

SCHEMATIC DESIGN OUTLINE SPECIFICATION

Petersburg Police Station, Petersburg, Alaska

February 27, 2013

PROJECT SCOPE:

- A. Floor plans shown on A201 and A202.

SITE WORK

- B. Parking Lot: Construct an approximately 15 vehicle lot in the lower area south of the building and an approximately 12 vehicle lot on the upper area east of the building. Modify existing Fire Station parking lot to connect to new upper police station parking. Lots to be paved with curb and gutter and storm drainage. Construct the parking lot per the following recommendation:
 - 1. Excavate existing muskeg to approximately 11'-0" below existing grade elevation.
 - 2. Static proof roll the bottom of the sub-cut using a 10 ton self propelled compactor. Should areas be observed to "pump" or "settle" further, excavate and replace with N.F.S. selected borrow and compact to 95%.
 - 3. Place 30" minimum depth of 12" minus well graded shot rock borrow and compact with vibratory grid roller (minimum centrifugal force shall be 50,000 lb) with minimum of 8 passes prior to placement of subsequent lifts. One pass is considered down and back.
 - 4. Place 6" depth of select borrow over the top of the shot rock borrow, compact to 95% of maximum dry density unit weight per ASTM D 1557.
 - 5. The selected borrow should be topped with a minimum 6" depth of base course, grading D-1 compacted to 95% of maximum dry density unit weight.
 - 6. Place a 2 1/2" depth of hot asphalt concrete pavement Class B, Type II asphalt mix over the structural base course section.
- C. Site Preparation for the Building: Prepare the site for the building by overexcavation and backfill per the following:
 - 1. Install erosion and sediment control devices prior to beginning construction.
 - 2. Clear and grub trees and vegetation designated for removal within the project site.
 - 3. Install dewatering devices as necessary to maintain a dry work zone.
 - 4. Over-excavate the area beneath the building foundation (10' outside each side of building foundation) to a depth of 4' minimum below bottom of proposed footing.
 - 5. Static proof roll the bottom of the excavation using a 10-ton self propelled compactor. Should areas be observed to "pump" or "settle" further, excavate and replace with shot rock borrow.
 - 6. Place 12" minus well graded shot rock borrow, 3' minimum depth and compact with a vibratory grid roller (minimum centrifugal force shall be 50,000 lb) with a minimum of 8 passes prior to placement of subsequent lifts. One pass is considered down and back. Initial lift thickness shall be a maximum of 24" in depth; all other lifts 12". Shot rock gradation should include enough fines such that the surface will seal and not be subject to voids from loss of fine material.

7. Select borrow material above the shot rock borrow shall be placed in maximum 12" lifts compacted to 95% of the maximum dry density unit weight as determined by modified proctor (ASTM D1557). This material shall be placed up to the bottom of the base course below the pool building floor slab or pool mat.

Non-frost material susceptible (N.F.S.) select borrow material shall consist of sand, gravel, fractured rock or combination thereof containing no muck, frozen materials, roots or other deleterious materials. The material shall have a plasticity index not greater than 6 as determined by AASHTO T90 and shall contain no more than 6% passing the #200 sieve based on material that passes a 3-inch screen.

The engineered embankment will have an allowable soil bearing pressure of 2,500 psf if constructed in accordance with the above guidelines. The majority of overall building site settlement should occur during embankment construction. After construction, settlement is estimated at less than 1 ½" with differential settlement of less than 1".

SITE UTILITIES

- D. Water Service: Extend the existing 8" water service stub from the existing bus lane on the north side of the site to building.
- E. Sanitary Sewer: Connect to one of the existing service stubs from the existing access road on the west side of the building site.
- F. Storm Sewer: Connect all service stubs from access road and lower parking lot to oil water separator and then outfall to the southwest of site.
- G. Power and Communications:

SUBSTRUCTURE

- H. Concrete footings and foundation walls.
- I. Concrete floor slabs with radiant heating and 4" rigid insulation.

SUPERSTRUCTURE

- J. Concrete deck with radiant heating on steel decking with 2" of rigid insulation.

EXTERIOR CLOSURE

- K. Lower and Upper Floor Walls: Concrete masonry walls with vapor barrier, 4" rigid insulation, wood furring, weather barrier, and metal siding. Cast-in-place concrete walls to the upper floor where the finish grade is above the lower floor level.
- L. Doors: Aluminum storefront with high performance paint at main entry. Painted galvanized steel elsewhere.
- M. Windows: Vinyl Windows

ROOF SYSTEM

- N. Roof: Metal raised seam roofing over plywood and underlayment.

INTERIOR CONSTRUCTION

- O. Non-Secure Area Partitions: Gypsum wall board over 3 ½" metal studs.
- P. Secure Area Partitions: 8" CMU.

- Q. Doors and Relites: Painted galvanized steel frames. Tempered glass.
- R. Floor Finishes:
1. Secure Areas: Sealed concrete
 2. Non-Secure Areas: Carpet tile
- S. Wall Finishes:
1. CMU Walls: Epoxy paint.
 2. Other Areas: Semi-gloss latex enamel.
- T. Ceiling Finishes:
1. Non-Secure Areas: Suspended acoustical panel ceiling.
 2. Secure Areas: Metal Security Ceiling Systems
- U. Specialties:
1. Secure Area Toilets and Sinks: Stainless steel toilets and sink manufactured for correctional facilities.
 2. Secure Area Toilet and Locker Accessories: Stainless steel toilet accessories manufactured for correctional facilities.
 3. Toilet and Locker Accessories: Stainless steel toilet and shower accessories. Phenolic plastic toilet compartments, lockers and lavatory counters.
 4. Cabinets and Counters: Plastic laminate counters and cabinets.

MECHANICAL DESIGN CRITERIA

The mechanical systems will be designed and constructed in accordance with the 2009 International Building, 2009 Uniform Plumbing Code, 2009 International Fire Code, 2012 National Fire Protection Association (NFPA), City and Borough of Petersburg and State of Alaska requirements.

DESIGN PARAMETERS

- Inside Air Temperature: 70F.
- Outside Air Temperature: -1F.
- Outside air per ASHRAE 62-2004 or a minimum of 15 CFM per person outdoor air ventilation air to all occupied spaces unless otherwise required.
- Total ventilation rate no less than 5 air changes per hour.

GENERAL SCOPE OF WORK

The scope of mechanical work include installation of heat pump – electric boiler dual heating plant, vertical borehole geothermal loopfield, radiant floor heating system, constant volume ventilation for all occupied areas, central exhaust air system, domestic water plumbing, electric domestic hot water tank with recirculating system, wet and dry sprinkler system covering all areas of facility, cooling system for IT room, emergency generator mechanical, and direct digital controls.

Contractor shall provide to Owner submittal data, O&M data, as-built drawings, adjustment of ventilation systems with report log, training of the mechanical systems, and assistance with commissioning.

HEATING SYSTEMS

Heating of the facility will be through a dual fuel arrangement with the ground source heat pump taking roughly 95% of the annual heating requirement and an electric boiler serving as backup and supplementing heating during extremely cold conditions. The facility will be heated from hydronic radiant floor heating with 25 zones, each controlled by a wall mounted room thermostat. The electric boiler will have PID controls and demand limiting capability. Both the geothermal heat pump and the electric boiler will be located in the Mechanical Room. The heat pump and the electric boiler would each have a circulating pump, P-2 and P-3 respectively (3/4 hp each), to inject heated water into the storage tank.

The geothermal loopfield is preliminary sized at 6 vertical boreholes, each at 300 feet deep with 3/4-inch diameter U-tube assembly, and would be located in the lower employee parking lot. Each vertical borehole piping pairs will be routed to a manifold inside the building and then 1-1/2 inch insulated mains routed to the heat pump in Building Services room.

Pump P-1 (1 hp) will circulate anti-freeze fluid between the loopfield and the heat pump. Underground horizontal manifolded piping is not anticipated. The heat pump would then transfer the ground heat to a storage tank which supplies the radiant floor heating and the AHU heating coil via lead-lag circulation pumps P-4A & P-4B (1 hp each). A cooling pump P-6 (3/4 hp) will circulate geothermal fluid between the loopfield and the AHU cooling coil to provide air-conditioning for the few times it is needed. Pump P-7 (1/2 hp) would circulate anti-freeze between an exhaust air heat recovery coil and a preliminary heating g coil in the AHU to recover heat from exhaust air and temper the ventilation air.

Preliminary size of heating equipment: Water-to water Heat Pump: 25 Kw; Electric Boiler 60 Kw.

VENTILATION AND EXHAUST AIR SYSTEM

All occupied areas of the facility shall be served by a single supply fan-return fan mechanical ventilation system. The air-handling unit AHU would be located in an Attic Penthouse. Preliminary size of the AHU unit is 8000 cfm supply fan and 7000 cfm return fan. AHU would have supply and return fan sections with plenum fans, mixing box section with outside and return air dampers, 30% efficiency filter section, and low temperature hydronic heating coil. AHU outside air will be taken in through a 4 foot by 5 foot intake louver on west side and exhaust/relieve air out a 4 foot by 6 foot wide exhaust louver on south side of the Penthouse Attic Room.

Ventilation system is recommended to be a traditional mixed air arrangement with supply and return grilles at the ceiling generally. The holding cells would have security type diffusers with supply air delivered at the ceiling and exhaust air taken from low in the room probably near the plumbing fixtures. Each occupied space would have a supply grille(s) and return/exhaust grille. Return air and exhaust air ducting would be routed from each room above ceiling. Plenum ceiling spaces are not anticipated as part of the ventilation system. All ductwork would be galvanized sheet metal. Supply air ductwork would be insulated due to cooling.

A central exhaust fan EF-1 will exhaust air from the toilet rooms, janitor, interview rooms, evidence, kitchen, and from above copiers. Preliminary size of EF-1 is 1100 cfm, 3/4 hp motor. EF-1 would be located in the Attic Penthouse.

A wall mounted exhaust fan EF-2 will be located in the Sally Port to exhaust fumes and excessive heat. Preliminary size of EF-2 is 600 cfm.

CONTROLS

A stand-alone direct digital control DDC system is anticipated to control the AHU air handling unit system, dual heating plant and radiant floor heating with remote connection via internet connection for trouble shooting. Computer station with printer would be provided by the controls contractor with graphics of the building mechanical systems for ease in monitoring, trending, and scheduling operation of mechanical systems. Estimate a total of 80 input-output control points. Controls contractor will be present during substantial completion inspections, training, commissioning, and a 6 month post-construction visit.

SPRINKLER SYSTEMS

A wet sprinkler system shall serve the building, and a dry sprinkler system will serve the cold attic and Vehicle Sally port with the sprinkler header located in the Building Services room. Sprinkler heads to be recessed where ceilings are present or pendant heads otherwise. Sprinkler heads in all cell rooms will be penal type. Sprinkler system shall be designed and installed per NFPA 13. A 4-inch water service with double check backflow preventer would be anticipated.

GENERATOR

In Generator Room mechanical system will include exhaust louver, exhaust air damper, return air dampers, and ductwork for generator radiator exhaust. Make-up and combustion air will be provided by an intake louver with automatic damper. Generator combustion exhaust will be routed to the exterior wall through exhaust pipe and silencer. A 100 gallon day tank with exterior fill will hold and supply fuel oil for the generator. See Electrical for additional information on Generator.

COOLING SYSTEM

The main IT server room will have a ductless split air-conditioning system, preliminary size of 24,000 Btu/hr. The exterior condensing unit will be located in the Sally Port or Storage room to shed heat. A wall mounted fan-coil unit will be located in the IT room and be controlled by a wall mounted thermostat module. Refrigerant piping would be routed between condenser and fan-coil unit.

ELEVATOR DRAINAGE

A sump pump P-8 (1/2 hp) located in the elevator will discharge effluent from the sump to a service sink. An oil sensor and control panel will monitor for hydraulic fluid and stop operating the sump pump and provide an alarm.

WASTE, VENT, AND WATER PIPING SYSTEM

Domestic cold and hot water piping interior to the facility will be Type L copper. A 2-inch cold water service is anticipated to serve the domestic water requirements from a branch off of the 4-inch water service. Domestic hot water will be supplied by high efficiency 80 gallon electric hot water tank. A tempering valve will be installed at the hot water tank and will temper the water for a maximum of 115F water temperature. Hot water recirculating system is anticipated with hot water recirculating pump P-10 (1/4 hp) located in Building Services room. Two exterior non-freeze type wall hydrants will be located at the Building Services and Garage. Sanitary waste and vent piping will be cast-iron hub-and-spigot below the building and No-hub with heavy duty couplings above the floor. 4-inch sanitary service will be routed to city service. 4-inch vent-through-roof shall serve the plumbing vent requirements.

PLUMBING FIXTURES AND EQUIPMENT

Handicapped accessible ADA fixtures will be used where required. Fixtures will be the water saving type. Sink in Kitchen and Coffee rooms will be stainless steel with undercoating and single lever gooseneck faucet. Water closets will be wall mounted, elongated bowl, high elevation type, battery operated electronic flush valve type. Lavatories will be wall mounted fixtures with manual single lever faucets. Service sink, located in Janitor, will be floor mounted enamel cast-iron with mixing faucet. Floor drains, 7 total, with trap primers will be located in toilet room, each cell room, and in front of the Shower. A floor sink would be located in the Building Services room. Drinking fountains are not anticipated.

ROOF DRAINAGE SYSTEM

Roof drain system is expected to be perimeter type only and covered in architectural division.

PIPE AND EQUIPMENT INSULATION

Vent piping within 10 feet of roof penetration, all domestic cold and hot water piping, and all aboveground geothermal piping shall be insulated with sectional pipe covering, mineral fiber, 1 inch IPS thick. Outside air duct from louver to fan and exhaust ducts from exterior wall back five feet will be insulated with faced 1-1/2 inch thick glass-fiber blanket having a minimum density of 1 pound per cubic foot and vapor barrier facing consisting of aluminum foil laminated to a sheet of flame-resistant 30 pound paper with glass-fiber reinforcing mesh between.

MECHANICAL DESIGN CRITERIA

Design Parameters: The most recent publications of codes, regulations, and standards of the following resources will be applied.

- IBC, International Building Code
- IFC, International Fire Code
- NFPA 70, National Electrical Code
- NFPA 72, National Fire Alarm & Signaling Code
- NETA, International Electrical Testing Agency
- NICET, National Institute for Certification in Engineering Technologies
- IESNA, Illuminating Engineers Society of North America
- BICSI, Building Industry Consulting Service International

Electrical Systems

SERVICE AND DISTRIBUTION

- Utility padmount type transformer will be installed near to the new facility. The service feeders will be routed underground in conduit. The operating power will be 208Y/120 volts, three phase, four wire. The load is anticipated to be less than 100 KVA.
- The service voltage switchgear will be located inside the building, near an exterior wall, close to an exterior door. It will include metering instruments for the utility revenue meter and the customer meter, main circuit breakers, automatic transfer switch, and distribution panels. The main circuit breakers will each include a shunt trip coil, operated by a push button located on the building exterior

in a secure panel. One main circuit breaker will feed the electric boiler while the other will feed the transfer switch and remainder of the building loads. The utility revenue meter will be located adjacent to the shunt trip pushbutton. Its overall rating will be 400 amperes.

- A transient voltage surge suppressor will be installed with the switchboard and connected to the utility service circuit to reduce voltage transients to the system.
- The feeder circuits will be configured with single conductors in conduit. Conduit within the building will be EMT. Conduit exterior to the building will be Rigid Steel within ten feet of the building perimeter, and PVC beyond. All circuits exterior to the building will be buried underground. Conductors inside the building will be insulated with THWN/THHN material while those outside the building or in unconditioned space will utilize XLPE material. All circuits will be concealed except within the utility spaces.

STANDBY GENERATOR

- A diesel fired generator will be located inside the building; configured to support all of the building loads, except the electrical boiler and domestic water heater. Its anticipated capacity will be 50 KW, or less.
- The generator will be positioned near to an exterior wall allowing for cooling and combustion air. The radiator will be skid mounted with the generator unit.
- Fuel will be contained in a single day tank near to the generator with plumbing and level indication for manual filling from the exterior.
- The generator will be circuited to the automatic transfer switch. The transfer switch will control the generator to operate with utility power conditions outside acceptable tolerances. The transfer switch will operate to allow generator support to the building when its power is deemed acceptable.
- Although the generator will be classified to provide standby power, a remote annunciator will be provided in the Dispatch area.

UNINTERRUPTIBLE POWER SUPPLY (UPS)

- A UPS will be provided with capacity to support the Dispatch equipment as well as other sensitive loads throughout the building. It will be located in the electrical space on the lower floor near to the electrical switchboard.
- The UPS output will be 208Y/120 volts, three phase, four wire with an anticipated capacity of 7.5 KW. It will include a battery with capacity to operate the full load for a minimum of 30 minutes without a normal power source.
- The UPS will be included as part of the generator supported load.
- The UPS will deliver power to a branch circuit panel (U) located on the upper floor, near to the Dispatch center.

BRANCH CIRCUITES

- Branch circuit panels will be located on both floors; fed from the generator supported distribution panel. One panel will be located on the upper floor near to the dispatch area; one supporting the lower floor offices and support rooms will be located in the main corridor; one will be in the elevator equipment room specifically for the elevator equipment; and one will be located in the electrical support space. The panel located in the electrical space will support all of the HVAC system, the utility spaces, and the exterior lighting & equipment.

- The panel boards in the upper and lower floor common spaces will be mounted flush to the walls. The panel boards in the utility spaces will be surface mounted. All branch circuit breakers will be bolt-in type.
- Transient voltage surge suppression will be incorporated into the panels for the dispatch area and the office/work areas on the two floors.
- Circuits will be provided for stationary equipment as required with appropriate disconnects and motor starters. This includes the HVAC equipment.
- Receptacles will be installed in the offices and work spaces with separation between devices less than ten feet. Special and dedicated receptacles will be provided for kitchen appliances and office equipment. Receptacles will be provided in the utility and common spaces, as well as the exterior to facilitate maintenance and facility cleaning. Receptacles will not be provided in holding areas.
- All interior branch circuits will be configured with single conductors in conduit. All conduit will be EMT; and conductors will be insulated with THWN/THHN material. All circuits will be concealed, except in the utility spaces. Some MC type cable will be allowed for short connections to luminaires.

GROUNDING

- The grounding system will be configured with a bus bar installed near to the service equipment inside the building. All of the system will radiate from this bus bar. The grounding electrodes will include a concrete encased conductor (UFR), three ground rods, connection to the building steel, and connection to the service water line.
- A second ground bus will be installed adjacent to the network equipment rack. It will be connected to the main system with a single conductor.
- All feeder and branch circuits will include ground conductors.
- A ground conductor will be provided with any cable trays with contact to conduits for the network circuits.

INTERIOR LIGHTING

- Exterior Building: Wall mounted fixtures with LED sources controlled with photoelectric cells and motion sensors. The motion sensors will allow the luminaires to operate at a low output, typically 30 percent of maximum, until motion is sensed in their vicinity. The luminaires will be located primarily near to the entrances and Sally Port.
- Vehicle Sally Port: Ceiling mounted linear fixtures with LED sources with motion sensors. The fixtures will be similar to those typically used in parking garages. These luminaires will operate continuously with the motion sensors controlling their output in a manner similar that for the exterior fixtures.
- Utility and Storage Spaces: Suspended and ceiling mounted linear fixtures with LED sources. The fixtures will be enclosed with a lense. These spaces will be controlled with occupancy sensors and low voltage switches. The controls will be configured with the switches activating the lighting, while it may be secured off with either the occupancy sensors or switches. The smaller rooms will utilize wall switch type units.
- Restrooms: Wall mounted fixtures with LED sources mounted above the sinks. This lighting will be controlled with wall switch type units. They will be programmed and configured to retain operation of the lighting and the exhaust fan for several minutes after occupant departure.
- Offices, Work Rooms, Squad Rooms, and other rooms with suspended ceilings: 2 ft x 2 ft troffers with LED sources. The controls will include occupancy sensors and switches configured similar to

those for the utility spaces. The controls will include dimming for specific rooms, ex. Squad Room, Incident Room, and Interview Rooms.

- Dispatch & DMV: Ceiling mounted recessed cylinders with LED sources. These fixtures will be situated to illuminate work surfaces. The control will utilize dimming. The control will be segregated for the Coffee, Dispatch/Files Copy, and the DMV.
- Support Spaces, including Laundry and Kitchen: Ceiling mounted recessed cylinders with LED sources. These rooms will be controlled with occupancy sensors and switches similar to the Offices. Undercabinet strips with LED sources and manual switching will be installed beneath wall cabinets where appropriate.
- Holding Spaces: Corner mounted (ceiling to wall) confinement type fixtures with LED sources. This lighting will be manually controlled with switches located in the corridor and dispatch area.
- Corridors, and Common Spaces: Ceiling mounted recessed cylinders with LED sources. Controls will include low voltage switches, occupancy sensors, and dimming. The switches will be used to select manual full brightness or automatic occupancy sensor controlled dimming.
- Lobby and Entries: Combination of wall mounted linear fixtures with up and down lighting with some ceiling mounted recessed cylinders, all using LED sources. The Lobby will be controlled in a manner similar to the Corridors. The Entries will be controlled with the adjacent spaces. The controls will be located in the corridors and Dispatch area.
- Emergency Egress Lighting: Battery packs will be incorporated into the fixtures and provide illumination within the time period after utility power fails and before the generator restores power. They will be distributed in the corridors, Dispatch area, Sally port, and other common areas with illumination in accordance to the IBC.
- Exit Signage: Exit signs will be positioned to identify routes to exterior exits in accordance to the IBC. They will utilize LED sources and incorporate battery packs for emergency application.

EXTERIOR LIGHTING

- Pole mounted fixtures will be positioned to illuminate the vehicle entry, public and staff parking, and the driveways. It is anticipated to mount the fixtures at 20 feet above grade on steel poles. The fixtures will utilize LED sources.
- The exterior lighting will be controlled with a combination of a photoelectric cell and fixture mounted motion sensors. The sensors will operate the fixtures at a lower brightness until motion in their vicinity is sensed. The controls will include selection of manual and automatic operation with the photoelectric cell incorporated into the automatic circuit. The motion sensors will be active whenever the luminaires are operating. This lighting control will be integrated with that for the building mounted exterior fixtures.

Communication Systems

DATA/COMMUNICATIONS

- The facility will be served with the borough's network connection, along with utility telephone and cable circuits. The borough's network will be extended from the fire station while the utility circuits will be routed underground from pedestals on Haugen Drive.
- The network will be centered from a set of racks positioned in a secure location. The racks will include patch panels, switches, and servers, along with accessories as required for power distribution, grounding, and cable management.

- The utility cables will be terminated to their demarcation equipment; and then extended to patch panels on the racks allowing for connection to circuits as required.
- The network cables for all of the systems noted below will be routed in basket trays above the ceiling. The basket tray on the Lower Floor may incorporate some of the terminals on the Upper Floor.
- Terminals will be located in all offices, interview rooms, work rooms, the Squad Room, and the building services areas, as well as Dispatch. The terminals will facilitate both communications and data.
- The cables for both communications and data will be rated for Category 6 operation. The circuits for the door access controls and surveillance cameras may be rated for Category 5e, but will probably be rated for Category 6.
- The communications system will include equipment as required for 911 and Dispatch, as well as common office telephony.

Safety and Security Systems

FIRE DETECTION AND ALARM

- A fully automatic system will be provided to detect fire conditions, and alarm the entire facility. It will be integrated with the fire detection and alarm system in the Fire Station next door.
- The initiation system will include manual pull stations at the entries (exits), in the stairwells, and at Dispatch. Smoke detection will be provided in each room with the exception of the generator area which will utilize thermal detection. With this fully implemented system, duct smoke detection will not be required.
- The sprinkler system will be monitored as required by the codes.
- Notification devices (horns, horn/strobes, and strobes) will be positioned throughout the facility in accordance to the codes.
- The fire alarm control panel will be located in the room with the network rack. A remote annunciator will be located in Dispatch. Indication of alarm conditions and detector locations will be identified at the fire station alarm panel.

DOOR ACCESS CONTROLS

- Access to the facility will be provided with a proximity card system. The system will control the access through the exterior doors, the Armory, Files, Evidence, Storage, Building Services, the network rack area, the front office suite, and other spaces as required.
- The system will include proximity card readers, door controls, site controller, and monitors. The door controllers will be circuited to the network rack where the site controller is located.
- Door activity will be recorded at the controller and monitored at Dispatch. The system will be accessible with appropriate codes from other work stations for monitoring and review of historic logs.

SURVEILLANCE CAMERAS

- An IP/Ethernet based camera network will be provided with digital video recorder (DVR), cameras, and monitors.
- The cameras will be individually circuited to the network where the DVR will also be located. The cameras will be powered through the same Ethernet circuits using Power-over-Ethernet (PoE) technology from the network switch designated for this system. The DVR will also be circuited from this switch.

- Monitors will be located in the Dispatch Center with selective capability to scan camera images, monitor specific camera video stream, or monitor all cameras. Work stations will have access to the system for monitoring and playback purposes with appropriate access codes.
- The cameras will include lenses appropriate for their application. Zoom and direction control will utilize software manipulation of the camera viewing field.
- The cameras inside the building will include commonly seen directional lenses inside ceiling mounted domes, ceiling mounted hemispherical cameras, and wall mounted cameras. These cameras will require some illumination of the space. An allowance will be made to incorporate cameras using infrared technology if necessary. These cameras will be situated in the corridors, Lobby, Armory, Evidence, Files, entries, and holding areas, as well as the Sally Port.
- The cameras outside the building will be situated to monitor the parking areas, driveway, and exterior of the building. They will be mounted on the lighting poles and building exterior. The cameras will all be arm mounted; and hermetically contained appropriately for the environment.