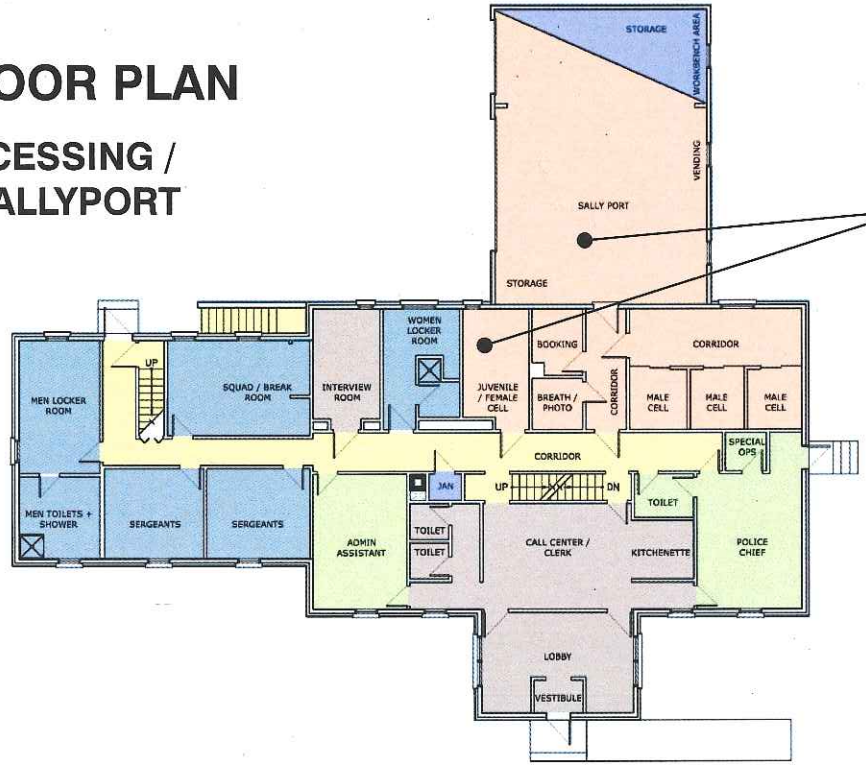
Norwell Police Department Study

EXISTING FLOOR PLAN

PRISONER PROCESSING / DETENTION + SALLYPORT



Unsafe booking and breathalyzer area

No shower for detainees

Cell not separate from public area

EXISTING FIRST LEVEL

LEGEND

- ENTRY, PUBLIC LOBBY + TRAINING
- PRISONER PROCESSING / DETENTION + SALLY PORT
- OFFICERS / SQUAD ROOM / EVIDENCE
- ADMINISTRATION
- DETECTIVE / PROSECUTOR / GENERAL OFFICE
- OFFICER SUPPORT
- BUILDING SUPPORT
- CIRCULATION

0 5' 10' 20' 40'

N

BOOKING AREA

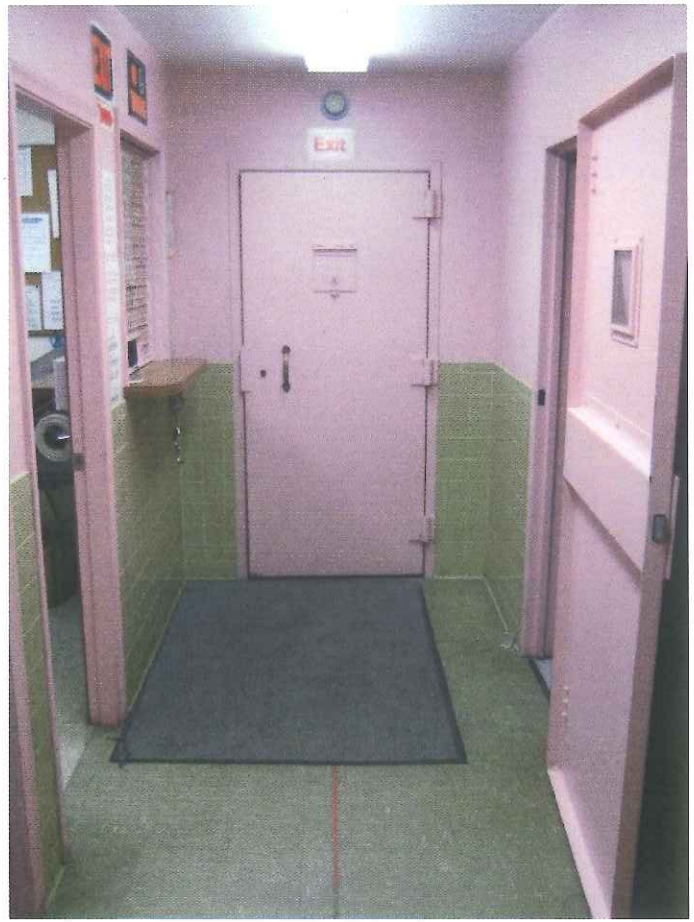
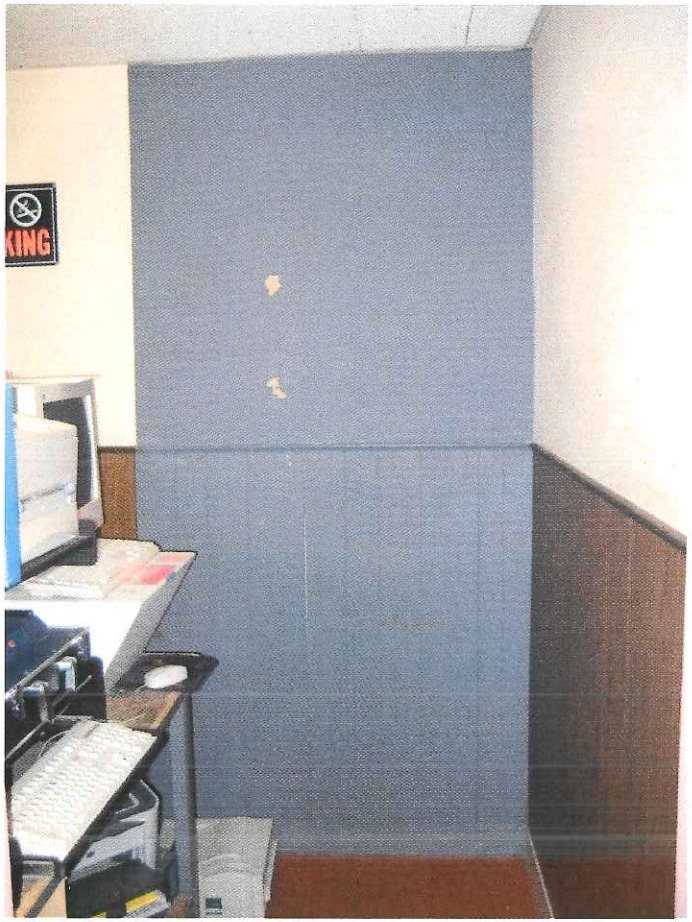
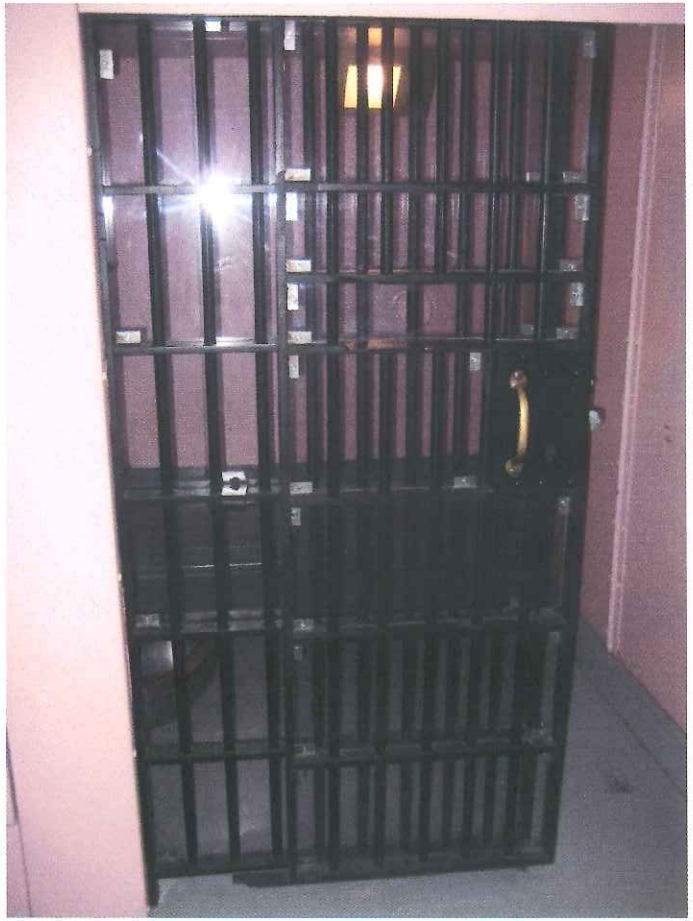


PHOTO / BREATHALYZER

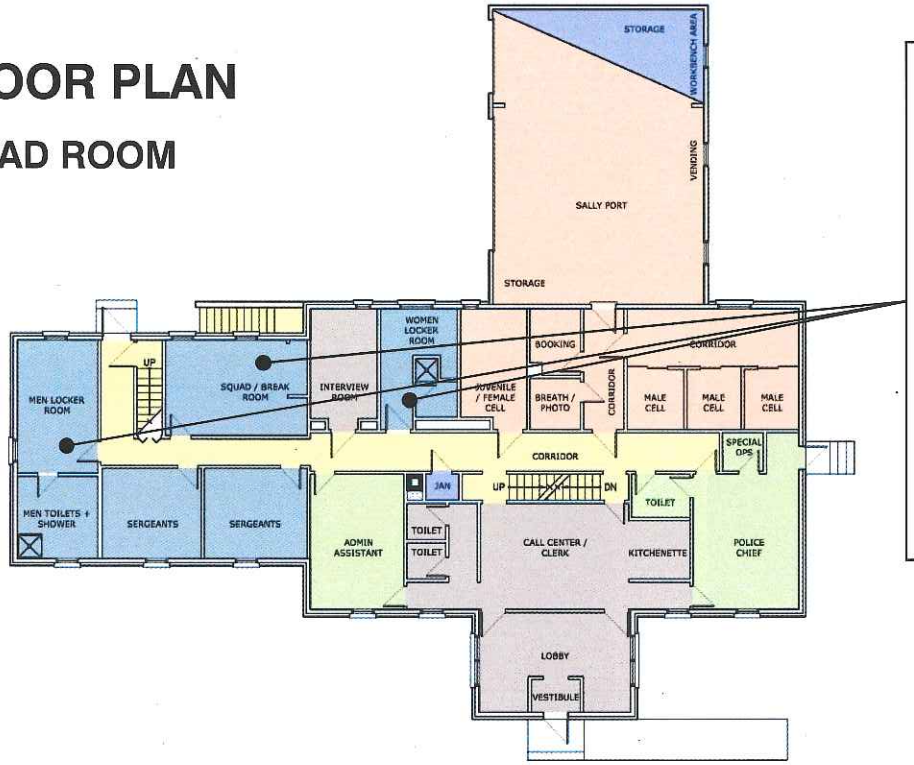


HOLDING CELLS



EXISTING FLOOR PLAN

OFFICERS / SQUAD ROOM



Squad room undersized for 20 Officers; Reports, Dining, Meetings

Both Men and Women's Locker rooms undersized

Lockers broken and undersized for Officers' equipment

EXISTING FIRST LEVEL

LEGEND

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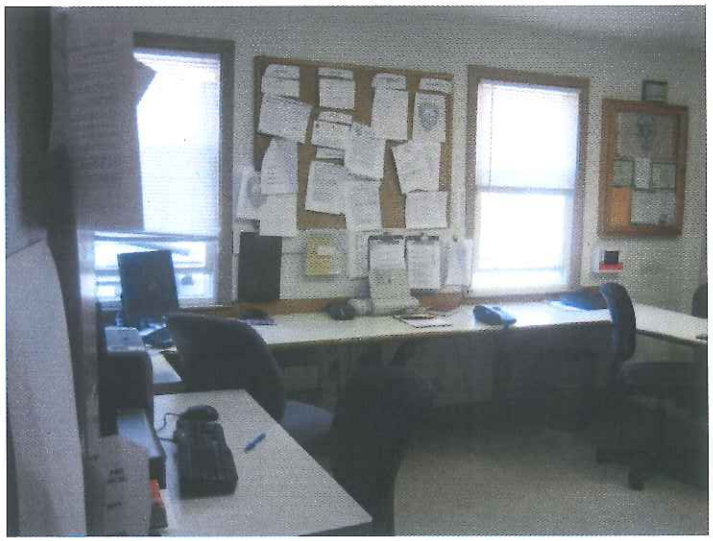
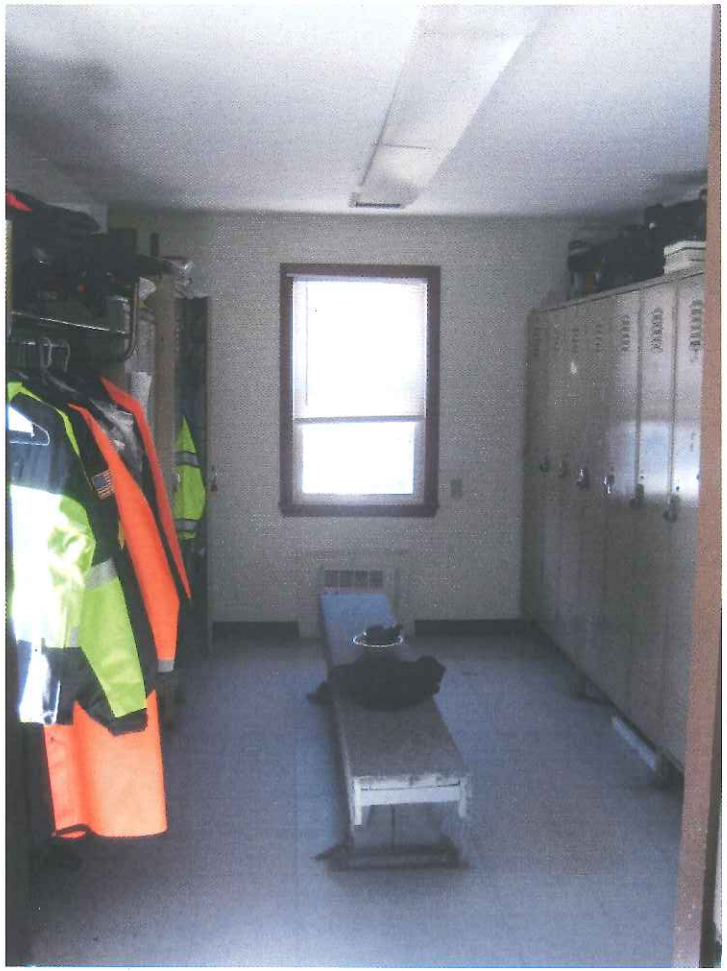
N

SQUAD ROOM

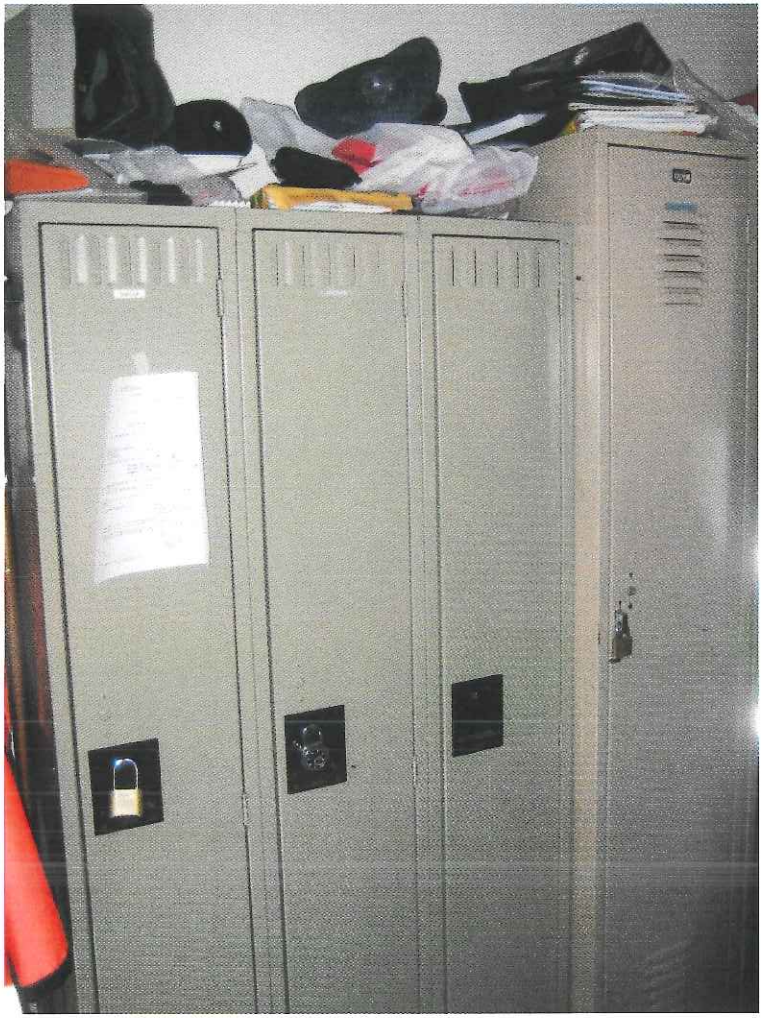


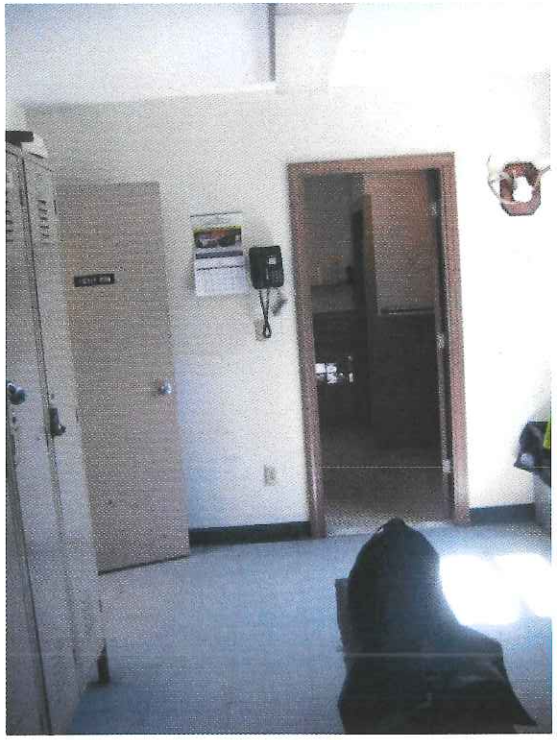
WOMEN'S LOCKER ROOM

MEN'S LOCKER ROOM

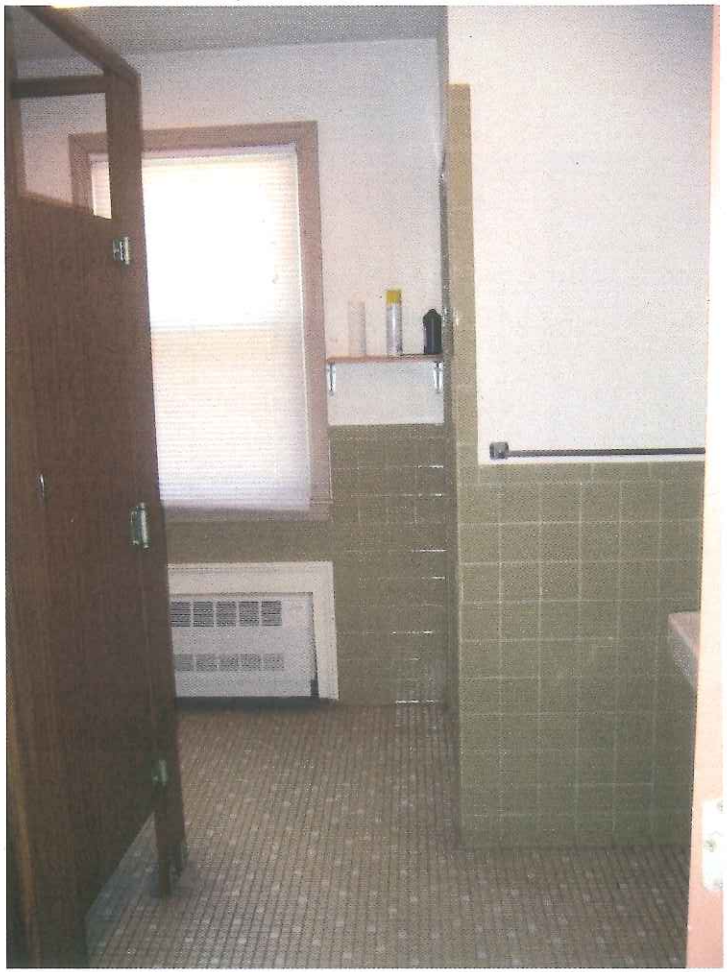


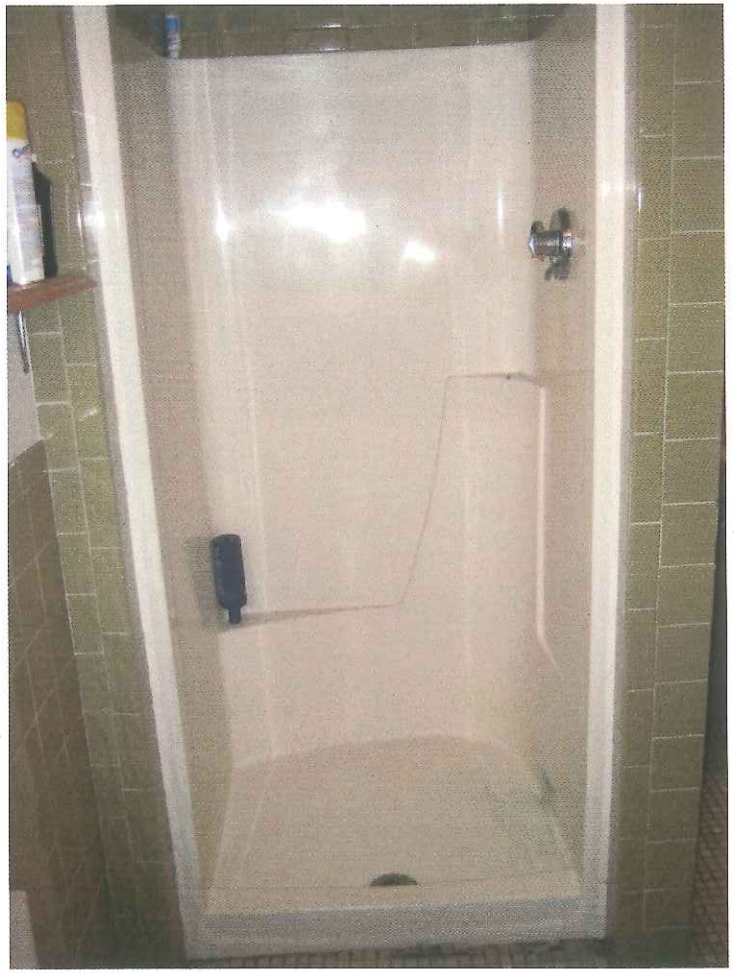
MEN'S LOCKER ROOM





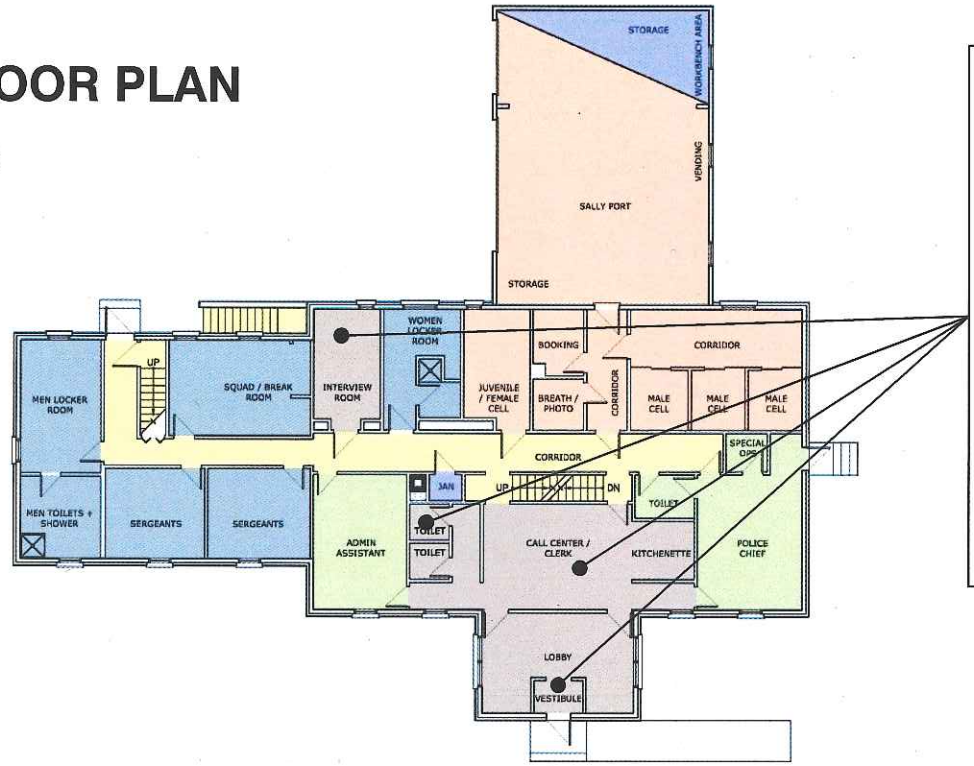
MEN'S TOILET/SHOWER ROOM





EXISTING FLOOR PLAN

PUBLIC SPACES



Non-dedicated public interview room; poorly accessed

Non-accessible toilet rooms

Inefficient layout of equipment, confidential information exposed

Non-code compliant entry vestibule

EXISTING FIRST LEVEL

LEGEND

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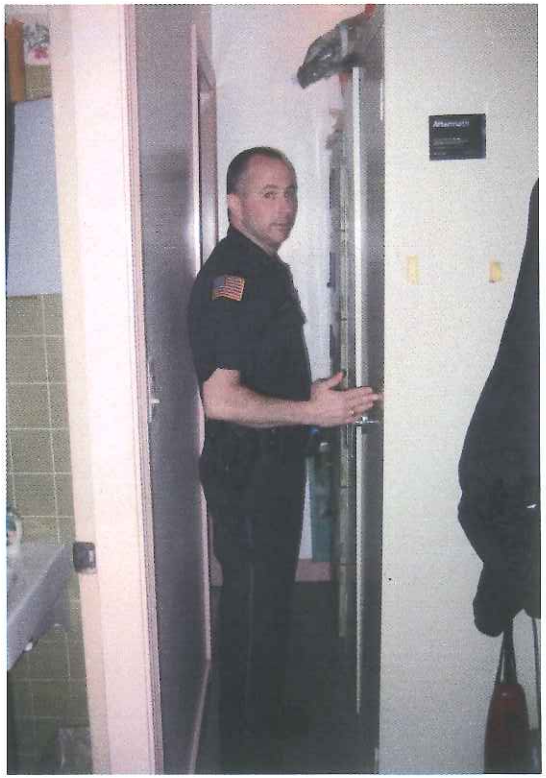
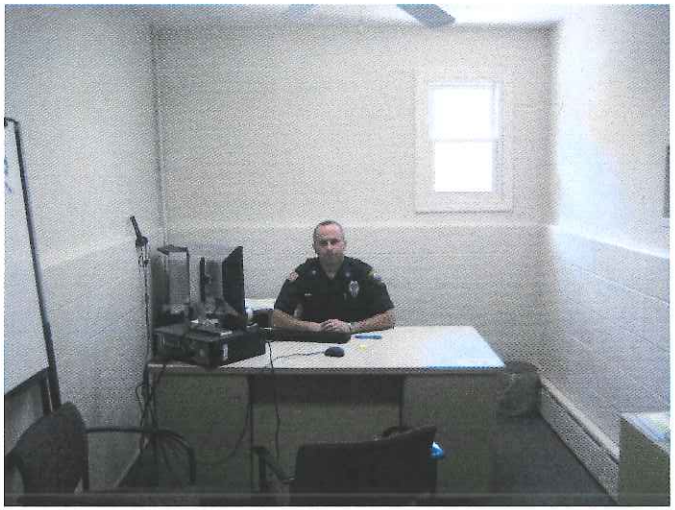
PUBLIC TOILET ROOMS

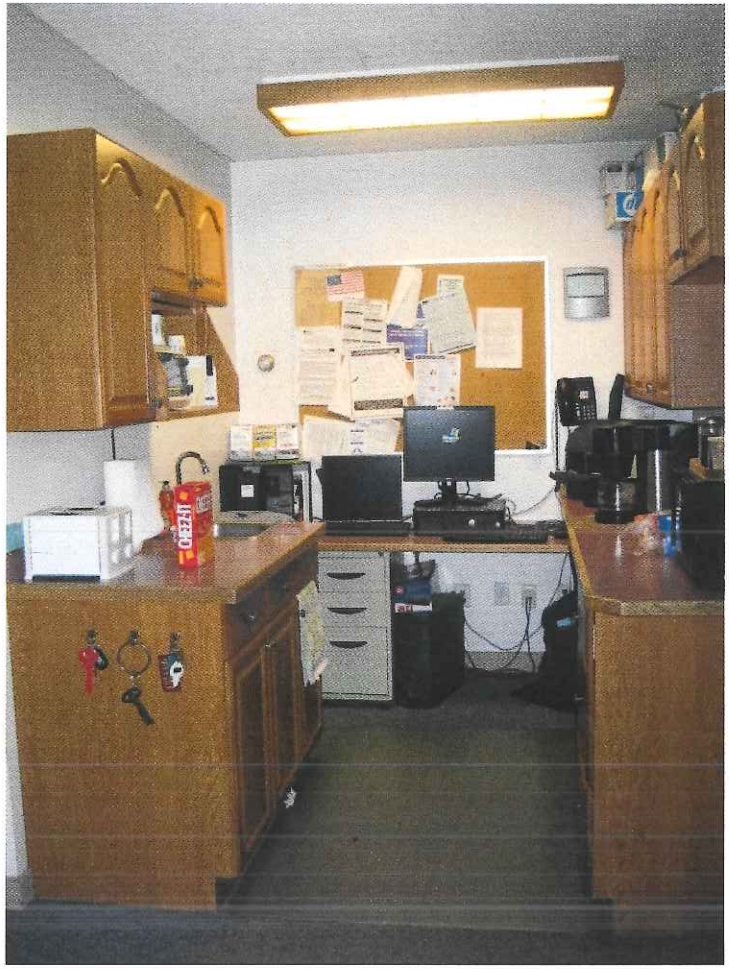


PUBLIC INTERVIEW ROOM



CLERK

CLERK

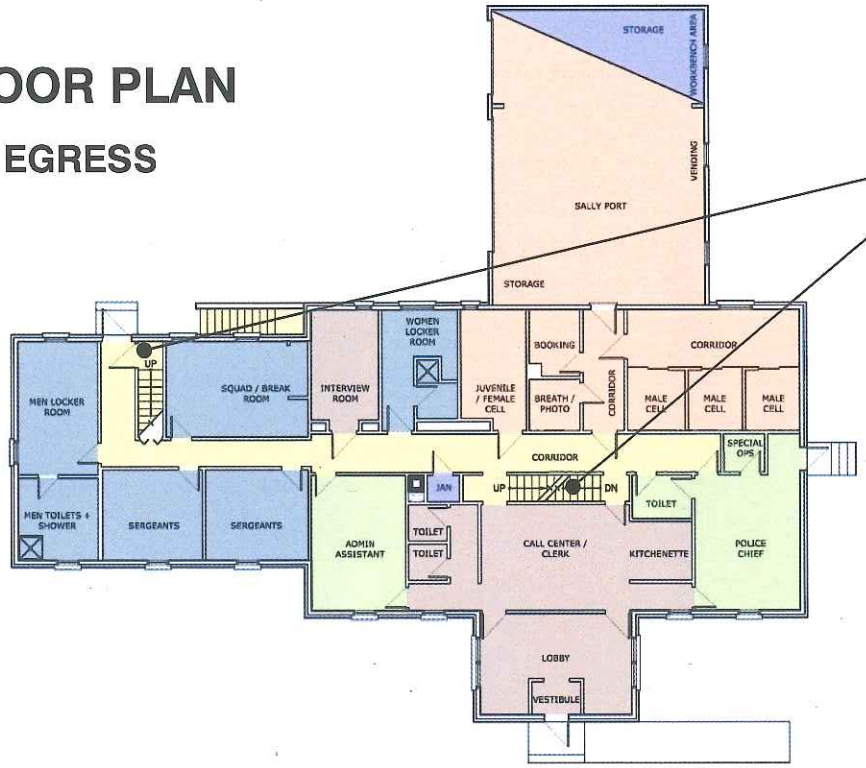


EXISTING FLOOR PLAN

CIRCULATION + EGRESS

Non fire-separated egress stair; no rated access to exterior

Corridor too narrow



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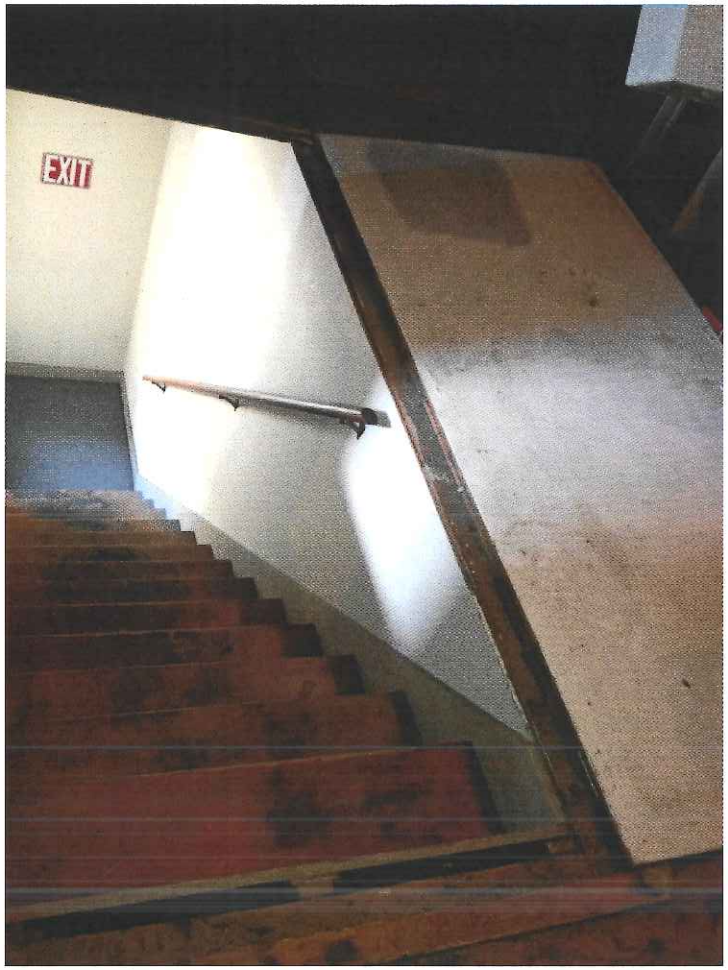
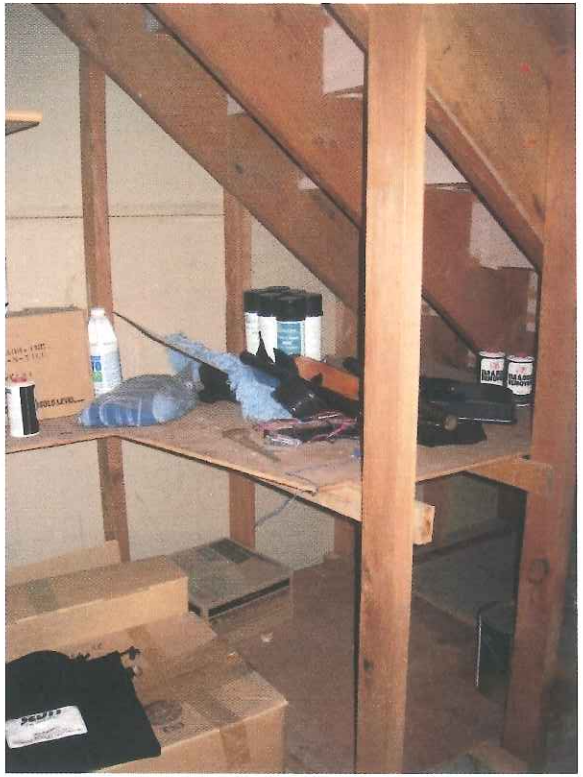
NON FIRE-SEPARATED STAIRS

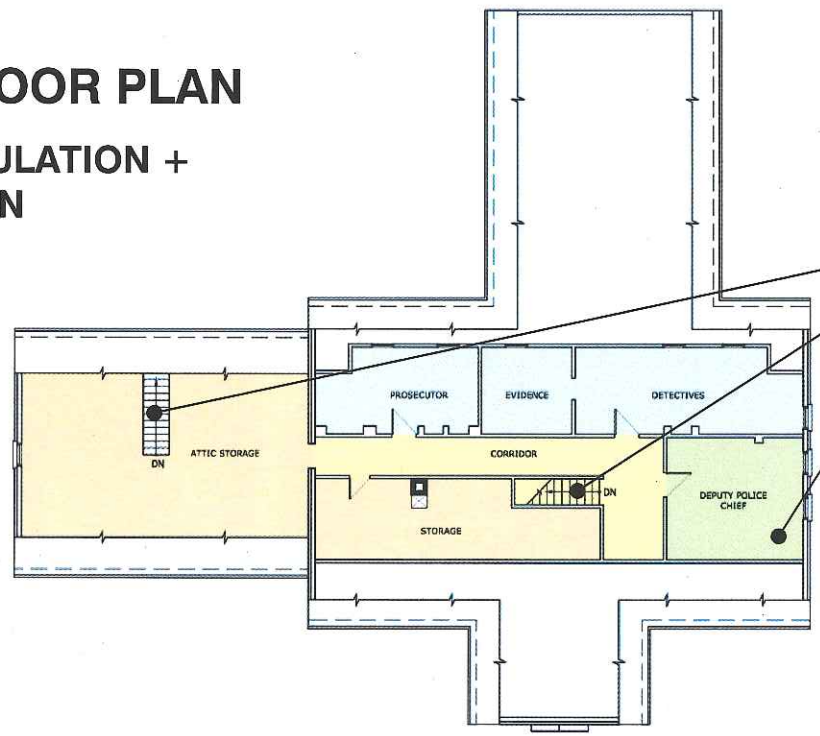


NON FIRE-SEPARATED STAIRS + CORRIDOR WIDTH



EXISTING FLOOR PLAN

VERTICAL CIRCULATION + ADMINISTRATION



Non fire-separated egress stair; no rated access to exterior

Water damage at 2nd floor office

No elevator for access to 2nd floor

EXISTING UPPER LEVEL

LEGEND

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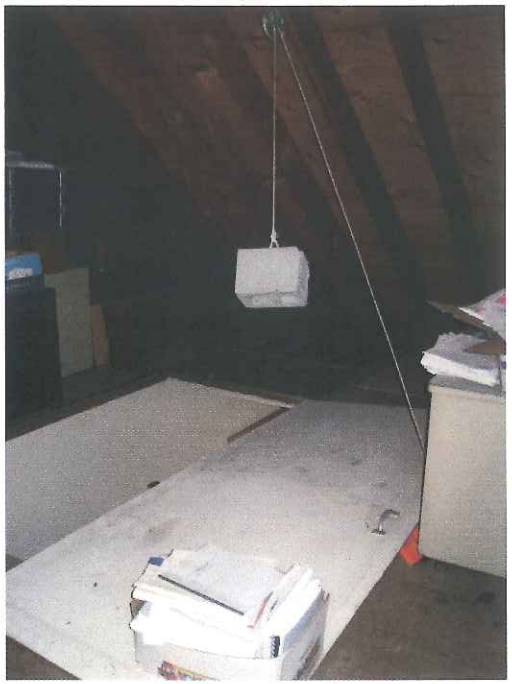
N

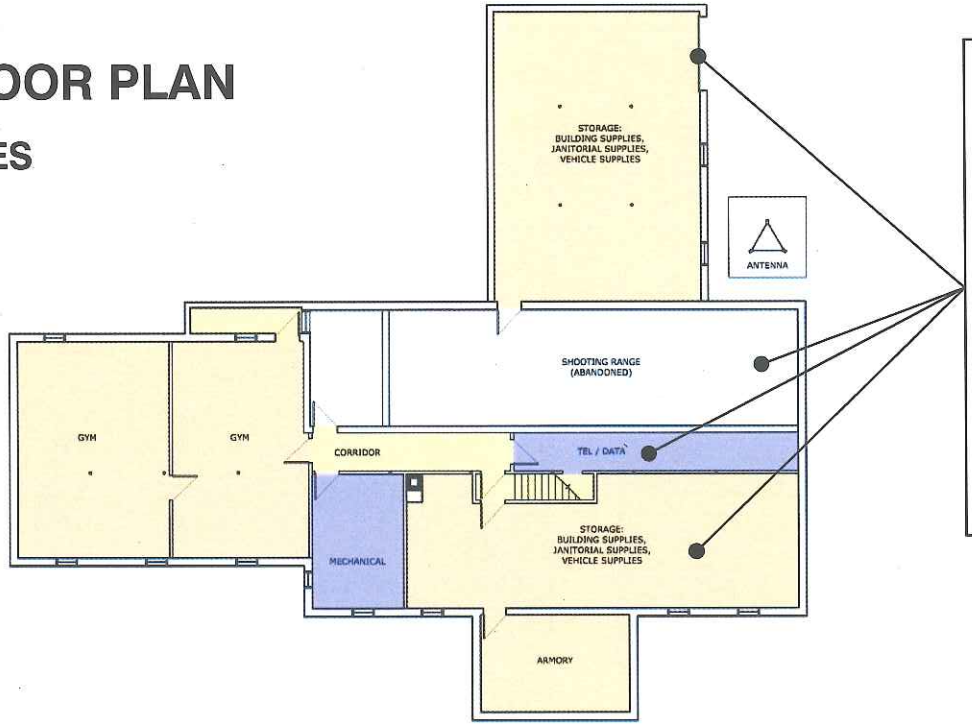
RECORDS STORAGE



WATER DAMAGE

EXISTING FLOOR PLAN

SUPPORT SPACES



Difficult to access, no paved drive lane

Abatement required due to lead levels

Inadequate space for Tel/Data

Miscellaneous mechanical systems scattered throughout

EXISTING LOWER LEVEL

LEGEND

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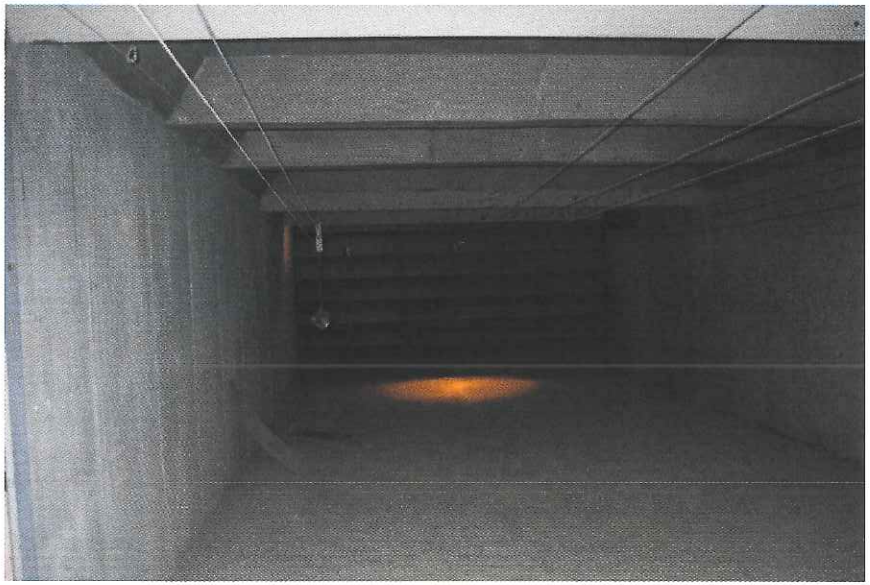
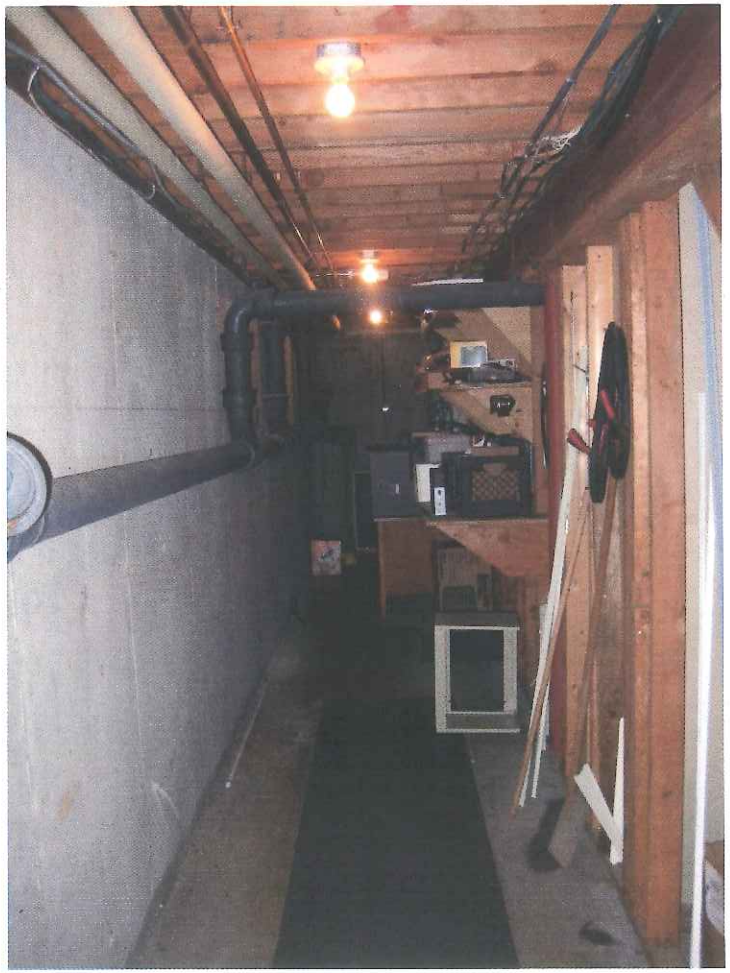
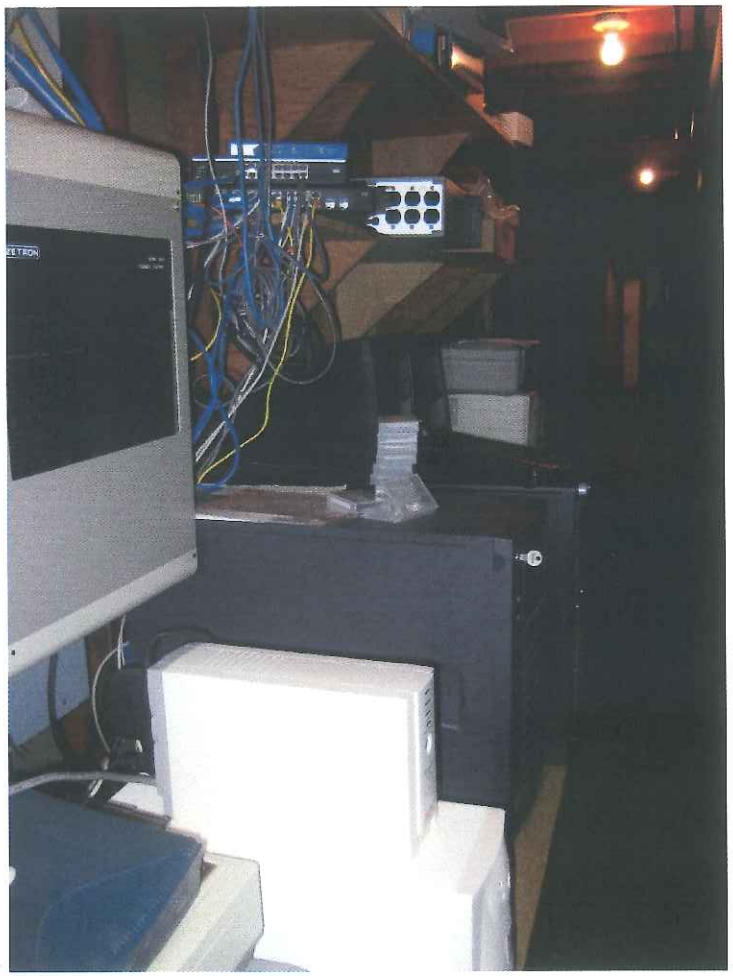
N

ACCESS + REMEDIATION

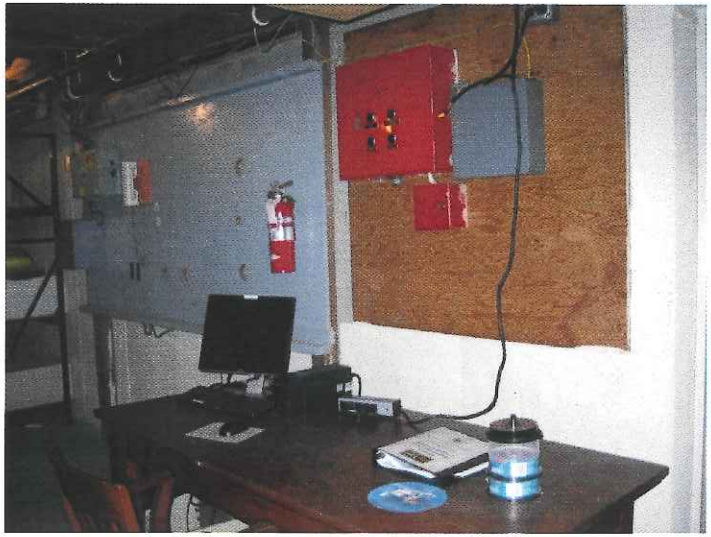


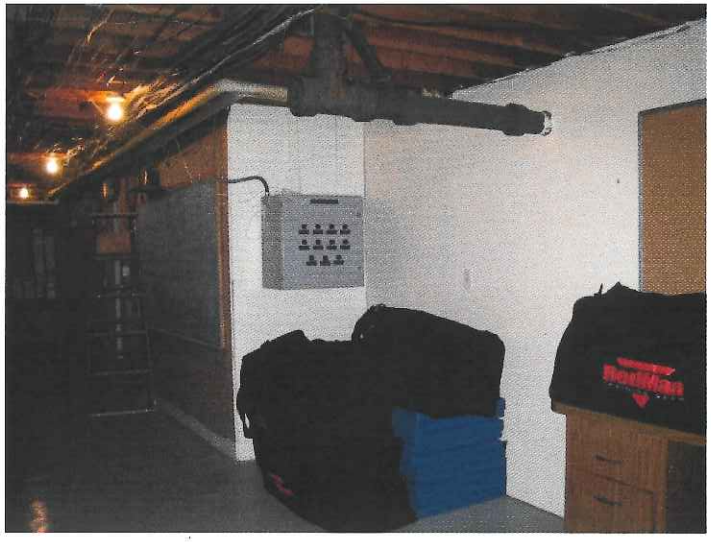
TEL / DATA





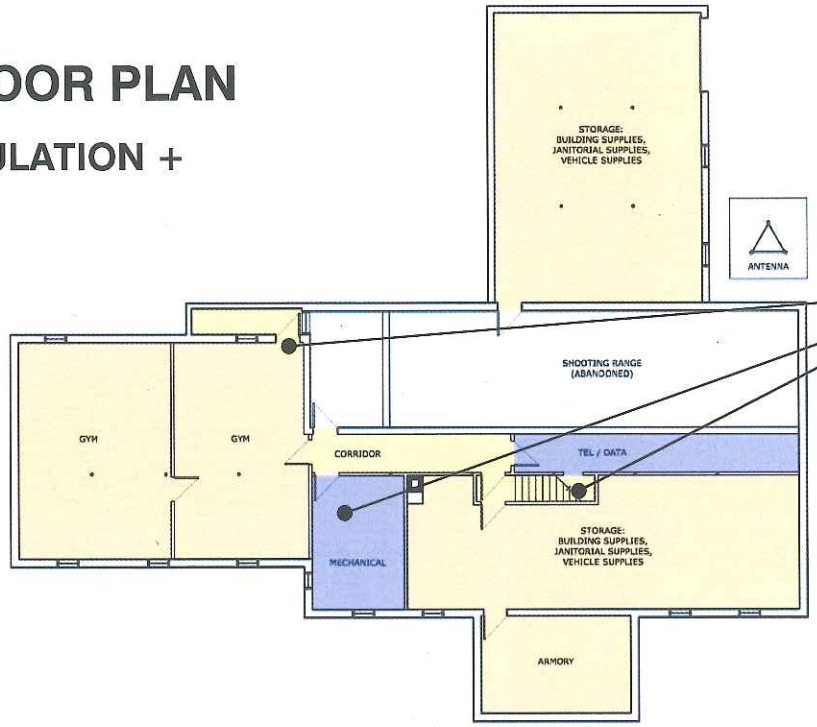
SCATTERED SYSTEMS





EXISTING FLOOR PLAN

VERTICAL CIRCULATION + MECHANICAL



Non-accessible egress due to step at door

Un-rated mechanical room

Non fire-separated egress; no rated access to exterior

No elevator for access to lower level

EXISTING LOWER LEVEL

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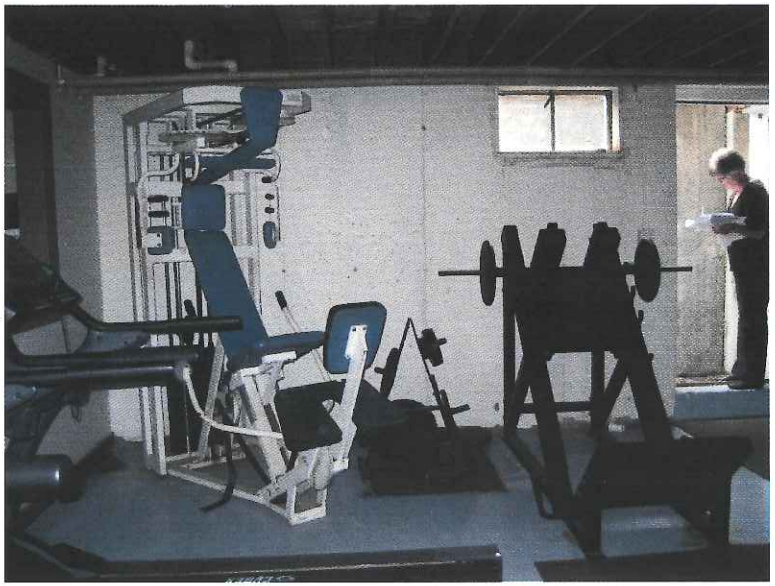
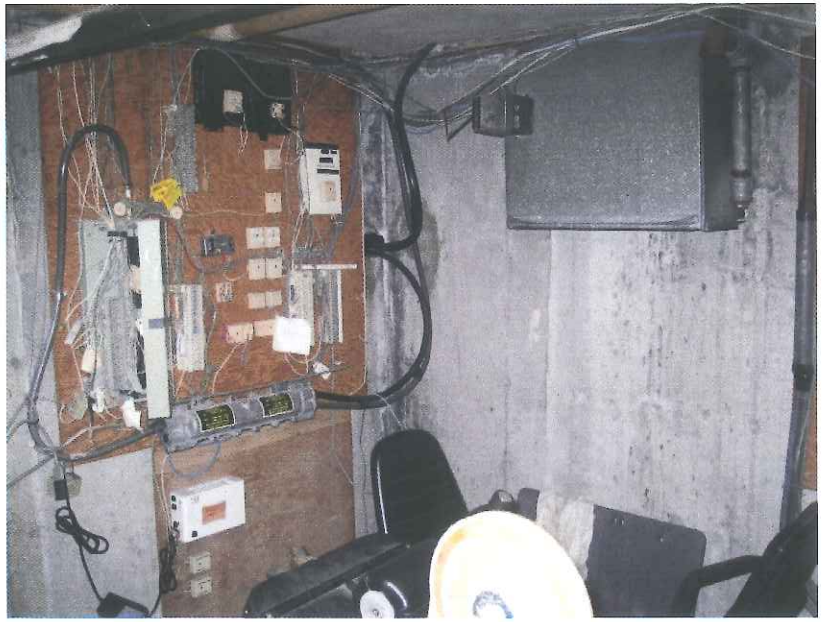
EGRESS



MECHANICAL ROOM



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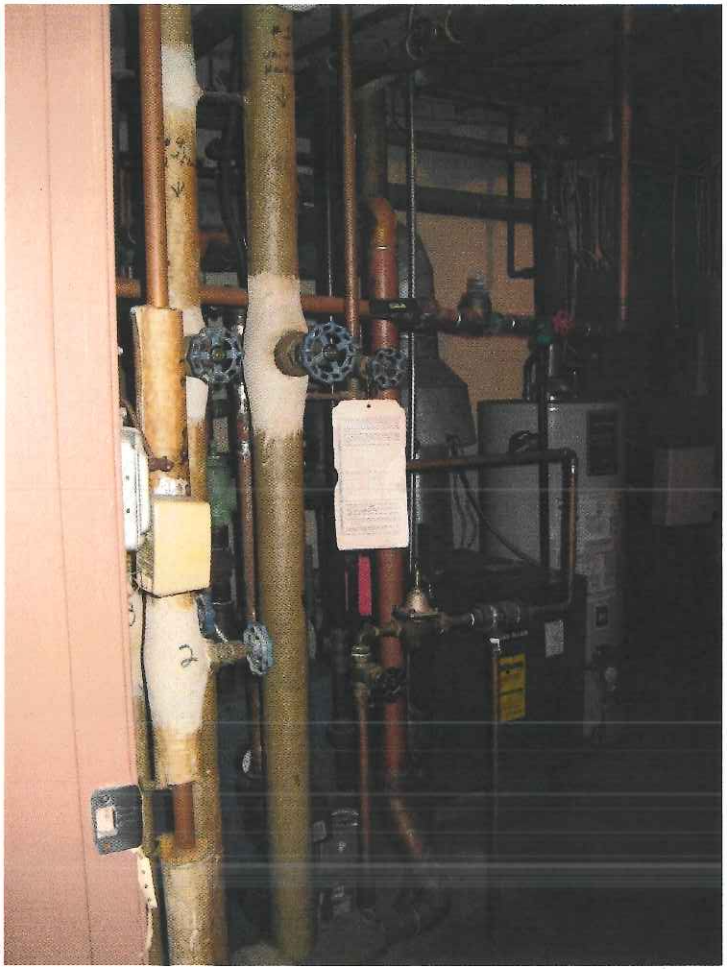
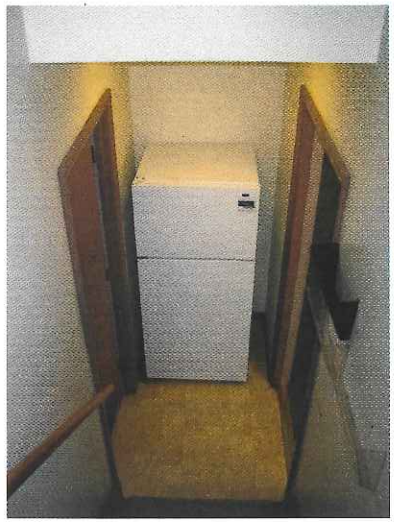


PROJECT PROCESS TO DATE

- Developed program using proposed Washington St. project
- Analyzed existing building + site
- Presented conceptual options for review + selected preferred option for further development;
- Updated program document to note differences in the two proposals
- Reviewed preferred option with Civil and Structural Engineers
- Finalized concept for professional cost estimator
- Secured cost associated with temporary facilities
- Developed soft costs to add to hard construction costs = Total Project Costs

BUILDING CODE REQUIREMENTS



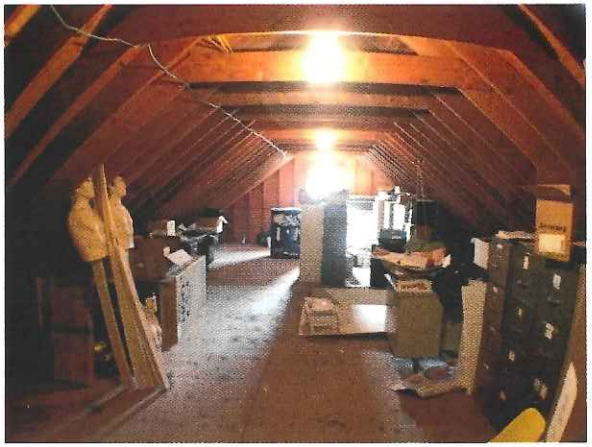
- 2009 International Existing Building Code with MA Amendments
  - Repairs: the restoration of any building part to good or sound condition as a product of maintenance. This project exceeds that definition.
  - Alteration: construction or renovation to an existing structure other than a repair/addition and is broken down to either Level 1, 2 or 3.
    - Level 1: the replacement or covering of existing materials, elements, equipment, or fixtures in kind.
    - Level 2: the reconfiguration of space, the addition or elimination of any door or window, the reconfiguration or extension of any system, or installing any additional equipment.
    - **Level 3: the work area exceeds 50% of the aggregate area of the building.**
  - **Addition: An extension or increase in the floor area, number of stories, or height of a building or structure.**
- 2009 International Energy Conservation Code with MA Amendments
  - Partial evaluation to understand implications to building envelope

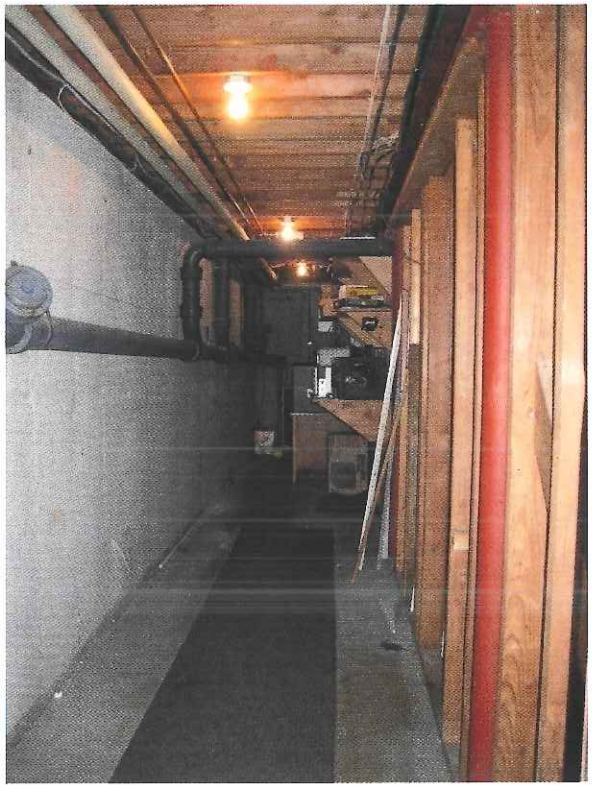
ARCHITECTURAL CONSIDERATIONS

- 2009 International Existing Building Code with MA Amendments: Level 3 Alterations + Addition
- **521 CMR Massachusetts Architectural Access Board**
- Department of Justice 2010 ADA Standards for Accessible Design
- 2009 International Energy Conservation Code with MA Amendments
- **DPH 105 CMR 470.000: Maintenance and Construction of Lockup Facilities**
- 248 CMR 10.00: Uniform State Plumbing Code
- 524 CMR Board of Elevator Regulations
- A listing of items that fall under the jurisdiction of the listed Codes:
  - **Life Safety**
  - **Sprinklers**
  - **Ventilation**
  - **2 forms of egress from each level in a Business Occupancy**
  - **Vertical access to all levels**
  - **Accessible door approaches**
  - Toilet fixture counts for building population
  - Exit access based upon building occupancy (different from population)
  - Insulation thickness
  - Air and/or vapor barriers
  - Prevent moisture infiltration
  - **Accessible site**

STRUCTURAL CONSIDERATIONS

- **2009 IEBC: Level 3 Alterations**
  - Requires evaluation for wind and seismic loads
- Foundation Slab
  - Remove to install elevator pit
  - Remove and reinstall at plumbing areas
  - **Modifications to support columns where required**
- First and Second Levels
  - Reframe around elevator and stairs
  - **Strengthen floor joists where live loads >50 psf (which is everywhere but the offices)**
- Roof
  - **Reconstruct where new exterior walls built**
  - **Install hurricane clips at all rafters**



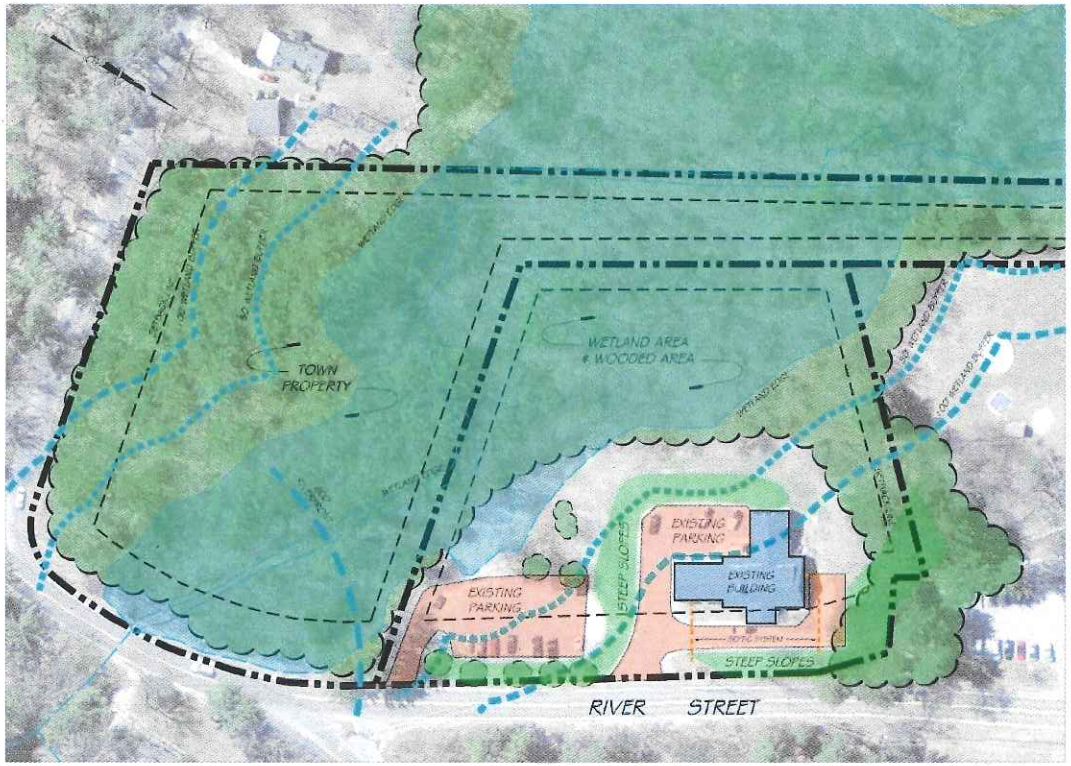


MEPFP CONSIDERATIONS

- Existing systems are old and have outlived their useful life; all new systems are recommended.
- **Fire Protection:** Sprinkler System to be installed
  - Sprinkler main, double check valve assembly, FD connection + wet system
- **Plumbing Systems:** All new services
  - Sewer ejector pit required
  - Possible leaching field replacement
- **HVAC Systems:** All new systems
- **Electrical Systems:**
  - All new systems: power, data, telephone, CCTV, interior and exterior lighting, emergency lighting, fire alarm, etc
  - New emergency generator

SITE CONSTRAINTS

- **Wetlands + associated buffers**
  - 100' buffer (State)
  - 50' no build (Town)
- Existing septic areas
- Property lines + offsets
- Areas of steep slopes



SITE PLANS

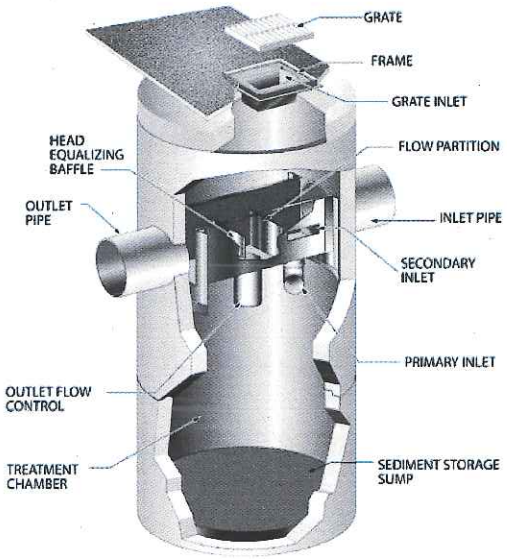
- Design Process
  - Conceptual floor plans and site plans developed and refined based on the program
  - Other storage needs accommodated by lean-tos

SITE PROGRAMMING

- **Site access + circulation**
  - 100% separation of public and private circulation paths not possible
  - Segregated parking
    - Visitors
    - Cruisers parked behind the building
    - Employees; shift change population considered
  - Acknowledge safety concerns of exiting onto public roads
- **Universal Accessibility**
  - Accessible entrance incorporated
  - Access from the lower level parking improved
- **Drainage improvements**
  - Limitations of setbacks and wetlands
- **Utility upgrades** include septic redevelopment

SITE CONSIDERATIONS

- Adding pavement for increased parking needs increases storm water runoff.
- Storm water runoff will require detention and treatment.
  - Any site work requiring meeting with the Conservation Commission will likely require storm water treatment
- Accessibility: modifications were required because the cost threshold of 30% or more of the full and fair cash value of the building were met. 521CMR requires a handicap ramp (+/- 110' long) for access from lower lot.
- Added retaining walls where pavement is increased
- Raised the level of lower parking lot to accommodate storm water runoff via swales and discharge.



Water treatment unit

COMPARISON BETWEEN STATIONS

Priority	Space	Occupants	Visitors	Total SF at Washington Street Station	Total SF at Option 5	Difference	Notes
ENTRY, PUBLIC LOBBY AND TRAINING							
	Public vestibule			88	89	1	Accessible + req'd by code
	Public toilet - first level			51	48	(3)	
	Public lobby - first level		3	208	135	(73)	Minimal seating; less display space
	Police clerk	1		347	329	(18)	Kitchenette space is small and difficult to get to for wheelchair users
	Public interview/ permitting room	4		91	74	(17)	
	Public toilet - upper level			46	0	(46)	
	Public Lobby - upper level		4	207	65	(142)	No seating area, requires personal escort from first floor lobby
	NET SUBTOTAL			**1,038**	**740**		
PRISONER PROCESSING/DETENTION + SALLYPORT							
	Prisoner processing			357	296	(61)	limited and awkward for processing equipment
	Cell			64	68	4	
	Cell			64	77	13	
	Cell			64	75	11	
	Cell - accessible			72	70	(2)	
	Ante			48	94	46	
	Ante			0	46	46	Secure corridors to satisfy DPH sight and sound requirements
	Ante			0	82	82	
	Prisoner shower			0	42	42	Required by Plumbing Code
	Janitor			0	7	7	Required by code, located for ease of cleaning cell area
	Interview/ bail	3		84	80	(4)	Path of travel for bailee to leave requires personal escort
	Holding/Booking			36	73	37	
	Sally port			840	715	(125)	Made smaller to fit holding + interview into plan. Lost mechanic workbench + storage
	NET SUBTOTAL			**1,629**	**1,725**		

COMPARISON BETWEEN STATIONS

Priority	Space	Occupants	Visitors	Total SF at Washington Street Station	Total SF at Option 5	Difference	Notes
OFFICERS/SQUAD ROOM/EVIDENCE							
	Sergeants office	5	5	318	364	46	6x6 cubes; Opt 5a: Day Sergeant desk in Roll Call space (37 sf); Offices in lower level; will need better natural lighting
	Closet			0	36	36	
	Squad room / Roll Call	6		351	397	46	Wash ST: 2 computer stations adj to sergeants + 2 stations in evidence receiving. Opt 5a: 332+65 (includes report writing)
	Break room			157	82	(75)	1 vending machine shown
	Evidence receiving	2		74	57	(17)	
	Evidence storage	1		154	243	89	Windows overlooking entry ramp will need modification; while SF is increased, layout due to elevator shaft is inefficient
	Narcotics/ valuables storage			45	58	13	Inefficient space; has a window requiring modification
	Found property			91	92	1	
	Bulk evidence storage			107	97	(10)	Indirect access through storage bay / road supplies space
	Storage Bay/Road supplies			203	292	89	laid out to maintain existing overhead door dimension
	NET SUBTOTAL			**1,500**	**1,718**		
ADMINISTRATION							
	Chief of police	1	4	215	258	43	
	Deputy chief of police	1	2	173	180	7	
	Admin. asst. / Records Storage	1		395	277	(118)	193 sf located in suite, 84 sf located outside suite, on corridor
	Conference room	12		314	204	(110)	Not directly accessed through Admin Assist space
	Workroom/ copier			142	49	(93)	Copier is just a space in the Admin area; not easily accessed by detectives and prosecuter; no workroom
	NET SUBTOTAL			**1,239**	**968**		

COMPARISON BETWEEN STATIONS

Priority	Space	Occupants	Visitors	Total SF at Washington Street Station	Total SF at Option 5	Difference	Notes
DETECTIVE/PROSECUTOR/GENERAL OFFICE							
	Detective bureau	2	1	294	289	(5)	less countertop workspace than Wash.St
	Closet			0	37	37	
	Interview	3		42	96	54	Monitoring off of Prosecuter office
	Prosecutor	1	2	150	130	(20)	
	File storage			113	84	(29)	Much smaller than required
	General Office	4		379	295	(84)	Needs: Elder Affairs, Crime Prevention Accident Reconstruction, Community Policing, Domestic Violence; able to get 4 workstations in, but circulation is not accessible and has limited file storage
	NET SUBTOTAL			**978**	**931**		
OFFICER SUPPORT							
	Unisex toilet			47	55	8	
	Female locker room	4		557	335	(222)	4 lockers, 2 toilets, 2 showers
	Male locker room	24		870	704	(166)	24 lockers, 2 toilets, 2 urinals, 2 showers; locker area has limited benches
	Firearms storage / armory			160	217	57	
	Laundry			0	104	104	
	NET SUBTOTAL			**1,634**	**1,415**		
BUILDING SUPPORT							
	Furniture storage			55	0	(55)	
	Sewer Ejector Pit / Sprinkler / Water				171		
	Network computer equipment room	1		67	60	(7)	
	Equipment Storage			138	162	24	2 equipment storage spaces at Wash St
	Mechanical room			210	225	15	
	Custodian			37	0	(37)	
	Emergency electrical			52	101	49	
	Electrical switchgear			75	73	(2)	

COMPARISON BETWEEN STATIONS

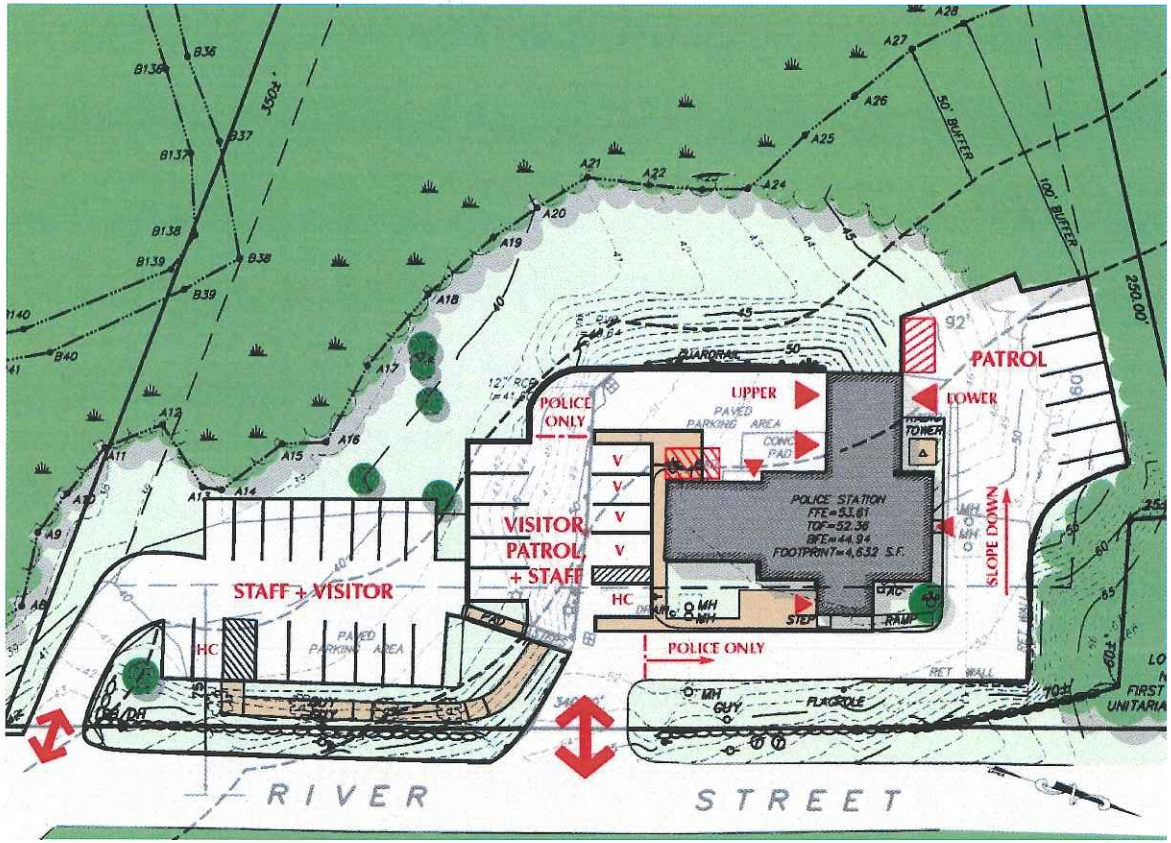
Priority	Space	Occupants	Visitors	Total SF at Washington Street Station	Total SF at Option 5	Difference	Notes
	Custodian closet			45	19	(26)	
	Custodian equipment closet			28	82	54	
	Janitor Lower Level			0	18	18	
	Toilet - upper level			0	56	56	
	Toilet - upper level			0	56	56	
	Elevator machine room			20	42	22	
	Elevator			126	177	51	(59)3
	Stair A / 1			308	425	117	2 floors at Wash St vs 3 floors at River St
	Stair B / 2			366	393	27	2 floors at Wash St vs 3 floors at River St
	Corridors			1,175	1,252	77	
	NET SUBTOTAL			**2,702**	**3,312**		
	NET GRAND TOTAL			**10,720**	**10,809**		
	GROSS AREA			**12,254**	**12,314**		Outside face of wall; taken from existing plans
SHARED SPACES							
	Existing community room/ training room	40		820	0	(820)	Assumed training gross = 956 sf
	GROSS WITH EXISTING SHARED TRAINING AT WASH ST			13,210	12,314		
	NET DEFICIENCIES			11,540	10,809	(2387)	Includes shared training room

OPERATIONAL COMPROMISES

- Entry/Public Areas: Significantly smaller + less organized particularly on upper level; clerk undersized
- Prisoner + Processing: Sally port loss of 1 bay + workspaces are smaller
- Officers: Sergeants located on lower level away from evidence + patrol officers; compromise was to add additional desk in squad room
- Squad Room: Less report writing area
- Community/Training Room: Not included in proposed Scheme 5
- Evidence: On main level at entry + inefficient layout
- Administration: Loss of storage + work space
- Detective/Prosecutor: Observation window moved to prosecutor rather than detectives
- General Office: Workstations accounted for, not all accessible
- Records Storage: Significantly smaller
- Officer Support: Location on lower level + away from breakroom
- Building Support: Some size issues

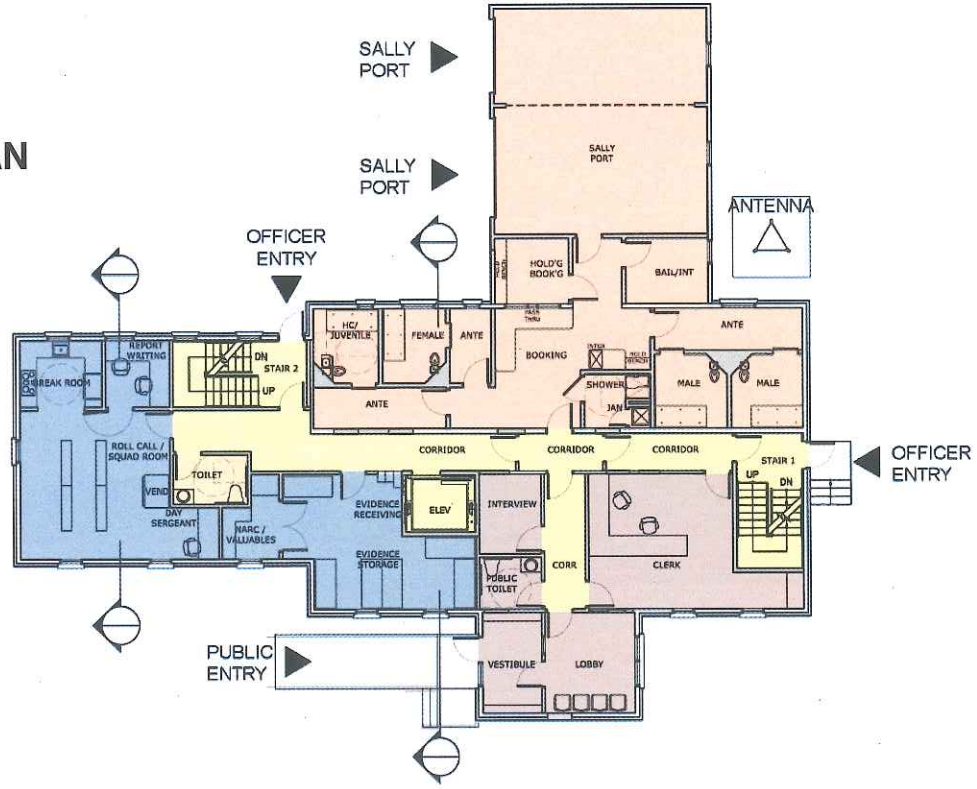
SITE PLANS

- Maintain existing vehicular entries on both levels
- Provide new dedicated visitor, staff + patrol vehicle parking on upper level
- Provide dedicated patrol vehicle parking at northwest portion of site
- Parking count accounts for shift change population
- Provide universal access from lower parking lot
- Provide new accessible entry to main lobby



OPTION 5

AGREED UPON FLOOR PLAN



PROPOSED FIRST LEVEL

LEGEND

- ENTRY, PUBLIC LOBBY + TRAINING
- PRISONER PROCESSING / DETENTION + SALLY PORT
- OFFICERS / SQUAD ROOM / EVIDENCE
- ADMINISTRATION
- DETECTIVE / PROSECUTOR / GENERAL OFFICE
- OFFICER SUPPORT
- BUILDING SUPPORT
- CIRCULATION

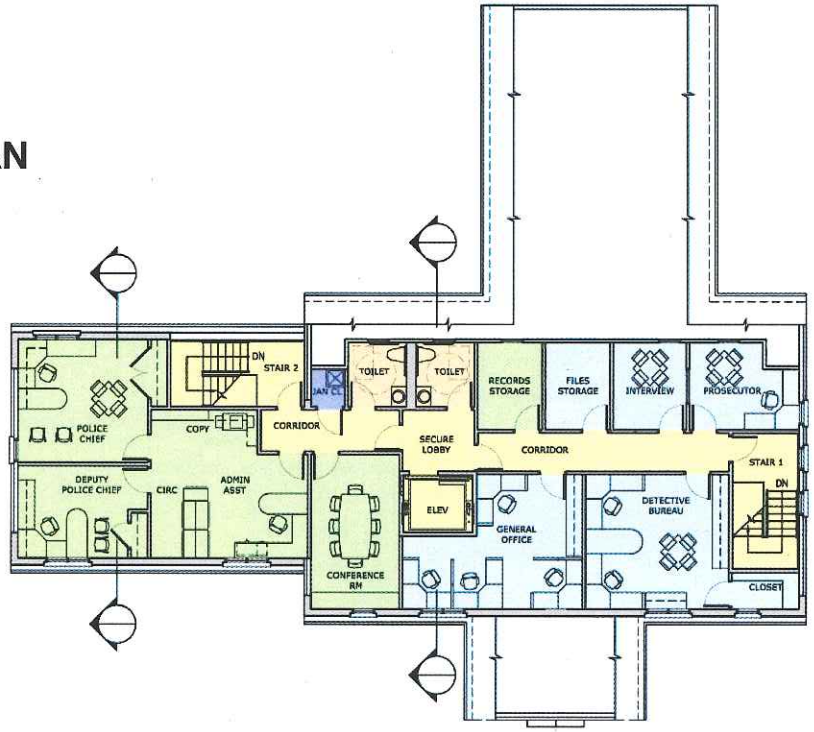
0 5' 10' 20' 40'

N

NORWELL POLICE DEPARTMENT

OPTION 5

AGREED UPON FLOOR PLAN



PROPOSED UPPER LEVEL

LEGEND

- ENTRY, PUBLIC LOBBY + TRAINING
- PRISONER PROCESSING / DETENTION + SALLY PORT
- OFFICERS / SQUAD ROOM / EVIDENCE
- ADMINISTRATION
- DETECTIVE / PROSECUTOR / GENERAL OFFICE
- OFFICER SUPPORT
- BUILDING SUPPORT
- CIRCULATION

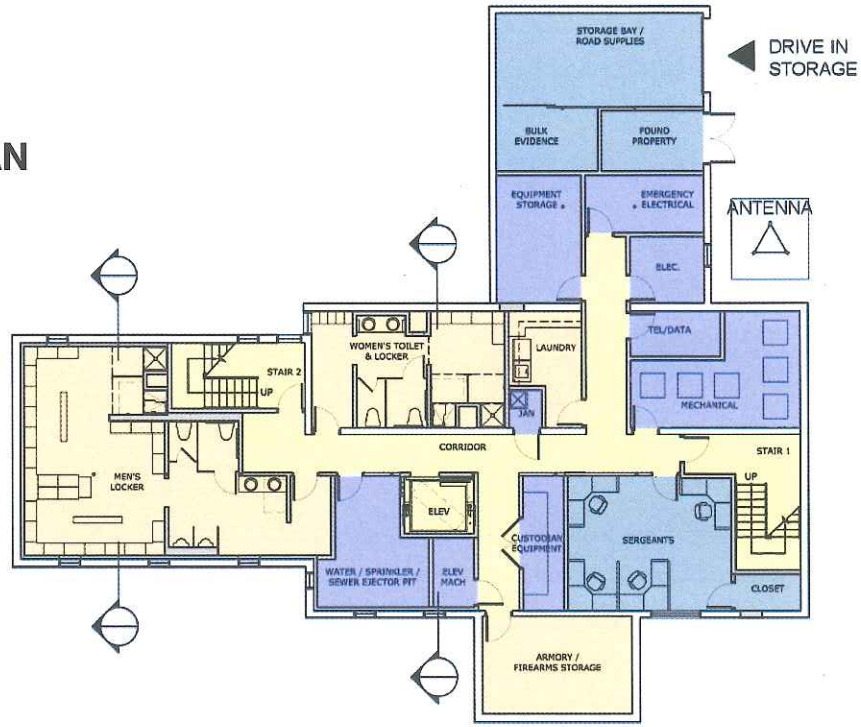
0 5' 10' 20' 40'

N

DECEMBER 12, 2012

OPTION 5

AGREED UPON FLOOR PLAN



PROPOSED LOWER LEVEL

LEGEND

- ENTRY, PUBLIC LOBBY + TRAINING
- PRISONER PROCESSING / DETENTION + SALLY PORT
- OFFICERS / SQUAD ROOM / EVIDENCE
- ADMINISTRATION
- DETECTIVE / PROSECUTOR / GENERAL OFFICE
- OFFICER SUPPORT
- BUILDING SUPPORT
- CIRCULATION

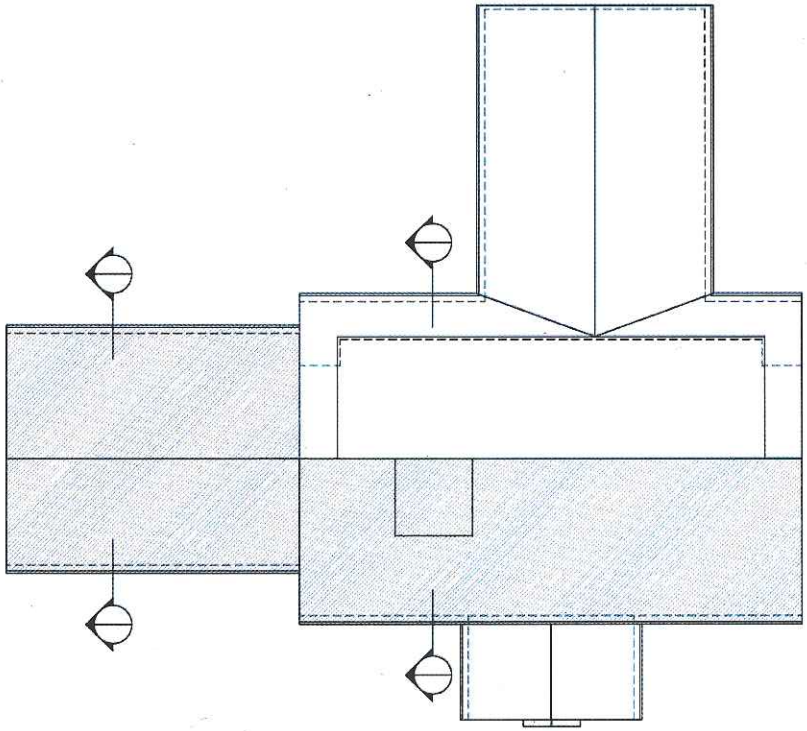
0 5' 10' 20' 40'

N

NORWELL POLICE DEPARTMENT

OPTION 5

ROOF PLAN



PROPOSED ROOF PLAN

LEGEND

- ENTRY, PUBLIC LOBBY + TRAINING
- PRISONER PROCESSING / DETENTION + SALLY PORT
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- CIRCULATION

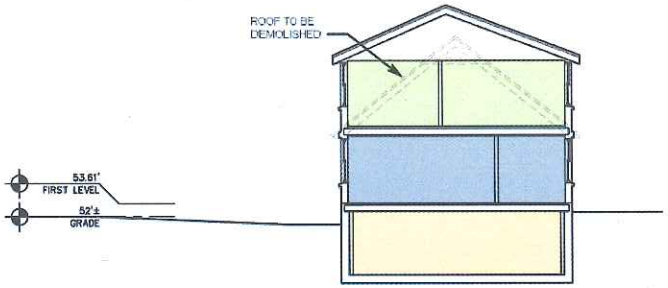
0 5' 10' 20' 40'

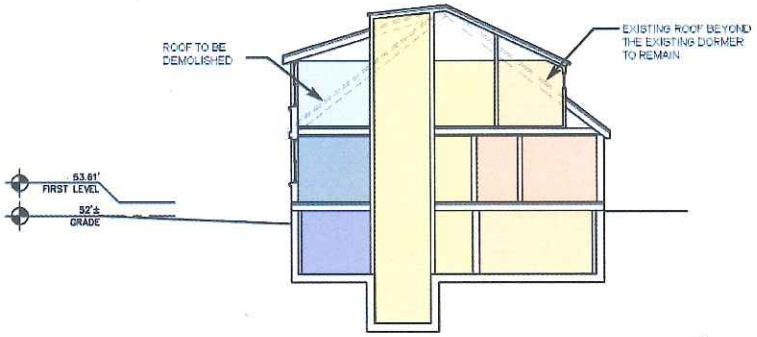
N

DECEMBER 12, 2012

OPTION 5

SECTIONS





SECTIONS

LEGEND

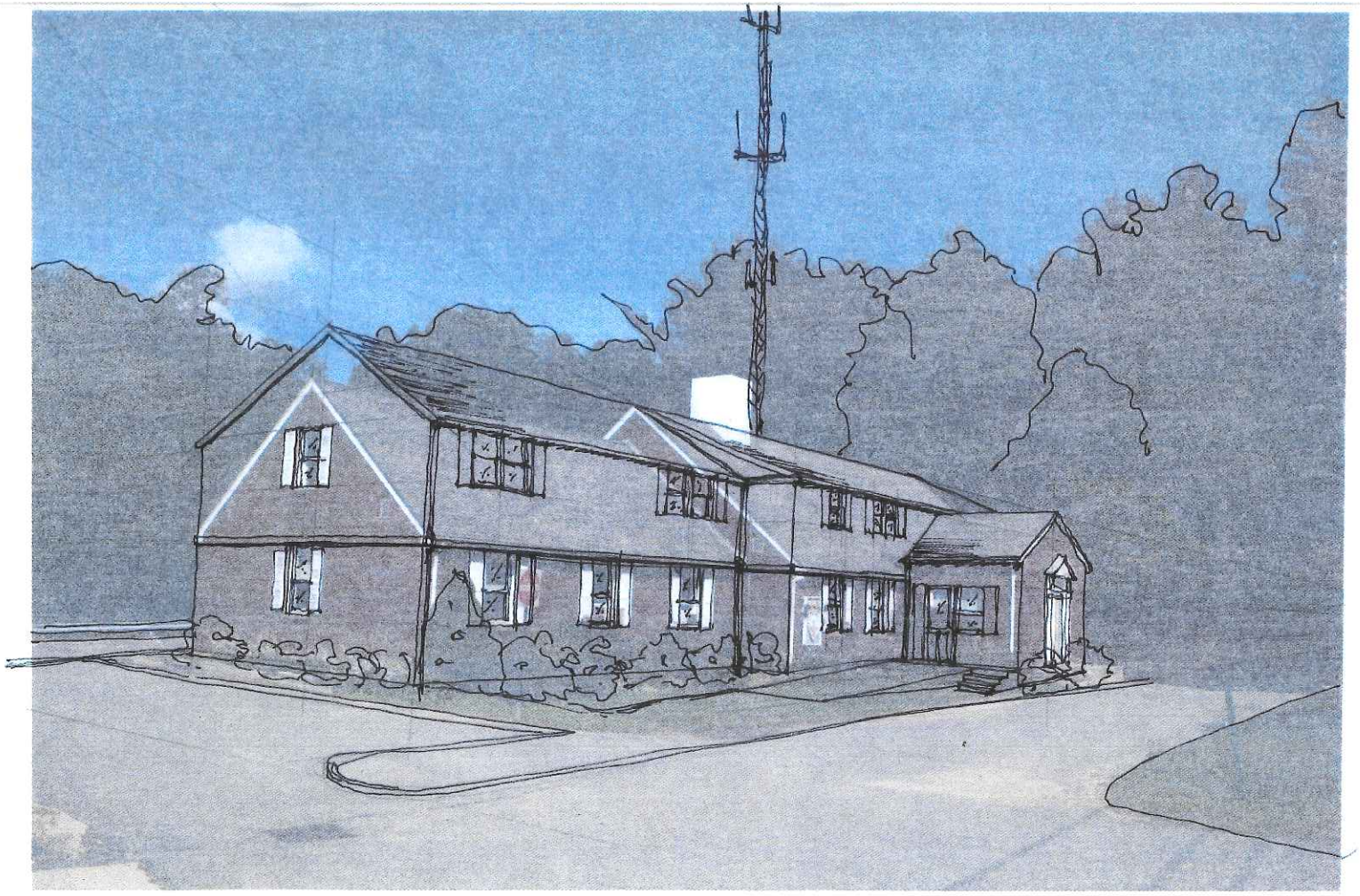
- ENTRY, PUBLIC LOBBY + TRAINING
- PRISONER PROCESSING / DETENTION + SALLY PORT
- OFFICERS / SQUAD ROOM / EVIDENCE
- ADMINISTRATION
- DETECTIVE / PROSECUTOR / GENERAL OFFICE
- OFFICER SUPPORT
- BUILDING SUPPORT
- CIRCULATION

0 5' 10' 20' 40'

N

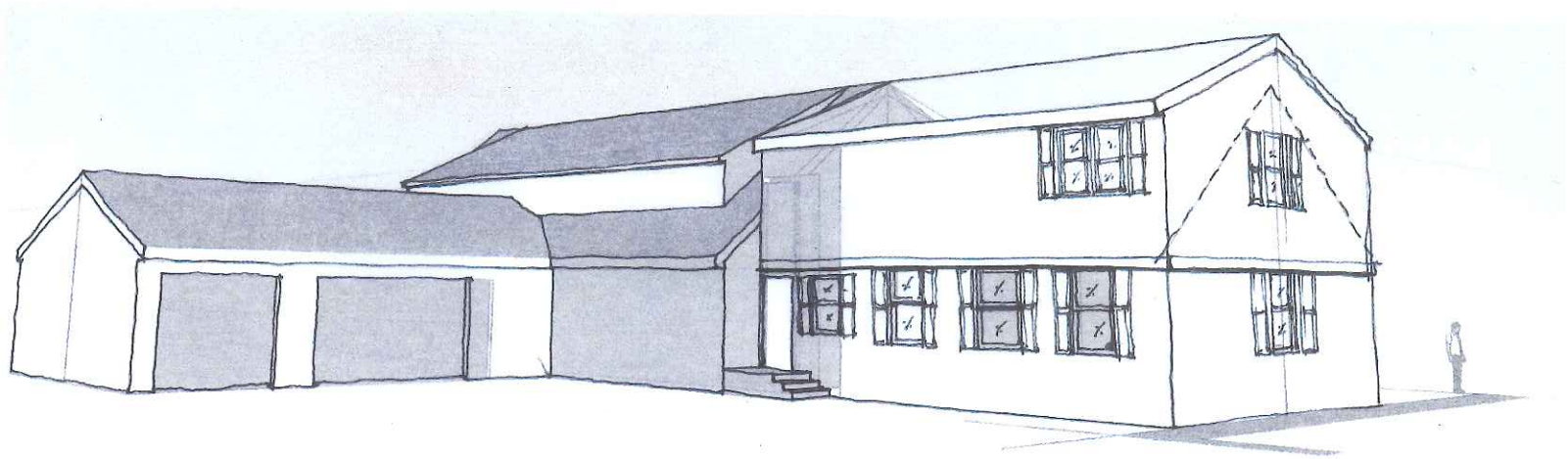
OPTION 5

VIEW FROM ENTRY



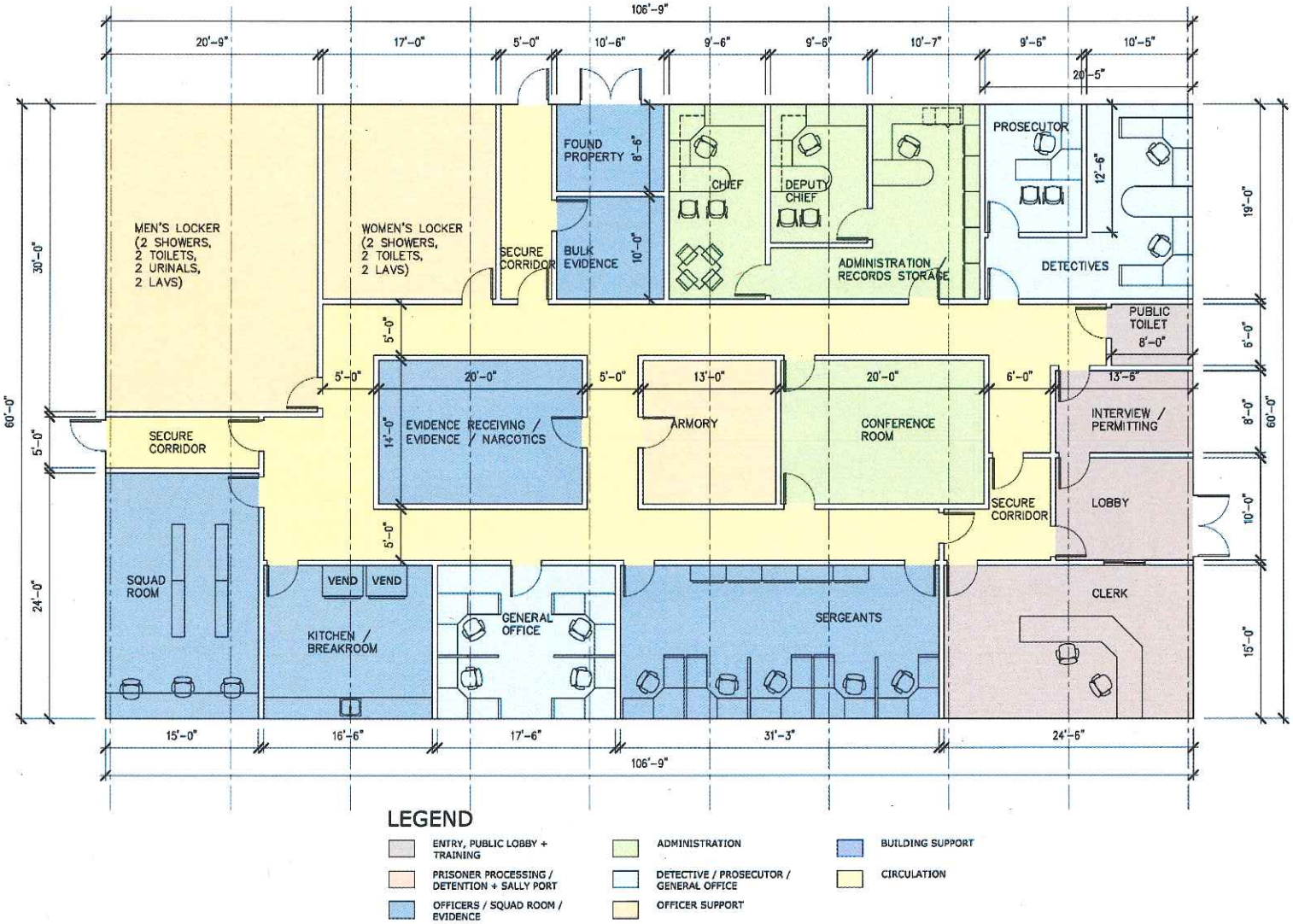
OPTION 5

VIEW AT REAR ELEVATION/SALLYPORT



TEMPORARY BUILDING

LOCATED AT HIGHWAY DEPARTMENT



LEGEND

- ENTRY, PUBLIC LOBBY + TRAINING
- PRISONER PROCESSING / DETENTION + SALLY PORT
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- BUILDING SUPPORT
- CIRCULATION

Estimated Total Project Costs	
ITEM	COST
Renovations: Building Cost + Site Development; allowances for septic system and lead remediation	$2,714,746
General Conditions, Bonds, Escalation + Design Contingencies	$ 982,621
Construction Contingencies	$ 369,737
Estimated Total Hard Construction Costs	**$4,067,104**
Estimated Soft Costs	$ 957,171
Total Construction Hard + Soft Costs	**$5,024,275**
Estimated Costs for Temporary Relocation + Permanent Move	$ 525,583
Total Project Costs	**$5,549,858**
Owners Contingency at 3%	$ 166,496
Project Totals	**$5,716,353**

THANK YOU