

Lewis & Clark County Detention Center Remodel

Programming Phase



July 20, 2018

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1.0 Introduction

The current Law Enforcement Center was built in 1984 to replace what is now the Myrna Loy Center. It has long surpassed its functional capacity of 58 beds as designed 30 years ago. The original plan called for 43 beds with 58 available to take into consideration the “peaking factor” when a spike in arrests was seen. To help alleviate the overcrowding and lack of bed space, additional beds were welded in an effort to “double bunk” inmates where possible. The current bed capacity remains at 70. The Average Daily Population (ADP) of the Lewis & Clark County Detention Center is typically above 100 inmates with at least an additional 20 held in other facilities around the state, which is a substantial cost to this county. A vast majority of people held at the Lewis & Clark County Detention Center are pretrial detainees, not convicted offenders. It is no longer feasible, appropriate nor constitutionally permitted to continue to incarcerate additional people to an already over-crowded facility. For the safety of the people incarcerated under the County’s care, the safety of the public when decisions to arrest and detain are determined by the capacity of the detention center, and for the staff required to work in such an environment, the current Law Enforcement Center is no longer a viable solution.

In 2011, the ADP exceeded 70 inmates. It was evident that due to increased inmate population, lack of space for an increase in law enforcement (the Helena Police Department and L&C County Sheriff’s Office share space) and a shortage of courtroom space that a study needed to be conducted to possibly renovate or build a new law enforcement facility. The current facility is poorly designed and as a result creates safety issues affecting inmates, staff and the general public. Currently the facility is overcrowded and does not provide sufficient staff or program space. The Elected Officials must provide the Sheriff sufficient staff for the jail to have a safe environment. Due to overcrowding, the current facility does not allow for effective separation of inmates requiring maximum security from others with a lower security requirement.

With the failure of the Bond and Operating Levy in November of 2015, Lewis & Clark County has pursued other options to house individuals pending incarceration with the City of Helena. Doing so saves the County and attorneys (and families who would otherwise have to travel to visit) valuable time and money. Following the successful passing of a renovation bond in 2016 and the passing of an operating levy in 2017, the process has begun to renovate the existing Law Enforcement Center to be fully dedicated to detention space. This Programming Document outlines the spaces and plans necessary to convert the lower, main and upper levels of the existing Law Enforcement Center into a fully functional detention center. The Sheriff’s Office and Helena Police Department will be moved off site to 406 Fuller Avenue (former Blue Cross/Blue Shield building) to make room for detention. New plan options along with a probable cost of construction cost estimate associated with the three-story renovation are included as part of this document. All design and spatial requirements set forth in this study take into consideration the minimum standards for National Fire Protection Codes, International Building Codes, Montana Title 81 Jail Standards, ADA (Americans with Disabilities Act), ACA (American Correctional Association) & PREA (Prison Rape Elimination Act).

2.0 Existing Detention Center

2.1 General Project Information/Existing Site Conditions

Name: Lewis & Clark County Detention Center
Address: 221 Breckenridge St.
City, State, Zip: Helena, Montana 59601

2.2 Lower Level Existing Conditions

Vehicular Sallyport: The VSP is located in the west side of the basement of the LEC and appears to be in working order. Access to the Intake area is through a long corridor and up an elevator. Typically, it is best to have the Vehicular Sallyport located as close to the Intake area as possible and without stairs or elevators as this is the most common area for inmate on officer violence. Other than creating a second entry to a new holding cell, there are no additional modifications anticipated to the Vehicular Sallyport. To access the adjacent Courthouse, inmates are walked outside the facility and into an unconditioned yet covered walkway. Once they are at the Courthouse the opportunity to cross paths with the public exists and there is not a secured holding area once they have arrived.

Emergency Operations Center: The Emergency Operations Center (EOC) is comprised of a large meeting room, two adjoining offices (with one of those outside the main room) and two storage rooms. When not in use during an emergency, the EOC serves as a large meeting room for the Helena Police Department (HPD) and Lewis & Clark County Sheriff's office (LCSO).



Support Spaces: The lower level support spaces include the main electrical room, elevator room, janitor closet, men's and women's locker rooms and a fitness room. No work, other than necessary to serve the renovation, will be undertaken in the electrical and mechanical rooms. Vertical access to the rest of the facility is attained by three stairways and two elevators with one stairway and one elevator each dedicated to public access. Approximately 40% of the lower level is unexcavated. Although briefly considered, the unexcavated area will not be utilized. The cost to excavate this area is not feasible.

2.3 Main Level Existing Conditions

Public Spaces: The only public entry to the existing LEC is accessible at this level off of Breckenridge Street. Public access to the building is available for visitation to the jail, personal records, concealed weapons permits and interviews.

Secure Spaces: The remainder of this floor serves the functions of both the HPD and LCSO. Offices for each department are located on this floor. Support spaces include public records storage, evidence storage and interview rooms.

Kitchen: The current kitchen is located on the upper level and is too small for the number of inmates and number of meals to be distributed. Additionally, it is not up to current health codes. The Kitchen lacks the ability to adequately prepare enough meals to accommodate the current inmate population. Due to these issues, meals are prepared at the State of Montana Penitentiary by Department of Corrections inmates, flash frozen and sent to the Lewis & Clark County Detention Center. Meals are served by the Trustees. The current location of the kitchen within the facility does not allow for ease of deliveries.



2.4 Upper Level Existing Conditions

Public Spaces: The only public spaces on the upper level are a restroom and visitation room. There are currently two means for visitation with the inmates; video and non-contact. Three stations are available for public utilization and are located inside the Public Lobby and one station inside each Dayroom. In the non-contact visitation room, there is space for three (3) visits to happen at the same time. There is one designated place for a contact attorney visit for a secure interview room. Yet, this space is also shared with finger printing. If the room is in use, then visitation has to be arranged in an available room (such as the library) or in the corridor.

Activity Yard: The Activity Yard is centrally located and the roof is open to the outside with a security mesh covering. The openness creates issues of use during inclement weather and creates the need of snow removal within the yard. It also has created issues with contraband due to the close proximity of the adjacent street. Most of the yard is visible from the control room; however, there are portions that can only be viewed via camera.

Program/Library: The Program / Library is centrally located on the housing floor of the facility. It has plenty of shelving for books and is equipped to serve as the video arraignment room. There is only one room so there is no ability to have several classes going on at the same time limiting the amount of programs the jail can offer the inmates.

Booking / Holding: The Booking area of the existing facility is small in size and not able to adequately handle large volumes of Bookings. There is currently a small desk with not a lot of work room that can only handle one booking at a time.

There are (2) small holding cells and (1) Suicide watch cell which are well below Lewis and Clark County's current needs. A separate room is provided for Dress-in/out and a fingerprinting room. The Inmate Property room is full and bags are hung in the hallway and are not secured. There is not secure storage for jail records and the security monitors are readily available for incoming inmates to see.



Booking Desk



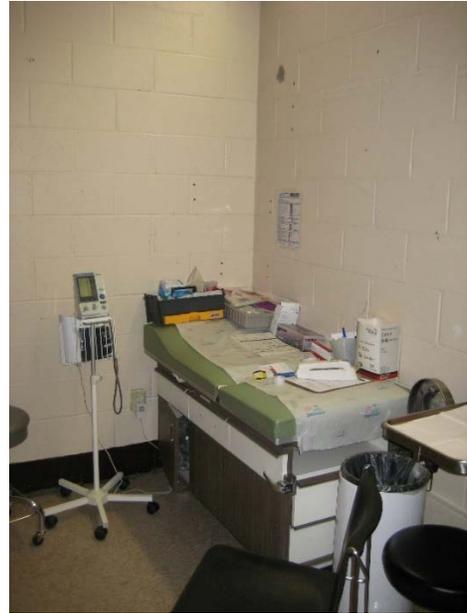
Personal Property Storage



Holding

Medical: The facility has (1) room designated for a nurse's office medical exam room. The equipment is inadequate and antiquated with very little storage available. The exam tables themselves are often used for storage (reference photo below). With no segregation cells provided; there is no way to isolate inmates with a contagious illness. The County currently contracts with SPECTRUM Medical for medical services. There is nursing coverage five days/week (approximately 40 hours) and mid-level availability (approximately 16 hours) throughout the week.

Dayrooms: The dayrooms are equipped with a detention grade table, inmate phone, kiosk for commissary/visits, a television and a shower. The space is sufficiently equipped and secure. Nine (9) showers have been recently renovated/retrofitted to address leaking issues. These upgrades have been completed at a cost of \$5,000 per shower.



Cells

The cells are equipped with a toilet, a sink, a detention grade desk/stool, a window to the outside and a bed. Some of the cells are bunk bed units. These have been added over time after the building was built. The cells are approximately 72 sf per cell and were originally designed for single occupancy. Seventy square feet (70 sf) total per cell must be provided if confinement exceeds 10 hours/day, otherwise 35 sf clear floor space is required. The cells meet both of these requirements. For double bunking, the cells must have 35 sf clear floor space if confinement exceeds 10 hour/day or 25 sf clear floor space if less than 10 hours. The cells meet the 25 sf clear requirement but not the 35 sf requirement meaning no inmates should be locked in their cell anytime other than night.



The Dayrooms were also sized for the cells to be single occupancy only and do not meet the minimum square footage if the cells were to be double bunked. The requirement is 35 sf/inmate and most dayrooms are about 140 sf short of meeting this requirement.

Control Room

There are two (2) elevated control rooms on the housing floor that have decent visibility of the pods and corridors. The physical size of the rooms are sufficient for the tasks performed within. The controls are antiquated and nowhere close to the technology of today. The main complaint about these is that there is no restroom in either and anytime the officer takes a break, someone has to relieve them.



3.0 Building Code Compliance

3.1 Current Codes:

2012 IBC, 2012 IPC, 2014 NEC, 2012 IFGC, 2012 IMC, 2012 IECC, ANSI A117.1, 2010 ADA

3.2 Code Review (Full code analysis will be conducted during the future phases.)

BASEMENT FLOOR AREA	6,440
FIRST FLOOR AREA	11,380
SECOND FLOOR AREA	11,380
MEZZANINE & MECH ATTIC	7,825
TOTAL NEW AREA	37,025
CONSTRUCTION TYPE	II-A
SPRINKLERED	YES
OCCUPANCY TYPES	INSTITUTIONAL (I-3) CONDITION 4 (OCCUPANCY IS RESTRICTED WITH REMOTE CONTROL RELEASE TO OTHER SMOKE COMPARTMENTS...

T503 ALLOWABLE HEIGHTS/AREAS

ALLOWABLE: (*WITH INCREASES PER 504.2)

GROUP	CONST. TYPE	# OF STORIES	SF PER FLOOR	HEIGHT
I-3	II-A	3*	15,000	65'

IBC 602.2 CONSTRUCTION TYPE

TYPE - II

WHERE BUILDING ELEMENTS LISTED IN 601 ARE OF NONCOMBUSTIBLE MATERIALS EXCEPT AS PERMITTED IN SECTION 603 AND ELSEWHERE IN THIS CODE

T601 & T602 FIRE RESISTANCE RATING

	II-A
STRUCTURAL FRAME	1-HR
BEARING WALLS	
EXTERIOR	1-HR
INTERIOR	1-HR
NONBEARING WALLS	
EXTERIOR	0-HR
INTERIOR	0-HR
FLOOR CONSTRUCTION	1-HR
ROOF CONSTRUCTION	1-HR

4.0 Detention Center Modifications

4.1 Lower Level Renovation/Modifications

The new lower level of the Detention Center will serve as Intake, **Booking and Holding** for the facility.

Reallocated space will include;

- Six (6) separate **holding areas**, three (3) single holding cells, two (2) group holding cells and one(1) open group holding. One group cell and one single cell and open group holding are sized for ADA accessibility.
- **Decontamination vestibule** located off the existing vehicle sallyport with a shower head for soiled individuals This space can also be used for disruptive transports.
- **DUI/DRE room** is provided for Field Sobriety Tests (FST) and drug testing.
- **Pre-Booking** is located adjacent to the existing vehicle Sallyport where transfer of custody between arresting agency and custody staff occurs. Area includes search and report writing capability.
- The **open booking** is centrally located with good observation of the holding areas, clothing exchange and entry sallyports. This area is responsible intake screening, fingerprinting, photo, property collection and area observation.
- **Shared office** is located adjacent to open booking providing good observation and will be used supervising staff and transport officers.
- A **Property Room** replaces the existing men's locker room. This is available for inmate belongings while incarcerated and includes a residential grade laundry area so that personal items may be washed prior to storage in the Property Room.
- Stair 2 will be demoed making space for the new mental **health office**
- **Kitchen** is to be relocated on the lower level in close proximity to food storage and coolers. Food will be delivered by cart and transported to upper housing levels by the sure elevator.
- The existing emergency generator will need to expand and be relocated. The space remaining is available for **cooler expansion** or space for new **security electronics room**.
 - Note; alternative location for **security electronics** will be in the attic area.
- Other support spaces include expanded **electrical, janitor's closet, and Staff Toilet**

These modifications will require the demolition, New construction will be of materials consistent with the security requirements for containment, including wall, floors, ceilings, doors and glazing.

4.2 Main Level Renovation/Modifications

Main level renovation will require demolition of most of the existing elements. Public access to the facility will remain off of the Breckenridge Street entrance. **Entry lobby, lobby and public restrooms** are to remain.

Reallocated space will include;

- One **interview** room near the front entrance.
- Upon entering the Detention Center, visitors are welcomed by a **Public Coordinator** in an enclosed office. This position will provide access and direct visiting public to appropriate areas of the building.

- **Public Visitation** will be located between the Public Lobby and the secure perimeter. This visitation area provides three (3) booths for family members to meet with detainees via the use of a handset. Area shall comply with ADA accessibilities.
- A separate **Attorney Visitation** room is provided so that confidential discussion and passing of papers may be initiated. This is a non-contact visitation room.
- Support spaces for the Detention Center includes office for the **Jail Lieutenant** and **Jail Captain**, a shared **Break/Briefing** Room with staff restroom, a combined male/female locker room with private changing/shower rooms.
- Expanded housing to include four(4) new small **detention pods** consisting of 2 to 3 cells with a proposed capacity of 14 beds, one (1) **detention dorm** with a proposed capacity of 8 beds, Direct supervision **detention dorm** with a proposed capacity of 40 beds
- Other support space includes two (2) mental health/**interview** rooms, two (2) **program**/multipurpose rooms, **Medical clinic**, **janitor**, **control**/office and staff **work station**.

These modifications will require the demolition, New construction will be of materials consistent with the security requirements for containment, including wall, floors, ceilings, doors and glazing.

4.3 Upper Level Renovation/Modifications

Existing housing element shall remain and operate per the original design and include seven (7) **Detention Pods** ranging from two (2) to six (6) cells with a proposed capacity of 49 beds. Also to remain are **control 1**, **control 2** major **circulation** and **public restroom**.

Reallocated space will include;

- Renovated housing includes expanded **detention dorm** with a proposed capacity of 20 beds
- New **detention dorm** with a proposed capacity of 16 beds
- Two **interview** rooms to support mental health services and small group meetings.
- **Public Visitation** will be located between the Public Lobby and the secure perimeter. This visitation area provides three (3) booths for family members to meet with detainees via the use of a handset. Area shall comply with ADA accessibilities.
- Outdoor **exercise** is centrally located on the upper level and is open to the outside with a security mesh covering. This existing space shall be split into two exercise yards (**Exercise 1 and 2**) so that two groups can use it at once. Direct access from the main level **Housing Pods** to the to **exercise 2** is available via the south stair. Security upgrades to **stair 3** will be required to accommodate increased inmate movement. **Stair 3** is also accessed by staff and used for emergency egress. Most of the yard is visible from the control room; however, there are portions that can only be viewed via camera.
- The proposed **Program** is centrally located on the floor. It has plenty of shelving for books and is equipped to serve as the video arraignment room.
- Library services is accessed off the proposed program space. Books shall be distributed to the individual detention pods by cart. Inmate access for law library services needs to be considered and can be achieved with the use of computer work station located in the programs or interview areas.
- Other support spaces include **laundry**, **staff restroom**, and **storage**

See Appendix B for Complete Program of Spaces

5.0 Facility Capacity Analysis

As part of this phased effort, our team put together a capacity analysis to confirm the available bed count for Lewis and Clark County Jail renovation and expansion project. This analysis considers both American Correctional association – Standards for Adult Detention Facilities 4th Addition, and Montana state detention standards. Our focus is on items that relate to the physical configuration of the building and the proposed renovations. Both sets of standards (ACA and Montana State) are considered best practice for this building type and shall not conflict with local, state or federal code requirements.

Areas of focus and review:

Fixture count:	Capacity based on the number of fixtures (showers, toilets, and lavatories) for areas of separation and population groupings.
Cell size:	Calculation of overall floor space and unencumbered floor space for individual rooms to determine number of occupants.
Multi occupant cell size:	Calculation of overall floor space and unencumbered floor space for individual rooms to determine maximum number of occupants.
Dormitories:	Calculation of overall floor space and unencumbered floor space for individual rooms to determine maximum number of occupants.
Dayroom size:	Calculate available floor space allocated for day time activities adjacent to groups of cells. Numbers used for capacity illustrate the maximum number of individuals who can occupy this space at one time.

The spreadsheet found in Appendix C compares capacity based on fixture counts, ACA related standards and Montana related standards to identify “proposed operational capacity” and “emergency operational capacity”. In determining the propose operational capacity, this analysis looked at the most stringent requirement from each set of standards.

Based on the findings of this report, overall capacity related to fixture count is 152 inmates, ACA standards is 156 inmates and Montana standards is 131. In developing the “Proposed Operational Capacity” consideration was given to the most restrictive standards as well as a practical review of operational limitations. For example, it is not practical to place two or more people in every cell based on varying classifications and behavior even though related standards may accommodate multioccupancy.

Based on the statements above, the current Proposed Occupancy is 147 operational beds.

An “Emergency Capacity” is identified to illustrate the maximum number of inmates that could be held for very short period of time but is not recommended when considering the safety and security of staff and inmate alike.

6.0 Mechanical, Plumbing, Fire Protection, Electrical and Security Electronics

6.1 Plumbing/Fire Protection Systems

Exterior

Underground piping. Domestic water and fire protection services are separate and are existing to the building.

The existing sewer main size leaving the building is currently unknown although it is anticipated to be no larger than 6" in diameter. A sewer system grinder has been requested by the Owner to be included within the remodel project. Although these may be located interior or exterior to the building, MKK's recommendation is to locate this exterior within a secure vault. This is to allow a reduction of interior space and ventilation requirements with an interior unit as well as ensure the unit is not in a secure location for servicing. This exterior system would be located within a vault that has an aluminum (lockable) lid for maintenance access. A possible location for this system will have to be confirmed during design based on the sewer location and available vault locations.

Natural gas is available within the existing building provided by Northwestern Energy. Any additional load requirements will be determine during the creation of the construction documents and coordinated with the provider.

Interior

Sanitary Waste System. All sanitary wastes from plumbing fixtures and equipment will be collected and drained by gravity to an exterior building sewer. The existing system will have to be evaluated during design to determine the amount of existing sewer piping that can be reused. Many of the existing pipes are 4" but with buildup are more likely only about 3" clear. During the evaluation of the existing system some discussion of cleaning versus replacement will need to be included.

Any new sanitary waste and vent piping will consist of no-hub cast iron soil pipe and fittings. Piping below grade and outside the building will be schedule 40 solid core PVC.

Holding cell water closets shall be 4" drain pipe, at the connection point of these 4" lines a screwed cap fitting that has a tungsten rod/pin that will extend into the piping to stop any flushed debris items (sheets, clothes, etc.) will be provided.

Storm Drainage System The existing facility has exterior roof drainage for the building that would be reused. Although the existing exterior recreation yard drainage will need to be evaluated based on the final floor plans and rerouted if required. Any new storm piping will consist of insulated cast iron soil pipe and fittings. Piping will be concealed in walls or chases where possible.

Domestic Water Systems The domestic water system will likely include a new domestic water entry with a booster pump that will serve plumbing fixtures and equipment. The requirement for the booster pump will have to be finalized during the design but given the existing maximum incoming pressure is around 75 psi and the heating water plant is up in the attic the system struggles at times per the owner. Cold and hot piping will be routed throughout the entire building as fixture locations dictate. Tempered water will serve penal fixtures and showers. A hot water recirculation system will need to be added to the building to improve system performance and decrease domestic hot water wait times.

Domestic water piping will consist of insulated type L copper and fittings. Shut-off valves will be quarter turn ball type. Remote domestic water shutdown in the housing area will be single zone for the entire housing area. This will be controlled through the security touch screen. Manual isolation

valves within the chases will then allow specific cells to be isolated for repair work. The existing water softener system is in need of replacement and will be included within the design. A water sample will need to be taken to establish the baseline water condition for sizing the system water softener. The desire is that both the hot and cold water systems be softened unless the existing Sloan diaphragm valves will be replaced.

Natural Gas System: Natural gas will be extended as needed using schedule 40 black steel pipe. Service will be brought to the new kitchen and laundry areas and as needed for other systems. Gas service will be a low-pressure distribution system.

Plumbing Fixtures: All detention water closets will be replaced due to the lack of current anti-flood control. New fixtures will be stainless steel anti-ligature combination fixtures with anti-flood controls to be provided with each flush valve. All showers for inmate use will be pushbutton type, stainless steel showers with front access. ADA compliant showers will have two heads (dual elevation) and two pushbutton; no hand held showers will be provided.

Fixtures for booking area will be stainless steel. Fixtures for public and staff areas will be vitreous china, exposed sensor operated flush valves, and sensor operated faucets. A flushing floor sink will be provided for the safety and or D.U.I. cells. A recessed hot and cold water hose bib assembly will be provided for cleaning of this cell. The current detention combination fixtures are getting their bubbler plugged by straws and pencils. The county would like to investigate what options exist to prevent this.

Emergency eyewash will be provided for laundry area chemical storage.

County maintenance staff prefers touch controls on detention plumbing fixtures in lieu of push button. Sloan or Metacraft electronic valves are preferred by the county maintenance staff. County maintenance staff has issues with cleaning the current small diameter sink p-traps. They would like to try and determine an alternate approach to allow them to snake the drain in lieu of using acid. A hot/cold domestic water hose bibb will be provided in each mechanical room area of the enclosed detention cell chases and in the vehicle sally port. A recessed and secured enclosure for a hose bib shall be provided for each outdoor recreation area and at the center of each of the housing units.

Drains: Floor drains will be located adjacent to each shower in the housing area. A floor drain will be provided in each mechanical room area of the enclosed chase of the detention cells if possible. Within the laundry the Owner desires the washing machine discharge into a trench/pit prior to entering the sanitary sewer system.

Plumbing Equipment: (Water heater system). The intent is to reuse the existing “newer” water heating plant located in the attic. Based on the final floor plans the existing plant capacity will be compared to the required capacity of the remodeled building to determine what if and changes are needed. Thermal mixing valve will be located at the domestic water heating plant. MKK recommended that a booster heater be provided for the kitchen to produce 180 deg F water for dishwashing. The location and type of booster heater will be coordinated with the kitchen design.

Water Heating: The exiting domestic hot water plant is located within the attic. This plant has three domestic water storage tanks; each with an associated pump that provides domestic hot water to the facility. The storage tanks are heated through an indirect means using the heating water from the small boiler plant located in the attic.

Fire Protection: A wet automatic sprinkler system will be extended /modified within the entire building so that the remodeled areas have coverage as required. Within the housing pods a zoned preaction sprinkler system with pressure monitoring shall be provided to minimize flooding of cells and allow for quicker maintenance staff response to a possible sprinkler discharge.

Piping will consist of black steel pipe with threaded cast iron and grooved type couplings for wet sprinklers and galvanized piping for pre-action systems. Sprinkler heads will be chrome pendant type in finished areas and security type in areas where inmates will exist. Any dry pipe areas will be pressured with nitrogen in lieu of compressed air.

A pre-action sprinkler system will be provided for the control rooms.

County maintenance staff prefers Nightraven sprinkler heads.

A water curtain may NOT be required for both sides of the control room and dayroom glass walls based on the planned use of rated, detention grade glass at these locations.

Will need to confirm water pressure and possible fire pump based on site available pressures and the City of Helena's new requirements.

The existing small glycol portion to the fire protection system for the Sally Port and the cooler will remain.

Fire sprinkler zones shall match building smoke control zones; while this is not a sprinkler requirement; the zones need to match to provide proper activation of the smoke control system.

6.2 Heating, Ventilation and Air Conditioning Systems

The following is a brief description of the criteria that will be used to establish the minimum requirements for design the HVAC system:

Design Conditions:

Season:	Winter	Summer
Indoor	72°F	75°F / 50% RH
Outdoor	-20.3°F	98.6°F db / 61.5°F wb

Minimum Outdoor Air Requirements will meet or exceed the requirements of the International Mechanical Code – 2012, Table 403.3 and the American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE) Standard 62.1 - 2010.

General System Requirements and Components: The majority of the building will be provided with heating and air conditioning. The general areas are:

1. Booking & Holding
2. Control Room
3. Jail Housing Pods
4. Kitchen
5. Laundry (space will be cooled as needed not to exceed 80 degrees)

Areas to receive cooling only include:

1. Major electronic equipment rooms
2. Security Electronics Rooms

Areas to receive heating only include:

1. Entrance Vestibules (location and final cooling loads of a vestibule will determine if mechanical cooling is needed.)
2. Vehicular Sallyport (space will be tempered only for heating)

Air Systems Description and Zoning: The existing system is and will remain a mixture of a condenser water heat pump and a variable air volume (VAV) air handling unit (AHU). The VAV system is located within the basement/lower level of the facility. The air handling unit is located near the sally port

and is interior to the building. Cooling is provided by an exterior DX condensing unit. Heating is provided by VAV box reheat coils which is served by the larger heating water plant.

The condenser water heat pump system providing heating or cooling to each zone through its internal refrigerant system. Each heat pump then rejects heat or pulls heat from the condenser water piping system that operated between 60 and 90 degrees. Heating is injected into the loop to maintain the desired minimum 60 temp when needed. Heat rejection from the loop is provide by a fluid cooler that uses air flow and evaporative cooling to maintain the desired maximum 90 temp when needed. During later stages of design access to heat pumps on the first floor will need to be reviewed to determine the best method of access for heat pumps located above secure ceilings. This will require further investigation based on the final floor plans and zoning however the intent is to design the system so that access above a secure ceiling is not required. For both the VAV and heat pump systems further analysis will need to be done based on the final floor plans regarding the full reuse of existing system within the building. This is due to the fact that additional load occurs due to the required ventilation required for the expanded detention facilities in comparison to the current use. However, it is understood that the intent of the project is to reuse as much as possible to reduce costs for the project.

The ventilation for the building is provided directly by the VAV AHU or to the heat pumps by the use of a dedicated outside air (DOAS) system with heat recovery. The DOAS unit due to the high amount of exhaust air that is needed utilizes heat recovery to pre-heat/pre-cool the ambient air coming into the building.

All restrooms will be exhausted per the requirements of the 2012 International Mechanical Code. If possible (further investigation during design phases required) the exhaust would be routed through the DOAS unit to allow for the re-capture of energy from the exhaust air stream though the DOAS heat recovery section.

The laundry area will be served by a single zone heat pump for cooling. Connections will be made between the dryer exhaust and the lint collector provided by the laundry service consultant.

Final kitchen equipment will be further determined in coordination with the owner, architect, and kitchen consultant. The kitchen area typically is served by a make-up air system (MAU) with, filters, a hot water heating coil or gas-fired heat exchanger, a direct evaporative cooler, supply fan and dedicated exhaust fans (kitchen hood and dishwashing machine). Supplemental un-occupied heating shall be provided through a cabinet unit heater.

The vehicle Sallyport will be provided with a gas-fired make-up air system (with return section) for ventilation and for heat. The operation of the make-up air unit will be controlled by carbon monoxide and nitrogen dioxide sensors. Exhaust will be taken from near the floor to ensure that the vehicle exhaust fumes are properly exhausted. No cooling will be provided in this space.

Heating Water Plant: The existing heating water plant capacity is 1,401 MBH. Preliminary estimates of the building loads and ventilation requirements indicate an estimate heating capacity could be around 1,800 MBH. Although minor change may be needed we feel that the difference in sizing may be resolved as the design progresses.

Fluid Cooler: The existing fluid cooler capacity is unknown although the manufacturer is reviewing the available information to assist. Preliminary estimates of the building loads and ventilation requirements indicate an estimate cooling capacity could be around 78 tons. Further investigation will be done after existing equipment capacities is determined.

Dedicated Exhaust Systems: Dedicated exhaust systems will be provided in the kitchen as noted above and other locations as determined necessary for the space usage.

Humidification: Active control of building humidification will not be provided.

Duct systems: The supply air ductwork system will be externally insulated. No lining will be used in the supply air stream. Any sound sensitive areas will be finalized with the owner and these ducts may contain lining. The return and exhaust air ductwork system will be internally lined where necessary for acoustics only. All transfer ducts will be lined for acoustics. All ductwork larger than 8"x8" penetrating security walls will be provided with security bars. Where ductwork exists the building in either horizontal or vertical planes, security bars will be placed.

Filtration: All air handling units will be equipped with 2" pleated 30% pre-filters and 65 percent efficient cartridge filters.

Air Inlets and Outlets: All cells and holding rooms will have medium/maximum security grilles. Where medium/maximum security grilles are located in potentially wet areas, such as showers, grilles will be specified to be stainless steel construction. Distribution approach to match the current law enforcement center facility which has supply air high and return/exhaust low behind the plumbing fixture. Any low supply or return grilles in cells will need to be investigate further so that liquids could drain toward the cells when inmates urinate in the grilles.

Temperature Controls: Control system shall be JCI Metasys based on integrating into the existing controls. Portions of the existing control system still have pneumatic controls in use. The intent is to replace these pneumatic controls to bring the entire facility to a common electric/electronic control system. Direct digital controls (DDC) with electric/electronic actuation will be used to control the air handling units. Interface between the units and the DDC system will be via BACnet protocol. Possible wireless access within facility from iPads or other devices. Final allowance of any remote access shall be determined with the county maintenance staff.

All terminal units to have DDC control. All cabinet unit heaters and unit heaters are to have DDC control. The VAV system shall be provided with economizer controls as required by IECC 2012.

Space temperature will be sensed using DDC sensors located in the return/exhaust ducts in the holding rooms and the jail pod. Sensor will be located in an accessible location. A minimum of 16 hours of temperature control training will be specified.

An engineered smoke control system will be provided in this project. The building will be broken into zones. The engineered smoke control system will be integrated with fire/smoke detection system. Each fire sprinkler zone shall match a building smoke control zone as well. Upon receiving a signal from the smoke detection system, the engineered smoke control system will automatically exhaust the zone in alarm. Dedicated smoke exhaust fans will be used for this purpose. The adjacent zones will continue to operate in their normal sequence. Emergency power will be provided for the smoke control exhaust fans.

Indoor Air Quality: To summarize, all air handling systems will incorporate the following Indoor Air Quality features:

1. Ventilation (outdoor air) quantities will follow the recommendations of ASHRAE 62.1-2010.
2. Ductwork will be constructed of sheet metal and will not be lined, except where necessary for acoustical purposes.
3. Ductwork is specified to be covered during construction.
4. Air handling units will be specified with stainless steel drain pans that are pitched in two directions.

5. Air handling units will be dual wall construction.
6. Air handling systems will be provided with cartridge final filters.
7. All VAV boxes will be designed with heating coils which allow a minimum airflow at all times without over cooling the space.

6.3 Electrical Systems

Existing Building Conditions:

The building is served by a pad mounted utility transformer located on the southwest side of the building. The electrical service is supplied by Northwestern Energy with power transformed down to 120/208V, 3-phase, 4 wire. The power extends from the utility transformer into a meter and CT cabinet located at the exterior of the building and from there terminates in a service entrance switchboard rated at 1600A, 120/208V, 3 phase, 4 wire. This board has two main fused disconnect switches. One of the two main service disconnect switches is rated at 400A and previously served the adjacent court house building but has been disconnected and is now a spare. The second fused main disconnected is rated at 1600A and serves this building. The service distribution section serves three (3) branch circuit panels, BA, 2A, 1B, Public elevator #1, and the emergency distribution board. There are provisions for four (4) 225A breakers. All of the distribution equipment is original to the 1984 building and is manufactured by Square D.

The emergency distribution board is fed from a 500A breaker through a 600A transfer switch and backed by a 150kW Generator. The feed from this board consist of seven (7) branch circuit boards, PA, 1A, 2XQ, BX, 2XB, RX/PX, 1X, and two motor control centers (MCC), MCCA and MCCX.

Generator: The existing generator is a 150kW standby Caterpillar diesel generator original to the building and currently backs up the emergency distribution board. The generator is located indoors on the basement level. It has been requested that the entire building be generator backed up. Preliminary calculations suggest new generator will be too large to be located indoors within the existing generator room. Site locations will need to be investigated to locate a weatherproof and sound attenuated generator outdoors. We will want to locate on the north and west sides of the building due to current diesel fuel infrastructure and noise concerns at the Courthouse.

Uninterruptable Power System (UPS): The existing UPS is 80kW/100kVA with an output rated at 300A and is manufactured by MGE. This UPS system backs up panelboard RX/PX which serves the radio room equipment and cooling located on the mezzanine level. The existing card access system and the new jail security system will need to be backed up by this existing UPS system.

Basement level: The Main Electrical room includes the Main Distribution Board (MDB), the Emergency Distribution Board (EMDB), panelboard RX, and the UPS system. The Card access system and the main telephone board are also located in the main electrical room. All of this equipment will remain and be utilized for the building remodel. Existing panelboards BA and BX1 located in a small electrical closet just north of the main electrical room will be removed and replaced at a new location on this level, exact location to be determined.

Main Level: Existing panelboards 1A, 1B, and 1X located in a small electrical closet at the southeast corner of the building will be removed and replaced at a new location with on this level, exact location to be determined.

Second Level: Existing panelboards 2A, 2AX/associated relay panel, and 2BX/associated relay panel will remain as is. These relays are interface to the existing jail security system for on/off of lighting.

Attic Level: Existing Motor Control Centers MCCX and MCCA, and panelboards PX, PA and Heat pump panel to remain as is.

Power and Wiring Devices: All existing receptacle, power devices, mechanical connections etc. and associated power circuiting to be removed in remodeled areas. Second floor control and inmate areas remaining will need to remain connected and in service during remodeling of the basement and first floor to jail space.

Lighting: All luminaire, associated controls, and associated power circuiting to be removed in remodeled areas. This includes the power required for all associated systems that need to remain active in this area during construction. Second floor control and inmate area luminaires and lighting controls are to remain. As an alternate the existing luminaires will be replaced one for one with LED type luminaires.

Emergency Egress Lighting: Integral Emergency battery packs are being utilized in the building and therefore will be removed with the luminaires noted to be removed. For the second floor control and inmate areas where the luminaires are remaining the integral emergency battery packs will remain functional. It does not appear that exterior emergency egress lighting exists on the building. This will need to be further investigated and provided to meet current code, if not existing.

Telecommunications: Further discussions are forthcoming with the Owner on what their telecommunications needs will be for the renovated building.

Fire Alarm: The existing fire alarm system was updated recently and will be reused. The main fire alarm is located on the first level in the dispatch area and will need to be relocated (location to be determined). Fire alarm devices will be removed and saved for reuse where possible. The fire alarm devices will remain on the second floor in the control and inmate areas. Further discussion will be required as to how to maintain the fire alarm system while remodeling is in progress.

New Electrical Remodel:

Electrical Service: The existing 1600A, 120/208V electrical service and distribution will remain and be utilized where possible. New panelboards will replace panelboards noted to be removed and replaced in the existing building condition section of this report. New panelboards will be added at various locations as needed to limit branch circuit lengths and to accommodate the new floor plans as needed. This will be further determined as the design progresses. Surge protection will be added at the main switchboard and all emergency power distribution. Indoor and outdoor lighting will be fed at 120 volt. Motors 1/2 horsepower and larger at 208 volt, 3 phase.

Emergency Power: The existing standby generator will be replaced with a new life safety rated, standby, outdoor, weather protected, sound attenuated, diesel generator set with sub-base fuel tank. Power will be generated at 120/208 volts. Preliminary size is 500 kW. Diesel fuel delivery from existing fuel supply system will need to be investigated. The generator will provide total backup of the entire facility.

A life safety branch will be provided with a dedicated transfer switch for life safety (code required emergency). The life safety branch is required to come on line within 10 seconds and the remainder of the building in 60 seconds or less. Usually, this can be completed for both in 15 seconds. There may need to be some integration with the building automation system to bring mechanical equipment sequentially on line while on emergency power to reduce in-rush on the generator. The life safety branch of emergency power will feed the following:

1. Exit lighting.
2. Emergency egress lighting.
3. Fire alarm system.
4. Existing UPS to maintain radio/911 communications.

A remote generator alarm panel will be located in Master Control or 911 Dispatch as this is a 24/7 occupied space. Fuel supply storage will be provided for 24 hours of backup. Size on fuel tank to be determined. Emergency battery backup lighting will be provided in addition to emergency generator power at key security locations for the generator startup and transfer time duration and in the event

of total normal and emergency power failure. Areas such as electrical distribution rooms, officer control stations and booking area are recommended. The existing UPS will be reused and load added as allowed.

Lighting: Lighting will be provided to meet the requirements the Illuminating Engineering Society (IES) and the American Correctional Association (ACA) Standards for the detention areas. Light sources indoors will be LED throughout the building. Detention spaces will also utilize LED light fixtures. The jail officer control stations and surrounding corridors will have dimmable LED lighting to allow for adjustment in light levels to improve viewing into the dayrooms from the control rooms. In general, lighting fixtures will be recessed 2' X 2' or 2' X 4' LED indirect perforated basket types in offices, conference rooms and similar areas. Utility type areas and storage rooms will be lit with 1' X 4' recessed fixtures with 1/8" acrylic lensing where lay in ceilings are provided and 4' strip type LED in non-ceiling mechanical, electrical and storage rooms. Compact LED down lights with silver reflectors will be used in areas to supplement the ambient lighting. Other sources and fixtures will be considered and designed to enhance architectural features of the building, particularly the main lobby. These areas will be developed during the design phase.

Jail Lighting Fixtures: Jail lighting fixtures will be specified of construction for the applicable surrounding area and to match the architectural durability of its location. In general, fixtures accessible to inmates of the facility without supervision, such as inmate cells or holding cells, will be of maximum detention durability, constructed of 12 gauge steel, power coated paint. Lensing will be 0.375" clear tempered glass/polycarbonate laminate lensing on the exterior side with 0.125" high impact prismatic acrylic lens on the interior. Cells will also be provided with an amber LED night light with internal dimming capability that will be on 24/7. Areas with supervision but subject to vandalism, such as dayrooms, housing dormitories and toilet rooms will be surface mounted high impact polycarbonate units. Areas with supervision and where the likelihood of vandalism is low will be standard lay-in type LED with 0.187" high impact acrylic lens and tamperproof doorframes. Cell normal lights will be controlled from the security touch screen as a group per dayroom both lower and upper cells. Energy efficiency will be designed to include the following:

1. Occupancy sensors in private offices/conference rooms and other locations where feasible.
2. Reduction of lighting by 50%, dual level switching or alternate switching.
3. Separate switching for lights adjacent to windows.
4. LED exit lights.

Receptacles: Receptacles for convenience use will be provided as required and located to accommodate the location of furniture, appliance and other equipment needs. Cover plates will be primarily thermoset plastic throughout the facility outside of inmate occupied areas. Cover plates in inmate occupied areas such as housing dayrooms will be 10 gauge security plates. A controlled GFCI receptacle is recommended to be located in selected ADA or normal cells for CPAP breathing apparatus users. This receptacle will be controlled through the security touch screen control system described below. All receptacles will be labeled with the panel and circuit number on the front of the cover plate. Receptacles are generally circuited 6 to a circuit or as dictated by need such as vending machines, large copiers, refrigerators and other equipment. A welding outlet is recommended to be located in the Housing Unit corridor for any door frame or door repairs. Some locations may require two compartment surface raceways for data/receptacles around the perimeter of the room depending on the density of receptacles and data outlets required.

Data/Voice Cable and Raceway System: Telephone/data outlets will be provided at two locations in each private office. Owner input is required regarding tele/data outlet locations. Wall box for data outlets will consist of 4" square boxes with two gang plaster ring and 1" conduit to accessible ceiling. Data outlets jacks and cabling will be provided by the projects IT/Data Consultant. A cable tray and raceway system may be provided in office administration areas if the density of outlets require.

Fire Alarm: The existing fire alarm system will be reused. Devices will be reused where possible and added devices will be provided as needed. The main panel will be located in the electrical equipment room with remote annunciators in all control stations and the designated fire department response location adjacent to the engineered smoke control panel provided by the mechanical contractor.

Full building smoke detection is required for the occupancy of a windowless building. The fire alarm system will be interfaced to the engineered smoke control system described under HVAC. All initiation devices within a smoke zone shall initiate the automatic smoke control sequence. See HVAC for further explanation.

All initiating devices will be individually identified on the system as to its device type and location. Pull stations at locations vulnerable to inmate access will be in locked boxes or key activated with detention staff required to carrying keys. Pull stations accessible to the public will be break glass types to deter false initiation.

Sprinkler flow and tamper switches will be monitored by the system. Each cell will be provided with a smoke detector mounted in the exhaust duct within the cell chase. Alarm devices will consist of horns and strobes to meet the requirements of the Americans with Disabilities Act (ADA).

6.4 Security Electronics

Existing Conditions

The existing security electronics system was upgraded in 2003. A Simplex 5200 system was installed. The user graphical interface are membrane switch panels consisting of the following:

1. Basement and first floor door control and status, card access doors, cameras and cell lighting control. This panel controls the vehicle sally port, secure elevator and displays card access controlled doors.
2. Second floor panel for all jail control intercom, door control and status, card access doors, elevator control, cameras and TV power. This panel controls all security on the second floor.

For communications of field devices (doors, intercom, power, etc.) as inputs to the security system and outputs (what gets displayed on graphic panel), there are special processing and interface boards that are proprietary to Simplex and no longer available or supported by Simplex. Failure of any one of these interface boards would leave a large portion of the jail without controls or monitoring.

The field devices are terminated in the crawl space of the East and West Control Stations. This is not a good arrangement for access to maintain the controls, cabling and subjects the interface boards to excessive heat and dust. The door control and status cabling can be reused. Terminal boxes will be installed in the crawl spaces and all cabling extended to a new dedicated, environmentally controlled security electronics equipment room.

The intercom system is also Simplex and the headend for this system is located in the mechanical mezzanine. This is also proprietary to Simplex and obsolete. The intercom stations operate on 40 ohm speakers and will require replacement of the intercom stations and paging speakers to a 25V system.

The existing video surveillance consists of approximately 53 analog color cameras. There is a variety of manufacturers cameras installed and there are three 16 camera Pelco analog DVR's. According to Jail Staff they have 60 days of storage capacity. Analog cameras are becoming obsolete and all cameras will be replaced with new IP, 1080HD cameras along with Network Video Recorders and PC Workstations for remote access by jail staff at an Administrative level.

There are separate panels and switch locations for shower water, inmate phone and other miscellaneous controls that will get interfaced to the new touch screen control system described below.

There is a card access control system for the access by staff to non-jail areas primarily in the basement and first floor. This is a Northern Computer system. The future use of this system will be reviewed in the Design Development phase of the project.

Security Control System (SCS): The Security Control System provides the integrated micro processing backbone for the various security control and monitoring functions within the facility. The SCS consists of the microprocessor-based programmable logic controls (PLC's) along with their associated power supplies, UPS's, input/output cards, multiplex communicators and control relays. These processors are interconnected to communicate with one another to achieve the various alarms and controls via a copper or fiber optic local area Ethernet network (LAN). A dedicated network will be provided for security.

For this project, one PLC is all that is required.

This SCS system also includes a dedicated PC workstation. This PC will perform the recording and history logging of the controls assigned for recording keeping. Each designated control or alarm desired for record keeping is time stamped for alarm, acknowledging and reset. The recording of all activity on the SCS is of benefit to the County, i.e., inmate complains that nobody answers his cell intercom or if a duress alarm or door alarm is initiated. This provides recorded backup and improves professionalism of the corrections officers. The record keeping is a hard disk backup which is downloaded periodically to compact disk.

We recommend that the security control system be designed using non-proprietary, off-the shelf equipment including programmable logic controllers (PLC's), touch screen control software, relays and power supplies. This insures that system parts can be purchased directly by the Owner from electrical distributors rather than relying on the original installer. In the event the original installer goes out of business or is no longer able to support the system there are other companies that will be able to diagnosis problems and take corrective action.

PC Touch Screen Graphics: This technology has become the most reliable as the speed of computer processors has evolved and the cost of computer equipment and peripheral devices have declined. The earlier versions of these systems were slow in operation which resulted in leaving staff stranded at security doors while other functions were being performed. The computers were not able to regenerate the graphic screens fast enough to be effective. Touch screens will be 27" wide view touch screen and also can be operated using a mouse. Three touch screen control locations are recommended:

1. First Floor Open Control Station – This will monitor and control all jail functions on the first floor Special Needs and Male Dormitory housing. Additional local control will be provided to allow staff hands-on control to doors using a key switch function at the door. The key switch allows for unlocking and shunting the alarm on the new system and can be individually switched on/off by the Master Control touch screen. This floor will require more staff to inmates than the second floor housing. Functionality will be designed into this touch screen location to allow for expedited log-on/off (walk away) when staff leaves the control station.
2. Second Floor West Control Station – This will monitor and control all jail functions for the West and Female Dormitory housing.
3. Second Floor East Master Control Station - This will monitor and control all jail functions for the Booking area East Housing pods and Trustee/Weekenders housing. In addition, the control stations see status of all the other touch screens and can take control from the other touch screen locations. This touch screen will also perform all movement in and out of the jail and the elevator.

The PC graphic control system consists of flat panel screens that can be touch screen or mouse-driven or both. The typical controls provided by this technology to name a few, include the following:

1. Door Control and Monitoring – Monitor each door for both door position and lock bolt position.
2. Door Hold Open.
3. Staff Access for local card access or key switch controlled doors.
4. Isolate door control. – Used to eliminate doors from a group unlock function. Emergency group release functions bypass this function.
5. Group Unlock/Group Relock – Unlock/Lock housing pod cell doors at one time.
6. Emergency Group Release – Release all cell doors sequentially one at a time. This function over-rides any other controls design for the cell doors.
7. Emergency Exit Control – One step process over normal door control.
8. Cell Intercom and isolate intercom – Each cell with an intercom can be isolated from sending an audible tone to the officer touch screen. The call still visibly annunciates and records.
9. Intercom to camera call-up – Minimizes camera monitors for those cameras responsible only for door operation.
10. Audio Tour – Sequentially listen to each cell intercom. Useful for monitoring sound of each cell in a lockdown situation.
11. Audio Record – Selectable record intercom conversations.
12. Duress alarm shutdown and transfer – Duress alarms at touch screen locations will automatically shut down the touch screen and transfer control and an alarm to an alternate or Master Control operator.
13. Zoom Controls – Many ways to access calls and alarms.
14. Utility Controls – Cell lights, dayroom lights, receptacles, domestic water controls and TV Power. Layered behind a Hidden Function screen. Reduces touch screen clutter.
15. History Logging – Record each and every action on the security control system.

Advantages of this system are:

1. Can handle a larger quantity of controls in a given space versus hardwired graphic panels.
2. Utility functions can be hidden on different layers and only called upon when needed. These are on/off functions such as lighting, TV power, shower controls, etc.
3. More flexible to changes and updates to floor plans. The backgrounds are imported to the software as AutoCAD files.
4. Allows for greater flexibility to transfer entire controls of one control station to another.
5. No switches or lexan overlays to wear out.

Disadvantages:

1. Failure of the touch screen PC can leave a portion of your facility inoperable. Suggest spare PC loaded with all touch screen locations with auto-boot control.

Door Monitoring and Control: Security doors for the movement of staff and inmates should not be controlled from more than one location unless the security system design includes a failsafe method of transferring the controls from one location to another. Failure to do this can result in missed communication between the two locations.

Emergency group release of inmate cells should occur in the housing pod or building security control station if the pod or building is “indirect controlled”. In “direct controlled” housing pods or buildings it is recommended that these functions be located at Master Control. Doors under emergency group release should be sequenced 3 or 4 at a time in 2 or 3 second intervals. This achieves two objectives, one, it allows an orderly release which can more easily be managed by staff and two, reduces the power supply requirement for the door control equipment and emergency generator should it be necessary to perform this group release. Emergency group release requires two actions

by the operator to initiate this function. For hardwired control panels, either simultaneous pushbuttons requiring two hands to operate, key operated or flip cap type pushbuttons. For PC graphic controls, two steps of icons and a series of pop-up windows requesting confirmation will be used.

Additional close coordination of door hardware and controls is a must and can save potential field problems. Modifications of door frames and hardware in the field is extremely expensive, often times requiring torching, grinding, welding, putty filling and refinishing. To reduce this risk, the contract documents should address the following:

1. Emphasis must be stressed in the specification for the verification and coordination of lock types provided by Division 8 and/or 11 and the controls provided by the security electronics contractor. The General Trade is responsible for assigning a specific individual to perform this task.
2. Include responsibility for the terminations of devices. Depending on where the security electronic controls are specified in the documents, make sure there is clear definition of responsibility for this.
3. Architectural specs should detail what is provided with the detention frames, i.e. conduit, boxes, etc.
4. Allow sufficient time for the architect and security consultant to thoroughly review the door hardware, detention frames and security electronics.

Card Access: Reuse of the existing card access system may be a consideration for those doors that are staff only access but still located in the perimeter of the jail requiring monitoring. The card access does not directly control door. The card access system validates a card read and closes a contact at the access control panel as an input to the jail security system. The jail security system unlocks the door. Any forced entry will report the Master Control touch screen.

Door Movement Intercom: The intercom and paging system be a digital processing system using Harding Instruments DXL. This system offers more flexibility in modifying intercom functions and allows features that are not easily provided with the PLC controlled, relay-based intercom allowing for transfer of entire housing pod intercoms from one control station to another.

The existing intercom stations will be replaced with new 25V intercom stations. Intercoms and paging speakers for door control, cell/holding communication and two-way audio in dayroom areas should be constructed to sustain the long term abuse placed upon them. Some of the intercom locations will require custom cover plates because the size of the back box is not a standard size electrical box. A means must be provided for the protection of the speaker to insure its operation. The assembly should be constructed of heavy gauge material such as 11 gauge brushed stainless steel. Cross baffles should be provided to protect the speaker from projectiles and fluids. The call button should be of metal material and flush with the plate. The use of cast horn type speakers as exists is not recommended as the audibility of these is poor.

Another consideration is to install a handset intercom station in direct supervision housing pods so that inmates can have a confidential conversation with the officer station. Intercom stations can be wall mounted in their own back box or within the detention door frame. Drawings should clearly indicate which devices are wall mounted and which are frame mounted. The detention contractor needs to be instructed in the specifications to coordinate these with the security electronic drawings.

Intercom masters at the touch screens will consist of a desktop microphone with push-to-talk button, goose neck microphone and speaker with volume control.

Wall mounted stations in frequently occupied inmate areas should be security caulked all around, this is especially true of block constructed walls where a truly flat surface is difficult to achieve. Inmate cells and holding rooms should have all frames, escutcheons and cover plate's security caulked.

Video Surveillance System: A Video Surveillance System (VSS) provides the best means to increase staff efficiency, improved security and reduce inmate aggressive behavior. Cameras which several years ago were considered a luxury are now installed in greater numbers for this reason. Cameras are also a requirement for helping in compliance with PREA (Prison Rape Elimination Act).

The significant decrease in costs of video equipment has made these systems more affordable. It will provide the watchful eyes where a fixed staff position would be impractical. However, camera locations should never be considered as a substitute for the most crucial security functions where direct staff supervision can be accommodated without disturbing the architecturally designed inmate or staff traffic patterns. Even then, there may be some locations where the security function is so critical as to require architectural changes. As we develop the security electronic systems and understand the processes and occupant flow, we will then be able to determine total camera quantities and control.

Cameras will be IP-based, 1080P HD, wide dynamic range, auto-focus, auto-iris with vari-focal lenses, minimum 2 megapixel. Cameras will primarily be fixed indoors and pan/tilt/zoom outdoors. Camera locations outdoors will be day/night cameras for automatic transition from color to black and white under low light level conditions.

Cameras will be recorded 24/7 to an IP-based Ethernet video server and network recorder at 1080P HD. Cameras will be viewed at 720P on multi-camera monitors. Cameras will be fed with Cat. 6 data communications cable to a copper patch panel and, depending on distance from the headend, may require POE injectors.

Cameras located where the main purpose is for verification of a door control request via an intercom call will be controlled for viewing to a dedicated monitor or monitors depending upon whether there are one or two cameras viewing the door. This reduces the overall monitor quantity.

Multi-view monitors will be used for cameras on a single monitor or several monitors. Sequencing is also an option but should only be considered for less critical camera locations. There may be certain camera locations, depending upon the nature of their view that could be viewed at more than one monitor location. On screen identification of each camera position is recommended. Each camera scene should include a physical descriptive line, date and time. This must also be provided on the digital video recording system.

Intercom call-up monitor/s should be located at hands-on control level for improved viewing by the operator. Monitors are recommended to be 22" for quad split and 42" for multi-view and overall surveillance. Generally, the quantity of cameras to be viewed on a monitor will depend on the security importance of the camera.

Controls will be microprocessor based, software driven with camera select and pan-tilt-zoom controls via a mouse. Monitors must be situated to provide the operator easy viewing access while maintaining other functions within the operators touch screen controls. Depending on the camera quantity and functions, this may be a dedicated staff position.

Cameras should be considered where the possibility of an altercation between inmates and staff and between inmates and each other may present itself. Usually a camera noticed will be a deterrent to any unacceptable activity. The camera may also capture, via digital video recording, any misconduct which could be used to justify disciplinary action. Cameras designed to be covert are most effective since the occupants of the area cannot determine the camera position. Cameras with smoked domes work well in these locations, however, do not hold up well to direct attack. The use of auto-

pan cameras should be discouraged because they accelerate camera maintenance. Preset positioning may be an option where a camera is covering more than one critical function on a time cycle basis or where a single camera could be used to respond to an intercom/door control from several locations. Camera housings will be selected based upon their location and application. There are minimum, medium and maximum camera housings for various applications such as recessed ceilings, surface wall mount, corner mount and others. Standard covert dome type cameras are recommended for most locations with higher security housings for camera locations accessible to inmates.

The competent training and use of the camera system must be well maintained. The systems benefits can only be realized by the efficiency of the operator. Cameras where positioned, to provide a secure environment for staff or visitors must not be neglected by the operator. Any camera positioned as such, cannot create a false sense of security. That security must be real. The use of dummy cameras should not be considered.

Rough-in locations for future cameras should be considered where a camera positioned now would only be a luxury. The rough-in of cameras should be provided anywhere the future possibility exists of staff reduction or the need for improved security surveillance could develop. The Master Control location must also take into consideration for potential future cameras for the sizing of monitors and controls.

Network Video Recording (NVR): An NVR system is recommended. This system is peripheral to the video control equipment that operates the jail. These systems provide their Owner's accountability by recording all camera activity within the facility. Should an altercation or dispute occur which is in view of a camera, the Owner would have some evidence for potential disciplinary action.

These systems basically consist of a server with multiple hard drives and a software program. The hard drives are RAID5 and sized depending on the camera quantity and the time duration at which the Owner desires to maintain a video library. RAID5 stores video across multiple hard-drives evenly so in the event of a hard-drive failure, it minimizes the recorded video lost. Sixty days of recording time is usually sufficient provided that procedures are in place to insure that staff search and download the recorded images when an event occurs.

The following lists some these system features:

1. Record on motion. Can be programmed to only record cameras with activity. This helps to reduce hard drive space, which reduces cost.
2. Can be interfaced to the facilities LAN system to allow any number of operators to access the system from their desk PC. Access to the software operating configuration can be programmed for several levels of security. The operator can access recorded video or view cameras live. The PC may need to have the appropriate video accelerators, graphic display cards and system operating speed dictated by the NVR manufacturer. Most modern PC has these capabilities.
3. Searching of recorded video is easier. The software allows various commands for searching the video, such as all camera activity at a specific date and time or time span.
4. Video can be downloaded to standard DVD disk or exported to standard Jpeg or H.264 movie clip file that can be e-mailed. Recording is encrypted which will not allow for any altering to the original digital recording.
5. Selected cameras can be programmed to higher record rates in response to alarms, such as a duress alarm or a door alarm. Cameras can also be programmed to record at higher rates at specific time schedules.

Audio/Video Recording System: These are systems usually installed in Intoxilyzer and Interview rooms. The system consists of the following:

1. Camera or cameras.
2. Wall mounted boundary type microphone with an AV interface device.
3. Motion sensor to automatically activate the recording or a wall mounted pushbutton to manually activate the system.
4. DVR recorder device that records both audio and video.
5. Video management PC for downloading of recorded video by the arresting officer.

The DVR can be interfaced to the facilities LAN system to allow any number of operators to access the system from their desktop PC. Access to the software operating configuration can be programmed for several levels of security. The software time stamps and encrypts the recording. Any attempt to digitally modify recorded video will render it unusable. The software also allows for transcribing notations to the recorded video. This system if provided must be properly coordinated in advance to insure that the camera and microphone are located for the best quality sound and picture. Special consideration should be given to the acoustic qualities of the room.

Duress Alarm: The use of duress alarms at all security control locations is necessary. Each control location with access to a security control panel or touch screen shall have a hardwired emergency pushbutton to alert Master Control to a potential security risk. When a duress alarm is initiated at a location of a hardwired control panel or touch screen, they automatically shut down and alert Master Control. The intent of these duress alarms is an attack on the control location itself.

As the security plan develops, there will discussion on the locations where wall mounted pushbuttons or under desk/counter manual alarms may be desired in addition to those at the security control locations.

Wireless duress alarms provide mobile staff with the ability to alert Master Control to an individual requiring assistance. These systems consist of a body mounted transmitter, either belt worn or neck lanyard and a receiver mounted in the area of coverage. There are three main technologies used, infrared, radio frequency and ultrasonic. Infrared requires a line of sight from the transmitter to the receiver and therefore does not work well in the jail environment. Both radio frequency and ultrasonic do not require line of sight. Radio frequency can penetrate walls and structures which can create alarms in several adjacent zones where receivers are located. This is not desirable in jails where seconds can mean the difference between aggressive behavior and an altercation. Ultrasonic does not penetrate walls or structures and does not require line of sight which makes this technology more ideal for the jail environment. However, none of these technologies are perfect and even under the most ideal installations, weak spots may exist. In the commissioning of these systems, staff must be made aware of these weak spots.

It is recommended that wireless duress alarms be provided in the booking area and program spaces as these are the most likely locations for an attack on an officer. Locating this system throughout the entire facility is a costly option that may not have a good return on investment especially if it is the intent of the facility to also carry radios with man down features.

Spare Parts: Each system specified will include a spare parts list for parts to be provided, cataloged, shrink-wrapped and turned over to the Owner for storage. The spare parts are necessary to insure continued functioning of the systems. Expect minor failures, especially within the first six months of operation as most defects in equipment will usually occur within this time period. This is especially true to the adjustment of door hardware. Maintenance staff must also reorder any spare parts used to maintain a stockpile.

Security Control Contractor: The integration of these systems is most critical to the successful operation of the facility. Although individually, these systems can be easily provided by a number of

local contractors, it's the integration that requires the most expertise. These facilities and the integration of systems are custom and the selection of this contractor is critical to insure that only qualified, experienced contractors are considered. These contractors are generally custom fabricators for the security control panels or touch screens and door/intercom functions. The need for experienced, competent and financially secure security contractors is a must for success of the security system and long-term operability and maintenance. It is recommended that these contractor's meet pre-qualification requirements that are included in our specifications.

The Security Design Process: Once a floor plan is developed, three meetings are scheduled for the development of the security systems:

1. Meeting 1 – Review the floor plans and discuss all the processes in the building such as intake/booking, classification, clothes out, evidence processing, food distribution, laundry operations, medical unit, etc. We need to understand how the Sheriff's Office wants the jail to operate and guide them on the application of system or equipment to improve the staff efficiency, communications and security. A detailed review of each door location will be done to address the security degree required, frame gauge, locks and options available on the doors such as pass-thru's, cuff-ports, shutters, glass, etc. Discuss who controls these doors from where. This meeting occurs in the design development phase.
2. Meeting 2 – This is a repeat of the meeting 1 and is critical because as the building floor plan develops changes will occur that need to be revisited in respect to security. This meeting occurs in the middle of construction document phase.

We take a holistic approach to security design and we will review the architectural drawings for any suggested changes we feel are necessary to insure a safe and secure environment for both staff and inmates. Coordination of engineering disciplines is critical, below are some issues to avoid conflicts in the field:

1. That the security electronic controls match the door hardware. Close coordination required between the hardware schedules and the controls.
2. Verify what is door frame mounted and wall mounted.
3. Review mechanical drawings for camera locations to verify that cameras are not located behind unit heaters, piping or ductwork.
4. Review Architectural drawings for ceiling types so the light fixture construction and speakers or cameras include the right security housing for the ceiling type.
5. Review Architectural details of the control station millwork to insure that all equipment is accounted for and equipment locations are included.
6. Review Architectural elevations for the mounting heights of all equipment that is wall mounted.
7. Review Electrical drawings for required connections to the security equipment. Also, coordinate the required UPS power backup sizing is adequate.
8. Review and coordinate equipment room sizes for the security electronics equipment. This should be done early in the project to insure that rooms are located in proximity to the control stations and are secured.
9. Review and coordinate cooling requirements with the mechanical consultant for maintaining security electronic equipment rooms on dedicated split AC systems.

Other Considerations: The following items are included to address other non-security electronics, physical issues that when combined with these systems, enhances the security as a whole.

Light Fixture Construction: Consideration must be given to the light fixture construction according to the degree of vulnerability to attack at its given location. In addition, bidding documents must clearly describe or detail the mounting of these fixtures to ensure a secure installation. The majority of fixture vandalism can be attributed to poor installation resulting in its entire removal from its

mounting rather than the destruction of the fixture itself. The following fixture construction is recommended:

1. Maximum Security - 12 gauge steel with 0.375" or 0.50" lexan or clear tempered glass with .125" DR high impact acrylic overlay.
2. Medium Security - 14 gauge steel with 0.250" lexan or clear tempered glass with .125" DR high impact acrylic overlay.
3. Minimum Security - 16 gauge steel with 0.187" high impact acrylic lens. These are generally fixtures located in areas where inmates may have access to them without supervision. There are many locations in the minimum security environment where standard vandal proof type fixtures can be used which is more cost effective.

There are varied preferences to the use of lexan versus tempered glass. Lexan can be melted with an open flame distorting the lensing and emitting toxic vapors. Clear tempered glass can be shattered if the lens retention system within the fixture does not provide an even pressure across the pane of glass. When properly installed with even pressure, it is difficult to shatter. Lexan is easier to replace and more readily available for replacement. It can be purchased by the maintenance staff and field cut to fit. Tempered glass is more difficult to replace, it must be purchased to fit because tempered glass requires heat treating after it is cut to size. With either lens, it is recommended that spare lenses be specified to be provided by the manufacturer of the light fixtures.

Support and administrative areas accessible to inmates under direct supervision such as classrooms, activity, meeting rooms, etc. should have their door frames secured with tamperproof screws to protect access to the lamps. They should also be specified with high impact DR acrylic lensing. Fluorescent lamps with a broken end can make lethal weapons.

Security Fasteners: All exposed fasteners must be security type. To ensure compatibility between various contractors, architectural specification (usually 11190) should specify the type to be utilized and parameters for locations on the project and all other divisions of contract should refer to that section. This will eliminate multiple types being provided and the tools required to service them. A Torxhead with center pin is recommended.

Cell Door Identification: Each cell door controlled from a security station should include a stenciled identification on the door to correspond with the location on the security control touch screen or panel. This expedites the control process, especially under a stress related control action such as a cell extraction or cell fire alarm. Additionally, the fire alarm system should be programmed so that the identification is identical on both systems.

7.0 Estimate of Probable Cost of Construction

Building Costs

Building costs are estimated by applying unit costs to spaces of different uses such as administrative, circulation, support, public and storage spaces. The unit costs are developed from as-constructed costs of past projects and provide a realistic cost per classification type. The unit costs are generally on a square footage basis with adjustments for special conditions.

In addition to the cost of the building structure itself, project development costs need to be considered. Project development costs include professional design fees, construction testing and inspection, permitting, construction management, contingency and inflation. They are included in the above numbers.

See a detailed breakdown of costs in Appendix C of this report.

Appendix A

Existing Detention Center Plans

EXISTING LOWER LEVEL FLOOR PLAN

EXISTING MAIN LEVEL FLOOR PLAN

EXISTING LOWER LEVEL FLOOR PLAN

EXISTING MEZZANINE LEVEL FLOOR PLAN

EXISTING BUILDING SPACE LIST



① LOWER LEVEL EXISTING
3/16" = 1'-0"



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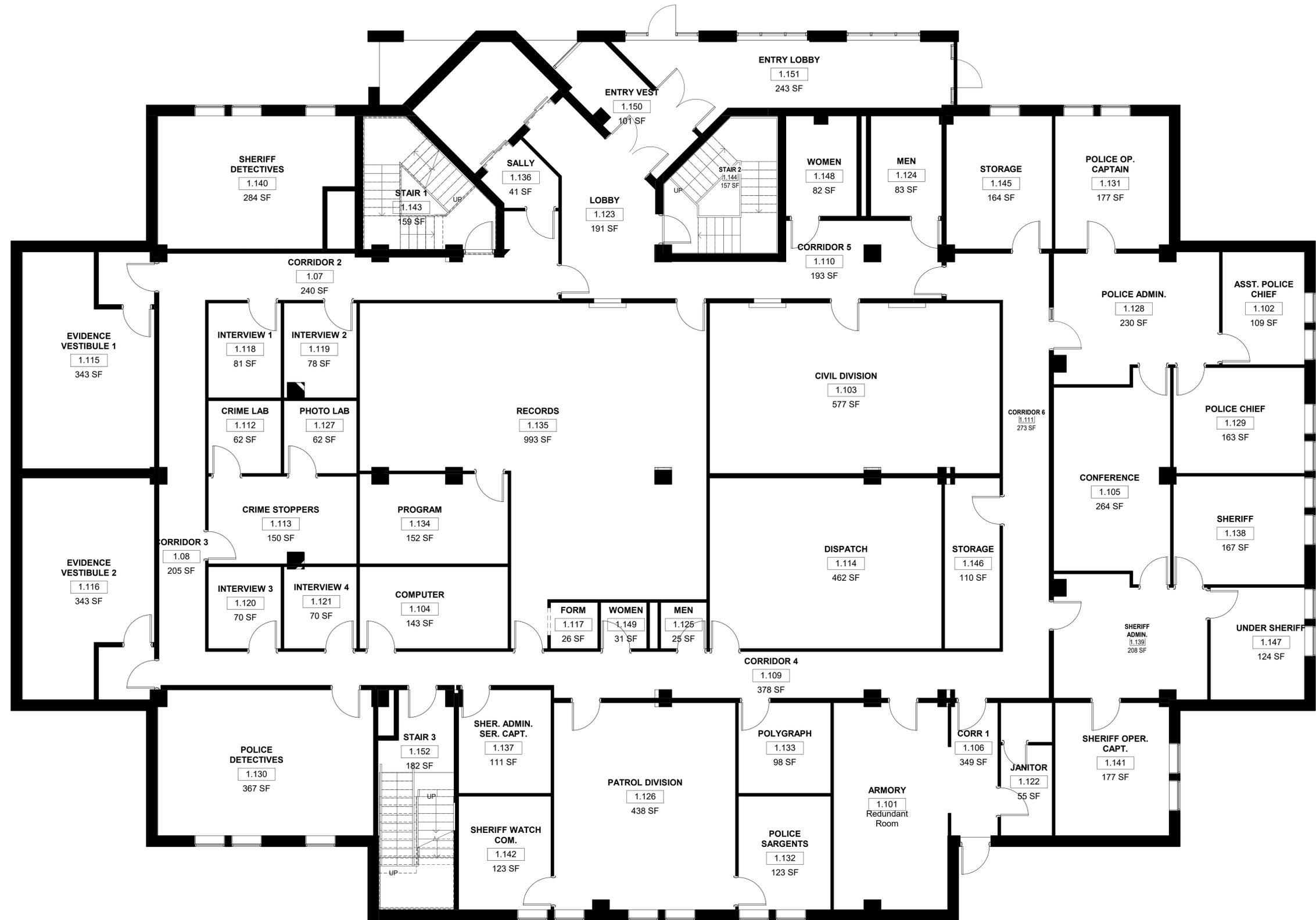
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LOWER LEVEL EXISTING
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Helena, Montana



① MAIN LEVEL EXISTING
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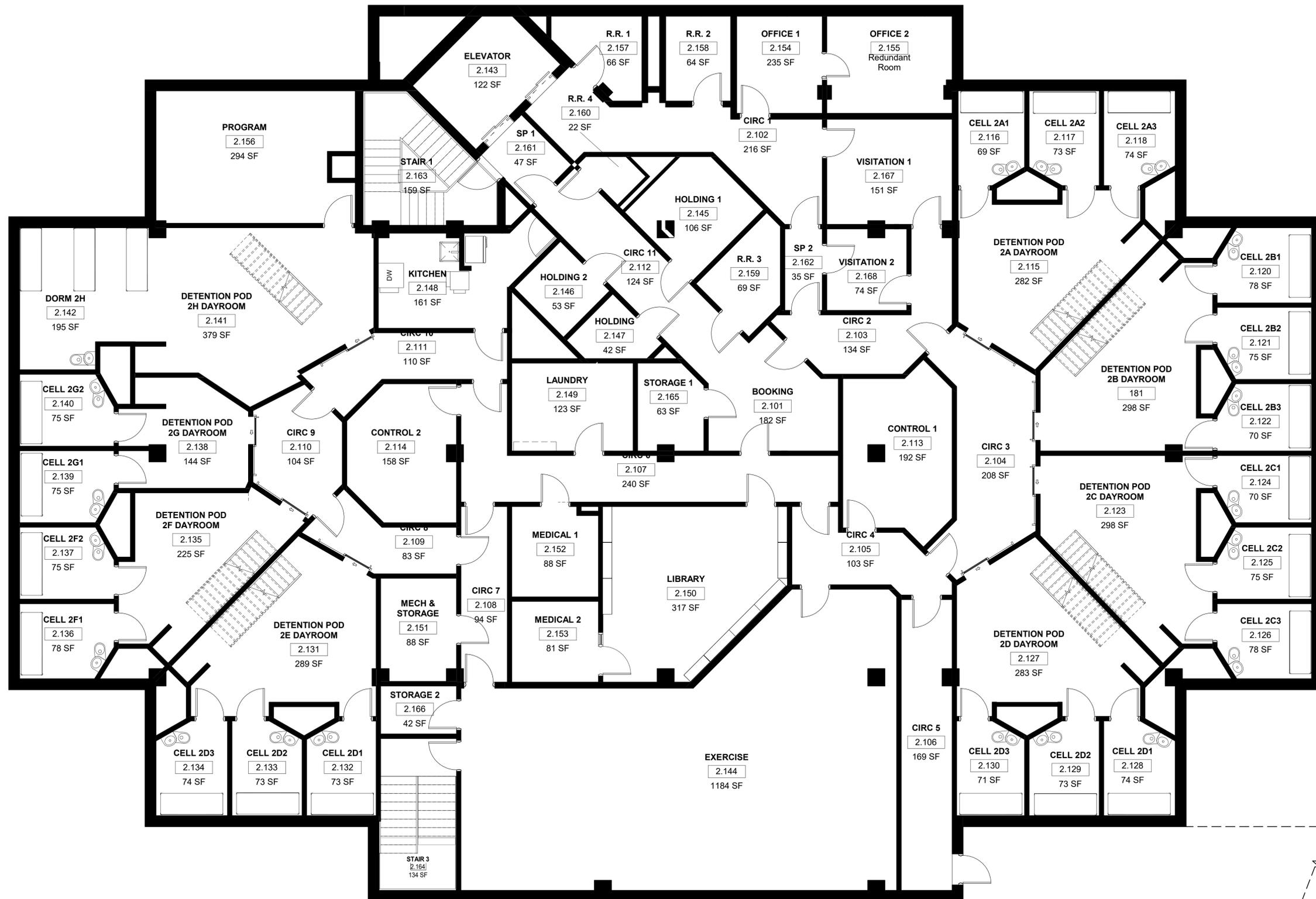
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MAIN LEVEL EXISTING
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① UPPER LEVEL EXISTING
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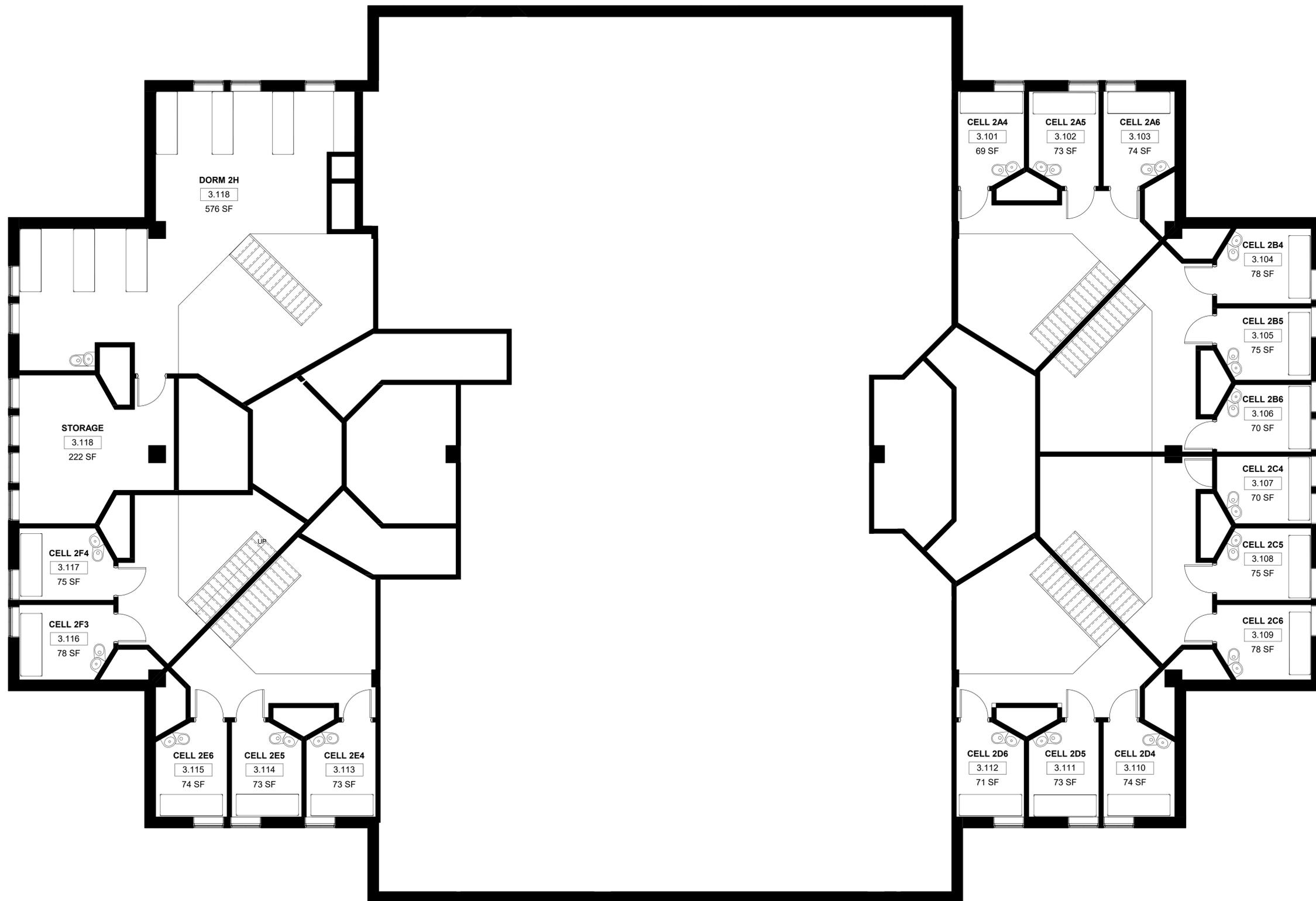
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UPPER LEVEL EXISTING
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Helena, Montana



① MEZZANINE LEVEL EXISTING
3/16" = 1'-0"

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MEZZANINE LEVEL EXISTING
LEWIS AND CLARK COUNTY -JAIL EXPANSION - PRELIMINARY DESIGN

Helena, Montana

Space #	Space Name	Persons or Items Per Area	Number of Areas	Space Standard	Square Feet	Comments
0.0 Existing Building						
0.100	Lower Level					
0.101	COOLER	1	1	184	184	TO REMAIN
0.102	CORRIDOR	1	1	196	196	DEMO
0.103	CORRIDOR	1	1	245	245	TO REMAIN
0.104	E.O.C.	1	1	292	292	DEMO
0.105	ELECTRICAL	1	1	292	292	TO BE RELOCATED / EXPANDED
0.106	ELEV. EQ.	1	1	123	123	TO REMAIN
0.107	EMER. POWER	1	1	130	130	TO BE RELOCATED / EXPANDED
0.108	EXERCISE ROOM	1	1	421	421	DEMO
0.109	JAN	1	1	39	39	DEMO
0.110	LOBBY	1	1	146	146	DEMO
0.111	LOUNGE	1	1	269	269	DEMO
0.112	MECHANICAL	1	1	170	170	TO REMAIN
0.113	MEETING ROOM	1	1	1129	1,129	DEMO
0.114	LOCKER ROOM MEN	1	1	471	471	DEMO
0.115	OFFICE	1	1	127	127	DEMO
0.116	SALLY PORT	1	1	40	40	DEMO
0.117	SHOWER 1	1	1	72	72	DEMO
0.118	SHOWER 2	1	1	64	64	DEMO
0.119	STAIR 1	1	1	159	159	TO REMAIN
0.120	STAIR 2	1	1	157	157	DEMO
0.121	STAIR 3	1	1	131	131	TO REMAIN
0.122	STG 1	1	1	36	36	DEMO
0.123	STG 2	1	1	47	47	DEMO
0.124	STG 3	1	1	34	34	DEMO
0.125	STORAGE 4	1	1	27	27	DEMO
0.126	TOILET	1	1	75	75	DEMO
0.127	VEHICLE SALLY PORT	1	1	720	720	TO REMAIN
0.128	LOCKER ROOM WOMEN	1	1	87	87	DEMO
0.129	ELEVATOR	1	1	0	0	TO REMAIN
Subtotal (NSF)					5,883	

1.100	Main Level					
1.101	ARMORY	1	1	274	274	DEMO
1.102	ASST. POLICE CHIEF	1	1	109	109	DEMO
1.103	CIVIL DIVISION	1	1	577	577	DEMO
1.104	COMPUTER	1	1	143	143	DEMO
1.105	CONFERENCE	1	1	264	264	DEMO
1.106	CORR. 1	1	1	73	73	RENOVATE
1.107	CORRIDOR 2	1	1	240	240	DEMO
1.108	CORRIDOR 3	1	1	205	205	DEMO
1.109	CORRIDOR 4	1	1	378	378	DEMO
1.110	CORRIDOR 5	1	1	193	193	RENOVATE
1.111	CORRIDOR 6	1	1	273	273	DEMO
1.112	CRIME LAB	1	1	62	62	DEMO
1.113	CRIME STOPPERS	1	1	150	150	DEMO
1.114	DISPATCH	1	1	462	462	DEMO
1.115	EVIDENCE VESTIBULE 1	1	1	343	343	DEMO
1.116	EVIDENCE VESTIBULE 2	1	1	343	343	DEMO
1.117	FORM	1	1	26	26	DEMO
1.118	INTERVIEW 1	1	1	81	81	DEMO
1.119	INTERVIEW 2	1	1	78	78	DEMO
1.120	INTERVIEW 3	1	1	70	70	DEMO
1.121	INTERVIEW 4	1	1	70	70	DEMO
1.122	JANITOR	1	1	55	55	DEMO
1.123	LOBBY	1	1	191	191	RENOVATE
1.124	MEN R.R.	1	1	83	83	TO REMAIN
1.125	MEN R.R.	1	1	25	25	DEMO
1.126	PATROL DIVISION	1	1	438	438	DEMO
1.127	PHOTO LAB	1	1	62	62	DEMO
1.128	POLICE ADMIN.	1	1	230	230	DEMO
1.129	POLICE CHIEF	1	1	163	163	DEMO
1.130	POLICE DETECTIVES	1	1	367	367	DEMO
1.131	POLICE OP. CAPTAIN	1	1	177	177	DEMO
1.132	POLICE SARGENTS	1	1	123	123	DEMO

1.133	POLYGRAPH	1	1	98	98	DEMO
1.134	PROGRAM	1	1	152	152	DEMO
1.135	RECORDS	1	1	993	993	DEMO
1.136	SALLYPORT	1	1	41	41	DEMO
1.137	SHER. ADMIN. SER. CAPT.	1	1	111	111	DEMO
1.138	SHERIFF	1	1	167	167	DEMO
1.139	SHERIFF ADMIN.	1	1	208	208	DEMO
1.140	SHERIFF DETECTIVES	1	1	284	284	DEMO
1.141	SHERIFF OPER. CAPT.	1	1	177	177	DEMO
1.142	SHERIFF WATCH COM.	1	1	123	123	DEMO
1.143	STAIR 1	1	1	159	159	TO REMAIN
1.144	STAIR 2	1	1	157	157	DEMO
1.145	STORAGE	1	1	164	164	DEMO
1.146	STORAGE	1	1	110	110	DEMO
1.147	UNDER SHERIFF	1	1	124	124	DEMO
1.148	WOMEN R.R.	1	1	82	82	TO REMAIN
1.149	WOMEN	1	1	31	31	DEMO
1.150	ENTRY VESTIBULE	1	1	101	101	DEMO
1.151	ENTRY LOBBY	1	1	243	243	TO REMAIN
1.152	STAIR 3	1	1	182	182	DEMO
1.153	ELEVATOR	1	1	0	0	TO REMAIN
Subtotal (NSF)					9,610	

2.100	Upper Level						
2.101	BOOKING	1	1	182	182	DEMO	
2.102	CIRC. 1	1	1	216	216	DEMO	
2.103	CIRC. 2	1	1	134	134	DEMO	
2.104	CIRC. 3	1	1	208	208	TO REMAIN	
2.105	CIRC. 4	1	1	103	103	TO REMAIN	
2.106	CIRC. 5	1	1	169	169	TO REMAIN	
2.107	CIRC. 6	1	1	240	240	TO REMAIN	
2.108	CIRC. 7	1	1	94	94	TO REMAIN	
2.109	CIRC. 8	1	1	83	83	TO REMAIN	
2.110	CIRC. 9	1	1	104	104	TO REMAIN	
2.111	CIRC. 10	1	1	110	110	TO REMAIN	
2.112	CIRC. 11	1	1	124	?	VERIFY	
2.113	CONTROL 1	1	1	192	192	TO REMAIN	
2.114	CONTROL 2					TO REMAIN	
2.115	DETENTION POD 2A - DAYROOM	1	1	282	282	TO REMAIN	
2.116	DETENTION POD 2A1 - CELL	1	1	69	69	TO REMAIN	
2.117	DETENTION POD 2A2 - CELL	1	1	73	73	TO REMAIN	
2.118	DETENTION POD 2A3 - CELL	1	1	74	74	TO REMAIN	
2.119	DETENTION POD 2B - DAYROOM	1	1	298	298	TO REMAIN	
2.120	DETENTION POD 2B1 - CELL	1	1	78	78	TO REMAIN	
2.121	DETENTION POD 2B2 - CELL	1	1	75	75	TO REMAIN	
2.122	DETENTION POD 2B3 - CELL	1	1	70	70	TO REMAIN	
2.123	DETENTION POD 2C - DAYROOM	1	1	298	298	TO REMAIN	
2.124	DETENTION POD 2C1 - CELL	1	1	70	70	TO REMAIN	
2.125	DETENTION POD 2C2 - CELL	1	1	75	75	TO REMAIN	
2.126	DETENTION POD 2C3 - CELL	1	1	78	78	TO REMAIN	
2.127	DETENTION POD 2D - DAYROOM	1	1	283	283	TO REMAIN	
2.128	DETENTION POD 2D1 - CELL	1	1	74	74	TO REMAIN	
2.129	DETENTION POD 2D2 - CELL	1	1	73	73	TO REMAIN	
2.130	DETENTION POD 2D3 - CELL	1	1	71	71	TO REMAIN	
2.131	DETENTION POD 2E - DAYROOM	1	1	289	289	TO REMAIN	
2.132	DETENTION POD 2E1 - CELL	1	1	73	73	TO REMAIN	
2.133	DETENTION POD 2E2 - CELL	1	1	73	73	TO REMAIN	
2.134	DETENTION POD 2E3 - CELL	1	1	74	74	TO REMAIN	
2.135	DETENTION POD 2F - DAYROOM	1	1	193	193	TO REMAIN	
2.136	DETENTION POD 2F1 - CELL	1	1	78	78	TO REMAIN	
2.137	DETENTION POD 2F2 - CELL	1	1	75	75	TO REMAIN	
2.138	DETENTION POD 2G - DAYROOM	1	1	144	144	TO REMAIN	
2.139	DETENTION POD 2G1 - CELL	1	1	75	75	TO REMAIN	
2.140	DETENTION POD 2G1 - CELL	1	1	75	75	TO REMAIN	
2.141	DETENTION POD 2H - DAYROOM	1	1	378	378	RENOVATE	
2.142	DETENTION POD 2H - DORM	1	1	195	195	RENOVATE	

2.143	ELEVATOR	1	1	122	122	TO REMAIN
2.144	EXERCISE	1	1	1184	1,184	TO REMAIN
2.145	HOLDING 1	1	1	106	106	DEMO
2.146	HOLDING 2	1	1	53	53	DEMO
2.147	HOLDING 3	1	1	42	42	DEMO
2.148	KITCHEN	1	1	161	161	DEMO
2.149	LAUNDRY	1	1	123	123	DEMO
2.150	LIBRARY	1	1	317	317	DEMO
2.151	MECH & STORAGE	1	1	88	88	TO REMAIN
2.152	MEDICAL 1	1	1	88	88	DEMO
2.153	MEDICAL 2	1	1	81	81	DEMO
2.154	OFFICE 1	1	1	96	96	DEMO
2.155	OFFICE 2	1	1	139	139	DEMO
2.156	PROGRAM	1	1	294	294	DEMO
2.157	R.R. 1	1	1	66	66	TO REMAIN
2.158	R.R. 2	1	1	64	64	DEMO
2.159	R.R. 3	1	1	69	69	DEMO
2.160	R.R. 4	1	1	22	22	DEMO
2.161	SP 1	1	1	47	47	RENOVATE
2.162	SP 2	1	1	35	35	DEMO
2.163	STAIR 1	1	1	159	159	TO REMAIN
2.164	STAIR 3	1	1	134	134	TO REMAIN
2.165	STORAGE 1	1	1	63	63	DEMO
2.166	STORAGE 2	1	1	42	42	TO REMAIN
2.167	VISITATION 1	1	1	151	151	DEMO
2.168	VISITATION 2	1	1	74	74	DEMO
Subtotal (NSF)					9,418	

3.100 Mezzanine and Attic						
3.101	DETENTION POD 2A4 - CELL	1	1	69	69	TO REMAIN
3.102	DETENTION POD 2A5 - CELL	1	1	73	73	TO REMAIN
3.103	DETENTION POD 2A6 - CELL	1	1	74	74	TO REMAIN
3.104	DETENTION POD 2B4 - CELL	1	1	78	78	TO REMAIN
3.105	DETENTION POD 2B5 - CELL	1	1	75	75	TO REMAIN
3.106	DETENTION POD 2B6 - CELL	1	1	70	70	TO REMAIN
3.107	DETENTION POD 2C4 - CELL	1	1	70	70	TO REMAIN
3.108	DETENTION POD 2C5 - CELL	1	1	75	75	TO REMAIN
3.109	DETENTION POD 2C6 - CELL	1	1	78	78	TO REMAIN
3.110	DETENTION POD 2D4 - CELL	1	1	74	74	TO REMAIN
3.111	DETENTION POD 2D5 - CELL	1	1	73	73	TO REMAIN
3.112	DETENTION POD 2D6 - CELL	1	1	71	71	TO REMAIN
3.113	DETENTION POD 2E4 - CELL	1	1	73	73	TO REMAIN
3.114	DETENTION POD 2E5 - CELL	1	1	73	73	TO REMAIN
3.115	DETENTION POD 2E6 - CELL	1	1	74	74	TO REMAIN
3.116	DETENTION POD 2F3 - CELL	1	1	78	78	TO REMAIN
3.117	DETENTION POD 2F4 - CELL	1	1	75	75	TO REMAIN
3.118	DETENTION POD 2H -DORM	1	1	576	576	RENOVATE
3.119	DETENTION POD 2H - STORAGE	1	1	222	222	RENOVATE
3.120	ATTIC / MECHANICAL	1	1	3272	3,272	
				Subtotal (NSF)	5,323	
				Total Area (NSF)	30,234	
				Building Gross	3,073	
				TOTAL AREA (DGSF)	33,307	

Appendix B

Detention Center Architectural Schematic Plans

PROPOSED LOWER LEVEL FLOOR PLAN

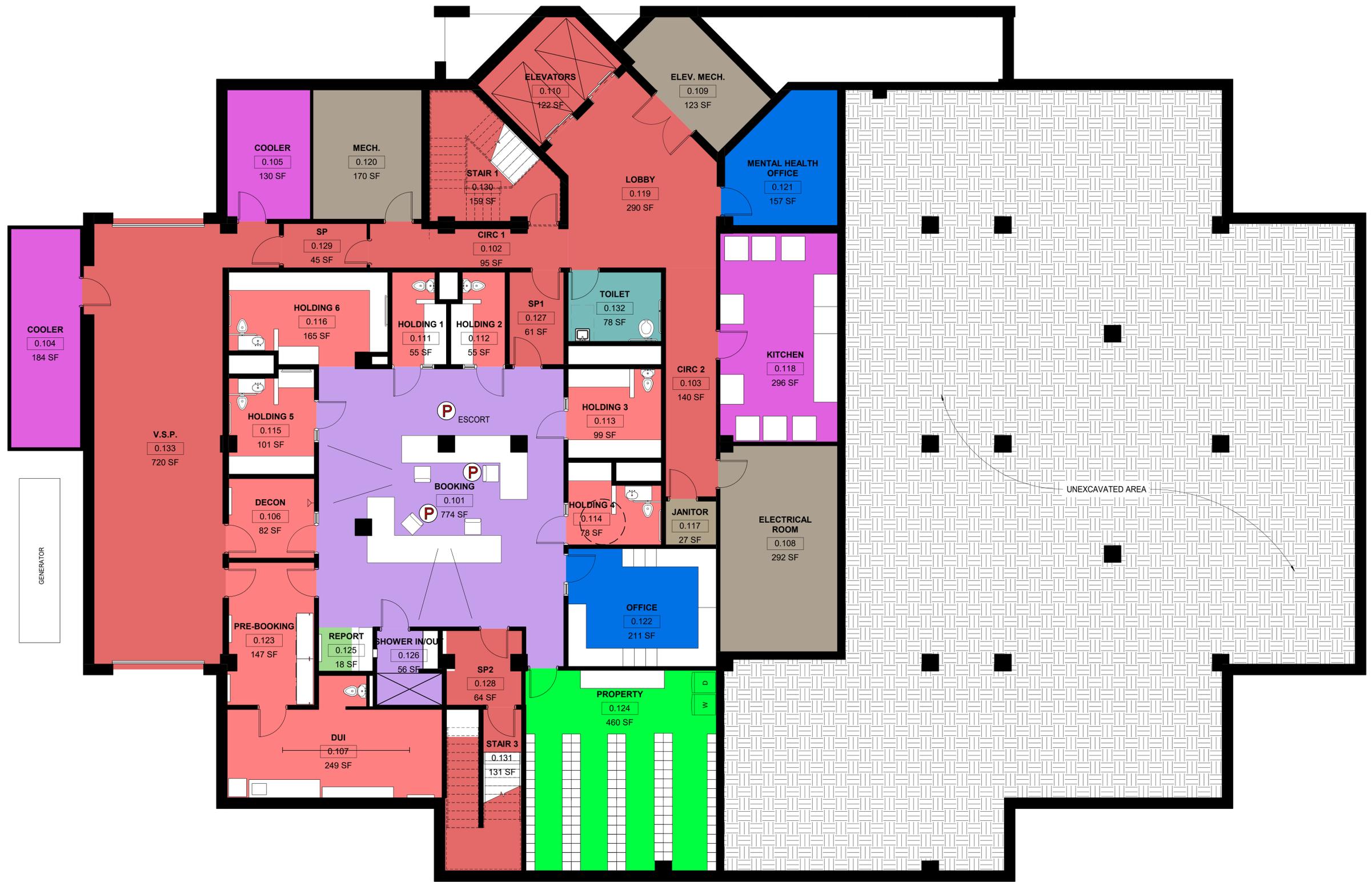
PROPOSED MAIN LEVEL FLOOR PLAN

PROPOSED LOWER LEVEL FLOOR PLAN

PROPOSED MEZZANINE LEVEL FLOOR PLAN

PROPOSED BUILDING SPACE LIST

DESIGN SPACE PROGRAM



1 PROPOSED LOWER LEVEL FLOOR PLAN
3/16" = 1'-0"



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LOWER LEVEL FLOOR PLAN

LEWIS AND CLARK COUNTY -JAIL EXPANSION - PRELIMINARY DESIGN

Helena, Montana



1 PROPOSED MAIN LEVEL FLOOR PLAN
3/16" = 1'-0"



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MAIN LEVEL FLOOR PLAN

LEWIS AND CLARK COUNTY -JAIL EXPANSION - PRELIMINARY DESIGN

Helena, Montana



1 PROPOSED UPPER LEVEL FLOOR PLAN
3/16" = 1'-0"

UPPER LEVEL FLOOR PLAN

LEWIS AND CLARK COUNTY -JAIL EXPANSION - PRELIMINARY DESIGN

Helena, Montana

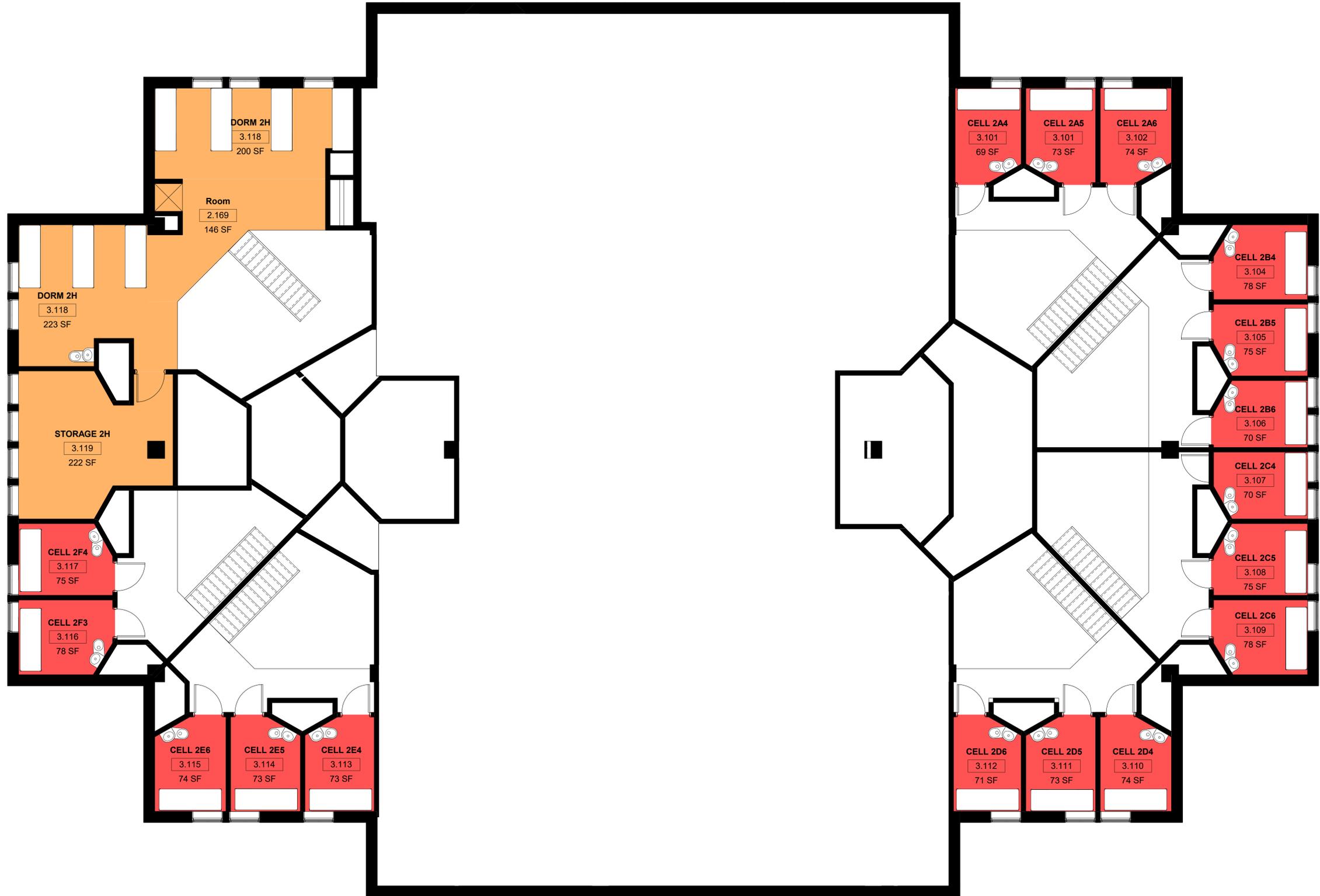


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① PROPOSED MEZZANINE LEVEL FLOOR PLAN
3/16" = 1'-0"

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MEZZANINE LEVEL FLOOR PLAN
LEWIS AND CLARK COUNTY -JAIL EXPANSION - PRELIMINARY DESIGN

Helena, Montana

Space #	Space Name	Persons or Items Per Area	Number of Areas	Space Standard	Square Feet	Comments
0.0 Design Space Program						
0.100	Lower Level					
0.101	BOOKING	1	1	774	774	PHOTO, FINGER PRINT, PROPERTY
0.102	CIRC. 1	1	1	95	95	
0.103	CIRC. 2	1	1	140	140	
0.104	COOLER 1	1	1	184	184	EXISTING
0.105	COOLER 2	1	1	130	130	CONFIRM EXPANSION OF COOLER 1
0.106	DECON	1	1	82	82	
0.107	DUI	1	1	249	249	BLOOD DRAW
0.108	ELECTRICAL ROOM	1	1	292	292	
0.109	ELEV. MECH.	1	1	123	123	EXISTING
0.110	ELEVATORS	1	1	122	122	EXISTING
0.111	HOLDING 1	1	1	55	55	
0.112	HOLDING 2	1	1	55	55	
0.113	HOLDING 3 - GROUP	1	1	99	99	
0.114	HOLDING 4	1	1	78	78	ADA COMPLIANT
0.115	HOLDING 5 - GROUP	1	1	101	101	ADA COMPLIANT
0.116	HOLDING 6 - OPEN	1	1	165	165	ADA COMPLIANT
0.117	JANITOR	1	1	27	27	
0.118	KITCHEN	1	1	296	296	
0.119	LOBBY	1	1	290	290	
0.120	MECH.	1	1	170	170	EXISTING
0.121	MENTAL HEALTH OFFICE	1	1	157	157	
0.122	OFFICE	1	1	211	211	
0.123	PRE-BOOKING	1	1	147	147	
0.124	PROPERTY	1	1	460	460	PROVIDE W/D
0.125	REPORT	1	1	18	18	
0.126	SHOWER IN/OUT	1	1	56	56	
0.127	SP 1	1	1	61	61	
0.128	SP 2	1	1	64	64	
0.129	SP 3	1	1	45	45	
0.130	STAIR 1	1	1	159	159	EXISTING
0.131	STAIR 3	1	1	131	131	EXISTING
0.132	TOILET	1	1	78	78	ADA COMPLIANT
0.133	VEHICLE SALLPORT	1	1	720	720	EXISTING
Subtotal (NSF)					5,834	

Space #	Space Name	Persons or Items Per Area	Number of Areas	Space Standard	Square Feet	Comments
1.100	Main Level					
1.101	BREAK/BRIEFING ROOM	1	1	340	340	
1.102	CIRC 1	1	1	195	195	
1.103	CIRC 2	1	1	89	89	
1.104	CIRC 3	1	1	423	423	
1.105	CIRC 4	1	1	108	108	
1.106	CIRC 5	1	1	513	513	
1.107	CONTROL 1	1	1	116	116	CONTROL / SGT OFFICE
1.108	DETENTION POD 1A - DAYROOM	1	1	279	279	
1.109	DETENTION POD 1A1 - CELL	1	1	71	71	
1.110	DETENTION POD 1A2 - CELL	1	1	72	72	
1.111	DETENTION POD 1A3 - CELL	1	1	71	71	
1.112	DETENTION POD 1B - DAYROOM	1	1	207	207	
1.113	DETENTION POD 1B1 - CELL	1	1	77	77	
1.114	DETENTION POD 1B2 - CELL	1	1	71	71	
1.115	DETENTION POD 1C - DAYROOM	1	1	154	154	
1.116	DETENTION POD 1C1 - CELL	1	1	71	71	
1.117	DETENTION POD 1C2 - CELL	1	1	71	71	
1.118	DETENTION POD 1D - DAYROOM	1	1	213	213	
1.119	DETENTION POD 1D1 - CELL	1	1	71	71	
1.120	DETENTION POD 1D2 - CELL	1	1	77	77	
1.121	DETENTION POD 1E - DAYROOM	1	1	353	353	
1.122	DETENTION POD 1E - DORM	1	1	148	148	
1.123	DETENTION POD 1F - DAYROOM	1	1	1413	1,413	
1.124	DETENTION POD 1F - DORM	1	1	720	720	
1.125	DETENTION POD 1F - RESTROOM	1	1	137	137	
1.126	DETENTION POD 1F - SHOWER	1	1	91	91	
1.127	DETENTION POD 1F - STAFF STATION	1	1	47	47	
1.128	ENTRY LOBBY	1	1	264	264	
1.129	ELEVATOR	1	1	122	122	

Space #	Space Name	Persons or Items Per Area	Number of Areas	Space Standard	Square Feet	Comments
1.130	INTERVIEW 1	1	1	71	71	MENTAL HEALTH SUPPORT
1.131	INTERVIEW 2	1	1	65	65	MENTAL HEALTH SUPPORT
1.132	INTERVIEW 3 - PUBLIC	1	1	81	81	OUTSIDE SECURITY
1.133	JANITOR	1	1	70	70	
1.134	LOBBY	1	1	191	191	
1.135	LOCKER ROOM	1	1	215	215	MAIL / FEMALE
1.136	LOCKER ROOM - SHOWER 1	1	1	35	35	
1.137	LOCKER ROOM - SHOWER 2	1	1	36	36	
1.138	LOCKER ROOM - SHOWER 3	1	1	63	63	
1.139	MEN R.R.	1	1	83	83	
1.140	MEDICAL LAB	1	1	67	67	
1.141	MEDICAL CLINIC	1	1	253	253	
1.142	OFFICE 1	1	1	104	104	
1.143	OFFICE 2	1	1	146	146	
1.144	PROGRAM 1	1	1	263	263	
1.145	PROGRAM 2	1	1	186	186	
1.146	PUBLIC COORDINATOR	1	1	157	157	
1.147	SP 1	1	1	156	156	
1.148	SP 2	1	1	48	48	
1.149	SP 3	1	1	97	97	
1.150	STAFF R.R.	1	1	59	59	
1.151	STAIR 1	1	1	159	159	
1.152	STAIR 3	1	1	182	182	
1.153	STORAGE	1	1	121	121	
1.154	VESTIBULE	1	1	73	73	
1.155	VISITATION - PUBLIC	1	1	98	98	
1.156	VISITATION - INMATE	1	1	97	97	
1.157	VISITATION - PUBLIC ATTURNEY	1	1	45	45	
1.158	VISITATION - INMATE ATTURNEY	1	1	44	44	
1.159	WOMEN R.R.	1	1	82	82	
1.160	WORK STATION	1	1	37	37	
Subtotal (NSF)					9,931	

Space #	Space Name	Persons or Items Per Area	Number of Areas	Space Standard	Square Feet	Comments
2.100	Upper Level					
2.101	STAFF R.R.	1	1	45	45	TO REMAIN
2.102	CIRC. 1	1	1	114	114	RENOVATE
2.103	CIRC. 2	1	1	139	139	RENOVATE
2.104	CIRC. 3	1	1	208	208	TO REMAIN
2.105	CIRC. 4	1	1	103	103	TO REMAIN
2.106	CIRC. 5	1	1	169	169	TO REMAIN
2.107	CIRC. 6	1	1	242	242	TO REMAIN
2.108	CIRC. 7	1	1	96	96	TO REMAIN
2.109	CIRC. 8	1	1	85	85	TO REMAIN
2.110	CIRC. 9	1	1	104	104	TO REMAIN
2.111	CIRC. 10	1	1	110	110	TO REMAIN
2.112	CIRC. 11	1	1	149	149	NEW
2.113	CONTROL 1	1	1	192	192	TO REMAIN
2.114	CONTROL 2	1	1	158	158	TO REMAIN
2.115	DETENTION POD 2A - DAYROOM	1	1	587	587	TO REMAIN
2.116	DETENTION POD 2A1 - CELL	1	1	69	69	TO REMAIN
2.117	DETENTION POD 2A2 - CELL	1	1	73	73	TO REMAIN
2.118	DETENTION POD 2A3 - CELL	1	1	74	74	TO REMAIN
2.119	DETENTION POD 2B - DAYROOM	1	1	298	298	TO REMAIN
2.120	DETENTION POD 2B1 - CELL	1	1	78	78	TO REMAIN
2.121	DETENTION POD 2B2 - CELL	1	1	75	75	TO REMAIN
2.122	DETENTION POD 2B3 - CELL	1	1	70	70	TO REMAIN
2.123	DETENTION POD 2C - DAYROOM	1	1	298	298	TO REMAIN
2.124	DETENTION POD 2C1 - CELL	1	1	70	70	TO REMAIN
2.125	DETENTION POD 2C2 - CELL	1	1	75	75	TO REMAIN
2.126	DETENTION POD 2C3 - CELL	1	1	78	78	TO REMAIN
2.127	DETENTION POD 2D - DAYROOM	1	1	283	283	TO REMAIN
2.128	DETENTION POD 2D1 - CELL	1	1	74	74	TO REMAIN
2.129	DETENTION POD 2D2 - CELL	1	1	73	73	TO REMAIN
2.130	DETENTION POD 2D3 - CELL	1	1	71	71	TO REMAIN
2.131	DETENTION POD 2E - DAYROOM	1	1	289	289	TO REMAIN

Space #	Space Name	Persons or Items Per Area	Number of Areas	Space Standard	Square Feet	Comments
2.132	DETENTION POD 2E1 - CELL	1	1	73	73	TO REMAIN
2.133	DETENTION POD 2E2 - CELL	1	1	73	73	TO REMAIN
2.134	DETENTION POD 2E3 - CELL	1	1	74	74	TO REMAIN
2.135	DETENTION POD 2F - DAYROOM	1	1	225	225	TO REMAIN
2.136	DETENTION POD 2F1 - CELL	1	1	78	78	TO REMAIN
2.137	DETENTION POD 2F2 - CELL	1	1	75	75	TO REMAIN
2.138	DETENTION POD 2G - DAYROOM	1	1	145	145	TO REMAIN
2.139	DETENTION POD 2G1 - CELL	1	1	75	75	TO REMAIN
2.140	DETENTION POD 2G2 - CELL	1	1	75	75	TO REMAIN
2.141	DETENTION POD 2H - DAYROOM	1	1	662	662	RENOVATE
2.142	DETENTION POD 2H - DORM	1	1	194	194	RENOVATE
2.143	ELEVATOR	1	1	122	122	TO REMAIN
2.144	EXERCISE1	1	1	682	682	RENOVATE
2.145	EXERCISE 2	1	1	492	492	RENOVATE
2.146	DETENTION POD 2I - DAYROOM	1	1	566	566	NEW
2.147	DETENTION POD 2I - DORM	1	1	254	254	NEW
2.148	DETENTION POD 2I - R.R.	1	1	77	77	NEW
2.149	LAUNDRY	1	1	185	185	RENOVATE
2.150	INTERVIEW 1	1	1	88	88	RENOVATE
2.151	MECH & STORAGE	1	1	88	88	TO REMAIN
2.152	INTERVIEW 2	1	1	88	88	RENOVATE
2.153	LIBRARY	1	1	81	81	RENOVATE
2.154	NOT USED					
2.155	NOT USED					
2.156	PROGRAM	1	1	317	317	RENOVATE
2.157	R.R. 1	1	1	66	66	TO REMAIN
2.158	NOT USED					
2.159	NOT USED					
2.160	NOT USED					
2.161	SP 1	1	1	47	47	RENOVATE
2.162	NOT USED					
2.163	STAIR 1	1	1	159	159	TO REMAIN
2.164	STAIR 3	1	1	134	134	TO REMAIN
2.165	STORAGE 1	1	1	95	95	NEW
2.166	STORAGE 2	1	1	42	42	TO REMAIN
2.167	VISITATION PUBLIC	1	1	95	95	NEW
2.168	VISITATION INMATE	1	1	78	78	NEW
Subtotal (NSF)					10,054	

Space #	Space Name	Persons or Items Per Area	Number of Areas	Space Standard	Square Feet	Comments
3.100	Mezzanine and Attic					
3.101	DETENTION POD 2A4 - CELL	1	1	69	69	TO REMAIN
3.102	DETENTION POD 2A5 - CELL	1	1	73	73	TO REMAIN
3.103	DETENTION POD 2A6 - CELL	1	1	74	74	TO REMAIN
3.104	DETENTION POD 2B4 - CELL	1	1	78	78	TO REMAIN
3.105	DETENTION POD 2B5 - CELL	1	1	75	75	TO REMAIN
3.106	DETENTION POD 2B6 - CELL	1	1	70	70	TO REMAIN
3.107	DETENTION POD 2C4 - CELL	1	1	70	70	TO REMAIN
3.108	DETENTION POD 2C5 - CELL	1	1	75	75	TO REMAIN
3.109	DETENTION POD 2C6 - CELL	1	1	78	78	TO REMAIN
3.110	DETENTION POD 2D4 - CELL	1	1	74	74	TO REMAIN
3.111	DETENTION POD 2D5 - CELL	1	1	73	73	TO REMAIN
3.112	DETENTION POD 2D6 - CELL	1	1	71	71	TO REMAIN
3.113	DETENTION POD 2E4 - CELL	1	1	73	73	TO REMAIN
3.114	DETENTION POD 2E5 - CELL	1	1	73	73	TO REMAIN
3.115	DETENTION POD 2E6 - CELL	1	1	74	74	TO REMAIN
3.116	DETENTION POD 2F3 - CELL	1	1	78	78	TO REMAIN
3.117	DETENTION POD 2F4 - CELL	1	1	75	75	TO REMAIN
3.118	DETENTION POD 2H -DORM	1	1	423	423	RENOVATE
3.119	DETENTION POD 2H - STORAGE	1	1	222	222	RENOVATE
3.120	ATTIC / MECHANICAL	1	1	3272	3,272	
				Subtotal (NSF)	5,170	
				Total Area (NSF)	30,989	
				Building Gross	2,318	
				TOTAL AREA (DGSF)	33,307	

Appendix C

Facility Capacity Analysis

Preliminary Estimate of Cost of Construction

Program No.	Housing Space	NSF	Room Quantities	Fixture Capacity	ACA Rated Cap	Montana Rated Cap	Proposed Opp Cap	Emergency Cap	
Facility Capacity Analysis									
1.100	First Floor								
1.108	DETENTION POD 1A - DAYROOM	279	1	8	8	8	5	6	
1.109	DETENTION POD 1A1 - CELL	71	1		2	1	2	2	MJS 18.02.01.A
1.110	DETENTION POD 1A2 - CELL	72	1		2	1	2	2	
1.111	DETENTION POD 1A3 - CELL	71	1		2	1	1	2	ONE SINGLE CELL PER POD
1.112	DETENTION POD 1B - DAYROOM	207	1	8	6	6	3	4	
1.113	DETENTION POD 1B1 - CELL	77	1		2	1	2	2	
1.114	DETENTION POD 1B2 - CELL	71	1		2	1	1	2	ONE SINGLE CELL PER POD
1.115	DETENTION POD 1C - DAYROOM	154	1	8	4	4	3	4	
1.116	DETENTION POD 1C1 - CELL	71	1		2	1	2	2	
1.117	DETENTION POD 1C2 - CELL	71	1		2	1	1	2	ONE SINGLE CELL PER POD
1.118	DETENTION POD 1D - DAYROOM	213	1	8	6	6	3	4	
1.119	DETENTION POD 1D1 - CELL	71	1		2	1	2	2	
1.120	DETENTION POD 1D2 - CELL	77	1		2	1	1	2	ONE SINGLE CELL PER POD
1.121	DETENTION POD 1E - DAYROOM	353	1	8	10	10	8	10	LIMITED BY FIXTURE COUNT (add shwr?)
1.122	DETENTION POD 1E - DORM	148	1		10	10	8	10	
1.123	DETENTION POD 1F - DAYROOM	1413	1	40	40	40	40	44	LIMITED BY FIXTURE COUNT
1.124	DETENTION POD 1F - DORM	720	1		40	40	40	44	
	Fixture Capacity			80					
	Dayroom Capacity				74	74	62	72	
	Cell Capacity				68	59	62	72	
	Rated Capacity						62		
	Emergency Capacity							72	

Program No.	Housing Space	NSF	Room Quantities	Fixture Capacity	ACA Rated Cap	Montana Rated Cap	Proposed Opp Cap	Emergency Cap	
2.100	Main Level								
2.115	DETENTION POD 2A - DAYROOM	282	1	8	8	8	8	9	
2.116	DETENTION POD 2A1 - CELL	69	2		4	2	3	3	
2.117	DETENTION POD 2A2 - CELL	73	2		4	2	3	3	
2.118	DETENTION POD 2A3 - CELL	74	2		4	2	2	3	
2.119	DETENTION POD 2B - DAYROOM	298	1	8	8	8	8	9	
2.120	DETENTION POD 2B1 - CELL	78	2		4	2	3	3	
2.121	DETENTION POD 2B2 - CELL	75	2		4	2	3	3	
2.122	DETENTION POD 2B3 - CELL	70	2		4	2	2	3	
2.123	DETENTION POD 2C - DAYROOM	298	1	8	8	8	8	9	
2.124	DETENTION POD 2C1 - CELL	70	2		4	2	3	3	
2.125	DETENTION POD 2C2 - CELL	75	2		4	2	3	3	
2.126	DETENTION POD 2C3 - CELL	78	2		4	2	2	3	
2.127	DETENTION POD 2D - DAYROOM	283	1	8	8	8	8	9	
2.128	DETENTION POD 2D1 - CELL	74	2		4	2	3	3	
2.129	DETENTION POD 2D2 - CELL	73	2		4	2	3	3	
2.130	DETENTION POD 2D3 - CELL	71	2		4	2	2	3	
2.131	DETENTION POD 2E - DAYROOM	289	1	8	8	8	8	9	
2.132	DETENTION POD 2E1 - CELL	73	2		4	2	3	3	
2.133	DETENTION POD 2E2 - CELL	73	2		4	2	3	3	
2.134	DETENTION POD 2E3 - CELL	74	2		4	2	2	3	
2.135	DETENTION POD 2F - DAYROOM	193	1	8	5	5	5	6	
2.136	DETENTION POD 2F1 - CELL	78	2		4	2	2	3	
2.137	DETENTION POD 2F2 - CELL	75	2		4	2	3	3	
2.138	DETENTION POD 2G - DAYROOM	144	1	8	4	4	4	6	
2.139	DETENTION POD 2G1 - CELL	75	1		2	1	2	3	
2.140	DETENTION POD 2G1 - CELL	75	1		2	1	2	3	
2.141	DETENTION POD 2H - DAYROOM	808	1	24	23	23	20	22	
2.142	DETENTION POD 2H - DORM	617	1		20	20	20	22	
2.146	DETENTION POD 2I - DAYROOM	566	1	16	16	16	16	18	
2.147	DETENTION POD 2I - DORM	254	1		16	16	16	18	

Program No.	Housing Space	NSF	Room Quantities	Fixture Capacity	ACA Rated Cap	Montana Rated Cap	Proposed Opp Cap	Emergency Cap	
	Fixture Capacity			72					
	Dayroom Capacity				88	88	85	97	
	Cell Capacity				108	72	85	97	
	Rated Capacity						85		
	Emergency Capacity							97	
Capacity Recap									
	Facility Capacity								
				Fixture Capacity	ACA Rated Cap	Montana Rated Cap	Proposed Opp Cap	Emergency Cap	
	Bed Count			152	156	131	147	169	



Programming

Project No. : 18033
 Project Name : L&C County Detention Remodel
 Date : July 19, 2018
 Area of Work : 29,204

OPINION OF PROBABLE COST (RENOVATION TO THE EXISTING FACILITY)

(Note: This estimate is schematic in nature and is not intended to be a contractual budget amount. Line item costs provided are estimate is based on preliminary design. The information contained herein is only for use by the project owner. Actual cost may range between 10%-15% - plus or minus.)

Overview	Total	Cost/SF
Line Item Subtotal	\$ 5,646,641	\$ 193.35
General Conditions (10%)	\$ 564,664	\$ 19.34
Contractor Overhead and Profit (15%)	\$ 846,996	\$ 29.00
Construction Total	\$ 7,058,301	\$ 241.69
Permitting and Other Fees	\$ 35,000	\$ 1.20
Owner Contingency (10%)	\$ 705,830	\$ 24.17
Professional Design Services Estimate (11%)	\$ 776,413	\$ 26.59
Total Project Cost	\$ 8,575,545	\$293.64

Line Item Information						
Name	Description of Scope of Work	Unit	Amount	Cost per Unit	Total	Cost/SF
Ceiling Demolition	Demo the existing ceiling	SF	18,206	\$ 2.00	\$ 36,412	\$ 1.25
Wall Demolition	Existing wall demolition and prep for new construction	SF	19,209	\$ 3.25	\$ 62,429	\$ 2.14
Flooring Demolition	Demo the existing flooring	SF	29,204	\$ 1.25	\$ 36,505	\$ 1.25
Asbestos Abatement	Allowance for abating asbestos	Allow	1	\$ 92,965.00	\$ 92,965	\$ 3.18
CMU Walls	New 6" CMU reinforced walls.	SF	14,516	\$ 11.00	\$ 159,676	\$ 5.47
Concrete Polishing	Concrete polishing for new finish	MSF	19	\$ 3,075.50	\$ 58,435	\$ 2.00
Block Filler	CMU block filler	SF	29,032	\$ 1.28	\$ 37,161	\$ 1.27
Painting	Paint CMU Wall	SF	29,032	\$ 0.87	\$ 25,258	\$ 0.86
Detention Ceiling	Basis of Design Armstrong SecureLock Plus	SF	13,680	\$ 34.00	\$ 465,120	\$ 15.93
Windows Interior	Visitor Windows	EA	8	\$ 5,055.00	\$ 40,440	\$ 1.38
Windows Exterior	New windows: Detention, west	EA	6	\$ 5,690.00	\$ 34,140	\$ 1.17
Detention Doors	New Detention Slider doors (Assume Existing to Remain)	EA	6	\$ 10,000.00	\$ 60,000	\$ 2.05
Electrified Security Doors	Swing Security Doors (new)	EA	69	\$ 7,100.00	\$ 489,900	\$ 16.78
Lighting/Detention Lighting	Detention rated and office lighting	SF	29,204	\$ 4.50	\$ 131,418	\$ 4.50
Electrical Renovations	Electrical system updates		29,204	\$ 8.10	\$ 236,552	\$ 8.10
Restroom and Janitor	New restrooms and janitor closets	SF	679	\$ 250.00	\$ 169,750	\$ 5.81
Mechanical Renovations	Mechanical system updates	SF	29,204	\$ 26.25	\$ 766,605	\$ 26.25
Plumbing Renovations	Includes new detention plumbing fixtures and updated piping as needed	SF	29,204	\$ 12.00	\$ 350,448	\$ 12.00
Laundry	New Laundry Room	SF	185	\$ 250.00	\$ 46,250	\$ 1.58
Kitchen	New kitchen facility on the first floor	SF	296	\$ 350.00	\$ 103,600	\$ 3.55
Security systems	New security including locks and cameras (Entire Facility)	SF	29,204	\$ 19.80	\$ 578,239	\$ 19.80
Fire Alarm	Modifications to the Fire Alarm		29,204	\$ 2.25	\$ 65,709	\$ 2.25
Fire Suppression	Modifications to the Fire Suppressions	SF	29,204	\$ 3.25	\$ 94,913	\$ 3.25
FF&E	Furniture, Fixtures & Equipment	%	20%		\$ 828,385	\$ 28.37
Emergency Generator	Addition of new generator to power	EA	1	\$ 163,000.00	\$ 163,000	\$ 5.58
Design Contingency	Design Contingency	%	10%		\$ 513,331	\$ 17.58
					\$ -	\$ -
Line Item Subtotal					\$ 5,646,641	\$ 193.35

Appendix D

Workshop Programming Presentation

Workshop Meeting Sign-in Sheets

Workshop Meeting Notes

Lewis & Clark County Detention Center Remodel

Programming Charrette Kickoff

LAW ENFORCEMENT CENTER
221 BRECKENRIDGE

June 11, 2018





Design Team

Agenda

- Introductions/Team
 - About the Design Team
- Visioning/Programming Work Session Agenda
- Starting Point: 2016 Bond Campaign
- Challenges
- Goals and Objectives
 - Housing
 - Intake, Transfer and Release
 - Services
 - Movement
- Questions/Action Items

LAW ENFORCEMENT CENTER
221 BRECKENRIDGE



**Lewis & Clark County
Detention Center Remodel**
Helena, MT

Programming Charrette Schedule

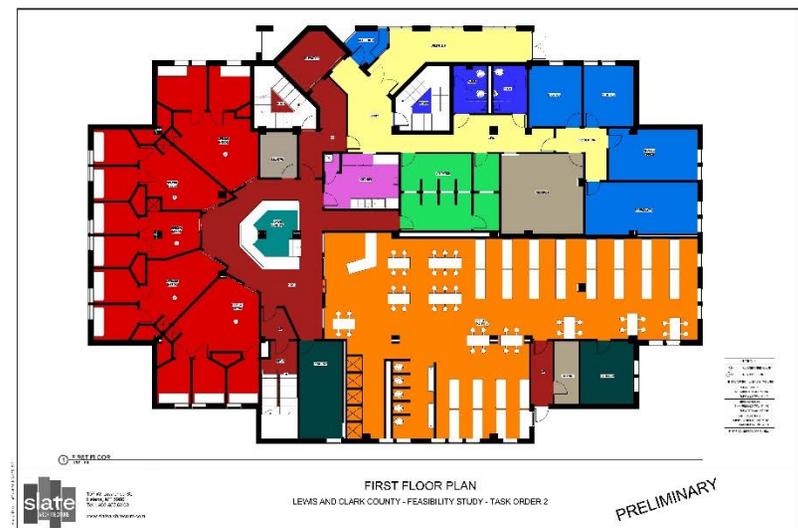
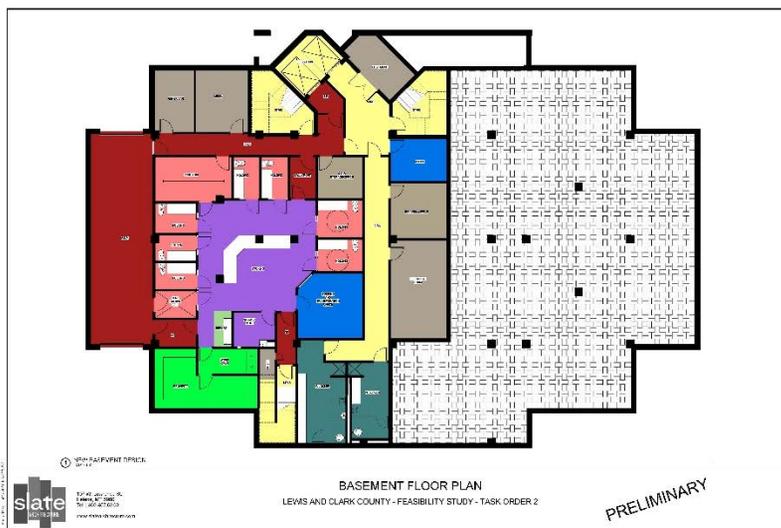
	Monday June 11, 2018	Tuesday June 12, 2018	Wednesday June 13, 2018
8:30 - 9:00	Prep/Set up for Programming (EOC)	Prep/Set up for Programming Charrettes (EOC)	Design Team Work Session (Off site)
9:00 - 9:30	Tour/Walk through of Existing Detention Center and Overview of Operations		
9:30 - 10:00	Charrette Kick-Off (Goal setting, Expectations, Project Parameters, schedule)	County Detention Staff Meeting 2	
10:00 - 10:30			
10:30 - 11:00			
11:00 - 11:30			
11:30 - 12:00	Working Lunch	Working Lunch	
12:00 - 12:30			
12:30 - 1:00 pm	Detention Staff Meeting 1 (Transport, Booking, Housing, Support)	Arch/Security/Mech./ Electrical Work Session (space plans and schedules)	
1:00 - 1:30			
1:30 - 2:00			
2:00 - 2:30	Restorative Services	Medical	Prep/Set up for Final Presentation (EOC)
2:30 - 3:00			
3:00 - 3:30	Facilities & Maintenance	Administration Meeting (front office)	Final Charrette Presentation (Programming, Next Steps, Action Items, Scope Adjustments)
3:30 - 4:00			
4:00 - 4:30	Facilities & Maintenance	Facilities & Maintenance	
4:30 - 5:00			
5:00 +	Design Team Work Session	Design Team Work Session	

Notes:

1. Although blue areas above are work sessions, Detention Staff are welcome at any time.
2. Yellow, red and green areas above are dedicated meeting times.
3. Projected outcome of Charrette session
 - a) Complete analysis of needs and programming
 - b) Schematic design of remodel to include:
 - i. BIM based floor plans with interior massing
 - ii. Building systems identified
 - iii. Security plan
 - c) Priorities/Alternates identified for Construction (Needs vs. Wants)
 - d) Review project delivery schedule
4. All meetings will be in the Law Enforcement Center basement in the Emergency Operations center UNO above.

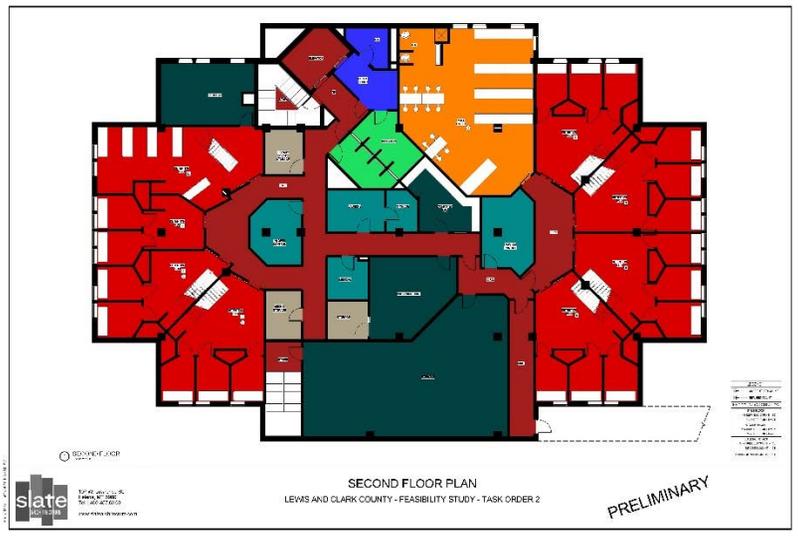
Starting Point – 2016 Bond Campaign

- Booking/Intake in Emergency Operations Center
- LCSO & HDP Move off site, create room for Special Needs Cells and Direct Supervision + Public Areas



Starting Point – 2016 Bond Campaign (continued)

- Upper Level: East and West cells – little to no work. Additional bed space added via Direct Supervision dormitory



What has changed since the Bond Campaign?

Challenges

- Getting the right facility for the need –within **Budget**
 - Locked into Budget per Bond requirements
 - Vaporization of many Security and Detention Equipment Contractors/Suppliers since Bond Vote in 2016
 - Prioritization will be **key**
- Construction work while existing jail is in operation 24/7/365
- Prioritizing Wants vs. Needs
- Available funding vs. requirements

What other Challenges are out there?

The background of the slide is a photograph of a multi-story brick building. The building has a mix of light and dark red bricks. A prominent sign on the building reads "LAW ENFORCEMENT CENTER" in large, raised letters, with "221 BRECKENRIDGE" in smaller letters below it. The building has several windows and a balcony area. The overall scene is brightly lit, suggesting daytime.

Goals and Objectives - Housing

- Levels of Classification
- Supervision: Direct vs. Indirect
- Managing Additional Bed Count
- Multiple Levels of Housing
- Visitation on Multiple Levels
- Medical

Additional Housing Goals?

Goals and Objectives – Intake, Transfer and Release

- Records
- Medical Screening
- Printing
- Bail and Bonding
- Holding
- Gender separation
- Classification

Additional Intake/Transfer/Release Goals?

LAW ENFORCEMENT CENTER
221 BRECKENRIDGE

Goals and Objectives – Services

- Medical Treatment and Medication
- Food Service
- Education and Programs
- Courts
- Volunteer Services
- Visitation: Multiple Levels

Additional Services Goals?

LAW ENFORCEMENT CENTER
221 BRECKENRIDGE

Goals and Objectives – Movement

- Detention Staff
- Support Staff
- Public
- Security Systems & Operations

Additional Movement Goals?



Questions & Action Items

LAW ENFORCEMENT CENTER
221 BRECKENRIDGE



Project No. : 18033

Project Name : Lewis and Clark County Detention Center Remodel

Date : Monday June 11, 2018 (10:00am - 12:00pm)

Charrette Kick-Off Meeting Sign-In Sheet

Name	Company	Phone No.	Email
JACOB AUGENSTEIN	SLATE ARCH.	406-457-0360	JACOBA@SLATEARCH.COM
HEATHER YANCY	SLATE ARCH	"	HEATHERY@SLATEARCH.COM
SCOTT CROMWELL	Slate Arch	"	scottc@slatearch.com
Kellie M ^{CP} Bride	LCC County Restrictive Justice	447-8380	KMCRBride@lccountymt.gov
Andra Zacherl	L+C Co.	447-8035	azacherl@lccountymt.gov
BRANT COLBERT	L+C SO	447-8235	brcolbert@lccountymt.gov
SHANE SWANDAL	HCCM	655-1114	sswandal@hultengine.com
Rich Wh. Tracy	HCCM	655-1116	rwh.tracy@hultengine.com
Scott Ferguson	LC SO Detention	447-8224	sferguson@lccountymt.gov
JASON GRIMMIS	LC SO UNDERSHERIFF	447-8203	jgrimmis@lccountymt.gov
ALAN HUGHES	LC SO - DETENTION CAPTAIN	406- 447-8246	Ahughes@lccountymt.gov
Leo Dutton	Lewis & Clark Co Sheriff	406-447-8204	ldutton@lccountymt.gov



Project No. : 18033
 Project Name : Lewis and Clark County Detention Center Remodel
 Date : Monday June 11, 2018 (1:00pm – 3:00pm) **DETENTION STAFF**

Detention Staff Meeting 1 Sign-In Sheet

Name	Company	Phone No.	Email
JACOB AUGENSTEIN	SLATE ARCH	457-0360	JACOB1@SLATEARCH.COM
SCOTT CROWMELL	"	"	scottc@slatearch.com
CODY COLBERT	LC SO	406 465-2723	Ccolbert@lccountymt.gov
Shawn Wittmer	LC SO	406-444-8390	swittmer@lccountymt.gov
TROY CHRISTENSEN	LC SO	406 438 1985	tchristensen@lccountymt.gov
Joshua Dickenson	LC SO	425-870-8979	JDICKENSON@LCCOUNTYMT.GOV
Scott Ferguson	LC SO	406 431-8076	sferguson@lccountymt.gov
John Looney	LC SO	406-465-7273	jlooney@lccountymt.gov
Clair R. Swain	LC SO	406-431-5532	cswain@lccountymt.gov
JASON GRIMMIS	LC SO UNDERSHERIFF	406- 465 ⁴⁴⁷ -8203	jgrimmis@lccountymt.gov
ALAN HUGHES	LC SO Detention Captain	406 447-8246	Ahughes@LCCOUNTYMT.GOV
WEATHER YANCEY	SLATE	406) 457-0500	weathery@slatearch.com



Project No. : 18033
 Project Name : Lewis and Clark County Detention Center Remodel
 Date : Monday June 11, 2018 (3:00pm – 4:00pm)

Restorative Services

Sign-In Sheet

Name	Company	Phone No.	Email
JACOB			
GLOTT			
HEATHER			
RICH S.			
SCOTT (DET) FERGASON			
KELLIE			
ALAN			
JASON			



Project No. : 18033
 Project Name : Lewis and Clark County Detention Center Remodel
 Date : Monday June 11, 2018 (4:00pm – 5:00pm)

Facilities & Maintenance

Sign-In Sheet

Name	Company	Phone No.	Email
JACOB AUGENSTEIN	SLATE ARCH	457-0360	JACOB@SLATEARCH.COM
Audra Zacherl	LCC Co.	447-8035	azacherl@lccountymt.gov
Eric Griffin	LCC	447-8036	egriffin@lccountymt.gov
KIRK KETCHUM	LCC	447-8299	kketchum@lccountymt.gov
Rich Whitney	HOLDING	655-1116	rwhitney@holdinginc.com
Dave Schmitz	Co Buildings	431-8024	dschmitz@lccountymt.gov
Mac McCarley	Co Build	459-1260	mmccarley@lccountymt.gov
SCOTT CROMWELL	slate Arch.	457-0360	scottc@slatearch.com
Rich Sidonovs	INTEEDALS	509-838-8662	rsidonovs@inteedals.com
Scott Ferguson	LCSC		



Project No. : 18033
 Project Name : Lewis and Clark County Detention Center Remodel
 Date : Tuesday June 12, 2018 (9:30am - 12:00pm)

Detention Staff Meeting 2 Sign-In Sheet

Name	Company	Phone No.	Email
JACOB AUGENSTEIN	SLATE ARCH	457-0360	JACOBA@SLATEARCH.COM
HEATHER YANCY	SLATE ARCH	"	HEATHERY@SLATEARCH.COM
JASON GRIMMIS	LCSO	447-8203	jgrimmis@lccountymt.gov
JOSHUA DICKENSON	LCSO	425-870-8979	JDICKENSON@LCCOUNTYMT.GOV
Jewel Lowery	LCSO	406-465-7273	jlowery@ lccountymt.gov lccountymt.gov
Shawn Wittmer	LCSO	406-447-8290	swittmer@lccountymt.gov
Scott Ferguson	LCSO	406 447-8214	sferguson@lccountymt.gov
TROY CHRISTENSEN	LCSO	406 447 8224	tchristensen@lccountymt.gov
CODY COLBERT	LCSO	406-465-2723	cocolbert@lccountymt.gov
Sean McCarty	LCSO	406-661-2558	smccarty@lccountymt.gov
Chae R. Swain	LCSO	431-5532	cswain@lccountymt.gov
SCOTT CROWMELL	SLATE ARCH	457-0360	scotte@slatearch.com



Project No. : 18033
 Project Name : Lewis and Clark County Detention Center Remodel
 Date : Tuesday June 12, 2018 (2:30pm – 3:30pm)

Medical Sign-In Sheet

Name	Company	Phone No.	Email
Jill Steeley	PureView Health Center	406-457-8956	jsteeley@lccountymt.gov
DAVE Jenkins	Pureview	406-551-0356	dsdj1-2000@yahoo.com djenkins@
Priscilla Cates	PureView Health Center	406-457-8946	pcates@lccountymt.gov
Scott Ferguson	LCSO	406 447-8664	sferguson@lccountymt.gov
Alan			
John			
Chawn			
COFF			
Rich			



Project No. : 18033
 Project Name : Lewis and Clark County Detention Center Remodel
 Date : Tuesday June 12, 2018 (4:00pm – 5:00pm)

Facilities & Maintenance Sign-In Sheet

Name	Company	Phone No.	Email
Scott Ferguson	LCSD	406 447-8884	sferguson@lccountymt.gov
Mac McCarley	LTC Buildings	406 459 1260	mmccarley@lccountymt.gov
Kirk Ketchum	LTC Buildings	406 447 8299	kketchum@lccountymt.gov
Dave Schmitz	Co Buildings	431-8024	dschmitz@lccountymt.gov
Andra Zacherl	LC Co. PW	447.8035	azacherl@lccountymt.gov
Chris Drake	MKK	438-1467	cdrake@mkkeng.com
CLINT LAFERRIERE	MKK	545-6423	claferriere@mkkeng.com



Project No. : 18033
 Project Name : Lewis and Clark County Detention Center Remodel
 Date : Wednesday June 13, 2018 (3:00pm – 5:00pm)

Final Presentation Sign-In Sheet

Name	Company	Phone No.	Email
JACOB AUGENSTEIN	SLATE ARCHITECTURE	457-0360	JACOBA@SLATEARCH.COM
HEATHER YANCY	SLATE	"	HEATHERY@SLATEARCH.COM
Audra Zacherl	L&C Co. P&W	447 8035	azacherl@lccountymt.gov
Chris Sinnrud	L&C Co IT	447 8322	csinnrud@lccountymt.gov
JASON GRIMMIS	LC SO	447-8203	jgrimmis@lccountymt.gov
Scott Ferguson	LC SO	447 8224	sferguson@lccountymt.gov
Leo C. Dutton	LC SO	447-8224	ldutton@lccountymt.gov
SHANE SWANDAL	HCCM	655-1116	sswandal@hultinginc.com
Rick Whidney	HCCM	655-1116	rwhidney@hultinginc.com
Dave Jenkins	Preview Health L + C Counh Administration	551-0356	davidj1-2000@yahoo.com
Roger Baltz	L + C Counh Administration	447-8311	rbaltz@lccountymt.gov
ALAN HUGHES	Sheriff's Off.	447-8246	Ahughes@



PROJECT NAME: L&C County Detention Center
JOB #: 18033
DATE: June 11, 2018

Challenges:

- #1: Budget
- #2 Phasing/Construction
- #3: Prioritizing wants/needs

Housing goals:

- Class/Gender separation – should anticipate gender neutral housing
- Higher bed count
- Visitation on each level
- Need nurse station and clinic adjacent, or in the same room (nurses aren't trained in security)
- Should have a program space dedicated to only mental health services

Services:

- Currently no EMT on staff. Should they change this?
- Currently no medical isolation or infirmary
- Food service – cooler is separate from building entirely. Should move it to be accessible by trustees

Movement/Circulation Goals:

- Separate entry for staff and volunteers
- Different classes shouldn't share hallways or cross paths



PROJECT NAME: L&C County Detention Center
JOB #: 18033
DATE: June 12, 2018

Recap from Monday:

- #1 Priority is maximize number of beds
- #2 Priority: Program spaces
- #3: Class/Gender Separation
- #4: Movement/Circulation – no cross traffic
- #5: Nurse station/Clinic/Infirmary

Wants of detention staff:

- Lights should be ceiling mounted. Detainees can access wall-mounted lights currently, sometimes break them
- Laundry and kitchen would work best downstairs
- Maybe add a direct circulation route to program spaces for direct supervision detainees
- Should we decrease the admin facilities to make room for direct male supervision area?

Needs:

- o FIRST FLOOR:
 - Public coordinator and admin offices
 - Visitation window to sign in
 - Waiting area
 - Briefing in staff area
- o SECOND FLOOR
 - Access to program room for each class
 - Trustees should be adjacent to laundry and kitchen
 - Wide enough hallways for food/med cart + 1 passing body



- 5% of beds and baths should be ADA
 - o BASEMENT
- Entry pat down area
- Property room
- Minimum of 1 group holding room
- Desk for booking
 - o MEDICAL
- Office
- 10x10 exam
- Blood draw equipment, UA and biohazard equip.
- Storage for meds/supplies
- Storage for records
- Could see as many as 20 a day as #'s increase
 - o BUILDING MAINTENCE
- Definitely will need a new generator. Will probably have to be placed outside building
- Laundry and Kitchen would work best in basement



PROJECT NAME: L&C County Detention Center
JOB #: 18033
DATE: June 13, 2018

Final Presentation Comments:

- 154 bed minimum
- Detention Center project is county's #1 priority
- Having a receptionist or public coordinator is a must
- Maybe only 2 showers in locker room; some say 4 showers is ideal
- Maybe more mechanical or janitor rooms
- Who will fund UPS? It needs to be replaced
- Attic may not hold as much storage as currently planned; may need to move to the Fuller Ave. building

Appendix E

(Reserved for Staffing Analysis)