

D:\CASI51\NOTES1 9/19/91

DATE	_____
DESIGNED BY	_____
DRAWN BY	_____
CHECKED BY	_____
ORIGINAL PLAN	_____
NOTED BY	_____
NO.	_____

CONSTRUCTION NOTES

- ALL APPLICABLE CONSTRUCTION WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, SEPTEMBER 1986 AND STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION, SEPTEMBER 1984, AS AMENDED, OF THE DEPARTMENT OF PUBLIC WORKS, CITY AND COUNTY OF HONOLULU, AND THE BOARD OF WATER SUPPLY'S WATER SYSTEM STANDARDS DATED 1985 AND ALL SUBSEQUENT AMENDMENTS.
- THE UNDERGROUND PIPES, CABLES OR DUCTLINES KNOWN TO EXIST BY THE DESIGN ENGINEER FROM HIS SEARCH OF RECORDS ARE INDICATED ON THE PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF THE FACILITIES AND EXERCISE PROPER CARE IN EXCAVATING IN THE AREA. WHEREVER CONNECTION OF NEW UTILITIES TO EXISTING UTILITIES ARE SHOWN ON THE PLANS, THE CONTRACTOR SHALL EXPOSE THE EXISTING LINES AT THE PROPOSED CONNECTIONS TO VERIFY THEIR LOCATIONS AND DEPTHS PRIOR TO EXCAVATION FOR THE NEW LINES.
- THE CONTRACTOR, AT HIS EXPENSE, SHALL KEEP THE PROJECT AREA AND SURROUNDING AREA FREE FROM DUST NUISANCES, THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION CONTROL STANDARDS AND REGULATIONS OF THE STATE DEPARTMENT OF HEALTH.
- BENCH MARKS FOR THIS PROJECT ARE SHOWN ON SHEETS 6 AND 9.
- BENCH MARKS SHALL BE ESTABLISHED ON NEW STREET MONUMENTS AND DATA SUBMITTED TO THE DIVISION OF ENGINEERING, DEPARTMENT OF PUBLIC WORKS, CITY AND COUNTY OF HONOLULU.
- OTHER CONTRACTORS MAY BE WORKING IN THE IMMEDIATE VICINITY OF THIS PROJECT. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THESE CONTRACTORS IN A MANNER THAT WILL RESULT IN THE TIMELY AND ORDERLY EXECUTION OF THIS CONTRACT AND NOT UNREASONABLY INTERFERE OR HINDER THE OTHER CONTRACTORS.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS DIVISION OF ENGINEERING CONSTRUCTION BRANCH SEVEN (7) DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION.
- ALL GRATES, FRAMES AND COVERS FOR STRUCTURES TO BE DEMOLISHED SHALL BE SALVAGED AND DELIVERED TO DIVISION OF ROAD MAINTENANCE CORPORATION YARD AT 160 AHUI STREET. CALL LOWELL LUM, HONOLULU SUPERINTENDENT @ 523-4287 AT LEAST 48 HRS. PRIOR TO DELIVERY.
- FOR STRUCTURES TO BE ABANDONED IN PLACE, THE TOP 4' SHALL BE REMOVED AND THE BASE SHALL BE CRACKED.
- THE CONTRACTOR SHALL (1) ARRANGE FOR RESIDENTS TO TAKE RUBBISH OUT TO THE MAIN ROADWAY WHEN LANES ARE NOT PASSABLE, (2) INFORM THE REFUSE DIVISION AT 523-4686 AND (3) CLEAN UP THE AREA WHERE THE RESIDENTS PLACE RUBBISH ON THE MAIN ROAD. THE TIME AND DAYS OF COLLECTION ARE 6:30 TO 8:30 AM ON WEDNESDAY AND SATURDAYS.
- UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXISTING IMPROVEMENTS WITHIN THE ROADWAY RIGHT-OF-WAY SHALL BE DEMOLISHED AND REMOVED. THIS WORK SHALL CONSIST OF THE REMOVAL, WHOLLY OR IN PART, AND SATISFACTORY DISPOSAL OF ALL BUILDINGS, FENCES, STRUCTURES, UTILITIES, OLD ROADWAYS, DRIVEWAYS, AND ALL OTHER OBSTRUCTIONS WHICH ARE NOT DESIGNATED OR PERMITTED TO REMAIN. IT SHALL ALSO INCLUDE BACKFILLING THE RESULTING TRENCHES AND HOLES. THE CONTRACTOR SHALL EXERCISE EVERY PRECAUTION TO PRESERVE AND PROTECT ALL STRUCTURES, FENCES, PUBLIC AND PRIVATE UTILITIES, ABOVE OR BELOW THE GROUND, WHICH ARE TO REMAIN.
- CONTRACTOR SHALL SALVAGE AND RELOCATE EXISTING MAIL BOXES, AS REQUIRED. CONTRACTOR SHALL CONTACT AND COORDINATE NEW LOCATION WITH HOMEOWNER.

WATER NOTES

- UNLESS OTHERWISE SPECIFIED, ALL MATERIALS AND CONSTRUCTION OF WATER SYSTEM FACILITIES AND APPURTENANCES SHALL BE IN ACCORDANCE WITH THE CITY AND COUNTY OF HONOLULU BOARD OF WATER SUPPLY'S "WATER SYSTEM STANDARDS", VOLUME 1 DATED 1985 AND THE "APPROVED MATERIAL LIST AND STANDARD DETAILS FOR WATER SYSTEM CONSTRUCTION", VOLUME 2, DATED 1985 AND ALL SUBSEQUENT AMENDMENTS AND ADDITIONS.
- ALL PLANS APPROVED BY THE BOARD OF WATER SUPPLY ARE BASED SOLELY ON THE ADEQUACY OF THE WATER SUPPLY. ALL OTHER FEATURES OF THE WATER SYSTEM, SUCH AS LINES, GRADES, FITTINGS, ETC., AND DRAINAGE AND OTHER FEATURES OF THE IMPROVEMENTS SHALL NOT BE THE RESPONSIBILITY OF THE BOARD OF WATER SUPPLY.
- THE CONTRACTOR SHALL SALVAGE AND REINSTALL ALL EXISTING METER ASSEMBLIES UNLESS INSTRUCTED OTHERWISE. PRIOR TO REINSTALLATION, ALL METAL FRAMES AND COVERS SHALL BE GIVEN A COAT OF HIGH GRADE ASPHALTUM.
- TEST PRESSURE SHALL BE 200 PSI.
- PRIOR TO EXCAVATING FOR NEW DRAIN AND OTHER UTILITY LINES, THE CONTRACTOR SHALL VERIFY IN THE FIELD THE LOCATION OF EXISTING WATER MAINS AND APPURTENANCES. WHERE THE INSTALLATION OF NEW DRAIN AND OTHER UTILITY LINES ARE TO CROSS OVER OR UNDER EXISTING WATER MAINS, THE CONTRACTOR SHALL EXPOSE THE EXISTING WATER MAINS PRIOR TO TRENCHING. EXCAVATION AROUND WATER MAINS SHALL BE DONE BY HAND.
- THE CONSTRUCTOR SHALL NOTIFY THE BOARD OF WATER SUPPLY PLANNING AND ENGINEERING DIVISION, CONSTRUCTION SECTION, IN WRITING ONE WEEK PRIOR TO COMMENCING WORK ON WATER SYSTEM.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL WATER LINES DURING CONSTRUCTION. THE CONTRACTOR SHALL BE ESPECIALLY CAREFUL WHEN EXCAVATING BEHIND WATER LINE TEES AND BENDS WHEREVER THERE IS A POSSIBILITY OF WATER LINE MOVEMENT DUE TO REMOVAL OF THE SUPPORTING EARTH BEYOND THE EXISTING REACTION BLOCKS. THE CONTRACTOR SHALL TAKE WHATEVER MEASURE NECESSARY TO PROTECT THE WATER LINES, SUCH AS CONSTRUCTING SPECIAL REACTION BLOCKS (WITH BWS APPROVAL) AND/OR MODIFYING HIS CONSTRUCTION METHODS.
- THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITIES AND STRUCTURES AS SHOWN ON THE PLANS ARE FROM THE LATEST AVAILABLE DATA BUT IS NOT GUARANTEED AS TO THE ACCURACY OR THE ENCOUNTERING OF OTHER OBSTACLES DURING THE COURSE OF THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE AND SHALL PAY FOR ALL DAMAGES TO THE EXISTING UTILITIES.
- PRIOR TO INSTALLATION, THE CONTRACTOR SHALL SUBMIT FOR APPROVAL BY THE BOARD OF WATER SUPPLY, THE MANUFACTURER'S CERTIFICATION THAT ALL CAST IRON (GRAY OR DUCTILE) FITTINGS FOR THE PROJECT CONFORM IN ALL RESPECTS TO THE WATER SYSTEM STANDARDS, DATED 1985.
- POLYGON SHAPE FOR MECHANICAL JOINT GLANDS AS DESCRIBED IN AWWA STANDARD C111 SHALL BE "STRAIGHT-SIDED" OR AN APPROVED EQUAL ON A JOB TO JOB BASIS.
- EXISTING FRAMES AND COVERS FOR MANHOLES AND VALVE BOXES, WHICH ARE TO REMAIN, SHALL BE ADJUSTED TO THE NEW GRADE.
- MAINTENANCE OF WATER LINES BEYOND WATER METERS SHALL BE THE RESPONSIBILITY OF THE OWNERS.
- THE CONTRACTOR SHALL COORDINATE ALL WATER SERVICE INTERRUPTIONS WITH THE AFFECTED PROPERTY OWNERS.
- AT ELECTRICAL/SIGNAL DUCTLINE WATER CROSSINGS, ADJUST ALL ELECTRICAL/SIGNAL DUCTLINE ELEVATION TO MAINTAIN 6" VERTICAL CLEAR SEPARATION FROM ALL WATER LINES (12" CLEAR FOR ALL ELECTRICAL/SIGNAL DUCTLINES STRUCTURES LARGER THAN 18") AT NO COST TO THE BWS AND THE STATE.
- MAINTAIN 3'-0" MIN. HORIZONTAL CLEAR SEPARATION BETWEEN ALL WATER LINE SYSTEMS AND NEAREST ELECTRICAL DUCTLINES PARALLING THE WATER SYSTEM AT NO COST TO THE BWS AND THE STATE.
- MAINTAIN 3'-0" MIN. HORIZONTAL CLEAR SEPARATION BETWEEN STREET LIGHT STANDARDS (INCLUDING ANY MODULAR UNITS) AND THE NEAREST WATER LINE SYSTEM. CONTRACTOR SHALL FIELD VERIFY FOR ANY CONFLICTS AT EACH STREET LIGHT STANDARD LOCATION. WHERE CONFLICTS OCCUR, THE CONTRACTOR SHALL COORDINATE WITH THE OFFICER IN CHARGE TO REVISE THE STREET LIGHT STANDARD TO PROVIDE THE REQUIRED CLEARANCES AT NO COST TO THE BWS AND THE STATE.
- CONTRACTOR SHALL CUT AND PLUG ALL EXISTING UNUSED LATERALS AT THE MAIN WHETHER OR NOT SHOWN ON THE PLANS. METER AND VALVE BOXES TO BE OR ALREADY ABANDONED SHALL BE DEMOLISHED OR REMOVED AND PROPERLY DISPOSED OF. THE DAMAGED AREA SHALL BE REPAIRED TO AN EQUAL OR BETTER CONDITION THAN THE IMMEDIATE AREA. ALL WORK SHALL BE DONE AT THE EXPENSE OF THE CONTRACTOR.
- CONTRACTOR SHALL CUT, PLUG & ABANDON ALL SMALL MAINS THAT WILL HAVE WATER LATERALS TRANSFERRED TO A NEW MAIN.
- REAPPROVAL SHALL BE REQUIRED IF THIS PROJECT IS NOT UNDER CONSTRUCTION WITHIN A PERIOD OF TWO YEARS.

FED. ROAD DIS. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-05-91	1992	4	49

- THE EXISTENCE OF ALL EXISTING SERVICE LATERALS AND CONNECTIONS, AS SHOWN ON PLANS, ARE BASED ON THE LATEST AVAILABLE INFORMATION BUT ARE NOT GUARANTEED AS TO THE ACCURACY OR THE ENCOUNTERING OF OTHER SERVICES DURING THE COURSE OF THE WORK. THE CONTRACTOR SHALL VERIFY ITS LOCATION, PRIOR TO COMMENCING WITH ANY OF THE WORK AND SHALL NOT ASSUME THAT, WHERE NO SERVICES ARE SHOWN NONE EXISTS.
- UNLESS OTHERWISE SHOWN, ALL EXISTING LATERALS SHALL BE REPLACED WITH NEW LATERALS, SIZE AND TYPE AS SHOWN ON THE PLANS.
- UPON APPROVAL FROM BWS, EXISTING METERS SHALL BE INDIVIDUALLY REMOVED FROM PRESENT METER BOXES, AND IMMEDIATELY TRANSFERRED TO AND RECONNECTED IN NEW METER BOXES BY CONTRACTOR.
- FOLLOWING TRANSFER OF METERS AND RECONNECTION TO EXISTING PROPERTY PIPING, EXISTING LATERALS SHALL BE PLUGGED AND ABANDONED IN PLACE. REMOVE ABANDONED WATER METER BOX, COVER AND BACKFILL.
- ALL WORK REQUIRED TO PLACE NEW LATERAL LATER INTO SERVICE INCLUDING CUTTING AND PLUGGING EXISTING LATERALS, RECONNECTING TO EXISTING PROPERTY PIPING AND SHUT-OFF VALVE, SHALL BE INCIDENTAL TO SERVICE LATERAL.
- CONTRACTOR SHALL REPAIR ALL DAMAGES TO EXISTING IMPROVEMENTS RESULTING FROM HIS OPERATIONS TO A CONDITION EQUAL TO OR BETTER THAN EXISTING.
- NEW METER BOXES SHALL BE LOCATED IN PUBLIC RIGHT OF WAY.
- THE CONTRACTOR SHALL CHLORINATE THE ENTIRE INSIDE SURFACE OF EACH PIPE AND FITTING WITH DISINFECTION SOLUTION OF 5 OUNCES OF SODIUM HYPOCHLORITE MIXED WITH 10 GALLONS OF WATER.
- BOARD OF WATER SUPPLY APPROVAL OF THESE PLANS DOES NOT CONSTITUTE A WATER COMMITMENT. AVAILABILITY OF WATER WILL BE DETERMINED WHEN BUILDING PERMIT IS PRESENTED TO THE DEPARTMENT. WATER COMMITMENT WILL DEPEND UPON THE STATUS OF THE WATER SYSTEM AT THAT TIME. SHOULD WATER SERVICE BE MADE AVAILABLE, THE WATER COMMITMENT WILL BE EFFECTIVE WHEN THE PROJECT RECEIVES AN APPROVED BUILDING PERMIT FROM THE BUILDING DEPARTMENT. ALL WATER COMMITMENTS WILL BE CANCELED IN THE EVENT THE BUILDING PERMIT IS CANCELED.

29 THE CASTLE HILLS SUBDIVISION DEVELOPER MUST SUBMIT AND RECORD EASEMENT DOCUMENTS TO BWS BEFORE FINAL INSPECTION IS MADE.

APPROVED:

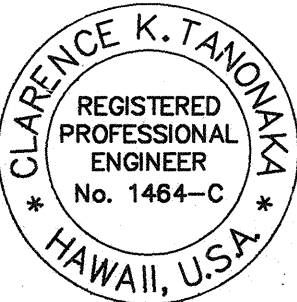
M. F. Fagan 11/8/91
CHIEF, DIVISION OF ENGINEERING, D.P.W. DATE

APPROVED:

12/27/91
MANAGER AND CHIEF ENGINEER, B.W.S. DATE
12/31/91
CHIEF, PLANNING AND ENGINEERING, B.W.S. DATE

APPROVED:

DEL 5 1991
FIRE CHIEF, HONOLULU FIRE DEPARTMENT, DATE
CITY AND COUNTY OF HONOLULU



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Clarence K. Taniguchi
P.E., Inc.
dba PARK ENGINEERING

REVISION	DATE	ADDED BWS SIGNATURE	DE.	BY	APPROVED
1	12/16/91				
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION					
NOTES					
CASTLE HILLS ACCESS ROAD PROJ. NO. HWY-0-05-91					
SCALE: AS SHOWN DATE: MARCH, 1991					
SHEET No. 1 OF 3 SHEETS					

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTED	
No.	

TRAFFIC NOTES

1. A PERMIT SHALL BE OBTAINED FROM THE DEPARTMENT OF TRANSPORTATION SERVICES BEFORE WORK ON ANY PORTION OF A PUBLIC STREET OR HIGHWAY MAY BEGIN.
2. THE CONTRACTOR SHALL PROVIDE, INSTALL AND MAINTAIN ALL NECESSARY SIGNS AND OTHER PROTECTIVE FACILITIES, WHICH SHALL CONFORM WITH THE "HAWAII ADMINISTRATION RULES GOVERNING THE USE OF TRAFFIC CONTROL DEVICES AT WORK SITES ON OR ADJACENT TO PUBLIC STREETS AND HIGHWAYS" ADOPTED BY THE DIRECTOR OF TRANSPORTATION AND THE CURRENT FEDERAL HIGHWAY ADMINISTRATION'S "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, PART VI - TRAFFIC CONTROLS FOR STREET AND HIGHWAY CONSTRUCTION AND MAINTENANCE OPERATIONS".
3. AS DIRECTED BY THE ENGINEER, THE CONTRACTOR SHALL HIRE SPECIAL DUTY POLICE OFFICERS TO CONTROL THE FLOW OF TRAFFIC.
4. 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.
5. THE CONTRACTOR SHALL REFERENCE, TO THE SATISFACTION OF THE ENGINEER AND DEPARTMENT OF TRANSPORTATION SERVICES, ALL EXISTING TRAFFIC SIGNS, POSTS AND PAVEMENT MARKERS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. THE CONTRACTOR SHALL REPLACE OR REPAIR ALL TRAFFIC SIGNS, POSTS AND PAVEMENT MARKERS DISTURBED BY HIS ACTIVITIES, UNLESS DIRECTED OTHERWISE BY THE ENGINEER.
6. DURING WORKING HOURS, THE CONTRACTOR SHALL PROVIDE TWO LANES FOR THROUGH TRAFFIC. ON STREETS TOO NARROW TO MAKE THIS PRACTICABLE, THE CONTRACTOR MAY WORK IN ONE HALF OF THE ROADWAY, KEEPING ONE LANE OPEN TO TRAFFIC AND ALTERNATING THE FLOW OF TRAFFIC.
7. DURING NON-WORKING HOURS ALL LANES SHALL BE OPEN AND ALL EXCAVATIONS ON THE ROAD SHALL BE COVERED WITH A SAFE NON-SKID BRIDGING MATERIAL. A ROADWAY MAY BE CLOSED ONLY WITH THE EXPRESS PERMISSION OF THE ENGINEER. ALL TRENCHES SHALL BE COVERED DURING NON-WORKING HOURS.
8. EXISTING STREET LIGHTING, FIRE ALARM AND TRAFFIC SIGNAL FACILITIES SHALL BE MAINTAINED IN OPERATING CONDITION THROUGHOUT THE CONSTRUCTION PROJECT. ANY RELOCATION REQUIRED SHALL BE APPROVED BY THE ENGINEER AND COORDINATED WITH THE ELECTRICAL AND MAINTENANCE DIVISION, DEPARTMENT OF TRANSPORTATION SERVICES AND PAID FOR BY THE CONTRACTOR.
9. CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF TRANSPORTATION SERVICES, TRAFFIC SIGNALS SECTION, AT 523-4961 ONE WEEK PRIOR TO ANY EXCAVATION.
10. THE CONTRACTOR SHALL NOTIFY MTL JOHN CHONG AT (848-4538) OR KENNETH HONG AT (848-4537), TWO WEEKS PRIOR TO CONSTRUCTION, INFORMING THEM OF LOCATION, SCOPE OF WORK, PROPOSED CLOSURE OF ANY STREET OR TRAFFIC LANES, AND THE NEED TO RELOCATE ANY BUS STOP.
11. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF TRANSPORTATION SERVICES AT 523- 4029 ONE WEEK PRIOR TO ANY SIGNING OR STRIPING WORK.
12. WORK ON ANY CITY STREET AREA MAY BE PERFORMED BETWEEN THE HOURS OF 8:30 A.M. TO 3:30 P.M. MONDAY THROUGH FRIDAY, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
13. DRIVEWAYS SHALL BE KEPT OPEN UNLESS THE OWNERS OF THE PROPERTY USING THESE RIGHTS-OF-WAY ARE OTHERWISE PROVIDED FOR SATISFACTORILY.

TRAFFIC SIGNS AND PAVEMENT MARKINGS

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, UNLESS OTHERWISE SPECIFIED ON THE PLANS AND SPECIFICATIONS.
2. THE CONTRACTOR SHALL INFORM THE ENGINEER AT LEAST SIX (6) DAYS PRIOR TO ANY WORK ON PAVEMENT MARKING OPERATIONS TO SCHEDULE A REVIEW AND APPROVAL OF THE STRIPING PLAN.
3. THE APPROVED STRIPING PLAN SHALL BE LAID OUT USING THINNED OUT PAINT OR OTHER APPROVED DEVICE. FIELD ADJUSTMENTS SHALL BE MADE AS DIRECTED BY THE ENGINEER BEFORE THE FINAL MARKINGS ARE APPLIED.
4. ALL PAVEMENT MARKINGS THAT BECOME INAPPLICABLE SHALL BE REMOVED BY THE CONTRACTOR AT HIS OWN EXPENSE. REMOVAL SHALL BE BY "SAND-BLASTING" OR BY OTHER METHODS APPROVED BY THE ENGINEER BEFORE THE NEW PAVEMENT MARKINGS ARE APPLIED.
5. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER A LIST OF THE TRAFFIC PAINTS HE DESIRES TO USE, INCLUDING MANUFACTURERS NAME AND FORMULA NUMBER, AND THE DATE OF PURCHASE FOR APPROVAL PRIOR TO STRIPING OPERATIONS.
6. STREET SIGNS SHALL BE INSTALLED IN ACCORDANCE WITH THE STANDARDS OF THE DEPARTMENT OF TRANSPORTATION SERVICES. THE EXACT LOCATION SHALL BE DETERMINED BY THE ENGINEER. IN LIEU OF THE STANDARD EMBOSSED SIGNS, REFLECTORIZED STREET NAME SIGNS WITH SIGN BRACKETS MAY BE USED.
7. FOR TEMPORARY STRIPING, THE CONTRACTOR MAY USE OTHER MATERIALS, SUCH AS ADHESIVE, WITH THE APPROVAL OF THE ENGINEER.

GRADING NOTES

1. GRADING WORK SHALL BE DONE IN ACCORDANCE WITH CHAPTER 23, GRADING, SOIL EROSION AND SEDIMENT CONTROL, OF THE REVISED ORDINANCE OF HONOLULU, 1978, AS AMENDED AND THE SOILS REPORT BY HAWAII GEOTECHNICAL GROUP INC., DATED MARCH 18, 1991, AS APPLICABLE.
2. THE CONTRACTOR SHALL REMOVE SILT AND DEBRIS RESULTING FROM HIS WORK AND DEPOSITED IN DRAINAGE FACILITIES, ROADWAYS AND OTHER AREAS. THE COSTS INCURRED FOR ANY NECESSARY REMEDIAL ACTION DIRECTED BY THE CHIEF ENGINEER (DEPT. OF PUBLIC WORKS, CITY & COUNTY OF HONOLULU) SHALL BE PAYABLE BY THE CONTRACTOR.
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 AND REGULATIONS OF THE STATE DEPARTMENT OF HEALTH.
4. THE CITY SHALL BE INFORMED OF THE LOCATION OF THE BORROW/DISPOSAL SITE FOR THE PROJECT WHEN THE APPLICATION FOR A GRADING PERMIT IS MADE. THE BORROW/DISPOSAL SITE MUST ALSO FULFILL THE REQUIREMENTS OF THE GRADING ORDINANCE.
5. NO GRADING WORK SHALL BE DONE ON SATURDAYS, SUNDAYS AND HOLIDAYS AT ANY TIME WITHOUT THE PRIOR APPROVAL OF THE CHIEF ENGINEER, DEPT. OF PUBLIC WORKS..
6. THE LIMITS OF THE AREA TO BE GRADED SHALL BE FLAGGED BEFORE THE COMMENCEMENT OF THE GRADING WORK.
7. GRADING OPERATIONS SHALL BE PERFORMED IN CONFORMANCE WITH THE APPLICABLE PROVISIONS OF CHAPTER 54, WATER QUALITY STANDARDS, AND CHAPTER 55, WATER POLLUTION CONTROL, OF TITLE 11, ADMINISTRATIVE RULES OF THE STATE DEPARTMENT OF HEALTH.

APPROVED: (FOR GRADING ONLY)

M. Fulegama 11/8/91
CHIEF, DIVISION OF ENGINEERING, D.P.W. *u* 43 DATE
G. Uyema 10/30/91
CHIEF, DIVISION OF WASTEWATER MANAGEMENT, D.P.W. *P* 40 DATE
(SEE SEWER NOTE NO.5)

APPROVED:

Peter H. P. Ho 10/25/91
CHIEF, TRAFFIC ENGINEERING DIVISION, D.O.T.S. (FOR CONSTRUCTION WITHIN CITY R.O.W. ONLY) DATE



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Clarence K. Taniguchi
P.E., INC.
c/o PARK ENGINEERING

FED. ROAD DIS. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-05-91	1992	5	49

SEWER NOTES

1. ALL SEWER CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION, SEPTEMBER 1986, AND THE STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION, SEPTEMBER 1984, AS AMENDED, OF THE DEPARTMENT OF PUBLIC WORKS, CITY AND COUNTY OF HONOLULU, AND DESIGN STANDARDS OF THE DIV. OF WASTEWATER MGMT. VOL. I FEB. 1984
2. THE CONTRACTOR SHALL NOTIFY THE DIVISION OF WASTEWATER MANAGEMENT, CITY AND COUNTY OF HONOLULU, SEVEN (7) DAYS PRIOR TO COMMENCEMENT OF WORK, AND SUBMIT FOUR (4) SETS OF APPROVED CONSTRUCTION DRAWINGS. CALL 523-4345 FOR INSPECTION SERVICES.
3. THE EXISTING UTILITIES HAVE BEEN SHOWN ON THESE PLANS INSOFAR AS IT IS POSSIBLE TO DO SO. THEIR LOCATIONS AS SHOWN ARE APPROXIMATE ONLY AND THE CONTRACTOR SHALL MAKE AN INDEPENDENT CHECK ON THE GROUND AND WITH THE VARIOUS COMPANIES AND GOVERNMENTAL AGENCIES TO ASCERTAIN THEIR EXACT LOCATIONS.
4. TOPS OF ALL EXISTING SMH TO REMAIN SHALL BE ADJUSTED TO NEW GRADES.
5. THE KANEHOE WASTEWATER TREATMENT PLANT IS INADEQUATE. THE SEWER MORATORIUM IS SCHEDULED TO BE ABOLISHED IN 1993 UPON COMPLETION OF THE SEWER FLOW DIVERSION FROM THE KANEHOE WWTP TO THE KAILUA WWTP. THERE WILL BE NO SEWER HOOKUP FOR THE KANEHOE BASEYARD PROJECT UNTIL SUCH TIME THAT THE SEWER SYSTEM IN KANEHOE IS UPGRADED AND THE MORATORIUM IS LIFTED.

TEMPORARY EROSION CONTROL PROCEDURES

1. THE CONTRACTOR SHALL MINIMIZE THE AMOUNT OF LAND TO BE EXPOSED AT ANY ONE TIME.
2. GRADED AREAS THAT ARE NOT FINAL GRADE AND IS EXPECTED TO BE EXPOSED FOR MORE THAN 30 DAYS, SHALL BE MULCHED (AT THE RATE OF 45 CUBIC FEET PER 1,000 SQUARE FEET) IN ORDER TO PREVENT EROSION AND SILT RUNOFF.
3. WHEN INSTALLING THE DRAINAGE SYSTEM FOR THE PROJECT, FILTERING MATERIAL (JUTE STRIPS OR EQUAL) AT THE INLETS TO THE SYSTEM SHALL BE PROVIDED TO PREVENT SILT FROM ENTERING THE SYSTEM.
4. THE ABOVE MEASURE FOR EROSION AND SEDIMENT CONTROL MAY BE REVISED BY THE CONTRACTOR TO CONFORM TO HIS GRADING OPERATION PROCEDURE. BUT ANY REVISION TO THE ABOVE SHALL BE SUBMITTED TO THE DEPARTMENT OF PUBLIC WORKS, CHIEF ENGINEER FOR APPROVAL, BY THE CONTRACTOR.
5. FOLLOW SEQUENCE OF OPERATION AS RECOMMENDED BY THE DEPARTMENT OF PUBLIC WORKS "SOIL EROSION STANDARDS AND GUIDELINES".
6. TEMPORARY EROSION CONTROLS SHALL NOT BE REMOVED BEFORE PERMANENT EROSION CONTROLS ARE IN PLACE AND ESTABLISHED.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

NOTES

CASTLE HILLS ACCESS ROAD
PROJ. NO. HWY-0-05-91

SCALE: AS SHOWN DATE: MARCH, 1991

SHEET No. 2 OF 3 SHEETS

DATE	_____
SURVEY PROVIDED BY	_____
DRAWN BY	_____
DESIGNED BY	_____
QUANTITIES BY	_____
CHECKED BY	_____
ORIGINAL PLAN	_____
NOTED	_____
No.	_____

NOTES FOR CONSTRUCTION WITHIN STATE RIGHT-OF-WAY

- THE CONTRACTOR SHALL OBTAIN A CONSTRUCTION PERMIT FROM THE STATE'S HIGHWAY DISTRICT ENGINEER AT 727 KAKOI STREET PRIOR TO COMMENCEMENT OF WORK WITHIN STATE HIGHWAY RIGHT-OF-WAY.
- CONSTRUCTION AND RESTORATION OF ALL EXISTING HIGHWAY FACILITIES WITHIN STATE RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH ALL APPLICABLE SECTIONS OF THE CURRENT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, AND THE SPECIFICATION FOR INSTALLATION OF IMPROVEMENTS WITHIN STATE HIGHWAYS, OF THE STATE HIGHWAYS DIVISION.
- ALL LANES SHALL BE OPENED TO TRAFFIC DURING THE MORNING PEAK HOURS FROM 6:30 A.M. TO 8:30 A.M. AND DURING THE AFTERNOON PEAK HOURS FROM 3:30 P.M. TO 6:00 P.M., AND DURING OFF-WORK HOURS.
- THE CONTRACTOR SHALL PROVIDE, INSTALL, AND MAINTAIN ALL NECESSARY SIGNS, LIGHTS, FLARES, BARRICADES, MARKERS, CONES, AND OTHER PROTECTIVE FACILITIES AND SHALL TAKE ALL NECESSARY PRECAUTIONS FOR THE PROTECTION AND FOR THE CONVENIENCE AND SAFETY OF PUBLIC TRAFFIC. ALL SUCH PROTECTIVE FACILITIES AND PRECAUTIONS TO BE TAKEN SHALL CONFORM WITH THE "ADMINISTRATIVE RULES OF HAWAII GOVERNING THE USE OF TRAFFIC CONTROL DEVICES AT WORK SITES ON OR ADJACENT TO PUBLIC STREETS AND HIGHWAYS" ADOPTED BY THE DIRECTOR OF TRANSPORTATION, AND THE CURRENT U.S. FEDERAL HIGHWAY ADMINISTRATION "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, PART VI - TRAFFIC CONTROL FOR HIGHWAY CONSTRUCTION AND MAINTENANCE OPERATIONS". IF LANE CLOSURES ARE REQUIRED DURING CONSTRUCTION, A TRAFFIC CONTROL PLAN SHALL BE INCORPORATED INTO THE CONSTRUCTION PLANS AND MUST BE APPROVED BY THE DIVISION PRIOR TO THE ISSUANCE OF THE PERMIT.
- THE MINIMUM PAVEMENT STRUCTURE SHALL CONSIST OF:
 - RESIDENTIAL DRIVEWAYS
 - 2" ASPHALT CONCRETE AND 6" AGGREGATE BASE COURSE, OR 2" ASPHALT CONCRETE AND 2 1/2" ASPHALT CONCRETE BASE COURSE OR ASPHALT CONCRETE.
 - 4" OF CLASS "A" CONCRETE REINFORCED WITH 6"x 6" - 6/8 WIRE MESH ON 12" AGGREGATE SUBBASE IF DEEMED NECESSARY BY ENGINEER.
 - COMMERCIAL DRIVEWAYS, AND SIDEROADS
 - 2 1/2" ASPHALT CONCRETE, 8" AGGREGATE BASE COURSE AND 12" AGGREGATE SUBBASE, OR 2 1/2" ASPHALT CONCRETE AND 8" ASPHALT CONCRETE BASE COURSE OR ASPHALT CONCRETE.
 - 6" OF CLASS "A" CONCRETE REINFORCED WITH 6"x 6" - 6/8 WIRE MESH ON 12" AGGREGATE SUBBASE IF DEEMED NECESSARY BY ENGINEER.
 - CHANNELIZED INTERSECTIONS AND UTILITY INSTALLATIONS ON MAJOR HIGHWAYS
 - 4" ASPHALT CONCRETE, 8" AGGREGATE BASE COURSE AND 12" AGGREGATE SUBBASE, OR 4" ASPHALT CONCRETE AND 8" ASPHALT CONCRETE BASE COURSE OR ASPHALT CONCRETE, OR MATCH EXISTING PAVEMENT STRUCTURE, WHICHEVER IS GREATER.
- NO MATERIAL AND/OR EQUIPMENT SHALL BE STOCKPILED OR OTHERWISE STORED WITHIN HIGHWAY RIGHTS-OF-WAY EXCEPT AT LOCATIONS DESIGNATED IN WRITING AND APPROVED BY THE DISTRICT ENGINEER.
- COMPACTION TESTS FOR SUBBASE, BASE COURSE AND TRENCHES SHALL BE TAKEN IN ACCORDANCE WITH THE "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 1985".
- PRIOR TO COMMENCING TRENCH EXCAVATION WORK, THE CONTRACTOR SHALL TAKE A PROFILE ALONG THE CENTERLINE OF NEW UTILITY TRENCH AND SUCH INFORMATION SHALL BE USED IN THE VERIFICATION OF RESTORING THE ROADWAY TO ITS ORIGINAL CONDITION. A COPY OF THE PROFILE SHALL BE SUBMITTED TO THE ENGINEER.
- THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE ADEQUATE, SAFE, NON-SKID BRIDGING MATERIAL OVER THE TRENCH, INCLUDING SHORING, WHEN TRENCHING IN PAVEMENT AREAS TO HANDLE ALL TYPES OF VEHICULAR TRAFFIC.
- NO TRENCH SHALL BE OPENED MORE THAN 200 FEET IN ADVANCE OF THE INSTALLED AND TESTED PIPE AND/OR DUCTLINE.
- LONGITUDINAL DRAINAGE ALONG THE HIGHWAY SHALL BE MAINTAINED.
- PAVEMENT STRIPING SHALL BE DONE BY CONTRACTOR.
- APPROVAL OF PERMIT CONSTRUCTION PLANS SHALL BE VALID FOR A PERIOD OF ONE YEAR THEREOF FROM THE DATE OF NOTIFICATION OF APPROVAL TO THE APPLICANT. IN THE EVENT CONSTRUCTION DOES NOT COMMENCE WITHIN THIS ONE-YEAR PERIOD, THE APPLICANT WILL BE REQUIRED TO RESUBMIT HIS CONSTRUCTION PLANS FOR DIVISION'S REVIEW AND APPROVAL.
- ALL REGULATORY, GUIDE AND CONSTRUCTION SIGNS AND BARRICADES SHALL BE OF HIGH INTENSITY REFLECTIVE SHEETING.
- CONTRACTOR SHALL INFORM THE STATE PERMIT OFFICE (PH. NO. 548-2596) AT LEAST 2 DAYS PRIOR TO CLOSING ANY LANES.
- DRIVEWAY SHALL BE KEPT OPEN UNLESS THE OWNERS OF THE PROPERTY USING THESE RIGHTS-OF-WAYS ARE OTHERWISE PROVIDED FOR SATISFACTORILY.
- WHERE PEDESTRIAN WALKWAYS EXIST THEY SHALL BE MAINTAINED IN PASSABLE CONDITION OR OTHER FACILITIES FOR PEDESTRIANS SHALL BE PROVIDED. PASSAGE BETWEEN WALKWAYS @ INTERSECTIONS SHALL LIKEWISE BE PROVIDED.
- THE CONTRACTOR SHALL REFERENCE TO THE SATISFACTION OF THE ENGINEER, ALL EXISTING TRAFFIC SIGNS, POSTS AND PAVEMENT MARKINGS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. THE CONTRACTOR SHALL REPLACE OR REPAIR ALL TRAFFIC SIGNS, POSTS AND PAVEMENT MARKINGS DISTURBED BY HIS ACTIVITIES UNLESS OTHERWISE DIRECTED BY THE ENGINEER OR HIS REPRESENTATIVE.

PERTINENT SECTIONS OF THE SOILS REPORT

PREPARED BY HAWAII GEOTECHNICAL GROUP INC.

- LOOSE SURFACE SOILS, SOFT POCKETS, STOCKPILED SOILS, OR UNCOMPACTED FILL ENCOUNTERED DURING THE SITE PREPARATION SHOULD BE STRIPPED TO STIFF GROUND AND REPLACED WITH SELECT ON-SITE MATERIALS COMPACTED IN THIN LIFTS. LOOSE OR SOFT SOILS IN DEPRESSIONS AND ALONG THE BOTTOM OF NATURAL DRAINAGEWAYS SHOULD ALSO BE STRIPPED OF STIFF NATURAL GROUND.
- SELECT MATERIALS SHOULD BE ON-SITE OR OFF-SITE BORROW SOILS WITH LOW SHRINK-SWELL POTENTIAL (CBR SWELL OF LESS THAN 1%) AND WITH ROCK SIZES LESS THAN ABOUT 3 INCH AND SHOULD BE FREE FROM LARGE CLUMPS OF SOIL. THE SOIL SHOULD CONTAIN NO MORE THAN A TRACE OF ORGANIC MATTER, ADOBE, OR OTHER DELETERIOUS MATERIAL.
- FILLS SHOULD BE CONSTRUCTED IN APPROXIMATELY LEVEL LAYERS STARTING AT THE LOWER END AND WORKING UPWARD. WHERE FILLS ARE MADE ON SLOPING AREAS STEEPER THAN ABOUT 5 HORIZONTAL TO 1 VERTICAL, THE GROUND AT THE TOE OF THE FILL SHOULD BE BENCHMARKED TO A GENERALLY LEVEL CONDITION. AS THE FILL IS BROUGHT UP, IT SHOULD CONTINUALLY BE KEYED INTO STIFF NATURAL GROUND BY CUTTING STEPS IN THE SLOPES AND COMPACTING THE FILL INTO THESE STEPS.
- IN GENERAL, FILLS SHOULD BE COMPACTED TO 90% OF ASTM D-1557 MAXIMUM DENSITY. IN ROADWAYS, THE TOP 2 FEET OF FILL SHOULD BE COMPACTED TO 95% OF MAXIMUM DENSITY.
- THIN FILLS ON SLOPING GROUND (SLIVER FILLS) SHOULD BE AVOIDED. OTHERWISE, THE EXISTING SLOPES SHOULD BE STRIPPED OF LOOSE MATERIAL AND 8 FEET OR WIDER, LEVEL BENCHES SHOULD BE CUT INTO STIFF GROUND AT THE TOE OF FILL AND THE NEW FILLS KEYED INTO STIFF GROUND.
- IN GENERAL, CUT AND FILL SLOPES OF 2H:1V OR FLATTER SHOULD BE USED. FILL SLOPES SHOULD BE OVER-BUILT AND TRIMMED BACK TO FIRM, WELL COMPACTED FILLS.
- THE CONTRACTOR MAY EXAMINE THE SOILS REPORT IN ITS ENTIRETY BY CONTACTING MR. HERBERT TAO OF THE STATE DEPARTMENT OF TRANSPORTATION AT 548-6932.

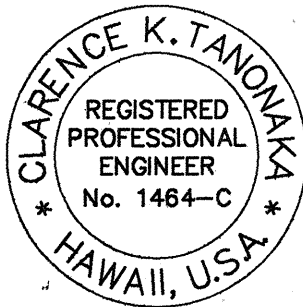
CONSTRUCTION WITHIN WETLAND AREAS

- DISCHARGES OR DREDGED OR FILL MATERIAL IN WATERS OF THE UNITED STATES SHALL BE MINIMIZED.
- DISCHARGES SHALL NOT RESTRICT OR IMPEDE THE MOVEMENT OF AQUATIC SPECIES INDIGENOUS TO THE WATERS OF THE PASSAGE OF NORMAL OR EXPECTED HIGH FLOWS OR CAUSE THE RELOCATION OF THE WATERS.
- IF THE DISCHARGE CREATE AN IMPOUNDMENT OF WATER, ADVERSE IMPACTS ON THE AQUATIC SYSTEM CAUSED BY THE ACCELERATED PASSAGE OF WATER AND/OR RESTRICTION OF ITS FLOW SHALL BE MINIMIZED.
- DISCHARGE IN WETLAND AREAS SHALL BE AVOIDED AND ALL DREDGED OR EXCAVATED MATERIALS SHALL BE DISPOSED OF OUTSIDE WETLAND AREAS.
- HEAVY EQUIPMENT WORKING IN WETLAND AREAS SHALL BE PLACED ON MATS.
- DISCHARGE INTO BREEDING AREAS FOR MIGRATORY WATERFOWL SHALL BE AVOIDED.
- ALL TEMPORARY FILLS SHALL BE REMOVED IN THEIR ENTIRETY.
- ANY STRUCTURE OR FILL AUTHORIZED SHALL BE PROPERLY MAINTAINED.

PROJECT SITE SURVEYS

- GRAVEL COMPACTION PILING WILL CAUSE GROUND MOVEMENTS IN THE VICINITY OF THE WORK AREA. GROUND MOVEMENTS COULD CAUSE DAMAGES TO THE ADJACENT EXISTING STRUCTURES AND UTILITIES AND ALL DAMAGES SHALL BE SETTLED BETWEEN THE CONTRACTOR AND THE OWNERS OF EXISTING STRUCTURES AND UTILITIES AT THE CONTRACTOR'S EXPENSE. THE EFFECTS OF POTENTIAL DAMAGES SHALL BE RECOGNIZED BY THE CONTRACTOR AND ALLOWANCES SHALL BE INCLUDED IN THE VARIOUS ITEMS OF WORK SCHEDULED IN THE PROPOSAL FOR POTENTIAL DAMAGES.
- IT IS SUGGESTED THAT FOR HIS OWN PROTECTION THE CONTRACTOR PERFORM A PRECONSTRUCTION SURVEY OF THE PROJECT SITE PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHOULD MAKE VISUAL INSPECTIONS, TAKE PHOTOGRAPHS AS NECESSARY OF ALL IMPROVEMENTS AT AND ADJACENT TO THE WORK SITE TO ENHANCE THE SURVEY, AND RECORD ALL EXISTING DAMAGES AND CRACKS. SURVEY POINTS SHOULD BE ESTABLISHED ON SLABS, PAVEMENTS, CORNERS OF STRUCTURES AND BUILDINGS AND OTHER LOCATIONS NECESSARY FOR CONSTRUCTION AND POST CONSTRUCTION EVALUATION OF SETTLEMENTS AND DAMAGES, AND LEVEL READINGS OF THE SURVEY POINTS SHOULD BE TAKEN.
- DURING AND AFTER CONSTRUCTION IT IS SUGGESTED THAT THE CONTRACTOR TAKE PERIODIC LEVEL READINGS OF THE SURVEY POINTS. THE RESULTS OF LEVEL READINGS SHOULD BE REVIEWED DURING CONSTRUCTION FOR INDICATIONS OF GROUND MOVEMENTS, AND ADJUSTMENTS TO CONSTRUCTION PROCEDURES AND METHODS SHOULD BE MADE ACCORDINGLY BY THE CONTRACTOR.
- PRECONSTRUCTION, CONSTRUCTION AND POST CONSTRUCTION SURVEYS SHALL NOT BE PAID FOR DIRECTLY, BUT SHALL BE INCLUDED IN THE PRICES BID FOR THE VARIOUS ITEMS OF WORK AS SCHEDULED IN THE PROPOSAL.

FED. ROAD DIS. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-05-91	1992	6	49



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Clarence K. Tanaka
PERS, Inc.
dba PARK ENGINEERING

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
NOTES
<u>CASTLE HILLS ACCESS ROAD</u> <u>PROJ. NO. HWY-0-05-91</u>
SCALE: AS SHOWN DATE: MARCH, 1991
SHEET No. 3 OF 3 SHEETS