STRUCTURAL

1. Foundation

Buildings will be supported on continuous wall footings with an allowable bearing pressure of 2500 psf.
Barracks: Refer to drawings
Galley: Footings shall be 24" wide x 12" deep reinforced with 3-#5 bottom continuous, and #4 @ 48" o.c. support bars. Top of footings shall be 16" below finished floor, where grade is less the 8" from finished floor. Where grade is lower, footings shall be 24" below finished floor.

2. Framing Systems:

FIRST FLOOR
Barracks: First floor construction consists of a 4-inch slab on grade on 10 mil vapor barrier and 4-inches of porous fill reinforce with 6X6-W2.9XW2.9 w.w.f. Provide 6-inch slab at mechanical room.
Galley: First floor construction consists of a 4-inch slab on grade on 10 mil vapor barrier and 4-inches of porous fill reinforce with 6X6-W2.9XW2.9 w.w.f. Provide 6-inch slab at mechanical spaces. Freezers may require a double slab with insulation – to be determined by kitchen consultant and based upon type of freezer utilized.

SECOND AND THIRD FLOORS
Barracks: 2nd and 3rd floor construction at the Barracks consists of 2" concrete topping on 6" precast prestressed hollowcore planks supported on masonry bearing walls.

ROOF FRAMING
Barracks: Roof framing consists of 1 ½" 20 gage galv roof deck on lightgage metal roof trusses.
Galley: Roof framing consists of 1 ½" 20 gage galv roof deck on lightgage metal roof trusses.

BEARING WALLS
Barracks: All bearing walls are 8-inch masonry block – refer to drawings for reinforcing
Galley: All bearing walls are 8-inch masonry block reinforce with #5 @ 32" o.c. vertical, with bond beams at first floor and roof level. For additional bond beams and reinforcing at windows, refer to ATFP below.

3. ATFP Structural System

ATFP: At each window, provide bond beach, top & bottom of each window, and 2-#5 vertical, each side of windows (typical both Galley and Barracks)

Progressive Collapse, Occupancy Category IV, Barracks Only, includes the following:
1) Tie Forces: Vertical and horizontal ties are required. In topping slab, reinforcing bars are added to meet these tie requirements, with additional perimeter ties as noted in the drawings.
2) Alternate Path: At exterior bearing walls only, wall is designed for removal of a portion of the wall equal to 2X building height to resist progressive collapse. Additional bond beams and reinforcing are noted on the drawings.

3) Enhanced Local Resistance: At first and second floor exterior masonry walls, walls are designed for enhanced resistance equal to 1.5 baseline flexural resistance is required. Wall reinforcing indicated on drawings has provided for this.

4. Structural Design Loads

Live load:

a. 4" Slab on Grade: 150 psf (typically unless otherwise noted)
b. 6" Slab on Grade (mech rooms): 200 psf
c. Dorm Rooms: 40 psf
d. Dorm Toilet Rooms: 80 psf (includes partition load)
e. Public Rooms: 100 psf
f. Laundry Rooms: 100 psf
g. Corridors: 100 psf
h. Roof: 20 psf

Wind Load:

a. Basic Wind Velocity V = 120 mph (3 second gust)
b. Wind Directionality Factor: 0.85
c. Building Category :IV, Importance Factor: 1.15
d. Exposure Category: C

Seismic Loads:

a. Ss=6%g, S1=12%g
b. Importance Factor, 1.5
c. Seismic Design Category C

5. Material Properties

a. Cast in Place Concrete: (ACI 301): Minimum 28 day compressive strength: 3500 psi
b. Reinforcing Steel (ASTM A615): Grade 60
c. Structural Steel: ASTM A36, Fy=36 ksi