FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-H-02-06M	2006	3	12

GENERAL NOTES:

1. This project consists of replacing the existing cesspools in the Hilo Baseyard with new septic systems. The work includes pumping, cleaning, demolishing and/or backfilling the existing cesspools; furnishing and installing new septic tank systems; furnishing and installing pre-cast perforated concrete pipes for seepage pits; constructing leach-field with all the necessary accessories and appurtenances; and replacing existing sewer pipes.
2. The Contractor is reminded of the requirements of Subsection 105.16 - Subletting of Contract, which requires him to perform work amounting to not less than 30 percent of the total contract cost less deductible items. Non-compliance with this Subsection may be grounds for rejection of bid.
3. The Contractor shall notify the State in writing, two (2) weeks prior to starting paving operations.
4. At the end of each day's work, the Contractor shall remove all equipment and other obstructions to permit free and safe passage of baseyard traffic.
5. The existence and location of underground utilities, manholes, monuments and structures as shown on the plans are from the latest available data but the accuracy is not guaranteed. The encountering of other obstacles during the course of the work is possible. The Contractor shall be held liable for any damages incurred to the existing facilities and/or improvements as a result of his operations.
6. The final locations of the septic tanks, seepage pits and leach-field shall be verified and approved by the Engineer.
7. Existing drainage system will be functional at all times during construction Contractor is to furnish materials, equipment, labor, tools and incidentals necessary to maintain flow. This work shall be considered incidental to the various contract items.
8. Contractor shall provide for access to all work areas and/or buildings at all times.
9. All saw cutting work shall be considered incidental to various contract items and will not be paid for separately.
10. The Contractor shall be responsible for coordinating all work for this project with the various adjacent property owners.
11. The Contractor shall coordinate their construction schedule and security and access responsibilities with baseyard personnel. The contractor shall contact State DOT, Highways Division at 933-8866. Baseyard to remain operational at all times.

SEPTIC TANK INSTALLATION NOTES:

1. Where not otherwise specified, the construction of the septic tank shall conform to the Hawaii Administration Rules, Chapter 62, wastewater system.
2. Excavation: pit shall be excavated to provide a minimum 12 inches (maxium 18 inches) side wall clearance around tank wall, minimum 12 inch thickness level tank bedding, and approximately 12 inch (min) Backfill over tank. The area shall be clear of sharp rocks and foreign objects. Excavate sewerlines and soil absorption bed to lines and grades shown on the plan.
3. Tank bedding: the bedding and backfill material must provide a Reaction modulus of 3000. Backfill bottom of excavation with $\frac{1}{8}$" to $\frac{1}{2}$" gravel or crushed rock (pea gravel preferred) in 6 inch lifts. Compact backfill material to 95% standard proctor density to provide minimum 12 inch thick level bedding for tank. Check bedding elevation so invert of inlet and outlet stubs will be at the proper elevation when tank is placed on the bedding.
4. Tank placement: use manufacturer's recommendation or a lifting sling or cable fastened to the lifting lugs or wrapped around the tank to lift and set the tank. Do not lift tank by the inlet or outlet stubs. Align and level tank, so invert of the inlet and outlet stubs are at the elevations shown on the plan.
5. Initial backfill and filling of water: place same material as bedding or backfill. Backfill uniformly around the sides of the tank in 6 inch lifts compacted to 95% of standard proctor density. Backfill under the haunches of the tank and distribute to provide uniform support without voids. Introduce water into the tank while backfilling. The water level in the tank should not exceed 2 feet above the fill material and per manufacturer's recommendations. Conduct water tests after the backfill support has been placed under the tank and to at least to the spring line of the tank.
6. Septic tank water tightness test: fill tank with water, observe septic tank for 48 hours making sure there is no presence of leaks or change in liquid level. The septic tank must be repaired if necessary.
7. Finish backfill: upon approval of connection work and notification by engineer to proceed with finish backfill uniformly around remaining sides of the tank in 6 inch lifts compacted to 95% of standard proctor density. to a minimum of 6 inches above the tank. Compact area around inlet and outlet with care to avoid settling or misaligning the pipes. Complete the backfilling operation using excavated or imported soil after the tank has been covered to a 6 inch depth with select backfill. Remove stones greater than 2 inches in dimension from the soil material. Hand tamp to grade or slightly higher. Use top of manhole cover as finish grade.

ABSORPTION BED (LEACHING FIELD) AND SEWER SYSTEM INSTALLATION:

1. Where not otherwise specified, the construction of the absorption bed shall conform to Chapter 62, wastewater rules and regulations, section 11-62-34, state of hawaii.
2. Bed excavation: excavate bed neatly to line and grade shown on the plans. Dispose unusable excavated material as directed by engineer.
3. Contractor to conduct percolation test/capacity test to verify the absorption bed soil infiltration rate. Contractor shall notify the engineer of the testing. The soil infiltration rate must be acceptable to the engineer and department of health. Percolation/ capacity test consists of introducing/pumping water in the excavated bed at 100-150 gallons per minute until the daily flow volume of approximately 600 gallons is reached.
4. Aggregate backfill and drainage unit: backfill excavated bed with #4 rock up to 12 inch below infiltration units. Place rock in 12 inch (max.) lifts and back blade each layer to compact lightly. Install line from distribution box to infiltrator units. Install infiltrator units following manufacturer's instructions. Upon approval of drain line installation by the department of health and engineer. Place #4 coarse crushed rock (1-$\frac{1}{2}$" to $\frac{3}{4}$") backfill between and to the top of infiltrator units. "walk-on" fill into place to give proper support to sides.
5. Hydraulic testing: conduct hydraulic testing of septic system after septic tank, piping and infiltrator units installation and before installation of finish backfill. Clean water shall be introduced in the drain pipe from the septic tank for a minimum of two hours to verify the septic system performace and that the water is equally distributed in the absorption field.
6. Finish backfill: place native soil from the bed excavation or import soil over fabric filter to 6 inches below finish grade. Remove stones greater than 2 inches in dimension from the soil material. Hand tamp to finish grade.
7. Rope off area to avoid construction traffic on system before final completion and after construction.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GENERAL NOTES

HILO BASEYARD
INSATLLATION OF SEPTIC SYSTEMS
PROJECT NO. HWY-H-02-06M

Scale: None Date: April, 2006

SHEET No. 1 OF 1 SHEETS