FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-09-06	2008	ADD. 6	46

General:

A. Workmanship and materials shall conform to the building code of the City and County of Honolulu (IBC 2003). However, where reference is made to performance conforming to other standards the more stringent shall apply.

B. The Contractor shall compare all the contract documents with each other and report in writing to the engineer all inconsistencies and omissions.

C. The Contractor shall take field measurements and verify field conditions and shall compare such field measurements and conditions with the drawings before commencing work. Report in writing to the architect all inconsistencies and omissions.

D. The Contractor shall be responsible for coordinating the work of all trades.

E. The Contractor shall be responsible for methods of construction, workmanship and job safety. The Contractor shall provide temporary shoring and bracing as required for stability of structural members and systems.

F. Construction loading shall not exceed design live load unless special shoring is provided. Allowable loads shall be reduced in areas where the structure has not attained full design strength.

G. The Contractor shall be responsible for protection of the adjacent properties, structures, streets and utilities during the construction period.

H. Details noted as typical on the structural drawings shall apply in all conditions unless specifically shown or noted.

Design Criteria:

A. Seismic Zone ——— 2

B. Basic wind speed and exposure ——— 105 mph, exposure B

C. Design live loads
   a. Platform ——— 100 psf

D. Allowable foundation bearing capacities (Bearing on on-site soils or properly compacted fill).
   a. Dead load + live load ——— 2,000 psf
   b. Dead load + live load + lateral load ——— 2,300 psf
   See soils report for additional bearing pressure information

Foundation:

A. Contractor shall provide for de-watering of excavation from surface water, ground water or seepage.

B. Contractor shall provide for design and installation of all cribbing, sheeting, and shoring necessary to preserve excavations and earth banks.

C. The project site should be cleared of all vegetation, construction debris, discarded testing materials, including concrete and asphalt cylinders and other deleterious material. Prior to placement of fill, the exposed subgrade should be scarified to a minimum depth of 6 inches, moisture conditioned or dried to slightly above the optimum moisture content, and compacted to a minimum 90 percent compaction as determined by ASTM D 1557.

D. Excavations for footings shall be approved by the geotechnical engineer prior to placement of concrete and reinforcing. Geotechnical engineer shall submit letter of compliance to the architect.

E. Contractor shall brace or protect all walls below grade from lateral loads until attaching floors are completely in place and have attained their full design strength.

Concrete :

A. Concrete construction shall conform to American Concrete Institute ACI 318R-02.

B. Concrete shall be regular weight hard rock concrete and shall have the following minimum 28 day compressive strengths:
   a. Footings, grade beams ——— 3,500 psi
   b. Slabs on grade ——— 3,500 psi
   All concrete slabs on grade shall be:
   1. Fiber Reinforced Concrete complying to ASTM C1116, ASTM C-1339, Ferro Fiber (Fiber Length shall be 2.25") by Forta Corp at the rate of 7.5# per cubic yard. Maximum water cement ratio of .50 with a slump shall be 4 inch plus or minus 1 inch. Superplasticizer shall be added to improve the workability of concrete to 6 inch plus or minus 1 inch. Fibers are to be added at central batch plant.
   2. Comply with Hot Weathering Concrete procedures, ASTM C-305. EUCO BAR by Euclid Chemical or equal.
   3. Curing conforming to ASTM C-309 and ASTM C-1325, Super Rez Seal by Euclid Chemical or approved equal.
   4. Joint Sealant: Eucolastic 1 by Euclid Chemical or equal.
   5. Test Slab is to be placed to demonstrate contactor's ability to provide finish product sort by DOT. Representative shall be present during initial placement and or pre-con.

   C. All other concrete ——— 3,000 psi

C. Concrete delivery tickets shall record all free water in the mix: at batching by plant, for consistency by driver, and any additional request by Contractor if permitted by the mix design.

D. All inserts, anchor bolts, plates, and other items to be cast in the concrete shall be hot-dipped galvanized according to ASTM A153 unless otherwise noted.

E. Reinforcing bars, anchor bolts, inserts, and other items to be cast in the concrete shall be secured in position prior to placement of concrete.

F. Conduits, pipes, and sleeves passing through a slab or footing and not conforming to typical details shall be located and submitted to the engineer for approval.

G. Conduits, pipes, and sleeves embedded within a slab or wall (other than those merely passing through) shall be:
   a. No larger in outside dimensions than one third the overall slab or wall thickness in which they are embedded.
   b. Placed in the middle one third of slab or wall thickness
   c. Spaced no closer than three diameters or widths on center.

H. Conduits, pipes, and sleeves shall not be placed through or embedded in a beam unless specifically detailed.

I. The Contractor shall locate construction joints so as not to impair the strength of the structure and to minimize shrinkage stresses. Submit location of construction joints to the architect for approval, unless otherwise noted.

J. See architectural drawings for chamfers, edge radii, drips, reglets, finishes and other non-structural items not shown or specified on the structural drawings.

K. Non-shrink grout shall be a premixed non-metallic formula, capable of developing a minimum compressive strength of 3,000 psi in 1 day and 5,000 psi in 28 days.

Reinforcing Steel:

A. Reinforcing steel shall be deformed bars conforming to ASTM A615, Grade 60.

B. Welded wire fabric shall conform to ASTM A185, galvanized.

Reinforcing Steel (Cont):

C. Clear concrete cover for reinforcing bars shall be as follows, unless otherwise noted:
   a. Footings, grade beams, etc. Cast against earth ——— 3"
   b. Footings, grade beams, etc. Formed and exposed to earth or weather ——— 2"
   c. Walls
      1. Faces exposed to earth or weather
         #5 bars and smaller ——— 1 1/2"
         #6 bars and larger ——— 2"
      2. Interior faces ——— 1"
   d. Beams and columns
      primary reinforcement, stirrups, ties and spirals ——— 1 1/2"
   e. Structural slabs
      1. Faces exposed to earth or weather ——— 1 1/2"
      2. Interior faces ——— 1"

D. Clear distance between the surface of a bar and any surface of a masonry unit shall be not less than 1/2 inch, unless otherwise noted.

E. Reinforcing steel shall be spliced where indicated on plans. Provide lap splice length per typical details and schedule, unless otherwise noted.

F. Welded wire fabric shall be lapped 8 inches or one full mesh plus 2 inches, whichever is greater.

G. Mechanical splice connectors shall develop in tension 125 percent of the specified minimum yield strength of reinforcing bars.

H. Bar bends and hooks shall be "standard hooks" in accordance with ACI 318.

Structural Steel:

A. Fabrication and erection of structural steel shall conform to the American Institute of Steel Construction Manual of Steel Construction, Ninth Edition.

B. Structural steel shall conform to ASTM A36 unless otherwise noted.

C. Steel wide flange sections shall conform to ASTM A992, Grade 50.

D. Steel channels, S, M and HP shapes shall conform to ASTM A572.

E. Steel pipes shall conform to ASTM A53, Grade B.

F. Steel tubes shall conform to ASTM 500, Grade B.

G. Bolts shall conform to ASTM A307, Grade A unless otherwise noted.

H. High-strength bolts shall conform to ASTM A325, type N. Use load indicator washers.

I. Welds and welding procedures shall conform to the structural welding code AWS D1.1 of the American Welding Society.

J. Welding shall be performed by welders prequalified for welding procedures to be used.

K. Welding electrodes shall be E70xx.

L. All steel shall be prime painted in the shop.

M. Exposed steel shall be hot-dipped galvanized.

6/10/08	Revise concrete strength
Date	Revision

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STRUCTURAL GENERAL NOTES

KANEOHE, PEARL CITY AND WAIANAE
BASEYARD WASHDOWN RACKS
Project No. HWY-0-09-06

KEN KAZUO HAYASHIDA
LICENSED PROFESSIONAL ENGINEER
No. 6818-S
HAWAII, U.S.A.

EXPIRATION DATE OF THE LICENSE 4/30/2010
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

SCALE: AS NOTED DATE: MAY 2008

SHEET No. S-000 OF 46 SHEETS

ADD. 6

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
No.	TRACED BY	
	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	

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