

# The Monolithic Dome As a Prison?

By David B. South

Can a Monolithic Dome be designed as a prison or jail? The answer is an emphatic Yes. In fact, if there are any buildings that ought to be Monolithic Domes, they are jails and prisons.

Consider just a few of the advantages of the dome over conventional designs:

- \* Monolithic Domes cost less to build, operate and maintain.

- \* The domes' interiors can be open and clear, free of supporting pillars or columns and free of walls that create hiding places. That openness provides clear views of all activities at all times, and those better sight lines translate into less staffing, and that's where the big money is saved.

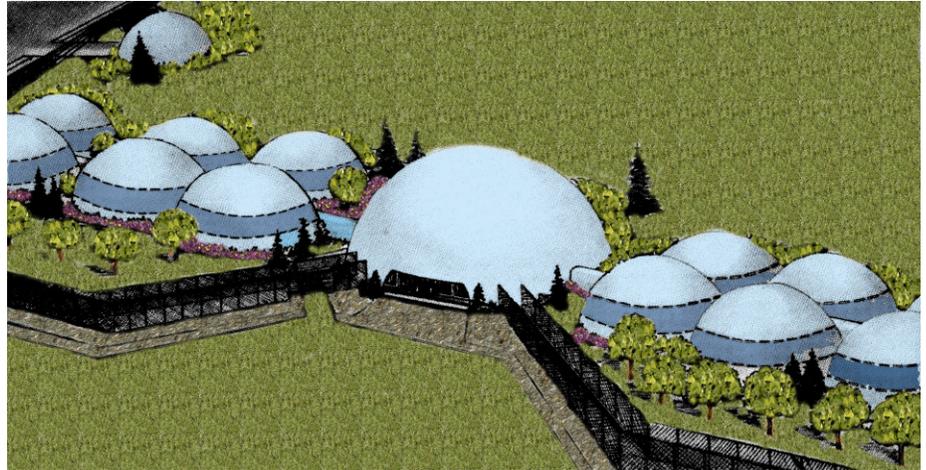
- \* A Monolithic, steel-reinforced concrete shell is impenetrable. Inmates simply cannot chisel or knife their way through it.

Some twenty-five years ago, Monolithic devoted a lot of time and money to jail and prison design. We knew that incarcerating facilities should be totally fire safe and impenetrable from both the outside and inside. Through research, we also learned that few jails and prisons are insulated. Apparently, insulation was skipped to cut costs -- an unnecessary forfeiture in a Monolithic Dome where the opposite is true. Rather than increasing costs, a dome's insulation holds utility costs to a minimum.

Larry Byrne, our designer, traveled extensively inspecting facilities and talking with prison officials to learn what was needed. Larry then began drawing jails and prisons of various types and sizes.

But nothing happened. In 1980, we did not have a serious number of completed domes we could point to, and none were prisons. So our plans met with the usual resistance. Conventional designs were the norm that people were used to, and they didn't want to change or even listen to some far-out, new ideas.

But we did design a full, 1200-bed facility for the State of South Carolina, that, for political reasons, never got



Detention Facility

built. We designed other facilities as well. All of that information is still good. We can still build and operate jails for less.

One of our more interesting experiences with prison design happened in 1986. A California Superior Court Judge ordered the County of Santa Clara to buy a Monolithic Dome prison. He made that decision after hearing on-the-stand testimony from California prison officials. A Prison Director testified that a Monolithic Dome jail looked "just fine" to him, and the Santa Clara County Sheriff said that he had done a lot of investigating of Monolithic Domes and felt that they would serve the County's needs well.

Unfortunately, supporters of a conventional jail plan got the judge's decision overturned. Two years later, the County Sheriff called me. He said, "I thought you should know that we now have our new jail. What you had promised to build for \$6.5 million in eight months, cost us \$16 million, took two years and does not have any of the improvements you would have incorporated."

So why haven't we pushed harder on jails? It's my wife's fault. One day Judy said to me, "David, do you really want your Monolithic Domes best known as prisons and jails?" I didn't.

Till then, we had been constructing bulk storages and a few designed buildings. Had we started with prisons and jails, we probably would not have been able to get into the school and church

market.

But now that Monolithic is somewhat established in church and school design, incorporating prison design into what we offer should not strike potential clients as "weird."

The accompanying PDFs include a number of preliminary designs for federal, state and private prisons and jails. Obviously, the drawings are a few years old, but the problems are still the same, as are the solutions. Please feel free to download the PDF.

After reading this, many people will want to know: How much? The answer: Substantially less! If you base the pricing on what Monolithic is doing with schools and churches, rest assured that we will design and construct prisons for substantially less than the price at which they are currently being built. And ongoing costs for prison staffing, utilities and maintenance will also be less.

Then too, a prison or jail built in the round simply functions more efficiently as an incarcerating facility. Sight lines are clear so there's a better view of all that goes on. Sprayed concrete is much tougher than conventional concrete. The amount of heating and cooling is vastly reduced. But the speed of construction is substantially increased, so that time from plan to finish is really quite rapid.

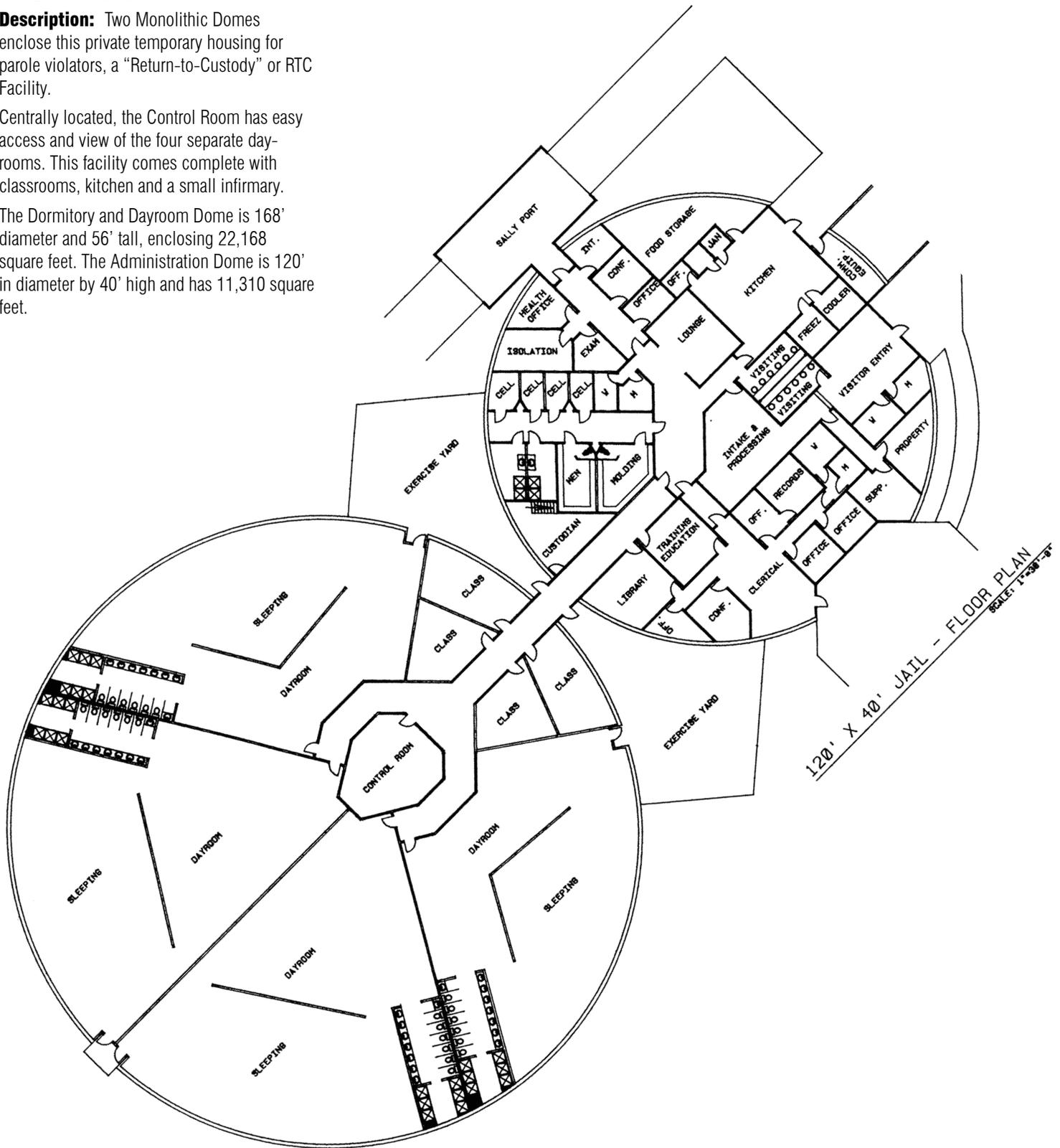
# Private RTC Facility

**Designer:** Larry Byrne

**Description:** Two Monolithic Domes enclose this private temporary housing for parole violators, a "Return-to-Custody" or RTC Facility.

Centrally located, the Control Room has easy access and view of the four separate day-rooms. This facility comes complete with classrooms, kitchen and a small infirmary.

The Dormitory and Dayroom Dome is 168' diameter and 56' tall, enclosing 22,168 square feet. The Administration Dome is 120' in diameter by 40' high and has 11,310 square feet.



120' X 40' JAIL - FLOOR PLAN  
SCALE: 1/8" = 1'-0"

# County Jail and Sheriff's Office

**Facility:** County Jail and Sheriff's Office

**Designer:** Larry Byrne

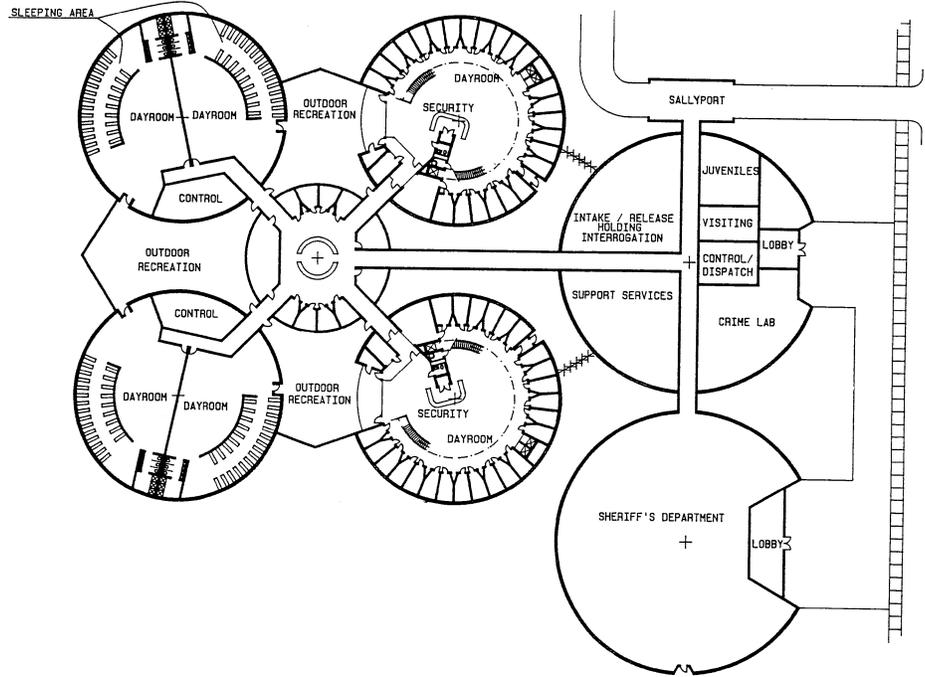
**Description:** Seven Monolithic Domes enclose this county jail facility.

Housed in a separate 124' dome, the Sheriff's department can operate without interruptions from the jail, yet is close enough for easy access.

Alongside the Sheriff's department, the 124' admitting dome also has crime lab facilities.

The central administrative dome for the jail is 75' in diameter and 4,410 square feet.

Each of the 100' x 33' housing units have 24 beds on each floor for a total inmate capacity of 192. Both medium and minimum security domes are shown.



# Youth Detention Center

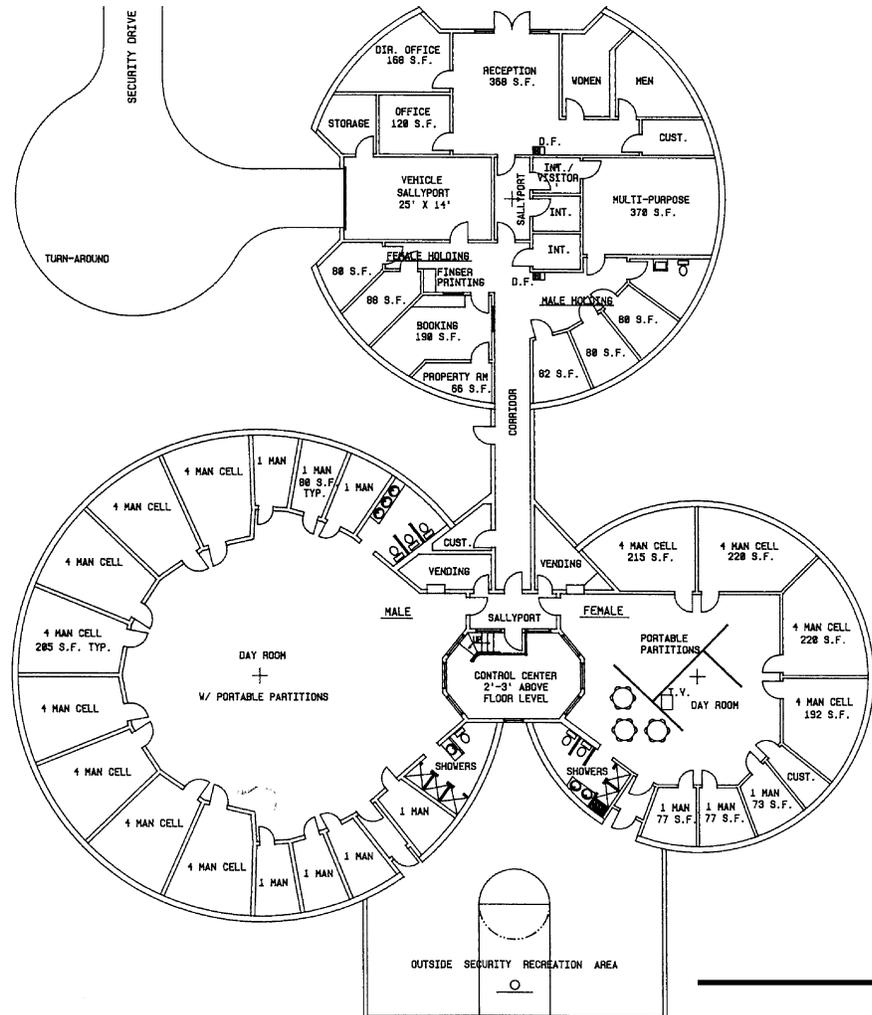
**Facility:** Youth Detention Center

**Designer:** Larry Byrne

**Description:** Youth detention center consisting of one 70' diameter administration and booking dome, one 90' diameter male security dome and one 60' diameter female security dome.

The administration dome comes complete with visitor area, separate holding areas for young men and young women and offices.

The housing units include 4-person cells as well as single unit cells. There are 39 beds in the male security dome and 19 in the female security dome.



# Prison Facility — 1200 Beds

**Facility:** 1200 Bed Prison

**Designer:** Larry Byrne

**Description:** A 1200 bed prison designed for the state of South Carolina. The project never went through to completion due to lack of state funding.

Perfect line of sight is the ultimate advantage given by a Monolithic Dome prison. A two story double-dome housing unit can house up to 120 inmates in single cells or 128 in double cells. Shown here is the medium security housing design in two 112 foot diameter, 37 foot tall domes with 120 beds in single cells.

Visitors enter between two 140 foot diameter visitors' domes into the 108 foot diameter administrations and operations dome. Each vis-

itors' dome has an 11,488 square feet open area.

The Reception and Evaluation dome (110' x 37') encompasses 9500 square feet with all the modern facilities.

Program Services, in a 100' dome, accommodates a pharmacy, infirmary, chaplain, 2500 square foot multi-purpose room and offices. The educational facility, also in a 100' dome, comes complete with classrooms, library, and more.

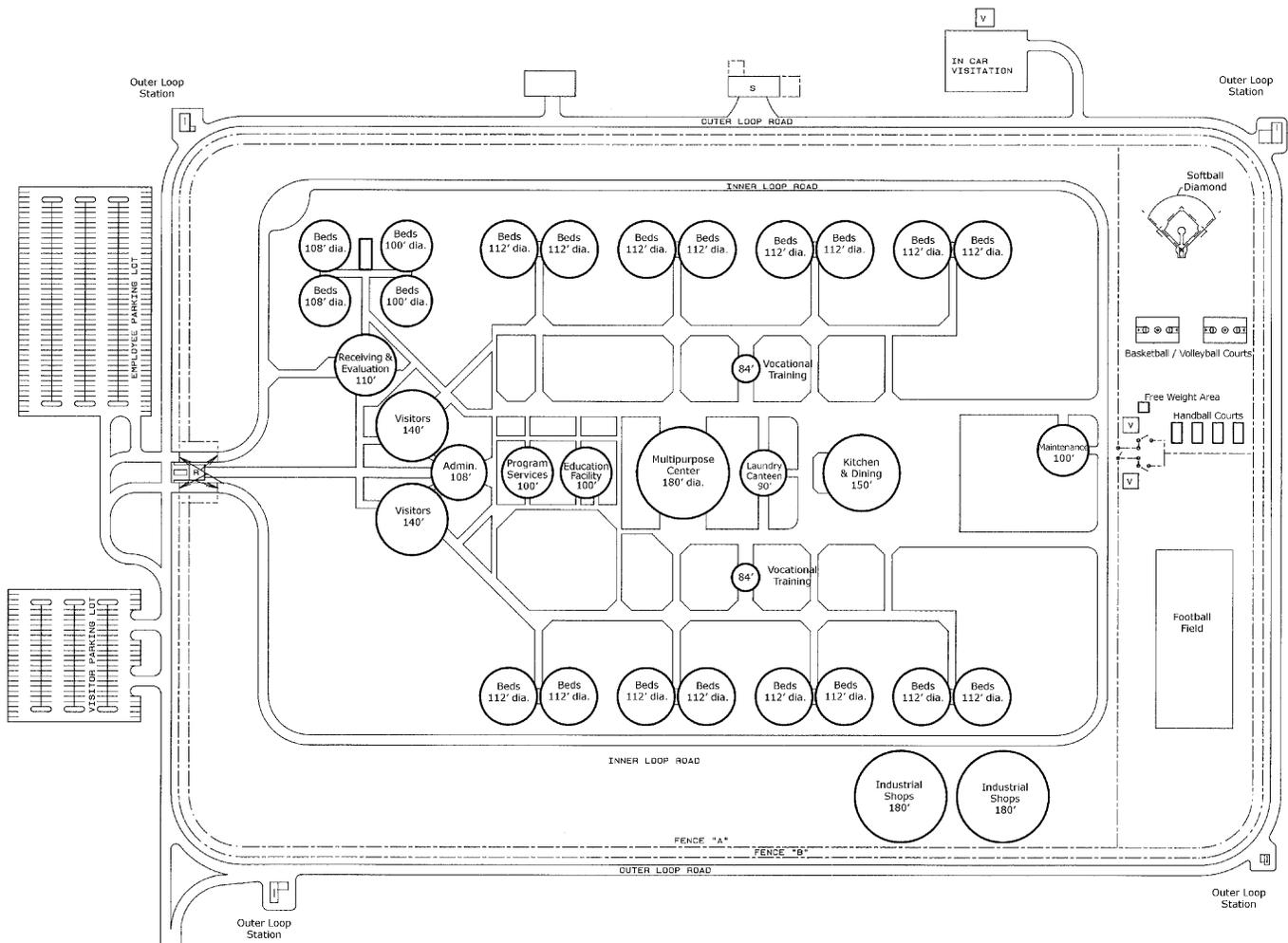
The centrally located kitchen in a 150' diameter, 17,000 square foot dome creates optimum work areas and easy access to the separate

dining halls — two for inmates, one for staff — as well as private access to the storage/unloading area.

Separate double gymnasiums are surrounded by locker rooms, exercise rooms and office in a 25,450 square foot, 150' diameter multi-purpose center.

Located between the multipurpose center and dining hall a 90' diameter dome houses the ample laundry and storage areas, commissary, canteen and barber.

A non-denominational chapel (60' x 25') with rooms for ecclesiastical counseling provides an optional religious center.

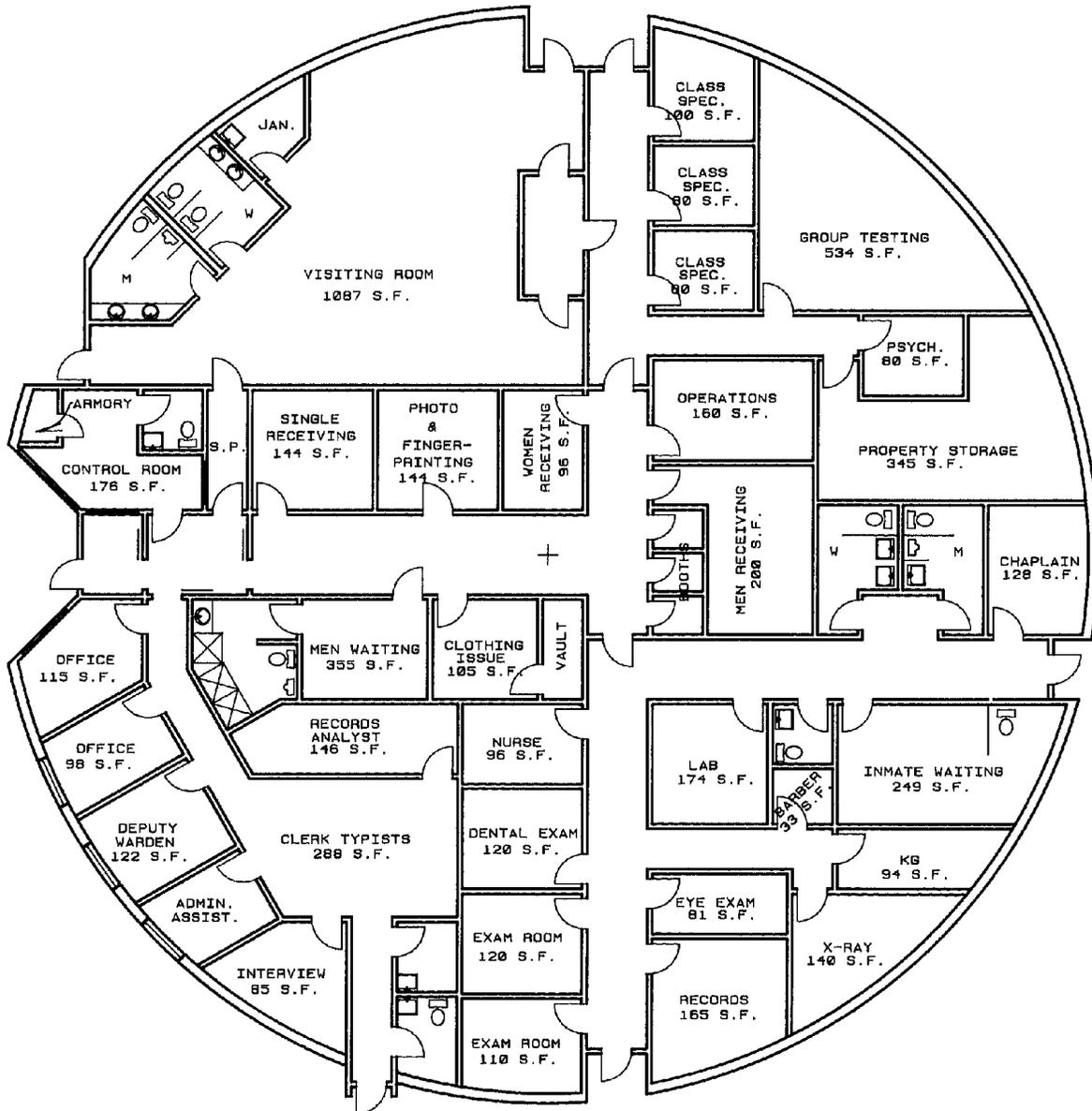


**Prison Schematic**



# Prison Facility — 1200 Beds (cont.)

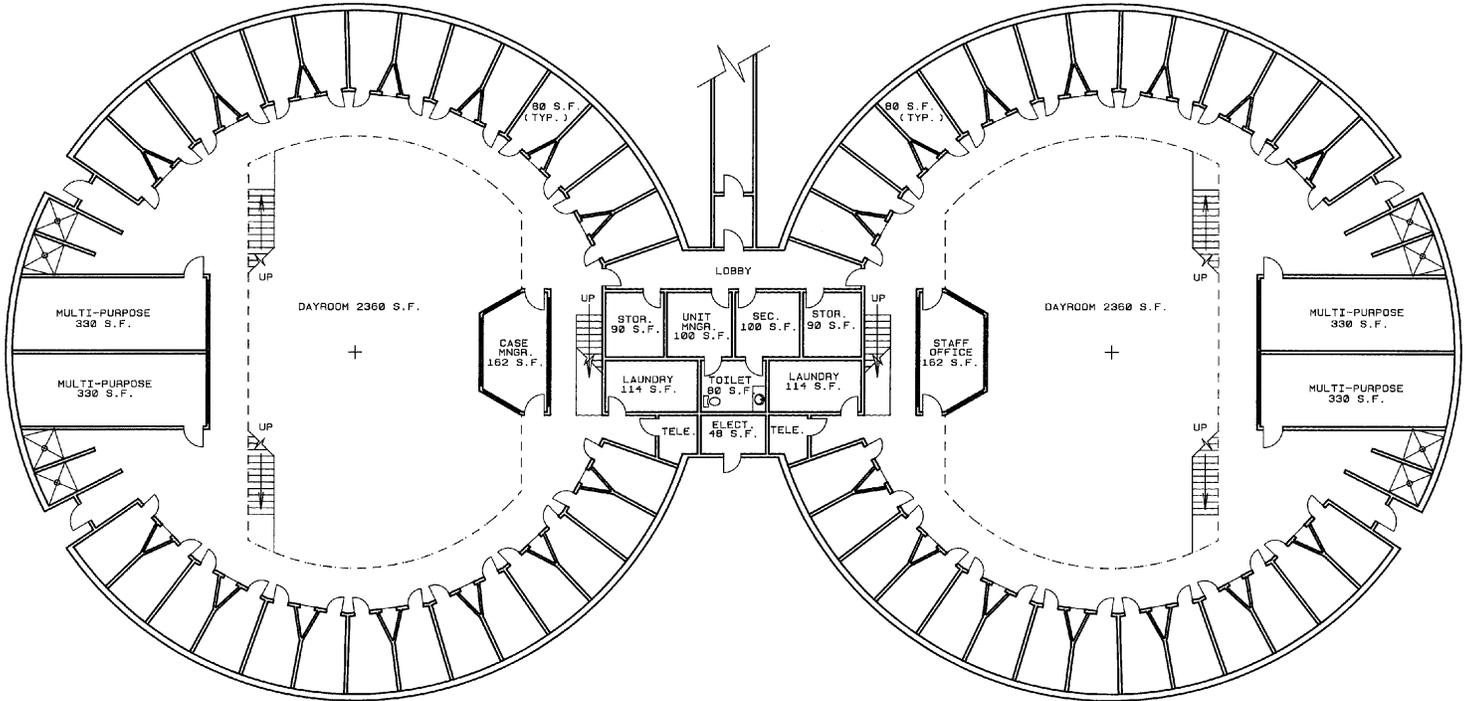
## Receiving and Evaluation - 110' x 37'



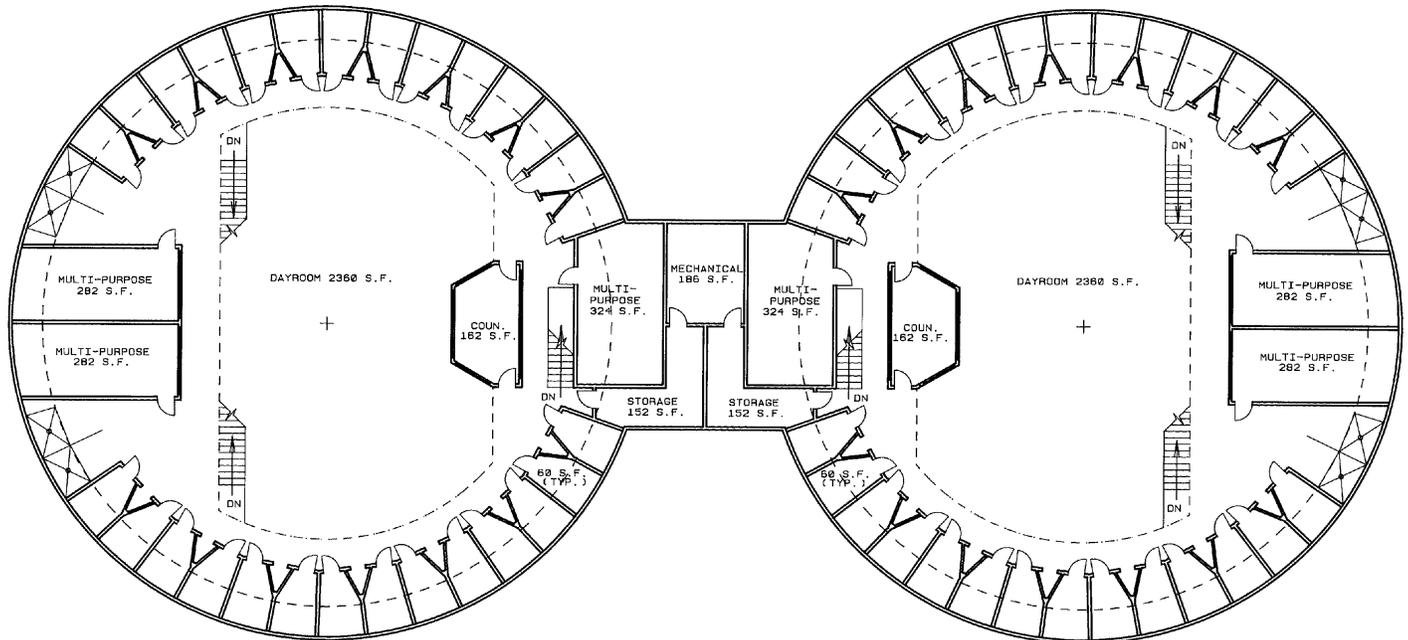
# Prison Facility — 1200 Beds (cont.)

## Housing - Maximum - Solitary

56 Beds per Dome - 108' x 36' Domes,  
Maximum Security, Solitary Confinement



First Floor



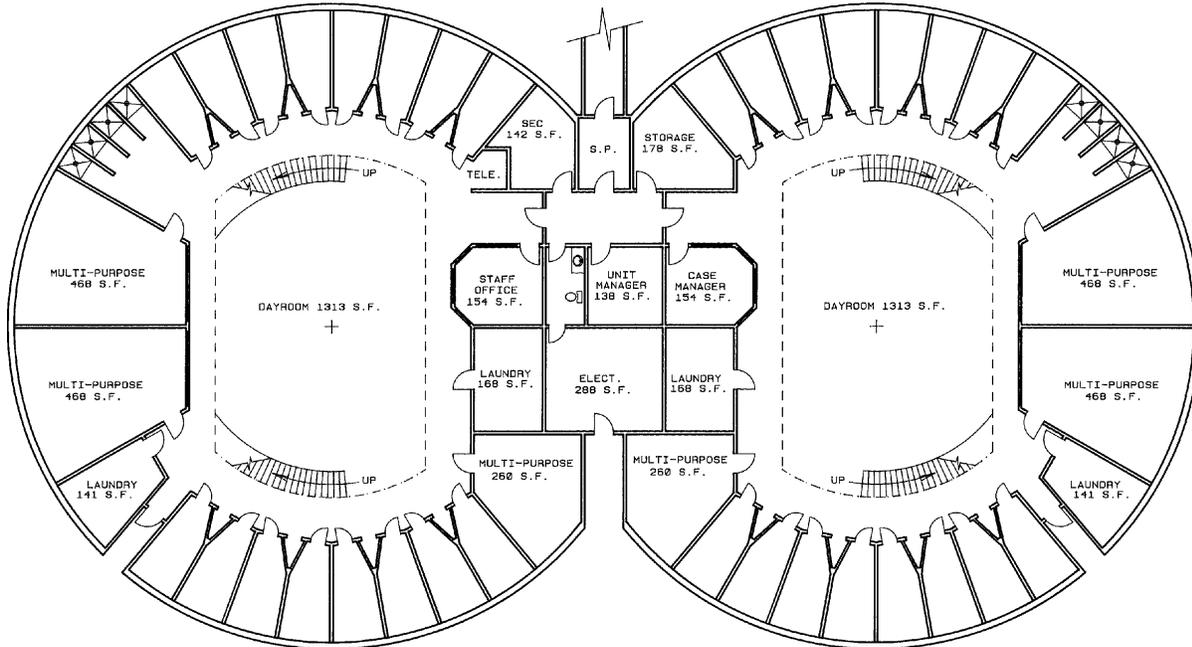
Second Floor

# Prison Facility — 1200 Beds (cont.)

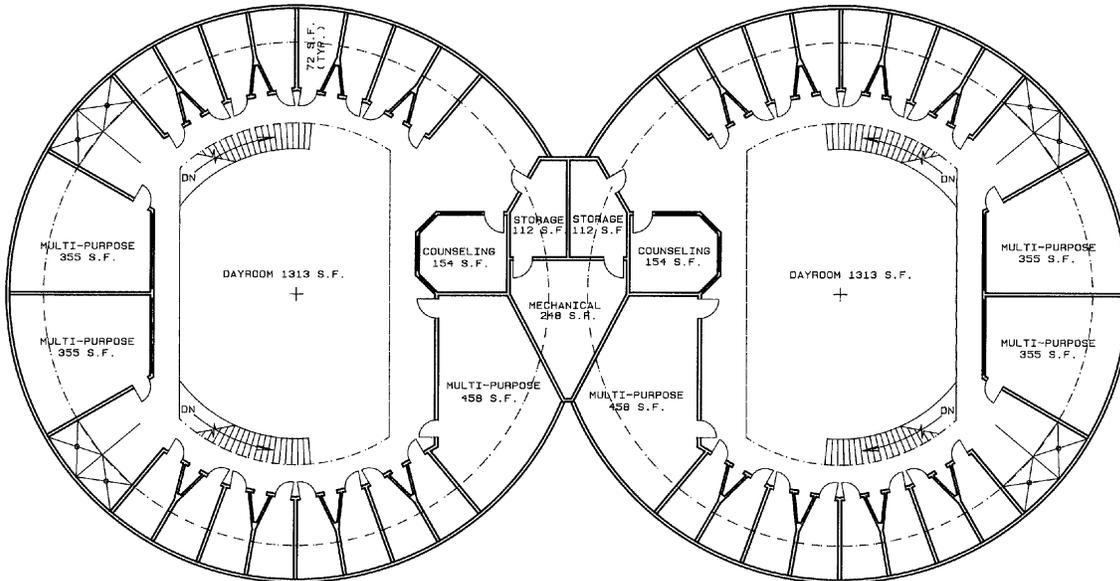
## Housing Domes - Maximum - Double

64 Double Cells per Dome - 100' x 33'

Domes, Maximum Security



**First Floor**

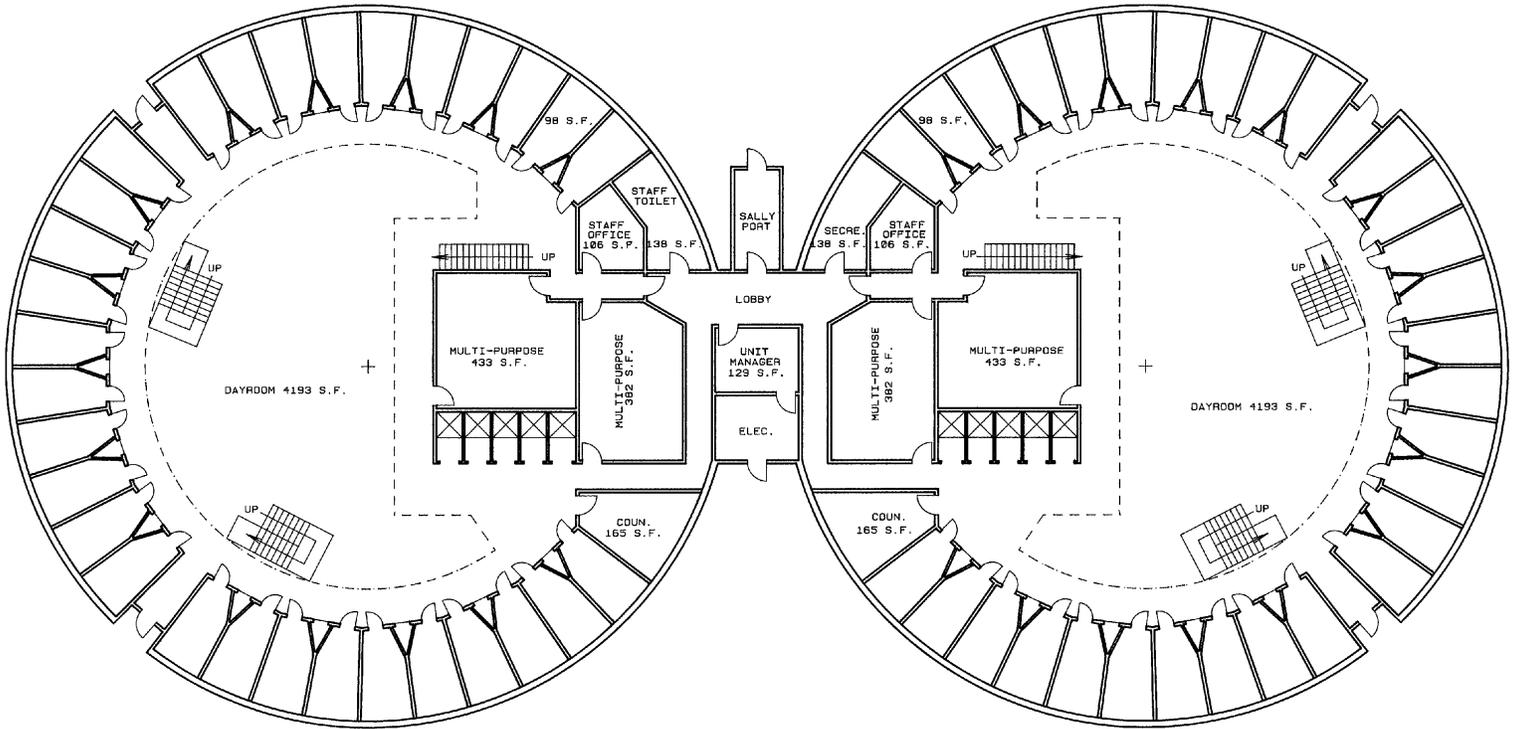


**Second Floor**

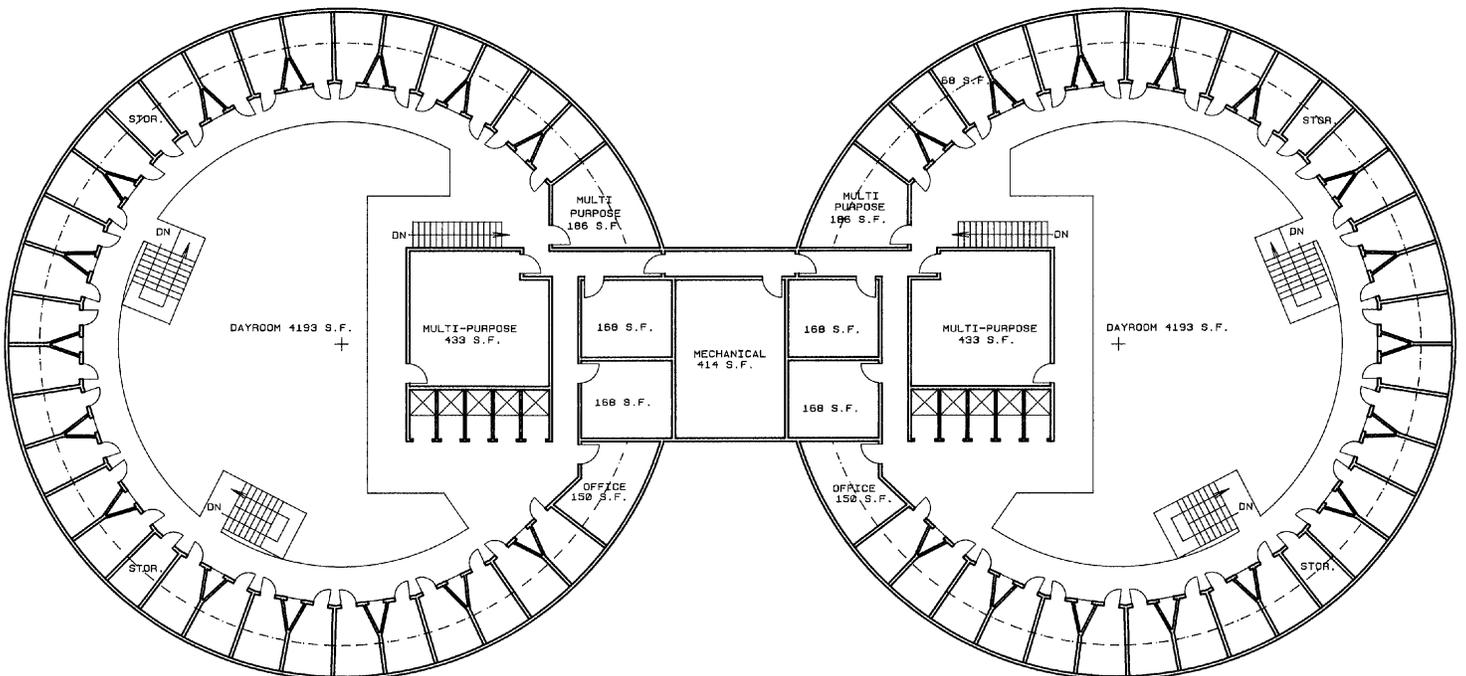
# Prison Facility — 1200 Beds (cont.)

## Housing - Medium

112' x 37' Domes, Medium Security



First Floor

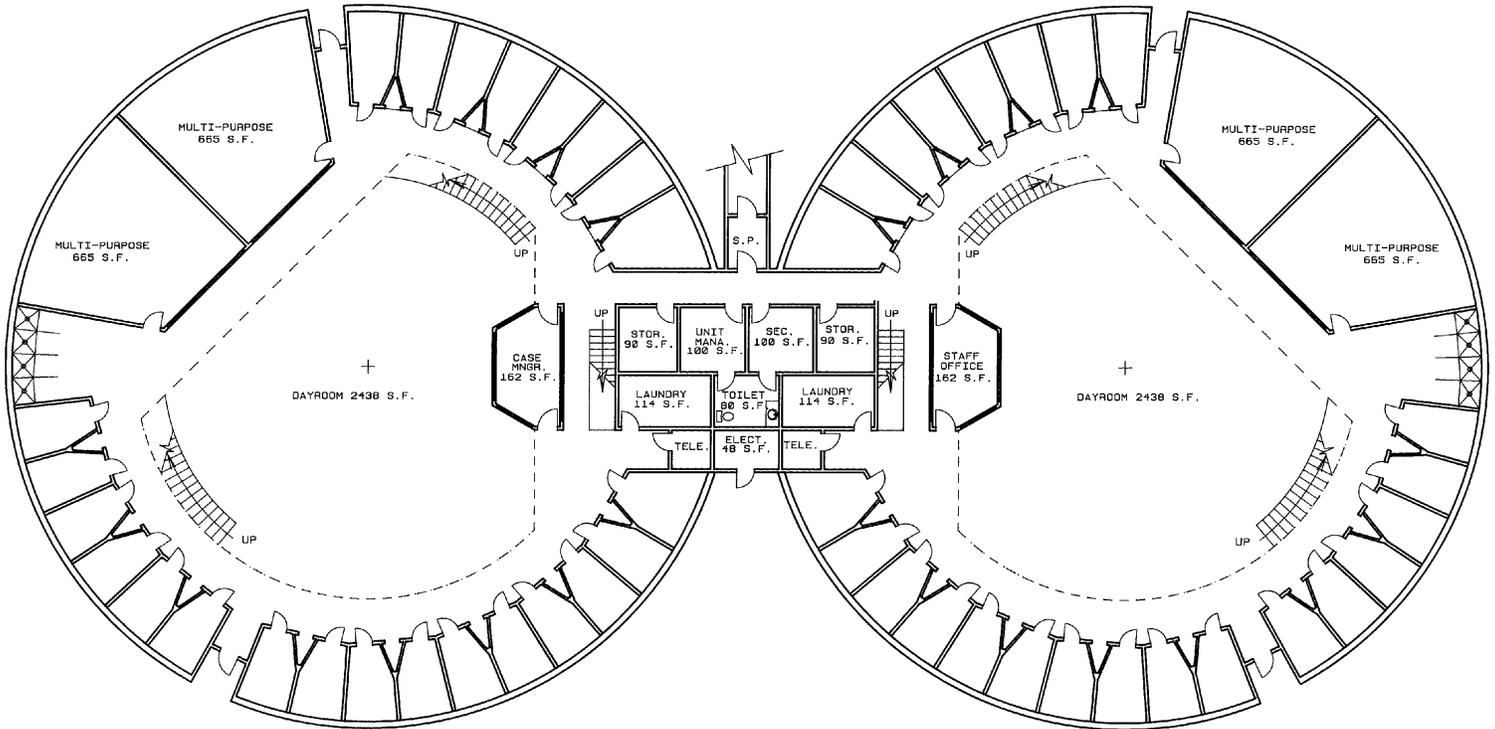


Second Floor

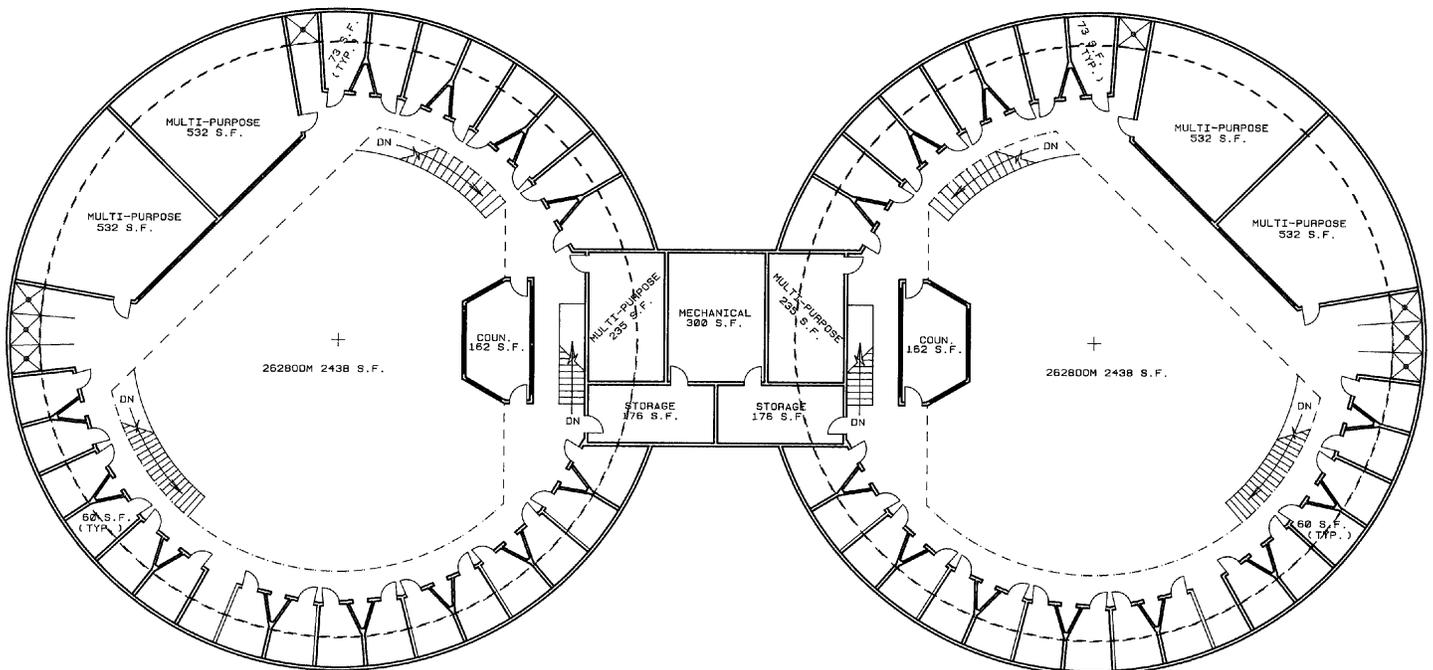
# Prison Facility — 1200 Beds (cont.)

## Housing - Medium Security

32 Double Cells, 64 Single Cells - 112'  
x 37' Domes, Medium Security



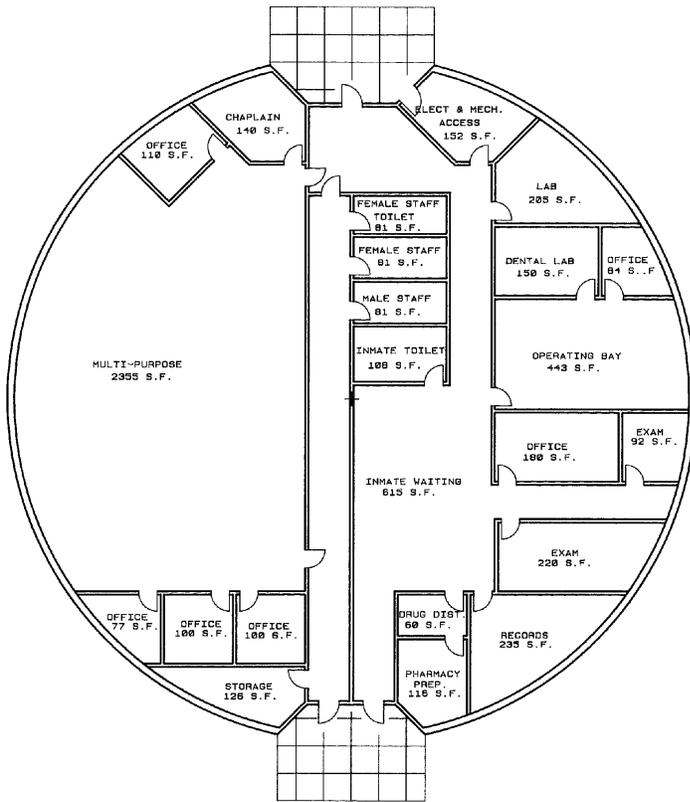
First Floor



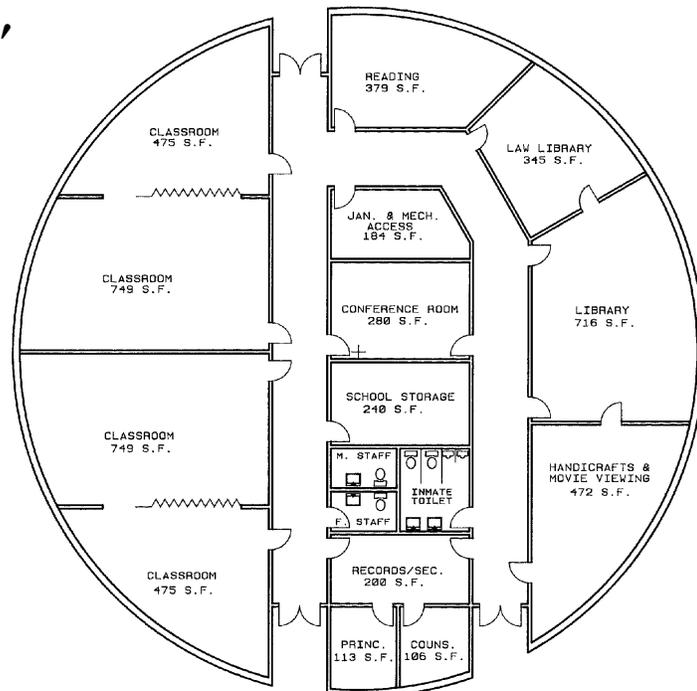
Second Floor

# Prison Facility — 1200 Beds (cont.)

## Program Services - 100' x 33'

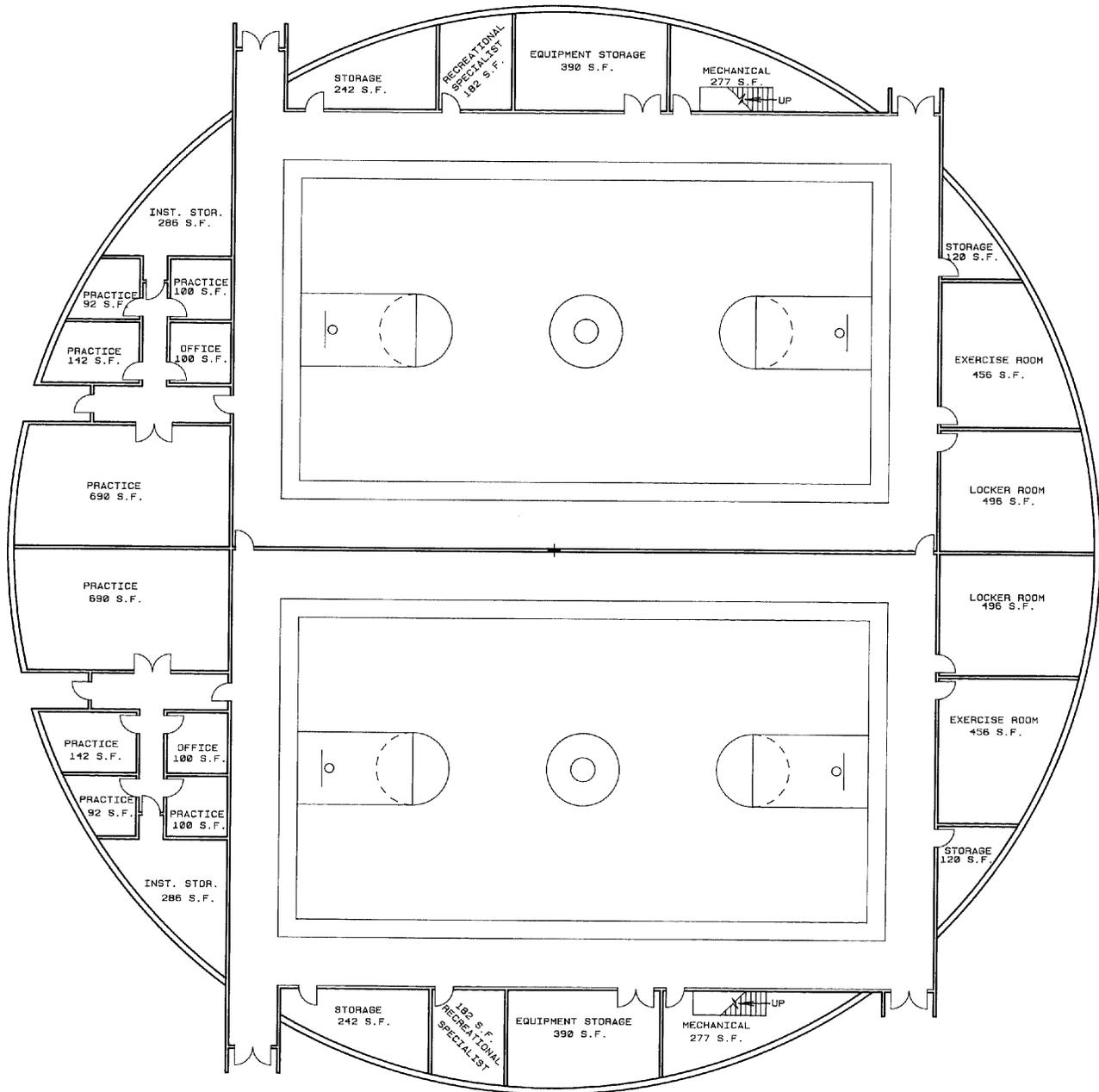


## Education - 100' x 33'



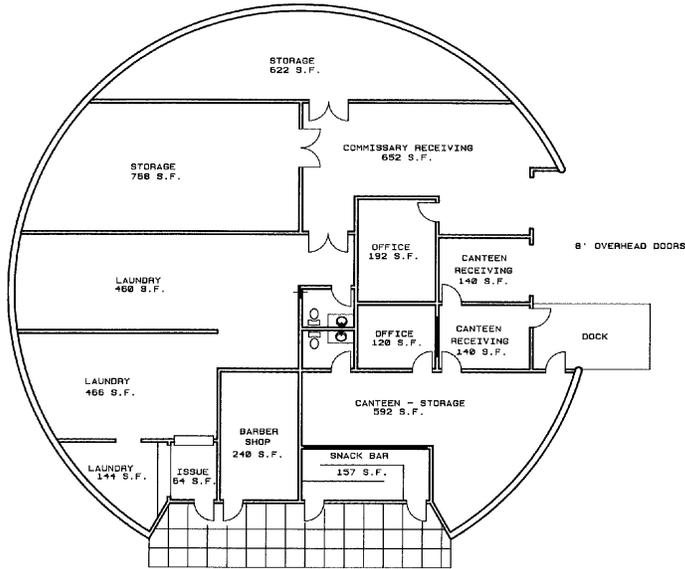
# Prison Facility — 1200 Beds (cont.)

Multipurpose Center - 180' x 60'

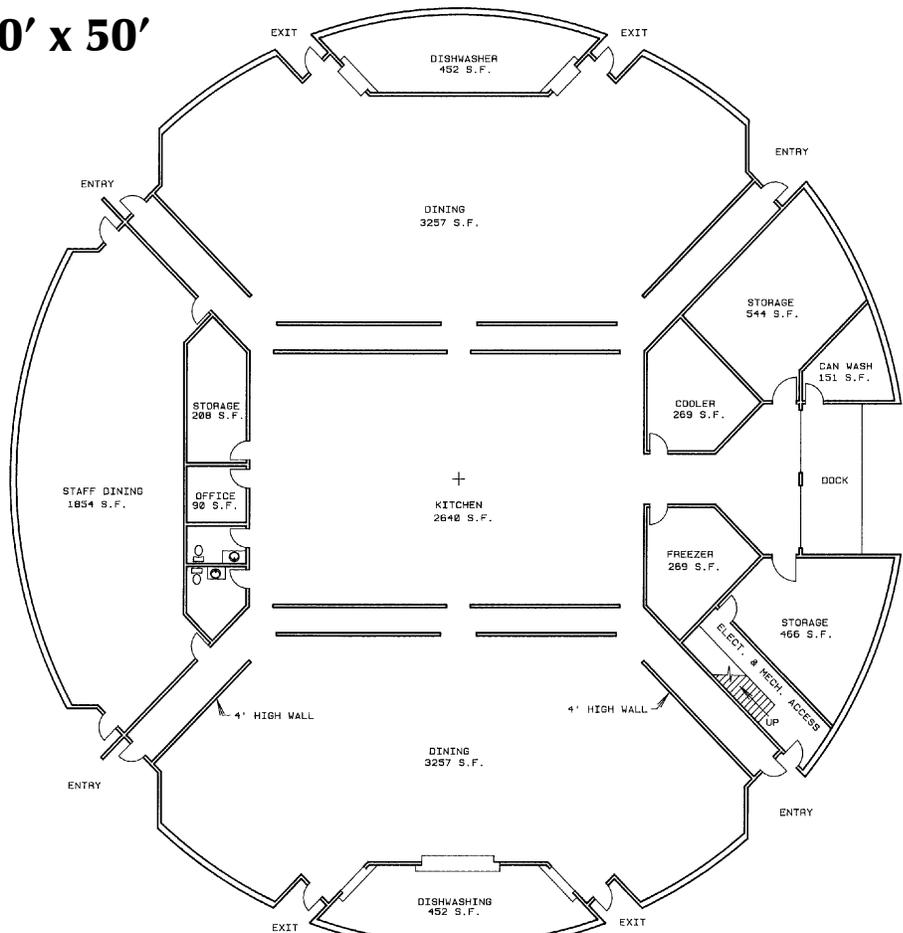


# Prison Facility — 1200 Beds (cont.)

## Laundry, Commissary & Canteen - 90' x 30'

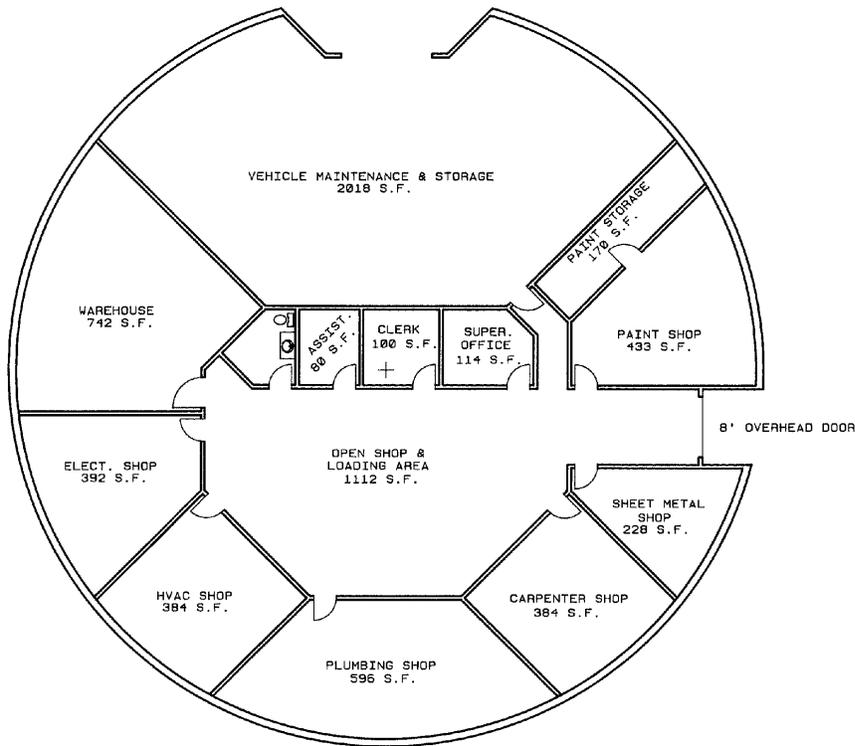


## Kitchen & Dining - 150' x 50'

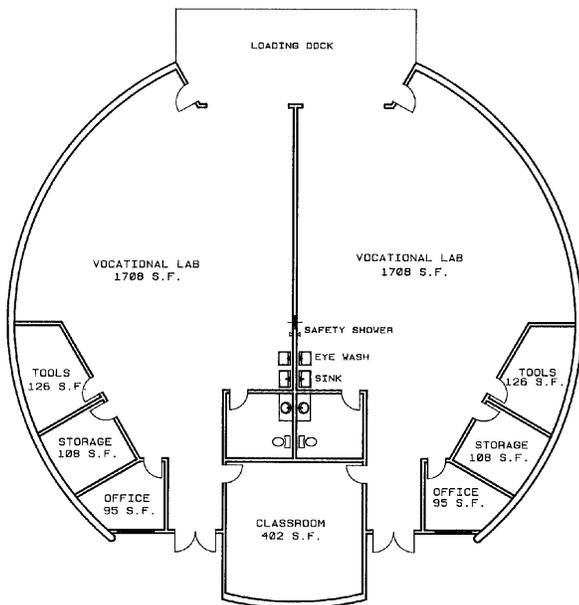


# Prison Facility — 1200 Beds (cont.)

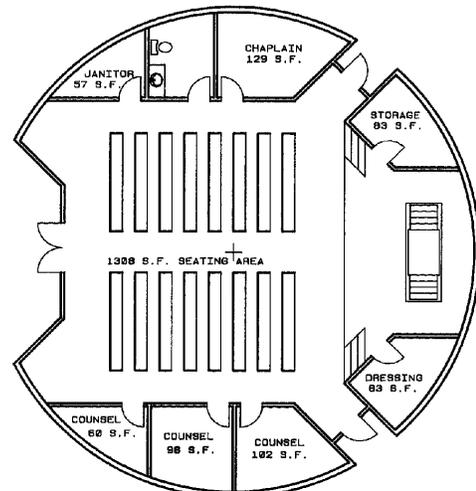
## Maintenance - 100' x 33'



## Vocational Training - 84' x 28'



## Chapel - 60' x 25'



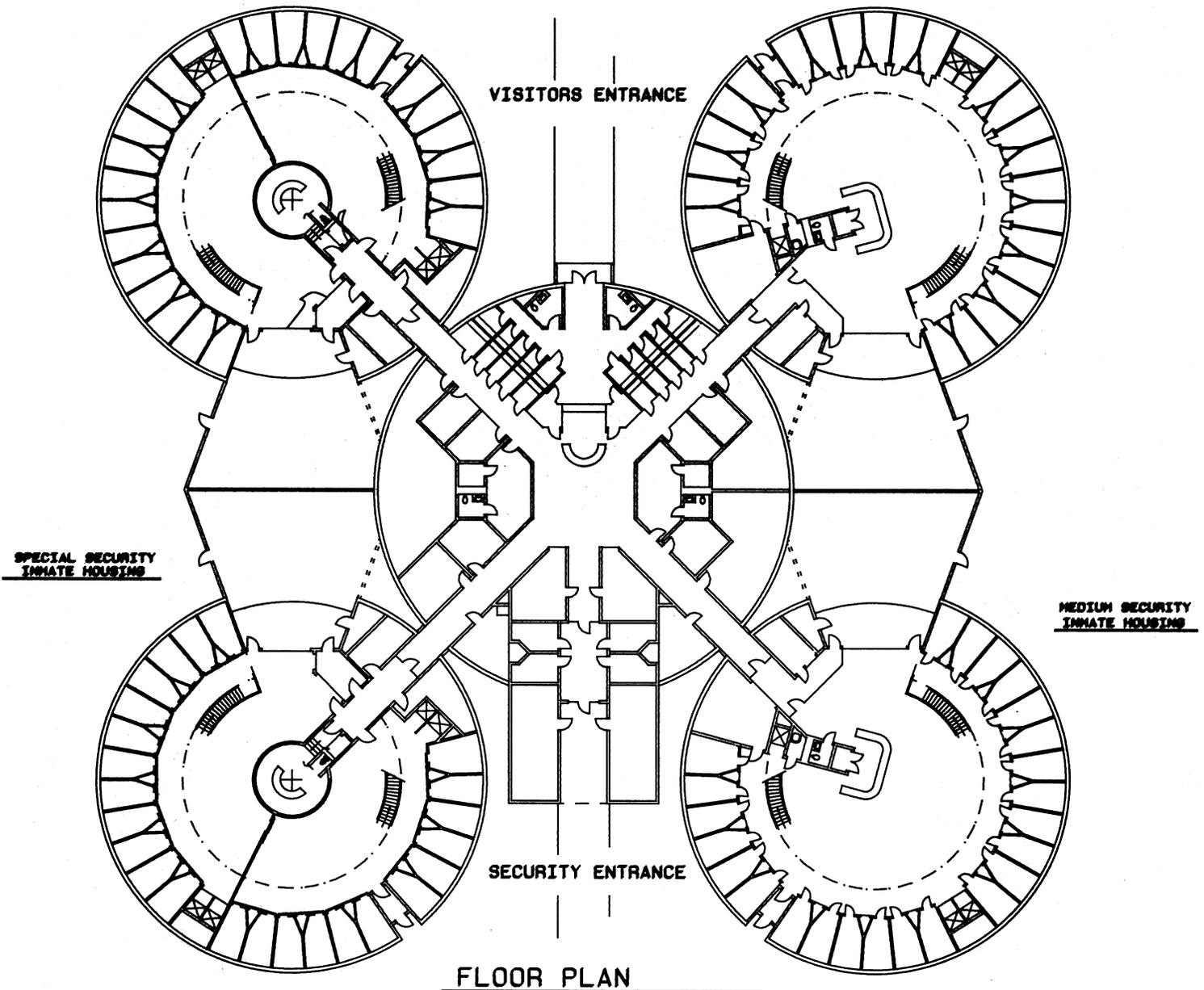
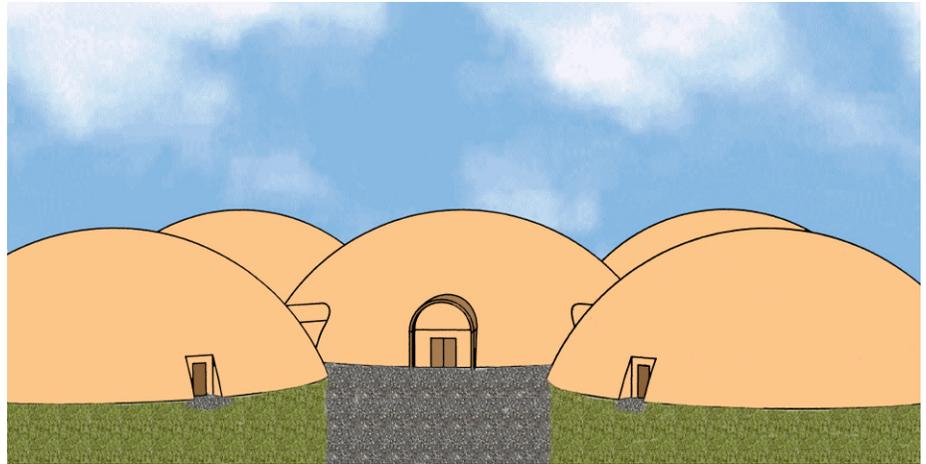
# California County Jail Facility

**Designer:** Larry Byrne

**Description:** Two Medium Security Housing Domes, Two Special Security Housing Domes, One Central Visitors' Dome.

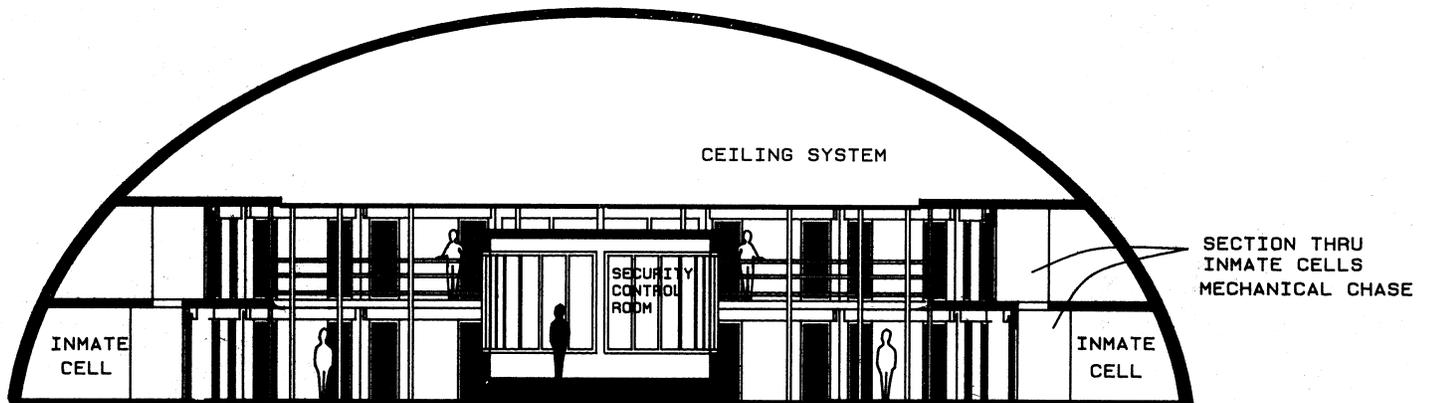
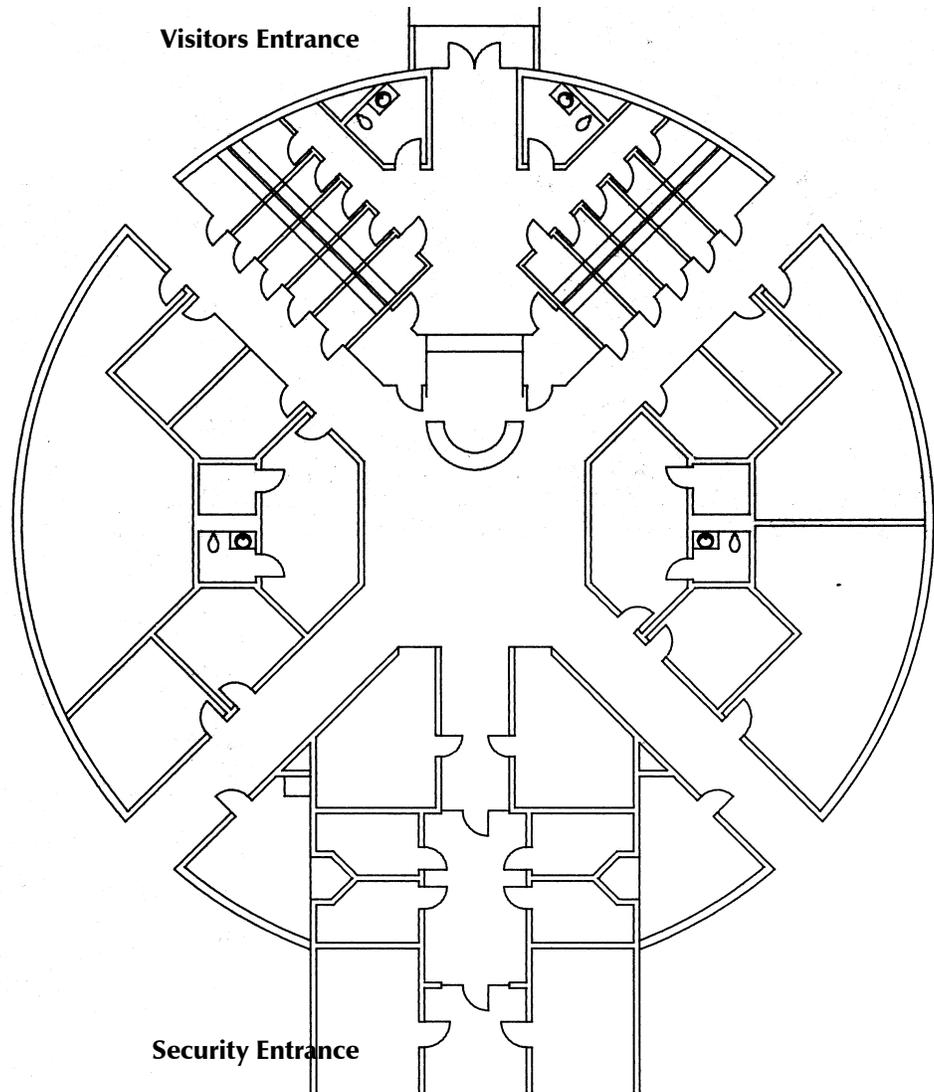
The central 110' diameter, 9500 square foot Dome is designed for personal visits as well as visits from Attorneys and other Counselors.

Each of the housing Domes has a total of approximately 15,300 square feet on two levels. The cells on the bottom floor are 88 square feet. Cells on the second floor are 78 square feet.



# California County Jail Facility (cont.)

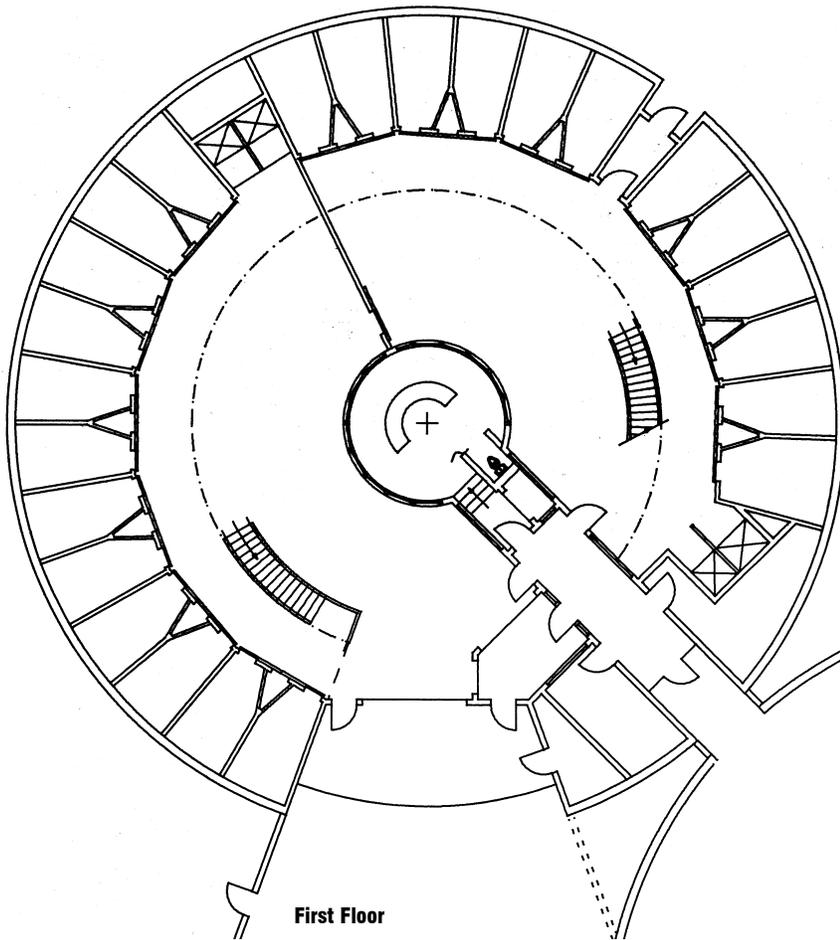
## Visitors' Dome



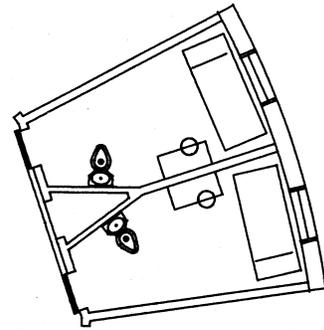
**SPECIAL SECURITY DOME  
BUILDING CROSS SECTION**

# California County Jail Facility (cont.)

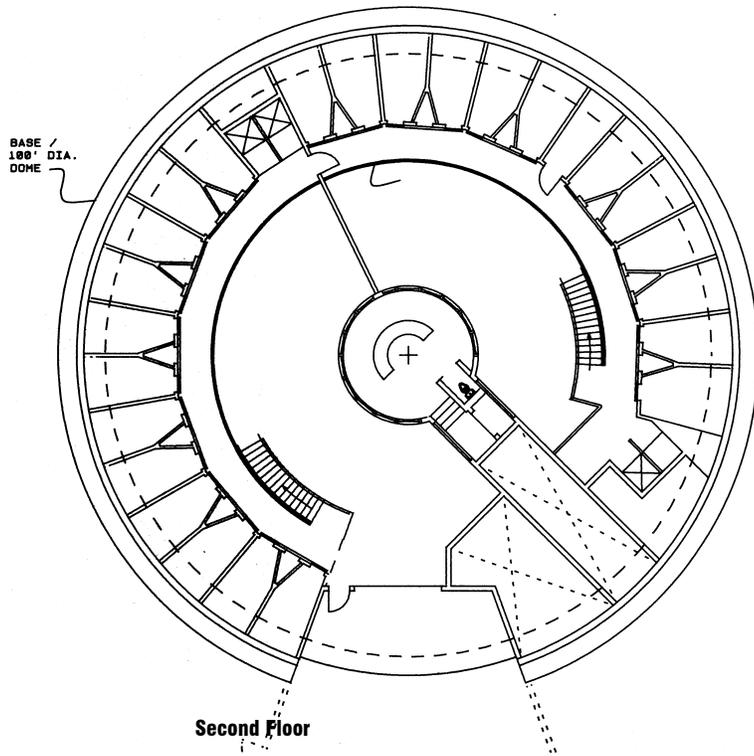
## Special Security Housing Dome



First Floor

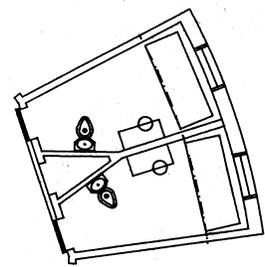


TYPICAL - CELL LAYOUT  
SCALE: 1" = 10'-0"



BASE /  
180' DIA.  
DOME

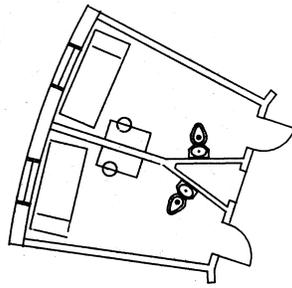
Second Floor



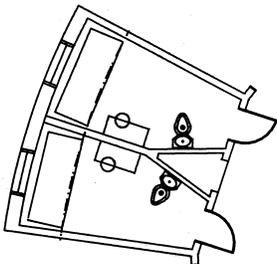
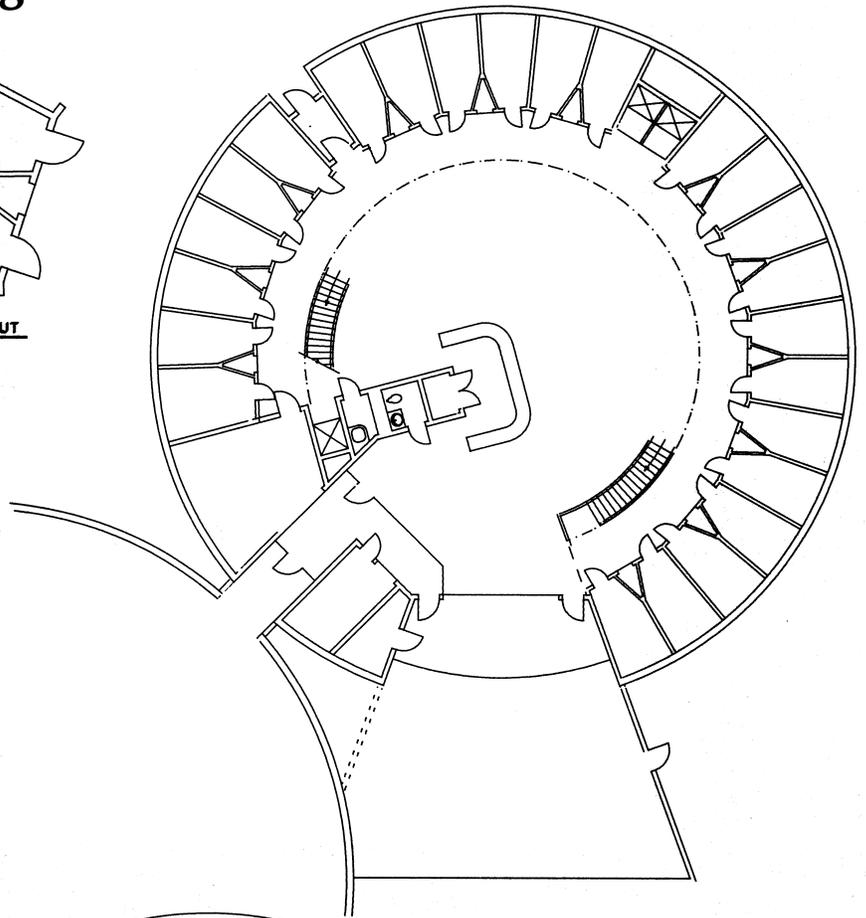
TYPICAL - 2ND LEVEL - CELL LAYOUT

# California County Jail Facility (cont.)

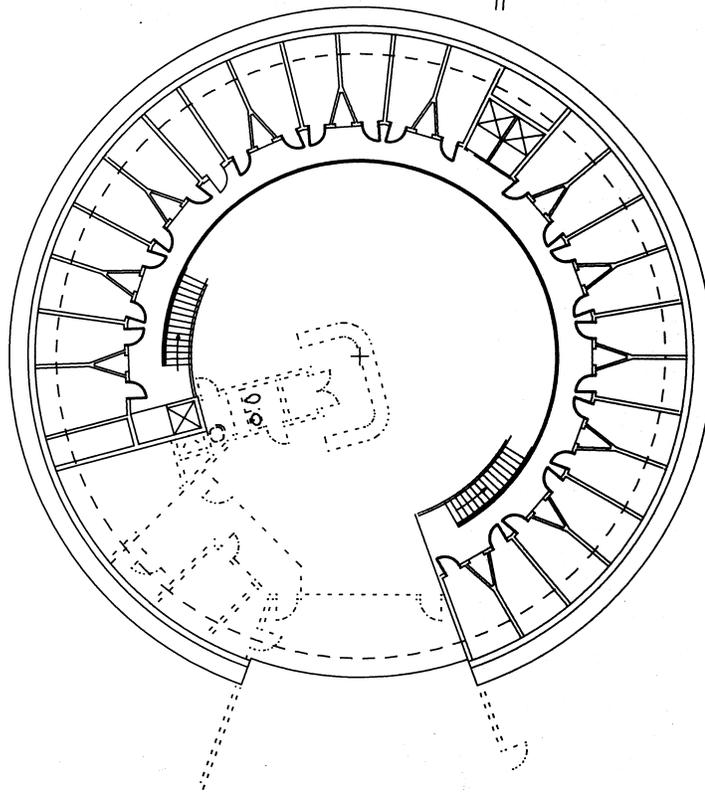
## Medium Security Housing Dome



TYPICAL - CELL LAYOUT



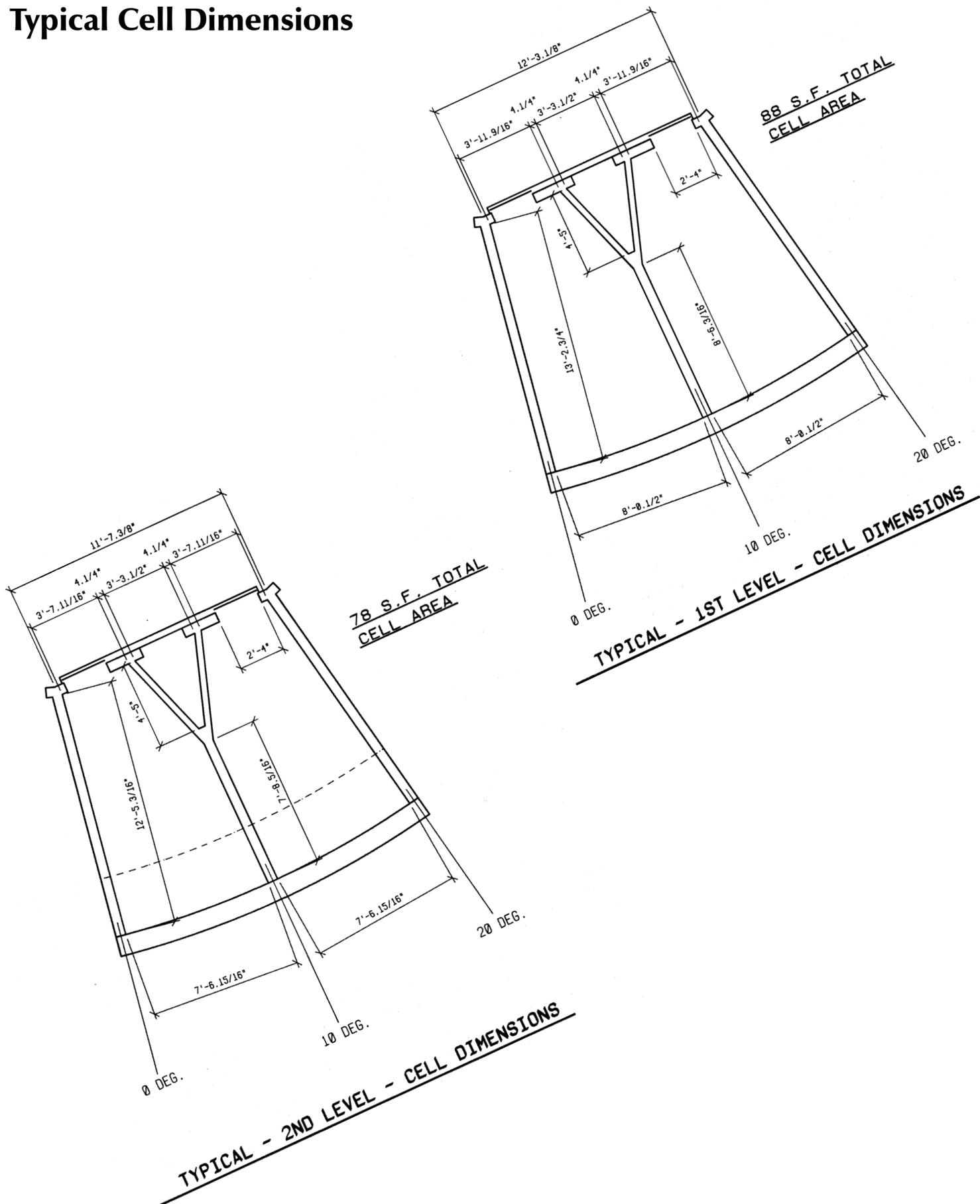
TYPICAL - 2ND LEVEL - CELL LAYOUT



MEDIUM SECURITY  
SECOND LEVEL - INMATE HOUSING

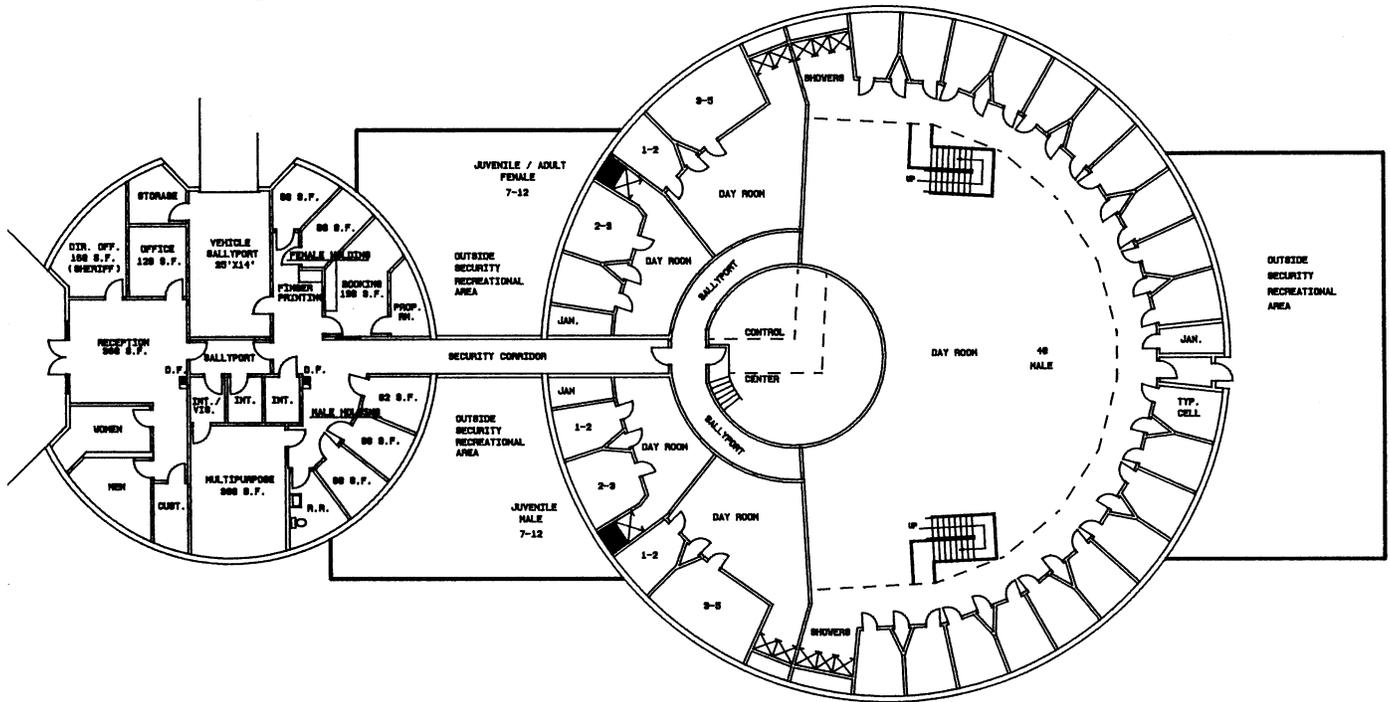
# California County Jail Facility (cont.)

## Typical Cell Dimensions

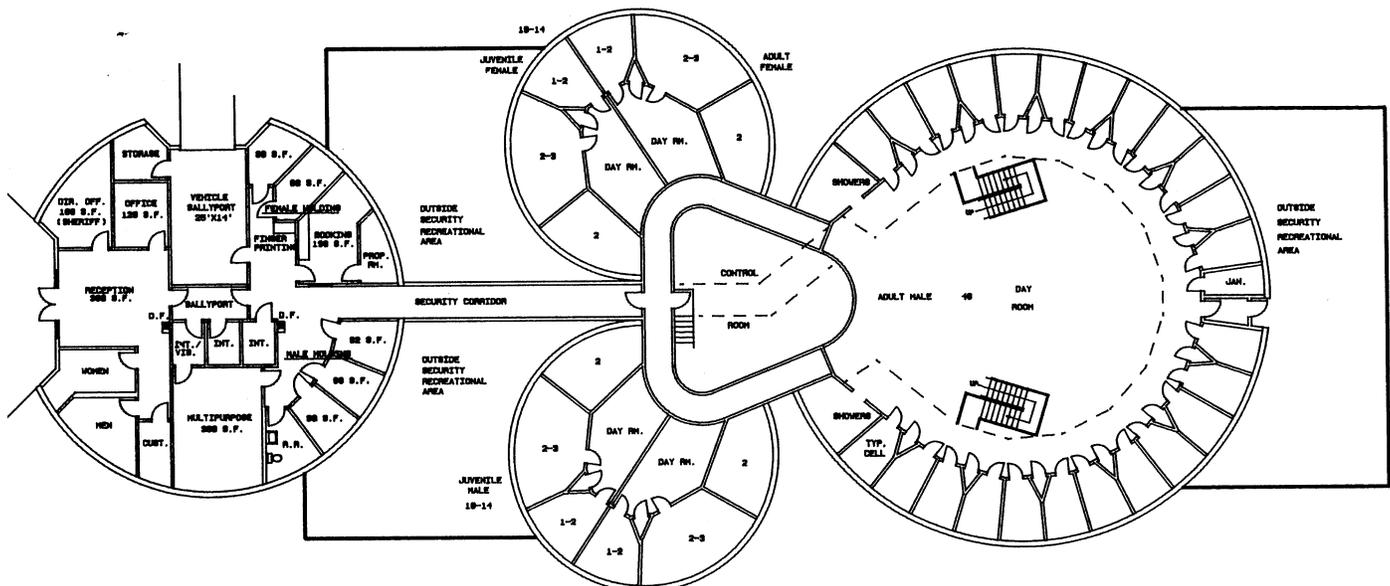


# Wyoming County Jail

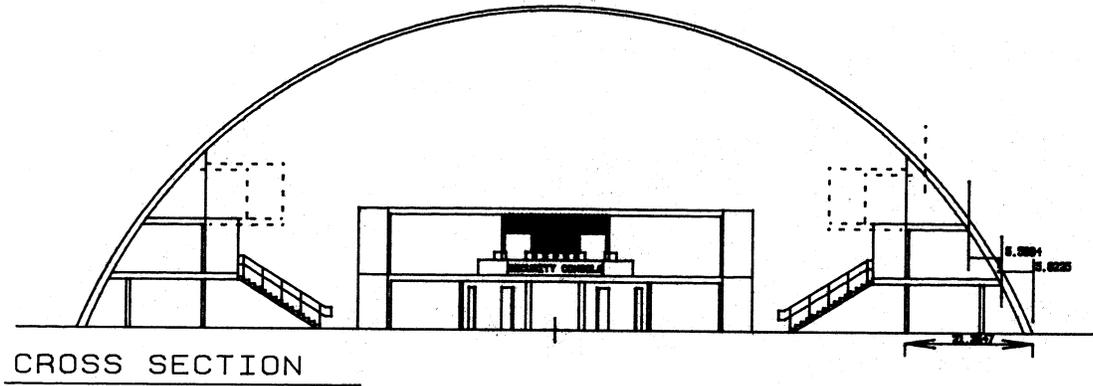
Preliminary Concept 1  
 72' Diameter Administration Dome  
 120' Diameter Security Dome  
 54 to 64+ Inmate Capacity



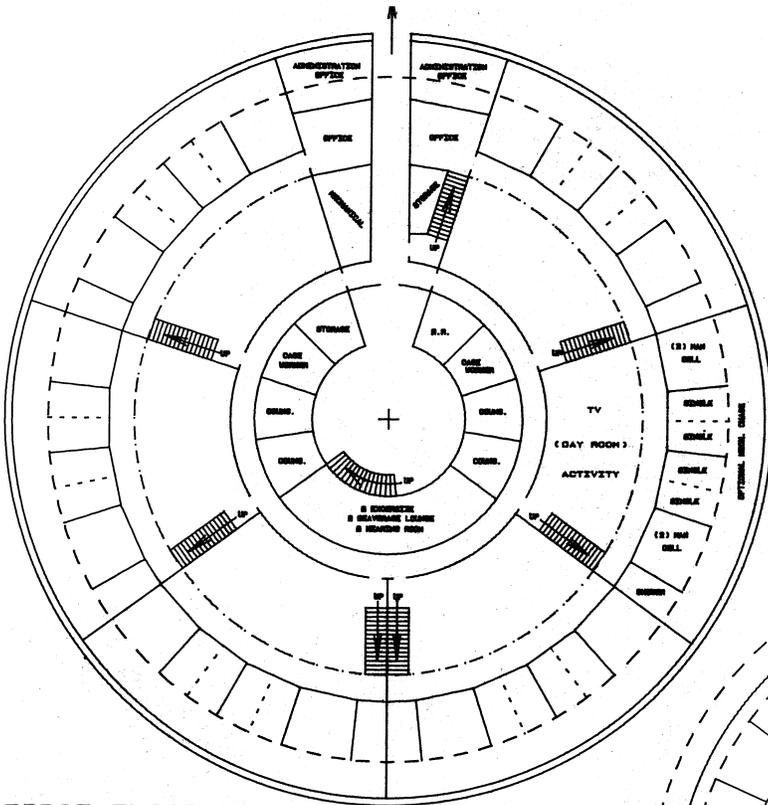
Preliminary Concept 2  
 72' Diameter Administration Dome  
 Two 50' Diameter and One 92' Diameter Security Domes for Juveniles  
 68 to 76+ Inmate Capacity



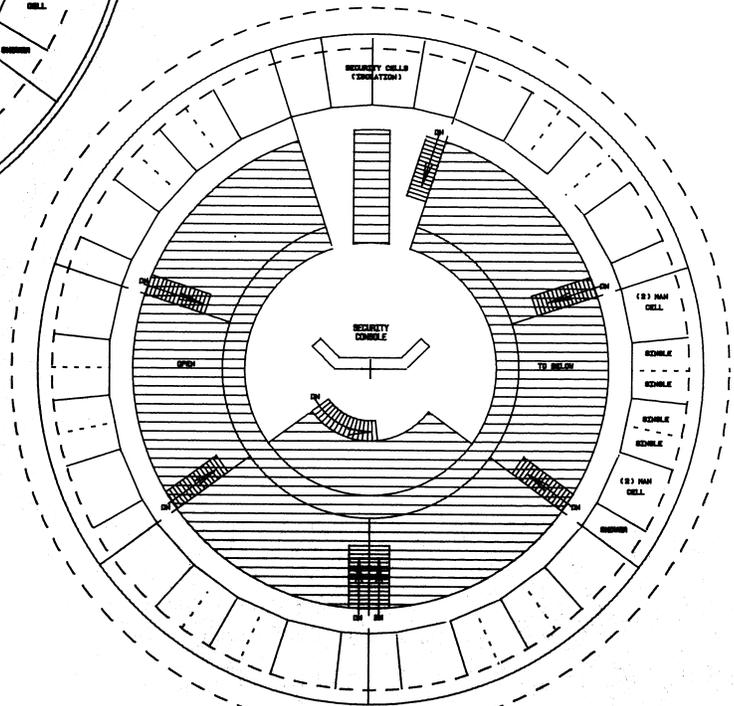
# High Security Jail



CROSS SECTION

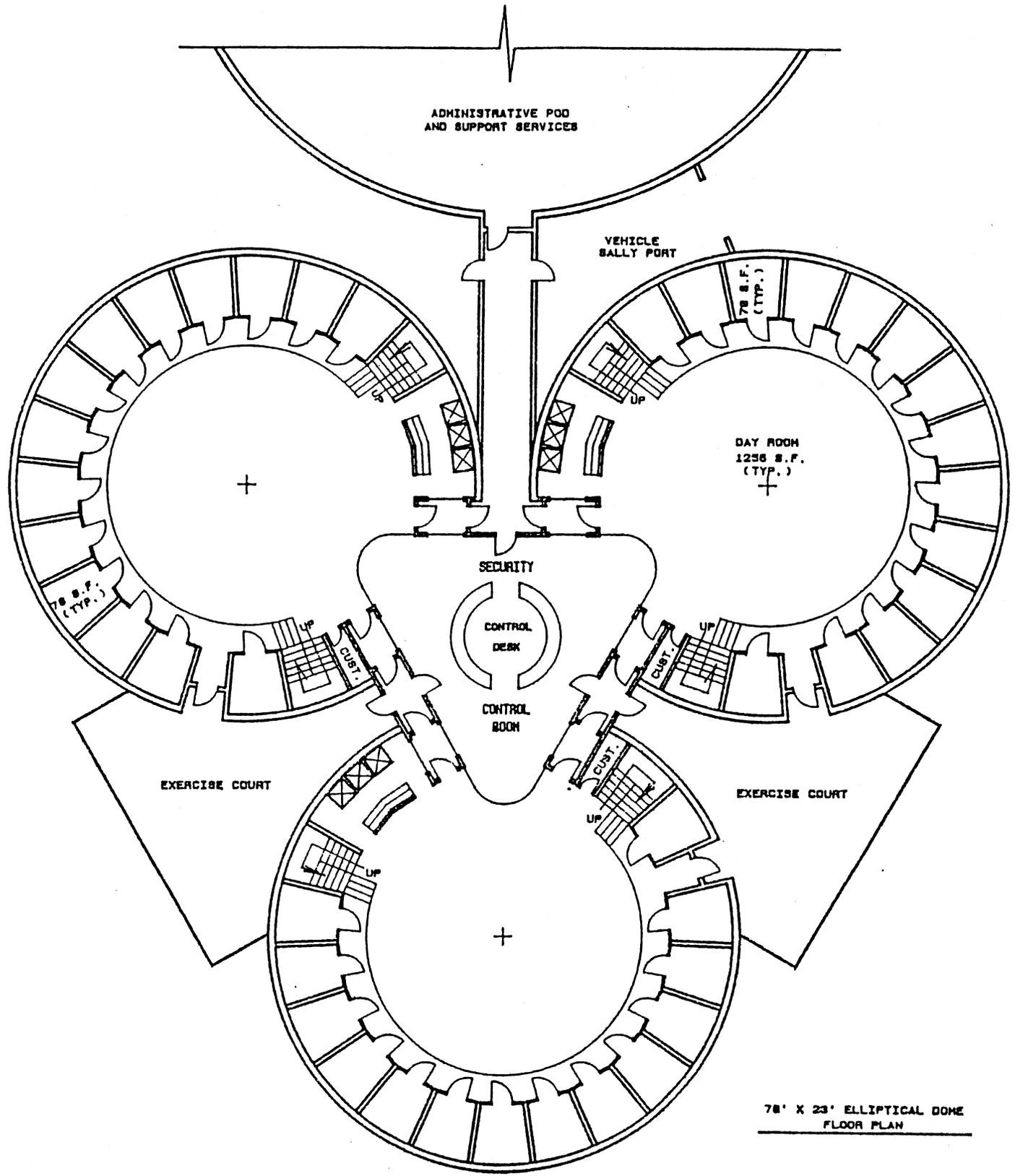


FIRST FLOOR PLAN



SECOND FLOOR PLAN

# 84 Bed Jail



78' X 23' ELLIPTICAL DOME  
FLOOR PLAN

# 84 Bed Jail (cont.) — Possible Expansion

