEPTABLE FLUSHING OF THE HIGH CONCENTRATION CHLORINE SOLUTION, TWO CONSECUTIVE SETS OF ACCEPTABLE SAMPLES SHALL BE TAKEN AT LEAST 24 HOURS APART FROM REPRESENTATIVE POINTS IN THE PROJECT AND SUBJECTED TO MICROBIOLOGICAL TESTS PERFORMED BY A CERTIFIED LABORATORY APPROVED BY THE DEPARTMENT OF HEALTH. AT LEAST ONE SET OF SAMPLES SHALL BE COLLECTED AND TESTED FROM EVERY 1,200 FEET OF THE NEW WATER MAIN, PLUS ONE FROM THE END OF THE LINE AND AT LEAST ONE SET FROM EACH BRANCH. 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, CURRENT EDITION.
9. MICROBIOLOGICAL TESTS SHALL BE MADE IN ACCORDANCE WITH "STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER," AMERICAN PUBLIC HEALTH ASSOCIATION, CURRENT EDITION.
10. THE DEVELOPER/CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH ALL OF THE FOREGOING.

NOTES FOR CONSTRUCTION WITHIN COUNTY RIGHT-OF-WAY

1. CONTRACTOR SHALL OBTAIN A ROADWAY PERMIT TO PERFORM WORK WITHIN THE COUNTY RIGHT-OF-WAY FROM THE DEVELOPMENT SERVICES ADMINISTRATION TWO WEEKS PRIOR TO THE COMMENCEMENT OF WORK.
2. STANDARD DETAIL DRAWINGS AND STANDARD SPECIFICATIONS OF THE DEPARTMENT OF PUBLIC WORKS SHALL BE INCLUDED AS PART OF THE CONSTRUCTION PLANS.
3. ALL CONSTRUCTION WORK SHALL STRICTLY CONFORM TO THE LATEST VERSION OF THE HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE PUBLIC WORKS CONSTRUCTION, AND THE SEPTEMBER 1984 "STANDARD DETAILS" FOR PUBLIC WORKS CONSTRUCTION OF THE DEPARTMENT OF PUBLIC WORKS, AS AMENDED.
4. IF EXISTING UTILITIES, WHETHER OR NOT SHOWN ON PLANS, ARE DAMAGED DURING CONSTRUCTION, THE CONTRACTOR SHALL AT HIS OWN EXPENSE BE REQUIRED TO REPAIR SUCH UTILITIES.
5. CONTRACTOR SHALL PROVIDE, INSTALL AND MAINTAIN ALL NECESSARY SIGNS, LIGHTS, FLARES, BARRICADES, AND OTHER PROTECTIVE DEVICES FOR THE PROTECTION, SAFETY AND CONVENIENCE OF THE PUBLIC, ACCORDING TO THE LATEST VERSION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICE FOR STREETS AND HIGHWAYS", AND TO THE RULES AND REGULATIONS GOVERNING THE USE OF TRAFFIC CONTROL DEVICES AT WORKSITES AND/OR ADJACENT TO PUBLIC STREETS AND HIGHWAYS ADOPTED BY THE HIGHWAY SAFETY COORDINATOR AND THE U.S. FEDERAL HIGHWAY ADMINISTRATION "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR HIGHWAY CONSTRUCTION AND MAINTENANCE OPERATIONS".
6. THE DIRECTOR OF PUBLIC WORKS AND/OR THE DIRECTOR OF THE DEPARTMENT OF WATER SUPPLY HAS THE RIGHT TO STOP CONSTRUCTION SHOULD ANY WORK BE FOUND CONTRARY TO THE APPROVED CONSTRUCTION PLAN OR DETRIMENTAL TO THE PUBLIC'S INTEREST.
7. THE CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH THE DEVELOPMENT SERVICES ADMINISTRATION FIVE (5) DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION.
8. THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, KEEP THE PROJECT AREA AND SURROUNDING AREA FREE FROM DUST NUISANCE. THE WORK SHALL BE IN CONFORMANCE WITH AIR POLLUTION CONTROL STANDARDS AND REGULATIONS OF THE STATE DEPARTMENT OF HEALTH AND COUNTY GRADING ORDINANCE.
9. THE CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS RESULTING FROM HIS WORK AND DEPOSITED IN DRAINAGE FACILITIES, ROADWAYS AND OTHER AREAS. THE COST INCURRED FOR ANY NECESSARY REMEDIAL ACTION ORDERED BY THE DIRECTOR OF PUBLIC WORKS SHALL BE PAID BY THE CONTRACTOR.

NOTES FOR CONSTRUCTION WITHIN COUNTY RIGHT-OF-WAY (CONT.)

10. CONSTRUCTION DEBRIS AND WASTES SHALL BE DEPOSITED AT AN APPROPRIATE WORK SITE. THE CONTRACTOR SHALL INFORM THE DIRECTOR OF PUBLIC WORKS OF THE LOCATION OF THE DISPOSAL SITES. THE DISPOSAL SITE MUST FULFILL THE REQUIREMENTS OF THE GRADING ORDINANCE.
11. THE CONTRACTOR SHALL SUBMIT A PDF OF THE "AS-BUILT" DRAWINGS PRIOR TO THE FINAL APPROVAL OF THE IMPROVEMENTS.
12. IF THE CLEARANCE BETWEEN A WASTEWATER LINE AND A NEW OR EXISTING WATERLINE IS EIGHTEEN INCHES (18") OR LESS, THE WASTEWATER LINE SHALL BE CONCRETE-JACKETED IN ACCORDANCE WITH THE STANDARD DETAILS OF PUBLIC WORKS CONSTRUCTION DATED SEPTEMBER 1984, AS AMENDED.
13. SHOULD HISTORIC SITES SUCH AS WALLS, PLATFORMS, PAVEMENTS, OR MOUNDS, OR REMAINS SUCH AS ARTIFACTS BURIALS, CONCENTRATION OF SHELL OR CHARCOAL BE ENCOUNTERED DURING CONSTRUCTION ACTIVITIES, WORK SHALL CEASE IMMEDIATELY IN THE IMMEDIATE VICINITY OF THE FIND AND THE FIND SHALL BE PROTECTED FROM FURTHER DAMAGE. THE CONTRACTOR AND/OR LANDOWNER SHALL IMMEDIATELY CONTACT THE STATE HISTORIC PRESERVATION DIVISION (692-8015), WHICH WILL ASSESS THE SIGNIFICANCE OF THE FIND AND RECOMMEND AN APPROPRIATE MITIGATION MEASURE, IF NECESSARY.
14. THE COUNTY OF MAUI IS NOT RESPONSIBLE FOR ANY PARK, ROADWAY, EASEMENT (INCLUDING BUT NOT LIMITED TO DRAINAGE, SEWER, ACCESS, RECLAIMED WATER, OR AVIGATION EASEMENT), OR ANY OTHER INTEREST IN REAL PROPERTY SHOWN ON THIS MAP OR SHOWN ON THESE PLANS, UNLESS THE MAUI COUNTY COUNCIL HAS ACCEPTED ITS DEDICATION BY A RESOLUTION APPROVED BY A MAJORITY OF COUNCIL MEMBERS AT A REGULAR OR SPECIAL MEETING OF THE MAUI COUNTY COUNCIL OR THE COUNTY OF MAUI HAS SIGNED ITS ACCEPTANCE VIA A CONVEYANCE DOCUMENT RECORDED IN THE BUREAU OF CONVEYANCES OF THE STATE OF HAWAII IN COMPLIANCE WITH MAUI COUNTY CODE SECTION 3.44.015.
15. STEEL PLATE WARNING SIGNS ARE REQUIRED FOR ALL STEEL PLATES IN THE RIGHT-OF-WAY.
16. WHEELCHAIR RAMP INSPECTION/CERTIFICATION FORMS SHALL BE REQUIRED FOR ALL NEWLY CONSTRUCTED RAMPS.
17. ALL STRIPING AND PAVEMENT MARKINGS SHALL BE OF THERMOPLASTIC MATERIAL.
18. COMPACTION REQUIREMENTS
   - a. TESTING OF MATERIALS SHALL BE CONDUCTED BY AN APPROVED INDEPENDENT TESTING AGENCY IN ACCORDANCE WITH ASTM STANDARD METHODS OR AS SPECIFIED BY THE DEPARTMENT OF PUBLIC WORKS, ENGINEERING DIVISION, AS FOLLOWS:
     - i. EMBANKMENT/SELECT BORROW AND SUBGRADE MATERIALS: ONE (1) COMPACTION TEST PER 600 SQUARE YARDS PER LIFT;
     - ii. AGGREGATE SUBBASE COURSE: ONE (1) COMPACTION TEST PER 400 SQUARE YARDS; ONE (1) GRADATION AND SAND EQUIVALENT TEST PER LIFT PER PROJECT;
     - iii. AGGREGATE BASE COURSE: ONE (1) COMPACTION TEST PER 300 SQUARE YARDS; ONE (1) GRADATION AND SAND EQUIVALENT TEST PER LIFT PER PROJECT;
     - iv. ASPHALT CONCRETE PAVEMENT OR ASPHALT TREATED BASE COURSE: THREE (3) A.C. CORES FOR THICKNESS AND DENSITY TESTS PER PROJECT;
     - v. TRENCH BACKFILL MATERIAL: ONE (1) TEST FOR EACH 300 LINEAL FEET OF TRENCH PER LIFT OF MATERIAL.
   - b. CONTRACTOR SHALL SUBMIT ALL TESTING REPORTS INCLUDING RESULTS TO THE COUNTY'S INSPECTION AGENCY FOR REVIEW AND APPROVAL PRIOR TO COUNTY'S ACCEPTANCE OF WORK.
   - c. THE CONTRACTOR SHALL BE REQUIRED TO NOTIFY THE COUNTY OF ANY TESTING FAILURES AND CORRECT EACH FAILURE PRIOR TO PROCEEDING TO THE NEXT PHASE OF CONSTRUCTION.

GRADING NOTES

1. FINISH SPOT ELEVATIONS AND FINISH CONTOURS, AS SHOWN ON PLAN REPRESENTS FINISH GRADING. THE SITEWORK CONTRACTOR SHALL COORDINATE WITH THE LANDSCAPE CONTRACTOR THE LOCATION AND DEPTH OF TOPSOIL. THE FINISH SUBGRADE SHALL REFLECT THE FINISH GRADE LESS SPECIFIED TOPSOIL DEPTH.
2. THE CONTRACTOR SHALL IMPLEMENT AND MAINTAIN THE MEASURES OF THE BEST MANAGEMENT PRACTICE (BMP) PLAN. ALL GRADING OPERATIONS SHALL BE PERFORMED IN CONFORMANCE WITH THE APPLICABLE PROVISIONS OF THE WATER POLLUTION CONTROL AND WATER QUALITY STANDARDS CONTAINED IN THE PUBLIC HEALTH REGULATIONS, STATE DEPARTMENT OF HEALTH, ON WATER POLLUTION CONTROL AND WATER QUALITY STANDARDS.
3. THE CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS RESULTING FROM HIS WORK AND DEPOSITED IN DRAINAGE FACILITIES, ROADWAYS, AND OTHER AREAS. THE COSTS INCURRED FOR ANY NECESSARY REMEDIAL ACTION BY THE STATE DEPARTMENT OF HEALTH SHALL BE PAYABLE BY THE CONTRACTOR.
4. THE CONTRACTOR, AT HIS EXPENSE, SHALL KEEP THE PROJECT AREA AND SURROUNDING AREA FREE OF DUST NUISANCE. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION CONTROL STANDARDS AND REGULATIONS OF THE STATE DEPARTMENT OF HEALTH.
5. CONSTRUCTION DEBRIS, ASH MATERIAL, AND WASTES SHALL BE DEPOSITED AT AN APPROPRIATE SITE. THE CONTRACTOR SHALL INFORM THE ENGINEER OF THE LOCATION OF DISPOSAL SITES. THE DISPOSAL SITE MUST ALSO FULFILL REQUIREMENTS OF THE GRADING ORDINANCES.
6. THE CONTRACTOR SHALL NOT DEMOLISH OR CLEAR ANY STRUCTURE, SITE OR VACANT LOT WITHOUT FIRST ASCERTAINING THE PRESENCE OR ABSENCE OF RODENTS WHICH MAY ENDANGER THE PUBLIC HEALTH BY DISPERSAL FROM SUCH PREMISES. SHOULD SUCH INSPECTION REVEAL THE PRESENCE OF SUCH RODENTS, THE CONTRACTOR SHALL ERADICATE SUCH RODENTS BEFORE DEMOLISHING OR CLEARING SAID STRUCTURE, SITE OR VACANT LOT.
7. THE FOLLOWING MEASURES SHALL BE TAKEN TO CONTROL DUST AND EROSION DURING THE SITE DEVELOPMENT PERIOD:
   - A. MINIMIZE TIME OF CONSTRUCTION.
   - B. RETAIN EXISTING GROUND COVER UNTIL THE LATEST DATE TO COMPLETE CONSTRUCTION.
   - C. CONSTRUCT REMAINING PERMANENT EROSION AND DRAINAGE CONTROL FEATURES AS EARLY AS POSSIBLE.

GRADING NOTES (CONT.)

   - D. USE TEMPORARY AREA SPRINKLERS IN NON-ACTIVE CONSTRUCTION AREAS WHEN GROUND COVER IS REMOVED.
   - E. STATION WATER TRUCK ON-SITE DURING CONSTRUCTION PERIOD TO PROVIDE FOR IMMEDIATE SPRINKLING, AS NEEDED, IN ACTIVE CONSTRUCTION AREAS (WEEKENDS AND HOLIDAYS INCLUDED).
   - F. USE TEMPORARY BERMS AND CUT-OFF DITCHES, WHERE NEEDED, FOR CONTROL OF EROSION. IMPLEMENT AND MAINTAIN THE MEASURES OF THE BMP PLAN.
   - G. GRADED AREAS SHALL BE THOROUGHLY WATERED AFTER CONSTRUCTION ACTIVITY HAS CEASED FOR THE DAY AND ON WEEKENDS.
   - H. ALL CUT AND FILL SLOPES SHALL BE SODDED OR PLANTED IMMEDIATELY AFTER GRADING WORK HAS BEEN COMPLETED.

DEPARTMENT OF HEALTH NOTES

1. THE CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS RESULTING FROM HIS WORK AND DEPOSITED IN DRAINAGE FACILITIES, ROADWAYS AND OTHER AREAS. THE COSTS INCURRED FOR ANY NECESSARY REMEDIAL ACTION BY THE STATE DEPARTMENT OF HEALTH SHALL BE PAYABLE BY THE CONTRACTOR.
2. THE CONTRACTOR, AT HIS EXPENSE, SHALL KEEP THE PROJECT AREA AND SURROUNDING AREA FREE OF DUST NUISANCE. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION CONTROL STANDARDS AND REGULATIONS OF THE STATE DEPARTMENT OF HEALTH.
3. 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," AND TITLE 11, CHAPTER 55, "WATER POLLUTION CONTROL."

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

   1. STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES THAT DISTURB ONE (1) ACRE OR MORE, AND
   2. 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 THE 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 . THE OWNER/DEVELOPER/ CONTRACTOR IS RESPONSIBLE FOR OBTAINING OTHER FEDERAL, STATE, OR LOCAL AUTHORIZATIONS REQUIRED BY LAW.
4. ALL SLOPES AND EXPOSED AREAS SHALL BE SODDED OR PLANTED IMMEDIATELY AFTER THE GRADING WORK HAS BEEN COMPLETED.
5. CONSTRUCTION DEBRIS AND WASTES SHALL BE DEPOSITED AT AN APPROPRIATE SITE. THE CONTRACTOR SHALL INFORM THE ENGINEER OF THE LOCATION OF DISPOSAL SITES. THE DISPOSAL SITE MUST ALSO FULFILL REQUIREMENTS OF THE GRADING ORDINANCES.
6. THE CONTRACTOR SHALL COMPLY WITH THE CONDITIONS OF THE BEST MANAGEMENT PRACTICE PLAN AND GENERAL PERMIT COVERING DISCHARGE OF STORM WATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES AND HYDROTESTING WATER.

DEPARTMENT OF PUBLIC WORKS NOTES

1. THE CONTRACTOR SHALL ALLOW FOUR WEEKS TO OBTAIN A GRADING PERMIT FROM THE DSA PRIOR TO COMMENCEMENT OF ANY CLEARING AND GRUBBING. A SATISFACTORY DRAINAGE AND EROSION CONTROL PLAN SHALL BE SUBMITTED IN THE EVENT THE GRUBBING AREA EXCEEDS ONE ACRE OR THE PROPOSED CUT OR FILL IS GREATER THAN 15 FEET IN HEIGHT. THE CONTRACTOR SHALL PROVIDE, INSTALL AND MAINTAIN ALL BEST MANAGEMENT PRACTICE MEASURES.
2. THE CONTRACTOR SHALL PROVIDE, INSTALL AND MAINTAIN ALL NECESSARY SIGNS, LIGHTS, FLARES, BARRICADES, AND OTHER PROTECTIVE DEVICES FOR THE PROTECTION, SAFETY AND CONVENIENCE OF THE PUBLIC AND IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, 2009." THE CONTRACTOR SHALL PREPARE AND OBTAIN NECESSARY APPROVALS OF TRAFFIC CONTROL PLANS IF REQUIRED BY THE DSA.

DISABILITY AND COMMUNICATION ACCESS BOARD (DCAB) REQUIREMENTS

1. WHERE PEDESTRIAN WALKWAYS EXIST, THEY SHALL BE MAINTAINED IN PASSABLE CONDITION OR OTHER FACILITIES FOR PEDESTRIANS SHALL BE PROVIDED. PASSAGE BETWEEN WALKWAYS AT INTERSECTIONS SHALL LIKEWISE BE PROVIDED.TEMPORARY PEDESTRIAN PASSAGES SHALL BE ACCESSIBLE PER ADAAG 201.3 AND SHALL COMPLY W/ADAAG 206.1.

BASE BID

ANSON M. MURAYAMA
LICENSED PROFESSIONAL ENGINEER
No. 6975-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/26

REVISION DATE	DESCRIPTION	MADE BY	APPROVED

Community Planning and Engineering, Inc.
Engineering Design | Construction Management | Infrastructure Planning
1286 Queen Emma Street, Third Floor Honolulu, Hawaii

KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B
KEOKEA & WAIOHULI, MAKAWAO, MAUI
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEYS: (2) 2-2-002:014 AND (2) 2-2-033:023

GENERAL NOTES - 1 - BASE BID

DRAWN BY: HWH | ENGINEER: HWH , FJC | CHECKED BY: AMM

ADDENDUM NO. 3

DWG. NO. **C-2** SHEET 03 OF 91 SHEETS

FILE	POCKET	FOLDER	NO.

STOCKPILING

1. ALL STOCKPILING WORK SHALL BE DONE IN ACCORDANCE WITH THE SOILS REPORT BY PSC DATED MARCH 2005 AND APRIL 2013.
2. NO CONTRACTOR SHALL PERFORM ANY STOCKPILING 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 OF 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 THE FINAL GRADES HAVE BEEN ESTABLISHED. PLANTING SHALL NOT BE DELAYED UNTIL ALL STOCKPILING WORK HAS BEEN COMPLETE. STOCKPILING 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 COUNTY SHALL BE INFORMED OF THE LOCATION OF THE BORROW SITE FOR THE PROJECT WHEN THE APPLICATION FOR A STOCKPILING PERMIT IS MADE. THE BORROW SITE MUST ALSO FULFILL THE REQUIREMENTS OF THE GRADING ORDINANCE.
9. NO STOCKPILING WORK SHALL BE DONE ON SATURDAYS, SUNDAYS AND HOLIDAYS AT ANY TIME WITHOUT PRIOR NOTICE TO THE DIRECTOR, DHHL, PROVIDED SUCH STOCKPILING WORK IS ALSO IN CONFORMANCE WITH 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 STOCKPILED SHALL BE FLAGGED BEFORE THE COMMENCEMENT OF THE STOCKPILING WORK.
11. ALL STOCKPILING 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 STOCKPILING WORK 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 STOCKPILING PERMIT.
15. IF THE STOCKPILING WORK INVOLVES CONTAMINATED SOIL, THEN ALL STOCKPILING WORK SHALL BE DONE IN CONFORMANCE WITH APPLICABLE STATE AND FEDERAL REQUIREMENTS.
16. THE CONTRACTOR SHALL NOTIFY THE DEVELOPMENT SERVICES ADMINISTRATION, DEPT. OF PUBLIC WORKS TO ARRANGE FOR INSPECTIONAL SERVICES AND SUBMIT THREE (3) SETS OF APPROVED CONSTRUCTION PLANS SEVEN (7) DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION WORK.
17. 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.

BEST MANAGEMENT PRACTICES NOTES

1. ALL GRADED AREAS SHALL BE PROTECTED FROM EROSION BY HYDROMULCHING EXPOSED AREAS AS SOON AS GRADES ARE ATTAINED.
2. ALL TEMPORARY EROSION CONTROL MEASURES, SUCH AS SILT FENCES. STABILIZED CONSTRUCTION ENTRANCE, AND HYDROMULCHING SHALL BE INSTALLED AND MAINTAINED UNTIL SUCH TIME PERMANENT EROSION CONTROL MEASURES ARE ESTABLISHED.
3. HYDROMULCHING AREAS SHALL BE MAINTAINED UNTIL GRASS HAS BEEN ESTABLISHED.

GRUBBING

1. ALL GRUBBING WORK SHALL BE DONE IN ACCORDANCE WITH THE SOILS REPORTS BY PSC DATED MARCH 2005 AND APRIL 2013.
2. NO CONTRACTOR SHALL PERFORM ANY GRUBBING 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, CHAPTER 11-60, "AIR POLLUTION CONTROL."
4. 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.
5. ALL GRUBBED AREAS SHALL BE SODDED OR PLANTED IMMEDIATELY AFTER THE GRUBBING WORK HAS BEEN COMPLETED.
6. THE COUNTY SHALL BE INFORMED OF THE LOCATION OF THE DISPOSAL SITE FOR THE PROJECT WHEN THE APPLICATION FOR A GRUBBING PERMIT IS MADE. THE DISPOSAL SITE MUST ALSO FULFILL THE REQUIREMENTS OF THE GRADING ORDINANCE.
7. NO GRUBBING WORK SHALL BE DONE ON SATURDAYS, SUNDAYS AND HOLIDAYS AT ANY TIME WITHOUT PRIOR NOTICE TO THE DIRECTOR, DHHL, PROVIDED SUCH GRUBBING WORK IS ALSO IN CONFORMANCE WITH THE COMMUNITY NOISE CONTROL STANDARDS CONTAINED IN THE HAWAII ADMINISTRATIVE RULES, CHAPTER 11-43, "COMMUNITY NOISE CONTROL FOR OAHU."
8. THE LIMITS OF THE AREA TO BE GRUBBED SHALL BE FLAGGED BEFORE THE COMMENCEMENT OF THE GRUBBING WORK.
9. ALL GRUBBING OPERATIONS SHALL BE PERFORMED IN CONFORMANCE WITH THE APPLICABLE PROVISIONS OF THE WATER QUALITY AND WATER POLLUTION CONTROL STANDARDS CONTAINED IN HAWAII ADMINISTRATIVE RULES, CHAPTER 11-54, "WATER QUALITY STANDARDS" AND CHAPTER 11-55, "WATER POLLUTION CONTROL", AND IF APPLICABLE, THE NPDES PERMIT FOR THE PROJECT.
10. WHERE APPLICABLE AND FEASIBLE, THE MEASURES TO CONTROL EROSION AND OTHER POLLUTANTS SHALL BE IN PLACE BEFORE ANY GRUBBING WORK IS INITIATED.
11. TEMPORARY EROSION CONTROLS SHALL NOT BE REMOVED BEFORE PERMANENT EROSION CONTROLS ARE IN-PLACE AND ESTABLISHED.
12. TEMPORARY EROSION CONTROL PROCEDURES SHALL BE SUBMITTED FOR APPROVAL PRIOR TO APPLICATION FOR GRUBBING PERMIT.
13. IF THE GRUBBING WORK INVOLVES CONTAMINATED SOIL, THEN ALL GRUBBING WORK SHALL BE DONE IN CONFORMANCE WITH APPLICABLE STATE AND FEDERAL REQUIREMENTS.
14. THE CONTRACTOR SHALL NOTIFY THE DEVELOPMENT SERVICES ADMINISTRATION DEPT. OF PUBLIC WORKS TO ARRANGE FOR INSPECTIONAL SERVICES AND SUBMIT THREE (3) SETS OF APPROVED CONSTRUCTION PLANS SEVEN (7) DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION WORK.
15. 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.

DUST CONTROL

1. THE COUNTY INSPECTOR AND/OR THE OWNERS ENGINEER SHALL DIRECT THE CONTRACTOR ON WHERE DUST SCREENS SHALL BE INSTALLED. THE COUNTY INSPECTOR SHALL BE INFORMED OF THESE LOCATIONS.
2. IN ACCORDANCE WITH CHAPTER 11-60.1, AIR POLLUTION CONTROL, TITLE II, HAWAI'I ADMINISTRATIVE RULES, THE PROPERTY OWNER/DEVELOPER SHALL BE RESPONSIBLE FOR ENSURING THAT EFFECTIVE CONTROL MEASURES ARE PROVIDED TO MINIMIZE OR PREVENT ANY VISIBLE DUST EMISSION CAUSED BY THE CONSTRUCTION WORK FROM IMPACTING THE SURROUNDING AREAS INCLUDING THE OFF-SITE ROADWAYS USED TO ENTER/EXIT THE PROJECT. THESE MEASURES INCLUDE BUT ARE NOT LIMITED TO THE USE OF WATER WAGONS, SPRINKLER SYSTEMS, DUST FENCES, ETC.
3. ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES SHALL CONTROL DUST EMISSIONS TO THE MAXIMUM EXTENT PRACTICAL THROUGH THE APPLICATION OF BMPS. THAT MAY INCLUDE WATERING WITH TRUCKS OR SPRINKLERS. ERECTION OF DUST FENCES LIMITING THE AREA OF DISTURBANCE AND TIMELY GRASSING OF FINISHED AREAS.

CONSTRUCTION BMPS

1. THE FOLLOWING SPECIAL CONDITIONS APPLY TO ALL LAND DISTURBANCE WORK CONDUCTED UNDER THE GENERAL PERMIT:

   A. CONSTRUCTION MANAGEMENT TECHNIQUES INCLUDE:

      1. CLEARING AND GRUBBING SHALL BE HELD TO THE MINIMUM NECESSARY FOR GRADING AND EQUIPMENT OPERATION.
      2. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IN PLACE AND FUNCTIONAL BEFORE EARTH MOVING OPERATIONS BEGIN AND SHALL BE CONSTRUCTED AND MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD. TEMPORARY MEASURES MAY BE REMOVED AT THE BEGINNING OF THE WORK DAY, BUT SHALL BE REPLACED AT THE END OF THE WORK DAY.
      3. 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 CONTRACTOR SHALL MAINTAIN RECORDS OF CHECKS AND REPAIRS.
      4. A SPECIAL INDIVIDUAL SHALL BE DESIGNATED TO BE RESPONSIBLE FOR EROSION AND SEDIMENT CONTROLS ON EACH PROJECT SITE.
      5. THE CONTRACTOR SHALL HAVE PERSONNEL INSPECT, REPAIR AND MAINTAIN THE INGRESS/EGRESS FILTER BERM FOR THE DURATION OF THE PROJECT. THIS SHALL INCLUDE BUT NOT BE LIMITED TO ANY SWEEPING OF GRAVEL, SAND AND DUST THAT MAY DISPERSE FROM THE BERM WITH AN INSPECTION AT BEGINNING OF THE DAY AND A FINAL INSPECTION AT THE END OF THE DAY.

   B. VEGETATION CONTROLS INCLUDE:

      1. PRE-CONSTRUCTION VEGETATIVE GROUND COVER SHALL NOT BE DESTROYED, REMOVED OR DISTURBED MORE THAN 20 CALENDAR DAYS PRIOR TO SITE DISTURBANCE.
      2. TEMPORARY SOIL STABILIZATION WITH APPROPRIATE VEGETATION SHALL BE APPLIED ON AREAS THAT WILL REMAIN UNFINISHED FOR MORE THAN 30 CALENDAR DAYS.
      3. PERMANENT SOIL STABILIZATION WITH PERENNIAL VEGETATION SHALL BE APPLIED AS SOON AS PRACTICABLE AFTER FINAL GRADING.

   C. STRUCTURAL CONTROLS INCLUDE:

      1. STORM WATER FLOWING TOWARD THE CONSTRUCTION AREA SHALL BE DIVERTED BY USING BERMS, CHANNELS, SEDIMENT TRAPS, AND OTHER APPROPRIATE CONTROL MEASURES, AS PRACTICAL.
      2. EROSION CONTROL MEASURES SHALL BE DESIGNED ACCORDING TO THE SIZE OF DISTURBED OR DRAINAGE AREAS, TO DETAIN RUNOFF AND TRAP SEDIMENT.
      3. WATER MUST BE DISCHARGED THROUGH A PIPE OR LINED CHANNEL SO THAT THE DISCHARGE DOES NOT CAUSE EROSION.
      4. MUDDY WATER TO BE PUMPED FROM EXCAVATION AND WORK AREAS MUST BE HELD IN SETTLING BASINS OR TREATED BY FILTRATION OR OTHER APPROPRIATE MEASURES PRIOR TO ITS DISCHARGE INTO STATE WATERS. WATER MUST BE DISCHARGED THROUGH A PIPE OR LINED CHANNEL SO THAT THE DISCHARGE DOES NOT CAUSE EROSION AND SEDIMENTATION.
      5. STORM DRAIN INLET PROTECTION.
      6. CONTRACTOR SHALL CLEAN OUT ALL ACCUMULATED SILT AND DEBRIS IN EXISTING DRAINAGE DITCHES AND INLETS. FLUSHING IS PROHIBITED.

   D. REMOVAL OF TEMPORARY SILT FENCE OR FILTER BERM:

      1. REMOVAL OF TEMPORARY SILT FENCE OR FILTER BERM SHALL BE DONE AFTER PERMANENT VEGETATIVE GROUND COVER HAS BEEN ACCEPTED BY THE GOVERNING AGENCY.

GENERAL NOTES FOR TRAFFIC CONTROL PLAN

1. THE PERMITTEE SHALL MAKE MINOR ADJUSTMENTS AT INTERSECTIONS, DRIVEWAYS, BRIDGES, STRUCTURES, ETC., TO FIT FIELD CONDITIONS.
2. CONES OR DELINEATORS SHALL BE EXTENDED TO A POINT WHERE THEY ARE VISIBLE TO APPROACHING TRAFFIC.
3. TRAFFIC CONTROL DEVICES SHALL BE INSTALLED SUCH THAT THE SIGN OR DEVICE FARTHEST FROM THE WORK AREA SHALL BE PLACED FIRST. THE OTHERS SHALL THEN BE PLACED PROGRESSIVELY TOWARD THE WORK AREA.
4. REGULATORY AND WARNING SIGNS WITHIN THE CONSTRUCTION ZONE THAT ARE IN CONFLICT WITH THE TRAFFIC CONTROL PLANS SHALL BE REMOVED OR COVERED. ALL SIGNS SHALL BE RESTORED UPON COMPLETION OF THE WORK.
5. FLAGGERS AND/OR POLICE OFFICERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES.
6. WHEN REQUIRED BY THE ISSUING OFFICE, THE PERMITTEE SHALL INSTALL A FLASHING ARROW SIGNAL.
7. ALL TRAFFIC LANES SHALL BE A MINIMUM OF 10 FEET WIDE.
8. ALL CONSTRUCTION WARNING SIGNS SHALL BE PROMPTLY REMOVED OR COVERED WHENEVER THE MESSAGE IS NOT APPLICABLE OR NOT IN USE.
9. THE BACKS OF ALL SIGNS USED FOR TRAFFIC CONTROL SHALL BE APPROPRIATELY COVERED TO PRECLUDE THE DISPLAY OF INAPPLICABLE SIGN MESSAGES (I.E., WHEN SIGNS HAVE MESSAGES ON BOTH FACES).
10. AT THE END OF EACH DAY'S WORK OR AS SOON AS THE WORK IS COMPLETED, THE PERMITTEE SHALL REMOVE ALL TRAFFIC CONTROL DEVICES NO LONGER NEEDED TO PERMIT FREE AND SAFE PASSAGE OF PUBLIC TRAFFIC. REMOVAL SHALL BE IN THE REVERSE ORDER OF INSTALLATION. EXISTING FADED OR OBLITERATED PAVEMENT MARKINGS THAT ARE NECESSARY FOR SAFE TRAFFIC FLOW IN THE CONSTRUCTION AREA SHALL BE REPLACED WITH TEMPORARY OR PERMANENT MARKINGS BEFORE OPENING THE ROADWAY TO PUBLIC TRAFFIC EACH DAY.
11. PERMANENT PAVEMENT MARKINGS AND TRAFFIC SIGNS SHALL BE REPLACED UPON COMPLETION OF EACH PHASE OF WORK.
12. DRIVEWAYS SHALL BE KEPT OPEN UNLESS THE OWNERS OF THE PROPERTY USING THE RIGHT-OF-WAY ARE OTHERWISE PROVIDED FOR SATISFACTORILY. FURTHER, THE PERMITTEE SHALL CONTROL TRAFFIC GOING IN AND OUT OF DRIVEWAYS.
13. ONE LANE ROAD (CW20-4) AND FLAGGER AHEAD (CW20-7) SIGNS SHALL BE REMOVED AND COVERED WHEN NO WORK IS BEING PERFORMED AND LANE IS NOT CLOSED.
14. SHOULDER TAPER: WHEN PAVED SHOULDERS HAVING A WIDTH OF 8-FT. OR MORE ARE CLOSED, CHANNELIZING DEVICES SHOULD BE USED TO CLOSE THE SHOULDER IN ADVANCE OF THE MERGING TAPER TO DIRECT VEHICULAR TRAFFIC TO REMAIN WITHIN THE TRAVELED WAY.
15. IF THE TANGENT DISTANCE ALONG THE TEMPORARY DIVERSION IS MORE THAN 600 FT. A REVERSE CURVE (CW1-4(L)) SIGN AND A REVERSE CURVE (CW1-4(R)) SIGN SHALL BE USED INSTEAD OF THE DOUBLE REVERSE CURVE (CW24-1A(L)) SIGN.
16. BUFFER ZONE REQUIREMENTS SHALL BE DETERMINED BY THE ENGINEER.
17. ALL CONES SPACED @ 10' O.C.

STANDARD TRAFFIC AND SIGNAGE NOTES

1. ALL TRAFFIC SIGNS AND PAVEMENT MARKINGS SHALL CONFORM TO THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS", AS AMENDED, AND APPLICABLE SECTIONS OF PART V OF THE "STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION" DATED SEPTEMBER 1984, AND THE "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" (2005 EDITION), UNLESS OTHERWISE SPECIFIED ON THE PLANS, SPECIFICATIONS, OR THE STANDARD TRAFFIC NOTES.
2. THE CONTRACTOR SHALL INSTALL PERMANENT OR TEMPORARY PAVEMENT MARKERS, STRIPING AND MARKINGS AS REQUIRED BY SECTION 629 OF THE "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" (2005 EDITION). THE TEMPORARY STRIPING MUST BE INSTALLED AS CLOSE AS POSSIBLE TO THE FINAL LOCATION TO ENSURE PROPER LANE WIDTHS AND SAFE FLOW OF TRAFFIC, BUT NOT IN THE WAY OF PAVEMENT MARKING LAYOUT OPERATIONS.

   THE CONTRACTOR SHALL COORDINATE AND HIRE SPECIAL DUTY POLICE OFFICER(S) AS NEEDED TO PROVIDE TRAFFIC CONTROL WHILE WORKING WITHIN THE COUNTY RIGHT OF WAY.

3. THE CONTRACTOR SHALL INFORM THE TRAFFIC DIVISION AT LEAST SIX (6) WORKING DAYS PRIOR TO ANY WORK ON PAVEMENT MARKING OPERATIONS AND/OR SIGN INSTALLATIONS TO SCHEDULE A REVIEW AND APPROVAL OF THE STRIPING AND/OR SIGNING PLANS.
4. THE APPROVED STRIPING PLAN SHALL BE LAID OUT USING THINNED-OUT PAINT OR OTHER APPROVED METHODS. FIELD ADJUSTMENTS SHALL BE MADE AS DIRECTED BY THE ENGINEER BEFORE THE FINAL MARKINGS ARE APPLIED.
5. ALL PAVEMENT MARKINGS THAT BECOME INAPPLICABLE SHALL BE REMOVED BY THE CONTRACTOR AT HIS OWN EXPENSE. REMOVAL SHALL BE BY ERADICATION OR BY OTHER METHODS APPROVED BY THE ENGINEER BEFORE THE NEW PAVEMENT MARKINGS ARE APPLIED. EXCESSIVE GOUGING OF THE PAVEMENT IS NOT ACCEPTABLE AND SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
6. ALL PAVEMENT STRIPING SHALL BE WITH REFLECTIVE THERMOPLASTIC COMPOUND PAVEMENT MARKING AS SPECIFIED IN SECTIONS 629 OF THE "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" (2005 EDITION) ON ALL ROADWAYS. THE CONTRACTOR SHALL SUBMIT CERTIFICATE OF COMPLIANCE CERTIFYING THAT THE THERMOPLASTIC MATERIAL TO BE USED MEETS THE CURRENT STATE OF HAWAII, DEPARTMENT OF TRANSPORTATION SPECIFICATIONS.
7. HEAT APPLIED PRE-FORMED THERMOPLASTIC PAVEMENT MARKING TAPE WITH VISIBLE TEMPERATURE INDICATORS, OR AN EQUAL PAVEMENT MARKING TAPE THAT IS APPROVED BY THE TRAFFIC DIVISION MAY BE USED FOR CROSSWALKS, STOPLINES, PAVEMENT ARROWS, ALPHABETS, & SYMBOLS IN LIEU OF THERMOPLASTIC COMPOUND.
8. REFLECTORIZED RAISED PAVEMENT MARKERS SHALL BE THE REGULAR SIZED MARKERS WITH APPROXIMATE DIMENSIONS OF 4" BY 4" BY 0.7". THE CONTRACTOR SHALL SUBMIT CERTIFICATE OF COMPLIANCE CERTIFYING THAT THE RAISED PAVEMENT MARKERS TO BE USED MEETS AND OR EXCEEDS THE CURRENT STATE OF HAWAII, DEPARTMENT OF TRANSPORTATION SPECIFICATIONS.
9. UPON COMPLETION OF THE CONSTRUCTION WORK, THE CONTRACTOR SHALL RESTRIPE ALL PAVEMENT MARKINGS WITHIN THE CONSTRUCTION WORK AREA AND ADJACENT ROADWAY PAVEMENTS UP TO 300 FEET BEYOND THE CONSTRUCTION AREA IN ACCORDANCE WITH ITEM 6 OF THE CURRENT STANDARD TRAFFIC NOTES. ALL TRAFFIC SIGNS AND POSTS WITHIN THE CONSTRUCTION AREA AND ADJACENT AREAS THAT HAVE BEEN DAMAGED, REMOVED, OR ADVERSELY AFFECTED BY THE CONSTRUCTION WORK SHALL BE REPLACED BY THE CONTRACTOR.

BASE BID

ANSON M. MURAYAMA
LICENSED PROFESSIONAL ENGINEER
No. 6975-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/26

REVISION DATE	DESCRIPTION	MADE BY	APPROVED

cp&e
Community Planning and Engineering, Inc.
Engineering Design | Construction Management | Infrastructure Planning
1286 Queen Emma Street, Third Floor Honolulu, Hawaii

KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B

KEOKEA & WAIOHULI, MAKAWAO, MAUI
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEYS: (2) 2-2-002:014 AND (2) 2-2-033:023

GENERAL NOTES - 2 - BASE BID

DRAWN BY: HWH	ENGINEER: HWH , FJC	CHECKED BY: AMM

ADDENDUM NO. 3

FILE	POCKET	FOLDER	NO

WATER POLLUTION AND EROSION CONTROL NOTES

1. GENERAL:

   A. SEE SPECIAL PROVISION SECTION 209 – WATER POLLUTION AND EROSION CONTROL. SECTION 209 DESCRIBES BUT IS NOT LIMITED TO: SUBMITTAL REQUIREMENTS; SCHEDULING OF A WATER POLLUTION AND EROSION CONTROL CONFERENCE WITH THE ENGINEER; CONSTRUCTION REQUIREMENTS; METHOD OF MEASUREMENT; AND BASIS OF PAYMENT. IN ADDITION, APPENDIX A LISTS POTENTIAL POLLUTANT SOURCES AND CORRESPONDING BMPS USED TO MITIGATE THE POLLUTANTS.

   B. FOLLOW THE GUIDELINES IN THE CURRENT HDOT CONSTRUCTION BEST MANAGEMENT PRACTICES FIELD MANUAL IN DEVELOPING, INSTALLING AND MAINTAINING THE BEST MANAGEMENT PRACTICES (BMP) FOR THE PROJECT. FOR ANY CONFLICTING REQUIREMENTS BETWEEN THE MANUAL AND APPLICABLE BID DOCUMENTS, THE APPLICABLE BID DOCUMENTS WILL GOVERN. SHOULD A REQUIREMENT NOT BE CLEARLY DESCRIBED WITHIN THE APPLICABLE BID DOCUMENTS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY FOR INTERPRETATION. FOR THE PURPOSES OF CLARIFICATION UNDER NOTE A.2, "APPLICABLE BID DOCUMENTS" INCLUDE THE CONSTRUCTION PLANS, STANDARD SPECIFICATIONS, SPECIAL PROVISIONS, PERMITS, AND THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) WHEN APPLICABLE.

   C. FOLLOW THE GUIDELINES IN THE HONOLULU'S CITY & COUNTY "RULES RELATING TO SOIL EROSION STANDARDS AND GUIDELINES" ALONG WITH APPLICABLE SOIL EROSION GUIDELINES FOR PROJECTS ON MAUI, MOLOKAI, KAUAI, AND HAWAII.

   D. THE ENGINEER MAY ASSESS LIQUIDATED DAMAGES OF UP TO $27,500 FOR NON-COMPLIANCE OF EACH BMP REQUIREMENT AND EACH REQUIREMENT STATED IN SECTION 209 AND SPECIAL PROVISIONS, FOR EVERY DAY OF NON-COMPLIANCE. THERE IS NO MAXIMUM LIMIT ON THE AMOUNT OF ASSESSED PER DAY.

   E. THE ENGINEER WILL DEDUCT THE COST FROM THE PROGRESS PAYMENT FOR ALL CITATIONS RECEIVED BY THE DEPARTMENT FOR NON-COMPLIANCE, OR THE CONTRACTOR SHALL REIMBURSE THE STATE FOR THE FULL AMOUNT OF THE OUTSTANDING COST INCURRED BY THE STATE.

   F. IF NECESSARY, INSTALL A RAIN GAGE PRIOR TO ANY FIELD WORK INCLUDING THE INSTALLATION OF ANY SITE-SPECIFIC BEST MANAGEMENT PRACTICES. THE RAIN GAGE SHALL HAVE A TOLERANCE OF AT LEAST 0.05 INCHES OF RAINFALL. INSTALL THE RAIN GAGE ON THE PROJECT SITE IN AN AREA THAT WILL NOT DETER RAINFALL FROM ENTERING THE GAGE OPENING. DO NOT INSTALL IN A LOCATION WHERE RAIN WATER MAY SPLASH INTO RAIN GAGE. THE RAIN GAGE INSTALLATION SHALL BE STABLE AND PLUMBED. DO NOT BEGIN FIELD WORK UNTIL THE RAIN GAGE IS INSTALLED AND SITE-SPECIFIC BEST MANAGEMENT PRACTICES ARE IN-PLACE.

   G. SUBMIT SITE-SPECIFIC BMP PLAN TO THE ENGINEER ALONG WITH A COMPLETED SITE-SPECIFIC BMP REVIEW CHECKLIST WITHIN 30 CALENDAR DAYS OF CONTRACT EXECUTION. THE SITE-SPECIFIC BMP REVIEW CHECKLIST MAY BE OBTAINED FROM HTTP://WWW.STORMWATERHAWAII.COM.

2. WASTE DISPOSAL:

   A. WASTE MATERIALS:

   COLLECT AND STORE ALL WASTE MATERIALS IN A SECURELY LIDDED METAL DUMPSTER OR ROLL OFF CONTAINER WITH COVER TO KEEP RAIN OUT OR LOSS OF WASTE DURING WINDY CONDITIONS. THE DUMPSTER SHALL MEET ALL LOCAL AND STATE SOLID WASTE MANAGEMENT REGULATIONS. DEPOSIT ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE IN THE DUMPSTER. EMPTY THE DUMPSTER WEEKLY OR WHEN THE CONTAINER IS TWO-THIRDS FULL, WHICHEVER IS SOONER. DO NOT BURY CONSTRUCTION WASTE MATERIALS ONSITE. THE CONTRACTOR'S SUPERVISORY PERSONNEL SHALL BE INSTRUCTED REGARDING THE CORRECT PROCEDURE FOR WASTE DISPOSAL. POST NOTICES STATING THESE PRACTICES IN THE OFFICE TRAILER, ON A WEATHERPROOF BULLETIN BOARD, OR OTHER ACCESSIBLE LOCATION ACCEPTABLE TO THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SEEING THAT THESE PROCEDURES ARE FOLLOWED. SUBMIT THE SOLID WASTE DISCLOSURE FORM FOR CONSTRUCTION SITES TO THE ENGINEER WITHIN 30 CALENDAR DAYS OF CONTRACT EXECUTION. PROVIDE A COPY OF ALL THE DISPOSAL RECEIPTS FROM THE FACILITY PERMITTED BY THE DEPARTMENT OF HEALTH TO RECEIVE SOLID WASTE TO THE ENGINEER MONTHLY. THIS SHOULD ALSO INCLUDE DOCUMENTATION FROM ANY INTERMEDIARY FACILITY WHERE SOLID WASTE IS HANDLED OR PROCESSED.

   B. HAZARDOUS WASTE:

   DISPOSE ALL HAZARDOUS WASTE MATERIALS IN THE MANNER SPECIFIED BY LOCAL OR STATE REGULATIONS AND BY THE MANUFACTURER. THE CONTRACTOR'S SITE PERSONNEL SHALL BE INSTRUCTED IN THESE PRACTICES AND SHALL BE RESPONSIBLE FOR SEEING THAT THESE PRACTICES ARE FOLLOWED.

   C. SANITARY WASTE:

   COLLECT ALL SANITARY WASTE FROM THE PORTABLE UNITS A MINIMUM OF ONCE PER WEEK, OR AS REQUIRED. POSITION SANITARY FACILITIES WHERE THEY ARE SECURE AND WILL NOT BE TIPPED OVER OR KNOCKED DOWN.

3. EROSION AND SEDIMENT CONTROL INSPECTION AND MAINTENANCE PRACTICES:

   A. FOR PROJECTS WITH AN NPDES PERMIT FOR CONSTRUCTION ACTIVITIES, INSPECT AT THE FOLLOWING INTERVALS. FOR CONSTRUCTION AREAS DISCHARGING TO NUTRIENT OR SEDIMENT IMPAIRED WATERS, INSPECT ALL CONTROL MEASURES AT LEAST ONCE EACH WEEK AND WITHIN 24 HOURS OF ANY RAINFALL EVENT OF 0.25 INCHES OR GREATER WITHIN A 24 HOUR PERIOD. FOR CONSTRUCTION AREAS DISCHARGING TO WATERS NOT IMPAIRED FOR NUTRIENT OR SEDIMENTS, INSPECT ALL CONTROL MEASURES WEEKLY. INSPECTIONS ARE ONLY REQUIRED DURING THE PROJECT'S NORMAL WORKING HOURS. THE DISCHARGE POINT WATER CLASSIFICATION MAY BE FOUND IN THE SWPPP.

   B. MAINTAIN ALL EROSION AND SEDIMENT CONTROL MEASURES PER SPECIFICATION SECTIONS 3.02 FIELD QUALITY CONTROL AND 3.03 INSPECTIONS. IF REPAIR IS NECESSARY, INITIATE REPAIR IMMEDIATELY AND COMPLETE BY THE CLOSE OF THE NEXT WORK DAY IF THE PROBLEM DOES NOT REQUIRE SIGNIFICANT REPAIR OR REPLACEMENT, OR IF THE PROBLEM CAN BE CORRECTED THROUGH ROUTINE MAINTENANCE. WHEN INSTALLATION OF A NEW EROSION OR SEDIMENT CONTROL OR A SIGNIFICANT REPAIR IS NEEDED, INSTALL THE NEW OR MODIFIED CONTROL OR COMPLETE THE REPAIR NO LATER THAN 7 CALENDAR DAYS FROM THE TIME OF DISCOVERY. "IMMEDIATELY" MEANS THE CONTRACTOR SHALL TAKE ALL REASONABLE MEASURES TO MINIMIZE OR PREVENT DISCHARGE OF POLLUTANTS UNTIL A PERMANENT SOLUTION IS INSTALLED AND MADE OPERATIONAL. IF A PROBLEM IS IDENTIFIED AT A TIME IN THE DAY IN WHICH IT IS TOO LATE TO INITIATE REPAIR, INITIATION OF REPAIR SHALL BEGIN ON THE FOLLOWING WORK DAY.

   C. REMOVE BUILT-UP SEDIMENT FROM THE SILT FENCE WHEN IT HAS REACHED ONE-THIRD THE HEIGHT OF THE FENCE. REMOVE SEDIMENT FROM THE OTHER PERIMETER SEDIMENT CONTROL DEVICES WHEN IT HAS REACHED ONE-HALF THE HEIGHT OF THE DEVICE.

   D. INSPECT SILT SCREEN OR FENCE FOR DEPTH OF SEDIMENT, TEARS, TO VERIFY THAT THE FABRIC IS SECURELY ATTACHED TO THE FENCE POSTS OR CONCRETE SLAB AND TO VERIFY THAT THE FENCE POSTS ARE FIRMLY IN THE GROUND. INSPECT AND VERIFY THE BOTTOM OF THE SILT SCREEN IS BURIED A MINIMUM OF 6 INCHES BELOW THE EXISTING GROUND.

   E. INSPECT TEMPORARY AND PERMANENT SEEDING AND PLANTING FOR BARE SPOTS, WASHOUTS AND HEALTHY GROWTH.

   F. COMPLETE AND SUBMIT TO THE ENGINEER A MAINTENANCE INSPECTION REPORT WITHIN 24 HOURS AFTER EACH INSPECTION.

   G. PROVIDE A STABILIZED CONSTRUCTION ENTRANCE AT ALL POINTS OF EXIT ONTO PAVED ROADS TO REDUCE VEHICLE TRACKING OF SEDIMENTS. INCLUDE STABILIZED CONSTRUCTION ENTRANCE IN THE WATER POLLUTION, DUST, AND EROSION CONTROL SUBMITTALS. MINIMUM LENGTH SHOULD BE 50 FEET. MINIMUM WIDTH SHOULD BE 30 FEET. MINIMUM DEPTH SHOULD BE 12 INCHES OR AS RECOMMENDED BY THE SOILS ENGINEER AND UNDERLAIN WITH GEO-TEXTILE FABRIC. IF MINIMUM DIMENSIONS CANNOT BE MET, PROVIDE OTHER STABILIZATION TECHNIQUES THAT REMOVE SEDIMENT PRIOR TO EXIT. CLEAN THE PAVED STREET ADJACENT TO THE SITE ENTRANCE DAILY OR AS REQUIRED TO REMOVE ANY EXCESS MUD, COLD-PLANED MATERIALS, DIRT OR ROCK TRACKED FROM THE SITE. DO NOT HOSE DOWN THE STREET WITHOUT CONTAINING OR VACUUMING WASH WATER. COVER DUMP TRUCKS HAULING MATERIAL FROM THE CONSTRUCTION SITE WITH A TARPAULIN. REMOVE SEDIMENT TRACKED ONTO THE STREET, SIDEWALK, OR OTHER PAVED AREA BY THE END OF THE DAY IN WHICH THE TRACK-OUT OCCURS.

   H. INCLUDE DESIGNATED CONCRETE WASHOUT AREA(S) IN THE WATER POLLUTION, DUST, AND EROSION CONTROL SUBMITTALS.

   I. SUBMIT THE NAME OF A SPECIFIC INDIVIDUAL DESIGNATED RESPONSIBLE FOR INSPECTIONS, MAINTENANCE AND REPAIR ACTIVITIES AND FILLING OUT THE INSPECTION AND MAINTENANCE REPORT.

   J. PERSONNEL SELECTED FOR THE INSPECTION AND MAINTENANCE RESPONSIBILITIES SHALL RECEIVE TRAINING FROM THE CONTRACTOR. THEY SHALL BE TRAINED IN ALL THE INSPECTION AND MAINTENANCE PRACTICES NECESSARY FOR KEEPING THE EROSION AND SEDIMENT CONTROLS USED ONSITE IN GOOD WORKING ORDER.

   K. CONTAIN, REMOVE, AND DISPOSE SLURRY GENERATED FROM SAW CUTTING OF PAVEMENT IN ACCORDANCE WITH APPROVED BMP PRACTICES. DO NOT ALLOW DISCHARGE INTO THE DRAINAGE SYSTEM OR STATE WATERS.

   L. FOR PROJECTS WITH AN NPDES PERMIT FOR CONSTRUCTION ACTIVITIES, IMMEDIATELY INITIATE STABILIZING EXPOSED SOIL AREAS UPON COMPLETION OF EARTH-DISTURBING ACTIVITIES FOR AREAS WHERE EARTH-DISTURBING ACTIVITIES HAVE PERMANENTLY OR TEMPORARILY CEASED. EARTH-DISTURBING ACTIVITIES HAVE PERMANENTLY CEASED WHEN CLEARING AND EXCAVATION WITHIN ANY AREA OF THE CONSTRUCTION SITE THAT WILL NOT INCLUDE PERMANENT STRUCTURES HAS BEEN COMPLETED. EARTH-DISTURBING ACTIVITIES HAVE TEMPORARILY CEASED WHEN CLEARING, GRADING, AND EXCAVATION WITHIN ANY AREA OF THE SITE THAT WILL NOT INCLUDE PERMANENT STRUCTURES WILL NOT RESUME (I.E., THE LAND WILL BE IDLE) FOR A PERIOD OF 14 OR MORE CALENDAR DAYS, BUT SUCH ACTIVITIES WILL RESUME IN THE FUTURE. FOR CONSTRUCTION AREAS DISCHARGING INTO WATERS NOT IMPAIRED FOR NUTRIENTS SEDIMENTS, COMPLETE INITIAL STABILIZATION WITHIN 14 CALENDAR DAYS AFTER THE TEMPORARY OR PERMANENT CESSATION OF EARTH-DISTURBING ACTIVITIES. FOR CONSTRUCTION AREAS DISCHARGING INTO NUTRIENT OR SEDIMENT IMPAIRED WATERS, COMPLETE INITIAL STABILIZATION WITHIN 7 CALENDAR DAYS AFTER THE TEMPORARY OR PERMANENT CESSATION OF EARTH-DISTURBING ACTIVITIES. CLASSIFICATION OF WATER AT THE DISCHARGE POINT MAY BE FOUND IN THE SWPPP.

   M. FOR PROJECTS WITHOUT AN NPDES PERMIT FOR CONSTRUCTION ACTIVITIES, COMPLETE INITIAL STABILIZATION WITHIN 14 CALENDAR DAYS AFTER THE TEMPORARY OR PERMANENT CESSATION OF EARTH-DISTURBING ACTIVITIES.

4. GOOD HOUSEKEEPING, BEST MANAGEMENT PRACTICES:

   A. MATERIALS POLLUTION PREVENTION PLAN

      I. 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	CLEANING SOLVENTS
DETERGENTS	WOOD
PAINTS (ENAMEL AND LATEX)	MASONRY BLOCK
METAL STUDS	HERBICIDES AND PESTICIDES
FERTILIZERS	CURING COMPOUNDS
PETROLEUM BASED PRODUCTS	ADHESIVES

      II. USE MATERIAL MANAGEMENT PRACTICES TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES TO STORM WATER RUNOFF. MAKE AN EFFORT TO STORE ONLY ENOUGH PRODUCT AS IS REQUIRED TO DO THE JOB.

      III. STORE ALL MATERIALS STORED ONSITE IN A NEAT, ORDERLY MANNER IN HEIR APPROPRIATE CONTAINERS AND IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE.

      IV. KEEP PRODUCTS IN THEIR ORIGINAL CONTAINERS WITH THE ORIGINAL MANUFACTURER'S LABEL.

      V. DO NOT MIX SUBSTANCES WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER.

      VI. WHENEVER POSSIBLE, USE A PRODUCT UP COMPLETELY BEFORE DISPOSING OF THE CONTAINER.

      VII. FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR PROPER USE AND DISPOSAL.

      VIII. CONDUCT A DAILY INSPECTION TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS ONSITE.

   B. HAZARDOUS MATERIAL POLLUTION PREVENTION PLAN

      I. KEEP PRODUCTS IN ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE.

      II. RETAIN ORIGINAL LABELS AND MATERIAL SAFETY DATA SHEETS (SDS) FORMERLY MATERIAL SAFETY DATA SHEETS (MSDS).

      III. DISPOSE OF SURPLUS PRODUCTS ACCORDING TO MANUFACTURER'S INSTRUCTIONS AND LOCAL AND STATE REGULATIONS.

   C. ONSITE AND OFFSITE PRODUCT SPECIFIC PLAN

   THE FOLLOWING PRODUCT SPECIFIC PRACTICES SHALL BE FOLLOWED ONSITE:

      I. PETROLEUM BASED PRODUCTS:
      MONITOR ALL ONSITE VEHICLES FOR LEAKS AND PERFORM REGULAR PREVENTIVE MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE. STORE PETROLEUM PRODUCTS IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. APPLY ASPHALT SUBSTANCES USED ONSITE ACCORDING TO THE MANUFACTURER'S RECOMMENDATION.

      II. FERTILIZERS:
      APPLY FERTILIZERS USED ONLY IN THE MINIMUM AMOUNTS RECOMMENDED BY THE MANUFACTURER AND FEDERAL, STATE, AND LOCAL REQUIREMENTS. AVOID APPLYING JUST BEFORE A HEAVY RAIN EVENT. APPLY AT THE APPROPRIATE TIME OF YEAR FOR THE LOCATION, AND PREFERABLY TIMED TO COINCIDE AS CLOSELY AS POSSIBLE TO THE PERIOD OF MAXIMUM VEGETATION UPTAKE AND GROWTH. ONCE APPLIED, WORK FERTILIZER INTO THE SOIL TO LIMIT EXPOSURE TO STORM WATER. DO NOT APPLY TO STORM CONVEYANCE CHANNELS WITH FLOWING WATER. STORAGE SHALL BE IN A COVERED SHED OR IN AND AREA WHERE FERTILIZER WILL NOT COME INTO CONTACT WITH PRECIPITATION OR STORMWATER. TRANSFER THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.

      III. PAINTS:
      SEAL AND STORE ALL CONTAINERS WHEN NOT REQUIRED FOR USE. DO NOT DISCHARGE EXCESS PAINT TO THE DRAINAGE SYSTEM, SANITARY SEWER SYSTEM, OR STATE WATERS. DISPOSE PROPERLY ACCORDING TO MANUFACTURERS' INSTRUCTIONS AND STATE AND LOCAL REGULATIONS.

      IV. CONCRETE TRUCKS:
      WASHOUT OR DISCHARGE CONCRETE TRUCK DRUM WASH WATER ONLY AT A DESIGNATED SITE AS FAR AS PRACTICABLE FROM STORM DRAIN INLETS OR STATE WATERS. DO NOT DISCHARGE WATER IN THE DRAINAGE SYSTEM OR STATE WATERS. CLEAN DISPOSAL SITE AS REQUIRED OR AS REQUESTED BY THE ENGINEER.

   D. SPILL CONTROL PLAN

      I. POST A SPILL PREVENTION PLAN TO INCLUDE MEASURES TO PREVENT AND CLEAN UP EACH SPILL.

      II. THE CONTRACTOR SHALL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR. DESIGNATE AT LEAST THREE SITE PERSONNEL WHO SHALL RECEIVE SPILL PREVENTION AND CLEANUP TRAINING. THESE INDIVIDUALS SHALL EACH BECOME RESPONSIBLE FOR A PARTICULAR PHASE OF PREVENTION AND CLEANUP. POST THE NAMES OF RESPONSIBLE SPILL PERSONNEL IN THE MATERIAL STORAGE AREA ON A WEATHERPROOF BULLETIN BOARD OR OTHER ACCESSIBLE LOCATION ACCEPTABLE TO THE ENGINEER AND IN THE OFFICE TRAILER ONSITE.

      III. CLEARLY POST MANUFACTURERS' RECOMMENDED METHODS FOR SPILL CLEANUP. MAKE SITE PERSONNEL AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES.

4. GOOD HOUSEKEEPING, BEST MANAGEMENT PRACTICES (CONT.):

      IV. KEEP AMPLE MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP IN THE MATERIAL STORAGE AREA ONSITE.

      V. CLEAN UP ALL SPILLS IMMEDIATELY AFTER DISCOVERY.

      VI. KEEP THE SPILL AREA WELL VENTILATED. PERSONNEL SHALL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.

      VII. REPORT SPILLS OF TOXIC HAZARDOUS MATERIAL TO THE APPROPRIATE STATE OR LOCAL GOVERNMENT AGENCY, REGARDLESS OF THE SIZE. WHERE A LEAK, SPILL, OR OTHER RELEASE CONTAINING A HAZARDOUS SUBSTANCE OR OIL IN AN AMOUNT EQUAL TO OR IN EXCESS OF A REPORTABLE QUANTITY ESTABLISHED UNDER EITHER 40 CFR PART 110, 40 CFR PART 117, OR 40 CFR PART 302 OCCURS DURING A 24-HOUR PERIOD, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AS SOON AS THE CONTRACTOR HAS KNOWLEDGE OF THE DISCHARGE. THE ENGINEER SHALL NOTIFY THE NATIONAL RESPONSE CENTER (NRC) AT (800) 424-8802, THE CLEAN WATER BRANCH DURING REGULAR BUSINESS HOURS AT 586-4309, AND THE HAWAII STATE HOSPITAL OPERATOR AT 247-2191 AND THE CLEAN WATER BRANCH (DOH-CWB) VIA EMAIL AT CleanWaterBranch@doh.hawaii.gov DURING NON-BUSINESS HOURS IMMEDIATELY. THE CONTRACTOR SHALL ALSO PROVIDE TO THE ENGINEER, WITHIN 7 CALENDAR DAYS OF KNOWLEDGE OF THE RELEASE, A DESCRIPTION OF THE RELEASE, THE CIRCUMSTANCES LEADING TO THE RELEASE, AND DATE OF THE RELEASE. THE ENGINEER WILL PROVIDE THIS INFORMATION TO THE DOH-CWB. THE ENGINEER WILL PROVIDE INFORMATION TO THE NRC IF REQUESTED.

5. PERMIT REQUIREMENTS:

   A. A NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT FOR CONSTRUCTION ACTIVITIES OF ONE ACRE OR MORE OF DISTURBED AREA IS REQUIRED FOR THIS PROJECT. IF THE CONTRACTOR REQUIRES EXTRA LAND DISTURBANCE, INCLUDING STAGING AND STORAGE AREAS, THAT IS NOT COVERED BY THE NPDES PERMIT OBTAINED BY THE STATE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE REQUIRED NPDES CONSTRUCTION ACTIVITIES PERMIT TO COVER THIS ADDITIONAL DISTURBED AREA. SEE HAWAII ADMINISTRATIVE RULES CHAPTER 11-55, APPENDIX C FOR DEFINITION OF LAND DISTURBANCE. THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE APPLICABLE NPDES PERMIT DOCUMENTS ON THE BID PACKAGE COMPACT DISC.

   B. COMPLY WITH ALL APPLICABLE STATE AND FEDERAL PERMIT CONDITIONS. PERMITS MAY INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:

      I. NPDES PERMIT FOR CONSTRUCTION ACTIVITIES
      II. NPDES PERMIT FOR CONSTRUCTION DEWATERING
      III. NPDES PERMIT FOR HYDROTESTING WATERS
      IV. WATER QUALITY CERTIFICATION
      V. STREAM CHANNEL ALTERATION PERMIT
      VI. SECTION 404 ARMY CORPS OF ENGINEER PERMIT

6. SITE-SPECIFIC BMP REQUIREMENTS:

   EACH BMP BELOW IS REFERENCED TO THE CORRESPONDING SECTION OF THE CURRENT HDOT CONSTRUCTION BEST MANAGEMENT PRACTICES FIELD MANUAL AND APPROPRIATE SUPPLEMENTAL SHEETS. THE MANUAL MAY BE OBTAINED FROM THE HDOT STATEWIDE STORMWATER MANAGEMENT PROGRAM WEBSITE AT http://www.stormwaterhawaii.com/resources UNDER CONSTRUCTION BEST MANAGEMENT PRACTICES FIELD MANUAL. SUPPLEMENTAL BMP SHEETS ARE LOCATED AT http://stormwaterhawaii.com/resources/contractors/contractors_BMPmanual.aspx UNDER CONCRETE CURING AND IRRIGATION WATER.

   THE REQUIREMENTS FOR WATER POLLUTION, DUST, AND EROSION CONTROL SUBMITTALS ARE INCLUDED IN SECTION 209 OF THE HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION DATED 2005 AND APPLICABLE SPECIAL PROVISIONS. A LIST OF POLLUTANT SOURCES AND CORRESPONDING BMP USED TO MITIGATE THE POLLUTANTS ARE INCLUDED IN SECTION 209 OF THE SPECIAL PROVISIONS UNDER APPENDIX A.

   FOLLOW THE REQUIREMENTS BELOW:

   A. PROTECT ALL DRAINAGE INLETS RECEIVING RUNOFF FROM DISTURBED AREAS (SC-2).

   B. CONTAIN ON-SITE RUNOFF USING PERIMETER SEDIMENT CONTROLS

      I. SC-1 SILT FENCE
      II. SC-5 VEGETATED FILTER STRIPS AND BUFFERS
      III. SC-8 COMPOST FILTER BERM
      IV. SC-13 SANDBAG BARRIER
      V. SC-14 BRUSH OR ROCK FILTER

   C. CONTROL OFFSITE RUNOFF FROM ENTERING CONSTRUCTION AREA

      I. EC-8 RUN-ON DIVERSION
      II. SC-6 EARTH DIKE
      III. SC-7 TEMPORARY DRAINS AND SWALES

   D. INCORPORATE APPLICABLE SITE MANAGEMENT BMP

      I. SM-1 EMPLOYEE TRAINING
      II. SM-2 MATERIAL DELIVERY AND STORAGE
      III. SM-3 MATERIAL USE
      IV. SM-4 PROTECTION OF STOCKPILES
      V. SM-6 SOLID WASTE MANAGEMENT
      VI. SM-7 SANITARY/SEPTIC WASTE MANAGEMENT
      VII. SM-9 HAZARDOUS WASTE MANAGEMENT
      VIII. SM-10 SPILL PREVENTION AND CONTROL
      IX. SM-11 VEHICLE AND EQUIPMENT CLEANING
      X. SM-12 VEHICLE AND EQUIPMENT MAINTENANCE
      XI. SM-13 VEHICLE AND EQUIPMENT REFUELING
      XII. SM-14 SCHEDULING
      XIII. SM-15 LOCATION OF POTENTIAL SOURCES OF SEDIMENT
      XIV. SM-16 PRESERVATION OF EXISTING VEGETATION
      XV. SM-18 DUST CONTROL

6. SITE-SPECIFIC BMP REQUIREMENTS (CONT.):

   E. CONTAIN POLLUTANTS WITHIN THE CONSTRUCTION STAGING/STORAGE AREA BMP WITH APPLICABLE PERIMETER SEDIMENT CONTROLS AND SITE MANAGEMENT BMP. INCLUDE A STABILIZED CONSTRUCTION ENTRANCE/EXIT (EC-2) FOR ALL AREAS WHICH EXIT ONTO A PAVED STREET. RESTRICT VEHICLE ACCESS TO THESE POINTS.

   F. MANAGE CONCRETE WASTE INCLUDING INSTALLING A CONCRETE WASHOUT AREA (SM-5) AND PROPERLY DISPOSING OF CONCRETE CURING WATER (CALIFORNIA STORMWATER BMP HANDBOOK NS-12 CONCRETE CURING.)

   G. REMOVE SAW CUT SLURRY AND HYDRODEMOLITION WATER FROM THE SITE BY VACUUMING. PROVIDE STORM DRAIN PROTECTION AND/OR PERIMETER SEDIMENT CONTROLS DURING SAW CUTTING AND HYDRODEMOLITION WORK.

BASE BID

ANSON M. MURAYAMA
LICENSED PROFESSIONAL ENGINEER
No. 6975-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/26

REVISION DATE	DESCRIPTION	MADE BY	APPROVED

cp&e Community Planning and Engineering, Inc.
Engineering Design | Construction Management | Infrastructure Planning
1288 Queen Emma Street, Third Floor Honolulu, Hawaii

KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B

KEOKEA & WAIOHULI, MAKAWAO, MAUI
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEYS: (2) 2-2-002:014 AND (2) 2-2-033:023

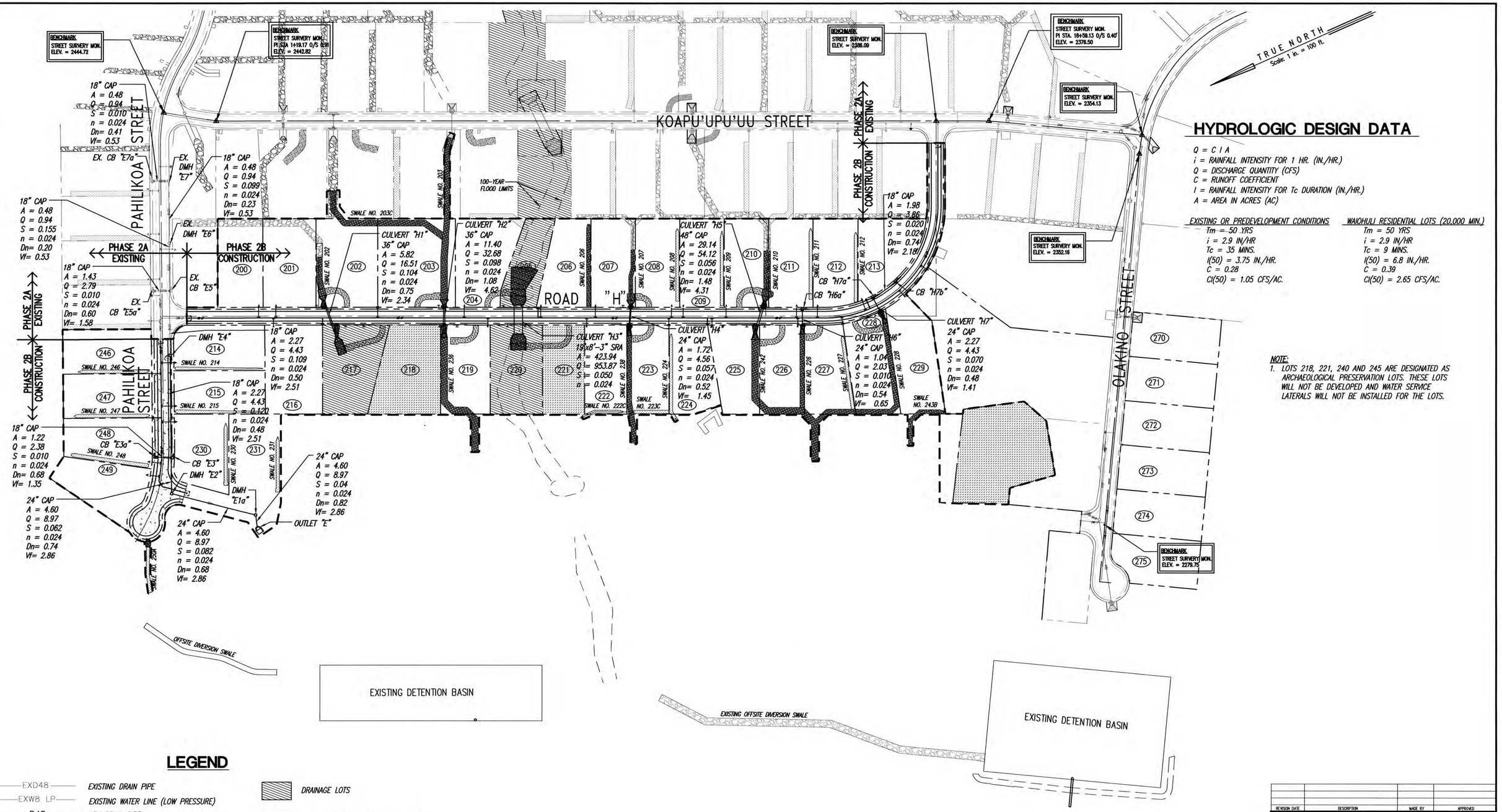
GENERAL NOTES - 3 - BASE BID

DRAWN BY:	ENGINEER:	CHECKED BY:
HWH	HWH , FJC	AMM

ADDENDUM NO. 3

DWG. NO. **C-4**

FILE	POCKET	FOLDER	NO.



HYDROLOGIC DESIGN DATA

Q = C I A
i = RAINFALL INTENSITY FOR 1 HR. (IN./HR.)
Q = DISCHARGE QUANTITY (CFS)
C = RUNOFF COEFFICIENT
I = RAINFALL INTENSITY FOR Tc DURATION (IN./HR.)
A = AREA IN ACRES (AC)

EXISTING OR PREDEVELOPMENT CONDITIONS	WAIOHULI RESIDENTIAL LOTS (20,000 MIN.)
Tm = 50 YRS	i = 2.9 IN/HR
i = 2.9 IN/HR	Tc = 9 MINS.
Tc = 35 MINS.	I(50) = 6.8 IN./HR.
I(50) = 3.75 IN./HR.	C = 0.39
C = 0.28	CI(50) = 2.65 CFS/AC.
CI(50) = 1.05 CFS/AC.	

NOTE:
1. LOTS 218, 221, 240 AND 245 ARE DESIGNATED AS ARCHAEOLOGICAL PRESERVATION LOTS. THESE LOTS WILL NOT BE DEVELOPED AND WATER SERVICE LATERALS WILL NOT BE INSTALLED FOR THE LOTS.

LEGEND

EXD48	EXISTING DRAIN PIPE
EXW8 LP	EXISTING WATER LINE (LOW PRESSURE)
D48	NEW DRAIN PIPE
W8 LP	NEW WATER LINE (LOW PRESSURE)
— — —	LIMITS OF 100-YR STORM
— — —	PROPERTY LINE
CAP	CORRUGATED ALUMINUM PIPE
HDPE	HIGH DENSITY POLYETHYLENE PIPE
SRA	SINGLE RADIUS ARCH CULVERT
CB	DRAIN CATCH BASIN
DMH	DRAIN MANHOLE
A	AREA, ACS
Q	DRAIN RUNOFF, CFS
S	SLOPE OF PIPE, FT/FT
Dn	NORMAL DEPTH OF FLOW, FT
Vf	FULL FLOW VELOCITY, FPS
(180)	LOT NUMBER

DRAINAGE LOTS
ARCHAEOLOGICAL PRESERVATION LOTS
CONCRETE PAVEMENT
CULVERT ACCESS ROAD
GRP SWALE
GRASS SWALE

GENERAL LAYOUT PLAN

SCALE: 1"=100'

100 50 0 100 200
Graphic Scale in Feet

BASE BID

ANSON M. MURAYAMA
LICENSED PROFESSIONAL ENGINEER
No. 6975-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/26

REVISION DATE	DESCRIPTION	MADE BY	APPROVED

cp&e Community Planning and Engineering, Inc.
Engineering Design | Construction Management | Infrastructure Planning
1286 Queen Emma Street, Third Floor Honolulu, Hawaii

KEOKEA-WAIOHULI DEVELOPMENT
PHASE 2B
KEOKEA & WAIOHULI, MAKAWAO, MAUI
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEYS: (2) 2-2-002:014 AND (2) 2-2-033:023

GENERAL LAYOUT PLAN - BASE BID

DRAWN BY: HWH	ENGINEER: HWH , FJC	CHECKED BY: AMM

ADDENDUM NO. 3

DWG. NO. C-5

SHEET 06 OF 91 SHEETS

FILE	POCKET	FOLDER	NO.

HYDROLOGIC DESIGN DATA

Q = C I A
i = RAINFALL INTENSITY FOR 1 HR. (IN./HR.)
Q = DISCHARGE QUANTITY (CFS)
C = RUNOFF COEFFICIENT
I = RAINFALL INTENSITY FOR Tc DURATION (IN./HR.)
A = AREA IN ACRES (AC)

EXISTING OR PREDEVELOPMENT CONDITIONS	WAIOHULI RESIDENTIAL LOTS (20,000 MIN.)
Tm = 50 YRS	Tm = 50 YRS
i = 2.9 IN/HR	i = 2.9 IN/HR
Tc = 35 MINS.	Tc = 9 MINS.
I(50) = 3.75 IN./HR.	I(50) = 6.8 IN./HR.
C = 0.28	C = 0.39
CI(50) = 1.05 CFS/AC.	CI(50) = 2.65 CFS/AC.

NOTE:
1. LOTS 218, 221, 240 AND 245 ARE DESIGNATED AS ARCHAEOLOGICAL PRESERVATION LOTS. THESE LOTS WILL NOT BE DEVELOPED AND WATER SERVICE LATERALS WILL NOT BE INSTALLED FOR THE LOTS.

LEGEND

EXD48	EXISTING DRAIN PIPE
EXW8 LP	EXISTING WATER LINE (LOW PRESSURE)
D48	NEW DRAIN PIPE
W8 LP	NEW WATER LINE (LOW PRESSURE)
	LIMITS OF 100-YR STORM
	PROPERTY LINE
CAP	CORRUGATED ALUMINUM PIPE
HDPE	HIGH DENSITY POLYETHYLENE PIPE
SRA	SINGLE RADIUS ARCH CULVERT
CB	DRAIN CATCH BASIN
DMH	DRAIN MANHOLE
A	AREA, ACS
Q	DRAIN RUNOFF, CFS
S	SLOPE OF PIPE, FT/FT
Dn	NORMAL DEPTH OF FLOW, FT
Vf	FULL FLOW VELOCITY, FPS
(180)	LOT NUMBER

- DRAINAGE LOTS
- ARCHAEOLOGICAL PRESERVATION LOTS
- CONCRETE PAVEMENT
- CULVERT ACCESS ROAD
- GRP SWALE
- GRASS SWALE

GENERAL LAYOUT PLAN

SCALE: 1"=100'

ADDITIVE ALTERNATE

100 50 0 100 200
Graphic Scale in Feet

ANSON M. MURAYAMA
LICENSED PROFESSIONAL ENGINEER
No. 6975-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/26

REVISION DATE	DESCRIPTION	MADE BY	APPROVED

cp&e Community Planning and Engineering, Inc.
Engineering Design | Construction Management | Infrastructure Planning
1288 Queen Emma Street, Third Floor Honolulu, Hawaii

KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B

KEOKEA & WAIOHULI, MAKAWAO, MAUI
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEYS: (2) 2-2-002:014 AND (2) 2-2-033:023

GENERAL LAYOUT PLAN - ADDITIVE ALTERNATE

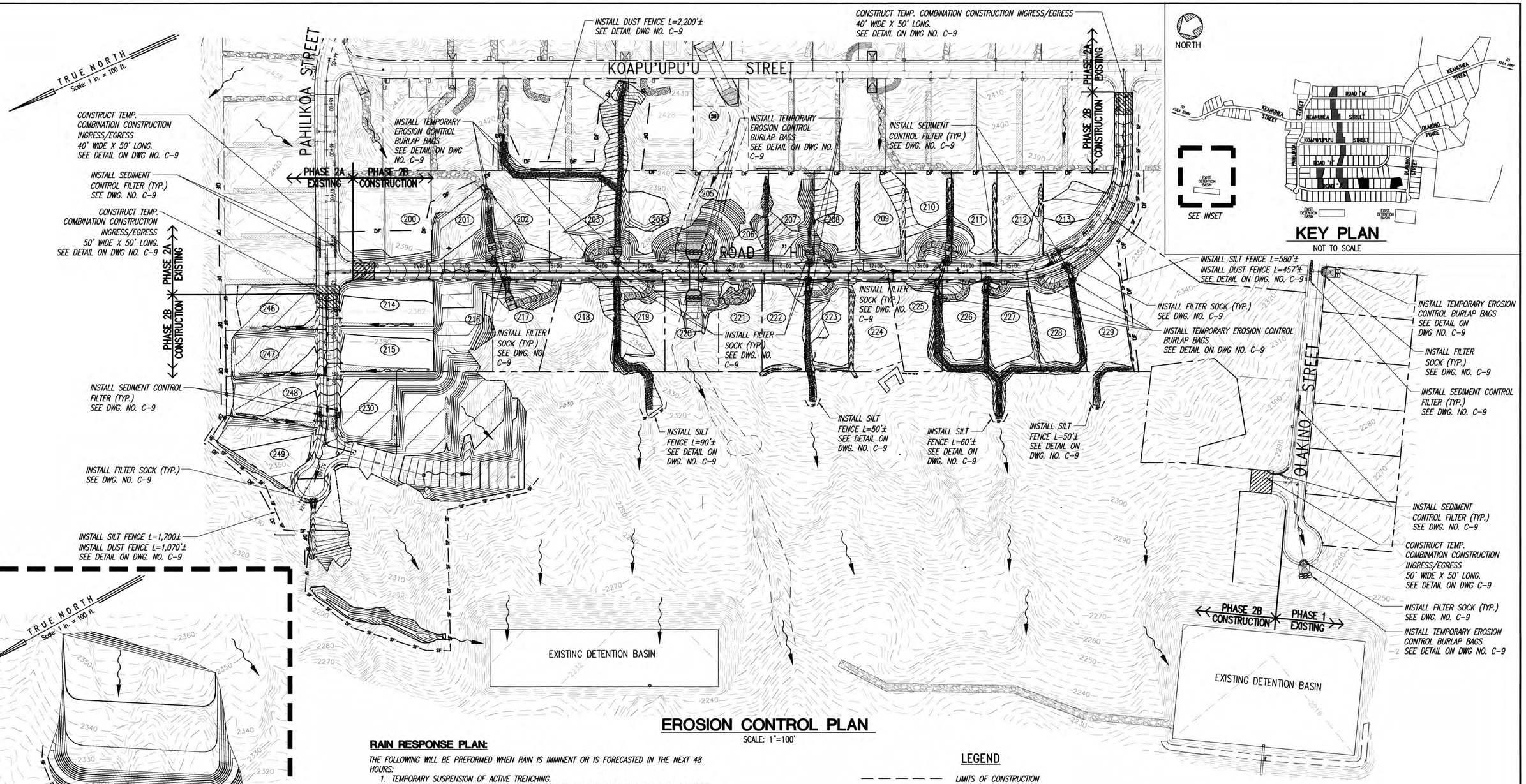
DRAWN BY:	ENGINEER:	CHECKED BY:
HWH	HWH , FJC	AMM

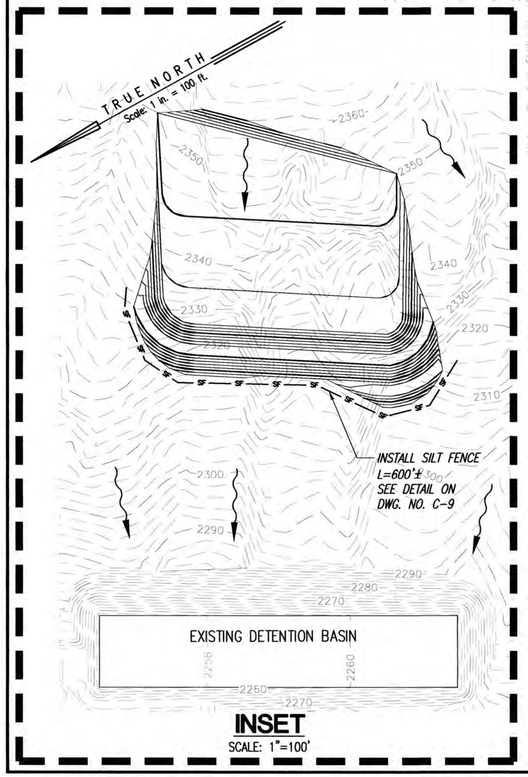
ADDENDUM NO. 3

DWG. NO. C-6

SHEET 07 OF 91 SHEETS

FILE	POCKET	FOLDER	NO.





INSET
SCALE: 1"=100'

EROSION CONTROL PLAN
SCALE: 1"=100'

RAIN RESPONSE PLAN:

THE FOLLOWING WILL BE PREFORMED WHEN RAIN IS IMMINENT OR IS FORECASTED IN THE NEXT 48 HOURS:

1. TEMPORARY SUSPENSION OF ACTIVE TRENCHING.
2. INSPECT ALL PERIMETER CONTROLS AND INLET PROTECTION DEVICES, AND MAINTAIN AS NEEDED. REINSTALL ANY PERIMETER CONTROLS THAT WERE REMOVED DUE TO ACTIVE WORK IN THE AREA. IF A SEVERE STORM IS EXPECTED, REMOVE INLET PROTECTION DEVICES TO PREVENT FLOODING ON SURROUNDING STREETS.
3. COVER OR RELOCATE MATERIAL STOCKPILES AND LIQUID MATERIAL CONTAINERS TO AVOID CONTACT WITH RAINWATER.
4. PLACE SPILL PADS OR OIL-ONLY SPILL PADS UNDER CONSTRUCTION VEHICLES TO PREVENT RUNOFF FROM CONTACTING ANY SPILLED PETROLEUM PRODUCTS. PROPERLY DISPOSE OR ANY ACCUMULATED OILY WATER AFTER THE RAIN EVENT.
5. RE-INSPECT AFTER THE RAIN EVENT AND REPLACE OR MAINTAIN BMPS AS NEEDED.

DUST CONTROL:

1. DUST FROM THE PROJECT SITE SHALL NOT BE TRANSPORTED OR DISCHARGED TO OFF-SITE AREAS. THE WORK MUST BE IN CONFORMANCE WITH AIR POLLUTION CONTROL STANDARDS CONTAINED IN THE HAWAII ADMINISTRATIVE RULES: TITLE 11 CHAPTER 60.1, "AIR POLLUTION CONTROL." PROVIDE CONTROL OF DUST BY ONE OR MORE OF THE FOLLOWING:
   A. MULCHING TO A DEPTH OF NO LESS THAN 1 INCH
   B. SPRINKLING EXPOSED SOILS WITH WATER TO MAINTAIN MOISTNESS AT A DEPTH OF 2-3 INCHES DURING WORKING HOURS AND NOT TO GENERATE ANY RUNOFF.
   C. VERTICAL DUST BARRIERS NO LESS THAN 6 FEET IN HEIGHT, CONSTRUCTED OF MATERIALS CAPABLE OF EFFECTIVELY PREVENTING THE SPREAD OF DUST PARTICLES
   D. SPRAY-ON CHEMICAL SOIL TREATMENTS (PALLIATIVES) SUCH AS ANIONIC ASPHALT EMULSION, LATEX EMULSION, RESIN-WATER EMULSIONS, OR CALCIUM CHLORIDE.
2. ALL POLLUTANTS DISCHARGED FROM CONSTRUCTION SITE TO OFF-SITE AREAS MUST BE SWEPT OR VACUUMED EACH DAY BEFORE LEAVING THE JOB SITE.

LEGEND

- LIMITS OF CONSTRUCTION
- 2360 EXISTING CONTOUR
- EX D48 EXISTING DRAIN PIPE
- EXISTING LOT LINE
- BURLAP BAGS OR APPROVED EQUAL @ CULVERT INLET/OUTLET
- COMBINATION CONSTRUCTION INGRESS/EGRESS
- FILTER SOCK
- DIRECTION OF STORM SURFACE RUNOFF FLOW
- SF / DF SILT FENCE / DUST FENCE
- (180) LOT NUMBER

100 50 0 100 200
Graphic Scale in Feet

BASE BID

ANSON M. MURAYAMA
LICENSED PROFESSIONAL ENGINEER
No. 6975-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/26

REVISION DATE	DESCRIPTION	MADE BY	APPROVED

cp&e Community Planning and Engineering, Inc.
Engineering Design | Construction Management | Infrastructure Planning
1286 Queen Emma Street, Third Floor Honolulu, Hawaii

KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B
KEOKEA & WAIOHULI, MAKAWAO, MAUI
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEYS: (2) 2-2-002:014 AND (2) 2-2-033:023

EROSION CONTROL PLAN - BASE BID

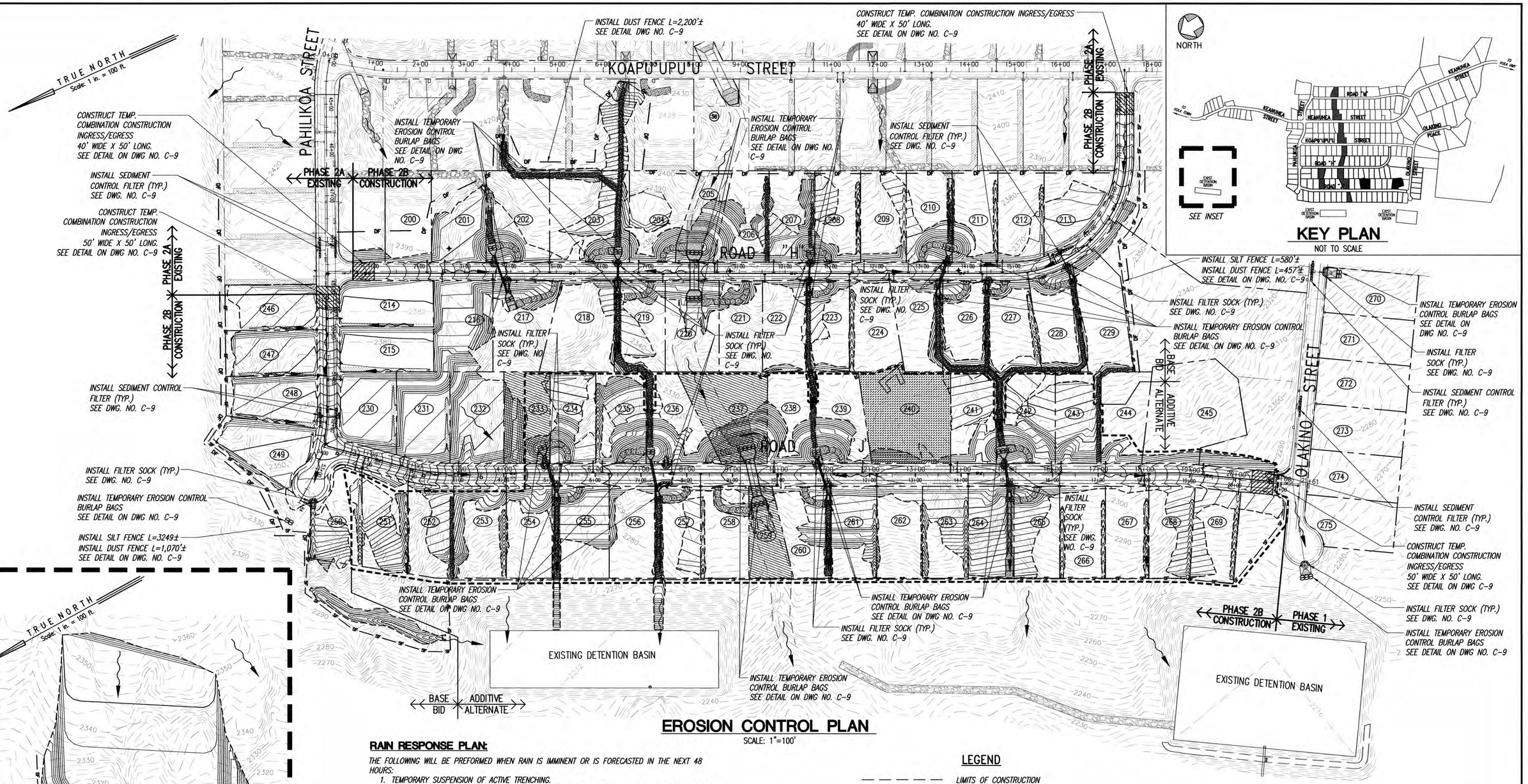
DRAWN BY: HWH	ENGINEER: HWH , FJC	CHECKED BY: AMM

ADDENDUM NO. 3

DWG. NO. **C-7**

SHEET 08 OF 91 SHEETS

FILE	POCKET	FOLDER	NO.



EROSION CONTROL PLAN

SCALE: 1"=100'

RAIN RESPONSE PLAN:

THE FOLLOWING WILL BE PREFORMED WHEN RAIN IS IMMINENT OR IS FORECASTED IN THE NEXT 48 HOURS:

1. TEMPORARY SUSPENSION OF ACTIVE TRENCHING.
2. INSPECT ALL PERIMETER CONTROLS AND INLET PROTECTION DEVICES, AND MAINTAIN AS NEEDED. REINSTALL ANY PERIMETER CONTROLS THAT WERE REMOVED DUE TO ACTIVE WORK IN THE AREA. IF A SEVERE STORM IS EXPECTED, REMOVE INLET PROTECTION DEVICES TO PREVENT FLOODING ON SURROUNDING STREETS.
3. COVER OR RELOCATE MATERIAL STOCKPILES AND LIQUID MATERIAL CONTAINERS TO AVOID CONTACT WITH RAINWATER.
4. PLACE SPILL PADS OR OIL-ONLY SPILL PADS UNDER CONSTRUCTION VEHICLES TO PREVENT RUNOFF FROM CONTACTING ANY SPILLED PETROLEUM PRODUCTS. PROPERLY DISPOSE OR ANY ACCUMULATED OILY WATER AFTER THE RAIN EVENT.
5. RE-INSPECT AFTER THE RAIN EVENT AND REPLACE OR MAINTAIN BMPS AS NEEDED.

DUST CONTROL:

1. DUST FROM THE PROJECT SITE SHALL NOT BE TRANSPORTED OR DISCHARGED TO OFF-SITE AREAS. THE WORK MUST BE IN CONFORMANCE WITH AIR POLLUTION CONTROL STANDARDS CONTAINED IN THE HAWAII ADMINISTRATIVE RULES: TITLE 11 CHAPTER 60.1, "AIR POLLUTION CONTROL." PROVIDE CONTROL OF DUST BY ONE OR MORE OF THE FOLLOWING:
   - A. MULCHING TO A DEPTH OF NO LESS THAN 1 INCH
   - B. SPRINKLING EXPOSED SOILS WITH WATER TO MAINTAIN MOISTNESS AT A DEPTH OF 2-3 INCHES DURING WORKING HOURS AND NOT TO GENERATE ANY RUNOFF.
   - C. VERTICAL DUST BARRIERS NO LESS THAN 6 FEET IN HEIGHT, CONSTRUCTED OF MATERIALS CAPABLE OF EFFECTIVELY PREVENTING THE SPREAD OF DUST PARTICLES
   - D. SPRAY-ON CHEMICAL SOIL TREATMENTS (PALLIATIVES) SUCH AS ANIONIC ASPHALT EMULSION, LATEX EMULSION, RESIN-WATER EMULSIONS, OR CALCIUM CHLORIDE.
2. ALL POLLUTANTS DISCHARGED FROM CONSTRUCTION SITE TO OFF-SITE AREAS MUST BE SWEPT OR VACUUMED EACH DAY BEFORE LEAVING THE JOB SITE.

LEGEND

- LIMITS OF CONSTRUCTION
- 2360 — EXISTING CONTOUR
- EX D48 — EXISTING DRAIN PIPE
- EXISTING LOT LINE
- BURLAP BAGS OR APPROVED EQUAL @ CULVERT INLET/OUTLET
- COMBINATION CONSTRUCTION INGRESS/EGRESS
- FILTER SOCK
- DIRECTION OF STORM SURFACE RUNOFF FLOW
- SF / DF — SILT FENCE / DUST FENCE
- (180) — LOT NUMBER

ADDITIVE ALTERNATE

100 50 0 100 200
Graphic Scale in Feet

ANSON M. MURAYAMA
LICENSED PROFESSIONAL ENGINEER
No. 6975-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/26

REVISION DATE	DESCRIPTION	MADE BY	APPROVED

cp&e — Community Planning and Engineering, Inc.
Engineering Design | Construction Management | Infrastructure Planning
1286 Queen Emma Street, Third Floor Honolulu, Hawaii

KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B
KEOKEA & WAIOHULI, MAKAWAO, MAUI
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEYS: (2) 2-2-002:014 AND (2) 2-2-033:023

EROSION CONTROL PLAN - ADDITIVE ALTERNATE

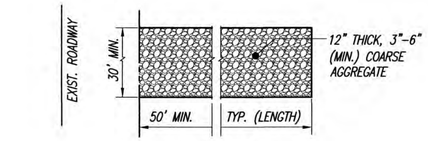
DRAWN BY: HWH	ENGINEER: HWH , FJC	CHECKED BY: AMM

ADDENDUM NO. 3

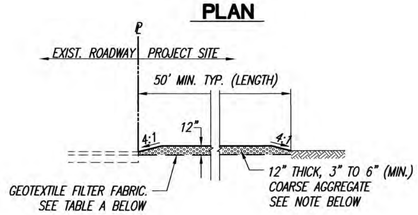
DWG. NO. C-8

SHEET 09 OF 91 SHEETS

FILE	POCKET	FOLDER	NO.



PLAN



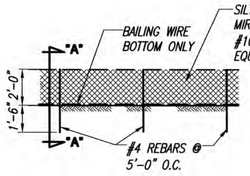
SECTION - COMBINATION INGRESS/EGRESS

NOTE:
12" COARSE AGGREGATE LAYER SHALL BE REMOVED IMMEDIATELY PRIOR TO INSTALLATION OF ROADWAY BASE COARSE

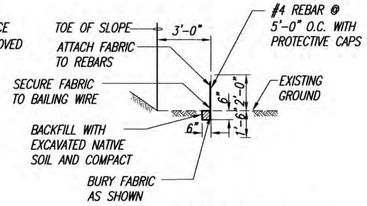
TABLE A	GEOTEXTILE REQUIREMENTS
PHYSICAL PROPERTY	REQUIREMENTS
GRAB TENSILE STRENGTH	220 LB (ASTM D1682)
ELONGATION FAILURE	60% (ASTM D1682)
MULLEN BURST STRENGTH	430 LB (ASTM D3768)
PUNCTURE STRENGTH	125 LB (ASTM D751, MODIFIED)
EQUIVALENT OPENING	SIZE 40-80 (U.S. STD SIEVE, CW-02215)

CONSTRUCTION INGRESS/EGRESS DETAILS

SCALE : 1 ½ IN. = 1 FT.



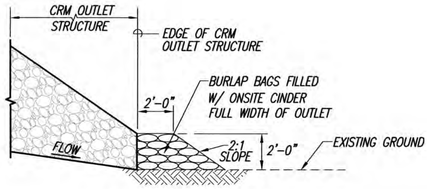
ELEVATION



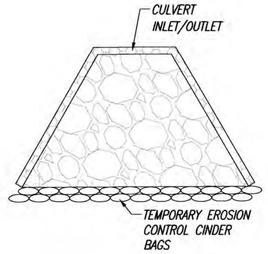
SECTION "A-A"

TYPICAL SILT FENCE

SCALE : 3 IN. = 1 FT.

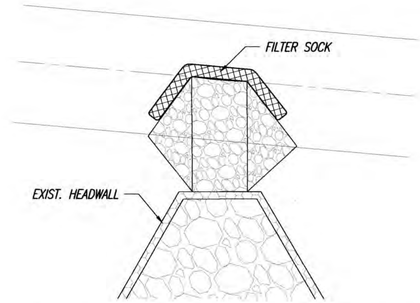


TYPICAL SECTION



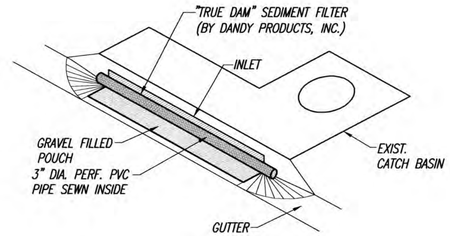
TEMPORARY EROSION CONTROL @ CULVERT OUTLETS

SCALE : 3 IN. = 1 FT.



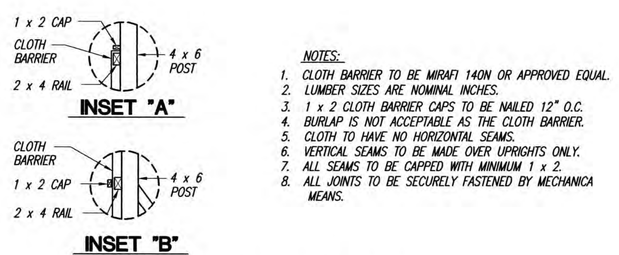
TEMPORARY EROSION CONTROL @ GRP SWALE CUTOUT

SCALE : 3 IN. = 1 FT.



TYPICAL SEDIMENT CONTROL FILTER AT CATCH BASIN

SCALE : 3 IN. = 1 FT.



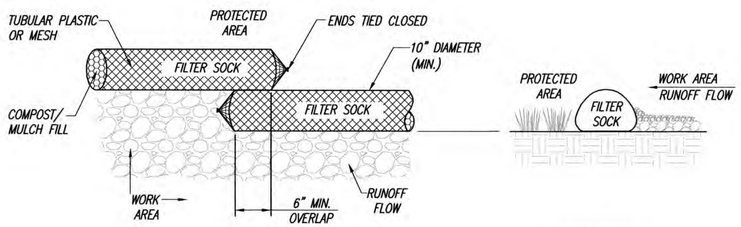
INSET "A"

INSET "B"

NOTES:
1. CLOTH BARRIER TO BE MIRAFI 140N OR APPROVED EQUAL.
2. LUMBER SIZES ARE NOMINAL INCHES.
3. 1 x 2 CLOTH BARRIER CAPS TO BE NAILED 12" O.C.
4. BURLAP IS NOT ACCEPTABLE AS THE CLOTH BARRIER.
5. CLOTH TO HAVE NO HORIZONTAL SEAMS.
6. VERTICAL SEAMS TO BE MADE OVER UPRIGHTS ONLY.
7. ALL SEAMS TO BE CAPPED WITH MINIMUM 1 x 2.
8. ALL JOINTS TO BE SECURELY FASTENED BY MECHANICA MEANS.

TYPICAL DUST FENCE

SCALE : 1 ½ IN. = 1 FT.



PLAN SECTION

TYPICAL FILTER BARRIER DETAIL

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

NOTES:
1. SEDIMENT AND DEBRIS AT THE SEDIMENT CONTROL FILTER AT CATCH BASINS SHALL BE CLEANED AND REMOVED WEEKLY IN DRY PERIODS AND WITHIN 24 HR PERIOD DURING RAINFALL. DAILY CHECKING IS NECESSARY. THE PERMITTEE SHALL MAINTAIN RECORDS OF CHECKS AND REMOVAL OF SEDIMENT AND DEBRIS.
2. DURING AN EVENT OF ABOVE NORMAL RAINFALL, THE CONTRACTOR SHALL REMOVE SEDIMENT FILTER AND REPLACE AFTER EVENT HAS PASSED.
3. SEDIMENT CONTROL FILTERS AT EXISTING CATCH BASINS SHALL BE IN PLACE AND FUNCTIONAL BEFORE CONSTRUCTION OPERATIONS BEGIN AND SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
4. SEDIMENT CONTROL FILTERS AT NEW CATCH BASINS SHALL BE INSTALLED IMMEDIATELY AFTER THE CONSTRUCTION OF THE CATCH BASIN AND SHALL BE MAINTAINED THROUGHOUT THE REMAINING DURATION OF CONSTRUCTION.

ANSON M. MURAYAMA
LICENSED PROFESSIONAL ENGINEER
No. 6975-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/26

REVISION DATE	DESCRIPTION	MADE BY	APPROVED

cp&e Community Planning and Engineering, Inc.
Engineering Design | Construction Management | Infrastructure Planning
1286 Queen Emma Street, Third Floor Honolulu, Hawaii

KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B
KEOKEA & WAIOHULI, MAKAWAO, MAUI
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEYS: (2) 2-2-002:014 AND (2) 2-2-033:023

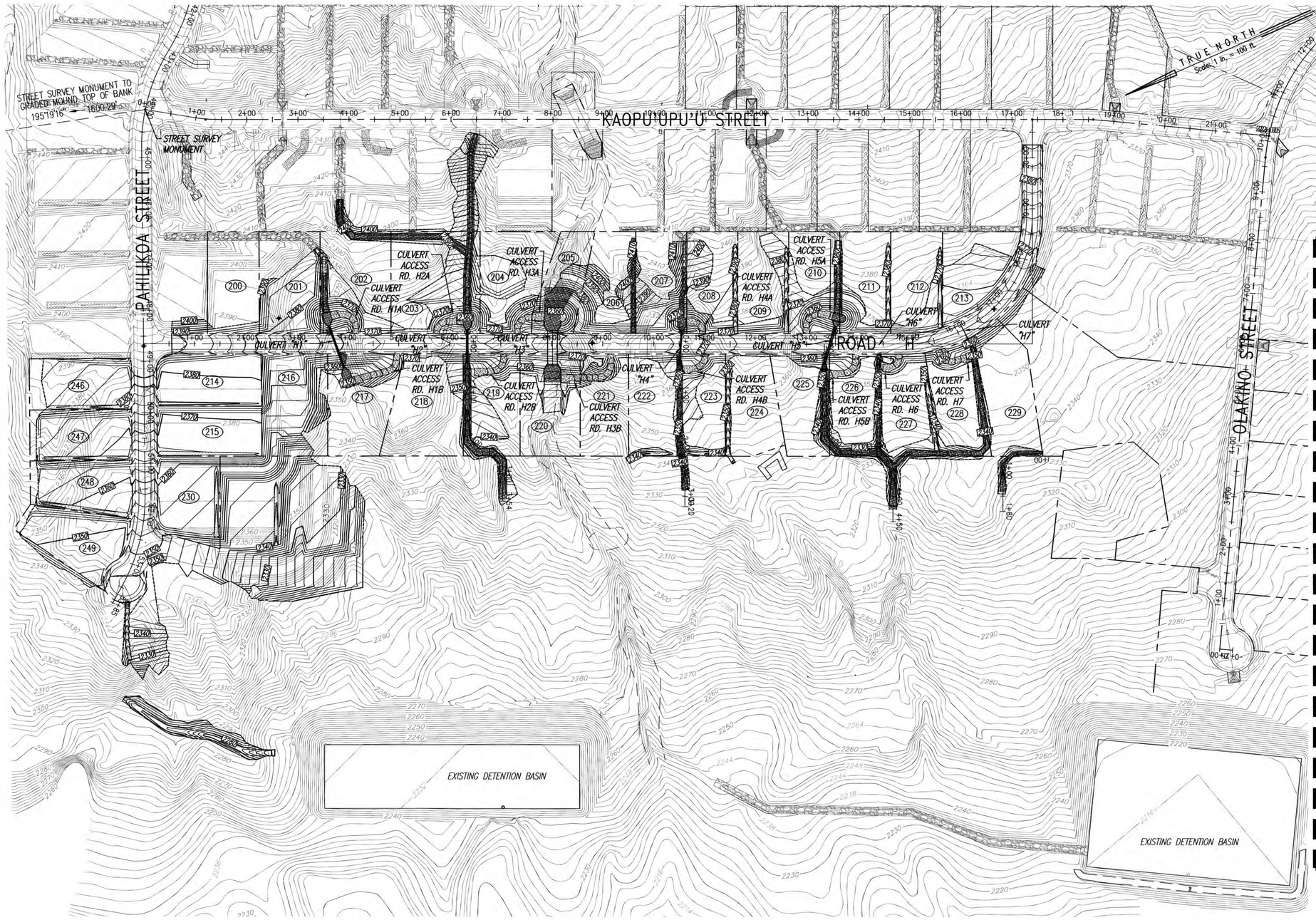
EROSION CONTROL DETAILS - BASE BID

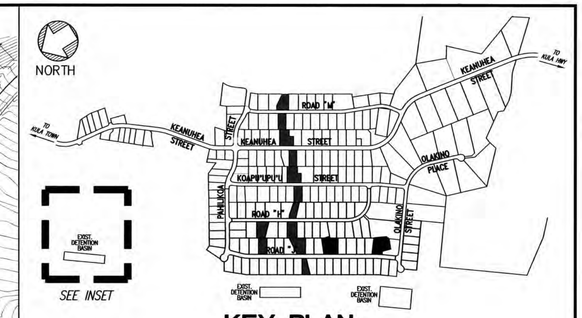
DRAWN BY: HWH	ENGINEER: HWH , FJC	CHECKED BY: AMM

BASE BID

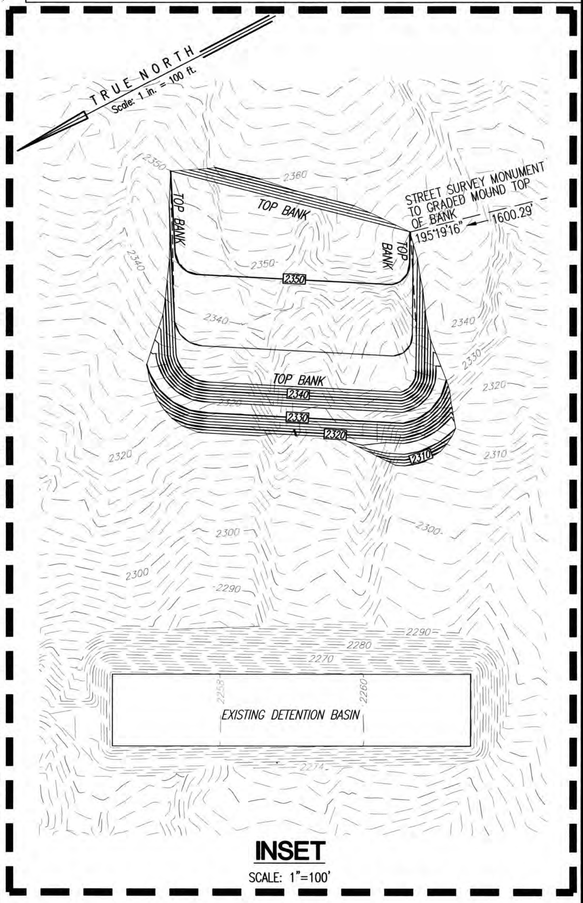
ADDENDUM NO. 3

FILE	POCKET	FOLDER	NO.





KEY PLAN
NOT TO SCALE



INSET
SCALE: 1"=100'

LEGEND

- 2360 — EXISTING CONTOUR
- EX D48 — EXISTING DRAIN PIPE
- D48 — DRAIN PIPE
- — — — EXISTING LOT LINE
- (180) — LOT NUMBER
- — — — — — LIMITS OF GRADING
- TP-3 — BORING LOG

GENERAL GRADING PLAN
SCALE: 1"=100'

EARTHWORK QUANTITIES
(FOR PERMIT PURPOSES ONLY)

AREA TO BE GRADED	14.04	ACS.
EXCAVATION	68,500	CY
EMBANKMENT	68,500	CY

100 50 0 100 200
Graphic Scale in Feet

BASE BID

ANSON M. MURAYAMA
LICENSED PROFESSIONAL ENGINEER
No. 6975-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/26

REVISION DATE	DESCRIPTION	MADE BY	APPROVED

Community Planning and Engineering, Inc.
Engineering Design | Construction Management | Infrastructure Planning
1286 Queen Emma Street, Third Floor Honolulu, Hawaii

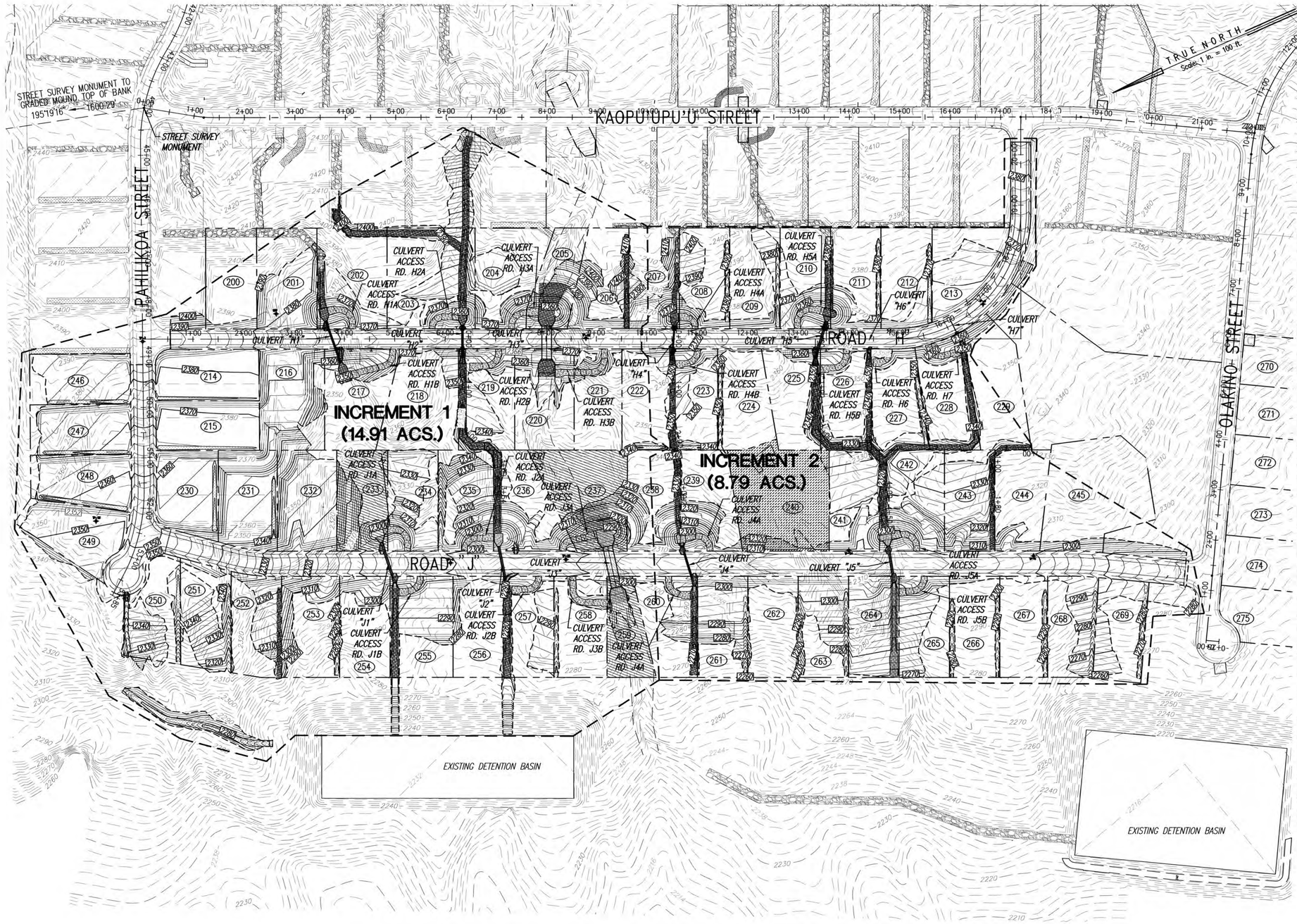
KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B
KEOKEA & WAIOHULI, MAKAWAO, MAUI
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEYS: (2) 2-2-002:014 AND (2) 2-2-033:023

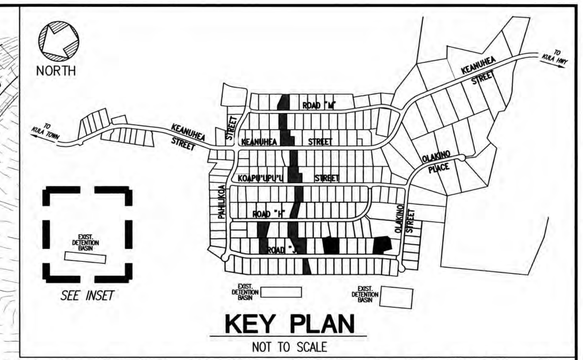
GENERAL GRADING PLAN - BASE BID

DRAWN BY: HWH	ENGINEER: HWH , FJC	CHECKED BY: AMM

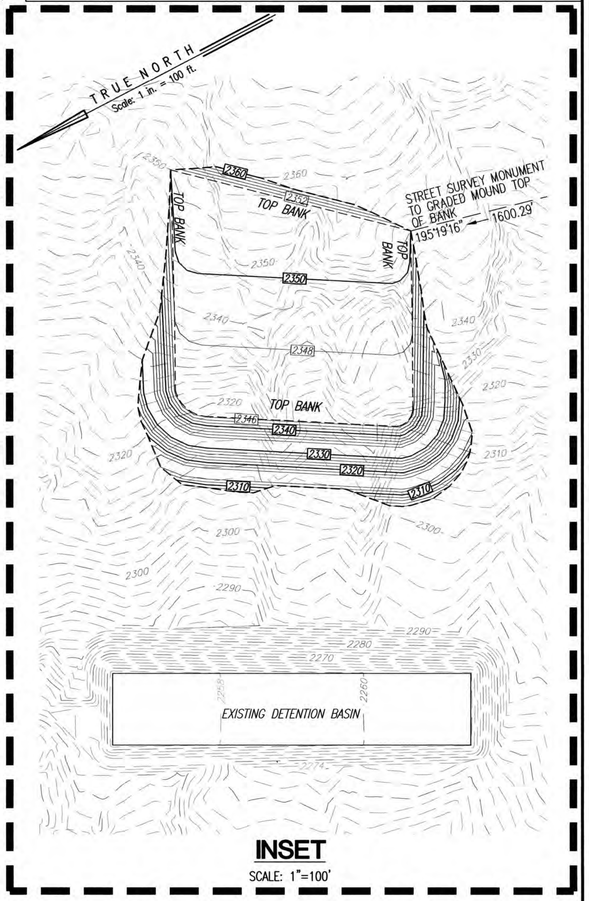
ADDENDUM NO. 3

FILE	POCKET	FOLDER	NO.





KEY PLAN
NOT TO SCALE



INSET
SCALE: 1"=100'

LEGEND

2360	EXISTING CONTOUR
EX D48	EXISTING DRAIN PIPE
D48	DRAIN PIPE
	EXISTING LOT LINE
(180)	LOT NUMBER
	LIMITS OF GRADING
TP-3	BORING LOG

GENERAL GRADING PLAN
SCALE: 1"=100'

EARTHWORK QUANTITIES
(FOR PERMIT PURPOSES ONLY)

AREA TO BE GRADED	27.50	ACS.
EXCAVATION	118,400	CY
EMBANKMENT	118,400	CY

100 50 0 100 200
Graphic Scale in Feet

ADDITIVE ALTERNATE

ANSON M. MURAYAMA
LICENSED PROFESSIONAL ENGINEER
No. 6975-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/26

REVISION DATE	DESCRIPTION	MADE BY	APPROVED

cp&e Community Planning and Engineering, Inc.
Engineering Design | Construction Management | Infrastructure Planning
1286 Queen Emma Street, Third Floor Honolulu, Hawaii

KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B
KEOKEA & WAIOHULI, MAKAWAO, MAUI
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEYS: (2) 2-2-002:014 AND (2) 2-2-033:023

GENERAL GRADING PLAN - ADDITIVE ALTERNATE

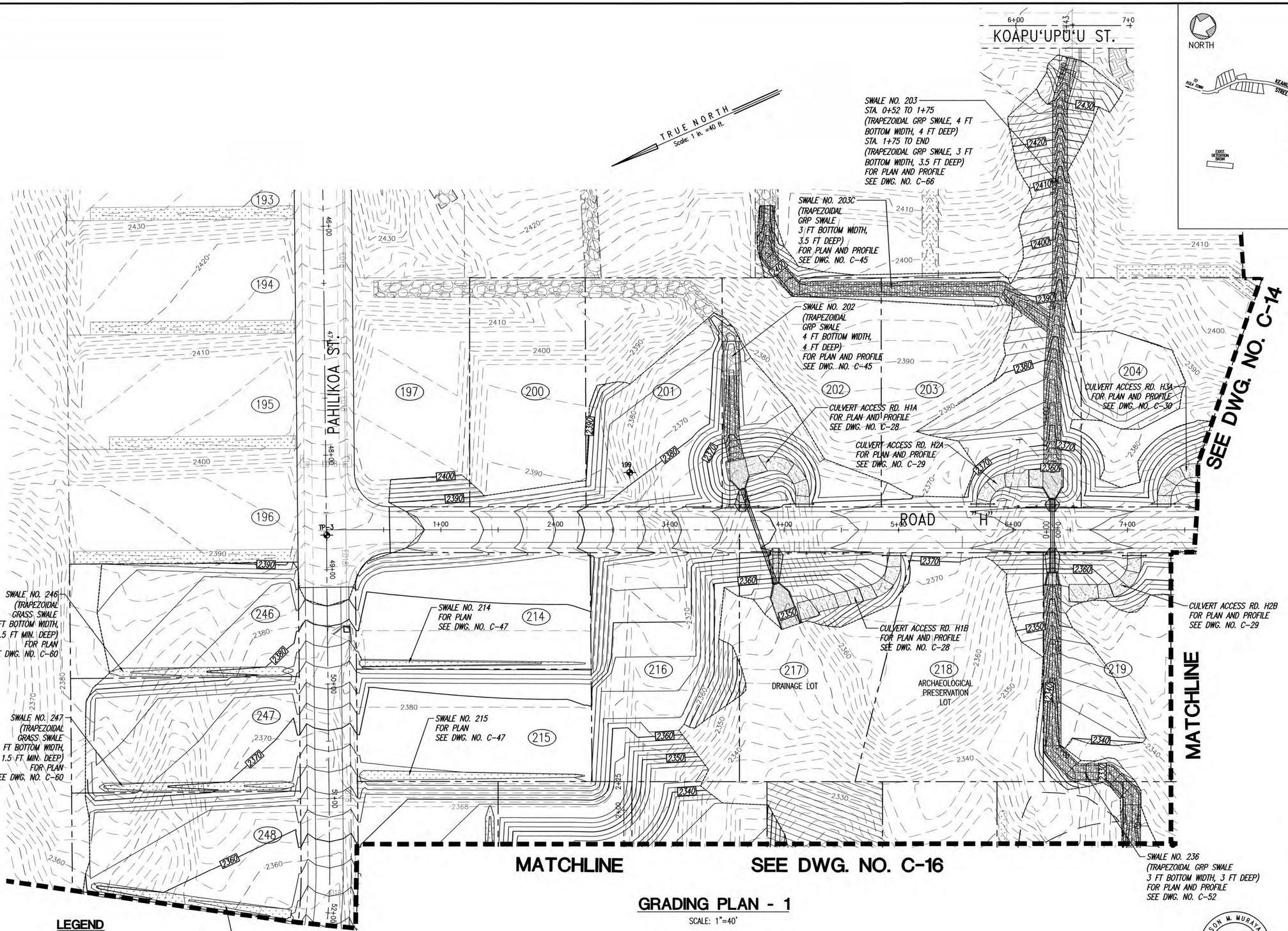
DRAWN BY:	ENGINEER:	CHECKED BY:
HWH	HWH , FJC	AMM

ADDENDUM NO. 3

DWG. NO. C-11

SHEET 12 OF 91 SHEETS

FILE	POCKET	FOLDER	NO.



LEGEND

- 2360 — EXISTING CONTOUR
- EX D48 — EXISTING DRAIN PIPE
- D48 — DRAIN PIPE
- EXISTING LOT LINE
- (180) LOT NUMBER
- LIMITS OF GRADING
- TP-3 BORING LOG

GRADING PLAN - 1

SCALE: 1"=40'

BASE BID

Graphic Scale in Feet (40 20 0 40 80)

ADDENDUM NO. 3

REVISION DATE	DESCRIPTION	MADE BY	APPROVED

cp&e Community Planning and Engineering, Inc.
Engineering Design | Construction Management | Infrastructure Planning
1286 Queen Emma Street, Third Floor Honolulu, Hawaii

KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B

KEOKEA & WAIOHULI, MAKAWAO, MAUI
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEYS: (2) 2-2-002:014 AND (2) 2-2-033:023

GRADING PLAN - 1 - BASE BID

DRAWN BY: HWH	ENGINEER: HWH , FJC	CHECKED BY: AMM

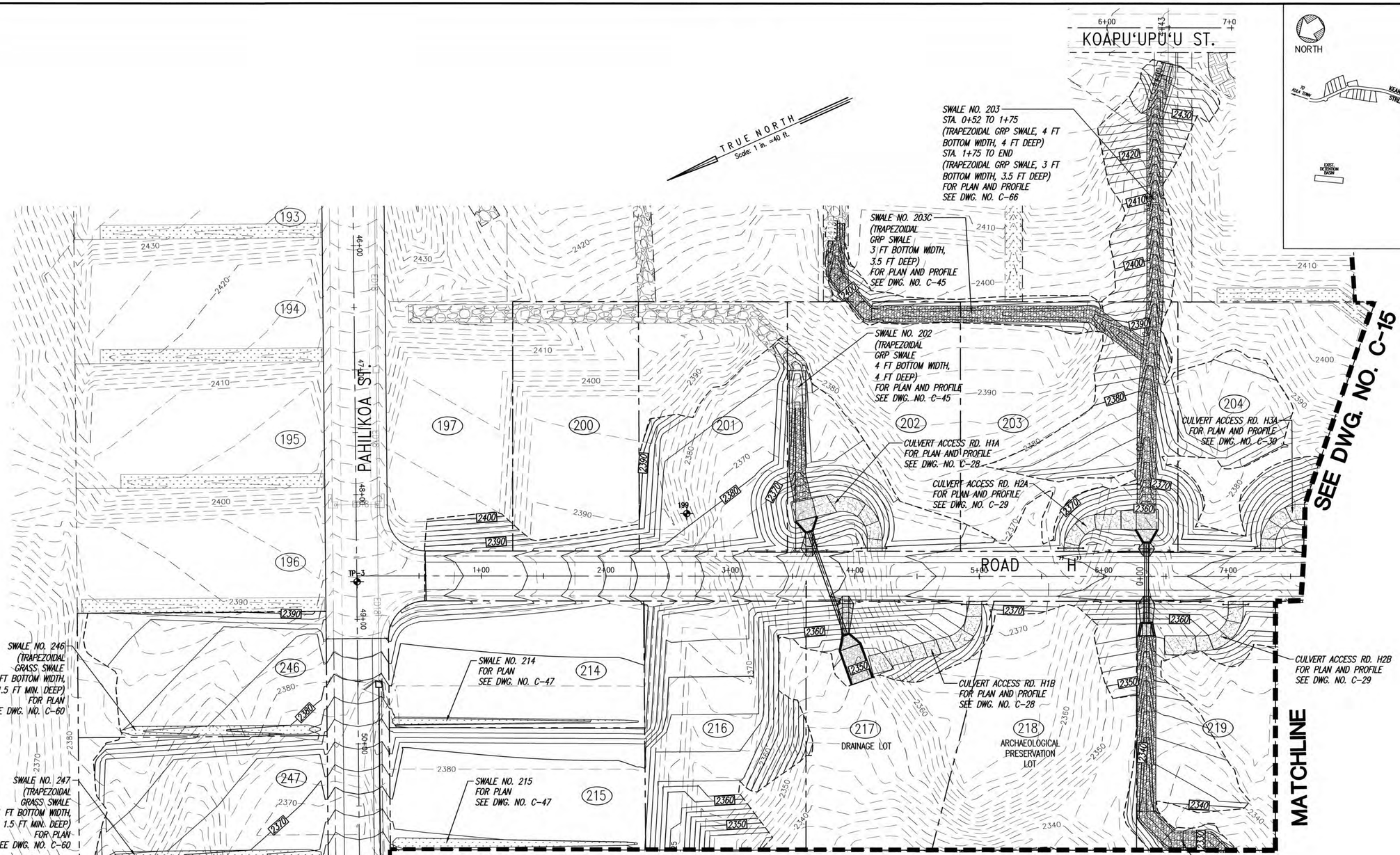
ANSON M. MURAYAMA LICENSED PROFESSIONAL ENGINEER No. 6975-C HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/26

DWG. NO. C-12

SHEET 13 OF 91 SHEETS

FILE	POCKET	FOLDER	NO.



GRADING PLAN - 1

SCALE: 1"=40'

ADDITIVE ALTERNATE

Graphic Scale in Feet (40 20 0 40 80)

LEGEND

- 2360 — EXISTING CONTOUR
- FX D48 — EXISTING DRAIN PIPE
- D48 — DRAIN PIPE
- EXISTING LOT LINE
- (180) LOT NUMBER
- LIMITS OF GRADING
- TP-3 BORING LOG

REVISION DATE	DESCRIPTION	MADE BY	APPROVED

cp&e **Community Planning and Engineering, Inc.**
Engineering Design | Construction Management | Infrastructure Planning
1286 Queen Emma Street, Third Floor Honolulu, Hawaii

KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B
KEOKEA & WAIOHULI, MAKAWAO, MAUI
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEYS: (2) 2-2-002:014 AND (2) 2-2-033:023

GRADING PLAN - 1 - ADDITIVE ALTERNATE

DRAWN BY: HWH	ENGINEER: HWH , FJC	CHECKED BY: AMM

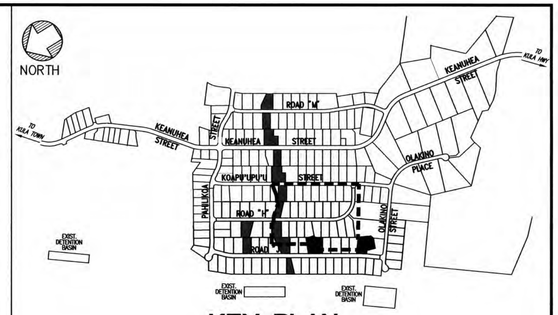
ANSON M. MURAYAMA LICENSED PROFESSIONAL ENGINEER No. 6975-C HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/26

ADDENDUM NO. 3

DWG. NO. C-13 SHEET 14 OF 91 SHEETS

FILE	POCKET	FOLDER	NO.



KEY PLAN

NOT TO SCALE

TRUE NORTH
Scale: 1 in. =40 ft.

MATCH LINE SEE DWG. NO. C-12

56 DRAINAGE LOT

205 DRAINAGE LOT

220 DRAINAGE LOT

221 ARCHAEOLOGICAL PRESERVATION LOT

55

SWALE NO. 206 (TRAPEZOIDAL GRP SWALE 2 FT BOTTOM WIDTH, 2 FT DEEP) FOR PLAN AND PROFILE SEE DWG NO. C-46

SWALE NO. 207 (TRAPEZOIDAL GRP SWALE 4 FT BOTTOM WIDTH, 4 FT DEEP) FOR PLAN AND PROFILE SEE DWG NO. C-46

SWALE NO. 208 (TRAPEZOIDAL GRASS SWALE 1 FT BOTTOM WIDTH, 1.5 FT MIN. DEEP) FOR PLAN SEE DWG NO. C-47

SWALE NO. 209 (TRAPEZOIDAL GRASS SWALE 1 FT BOTTOM WIDTH, 1.5 FT MIN. DEEP) FOR PLAN SEE DWG NO. C-47

SWALE NO. 210 (TRAPEZOIDAL GRP SWALE 4 FT BOTTOM WIDTH, 4 FT MIN. DEEP) FOR PLAN AND PROFILE SEE DWG NO. C-48

SWALE NO. 211 (TRAPEZOIDAL GRASS SWALE 1 FT BOTTOM WIDTH, 1.5 FT MIN. DEEP) FOR PLAN SEE DWG NO. C-47

SWALE NO. 212 (TRAPEZOIDAL GRASS SWALE 1 FT BOTTOM WIDTH, 1.5 FT MIN. DEEP) FOR PLAN SEE DWG NO. C-47

CULVERT ACCESS RD. H4A FOR PLAN AND PROFILE SEE DWG. NO. C-31

CULVERT ACCESS RD. H5A FOR PLAN AND PROFILE SEE DWG. NO. C-32

CULVERT ACCESS RD. H7 FOR PLAN AND PROFILE SEE DWG. NO. C-33

ROAD "H"

CULVERT ACCESS RD. H3B FOR PLAN AND PROFILE SEE DWG. NO. C-30

CULVERT ACCESS RD. H4B FOR PLAN AND PROFILE SEE DWG. NO. C-31

CULVERT ACCESS RD. H5B FOR PLAN AND PROFILE SEE DWG. NO. C-32

CULVERT ACCESS RD. H6 FOR PLAN AND PROFILE SEE DWG. NO. C-33

SWALE NO. 226 (TRAPEZOIDAL GRP SWALE 3 FT BOTTOM WIDTH, 2.5 FT DEEP) FOR PLAN AND PROFILE SEE DWG. NO. C-48

SWALE NO. 226 (TRAPEZOIDAL GRP SWALE 2 FT BOTTOM WIDTH, 2.5 FT DEEP) FOR PLAN AND PROFILE SEE DWG. NO. C-48

SWALE NO. 227 (TRAPEZOIDAL GRASS SWALE 1 FT BOTTOM WIDTH, 1.5 FT MIN. DEEP) FOR PLAN SEE DWG. NO. C-49

SWALE NO. 228 (TRAPEZOIDAL GRP SWALE 3 FT BOTTOM WIDTH, 2.5 FT DEEP) FOR PLAN AND PROFILE SEE DWG. NO. C-50

SWALE NO. 243B (TRAPEZOIDAL GRP SWALE 2 FT BOTTOM WIDTH, 2 FT DEEP) FOR PLAN AND PROFILE SEE DWG. NO. C-59

SWALE NO. 222C (TRAPEZOIDAL GRP SWALE 2 FT BOTTOM WIDTH, 2 FT DEEP) FOR PLAN AND PROFILE SEE DWG. NO. C-49

SWALE NO. 223C (TRAPEZOIDAL GRP SWALE 2 FT BOTTOM WIDTH, 2 FT DEEP) FOR PLAN AND PROFILE SEE DWG. NO. C-49

SWALE NO. 238 (TRAPEZOIDAL GRP SWALE 3 FT BOTTOM WIDTH, 2.5 FT DEEP) FOR PLAN AND PROFILE SEE DWG NO. C-54

SWALE NO. 224 (TRAPEZOIDAL GRASS SWALE 1 FT BOTTOM WIDTH, 1.5 FT DEEP) FOR PLAN SEE DWG NO. C-49

LEGEND

- 2360 — EXISTING CONTOUR
- EX D48 — EXISTING DRAIN PIPE
- D48 — DRAIN PIPE
- EXISTING LOT LINE
- (180) LOT NUMBER
- LIMITS OF GRADING
- TP-3 BORING LOG

GRADING PLAN-2

SCALE: 1"=40'

40 20 0 40 80
Graphic Scale in Feet

BASE BID

ANSON M. MURAYAMA LICENSED PROFESSIONAL ENGINEER No. 6975-C HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/26

REVISION DATE	DESCRIPTION	MADE BY	APPROVED

cp&e Community Planning and Engineering, Inc.
Engineering Design | Construction Management | Infrastructure Planning
1286 Queen Emma Street, Third Floor Honolulu, Hawaii

KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B

KEOKEA & WAIOHULI, MAKAWAO, MAUI
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEYS: (2) 2-2-002:014 AND (2) 2-2-033:023

GRADING PLAN - 2 - BASE BID

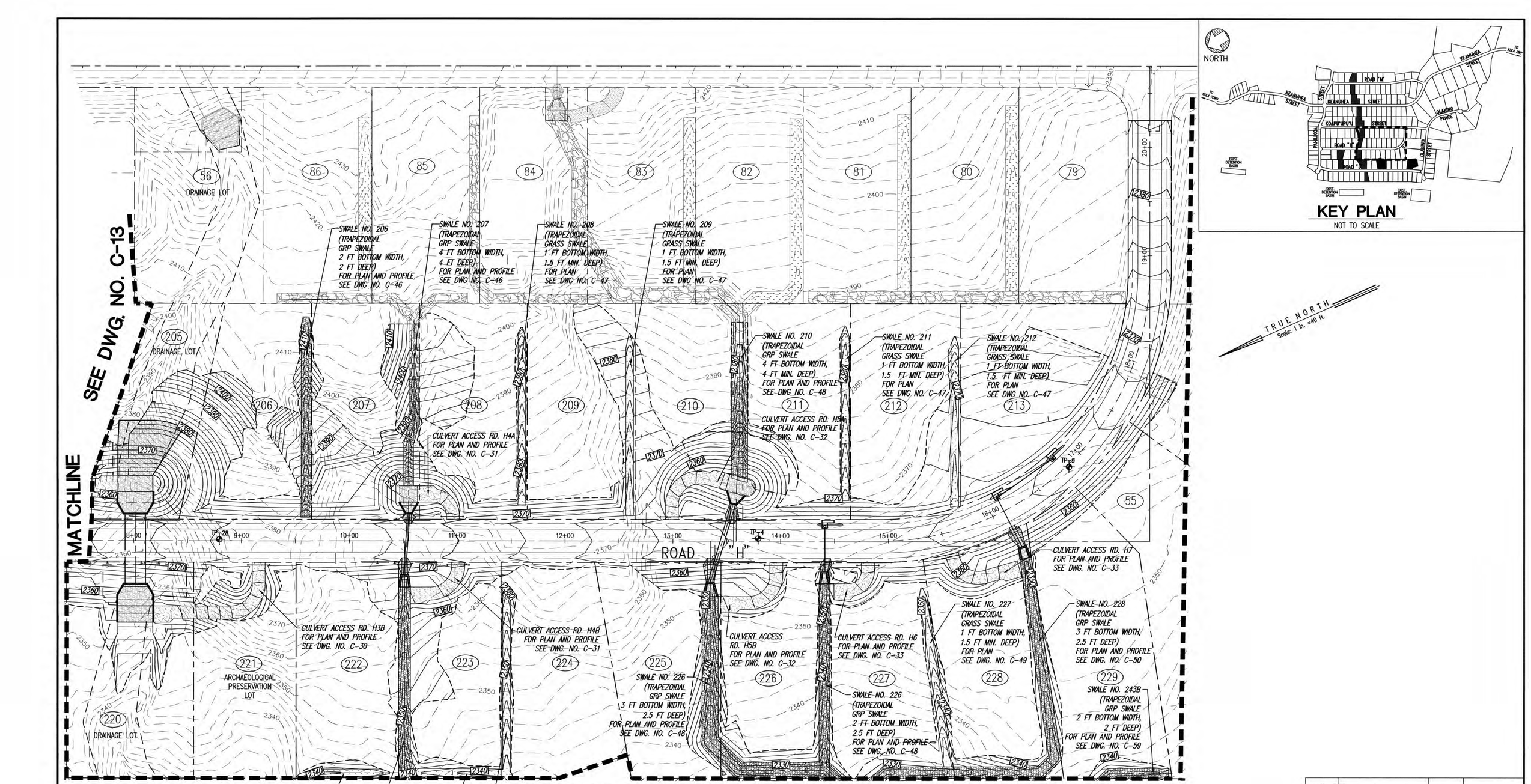
DRAWN BY: HWH	ENGINEER: HWH , FJC	CHECKED BY: AMM

ADDENDUM NO. 3

DWG. NO. C-14

SHEET 15 OF 91 SHEETS

FILE	POCKET	FOLDER	NO.



LEGEND

- 2360 — EXISTING CONTOUR
- EX D48 — EXISTING DRAIN PIPE
- D48 — DRAIN PIPE
- EXISTING LOT LINE
- (180) LOT NUMBER
- LIMITS OF GRADING
- TP-3 BORING LOG

GRADING PLAN-2

SCALE: 1"=40'

ADDITIVE ALTERNATE

Graphic Scale in Feet: 40 20 0 40 80

ADDENDUM NO. 3

REVISION DATE	DESCRIPTION	MADE BY	APPROVED

Community Planning and Engineering, Inc.
Engineering Design | Construction Management | Infrastructure Planning
1288 Queen Emma Street, Third Floor Honolulu, Hawaii

KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B

KEOKEA & WAIOHULI, MAKAWAO, MAUI

OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS

TAX MAP KEYS: (2) 2-2-002:014 AND (2) 2-2-033:023

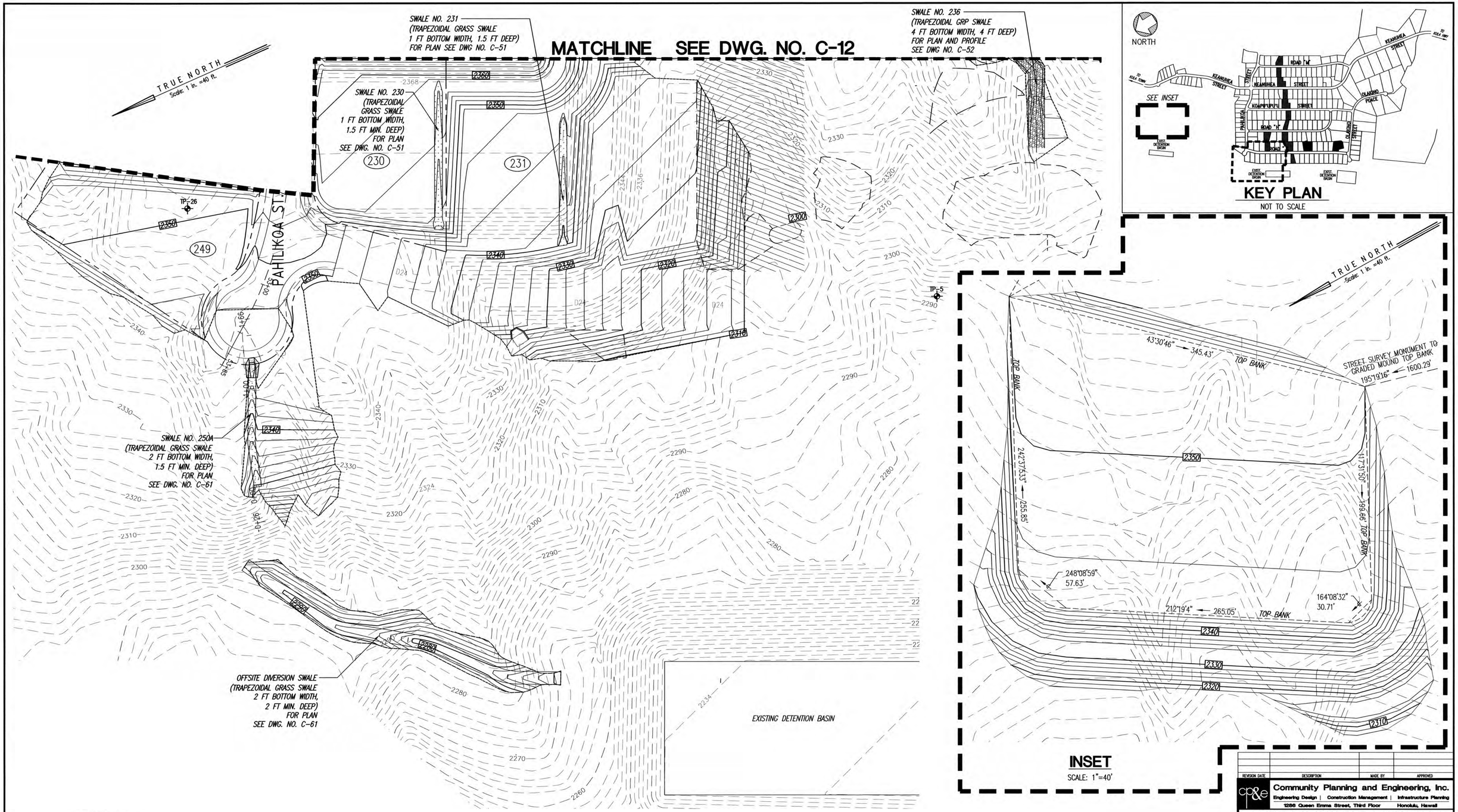
GRADING PLAN - 2 - ADDITIVE ALTERNATE

DRAWN BY: HWH	ENGINEER: HWH , FJC	CHECKED BY: AMM

AMSON M. MURAYAMA
LICENSED PROFESSIONAL ENGINEER
No. 6975-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/26

FILE	POCKET	FOLDER	NO.



LEGEND

- EXISTING CONTOUR
- EXISTING DRAIN PIPE
- DRAIN PIPE
- EXISTING LOT LINE
- (180) LOT NUMBER
- LIMITS OF GRADING
- TP-3 BORING LOG
- DRAINAGE LOT
- ARCHAEOLOGICAL PRESERVATION LOT

GRADING PLAN - 3

SCALE: 1"=40'

BASE BID

40 20 0 40 80
Graphic Scale in Feet

ANSON M. MURAYAMA
LICENSED PROFESSIONAL ENGINEER
No. 6975-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/26

REVISION DATE	DESCRIPTION	MADE BY	APPROVED

cp&e
Community Planning and Engineering, Inc.
Engineering Design | Construction Management | Infrastructure Planning
1286 Queen Emma Street, Third Floor Honolulu, Hawaii

KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B

KEOKEA & WAIOHULI, MAKAWAO, MAUI
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEYS: (2) 2-2-002:014 AND (2) 2-2-033:023

GRADING PLAN - 3 - BASE BID

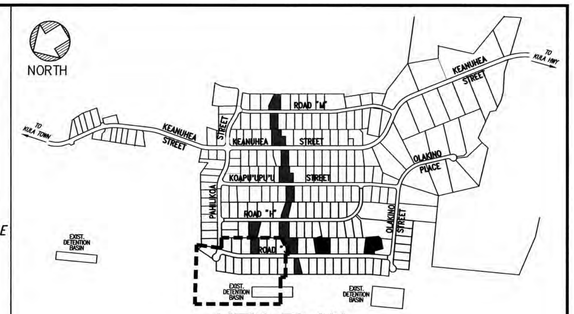
DRAWN BY: HWH	ENGINEER: HWH , FJC	CHECKED BY: AMM

ADDENDUM NO. 3

DWG. NO. **C-16** SHEET 17 OF 91 SHEETS

FILE	POCKET	FOLDER	NO.

NORTH



KEY PLAN

NOT TO SCALE

MATCHLINE SEE DWG. NO. C-13

SWALE NO. 231 (TRAPEZOIDAL GRASS SWALE 1 FT BOTTOM WIDTH, 1.5 FT DEEP) FOR PLAN SEE DWG NO. C-51

SWALE NO. 235 (TRAPEZOIDAL GRASS SWALE 1 FT BOTTOM WIDTH, 1.5 FT DEEP) FOR PLAN SEE DWG NO. C-51

SWALE NO. 236 (TRAPEZOIDAL GRP SWALE 4 FT BOTTOM WIDTH, 4 FT DEEP) FOR PLAN AND PROFILE SEE DWG NO. C-52

SWALE NO. 230 (TRAPEZOIDAL GRASS SWALE 1 FT BOTTOM WIDTH, 1.5 FT MIN. DEEP) FOR PLAN SEE DWG. NO. C-51

CULVERT ACCESS RD. J2A FOR PLAN AND PROFILE SEE DWG. NO. C-35

TRUE NORTH
Scale: 1 in. =40 ft.

PAHILIKOA ST.

ROAD "J"

DRAINAGE LOT

CULVERT ACCESS RD. J1A FOR PLAN AND PROFILE SEE DWG. NO. C-34

CULVERT ACCESS RD. J1B FOR PLAN AND PROFILE SEE DWG. NO. C-34

CULVERT ACCESS RD. J2B FOR PLAN AND PROFILE SEE DWG. NO. C-35

SWALE NO. 250A (TRAPEZOIDAL GRASS SWALE 2 FT BOTTOM WIDTH, 1.5 FT MIN. DEEP) FOR PLAN SEE DWG. NO. C-61

SWALE NO. 250 (TRAPEZOIDAL GRASS SWALE 1 FT BOTTOM WIDTH, 1.5 FT MIN. DEEP) FOR PLAN SEE DWG. NO. C-61

SWALE NO. 251 (TRAPEZOIDAL GRASS SWALE 1 FT BOTTOM WIDTH, 1.5 FT DEEP) FOR PLAN SEE DWG NO. C-61

SWALE NO. 252 (TRAPEZOIDAL GRP SWALE 2 FT BOTTOM WIDTH, 2 FT DEEP) FOR PLAN AND PROFILE SEE DWG NO. C-59

SWALE NO. 253 (TRAPEZOIDAL GRASS SWALE 1 FT BOTTOM WIDTH, 1.5 FT MIN. DEEP) FOR PLAN SEE DWG. NO. C-61

SWALE NO. 255 (TRAPEZOIDAL GRP SWALE 4 FT BOTTOM WIDTH, 4 FT DEEP) FOR PLAN AND PROFILE SEE DWG. NO. C-62

SWALE NO. 257 (TRAPEZOIDAL GRP SWALE 4 FT BOTTOM WIDTH, 4 FT DEEP) FOR PLAN AND PROFILE SEE DWG. NO. C-62

OFFSITE DIVERSION SWALE (TRAPEZOIDAL GRASS SWALE 2 FT BOTTOM WIDTH, 2 FT MIN. DEEP) FOR PLAN SEE DWG. NO. C-61

EXISTING DETENTION BASIN

MATCHLINE SEE DWG. NO. C-18

LEGEND

- 2360 — EXISTING CONTOUR
- EX D48 — EXISTING DRAIN PIPE
- D48 — DRAIN PIPE
- — — EXISTING LOT LINE
- (180) LOT NUMBER
- — — — — LIMITS OF GRADING
- TP-3 BORING LOG
- DRAINAGE LOT
- ARCHAEOLOGICAL PRESERVATION LOT

GRADING PLAN - 3

SCALE: 1"=40'

ADDITIVE ALTERNATE

40 20 0 40 80
Graphic Scale in Feet

ANSON M. MURAYAMA
LICENSED PROFESSIONAL ENGINEER
No. 6975-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/26

REVISION DATE	DESCRIPTION	MADE BY	APPROVED

cp&e
Community Planning and Engineering, Inc.
Engineering Design | Construction Management | Infrastructure Planning
1296 Queen Emma Street, Third Floor Honolulu, Hawaii

KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B

KEOKEA & WAIOHULI, MAKAWAO, MAUI
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEYS: (2) 2-2-002:014 AND (2) 2-2-033:023

GRADING PLAN - 3 - ADDITIVE ALTERNATE

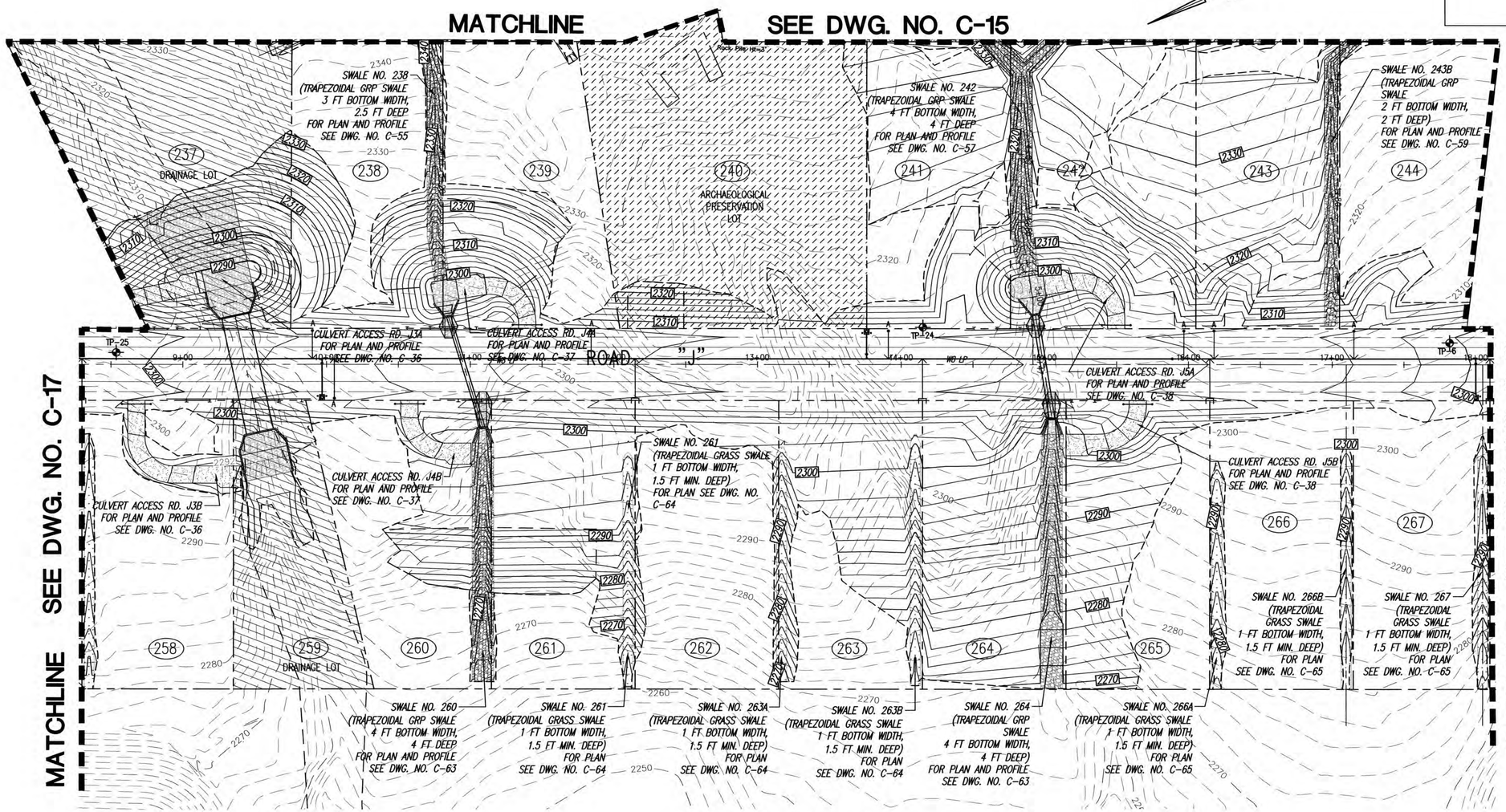
DRAWN BY: HWH	ENGINEER: HWH , FJC	CHECKED BY: AMM

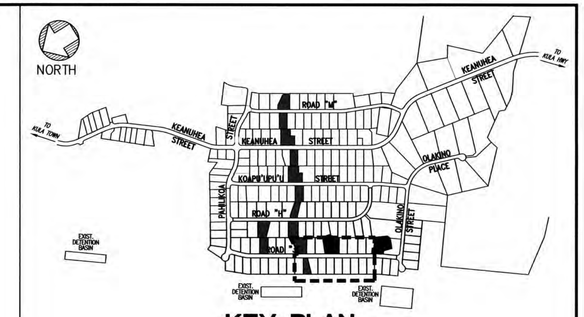
ADDENDUM NO. 3

DWG. NO. C-17

SHEET 18 OF 91 SHEETS

FILE	POCKET	FOLDER	NO.





KEY PLAN
NOT TO SCALE

GRADING PLAN - 4
SCALE: 1"=40'

LEGEND

- 2360 — EXISTING CONTOUR
- EX D48 — EXISTING DRAIN PIPE
- D48 — DRAIN PIPE
- EXISTING LOT LINE
- (180) LOT NUMBER
- LIMITS OF GRADING
- TP-3 BORING LOG

40 20 0 40 80
Graphic Scale in Feet

ADDITIVE ALTERNATE

ADDENDUM NO. 3

REVISION DATE	DESCRIPTION	MADE BY	APPROVED

cp&e **Community Planning and Engineering, Inc.**
Engineering Design | Construction Management | Infrastructure Planning
1286 Queen Emma Street, Third Floor Honolulu, Hawaii

KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B
KEOKEA & WAIOHULI, MAKAWAO, MAUI
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEYS: (2) 2-2-002:014 AND (2) 2-2-033:023

GRADING PLAN - 4 - ADDITIVE ALTERNATE

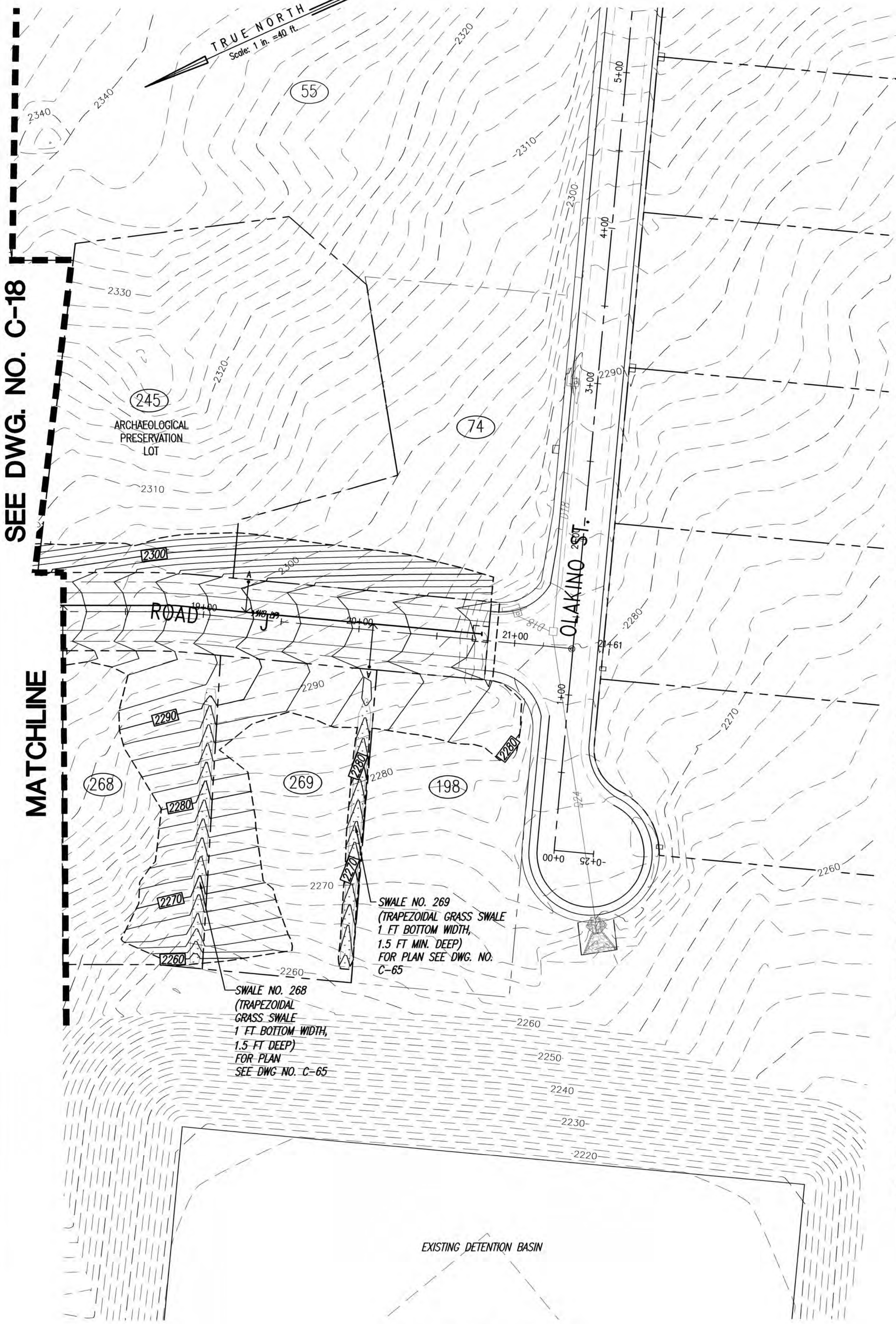
DRAWN BY: HWH	ENGINEER: HWH , FJC	CHECKED BY: AMM

ANSON M. MURAYAMA
LICENSED PROFESSIONAL ENGINEER
No. 6975-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/26

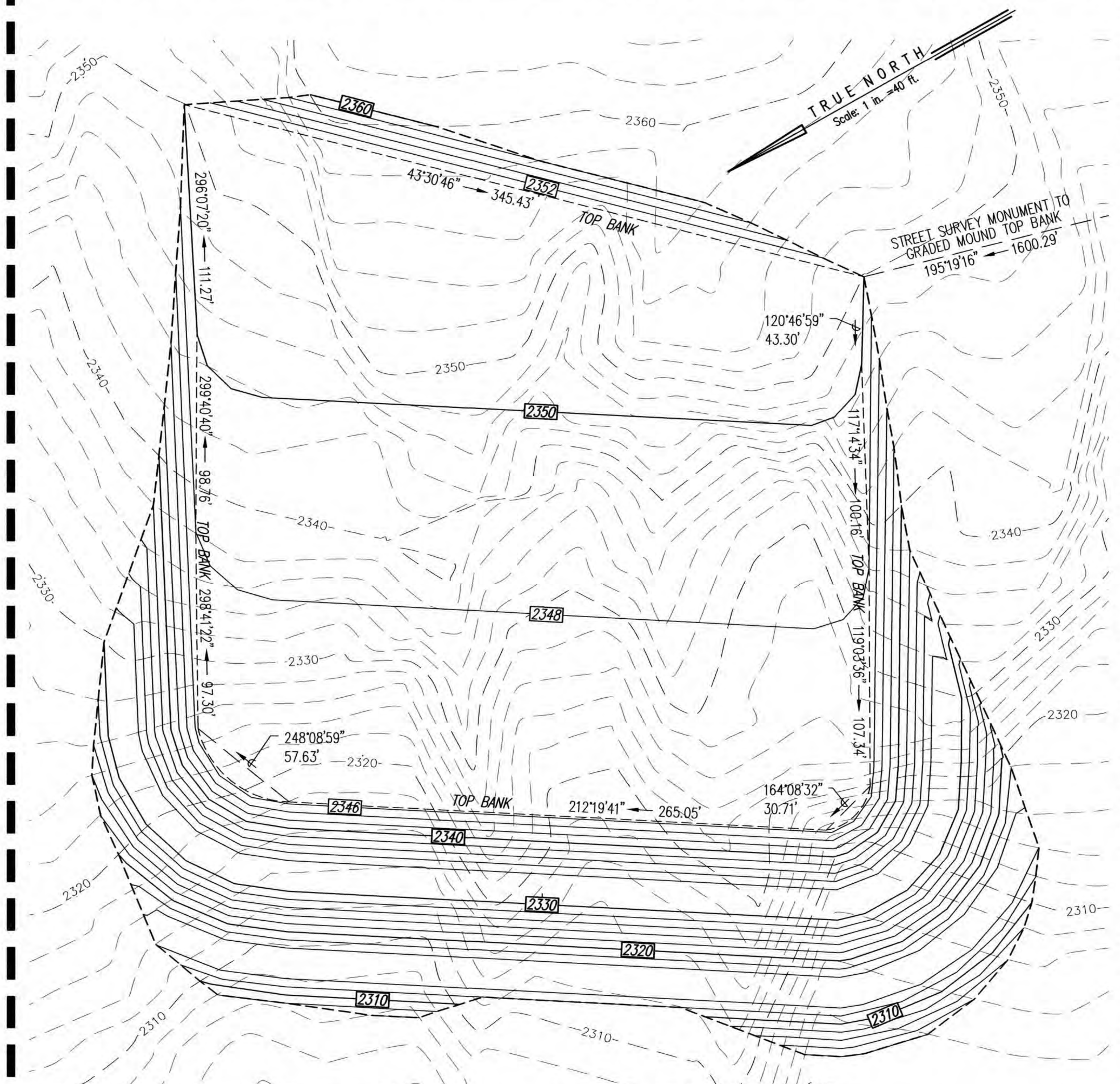
DWG. NO. C-18 SHEET 19 OF 91 SHEETS

FILE	POCKET	FOLDER	NO.



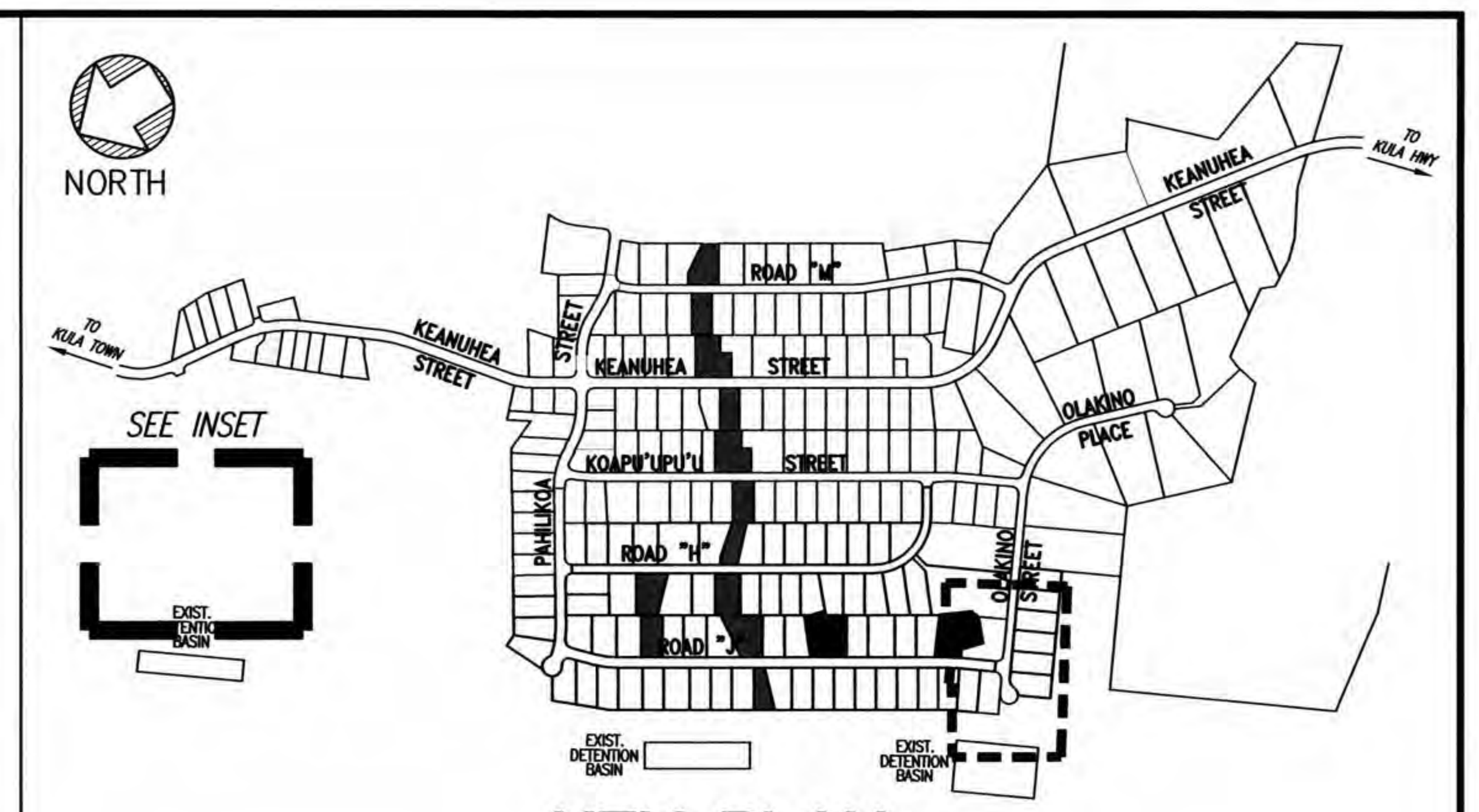
GRADING PLAN - 5

SCALE: 1"=40'



INSET

SCALE: 1"=40'



KEY PLAN

NOT TO SCALE

LEGEND

2360	EXISTING CONTOUR
EX D48	EXISTING DRAIN PIPE
D48	DRAIN PIPE
— — —	EXISTING LOT LINE
(180)	LOT NUMBER
— — — —	LIMITS OF GRADING
TP-3 ⌖	BORING LOG

NOTE:
TIE TO CORNER OF GRADED MOUND TOP BANK IS FROM STREET SURVEY MONUMENT AT THE INTERSECTION OF PAHILIKOA STREET AND KOAPU'UPU'U STREET, SEE DWG. NO. C-11

40 20 0 40 80
Graphic Scale in Feet

ANSON M. MURAYAMA
LICENSED PROFESSIONAL ENGINEER
No. 6975-C
HAWAII, U.S.A.

[illegible]

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.
LICENSE EXPIRATION DATE: 04/30/26

ADDITIVE ALTERNATE

REVISION DATE	DESCRIPTION	MADE BY	APPROVED

Community Planning and Engineering, Inc.
Engineering Design | Construction Management | Infrastructure Planning
1286 Queen Emma Street, Third Floor Honolulu, Hawaii

KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B

KEOKEA & WAIOHULI, MAKAWAO, MAUI
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEYS: (2) 2-2-002:014 AND (2) 2-2-033:023

GRADING PLAN - 5 - ADDITIVE ALTERNATE

DRAWN BY: HWH | ENGINEER: HWH , FJC | CHECKED BY: AMM

ADDENDUM NO. 3

DWG. NO. **C-19** SHEET 20 OF 91 SHEETS

FILE	POCKET	FOLDER	NO.