Volume I

study for

# J. Michael Ruane Judicial Center Salem Trial Court TRC 9910 ST2

Salem, Massachusetts

April 4, 2007

GOODY CLANCY
ARCHITECTURE
PLANNING
PRESERVATION

# Volume I

study for

# J. Michael Ruane Judicial Center
# Salem Trial Court TRC 9910 ST2

Salem, Massachusetts
April 4, 2007

## Volume I




GOODY CLANCY
ARCHITECTURE
PLANNING
PRESERVATION

# Volume II

# Volume III

## A2 Appendix 2

A2.1 *Salem Probate and Family Court Existing Conditions Report*, Goody Clancy, Draft: September 26, 2005, Revised: November 11, 2005

A2.2 *Salem Probate and Family Court Space Program*, DCAM, Draft–March 6, 2006

A2.3 *Chapter 34 Evaluation Renovation of the Probate and Family Court Building*, *Salem, Massachusetts, J. Michael Ruane Judicial Center*, Rolf Jensen & Associates, Inc., April 19, 2006;

A2.4 *Mechanical and Electrical Systems Analysis, Salem Trial Courts*, SEi, February 13, 2007; Mechanical Drawings, Salem New Trial Court, February 6, 2007; *Plumbing and Fire Protection Systems Analysis, J. Michael Ruane Judicial Center, Salem, Massachusetts*, Draft–February 2007

A2.5 *Salem Additional Service—Alternate Plan B Draft Study, Task 9—Identify Possible Levels of Partial Renovation of the PFC*, November 21, 2006

A2.6 *Asbestos, Lead Paint and Other Hazardous Materials Survey, Probate and Family Court Complex*, ATC Associates Inc., April 1, 2006

A2.7 *MEP HVAC Options for Minimal Renovation to PFC*, *Salem Courts*, September 27, 2006

A2.8 *Salem Courts Expansion Study, Salem, Massachusetts, Structural Evaluation*, Green International Affiliates, Inc., July 2003

A2.9 *Permitting Analysis*, *J. Michael Ruane Judicial Center and Salem Trial Courts*, Epsilon Associates, November 2005

A2.10 *Calculation of Water Usage and Discharge in New Court Facilities*, DCAM, March 7, 2007

# Volume IV

## A3 Appendix 3

A3.1 *Environmental Notification Form, J. Michael Ruane Judicial Center, Salem Trial Courts*, Epsilon Associates, Inc., January 2, 2007

A3.2 *Certificate of the Secretary of Environmental Affairs on the Environmental Notification Form*, February 22, 2007

A3.3 *Memo: DCAM, Proposed Trial Courts Expansion, Salem, Massachusetts, Pedestrian Improvement and Accommodations and Traffic Calming*, Earth Tech, Inc., February 7, 2007

A3.4 *Memo: DCAM, Proposed Trial Courts Expansion, Salem, Massachusetts, MBTA Garage Data—Traffic Analysis*, February 8, 2007

A3.5 *Functional Design Report, Proposed Construction of a New Trial Court Facility, J. Michael Ruane Judicial Center, Salem, Massachusetts*, Earth Tech, Inc., November 2006

A3.6 *Salem Trial Courts Transportation Study*, Howard/Stein-Hudson Associates, Inc., May 2002

A3.7 *Final Geotechnical Data Report, North Street and Bridge Street Ramp Re-Alignment, Salem, Massachusetts*, Nobis Engineering, October 14, 2005

A3.8 *Phase I and II Site Analysis, Detailed Review*, ICON architecture, inc., July 2003

# Preface

This study was prepared for the Office of Planning Design and Construction of the Division of Capital Asset Management, Commonwealth of Massachusetts, in accordance with Massachusetts General Laws Chapter 29, Sections 7K and 26A. It is intended to investigate capital needs, evaluate alternatives, and recommend a solution that corresponds to the current needs of the Trial Court, in conformance with its current long term capital facilities development plan.

The study provides a clear and detailed frame of reference for the design and implementation process and recommends a solution that can be accomplished within the appropriation or authorization for that project. It includes a space program which reflects the Trial Court's needs, a description of the project requirements, an accurate estimate of capital and operating costs, and an implementation schedule. Conceptual building designs, where included, are not intended to constrain the final design, but rather to illustrate functional relationships, demonstrate the practical operation of design criteria and conformance with applicable codes and standards, and serve as the basis for developing an accurate cost estimate.

Before DCAM can enter into a contract for final design services, this study must be certified by the head of the Trial Court, and by the Director of the Court Facilities Unit and the Commissioner of DCAM. Thereafter no substantial changes can be made to the program during the implementation process. In no event shall the design work be such as would result in a change in the number of gross square feet to be constructed in the project of more than ten per cent from the number specified in this study.

# Acknowledgements

## Commonwealth of Massachusetts


### Executive Office of Administration and Finance Division of Capital Asset Management

David B. Perini, Commissioner

### Office of Planning Design and Construction

Michael McKimmey, Deputy Commissioner

Michael B. Williams, Director of Programming

Elizabeth A. Minnis, Director, Courts Facilities Unit

Gail Rosenberg, Project Manager, Programming

Ron Ferrara, Project Manager, Design and Construction

Craig Holmes, Senior Cost Manager

### Office of the General Counsel

Robert McGinness, General Counsel

Freya Bernstein, Deputy General Counsel

Carol Meeker, Deputy General Counsel

### Office of Real Estate

H. Peter Norstrand, Deputy Commissioner

Stephen Andrews, Deputy Director

Warren Madden, Project Manager

### Office of Leasing

Martha Goldsmith, Director

Bruce Tebo, Senior Leasing Program Manager

Gayle Clifford, Program Manager

## Office of Facilities Maintenance

Tom Tagan, Program Manager

## Administrative Office of the Trial Courts

Robert A. Mulligan, Chief Justice for Administration and Management

Michael Jordan, Director, Court Capital Projects

Hon. Gregory C. Flynn, Presiding Justice, Waltham District Court

Richard L'heureux, Manager, Programming, Planning & Design

Margaret Cavanaugh, Administrative Attorney

**LAW LIBRARY**

Marnie Warner, Director

Richard Adamo, Law Librarian, Essex County

## Trial Court Personnel

**SUPERIOR COURT**

Hon. Barbara Rouse, Chief Justice

Thomas A. Driscoll, Jr., Superior Court Clerk Magistrate

John O'Brien, Superior Court Clerk

**DISTRICT COURT**

Hon. Lynda M. Connelly, Chief Justice

Hon. Robert A. Cornetta, Presiding Justice

Robert Arena, District Court Clerk Magistrate

Dolores Reyes-Gormley, Chief Probation Officer

**PROBATE AND FAMILY COURT**

Hon. Sean N. Dunphy, Chief Justice

Hon. John Stevens, First Justice

Pamela Casey O'Brien, Register of Probate

Terry Carfazzo, Assistant Register of Probate

Mark D. Juknavorian, Chief Probation Officer

**JUVENILE COURT**

Hon. Martha P. Grace, Chief Justice

Hon. Sally Padden, First Justice

Judy Brennan, Juvenile Court Clerk Magistrate

**HOUSING COURT**

Hon. Steven D. Pierce, Chief Justice

Paul J. Burke, Director of Operations

Court Administrator Harvey Chopp

**ESSEX COUNTY COURT FACILITIES**

Jay Leonard, Courts Facilities Director

## State Officials

Senator Frederick Berry

Representative John Keenan

## City of Salem

Mayor Kimberley Driscoll

Lynn Duncan, Director, Department of Planning and Community Development

Bruce Thibodeau, City Engineer

The Salem Partnership

Historic Salem Inc.

Federal Street Neighborhood Alliance

Salem Courthouse Steering Committee

## MassHighway

Neil Boudreau, State Traffic Engineer

Steve McLaughlin, Project Manager

# Consultants

## Goody Clancy

Joan Goody, FAIA, Principal-in-Charge

Jean Carroon, AIA, Principal

Paul Dudek, AIA, Project Manager, Study

George Perkins, AIA, Project Manager, Design

Michael Joyce, AIA, Project Architect

## SEi Companies MECHANICAL AND ELECTRICAL ENGINEERING

Don Haiges, P.E., Principal-in-Charge

Mark Warren, P.E., Facilities Director

Mike Fournier, P.E., Associate Principal

**Judith Nitsch** CIVIL ENGINEERING

Bill Doyle, P.E., LEED, Project Manager

Gerald Blumenthal, Senior Project Manager

**Lim Consultants** STRUCTURAL ENGINEERING

Lee Lim, Principal

**Carol R. Johnson & Associates, Inc.** LANDSCAPE ARCHITECTURE

Harry S. Fuller, Executive Vice President

Kate Thompson, Senior Associate

**DMC Engineering, Inc.** PLUMBING ENGINEERING

Daniel Carson, President

Raymond McCrary, Principal

**Falk Associates, Inc.** SPECIFICATIONS

Stephen Falk

**Rolf Jensen & Associates** CODE CONSULTANTS

David LeBlanc, P.E., Engineering Manager

**Faithful and Gould** COST ESTIMATING

Neil Fontana, Senior Consultant

**Epsilon Associates** PERMITTING/HISTORIC

Laura Rome, Senior Consultant

Douglas Kelleher, Senior Planner

**Earth Tech** TRANSPORTATION PLANNING

Nicholas Rubino, Senior Project Manager

Dennis Flynn, Traffic Engineer Project Professional

# 1 Executive Summary

## 1.1 Project Justification

The purpose of this project is to replace the Commonwealth's outdated judicial facilities in downtown Salem serving Southern Essex County. Currently the courts are housed in four buildings; the Superior Court is located in two interconnected buildings on Federal Street; Probate and Family Court is located directly adjacent on Federal Street, and the District Court is housed in a building on Washington Street at the corner of Church Street, one block away. Housing Court currently holds sessions in the Juvenile Court leased facility building. The Jury Pool meets in leased space in the Tabernacle Church on Federal Street across from the Superior Court building. Juvenile Court leases space at Shetland Park, an industrial park on Congress Street, approximately one mile away.

The project will be the fulfillment of a preliminary Master Plan completed in August 2004 which proposed the creation of a "courts campus" to bring together different court departments in order to offer comprehensive services and take advantage of shared resources.

## 1.2 Project Summary

The project will meet the goals of the original Master Plan by constructing a new Trial Court building to house the Superior Court, District Court, Juvenile Court and Housing Court. The Law Library will be accommodated in the relocated First Baptist Church building. Renovation of the existing Probate and Family Court building (also currently housing the Registry of Deeds) for the sole use of the Probate and Family Court was originally included in the scope but has been placed on hold pending funding. The unanticipated rapid escalation of construction costs since 2004 has reduced the intended scope of the project to fit the project budget. The study for the renovation of the Probate and Family Court/Registry of Deeds building will be completed and certified at a later date when funding is available.

**FIGURE 1A** Location Plan

**FIGURE 1B** Site Plan with 1/4-mile context

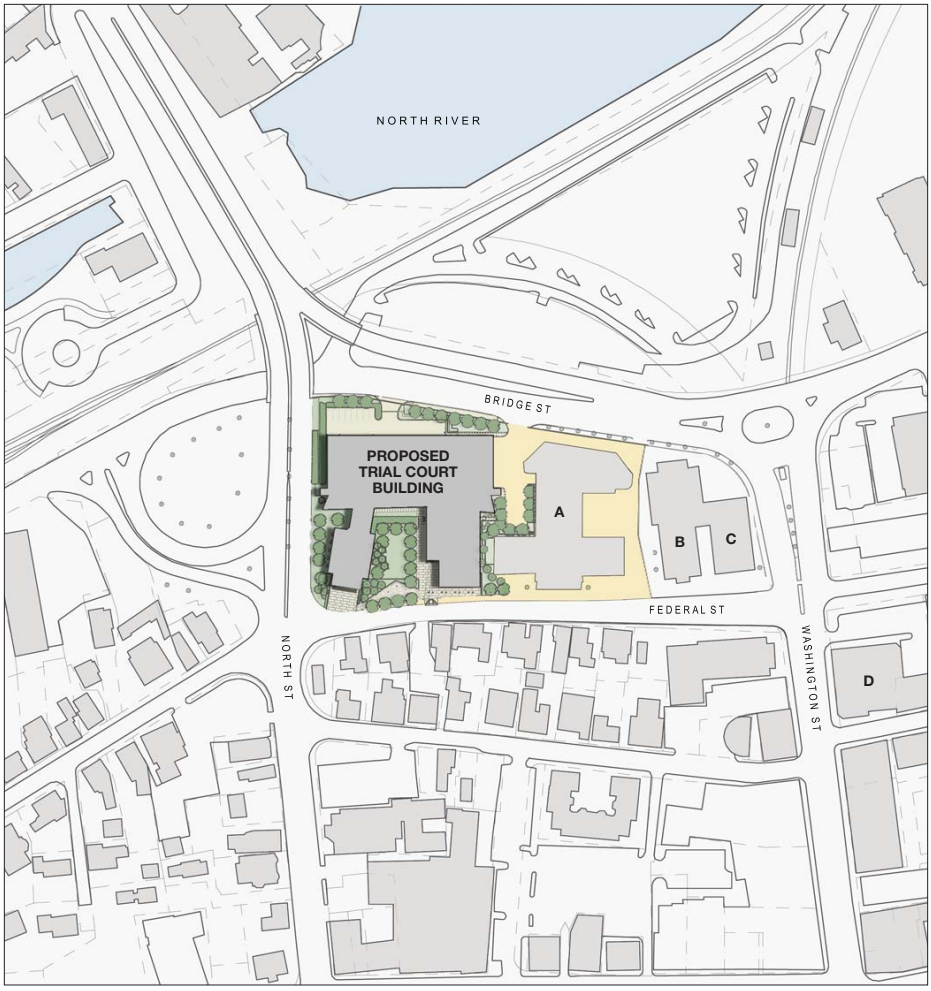
Existing Court Buildings:

**A** Probate and Family Court/ Registry of Deeds

**B** Superior Court

**C** County Commissioner's Building

**D** District Court




**SITE ASSEMBLY** After the decision was made to locate the new Trial Court building adjacent to the Probate and Family Court building on Federal Street, and in order to have a site large enough to accommodate the proposed Trial Court Building, DCAM had to assemble a parcel by acquiring several different properties, both private and municipal. The land acquisition process was complicated and involved the purchase of three mixed use/residential properties (58, 60 and 62 Federal Street), the transfer of a city-owned parcel (granted to DCAM by a unanimous vote of the Salem City Council on November 16, 2005) to the Commonwealth and the removal of an interchange ramp from North Street to Bridge Street. Crucial to the project was the acquisition of the First Baptist Church of Salem, which is in the final stages of being resolved. The resulting 3.1 acre site will be bounded by a line between the Probate and Family Court and the Superior Court and County Commissioner's buildings to the east, Federal Street to the south, North Street to the west and Bridge Street to the north (see Figures 1A and 1B).

## 1.3 Space Program Summary

The proposed Trial Court Building is programmed to be 175,412 GSF. The current plans total 190,071 GSF. During the design phase, every effort will be made to bring the building square footage into line with the program. The courtroom wing facing Bridge Street will be six stories high (88 ft); the pavilion wing fronting on Federal Street will be four stories high (60 ft).

The courtroom wing houses the Superior Court (four courtrooms in two court sets) with judges and juries on the 4th floor; the District Court and Housing Court (three District Court courtrooms and one courtroom for Housing in two court sets) with associated judges and juries on the 3rd floor; Superior Court Probation, Superior Court Clerk Magistrate, Housing Court Clerk Magistrate and the Jury Pool on the 2nd floor and the District Arraignment Court, District Court Probation and District Court Clerk Magistrate on the 1st floor. The lower level houses a central holding area for detainees, loading dock, storage, maintenance shop and parking for the judges.

The pavilion wing houses the Juvenile Court with judges and juries on the 4th floor; two Juvenile Court courtrooms (one court set) on the 3rd floor; the Juvenile Court Clerk Magistrate on the 2nd floor; Juvenile Court Probation on the 1st floor and the District Attorney and the Grand Jury in the lower level.

Total number of courtrooms is eleven. Five courtrooms are planned for the renovated Registry of Deeds/Family and Probate Court, which is not part of this project.

Nineteen secure parking spaces will be provided on the site for judges and senior staff.

**TABLE 1A** Courtroom Summary

| COURT | NO. OF COURTROOMS | LOCATION |
|---|---|---|
| Superior Court | 4 | On Level 4 |
| Juvenile Court | 2 | On Level 3 |
| Housing Court | 1 | On Level 3 |
| District Court | 4 | On Levels 1&3 |
| Probate and Family Court | (5) | (In PFC) |

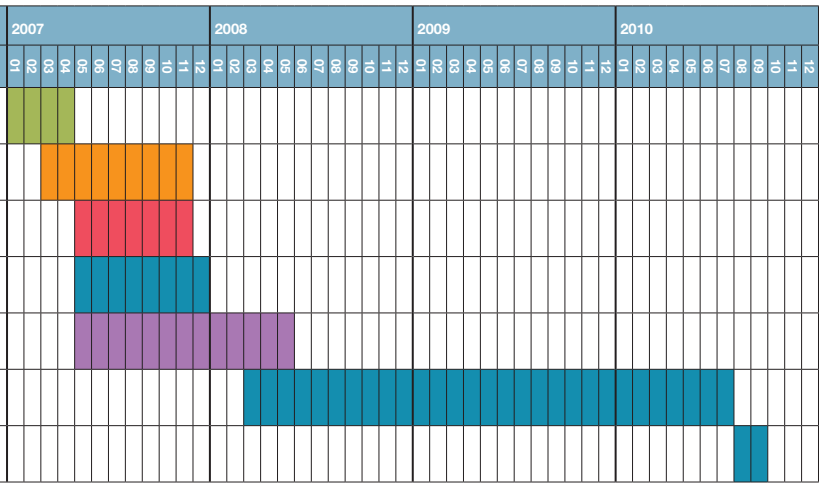
## 1.4 Project Budget

The amount approved for this project is $106,000,000. The construction budget for the proposed Trial Court building is $81,613,401.

## 1.5 Implementation and Phasing Schedule

Assuming this Certifiable Building Study will be certified by April 2, 2007, the project schedule is as follows:

| | TASK | DATES |
|---|---|---|
| 1 | Study through Certification | pres—04.07 |
| 2 | MHD North Street Design and Construction | 03.07—11.07 |
| 3 | Disposition of Federal Street houses | 05.07—11.07 |
| 4 | Design and Contruction of Church Foundation and Relocation | 05.07—12.07 |
| 5 | Design of New Building | 05.07—05.08 |
| 6 | Construction of New Building including Site Prep | 03.08—07.10 |
| 7 | Occupancy | 08.10—09.10 |




For the schedule to be maintained as outlined above, the following tasks must be completed by June of 2008:

1 The reconstruction of the North Street/Federal Street intersection must be complete so the North Street/Bridge Street interchange ramp can be removed from the site.

2 DCAM must take possession of the First Baptist Church, perform an existing conditions survey and demolish the rear addition.

3 The buildings at 58, 60 & 62 Federal Street must be removed from the site.

4 Foundations for the church must be constructed and the church moved to its final location at the corner of Federal Street and North Street.

5 Existing site drainage structures must be relocated on the site.

## 1.6 Issues for Final Design

A Reconcile proposed design gross floor area with program gross floor area.

B Further refinement of program

C Perform an existing conditions survey and Chapter 34 analysis of the First Baptist Church building to determine accessibility requirements.

D Perform more extensive geotechnical investigation to select most cost effective foundation system.

E Establish property lines for the full site.

F Analyze fire separation strategies between new Trial Court Building and existing Probate and Family Court Building.

G Analyze fire separation strategies between new Trial Court Building and relocated Church/Law Library.

H Determine extent of Detainee Tunnel connecting to PFC to be constructed with the proposed new Trial Court building.

I Determine if provisions should be built into the Trial Court building for a future enclosed pedestrian bridge connecting to the PFC.

J Locate steel braced frames in both orthogonal directions to avoid and/or reduce the cost of moment frame connections to stabilize the building against wind and seismic forces. Cost estimate is based on braced frames with no moment connections.

K Life cycle cost analysis calculations refinements.

L Operations, maintenance and renewal cost calculations refinements.

M Energy modeling

N Data sheets

O Verify construction type of First Baptist Church

# 2 Project Design Goals


## 2.1 Introduction

The purpose of this section is to identify performance requirements that the project must meet to support the goals of DCAM and AOTC. The goals of the two organizations are very closely linked and, in some cases, overlap. For the purposes of this document, the operational goals are listed as AOTC goals and the building performance goals are labeled DCAM goals due to the differing roles each agency plays in the life of the facility. The design of the new J. Michael Ruane Judicial Center will be evaluated on how well it meets the following performance requirements. Following DCAM and AOTC goals is a statement of the Designer's goals.

## 2.2 AOTC Goals For Courthouse Design

**A TO PROVIDE EFFICIENT AND COST-EFFECTIVE JUDICIAL SERVICES TO THE PUBLIC.** This shall be achieved through the following performance requirements:

- Providing multiple court department in a single "justice center" for sharing resources
- Designing the courthouse for internal flexibility of space assignments including office space and courtroom uses
- Grouping courtrooms to minimize the need for large public waiting areas and maximize the use of courtroom support elements.
- Locating high traffic areas (departments and courtrooms) on lower floors
- Designing all work spaces with staff effectiveness and well-being in mind
- Incorporating opportunities for future upgrading of systems such as security and electronic work flow
- Ensuring that courtrooms and meeting rooms can be used flexibly

**B TO DESIGN A FACILITY THAT SUPPORTS THE COURTS ADDRESSING A WIDE RANGE OF CHALLENGES** Making dispute resolution more efficient and accessible to the community, and maximizing the opportunities to provide user-oriented justice. This can be achieved by:

- Designing the building so that the community perceives it as a physical and social asset
- Accommodating multiple court department in a single "justice center"
- Locating under the same roof the ancillary functions that support the work of the court such as a law library, clinics, and space for victims and witnesses.

**C TO REINFORCE THE IMPORTANCE OF THE COURT IN SOCIETY AS A PLACE WHERE CITIZENS PARTICIPATE IN THE JUSTICE SYSTEM.** This shall be achieved through the following performance requirements:

- Designing the building to communicate dignity as well as openness.
- Ensuring that design supports the public's needs including wayfinding, waiting and access to services
- Designing the building for universal access for the public regardless of their status and ability.
- Designing the courthouse so that it can be used for non-court public functions without sacrificing security.

**D TO ENSURE THE SAFETY AND SECURITY OF ALL COURT STAFF AND USERS.** This shall be achieved through the following performance requirements:

- Providing completely separate circulation systems for the public, staff and detainees.
- Designing the courthouse so that it is easily monitored by staff as well as electronics.
- Coordinating design decisions with technology and staff capacity to ensure that all contribute to a secure environment.

**E TO ENHANCE THE DELIVERY OF JUSTICE BY CREATING A SUPPORTIVE INFRASTRUCTURE FOR NEW TECHNOLOGY.** Innovations in technology provide court users with an array of options to assist in court-related business and practices. These technological advances can increase efficiency, making better use of resources, save time and reduce costs. This shall be achieved through the following performance requirements:

- Designing this courthouse to be able to adopt new technologies as they are developed.

## 2.3 DCAM Goals for Courthouse Design

**A TO SUPPORT THE NEEDS OF THE USER AGENCY.** The primary goal of DCAM is to effectively design buildings that support the mission, organization and operations

of the client agencies. This shall be achieved through the following performance requirements:

- The spatial organization of program elements and building circulation should be logical and clear and support the workflow of the Agency.
- The design of the site and the building must facilitate the management of multiple activities and needs of the user agency and the public at large.
- The building organization and design balances the essential requirement for security of all personnel, visitors and court operations with the important value of a justice system serving all citizens.
- Construction materials, resources and finishes should be designed for durability and ease of maintenance to control operating budgets.

**B TO DESIGN BUILDINGS THAT RESPECT AND REFLECT LOCAL URBAN DESIGN CONSIDERATIONS.** Public buildings are important landmarks in their respective communities and they have a civic responsibility to relate to their immediate physical surroundings as they define the public space that surrounds them. This shall be achieved through the following performance requirements:

- Provide accessible pedestrian access to the site.
- Design the building to respond to its physical context, with respectful acknowledgement to its environment.
- Address the site so that the perimeter enlivens the edges and strengthens the connections to the retail and residential neighborhood.
- Provide interesting open space that can be used and enjoyed by the public without compromising building security.

**C TO ENSURE THAT PUBLICLY FUNDED BUILDINGS REFLECT THE WISE USE OF TAXPAYERS' INVESTMENT BY CAREFUL ATTENTION TO FLEXIBILITY AND EFFICIENCY CONSIDERATIONS.** The design of the Commonwealth's buildings must balance short term and long term benefits and costs to ensure long term useful life and capacity for changes in use. This shall be achieved through the following performance requirements:

- Optimizing opportunities for sharing of resources and efficiencies of organization and operation.
- Meeting the program requirements for flexibility to accommodate future changes in service delivery by the user agency.
- Organizing spaces to optimize future reallocation of program functions while maintaining separate circulation and security zoning.
- Provide a flexible infrastructure to meet today's technological needs and anticipate future changes including more remote conferencing and increased electronic capacity throughout the facility.

D **TO EMPLOY UNIVERSAL DESIGN PRINCIPLES.** It is DCAM's goal to design public buildings as inclusive places serving all users regardless of their physical and mental abilities, language, age, size, gender, ethnicity or economic circumstances. This shall be achieved through the following performance requirements:

- Locating public spaces, building entrances, and building amenities to facilitate wayfinding and equitable access without need for separate, specialized features.
- A human centered design that enables diverse users to comprehend and access the programs and services of the justice system, meet fundamental needs, and understand the dignity and seriousness of court proceedings.

E **TO ACHIEVE A DEGREE OF SUSTAINABILITY THAT MINIMIZES NEGATIVE ENVIRONMENTAL IMPACT AND MAXIMIZES FEATURES THAT CONSERVE NATURAL RESOURCES.** This shall be achieved through the following performance requirements:

- Careful and comprehensive application of the design principles for environmentally-sustainable buildings including daylighting, natural ventilation, resource recovery, and reduction in use of non-renewable resources.
- Meet LEED standards specified elsewhere in this document

F **TO MAKE PUBLIC BUILDINGS THAT CONVEY A PUBLIC-SPIRIT, CIVIC MINDEDNESS, INNOVATION, ACCESSIBILITY AND SOCIAL PERMANENCE.** This shall be achieved through the following performance requirements:

- Using the exterior expression of the building to reinforce the function it houses.
- Expressing monumental or special spaces, if there are any, in massing, skin patterns, windows and other façade elements.
- Arranging spaces to convey the impression of order and decorum.
- Using durable materials that convey a sense of permanence and strength.

## 2.4 Designer Goals for Salem Trial Court

A **TO DESIGN A COURTHOUSE THAT IS IN SCALE WITH ITS SURROUNDINGS**—which range from the combination of smaller institutional and residential buildings that front on Federal Street to the more industrial scale of Bridge Street, facing the MBTA Commuter Rail Station and the North River.

B **TO CAPITALIZE ON THE TOPOGRAPHICAL AND GEOGRAPHICAL CHARACTERISTICS OF THE SITE,** including the 15-foot grade change from Federal to Bridge Streets and the high visibility from the MBTA and surrounding roads of the Bridge Street facade which makes it (particularly at the North Street corner) a gateway to Salem.

**C TO DESIGN A NEW COURTHOUSE THAT MEETS CONTEMPORARY COURT NEEDS AND RESPECTS SALEM'S ARCHITECTURAL CHARACTER:** a design that complements the distinctive and varied styles of the adjacent buildings and the city.

**D TO MAXIMIZE THE POSITIVE IMPACTS OF THE PROJECT ON SALEM'S DOWNTOWN AND NEIGHBORHOODS** by extending its tradition of historic preservation and historically compatible new construction while providing a larger court complex to bolster the City's economy.

**E TO ADJUST STREET LINES AND CURB CUTS (WHERE NECESSARY) TO RESPECT AND IMPROVE LOCAL TRAFFIC PATTERNS.** To provide safe and efficient vehicular and pedestrian movement to the courthouse and to the downtown and neighborhoods, taking into consideration the Central Transportation Improvement Study of Salem's downtown (November 2005).

**F TO RE-USE EXISTING STRUCTURES ON THE SITE TO THE MAXIMUM EXTENT FEASIBLE.**

**G TO PROVIDE A VISUAL CONNECTION BETWEEN THE NEW COURTHOUSE COMPLEX, NORTH STREET, AND THE FEDERAL STREET NEIGHBORHOOD**, acknowledging the view corridor from upper Federal Street across North Street.

# 3 Documentation of Project Site

## 3.1 Overview

**SITE CONTEXT & ANALYSIS GOALS**

An analysis of the existing and proposed Salem Trial Courts site was conducted to gather information and make observations about the attributes and characteristics of the site in order to inform the planning of the proposed project. The following primary goals will be met throughout this project based on the site analysis:

- Preserve and protect the significant historic resources that include three buildings listed on the National Register.
- Build a visually compatible, state of the art court building that provides continuity in its site and building design.
- Contribute to the community character as well as the court complex itself.
- Provide a robust court facility that compliments all three historic court buildings.
- Coordinate with corollary highway and parking projects for maximum benefit for the project and the larger area.

## 3.2 Site Description

The Salem Trial Courts are located at the edge of a historically significant downtown in the city of Salem, Massachusetts (see Figure 3A). The city itself (population—42,000) is 16 miles north of the capital city of Boston, and in the heart of Essex County. The courts draw people from throughout this area and are an important part of the economy as well as the built fabric of the town center.

The three court buildings, the County Commissioners Building, the Superior Court and the Probate and Family Court/Registry of Deeds are situated on a city block bounded by Federal, Washington, Bridge and North Streets. An additional court building, the District Court, is located nearby on a site along Washington Street.

**FIGURE 3A** Location Plan



Many important destinations surround this block. The heart of Salem's downtown is less than a five-minute walk to the southeast. The MBTA Commuter Rail and Bus Station are located the same distance to the northeast. The North River Canal, identified for future park improvements, lies to the northeast. A tight-knit, residential and commercial downtown neighborhood stretch to the south and west.

## 3.3 Historic Context

### HISTORIC DEVELOPMENT / TIMELINE

Although today the City of Salem may be most well known as the site of the 1692 Salem Witchcraft Trials, Salem's development as a significant city within the northern Boston metropolitan area is an important part of considering redevelopment on the Salem Trial Courts site.

Salem was first settled in the early 1600's as a fishing village and experienced early success as a town in the 1700's based on thriving international trade. The city established itself as the dominant seaport on the eastern seaboard; evidence of this maritime history is still visible in the historic structures throughout the city and the tight knit development pattern of the downtown. By 1790, Salem was the sixth largest city in the country and the richest per capita.

The city continued to experience prosperous years through the 1800's, during which the local economy moved away from trade towards a manufacturing and retail economy. During this transition, a number of Salem's most important structures were built, including many of the buildings on the site. The first building on the Salem Trial Courts site was the First Baptist Church of Salem (constructed in 1805); the next, the County Commissioners Building, was erected in 1841. As the Superior Court was being built in 1862, other residential structures, including a c.1850 house on the site, were being constructed as the downtown continued to expand. The final court building, the Probate and Family Court/Registry of Deeds, was constructed in 1909. Existing houses and a street were removed to accommodate this court building, resulting in a unique court complex that characterizes the north side of Federal Street. Three small houses (dating from the early 19th to early 20th century) remain near the southwest corner.

As Salem continued to grow and prosper, Irish and French Canadian immigrants poured into the city to work in its new leather and shoe factories or at the Naumkeag Steam Cotton Company. As of 1914 the population of Salem had swelled to 40,000. By that time the Salem Trial Courts Complex was operating as the heart of the judicial system for Essex County, adding jobs and associated services to the local economy.

In the later half of the 20th century Salem's economy transformed once again, this time moving away from industry towards a service economy. As the county seat, the Trial Court services and facilities continued to expand, adding the District Court building in 1976 on the other side of Washington Street—splitting services for the first time between sites within the downtown. Modernization of the existing facilities was limited to an addition on the Bridge Street side of the existing Probate and Family Court/Registry of Deeds Building in 1979.

As part of the evolution of the city's service economy, Salem's redevelopment philosophy shifted to preservation in the 1970's, which helped stimulate Salem's budding tourist industry. Maintaining Salem's architectural resources and highlighting the Salem Witchcraft Trials became central attractions. Tourism, health care and higher education are currently the foundations of the current Salem economic base.

Today, Salem has 42,000 residents and as many as one million visitors annually who come to enjoy the downtown and view its historic and architectural treasures. The Salem Trial Courts continue to be an important part of the City's architectural as well as economic resources.

#### HISTORIC PRESERVATION ANALYSIS

The Salem Trial Courts Complex and the Federal Street area are currently recognized as significant historic resources through both federal and state designation and should be sensitively restored, re-used, or added to with these protections in mind. The Probate and Family Court/Registry of Deeds, Superior Court and County Commissioners Buildings are currently part of the Essex County Court Buildings listed on the National Register of Historic Places, and the entire site is listed on the State Register as part of the Federal Street Historic District. These designations will ensure cooperation with state and local authorities when planning any restoration, re-use or new construction activities.

## 3.4 Visual Context

#### GATEWAY & RELATION TO COMMUNITY

The Salem Trial Courts stand out as a group of architecturally significant buildings at the north entryway to the center of the city of Salem. The buildings are visible from major transportation routes, notably the approach on Route 114 from Peabody and the Commuter Rail. The court building facades add a stately presence along Federal Street (see Figure 3B), where their entrances are located. Although of different styles they form a coherent group of structures at the edge of a dense mixed-use neighborhood and represent contributions to the distinctive visual character of the street and the larger district. The Federal Street Historic District National Register nomination comments on the cohesive quality of the Courts Complex site, noting that it is "characterized by contrasts of scale, architectural style and use which successfully synthesize into a single entity." It further observes that "the contrast of the monumental institutional buildings on the north side of the street with the row of houses facing them defines the character of the district."

The First Baptist Church (see Figure 3C) is a strong contributor to this visual impression. On the other hand, the small residential buildings next to the church, a remnant of the residential cluster removed for the construction of the courts, are out of scale with the larger structures on the site and appear isolated against North Street and the highway ramp connecting to Bridge Street.

The Bridge Street (north) side of the site is radically different the Federal Street side of the block in terms of scale, traffic speed and visual character. There is a 13 to 15 foot drop in grade from Federal Street to Bridge Street. The lower levels of the buildings facing Bridge


**FIGURE 3B** Probate and Family Court/Registry of Deed, Superior Court, County Commissioners Building

**FIGURE 3C** First Baptist Church

Street contain service and/or parking areas; these areas serve as (and look like) “the back door” (see Figure 3D). However, the north faces of these buildings are highly visible to many people passing on the commuter trains, by foot or by car. Bridge Street is a major arterial road and is being upgraded to enhance vehicular traffic.

The North Street side of the site (Rte. 114) is another heavily trafficked, wide street and one of the main vehicular entries to the city. The northwest corner of any new structure will be very visible from here.

**FIGURE 3D** View looking down Bridge Street; cars are parked beneath the administration addition of the Probate and Family Court.

## 3.5 Neighborhood Context

### CONTRIBUTION TO AREA

The Salem Trial Courts create an important edge to the downtown, sitting between the heart of the mixed-use district and the North River, the commuter rail tracks and several major roadways. The buildings are also successfully integrated into the downtown by facing Federal Street and meeting the street edge. Although they are larger than the surrounding buildings, the grand entrances and high level of architectural detail make them appealing neighbors, and they add a civic presence that establishes the importance of the area. The court area also supports a significant number of ancillary law offices and commercial uses that have been integrated into surrounding residential-scale buildings.

Salem residents take great pride in their city's historic buildings and have formed many neighborhood groups including Historic Salem, Alliance of Salem Neighborhoods, and Federal Street Neighborhood Association. The Federal Street neighborhood suffered major disconnections when both Washington Street and North Street were widened and became heavy traffic arteries. The residents, as represented by individuals who were appointed to a Citizens' Steering Committee formed by DCAM, are looking for opportunities to reconnect the east and west portions of that street both visually and by improved pedestrian patterns.

### ADJACENT SITE ISSUES

While the site itself is for the most part institutional in nature, the surrounding area contains a mix of residential and commercial uses in residential buildings. Local residents

have expressed concern about increased vehicular traffic, pedestrian safety and the impact of a large facility on the character of their historic neighborhood. DCAM and Goody Clancy are committed to working with representatives of these neighborhood associations as the project moves forward into design to ensure that the historic qualities are maintained and that the area remains a walkable, livable neighborhood.

#### POTENTIAL ECONOMIC IMPACT

When a site selection analysis was first being conducted for the courts project as part of the original master plan, a report was issued by the Salem Partnership, an independent local organization dedicated to fostering business initiatives for the city of Salem, outlining the economic benefits that the courts bring to the downtown. This report (2002) noted that the Court is the second largest employer in the city, and with the Registry of Deeds attracted approximately 1400 professionals and support staff to the city each day. Over 400 private attorneys with their support staff are located in Salem because of their proximity to the legal community. Other professionals peripherally connected with the court system include psychologists, social workers, and accountants. In addition to these professionals and their support staff, there are many secondary jobs that are created by the companies that provide services to the court-related businesses. It is estimated that the number of jobs created by the support businesses is over 1000. The economic return from these professionals and their staff working in Salem is significant, extending both direct and indirect benefits to the city's economy.

## 3.6 Current Use and Historical Use of Site

#### CHANGING PROGRAMMATIC NEEDS

Historically, the use of the site is characterized by a successive set of court buildings constructed over time to respond to the changing needs of the Essex County Government, which included the court system. As these functions expanded, space was created nearby to allow for coordinated activities. Buildings of a similar stature and quality were built to create a feeling of coordinated activities and to enhance the impression of judicial importance. Over the years, public buildings have come to dominate the site, previously mainly occupied by small residential structures.

According to the Sanborn Fire Maps for the area, a gasometer was located on the parcel just behind the houses at 58-62 Federal Street, land now occupied by the North Street ramp. The gasometer appears on the 1890, 1906 and 1950 Sanborn maps.

Currently, the court buildings demonstrate the difficulties of continued use when faced with the need to respond to 21st century justice requirements and meet a higher level of

security needs. The site remains a relevant location for these uses and the historic buildings add a sense of municipal importance that is irreplaceable; however, several challenges are evident. Service to the site is difficult and parking is an issue, as is common in any dense urban area. Two of the buildings are not adaptable for current day court functions and cannot meet security and accessibility requirements due to their small scale and arrangement of functions over multiple levels.

## 3.7 Existing Buildings on the Site

### COUNTY COMMISSIONERS BUILDING, SUPERIOR COURT BUILDING

The County Commissioners Building (Figure 3E), located on the corner of Federal Street and Washington Street (32 Federal Street), was designed by Richard Bond and erected in 1841. Made of grey granite, the courthouse is in Greek Revival Style with a temple front facing Federal Street. While the exterior is impressive in nature with its historic detail intact, the building's interior was stripped of most of its historic character in previous renovations. The building has three floors with a total of 12,354 net square feet (NSF). It currently houses offices for the Civil Clerk of Courts and the Superior Court Probation Department as well as record storage in the basement.

**FIGURE 3E** Commissioners Building

The Superior Court building (figure 3F) (1861-1891) at 34 Federal Street was designed by Simeon Flint and constructed in distinct red sandstone in an Italianate, Romanesque Revival style. It has four floors with a total of 35,316 NSF. Major spaces are three courtrooms, the Essex County Law Library and the Clerk of Courts. The law library retains its original architectural features and furnishings.

A connection was built between the two buildings in the 1990's, which also provided an entrance at the center which is no longer used due to security issues. A summary of findings by ICON architecture (September 2003) noted that the buildings had small floor plates, multiple level changes, no separate circulation systems (judges and detainees use public corridors) and unenclosed egress stairs. Also noted was that at the exterior, the joint

**FIGURE 3F** Superior Court


facilities lack an accessible entrance route coinciding with that used by the general public. The layout of the interior spaces is not in conformance with the current access regulations.

The primary heating source for these buildings is steam from the central steam plant located in a subbasement of the Registry of Deeds/Probate and Family Court building. The heating and ventilating equipment and distribution systems are antiquated and need replacing. There is no central air conditioning system in either building; window mounted air conditioners are used in selective areas.

Reuse studies by ICON architecture demonstrated the infeasibility of utilizing the Superior Court and County Commissioner's buildings to accommodate current court program requirements. Upon completion of the new facility, the buildings will no longer be used for court functions. DCAM is currently in the planning stages of the disposition process to be undertaken as a separate project.

**PROBATE AND FAMILY COURT/REGISTRY OF DEEDS**

Designed in classical revival style by Phineas Alpers, the Probate and Family Court/Registry of Deeds (Figure 3G) was constructed in 1909, with a grey granite façade alongside the Superior Court building, completing the complex that at its time was a state of the art judicial facility. In 1976, a five-story addition was constructed to the rear of the Probate and Family Court/Registry of Deeds, originally to house Essex County administrative functions (Figure 3H.)

**FIGURE 3G** Probate and Family Court/Registry of Deeds

**FIGURE 3H** Probate and Family Court/Registry of Deeds rear addition

An existing conditions survey by Goody Clancy (*Salem Probate and Family Court Existing Conditions Report*, Draft September 26, 2005/Revised November 11, 2005, Appendix A2.1) found that the exterior of the building was in generally good condition with some defective conditions requiring restoration. The public entrance has been recently made accessible with a nicely detailed ramp. On the interior, the Session I courtroom, the entry lobby, the monumental stair, the open elevator cage and the east-west public corridors on the first and second floors have retained their original finishes and details, are in generally good condition and are worthy of restoration and preservation. New accessible public toilets have been recently completed in the lower level. The former Bar Association area on the basement level underwent asbestos abatement and renovation for use by the Probate &

Family Court Probation Department. Other recent improvements include the installation of a new roof and life safety upgrades.

A hazardous material survey on the Probate and Family Court/Registry of Deeds building was issued on April 1, 2006 (Appendix A2.6).

Conceptual studies by Goody Clancy have demonstrated that the building can be adapted to accommodate the program requirements for sole use by the Family Probate and Family Court. With the exception of the spaces marked for reuse and preservation, it is recommended that the building undergo a gut rehab with all new mechanical and electrical systems. Preliminary layout alternatives were discussed with representatives from the AOTC and Probate & Family Court and will be developed further when the funding is approved for the renovation.

The First Baptist Church of Salem (Figure 3I), constructed of red brick in 1806 and subsequently modified in the mid-nineteenth century in the First Renaissance Revival style, is set back 70 feet from Federal Street creating a forecourt with lawn and mature trees. According to church records, additions in the rear date from 1837, 1885 and 1909 (Figure 3J). After sustaining significant structural damage due to a storm, the steeple was removed from the church in 1926 and never replaced.

**FIGURE 3I** First Baptist Church

**FIGURE 3J** First Baptist Church rear additions

Given that the rear addition does not have the same historical value as the original section of the building, this study recommends the demolition of the addition and the relocation to the corner of Federal Street and North Street and preservation of the sanctuary portion of the building for use as the Law Library. This will make room for the proposed Trial Court Building and contribute to preserving the historic streetscape. The resulting footprint of the Church will be 4,536 NSF. When combined with a full basement of the same size this will yield 9,072 NSF. The structure will require an existing conditions survey prior to demolition and moving and may require additional analysis and documentation as part of the consultation process with MassHistoric.

**RESIDENTIAL BUILDINGS**

To the west of the First Baptist Church on Federal Street are three wood frame residential buildings (figure 3K): 58 (built c. 1850), 60 (built c. 1810) and 62 (built c. 1900) Federal Street. They were acquired by the Commonwealth as part of the site assemblage process in January 2007. 58 Federal (the closest building to the First Baptist Church) contains four residential units. 60 Federal consists of an office on the first and second floors and an apartment unit in a portion of the second floor. 62 Federal Street is a rooming house. All three of the buildings are in poor condition. These buildings occupy the proposed new location of the church building at the prominent corner portion of the site, and are not suitable for use by any court functions. Additionally, they are not appropriately scaled to relate to the proposed new Trial Court building. The study recommends the removal of these three buildings, preferably by private relocation.

**FIGURE 3K** Houses at 58, 60, 62 Federal Street

## 3.8 Corollary / Related Projects

There are a number of related projects ongoing in the immediate vicinity of the court project.

**BRIDGE STREET** MassHighway is in the process of a major renovation of Bridge Street, a portion of which is currently under construction as the Bridge Street Bypass Road. The old rotary at the intersection of Bridge and Washington Streets has been replaced by a signalized intersection; other road improvements are in progress at the Beverly Bridge end of Bridge Street. Additional improvements are in design for Bridge Street from Washington to Flint Street.

**NORTH STREET** MassHighway is also in the process of making improvements to North Street. In anticipation of impacts due to the courts project and coordination with DCAM for changes to the roadway, construction began last year starting at Mason Street to the north. The roadwork required to accommodate the traffic from the off ramp being removed as part of the courts project will be undertaken as a change order to the existing North Street Improvement contract.

**MBTA PARKING GARAGE** Also in the area and of consequence to the courts project is a proposed MBTA Parking Garage. The MBTA has a 25% design for a garage that will accommodate 750-1000 cars and includes an upgraded Commuter Rail Station. Under an agreement between the MBTA and DCAM, the garage will provide between 150-250 designated spaces for courthouse parking during business hours. Currently, the MBTA does not have the funding to move ahead with the project, but DCAM's traffic analysis took into consideration the projections for the new parking facility. DCAM will continue to work with representatives from the MBTA to ensure coordination of both projects.

**NORTH CANAL STUDY** The City of Salem completed a planning study Neighborhood Master Plan for the North River Canal Corridor in October 2003. The vision articulated in the study is to "create appropriate development while preserving...historic neighborhood character", "address transportation issues for existing and new developments", and "enhance the public realm in keeping with [Salem's] neighborhood character.".

## 3.9 Transportation / Parking / Traffic

Traffic and parking studies of the Trial Court as listed below have been prepared to study both existing conditions and the impact of the proposed new Trial Court facility. All are attached in the Appendices.

*Salem Trial Courts Transportation Study*, Howard/Stein Hudson Associates, May 2002 (A3.6);
*Functional Design Report, Proposed Construction of a New Trial Court Facility*, J. Michael Ruane Judicial Center, Salem, MA, Earth Tech, Inc., 2006 (A3.5);
*Environmental Notification Form*, J. Michael Ruane Judicial Center Salem Trial Courts, Epsilon Associates Inc., 2007 (A3.1)

#### TRANSPORTATION—COMMUTER RAIL

The Trial Court complex is conveniently served by the MBTA commuter rail line with the station located on the north side of Bridge Street at the intersection with Washington Street. The distance from the station to the public entrance of the proposed Trial Court Building on Federal Street is approximately 800 feet. The distance from the station to the staff entrance of the Trial Court Building on Bridge Street is approximately 600 feet. The commuter rail line connects Salem with Swampscott, Lynn, Chelsea and Boston to the south and Beverly, Hamilton, Wenham, Rowley Newburyport, Manchester, Gloucester and Rockport to the north.

#### TRANSPORTATION—BUS SERVICE

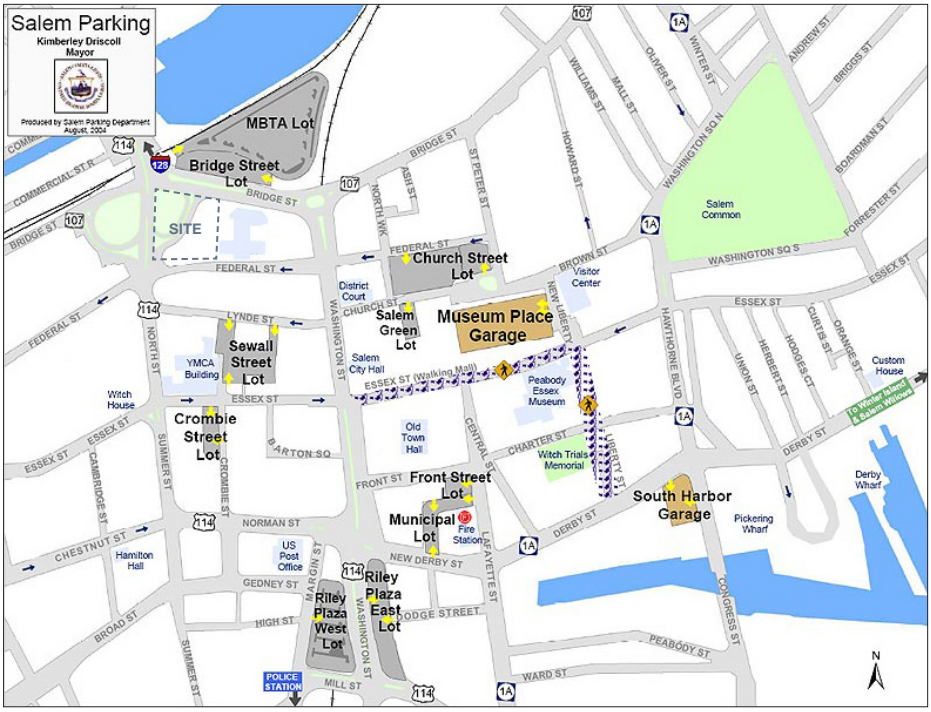
MBTA bus routes 455/455W, 456 & 459 make a loop circling the Trial Court site on Washington Street, Bridge Street and North Street. Route 455/455W and 459 connect Salem to Boston. Route 456 connects Salem to Lynn.

#### PARKING

While parking in downtown Salem can be challenging, six off-street public parking areas are located within three blocks of the Trial Court building: The Church Street Lot two blocks to the east on Federal Street; the Sewall Street Lot, one block south of Federal Street; the Salem Green Lot, one block south and one block east on Church Street; the Museum Place Garage, one block south and two blocks east on Church Street, the Crombie Street Lot two blocks south on Essex Street and the City and MBTA lots across Bridge Street. The proposed MBTA garage planned for the existing lots will provide much needed additional parking for the area (see figure 3L).

The need for additional parking in the downtown area of Salem is well documented. The proposed MBTA garage is the most likely parking expansion opportunity, but the City of Salem is exploring other options as well. The majority of the court business is already in the area – within the existing buildings, so that parking demand is already within the

**FIGURE 3L** Public parking lots in vicinity of Trial Courts




downtown area. The new construction component of the project, in bringing the juvenile court back into the downtown and providing for future growth of court business will serve to increase the parking demand over time.

This project will not provide any additional public parking as that is not within the scope or budget of the project. DCAM will continue to work with the City and the MBTA to provide the parking demand data for their efforts to develop the necessary parking capacity to meet the needs of both the courts and the other businesses and institutions in this area of the downtown.

**TRAFFIC**

The traffic evaluation for this study was based on field observations of existing roadway and traffic conditions, review of previous studies/reports and data (largely derived from studies related to the extensive North Street and Bridge Street reconstruction projects) and traffic capacity analyses. Earth Tech (DCAM's traffic consultant and also the MHD's designer for the North Street project) developed a detailed analysis of the impact of this project and the proposed change to the North Street/Bridge Street interchange on 18 nearby intersections within the Salem Central Business District. The proposed MBTA garage across Bridge Street, and other proposed roadway improvements were factored into the analysis. (Refer to Appendix A3.5)

The traffic analysis indicates a projected increase in traffic in the area due to this project and others proposed in the future. As part of this project DCAM is funding an adjustment to the North Street/Bridge Street interchange loop which will provide for a significant portion of the project site through the elimination of an existing access ramp. According to the traffic analysis, the changes that will be made at this interchange will result in overall improvement of the vehicular and pedestrian safety of this heavily traveled location.

This intersection serves as a gateway to the downtown and provides direct pedestrian access to the adjacent MBTA commuter rail station. Ongoing coordination among DCAM, the Massachusetts Highway Department (MassHighway), and the MBTA will ensure pedestrian and bicycle accommodations are maintained and/or enhanced as a result of the project. The roadway improvements to the North Street / Bridge Street interchange will be carried out by MassHighway as part of the on-going North Street Reconstruction project, and will be consistent with state and federal plans and policies. DCAM and MassHighway will work closely with City officials to ensure consistency with the City of Salem's 1996 Master Plan Update and Action Plan and the Open Space and Recreation Plan currently being developed by the City's Planning Department.

## 3.10 Site Survey, Zoning, Easement

### THE SITE

The boundaries of the site will be Federal Street to the south, North Street to the west, Bridge Street to the north and a new property line on the east side, down the access road between the Superior Court building and the Probate and Family Court building (PFC). The area of the site (including the Probate and Family Court) is approximately 136,500 square feet (3.1 acres). The Superior Court / County Commissioner's building will sit on an independent site.

The new assembled site comprises the following parcels (see Figure 3M):

1 North Street/Bridge Street interchange ramp (formerly City-owned)
2 Three houses on Federal Street
3 First Baptist Church of Salem
4 Probate and Family Court/Registry of Deeds

**FIGURE 3M** Site Assembly Plan

**KEY TO BUILDINGS**

**A** Proposed Trial Court Building

**B** First Baptist Church, existing location

**C** Probate and Family Court/ Registry of Deeds

**D** 62 Federal Street

**E** 60 Federal Street

**F** 58 Federal Street

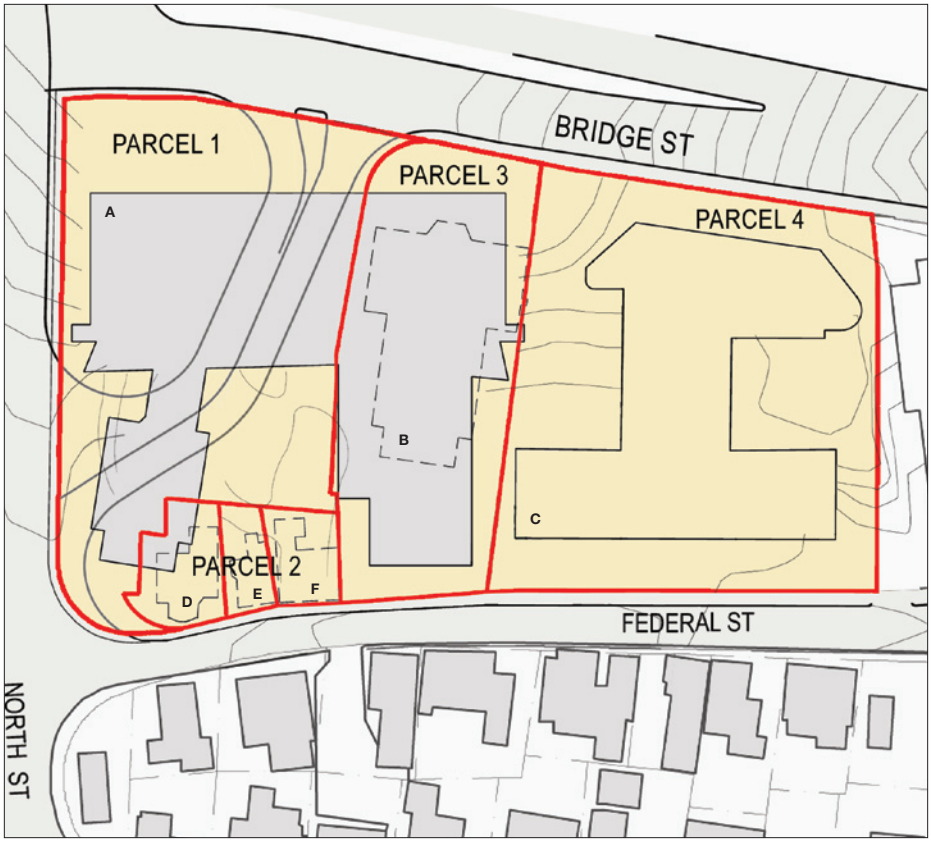
**KEY TO PARCELS**

**1** North Street/Bridge Street interchange ramp (formerly City-owned)

**2** Three houses on Federal Street

**3** First Baptist Church of Salem

**4** Probate and Family Court/ Registry of Deeds




**ZONING ANALYSIS**

Although projects under the authority of the Commonwealth are not required to meet local zoning ordinances, a thorough zoning analysis was conducted to ensure that the redevelopment of the site respects local dimensional and site regulations where possible.

The Salem Trial Court is in the Business 5 zoning district along with the city center that makes up the majority of this district. The analysis shown in Table 3A below indicates that the proposed Trial Court building and the Probate and Family Court on the new site will generally conform to the zoning requirements with two exceptions: the proposed Trial Court building will exceed the 70 foot maximum height allowed by zoning by 18 feet along Bridge Street and the minimum distance between buildings on a lot will not be met.

**TABLE 3A** Zoning Analysis

| | NONRESIDENTIAL USES—NEW CONSTRUCTION | NOTES |
|---|---|---|
| **Minimum Lot Area (sf)** | **2,000** | **For all categories** |
| Trial Court/PFC lot is 136,500 sf | | |
| **Minimum Lot Width (ft)** | **30** | **For all categories** |
| Trial Court/PFC lot width is 495 ft | | |
| **Maximum Lot Coverage by all buildings (%)** | **50** | **For existing buildings 100%** |
| Trial Court/PFC lot coverage is 46.7% | | |
| **Minimum width of side yard (ft)** | **5** | **For existing buildings no minimum** |
| Side yard at PFC when Superior Court/County Commissioner's building subdivided off will be approximately 24 ft | | |
| **Maximum height of building (ft)** | **70** | **For all categories** |
| Height of Trial Court building on Federal Street will be approx. 60 feet from grade to roof. Height of Trial Court building on Bridge Street will be approx. 88 feet from grade to roof. Note: there will be a mechanical penthouse above the main roof 16 feet high. | | |
| **Maximum height of building (stories)** | **6** | **For all categories** |
| Trial Court building will be 6 stories on Bridge Street and 4 stories on Federal Street, not including mechanical penthouse. | | |
| **Maximum height of fences and bordering walls (ft)** | **10** | **For all categories** |
| A screen wall/fence will be provided for Staff Secure Parking under and outside the proposed Trial Court building along Bridge Street. | | |
| **Minimum distance between buildings if more than one on a lot** | **Distance equal to height of the taller building** | **Distance may be reduced as long as adequate light, air and access, subject to approval by planning board, is provided.** |
| The Trial Court building and the PFC are on one lot. Although at its narrowest the distance between them will be 25 feet, the distance between them will typically be 48 to 90 feet. There is adequate light, air and access between the two buildings. | | |
| **Floor Area Ratio** | **3:1** | **May be increased up to 6:1 for buildings 50% parking structure or 6:1 for existing buildings.** |
| Based on 190,000 GSF for the Trial Court building plus the area of the PFC at 77,646 GSF, the total GSF on the site equals 267,646. After subdivision of the Superior Court and County Commissioners buildings the site will be about 136,500 SF. The floor area ratio for the new Trial Court/Probate & Family Court will be 267,646 / 136,500 = 1.96:1 | | |

## EASEMENTS

An easement may be required to replace an existing easement for the storm drain (to be relocated on site) currently serving the connector ramp and North Street. DCAM will follow up on this issue in Schematic Design. An easement will also be required to use the existing service lane when the property line is established between the PFC and the Superior Court building. This easement will be determined at a later date.

## 3.11 Topography

The Salem Trial Court site is significantly sloped down in a northerly direction from Federal Street to Bridge Street and the buildings on the site generally respond to this condition. The Probate and Family Court/Registry of Deeds building has in effect two different facades – the grand entrance along Federal Street and the more recent glass and concrete addition along Bridge Street. The First Baptist Church building has a solid brick wall with a distinctive band of gold lettering visible from the ramp and Bridge Street side of the building in contrast to the highly articulated entrance portico on the Federal Street Side. Service vehicles enter the site at the lower elevation off Bridge Street. Public pedestrian entries to the buildings are from the Federal Street side.

In the area with the most pronounced slope (the highway ramp), the maximum elevation change is approximately 15 feet. The ramp is graded to allow cars to negotiate the grade change down an evenly sloped arc, while the lots with the existing houses are bermed, maintaining a level area for the buildings. The First Baptist Church and the Probate and Family Court/Registry of Deeds are larger buildings with a level that opens to Federal Street and a lower level that opens to Bridge Street. The difference in grade creates distinct edges to the site and the design of the proposed Trial Court building responds to the change in grade as do the existing buildings.

## 3.12 Utilities

*Salem Courts Expansion Study, Salem, Massachusetts, Evaluation of Site Utilities*, July 2003 by Green International Affiliates, Inc., is attached to this report in Appendix 1.8. The information below is based on that study.

**WATER** City of Salem municipal water mains exist along the south, east and north sides of the site. The material and age of these distribution mains is unknown.

**SEWER** A City of Salem municipal trunk line runs westerly on Bridge Street along the northern side of the site. It is 12-inch polyethylene slip-lined into an abandoned 60-inch Southern Essex Sanitary District pipe. According to the record plan, the 12-inch sewer line has a slope of 0.006 ft/ft; the full flow capacity is estimated to be approximately 3.5 cubic feet per second.

**DRAINAGE** A City of Salem municipal drain line runs along Bridge Street. This 18 inch line receives the storm water runoff from the site.

**ELECTRICAL** Massachusetts Electric supplies electricity to the site. According to record plans there are underground electrical ducts along the south, east and north sides of the site. There are four 4-inch ducts long Bridge Street and nine 3.5-inch and nine 4-inch ducts along Bridge Street. Material and age of the ducts is unknown. There are electrical transformers at the north side of the Superior Court Building and at the west side of the Probate and Family Court/Registry of Deeds Building.

**TELEPHONE** According to record plans there are underground telephone ducts, owned and maintained by Verizon, along the south, east and north sides of the site, along Federal, Washington and Bridge Streets respectively.

**GAS** There are gas distribution mains, owned and maintained by Keyspan, at the south, east and north sides of the site. There are high pressure mains along Federal Street and Bridge Street, and low pressure mains along Federal Street, Washington Street and Bridge Street. A gas meter is located at the southeast corner of the Probate and Family Court 1979 addition. There is an abandoned-in-place oil tank in the parking lot to the north of the Probate and Family Court/Registry of Deeds.

**CABLE TV** According to record plans, underground cable TV conduit, owned and maintained by Comcast, runs along Federal Street.

## 3.13 Existing Uses

### IMPROVING, ADAPTING OR RELOCATING USES

The proposed Salem Trial Court site currently has several uses on it that are not part of the court facilities that could either be adapted, improved or relocated to provide area for a modernized court facility. The current highway ramp and internal grassy island occupy more than half and acre of land adjacent to the site. The ramp acts as a poor neighbor to the residential structures and the Baptist Church that turn their backs on this roadway intersection. Elimination of the ramp will create a site large enough to accommodate the new Trial Court building.

The First Baptist Church is a historic structure that has a similar civic presence as the court buildings on the site and as such will be relocated to a prominent position at the corner of Federal Street and North Street and will be used for the Law Library.

The three residential structures at the end of Federal Street are dwarfed by the highway interchange and feel exposed at the end of Federal Street. These structures would not be compatible for re-use for court functions due to their small scale. Existing uses will be carefully considered throughout this process and all buildings may be retained either on-site or relocated to appropriate sites within the City of Salem.

## 3.14 Sustainable Design Considerations

Renovation of the existing Probate and Family Court building and any new construction on the Salem Trial Courts site will meet LEED Silver Certification in accordance with DCAM's stated goals to incorporate green building design into all building projects. This is above and beyond Executive Order 12 (2006) which requires all new state buildings to meet LEED Plus requirements. Focusing on this goal in the planning feasibility stage of the project will enable green design to be part of an integrated design process.

The project has undergone a preliminary review for compliance with LEED criteria. The attached LEED checklist scoring sheet identifies the likely points that will apply, and provides an initial gauge of anticipated cost range and payback period. This review is preliminary and will be refined as schematic design proceeds.

Specific potential energy conservation measures are identified and described in Section 3.16.

A first-pass analysis indicates that the project can meet 29 of the 33 points required for LEED Silver Certification. Additional points are in the "maybe" category and will be resolved in the design phase.

Some LEED credits which appear to be attainable are listed below:

The site qualifies as urban land and it is adjacent to major public transportation resources (Sustainable Sites Credit 1 Site Selection and Credit 4 Alternative Transportation). Water savings will be achieved by efficiency measures, native landscaping and stormwater management (Sustainable Sites Credit 6 Stormwater Management; Water Efficiency Credit 1 Water Efficient Landscaping; Credit 3 Water Use Reduction). All buildings will take advantage of the favorable west-east orientation (primary facades along Federal Street facing southward and Bridge Street facing northward) for energy savings (Energy and Atmosphere Credit 1 Optimize Energy Performance). Materials used for the renovation and new construction will considered for their recycled content, renewable qualities and low level of emissions (Materials & Resources Credit 4 Recycled Content and Credit 6 Rapidly Renewable Materials; and Indoor Environmental Quality Credit 4 Low-Emitting Materials.

In addition, the project will also consider the Executive Office of Environmental Affairs' Sustainable Design Roundtable initiative that has developed green building recommendations for those buildings that are built and/or funded by the Commonwealth, including projects under the jurisdiction of the DCAM. The report was completed and the document published in October 2006 under the title Leading By Example, An Action Plan for Green Buildings in Massachusetts State Building Projects, Final Report of the Massachusetts Sustainable Design Roundtable.

## 3.15 LEED Checklist

**PAGE 37-43**

LEED-NC

**LEED-NC Version 2.2 Project Checklist**
J. Michael Ruane Judicial Center
Salem, MA
Goody Clancy 22-Mar-07

| Yes | ? | No | | | | | MASS LEED + | Estimated Cost: AE fee | Estimated Cost: Const premium | Pay-back: 10 years or less | Description | Notes on Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | 6 | 1 | **Sustainable Sites** | | **14** Points | | | | | | | |
| Y | | | Prereq 1 | **Construction Activity Pollution Prevention** | Required | ● | N | NA | NA | Because the site exceeds one acre DCAM will have to apply for a National Pollution Discharge Elimination System Permit. | Contract Docs to include Erosion and Sedimentation Control Plan |
| 1 | | | Credit 1 | **Site Selection** | 1 | | N | NA | NA | NA | DCAM will need to document the site on a Map that will be certified. . |
| 1 | | | Credit 2 | **Development Density & Community Connectivity** | 1 | ● | Y | NA | NA | This point should be attainable. MA LEED Plus 1-point minimum requirement from SS Credits 2, 3, 4.1 or MR Credit 1.1. | A/E fee for density calculations. Architect will have to document the density of the site development and the density of the surrounding area. |
| | 1 | | Credit 3 | **Brownfield Redevelopment** | 1 | ● | N | NA | NA | Site contaminants may be encountered during Site Prep. MA LEED Plus 1-point minimum requirement from SS Credits 2, 3, 4.1 or MR Credit 1.1. | Contract docucuments to include site remediation requirements. Remediation scope is unknown; cost cannot be estimtated. |
| 1 | | | Credit 4.1 | **Alternative Transportation**, Public Transportation Access | 1 | ● | N | NA | NA | Identify commuter rail, bus lines on map. MA LEED Plus 1-point minimum requirement from SS Credits 2, 3, 4.1 or MR Credit 1.1. | NA |
| 1 | | | Credit 4.2 | **Alternative Transportation**, Bicycle Storage & Changing Rooms | 1 | | N | NA | NA | Need to locate on site. Changing rooms included in program for occupants | Exterior bike storage in amended building program. Shower and changing facilities in the program. |
| | 1 | | Credit 4.3 | **Alternative Transportation**, Low-Emitting and Fuel-Efficient Vehicles | 1 | | N | NA | NA | NA | Calculations by owner. DCAM/AOTC to investigate if they want to designate preferred parking for these vehicles. |
| | 1 | | Credit 4.4 | **Alternative Transportation**, Parking Capacity | 1 | | N | NA | NA | NA | Calculations by owner. Operating cost to implement plan, and loss of revenue due to restricted parking |
| | | 1 | Credit 5.1 | **Site Development,** Protect or Restore Habitat | 1 | | N | NA | NA | Not feasible | NA |

| Yes | ? | No | | MASS LEED + | | Estimated Cost: AE fee | Estimated Cost: Const premium | Pay-back: 10 years or less | Description | Notes on Cost |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | | Credit 5.2 **Site Development,** Maximize Open Space | | 1 | Y | $12,000-$30,000 | NA | With green roof this may be possible. Green roof will probably be extensive. Check costs for green roof. Check maintenance requirements and policy on providing maintenance. | A/E fee for calculations. Construction and operational cost premiums for Green roof (+/- 2000 sf). |
| | 1 | | Credit 6.1 **Stormwater Design,** Quantity Control | | 1 | N | NA | NA | NA | This credit is attained by an underground detention structure that mitigates pre and post stormwater flows from the site and would be required by Wetland Regulations and good engineering practice. |
| 1 | | | Credit 6.2 **Stormwater Design,** Quality Control | | 1 | N | NA | NA | NA | Water quality control is code required regardless of whether the project pursues LEED accreditation and therefore its cost is part of the base contract (not an additional cost). |
| 1 | | | Credit 7.1 **Heat Island Effect,** Non-Roof | | 1 | Y | $ - | NA | NA | Operating cost premium for maintenance of shade vegetation and open grid paving system |
| | 1 | | Credit 7.2 **Heat Island Effect,** Roof | | 1 | Y | $25,000 | Y | A PVC roof or a Thermoplastic Olefin (TPO) roof would qualify for this credit. | A/E fee for calculations. Construction cost premium for roof with SRI ≥78 estimated at $0.85/sf x 30,000sf = $25,500. |
| 1 | | | Credit 8 **Light Pollution Reduction** | | 1 | Y | NA | Y | The assumption is that we should be able to design both interior and exterior lighting to meet the requirements for this credit. | A/E fee for calculations. |
| 2 | 3 | | **Water Efficiency** | | **5** Points | | | | | |
| 1 | | | Credit 1.1 **Water Efficient Landscaping**, Reduce by 50% | | 1 ● | Y | $3000-$72,000 | Y | Water Efficient Landscaping, Reduce by 50%. Provide drip irrigation at all planting areas. Use native plants requiring less water. | A/E premium to calculate baseline and reduction. $3000 construction premium for state-of-art water-saving irrigation fixtures; $72,000 construction premium to substitute shrubs/ground cover or native plantings for lawn. |
| | 1 | | Credit 1.2 **Water Efficient Landscaping**, No Potable Use or No Irrigation | | 1 | Y | $25,000 | N | NA | $25,000 installation cost for 25,000 gallon tank used to capture stormwater for irrigation use. |

| Yes | ? | No | | | MASS LEED + | Estimated Cost: AE fee | Estimated Cost: Const premium | Pay-back: 10 years or less | Description | Notes on Cost |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | | Credit 2 | **Innovative Wastewater Technologies** | 1 | Y | $30,000-60,000 | N | Innovative Wastewater Technologies. Examine the use of rainwater for use in low flush toilets. Consider costs for filtering, holding tanks and maintenance. Perform a life cycle analysis. | A/E fee premium to calculate baseline vs design case, and for life cycle cost analysis. Potential construction premium for additional piping and equipment. We assumed that rainwater would be stored in an underground tank. This would require pumps, in addition to filters, chemical treatment, make up water piping and controls. If the rainwater could be stored on an upper floor, the need for pumping could be eliminated. Based on the annual rainfall in Salem and the domestic water usage supplied by DCAM, rainwater could provide 75% of the water used for toilet flushes, however potential operational cost savings would be offset by the cost of energy to run the pumps, water treatment and the relatively low cost of water. |
| 1 | | | Credit 3.1 | **Water Use Reduction**, 20% Reduction | 1 ● | Y | NA | Y | Water Use Reduction, 20% Reduction. MA LEED+ Requirement. Consider waterless urinals and dual flush 1.6 gallon waterclosets. | A/E fee premium to calculate baseline vs design case. Potential construction premium for additional piping and equipment for greywater/stormwater use. The extra cost of waterless urinals may be offset by the elimination of urinal supply piping and flush valves.Operational cost: reduction due to utility savings/increase due to greywater/water system maintenance. |
| | 1 | | Credit 3.2 | **Water Use Reduction**, 30% Reduction | 1 | Y | NA | Y | Water Use Reduction, 30% Reduction. The same fixtures used for Credit 3.1 may meet the 30% reduction required for this point. | A/E fee premium to calculate baseline vs design case. Potential construction premium for additional piping and equipment for greywater/stormwater use. The extra cost of waterless urinals may be offset by the elimination of urinal supply piping and flush valves.Operational cost: reduction due to utility savings/increase due to greywater/water system maintenance. |

| Yes | ? | No | | | | MASS LEED + | Estimated Cost: AE fee | Estimated Cost: Const premium | Pay-back: 10 years or less | Description | Notes on Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | 1 | 11 | **Energy & Atmosphere** | | **17** Points | | | | | | |
| Y | | | Prereq 1 | **Fundamental Commissioning of the Building Energy Systems** | Required | ● | N | NA | NA | NA | Commissioning is standard DCAM practice. |
| Y | | | Prereq 2 | **Minimum Energy Performance** | Required | ● | N | NA | NA | NA | A/E basic services/mandatory. |
| Y | | | Prereq 3 | **Fundamental Refrigerant Management** | Required | ● | N | NA | NA | NA | NA |
| 2 | | 8 | Credit 1 | **Optimize Energy Performance** | 1 to 10 | ● | Y | See Sei report | Y | Per Mass LEED+ energy performance to exceed Mass Energy Code requirements by at least 20 percent or meet requirements for 2-point minimum on this credit. Demonstrate 14 percent improvement in building performance rating compared to the baseline ASHRAE/IESNA 90.1-2004. Mechanical engineers have identified 10 HVAC options. See SEi spreadsheet report *Salem Courthouse Energy Conservation Measures* . | A/E fee premium for engineering, baseline vs design case calculations and energy modelling. Due to the significant scope of this task, this will be an additional A/E service despite being a LEED + requirement. Potential construction premium for equipment (see SEi report). Potential operational cost reduction due to utility savings. |
| 1 | | 2 | Credit 2 | **On-Site Renewable Energy** | 1 to 3 | | Y | $80,000-$775,000 | Y | Achieve 2.5% renewable energy. Mechanical engineers have identified 3 options (photovoltaic, solar system. microturbines). Potential 3 credits, assume 1. | A/E fee premium for research, engineering, and compliance calculations. Construction premium for equipment. Operational cost: reduction due to utility savings, additional cost due to equipment maintenance/depreciation |
| 1 | | | Credit 3 | **Enhanced Commissioning** | 1 | ● | N | see note | Y | Requires independent commissioning authority prior to the start of construction documents. | Operational cost reduction due to utility savings. Cost to Owner of hiring an independent commissioning authority. Potential reduction in construction cost by improved coordination and reduction in change orders. |
| 1 | | | Credit 4 | **Enhanced Refrigerant Management** | 1 | | Y | $ - | NA | Use no refrigerants or select refrigerants that minimize or eliminate emission of compounds that contribute to ozone depletion. | A/E premium for equipment research, engineering and specifications. Potential marginal construction premium for equipment. Potential operational premium for equipment maintenance |

| Yes | ? | No | | | MASS LEED + | Estimated Cost: AE fee | Estimated Cost: Const premium | Pay-back: 10 years or less | Description | Notes on Cost |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | | Credit 5 | **Measurement & Verification** | 1 | Y | $75,000-$125,000 | Y | Measurement and verification program. | Construction premium for additional metering/controls. Operational labor premium to monitor/process data for M&V plan, monitoring may allow operational savings due to efficiency. (This is HVAC Item 10 in the SEi spreadsheet report). |
| | | 1 | Credit 6 | **Green Power** | 1 | N | NA | NA | Currently not possible for the State to purchase green power. | NA |
| 5 | 4 | 4 | **Materials & Resources** | **13** Points | | | | | | |
| Y | | | Prereq 1 | **Storage & Collection of Recyclables** | Required • | N | NA | NA | NA | NA |
| | 1 | | Credit 1.1 | **Building Reuse**, Maintain 75% of Existing Walls, Floors & Roof | 1 • | N | NA | NA | Reuse of First Baptist Church unlikely to qualify due to demolition of rear addition. MA LEED Plus 1-point minimum requirement from SS Credits 2, 3, 4.1 or MR Credit 1.1. | NA |
| | | 1 | Credit 1.2 | **Building Reuse**, Maintain 100% of Existing Walls, Floors & Roof | 1 | NA | NA | NA | Rear addition is being demolished | NA |
| | | 1 | Credit 1.3 | **Building Reuse**, Maintain 50% of Interior Non-Structural Elements | 1 | NA | NA | NA | Unlikely this requirement could be met with Church. | NA |
| 1 | | | Credit 2.1 | **Construction Waste Management**, Divert 50% from Disposal | 1 | Y | $24,000 | NA | Construction specifications to require. | A/E fee premium for calculations and to develop construction waste management plan. |
| | 1 | | Credit 2.2 | **Construction Waste Management**, Divert 75% from Disposal | 1 | Y | $24,000 | NA | Requires input from Construction Manager for feasibility and cost. | A/E fee premium for calculations and to develop construction waste management plan. |
| | | 1 | Credit 3.1 | **Materials Reuse**, 5% | 1 | NA | NA | NA | Not feasible. | NA |
| | | 1 | Credit 3.2 | **Materials Reuse**,10% | 1 | NA | NA | NA | Not feasible. | NA |
| 1 | | | Credit 4.1 | **Recycled Content**, 10% (post-consumer + ½ pre-consumer) | 1 | Y | NA | NA | Include in specification. | A/E fee premium for calculations. |
| 1 | | | Credit 4.2 | **Recycled Content**, 20% (post-consumer + ½ pre-consumer) | 1 | Y | $ - | NA | NA | A/E fee premium for calculations. |

| Yes | ? | No | | | MASS LEED + | Estimated Cost: AE fee | Estimated Cost: Const premium | Pay-back: 10 years or less | Description | Notes on Cost |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | Credit 5.1 | **Regional Materials**, 10% Extracted, Processed & Manufactured Regionally | 1 | Y | $ - | NA | NA | A/E fee premium for calculations. |
| 1 | | | Credit 5.2 | **Regional Materials**, 20% Extracted, Processed & Manufactured Regionally | 1 | Y | $ - | NA | NA | A/E fee premium for calculations. |
| | 1 | | Credit 6 | **Rapidly Renewable Materials** | 1 | Y | $ - | NA | NA | A/E fee premium for calculations. |
| | 1 | | Credit 7 | **Certified Wood** | 1 | Y | $300,000 | NA | NA | A/E fee premium for calculations. |
| 9 | 5 | 1 | **Indoor Env'l Quality** | | **15** Points | | | | | |
| Y | | | Prereq 1 | **Minimum IAQ Performance** | Required | • N | NA | NA | NA | NA |
| Y | | | Prereq 2 | **Environmental Tobacco Smoke** (ETS) **Control** | Required | • N | NA | NA | Prohibit smoking in building; Smoking areas at least 25' from building | Drawings to indicate |
| 1 | | | Credit 1 | **Outdoor Air Delivery Monitoring** | 1 | N | NA | NA | Mechanically ventilated spaces: Monitor carbon dioxide concentrations within all densely occupied spaces. For non-densely occupied spaces provide a direct outdoor airflow measurement device. | This is in base design. |
| 1 | | | Credit 2 | **Increased Ventilation** | 1 | N | NA | NA | NA | This is in base design. (This is HVAC Item 7 in the SEi spreadsheet report *Salem Courthouse Energy Conservation Measures* ). |
| 1 | | | Credit 3.1 | **Construction IAQ Management Plan**, During Construction | 1 | N | $ - | NA | NA | Specifications to require. |
| | 1 | | Credit 3.2 | **Construction IAQ Management Plan**, Before Occupancy | 1 | N | $125,000 | NA | NA | Construction cost premium. |
| 1 | | | Credit 4.1 | **Low-Emitting Materials**, Adhesives & Sealants | 1 | N | $ - | NA | NA | Specifications to require. |
| 1 | | | Credit 4.2 | **Low-Emitting Materials**, Paints & Coatings | 1 | N | NA | NA | NA | Specifications to require. Construction premium of $1 per gallon is not a LEED add, because this is a Mass code requirement. |
| 1 | | | Credit 4.3 | **Low-Emitting Materials**, Carpet Systems | 1 | N | $ - | NA | NA | Specifications to require. |

| Yes | ? | No | | | MASS LEED + | Estimated Cost: AE fee | Estimated Cost: Const premium | Pay-back: 10 years or less | Description | Notes on Cost |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | Credit 4.4 | **Low-Emitting Materials**, Composite Wood & Agrifiber Products | 1 | N | $ - | NA | NA | Specifications to require. |
| | 1 | | Credit 5 | **Indoor Chemical & Pollutant Source Control** | 1 | N | $45,000 | NA | Provide entryway systems to capture dirt and paticulates; provide air filtration media with MERV 13 or better | Specifications to require entryway systems as base design. Construction premium for air filtration media with MERV 13 or better. |
| 1 | | | Credit 6.1 | **Controllability of Systems**, Lighting | 1 | Y | $50,000-$250,000 | Y | NA | A/E fee for calculations. Architect to review/confirm design with owner/users. |
| | 1 | | Credit 6.2 | **Controllability of Systems**, Thermal Comfort | 1 | Y | $200,000 | NA | Individual or group thermal comfort control. Consider operable windows. | A/E fee for calculations. Architect to review/confirm design with owner/users. |
| 1 | | | Credit 7.1 | **Thermal Comfort**, Design | 1 | NA | NA | NA | Design HVAC system and building envelope to meet requirements of ASHRAE Standard 55-2004 | This is in base design. |
| | 1 | | Credit 7.2 | **Thermal Comfort**, Verification | 1 | NA | NA | NA | Survey occupants within 6 to 18 months of occupancy. | DCAM/AOTC to establish policy. |
| | 1 | | Credit 8.1 | **Daylight & Views**, Daylight 75% of Spaces | 1 | Y | NA | NA | While courtrooms and spaces along building perimeter will have daylight, there is a lot of interior transaction space that won't meet this requirement. | A/E fee for calculations. A preliminary analysis indicates that it may be possible to meet this requirement. During the design phase modeling, or calculations would be performed (with associated cost) in order to verify the credit. |
| | | 1 | Credit 8.2 | **Daylight & Views**, Views for 90% of Spaces | 1 | NA | NA | NA | Views for 90% of Spaces. | Not likely |
| 1 | | | **Innovation & Design Proce** | **5** Points | | | | | | |
| | | | Credit 1.1 | **Innovation in Design**: Provide Specific Title | 1 | | | | | |
| | | | Credit 1.2 | **Innovation in Design**: Provide Specific Title | 1 | | | | | |
| | | | Credit 1.3 | **Innovation in Design**: Provide Specific Title | 1 | | | | | |
| | | | Credit 1.4 | **Innovation in Design**: Provide Specific Title | 1 | | | | | |
| 1 | | | Credit 2 | **LEED® Accredited Professional** | 1 | | | | | |
| 29 | 19 | 17 | **Project Totals (pre-certification estimates)** | **69** Points | | | | | | |

**Certified** 26-32 points **Silver** 33-38 points **Gold** 39-51 points **Platinum** 52-69 points

## 3.16 Salem Courthouse Energy Conservation Measures

**PAGE 47-48**

| Energy Conservation Measures Category | Energy Conservation Measure | Incremental Cost Range ($) | Available Incentives | Simple Payback Range (years) | Comments |
|---|---|---|---|---|---|
| **Building Envelope** | 1) High Performance Glazing | $ 150,000 to $ 300,000 | Unlikely | 10 to 15 years | Triple pane glazing with U-value < 0.3 |
| | 2) Improved Wall and Roof | $ 50,000 to $ 100,000 | Unlikely | 12 to 16 years | Insulation at least 25-30% better than code |
| **HVAC** | 1) Energy Efficient Chillers | $ 150,000 to $ 200,000 | Yes | 5 to 7 years | Centrifugal Chillers meeting the minimum requirements of National Grid prescriptive incentive criteria. |
| | 2) Gas Fired Chiller | $ 50,000 to $ 100,000 | Likely | 7 to 9 years | Contingent on incentives by KeySpan and availability of natural gas. |
| | 3) Variable Frequency Drives on pumping systems | $ 30,000 to $ 50,000 | Yes | 3 to 5 years | Incentives provided by National Grid for variable frequency drives on chilled water and hot water pumps. |
| | 4) Variable Frequency Drives on Air Handling Units | $ 50,000 to $ 75,000 | Yes | 3 to 5 years | Incentives provided by National Grid for variable frequency drives on air handling units. |
| | 5) Geothermal Systems Open Loop | $ 350,000 to 450,000 | Yes | 7 to 10 years | Incentives provided by National Grid. Feasibility of geothermal system dependent on soil mechanics and water table. |
| | 6) Condensing Boilers (High Efficiency) | $ 175,000 to $ 225,000 | Yes | 7 to 10 years | Some prescriptive incentives available by KeySpan. |
| | 7) Dedicated Outside Air System | $ 150,000 to $ 200,000 | No | 3 to 5 years | Included in base building design. |

| Energy Conservation Measures Category | Energy Conservation Measure | Incremental Cost Range ($) | Available Incentives | Simple Payback Range (years) | Comments |
|---|---|---|---|---|---|
| | 8) Enthalpy Wheel | $ 125,000 to $ 175,000 | Likely | 7 to 10 years | Custom Incentives provided by KeySpan. |
| | 9) Demand Control Ventilation | $ 50,000 to $ 75,000 | Yes | 3 to 5 years | Prescriptive/Custom Incentives available by National Grid. Assumed CO2 sensors in courtroom area and conference rooms. |
| | 10) Enhanced Building Automation System | $ 75,000 to $ 125,000 | Yes | 5 to 7 years | Incremental cost depends on number of points controlled by BAS system. |
| **Lighting Systems** | 1) Energy Efficient Lighting System | $ 75,000 to $ 100,000 | Yes | 4 to 6 years | Incentives available by National Grid. |
| | 2) Lighting Control System-Occupancy Sensors | $ 50,000 to $ 75,000 | Yes | 4 to 6 years | Assumed 1 sensor/ 1000 $ft^{2.}$ |
| | 3) Lighting Control System-Daylight Sensors | $ 50,000 to $ 75,000 | Yes | 4 to 6 years | Assumed daylight control for the perimeter and the light well area. |
| **Renewable Energy** | 1) Photo Voltaic Array | $ 80,000 to $ 100,000 | Yes | 8 to 10 years | Incentives available by Massachusetts Technology Collaborative. 10 kW PV array assumed. |
| | 2) Microturbine | $ 300,000 to $ 500,000 | Yes | 10 to 15 years | Incentives available by Massachusetts Technology Collaborative. 100 kW microturbine assumed. |
| | 3) Wind Turbine | $ 125,000 to $ 175,000 | Yes | 8 to 10 years | Incentives available by Massachusetts Technology Collaborative. 10 kW wind turbine assumed. |

# 4 Design Requirements

This chapter provides DCAM and AOTC building, site design and technical standards followed by Designer's statements of how those goals are met in the conceptual design for the Salem Trial Court.

The sections are organized as follows:



## 4.1 Building Design Concept Principles: AOTC/DCAM

Following is DCAM's statement of courthouse building design concept principles, organized as follows:

## A OPTIMUM BLOCKING AND STACKING OF PROGRAM ELEMENTS

*(Designer's response on page 56)*

### 1 Vertical order of functions

Maximum efficiency in courthouse design can be achieved by grouping similar program functions together. The typical modern courthouse is organized with detainee areas on the lowest level (basement), transaction offices on the main floor (and the second floor, as needed), and the court¬rooms located above. The Judicial Suites may be located on a dedicated floor above the courtroom floors or in a separate area on courtroom floors.

The following functions are considered to be high traffic:

- Transaction counters for Clerks' offices and Probation offices
- Arraignment courtrooms

Locating high traffic functions on lower floors provides the following benefits:

- Ease of wayfinding
- Service provision efficiency
- Economy of elevator use
- Control and security

### 2 Separation of court and non-court functions

Non-court functions are those operations which may be located in the courthouse but which are not under the control of the Administrative Office of the Trial Court. The presence of these operations is beneficial to the courts as the services they provide are immediately available to the courts' users. This availability often reduces the need for court activity, as problems may be resolved immediately through the efforts of mediators, or referrals can be made to other agencies which have programs that address a person's needs more appropriately than the court system.

All non-court functions are accessible from the public circulation path only. There is no connection to the court staff circulation from these offices. All non-court personnel are typically restricted from using court staff circulation except in the same manner as the public, through monitored control points. This restriction preserves the confidentiality of court activities and records which are not for public examination.

Non-court functions include the following:

- District Attorney's office
- Court Clinic

- Alternative Dispute Resolution
- Child Care (if provided for in program)
- Department of Revenue

Separation of court and non-court functions provides the following benefits:

- Separation of public and staff circulation
- Offices can be easily found without traversing the courthouse
- Offices can be operated and accessed during non-court hours

**3 Plan courtroom sets in pairs**

Modern courthouse design organizes courtroom sets in pairs with a shared core composed of a secure elevator and holding cells.

This efficient pairing provides the following benefits:

- Courtrooms share a secure core with holding cells and a secure elevator
- Courtroom pairs on multiple floors can be served by the same core
- Complete separation of detainee, staff and public circulation
- Courtroom waiting can be shared
- Efficient access to public, staff and secure circulation

## B CIRCULATION

*(Designer's response on page 57)*

Clarity and simplicity of circulation systems is an essential quality of courthouse design that supports public access, productivity of staff, and security for all users. The Courthouse is organized around three separate circulation systems to provide convenience and safety for the public and staff:

1. **Public Circulation** for use by the general public;
2. **Staff Circulation** for use by the courthouse staff including judges; and
3. **Secure Circulation** for the transfer of persons in custody, under Court Officer escort.

These circulation systems are to remain separate throughout the facility. There are specific, limited and controlled locations to change from one circulation system to another. In some localized conditions a member of the public may be allowed into staff circulation, but only while under direct escort by court staff.

Each circulation system has specific requirements.

**1 Public Circulation**

- is **used by** the general public to gain access to all of the courthouse's public areas, such as the Transaction Offices and Courtrooms, as well as non-court functions

such as District Attorney offices, Court Clinic, and Child Care Center (if provided).

- **includes** the main entry, building lobby, courtroom waiting areas, jury assembly room, specified conference rooms, restrooms and telephone areas as well as all public stairways, escalators and elevators.
- **must be logical and simple** to navigate for all users, especially first time users, regardless of their destination within the building. Stairways and elevators must be located to make travel between floors easy and efficient.
- **must serve repetitive elements** such as meeting spaces, restrooms, and emergency egress stairs in a consistent pattern to help users find these elements.
- c**onnects to Staff circulation only at specific control points** where electronic admission or staff escort is required.

**2 Staff Circulation**

- **is used by court staff only.** Non-court personnel, such as clinicians, social service providers, District Attorney staff and attorneys are not permitted to use this circulation without escort.
- includes **separate elevators, stairways and restrooms** for staff only
- includes **corridors separate from the public** for court staff to move between departments and courtroom areas in a private "back of house" manner.
- allows staff to **circulate without risk** of uncontrolled encounters with hostile or upset members of the public
- allows a measure of **security and privacy** for the storage of sensitive files and confidential matters
- **provides an "Employees Only" area** where staff may work, meet or take rest or lunch breaks without being disturbed.
- **connects** with public circulation only at secure doors equipped with card readers.

Staff circulation includes two distinct types of circulation. In the transaction offices, staff circula¬tion is the office area and circulation behind the public counters. This circulation connects the dif¬ferent departments, such as the Probation Offices and Clerk's Office in each separate court de¬partment. On the Courtroom floors staff circulation refers to more private corridors which allow the Judge and Court Staff to reach the Courtroom and jury deliberation rooms without crossing the public circulation. It also provides separate circulation for jurors from the jury pool to courtrooms and from courtrooms to jury deliberation rooms. This corridor can be reached from the Judiciary offices and all staff areas. See the Functional Adjacency Diagrams for more details.

**3 Secure Circulation**

- is used to **move detainees** throughout the building;
- is **restricted** to Court Officers and authorized personnel such as Probation officers and certain law enforcement officials;
- **includes dedicated elevators** for moving detainees from the Central Holding Area to Courtroom holding areas and **separate detainee circulation** behind the courtrooms;
- **has the highest degree of security** to control detainee movement and to minimize the risk of escape, transfer of contraband and other inappropriate activities; and
- **security is reinforced** in secure corridors with the use of electronic locks on doors, surveillance cameras in corridors, and use of personal communication devices.

## C BUILDING ENTRY SEQUENCE

*(Designer's response on page 57)*

For security reasons, the court requires four separate secure entrances:

1 Covered **public** entrance with a security station, also used by staff.
2 **Detainee** entrance via a secure driveway through the sallyport.
3 Entry for **judges** from secure parking.
4 **Service** entry for deliveries.

Note: Judges and deliveries may share the service entry.

The **Main Public Entrance** is the single entrypoint to the courthouse for all public visitors. All staff members will also use the main entrance, with the exception of those using secure parking within the building. It must be located and expressed formally so that it can be easily identified and found from the street without depending on signage. The main entrance to the building should include a covered exterior area that accommodates and protects from the weather the many activities that occur just outside the entry doors, including queueing up for security, waiting for rides, smoking, taking a break and making phone calls.

The **Secure Detainee entrance** and vehicular **sallyport** lead directly to the central detention area. In order to achieve the desired separation of public, staff and detainees, this entrance is typically located away from the main entrance of the building. The detainee entrance must also be physically and visually separated from the judges' and delivery entrances. For additional information and further details regarding the detainee entrance and sallyport, please refer to the sallyport room data sheet.

**Judges** are provided parking spaces and an entry in a secure location separate from public parking. The judges' entry shall be physically and visually separated from the public and detainee entrances.

The **service entry** is used for the delivery of large items such as bulk supply orders, equipment, etc., unlike small package and U.S. Mail deliveries, which arrive through the main public entrance. The service entry, is typically located out of sight of the public entry and typically contains a loading dock.

### D BUILDING SECURITY

*(See further discussion in section 4.5, C.18 on page 83 and Designer's response on page 59)*

Building security systems should incorporate the following:

1 **Access Control System**

2 **CCTV System**
- Public areas
- All detainee areas
- Secure court space (parking areas)
- Building perimeter doors
- Access control doors
- Elevators

3 **Duress Alarm**
- Courtrooms (Judge and Clerk bench)
- Offices (Judges, Department heads)
- Public counters

4 **Intercom System**
- Lockup entry/exit
- Miscellaneous doors

### E EXTERIOR SPACES

*(Designer's response on page 58)*

The design should provide the following:
- A visible public entrance that can be identified from a distance.
- Weather protection for smoking, phone calls and waiting for rides.
- An area for vehicular drop-off within close proximity to the main entry.
- A step-free pathway from sidewalk to entrance.
- A civic plaza with street amenities that provide security.

Note: This information is provided as a summary of site considerations that may affect conceptual layout as well as blocking and stacking of the building. For complete information on site requirements, refer to 4.3, Site Design Concept Principles.

## F WAYFINDING IN PUBLIC AREAS

*(Designer's response on page 58)*

In order to facilitate navigation through the building for all users, the design should:

- Use clear building layout and interior and exterior landmarks to orient users.
- Locate elevators and open public stairs together for a single choice point.
- Centralize vertical circulation in plan to minimize travel distances for staff.
- Cluster public amenities such as waiting, telephones, and restrooms.

## G MULTI-HEIGHT SPACES

*(Designer's response on page 58)*

The design of atrium space in comprehensive justice centers is controversial and complex. The benefits and problems need to be carefully considered when evaluating atrium spaces within court buildings.

In addition to providing a public space, an atrium may serve as an orienting element for visitors to the courthouse. Atria are often used to bring daylight into the building interior, which is a desirable feature. However, there are also several drawbacks to using atrium spaces in courthouses. Large, multi-height public spaces can create acoustical issues for visitors, especially in courthouses where there may be many people waiting. There are safety risks associated with atrium spaces as well. In existing courthouses, distressed litigants have attempted to jump over atrium railings and fighting youths have tried to push one another over.

Atrium spaces can also increase HVAC operating costs and present maintenance challenges for window cleaning and relamping of light fixtures, and expensive smoke evacuation systems per code depending on the number of floors. In terms of the functional needs of the court, atrium spaces often occupy prime square footage, which may be better utilized by optimizing the useable floor space within the building.

## H FUTURE CHANGE IN COURTHOUSES

*(Designer's response on page 58)*

As stated in the DCAM Goals, flexibility and efficiency are important to consider when designing court buildings. Court functions may change over time and non-court functions may eventually move out to allow for court space expansion. The design of a comprehensive justice center can accommodate future changes through the following strategies:

- Locate administrative departments in contiguous space for expansion and contraction of space needs.

- Provide courtroom bay size and ceiling height in additional spaces for future courtroom needs.
- Provide cabling capacity for a fully electronic courthouse.

## 4.2 Building Design Concept Principles: Designer's Response

This section provides the designer's narrative of the Salem Trial Court building design concept principles, organized as follows:



### A OPTIMUM BLOCKING AND STACKING OF PROGRAM ELEMENTS

The concept design proposed for the Salem Trial Court is based on maximum efficiency in vertical stacking: detainee areas are on the lowest level (as is service), the heaviest traffic transaction offices (for District Court) are on the main floor, with Superior transaction offices directly above and courtrooms stacked above that. All courtroom sets are in pairs with the only exception the heavy traffic District Arraignment Court which is on the main floor.

The Judicial Suites are typically behind their courtrooms on each floor, making for efficient stacking. The Juvenile transaction areas and courtrooms are in a separate wing, entered just after the security zone.

The courtrooms are in pairs, around a shared core with secure elevator and holding cells. They are stacked above each other so that multiple floors are served by the same core.

### B NON-COURT FUNCTIONS

These functions (the District Attorney, Attorney's room, interpreter's office and court clinic) are all easily accessible from public circulation paths and are not connected to staff circulation.

The Law Library is housed in an historic church, connected to the main public circulation route by an enclosed pedestrian link, secured by a card reader-equipped door.

## C CIRCULATION

The proposed Salem Trial Court has three distinct and separate circulation systems:

- Public circulation is a broad, daylit corridor on each floor that gives access to all areas open to the public. It is a simple and logical system: a broad corridor, with room for seating and waiting—easy for the public to navigate and security personnel to survey.

  It is repetitive on all floors, to simplify orientation with open stairs and elevators at the center to make travel between floor easy and efficient. It is easy for orientation and easy for security.

- Staff circulation is typically behind the courtrooms with its own elevators and stairs (connecting to secure parking). It is used by court staff only and allows movement between departments and courtrooms without intersecting with the public circulation. Staff can circulate without risk and confidential or sensitive files are secure and private. Employees-only areas such as break rooms and staff toilets are reached by this circulation system, which connects with public circulation at only one secure card reader-equipped door. The Jury Pool also has access to the secure circulation system for jurors to reach courtrooms and jury deliberation rooms.

- Secure Circulation begins at the Central Holding Area where detainees enter and includes dedicated corridors and elevators that bring them to all courtrooms. It is a self-contained system that does not intersect with any of the other circulation systems and is used only by detainees and court officers or other authorized personnel.

## D BUILDING ENTRANCES

There are four distinct points of entry to the Salem Judicial Center.

- The Main Public Entrance is on Federal Street and is used by the public and the staff (with the exception of those staff members who have secure parking on the Bridge Street side) and will enter via the staff stairs and elevators directly into the staff circulation system.

  This entry is housed in a “pavilion” with a covered portico that provides protection for outdoor activities and signals the formal entry to the courthouse by its design. It is related in scale and character to the adjacent, historic Probate and Family Courthouse but is accessible at grade.

- The Sallyport provides a secure entrance for detainees and leads directly to the central detention area. It is reached via a curb cut on Bridge Street, a floor below the public entry on Federal Street.

- The Judges' Entry is via their secure parking area off Bridge Street and is visually and physically separate from the detainees' entry.

- The Service Entry is also accessed via Bridge Street and includes a loading dock with space for a 40' maximum truck and a dumpster.

### E EXTERIOR PUBLIC SPACES

The Salem Judicial Center has a visible entry portico that can be seen when approaching from either end of Federal Street and also provides covered space for those waiting outside for rides with a vehicular drop-off nearby.

The entry is at grade, accessible for those with mobility impairments. A paved area with a low seating wall links the portico with the Law Library/Church and provides a civic plaza that is separated from the rest of the building by a planted area to provide security.

### F WAYFINDING IN PUBLIC AREAS

The public path from the point of entry is simple and direct: Security screening takes place directly off the entry and leads to the broad cross corridor/waiting area that gives access to all public spaces. Elevators and stairs are at the midpoint of this corridor, close to the point of entry and near restrooms. Signage will be employed as required to reinforce the logic of the building and to guide users to specific destinations.

### G MULTI-HEIGHT SPACES

The Salem Judicial Center has no atrium. Its broad public corridors, stacked above each other and glazed along their full length and at the ends, provide daylight and orientation to the public circulation. A two-story lobby in the pavilion gives dignity to the entry sequence.

### H ADAPTABILITY

Future change is anticipated by grouping by function: Transaction areas can grow and shrink as they are adjacent to each other. Courtrooms are located and designed to allow their use by other court departments than those now programmed to be in them.

**I SECURITY**

All aspects of security have been give careful consideration in the design of the Salem Judicial Center including:

**1 Site Security & Building Entrances**

- The location of the building on the site is set back from surrounding streets to the extent possible and low walls and bollards are planned for key locations where unauthorized vehicles might try to approach.
- Landscaping is planned to enhance the building so as not to obstruct sightlines or provide hiding places. Good sight lighting will further discourage intrusion into the site and support operation of CCTV cameras.
- There are two curb cuts off Bridge Street: One to secure Judges' parking, accessible only by electronic cards and one to the service and sally port areas. There is no public parking on the site. The public pedestrian entry (on Federal Street) is via a security station that includes magnetometers for metal detection and x-ray equipment for packages.

**2 Building Security**

- After passing through the security station the public enters a broad straight corridor where security personnel have direct views of all activities.
- Access for the public to the staff corridors is limited to one, electronically controlled point of access for the limited occasions when it is desired.
- Secure circulation for detainees is completely separate and never crosses other circulation.

## 4.3 Site Design Concept Principles: AOTC/DCAM

Following is DCAM's statement of courthouse site design concept principles, organized as follows:



**A SITE LIGHTING**

- Site lighting design should ensure pedestrian safety around the perimeter of the site, within the parking areas and along any proposed pedestrian walks.

- Lighting along City streets shall be a continuation of existing street lighting meeting the requirements of the SalemPublic Works De¬partment.
- Site lights shall be vandal ¬resistant, located out of the way of snow plows and other vehicles. Provide concrete foot¬ing/bases flush with finish grades. Place wiring between poles near the back of curbs so as not to interfere with proposed plantings.
- Consider the use of photo-voltaic energy as the power source for site lighting.

**B SITE IMPROVEMENTS**

*(Designer's response on page 64)*

Durable, high quality site improvements should be provided to enhance the overall site design concept and uses of the site. Amenities may include benches; bicycle racks; trash recep¬tacles; ash urns; site lights for streets, drives/parking and pedestrian areas; tree grates for trees in pavement; bollards; seat walls and retaining walls; flagpoles; sculptures or other art work; signs; and fences. The information below provides general considerations for site improvements. For detailed information, refer to the specifications.

- Locate trash receptacles at convenient locations for both pedestrian use and for trash collection: along pedestrian routes and near building entries. Specification and placement of trash receptacles should be coordinated with AOTC security specialists.
- Bicycle racks should be located near building entry.
- The site design should consider the presence of smokers and the courts' desire to dissuade them from congregating at the front entry.

The following is a minimum list of site furnishings that shall be provided as part of the Main entry area: Bicycle rack, trash receptacle, ash urn, benches or seating wall, lighting, flagpoles. Additional items may be provided, subject to DCAM and AOTC approval.

**C SITE DRAINAGE, VEGETATION, SURFACE MATERIALS**

- Design pedestrian and parking areas to minimize the use of snow and ice removal methods that consume large amounts of energy and release chemical pollutants.
- Wherever possible, utilize porous pavement, vegetated filter strips, grassy swales, filtration basins or other methods to minimize, capture and treat stormwater run-off.
- Excessive paving also contributes to heat build-up on the site so increase shade and provide cooling from evapo-transpiration by using a high percentage of

landscape coverage. Highly (reflective) materials also minimizes heat build-up so those should be used on-site wherever possible.

- The landscape design should be as much of a self-contained ecosystem as possible. One possibility for irrigation can be the gravitational flow from storm water retention cisterns.
- Utilize planting species and varieties that are native to the local ecosystem.
- Utilize native plants to help in pest control and minimize the use of toxic chemicals.
- Exterior hose bibbs shall be provided at convenient locations to facilitate maintenance without placement of hoses over pedestrian or vehicular pavements. Provide sleeving under pavements and through site structures between all isolated plant beds to accommodate irrigation system.(Walkway material to be determined in Schematic Design.)
- Use of deciduous tress for shading of building

The pedestrian route shall be lined with site improvements and, where possible, shade trees, flowering trees, low shrubs (three foot maximum height) and hardy perennials and bulbs.

Flowering trees may be provided at pedestrian gathering areas. Tree plantings shall be en¬hanced with lawn, low-growing evergreen and deciduous shrubs (three feet maximum height); spring bulbs, hardy perennials (such as low everblooming daylilies) and groundcovers. All lawns and planted areas will be irrigated.

## D WETLANDS

A 100 year Flood Zone is tangential to the southern border of the site. No wetland issues exist for this site.

## E UTILITIES

*Results of Limited Subsurface Investigation, Salem Department of Public Works, North Road and Bridge Street Interchange, Salem, Massachusetts,* February 20, 2003 is attached as Appendix A1.7.

*Salem Courts Expansion Study, Salem, Massachusetts, Evaluation of Site Utilities,* Green International Affiliates, Inc., July 2003 is attached as Appendix A1.8.

Design team is responsible for confirming all survey information provided and coordinating with all state and local requirements.

## F PEDESTRIAN AND VEHICULAR CIRCULATION

*(Designer's response on page 64)*

The site should provide a major barrier-free civic pedestrian way from the existing city sidewalks to the Trial Court on Federal Street. The vehicle dropoff will be on an accessible route. Sidewalks provided on site shall be a minimum of 10' wide (not including bench setbacks) and 80" clear to the lowest overhead tree branches to permit visual surveillance through the space and physical access by security vehicles. Provide curb cuts and thickened reinforced pavement to accommodate vehicle loads. Provide lockable removable bollards at the site edge along Federal Street.

Pedestrian access to the site should be well lit and include landscaping such as deciduous shade trees, flowering trees, low shrubs or lawn. The plantings must not screen eye-level views through the space. The walkway pavement must accommodate emergency vehicle access and snow re¬moval equipment.

The site design must include a vehicular drop-off area near the building entrance; this access should be coordinated with the recently completed handicapped ramp serving the adjacent Probate and Family Court buildingThe drop-off should be combined with a pedestrian gathering space, which is provided with benches, trash receptacles, and additional plantings. Additional pedestrian gathering spaces along the walk may also be provided. The entry plaza may include seat and planter walls which relate to the design and materials of the Trial Court building. The layout of walkways, seating and landscaping should respect existing and proposed pedestrian movements.

Vehicular access to the site will be limited to service, staff and detention vehicles. Where vehicular access occurs, two-way, entry/exit, curb cuts into the site from adjacent streets shall be a minimum of 24' wide. Provide adequate radii, slopes and sight-line clearance for single-unit truck and emergency ve¬hicle maneuverability. Provide for emergency/security/maintenance vehicle access to linear walkways where they are separated from the vehicular pavement.

**FIRE LANES** Fire lanes shall be established near the proposed facility in accordance with the requirements of the Salem Fire Department. Fire hydrants shall be located to be easily accessible, but as inconspicuous to pedestrians as possible.

**SALLYPORT** Vehicles with detainees will enter directly into a controlled sallyport, which must be entirely separated from public, service and staff vehicular and pedestrian circulation. Vehicular access to the sallyport should not have a view of the secure "Authorized Only" parking area so that detainees do not have opportunity to

see judges entering and exiting the court facility. For additional information regarding the sallyport, refer to the room data sheets located in the Building Program Section of this document.

### G PARKING REQUIREMENTS

*(Designer's response on page 64)*

The only parking being provided for as part of this project is that for specific staff noted below. There will be no public parking developed on site.

The program is expected to accommodate a total of 19 parking spaces which will provide secure parking for 11 judges, 4 Clerk Magistrates and 4 Chief Probation Officers. Additional parking for the public, jury and staff can be accommodated nearby by means of on and off-street parking. Secure access and control for judges' parking shall be provided by a barrier, attractive fencing (relating the the design of the facility) and card-key access. Standard parking space dimensions shall meet the guidelines required by the Massachusetts State Building Code as well as those of the MAAB and the ADAAG.

Of the total 19 non-public parking spaces, provide one "van accessible" space and access aisle.

Pavement marking and signage shall be provided for traffic and parking guidance, identification of accessible or reserved parking areas, pedestrian drop-off areas and for clearly marking pedestrian crosswalks.

### H SERVICE AREAS

*(Designer's response on page 64 and page 102)*

A secure method/sequence shall be provided for large deliveries and trash removal. This service area should be in an inconspicuous location convenient for truck circulation and loading. Provide loading dock space for a minimum of one truck, with either a 4' high loading platform or a lift device to facilitate truck loading.

Provide screened and separated areas for exterior dumpsters, transformers or other equipment. Service areas need to provide for storage of items such as snowblowers, shovels, salt, weed trimmers or sand in close proximity to parking lots and walkways.

### I SITE SECURITY

*(Designer's response on page 64)*

The entire building perimeter and overview of the parking area shall be CCTV-monitored. Above-ground utility structures should be located for convenient service

access but away from pedestrian circulation areas. Provide screened secure enclosures with low maintenance pads..

4.4 Staff will arrive from nearby parking areas and during normal business hours the staff will enter through the public main entrance. Judges will enter the building through the secure staff-only entrance during normal business hours.

## Site Design Concept Principles: Designer's Response

**A THE BUILDING IS SITED AND DESIGNED IN RESPONSE TO THE FOLLOWING PRINCIPLES:**

- That wayfinding for the public is clear without signage: a major entry (with portico) on Federal Street signals the point of entry.
- That drop-off and pick-up for the public is near the entry and provides a covered place to wait under the portico on Federal Street.
- That the pedestrians with and without mobility impairment can move into the building at grade, without steps in a direct and dignified manner: under the portico to a single, large entry.
- That service areas are distant from the public entry and hidden from view: a service entry and loading dock are a full level below the public entry and on the opposite side of the building off Bridge Street.
- That the site is easily surveilled and difficult to penetrate other than at designated points: open landscaped areas with limited public access provide a visual amenity but are a buffer.
- That staff parking be secure and lead directly to the staff circulation system: parking for 19 vehicles is off Bridge Street is behind a security fence and leads directly to staff elevators and stairs.

**B SITE DESIGN CONSIDERATIONS**

Site Improvements include both hard and soft scape and respond to the various conditions on different sides of the building:

- On Federal Street (to the south) there are a series of paved areas that (going from east to west)
  - provide the at grade transition from sidewalk to building entry, under the portico.
  - create a small public plaza with a row of deciduous trees (for summer shade) and a seating wall.
  - provide a paved forecourt to the Church/Law Library that responds to its original setting and broad steps.
- Behind the public plaza, low planting (both evergreen and deciduous) and a lawn create a green oasis, visible from the public circulation within and the street. High branching trees line two sides of this space.

- On the North Street (west) side of the Judicial Center careful grading and a retaining wall allow lawn and (where steeper) deciduous shrubs to come up to the sidewalk.
- On Bridge Street (north of the building) a row of high branching deciduous trees, set in a narrow lawn, follow the street line and, in conjunction with evergreen planting, help screen the fence around the secure parking and service area.
- Between the new building and the Probate and Family Court (to the east), there is a paved service court and, beyond that, a small garden to enhance the view from the Grand Jury Suite.

## 4.5 Building Systems Standards: AOTC/DCAM

This section is intended to address building systems from several perspectives:

- Aspects of the user agency's operations that may influence the design of building systems.
- Specific demands the users place on the building that may have technical implications
- Unique site and locational issues that may need to be addressed in the design of systems
- Overview of technical performance expected by DCAM and AOTC based on the agencies' experience constructing and maintaining many courthouses.

This information is general and qualitative. Technical standards are described in the Specifications. Outline of this section is as follows:

## A INFRASTRUCTURE

### 1 Foundations and Basement Construction

*(Designer's response on page 88)*

The site slopes down from Federal Street to Bridge Street approximately 15 feet. The lower level opens on grade with Bridge Street and the first floor above, opens on grade with Federal Street. As the lower level extends back into the site towards Federal Street it becomes a basement level fully below grade. A portion of this level is expected to be a few feet into the water table, so it will be necessary to waterproof the floor slab and design it to resist uplift.

### 2 Structural

*(Designer's response on page 89)*

The typical courtroom floor consisting of two court sets separated by a open green-roof/light well will set the structural bay size. Courtrooms require a clear span of 40 feet across the width for a column free space.

The shared detainee area between the two courtrooms of a court set requires a width of about 20 feet.

All court transaction spaces occur on floors below the courtroom floors, and the courtroom floor structural grid will carry down though these floors. Where active record storage occurs on these floors the structural bay size will be reduced to accommodate the increase loading of dense compact filing systems and the floor slab design will be strengthened.

**Programmatic performance**

- Plan for extra floor loads at each transaction office for high density records storage

**System performance**

- Design structural system to provide necessary large spans for courtrooms and parking, if within the building.

## B EXTERIOR ENVELOPE

### 1 Roof Construction

*(Designer's response on page 90)*

**Programmatic performance**

- The roof design shall minimize wear and tear from traffic by coordinating the location of rooftop equipment with access points. If the building design includes a mechanical penthouse, provide watertight access and walkway pads.
- Materials that are exposed to view from the ground, even at a dis¬tance, shall be copper, terne, slate, or similar materials.
- The roof must be accessed by stairs (not ladder).
- Determine what devices, if any, are required on the roof for the window washing equipment.
- If mechanical equipment is located on the roof, a penthouse is required. Its design shall address the following:
- not be visible from the ground.
- be a tempered but not fully conditioned space.
- Provide sufficient sound and vibration isolation to prevent excessive noise to upper levels of courthouse as well as to adjacent properties.
- be designed consistent with the building aesthetic and expressed as an architectural element such as a dormer, sloped roof, or tower rather than a mechanical box.
- if constructed of lighter materials than the rest of the building, the materials will the same life expectancy as the rest of the building.

**System performance**

- Roofing membrane shall be warranted for 20 years minimum.
- The roof system shall be SBS (Styrene-Butadiene-Styrene).
- The R-value shall meet the overall building thermal loss as required by the energy code.

**Technical performance**

- A flat roof of no less than 1/4 inch per foot slope is required. , All roofs shall be pitched to drain.

**2 Exterior Walls**

*(Designer's response on page 90)*

**Programmatic performance**

- Exterior wall configuration, especially where the roof may project beyond the exterior wall, must take into account how windows will be washed.

**System performance**

- The exterior cladding of the building will be masonry or precast construction.
- Select color and finish, and use accent materials with respect to the surrounding visual context and considering the long term appearance of the building with minimal upkeep.

**Technical performance**

- Minimize projections on the exterior walls that will become pigeon roosts.
- The selected material must have a proven technique for graffti removal.
- Specification of exterior wall materials and anchorage systems shall take into account proximity to a salt air environment.

**3 Exterior Windows**

*(Designer's response on page 90)*

**Programmatic performance**

- To provide optimal indoor air quality and comfort for occupants, use operable windows in select areas wherever possible. It is not necessary to open the windows all the way.
- In some areas of the courthouse, windows are undesirable for safety/security reasons. Such spaces include all detainee areas (including corridors) and directly the area around the judge's bench in the courtroom.
- No windows in courtrooms and jury deliberation rooms should be located where the public can look into the space from the outside.
- The design and location of windows must ensure ease and minimal cost of window washing, both exterior and interior. Coordinate with operations to determine optimal maintenance plan. Exterior and internal windowashing equipment must meet OSHA requirements.
- Any windows located where the sun will shine into the public spaces during the day must address glare control.

**System performance**

- The windows shall meet the highest industry standards for energy efficiency.

**Technical performance**

- Windows shall be specified to be non-corrosive in the salt air environment of Salem.

### 4 Exterior Doors

**Programmatic performance**

- Provide the highest quality, easily maintained automatic sensor door openers at all public doors.
- If public entry doors are designated as entrance and exit, be sure the entrance is on the right from the exterior. Coordinate with the location and layout of interior security.
- Design exterior egress-only doors so that they do not look like entrance doors.
- Do not recess egress-only doors in alcoves where the public can loiter.
- Select doors that have visual clarity regarding which side of the door is operable.
- No offset hinge doors are permitted.
- The opening force required for exterior doors exceeds what many users can push. At least one door at the public entrance must open automatically, either with a sensor or a button/plate.

**System performance**

- All exterior doors will be alarmed. See security section for specific information.
- Egress doors must be in compliance with ADA and MAAB requirements .

**Technical performance**

- Any exterior automatic doors with push plates or buttons must be operable with a maximum of 15 lbs pressure.

## C INTERIOR CONSTRUCTION

### 1 Partitions and Wall Finishes

**Programmatic performance**

- Install wainscoting below drywall in public areas where people are apt to lean against walls.
- Install chair rails on the walls of all meeting rooms unless wainscoting is provided.

**Technical performance**

- All walls that are required to provide acoustical privacy must extend to the underside of the floor above.

### 2 Interior Doors

**Programmatic performance**

- Locate all doors so they have sufficient maneuvering space inside and outside to be accessible. Automatic door openers on interior doors may not be substituted for maneuvering space in new construction.
- All interior doors on closers must be operable with 5 lbs. of pressure.

### 3 Floor Finishes

**Programmatic performance**

- All floor surfaces must be slip resistant, especially when wet.
- Minimize the number of floor materials that require unique cleaning protocols and cleaning equipment.
- Provide sufficient walk-off surfaces at all entrances to minimize sand and salt in the building during the winter.
- Provide a walk-off surface in the public entrance weather vestibule that can be easily removed and cleaned and complies with accessibility requirements for level changes no greater than 1/4 inch.

### 4 Ceiling Finishes

Courthouse ceiling materials/finishes will vary depending room/space function. Common attributes to all ceiling materials will be durability and low maintenance. Some areas will have articulated, decorative ceilings and other areas will be primarily functional.

a Courtrooms will have the highest quality ceilings consisting of veneer plaster on gypsum lath forming coffers, coves and dropped soffits. Some areas where sound absorption may be desirable will receive acoustic tile with concealed spline suspension system.

b Courtroom vestibule ceilings will be veneer plaster on gypsum lath or ACT with concealed spline suspension system.

c Justice's offices, conference rooms and executive offices will have ACT with concealed spline suspension system.

d Office pools, offices, file rooms, storage and equipment rooms will have 2' x 2' ACT. Large areas may be articulated with dropped soffits.

e Public lobbies, circulation and waiting areas will have ACT or linear metal slats/panels. Large areas may be articulated with dropped soffits.

f Detainee areas will have steel plate or poured concrete ceilings. Corridors will either be the same or have veneer plaster on abuse resistant gypsum lath installed over two layers of 3/4" plywood.

g Public and staff toilet rooms will have 2' X 2' ACT or veneer plaster on moisture resistant gypsum lath, painted with a glazed wall finish.

h Mechanical rooms, storage rooms, workshops and other back-of-house ceilings will be exposed structure with 2' X 2' ACT where sound absorption may be required.

## 5 Specialties

**Programmatic performance**

- Toilet partitions in public restrooms must be designed to withstand extreme wear and tear. Surfaces should be grafitti resistant.
- Doors to accessible toilet stalls shall have self-closing hinges.
- Any public telephone location shall have a wall outlet available for public use of portable text telephones.
- At locations with a bank of two or more public telephones, a public text phone must be provided.

## 6 Staircases

**Programmatic performance**

- Railing height and depth to be discussed in schematic design.
- Design stairs so the stringer color contrasts visually with the color of the stair treads to help people navigate the stairs safely.
- Use a contrasting color or material at the top and bottom landing to highlight change in elevation and reduce falls.
- Free standing stairs must be designed to avoid being a protruding object in circulation areas.
- Locate stairwell lighting so that lights can be relamped without scaffolding or lifts.

**System performance**

Design stairs to minimize deflection and noise at landings

## 7 Atriums and Balconies

*(Designer's response on page 58)*

**Programmatic performance**

- Atriums may not be more than two stories.
- Railing design at open areas must minimize the opportunities for jumping or falling over by have no horizontal elements for feet and sufficient depth and height to deter accidents.
- Design large, multi-height window areas to:
  - eliminate problems of glare
  - minimize local heat build-up
  - be easily cleaned on the interior
  - reduce dust shelves
- Design atrium lighting to avoid need for lifts or scaffolding to relamp fixtures.
- Design atriums with surfaces and features that dampen noise reverberation.

**System performance**

- Fire protection issues
- Mechanical issues

**8 Interior Air Quality**

**Programmatic performance**

- Prohibit smoking at the building entrance and designate a location nearby that ensures that smoke is not sucked into the interior at doors or at air intakes.

**Technical performance**

- Select materials to maximize indoor air quality. The composition of materials should be analyzed for the potential of harmful off-gassing as well as their propensity to collect and disperse pollutants, consistent with sustainable and green building requirements

**9 Conveying Systems**

**Programmatic performance**

- Detainee elevators shall have a lockable "cage" inside with a sliding door.
- In detainee elevators,all materials shall be suicide-resistant and elevators cabs equipped with security cameras.
- In situations where detainee elevators must also be used by staff (this is not preferred), there shall be separate doors from the elevator to the secure circulation corridor and the staff circulation
- In a shared-use elevator, the following controls shall be incorporated:
  - The elevators will normally respond to a call at any staff location.
  - At each detainee area (central holding and courtroom holding areas), the control will be only by a Court Officer's key.
  - When placed under Court Officer's operation at any location, the elevator will make its previously scheduled stop(s) before proceeding to the Courts Officer's call location.
  - The court officer's control key will override all other call functions. While under key operation by the court officer, the elevator will be secured and will stop only at the secure circulation corridors.
  - The call stations at the elevator doors in secure circulation shall be activated by key only.
  - "Stretcher" elevators to accommodate emergency personnel must be provided.

**Vertical or inclined lifts are not an acceptable means of providing vertical access to witness stands, jury boxes or judge's benches, or for any other circumstance in new construction.**

**System performance**

- Hydraulic elevators are typically not acceptable for public and freight use because with heavy use they require extensive maintenance and repair.
- The level of the water table shall be considered in the design of elevator pits. In the case of a high water table in the area of the new building, sump pumps shall be included in each elevator pit.
- There shall be at least one freight elevator that is easily accessible from and able to handle the loads associated with record storage, loading dock, and mechanical spaces.

**Technical performance**

- Each elevator shall be equipped with a cylinder lockout for each floor.
- Each elevator shall be provided with full pads and hooks for use in moving furniture and equipment.

## 10 Plumbing

*(Designer's response on page 96)*

**Programmatic performance**

- In addition to multi-user public restrooms, provide one public companion restroom per floor as part of the required fixture count.
- Drinking fountains shall be as follows:
  - located in close proximity to the public toilet rooms.
  - have separate high and low fixtures at each location
  - be located so that they are not protruding into circulation spaces as required by MAAB 20.6.
- Plumbing chases for detention cells shall be easily accessed from a locked door outside of the cell.
- All toilet rooms shall have a hose bib and floor drains.
- The holding cell area shall have a floor drain and a recessed hose bib for clean up.
- For every multi-user restroom with six (6) or more stalls, provide an alternate accessible stall as per MAAB 30.6.2.

**System performance**

- Utilize the waste heat from the building system to provide a large percentage of domestic hot water.
- Domestic water supply piping shall be insulated for energy efficiency and to prevent condensation.
- Domestic water piping shall be run close to the underside of floor deck and to provide a minimum of 8'-6"' clearance beneath, where exposed to view.

**Technical performance**

- Sink valves on detention fixtures shall be temperature controlled to prevent detainees from scalding themselves.
- Fixtures in detention cells shall be monolithic, stainless units that combine sink and toilet into a single fixture.
- The flush mechanism for detainee toilets should be located outside of the cells, activated from the Control Room.
- Use low water consuming toilets throughout the building.
- Use low flow faucets with infrared on-off valves throughout the building.
- For all toilet fixtures, waste pipes shall be sound insulated.

### 11 Energy Usage and Conservation

**Programmatic performance**

- Consideration must be given to aspects of the building configuration or site that present opportunities for energy conservation.
- Locate major ventilation equipment (intake air, exhaust, mechanical system, etc.) away from public open spaces to decrease site noise.

**System performance**

- Work with DCAM energy team and utility companies to identify opportunities for utility rebates early on in the design process.
- Life cycle calculations must be conducted as a condition for making design decisions. May include: HVAC equipment, heat recovery, variable speed drives, variable air volume systems, lighting, controls, envelope, building materials.
- Utilize energy modeling during design phase.
- Energy monitoring is required during schematic design and design development; commissioning will also be part of this project.

**Technical performance**

- Use variable speed motors.
- Use solar panels to pre-heat ventilation air/domestic hot water.

### 12 HVAC

*(Designer's response on page 92)*

**Programmatic performance**

- Mechanical rooms should be easily accessed from staff circulation.
- The mechanical equipment shall be located in the building or within an enclosed rooftop mechanical penthouse.
- It is important that the equipment be easy to work on, providing sufficient clearance to access and replace any necessary parts. Consideration should be given to the various clearances required in order to replace any necessary parts.

- Use a variety of different HVAC systems adapted to different conditions throughout the building. Examples: the south façade may benefit from a passive solar approach while the north side will be more dependent on mechanical supply; the computer rooms may require compressor-type air conditioning; and natural ventilation may be more effective in a narrower wing of the building while broader floor plates require a duct system.
- Provide for individual control of HVAC to enhance comfort. The greater the number of HVAC and lighting zones in a building, the more responsive it can be to differences in HVAC requirements and that provides for greater control and comfort for the individual staff. Assume there will be after-hours building use.
- Provide multiple vertical cores and chases to reduce the size of horizontal distribution of systems. This technique saves space as well as facilitates a larger array of HVAC, electric, communication and data zones.
- Humidity control for record storage rooms and electronic equipment storage

**System performance**

- The HVAC system should be sized to respond to actual loads as opposed to rules-of-thumb. Oversizing equipment results in higher energy use and operating cost.
- Consideration must be given to the design of a system that is reliable and easy to maintain, while providing cost effectiveness over the life of the system.
- The HVAC system should be designed to operate most efficiently at average loads, not peak load. Peak load is a condition that occurs typically less than 5 percent of operating time.
- Use occupancy sensors in each space to control heating and cooling water loops. These sensors will vary the flow depending on the number of people in the vicinity of the sensor.
- Use of evaporative cooling instead of conventional refrigeration/cooling equipment may be investigated as part of schematic design. This strategy can be used by drying the air with desiccant de-humidification (this is more efficient in removing latent heat than chillers) and then using evaporative cooling to cool and add humidity back to the supply air at the same time. The elimination of conventional cooling will also eliminate chemical use.
- The cooling system should have capacity to conduct a night-time ventilation purge to cool the mass of the building overnight. The HVAC system should be able to provide 100% outside air in a controlled fashion to remove the heat build-up of the day.

- Air intake louvers shall be located away from pollution sources and exhaust air, idling vehicles, or near any other noxious pollutants that may come from neighboring buildings. Louvers shall be located away from areas where snow might drift and cover the louvers. Filters for outside air must be effective and properly maintained, outdoor air, as well as indoor air, may contain particulates and pollutants.
- Fresh air and ventilation is very important for courtrooms, holding area, jury rooms food service areas. Holding areas require 100% fresh air exchange.
- Reduce duct and fan sizes by employing a displacement ventilation delivery system equipment may be investigated as part of schematic design. Deliver air in a steady, but slow, process from the floor of the spaces. Ventilation is unhampered by walls and furniture since the air is being filled from the bottom towards the ceiling. Such systems can be integrated with a raised floor air distribution concept.
- Separate ventilation from heating and air conditioning systems to provide continuous fresh air delivery with a smaller, easily cleaned duct system. Slow, but continuous, air movement requires less energy. This type of system is also compatible with operable windows because heat and cooling can be separately shut off when the windows are open and the system ventilation can help continue to move fresh air throughout the space when the breezes die down. This may be investigated as part of schematic design
- No internal duct insulation is to be used.
- Back-up systems requirements to be determined in schematic design.

**Technical performance**

- Avoid contamination of HVAC equipment and ductwork. Do not use the systems during construction, if unavoidable, provide and frequently change proper filters. Clean equipment and ductwork as part of commissioning process.
- Provide sound transmission and vibration transmission and isolation features to reduce disruptive or annoying noises in all areas, but especially courtrooms.
- Provide acoustical lining and sound traps for areas requiring private conversation.
- Air distribution devices should be constructed in low-noise configurations.
- The contractor is to clean all ducts and make sure filters are clean prior to occupancy.
- Ventilation distribution outlet and exhaust inlets should be designed so that building users can't block the vents.

**Ventilation Requirements**

| LOCATION | VENTILATION REQUIREMENT |
|---|---|
| Offices | 20 cfm/person |
| Courtrooms | 15 cfm/person |
| Staff Break Rooms | 15 cfm/person |
| Conference Rooms | 20 cfm/person |
| Lobbies | 15 cfm/person |
| Holding Cells | 20 cfm/person |
| Guard stations | 15 cfm/person |
| Corridors | .10 cfm/person |
| Elevator / Machine Room | 1.0 cfm/sf |
| Electrical/Mechanical Room | Provide ventilation to maintain temperature <90o F |
| Storage Rooms | 4-6 air changes/hour |
| Toilet rooms/maintenance | 75 cfm/watercloset, urinal or janitor's sink |

**Temperature and Relative Humidity Requirements**

| LOCATION | WINTER TEMP. | SUMMER TEMP. |
|---|---|---|
| Offices | 72o F | 75o F at 50% RH |
| Courtrooms | 72o F | 75o F at 50% RH |
| Staff Break Rooms | 72o F | 75o F at 50% RH |
| Conference Rooms | 72o F | 75o F at 50% RH |
| Lobbies | 72o F | Ambient |
| Holding Cells | 72o F | 75o F at 50% RH |
| Guard stations | 72o F | 75o F at 50% RH |
| Corridors | 72o F | Ambient |
| Elevator / Machine Room | 55o F - 90o F, per code | 55o F - 90o F, per code |
| Electrical/Mechanical Room | 72o F | Ambient, 90o F max. |
| Storage Rooms | 72o F | Ambient |
| Toilet rooms/maintenance | 72o F | Ambient |
| | | |

**Room Noise Criteria Levels**

RC(N) for HVAC systems and Noise Criteria levels, NC for HVAC equipment shall be according to the following:

| LOCATION | RC(N) |
|---|---|
| Courtrooms | 25 – 35 |
| Offices | 25 – 35 |
| Open Offices | 30 – 40 |
| Conference Rooms | 25 – 35 |
| Jury Rooms | 25 – 35 |
| Corridors and Lobbies | 40 – 45 |

### 13 Fire Protection

*(Designer's response on page 97)*

**Technical performance**

- Issues for consideration:
  - Location of standpipes
  - Location of fire extinguishers
  - Carbon monoxide detectors
  - Radon detectors
- Atriums are not recommended because they require the installation and ongoing maintenance of a smoke evacuation system.
- Coordinate the installation and compatibility of all flow, tamper, pressure, and alarm devices, required and specified, for the proper annunciation and transmission of an alarm or trouble condition to the local fire department or monitoring agency.
- Coordinate with the local water department as to any local restrictions or requirements relative to backflow prevention devices and metering.
- Piping shall run close to the underside of floor deck and provide a minimum of 8'6" clearance beneath, where exposed to view.
- Fire Protection & Sprinkler Systems: Stand-pipe and Hose Systems

### 14 Electrical

*(Designer's response on page 98)*

**Programmatic performance**

- Emergency lighting in courtrooms must be provided to permit orderly evacuation in the event of an emergency. Selected lighting fixtures within the courtroom must provide an uninterrupted source of lighting in the event of a power outage. Standby power for emergency lighting to the courtrooms must be provided by local battery back-up units connected to an

emergency generator. The judge's bench must not be spotlighted by emergency lighting.

- Emergency Lighting must be provided for selected lighting units in the judge's private chambers, reference/conference room, and circulation spaces.
- Emergency Lighting must be provided in the jury assembly area, trial jury suite, and grand jury suite.
- The judges' conference room and robing room must have emergency lighting.
- Cat 6 standard requirement for all wiring/cabling for telecommunication and computer networks
- For consideration during schematic design –any special equipment with high power needs.
- All transformers shall be K-type.
- For consideration during schematic design - Location of electrical panels—in staff circulation areas—locked access panels

**System performance**

- The vertical power distribution system shall be designed for easy repair and modification through vertical stacking of electrical closets and simplified modular connections to horizontal distribution systems.
- Switching, electrical panels, and controls shall be located for ease of access and to allow for future electrical systems expansion. Electrical systems shall be designed for total connected load requirements, plus a 25 – 30% allowance for expansion.
- Provide molded case main and branch circuit breakers at the main switchboard with the interrupting rating necessary to safely interrupt a postulated full three-phase line to ground fault without damage. Circuit breakers shall feed building mechanical equipment including elevators and 120/208V 3-phase 4-wire panelboards.
- Provide motors 1HP and larger at 480 volt and power lighting at 277 volts and all 120/208 volt from K-type transformers
- Provide separate switchboard breakers and panelboards for the electrical equipment loads supporting the Sallyport, security and CCTV systems, and secure area to prevent shutdown of these loads when servicing miscellaneous building mechanical and area loads.
- An emergency power distribution system shall be provided for emergency lighting, computer systems, and security systems. An emergency generator is preferred. The computer room can use UPS.
- Consider using photovoltaic-assisted power to provide energy for fans. They are most cost-effective to power systems that have the majority of their use during the day and low level requirements at night.

**Technical performance**

- Provide a shunt trip breaker for the elevator load.
- All motors over 5 hp shall be premium efficiency.
- Disconnecting means shall be provided at all equipment.

### 15 Lighting and Branch Wiring

*(Designer's response on page 99)*

**Programmatic performance**

- Natural lighting is greatly desired for workspaces including courtrooms and hearing rooms. Use daylight for 90 percent of the ambient lighting requirements. This can be effected through windows, skylights, light wells, and interior windows that capture light from adjacent spaces. At the same time building users should be able to control natural light, especially with regard to glare at workstations and video display terminals. Any shading devices should minimize glare.
- Quality of light is as important as quantity of foot-candles. Lighting should make people and things look attractive through consideration of lamp color temperature and strategies for positioning diffuse and direct lighting. Building finishes should be selected under the primary lighting conditions under which they will be installed.
- Fixtures should be easy to service, and as maintenance-free as possible. Use of specialized lamps with obscure suppliers, or that are susceptible to damage, or are expensive to replace should not be specified in the design.
- Combine ambient general lighting with workstation task lighting for maximum efficiency. The ambient light should be kept at a low level in offices and passageways and higher in file areas and other general office spaces. Environments with diverse lighting levels are more interesting and reduce energy consumption and individually controlled environments have been demonstrated to significantly increase productivity and staff comfort.
- Direct lighting in the courtrooms should be used to place emphasis on the judge's position and to promote the position of the witness, jury and attorneys during deliberations.
- Lighting should promote clear visual communication and security.
- Avoid materials and architectural composition that creates visual "noise" for deaf people, or that can confuse way-finding by persons with low vision.
- Lighting controls: Consideration should be given for each space as to who will operate the lighting controls and under what circumstances. Use of pre-set or pre-programmed lighting settings? Controls should be used easily and intuitively—large banks of switches can be confusing.

- Where possible, use occupancy sensors for control of lighting.
- Emphasis should be on compact fluorescent lighting.
- Lighting levels should be coordinated with security camera sensitivity.

**System performance**

- Natural lighting should be used wherever possible to reduce the building's energy requirements. Fixtures should be low wattage for energy conservation and low heat so as to minimize heating loads on the HVAC system.
- Lighting the building at night? (timers for emergency lighting only or 10% lighting?)

**Technical performance**

- Utilize dimmable ballasts for fluorescent fixtures and control them with area daylight sensors to provide efficient, balanced, and integrated lighting systems so that the fixtures emit only the necessary level of artificial light to supplement the available natural daylight.

### 16 Sound System and Audio/Visual Recommendations for Courtrooms

**Programmatic performance**

- Install a permanently wired assistive listening system for hearing impaired participants and language translation.
- Provide separate audio/visual control cabinets in courtrooms or in A/V closets adjacent to the well. Do not place A/V equipment racks under the judge's bench.
- Low profile desk microphones are recommended so that views to the speaker are not obscured.
- Plan sidebar microphones for the electronic record.
- Provide adequate A/V system training to all courtroom personnel to properly adjust sound systems in courtrooms.

**System performance**

- If a wireless microphone system is used, provide wall-mounted antennas with equipment located on a centralized equipment rack.
- Carefully locate all receptables to optimize cable management and provide flush junction boxes and connections for them.
- Provide a masking system over the jury box to allow for confidentiality during judge's bench conferences.
- If access flooring is not provided, provide generously sized flush floorboxes with voice, data and power connections within the well. Carefully consider the location of the floorboxes to allow for the requirements of movable furnishings.

- Plan for the future integration of automation technologies into the courtroom, including large screen video monitors, computer-based Judge's bench, and computer-generated display technology.

**Technical performance**

- Provide individual control of each microphone at the clerk's station.
- Provide an on-off switch at each microphone for each station. Provide a microphone mute button at the judge's bench.

### 17 Acoustics

**Programmatic performance**

- The courtroom acoustics should be designed to minimize the need for voice amplification, although amplification might be used. A good quality an well-designed sound system is essential where audio and video recording devices are used.
- Courtroom acoustics should amplify and diffuse sound, limit reverberation, and control external noise. An audio specialist should be consulted so that the architecture, materials, furniture and equipment are coordinated for an optimum acoustical environment.
- The well and the spectator areas of the courtroom require different acoustical conditions. Sound in the well should be balanced with sound-reflecting wall surfaces, and sound-absorbing floor and ceiling materials that reduce reflected sound.
- Provide sound lock vestibules at the public entry of the courtrooms. The attorney/client conference room should be entered through this vestibule.

**System performance**

- The spectator area should be treated with highly absorptive materials to eliminate reverberation from sound from the well, and to reduce the level of noise made by spectators.
- Barrel vaulting or coffered ceilings can create a fluttering echo if the acoustical treatment is not appropriate.
- Courtroom "rumble" can be minimized by locating air handling equipment away from the courtrooms.
- Courtroom "hiss" can be minimized by maintaining low air velocities at the diffusers.
- Noise from fluorescent lighting ballasts can be quieted by relocating the ballast to a remote location or changing to an electronic type. See also the section below regarding mechanical equipment for additional considerations concerning sound isolation.

**Technical performance**

- Sound Transmission Class rating for wall assemblies should be greater than or equal to 50 STC for areas that need to be acoustically isolated from adjacent spaces. These areas include courtrooms, hearing rooms, jury deliberation rooms, judicial chambers, and conference rooms.
- For a vestibule configuration, provide a solid-core wood door with a single smoke gasket around the perimeter and jamb, and drop bottom gaskets or thresholds for sound isolation.
- For a non-vestibule configuration – provide a compression gasket and a smoke gasket in addition to door bottom gaskets with a threshold for sound isolation.
- An integral bubble gasket with dual gasketing around the entire perimeter and head is an effective sound gasketing configuration for a single door from a secured area.

**18 Security**

*(Designer's response on page 102)*

An integrated security, fire alarm and energy management system must be investigated as part of schematic design and design development.

**Programmatic performance**

***General***

- Courthouse security requires coordination of architectural design, security personnel, and security systems and equipment. Basic architectural solutions to security problems are an integral part of planning and design for the courthouse.
- Separation of public, restricted, and secure circulation patterns and provision of secure prisoner holding and interview facilities are essential security design elements.
- Courthouse security system and equipment design includes both perimeter and interior security. Perimeter security includes considerations of site, parking, lighting, access control at building entrances, and intrusion detection/alarm systems.
- Interior security includes personnel security, security of property and documents, access control to interior spaces, personnel movement and circulation controls, security aspects of spatial arrangements, and the coordination and integration of security and fire safety requirements.

***Site Security***

- The building must be physically protected from vehicles using passive barriers such as bollards and planters.

- Special attention must be given to the location and configuration of plants outside the building, particularly at parking and building entrances. Plants must be small and low so they cannot be used as hiding places or obstruct site lines. Landscaping can also be used to enhance security by preventing encroachment on the building setback.
- Sufficient lighting is critical to the safety of the public and employees outside the courthouse. Illumination must be provided for areas between cars and around bushes and shrubs. Higher levels of illumination are required at vehicle and pedestrian entrances. All perimeter lighting must support the operation of CCTV cameras.

***Vehicle Access and Parking***

- Vehicle access onto the site may be controlled at a single point with electronic access control and hydraulic vehicle barriers.
- Provide electronic access control to judges' parking. Judges' parking should be located in a totally enclosed area under the building or if this is not possible, in a fenced area with minimal public view of the parking area and the judge's path to the building. A separate restricted entrance to the building from the parking area must be provided.
- Parking for service vehicles must be located outside the court building. Where service and delivery vehicles are parked adjacent to the court building, the area must be designed to reflect and withstand explosions. Where a parking lot guard is provided, vehicular deliveries can be channeled past the guard post for screening.

***Building Perimeter***

- An intrusion-detection system covering all perimeter doors, including roof access, must be install in the courthouse. Ground floor or accessible windows must be protected with glass break detectors or other sensor technology.
- Where permissible by code, emergency exits should be equipped with magnetic locks or electric strikes connected to an alarm/time delay mechanism or the fire alarm/sprinkler system. Electric locking systems on fire doors should be connected to battery back-up power and emergency generators. The systems must remain locked from the outside during a power failure.

***Building Entrances***

- The public entry is controlled by a security station. All persons entering the building must pass through a metal detector and a turnstile. Packages and briefcases must be scanned by X-ray. In addition, the lobby area must have a CCTV camera and the security station, a duress alarm device.

- All employees must enter the courthouse through the public entry screening point. If a separate employee entry is provided, electronic access control, a CCTV camera, and an intercom should be installed.
- Entrance from the judges' parking area to the restricted elevator via a restricted lobby must have electronic access control, a CCTV camera, an intercom and a duress alarm device.
- A single building entry point for supplies and services must be provided by the loading dock and service area. The loading dock entry must have electrically-controlled doors, with remote control and monitoring. Intercom and CCTV systems must be installed to alert security personnel to the arrival of delivery trucks and allow surveillance of the loading dock area.
- Consideration should be given to the possibility of afterhours use.

***Interior Security/ Circulation Controls***

- Access to secure corridors and staff corridors may be controlled by electronic access control such as a card reader system.
- Service circulation can be located within restricted circulation.
- The building design must allow for the movement of prisoners from the vehicle sallyport into central holding facilities and to holding cells adjacent to trial courtrooms without passing or entering public or restricted spaces.
- A secure area-of-refuge is required for protection of the judiciary during emergencies.
- The central cellblock must be designated an area-of-refuge for prisoners.

***Courtroom Security***

- Each courtroom must be keyed separately with a sub-master. Doors from restricted circulation, excluding fire exits, must have free access from restricted circulation and access control on the courtroom side.
- Duress Alarm Devices must be located at the judge's bench, courtroom clerk station, and court officer station (if present). All duress alarm device in a courtroom should report as a single zone.
- Public egress from the courtroom should be through public circulation. Emergency egress doors, used by judges, must have free access from restricted circulation and an alarmed crash bar for second means of egress on the courtroom side.
- A CCTV camera must be provided for the public lobby areas outside each courtroom.

***Judges' Chambers Suite Security***

- A CCTV camera, intercom, and electric door strike must be provided at the visitor entry door to restricted circulation and at the suite entrance. The system must be monitored and controlled from the secretary workstation and from one of the law clerk offices in the suite. Electronically-controlled entry doors must be fail-secure.
- Duress Alarm devices must be installed in the chambers suite under the secretary's desk, judge's desk, and one law clerk's desk, with all three reporting as a single zone to the security control center.

***Jury Facility Security***

- A duress alarm device must be provided at the jury check-in counter, located in the jury assembly area and at the trial jury and grand jury suite security workstations.

***Court Library Security***

- The public entrance to the library must be provided a key-lock. A key-lock or electronic access control from the library to restricted circulation must also be provided.
- Duress Alarm Devices must be provided at the circulation desk, library staff offices, and study areas.

***Clerk's Office Security***

- Public entrances to Clerk's Offices must be provided a key-lock. Public access to restricted office areas is controlled with an electric lock operated at the public counter workstation. Employee access from public circulation is controlled by key-lock or electronic access control. Access from the clerk's Office to restricted circulation, if provided, is controlled key-lock or electronic access control.
- Evidence vaults in the clerk's Office must have a keypad shunt, vault door contacts, heat sensors, motion detector, and a duress alarm device monitored at the security control center.
- Duress Alarm Devices must be located in the clerk's private office, as well as the staff side of the public counter, secure storage, vaults, and other selected office areas. The alarms must be logically zoned.

***Judiciary Related Office***

- The public entrance to judiciary-related offices must be provided a key-lock. Public access to the office areas is controlled with an electric lock operated at the public counter or reception workstation. Employee access from public circulation is controlled by key-lock or electronic access control. Access from the judiciary-related offices to restricted circulation, if provided, in controlled by key-lock or electronic access control.

- Vaults must have a keypad shunt, vault door contact, heat sensor, motion detector, and duress alarm device.
- Duress Alarm devices must be placed on the staff side of transaction windows, near the receptionist at the main entrance door, secure storage, and other selected areas. They must also be placed in interview rooms, supervisors' offices, and offices of Probation/Pretrial Services Supervision officers.
- Where appropriate, a CCTV camera, monitor, and intercom can be used to screen visitors.

**System performance**

***CCTV***

- Install sufficient CCTV cameras to provide complete perimeter coverage and to monitor access to restricted and secure parking areas, parking spaces, and associated building entrances.
- Emergency doors must be self-locking and equipped with a remote alarm and interior CCTV camera.
- A CCTV camera must be installed inside the building at each remote exit.
- Conduits for CCTV must be installed in all four corners of courtrooms to accommodate current and future camera installation. Where cameras are installed, recessed housings must be provided in the wall or ceiling. Cameras must be positioned to prevent room lighting from interfering with the view or picture quality.

***Security Alarms***

- Intrusion-detection systems and locking systems is usually the first line of protection. Interior intrusion alarms and perimeter intrusion-detection systems should be combined.
- Duress Alarm devices should be logically zoned for connection to the main security control center.

***Prisoner Security***

- A secure perimeter system must surround the central cellblock and courtroom holding cell areas.

**Technical performance**

All ground floor or accessible windows must be sealed and glazed with break-resistant (UL-972) materials.

**19 Waste Management**

*(Designer's response on page 102)*

## 4.6 Building Systems: Designer's Response

This section provides the Designer's narrative of Salem Trial Court building systems, organized as follows:



### A INTRASTRUCTURE

#### 1 Foundations and Basement Construction

The existing drawings for the Probate and Family Court/Registry of Deeds building indicate it is supported on spread footings. The 1977 addition to the north side of the existing courthouse is supported on belled caissons bearing on the clay layer with an allowable bearing pressure of 5 TSF. Preliminary geotechnical information indicates that materials immediately below the proposed Trial Court building are urban fills with traces of organic peat, and with

sand and clay layers located at least 30 feet below grade. Further site investigation will be necessary. It is likely that the suitable foundation system for this building is either belled caissons or pressured injected footings (PIFs), or a combination of both systems with caps, grade beams and tie beams.

The lower level of the Trial Court building is on grade with respect to Bridge Street but the rear wall facing Federal Street and the west side wall facing North Street will be retaining earth and may be a few feet below the existing water table. These walls will require waterproofing. It is recommended that the lower level floor slab be designed to resist uplift, as a two-way slab spanning between pilecaps. A mud slab supporting a waterproof membrane will be under the floor slab.

The existing church building is to be moved in a south-southwest direction to a higher ground. It will have a basement floor to be used for library storage. Pending the results of future geotechnical investigations, it is likely that the relocated church building will be supported on spread footings. The basement slab will likely to a 6-inch thick reinforced concrete slab-on-grade. The basement walls will also be cast-in-place reinforced concrete, 12” thick minimum.

Elevator pit walls and floor slabs will require waterproofing.

### 2 Structural Systems

The Trial Court building will be steel framed with bolted connections and stabilized against wind and seismic forces by concentrically braced steel frames in both orthogonal directions. Floor slabs will be 3-¼” lightweight concrete topping on a 3-inch thick composite metal deck spanning the ten foot direction.

Two 40-foot wide courtrooms on either side of a 19-foot wide detainee holding bay set the typical structural bay for this courthouse at 40 ft, 19 ft, 40 ft in one direction by 20 ft in the other direction. W 18s at ten feet on center span the 40 ft bay and frame into W 21s that span the 20 ft length.

Floors to floor heights will be set to accommodate the functions occurring on that floor. Floors that have transaction areas will have floor-to-floor heights of 13’-0”. Floors that have courtrooms will have heights of 18’-6” floor-to-floor.

Where compact, high density, mobile filing systems are used for Active Record Storage, the structural bay will be reduced to 20 feet by 20 feet. They will be

framed with W 18s at 5 ft o.c. with 4-1/2" normal weight concrete on 3" metal deck. Deflection must be limited to the span/2000.

Floor slabs supporting the mechanical penthouses will have a 4-1/2" normal weight concrete topping on a 3-inch composite metal deck to control floor vibration and noise transmission to the floor below.

## B EXTERIOR ENVELOPE

### 1 Roof Construction

A fire rated, 3-ply modified bitumen roof system with "Cool White" cap sheet is proposed. Protective walk pads are specified where required to service roof top mechanical equipment. A minimum pitch of ¼" per foot to the roof drains will be provided by the tapered insulation.

A green roof is proposed for the open light well that provides daylight to interior courtrooms. The green roof will be designed as an extensive roof requiring little maintenance. The construction from the deck up starts with a waterproof membrane followed by protection board, root barrier, insulation panels, drainage mat, moisture retention mat, system filters, engineered soils and a vegetated ground cover. Integral roof drains to have either nickel bronze or stainless steel grating assembly with debris screens and flashing clamps. Drains from roof shall not be routed through occupied areas – these will be routed through circulation areas wherever possible.

### 2 Exterior Walls

Exterior wall materials and anchorage systems are specified to be non-corrosive in the salt air environment of Salem. Exterior wall construction will be a cavity wall, consisting of masonry (brick and granite) anchored with stainless steel to a concrete block wall back-up. The cavity wall side of the CMU backup will be covered with a continuous air/vapor barrier and rigid insulation. A brick manufactured in New England is proposed for the Bridge Street elevation, wrapping around the east and west sides to the two stair towers. Four inch thick granite cladding is proposed for the Federal Street entry pavilion on the south, east and west elevations. Three centimeter granite is carried as an Alternate.

### 3 Exterior Windows

Punched openings will be filled with thermally broken aluminum casement and fixed window units with insulating, low E glass.

### 4 Curtain Wall

An aluminum curtainwall is proposed for the south elevation of the courtroom wing letting in daylight and offering views to all main courtroom waiting areas and public circulation areas. Insulating glass units with low E are proposed. The curtainwall will be shaded by fixed aluminum shading devices by the curtainwall manufacturer. If windows are not flush against exterior walls, install bird preventative measures.

Automatically controlled operable sunshades to reduce solar glare and heat gain are carried as an alternate. PowerShade, a building integrated photovoltaic sunshade that generates solar power while also providing optimal solar shading, is priced as another Alternate. This will be further investigated during design development.

### 5 Mechanical Penthouses

Two mechanical penthouses will be required and will be steel framed with zinc coated copper standing seam siding. Anodized aluminum is proposed as an alternate. One stair will serve each penthouse. Floor slabs are designed to reduce vibration and noise to spaces below. See structural notes above.

## C MECHANICAL AND ELECTRICAL SYSTEMS

### 1 Introduction

Originally, the Salem Courts project included analysis and renovations to the Probate and Family Court (PFC) as well as the New Trial Court. Over the course of the analysis and study, the scope of work has been reduced to encompass only the New Trial Court Building (NTC) and the Church building.

Under separate reports, studies were performed, attached in the Appendices as indicated:

a *Salem Probate and Family Court Existing Conditions Report*, Draft September 26, 2005, Revised November 11, 2005, Goody Clancy (Appendix A2.1)

b *Salem Courts, MEP HVAC Options for Minimal Renovation to PFC*, September 27, 2006 (Appendix A2.7)

c *Salem Trial Courts Mechanical and Electrical Systems Analysis*, SEi Companies [Including renovation of Probate and Family Court Building]; HVAC drawings, SEi Companies, January 31, 2006, April 12, 2006 (Appendix A1.2)

d *Salem Trial Courts, Mechanical & Electrical Systems Analysis*, SEi, February 13, 2007; *Salem New Trial Court, Mechanical Drawings*,

February 6, 2007; *J. Michael Ruane Judicial Center, Salem, Massachusetts Plumbing and Fire Protection Systems Analysis*, draft February 2007 (Appendix A2.4)

**2 HVAC System Description**

***Primary air handling systems***

A major factor in the system selection is the varied usage and varying people densities in the different spaces. This characteristic requires proper ventilation to each space type (i.e., courtroom, vs. office vs. conference room) and the ability to control that ventilation in occupied/unoccupied modes for energy efficiency. Our recommendation brings us to a dual air approach to maximize energy efficiency and to minimize building duct distribution, yet providing superior air quality and temperature control characteristics.

a The first air system is comprised of three Dedicated Outdoor Air Systems (DOAS) which will provide the outdoor air (OA) ventilation requirement to each of the building spaces. These units will directly provide OA to each courtroom or building zone. These units, complete with enthalpy heat recovery, will be variable volume in control with individual zone air box on/off control according to occupancy. This control assures the exact OA to each space as required yet can be shut off when the zone is not in use to maximize energy savings.

b The second air system is comprised of multiple VAV air handlers providing the individual room air temperature control. Used in concert with the DOAS system, these VAV air handlers are then fully recirculating units such that heating coils are not necessary in the units eliminating coil HW piping. The units will, however have airside economizer controls (the use of all outdoor air for cooling) to maximize energy efficiency in the intermediate cooling seasons.

c Due to the architectural configuration of the proposed new building construction, the HVAC air distribution pattern lends itself to four broad air handling zones: two vertical distribution zones along the Bridge Street building axis, one zone for the south wing toward Federal Street and one zone for the church reuse.

i For the axis along Bridge Street, the air handling units would be located in the roof penthouse with distribution running vertical and horizontal from this location. For the south wing toward Federal Street, the air handling units would be located on the roof penthouse on that wing with distribution running vertical and horizontal from this location. For the church renovation into the law library, it is proposed that those units would be located in the new basement of that church building.

ii The Church renovation building would be served by a single VAV air handling system complete with its full outdoor air component. As the building is generally one zone, there is no need to provide two systems for this building. This unit will be in the 12,000 CFM range. When final plan layouts and space usage is defined and envelope characteristics are determined, we will determine if and where baseboard radiation will be needed.

iii The air handling units shall feed a common supply duct headers in the penthouse and be distributed to vertical shafts serving the building floors below.

iv Supply risers shall have sound attenuators in the vertical drops. Air shall be distributed through VAV valves with VAV manufacturer's attenuators and duct mounted reheat coils.

**3 General Exhaust Systems**

Roof mounted centrifugal dome fans shall be used for toilet exhaust systems and penthouse mechanical room exhaust systems.

**4 Chilled Water System**

a Chilled water for the project shall be provided by two 280-ton centrifugal water cooled chillers located in the basement of the new trial court. The chillers will have variable frequency drives.

b The chilled water system will be designed around a temperature differential of 14°F (42° to 56°F).

c A primary chilled water pumping system shall be provided. The system shall consist of three (3) variable speed vertical split coupled chilled water pumps (1 is a standby). Use 60% glycol.

d Two (2) 280-ton cooling towers shall be located on the roof. The cooling towers fans will have variable speed drives. The condenser water system will have three (3) vertical split coupled pumps (1 is a standby).

**5 Hot Water System**

a Building heating hot water for the project will be provided by three (3) 100 boiler horse power (BHP) gas-fired, water tube boilers located in the basement of the new trial court.

b Hot water will be distributed to hot water reheat coils, air handling unit heating coils and perimeter baseboard radiation via three (3) vertical split coupled variable speed drive pumps.

c Boiler breeching shall be double wall and extend to 10 feet above the roof of the building.

**6 Heat Recovery**

The building's dedicated outside air system (DOAS) exhaust and supply air handling units shall contain enthalpy heat recovery wheels.

**7 Entry, Waiting and Concourse Areas**

The multi-story space will be designed so as not to require a dedicated smoke emergency evacuation system. It will be conditioned from the main supply and return air system and supplemented by an under floor hot water/chilled water radiant heating system.

**8 Loading Dock Ventilation and Heating**

Variable flow exhaust fans with a capacity of 1.5 CFM/SF will provide the motive force for ventilation. The rate of exhaust flow will be determined by carbon monoxide (CO) sensors distributed throughout the area.

Makeup air will be provided by a combination of the open truck entrance and transfer ductwork with direct connections to the outdoors.

Heating will be provided by overhead radiant heaters or unit heaters. Air curtain to be considered during schematic design to maintain indoor temperature at loading dock.

**9 Stair Pressurization**

Provide stairway and elevator hoistway pressurization systems.

**10 Controls**

The building will have a stand-alone Direct Digital Control (DDC) system to control and monitor all functions of the building mechanical systems. The front-end controls computer will be located in the basement mechanical room.

**11 Miscellaneous Systems**

Mechanical and main electric rooms shall be ventilated with 100% outdoor air via side wall intake louvers and ducted exhaust to either a sidewall louver or roof mounted fan. The exhaust system shall be controlled by a room thermostat. Heating shall be accomplished via hot water horizontal unit heaters.

Entries and exterior stairwells shall have hot water cabinet unit heaters.

Elevator machine rooms and tel/data rooms shall be cooled via the main building supply air units.

## 12 Systems Commissioning

The new Trial Court Building will be fully and formally commissioned. A commissioning section will be included in the specification. DCAM will retain an independent third-party commissioning authority/agent (Cx-A) to act as the Commissioning Authority. The Commissioning Authority will observe and document the commissioning work of mechanical and electrical systems; power factor study at completion of construction.

All prime contractors, trade contractors, subcontractors, installing subcontractors, air balancing and controls contractors, vendors, equipment and material suppliers and the like are part of the commissioning team and are required to take part in the complete commissioning process.

## 13 Plumbing and Fire Protection Systems

### *Storm Water System*

Two new storm drains will serve the new Trial Court Building. Each will be 10” in diameter and will discharge to Bridge Street. Storm leaders will run vertically from their respective roof drains to horizontal collection points on the lower floors. Any portion of the horizontal line exposed to outdoor conditions will be heat traced. Storm leaders may not be routed through occupied areas – these will be routed through circulation areas wherever possible.

### *Sanitary Waste*

Two new sanitary waste lines will serve the new Trial Court Building. Each will be 8” in diameter and will discharge to Bridge Street. Sanitary waste lines will run vertically from their respective toilet rooms cores to collection points on the lower floors. Vent stacks will run vertically to the roof as necessary to accommodate the new program. Any portion of the horizontal line exposed to outdoor conditions will be heat traced.

### *Domestic Cold Water*

The new Trial Court Building will be served by a dedicated 4” water service. This service will enter from the Bridge Street side of the building into a small mechanical room. The mechanical room will serve only the water service entrance, water meter, and backflow preventer.

The new Trial Court Building will have a dedicated cold water distribution system delivering water to all fixtures. The piping will be routed as necessary to accommodate the program. If pressure is insufficient booster pumps will be provided.

***Domestic Hot Water***

The new Trial Court Building will be provided with a dedicated gas fired water heater. The heater will be located in a dedicated mechanical room close to the water service entrance. A new gas service will be provided along with through wall venting and air intake.

Considering distances between some fixtures and the hot water heater, the system will be provided with a re-circulation pipe loop to maintain the water temperature. Circulating pumps will be necessary to deliver and return the hot water to remote parts of the system.

***Water and Sewer Estimates***

DCAM has developed water consumption quantities based on water efficient equipment. Anticipated water consumption for the courthouse will come from domestic uses (drinking and sanitary), janitorial activities and provision of makeup water to mechanical systems (i.e., air handlers, cooling towers, pumps, etc). The City of Salem will supply the proposed courthouse water needs via an existing water main located in Federal Street.

Based on data collected from existing courthouses of 1,350 persons, the maximum domestic water consumption would be 4,725 gpd. The non-domestic water consumption during winter months is anticipated to be 5,000 to 6,000 gpd. The seasonal range in daily consumption is due to the need for makeup water to compensate for evaporation loss from the cooling towers.

In anticipation of achieving LEED certification, attempts have been, and will be made, to reduce the water consumption at the proposed courthouse by use of energy/water efficient equipment and limiting the use of potable for landscape irrigation.

***Probate and Registry of Deeds Building/1979 Addition***

| | |
|---|---|
| Domestic Water Usage | 5,820 Gallons Per Day |
| Discharge to Sewer | 5,820 Gallons Per Day |

***New Trial Court Building***

| | |
|---|---|
| Domestic Water Usage | 11,000 Gallons Per Day |
| Discharge to Sewer | 11,000 Gallons Per Day |

***Fire Protection Systems***

The fire protection systems evaluated include the following: fire service entrance to the buildings, fire pump requirement, standpipe system, and sprinkler system.

***Fire Service Entrance***

The fire service for the new Trial Court Building will enter in the same location as the domestic water service. The service will be 6” in diameter, with a 4” fire department connection and water flow alarm located in a conspicuous location in the rear of the building.

***Fire Pump***

The system pressure requirements for the New Trial Court building will be no more than the requirements of the existing system for the 1979 addition to the Probate and Registry of Deeds. Therefore, it is assumed that a fire pump will not be required for the new building. However, this will need to be confirmed by a water flow test to determine water flow, static and residual pressure.

***Standpipe System***

A 4” standpipe along with the required 2-1/2” fire department valves will be provided in each stairwell and anywhere else required by the new program. In certain locations the standpipe will be in combination with the sprinkler system.

***Sprinkler System***

Incoming 8” fire service will enter the building into the Fire Pump room at ground level and be provided with a double detector check valve type backflow prevention device. The system will consist of a fire pump, jockey pump, controls and automatic transfer switches. These systems are required to be on emergency power.

The building will be protected by a fully automatic sprinkler system.

Dry sprinkler systems will be required in areas of the building that can not maintain temperatures above freezing at all times including Judges Parking, Receiving and the Sallyport.

Closed head pre-action sprinkler system in MDF Closets and Inactive Records Storage area (may be constructed on first mezzanine) will consist of a pre-action valve system, compressor and control panel.

In some locations the sprinkler riser will be in combination with the standpipe system. Sprinklers will generally be concealed pendant type, or suicide resistant in lock-up areas.

## 14 Electrical Systems

### *Electrical System Description*

National Grid will provide primary electric service, including wiring and exterior pad mounted switch and two 2,000 kVA transformers and pads to serve 277/480 volts to the Courthouse's interior switchboards.

Provide primary conduit ductbank and secondary conduit ductbank and wiring from the exterior transformers to building's interior switchboards. Each switchboard shall be 4,000Amp 277/480 volt, 3 phase 4 wire 60 hz grounded circuit breaker switchboard with 3,000A-3P main circuit breaker.

New distribution throughout the building shall be 277/480 volt, 3 phase 4 wire for mechanical and lighting loads. Dry type step down transformers shall be provided to provide power for incandescent lighting, receptacles and other 120/208 volt loads.

Panelboards for lighting, office power and mechanical power shall be located in electric closets and mechanical rooms.

### *New Wiring Methods*

a MC and AC cable may be used for branch circuiting as allowed by the NEC and as allowed by the local authorities having jurisdiction.

b All penetrations through fire and smoke partitions and floors will be firestopped.

c Fishwires will be installed in all empty raceways.

### *Emergency Service and Distribution*

a All emergency lighting and smoke evacuation shall be provided from a 1,250 kW, 480/277 volt diesel powered generator. Generator shall be installed on site with acoustic weatherproof enclosure. Emergency generator shall provide power to standby loads including heating and other loads as dictated by design.

b Provide 2 hour rated feeders and emergency distribution closet for all life safety and emergency loads.

c The emergency distribution will be broken up into three systems with one or more transfer switches serving each of the following:
   i Life safety
   ii Elevator
   iii Standby (non-essential)

d Emergency lighting shall be provided in courtrooms. Select fixtures shall also be provided with battery backup ballasts to provide lighting during the transfer from normal to emergency power. The lighting shall be designed such that this emergency lighting does not provide spot lighting for the judge's bench.

e In addition to the courtrooms and circulation areas for egress, emergency lighting shall be provided in the following areas:
   i Jury assembly area
   ii Trial jury suite
   iii Grand jury suite
   iv Judge's private chambers, conference room and robing room
   v Other areas as dictated by design

***Grounding***

a A perimeter grounding system comprising driven ground rods, buried copper cable, connections to building steel and copper ground buses shall be provided. The maximum resistance to ground for the ground system shall be two ohms.

b All feeders and branch circuits shall be provided with a green equipment ground conductor. A ground wire and ground buses shall be provided in all telecommunications rooms and closets.

***Lighting and Power***

a Provide convenience outlets generally in courtrooms, offices, public areas, mechanical rooms and electrical rooms as dictated by design.
   i Lighting will be designed to meet the aesthetic qualities for the individual design areas. The lighting will also be designed in accordance with Owner's standards for quality and efficiency.
   ii The lighting will be designed to meet and exceed the requirements of the Massachusetts State Energy Code.
   iii Lighting levels and quality will be designed to meet or exceed IESNA guidelines.
   iv Lighting controls will be provided for individual occupancy control in each design area. Controls will be provided to allow for multiple levels of lighting for occupant comfort and use.

v Occupancy sensors and time clock controlled lighting contractors will be incorporated to provide automatic lighting controls throughout the facility and for exterior site lighting. Automatic lighting controls for individual spaces will be provided to meet the individual requirements of the respective spaces and will be determined in subsequent meetings.

***Fire Alarm***

a An addressable type fire alarm system shall be provided. The main control panel (FACP) shall be located in the water fire service room. The system shall be connected to the Salem Fire Department via a leased telephone line for alarm and trouble indications in accordance with the building code.

i The fire alarm system shall operate manually via fire alarm pull stations located at egress locations on each level.

ii The fire alarm system shall operate automatically via smoke detectors located in corridors, lobbies, electrical closets, and other selected spaces. Automatic operation shall also be initiated by smoke detectors in the HVAC air-handling units. Sprinkler system shall also initiate automatic operation. Alarms shall be horn/strobe units.

iii Activation of the sprinkler system shall also trip a radio master box to alarm the Salem Fire Department.

***Other Electrical Systems***

a Where heat trace systems are provided under section 15000, provide power and final testing and connections.

b An empty raceway system shall be provided for security system and CCTV devices in the building to corridors, stairwells and grade level perimeter doors.

c An empty raceway system shall be provided for audio/visual systems.

d No conditioned power (Uninterruptible power supplies (UPS), special transformers, isolated ground systems etc) is anticipated at this time.

e Lightning protection will be provided to protect the building from lightning strikes with lightning rods along the roof perimeter, around the penthouses, cooling towers and emergency generator enclosure.

**15 Telecommunication**

***Verizon Service***

Verizon will provide a single point of entry into the new Court House Building. Verizon's infrastructure shall be via copper cable terminated on

lightning protection and or fiber optic cables or both. This presence will be in The Main Distribution Frame (MDF).

***Telephone Distribution***

The telephone distribution will be copper backbone cabling distributed from the proposed MDF located on the basement level. The (2) proposed Internal Distribution Frame (IDF) closets per floor shall be connected via new copper backbone cables to the proposed MDF. All new voice station cabling shall be terminated on 110 type terminations. Cables will feed from the MDF/IDF to all voice outlets.

***Data Distribution***

High speed data communications services will be distributed from the MDF to each IDF via multi strand multimode fiber optic cables.

***Telecommunications Grounding System***

a A telecommunications main grounding busbar will be in the MDF connected with a minimum #4 grounding conductor to the main electrical ground.

b Provide a telecommunications bonding backbone from the MDF main grounding busbar through the IDF rooms and terminated on a grounding busbar at the last closet.

c Provide a telecommunications busbar in each closet

d Bond all busbars to the telecommunications bonding backbone.

e Bond all tap/splitters, distribution devices, racks etc to the grounding busbar.

***Codes and Standards***

The Telecommunications System will be designed to conform, as a minimum, to the following codes and standards:

a Local and State Building Department Codes.

b Occupational Safety and Health Act (OSHA).

c Underwriters Laboratories (UL).

d National Fire Protection Association (NFPA).

e National Electrical Code (NEC).

f Massachusetts Electrical Code (MEC)

g Americans with Disabilities Act (ADA).

h ANSI /TIA/EIA 568-B 2.1 Commercial building cabling standard.

**16 Security**

The Security System shall consist of Security Management System (SMS), Closed Circuit Television (CCTV) System, Card Access System, Intercom System, Graphical User Interface (GUI), all applicable wire and cable, and the functional integration of all subsystems through subsystem interfaces.

**17 Waste Management**

The proposed conceptual design has a loading dock/receiving area located on grade, accessed through a common service court entered off Bridge Street.

The elevated loading dock has three weather protected loading bays of sufficient height; two sized to accommodate 45 foot trucks and one sized to accommodate a FedEX or UPS delivery van. An additional bay accommodates a trash compactor/ dumpster. Overhead rolling steel doors are provided to close off the elevated loading dock. A storage room immediately adjacent to the loading dock will provide secure conditioned space for trash and recyclables. The dock is sized to accommodate an X-ray machine, scissors lift/dock levelers and pallet trucks.

Mechanical systems will be designed to prevent truck exhaust from entering the building. The ceiling above the truck bays will be sound proofed as well as the exterior wall above the entry at the loading bays. Windows on the floor immediately above the dock will be specified to provide acoustic isolation so that the courtroom above will not be adversely impacted by noise originating from the loading dock area.

**18 Issues for Final Design**

a Flow test

b Storm drainage alternatives

c AOTC prefers conduit to local distribution point, with MC cable for drops *(See 4.6, C.14/New Wiring Methods, page 99)*

d Per AOTC Uninterruptible power supplies (UPS) are required in this facility. Specialized transformers and isolated ground systems will be reviewed in schematic design. *(See 4.6, C.14/Other Electrical Systems, page 101)*

e Per AOTC standard telecommunication wiring to be VoIP. *(See 4.6, C.15/ Verizon Service, page 101)*

# 5 Building Program

## 5.1 Introduction

DCAM and the Administrative Office of the Trial Court began the process of identifying program needs for the Salem Trial Courts with the Salem Courts Master Plan in 2000. Extensive interviews were conducted with judicial staff and departmental representatives of the Superior, District, Juvenile, Housing and Probate and Family Courts, as well as the Law Librarian, District Attorney's Office and the director of operations for the Department of Revenue (DOR) for Essex County. The information was consolidated into a Space Inventory, which was updated in 2006 and refined to reflect the project budget. While the major issues have been agreed upon between DCAM and AOTC, it is should be acknowledged that some further refinement will occur as part of the design process.

The purpose of this chapter is to address the **functional needs of the court**. This information is organized in the following manner:



## 5.2 Salem Demographics

Incorporated as a town in 1626 and as a city in 1836, Salem is a diverse community with a rich ethnic history, to which people of many races, creeds, colors and origins have contributed over the generations. Even today, Salem services children speaking no less than 20 different languages in its public school system. Long a trading, manufacturing

and retail center, Salem has been making a slow, and sometimes painful, transition to a service-based economy. The City today serves as the home of Salem State College, the North Shore Medical Center, the Essex County District Superior and Probate Courts, and Registry of Deeds, the world-famous Peabody and Essex Museum, and a host of banks and other financial institutions. It is the educational, medical, legal, cultural and banking hub of the North Shore. (Source: www.mass.gov)

Statistically speaking, as of February 2007, the population of Salem is 42,000, 13.47% of whom are age 65 or over, and 20.8% of whom are age 18 and younger. The average household income is $57,650. The 2004 median price for a single family home was $223,283; tax rate per $100 is $11.21 residential and $21.33 commercial.

## 5.3 Building User Descriptions

This facility will be used by many different constituents. If their varied needs are taken into consideration during design, they will be able to accomplish their court business making fewer demands on the courts staff for special attention. The Universal Design goal for this building underscores the importance that design decisions provide options for use that serve a diverse population of users.

The people who use the courthouse generally fall into five categories:

- courts personnel who work in the courthouse;
- professionals who work on cases such as defense attorneys and prosecutors; mental health workers; advocates; and mediators
- public safety officers including local police and sheriffs;
- the general public; and
- service providers such as couriers, maintenance vendors, trades people, translators and constables, concession vendors, and child care providers.

### COURTS PERSONNEL

**JUDGES** The judge symbolizes and carries out the administration of justice. In some courts, such as Superior Court, judges may circulate from one courthouse to another. Judges in District, and Probate & Family Courts generally serve in one location and have traditionally been assigned to a specific courtroom. Except for the larger urban locations, in most Juvenile and Housing courts, the judges may serve between two or more locations during the week, due to the number of judges relative to the locations served.

In the Salem Trial Court, courtrooms will be shared by circuit and permanently assigned judges. In addition to presiding in court, Judges also spend time in their offices reviewing laws, reading cases, preparing opinions and judgments and meeting with court staff and attorneys as well as members of the public.

**COURTHOUSE STAFF**

The operations of the courts are supported by numerous personnel who help record, process and store official records of all court proceedings.

The Clerk Magistrate offices take in various filings and initiate cases by assigning them docket numbers which are the keys to case management. The cases are then processed according to court findings and judgements and all records are stored within the department for access and retrieval.

Probation officers meet with their clients, establish goals according to the probationers' terms and needs and supervise their progress for the length of their probation.

Associate Court officers provide for weapons and contraband screening at the public entrance, as well as monitoring all public exterior and interior spaces. Court Officers provide personal security for the Judges in the courtrooms as well as intake and monitoring of all detainees who arrive at the courthouse for legal proceedings.

Building management personnel provide for the operation, maintenance and upkeep of all building systems required for the comfort, safety and well-being of all of the building occupants.

Court interpreters, court reporters, law librarians, computer support technicians and other support personnel round out the non-judicial staffing that keep the court functioning in the most efficient manner.

**PUBLIC PROFESSIONALS** Many attorneys visit the courthouse on a daily basis representing clients, prosecuting cases and filing papers and researching records in the transaction offices. With the increasing use of portable computers and cell phones attorneys are often able to conduct their business from the courthouse.

**DISTRICT ATTORNEYS** The District Attorney (DA) serves as the prosecutor in criminal cases in Superior, District and Juvenile courts. Each DA's office is organized typically by county jurisdiction and generally coincide with the court's jurisdiction. The main activities of the DA staff in the courthouse are as prosecutors within the courtroom and preparatory meetings with victims and witnesses. Additionally, they run a grand jury session in each county at one of the Superior Court locations.

Assistant District Attorneys (ADA's) and administrative personnel work at the courthouse and while the judiciary is impartial, the DA, as prosecutor, is not. The DA needs space within the courthouse to meet the day-to-day support for the courtroom activity, however,

their relationship with the judiciary is one of "arms length" where they must not be perceived by the public as being a part of the judiciary. For this reason, generally the DA has a main office outside of the courthouse and a satellite office for the ADA's and some minimal administrative support staff to work out of at the court facility.

**PUBLIC DEFENDERS** Court Appointed Defense Attorneys – In criminal cases, where the defendant cannot afford their own attorney, the court will appoint a defense attorney to represent them. This service is managed through a combination of contracts with private attorneys to serve as defense and an organized defense bar in several jurisdictions managed under the Committee for Public Counsel Services (CPCS). These attorneys work out of an office outside of the courthouse (to maintain a sense of distance from the system) and they often meet with clients either in an available room or corridor at the courthouse or if the litigant is detained, they may meet them in the central detention area.

**PUBLIC SAFETY OFFICERS** Local police officers and sheriffs bring defendants to court who have been arrested and kept in custody. They formally turn the care of defendants over to a court officer at the detention area. Police officers also make frequent appearances in court, especially in Arraignment court to answer questions related to an arrest. When they enter the courthouse they are required to remove their guns, leaving them in a secure lockbox.

**THE GENERAL PUBLIC**

Many people have never been into a courthouse. For some the only courthouse experience is being called for jury duty. For others, courthouse experience may be limited to a paperwork transaction. Some people, however, spend a good deal of time in courthouses as defendants, litigants, or the families and friends of these parties. This may include children.

Many people who visit courthouses are unfamiliar with the judicial system. They may enter the courthouse not understanding why they are there, where they need to go, and what will be expected of them. Those who represent themselves do not have the benefit of an attorney to guide them.

**JURORS** Jurors are "temporary officers of the court" and many serve at some personal sacrifice to perform their civic duty. Many are unfamiliar with the judicial process and appreciate design features that make their time in the courthouse as convenient, comfortable and stress free as possible. Jurors, like the general public, may have personal circumstances that need accommodation. This may include seating options that fit their size and physical condition, the ability to use a cell phone in the building, bringing a service animal with them, and being able to eat at undesignated times. Every juror will be happier

fulfilling their civic duty if they can easily find parking, easily locate the jury pool, easily find restrooms, drinking fountains, pay phones and food.

**LITIGANTS** Litigants are involved in a court case in some manner and are often accompanied by their attorney when they come to the courthouse.

**PRO SE LITIGANTS** The pro se litigant is self-represented—taking responsibility for their own management of the court business. Due to their unfamiliarity with the system and norms of the court, they often require additional assistance and staff time. Pro se litigants are growing in number, particularly in the Probate and Family Court department.

**RESEARCHERS** The majority of researchers at the courthouse visit the law library to do personal research. They may also visit the transaction offices to view public records.

**VICTIMS / WITNESSES** The majority of victims and witnesses who come to the courthouse are there at the request of the criminal prosecuting ADA. They may be requested to testify either at a grand jury hearing or at a criminal trial or hearing. The ADA will generally escort them through the courthouse and work to ensure that they are safe from an unintended encounter with the perpetrator.

Some victims or witnesses may not be involved with the District Attorney but may be concerned for their safety within the courthouse.

**ADVOCATES** Advocates such as "Safe Plan" or other social service groups may provide assistance to victims at the courthouse. Although they may not be attorneys, they may provide emotional support and some minimal guidance to the victim to help them find their way through the forms and processes required at the court.

**PRESS** In large court facilities, especially with Superior Court courtrooms, the press is often present on a full-time or close to full-time basis. The presence of the press will greatly increase during a high-profile trial.

**CLINICIANS / SOCIAL SERVICES** Many of the litigants involved in court proceedings may have mental health and substance abuse issues and may need assistance with obtaining social services and other supports to resolve these issues. A number of clinicians support the work of the court providing evaluations ordered by the judge to determine the mental health status of the litigant.

**MEDIATORS** The courts are increasingly encouraging litigants to attempt resolution through outside dispute mediation means prior to bringing their case before a judge. The Trial Court funds some mediation programs and often provides space within the courthouse for the mediation. Mediators are certified to help others resolve disputes using professional methods and procedures.

## 5.4 Description of Court Departments

### SUPERIOR COURT

The Superior Court has general original jurisdiction over most felonies and civil actions, including matters in which equitable relief is sought, and has jurisdiction to review certain administrative decisions. Superior Court proceedings include criminal arraignments and criminal and civil jury trials. Proceedings often require jury courtrooms with access to holding areas. Civil Clerk Magistrates and Criminal Clerk Magistrates hold hearings and manage records, while probation officers monitor offenders.

### DISTRICT COURT

The District Court has been referred to as the 'neighborhood court' or 'people's court' and serves as many individuals' introduction to the court system. Not all of these new court users are offenders; they may include victims who walk in off the street in urgent need of Court assistance, or persons requesting documents. For these reasons, the District Court should have a welcoming and accessible image, and appear dignified without being forbidding. Design provisions that contribute to this accessible image may include a multi-lingual building directory or information kiosk, and an obvious route and/or clear sightlines between the public entrance and most-used services.

The District Court has civil jurisdiction over, among other matters, money damage cases in tort and contract; small claims; summary process; and mental health, alcoholism and drug abuse commitments. The court may also have jurisdiction over evictions and some related matters, and provides judicial review of a number of governmental agency actions such as Attorney General victim compensation decisions and police department firearm license denials.

District Court proceedings include criminal arraignments and pre-trial hearings, calendar sessions and motions sessions; criminal and civil jury trials, civil cases, traffic/motor vehicle hearings, and hearings with Clerk Magistrates. Proceedings may take place in courtrooms, formal hearings rooms, and the Clerk Magistrates' offices. Civil Clerk Magistrates and Criminal Clerk Magistrates hold hearings and manage records, while probation officers monitor offenders.

Superior Court and District Court both hold criminal jury trials and have similar security requirements.

**PROBATE AND FAMILY COURT**

The Probate and Family Court Department has jurisdiction over such family-related matters as divorce, separate support, family abuse, custody, and adoptions, as well as wills, trust, guardianships, conservatorships, and name changes.

Unlike the District and Superior Courts, Probate and Family Court deals with relatively few persons in custody. For this reason, detainee security needs are not as stringent as for the Juvenile, District, and Superior Court departments. However, because Probate and Family Court has jurisdiction in highly emotional cases involving personal relationships and child custody, it is said to be the most potentially volatile of the court departments. For this reason, court officers in the Probate and Family Court have as great or greater need than in other Trial Courts to monitor the courtrooms and public areas for potential interactions between parties.

Formal proceedings of the Probate and Family Court take place in courtrooms. Much dispute intervention takes place in the Probation Department, where probation officers have an active role in fact-finding, evaluation and negotiation. The Register of Probate manages court records.

Judges of the Probate and Family Court tend to preside over less formal and more 'intimate' hearings than the proceedings of the other Trial Court departments.

**JUVENILE COURT**

The Juvenile Court Department handles criminal and civil matters concerning defendants 17 years old or younger and civil matters such as the care and protection of children and termination of parental rights. This department serves a distinctly different population from the other Trial Court departments. For reasons of confidentiality, Juvenile Court proceedings are closed to the public.

The Juvenile Court requires courtrooms and hearing/conference rooms. Clerk Magistrates and probation officers manage court records and monitor offenders.

**HOUSING COURT**

The Housing Court has jurisdiction over use of real property as it affects the health, welfare, and safety of residents, users, and the general public. Housing Court also has jurisdiction over Small Claims. A circuit judge and visiting Housing Specialists presently

serve the Essex County Housing Court, with sessions in Salem held on Tuesday mornings. The Master Plan program anticipates a full time Housing Court presence in Salem.

The Housing Court functions require access to courtrooms, hearing rooms and mediation rooms. Clerk Magistrates and Housing Specialists conduct business at a transaction counter or in private meetings with litigants.

## 5.5 Programming Process

DCAM first began to develop the program for the Salem Trial Courts as part of the original master planning effort. Ricci Associates conducted interviews with Trial Court staff, administrators and judges. Through this effort, and with projected staffing numbers given to DCAM by AOTC, a program spreadsheet was developed and refined. This spreadsheet has been reviewed and updated over the past five years to keep numbers current, and while it is to be considered in the final stages, it is anticipated that some adjustments will be made in schematic design.

## 5.6 Recent Trends in Court Design

Society underwent significant change in the 20th century, and in the 21st century the courts are adapting to meet changing needs. Some of these changes affect space needs in court facilities. The following list identifies some of the recent trends that have come to redefine how justice is administered and how facilities are designed for the courts:

#### ALTERNATIVE DISPUTE RESOLUTION

An increasing number of disputes are being settled outside the courtroom through various forms of alternative dispute resolution. The court system is currently being planned with additional space for court-sponsored alternative dispute resolution.

#### UN-REPRESENTED LITIGANTS

With the rising costs of legal services and decreased funding for legal services for indigent litigants, more litigants are appearing in court without lawyers. For this reason, courthouses must include clear signage, properly equipped information booths, electronic information systems, and access to legal resources.

#### INFORMATION TECHNOLOGY

The many technological innovations over the past decade have provided court users with more options for carrying out court business. Videoconferencing, video arraignments, electronic tracking of cases, and closed-circuit TV are now available and utilized with varying degrees of success throughout the system. For the future, court users will be able to file cases remotely and at more than one location. Technological solutions are encouraged because they make efficient use of resources.

**SOCIAL SERVICES**

In recent years, trial courts have accepted increased responsibility for responding to social problems which litigants present. These problems include erosion of the traditional family, domestic violence, and substance abuse. Courts have begun to refer parties to programs such as parent education for divorcing parents, anger management, and substance abuse treatment. Many of these programs, particularly self-help recovery groups may take place right in the courthouse and need to be accommodated, with appropriate security arrangements. As to others, space is needed for an increased information and referral capacity.

**INCREASED SECURITY REQUIREMENTS:**

Enhanced courthouse security has become a major element in the design and renovation of the Commonwealth's court facilities. Increased security needs can be met operationally by trained personnel and architecturally by means of separate entry points (public and secure) and separate internal circulation paths, along with electronic surveillance methods such as cameras, duress alarms and video monitoring.

## 5.7 The Trial Court in Essex County

Essex County has court facilities in seven communities. Salem, traditionally the seat of Essex County, has sessions for Superior (both civil and criminal), District, Probate & Family, Juvenile and Housing matters. Other sessions are held in Lawrence (Superior, District, Probate & Family, Juvenile and Housing), Newburyport (Superior, District, Probate & Family), Haverhill (District), Peabody (District), Gloucester (District) and Lynn (District, Juvenile, and Housing on a circuit basis). The District Court in Ipswich was merged into the Newburyport District Court in 2004.

## 5.8 Space Inventory

**PAGE 115-137**

2nd DRAFT for Review 11/28/06

Revision Date: 11-28-06 DCAM
Reviewed by GRR

Approved By: _____

Date: _____

## SALEM Trial Court Space Inventory
## Space Summary

| Program Area | Total Staff Existing | Total Staff Projected | Net Square Feet | Dept. Gross Factor | Dept. Gross Sq. Ft | Notes |
|---|---|---|---|---|---|---|
| **Courtroom Sets** | | | **34,456** | **1.15** | **39,624** | |
| **Judicial Offices** | **21.5** | **36** | **7,024** | **1.25** | **8,780** | |
| **Transaction Offices** | **118** | **148** | **23,928** | | **33,499** | |
| **Superior Court** | **34** | **42** | **6,491** | | **9,087** | |
| Clerk Magistrate | 20 | 22 | 3,717 | 1.40 | 5,204 | |
| Probation | 14 | 20 | 2,774 | 1.40 | 3,884 | |
| **District Court** | **49** | **61** | **9,583** | | **13,416** | |
| Clerk Magistrate | 23 | 26 | 5,262 | 1.40 | 7,367 | |
| Probation | 26 | 35 | 4,321 | 1.40 | 6,049 | |
| Probate & Family Court | | | | | | in separate building |
| Register of Probate | | | | | | |
| Probation | | | | | | |
| **Juvenile Court** | **19** | **29** | **5,303** | | **7,424** | |
| Clerk Magistrate | 10 | 13 | 2,801 | 1.40 | 3,921 | |
| Probation | 9 | 16 | 2,502 | 1.40 | 3,503 | |
| **Housing Court** | **16** | **16** | **2,551** | **1.40** | **3,571** | |
| **Court Support** | **22** | **2** | **12,349** | | **16,743** | |
| Central Detainee Holding | | | 3,560 | 1.75 | 6,230 | |
| Court Officers | 22 | 2 | 390 | 1.10 | 429 | |
| Jury Pool | | | 2,415 | 1.10 | 2,657 | |
| Trial Court Secure Waiting Area | 0 | 0 | 120 | 1.25 | 150 | |
| Interpreter Services | | | 200 | 1.10 | 220 | |
| Court Reporters | | | 200 | 1.10 | 220 | |
| Public Lobby | 0 | 0 | 4,134 | 1.30 | 5,374 | |
| Staff Support | | | 1,330 | 1.10 | 1,463 | |
| **Court Operations** | **0** | **0** | **6,985** | | **7,684** | |
| Law Library | 1 | 1 | 6,985 | 1.10 | 7,684 | |
| **Supplemental Operations** | **25** | **29** | **4,870** | | **6,163** | |
| District Attorney | 24 | 28 | 2,390 | 1.30 | 3,107 | |
| Grand Jury | | | 1,460 | 1.30 | 1,898 | |
| Attorneys' Room | | | 150 | 1.10 | 165 | |
| Police Prosecutors' Room | | | 150 | 1.10 | 165 | |
| Alternative Dispute Resolution | 0 | 0 | - | 1.15 | - | |
| Adult Court Clinic | 0 | 0 | 360 | 1.15 | 414 | |
| Juvenile Court Clinic | 1 | 1 | 360 | 1.15 | 414 | |
| Child Care Center | 0 | 0 | - | 1.25 | - | |
| Social Services | | | - | 1.10 | - | |
| DOR - Child Support | | | | 1.30 | - | |
| | | | | | - | |
| **Building Support** | **0** | **0** | **4,504** | **1.25** | **5,630** | |
| | | | | | - | |
| **TOTAL STAFF** | **187** | **215** | | | | |
| **TOTAL NET SQUARE FEET** | | | **94,116** | | | |
| **TOTAL DEPARTMENT GROSS SQUARE FEET** | | | | | **118,123** | |
| **BUILDING MECHANICAL @ 10% DGSF** | | (was 8%) | | | **11,812** | |
| **SUBTOTAL** | | | | | **129,935** | |
| **BUILDING GROSS FACTOR** | | | | | **1.35** | |
| **TOTAL BUILDING GROSS SQUARE FEET** | | | | | **175,412** | |
| **% NET TO GROSS** | | | | | **54%** | |
| **GSF/COURTROOM** * | | | | | **14688** | |
| **% SUPPLEMENTAL OPERATIONS** | | | | | **8%** | |

* GSF is Subtotal of the building sf (before grossing factor) minus Supplemental Operations and Court Operations divided by the number of courtrooms

SALEM FULL PROGRAM
New Grossing Factors

1

2nd DRAFT for Review 11/28/06

## COURTROOM SETS

| Data Sheet Ref | Area Description | Units | Area Per Unit | NSF | Notes |
|---|---|---|---|---|---|
| | **Courtrooms** | | | | |
| | **Superior Court** | | | | |
| 1.1 | X-Large Jury Courtroom w/detainee dock | 1 | 2,500 | 2,500 | |
| 1.2 | Large Jury Courtroom | 3 | 2,000 | 6,000 | |
| | **Subtotal** | **4** | | **8,500** | |
| | **District Court** | | | | |
| 1.1 | X-Large Non-Jury Courtroom w/detainee dock | 1 | 2,500 | 2,500 | |
| 1.2 | Large Jury Courtroom w/detainee dock | 1 | 2,000 | 2,000 | |
| 1.2 | Medium Jury Courtroom | 2 | 1,600 | 3,200 | |
| | **Subtotal** | **4** | | **7,700** | |
| | **Probate & Family Court** | | | | |
| 1.3 | Large Non-Jury Courtroom | | | | in separate building |
| 1.3 | Medium Non-Jury Courtroom | | | | |
| 1.3 | Small Non-Jury Courtroom | | | | |
| | **Subtotal** | **0** | | **-** | |
| | **Juvenile Court** | | | | |
| 1.2 | Medium Jury Courtroom | 1 | 1,600 | 1,600 | |
| 1.3 | Medium Non-Jury Courtroom | 0 | 1,600 | - | |
| 1.2 | Small Jury Courtroom | 1 | 1,200 | 1,200 | |
| | **Subtotal** | **2** | | **2,800** | |
| | **Housing Court** | | | | |
| 1.2 | Large Jury Courtroom | 1 | 2,000 | **2,000** | |
| | **Subtotal** | **1** | | **2,000** | |
| | **Total Courtrooms** | **11** | | **21,000** | |
| | **Courtroom Support** | | | | |
| 6.1 | Off-bench Judge's Conf. Room | 3 | 160 | 480 | Added 1 and changed back to 160 |
| 1.14 | Courtroom Entrance Vestibule | 11 | 80 | 880 | |
| 1.15 | Waiting Area - X-Large Courtrooms | 2 | 400 | 800 | |
| 1.15 | Waiting Area - all Juvenile Courtrooms | 2 | 400 | 800 | |
| 1.15 | Waiting Area - Large Courtrooms | 4 | 300 | 1,200 | |
| 1.15 | Waiting Area - Med. Courtrooms | 3 | 200 | 600 | |
| 1.15 | Waiting Area - Small Courtrooms | 0 | 200 | - | |
| 6.1 | Pre-Trial Conference Room | 22 | 120 | 2,640 | 2 |
| 1.16 | A/V Storage | 11 | 30 | 330 | |
| 1.17 | Evidence Vault | 11 | 50 | 550 | |
| | **Subtotal** | | | **8,280** | |
| | **Courtroom Holding Area** | | | | 3 |
| 1.19 | Detainee Staging | 5 | 50 | 250 | |
| 1.19 | Detainee Soundlock | 5 | 40 | 200 | |
| 1.19 | Detainee Holding Cell (group) | 5 | 150 | 750 | |
| 1.19 | Detainee Holding Cell (indiv.) | 5 | 70 | 350 | |
| 1.14 | Detainee Dock | | 80 | - | within courtroom space 4 |
| | **Subtotal** | **20** | **390** | **1,550** | |
| | **Jury Deliberation Areas** | | | | 5 |
| 1.20 | Jury Deliberation Room | 7 | 300 | 2,100 | |
| 1.20 | Vestibule w/toilets | 7 | 200 | 1,400 | |
| 1.2 | Court Officers' Alcove | 3 | 42 | 126 | 6 |
| | **Subtotal** | | | **3,626** | |
| | **Total NSF- Courtroom Sets** | | | **34,456** | |
| | **Departmental Gross Factor** | | | **1.15** | (was 1.25) |
| | **Department Gross Square Feet** | | | **39,624** | |

SALEM FULL PROGRAM
New Grossing Factors 2

2nd DRAFT for Review 11/28/06

Notes:

1. Based on one per two courtrooms or distance from courtroom to collegial suite. This includes 30sf toilet.
2. Two per courtroom. In Superior Court only, 1 or 2 of these may be utilized by court reporters as shared workspace. Refer to Court Reporter section on page 14 for additional information.
3. Detainee area shared between courtrooms. There is also a holding area at the Grand Jury (refer to pg 17) Only Arraignment courtrooms require 2 holding cells in core- smaller can have 1.
4. Included in all Arraignment courtrooms, 1 large SC courtroom and 1 DC standard courtroom
5. Ratio of Jury Deliberation Areas: Less than four courtrooms = 1 : 1 . More than four courtrooms = 1 : .75
6. One per two Jury Deliberation Areas
7. Group detainee holding cells located next to 1st and 2nd session and X-large Superior Court courtroom. Number of group holding cells depends on adjacency to each core. If 1st session, 2nd session and X-large Superior Courtrooms share a core, then 2 group cells between them will suffice. If any of the named courtrooms share a core with other courtrooms, 2 group cells will be required and no individual cells. All other shared cores will have 2 individuals cells.

SALEM FULL PROGRAM
New Grossing Factors 3

2nd DRAFT for Review 11/28/06

## JUDICIAL OFFICES

| Data Sheet Ref | Area Description | | Staff Existing | Staff Projected | Units | Area Per Unit | NSF | Notes |
|---|---|---|---|---|---|---|---|---|
| | **Staff** | | | | | | | |
| | **Superior Court** | | | | | | | 3 |
| 2.1 | Judge | | 3 | 4 | 4 | 330 | 1,320 | 1 |
| 4.2 | Judicial Secretary | | 1 | 2 | 2 | 80 | 160 | |
| 4.2 | Law Clerk | | 4 | 4 | 4 | **48** | **192** | reduced from 64 |
| 4.1 | Assistant Clerk Magistrate | | 3 | 4 | 4 | 120 | 480 | |
| 4.1 | Head Administrative Assistant | | 0 | 1 | 1 | **100** | **100** | reduced from 120 |
| | **Total SC Judicial Staff** | | **11** | **15** | **15** | | **2,252** | |
| | **District Court** | | | | | | | |
| 2.1 | Judge | | 4 | 4 | 4 | 330 | 1,320 | 1 |
| 4.2 | Judicial Secretary | | 2 | 2 | 2 | 80 | 160 | |
| 4.1 | Head Administrative Assistant | | 1 | 1 | 1 | **100** | **100** | reduced from 120 |
| 4.1 | Law Clerk | | 0 | 2 | 2 | **48** | **96** | reduced from 64 |
| | | **Subtotal** | **7** | **9** | **9** | | **1,676** | |
| | **Probate & Family Court** | | | | | | | in separate building |
| | **Juvenile Court** | | | | | | | |
| 2.1 | Judge | | 1.5 | 2 | 2 | 330 | 660 | 1 |
| 4.2 | Judicial Secretary | | 1 | 2 | 2 | 80 | 160 | |
| 4.2 | Law Clerk | | 0 | 2 | 1 | **48** | **48** | reduced from 64 |
| 4.1 | Head Administrative Assistant | | 1 | 1 | 1 | **100** | **100** | reduced from 120 |
| | | **Subtotal** | **3.5** | **7** | | | **968** | |
| | **Housing Court** | | | | | | | |
| 2.1 | Judge | | 0 | 1 | 1 | 330 | 330 | 1 |
| 4.2 | Judicial Secretary | | 0 | 1 | 1 | 80 | 80 | |
| 4.2 | Law Clerk | | 0 | 1 | 0 | 48 | - | |
| | | **Subtotal** | **0** | **3** | | | **410** | |
| | **Visiting Judge** | | | | | | | |
| 2.1 | Judge | | 0 | 2 | 2 | 330 | **660** | reduced to 1 unit, 9/28/06 |
| | | | | | | | | **increased back to 2 units** |
| | **Total SC/DC/JC/HC** | | | | | | | |
| | **Judicial Staff** | | **21.5** | **36** | | | **5,966** | |
| | **Support** | | | | | | | 2 |
| 3.1 | Entry & waiting | (was 120) | | | 1 | **80** | **80** | was 100 |
| 3.1 | Reception Desk | (was 64) | | | 1 | 48 | 48 | |
| 6.1 | Library/Conference | | | | 1 | 300 | 300 | |
| 6.1 | Staff Conference Room | (combined library/conf) | | | 1 | 200 | 200 | **restored conf. room** |
| 5.2 | Equipment Room | | | | 1 | 80 | 80 | |
| 5.2 | Supply Room | | | | 1 | 80 | 80 | |
| 5.1 | File Room | | | | **3** | **80** | **240** | **added 2 for a total of 3** |
| 7.22 | Kitchenette | | | | 1 | 30 | 30 | |
| | | **Subtotal** | | | | | **1,058** | |
| | **Total NSF- Judicial Offices** | | | | | | **7,024** | |
| | **Departmental Gross Factor** | | | | | | **1.25** | |
| | **Department Gross Square Feet** | | | | | | **8,780** | |

Notes:
1. Includes 30sf toilet and 10sf coat closet
2. Support area to be located within shared (DC/PFC/JC/HC) judicial suite area with circulation capacity to SC judicial offices If judicial offices are spanning multiple floors, shared support spaces should be evaluated to determine if any duplication is necessary.

SALEM FULL PROGRAM
New Grossing Factors 4

2nd DRAFT for Review 11/28/06

3. Superior Court judicial offices to be located adjacent to SC courtrooms; all other judicial offices can be arranged in collegial suites
4. Law Clerk and Judicial Sectretary may be located near but not directly adjeacent to SC Judge's Lobby

SALEM FULL PROGRAM
New Grossing Factors 5

2nd DRAFT for Review 11/28/06

## TRANSACTION OFFICES

**SUPERIOR COURT: Clerk Magistrate**

| Data Sheet Ref | Area Description | Staff Existing | Staff Projected | Units | Area Per Unit | NSF | Notes |
|---|---|---|---|---|---|---|---|
| | **Staff** | | | | | | |
| 4.1 | Clerk Magistrate | 1 | 1 | 1 | 180 | 180 | (reduced from 200) |
| 4.1 | 1st Assistant Clerk Magistrate | 1 | 1 | 1 | 140 | 140 | reduced from 150 |
| 4.2 | Supervisory Clerical | 1 | 2 | 2 | 80 | 160 | |
| 4.2 | Clerical | 17 | 18 | 18 | 64 | 1,152 | |
| | **Subtotal** | **20** | **22** | | | **1,632** | |
| | **Support** | | | | | | |
| 3.1 | Transaction Counter/ Service | | | 1 | 90 | 90 | 1,2 |
| 3.1 | Transaction Waiting Space | | | 1 | 275 | 275 | 3 |
| 6.1 | Public Conference Room | | | 1 | 120 | 120 | |
| 6.1 | Staff Conference Room | | | 1 | 300 | 300 | include conf rm, share w/Prob |
| 5.2 | Equipment Room | | | 1 | 100 | 100 | |
| 5.2 | Supply Room | | | 1 | 100 | 100 | |
| 5.1 | Active Records Storage | | | 1 | 1,000 | 1,000 | 5 |
| 5.1 | Evidence Room | | | 1 | 100 | 100 | |
| 7.19 | Breakroom (shared) | | | | | | 7 |
| | **Subtotal** | | | | | **2,085** | |
| | **Total NSF- Superior Court Clerk Magistrate** | | | | | **3,717** | |
| | **Departmental Gross Factor** | | | | | **1.40** | **(was 1.45)** |
| | **Department Gross Square Feet** | | | | | **5,204** | |

Notes:
1. Assumes 4 staff positions at the counter at 22.5 sf each, including 30" deep counter and circulation space.
2. Transaction counter will require a small safe to handle cash transactions in the department
3. Assumes 15 people, based on 200sf minimum at 20 sf/person to accommodate 10 people (if >10 people add 15 sf/person)
   Note: initial 20 sf/person includes display space for forms, counter space for filling them out, etc.
4. For depts with 10 people or less, provide 200sf; For depts with greater than 10 people, provide 300sf
5. Assumes high density shelving. Inactive records are stored elsewhere. Calculate actual & projected based on court dept. needs.
6. Additional evidence (i.e. large items) may need to be stored in locked area in basement (storage cage?)
7. Refer to staff support section page 15 for breakroom information

SALEM FULL PROGRAM
New Grossing Factors 6

2nd DRAFT for Review 11/28/06

## TRANSACTION OFFICES

**SUPERIOR COURT: Probation**

| Data Sheet Ref | Area Description | Staff Existing | Staff Projected | Units | Area Per Unit | NSF | Notes |
|---|---|---|---|---|---|---|---|
| | **Staff** | | | | | | |
| 4.1 | Chief Probation Officer | 1 | 1 | 1 | 180 | 180 | (reduced from 200) |
| 4.1 | 1st Assistant Chief Probation Officer | 0 | 1 | 1 | 140 | 140 | reduced from 150 |
| 4.1 | Assistant Chief Probation Officer | 1 | 1 | 1 | 140 | 140 | reduced from 150 |
| 4.1 | Probation Officer | 7 | 8 | 8 | 100 | 800 | reduced from 120 |
| 4.2 | Associate Probation Officer | 1 | 2 | 2 | 80 | 160 | |
| 4.2 | Supervisory Clerical | 0 | 1 | 1 | 80 | 80 | |
| 4.2 | Clerical | 4 | 6 | 6 | 64 | 384 | |
| | **Subtotal** | **14** | **20** | | | **1,884** | |
| | **Support** | | | | | | |
| 3.1 | Transaction Counter/ Service | | | 1 | 90 | 90 | 1, 2 |
| 3.1 | Transaction Waiting Space | | | 1 | 200 | 200 | 3 |
| 6.1 | Staff Conference Room | | | 0 | 0 | - | (share conf rm with clerk) |
| 6.1 | Interview Room/ Intake | | | 1 | 120 | 120 | reduced due to office space |
| 3.2 | Drug Testing Toilet Room w/storage | | | 1 | 80 | 80 | provided for interview use |
| 5.2 | Equipment Room | | | 1 | 100 | 100 | |
| 5.2 | Supply Room | | | 1 | 100 | 100 | |
| 5.1 | Active Record Storage | | | 1 | 200 | 200 | 5 |
| 7.19 | Breakroom (shared) | | | | | | 6 |
| | **Subtotal** | | | | | **890** | |
| | **Total NSF- Superior Court Probation** | | | | | **2,774** | |
| | **Departmental Gross Factor** | | | | | **1.40** | **(was 1.45)** |
| | **Department Gross Square Feet** | | | | | **3,884** | |

Notes:
1. Assumes 4 staff positions at the counter at 22.5 sf each, including 30" deep counter and circulation space.
   Note: initial 20 sf/person includes display space for forms, counter space for filling them out, etc.
2. Transaction counter will require a small safe to handle cash transactions in the department.
3. Assumes 10 people, based on 200sf minimum at 20 sf/person to accommodate 10 people (if >10 people add 15 sf/person)
4. For depts with 10 people or less, provide 200sf; For depts with greater than 10 people, provide 300sf. Locate adjacent to intake rooms.
5. Assumes high density shelving. Inactive records are stored elsewhere. Calculate actual & projected based on court dept. needs.
6. Refer to staff support section page 15 for breakroom information.

SALEM FULL PROGRAM
New Grossing Factors 7

2nd DRAFT for Review 11/28/06

## TRANSACTION OFFICES

**DISTRICT COURT: Clerk Magistrate**

| Data Sheet Ref | Area Description | Staff Existing | Staff Projected | Units | Area Per Unit | NSF | Notes |
|---|---|---|---|---|---|---|---|
| | **Staff** | | | | | | |
| 4.1 | Clerk Magistrate | 1 | 1 | 1 | 180 | 180 | (reduced from 200) |
| 4.1 | 1st Assistant Clerk Magistrate | 0 | 1 | 1 | 140 | 140 | reduced from 150 |
| 4.1 | Assistant Clerk Magistrate | 5 | 5 | 5 | 120 | 600 | |
| 4.2 | Supervisory Clerical | 1 | 1 | 1 | 80 | 80 | |
| 4.2 | Clerical | 16 | 18 | 18 | 64 | 1,152 | |
| | **Subtotal** | **23** | **26** | | | **2,152** | |
| | **Support** | | | | | | 9 |
| 3.1 | Transaction Counter/ Service | | | 1 | 90 | 90 | 1,2 |
| 3.1 | Transaction Waiting Space | | | 1 | 300 | 300 | (reduced to 300 ) 3 |
| 6.1 | Public Conference Room | | | 1 | 120 | 120 | |
| 6.2 | Hearing Room | | | 2 | 300 | 600 | 4 |
| 6.1 | Staff Conference Room | | | 1 | 200 | 200 | share with Probation |
| 5.2 | Equipment Room | | | 1 | 100 | 100 | |
| 5.2 | Supply Room | | | 1 | 100 | 100 | |
| 5.1 | Active Records Storage | | | 1 | 1,500 | 1,500 | 6 |
| 5.1 | Evidence Room | | | 1 | 100 | 100 | |
| 7.19 | Breakroom (shared) | | | | | | 8 |
| | **Subtotal** | | | | | **3,110** | |
| | **Total NSF- District Court Clerk Magistrate** | | | | | **5,262** | |
| | **Departmental Gross Factor** | | | | | **1.40** | **(was 1.45)** |
| | **Department Gross Square Feet** | | | | | **7,367** | |

Notes:
1. Assumes 4 staff positions at the counter at 22.5 sf each, including 30" deep counter and circulation space.
2. Transaction counter will require a small safe to handle cash transactions in the department.
3. Assumes 25 people, based on 200sf minimum at 20 sf/person to accommodate 10 people (if >10 people add 15 sf/person)
   Note: initial 20 sf/person includes display space for forms, counter space for filling them out, etc.
4. Assumes 15 people at 20 sf/person. / Assumes large hearings to be conducted in Housing Court ctrm 4 days/wk
   when Housing Court is not in session: pending agreement between the two depts; re-evaluate if not agreed upon
5. For depts with 10 people or less, provide 200sf; For depts with greater than 10 people, provide 300sf
6. Assumes high density shelving. Inactive records are stored elsewhere. Calculate actual & projected based on court dept. needs.
7. Additional evidence (i.e. large items) may need to be stored in locked area in basement (storage cage?)
8. Refer to staff support section page 15 for breakroom information
9. Central cashier has moved to public lobby support functions for future use by all depts. Each transaction counter will need a small safe to handle cash transactions in the departments

SALEM FULL PROGRAM
New Grossing Factors 8

2nd DRAFT for Review 11/28/06

## TRANSACTION OFFICES

**DISTRICT COURT:Probation**

| Data Sheet Ref | Area Description | Staff Existing | Staff Projected | Units | Area Per Unit | NSF | Notes |
|---|---|---|---|---|---|---|---|
| | **Staff** | | | | | | |
| 4.1 | Chief Probation Officer | 1 | 1 | 1 | 180 | 180 | (reduced from 200) |
| 4.1 | 1st Assistant Chief Probation Officer | 0 | 1 | 1 | 140 | 140 | reduced from 150 |
| 4.1 | Assistant Chief Probation Officer | 2 | 4 | 4 | 140 | 560 | " |
| 4.1 | Probation Officer | 13 | 15 | 15 | 100 | 1,500 | reduced from 120 |
| 4.2 | Associate Probation Officer | 2 | 4 | 4 | 80 | 320 | |
| 4.2 | Supervisory Clerical | 1 | 1 | 1 | 80 | 80 | |
| 4.2 | Clerical | 7 | 9 | 9 | 64 | 576 | |
| | **Subtotal** | **26** | **35** | | | **3,356** | |
| | **Support** | | | | | | |
| 3.1 | Transaction Counter/ Service | | | 1 | 90 | 90 | 1, 2 |
| 3.1 | Transaction Waiting Space | | | 1 | 275 | 275 | |
| 6.1 | Staff Conference Room | | | | 200 | - | (share w/ Clerk) |
| 6.1 | Interview Room/ Intake | | | 1 | 120 | 120 | reduced due to office space |
| 3.2 | Drug Testing Toilet Room w/storage | | | 1 | 80 | 80 | provided for interview use |
| 5.2 | Equipment Room | | | 1 | 100 | 100 | |
| 5.2 | Supply Room | | | 1 | 100 | 100 | |
| 5.1 | Active Record Storage | | | 1 | 200 | 200 | reduced from 150 |
| 7.19 | Breakroom (shared) | | | | | | 6 |
| | **Subtotal** | | | | | **965** | |
| | **Total NSF- District Court Probation** | | | | | **4,321** | |
| | **Departmental Gross Factor** | | | | | **1.40** | **(was 1.45)** |
| | **Department Gross Square Feet** | | | | | **6,049** | |

Notes:
1. Assumes 4 staff positions at the counter at 22.5 sf each, including 30" deep counter and circulation space.
2. Transaction counter will require a small safe to handle cash transactions in the department.
3. Assumes 15 people, based on 200sf minimum at 20 sf/person to accommodate 10 people (if >10 people add 15 sf/person)
4. For depts with 10 people or less, provide 200sf; For depts with greater than 10 people, provide 300sf
5. Assumes high density shelving. Inactive records are stored elsewhere. Calculate actual & projected based on court dept. needs.
6. Refer to staff support section page 15 for breakroom information.

2nd DRAFT for Review 11/28/06

## TRANSACTION OFFICES

**JUVENILE COURT: Clerk Magistrate**

| Data Sheet Ref | Area Description | Staff Existing | Staff Projected | Units | Area Per Unit | NSF | Notes |
|---|---|---|---|---|---|---|---|
| | **Staff** | | | | | | |
| 4.1 | Clerk Magistrate | 1 | 1 | 1 | 180 | 180 | |
| 4.1 | 1st Assistant Clerk Magistrate | 0 | 0 | 0 | 140 | - | |
| 4.1 | Assistant Clerk Magistrate | 1 | 1 | 1 | 120 | 120 | PO Workstation/Interview Rms |
| 4.2 | Supervisory Clerical | 1 | 2 | 2 | 80 | 160 | |
| 4.2 | Clerical | 7 | 9 | 9 | 64 | 576 | |
| | **Subtotal** | **10** | **13** | | | **1,036** | |
| | **Support** | | | | | | |
| 3.1 | Transaction Counter/ Service | | | 1 | 90 | 90 | 1, 2 |
| 3.1 | Transaction Waiting Space | | | 1 | 275 | 275 | 3 |
| 6.1 | Public Conference Room | | | 1 | 120 | 120 | |
| 6.2 | Hearing Room | | | 1 | 300 | 300 | 4 |
| 6.1 | Staff Conference Room | | | 1 | 200 | 200 | Share with Probation |
| 5.2 | Equipment Room | | | 1 | 100 | 100 | was 130 |
| 5.2 | Supply Room | | | 1 | 100 | 100 | added back |
| 5.1 | Active Records Storage | | | 1 | 500 | 500 | 6 |
| 5.1 | Evidence Room | | | 1 | 80 | 80 | reduced from 150; sm. dept. |
| 7.19 | Breakroom (shared) | | | | | | 8 |
| | **Subtotal** | | | | | **1,765** | |
| | **Total NSF- Juvenile Court Clerk Magistrate** | | | | | **2,801** | |
| | **Departmental Gross Factor** | | | | | **1.40** | |
| | **Department Gross Square Feet** | | | | | **3,921** | |

Notes:
1. Assumes 4 staff positions at the counter at 22.5 sf each, including 30" deep counter and circulation space.
2. Transaction counter will require a small safe to handle cash transactions in the department.
3. Assumes 15 people, based on 200sf minimum at 20 sf/person to accommodate 10 people (if >10 people add 15 sf/person)
   Note: initial 20 sf/person includes display space for forms, counter space for filling them out, etc.
4. Assumes 15 people at 20 sf/person
5. For depts with 10 people or less, provide 200sf; For depts with greater than 10 people, provide 300sf
6. Assumes high density shelving. Inactive records are stored elsewhere. Calculate actual & projected based on court dept. needs.
7. Additional evidence (i.e. large items) may need to be stored in locked area in basement (storage cage?)
8. Refer to staff support section page 15 for breakroom information

2nd DRAFT for Review 11/28/06

## TRANSACTION OFFICES

**JUVENILE COURT: Probation**

| Data Sheet Ref | Area Description | Staff Existing | Staff Projected | Units | Area Per Unit | NSF | Notes |
|---|---|---|---|---|---|---|---|
| | **Staff** | | | | | | |
| 4.1 | Chief Probation Officer | 1 | 1 | 1 | 180 | 180 | |
| 4.1 | 1st Assistant Chief Probation Officer | 0 | 1 | 1 | 140 | 140 | reduced from 150 |
| 4.1 | Assistant Chief Probation Officer | 1 | 2 | 2 | 140 | 280 | " |
| 4.1 | Probation Officer | 6 | 7 | 7 | 100 | 700 | reduced from 120 |
| 4.2 | Associate Probation Officer | 0 | 1 | 1 | 80 | 80 | |
| 4.2 | Supervisory Clerical | 0 | 1 | 1 | 80 | 80 | |
| 4.2 | Clerical | 1 | 3 | 3 | 64 | 192 | |
| | **Subtotal** | **9** | **16** | | | **1,652** | |
| | **Support** | | | | | | |
| 3.1 | Transaction Counter/ Service | | | 1 | 90 | 90 | 1, 2 |
| 3.1 | Transaction Waiting Space | | | 1 | 200 | 200 | 3 |
| 6.1 | Staff Conference Room | | | 0 | 200 | - | Share w/Clerk |
| 6.1 | Interview Room/ Intake | | | 1 | 120 | 120 | was 2 |
| 3.2 | Drug Testing Toilet Room w/storage | | | 1 | 80 | 80 | |
| 5.2 | Equipment Room | | | 1 | 80 | 80 | reduced from 100 - small dept. |
| 5.2 | Supply Room | | | 1 | 80 | 80 | added back |
| 5.1 | Active Record Storage | | | 1 | 200 | 200 | reduced from 300 |
| 7.19 | Breakroom (shared) | | | | | | 6 |
| | **Subtotal** | | | | | **850** | |
| | **Total NSF- Juvenile Court Probation** | | | | | **2,502** | |
| | **Departmental Gross Factor** | | | | | **1.40** | |
| | **Department Gross Square Feet** | | | | | **3,503** | |

Notes:
1. Assumes 4 staff positions at the counter at 22.5 sf each, including 30" deep counter and circulation space.
2. Transaction counter will require a small safe to handle cash transactions in the department.
3. Assumes 15 people, based on 200sf minimum at 20 sf/person to accommodate 10 people (if >10 people add 15 sf/person)
4. For depts with 10 people or less, provide 200sf; For depts with greater than 10 people, provide 300sf
5. Assumes high density shelving. Inactive records are stored elsewhere. Calculate actual & projected based on court dept. needs.
6. Refer to staff support section page 15 for breakroom information.

SALEM FULL PROGRAM
New Grossing Factors 11

2nd DRAFT for Review 11/28/06

## TRANSACTION OFFICES

**HOUSING COURT: Clerk Magistrate**

| Data Sheet Ref | Area Description | Staff Existing | Staff Projected | Units | Area Per Unit | NSF | Notes |
|---|---|---|---|---|---|---|---|
| | | | | | | | VERIFY STAFFING AT THIS LOCATION! |
| | **Staff** | | | | | | |
| 4.1 | Clerk Magistrate | 1 | 1 | 1 | 180 | 180 | was 200 |
| 4.1 | 1st Assistant Clerk Magistrate | 1 | 1 | 1 | 140 | 140 | |
| 4.1 | Assistant Clerk Magistrate | 1 | 1 | 1 | 120 | 120 | |
| 4.1 | Chief Housing Specialist | 1 | 1 | 1 | 180 | 180 | was 200 |
| 4.2 | Housing Specialist | 6 | 6 | 6 | 80 | 480 | |
| 4.2 | Supervisory Clerical | 2 | 2 | 2 | 80 | 160 | |
| 4.2 | Clerical | 4 | 4 | 4 | 64 | 256 | |
| | **Subtotal** | **16** | **16** | | | **1,516** | |
| | **Support** | | | | | | |
| 3.1 | Transaction Counter/ Service | | | 1 | 90 | 90 | 1, 2 |
| 3.1 | Transaction Waiting Space | | | 1 | 275 | 275 | 3 |
| 6.1 | Public Conference Room | | | 1 | 120 | 120 | |
| 6.2 | Hearing Room | | | 0 | 300 | - | |
| 6.1 | Mediation Room | | | 2 | 150 | 300 | |
| 6.1 | Staff Conference Room | | | 0 | 200 | - | |
| 5.2 | Equipment Room / Supply (combined) | | | **1** | **100** | **100** | small department |
| 5.2 | Supply Room | | | 0 | 100 | - | |
| 5.1 | Active Records Storage | | | 1 | **150** | **150** | small department |
| 7.19 | Breakroom (shared) | | | | | | 5 |
| | **Subtotal** | | | | | **1,035** | |
| | **Total NSF- Housing Court Clerk Magistrate** | | | | | **2,551** | |
| | **Departmental Gross Factor** | | | | | **1.40** | |
| | **Department Gross Square Feet** | | | | | **3,571** | |

Notes:
1. Assumes 4 staff positions at the counter at 22.5 sf each, including 30" deep counter and circulation space.
2. Transaction counter will require a small safe to handle cash transactions in the department.
3. Assumes 25 people, based on 200sf minimum at 20 sf/person to accommodate 10 people (if >10 people add 15 sf/person)
   Note: initial 20 sf/person includes display space for forms, counter space for filling them out, etc.
4. Assumes high density shelving. Inactive records are stored elsewhere. Calculate actual & projected based on court dept. needs.
5. Refer to staff support section page 15 for breakroom information.

SALEM FULL PROGRAM
New Grossing Factors

12

2nd DRAFT for Review 11/28/06

## COURT SUPPORT
### CENTRAL DETAINEE HOLDING and COURT OFFICERS

| Data Sheet Ref | Area Description | | | Units | Area Per Unit | NSF | Notes |
|---|---|---|---|---|---|---|---|
| | **Adult Central Detainee Holding** | | | | | | 3 |
| 7.4 | Group Holding Cell (Male) | | | 3 | 150 | 450 | |
| 7.4 | Individual Holding Cell (Male) | | | 7 | 70 | 490 | |
| 7.4 | Group Holding Cell (Female) | | | 2 | 150 | 300 | |
| 7.4 | Individual Holding Cell (Female) | | | 3 | 70 | 210 | |
| 7.4 | Observation Cell | | | 1 | 70 | 70 | |
| | | **Total Adult Cells** | | **16** | | **1,520** | |
| | **Juvenile Central Detainee Holding** | | | | | | 3 |
| 7.4 | Group Holding Cell (Male Juvenile) | | | 1 | 150 | 150 | |
| 7.4 | Individual Holding Cell (Male Juvenile) | | | 1 | 70 | 70 | |
| 7.4 | Group Holding Cell (Female Juvenile) | | | 1 | 150 | 150 | |
| 7.4 | Individual Holding Cell (Female Juvenile) | | | 1 | 70 | 70 | |
| 7.4 | Observation Cell | | | 1 | 70 | 70 | |
| | | **Total Juvenile Cells** | | **5** | | **510** | |
| | **Detainee Holding Support** | | | | | | |
| 7.2 | Detainee Staging Area | | | 1 | 200 | 200 | |
| 7.2 | Detainee Entry Trap (w/double door) | | | 2 | 40 | 80 | minimum 2 for egress |
| 7.3 | Control Room | | | 1 | 200 | 200 | |
| 7.21 | Staff Toilet | | | 1 | 50 | 50 | 1 |
| 7.6 | Property Storage Closet | | | 1 | 80 | 80 | |
| 10.15 | Shower/ Janitor Closet | | | 1 | 30 | 30 | |
| 7.5 | Attorney Waiting Area | | | 1 | 30 | 30 | |
| 7.5 | Attorney-Client Conference (Accessible) | | | **2** | **80** | **160** | increased to 2 |
| 7.3 | Transport Officer's Room | | | 1 | 100 | 100 | Reduced to 100 9/28/06 |
| 7.1 | Vehicle Sallyport | | | 1 | 600 | 600 | includes gunlocker |
| | **Subtotal** | **0** | **0** | | | **1,530** | |
| | **Total NSF - Detainee Holding** | | | | | **3,560** | |
| | **Departmental Gross Factor** | | | | | **1.75** | |
| | **Department Gross Square Feet** | | | | | **6,230** | |
| | **Court Officer's Area** | | | | | | |
| | **Staff** | | | | | | |
| 4.1 | Chief Court Officer | 2 | 2 | 2 | 120 | 240 | Reduced to 100 9/28/06 |
| 7.19 | Court Officers' Break Room | 20 | 0 | 1 | **150** | **150** | reduced to 150 |
| | **Subtotal** | **22** | **2** | | | **390** | |
| | **Total NSF - Court Officers' Area** | | | | | **390** | |
| | **Departmental Gross Factor** | | | | | **1.10** | **(was 1.25)** |
| | **Department Gross Square Feet** | | | | | **429** | |

Notes:
1. Adjacent to Control Room.
2. C.O.'s share one room; includes kitchenette. Staffing: 2 per ctrm, 3 at entry, 1 ACO per floor, 1 CO in detention plus growth. (2/CR=11 + 3/entry + 4 @1 per flr. + detention + 2 Ch. CO + 1 = 22)
3. Number of holding cells to be determined by the custody count at each location
4. Within or directly adjacent to control room
5. One conference room for every 6 cells.
6. Located as close to control room as possible.

SALEM FULL PROGRAM
New Grossing Factors 13

2nd DRAFT for Review 11/28/06

## COURT SUPPORT

**JURY POOL, TRIAL COURT SECURE WAITING AREA**
**INTERPRETER SERVICES and COURT REPORTERS**

| Data Sheet Ref | Area Description | | | Units | Area Per Unit | NSF | Notes |
|---|---|---|---|---|---|---|---|
| | **Jury Pool** | | | | | | |
| 7.7 | Jury Check-in area | | | 1 | 100 | 100 | |
| 7.7 | Jury Waiting Area | | | 1 | 2,160 | 2,160 | ~~reduced to 1900, 9/28/06~~ |
| 7.7 | A/V Storage Closet | | | 1 | 15 | 15 | incr. back to 2160 for full prog. |
| 7.7 | Jury Toilets | | | 2 | 50 | 100 | |
| 7.7 | Vending alcove | | | 1 | 30 | 30 | |
| 7.7 | Public Telephone alcove | | | 1 | 10 | 10 | |
| | **Subtotal** | | | | | **2,415** | |
| | **Total NSF - Jury Pool** | | | | | **2,415** | |
| | **Departmental Gross Factor** | | | | | **1.10** | **(was 1.25)** |
| | **Department Gross Square Feet** | | | | | **2,657** | |
| 7.8 | **Trial Court Secure Waiting Area** | | | | | | 2 |
| | **Staff** | | | | | | |
| 4.1 | Office | 0 | 0 | 1 | 120 | 120 | **locate at entry** |
| 4.2 | Receptionist | 0 | 0 | 0 | 80 | - | |
| | **Subtotal** | **0** | **0** | | | **120** | |
| | Support | | | | | | |
| 7.8 | Waiting/ Play Area | | | 0 | 120 | - | |
| 7.14 | Toilet | | | 0 | 50 | - | |
| 7.22 | Kitchenette | | | 0 | 30 | - | |
| 6.1 | Conference Room | | | 0 | 100 | - | |
| | **Subtotal** | | | | | **-** | |
| | **Total NSF - Secure Waiting Area** | | | | | **120** | |
| | **Departmental Gross Factor** | | | | | **1.25** | |
| | **Department Gross Square Feet** | | | | | **150** | |
| | **Interpreter Services** | | | | | | |
| 7.9 | Office area | | | 1 | 200 | 200 | 3 |
| | **Total NSF - Interpreter Services** | | | | | **200** | |
| | **Departmental Gross Factor** | | | | | **1.10** | **(was 1.25)** |
| | **Department Gross Square Feet** | | | | | **220** | |
| | **Court Reporters** | | | | | | |
| 7.10 | Office area | | | 1 | 200 | 200 | 3 |
| | **Total NSF - Court Reporters** | | | | | **200** | |
| | **Departmental Gross Factor** | | | | | **1.10** | **(was 1.25)** |
| | **Department Gross Square Feet** | | | | | **220** | |

Notes:
1. Accommodates 100 persons, as follows: Provide a 70/30 split between chair seating and table seating.
   Chair seating for 70 persons @ 15 sf/person; tables for 30 persons @ 25 sf/person = 1, 800sf
   Size to be adjusted based on actual # of jurors from Jury Commissioner; if >100 persons, add 15 sf/person
2. This area should be located adjacent to main entry
3. Shared workspace off of public circulation.

SALEM FULL PROGRAM
New Grossing Factors

14

2nd DRAFT for Review 11/28/06

## COURT SUPPORT

**PUBLIC LOBBY and STAFF SUPPORT**

| Data Sheet Ref | Area Description | Units | Area Per Unit | NSF | Notes |
|---|---|---|---|---|---|
| | **Public Lobby** | | | | |
| 7.11 | Weather Vestibule | 1 | 200 | 200 | 1 |
| 7.12 | Security Screening & Queuing Area | 1 | 200 | 200 | 2 |
| 7.11 | Information Desk | 1 | 64 | 64 | |
| 7.11 | Lobby | 1 | 3,000 | 3,000 | |
| 7.13 | Concession/ Vending/ Storage | 1 | 150 | 150 | |
| | **Subtotal** | | | **3,614** | |
| | **Public Lobby Support Functions** | | | | |
| 7.16 | Main Entry Security Office | 1 | **150** | **150** | (Reduced to 150) 7 |
| 7.17 | Police Room | 1 | **120** | **120** | reduced to 120 |
| 7.18 | Central Cashier | 1 | 150 | 150 | 6 |
| TBD | Server Room | 1 | **100** | **100** | Reduced to 100 |
| | **Subtotal** | | | **520** | |
| | **Total NSF - Public Areas** | | | **4,134** | |
| | **Departmental Gross Factor** | | | **1.30** | |
| | **Department Gross Square Feet** | | | **5,374** | |
| | **Staff Support** | | | | |
| 7.19 | Staff Breakroom w/kitchenette | **3** | **200** | **600** | (Inc. to 3 - HC can share) 3, 4 |
| 7.20 | Staff Female Shower/ Lockers/ Toilet | 1 | 230 | 230 | reduced from 300) 5, 8 |
| 7.20 | Staff Male Shower/ Lockers/ Toilet | 1 | 500 | 500 | (reduced from 900) 5, 8 |
| | **Subtotal** | | | **1,330** | |
| | **Total NSF - Staff Support** | | | **1,330** | |
| | **Departmental Gross Factor** | | | **1.10** | **(was 1.30)** |
| | **Department Gross Square Feet** | | | **1,463** | |

Notes:
1. 200sf minimum
2. Includes 2 security screening stations. 200sf min is placeholder; needs to be increased; pending further research
3. Assumes 200sf to serve approx. 45-50 staff.
4. Breakrooms should be conveniently located in a neutral area so that they can be easily shared.
   Assumes shared use by departments; Exception: where staff exceeds 45-50 people, provide designated breakroom
5. # of lockers will be determined by number of staff. **ASSUME 80 lockers and 1,200 SF** for the study (32 CO's for courtrooms (2x16 courtrooms) + 6 (3 @ each entrance x2) + 10 (1/floor new facility, 1/floor PFC) + 19 Maintenance Staff = *66 + 10 + 76 + 4 growth = 80 (Based on 1 per court officer / 1 per maintenance staff + 10 addl court staff)*

   (#CO + # maintenance + 10 court staff) = # staff x 15sf/person = sf (distr. appropriately between male & female lockers) = 80 x 15SF = 1200SF

6. Note: must be accessible from both public and staff circulation
7. Gunlocker housed inside security office.
8. Court Officer (CO) and Assistnat Court Officers (ACO) shall have full sized lockers. Maintenance staff and all other staff to have half sized lockers. Maintenance staff lockers shall be separate and located near maintenance offices/ floor. Another staff to share with CO and ACO.

SALEM FULL PROGRAM
New Grossing Factors

2nd DRAFT for Review 11/28/06

## COURT OPERATIONS

### LAW LIBRARY

| Data Sheet Ref | Area Description | Staff Existing | Staff Projected | Units | Area Per Unit | NSF | Notes |
|---|---|---|---|---|---|---|---|
| | **Staff** | | | | | | |
| 4.1 | Head Law Librarian | 1 | 1 | 1 | 150 | 150 | DELETE PROGRAM |
| 4.1 | Reference Librarian | 1 | 1 | 1 | 100 | 100 | reduced to 100, 9/28/06 |
| 4.1 | Law Library Assistant | 3 | 3 | 1 | 100 | 100 | reduced to 100, 9/28/06 |
| | **Subtotal** | **5** | **5** | | | **350** | |
| | **Library Service Area** | | | | | | |
| 8.1 | Public Entrance | | | 1 | 100 | 100 | 7 |
| 8.1 | Stand-up Public Access Computers | | | 5 | 15 | 75 | 2-3 computers |
| 8.1 | Reference Computer Stations | | | 6 | 60 | 360 | 3 computers |
| 8.1 | Public Use Equipment Alcove | | | 1 | 90 | 90 | |
| | **Support** | | | | | | |
| 8.1 | Reference/ Circulation Desk | | | 1 | 200 | 200 | |
| 8.1 | Collections | | | 1 | 2,500 | 2,500 | 1 |
| 8.1 | Historic Collections | | | 1 | 1,500 | 1,500 | 1 |
| 8.1 | Current Periodicals | | | 1 | 150 | 150 | |
| 8.1 | Tables/ Chairs | | | 15 | 30 | 450 | reduced to 30, 9/28/06 |
| 8.1 | Computer Workstations | | | 5 | 30 | 150 | reduced to 30, 9/28/06 |
| 8.1 | Microfilm/fiche Center | | | 1 | 90 | 90 | 3 |
| 6.1 | Multi-Media Conference Room | | | 1 | 300 | 300 | |
| 8.1 | Technical Services Area | | | 1 | 500 | 500 | 4 |
| 5.2 | Supply Room | | | 1 | 80 | 80 | 8 |
| TBD | Server Room | | | 1 | 40 | 40 | |
| 7.21 | Staff Toilet | | | 1 | 50 | 50 | 5 |
| | **Subtotal** | | | | | **6,635** | |
| | **Total NSF- Law Library** | | | | | **6,985** | |
| | **Departmental Gross Factor** | | | | | **1.10** | |
| | **Department Gross Square Feet** | | | | | **7,684** | |

Notes:

1. Confirm collection space needs with Trial Court Law Librarian; sf does not include aisles - they are in grossing factor
2. Computer Workstations @ 60sf per workstation.
3. Assumes 1 microfiche reading station and 2 microfilm storage cabinets @ 2'Wx4'L.
4. Includes 300sf storage
5. Public toilet needs to be nearby or adjacent.
6. Can be located in technical services within view or near circulation desk. A glass wall can provide viewing access.
7. Integrate display area into public entry.
8. Located near technical service area.

2nd DRAFT for Review 11/28/06

## SUPPLEMENTAL OPERATIONS

**DISTRICT ATTORNEY, GRAND JURY**

| Data Sheet Ref | Area Description | Staff Existing | Staff Projected | Units | Area Per Unit | NSF | Notes |
|---|---|---|---|---|---|---|---|
| | **District Attorney** | | | | | | |
| | **Staff** | | | | | | |
| 4.1 | Chief DA Prosecutor | 0 | 0 | 0 | 120 | - | |
| 4.1 | Supervising DA | 1 | 1 | 1 | 120 | 120 | |
| 4.2 | Asst. DA's | 10 | 10 | 10 | **64** | **640** | reduced from 80 |
| 4.2 | Victim/Witness Advocates | 5 | 8 | 8 | **48** | **384** | reduced from 64 |
| 4.2 | Support/ Clerical | 5 | 6 | 6 | **48** | **288** | reduced from 64 |
| 4.2 | Interns | 3 | 3 | 3 | **36** | **108** | reduced from 42 |
| | **Subtotal** | **24** | **28** | | | **1,540** | |
| | **Support** | | | | | | |
| 9.1 | Reception/ Waiting Area | | | 1 | **100** | **100** | reduced from 120 |
| 9.1 | Victim/Witness Waiting | | | 1 | 120 | 120 | added per Taunton |
| 9.1 | Victim/Witness Conference Room | | | 2 | 120 | 240 | |
| 7.14 | Toilets | | | 2 | 50 | 100 | |
| 6.1 | Conference/ Library | | | | 200 | - | (can use grand jury) |
| 5.2 | Equipment/ Supply Room | | | 1 | 80 | 80 | |
| 5.1 | Active Record Storage | | | 1 | 150 | 150 | |
| 7.22 | Kitchenette | | | 1 | 30 | 30 | |
| TBD | Server/ Telephone room | | | 1 | 30 | 30 | 3 |
| | **Subtotal** | | | | | **850** | |
| | **Total NSF - District Attorney** | | | | | **2,390** | |
| | **Departmental Gross Factor** | | | | | **1.30** | **(was 1.25)** |
| | **Department Gross Square Feet** | | | | | **3,107** | |
| | **Grand Jury** | | | | | | |
| | **Support** | | | | | | |
| 9.3 | Reception/ Waiting | | | 1 | 100 | 100 | reduced to 100, 9-28-06 |
| 9.3 | Victim/ Witness Waiting Area | | | 1 | 120 | 120 | |
| 6.1 | Public Conference Room | | | 2 | 120 | 240 | |
| 9.3 | Grand Jury Room | | | 1 | 900 | 900 | |
| 7.14 | Toilets | | | 2 | 50 | 100 | |
| 7.22 | Kitchenette | | | 0 | 30 | - | |
| 5.2 | Equipment/ Supply Room | | | | | | 1 |
| | **Subtotal** | | | | | **1,460** | |
| | **Total NSF - Grand Jury** | | | | | **1,460** | |
| | **Departmental Gross Factor** | | | | | **1.30** | **(was 1.25)** |
| | **Department Gross Square Feet** | | | | | **1,898** | |

SALEM FULL PROGRAM
New Grossing Factors

17

2nd DRAFT for Review 11/28/06

Notes:

1. Shared Space: refer to District Attorney Support
2. This space is only staffed when Grand Jury is in session.

SALEM FULL PROGRAM
New Grossing Factors

18

2nd DRAFT for Review 11/28/06

## SUPPLEMENTAL OPERATIONS

**ATTORNEYS' ROOM**
**and POLICE PROSECUTORS' ROOM**

| Data Sheet Ref | Area Description | Staff Existing | Staff Projected | Units | Area Per Unit | NSF | Notes |
|---|---|---|---|---|---|---|---|
| 9.2 | Attorney's Room | | | 1 | 150 | 150 | |
| | Subtotal | | | | | 150 | |
| | Total NSF - Attorney's Room | | | | | 150 | |
| | Departmental Gross Factor | | | | | 1.10 | (was 1.25) |
| | Department Gross Square Feet | | | | | 165 | |
| 9.9 | Police Prosecutors' Room | | | 1 | 150 | 150 | |
| | Subtotal | | | | | 150 | |
| | Total NSF - Police Prosecutors' Room | | | | | 150 | |
| | Departmental Gross Factor | | | | | 1.10 | (was 1.25) |
| | Department Gross Square Feet | | | | | 165 | |

SALEM FULL PROGRAM
New Grossing Factors

19

2nd DRAFT for Review 11/28/06

## SUPPLEMENTAL OPERATIONS

**ALTERNATIVE DISPUTE RESOLUTION and COURT CLINIC**

| Data Sheet Ref | Area Description | Staff Existing | Staff Projected | Units | Area Per Unit | NSF | Notes |
|---|---|---|---|---|---|---|---|
| 9.4 | **Alternative Dispute Resolution** | | | | | | |
| | **Staff** | | | | | | |
| 4.1 | Office | 0 | 0 | 0 | 120 | - | |
| 4.2 | Clerical | 0 | 0 | 0 | 64 | - | |
| | **Subtotal** | **0** | **0** | | | **-** | |
| | **Support** | | | | | | |
| 9.4 | Waiting Area | | | 0 | 120 | - | |
| 6.1 | Mediation Room | | | 0 | 150 | - | |
| 6.1 | Conference Room | | | 0 | 200 | - | |
| 5.2 | Equipment/ Supply Room | | | 0 | 80 | - | |
| | **Subtotal** | | | | | **-** | |
| | **Total NSF- Alternative Dispute Resolution** | | | | | **-** | |
| | **Departmental Gross Factor** | | | | | **1.15** | was 1.3 |
| | **Department Gross Square Feet** | | | | | **-** | |
| 9.5 | **Adult Court Clinic: (SC, DC)** | | | | | | |
| | **Staff** | | | | | | |
| 4.1 | Clinician's Office | 0 | 0 | 1 | 120 | 120 | |
| 4.1 | Social Worker | 0 | 0 | 1 | 120 | 120 | |
| | **Subtotal** | **0** | **0** | **2** | | **240** | |
| | **Support** | | | | | | |
| 9.5 | Reception/ Waiting Area | | | 1 | 120 | 120 | |
| | **Subtotal** | | | | | **120** | |
| | **Total NSF- Adult Court Clinic** | | | | | **360** | |
| | **Departmental Gross Factor** | | | | | **1.15** | **(was 1.25)** |
| | **Department Gross Square Feet** | | | | | **414** | |
| 9.5 | **Juvenile Court Clinic** | **Need to check staffing and requirements for Salem** | | | | | |
| | **Staff** | | | | | | |
| 4.1 | Clinician's Office | 1 | 1 | 1 | 120 | 120 | |
| 4.1 | Social Worker | 0 | 0 | 1 | 120 | 120 | |
| | **Subtotal** | **1** | **1** | | | **240** | |
| | **Support** | | | | | | |
| 9.5 | Reception/ Waiting Area | | | 1 | 120 | 120 | added per Taunton |
| | **Subtotal** | | | | | **120** | |
| | **Total NSF- Juvenile Court Clinic** | | | | | **360** | |
| | **Departmental Gross Factor** | | | | | **1.15** | **(was 1.3)** |
| | **Department Gross Square Feet** | | | | | **414** | |

SALEM FULL PROGRAM
New Grossing Factors

20

2nd DRAFT for Review 11/28/06

## SUPPLEMENTAL OPERATIONS

**CHILDCARE CENTER and SOCIAL SERVICES**

| Data Sheet Ref | Area Description | Staff Existing | Staff Projected | Units | Area Per Unit | NSF | Notes |
|---|---|---|---|---|---|---|---|
| | **Childcare Center** | | | | | | 1 |
| | **Staff** | | | | | | |
| 4.1 | Director's Office | 0 | 0 | 0 | 120 | - | |
| | **Subtotal** | | | | | - | |
| | **Support** | | | | | | |
| 9.6 | Reception/ Waiting Area | | | 0 | 240 | - | 2 |
| 9.6 | Multi-Purpose Room | | | 0 | 1,000 | - | |
| 9.6 | Laundry/ Kitchenette | | | 0 | 30 | - | |
| 9.6 | Storage Closet | | | 0 | 50 | - | |
| 7.14 | Toilet | | | 0 | 50 | - | 3 |
| | **Subtotal** | | | | | - | |
| | **Total NSF - Childcare Center** | | | | | - | |
| | **Departmental Gross Factor** | | | | | 1.25 | was 1.3 |
| | **Department Gross Square Feet** | | | | | - | |
| 9.7 | **Social Services** | | | | | | 4 |
| | Shared Workroom / Conference Room | | | 0 | 150 | - | |
| | **Subtotal** | | | | | - | |
| | **Total NSF - Social Services** | | | | | - | |
| | **Departmental Gross Factor** | | | | | 1.10 | was 1.3 |
| | **Department Gross Square Feet** | | | | | - | |

Notes:
1. Childcare Center must be located at grade level for emergency egress.
2. Includes interview alcoves and a reception desk.
3. 1 toilet for staff / 1 toilet for children
4. Social services may include the following entities: CASA

2nd DRAFT for Review 11/28/06

## SUPPLEMENTAL OPERATIONS

DEPARTMENT of REVENUE- Child Support

| Data Sheet Ref | Area Description | Staff Existing | Staff Projected | Units | Area Per Unit | NSF | Notes |
|---|---|---|---|---|---|---|---|
| | **Staff** | | | | | | |
| 4.1 | Regional Counsel | | | | 120 | | |
| 4.2 | Counsel | | | | 80 | | |
| 4.2 | Child Support Worker | | | | 64 | | |
| 4.2 | Clerical | | | | 64 | | |
| | **Subtotal** | | | | | | |
| | **Support** | | | | | | |
| 9.8 | Transaction Counter/ Service | | | | 90 | | |
| 9.8 | Transaction Waiting Space | | | | 150 | | |
| 9.8 | Interview Room | | | | 150 | | |
| 5.2 | Equipment/ Supply Room | | | | 80 | | |
| | **Subtotal** | | | | | | |
| | **Total NSF - Department of Revenue: Child Support** | | | | | | |
| | **Departmental Gross Factor** | | | | | 1.15 | was 1.3 |
| | **Department Gross Square Feet** | | | | | | |

Notes:
1. DOR area must be located near an area that can handle overflow waiting.
2. Assumes 10 people, based on 200 sf minimum at 20 sf/person to accommodate 10 people (if >10 people add 15 sf/person)

SALEM FULL PROGRAM
New Grossing Factors

22

2nd DRAFT for Review 11/28/06

## BUILDING SUPPORT

| Data Sheet Ref | Area Description | Staff Existing | Staff Projected | Units | Area Per Unit | NSF | Notes |
|---|---|---|---|---|---|---|---|
| | **Staff** | | | | | | |
| 4.1 | Building Manager | 0 | 0 | 1 | 120 | 120 | |
| 4.2 | **Building System Manager Office** | | | 1 | 320 | 320 | moved from support below |
| 4.3 | Clerical | 0 | 0 | 1 | 64 | 64 | |
| | **Subtotal** | **0** | **0** | | | **504** | |
| | | | | | | | (assume exterior parking) |
| | **Support** | | | | | | 4 |
| 10.1 | Judge's parking | | | | 350 | - | Exterior pkg if possible? |
| 10.1 | Secure Staff Parking | | | | 350 | - | Exterior pkg if possible? |
| 10.2 | Security Equipment Sever Room | | | 0 | 120 | - | **Moved to Public Lobby** |
| 10.3 | Central I.T.Computer Room | | | 1 | 200 | 200 | reduced from 250 |
| 10.4 | Central Mail Room | | | 1 | 150 | 150 | |
| 10.5 | Loading Dock/ Receiving Area | | | 1 | 800 | 800 | (reduced loading from 1000) |
| 10.6 | Maintenance Equipment Storage | | | 1 | 300 | 300 | |
| 10.7 | Maintenance Shop | | | 1 | 300 | 300 | |
| 10.8 | Outdoor Equipment Storage | | | 1 | 500 | 500 | |
| 10.9 | Trash/ Recycling Room | | | 1 | 300 | 300 | **(was 200, changed to 300)** |
| 10.10 | Janitorial Supply Room | | | 1 | 300 | 300 | |
| 10.11 | Bicycle Storage Room | | | 0 | 120 | - | Exterior storage |
| 10.12 | **Telephone Room** | | | 1 | 150 | 150 | **added per MH** |
| 10.13 | Inactive Records Storage | | | 1 | 1000 | 1,000 | 3 |
| | **Subtotal** | | | | | **4,000** | |
| | **Total NSF - Building Support** | | | | | **4,504** | |
| | **Departmental Gross Factor** | | | | | **1.25** | |
| | **Department Gross Square Feet** | | | | | **5,630** | |

Notes:

1. Confirm with specific site and project requirements; parking based on # of judges + # of Chief CM / Chief PO + 1-2 addt'l each
2. This should be approx 350sf per space if double-loaded arrangement.
3. Minimum 500sf to accommodate storage boxes.
4. **The following builidng support spaces are included in the Grossing Factor for the building:**
   - Life Safety Equipment Room
   - Switchgear Room
   - Tel / Data Closets
   - Electrical Closets/ Emergency Elec Rm
   - Generator Room
   - Janitorial Supply Closets
   - Elevator Machine Room
   - Fire Pump Room

SALEM FULL PROGRAM
New Grossing Factors

23

## 5.9 Program Changes

**PAGE 141-144**

# M E M O R A N D U M

**Division of Capital Asset Management**
**Office of Planning, Design and Construction**
One Ashburton Place, 15th Floor
Boston, Massachusetts 02108
**(617) 727-4050** / FAX (617) 727-6060

| | |
|---|---|
| **To:** | **Liz Minnis, Director, CFU** |
| **From:** | **Gail Rosenberg, Project Manager** |
| **Cc:** | DCAM: Elayne Campos |
| | AOTC: Michael Jordan, Michael Hayes, Richard L'Heureux |
| **Date:** | **November 28, 2006** |
| **Re:** | Changes made to Salem Full Program, 11/28/06 (SC/DC/JC/HC) |

Below are changes made to the Salem Program, by department and page, following review of AOTC's comments on the draft submitted to them dated 11/06/06. Incorporated into this draft are additions which were requested, offset by some square footage decisions made by DCAM.

This resulted in a total gross building square footage of 176,410 GSF, which is within the 177,000 GSF we have established as the goal for the project.

**COURTROOM SETS**

p.3 Off –bench Judges Conference Room – increased to 160 SF (from reduction to 120)
p.3 Off –bench Judges Conference Room – increased quantity from 2 to 3
(Note: Detainee docks to be carried in courtroom SF)

**JUDICIAL OFFICES**

p.5 SC - Law Clerks – reduced from 64 to 48 SF
SC - Head Administrative Assistant – reduced to 100 from 120

DC - Law Clerks – reduced from 64 to 48 SF
DC - Head Administrative Assistant – reduced to 100 from 120

JC - Law Clerks – reduced from 64 to 48 SF
JC - Head Administrative Assistant – reduced to 100 from 120

HC - Law Clerks – reduced from 64 to 48 SF
HC - Head Administrative Assistant – reduced to 100 from 120

Visiting Judge's Lobby – increased quanity from 1 to 2

Support – reduced Entry and waiting from 100 SF to 80

Restored Staff Conference Room @ 200 SF

Increase File Room quantity from 1 to 3 @ 80 SF (4 requested, but Housing Court is small presence here)

**TRANSACTION OFFICES – SUPERIOR COURT CLERK MAGISTRATE**

p.7 SC Clerk Magistrate – remains reduced from 200 to 180 SF
SC 1st Asst. Clerk Magistrate – reduced from 150 to 140 SF

Staff Conference Room – added back in, 1 @ 300 SF to be shared with Probation

**TRANSACTION OFFICES – SUPERIOR COURT PROBATION**

p.8 Chief Probation Officer – remains reduced from 200 to 180 SF
1st Asst. Chief Probation Officer – reduced from 150 to 140 SF
Asst. Chief Probation Officer – reduced from 150 to 140 SF
Probation Officers – reduced to 80 SF (with use of interview rooms)

Staff Conference Room – to be shared with Clerk's Office

2 Additional Interview Room added *(for a total of 3 for 8 PO's)*

**TRANSACTION OFFICES – DISTRICT COURT CLERK MAGISTRATE**

p.9 DC Clerk Magistrate – remains reduced from 200 to 180 SF
DC 1st Asst. Clerk Magistrate – reduced from 150 to 140 SF

Staff Conference Room – added back in, 1 @ 200 SF to be shared with Probation

**TRANSACTION OFFICES – DISTRICT COURT PROBATION**

p.10 Chief Probation Officer – remains reduced from 200 to 180 SF
1st Asst. Chief Probation Officer – reduced from 150 to 140 SF
Asst. Chief Probation Officer – reduced from 150 to 140 SF
Probation Officers – reduced to 80 SF (with use of interview rooms)

Staff Conference Room – to be shared with Clerk's Office

Additional Interview Rooms added *(for a total of 5 for 15 PO's)*

**TRANSACTION OFFICES – JUVENILE COURT CLERK MAGISTRATE**

p.11 JC Clerk Magistrate – remains reduced from 200 to 180 SF

Staff Conference Room – added back in, 1 @ 200 SF to be shared with Probation

Supply Room – added back in, 1 @ 100 SF

Evidence Room – reduced from 150 to 100 SF

**TRANSACTION OFFICES – JUVENILE COURT PROBATION**

p.12 Chief Probation Officer – remains reduced from 200 to 180 SF
1st Asst. Chief Probation Officer – reduced from 150 to 140 SF
Asst. Chief Probation Officer – reduced from 150 to 140 SF
Probation Officers – reduced to 80 SF (with use of interview rooms)

Staff Conference Room – to be shared with Clerk's Office

1 Additional Interview Room added *(for a total of 3 for 7 PO's)*

**TRANSACTION OFFICES – HOUSING COURT CLERK MAGISTRATE**

p.13 HC Clerk Magistrate – remains reduced from 200 to 180 SF

Equipment/Supply(combined) Room – added back in, 1 @ 100 SF (small dept.)

Active Records Storage – reduced from 200 to 150 SF (small satellite dept.)

**COURT SUPPORT – CENTRAL DETAINEE HOLDING and COURT OFFICERS**

p.14 Attorney/Client Conference Room – increased to 2 (from 1)

Court Officer's Breakroom – reduced to 150 from 200SF

**COURT SUPPORT – Jury Pool / Trial Court Secure Waiting / Interpreter Services / Court Reporters**

p.15 Trial Court Secure Waiting Area – added back in, 1 @ 120 SF; note to locate @ entry

MH had a question as to whether or not 200 SF could accommodate 4 Court Reporters and their storage – this room is assumed to be where proceedings are transcribed and not for record storage – to be verified with SC

**COURT SUPPORT – PUBLIC LOBBY AND STAFF SUPPORT**

p.16 Main Entry Security Office – reduced from 200 to 150 SF

Police Room – reduced from 150 to 120 SF

Server Room – reduced from 120 to 100 SF

Note added to locate Central Cashier with access to Public and Staff circulation

Staff Breakroom increased from 2 to 3 (HC will not have their own breakroom given their limited presence in building)

MH had question about locker rooms being able to accommodate staff – since all staff will not be using locker room/showers at same time, space provided should be sufficient

**SUPPLEMENTAL OPERATIONS – DISTRICT ATTORNEY**

p.18 Assistant DA – reduced from 80 to 64 SF

Victim / Witness Advocates – reduced from 64 to 48 SF

Support / Clerical – reduced from 64 to 48 SF

Interns – reduced from 48 to 36 SF

**BUILDING SUPPORT**

p.24 Building System Management Office – moved from Support to Staff; kept at 320 SF to accommodate building manager and two workstations; one for CAMIS and one for HVAC and other building systems controls.

Central IT Computer Room – reduced from 250 to 200 SF

Bicycle Storage – SF removed with note to locate as exterior storage

Telephone Room added per MH 1 @ 150 SF

Page 4 3/8/2007

## 5.10 Floor Area Calculations

**PAGE 147-167**

4/2/2007

## SALEM Trial Court Floor Area Calculations
## 11.28.06 Program vs 4.4.07 Study As Drawn

| | PER PROGRAM | | | | | AS DRAWN | | |
|---|---|---|---|---|---|---|---|---|
| Program Area | Total Staff Existing | Total Staff Projected | Net Square Feet | Dept. Gross Factor | Dept. Gross Sq. Ft | Net Square Feet | Dept. Gross Sq. Ft. | Notes |
| **Courtroom Sets** | | | **34,456** | **1.15** | **39,624** | **31,089** | **30,668** | |
| **Judicial Offices** | **21.5** | **36** | **7,024** | **1.25** | **8,780** | **7,696** | **12,409** | |
| **Transaction Offices** | **118** | **148** | **23,928** | | **33,499** | **25,939** | **36,482** | |
| **Superior Court** | **34** | **42** | **6,491** | | **9,087** | **7,073** | **9,079** | |
| Clerk Magistrate | 20 | 22 | 3,717 | 1.40 | 5,204 | 4,106 | 5,299 | |
| Probation | 14 | 20 | 2,774 | 1.40 | 3,884 | 2,967 | 3,780 | |
| **District Court** | **49** | **61** | **9,583** | | **13,416** | **10,198** | **14,282** | |
| Clerk Magistrate | 23 | 26 | 5,262 | 1.40 | 7,367 | 5,557 | 7,632 | |
| Probation | 26 | 35 | 4,321 | 1.40 | 6,049 | 4,641 | 6,650 | |
| **Probate & Family Court** | | | | | | | | |
| Register of Probate | | | | | | | | |
| Probation | | | | | | | | |
| **Juvenile Court** | **19** | **29** | **5,303** | | **7,424** | **5,916** | **9,298** | |
| Clerk Magistrate | 10 | 13 | 2,801 | 1.40 | 3,921 | 3,004 | 5,024 | |
| Probation | 9 | 16 | 2,502 | 1.40 | 3,503 | 2,912 | 4,274 | |
| **Housing Court** | **16** | **16** | **2,551** | **1.40** | **3,571** | **2,752** | **3,823** | |
| **Court Support** | **22** | **2** | **12,349** | | **16,743** | **10,226** | **14,498** | |
| Central Detainee Holding | | | 3,560 | 1.75 | 6,230 | 3,476 | 7,708 | |
| Court Officers | 22 | 2 | 390 | 1.10 | 429 | 421 | 436 | |
| Jury Pool | | | 2,415 | 1.10 | 2,657 | 2,477 | 2,502 | |
| Trial Court Secure Waiting Area | 0 | 0 | 120 | 1.25 | 150 | 123 | 123 | |
| Interpreter Services | | | 200 | 1.10 | 220 | 168 | 168 | |
| Court Reporters | | | 200 | 1.10 | 220 | 177 | 177 | |
| Public Lobby | 0 | 0 | 4,134 | 1.30 | 5,374 | 1,982 | 1,982 | |
| Staff Support | | | 1,330 | 1.10 | 1,463 | 1,402 | 1,402 | |
| **Court Operations** | **0** | **0** | **6,985** | | **7,684** | **5,421** | **8,942** | |
| Law Library | 1 | 1 | 6,985 | 1.10 | 7,684 | 5,421 | 8,942 | |
| **Supplemental Operations** | **25** | **29** | **4,870** | | **6,163** | **5,358** | **7,061** | |
| District Attorney | 24 | 28 | 2,390 | 1.30 | 3,107 | 2,554 | 4,021 | |
| Grand Jury | | | 1,460 | 1.30 | 1,898 | 1,606 | 1,812 | |
| Attorneys' Room | | | 150 | 1.10 | 165 | 162 | 162 | |
| Police Prosecutors' Room | | | 150 | 1.10 | 165 | 232 | 232 | |
| Alternative Dispute Resolution | 0 | 0 | - | 1.15 | - | - | - | |
| Adult Court Clinic | 0 | 0 | 360 | 1.15 | 414 | 437 | 454 | |
| Juvenile Court Clinic | 1 | 1 | 360 | 1.15 | 414 | 367 | 380 | |
| Child Care Center | 0 | 0 | - | 1.25 | - | - | - | |
| Social Services | | | - | 1.10 | - | - | - | |
| DOR - Child Support | | | | 1.30 | - | - | - | |
| | | | | | - | - | - | |
| **Building Support** | **0** | **0** | **4,504** | **1.25** | **5,630** | **3,923** | **3,923** | |
| | | | | | - | | - | |
| **TOTAL STAFF** | **187** | **215** | | | | | | |
| **TOTAL NET SQUARE FEET** | | | **94,116** | | | **89,652** | | |
| **TOTAL DEPARTMENT GROSS SQUARE FEET** | | | | | **118,123** | | **113,983** | |
| **BUILDING MECHANICAL @ 10% DGSF** | | **(was 8%)** | | | **11,812** | | **15,463** | |
| **SUBTOTAL** | | | | | **129,935** | | **129,446** | |
| **BUILDING GROSS FACTOR** | | | | | **1.35** | | **1.47** | |
| **TOTAL BUILDING GROSS SQUARE FEET** | | | | | **175,412** | | **190,525** | |
| **% NET TO GROSS** | | | | | **54%** | | **47%** | |
| **GSF/COURTROOM *** | | | | | **14688** | | **15866** | |
| **% SUPPLEMENTAL OPERATIONS** | | | | | **8%** | | **8%** | |

* GSF is Subtotal of the building sf (before grossing factor) minus Supplemental Operations and Court Operations divided by the number of courtrooms

## COURTROOM SETS

| Data Sheet Ref | Area Description | PER PROGRAM Units | Area Per Unit | NSF | AS DRAWN Area Per Unit | NSF | Notes |
|---|---|---|---|---|---|---|---|
| | **Courtrooms** | | | | | | |
| | **Superior Court** | | | | | | |
| 1.1 | X-Large Jury Courtroom w/detainee dock | 1 | 2,500 | 2,500 | 2,500 | 2,500 | |
| 1.2 | Large Jury Courtroom | 3 | 2,000 | 6,000 | 2,000 | 6,000 | |
| | **Subtotal** | **4** | | **8,500** | | **8,500** | |
| | **District Court** | | | | | | |
| 1.1 | X-Large Non-Jury Courtroom w/detainee dock | 1 | 2,500 | 2,500 | 2,500 | 2,500 | |
| 1.2 | Large Jury Courtroom w/detainee dock | 1 | 2,000 | 2,000 | 2,000 | 2,001 | |
| 1.2 | Medium Jury Courtroom | 2 | 1,600 | 3,200 | 1,600 | 3,200 | |
| | **Subtotal** | **4** | | **7,700** | | **7,701** | |
| | **Probate & Family Court** | | | | | | |
| 1.3 | Large Non-Jury Courtroom | | | | | | |
| 1.3 | Medium Non-Jury Courtroom | | | | | | |
| 1.3 | Small Non-Jury Courtroom | | | | | | |
| | **Subtotal** | **0** | | **-** | | | |
| | **Juvenile Court** | | | | | | |
| 1.2 | Medium Jury Courtroom | 1 | 1,600 | 1,600 | 1,600 | 1,600 | |
| 1.3 | Medium Non-Jury Courtroom | 0 | 1,600 | - | | - | |
| 1.2 | Small Jury Courtroom | 1 | 1,200 | 1,200 | 1,600 | 1,600 | |
| | **Subtotal** | **2** | | **2,800** | | **3,200** | |
| | **Housing Court** | | | | | | |
| 1.2 | Large Jury Courtroom | 1 | 2,000 | **2,000** | **2,000** | **2,000** | |
| | **Subtotal** | **1** | | **2,000** | | **2,000** | |
| | **Total Courtrooms** | **11** | | **21,000** | | **21,401** | |
| | **Courtroom Support** | | | | | | |
| 6.1 | Off-bench Judge's Conf. Room | 3 | 160 | 480 | | - | |
| 1.14 | Courtroom Entrance Vestibule | 11 | 80 | 880 | 51 | 561 | |
| 1.15 | Waiting Area - X-Large Courtrooms | 2 | 400 | 800 | | 800 | |
| 1.15 | Waiting Area - all Juvenile Courtrooms | 2 | 400 | 800 | | 800 | |
| 1.15 | Waiting Area - Large Courtrooms | 4 | 300 | 1,200 | | 1,200 | |
| 1.15 | Waiting Area - Med. Courtrooms | 3 | 200 | 600 | | 600 | |
| 1.15 | Waiting Area - Small Courtrooms | 0 | 200 | - | | - | |
| 6.1 | Pre-Trial Conference Room | 22 | 120 | 2,640 | 112 | 2,474 | |
| 1.16 | A/V Storage | 11 | 30 | 330 | | - | |
| 1.17 | Evidence Vault | 11 | 50 | 550 | | 0 | |
| | **Subtotal** | | | **8,280** | | **6,435** | |
| | **Courtroom Holding Area** | | | | | | |
| 1.19 | Detainee Staging | 5 | 50 | 250 | | TBD | |
| 1.19 | Detainee Soundlock | 5 | 40 | 200 | | TBD | |
| 1.19 | Detainee Holding Cell (group) | 5 | 150 | 750 | | TBD | |
| 1.19 | Detainee Holding Cell (indiv.) | 5 | 70 | 350 | | TBD | |
| 1.14 | Detainee Dock | | 80 | - | | TBD | |
| | **Subtotal** | **20** | **390** | **1,550** | | **TBD** | |
| | **Jury Deliberation Areas** | | | | | | |
| 1.20 | Jury Deliberation Room | 7 | 300 | 2,100 | 286 | 1,716 | |
| 1.20 | Vestibule w/toilets | 7 | 200 | 1,400 | 186 | 1,116 | |
| 1.2 | Court Officers' Alcove | 3 | 42 | 126 | 140 | 421 | |
| | **Subtotal** | | | **3,626** | | **3,253** | |
| | **Total NSF- Courtroom Sets** | | | **34,456** | | **31,089** | |
| | **Departmental Gross Factor** | | | **1.15** | | **0.99** | |
| | **Department Gross Square Feet** | | | **39,624** | | **30,668** | |

SALEM TRIAL COURT
Floor Area Calculations

G:\6290 - Salem Trial Court\01_General\Final Report\Electronic Files\Chapter 5\Salem-area-calc_STUDY.xls

Page 2

Notes:

1. Based on one per two courtrooms or distance from courtroom to collegial suite. This includes 30sf toilet.
2. Two per courtroom. In Superior Court only, 1 or 2 of these may be utilized by court reporters as shared workspace. Refer to Court Reporter section on page 14 for additional information.
3. Detainee area shared between courtrooms. There is also a holding area at the Grand Jury (refer to pg 17) Only Arraignment courtrooms require 2 holding cells in core- smaller can have 1.
4. Included in all Arraignment courtrooms, 1 large SC courtroom and 1 DC standard courtroom
5. Ratio of Jury Deliberation Areas: Less than four courtrooms = 1 : 1 . More than four courtrooms = 1 : .75
6. One per two Jury Deliberation Areas
7. Group detainee holding cells located next to 1st and 2nd session and X-large Superior Court courtroom. Number of group holding cells depends on adjacency to each core. If 1st session, 2nd session and X-large Superior Courtrooms share a core, then 2 group cells between them will suffice. If any of the named courtrooms share a core with other courtrooms, 2 group cells will be required and no individual cells. All other shared cores will have 2 individuals cells.

SALEM TRIAL COURT
Floor Area Calculations G:\6290 - Salem Trial Court\01_General\Final Report\Electronic Files\Chapter 5\Salem-area-calc_STUDY.xls Page 3

## JUDICIAL OFFICES

| Data Sheet Ref | Area Description | | PER PROGRAM Staff Existing | Staff Projected | Units | Area Per Unit | NSF | AS DRAWN Area Per Unit | NSF | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| | **Staff** | | | | | | | | | |
| | **Superior Court** | | | | | | | | | |
| 2.1 | Judge | | 3 | 4 | 4 | 330 | 1,320 | 328 | 1,310 | |
| 4.2 | Judicial Secretary | | 1 | 2 | 2 | 80 | 160 | 160 | 160 | |
| 4.2 | Law Clerk | | 4 | 4 | 4 | 48 | 192 | 192 | 192 | |
| 4.1 | Assistant Clerk Magistrate | | 3 | 4 | 4 | 120 | 480 | 113 | 452 | |
| 4.1 | Head Administrative Assistant | | 0 | 1 | 1 | 100 | 100 | 100 | 100 | |
| | **Total SC Judicial Staff** | | **11** | **15** | **15** | | **2,252** | | **2,214** | |
| | **District Court** | | | | | | | | | |
| 2.1 | Judge | | 4 | 4 | 4 | 330 | 1,320 | 323 | 1,292 | |
| 4.2 | Judicial Secretary | | 2 | 2 | 2 | 80 | 160 | 143 | 292 | |
| 4.1 | Head Administrative Assistant | | 1 | 1 | 1 | 100 | 100 | 100 | 100 | |
| 4.1 | Law Clerk | | 0 | 2 | 2 | 48 | 96 | 96 | 96 | |
| | **Subtotal** | | **7** | **9** | **9** | | **1,676** | | **1,780** | |
| | Probate & Family Court | | | | | | | | | |
| | **Juvenile Court** | | | | | | | | | |
| 2.1 | Judge | | 1.5 | 2 | 2 | 330 | 660 | 370 | 740 | |
| 4.2 | Judicial Secretary | | 1 | 2 | 2 | 80 | 160 | 117 | 235 | |
| 4.2 | Law Clerk | | 0 | 2 | 1 | 48 | 48 | 48 | 48 | |
| 4.1 | Head Administrative Assistant | | 1 | 1 | 1 | 100 | 100 | 100 | 100 | |
| | **Subtotal** | | **3.5** | **7** | | | **968** | | **1,123** | |
| | **Housing Court** | | | | | | | | | |
| 2.1 | Judge | | 0 | 1 | 1 | 330 | 330 | 325 | 325 | |
| 4.2 | Judicial Secretary | | 0 | 1 | 1 | 80 | 80 | 244 | 244 | |
| 4.2 | Law Clerk | | 0 | 1 | 0 | 48 | - | | - | |
| | **Subtotal** | | **0** | **3** | | | **410** | | **569** | |
| | **Visiting Judge** | | | | | | | | | |
| 2.1 | Judge | | 0 | 2 | 2 | 330 | **660** | **332** | **664** | |
| | **Total SC/DC/JC/HC Judicial Staff** | | **21.5** | **36** | | | **5,966** | | **6,350** | |
| | **Support** | | | | | | | | | |
| 3.1 | Entry & waiting | (was 120) | | | 1 | 80 | 80 | 421 | 421 | |
| 3.1 | Reception Desk | (was 64) | | | 1 | 48 | 48 | 421 | 421 | |
| 6.1 | Library/Conference | | | | 1 | 300 | 300 | 252 | 504 | |
| 6.1 | Staff Conference Room | (combined library/conf) | | | 1 | 200 | 200 | | - | |
| 5.2 | Equipment Room | | | | 1 | 80 | 80 | | - | |
| 5.2 | Supply Room | | | | 1 | 80 | 80 | | - | |
| 5.1 | File Room | | | | 3 | 80 | 240 | | - | |
| 7.22 | Kitchenette | | | | 1 | 30 | 30 | | - | |
| | **Subtotal** | | | | | | **1,058** | | **1,346** | |
| | **Total NSF- Judicial Offices** | | | | | | **7,024** | | **7,696** | |
| | **Departmental Gross Factor** | | | | | | **1.25** | | **1.61** | |
| | **Department Gross Square Feet** | | | | | | **8,780** | | **12,409** | |

Notes:
1. Includes 30sf toilet and 10sf coat closet
2. Support area to be located within shared (DC/PFC/JC/HC) judicial suite area with circulation capacity to SC judicial offices
   If judicial offices are spanning multiple floors, shared support spaces should be evaluated to determine if any duplication is necessary.
3. Superior Court judicial offices to be located adjacent to SC courtrooms; all other judicial offices can be arranged in collegial suites
4. Law Clerk and Judicial Sectretary may be located near but not directly adjeacent to SC Judge's Lobby

SALEM TRIAL COURT
Floor Area Calculations G:\6290 - Salem Trial Court\01_General\Final Report\Electronic Files\Chapter 5\Salem-area-calc_STUDY.xls 4

## TRANSACTION OFFICES

**SUPERIOR COURT: Clerk Magistrate**

| Data Sheet Ref | Area Description | PER PROGRAM Staff Existing | Staff Projected | Units | Area Per Unit | NSF | AS DRAWN Area Per Unit | NSF | Notes |
|---|---|---|---|---|---|---|---|---|---|
| | **Staff** | | | | | | | | |
| 4.1 | Clerk Magistrate | 1 | 1 | 1 | 180 | 180 | 183 | 183 | |
| 4.1 | 1st Assistant Clerk Magistrate | 1 | 1 | 1 | 140 | 140 | 155 | 155 | |
| 4.2 | Supervisory Clerical | 1 | 2 | 2 | 80 | 160 | 73 | 147 | |
| 4.2 | Clerical | 17 | 18 | 18 | 64 | 1,152 | 64 | 1,152 | |
| | **Subtotal** | **20** | **22** | | | **1,632** | | **1,637** | |
| | **Support** | | | | | | | | |
| 3.1 | Transaction Counter/ Service | | | 1 | 90 | 90 | 99 | 99 | |
| 3.1 | Transaction Waiting Space | | | 1 | 275 | 275 | 286 | 286 | |
| 6.1 | Public Conference Room | | | 1 | 120 | 120 | 128 | 128 | |
| 6.1 | Staff Conference Room | | | 1 | 300 | 300 | 287 | 287 | |
| 5.2 | Equipment Room | | | 1 | 100 | 100 | 93 | 93 | |
| 5.2 | Supply Room | | | 1 | 100 | 100 | 75 | 75 | |
| 5.1 | Active Records Storage | | | 1 | 1,000 | 1,000 | 1,031 | 1,031 | |
| 5.1 | Evidence Room | | | 1 | 100 | 100 | 77 | 77 | |
| 7.19 | Breakroom (shared) | | | | | | 393 | 393 | |
| | **Subtotal** | | | | | **2,085** | | **2,469** | |
| | **Total NSF- Superior Court Clerk Magistrate** | | | | | **3,717** | | **4,106** | |
| | **Departmental Gross Factor** | | | | | **1.40** | | **1.29** | |
| | **Department Gross Square Feet** | | | | | **5,204** | | **5,299** | |

Notes:
1. Assumes 4 staff positions at the counter at 22.5 sf each, including 30" deep counter and circulation space.
2. Transaction counter will require a small safe to handle cash transactions in the department
3. Assumes 15 people, based on 200sf minimum at 20 sf/person to accommodate 10 people (if >10 people add 15 sf/person)
   Note: initial 20 sf/person includes display space for forms, counter space for filling them out, etc.
4. For depts with 10 people or less, provide 200sf; For depts with greater than 10 people, provide 300sf
5. Assumes high density shelving. Inactive records are stored elsewhere. Calculate actual & projected based on court dept. needs.
6. Additional evidence (i.e. large items) may need to be stored in locked area in basement (storage cage?)
7. Refer to staff support section page 15 for breakroom information

## TRANSACTION OFFICES

**SUPERIOR COURT: Probation**

| Data Sheet Ref | Area Description | PER PROGRAM Staff Existing | Staff Projected | Units | Area Per Unit | NSF | AS DRAWN Area Per Unit | NSF | Notes |
|---|---|---|---|---|---|---|---|---|---|
| | **Staff** | | | | | | | | |
| 4.1 | Chief Probation Officer | 1 | 1 | 1 | 180 | 180 | 263 | 263 | |
| 4.1 | 1st Assistant Chief Probation Officer | 0 | 1 | 1 | 140 | 140 | 113 | 113 | |
| 4.1 | Assistant Chief Probation Officer | 1 | 1 | 1 | 140 | 140 | 106 | 106 | |
| 4.1 | Probation Officer | 7 | 8 | 8 | 100 | 800 | 101 | 806 | |
| 4.2 | Associate Probation Officer | 1 | 2 | 2 | 80 | 160 | 101 | 203 | |
| 4.2 | Supervisory Clerical | 0 | 1 | 1 | 80 | 80 | 90 | 90 | |
| 4.2 | Clerical | 4 | 6 | 6 | 64 | 384 | 74 | 442 | |
| | **Subtotal** | **14** | **20** | | | **1,884** | | **2,023** | |
| | **Support** | | | | | | | | |
| 3.1 | Transaction Counter/ Service | | | 1 | 90 | 90 | 99 | 99 | |
| 3.1 | Transaction Waiting Space | | | 1 | 200 | 200 | 257 | 257 | |
| 6.1 | Staff Conference Room | | | 0 | 0 | - | - | - | |
| 6.1 | Interview Room/ Intake | | | 1 | 120 | 120 | 145 | 145 | |
| 3.2 | Drug Testing Toilet Room w/storage | | | 1 | 80 | 80 | 87 | 87 | |
| 5.2 | Equipment Room | | | 1 | 100 | 100 | 88 | 88 | |
| 5.2 | Supply Room | | | 1 | 100 | 100 | 78 | 78 | |
| 5.1 | Active Record Storage | | | 1 | 200 | 200 | 190 | 190 | |
| 7.19 | Breakroom (shared) | | | | | | 393 | 393 | |
| | **Subtotal** | | | | | **890** | | **944** | |
| | **Total NSF- Superior Court Probation** | | | | | **2,774** | | **2,967** | |
| | **Departmental Gross Factor** | | | | | **1.40** | | **1.27** | |
| | **Department Gross Square Feet** | | | | | **3,884** | | **3,780** | |

Notes:
1. Assumes 4 staff positions at the counter at 22.5 sf each, including 30" deep counter and circulation space.
   Note: initial 20 sf/person includes display space for forms, counter space for filling them out, etc.
2. Transaction counter will require a small safe to handle cash transactions in the department.
3. Assumes 10 people, based on 200sf minimum at 20 sf/person to accommodate 10 people (if >10 people add 15 sf/person)
4. For depts with 10 people or less, provide 200sf; For depts with greater than 10 people, provide 300sf. Locate adjacent to intake rooms.
5. Assumes high density shelving. Inactive records are stored elsewhere. Calculate actual & projected based on court dept. needs.
6. Refer to staff support section page 15 for breakroom information.

## TRANSACTION OFFICES

**DISTRICT COURT: Clerk Magistrate**

| Data Sheet Ref | Area Description | PER PROGRAM Staff Existing | Staff Projected | Units | Area Per Unit | NSF | AS DRAWN Area Per Unit | NSF | Notes |
|---|---|---|---|---|---|---|---|---|---|
| | **Staff** | | | | | | | | |
| 4.1 | Clerk Magistrate | 1 | 1 | 1 | 180 | 180 | 225 | 225 | |
| 4.1 | 1st Assistant Clerk Magistrate | 0 | 1 | 1 | 140 | 140 | 169 | 169 | |
| 4.1 | Assistant Clerk Magistrate | 5 | 5 | 5 | 120 | 600 | 138 | 956 | |
| 4.2 | Supervisory Clerical | 1 | 1 | 1 | 80 | 80 | 110 | 110 | |
| 4.2 | Clerical | 16 | 18 | 18 | 64 | 1,152 | 63 | 1,134 | |
| | **Subtotal** | **23** | **26** | | | **2,152** | | **2,594** | |
| | **Support** | | | | | | | | |
| 3.1 | Transaction Counter/ Service | | | 1 | 90 | 90 | 95 | 95 | |
| 3.1 | Transaction Waiting Space | | | 1 | 300 | 300 | 300 | 300 | |
| 6.1 | Public Conference Room | | | 1 | 120 | 120 | 121 | 121 | |
| 6.2 | Hearing Room | | | 2 | 300 | 600 | 261 | 522 | |
| 6.1 | Staff Conference Room | | | 1 | 200 | 200 | 195 | 195 | |
| 5.2 | Equipment Room | | | 1 | 100 | 100 | 93 | 93 | |
| 5.2 | Supply Room | | | 1 | 100 | 100 | 93 | 93 | |
| 5.1 | Active Records Storage | | | 1 | 1,500 | 1,500 | 727 | 1,455 | |
| 5.1 | Evidence Room | | | 1 | 100 | 100 | 88 | 88 | |
| 7.19 | Breakroom (shared) | | | | | | | | |
| | **Subtotal** | | | | | **3,110** | | **2,962** | |
| | **Total NSF- District Court Clerk Magistrate** | | | | | **5,262** | | **5,556** | |
| | **Departmental Gross Factor** | | | | | **1.40** | | **1.37** | |
| | **Department Gross Square Feet** | | | | | **7,367** | | **7,632** | |

Notes:
1. Assumes 4 staff positions at the counter at 22.5 sf each, including 30" deep counter and circulation space.
2. Transaction counter will require a small safe to handle cash transactions in the department.
3. Assumes 25 people, based on 200sf minimum at 20 sf/person to accommodate 10 people (if >10 people add 15 sf/person)
   Note: initial 20 sf/person includes display space for forms, counter space for filling them out, etc.
4. Assumes 15 people at 20 sf/person. / Assumes large hearings to be conducted in Housing Court ctrm 4 days/wk
   when Housing Court is not in session: pending agreement between the two depts; re-evaluate if not agreed upon
5. For depts with 10 people or less, provide 200sf; For depts with greater than 10 people, provide 300sf
6. Assumes high density shelving. Inactive records are stored elsewhere. Calculate actual & projected based on court dept. needs.
7. Additional evidence (i.e. large items) may need to be stored in locked area in basement (storage cage?)
8. Refer to staff support section page 15 for breakroom information

9. Central cashier has moved to public lobby support functions for future use by all depts. Each transaction counter will need a small safe to handle cash transactions in the departments

**TRANSACTION OFFICES**

**DISTRICT COURT:Probation**

| Data Sheet Ref | Area Description | PER PROGRAM Staff Existing | Staff Projected | Units | Area Per Unit | NSF | AS DRAWN Area Per Unit | NSF | Notes |
|---|---|---|---|---|---|---|---|---|---|
| | **Staff** | | | | | | | | |
| 4.1 | Chief Probation Officer | 1 | 1 | 1 | 180 | 180 | 217 | 217 | |
| 4.1 | 1st Assistant Chief Probation Officer | 0 | 1 | 1 | 140 | 140 | 189 | 189 | |
| 4.1 | Assistant Chief Probation Officer | 2 | 4 | 4 | 140 | 560 | 360 | 721 | |
| 4.1 | Probation Officer | 13 | 15 | 15 | 100 | 1,500 | 109 | 1,630 | |
| 4.2 | Associate Probation Officer | 2 | 4 | 4 | 80 | 320 | 76 | 76 | |
| 4.2 | Supervisory Clerical | 1 | 1 | 1 | 80 | 80 | 72 | 72 | |
| 4.2 | Clerical | 7 | 9 | 9 | 64 | 576 | 64 | 576 | |
| | **Subtotal** | **26** | **35** | | | **3,356** | | **3,481** | |
| | **Support** | | | | | | | | |
| 3.1 | Transaction Counter/ Service | | | 1 | 90 | 90 | 90 | 90 | |
| 3.1 | Transaction Waiting Space | | | 1 | 275 | 275 | 306 | 306 | |
| 6.1 | Staff Conference Room | | | | 200 | - | 209 | 209 | |
| 6.1 | Interview Room/ Intake | | | 1 | 120 | 120 | 128 | 128 | |
| 3.2 | Drug Testing Toilet Room w/storage | | | 1 | 80 | 80 | 76 | 76 | |
| 5.2 | Equipment Room | | | 1 | 100 | 100 | 104 | 104 | |
| 5.2 | Supply Room | | | 1 | 100 | 100 | 65 | 65 | |
| 5.1 | Active Record Storage | | | 1 | 200 | 200 | 182 | 182 | |
| 7.19 | Breakroom (shared) | | | | | | | | |
| | **Subtotal** | | | | | **965** | | **1,160** | |
| | **Total NSF- District Court Probation** | | | | | **4,321** | | **4,641** | |
| | **Departmental Gross Factor** | | | | | **1.40** | | **1.43** | |
| | **Department Gross Square Feet** | | | | | **6,049** | | **6,650** | |

Notes:
1. Assumes 4 staff positions at the counter at 22.5 sf each, including 30" deep counter and circulation space.
2. Transaction counter will require a small safe to handle cash transactions in the department.
3. Assumes 15 people, based on 200sf minimum at 20 sf/person to accommodate 10 people (if >10 people add 15 sf/person)
4. For depts with 10 people or less, provide 200sf; For depts with greater than 10 people, provide 300sf
5. Assumes high density shelving. Inactive records are stored elsewhere. Calculate actual & projected based on court dept. needs.
6. Refer to staff support section page 15 for breakroom information.

## TRANSACTION OFFICES

**JUVENILE COURT: Clerk Magistrate**

| Data Sheet Ref | Area Description | PER PROGRAM Staff Existing | Staff Projected | Units | Area Per Unit | NSF | AS DRAWN Area Per Unit | NSF | Notes |
|---|---|---|---|---|---|---|---|---|---|
| | **Staff** | | | | | | | | |
| 4.1 | Clerk Magistrate | 1 | 1 | 1 | 180 | 180 | 149 | 149 | |
| 4.1 | 1st Assistant Clerk Magistrate | 0 | 0 | 0 | 140 | - | | | |
| 4.1 | Assistant Clerk Magistrate | 1 | 1 | 1 | 120 | 120 | 129 | 129 | |
| 4.2 | Supervisory Clerical | 1 | 2 | 2 | 80 | 160 | 98 | 195 | |
| 4.2 | Clerical | 7 | 9 | 9 | 64 | 576 | 70 | 632 | |
| | **Subtotal** | **10** | **13** | | | **1,036** | | **1,105** | |
| | **Support** | | | | | | | | |
| 3.1 | Transaction Counter/ Service | | | 1 | 90 | 90 | 83 | 83 | |
| 3.1 | Transaction Waiting Space | | | 1 | 275 | 275 | 255 | 255 | |
| 6.1 | Public Conference Room | | | 1 | 120 | 120 | 120 | 120 | |
| 6.2 | Hearing Room | | | 1 | 300 | 300 | 337 | 337 | |
| 6.1 | Staff Conference Room | | | 1 | 200 | 200 | 149 | 149 | |
| 5.2 | Equipment Room | | | 1 | 100 | 100 | 79 | 79 | |
| 5.2 | Supply Room | | | 1 | 100 | 100 | 92 | 92 | |
| 5.1 | Active Records Storage | | | 1 | 500 | 500 | 484 | 484 | |
| 5.1 | Evidence Room | | | 1 | 80 | 80 | 75 | 75 | |
| 7.19 | Breakroom (shared) | | | | | | | 225 | |
| | **Subtotal** | | | | | **1,765** | | **1,899** | |
| | **Total NSF- Juvenile Court Clerk Magistrate** | | | | | **2,801** | | **3,004** | |
| | **Departmental Gross Factor** | | | | | **1.40** | | **1.67** | |
| | **Department Gross Square Feet** | | | | | **3,921** | | **5,024** | |

Notes:
1. Assumes 4 staff positions at the counter at 22.5 sf each, including 30" deep counter and circulation space.
2. Transaction counter will require a small safe to handle cash transactions in the department.
3. Assumes 15 people, based on 200sf minimum at 20 sf/person to accommodate 10 people (if >10 people add 15 sf/person)
   Note: initial 20 sf/person includes display space for forms, counter space for filling them out, etc.
4. Assumes 15 people at 20 sf/person
5. For depts with 10 people or less, provide 200sf; For depts with greater than 10 people, provide 300sf
6. Assumes high density shelving. Inactive records are stored elsewhere. Calculate actual & projected based on court dept. needs.
7. Additional evidence (i.e. large items) may need to be stored in locked area in basement (storage cage?)
8. Refer to staff support section page 15 for breakroom information

## TRANSACTION OFFICES

**JUVENILE COURT: Probation**

| Data Sheet Ref | Area Description | PER PROGRAM Staff Existing | Staff Projected | Units | Area Per Unit | NSF | AS DRAWN Area Per Unit | NSF | Notes |
|---|---|---|---|---|---|---|---|---|---|
| | **Staff** | | | | | | | | |
| 4.1 | Chief Probation Officer | 1 | 1 | 1 | 180 | 180 | 176 | 176 | |
| 4.1 | 1st Assistant Chief Probation Officer | 0 | 1 | 1 | 140 | 140 | 140 | 132 | |
| 4.1 | Assistant Chief Probation Officer | 1 | 2 | 2 | 140 | 280 | 118 | 237 | |
| 4.1 | Probation Officer | 6 | 7 | 7 | 100 | 700 | 100 | 703 | |
| 4.2 | Associate Probation Officer | 0 | 1 | 1 | 80 | 80 | 101 | 101 | |
| 4.2 | Supervisory Clerical | 0 | 1 | 1 | 80 | 80 | 82 | 82 | |
| 4.2 | Clerical | 1 | 3 | 3 | 64 | 192 | 73 | 220 | |
| | **Subtotal** | **9** | **16** | | | **1,652** | | **1,651** | |
| | **Support** | | | | | | | | |
| 3.1 | Transaction Counter/ Service | | | 1 | 90 | 90 | 90 | 90 | |
| 3.1 | Transaction Waiting Space | | | 1 | 200 | 200 | 249 | 249 | |
| 6.1 | Staff Conference Room | | | 0 | 200 | - | 193 | 193 | |
| 6.1 | Interview Room/ Intake | | | 1 | 120 | 120 | 120 | 120 | |
| 3.2 | Drug Testing Toilet Room w/storage | | | 1 | 80 | 80 | 77 | 77 | |
| 5.2 | Equipment Room | | | 1 | 80 | 80 | 214 | 214 | |
| 5.2 | Supply Room | | | 1 | 80 | 80 | 119 | 119 | |
| 5.1 | Active Record Storage | | | 1 | 200 | 200 | 199 | 199 | |
| 7.19 | Breakroom (shared) | | | | | | | | |
| | **Subtotal** | | | | | **850** | | **1,261** | |
| | **Total NSF- Juvenile Court Probation** | | | | | **2,502** | | **2,912** | |
| | **Departmental Gross Factor** | | | | | **1.40** | | **1.47** | |
| | **Department Gross Square Feet** | | | | | **3,503** | | **4,274** | |

Notes:
1. Assumes 4 staff positions at the counter at 22.5 sf each, including 30" deep counter and circulation space.
2. Transaction counter will require a small safe to handle cash transactions in the department
3. Assumes 15 people, based on 200sf minimum at 20 sf/person to accommodate 10 people (if >10 people add 15 sf/person
4. For depts with 10 people or less, provide 200sf; For depts with greater than 10 people, provide 300sl
5. Assumes high density shelving. Inactive records are stored elsewhere. Calculate actual & projected based on court dept. needs.
6. Refer to staff support section page 15 for breakroom information.

## TRANSACTION OFFICES

**HOUSING COURT: Clerk Magistrate**

| Data Sheet Ref | Area Description | PER PROGRAM Staff Existing | Staff Projected | Units | Area Per Unit | NSF | AS DRAWN Area Per Unit | NSF | Notes |
|---|---|---|---|---|---|---|---|---|---|
| | **Staff** | | | | | | | | |
| 4.1 | Clerk Magistrate | 1 | 1 | 1 | 180 | 180 | 176 | 176 | |
| 4.1 | 1st Assistant Clerk Magistrate | 1 | 1 | 1 | 140 | 140 | 133 | 133 | |
| 4.1 | Assistant Clerk Magistrate | 1 | 1 | 1 | 120 | 120 | 121 | 121 | |
| 4.1 | Chief Housing Specialist | 1 | 1 | 1 | 180 | 180 | 190 | 190 | |
| 4.2 | Housing Specialist | 6 | 6 | 6 | 80 | 480 | 63 | 380 | |
| 4.2 | Supervisory Clerical | 2 | 2 | 2 | 80 | 160 | 89 | 178 | |
| 4.2 | Clerical | 4 | 4 | 4 | 64 | 256 | 72 | 647 | |
| | **Subtotal** | **16** | **16** | | | **1,516** | | **1,825** | |
| | **Support** | | | | | | | | |
| 3.1 | Transaction Counter/ Service | | | 1 | 90 | 90 | 99 | 99 | |
| 3.1 | Transaction Waiting Space | | | 1 | 275 | 275 | 295 | 295 | |
| 6.1 | Public Conference Room | | | 1 | 120 | 120 | 143 | 143 | |
| 6.2 | Hearing Room | | | 0 | 300 | - | | | |
| 6.1 | Mediation Room | | | 2 | 150 | 300 | 139 | 278 | |
| 6.1 | Staff Conference Room | | | 0 | 200 | - | | | |
| 5.2 | Equipment Room / Supply (combined) | | | 1 | 100 | 100 | 41 | 41 | |
| 5.2 | Supply Room | | | 0 | 100 | - | | | |
| 5.1 | Active Records Storage | | | 1 | 150 | 150 | 71 | 71 | |
| 7.19 | Breakroom (shared) | | | | | | | | |
| | **Subtotal** | | | | | **1,035** | | **927** | |
| | **Total NSF- Housing Court Clerk Magistrate** | | | | | **2,551** | | **2,752** | |
| | **Departmental Gross Factor** | | | | | **1.40** | | **1.39** | |
| | **Department Gross Square Feet** | | | | | **3,571** | | **3,823** | |

Notes:
1. Assumes 4 staff positions at the counter at 22.5 sf each, including 30" deep counter and circulation space.
2. Transaction counter will require a small safe to handle cash transactions in the department.
3. Assumes 25 people, based on 200sf minimum at 20 sf/person to accommodate 10 people (if >10 people add 15 sf/person)
   Note: initial 20 sf/person includes display space for forms, counter space for filling them out, etc.
4. Assumes high density shelving. Inactive records are stored elsewhere. Calculate actual & projected based on court dept. needs.
5. Refer to staff support section page 15 for breakroom information.

**COURT SUPPORT**

**CENTRAL DETAINEE HOLDING and COURT OFFICERS**

| Data Sheet Ref | Area Description | | | PER PROGRAM Units | Area Per Unit | NSF | AS DRAWN Area Per Unit | NSF | Notes |
|---|---|---|---|---|---|---|---|---|---|
| | **Adult Central Detainee Holding** | | | | | | | | |
| 7.4 | Group Holding Cell (Male) | | | 3 | 150 | 450 | 153 | 458 | |
| 7.4 | Individual Holding Cell (Male) | | | 7 | 70 | 490 | 73 | 438 | |
| 7.4 | Group Holding Cell (Female) | | | 2 | 150 | 300 | 150 | 300 | |
| 7.4 | Individual Holding Cell (Female) | | | 3 | 70 | 210 | 73 | 219 | |
| 7.4 | Observation Cell | | | 1 | 70 | 70 | 73 | 146 | |
| | **Total Adult Cells** | | | **16** | | **1,520** | | **1,561** | |
| | **Juvenile Central Detainee Holding** | | | | | | | | |
| 7.4 | Group Holding Cell (Male Juvenile) | | | 1 | 150 | 150 | 139 | 139 | |
| 7.4 | Individual Holding Cell (Male Juvenile) | | | 1 | 70 | 70 | 72 | 72 | |
| 7.4 | Group Holding Cell (Female Juvenile) | | | 1 | 150 | 150 | 139 | 139 | |
| 7.4 | Individual Holding Cell (Female Juvenile) | | | 1 | 70 | 70 | 72 | 72 | |
| 7.4 | Observation Cell | | | 1 | 70 | 70 | 68 | 68 | |
| | **Total Juvenile Cells** | | | **5** | | **510** | | **490** | |
| | **Detainee Holding Support** | | | | | | | | |
| 7.2 | Detainee Staging Area | | | 1 | 200 | 200 | 129 | 129 | |
| 7.2 | Detainee Entry Trap (w/double door) | | | 2 | 40 | 80 | 72 | 145 | |
| 7.3 | Control Room | | | 1 | 200 | 200 | 225 | 225 | |
| 7.21 | Staff Toilet | | | 1 | 50 | 50 | - | - | |
| 7.6 | Property Storage Closet | | | 1 | 80 | 80 | 64 | 64 | |
| 10.15 | Shower/ Janitor Closet | | | 1 | 30 | 30 | - | - | |
| 7.5 | Attorney Waiting Area | | | 1 | 30 | 30 | - | - | |
| 7.5 | Attorney-Client Conference (Accessible) | | | 2 | 80 | 160 | 122 | 244 | |
| 7.3 | Transport Officer's Room | | | 1 | 100 | 100 | 111 | 111 | |
| 7.1 | Vehicle Sallyport | | | 1 | 600 | 600 | 507 | 507 | |
| | **Subtotal** | **0** | **0** | | | **1,530** | | **1,425** | |
| | **Total NSF - Detainee Holding** | | | | | **3,560** | | **3,476** | |
| | **Departmental Gross Factor** | | | | | **1.75** | | **2.22** | |
| | **Department Gross Square Feet** | | | | | **6,230** | | **7,708** | |
| | **Court Officer's Area** | | | | | | | | |
| | **Staff** | | | | | | | | |
| 4.1 | Chief Court Officer | 2 | 2 | 2 | 120 | 240 | 135 | 270 | |
| 7.19 | Court Officers' Break Room | 20 | 0 | 1 | 150 | 150 | 151 | 151 | |
| | **Subtotal** | **22** | **2** | | | **390** | | **421** | |
| | **Total NSF - Court Officers' Area** | | | | | **390** | | **421** | |
| | **Departmental Gross Factor** | | | | | **1.10** | | **1.04** | |
| | **Department Gross Square Feet** | | | | | **429** | | **436** | |

Notes:
1. Adjacent to Control Room.
2. C.O.'s share one room; includes kitchenette. Staffing: 2 per ctrm, 3 at entry, 1 ACO per floor, 1 CO in detention plus growth. (2/CR=11 + 3/entry + 4 @1 per flr. + detention + 2 Ch. CO + 1 = 22)
3. Number of holding cells to be determined by the custody count at each locatior
4. Within or directly adjacent to control room
5. One conference room for every 6 cells.
6. Located as close to control room as possible.

## COURT SUPPORT

**JURY POOL, TRIAL COURT SECURE WAITING AREA**
**INTERPRETER SERVICES and COURT REPORTERS**

| Data Sheet Ref | Area Description | | | PER PROGRAM Units | Area Per Unit | NSF | AS DRAWN Area Per Unit | NSF | Notes |
|---|---|---|---|---|---|---|---|---|---|
| | **Jury Pool** | | | | | | | | |
| 7.7 | Jury Check-in area | | | 1 | 100 | 100 | 140 | 140 | |
| 7.7 | Jury Waiting Area | | | 1 | 2,160 | 2,160 | 2,136 | 2,136 | |
| 7.7 | A/V Storage Closet | | | 1 | 15 | 15 | - | - | |
| 7.7 | Jury Toilets | | | 2 | 50 | 100 | 78 | 156 | |
| 7.7 | Vending alcove | | | 1 | 30 | 30 | 38 | 38 | |
| 7.7 | Public Telephone alcove | | | 1 | 10 | 10 | 7 | 7 | |
| | **Subtotal** | | | | | **2,415** | | **2,477** | |
| | **Total NSF - Jury Pool** | | | | | **2,415** | | **2,477** | |
| | **Departmental Gross Factor** | | | | | **1.10** | | **1.01** | |
| | **Department Gross Square Feet** | | | | | **2,657** | | **2,502** | |
| 7.8 | **Trial Court Secure Waiting Area** | | | | | | | | |
| | **Staff** | | | | | | | | |
| 4.1 | Office | 0 | 0 | 1 | 120 | 120 | | 123 | |
| 4.2 | Receptionist | 0 | 0 | 0 | 80 | - | | - | |
| | **Subtotal** | **0** | **0** | | | **120** | | **123** | |
| | Support | | | | | | | | |
| 7.8 | Waiting/ Play Area | | | 0 | 120 | - | | | |
| 7.14 | Toilet | | | 0 | 50 | - | | | |
| 7.22 | Kitchenette | | | 0 | 30 | - | | | |
| 6.1 | Conference Room | | | 0 | 100 | - | | | |
| | **Subtotal** | | | | | **-** | | | |
| | **Total NSF - Secure Waiting Area** | | | | | **120** | | **123** | |
| | **Departmental Gross Factor** | | | | | **1.25** | | **1.00** | |
| | **Department Gross Square Feet** | | | | | **150** | | **123** | |
| | **Interpreter Services** | | | | | | | | |
| 7.9 | Office area | | | 1 | 200 | 200 | | 168 | |
| | **Total NSF - Interpreter Services** | | | | | **200** | | **168** | |
| | **Departmental Gross Factor** | | | | | **1.10** | | **1.00** | |
| | **Department Gross Square Feet** | | | | | **220** | | **168** | |
| | **Court Reporters** | | | | | | | | |
| 7.10 | Office area | | | 1 | 200 | 200 | | 177 | |
| | **Total NSF - Court Reporters** | | | | | **200** | | **177** | |
| | **Departmental Gross Factor** | | | | | **1.10** | | **1.00** | |
| | **Department Gross Square Feet** | | | | | **220** | | **177** | |

Notes:
1. Accommodates 100 persons, as follows: Provide a 70/30 split between chair seating and table seating.
   Chair seating for 70 persons @ 15 sf/person; tables for 30 persons @ 25 sf/person = 1, 800sf
   Size to be adjusted based on actual # of jurors from Jury Commissioner; if >100 persons, add 15 sf/person
2. This area should be located adjacent to main entry
3. Shared workspace off of public circulation.

## COURT SUPPORT

**PUBLIC LOBBY and STAFF SUPPORT**

| Data Sheet Ref | Area Description | PER PROGRAM Units | Area Per Unit | NSF | AS DRAWN Area Per Unit | NSF | Notes |
|---|---|---|---|---|---|---|---|
| | **Public Lobby** | | | | | | |
| 7.11 | Weather Vestibule | 1 | 200 | 200 | - | - | |
| 7.12 | Security Screening & Queuing Area | 1 | 200 | 200 | 196 | 196 | |
| 7.11 | Information Desk | 1 | 64 | 64 | 191 | 191 | |
| 7.11 | Lobby | 1 | 3,000 | 3,000 | 869 | 869 | |
| 7.13 | Concession/ Vending/ Storage | 1 | 150 | 150 | 155 | 155 | |
| | **Subtotal** | | | **3,614** | | **1,411** | |
| | **Public Lobby Support Functions** | | | | | | |
| 7.16 | Main Entry Security Office | 1 | 150 | 150 | 160 | 160 | |
| 7.17 | Police Room | 1 | 120 | 120 | 128 | 128 | |
| 7.18 | Central Cashier | 1 | 150 | 150 | 176 | 176 | |
| TBD | Server Room | 1 | 100 | 100 | 107 | 107 | |
| | **Subtotal** | | | **520** | | **571** | |
| | **Total NSF - Public Areas** | | | **4,134** | | **1,982** | |
| | **Departmental Gross Factor** | | | **1.30** | | **1.00** | |
| | **Department Gross Square Feet** | | | **5,374** | | **1,982** | |
| | **Staff Support** | | | | | | |
| 7.19 | Staff Breakroom w/kitchenette | 3 | 200 | 600 | 279 | 828 | |
| 7.20 | Staff Female Shower/ Lockers/ Toilet | 1 | 230 | 230 | 132 | 132 | |
| 7.20 | Staff Male Shower/ Lockers/ Toilet | 1 | 500 | 500 | 336 | 336 | |
| | **Subtotal** | | | **1,330** | | **1,296** | |
| | **Total NSF - Staff Support** | | | **1,330** | | **1,296** | |
| | **Departmental Gross Factor** | | | **1.10** | | **1.00** | |
| | **Department Gross Square Feet** | | | **1,463** | | **1,296** | |

Notes:
1. 200sf minimum
2. Includes 2 security screening stations. 200sf min is placeholder; needs to be increased; pending further research
3. Assumes 200sf to serve approx. 45-50 staff.
4. Breakrooms should be conveniently located in a neutral area so that they can be easily shared.
   Assumes shared use by departments; Exception: where staff exceeds 45-50 people, provide designated breakroom
5. # of lockers will be determined by number of staff. **ASSUME 80 lockers and 1,200 SF** for the study (32 CO's for courtrooms (2x16 courtrooms) + 6 (3 @ each entrance x2) + 10 (1/floor new facility, 1/floor PFC) + 19 Maintenance Staff = *66 + 10 + 76 + 4 growth = 80 (Based on 1 per court officer / 1 per maintenance staff + 10 addl court staff)*

(#CO + # maintenance + 10 court staff) = # staff x 15sf/person = sf (distr. appropriately between male & female lockers) = 80 x 15SF = 1200SF

6. Note: must be accessible from both public and staff circulation
7. Gunlocker housed inside security office.
8. Court Officer (CO) and Assistnat Court Officers (ACO) shall have full sized lockers. Maintenance staff and all other staff to have half sized lockers. Maintenance staff lockers shall be separate and located near maintenance offices/ floor. Another staff to share with CO and ACO.

**COURT OPERATIONS**

**LAW LIBRARY**

| Data Sheet Ref | Area Description | PER PROGRAM Staff Existing | Staff Projected | Units | Area Per Unit | NSF | AS DRAWN Area Per Unit | NSF | Notes |
|---|---|---|---|---|---|---|---|---|---|
| | **Staff** | | | | | | | | |
| 4.1 | Head Law Librarian | 1 | 1 | 1 | 150 | 150 | 139 | 139 | |
| 4.1 | Reference Librarian | 1 | 1 | 1 | 100 | 100 | 82 | 82 | |
| 4.1 | Law Library Assistant | 3 | 3 | 1 | 100 | 100 | 118 | 118 | |
| | **Subtotal** | **5** | **5** | | | **350** | | **339** | |
| | **Library Service Area** | | | | | | | | |
| 8.1 | Public Entrance | | | 1 | 100 | 100 | 115 | 155 | |
| 8.1 | Stand-up Public Access Computers | | | 5 | 15 | 75 | 15 | 77 | |
| 8.1 | Reference Computer Stations | | | 6 | 60 | 360 | 54 | 294 | |
| 8.1 | Public Use Equipment Alcove | | | 1 | 90 | 90 | - | - | |
| | **Support** | | | | | | | | |
| 8.1 | Reference/ Circulation Desk | | | 1 | 200 | 200 | 219 | 219 | |
| 8.1 | Collections | | | 1 | 2,500 | 2,500 | 1,348 | 1,348 | |
| 8.1 | Historic Collections | | | 1 | 1,500 | 1,500 | 810 | 810 | |
| 8.1 | Current Periodicals | | | 1 | 150 | 150 | 471 | 471 | |
| 8.1 | Tables/ Chairs | | | 15 | 30 | 450 | 35 | 519 | |
| 8.1 | Computer Workstations | | | 5 | 30 | 150 | 20 | 99 | |
| 8.1 | Microfilm/fiche Center | | | 1 | 90 | 90 | 104 | 104 | |
| 6.1 | Multi-Media Conference Room | | | 1 | 300 | 300 | 206 | 206 | |
| 8.1 | Technical Services Area | | | 1 | 500 | 500 | 561 | 561 | |
| 5.2 | Supply Room | | | 1 | 80 | 80 | 150 | 150 | |
| TBD | Server Room | | | 1 | 40 | 40 | 28 | 28 | |
| 7.21 | Staff Toilet | | | 1 | 50 | 50 | 41 | 41 | |
| | **Subtotal** | | | | | **6,635** | | **5,082** | |
| | **Total NSF- Law Library** | | | | | **6,985** | | **5,421** | |
| | **Departmental Gross Factor** | | | | | **1.10** | | **1.65** | |
| | **Department Gross Square Feet** | | | | | **7,684** | | **8,942** | |

Notes:

1. Confirm collection space needs with Trial Court Law Librarian; sf does not include aisles - they are in grossing factor
2. Computer Workstations @ 60sf per workstation.
3. Assumes 1 microfiche reading station and 2 microfilm storage cabinets @ 2'Wx4'L.
4. Includes 300sf storage
5. Public toilet needs to be nearby or adjacent.
6. Can be located in technical services within view or near circulation desk. A glass wall can provide viewing access.
7. Integrate display area into public entry.
8. Located near technical service area.

## SUPPLEMENTAL OPERATIONS

**DISTRICT ATTORNEY, GRAND JURY**

| Data Sheet Ref | Area Description | PER PROGRAM Staff Existing | Staff Projected | Units | Area Per Unit | NSF | AS DRAWN Area Per Unit | NSF | Notes |
|---|---|---|---|---|---|---|---|---|---|
| | **District Attorney** | | | | | | | | |
| | **Staff** | | | | | | | | |
| 4.1 | Chief DA Prosecutor | 0 | 0 | 0 | 120 | - | 120 | 120 | |
| 4.1 | Supervising DA | 1 | 1 | 1 | 120 | 120 | 120 | 120 | |
| 4.2 | Asst. DA's | 10 | 10 | 10 | 64 | 640 | 64 | 640 | |
| 4.2 | Victim/Witness Advocates | 5 | 8 | 8 | 48 | 384 | 48 | 344 | |
| 4.2 | Support/ Clerical | 5 | 6 | 6 | 48 | 288 | 48 | 288 | |
| 4.2 | Interns | 3 | 3 | 3 | 36 | 108 | 36 | 108 | |
| | **Subtotal** | **24** | **28** | | | **1,540** | | **1,620** | |
| | **Support** | | | | | | | | |
| 9.1 | Reception/ Waiting Area | | | 1 | 100 | 100 | 230 | 230 | |
| 9.1 | Victim/Witness Waiting | | | 1 | 120 | 120 | - | - | |
| 9.1 | Victim/Witness Conference Room | | | 2 | 120 | 240 | 120 | 240 | |
| 7.14 | Toilets | | | 2 | 50 | 100 | 64 | 128 | |
| 6.1 | Conference/ Library | | | | 200 | - | - | - | |
| 5.2 | Equipment/ Supply Room | | | 1 | 80 | 80 | 69 | 69 | |
| 5.1 | Active Record Storage | | | 1 | 150 | 150 | 149 | 149 | |
| 7.22 | Kitchenette | | | 1 | 30 | 30 | 69 | 69 | |
| TBD | Server/ Telephone room | | | 1 | 30 | 30 | 49 | 49 | |
| | **Subtotal** | | | | | **850** | | **934** | |
| | **Total NSF - District Attorney** | | | | | **2,390** | | **2,554** | |
| | **Departmental Gross Factor** | | | | | **1.30** | | **1.57** | |
| | **Department Gross Square Feet** | | | | | **3,107** | | **4,021** | |
| | **Grand Jury** | | | | | | | | |
| | **Support** | | | | | | | | |
| 9.3 | Reception/ Waiting | | | 1 | 100 | 100 | 317 | 317 | |
| 9.3 | Victim/ Witness Waiting Area | | | 1 | 120 | 120 | 88 | 88 | |
| 6.1 | Public Conference Room | | | 2 | 120 | 240 | 117 | 234 | |
| 9.3 | Grand Jury Room | | | 1 | 900 | 900 | 883 | 883 | |
| 7.14 | Toilets | | | 2 | 50 | 100 | 42 | 84 | |
| 7.22 | Kitchenette | | | 0 | 30 | - | - | - | |
| 5.2 | Equipment/ Supply Room | | | | | | | | |
| | **Subtotal** | | | | | **1,460** | | **1,606** | |
| | **Total NSF - Grand Jury** | | | | | **1,460** | | **1,606** | |
| | **Departmental Gross Factor** | | | | | **1.30** | | **1.13** | |
| | **Department Gross Square Feet** | | | | | **1,898** | | **1,812** | |

Notes:

1. Shared Space: refer to District Attorney Support
2. This space is only staffed when Grand Jury is in session.

**SUPPLEMENTAL OPERATIONS**
**ATTORNEYS' ROOM**
**and POLICE PROSECUTORS' ROOM**

| Data Sheet Ref | Area Description | PER PROGRAM Staff Existing | Staff Projected | Units | Area Per Unit | NSF | AS DRAWN Area Per Unit | NSF | Notes |
|---|---|---|---|---|---|---|---|---|---|
| 9.2 | Attorney's Room | | | 1 | 150 | 150 | 162 | 162 | |
| | Subtotal | | | | | 150 | | 162 | |
| | Total NSF - Attorney's Room | | | | | 150 | | 162 | |
| | Departmental Gross Factor | | | | | 1.10 | | 1.00 | |
| | Department Gross Square Feet | | | | | 165 | | 162 | |
| 9.9 | Police Prosecutors' Room | | | 1 | 150 | 150 | | 232 | |
| | Subtotal | | | | | 150 | | 232 | |
| | Total NSF - Police Prosecutors' Room | | | | | 150 | | 232 | |
| | Departmental Gross Factor | | | | | 1.10 | | 1.00 | |
| | Department Gross Square Feet | | | | | 165 | | 232 | |

**SUPPLEMENTAL OPERATIONS**
**ALTERNATIVE DISPUTE RESOLUTION and COURT CLINIC**

| Data Sheet Ref | Area Description | PER PROGRAM Staff Existing | Staff Projected | Units | Area Per Unit | NSF | AS DRAWN Area Per Unit | NSF | Notes |
|---|---|---|---|---|---|---|---|---|---|
| 9.4 | **Alternative Dispute Resolution** | | | | | | | | |
| | **Staff** | | | | | | | | |
| 4.1 | Office | 0 | 0 | 0 | 120 | - | | | |
| 4.2 | Clerical | 0 | 0 | 0 | 64 | - | | | |
| | **Subtotal** | **0** | **0** | | | **-** | | | |
| | **Support** | | | | | | | | |
| 9.4 | Waiting Area | | | 0 | 120 | - | | | |
| 6.1 | Mediation Room | | | 0 | 150 | - | | | |
| 6.1 | Conference Room | | | 0 | 200 | - | | | |
| 5.2 | Equipment/ Supply Room | | | 0 | 80 | - | | | |
| | **Subtotal** | | | | | **-** | | | |
| | **Total NSF- Alternative Dispute Resolution** | | | | | **-** | | | |
| | **Departmental Gross Factor** | | | | | **1.15** | | | |
| | **Department Gross Square Feet** | | | | | **-** | | | |
| 9.5 | **Adult Court Clinic: (SC, DC)** | | | | | | | | |
| | **Staff** | | | | | | | | |
| 4.1 | Clinician's Office | 0 | 0 | 1 | 120 | 120 | | 130 | |
| 4.1 | Social Worker | 0 | 0 | 1 | 120 | 120 | | 130 | |
| | **Subtotal** | **0** | **0** | **2** | | **240** | | **260** | |
| | **Support** | | | | | | | | |
| 9.5 | Reception/ Waiting Area | | | 1 | 120 | 120 | | 177 | |
| | **Subtotal** | | | | | **120** | | **177** | |
| | **Total NSF- Adult Court Clinic** | | | | | **360** | | **437** | |
| | **Departmental Gross Factor** | | | | | **1.15** | | **1.04** | |
| | **Department Gross Square Feet** | | | | | **414** | | **454** | |
| 9.5 | **Juvenile Court Clinic** | **Need to check staffing and requirements for Salem** | | | | | | | |
| | **Staff** | | | | | | | | |
| 4.1 | Clinician's Office | 1 | 1 | 1 | 120 | 120 | | 122 | |
| 4.1 | Social Worker | 0 | 0 | 1 | 120 | 120 | | 123 | |
| | **Subtotal** | **1** | **1** | | | **240** | | **245** | |
| | **Support** | | | | | | | | |
| 9.5 | Reception/ Waiting Area | | | 1 | 120 | 120 | | 122 | |
| | **Subtotal** | | | | | **120** | | **122** | |
| | **Total NSF- Juvenile Court Clinic** | | | | | **360** | | **367** | |
| | **Departmental Gross Factor** | | | | | **1.15** | | **1.04** | |
| | **Department Gross Square Feet** | | | | | **414** | | **380** | |

SALEM TRIAL COURT
Floor Area Calculations G:\6290 - Salem Trial Court\01_General\Final Report\Electronic Files\Chapter 5\Salem-area-calc_STUDY.xls 18

## SUPPLEMENTAL OPERATIONS

**CHILDCARE CENTER and SOCIAL SERVICES**

| Data Sheet Ref | Area Description | PER PROGRAM Staff Existing | Staff Projected | Units | Area Per Unit | NSF | AS DRAWN Area Per Unit | NSF | Notes |
|---|---|---|---|---|---|---|---|---|---|
| | **Childcare Center** | | | | | | | | |
| | **Staff** | | | | | | | | |
| 4.1 | Director's Office | 0 | 0 | 0 | 120 | - | - | - | |
| | **Subtotal** | | | | | - | - | - | |
| | **Support** | | | | | | | | |
| 9.6 | Reception/ Waiting Area | | | 0 | 240 | - | - | - | |
| 9.6 | Multi-Purpose Room | | | 0 | 1,000 | - | - | - | |
| 9.6 | Laundry/ Kitchenette | | | 0 | 30 | - | - | - | |
| 9.6 | Storage Closet | | | 0 | 50 | - | - | - | |
| 7.14 | Toilet | | | 0 | 50 | - | - | - | |
| | **Subtotal** | | | | | - | - | - | |
| | **Total NSF - Childcare Center** | | | | | - | - | - | |
| | **Departmental Gross Factor** | | | | | 1.25 | - | - | |
| | **Department Gross Square Feet** | | | | | - | - | - | |
| 9.7 | **Social Services** | | | | | | | | |
| | Shared Workroom / Conference Room | | | 0 | 150 | - | - | - | |
| | **Subtotal** | | | | | - | - | - | |
| | **Total NSF - Social Services** | | | | | - | - | - | |
| | **Departmental Gross Factor** | | | | | 1.10 | - | - | |
| | **Department Gross Square Feet** | | | | | - | - | - | |

Notes:
1. Childcare Center must be located at grade level for emergency egress.
2. Includes interview alcoves and a reception desk.
3. 1 toilet for staff / 1 toilet for children
4. Social services may include the following entities: CASA

SALEM TRIAL COURT
Floor Area Calculations G:\6290 - Salem Trial Court\01_General\Final Report\Electronic Files\Chapter 5\Salem-area-calc_STUDY.xls 19

4/2/2007

## SUPPLEMENTAL OPERATIONS

DEPARTMENT of REVENUE- Child Support

| Data Sheet Ref | Area Description | PER PROGRAM Staff Existing | Staff Projected | Units | Area Per Unit | NSF | AS DRAWN Area Per Unit | NSF | Notes |
|---|---|---|---|---|---|---|---|---|---|
| | **Staff** | | | | | | | | |
| 4.1 | Regional Counsel | | | | 120 | | - | - | |
| 4.2 | Counsel | | | | 80 | | - | - | |
| 4.2 | Child Support Worker | | | | 64 | | - | - | |
| 4.2 | Clerical | | | | 64 | | - | - | |
| | **Subtotal** | | | | | | - | - | |
| | **Support** | | | | | | | | |
| 9.8 | Transaction Counter/ Service | | | | 90 | | - | - | |
| 9.8 | Transaction Waiting Space | | | | 150 | | - | - | |
| 9.8 | Interview Room | | | | 150 | | - | - | |
| 5.2 | Equipment/ Supply Room | | | | 80 | | - | - | |
| | **Subtotal** | | | | | | - | - | |
| | **Total NSF - Department of Revenue: Child Support** | | | | | | - | - | |
| | **Departmental Gross Factor** | | | | | 1.15 | - | - | |
| | **Department Gross Square Feet** | | | | | | - | - | |

Notes:
1. DOR area must be located near an area that can handle overflow waiting.
2. Assumes 10 people, based on 200 sf minimum at 20 sf/person to accommodate 10 people (if >10 people add 15 sf/person)

## BUILDING SUPPORT

| Data Sheet Ref | Area Description | PER PROGRAM Staff Existing | Staff Projected | Units | Area Per Unit | NSF | AS DRAWN Area Per Unit | NSF | Notes |
|---|---|---|---|---|---|---|---|---|---|
| | **Staff** | | | | | | | | |
| 4.1 | Building Manager | 0 | 0 | 1 | 120 | 120 | | 130 | |
| 4.2 | **Building System Manager Office** | | | 1 | 320 | 320 | | 257 | |
| 4.3 | Clerical | 0 | 0 | 1 | 64 | 64 | | 64 | |
| | **Subtotal** | **0** | **0** | | | **504** | | **451** | |
| | **Support** | | | | | | | | |
| 10.1 | Judge's parking | | | | 350 | - | | - | |
| 10.1 | Secure Staff Parking | | | | 350 | - | | - | |
| 10.2 | Security Equipment Server Room | | | 0 | 120 | - | | - | |
| 10.3 | Central I.T.Computer Room | | | 1 | 200 | 200 | | 170 | |
| 10.4 | Central Mail Room | | | 1 | 150 | 150 | | 232 | |
| 10.5 | Loading Dock/ Receiving Area | | | 1 | 800 | 800 | | 614 | |
| 10.6 | Maintenance Equipment Storage | | | 1 | 300 | 300 | | 254 | |
| 10.7 | Maintenance Shop | | | 1 | 300 | 300 | | 254 | |
| 10.8 | Outdoor Equipment Storage | | | 1 | 500 | 500 | | 424 | |
| 10.9 | Trash/ Recycling Room | | | 1 | 300 | 300 | | 297 | |
| 10.10 | Janitorial Supply Room | | | 1 | 300 | 300 | | 254 | |
| 10.11 | Bicycle Storage Room | | | 0 | 120 | - | | - | |
| 10.12 | **Telephone Room** | | | 1 | 150 | 150 | | 170 | |
| 10.13 | Inactive Records Storage | | | 1 | 1000 | 1,000 | | 803 | |
| | **Subtotal** | | | | | **4,000** | | **3,472** | |
| | **Total NSF - Building Support** | | | | | **4,504** | | **3,923** | |
| | **Departmental Gross Factor** | | | | | **1.25** | | **1.00** | |
| | **Department Gross Square Feet** | | | | | **5,630** | | **3,923** | |

Notes:

1. Confirm with specific site and project requirements; parking based on # of judges + # of Chief CM / Chief PO + 1-2 addt'l each
2. This should be approx 350sf per space if double-loaded arrangement.
3. Minimum 500sf to accommodate storage boxes.
4. **The following builidng support spaces are included in the Grossing Factor for the building:**
   - Life Safety Equipment Room
   - Switchgear Room
   - Tel / Data Closets
   - Electrical Closets/ Emergency Elec Rm
   - Generator Room
   - Janitorial Supply Closets
   - Elevator Machine Room
   - Fire Pump Room

# 6 Regulatory Analysis

## 6.1 The Regulatory Context for Courthouses

The design of courthouses is subject to several sets of regulations in addition to the Massachusetts State Building Code and the Life Safety Code, as listed below.

- 248 CMR The Massachusetts State Plumbing and Gas Code
- 310 CMR Department of Environmental Protection
- 310 CMR 10.00 Wetlands Protection Act
- 521 CMR Massachusetts Architectural Access Board
- 524 CMR Massachusetts State Elevator Regulations
- 527 CMR Massachusetts State Fire Prevention Regulations
- 527 CMR 12.00 The Massachusetts State Electrical Code 2005 edition
- 780 CMR The Massachusetts State Building Code, Sixth Edition
- Massachusetts Environmental Policy Act (MEPA)
- Massachusetts Historical Commission (MHC)
- Massachusetts Department of Environmental Protection Waterways Program, Chapter 91 License Requirements
- The Americans with Disabilities Act (ADA)
- New Limited English Proficiency (LEP) requirements
- Juvenile Justice and Delinquency Prevention Act of 2002

Discussion of some aspects of the above regulations particular to the Trial Court and Registry of Deeds/Family and Probate Court buildings follows.

## 6.2 The Massachusetts State Building Code, Sixth Edition (780 CMR)

The Commonwealth of Massachusetts is currently working towards the adoption of a new statewide building code based on the 2003 edition of the International Building Code (IBC). It is possible that this new code will be adopted in 2008 and it is likely that there will be a six-month period following adoption during which the use of either the existing or the new code will be permitted. It is also possible that this schedule for adoption of the new

code will slip another three to six months. The structural fire resistance requirements, the means of egress provisions, the structural load provisions and the energy conservation provisions are not expected to change significantly.

The proposed Trial Court Building and the Probate and Family Court Building are mixed-use occupancies containing Use Group A-3, Assembly (courtrooms, large conference rooms (50 or more persons)); Use Group, Business (office space); Use Group S-1, Moderate Hazard Storage (compact shelving areas, storage rooms); Use Group S-2, Low Hazard Storage (vehicle parking area, mechanical, electrical, plumbing & fire protection rooms) and Use Group H, Hazardous (fuel storage).

**THE TRIAL COURT BUILDING**

The Trial Court building is more than 70 feet above the mean grade plane and therefore will be classified as a High-Rise Building and must meet the provisions of Section 403 High Rise Buildings. The code requires the Construction Type to be 1B and allows a modification to Type 2A provided the floor construction remains two hours (MSBC 403.3.3.1).

The exterior wall separation between the proposed Trial Court building and the existing Probate and Family Court Building will be approximately 25 feet. An assumed lot line must be drawn between these two buildings providing a reference line to determine the fire separation distance. The fire separation distance determines the fire rating of the exterior wall and the maximum area of exterior wall openings. The lot line should be drawn such that the existing Probate and Family Court building remains compliant with the building code.

There are two open monumental stairs in the Trial Court building that exceed two stories, one serving the main courtroom wing (5 stories) and one serving the Juvenile wing (4 stories). If these stairwells remain open they would create an atrium. There are three options to address this condition. A series of two story openings could be created to avoid floor openings of more than two stories, the open stairs can be enclosed within a two hour fire rated construction; or an atrium can be designed in accordance with Section 404 of the MSBC. An atrium would require an extensive smoke control system as well as one-hour fire separation assemblies or glazing that is deluged by an automatic sprinkler system. This study proposes that the monumental stairways be limited to two story openings.

The First Baptist Church to be renovated for use by the Law Library will be moved to a new location on a newly constructed full basement. The Church is believed to be Type 3B construction. The Law Library and the Trial Court building will be treated as two separate buildings connected by a pedestrian passageway. The pedestrian passageway will require a two-hour separation at each end. Both the basement and the first floor of the Law Library

will require a minimum of two means of egress. A Chapter 34 analysis will be necessary to determine accessibility requirements for these means of egress.

**THE PROBATE AND FAMILY COURT BUILDING/MSBC 780 CMR 34.00**

Renovation of the existing Registry of Deeds/Family and Probate Court for the sole use of the Probate and Family Court was originally included in the scope but has been placed on hold pending funding. Discussion of key points from MSBC which will affect that renovation when it occurs follows.

Chapter 34 of the MSBC will classify the Probate and Family Court Building, which is listed in the National and State Registers of Historic Places, as a Partially Preserved building. This will not apply to the 1970's addition.

- Both the historic Probate and Family Court and the addition have stairs wrapping around elevators. The stair must be enclosed in a rated assembly to be a legal means of egress. The elevator hoistway is an open shaft through this assembly. This condition requires discussion with the local authority having jurisdiction to determine if it must be remedied or if a variance would be supported.
- Assembly spaces (courtrooms) will be renovated and thus will be required to comply with the MSBC for new construction. This includes eliminating the dead-end corridors at the east and west ends of the building. It is proposed that new stairs be added in each wing to meet egress requirements.
- The monumental stair, which is open to three floors, is considered part of the historic portion of the building. Chapter 34 requires that it be enclosed or treated as an atrium with a smoke control system or reduced to a 2-story vertical opening. Closing off the lower level with a rated door will create a two story opening with a "bump down" to the lower level. This approach will require discussions with the local authority having jurisdiction.
- A standpipe and sprinkler system will be required. The fire alarm system must be reconfigured for all renovated spaces.
- The entire building must comply fully with MAAB requirements since the cost of the renovation will exceed 30% of the fair and full cash value of the building. In the addition, the areas of alteration must be compliant with new construction requirements to the fullest extent practical. Where compliance is not feasible due to impracticalities, compliance alternatives must be developed and approved by the local authority having jurisdiction.

## 6.3 Jurisdiction of Local Zoning or Other Authorities

Projects under the authority of the State are not required to meet local zoning ordinances. Nevertheless, a thorough zoning analysis was conducted to ensure that the redevelopment of the site respects local dimensional and site regulations where possible. See Chapter 3 for that analysis.

## 6.4 The Massachusetts State Plumbing Code

The code stipulates a ratio of plumbing fixtures per population based on building use groups. The plumbing code does not list courthouses as a building use group. The closest building use group in the plumbing code is office buildings. Based on office buildings the requirement for fixtures (248 CMR-74) is as follows:

Water closets: 1 per 20 females; 1 per 25 males
Urinals: 33% males
Lavatories: 1 per 50 each sex
Water fountains: 1 per floor

The MSBC establishes the building occupancy load based on 780 CMR 1008.1.1, Actual number; 1008.1.2, Number by table and 1008.3, Number by combination.

Calculations for courthouses must take into account a variety of occupancies from business at 100 GSF per occupant, assembly without fixed seats - unconcentrated (conference rooms) at 15 net SF, courtrooms with fixed benches at one occupant per 18 lineal inches etc. An argument must be constructed to avoid double counting occupancies. For example, juries are either in the courtroom or jury room, but not both places at once. Similarly courtroom waiting spaces are combined with circulation spaces and are sized to keep adequate distance between users; a reasonable assumption must be made concerning the occupancy allowances. The same will apply to file storage areas.

Assumptions and calculations establishing the occupancy load must be reviewed with the authority having jurisdiction (the local plumbing inspector).

## 6.5 Accessibility Laws

There are two different accessibility regulations that apply to courthouses in Massachusetts.

#### MAAB 521 CMR

The state accessibility regulations, 521 CMR, are part of the State Building Code and are enforced by the building inspector and the Massachusetts Architectural Access Board (MAAB). The MAAB requires all new construction to be in full compliance with the

Massachusetts Architectural Access Board Rules and Regulations (521 CMR). 521 CMR does not address courthouses specifically but does cover public areas in public buildings.

**ADA TITLE II: STATE AND LOCAL GOVERNMENT SERVICES**

The Americans with Disabilities Act (ADA) is a civil rights law that is enforced by the U.S. Department of Justice (DOJ). The section of the federal law governing accessibility in state and municipal buildings is Title II of the Americans with Disablilites Act (ADA).

*35.130(a) No qualified individual with a disability shall, on the basis of disability, be excluded from participation in or denied benefits of the services, programs or activities of a public entity, or be subject to discrimination by any public entity.*

It requires that all programs and services offered to the public be accessible. The architectural requirements for compliance with the ADA are embodied in the ADAAG (American with Disabilities Act Guidelines) and are generally, but not always, similar to the requirements of the MAAB. The ADAAG guidelines are reportedly under revision.

It requires that all programs and services offered to the public be accessible. The architectural requirements for compliance with the ADA are embodied in the ADAAG (American with Disabilities Act Guidelines) and are generally, but not always, similar to the requirements of the MAAB. Courthouses should be in compliance with the 2004 revision of ADAAG, even though it has not yet been adopted by the Department of Justice.

The ADAAG guidelines are not implemented or enforced by building code officials, but in the form of formal complaints to the Department of Justice. Title II of the ADA requires that all new construction be non-discriminatory to people with disabilities. The design must support the User Agency's obligations to provide equal benefits to users in the most integrated setting without separate accommodation. It requires accessible features for employees as well as the general public. Where discrepancies exist between the ADAAG and the MAAB the designer shall use the more stringent requirement. All elements of courtrooms, except employee workstations, must be fully accessible to people with disabilities including all paths of travel, maneuvering spaces, seating and auditory components. Courtroom design for new courthouses should be accessible without the use of mechanical lifts.

## 6.6 Environmental Permitting

An environmental permitting analysis was performed in November, 2005, by Epsilon Associates, Inc., for DCAM. (See *Permitting Analysis, J. Michael Ruane Judicial Center/Salem Trial Courts*, Epsilon Associates, November, 2005 in Appendix 2.9). The analysis covered the following:

A Review under the Massachusetts Environmental Policy Act (MEPA)

B Review by the Massachusetts Historical commission (MHC)

C Review in accordance with Massachusetts Department of Environmental Protection Waterways Program, chapter 91 License Requirements

D Review under relevant state and local wetlands regulations

The project underwent MEPA review pursuant to 301 CMR 11.03(10)(b) because it consists of demolition of all or any exterior part of a Historic Structure listed in or located in a Historic District listed in the State Register of Historic Places. All buildings on the project site are listed in the State and National Registers of Historic Places. Three structures are slated for removal from the site and a fourth is slated to have an addition removed and to have the remaining structure moved within the site.

Epsilon Associates prepared and filed an Environmental Notification Form (ENF) on behalf of DCAM on January 2, 2007. Following a public meeting in Salem and opportunity for submission of written public comment, the Secretary of Environmental Affairs issued an ENF Certificate dated February 22, 2007 finding that no additional MEPA review is warranted. MEPA determined that the project proponent can address development and/or refinement of appropriate mitigation for historic and environmental impacts through subsequent state and local review and permitting processes.

Following conclusion of the MEPA review, DCAM entered into consultation with the Massachusetts Historical Commission (MHC) and various Interested Parties to seek ways to avoid, minimize or mitigate the adverse effect of the project on historic resources pursuant to 950 CMR 71.07(3). DCAM expects that the consultation process, which is ongoing at the time of this study, will result in a Memorandum of Agreement identifying appropriate measures to mitigate impacts to historic resources.

## 6.7 Air and Noise

- Department of Environmental Protection plan approval under 310 CMR 7.02 (Air Pollution Control, Plan Approval and Emission Limitations) will be required if any natural gas-fired combustion device has an energy input capacity exceeding 10 million British thermal units per hour (MMBtu/hr). A Comprehensive Plan Approval (CPA) would be required if any individual fuel burning unit firing natural gas has an energy input capacity exceeding 40 MMBtu/hr.

- DEP Construction/Demolition Notification is required 10 working days prior to starting construction or demolition activities (310 CMR 7.09, Air Pollution Control, Dust, Odor, Construction and Demolition).
- Construction or demolition of a structure containing asbestos or asbestos containing materials (ACM) must comply with 310 CMR 7.09(2), 310 CMR 7.15, and the National Emission Standards for Hazardous Air Pollutants (NESHAPs) in 40 Code of Federal Regulations (CFR) Part 61.
- DEP and the Massachusetts Division of Occupational Safety (DOS) must be notified 10 working days prior to demolition, abatement, or removal activities involving ACM. Notification to DEP and DOS must be made using DEP's Asbestos Notification form, ANF-001.
- DEP has discretionary authority to bring enforcement actions in reponse to complaints if they believe that emissions or noise generated by an activity are causing air pollution (including excessive noise resulting from demolition or construction activities).

## 6.8 Sight and Sound Separation for Juveniles

The Juvenile Justice and Delinquency Prevention Act of 2002 limits the placement of juveniles in courthouses and requires that sight and sound separation be maintained at all times, when there are both juveniles and adults held in detainee holding areas. Juveniles placed in facilities where they may have physical contact with adult inmates are frequently the victims of physical, mental, sexual and emotional abuse. Contact that allows oral communication exposes juveniles to adult criminal behavior. The term "contact" is defined to include any physical or sustained sight and sound contact between juvenile offenders in a secure custody status and incarcerated adults.

## 6.9 Limited English Proficiency Requirements for Signage in State Courthouses

New Limited English Proficiency (LEP) requirements are based on Title VI of the Civil Rights Act of 1964, and its implementing regulations. Recipients of federal financial assistance, such as the Massachusetts court system, have an obligation to reduce language barriers that can preclude meaningful access by LEP persons to important programs and activities.

Language access services are a bridge to help those who have not yet acquired, or cannot acquire, English proficiency. They are a bridge to help millions of LEP members of the American public have meaningful access to statements of rights, complaint processes, government benefits and services, and other critical information and programs.

## 6.10 Recommendations During Final Design

- The design team should confirm projected water supply and wastewater discharge volumes for the proposed Trial Court and reconfirm that the sanitary wastewater flows will not exceed the DEP permit threshold of 15,000 gallons per day.
- The Design Team should assess fire flow requirements for the project and reconfirm that adequate fire flow capacity is available with the City of Salem's Water Department.
- The Design Team should assess projected heating and hot water needs for the Project, determine the associated energy input capacity of proposed equipment and compare energy input requirements with thresholds for plan approval. If Limited Plan Approval (LPA) or Comprehensive Plan Approval (CPA) is required, DEP air permitting activities should be initiated once equipment specifications for heating and hot water are established.
- The Design Team should reconfirm availability of natural gas and electric power.
- If the church is included in this project, DCAM should commission a survey of the church and its addition for ACM or other hazardous materials prior to any demolition, moving or renovation.
- Design specifications should include provisions for noise and dust control.
- Design specifications should include provisions for erosion and sediment control.

## 6.11 Preliminary Code Analysis

Preliminary code analysis has been prepared by Rolf Jensen & Associates (see Chapter 34 Evaluation Renovation of the Probate & Family Court Building, Salem, Massachusetts, J. Michael Ruane Judicial Center, Rolf Jensen & Associates, Inc., 4.19.06 and Concept Phase Drawing Review, Salem New Trial Court - Salem, Massachusetts, Rolf Jensen & Associates, Inc., 2.22.07 in the Appendix).

The proposed new Trial Court building is reviewed for conformance with the Massachusetts State Building Code (MSBC), Sixth Edition. It is possible that Massachusetts will adopt the International Building Code in the year 2008. The project is also reviewed in accordance with the Massachusetts Architectural Access Board (MAAB) and the American Disabilities Act Accessibility Guidelines (ADAAG).

An overview of the findings indicate that the building must comply with Section 403 of the MSBC for High-Rise Buildings (MSBC 403.1). Based on a non-separated mixed-use building with A-3 occupancies, the Construction Type should be a minimum of Type 1B. However, since the building will be in accordance with the High-Rise provision of Section 403 a modification from Construction Type 1B to 2A is permitted provided the floor construction remains two hours (MSBC 403.3.3.1).

A strategy must be developed for the optimal way to meet the required fire separation between new Trial Court Building and existing Probate and Family Court Building and between the new Trial Court Building and relocated Church/Law Library with respect to fire rating of exterior walls and the percentage of unprotected openings. An assumed lot line should be shown on the drawings that separate these buildings and provides a reference to determine the fire separation distance. The lot line should be drawn such that the existing Probate and Family Court building exterior walls remain compliant with Tables 705.2 and 705.3 of the MSBC.

## 6.12 Detention Facilities

The Massachusetts State Building Code classifies detainee areas as Institutional Use Group I-3, Occupancy Condition V (780 CMR 308.4.5)

The Americans with Disability Act, Section 11. Judicial, Legislative and Regulatory Facilities, 11.2.3 Courthouse Holding Facilities enumerates ADA requirements. This section has not been incorporated in the Department of Justice accessibility standards and therefore is not enforceable.

# 7 Consensus Alternative / Proposed Project Scope

## 7.1 Scope Overview

The project scope consists of constructing a new 175,412 GSF Trial Court building on a site adjacent to the existing Registry of Deeds/Probate and Family Court building in Salem, Massachusetts. The proposed new J. Michael Ruane Judicial Center will bring together four different court departments in order to offer comprehensive services and take advantage of shared resources.

The unanticipated rapid escalation of construction costs since 2004 has reduced the intended scope of the project to fit the project budget of $106,000,000. The space inventory was reduced from approximately 193,000 GSF to 176,000 GSF. This number will be reconciled with the pre-schematic square footage of 190,071 during schematic design. The final design for the renovation of the 77,000 GSF Probate and Family Court/Registry of Deeds building for the sole use of the Probate and Family Court, part of the original project scope of work, has been postponed pending new funding and will be certified as soon as the funding is in place.

To accommodate a facility of this size adjacent to the Probate and Family Court (PFC) it was necessary to acquire several properties immediately to the west of the PFC. Earlier studies demonstrated the infeasibility of utilizing the Superior Court building and the County Commissioner's building bordering the PFC on the east side.

The site, bounded by the Registry of Deeds/Probate and Family Court building on the east, Federal Street on the south, North Street on the west and Bridge Street on the north is in the process of being assembled by DCAM. Assembling the site consists of the acquisition of the properties at 58, 60 and 62 Federal Street, a municipal parcel currently serving as a ramp interchange between North Street and Bridge Street, and the First Baptist Church of

Salem. Still to come in the process will be the disposition of the Superior Court/County Commissioners building and the existing District Court building on Washington Street. In conjunction with MassHighway, DCAM's traffic engineering consultant (Earth Tech) is proceeding with the design for the reconfiguration of the North Street interchange.

## 7.2 Site Acquisition

The site is made up of five properties: the First Baptist Church (56 Federal Street), three residential properties (58, 60 & 62 Federal Street) and the land currently occupied by the east on/off ramps connecting North Street to Bridge Street. DCAM completed the acquisition of the residential properties in January 2007 and is in the process of finalizing a Purchase and Sale Agreement with the First Baptist Church. Salem's City Council voted unanimously to transfer the municipal property containing the ramp to the Commonwealth. The design for the North Street modifications is at 25% and has been given approval by MassHighway (MHD) to proceed to 75% design. MHD is in the process of planning a public hearing for the changes to their North Street project; the roadwork that is due to the court project will be handled as a change order to the existing improvement project already under construction.

## 7.3 Site Subdivision

The site will be subdivided with a property line located down the center of the access road between the Registry of Deeds/PFC building and the Superior Court building. This will create a separate parcel for the Superior Court / County Commissioner's buildings for future redevelopment.

The Superior Court / County Commissioner's buildings will be served by the steam utility from the Probate and Family Court/Registry of Deeds heating plant as they are currently. The steam line's future disconnection will be addressed in conjunction with the disposition of those buildings and is not included in this project.

## 7.4 Building Disposition

As indicated in the preferred alternative, the three houses at 58, 60 and 62 Federal Street will need to be relocated to make way for the construction of the proposed new Trial Court Building. They currently sit on the proposed location of the First Baptist Church building. DCAM has determined that the buildings themselves can be sold separate from the property on which they sit, and is in the process of developing an RFP for interested parties to acquire the houses and move them off-site.

## 7.5 The First Baptist Church

The First Baptist Church will have its rear addition demolished and will be relocated on the site at the corner of Federal Street and North Street, to be used by the new Trial Court as a Law Library. Prior to demolition of the addition, an existing conditions survey and a hazardous material survey will be required.

## 7.6 Site Preparation Scope

The following steps are necessary to clear the site for construction:

A Remove the three houses ; secure foundations until they can be removed

B Conduct hazardous materials analysis of site for potential abatement

C Remove the three house foundations

D Remove the Church addition and foundations

The reconfiguration of the Federal Street/North Street intersection and interchange must be completed before the following steps to finish the site preparation can be taken:

E Demolish highway ramp

F Relocate utilities in the vicinity of the ramp

G Construct new foundations for the Church

H Move the Church onto the new foundations

I Clear and grub the remainder of the Site

## 7.7 Trial Court Building Overview

The proposed new Trial Court building will sit on the site that slopes approximately 15 feet down from Federal Street to Bridge Street. The building consists of a courtroom "bar" paralleling Bridge Street with a "pavilion" wing that extends out, at right angles, to Federal Street. The courtroom bar will house the Superior Court, District Court and Housing Court. The pavilion wing will house the Juvenile Court on all levels and will be served by a separate elevator. DA and Grand Jury are located on the lower level of the pavilion wing. Access to the public entry is from Federal Street into the pavilion wing. The service entry is located on Bridge Street, one level below Federal Street.

The pavilion wing fronting on Federal Street is four stories high and the main courtroom wing fronting on Bridge Street is 6 stories high. The total gross square footage for the proposed Trial Court building including the renovated Church building with a new full basement is 190,071 GSF in the current preschematic plans. Efforts to reduce this overall square footage will occur in schematic design.

## 7.8 Trial Court Building Organization by Floor

- Lower Level: The lower level is on grade with Bridge Street and contains the sally port and Central Detainee Holding area, the loading dock and storage rooms, and the building mechanical and electrical rooms. Bridge Street provides easy access to secure parking for 21 vehicles, access to the sally port and to the loading dock. The space between the existing Probate and Family Court building and the proposed new Trial court building provides for ample maneuvering space for delivery vehicles and trash pick-up.

  The basement of the relocated church is also on this level and will house the collections for the Law Library.

- Level 1 is entered from Federal Street through security into the lobby of the pavilion wing. Juvenile Probation is located in the pavilion and is entered directly off the lobby. The main courtroom wing is occupied by the District Arraignment Court, District Probation and District Transaction. These court functions are located on the entry level due to the high traffic they generate. The Law Library is located in the Church and is entered off the main circulation waiting area.
- Level 2 is occupied by Housing Clerk Magistrate, Superior Clerk Magistrate, Superior Probation and the Jury Pool all located in the main courtroom wing. The Juvenile Clerk Magistrate is located in the pavilion wing.
- Level 3 contains the Housing Courtroom, three District Courtrooms, Jury Rooms and the Judicial Suite in the main courtroom wing. A light-well/green roof provides daylight to the two inner courtrooms. Two Juvenile courtrooms are located in the pavilion.
- Level 4 is occupied by the Superior Arraignment Courtroom, three Superior Courtrooms, two Jury Rooms and the Judicial Suite. The light-well/green roof provides daylight to the two inner courtrooms. Two Jury rooms and a Judicial Suite are located in the Pavilion serving the Juvenile Court. A mechanical room serving the pavilion wing is also located on this floor.
- Level 4M houses a Judicial Suite for two visiting judges.
- Mechanical Penthouses contains supply and exhaust air houses and cooling towers.

## 7.9 Issues for Final Design

A Reconcile proposed design gross floor area with program gross floor area.

B Further refinement of program

C Perform an existing conditions survey and Chapter 34 analysis of the First Baptist Church building to determine accessibility requirements.

D Perform more extensive geotechnical investigation to select most cost effective foundation system.

E Establish property lines for the full site.

F Analyze fire separation strategies between new Trial Court Building and existing Probate and Family Court Building.

G Analyze fire separation strategies between new Trial Court Building and relocated Church/Law Library.

H Determine extent of Detainee Tunnel connecting to PFC to be constructed with the proposed new Trial Court building.

I Determine if provisions should be built into the Trial Court building for a future enclosed pedestrian bridge connecting to the PFC.

J Locate steel braced frames in both orthogonal directions to avoid and/or reduce the cost of moment frame connections to stabilize the building against wind and seismic forces. Cost estimate is based on braced frames with no moment connections.

K Life cycle cost analysis calculations refinements.

L Operations, maintenance and renewal cost calculations refinements.

M Energy modeling

N Per AOTC: Detainee Dock and Detainee corridors glazed wall finish at CMU partitions to be 50" aff (*see specifications C3010/10900*). Cost estimate carried CMU, without glazed finish. Spec indicates CMU with full height spray-applied glazed finish. Verify desired material and scope.

O Per AOTC: consider eliminating cherry wood interiors at Judges' elevators (*see specifications D1010/Judges' Elevators*).

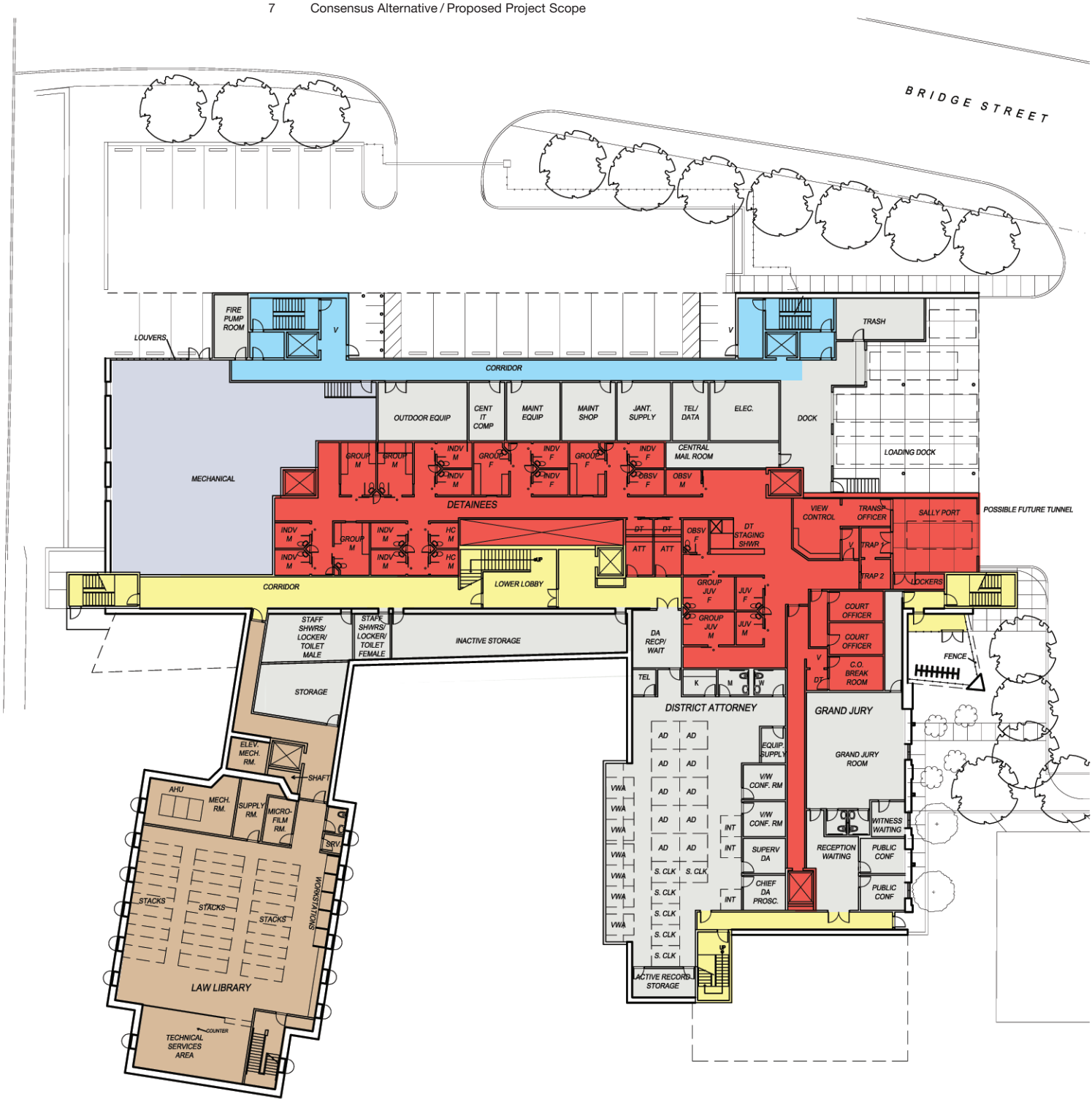
P Per AOTC: eliminate lockable cage at Detainees' elevators (see specifications D1010/Prisoner Elevators).

Q Per AOTC: telephone distribution to be Voice over Internet Protocol (VoIP) (*spec item D5030/Comm/Security Systems*).

R Per AOTC comment, confirm scope of courtroom cameras and conduit (*see Chapter 4.5, C.18 Security and spec D5040/Other Special Systems* ).

## 7.10 Concept Graphics

Site Plan


**Lower Level Plan**

***Plan A-B***


**Level 1 Plan**

***Plan A-B***


LEGEND
- Public
- Staff
- Detainee
- Superior
- District
- Housing
- Juvenile
- Mechanical
- Service
- Jury Pool
- Law Library

0 20 40' N

**Level 2 Plan**

***Plan A-B***


LEGEND
- Public
- Staff
- Detainee
- Superior
- District
- Housing
- Juvenile
- Mechanical
- Service
- Jury Pool
- Law Library

0 20 40'

N

## Level 3 Plan
## *Plan A-B*

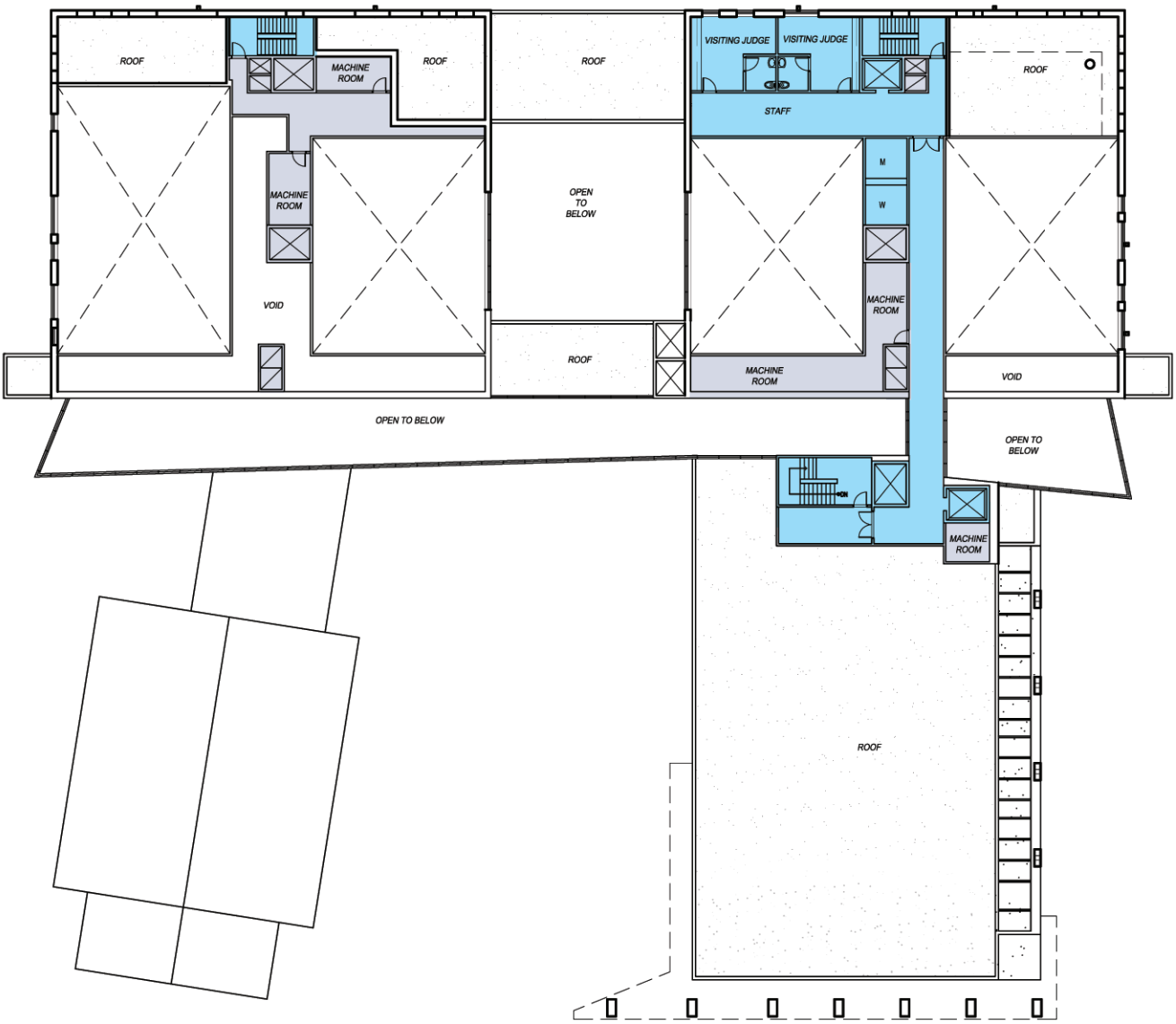

LEGEND
- Public
- Staff
- Detainee
- Superior
- District
- Housing
- Juvenile
- Mechanical
- Service
- Jury Pool
- Law Library

0 20 40'

N

**Level 4 Plan**

***Plan A-B***




LEGEND
- Public
- Staff
- Detainee
- Superior
- District
- Housing
- Juvenile
- Mechanical
- Service
- Jury Pool
- Law Library

0 20 40'

N

**Level 4M Plan**

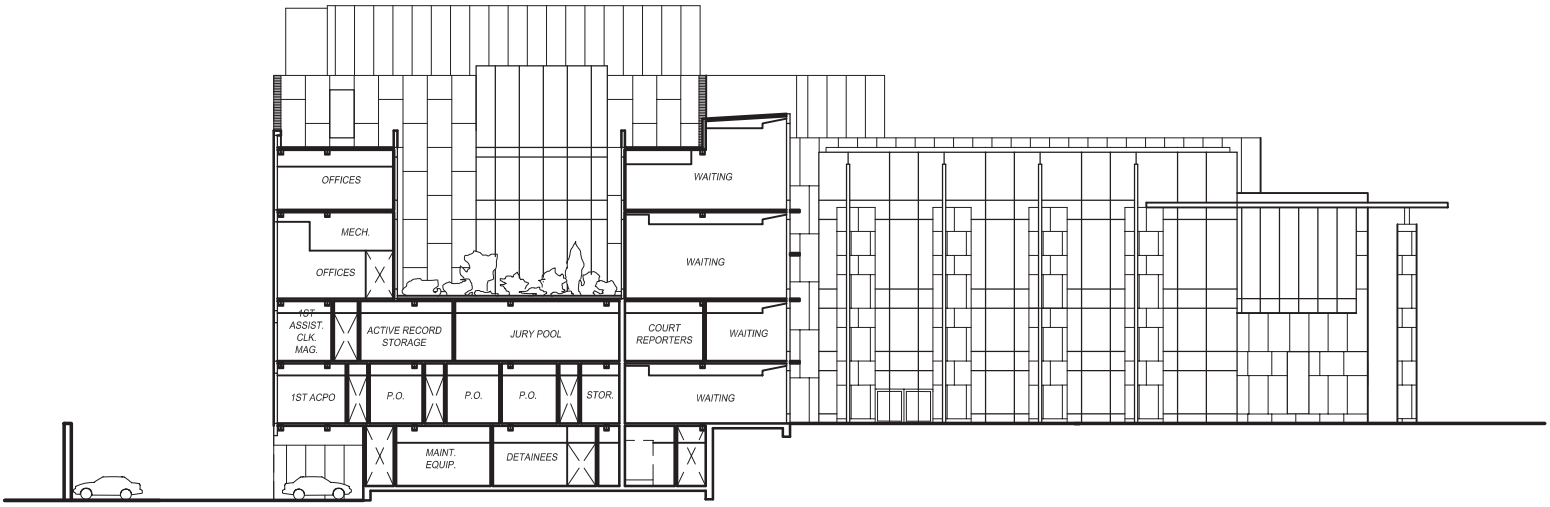
***Plan A-B***


LEGEND
- Public
- Staff
- Detainee
- Superior
- District
- Housing
- Juvenile
- Mechanical
- Service
- Jury Pool
- Law Library

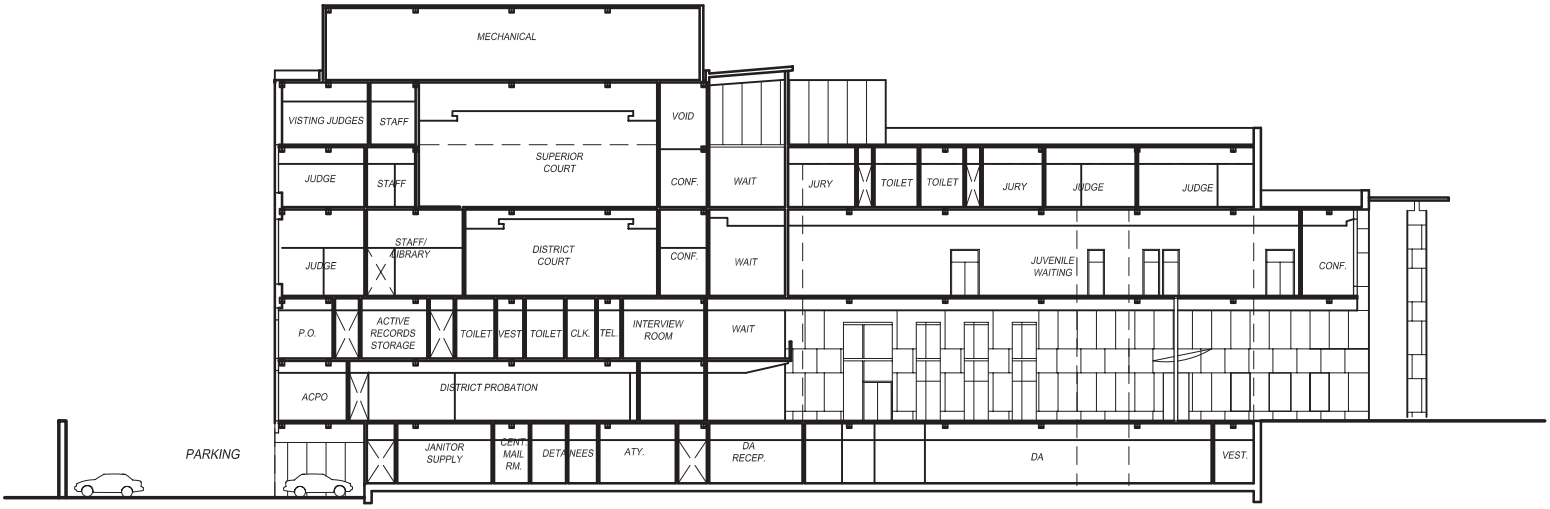
0 20 40' N

## Level 5 Plan

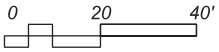
## *Plan A-B*



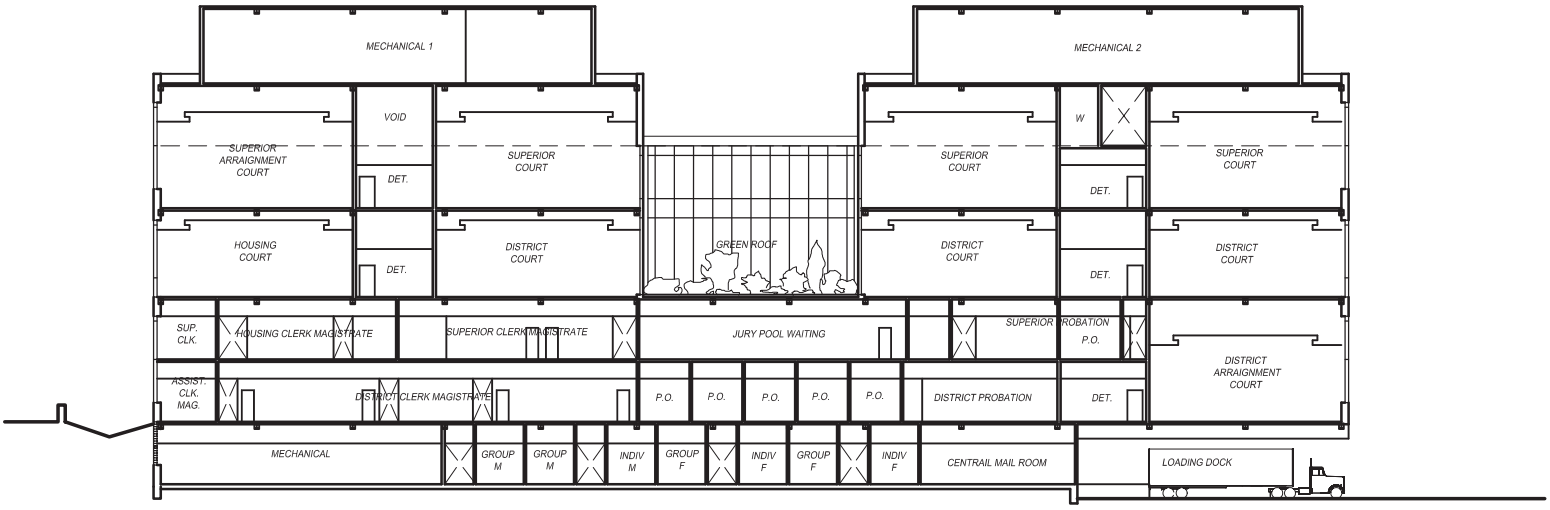

NORTH-SOUTH SECTION THROUGH GREEN ROOF



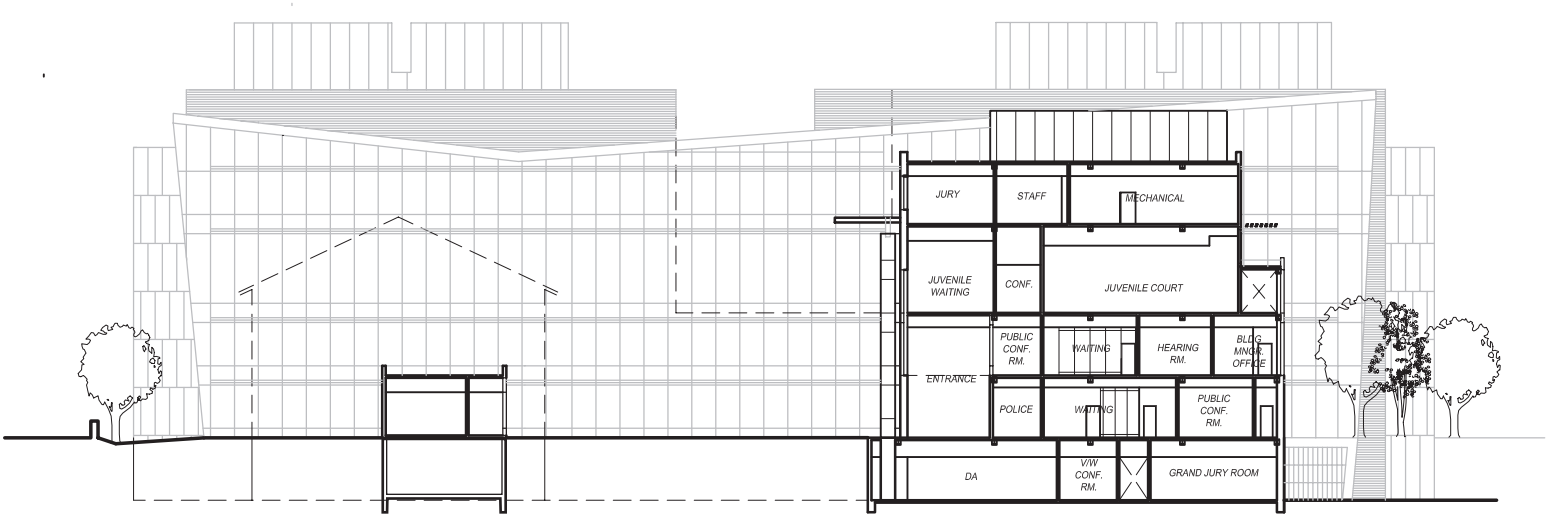

NORTH-SOUTH SECTION THROUGH ENTRY




**Sections North and South**
***Plan A-B***

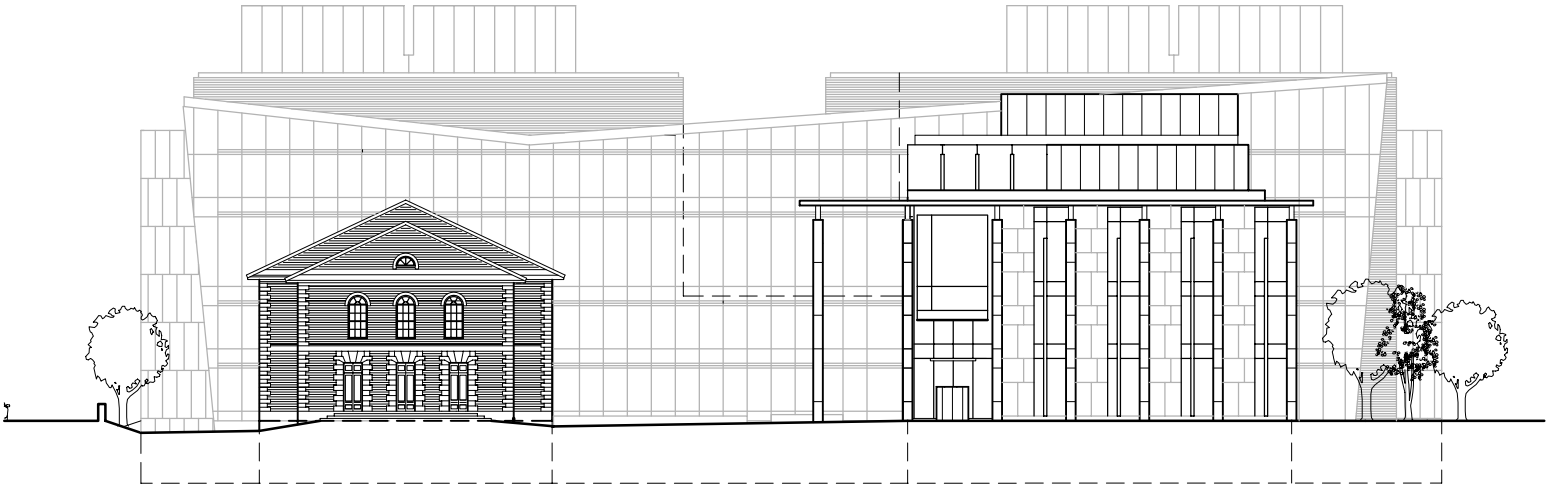



EAST-WEST SECTION THROUGH GREEN ROOF




EAST-WEST SECTION THROUGH JUVENILE PAVILION

## Sections East and West
## *Plan A-B*



SOUTH ELEVATION

NORTH ELEVATION

0 20 40'

**Elevations North and South**
***Plan A-B***

EAST ELEVATION

WEST ELEVATION

0 20 40'

**Elevations East and West**
***Plan A-B***

## 7.11 Outline Specifications

**PAGE 201-243**

PROJECT: **J. Michael Ruane Judicial Center**
LOCATION: **Federal Street; Salem, Ma.**
ARCHITECT: Goody Clancy Architects
PHASE: Revised Study Stage
FILE NO: DCAM Project No. TRC 9910 ST2 / Gca06290.00 / Fa2160

| SYSTEMS RECAPITULATION | | | SCOPE DESCRIPTION OF WORK |
|---|---|---|---|
| UNIF# | CSI # | | |
| **A** | | **SUBSTRUCTURE** | |
| ***A10*** | | ***FOUNDATIONS*** | The existing drawings indicate that exiting courthouse is supported on spread footings. The 1977 addition to the north side of the existing courthouse is supported on belled caissons bearing on the clay layer with an allowable bearing pressure of 5 TSF. Preliminary geotechnical information indicates that materials immediately below the proposed building are urban fills with traces of organic peats, and with sand and clay layers located at least 30 feet below grade. Further site investigation is being proposed. It is likely that the suitable foundation system for this building is either belled caissons or pressured injected footings (PIFs), or a combination of both systems.<br><br>The existing church building is proposed to be moved in a south-southwest direction to a higher ground. It will have a basement floor to be used for library storage. Pending on the results of future geotechnical investigations, it is likely that the relocated church building will be supported on spread footings. The basement slab will likely to a 6-inch thick reinforced concrete slab-on-grade. The basement walls will also be cast-in-place reinforced concrete, 12" thick minimum. |
| A1010 | | STANDARD FOUNDATIONS | |
| | 03300 | FOOTINGS | Special foundations required, pile/caisson caps, grade beams and tie beams; retaining wall at areas of occupied space below grade and retaining earth. |
| | 02300 | EXCAVATION | Conventional excavation and backfill; allow for possibly extensive dewatering and recharge operations |
| | 02060 | SHEETING AND SHORING | Allow for interlock steel sheet piling along Federal Street and North Streets to retain excavations to the greatest extent possible. |
| A1020 | | SPECIAL FOUNDATIONS | If belled caissons are recommended to be used to support the building, the caisson bell size is likely to be about 12 ft. diameter at each column location assuming a 20' x 40 ft. bay |

PROJECT: **J. Michael Ruane Judicial Center**
LOCATION: **Federal Street; Salem, Ma.**
ARCHITECT: Goody Clancy Architects
PHASE: Revised Study Stage
FILE NO: DCAM Project No. TRC 9910 ST2 / Gca06290.00 / Fa2160

| SYSTEMS RECAPITULATION | | | SCOPE DESCRIPTION OF WORK |
|---|---|---|---|
| UNIF# | CSI # | | |
| | | | and an allowable soil bearing pressure of 5 TSF. At the basement level, the belled caissons will be supplemented by 3-1/2 ft. diameter straight-shaft caissons located at 20' spacing each direction supporting the 10-inch concrete slab.<br><br>If pressured injected footings are recommended, a total of about 450 - 120T PIFs will be required to support the new building. |
| A1030 | | SLABS ON GRADE/LOWEST FLOOR CONSTRUCTION | The basement floor slab will be a 10-inch reinforced structural concrete slab (based on a 20' x 20' grid) designed as two-way slab spanning between pilecaps. |
| | 02620 | SUB DRAINS/UNDERDRAIN SYSTEM | Provide 6 inch perforated pipe wrapped in filter fabric at 8 foot centers and collected in header pipe and tied to storm system; provide 12 inch crushed stone layer. |
| | 07200 | INSULATION | Provide perimeter and full under slab insulation in accordance with current codes; R=10.0 minimum. |
| | 03300 | MECHANICAL PADS, ETC. | Provide for reinforced equipment pads. |
| | | | |
| ***A20*** | | ***BASEMENT CONSTRUCTION*** | |
| A2010 | 02300 | BASEMENT EXCAVATION | As above |
| A2020 | 03300 | BASEMENT WALLS | Loads will also be transmitted to the sound bearing layer by means of 18" foundation walls acting also as deep beams spanning between reinforced concrete pilecaps supported on caissons and/or PIFs.<br><br>Interior columns will be carried down to bear on top of the pilecaps immediately below the basement slab.<br><br>Peripheral columns will be supported on wall pilasters at the first floor level.<br><br>The foundation/basement walls will be cast-in-place reinforced concrete, likely 18-inch thick<br><br>Construction "new" basement for receipt of relocated church to |

PROJECT: **J. Michael Ruane Judicial Center**
LOCATION: **Federal Street; Salem, Ma.**
ARCHITECT: Goody Clancy Architects
PHASE: Revised Study Stage
FILE NO: DCAM Project No. TRC 9910 ST2 / Gca06290.00 / Fa2160

| SYSTEMS RECAPITULATION | | | SCOPE DESCRIPTION OF WORK |
|---|---|---|---|
| UNIF# | CSI # | | |
| | | | accommodate new Law Library |
| | 03300 | PITS | Provide elevator pits; coordinate with Division 14 for inserts and 07165 for pit waterproofing. |
| | 07130 | WATERPROOFING SYSTEMS | Procor or 60 mil SARA applied to all foundation walls; protect with integral drainage mat; tie to footing drains. |
| | 07165 | CEMENTITIOUS WATERPROOFING | Capillary treatment on elevator pit walls and floors |
| | | | |
| **B** | | **SHELL** | |
| ***B10*** | | ***SUPERSTRUCTURE*** | The primary structure including part of the building roof is proposed to be structural steel with 3-1/4 inch thick lightweight concrete topping cast on 3-inch thick composite metal deck. The floors for the mechanical rooms will be constructed of steel beams and girders with 4-1/2 inch thick normalweight concrete topping cast on 3-inch deep composite steel deck. Normalweight concrete is proposed in the mechanical area in an effort to control floor vibration and noise transmission to the floor below. The building roof structure without equipment on it will be 3-inch deep metal roof deck with no concrete fill.<br><br>The building will be stabilized against wind and seismic forces by concentrically steel braced frames in both orthogonal directions at locations to be determined in Schematic Design Phase. Connections for the diagonal braces will be shop and field welded. Connections for beams to beams, beams to girders, and beams/girders to columns will be field bolted. Columns will primarily be wide flange sections with the possibility of round and rectangular tubes in certain exposed locations.<br><br>The exterior walls will be a combination of stone and brick with reinforced CMU backup wall. It is likely that the tall curtain walls will be stiffened by tubular steel sections behind the vertical mullions. |

PROJECT: **J. Michael Ruane Judicial Center**
LOCATION: **Federal Street; Salem, Ma.**
ARCHITECT: Goody Clancy Architects
PHASE: Revised Study Stage
FILE NO: DCAM Project No. TRC 9910 ST2 / Gca06290.00 / Fa2160

| SYSTEMS RECAPITULATION | | | SCOPE DESCRIPTION OF WORK |
|---|---|---|---|
| UNIF# | CSI # | | |
| | | | Fire protection of the steel frame will be primarily by applied fireproofing with some elements being protected by embedment in concrete. The composite steel/lightweight concrete slabs and composite steel/normalweight concrete slabs as proposed will meet the 2-hour rated fire protection criteria without spraying.<br><br>The structural steel tonnage is likely to be about 16 PSF.<br><br>The new building will be designed in accordance with the Sixth Edition of the Massachusetts State Building Code 1997, unless the Seventh Edition is published prior to the commencement of structural design. The new building will be designed for the following loads:<br>a. Live Loads:<br>1. Assembly, Courts, Corridors, General Usage - 100 PSF<br>2. Library, Storage, Mechanical - 150 PSF<br>3. Compact Storage and Record Rooms - 300 PSF<br>b. Roof Live Loads:<br>1. Snow (Zone 2, Basic) - 30 PSF (Basic snow to be adjusted for drift, roof slope, sliding.)<br>c. Wind Load: Zone 3, Exposure C - 21 PSF for 0' < height < 50'; 31 PSF for 50' < height < 100' (Basic wind to be adjusted for various elements, locations on and shapes of building elements)<br>d. Seismic Forces: Equivalent Static Force Method for A = .12g in accordance with all code requirements. Site coefficient S to be evaluated by future geotechnical investigations.<br>e. Dead Loads: Materials and Equipment - Estimated Actual Weights |
| B1010 | | FLOOR CONSTRUCTION | |
| | 05120 | FRAMING SYSTEMS | Composite structural steel framing system. |
| | 05300 | DECKING | 3 inch 20 gauge composite design galvanized metal decking |

PROJECT: **J. Michael Ruane Judicial Center**
LOCATION: **Federal Street; Salem, Ma.**
ARCHITECT: Goody Clancy Architects
PHASE: Revised Study Stage
FILE NO: DCAM Project No. TRC 9910 ST2 / Gca06290.00 / Fa2160

| SYSTEMS RECAPITULATION | | | SCOPE DESCRIPTION OF WORK |
|---|---|---|---|
| UNIF# | CSI # | | |
| | 03300 | SURFACING | 3-1/4 inch 3,500 psi mesh reinforced concrete; 4-1/2 for mechanical areas |
| | 07810 | FIREPROOFING | Cementitious spray on fireproofing on all steel framing |
| | 07850 | FIRESTOPPING | All penetrations and linear at exterior walls, stairs, etc. |
| | | OTHER | |
| | | | |
| B1020 | | ROOF CONSTRUCTION | |
| | | FRAMING SYSTEMS | Conventional structural steel with composite system only for roof mounted mechanical equipment. |
| | | DECKING | 3 inch 20 gauge galvanized metal deck; composite design at equipment pads. |
| | | SURFACING | 6 inch overall thickness; 3,500 psi concrete for equipment pads. |
| | 07810 | FIREPROOFING | As for floors |
| | 07850 | FIRESTOPPING | As for floors at equipment penetrations |
| | | OTHER | Allow for moment frames |
| | | | |
| ***B20*** | | ***EXTERIOR CLOSURE*** | |
| B2010 | | EXTERIOR WALLS | |
| | | INTERIOR SKIN | **Optional Systems** (Price as alternates above the lower level):<br>• LMF with gypsum cladding interior and "dens-glass" sheathing OR.<br>• Concrete masonry with furred gypsum finish<br>**NOTE:** Each system to receive Air Vapor Barrier and rigid insulation (R=13.0) and anchorage for skin attachment.<br><br>Provide membrane flashings in connection with skin.<br><br>Reconstruct rear exterior wall of Law Library (North elevation, Sanctuary of First Baptist Church). Brick and mortar to match existing. |
| | | EXTERIOR SKIN | **Exterior Courtroom block fronting on Bridge Street to the** |

PROJECT: **J. Michael Ruane Judicial Center**
LOCATION: **Federal Street; Salem, Ma.**
ARCHITECT: Goody Clancy Architects
PHASE: Revised Study Stage
FILE NO: DCAM Project No. TRC 9910 ST2 / Gca06290.00 / Fa2160

| SYSTEMS RECAPITULATION | | | SCOPE DESCRIPTION OF WORK |
|---|---|---|---|
| UNIF# | CSI # | | |
| | | | **north**:<br>• Brick (allow for Morin Water Struck Brick at $650.00 per thousand), grade to roof parapet, on north elevation wrapping around on the west and east elevations to the projecting stairwell towers as well as on end walls of stair towers.<br>• Local Granite (1-1/2 inch)in a rain screen configuration and curtain wall (Kawneer 1600) with high performance glass on the two projecting stair towers (See alternate for granite panels).<br>• Curtainwall (Kawneer 1600) on the south elevation and metal panels (and portions of east and west elevations) from stair tower to stair tower allow for sun shading devices as below.<br>**Exterior Juvenile wing (the "Pavilion")**<br>• Granite panels on walls and columns.<br>• Curtainwall (Kawneer 1600) and metal panel infills on West elevation of Wing.<br>**Mechanical Penthouse:**<br>• Anodized aluminum roof panels on vertical walls<br>• Alternate - Zinc coated copper standing seam.<br>**Sun Shading Devices:**<br>• **Fixed** – Sunshade 1600 by Kawneer An economical, pre-engineered and integrated sunshade with mix and match design choices. Key Features Include: Standard sunshade that integrates easily into outside-glazed 1600 Wall System®1 or inside-glazed 1600 Wall System®5 and shades interiors and conserves energy with a 30-inch projection. Outriggers and brackets are available in several shapes; louvers can be air-foil, wing-shaped, cylindrical, square or flat; fascias or outmost elements can be rounded, square, or air-foil shaped. Anchorage design capable of handling 60 psf combined vertical load |

PROJECT: **J. Michael Ruane Judicial Center**
LOCATION: **Federal Street; Salem, Ma.**
ARCHITECT: Goody Clancy Architects
PHASE: Revised Study Stage
FILE NO: DCAM Project No. TRC 9910 ST2 / Gca06290.00 / Fa2160

| SYSTEMS RECAPITULATION | | | SCOPE DESCRIPTION OF WORK |
|---|---|---|---|
| UNIF# | CSI # | | |
| | | | of wind and snow.<br><br>• **Alternate #3A** - 1600 PowerShade a Building Integrated Photovoltaic sunshade that generates solar power while also providing optimal shade in a total system/single source solution. Key Features Include: Pre-engineered sunshade system effectively reduces solar heat gain; Exclusive dual position pivot system provides optimal angle and extension for shading any location; Produces power/reduces energy consumption and building operating cost.<br><br>• **Alternate #3B** - C/S Operating Sunshades provide optimum solar shading. C/S Sunshades pivot up to 110° to reduce solar glare and heat gain and are designed to control the amount of daylight coming into the building interior. Blades can close completely to provide for energy savings, or for security purposes. |
| | 10200 | LOUVER SYSTEMS | As required; integrate into the mechanical penthouse enclosures – Assume extruded aluminum with Kynar XL finish. |
| | | SOFFITS | Cement plaster on wire lath at loading dock, covered parking and other "back-of-house" areas, joint at 100 square feet.<br><br>4 mm composite aluminum panels at soffits over main entry and at "Pavilion" roof overhang. |
| | | OTHER | Scaffolding; flashings; reliving angles; caulking; expansion control and the like |
| | | | |
| B2020 | | WINDOWS | |
| | 08520 | STANDARD WINDOWS | Prefinished aluminum, casement and fixed units with double "low-e" glazing – base upon Kawneer **8225TL ISOLOCK® Window** |
| | 08400 | STOREFRONTS | Base upon Kawneer "EnCore -6 inch sections with wide stile 500 aluminum swing doors both for entrance line and exits; coordinate with 08450 for revolving doors. Glazing to be |

PROJECT: **J. Michael Ruane Judicial Center**
LOCATION: **Federal Street; Salem, Ma.**
ARCHITECT: Goody Clancy Architects
PHASE: Revised Study Stage
FILE NO: DCAM Project No. TRC 9910 ST2 / Gca06290.00 / Fa2160

| SYSTEMS RECAPITULATION | | | SCOPE DESCRIPTION OF WORK |
|---|---|---|---|
| UNIF# | CSI # | | |
| | | | tempered insulating "low-e" glazing. |
| | 08450 | REVOLVING ENTRANCE DOORS | Provide revolving door assemblies as shown and specified herein, complete in all respects, including -<br>• Circular glazed enclosure walls,<br>• Flat ceiling with ceiling lights<br>• Masterkeyable (removable core) locking devices<br>• Emergency collapsing mechanism with overhead speed control and round cover plate<br>• Revolving 4 wing design with custom push bars and roll-aside wing features similar and equal to Crane "Fullview".<br>• Floor mat ring; coordinate with Section 04400/09650/12480 for floor mat system.<br>and all other accessories and appurtenance shown and/or required for the installation shown. |
| | 08900 | CURTAIN WALLS | Curtain walls with combination of tempered clear, fritted and clear "low-e" glazing set in to aluminum framing; allow for 4 mm composite aluminum spandrels and trim. Base estimate upon Kawneer "1600" wall system both fully captured as well as structural glazed in locations as to be determined. Coordinate with "Exterior Skin" description above. |
| | | SPECIAL | Caulking and sealing; allow for miscellaneous framing in connection with curtain walls (2.5#/sf of wall); blockings; etc. |
| | | | |
| B2030 | | EXTERIOR DOORS | |
| | 08110 | HOLLOW METAL UNITS | Single and Double - 14 gauge doors; 12 gauge frames<br><br>Security provisions at "prisoner areas" to consist of 2 doors in a single frame. |
| | 08400 | ENTRY DOORS | See B2020 above with the addition of the requirement for automatic door operators for both the revolving door as well as one pair of swing type aluminum and glass doors at entrance and exit ways. |

PROJECT: **J. Michael Ruane Judicial Center**
LOCATION: **Federal Street; Salem, Ma.**
ARCHITECT: Goody Clancy Architects
PHASE: Revised Study Stage
FILE NO: DCAM Project No. TRC 9910 ST2 / Gca06290.00 / Fa2160

| SYSTEMS RECAPITULATION | | | SCOPE DESCRIPTION OF WORK |
|---|---|---|---|
| UNIF# | CSI # | | |
| | 08330 | SECURITY OVERHEAD DOORS | Sallyport construction with double door and controls – Thermiser units. |
| | | OTHER | Sealant; paint; blockings |
| | | | |
| ***B30*** | | ***ROOFING*** | |
| B3010 | | ROOF COVERINGS | |
| | 07130 | MEMBRANE WATERPROOFING | Plaza waterproofing using 2 layers of 60 mil cross laminated SARA sheet with drainage mat, insulation and protection board. Plaza treatment to be granite, precast concrete or brick pavers set in "hot" – **Coordinate with G20 following**. Provide companion flashings. |
| | 07550 | MEMBRANE ROOFING | 3 ply modified bitumen roof system with "Cool White" cap sheet and companion flashings over dens-deck protective layer over tapered isocyanurate insulation yielding an "R" factor of 25.0 average. System shall be complete with all companion base flashings and vapor barrier tied into exterior AVB as per MSBC. |
| | 07260 | AVB AND INSULATION SYSTEMS | Provide "Henry Air Bloc 32" or similar over entire exterior surface not receiving glazing treatment; cover same with rigid insulation (Styrofoam or Roxul) to produce an "R=13" |
| | 07515 | GREEN ROOF SYSTEMS | Provide, as a alternate request in lieu of membrane with a paver/ballast pattern, at interior courtyard the green roof assembly as follows:<br>• Membrane waterproofing system and companion flashings be it hot applied rubberized asphalt **or at the option of the contractor a** fully adhered "PVC" sheet material.<br>• Edge retainer system surrounding "green roof area" set on base membrane; flash into full membrane and carry drainage mat over leg to allow for positive water flow to drains.<br>• Drain systems with either nickel bronze or stainless steel grating assembly and integral roof drains with debris screens and flashing clamps.<br>• Flashing of drains to insure watertightness using sheet |

PROJECT: **J. Michael Ruane Judicial Center**
LOCATION: **Federal Street; Salem, Ma.**
ARCHITECT: Goody Clancy Architects
PHASE: Revised Study Stage
FILE NO: DCAM Project No. TRC 9910 ST2 / Gca06290.00 / Fa2160

| SYSTEMS RECAPITULATION | | | SCOPE DESCRIPTION OF WORK |
|---|---|---|---|
| UNIF# | CSI # | | |
| | | | membrane with liquid applied material OR "weldable" PVC ring.<br>• Any and all required wood blocking systems in connection with the provision of the "green roof" assembly and companion paver surfacing.<br>• Protection sheet.<br>• Root Stop or Protection Membrane as applicable to system.<br>• Extruded expanded polystyrene insulation panels with fabricated cut-in ribs throughout the length of the board and with rain channels on all four bottom edges.<br>• Drainage mat<br>• Moisture retention mat and 3 dimensional drainage mat.<br>• System filter.<br>• Engineered soils (Media DE)<br>• Vegetated roof covers.<br>• Unitized, pedestal supported roof pavers in areas outside of planted roof areas. |
| | 07600 | FLASHING AND SHEET METAL | Provide companion flashings to membrane roofing and formed parapet copings using color matched aluminum systems (minimum 0.040 inch thick). |
| | 07700 | ACCESSORIES | Roof railings; access hatches; elevator vents; prefabricated curbs. |
| | | | |
| B3020 | | ROOF OPENINGS | |
| | 08620 | SKYLIGHT SYSTEMS | Provide "grade" skylights at plaza level in sizes and location shown. Base estimate upon "91R" panels by Circle Redmont.<br><br>Provide 4 precurbed pyramidal skylights at courtyard roof area; glazing shall be security type insulated glass. |
| | | | |
| **C** | | **INTERIORS** | |

PROJECT: **J. Michael Ruane Judicial Center**
LOCATION: **Federal Street; Salem, Ma.**
ARCHITECT: Goody Clancy Architects
PHASE: Revised Study Stage
FILE NO: DCAM Project No. TRC 9910 ST2 / Gca06290.00 / Fa2160

| SYSTEMS RECAPITULATION | | | SCOPE DESCRIPTION OF WORK |
|---|---|---|---|
| UNIF# | CSI # | | |
| | | | |
| ***C10*** | | ***INTERIOR CONSTRUCTION*** | |
| C1010 | | INTERIOR PARTITIONS | |
| | 09250 | FIXED | In general, partitions assemblies shall be double drywall (5/8 inch abuse resistant top layer) on 20 gauge steel studs.<br><br>Allow for bead of fire caulking at tracks of all partitions.<br><br>Provide reinforced "CMU" partitions at prisoner/holding areas, service spaces, mechanical areas and the like , provide furring wall on public side of CMU partitions.<br><br>Allow for deflection heads at all partitions.<br><br>Bring all partitions to a Level 4 finish with Level 5 for public spaces only (veneer plaster base, alternate for "Tuffhide and Coating" finish) |
| | 07810 | FIRESTOPPING | As required at all penetrations; deflection heads; curtain wall openings and the like. |
| | | OTHER | Provide 3 lines of blocking at all gypsum partitions; provide acoustical insulation in partitions; all sealant operations; etc. |
| | | | |
| C1020 | | INTERIOR DOORS | |
| | 08110 | METAL | Security doors and frames (double openings); conventional hollow metal doors and frames; hollow metal frames to receive wood doors under 08200.<br><br>The Detainee Dock and Detainee Corridors will have slam lock cell doors.<br><br>Detainee doors are sliding cell doors or detention steel doors |
| | 08200 | WOOD | SLCR doors for all openings shown; rated as required. Veneers to be "Cherry" (with even grain and natural finish) for court |

PROJECT: **J. Michael Ruane Judicial Center**
LOCATION: **Federal Street; Salem, Ma.**
ARCHITECT: Goody Clancy Architects
PHASE: Revised Study Stage
FILE NO: DCAM Project No. TRC 9910 ST2 / Gca06290.00 / Fa2160

| SYSTEMS RECAPITULATION | | | SCOPE DESCRIPTION OF WORK |
|---|---|---|---|
| UNIF# | CSI # | | |
| | | | rooms and public spaces; birch for all other locations.<br><br>Vision Lites: Required in doors to Courtroom. Prohibited in doors to corridor. Standard 3"x 33" or 4" x 25". |
| | 08700 | HARDWARE | First quality, keying based upon judicial standards; all lock sets to be bored through cylinder design in lieu of mortise; allow $550.00 per leaf for hardware material; all metal surfaces to be brushed stainless steel or brushed chrome. |
| | | | |
| C1030 | | INTERIOR SPECIALTIES | |
| | 10100 | VISUAL DISPLAY SYSTEMS | Allow |
| | 10160 | TOILET COMPARTMENTS | Bobrick "Sierra" ceiling hung; provide overhead support systems; coordinate with Sections 05500 and 09250<br><br>**Alternate Request**: Provide stainless steel assemblies in/lieu/of phenolic . |
| | 10270 | ACCESS FLOORING | **Alternate Request:** Raised floor system by Pathways Low Profile Floor. (At all Transaction areas) floor area: 34,311 SF; coordinate with Electrical for wiring and distribution. |
| | 10400 | IDENTIFYING DEVICES | Allow $0.50 per square foot gross |
| | 10500 | LOCKERS AND BENCHES | Staff |
| | 10520 | FIRE EXTINGUISHES, CABINETS AND AED DEVICES | Per Code |
| | 10800 | TOILET ACCESSORIES | Public, Judges, Staff |
| | 10900 | MISCELLANEOUS SPECIALTIES | Millwork and Glazing including Transaction counters; cashier's station in the transaction office and the like as required. |
| ***C20*** | | ***STAIRWAYS*** | |
| C2010 | | STAIR CONSTRUCTION | |
| | | EGRESS STAIRS | Concrete filled pan type with conventional railing system; unfinished; provide "exit" pathway markings in stair enclosures and detectible warning strips at stairs proper. |
| | | MAIN STAIR | Folded plate unit with finished soffit and custom designed railing system consisting of stainless steel posts supporting |

PROJECT: **J. Michael Ruane Judicial Center**
LOCATION: **Federal Street; Salem, Ma.**
ARCHITECT: Goody Clancy Architects
PHASE: Revised Study Stage
FILE NO: DCAM Project No. TRC 9910 ST2 / Gca06290.00 / Fa2160

| SYSTEMS RECAPITULATION | | | SCOPE DESCRIPTION OF WORK |
|---|---|---|---|
| UNIF# | CSI # | | |
| | | | tempered glass balustrade with cherry wood handrail supported off stainless steel brackets mounted on glass balustrade. |
| | | | |
| C2020 | | STAIR FINISHES | |
| | | MAIN STAIR | Stone treads; perforated and painted risers. |
| | | EGRESS STAIRS | Paint and floor stains/sealers. |
| | | | |
| ***C30*** | | ***INTERIOR FINISHES*** | |
| C3010 | | INTERIOR WALL FINISHES | |
| | | SPECIAL COURT ROOM TREATMENT | The Courtroom will have the highest quality finishes and millwork in the courthouse. Though these materials are high quality, attention must also be paid to the durability of the materials. Since this is a public space, the materials should require relatively low maintenance.<br>• 5 foot high wood wainscot (Cherry - natural finish), Cherry trim around windows and doors. Cherry trim on walls with no windows. Cherry wood base for both vestibules as well as courtrooms.<br>• Fabric covered acoustic panels (STC 55 minimum). Rear and side walls will be required to have acoustically absorptive panels as required to achieve acoustical performance.<br>• Painted veneer plaster on drywall |
| | | BALANCE OF SPACES | **The Detainee Finish**, which includes all the detainee corridors, the courtroom docks, and the detainee conference rooms, will have CMU Partitions with glazed wall finish.<br><br>**The Professional Finish** is in some offices (such as Justice's Offices) and conference rooms and shall receive natural finished wood base with limited use of vinyl. Painted GWB. Not less than 30% will be a higher quality wall surface such as wood panels, or similar, with chair rail or wainscot. |

PROJECT: **J. Michael Ruane Judicial Center**
LOCATION: **Federal Street; Salem, Ma.**
ARCHITECT: Goody Clancy Architects
PHASE: Revised Study Stage
FILE NO: DCAM Project No. TRC 9910 ST2 / Gca06290.00 / Fa2160

| SYSTEMS RECAPITULATION | | | SCOPE DESCRIPTION OF WORK |
|---|---|---|---|
| UNIF# | CSI # | | |
| | | | **Public Areas**: Painted veneer plaster on gypsum lath or masonry. Allow for large public areas (over 500 SF), not less than 30% of wall surface shall be covered with higher quality finishes such as natural finished hardwood, ceramic tile, stone, or standing and running trim.<br><br>**The Toilet Room** wall finishes in the Jury Deliberation suites and the Justice's Office suites will have glazed wall finish on veneer plaster on gypsum lath; balance will have ceramic tile or ceramic tile wainscot (6' high minimum) and glazed wall finish on veneer plaster on gypsum lath. (Shower Rooms shall be mud set on galvanized metal lath).<br><br>**The Mechanical Finish**, which includes all the mechanical rooms, loading areas, and similar spaces will have CMU Partitions with glazed wall finish, except in unoccupied, mechanical rooms. |
| C3020 | | INTERIOR FLOOR FINISHES | **The Detainee Dock and Detainee Corridors** will have seamless flooring and companion base.<br><br>**The Detainee Finish**, which includes all the detainee corridors, the courtroom docks, and the detainee conference rooms floor and base will be concrete with seamless flooring.<br><br>**The Professional Finish** is in some offices (such as Justice's Offices) and conference rooms and shall have carpet finish.<br><br>**The Standard Finish**, which is in most offices, office pools, and equipment spaces, will receive carpet or vinyl with resilient rubber base. **Alternate**: Carpet tiles at all raised floor locations.<br><br>Toilet Room Floor and Bases - Ceramic tile cove design at walls. |

PROJECT: **J. Michael Ruane Judicial Center**
LOCATION: **Federal Street; Salem, Ma.**
ARCHITECT: Goody Clancy Architects
PHASE: Revised Study Stage
FILE NO: DCAM Project No. TRC 9910 ST2 / Gca06290.00 / Fa2160

| SYSTEMS RECAPITULATION | | | SCOPE DESCRIPTION OF WORK |
|---|---|---|---|
| UNIF# | CSI # | | |
| | | | **The Mechanical Finish**, which includes all the mechanical rooms, loading areas, and similar spaces will receive concrete with hardener and sealer in mechanical spaces, vinyl tile in corridor spaces and other "semi-inhabited" spaces. None at concrete floors, resilient cove base at vinyl tile. |
| | | ALL PUBLIC SPACES INCLUDING WAITING AND CIRCULATION | Thin set large format porcelain tile and companion base; size 30 by 60 cm; base estimate on Buchtal "Xeno"<br><br>**Alternate Request**: Thin set terrazzo and integral base. |
| C3030 | | INTERIOR CEILING FINISHES | **Courtroom Ceilings**: Painted veneer plaster on gypsum lath forming coffers and/or coves. No more than 50% acoustical ceiling tile (ATC).<br><br>**The Detainee Dock and Detainee Corrido**r ceilings will have steel plate; or painted veneer plaster on gypsum lath, installed over one layer of ¾" veneer core plywood.<br><br>**The Detainee Ceiling Finish**, which includes all the detainee corridors, the courtroom docks, and the detainee conference rooms will have steel plate within Holding Cells and corridors shall match Holding Cells or will have painted veneer plaster on gypsum lath, installed over two layers of 3/4" veneer core plywood.<br><br>**The Professional Finish** is in some offices (such as Justice's Offices) and conference rooms and shall have ceilings of acoustical tile with natural wood or painted plaster coves/coffers.<br><br>**The Standard Finish**, which is in most offices, office pools, and equipment spaces, will receive 2'0" x 2'0" ATC lay-in design.<br><br>**Public Area ceilings** to be 2' x 2' lay in acoustical. Large rooms (over 500 SF) to have areas of soffits or other |

PROJECT: **J. Michael Ruane Judicial Center**
LOCATION: **Federal Street; Salem, Ma.**
ARCHITECT: Goody Clancy Architects
PHASE: Revised Study Stage
FILE NO: DCAM Project No. TRC 9910 ST2 / Gca06290.00 / Fa2160

| SYSTEMS RECAPITULATION | | | SCOPE DESCRIPTION OF WORK |
|---|---|---|---|
| UNIF# | CSI # | | |
| | | | articulation.<br><br>**Toilet Room Ceilings**: 2'0" x 2'0" ATC or veneer coat plaster on moisture resistant gypsum lath, painted with glazed wall finish.<br><br>**The Mechanical Finish**, which includes all the mechanical rooms, loading areas, and similar spaces will have exposed structure, unless more required for acoustical purposes, 2'0" x 2'0" A TC in "semi-inhabited" spaces. |
| | | | |
| **D** | | **SERVICES** | |
| | | | |
| ***D10*** | | ***CONVEYING SYSTEMS*** | |
| D1010 | 14215 | VERTICAL TRANSPORTATION | All electric traction, **evaluate MRL units as an alternate request**. Provide a central monitoring station for all elevators; banks shall be duplex selective collective microprocessor operated; individual units shall be single microprocessor operated.<br><br>Provide at Elevators E-3 and E-4 automatic elevator smoke door containment system tied to smoke/fire alarm system.<br><br>Each elevator shall be equipped with a cylinder lockout for each floor.<br><br>Each public and judges elevator shall be provided with full pads and hooks for use in moving furniture and equipment. |
| | | PUBLIC ELEVATORS | Stainless Steel Cabs and Hoistway Openings with companion flooring as per interior floors; Allow $25,000.00 per cab.<br>• E-2; Front Opening; 5 Stop; 3,500 lb capacity; 200 fpm; overall travel distance – 60'<br>• E-3; Front Opening; 5 stop; 3,500 lb capacity; 200 fpm; overall travel distance – 59'6" |

PROJECT: **J. Michael Ruane Judicial Center**
LOCATION: **Federal Street; Salem, Ma.**
ARCHITECT: Goody Clancy Architects
PHASE: Revised Study Stage
FILE NO: DCAM Project No. TRC 9910 ST2 / Gca06290.00 / Fa2160

| SYSTEMS RECAPITULATION | | | SCOPE DESCRIPTION OF WORK |
|---|---|---|---|
| UNIF# | CSI # | | |
| | | | • E-4; Front Opening; 4 stop; 3,500 lb capacity; 200 fpm; overall travel distance – 44’6” |
| | | JUDGES ELEVATORS | Provide wood (cherry) interiors with stainless steel hoistway openings and car panels; allow $25,000.00 per cab. Flooring to be rubber;<br>• E-6 and 7; Front Opening; 7 stops; 3,000 lb capacity; 200 fpm; overall travel distance – 79’6”.<br>• E-9; Front Opening; 3 stops; 3,000 lb capacity; 200 fpm; overall travel distance – 28’6” |
| | | PRISONER ELEVATORS | All stainless steel finishes including deck plate flooring.<br>• E-1; Front and Rear Opening; 3 stops; 3,500 lb capacity; 200 fpm; overall travel distance – 39’0”<br>• E-5; Front and Rear Opening; 4 stops; 3,500 lb capacity; 200 fpm; overall travel distance – 59’6”<br>• E-8; Front and Rear Opening; 4 stops; 3,500 lb capacity; 200 fpm; overall travel distance – 59’6”<br>Detainee elevators shall have a lockable "cage" inside with a sliding door. In detainee elevators all materials shall be suicide-resistant and elevators cabs equipped with security cameras. In situations where detainee elevators must also be used by staff, there shall be separate doors from the elevator to the secure circulation corridor and the staff circulation In a shared-use elevator, the following controls shall be incorporated.<br>• The elevators will normally respond to a call at any staff location.<br>• At each detainee area (central holding and courtroom holding areas), the control will be only by a Court Officer's key. When placed under Court Officer's operation at any location, the elevator will make its previously scheduled stops before proceeding to the Courts Officer's call location. The court officer's control key will override all other call functions.<br>• While under key operation by the court officer, the |

PROJECT: **J. Michael Ruane Judicial Center**
LOCATION: **Federal Street; Salem, Ma.**
ARCHITECT: Goody Clancy Architects
PHASE: Revised Study Stage
FILE NO: DCAM Project No. TRC 9910 ST2 / Gca06290.00 / Fa2160

| SYSTEMS RECAPITULATION | | | SCOPE DESCRIPTION OF WORK |
|---|---|---|---|
| UNIF# | CSI # | | |
| | | | elevator will be secured and will stop only at the secure circulation corridors.<br>• The call stations at the elevator doors in secure circulation shall be activated by key only. |
| | | LAW LIBRARY | 2 Stop; Front Opening; 3,000 pound unit, 200 fpm; unit to be utilitarian in construction all with stainless steel front panels and hoistway entrances. Allow $15,000.00 for cab. |
| | 05500 | PIT LADDERS | Hot dipped galvanized |
| | 05500 | SILL ANGLES | Allow |
| | | | |
| ***D20*** | ***15400*** | ***PLUMBING SYSTEMS*** | |
| D2010 | | PLUMBING FIXTURES | **Water Closets**: Commercial grade, white vitreous china, wall hung. 1.6 GPF, with exposed, manually operated, flush valve, and open front white plastic seat and self-sustaining check hinge. Fixture to be mounted on commercial grade, floor supported concealed chair carrier.<br><br>**Urinals**: Commercial grade, white vitreous china, wall hung, 1.0 GPF, with exposed, manually operated, flush valve. Fixture to be mounted on commercial grade, floor supported chair carrier.<br><br>**Lavatories**:<br>• Commercial grade, white vitreous china, self-rimming, counter-top type, with front overflow. Fixture to be provided with chrome plated faucet, open grid drain, supplies with stops, and "P" trap. Those fixtures designated as accessible, are to have the exposed water and water piping below the counter insulated.<br>• Institutional grade, white vitreous china, self-rimming, wall-hung type, with front overflow. Fixture to be mounted on commercial grade, floor supported chair carrier. Fixture to be provided with chrome plated faucet, open grid drain, supplies with stops, and "P" |

PROJECT: **J. Michael Ruane Judicial Center**
LOCATION: **Federal Street; Salem, Ma.**
ARCHITECT: Goody Clancy Architects
PHASE: Revised Study Stage
FILE NO: DCAM Project No. TRC 9910 ST2 / Gca06290.00 / Fa2160

| SYSTEMS RECAPITULATION | | | SCOPE DESCRIPTION OF WORK |
|---|---|---|---|
| UNIF# | CSI # | | |
| | | | trap. Fixtures shall be temperature limited to 110 Deg. F. Those fixtures designed as accessible are to have the exposed water and waste piping below the fixture insulated.<br>**Drinking Fountains**: Institutional grade, wall hung, stainless steel finish, non-refrigerated type.<br><br>**Janitors' Sinks**: Floor mounted, mop service basins, molded plastic composition, with stainless steel grid drain. Provide with chrome plated mixing faucet with integral vacuum breaker, wall brace, pail hook, and stainless steel wall splashguard. |
| D2020 | | DOMESTIC WATER DISTRIBUTION | **See Section "G20, Site Improvements" for storm water retention on-site.**<br><br>**Sustainable Options**: Collecting the rainwater from the roof areas, storing it in tanks with circulation pumps and filters. This non-potable water would then be pumped throughout the building supplying the flushing fixtures, water closets, and urinals. This option will be priced as an alternate.<br><br>**Water Supply Piping Systems**:<br>• Cold Water: Cold water supply system to enter the building at grade in the water service room. Underground service piping shall be cement-lined ductile iron. Service entrance to be equipped with a water meter in accordance with Town of Salem requirements. The water main shall be sized to serve all building areas. Domestic cold water piping to be distributed throughout the building and serve all fixtures and equipment requirement service, and be provided with isolation valves to provide zone control of the system. Domestic cold water piping shall be Type L copper. Water piping to mechanical equipment (e.g. heating boilers) shall be protected form cross connections with |

PROJECT: **J. Michael Ruane Judicial Center**
LOCATION: **Federal Street; Salem, Ma.**
ARCHITECT: Goody Clancy Architects
PHASE: Revised Study Stage
FILE NO: DCAM Project No. TRC 9910 ST2 / Gca06290.00 / Fa2160

| SYSTEMS RECAPITULATION | | | SCOPE DESCRIPTION OF WORK |
|---|---|---|---|
| UNIF# | CSI # | | |

the use of reduced pressure zone backflow preventers in accordance with the plumbing code (248 CMR) and D.E.P. (310 CMR 22.22) requirements. A duplex domestic water boosting system at grade level may be required to provide adequate pressure for the building's plumbing system. A hydrant flow and pressure test is required to determine if the pressure boosting system is required.

- Hot Water: Hot water supply system shall be generated by the natural gas fired domestic storage water heaters, and distributed to those fixtures requiring hot water. Hot water circuits with a developed length of more than 100 feet from the water heater or a hot water supply main shall be provided with a re-circulation piping loop to maintain the water temperature. Hot water delivery temperatures shall be as follows:

| Designation | Description | Operating Temperature |
|---|---|---|
| HW | Domestic Hot Water | 120 Deg. F. |
| PHW | Public Lavatory Faucets (Tempered at faucet) | 110 Deg. F. |
| PHW | Kitchen Hand Wash Sinks (Tempered locally) | 110 Deg. F. |

- Hot Water Re-Circulation: Hot water supply piping shall be re-circulated from the remote ends of the system and returned to the water heaters to maintain system temperature. Re-circulation hoops to be provided with bronze bodied circulator pumps operated by immersion aquastats. Hot water distribution piping shall be Type L copper.
- Cooling Tower/Boiler Makeup Water Supply: The supply water for both cooling tower and boiler makeup water shall be equipped with reduced pressure zone backflow preventers. All piping on the discharge side of these backflow preventers is the responsibility of the HVAC

PROJECT: **J. Michael Ruane Judicial Center**
LOCATION: **Federal Street; Salem, Ma.**
ARCHITECT: Goody Clancy Architects
PHASE: Revised Study Stage
FILE NO: DCAM Project No. TRC 9910 ST2 / Gca06290.00 / Fa2160

| SYSTEMS RECAPITULATION | | | SCOPE DESCRIPTION OF WORK |
|---|---|---|---|
| UNIF# | CSI # | | |
| | | | contractor.<br><br>**Water Supply Equipment**:<br>• Water Meter: Type and style as required by the Town of Salem water department and sized for the peak intermittent demands of the building. Piping arrangement at meter installation to be as required by the Town of Salem water department.<br>• Backflow Preventers: Reduced pressure principle devices with test ports and vented intermediate chamber. These devices will be ASSE listed and Mass. Code approved. Drip from vented chamber to be discharged over floor drain.<br>• Domestic Water Heaters: Commercial grade, storage type, gas-fired (electrically energized), with integral operating controls. The central water heating system will consist of two gas-fired heaters, located in the basement. These units will supply hot water to all plumbing fixtures requiring hot water.<br>• Wall Hydrants: Shall be provided at 100-foot intervals around the building. Units shall be non-freeze enclosed type, equipped with loose operating key, and located approximately 24 inches above finished grade. Units shall be PDI listed, and be complete with integral vacuum breaker.<br>• Hose Bibbs: Shall be chrome plated, wall mounted, with integral vacuum breaker, and loose key handle. They shall be located in each toilet room, and all rooms containing a floor drain.<br>• Mixing / Tempering Valves: Bronze bodied, thermostatically controlled, adjustable valves, manufactured specifically to maintain outlet temperatures at varying flows for domestic water systems. Valves to be two-stage (high-low) flow type |

PROJECT: **J. Michael Ruane Judicial Center**
LOCATION: **Federal Street; Salem, Ma.**
ARCHITECT: Goody Clancy Architects
PHASE: Revised Study Stage
FILE NO: DCAM Project No. TRC 9910 ST2 / Gca06290.00 / Fa2160

| SYSTEMS RECAPITULATION | | | SCOPE DESCRIPTION OF WORK |
|---|---|---|---|
| UNIF# | CSI # | | |
| | | | for temperature maintenance across the full flow range. Units shall be wall mounted, bronze finish, and be equipped with inlet and outlet thermometers.<br><br>**Water Supply Insulation**: Cold water, hot water, and hot water re-circulating piping will be insulated with one-inch thick fiberglass insulation with all-service jacket. Exposed piping under accessible sinks will be insulated with pre-molded insulation kits. |
| D2030 | | SANITARY WASTE SYSTEMS | **Waste and Vent Piping**<br>• Piping to be designed to collect liquid wastes from all plumbing fixtures and drains requiring waste connections. Horizontal collection of the vertical stacks to be primarily below the fist floor slab to minimize the potential for interference with work of other trades.<br>• Building sewer will exit the building and connect to the site sanitary sewer system by gravity.<br>• System to include atmospheric venting system to maintain trap seals with vent terminal through the roof, located not closer than 25 feet from any fresh air intake or operable window.<br>• Trap primer systems will provide makeup water to fixture and drain traps where necessary to maintain liquid trap seals.<br><br>**Wastewater Piping Specialties**: Floor drains shall be of cast iron construction, heavy-duty grade. Those for use in toilet rooms and other finished spaces shall have polished bronze exposed finishes. Those for use in mechanical rooms and other unfinished spaces shall be all cast iron and of heavy-duty construction.<br><br>**Waste Piping Insulation**: Insulate horizontal roof drain piping with one-inch thick fiberglass insulation with all |

PROJECT: **J. Michael Ruane Judicial Center**
LOCATION: **Federal Street; Salem, Ma.**
ARCHITECT: Goody Clancy Architects
PHASE: Revised Study Stage
FILE NO: DCAM Project No. TRC 9910 ST2 / Gca06290.00 / Fa2160

| SYSTEMS RECAPITULATION | | | SCOPE DESCRIPTION OF WORK |
|---|---|---|---|
| UNIF# | CSI # | | |
| | | | service jacket. |
| D2040 | | RAIN WATER DRAINAGE SYSTEMS | System to be gravity drainage type and collect the discharge from all roof, plaza, and deck drains. For flat roofs, interior pipe routing is to be offset from the roof drain location, vertically down against building columns, and be collected below the first floor slab to minimize conflicts with other building elements and systems. Peaked roofs will either spill off onto contiguous flat roofs or will be provided with exterior gutters and downspouts and will be connected to an exterior storm drainage collection system.<br><br>**Rain Water Drainage specialties**: Roof drains to be cast iron construction, heavy duty, with flashing clamp for membrane roofing, Underdeck clamping device, and aluminum domes.<br><br>**Rain Water Drainage Insulation**: Provide pre-formed pipe insulation on all drain bodies and horizontal sections of rainwater drainage system to prevent condensation.<br><br>**GREEN ROOF PROVISIONS**: Provide, as part of alternate for green roof, an irrigation and collection system for rain and irrigation water. |
| D2050 | | SPECIAL PLUMBING SYSTEMS | **Natural Gas Systems**:<br>Natural gas is the preferred energy source for this facility. The local serving gas supplier will be consulted for the location of adequately sized underground mains on the Salem site, or will be requested to provide a new underground service from their street distribution system. Because this is new construction, the gas services represents new revenue for the utility and often mitigates, partially or fully, the costs of installing the new service. From the discharge of the meter, internal gas piping will be installed by the plumbing contractor to all equipment (primarily the heating boiler and domestic water heaters) requiring gas including connections to the equipment and necessary venting of gas |

PROJECT: **J. Michael Ruane Judicial Center**
LOCATION: **Federal Street; Salem, Ma.**
ARCHITECT: Goody Clancy Architects
PHASE: Revised Study Stage
FILE NO: DCAM Project No. TRC 9910 ST2 / Gca06290.00 / Fa2160

| SYSTEMS RECAPITULATION | | | SCOPE DESCRIPTION OF WORK |
|---|---|---|---|
| UNIF# | CSI # | | |
| | | | train safety and control devices to the outside atmosphere. Gas piping shall be Schedule 40 black steel with malleable iron threaded fittings.<br><br>Domestic cold water, hot water, hot water return, sanitary, vent, and storm piping will be routed in a chase located in the core bathrooms and distributed to the fixtures they serve above the ceilings. |
| | | | |
| ***D30*** | ***15500*** | ***HVAC SYSTEMS*** | |
| | | PRIMARY AIR HANDLING SYSTEMS (See Outline Specification Attached) | The first air system is comprised of three Dedicated Outdoor Air Systems (DOAS) which will provide the outdoor air ventilation requirement to each of the building spaces. These units will directly provide OA to each courtroom or building zone. These units, complete with enthalpy heat recovery, will be variable volume in control with individual zone air box on/off control according to occupancy. This control assures the exact OA to each space as required yet can be shut off when the zone is not in use to maximize energy savings.<br><br>The second air system is comprised of multiple VAV air handlers providing the individual room air temperature control. Used in concert with the DOAS system, these VAV air handlers are then fully recirculating units such that heating coils are not necessary in the units eliminating coil HW piping. The units will, however have airside economizer controls (the use of all outdoor air for cooling) to maximize energy efficiency in the intermediate cooling seasons.<br><br>Due to the architectural configuration of the proposed new building construction, the HVAC air distribution pattern lends itself to four broad air handling zones: two vertical distribution zones along the Bridge Street building axis, one zone for the south wing toward Federal Street and one zone for the church reuse. |

PROJECT: **J. Michael Ruane Judicial Center**
LOCATION: **Federal Street; Salem, Ma.**
ARCHITECT: Goody Clancy Architects
PHASE: Revised Study Stage
FILE NO: DCAM Project No. TRC 9910 ST2 / Gca06290.00 / Fa2160

| SYSTEMS RECAPITULATION | | | SCOPE DESCRIPTION OF WORK |
|---|---|---|---|
| UNIF# | CSI # | | |
| | | | For the axis along Bridge Street, the air handling units would be located in the roof penthouse with distribution running vertical and horizontal from this location. For the south wing toward Federal Street, the air handling units would be located on the roof penthouse on that wing with distribution running vertical and horizontal from this location. For the church renovation into the law library, it is proposed that those units would be located in the new basement of that church building.<br><br>The Church renovation building would be served by a single VAV air handling system complete with its full outdoor air component. As the building is generally one zone, there is no need to provide two systems for this building. This unit will be in the 12,000 CFM range. When final plan layouts and space usage is defined and envelope characteristics are determined, we will determine if and where baseboard radiation will be needed.<br><br>The air handling units shall feed a common supply duct headers in the penthouse and be distributed to vertical shafts serving the building floors below.<br><br>Supply risers shall have sound attenuators in the vertical drops. Air shall be distributed through VAV valves with VAV manufacturer's attenuators and duct mounted reheat coils. |
| | | GENERAL EXHAUST SYSTEMS | Roof mounted centrifugal dome fans shall be used for toilet exhaust systems and penthouse mechanical room exhaust systems. |
| | | CHILLED WATER SYSTEM | Chilled water for the project shall be provided by two 280-ton centrifugal water cooled chillers located in the basement of the new trial court. The chillers will have variable frequency drives.<br><br>The chilled water system will be designed around a temperature differential of 14°F (42° to 56°F). |

PROJECT: **J. Michael Ruane Judicial Center**
LOCATION: **Federal Street; Salem, Ma.**
ARCHITECT: Goody Clancy Architects
PHASE: Revised Study Stage
FILE NO: DCAM Project No. TRC 9910 ST2 / Gca06290.00 / Fa2160

| SYSTEMS RECAPITULATION | | | SCOPE DESCRIPTION OF WORK |
|---|---|---|---|
| UNIF# | CSI # | | |
| | | | A primary chilled water pumping system shall be provided. The system shall consist of three (3) variable speed vertical split coupled chilled water pumps (1 is a standby).<br><br>Two (2) 280-ton cooling towers shall be located on the roof. The cooling towers fans will have variable speed drives. The condenser water system will have three (3) vertical split coupled pumps (1 is a standby). |
| | | HOT WATER SYSTEM | Building heating hot water for the project will be provided by three (3) 80 boiler horse power (BHP) gas-fired, flexible water tube boilers located in the basement of the new trial court.<br><br>Hot water will be distributed to hot water reheat coils, air handling unit heating coils and perimeter baseboard radiation via three (3) vertical split coupled variable speed drive pumps.<br><br>Boiler breeching shall be double wall and extend to 10 feet above the roof of the building. |
| | | HEAT RECOVERY | The building's dedicated outside air system (DOAS) exhaust and supply air handling units shall contain enthalpy heat recovery wheels |
| | | CONTROL SYSTEMS | The building will have a stand-alone Direct Digital Control (DDC) system to control and monitor all functions of the building mechanical systems. The front-end controls computer will be located in the basement mechanical room. |
| | | SPECIAL SYSTEMS | ENTRY, WAITING AND CONCOURSE AREAS: These multi-story spaces will be designed so as not to require a dedicated smoke emergency evacuation system. It will be conditioned from the main supply and return air system and supplemented by an under floor hot water/chilled water radiant heating system.<br><br>LOADING DOCK VENTILATION AND HEATING: Variable flow exhaust |

PROJECT: **J. Michael Ruane Judicial Center**
LOCATION: **Federal Street; Salem, Ma.**
ARCHITECT: Goody Clancy Architects
PHASE: Revised Study Stage
FILE NO: DCAM Project No. TRC 9910 ST2 / Gca06290.00 / Fa2160

| SYSTEMS RECAPITULATION | | | SCOPE DESCRIPTION OF WORK |
|---|---|---|---|
| UNIF# | CSI # | | |
| | | | fans with a capacity of 1.5 CFM/SF will provide the motive force for ventilation. The rate of exhaust flow will be determined by carbon monoxide (CO) sensors distributed throughout the area. Makeup air will be provided by a combination of the open truck entrance and transfer ductwork with direct connections to the outdoors. Heating will be provided by overhead radiant heaters.<br><br>Provide stairway and elevator hoistway pressurization systems.<br><br>Mechanical and main electric rooms shall be ventilated with 100% outdoor air via side wall intake louvers and ducted exhaust to either a sidewall louver or roof mounted fan. The exhaust system shall be controlled by a room thermostat. Heating shall be accomplished via hot water horizontal unit heaters.<br><br>Entries and exterior stairwells shall have hot water cabinet unit heaters.<br><br>Elevator machine rooms and tel/data rooms shall be cooled via the main building supply air units. |
| | | SYSTEMS COMMISSIONING | The new Trial Court Building will be fully and formally commissioned. The owner will retain an independent third-party commissioning authority/agent (Cx-A) to act as the Commissioning Authority. The Commissioning Authority will observe and document the commissioning work.<br><br>All prime contractors, trade contractors, subcontractors, installing subcontractors, air balancing and controls contractors, vendors, equipment and material suppliers and the like are part of the commissioning team and are required to take part in the complete commissioning process. |
| | | | |
| ***D40*** | ***15300*** | ***FIRE PROTECTION SYSTEMS*** | |

PROJECT: **J. Michael Ruane Judicial Center**
LOCATION: **Federal Street; Salem, Ma.**
ARCHITECT: Goody Clancy Architects
PHASE: Revised Study Stage
FILE NO: DCAM Project No. TRC 9910 ST2 / Gca06290.00 / Fa2160

| SYSTEMS RECAPITULATION | | | SCOPE DESCRIPTION OF WORK |
|---|---|---|---|
| UNIF# | CSI # | | |
| D4010 | | FIRE PROT. SPRINKLER SYSTEMS | Incoming 8" fire service will enter the building into the Fire Pump room at ground level and be provided with a double detector check valve type backflow prevention device.<br><br>The system will consist of a fire pump, jockey pump, controls and automatic transfer switches. These systems are required to be on emergency power.<br><br>The building will be protected by a fully automatic sprinkler system.<br><br>Dry sprinkler systems will be required in areas of the building that can not maintain temperatures above freezing at all times including Judges Parking, Receiving and the Sallyport.<br><br>Closed head pre-action sprinkler system in Inactive Records Storage area (may be constructed on first mezzanine) will consist of a pre-action valve system, compressor and control panel. |
| D4020 | | STANDPIPE & HOSE SYSTEMS | A Class I standpipe system will be provided throughout the building with hose valve connections located in the exit stairwells and other locations as required by NFPA 14. |
| D4030 | | FIRE PROTECTION SPECIALTIES | Fire extinguishers and cabinets will be provided as required and in accordance with applicable codes. |
| D4040 | | SPECIAL SYSTEMS | None |
| | | | |
| ***D50*** | ***16000*** | ***ELECTRICAL SYSTEMS*** | |
| D5010 | | SERVICE AND DISTRIBUTION | National Grid will provide primary electric service, including wiring and exterior pad mounted switch and two 2,000 kVA transformers and pads to serve 277/480 volts to the Courthouse's interior switchboards.<br><br>Provide primary conduit ductbank and secondary conduit ductbank and wiring from the exterior transformers to |

PROJECT: **J. Michael Ruane Judicial Center**
LOCATION: **Federal Street; Salem, Ma.**
ARCHITECT: Goody Clancy Architects
PHASE: Revised Study Stage
FILE NO: DCAM Project No. TRC 9910 ST2 / Gca06290.00 / Fa2160

| SYSTEMS RECAPITULATION | | | SCOPE DESCRIPTION OF WORK |
|---|---|---|---|
| UNIF# | CSI # | | |
| | | | building's interior switchboards. Each switchboard shall be 4,000 Amp 277/480 volt, 3 phase 4 wire 60 hz grounded circuit breaker switchboard with 3,000A-3P main circuit breaker.<br><br>New distribution throughout the building shall be 277/480 volt, 3 phase 4 wire for mechanical and lighting loads. Dry type step down transformers shall be provided to provide power for incandescent lighting, receptacles and other 120/208 volt loads.<br><br>Panelboards for lighting, office power and mechanical power shall be located in electric closets and mechanical rooms. Where practical, elevator rooms will be stacked to allow flexibility and ease of maintenance.<br><br>New Wiring Methods: MC and AC cable may be used for branch circuiting as allowed by the NEC and as allowed by the local authorities having jurisdiction.<br><br>All penetrations through fire and smoke partitions and floors will be firestopped.<br><br>Fish wires will be installed in all empty raceways. |
| D5020 | | LIGHTING & BRANCH WIRING | Provide convenience outlets generally in courtrooms, offices, public areas, mechanical rooms and electrical rooms as dictated by design.<br><br>Lighting will be designed to meet the aesthetic qualities for the individual design areas. The lighting will also be designed in accordance with Owner's standards for quality and efficiency.<br><br>The lighting will be designed to meet and exceed the requirements of the Massachusetts State Energy Code.<br><br>Lighting levels and quality will be designed to meet or exceed |

PROJECT: **J. Michael Ruane Judicial Center**
LOCATION: **Federal Street; Salem, Ma.**
ARCHITECT: Goody Clancy Architects
PHASE: Revised Study Stage
FILE NO: DCAM Project No. TRC 9910 ST2 / Gca06290.00 / Fa2160

| SYSTEMS RECAPITULATION | | | SCOPE DESCRIPTION OF WORK |
|---|---|---|---|
| UNIF# | CSI # | | |
| | | | IESNA guidelines.<br><br>Lighting controls will be provided for individual occupancy control in each design area. Controls will be provided to allow for multiple levels of lighting for occupant comfort and use.<br><br>Occupancy sensors and time clock controlled lighting contractors will be incorporated to provide automatic lighting controls throughout the facility and for exterior site lighting. Automatic lighting controls for individual spaces will be provided to meet the individual requirements of the respective spaces and will be determined in subsequent meetings. |
| D5030 | | COMM/SECURITY SYSTEMS | Verizon Service: Verizon will provide a single point of entry into the new Court House Building. Verizon's infrastructure shall be via copper cable terminated on lightning protection and or fiber optic cables or both. This presence will be in The Main distribution Frame (MDF).<br><br>Telephone Distribution: The telephone distribution will be copper backbone cabling distributed from the proposed MDF located on the basement level. The (2) proposed IDF closets per floor shall be connected via new copper backbone cables to the proposed MDF. All new voice station cabling shall be terminated on 110 type terminations. Cables will feed from the MDF/IDF to all voice outlets.<br><br>Data Distribution: High speed data communications services will be distributed from the MDF to each IDF via multi strand multimode fiber optic cables.<br><br>Telecommunications Grounding System:<br>• A telecommunications main grounding bus bar will be in the MDF connected with a minimum #4 grounding conductor |

PROJECT: **J. Michael Ruane Judicial Center**
LOCATION: **Federal Street; Salem, Ma.**
ARCHITECT: Goody Clancy Architects
PHASE: Revised Study Stage
FILE NO: DCAM Project No. TRC 9910 ST2 / Gca06290.00 / Fa2160

| SYSTEMS RECAPITULATION | | | SCOPE DESCRIPTION OF WORK |
|---|---|---|---|
| UNIF# | CSI # | | |
| | | | to the main electrical ground.<br>• Provide a telecommunications bonding backbone from the MDF main grounding bus bar through the IDF rooms and terminated on a grounding bus bar at the last closet.<br>• Provide a telecommunications busbar in each closet<br>• Bond all bus bars to the telecommunications bonding backbone.<br>• Bond all tap/splitters, distribution devices, racks etc to the grounding bus bar.<br><br>Codes and Standards: The Telecommunications System will be designed to conform, as a minimum, to the following codes and standards:<br>• Local and State Building Department Codes.<br>• Occupational Safety and Health Act (OSHA).<br>• Underwriters Laboratories (UL).<br>• National Fire Protection Association (NFPA).<br>• National Electrical Code (NEC).<br>• Massachusetts Electrical Code (MEC)<br>• Americans with Disabilities Act (ADA).<br>• ANSI /TIA/EIA 568-B 2.1 Commercial building cabling standard.<br><br>SECURITY: The Security System shall consist of Security Management System (SMS), Closed Circuit Television (CCTV) System, Card Access System, Intercom System, Graphical User Interface (GUI). All applicable wire and cable, and the functional integration of all subsystems through subsystem interfaces. |
| D5040 | | SPECIAL SYSTEMS | |
| | | EMERGENCY SERVICE AND DISTRIBUTION | All emergency lighting and smoke evacuation shall be provided from a 1,250 kW, 480/277 volt diesel powered generator. Generator shall be installed on site with acoustic |

PROJECT: **J. Michael Ruane Judicial Center**
LOCATION: **Federal Street; Salem, Ma.**
ARCHITECT: Goody Clancy Architects
PHASE: Revised Study Stage
FILE NO: DCAM Project No. TRC 9910 ST2 / Gca06290.00 / Fa2160

| SYSTEMS RECAPITULATION | | | SCOPE DESCRIPTION OF WORK |
|---|---|---|---|
| UNIF# | CSI # | | |
| | | | weatherproof enclosure. Emergency generator shall provide power to standby loads including heating and other loads as dictated by design.<br><br>Provide 2 hour rated feeders and emergency distribution closet for all life safety and emergency loads.<br><br>The emergency distribution will be broken up into three systems with one or more transfer switches serving each of the following:<br>• Life safety<br>• Elevator<br>• Standby (non-essential)<br><br>Emergency lighting shall be provided in courtrooms. Select fixtures shall also be provided with battery backup ballasts to provide lighting during the transfer from normal to emergency power. The lighting shall be designed such that this emergency lighting does not provide spot lighting for the judge's bench.<br><br>In addition to the courtrooms and circulation areas for egress, emergency lighting shall be provided in the following areas:<br>• Jury assembly area<br>• Trial jury suite<br>• Grand jury suite<br>• Judge's private chambers, conference room and rolling room<br>• Other areas as dictated by design |
| | | GROUNDING | A perimeter grounding system comprising driven ground rods, buried copper cable, connections to building steel and copper ground buses shall be provided. The maximum resistance to ground for the ground system shall be two ohms. |

PROJECT: **J. Michael Ruane Judicial Center**
LOCATION: **Federal Street; Salem, Ma.**
ARCHITECT: Goody Clancy Architects
PHASE: Revised Study Stage
FILE NO: DCAM Project No. TRC 9910 ST2 / Gca06290.00 / Fa2160

| SYSTEMS RECAPITULATION | | | SCOPE DESCRIPTION OF WORK |
|---|---|---|---|
| UNIF# | CSI # | | |
| | | | All feeders and branch circuits shall be provided with a green equipment ground conductor. A ground wire and ground buses shall be provided in all telecommunications rooms and closets. |
| | | FIRE ALARM | An addressable type fire alarm system shall be provided. The main control panel (FACP) shall be located in the water fire service room. The system shall be connected to the Salem Fire Department via a leased telephone line for alarm and trouble indications in accordance with the building code.<br><br>The fire alarm system shall operate manually via fire alarm pull stations located at egress locations on each level.<br><br>The fire alarm system shall operate automatically via smoke detectors located in corridors, lobbies, electrical closets, and other selected spaces. Automatic operation shall also be initiated by smoke detectors in the HVAC air-handling units. Sprinkler system shall also initiate automatic operation. Alarms shall be horn/strobe units.<br><br>Activation of the sprinkler system shall also trip a radio master box to alarm the Salem Fire Department. |
| | | OTHER SPECIAL SYSTEMS | Where heat trace systems are provided under section 15000 provide power and final testing and connections.<br><br>Provide an empty raceway system for<br>• security system and CCTV devices in the building to corridors, stairwells and grade level perimeter doors.<br>• audio/visual systems.<br><br>**No conditioned power (Uninterruptible power supplies (UPS), special transformers, isolated ground systems etc) is anticipated at this time.** |
| | | | |

PROJECT: **J. Michael Ruane Judicial Center**
LOCATION: **Federal Street; Salem, Ma.**
ARCHITECT: Goody Clancy Architects
PHASE: Revised Study Stage
FILE NO: DCAM Project No. TRC 9910 ST2 / Gca06290.00 / Fa2160

| SYSTEMS RECAPITULATION | | | SCOPE DESCRIPTION OF WORK |
|---|---|---|---|
| UNIF# | CSI # | | |
| **E** | | **EQUIPMENT** | |
| ***E10*** | | ***EQUIPMENT*** | |
| E1010 | | COMMERCIAL EQUIPMENT | NONE |
| E1020 | | INSTITUTIONAL EQUIPMENT | Detention area equipment in lower level holding facilities and satellite areas adjacent to courtrooms, including security and control system. Detainee docks within courtrooms. |
| E1030 | | VEHICULAR EQUIPMENT | Provide scissor lift at loading dock - 16,000 lb. Capacity. |
| E1040 | | OTHER EQUIPMENT | Appliances, Allow |
| ***E20*** | | ***FURNISHINGS*** | |
| E2010 | | FIXED | Courtroom spectator benches and attorneys' tables.<br><br>Wood high-back double benches in waiting areas. |
| | | ENTRANCE MATS AND FRAMES | Bar Grille with pans and carpet inserts (C/S #G9) |
| | | WINDOW TREATMENTS | Electronically operated shades at courtroom windows similar and equal to those provided by MechoShade.<br><br>Manual pull down roller shades for offices, conferences rooms and like areas.<br><br>Fabric shall be "Ecoveil" by MechoShade Company.<br><br>Drapes or blinds in offices and similar spaces (not at public lobbies/corridors) to be furnished under FF+E contract. |
| | | COMPACT SHELVING | Compact shelving to be furnished under FF+E contract. |
| | | LIBRARY SHELVING | Stack shelving and other storage units in Law Library under FF+E. |
| | | SECURITY SCREENING DEVICES | Security screening equipment to be provided under FF+E contract. |
| E2020 | | MOVABLE | Jury, judges' and witness chairs to be furnished under FF+E contract and all other movable furniture provided under FF+E contract. |
| | | | |
| **F** | | **OTHER BUILDING CONSTRUCTION** | |

PROJECT: **J. Michael Ruane Judicial Center**

LOCATION: **Federal Street; Salem, Ma.**

ARCHITECT: Goody Clancy Architects

PHASE: Revised Study Stage

FILE NO: DCAM Project No. TRC 9910 ST2 / Gca06290.00 / Fa2160

| SYSTEMS RECAPITULATION | | | SCOPE DESCRIPTION OF WORK |
|---|---|---|---|
| UNIF# | CSI # | | |
| F10 | | SPECIAL CONSTRUCTION | |
| F1010 | | SPECIAL STRUCTURES | |
| F1020 | | INTEGRATED CONSTRUCTION | |
| F1030 | | SPECIAL CONSTRUCTION SYSTEMS | |
| F1040 | | SPECIAL FACILITIES | |
| F1050 | | SPEC. CONTROL SYSTEMS | |
| | | | |
| F20 | 02070 | SELECTIVE DEMOLITION AND MOVING OF CHURCH BUILDING | Move existing and demolish rear addition of First Baptist Church, remove foundations (May require hazardous material abatement, allow for same.) |
| F2010 | | BUILDING ELEMENT DEMOLITION | NONE |
| F2020 | | HAZARDOUS COMP. ABATEMENT | Assume hazardous materials (other than at First Baptist Church) has been removed prior to this construction contract. |
| | | | |
| **G** | | **BUILDING SITEWORK** | |
| G10 | | SITE PREPARATION | Clearing of surface materials and temporary site conditions, and excavation in preparation for finished site work and new building foundations. |
| G1010 | | SUBSURFACE INVESTIGATION | See Geotechnical Reports prepared by Nobis Engineering and Ransom Environmental Consultants, Inc. for DCAM and dated 10/14/05 and February 2003 respectively |
| G1020 | | SITE CLEARING | |
| G1030 | | SITE DEMOLITION & RELOCATIONS | |
| G1030.1 | | BUILDING DEMOLITION | |
| G1040 | | SITE EARTHWORK | |
| G1050 | | HAZARDOUS WASTE REMEDIATION | |
| | | | |
| G20 | | SITE IMPROVEMENTS | The new Entrance Plaza is a terraced/planted landscape area with specialty paving and large planted area. The entry is designed so that the main points of egress are universally accessible to accommodate ADA requirements without the addition of special ramps and railings. |

PROJECT: **J. Michael Ruane Judicial Center**
LOCATION: **Federal Street; Salem, Ma.**
ARCHITECT: Goody Clancy Architects
PHASE: Revised Study Stage
FILE NO: DCAM Project No. TRC 9910 ST2 / Gca06290.00 / Fa2160

| SYSTEMS RECAPITULATION | | | SCOPE DESCRIPTION OF WORK |
|---|---|---|---|
| UNIF# | CSI # | | |
| | | | Bituminous paved combined delivery/service bay and sallyport approach, granite curbs, accessed from separate drive from Bridge Street. Sallyport is separate from the delivery bay and includes supplementary exterior secure enclosure (8' metal fence and electric gate and colored, textured CMU retaining walls) for two vehicles and secure exterior sallyport vehicle stacking. Provide colored, textured CMU wall for dumpster enclosure.<br><br>Bituminous paved drive with granite curbs and 8' high "architectural" security fence with plantings at access to judges' parking from Bridge Street.<br><br>Irrigation system.<br><br>Site drainage system which includes large pervious landscape areas to enhance storm water management. Retention tank will be located under the main plaza. Provide catch basins and drains as required.<br><br>Site security and lighting including both light standards and accent lighting throughout.<br><br>Coordination with all site utilities and mechanical requirements, including equipment pads.<br><br>Pavement striping for vehicle approaches and at judges' and other parking. |
| G2010 | 02500 | ROADWAYS | Bituminous concrete pavement<br>Concrete pavement - 4" sidewalks<br>Concrete Service Pavement - 6"<br>Granite or Brick pavement<br>6" vertical granite curb<br>Wheelstops<br>12" vertical granite curb |

PROJECT: **J. Michael Ruane Judicial Center**
LOCATION: **Federal Street; Salem, Ma.**
ARCHITECT: Goody Clancy Architects
PHASE: Revised Study Stage
FILE NO: DCAM Project No. TRC 9910 ST2 / Gca06290.00 / Fa2160

| SYSTEMS RECAPITULATION | | | SCOPE DESCRIPTION OF WORK |
|---|---|---|---|
| UNIF# | CSI # | | |
| G2020 | 02500 | PARKING LOTS | See G2010 |
| G2030 | | PEDESTRIAN PAVING | See G2010 |
| G2040 | 02800 | SITE DEVELOPMENT | Concrete retaining walls<br>Steel picket vehicular gate<br>Steel picket fence and pedestrian gate - 6 ft ht.<br>Tree grates<br>Granite veneer seatwall<br>Reset granite steps<br>Concrete stairs and handrails<br>Trash receptacle<br>Flagpole<br>Bike Rack<br>Ash urn |
| G2050 | 02900 | LANDSCAPING | Fine grading and compacting of subgrade<br>Deciduous tree (4"-4 1/2" caliper)<br>Ornamental tree (2"-2 1/2" caliper)<br>Evergreen tree (8'-10' ht.)<br>Shrubs, groundcover and/or perennials<br>Loam & seed |
| | 02810 | IRRIGATION | Allow for project |
| | | | |
| G30 | | SITE PLUMBING UTILITIES | |
| G3010 | 02510 | WATER SUPPLY & DISTRIBUTION | Ductile Iron Pipe and Fittings for Water Distribution: Fire service connections to buildings shall be assumed to be 8-inch diameter and domestic water service connections to buildings shall be assumed to be 4-inch diameter. All ductile iron water pipe shall conform to American Water Works Association (AWWA) C150 and AWWA C151. Water distribution systems shall be Class 52 ductile iron pipe with push-on or mechanical joints with gaskets conforming to AWWA C111. Ductile iron water pipe shall be double cement lined inside and asphalt seal coated in accordance with AWWA C104. The pipe shall be furnished with necessary materials and equipment recommended by the manufacturer for use in joining pipe lengths and fittings conforming to ANSI Specifications. |

PROJECT: **J. Michael Ruane Judicial Center**
LOCATION: **Federal Street; Salem, Ma.**
ARCHITECT: Goody Clancy Architects
PHASE: Revised Study Stage
FILE NO: DCAM Project No. TRC 9910 ST2 / Gca06290.00 / Fa2160

| SYSTEMS RECAPITULATION | | | SCOPE DESCRIPTION OF WORK |
|---|---|---|---|
| UNIF# | CSI # | | |
| | | | Disinfection of Water Mains and Appurtenances: All pipelines shall be disinfected, after testing and prior to being placed into service, in accordance with the AWWA Standard C651.<br><br>Hydrostatic Tests: After the pipe is laid, the joints completed, fire hydrants permanently installed, and the trench partially backfilled leaving the joints exposed for examination, the newly laid piping or any valved section of water supply lines or water service piping shall, unless otherwise specified, be subject for 2 hours to a hydrostatic pressure test of 200 psi as specified in AWWA Standards. |
| G3020 | 02530 | SANITARY | Polyvinyl Chloride (PVC) Pipe for Sanitary Sewage Conveyance: Sanitary Sewage discharge pipes from buildings shall be assumed to be a minimum of 6-inch diameter polyvinyl chloride (PVC) pipe. Sanitary Sewage mains shall be assumed to be 8-inch diameter PVC pipe. Sanitary Sewage pipe shall be type PSM, SDR-35 PVC pipe conforming to the requirements of American Society for Testing and Materials (ASTM) D3034, current edition. Joints shall be elastomeric, oil resistant gasket joints conforming to the requirements of ASTM D3212, current edition, push-on type. Tee branches, wyes, and fittings shall be type PSM SDR-35 PVC pipe, conforming to ASTM D3034, current edition.<br><br>Cleanouts: Cleanouts shall be cast iron with a heavy-duty brass top. Cleanout frame and cover shall be set in concrete 12 by 12 by 6-inches deep, except where location is in bituminous paving. Set top of cleanout 1-inch above surrounding earth grade or flush with grade when installed in paving.<br><br>Tap Connections: Branch connections to existing pipes shall be made by installing a saddle or wye connection. |
| G3030 | 02630 | STORM SEWERAGE | **The stormwater management system is comprised of a closed** |

PROJECT: **J. Michael Ruane Judicial Center**
LOCATION: **Federal Street; Salem, Ma.**
ARCHITECT: Goody Clancy Architects
PHASE: Revised Study Stage
FILE NO: DCAM Project No. TRC 9910 ST2 / Gca06290.00 / Fa2160

| SYSTEMS RECAPITULATION | | | SCOPE DESCRIPTION OF WORK |
|---|---|---|---|
| UNIF# | CSI # | | |
| | | | **drainage system or of collection structures and piping. The system will mitigate increased post-development flows to pre-development conditions and comply with the requirements to obtain LEED Credits 6.1 and 6.2.**<br><br>Corrugated Polyethylene Pipe: Stormwater collected within catch basins on site and on rooftops shall be conveyed through a closed drainage system using corrugated polyethylene pipe (CPP). The CPP pipe shall be sized utilizing accepted engineering practices for closed drainage systems. CPP pipe shall conform to AASHTO M-294, AASHTO M242, or AASHTO MP6, Type S depending upon the diameter of the pipe.<br><br>Storm Drain Manholes: Precast reinforced concrete manhole structures shall comply with material, design, and construction standards specified under ASTM C478. Manholes shall be 4-foot diameter. Manhole tops shall be precast concrete designed to meet H20 loadings. Frames and covers shall be of cast iron conforming to the requirements of ASTM A48, Class No. 30. Cement for manholes shall be Type II and concrete shall have a minimum strength of 4,000 psi. Joints between sections of concrete structures shall be sealed with a self-sealing butyl rubber based flexible joint sealant gasket complying with ASTM C443. Manhole Steps and reinforcing rods shall conform to ASTM A615. Manhole frames shall be set to finish course with brick masonry.<br><br>Catch Basins: Precast reinforced concrete catch basins shall comply with material, design, and construction standards specified under ASTM C478. Frames and grates shall be of 4-flange cast iron unless along curbing. Catch basins shall have removable hoods and a minimum 4-feet deep sump.<br><br>Underground Detention Basins: Underground detention basins shall be composed of Corrugated Polyethylene Pipe (CPP) set in |

PROJECT: **J. Michael Ruane Judicial Center**
LOCATION: **Federal Street; Salem, Ma.**
ARCHITECT: Goody Clancy Architects
PHASE: Revised Study Stage
FILE NO: DCAM Project No. TRC 9910 ST2 / Gca06290.00 / Fa2160

| SYSTEMS RECAPITULATION | | | SCOPE DESCRIPTION OF WORK |
|---|---|---|---|
| UNIF# | CSI # | | |
| | | | crushed stone complying with Massachusetts Highway Department (MHD) M2.01.1. The pipe shall be placed within the crushed stone so that it is a minimum of 6-inches above the suitable base and has a minimum 6-inch cover. The crushed stone shall be wrapped in geotextile fabric with a 6-inch overlap. The crushed stone shall be covered with 6-inches of gravel borrow (MHD M1.03.0 Type A), ordinary borrow (MHD M1.01.0), and either 12-inches of gravel subbase (MHD M1.03.0 Type B) beneath paved surfaces or 4-inches of loam (MHD M 1.07.0) beneath pervious surfaces. Access manholes shall be provided at the four corners of the basin.<br><br>Water Quality Structures: The water quality structure shall have a proven record of having the capability to remove a minimum of 75% of the average yearly sediment load from the low-flow storm conditions from the total catchment area of the drainage system. The structure must be capable of removing silt and clay-sized particles. The water quality structure shall be installed underground as part of the stormwater system and be designed to accept AASHTO H-20 Loading. The water quality structure shall be equipped with a high flow bypass and without backwater conditions so as to prevent resuspension of material. The structure shall be maintainable from the surface.<br><br>Rainwater Cisterns: The rainwater cistern structure shall be a 25,000-gallon fiberglass water-tight structure. The structure shall be installed underground as part of the stormwater system and be designed to accept AASHTO H-20 Loading. The structure shall be maintainable from the surface. |
| G3040 | 02660 | FUEL DISTRIBUTION | Natural Gas as per D2050 |
| | | | |
| G40 | | SITE HVAC UTILITIES | NONE |
| | | | |

PROJECT: **J. Michael Ruane Judicial Center**

LOCATION: **Federal Street; Salem, Ma.**

ARCHITECT: Goody Clancy Architects

PHASE: Revised Study Stage

FILE NO: DCAM Project No. TRC 9910 ST2 / Gca06290.00 / Fa2160

| SYSTEMS RECAPITULATION | | | SCOPE DESCRIPTION OF WORK |
|---|---|---|---|
| UNIF# | CSI # | | |
| G50 | | SITE ELECTRICAL UTILITIES | See D50 for all electrical site work other that bollards. |
| G5020 | 16520 | LIGHTING | Security lite bollards, 12 inch diameter, ALLOW 13 units |
| | | | |
| G60 | | OTHER SITE CONSTRUCTION | NONE |
| | | | |
| Z | | **GENERAL** | |
| Z10 | | GENERAL REQUIREMENTS | |
| Z20 | | BONDS & CONDITIONS | |
| Z30 | | PROFIT ALLOWANCES | |
| Z40 | | DEVELOPMENT CONTINGENCIES | |

PROJECT: **J. Michael Ruane Judicial Center**
LOCATION: **Federal Street; Salem, Ma.**
ARCHITECT: Goody Clancy Architects
PHASE: Revised Study Stage
FILE NO: DCAM Project No. TRC 9910 ST2 / Gca06290.00 / Fa2160

| SYSTEMS RECAPITULATION | | | SCOPE DESCRIPTION OF WORK |
|---|---|---|---|
| UNIF# | CSI # | | |

**LISTING OF ALTERNATES FOR PRICING AND ANALYSIS**

| | | | |
|---|---|---|---|
| | | INTERIOR SKIN | **Optional Systems** (Price as alternates above the lower level):<br>• LMF with gypsum cladding interior and "dens-glass" sheathing (BASE ESTIMATE)<br>• Concrete masonry with furred gypsum finish (**ALTERNATE REQUEST #1)**.<br>**NOTE**: Each system to receive Air Vapor Barrier and rigid insulation (R=13.0) and anchorage for skin attachment. |
| | | EXTERIOR SKIN | **Mechanical Penthouse: Alternate Request #2:** Zinc coated copper standing seam.<br><br>**Sun Shading Devices – Alternate Request #3A & 3B:**<br>• **Alternate #3A** - 1600 PowerShade a Building Integrated Photovoltaic sunshade that generates solar power while also providing optimal shade in a total system/single source solution. Key Features Include: Pre-engineered sunshade system effectively reduces solar heat gain; Exclusive dual position pivot system provides optimal angle and extension for shading any location; Produces power/reduces energy consumption and building operating cost.<br>• **Alternate #3B -** C/S Operating Sunshades provide optimum solar shading. C/S Sunshades pivot up to 110° to reduce solar glare and heat gain and are designed to control the amount of daylight coming into the building interior. Blades can close completely to provide for energy savings, or for security purposes. |
| | 09250 | FIXED PARTITIONS | **Alternate Request #4:** Bring all partitions to a Level 4 finish with Level 5 in public spaces only using **"Tuffhide and Coating" finish in lieu of veneer plaster.** |
| | 10270 | ACCESS FLOORING | **Alternate Request #5:** Raised floor system by Pathways Low Profile Floor. (At all Transaction areas) floor area: 34,311 |

PROJECT: **J. Michael Ruane Judicial Center**
LOCATION: **Federal Street; Salem, Ma.**
ARCHITECT: Goody Clancy Architects
PHASE: Revised Study Stage
FILE NO: DCAM Project No. TRC 9910 ST2 / Gca06290.00 / Fa2160

| SYSTEMS RECAPITULATION | | | SCOPE DESCRIPTION OF WORK |
|---|---|---|---|
| UNIF# | CSI # | | |
| | | | SF); coordinate with Electrical for wiring and distribution and C3020 for finish flooring. |
| C3020 | | INTERIOR FLOOR FINISHES | **Part of Alternate Request #5** : Carpet tiles at all raised floor locations; include as part of alternate request for same. |
| | | ALL PUBLIC SPACES INCLUDING WAITING AND CIRCULATION | **Alternate Request #6**: Thin set terrazzo and integral base in lieu of paver tile. |
| C1030 | 10160 | TOILET COMPARTMENTS | **Alternate Request #7:** Provide stainless steel assemblies in/lieu/of phenolic. |
| D1010 | 14215 | VERTICAL TRANSPORTATION | **Alternate Request #8:** evaluate MRL units as an alternate request. |
| B3010 | 07515 | GREEN ROOF SYSTEMS | **Alternate Request #9:** Provide, as a alternate request in lieu of membrane with a paver/ballast pattern, at interior courtyard the green roof assembly as specified above. |
| G Series | | LEED CERTIFICATION ALTERNATE | **Alternate Request #10**: Substitute shrubs/groundcover for lawn |
| | | LEED CERTIFICATION ALTERNATE | **Alternate Request #11**: Substitute state-of-art water-saving irrigation fixtures |
| | | EXTERIOR SKIN | **Alternate Request #12:** Substitute 4 inch granite in full mortar setting for base bid 1-1/2 inch (3 cm) granite panels in a rain screen configuration as outlined in B2010 above. |
| D2020 | | RAIN WATER COLLECTION | **Alternate Request #13:** Provide "sustainable" rain water collection system as noted in the description in D2020 above. |
| | | INTERIOR WALL FINISHES | **Alternate Request #14:** Delete wood wainscot in judges offices & court conf. rooms and leave a chair rail only. |
| | | | **Alternate Request #15:** Early construction package including church demo, site prep & demo, church foundation walls & slab. |
| | | | **Alternate Request #16**: Extend Design Time by 6 months |
| | | | **Alternate Request #17:** Substitute "Corian" for "Granite" counter systems |

## 7.12 Summary of Finishes and Systems

**PAGE 247**

**Summary of Finishes and Systems**
3/26/2007

**Legend of Finishes**
**ACT** Acoustic Ceiling Tile
**CMU** Concrete Masonry Unit
**CPT** Carpet
**CT** Ceramic Tile
**ER** Epoxy Resin
**GWB** Gypsum Wll Board
**MET** Metal Security Ceiling

**PNT** Painted
**RB** Resilient Base
**RF** Resilient Flooring
**SC** Sealed Concrete
**ST** Stone or Equal
**VPG** Veneer Plaster on GWB
**WB** Wood Base
**WP** Wood Paneling

**Lighting**
**FA** Fluorescent Ambient
**TL** Task
**SP** Special

**Security/Communications**
**SA** Security Alarms/CCTV
**CTV** Cable TV
**CD** Communications Devices
**SP** Sound/Paging
**NA** Not Applicable

| Data Sheet Ref | Program Area | Room Finishes: Wall Constr/Finish | Floor Finish | Base Finish | Ceiling Constr/Finish | Lighting: Ceiling Height | Required fc | HVAC: Type | Ventilat'n CFM/per | Sum/Win Rel. Hum. | Sum/Win Temp. F. | Acoust.: Noise Criteria | Min STC | Security/Com: Security/ Communications | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Courtroom Sets** | | | | | | | | | | | | | | |
| 1.1, 1.2, 1.3 | Courtroom | PNT/WP | CPT | WB | VPG/PNT | 14' | 40-50 | FA/TL/SP | 20 | 45/35 +/-5 | 75/72 +/-1 | 25-35 | 55 | SA/CTV/CD/SP | Courtroom occupants millwork |
| 1.16 | Public Waiting | VPG/PNT/ST | ST | ST | VPG/PNT | 14' | | FA/SP | 20 | 45/35 +/-5 | 75/72 +/-1 | 35 | 45 | SA/CD/SP | Wood benches |
| 6.1 | Conference Room (public) | GWB/PNT | CPT | WB | GWB/PNT | 9' | | FA/TL | 20 | 45/35 +/-5 | 75/72 +/-1 | 35 | | SA/CD/SP | |
| 1.19 | Courtroom Holding | CMU/PNT | RF/ER | RB/ER | GWB/PNT/MET | 9' | 20-30 | SP | 20 | 45/35 +/-5 | 75/72 +/-1 | 35 | 55 | SP | Detainee equipment |
| 1.20 | Jury Deliberation | GWB/PNT | CPT | RB | ACT | 9' | | FA | 20 | 45/35 +/-5 | 75/72 +/-1 | 30 | | CD | Sink/counter; toilet rooms |
| | **Judicial Offices** | | | | | | | | | | | | | | |
| 2.1 | Judge's Lobby | VPG/PNT/WP | CPT | WB | VPG/PNT | 9' | | FA/TL | 20 | 45/35 +/-5 | 75/72 +/-1 | 30 | | SA/CD | Wood shelving; toilet |
| 4.1,4.2, 6.1 | Support Offices/Recept'n/Library | GWB/PNT | CPT | RB | ACT | 9' min | | FA/TL | 20 | 45/35 +/-5 | 75/72 +/-1 | 30-35 | | SA/CD/SP | Wood library shelving |
| | **Transaction Offices** | | | | | | | | | | | | | | |
| 3.1 | Public Transaction Counter | VPG/PNT | CPT | RB | ACT | 10' | | FA/TL | 20 | 45/35 +/-5 | 75/72 +/-1 | 35 | | SA/CD/SP | Public counter and work counter |
| 4.1 | Chief ClerkMag./Chief Prob.Off. | VPG/PNT | CPT | WB | VPG/PNT | 9' | | FA/TL | 20 | 45/35 +/-5 | 75/72 +/-1 | 30 | | CD | Wood shelving; chair rail |
| 4.1 | Private offices | GWB/PNT | CPT | RB | ACT | 9' | | FA/TL | 20 | 45/35 +/-5 | 75/72 +/-1 | 30 | | SA/CD/SP | |
| 4.2 | Open Office Plan (workstations) | GWB/PNT | CPT | RB | ACT | 9' min | | FA/TL | 20 | 45/35 +/-5 | 75/72 +/-1 | NA | | CD/SP | System furniture within open plan space |
| 6.2 | Hearing Room | VPG/PNT | CPT | WB | VPG/PNT | 12' | | FA/TL/SP | 20 | 45/35 +/-5 | 75/72 +/-1 | 25 | | CD | Chair rail; AV closet |
| 6.1 | Conference Room (staff) | GWB/PNT | CPT | WB | GWB/PNT | 9' | | FA/TL | 20 | 45/35 +/-5 | 75/72 +/-1 | 30 | | CTV/CD | |
| 5.1 | Active Record Storage | GWB/PNT | RF | RB | GWB/PTD | 10' | | FA | 1-3 ACh | 45/35 +/-5 | 75/72 +/-1 | 35 | | CD | 2-hr. fire rated; structure-compact files |
| | **Court Support** | | | | | | | | | | | | | | |
| 7.1,7.2,7.3 | Detainee support spaces | CMU/PNT | RF | RB | GWB/PNT/MET | 10' | 20-30 | SP | 20 | 45/35 +/-5 | 75/72 +/-1 | 35 | 55 | SA/SP | Sallyport; control room equip. |
| 7.4 | Detainee Cells | CMU/PNT | ER | ER | MET | 9' | 20-30 | SP | 20 | 45/35 +/-5 | 75/72 +/-1 | 35 | 55 | SA/SP | Detainee eqipment |
| 7.3, 7.19 | Court Officers | GWB/PNT | RF | RB | ACT | 9' | | FA/TL | 20 | 45/35 +/-5 | 75/72 +/-1 | 35 | | CD | Kitchennette |
| 7.7 | Jury Pool | VPG/PNT | CPT | WB | VPG/PNT | 14' | | FA/SP | 20 | 45/35 +/-5 | 75/72 +/-1 | 35 | | SA/CTV/CD/SP | Toilets; vending area; chair rail |
| 7.8 | Trial Court Secure Waiting area | GWB/PNT | CPT | RB | ACT | 8' | | FA/TL | 1-3 ACh | 45/35 +/-5 | 75/72 +/-1 | 30 | | SA/SP | Window to adjacent staff station |
| 7.9 | Interpreter Services | GWB/PNT | CPT | RB | ACT | 8' | | FA/TL | 20 | 45/35 +/-5 | 75/72 +/-1 | 35 | | SA/CD/SP | |
| 7.10 | Court Reporters | GWB/PNT | CPT | RB | ACT | 8' | | FA/TL | 20 | 45/35 +/-5 | 75/72 +/-1 | 30 | | CD | |
| 7.19 | Breakroom | GWB/PNT | RF | RB | ACT | 9' | | FA/TL | 4 ACh | 45/35 +/-5 | 75/72 +/-1 | 40 | | CD | Kitchennette |
| | **Court Operations** | | | | | | | | | | | | | | |
| 8.1 | Law Library | GWB/PNT | CPT | RB | ACT | varies | | FA/TL | 20 | 45/35 +/-5 | 75/72 +/-1 | 30 | | SP | Incl. full library staff and support spaces |
| | **Supplemental Operations** | | | | | | | | | | | | | | |
| 9.1 | District Attorney | GWB/PNT | CPT | RB | ACT | 8' min | | FA/TL | 20 | 45/35 +/-5 | 75/72 +/-1 | 30 | | CD | Visitor, staff and support; victim witness |
| 9.3 | Grand Jury | VPG/PNT | CPT | WB | VPG/PNT | 12' | | FA/TL/SP | 20 | 45/35 +/-5 | 75/72 +/-1 | 25 | | CD | Chair rail; AV closet |
| 9.2 | Attorney's Room | GWB/PNT | CPT | RB | ACT | 8' | | FA/TL | 4 ACh | 45/35 +/-5 | 75/72 +/-1 | 35 | | CD/SP | |
| 9.4 | Alternative Dispute Resolution | GWB/PNT | CPT | RB | ACT | 9' | | FA | 20 | 45/35 +/-5 | 75/72 +/-1 | 30 | | SA/CD/SP | Mediation rm, conf rm, staff, support |
| 9.5 | Adult Court Clinic | GWB/PNT | RF | RB | ACT | 8' | | FA/TL | 20 | 45/35 +/-5 | 75/72 +/-1 | 35 | | SA/CD | HC toilet; clinic counter/storage |
| 9.6 | Child Care Center | GWB/PNT | CPT/RF | RB | ACT | varies | | FA/TL | 20 | 45/35 +/-5 | 75/72 +/-1 | 35 | | SA/SP | Pl. lam. Casework/shelves; toilets; lavs. |
| | **Building Support** | | | | | | | | | | | | | | |
| 7.11,7.12,7.13 | Public Lobby and Circulation | VPG/PNT | ST | ST | VPG/PNT/ACT | varies | | FA/SP | 20 | 45/35 +/-5 | 75/72 +/-1 | 40 | | SA/CD/PA | Security screening at entry; concession |
| NA | Staff Circulation | GWB/PNT | CPT/RF | RB | GWB/PNT/ACT | varies | | FA | | 45/35 +/-5 | 75/72 +/-1 | 40 | | SA/SP | |
| 10.1 | Judges' Parking | CMU/PNT | SC | CMU/PNT | SC | 7'-6" min | | FA | code | NA | NA/50 | | | SA | Enclosed garage; automatic door |
| 10.5,10.6,10.7 | Maintenance and Bldg. Storage | CMU/PNT | RF/SC | RB/CMU | ACT/SC | 10' | | FA | varies | varies | varies | varies | | CD | Truck dock; all bldg. admin. and support |
| 10.13 | Inactive Records Storage | GWB/PNT | RF | RB | SC | 10' min | | FA | 1-3 ACh | 45/35 +/-5 | 75/72 +/-1 | 35 | | CD | 2-hr. fire rated; structure-compact files |
| 7.14, 7.21 | Public and Staff Toilet Rooms | CT/VPG/PNT | CT | CT | ACT | 8' | | FA | 75 | 45/35 +/-5 | 75/72 +/-1 | 40 | | SP | HC accessible |
| | **Building Mechanical** | | | | | | | | | | | | | | |
| N/A | MEP, Fire Prot, Tel/Data Spaces | CMU/PNT | SC | CMU/PNT | SC | varies | | FA | code | varies | varies | varies | | CD | |

# 8 Summary of Alternative Design Concepts


## 8.1 Introduction

Several schemes for the proposed new Trial Court Building were studied at the conceptual level on two site configurations, both in response to requests from local groups and with respect to the challenges of site acquisition. Drawings of Plans A,B and C and Schemes A1, A2 and A3 are shown in the following Sections 8.2-8.7, and additional studies are described in Section 8.8. Careful consideration in all schemes was given to the question of scale and streetscape presence. At issue was the ability to create a building that would meet the needs of the Trial Court on a tightly constrained site. Goody Clancy explored alternatives in which the First Baptist Church was incorporated as part of the project, as well as options that left the church in place. Also in the mix was an alternative which maintained the three houses at 58, 60 and 62 Federal Street, as requested by preservationists concerned with keeping the connection to both a vanished neighborhood and to the adjacent residential areas.

The larger site includes the First Baptist Church and is approximately 82,531 square feet (SF). This site is bounded by the Probate and Family Court on the east side, Federal Street on the south side, North Street on the west side and Bridge Street on the north side. In this site configuration, the ramp interchange is demolished (with the displaced traffic to be accommodated via the ramp on the other side of North Street) and the land transferred by the city to DCAM. The three residences (58, 60 and 62 Federal Street) are considered to be removed from the site. This site is large enough to develop a footprint that allowing a relatively low height of the proposed Trial Court Building. The site, with its adjacency to the Probate and Family Court, allows for direct connections of utilities, staff and detainees between the new Trial Court building and the existing Probate and Family Court,

The smaller site does not incorporate the church property and is approximately 54,951 SF. It is bounded by the First Baptist Church property line on the east side, Federal Street on the south side, North Street on the west side and Bridge Street on the north side. This

smaller site provides a smaller footprint for the proposed Trial Court facility, resulting in a taller building with more levels constructed below grade. Left in place, The First Baptist Church property blocks connections to the Probate and Family Court.

## 8.2 Plan A (formerly referred to as Scheme B)

Plan A assumes the rear addition to the church is to be demolished and the sanctuary relocated to a preferred location at the corner of Federal Street and North Street. This scheme of approximately 190,000 GSF places the mass of the new building along Bridge Street with a pavillion wing that extends to Federal Street. It has two levels below Federal Street and five levels above Federal Street. The public entry is on Federal Street adjacent to the public entry to the Probate and Family Court. As with schemes A1 and A2, staff, service and detainees enter off Bridge Street. A tunnel connection to the Probate and Family Court for utilities and detainees is possible as well as a potential pedestrian bridge for staff.

**PROS**

A The mass and highest portion of the building fronts along Bridge Street with an appropriately scaled lower entry pavilion fronting on Federal Street. The entry pavilion is adjacent to and matches the height of the Probate and Family Court entrance.

B Relocated to a prominent position on the corner of Federal Street and North Street, the church will replace the three houses with an appropriately scaled structure visible when viewed from either end of Federal Street. The location of the church continues a pattern of churches located on corners in historic Salem.

This scheme is the precursor to Plan A/B, the preferred scheme.

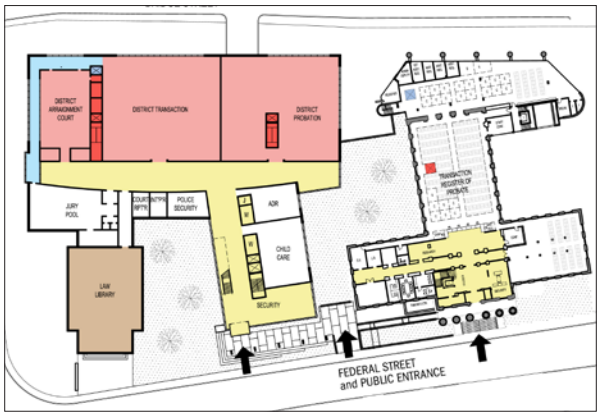
**CONS**

A Service dock access is tight.

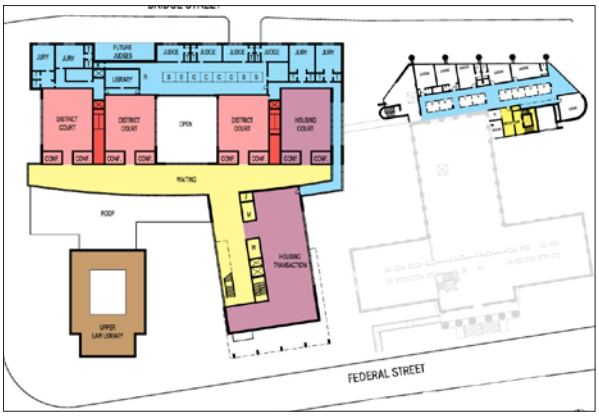
B Complex ramp construction is required to provide parking below grade.

**FIGURE 8A** Plan A

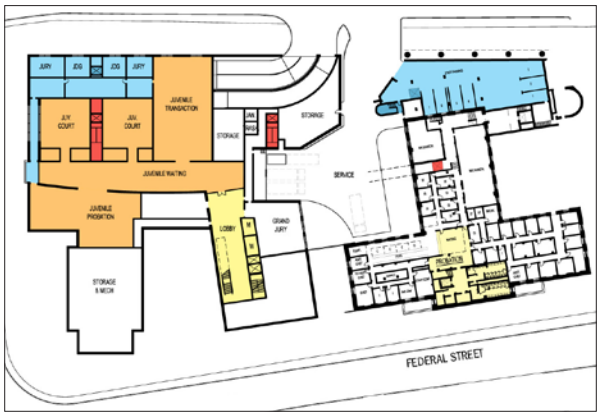

Third Floor



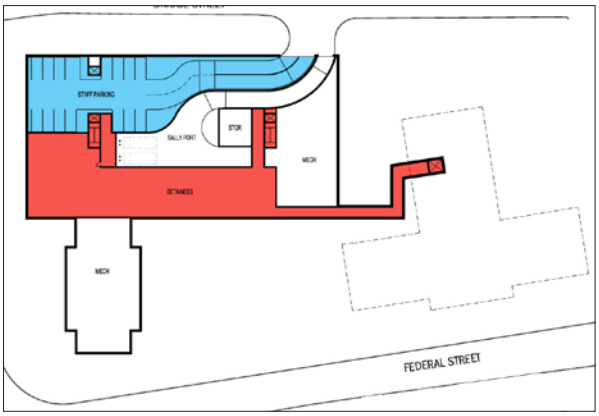

First Floor




Second Floor




Level B1




Level B2

***Plan A*** 0 20 50 100 ft

## 8.3 Plan B

Plan B locates the proposed Trial Court building on a smaller site that excludes the First Baptist Church. In this alternative, the Trial Court building would have a reduced footprint (about 33,000 GSF) but as a consequence, would result in a taller structure with three levels below Federal Street and six levels above Federal Street to accommodate approximately 190,000 GSF.

**PROS**

A Preserves the First Baptist Church property intact.

**CONS**

A A more massive structure located too close to the small First Baptist Church.

B The cost associated with building a taller structure with an additional level below grade.

C The cost associated with ramping down within the structure for staff parking, service vehicles and access to the sally port.

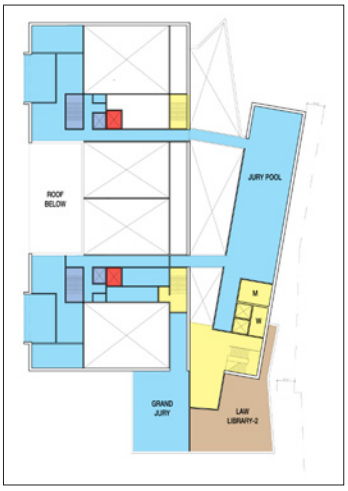
D Inability to connect a service tunnel to the Probate and Family Court building, for staff and detainee secure circulation and for sharing utilities.

**FIGURE 8B** Plan B


Level 3

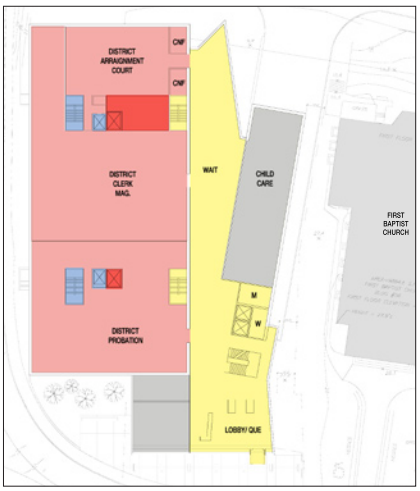

Level 3M


Level 2




Level 2M


Level B1




Level 1


Level 1M

***Plan B*** 0 10 20 50 ft

## 8.4 Plan C

Plan C is similar to Plan A, but maintains the three residential structures 58, 60 & 62 Federal Street in place. The First Baptist Church is moved but must be set back from the corner of Federal Street and North Street due to lack of space on the corner.

**PROS**

See Plan A above.

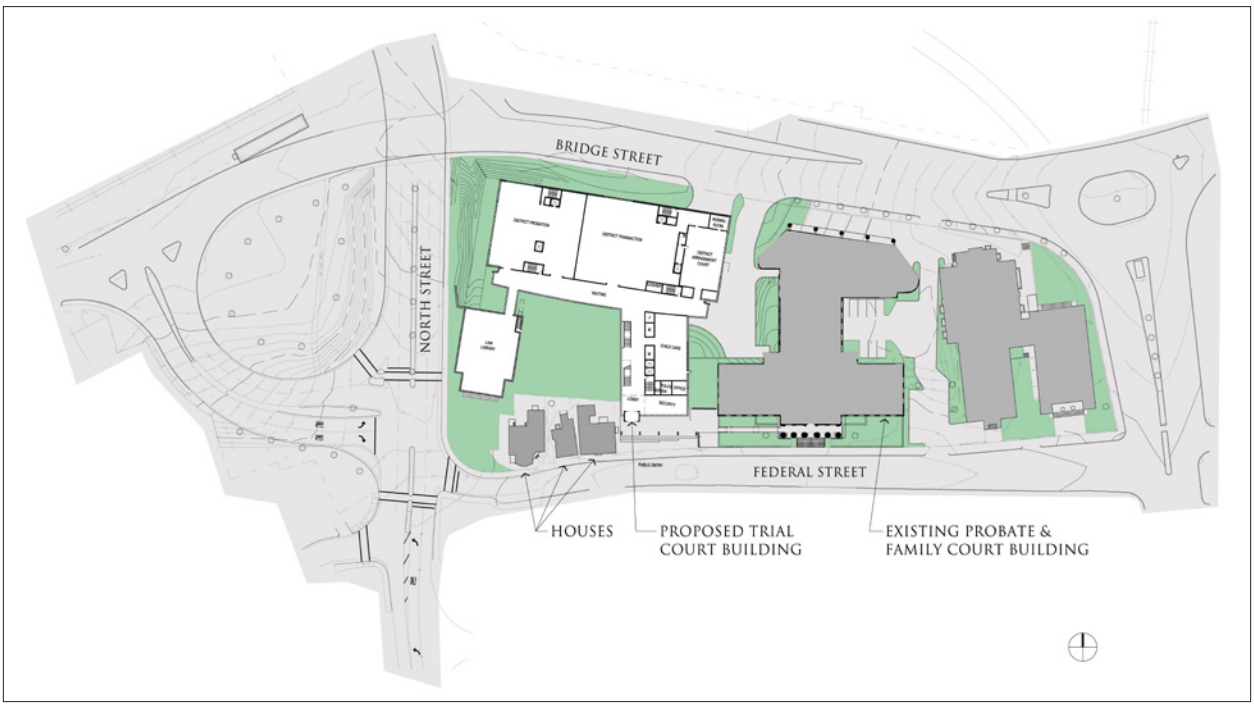
**CONS**

Same as above with the following additions:

A The three residential structures prevent the church from being in the preferred location of the corner.

B The three residential structures crowd the entrance pavilion to the Trial Court building.

C The scale of the three residential structures is not appropriate with the scale of the Trial Court. Both the residential structures and the Trial Court are demeaned by this juxtaposition.



## 8.5 Scheme A1

Scheme A1 incorporates the First Baptist Church in its present location but removes the rear addition. This scheme, of approximately 190,000 GSF, wraps around the church with an L shaped plan. It has two levels below Federal Street and five levels above Federal Street. The public entry is on Federal Street at the corner of Federal and North Streets. Staff, service and detainees enter off Bridge Street. A tunnel connection to the Probate and Family Court for utilities and detainee transfer is possible. The potential also exists for a pedestrian bridge connection to the Probate and Family Court.

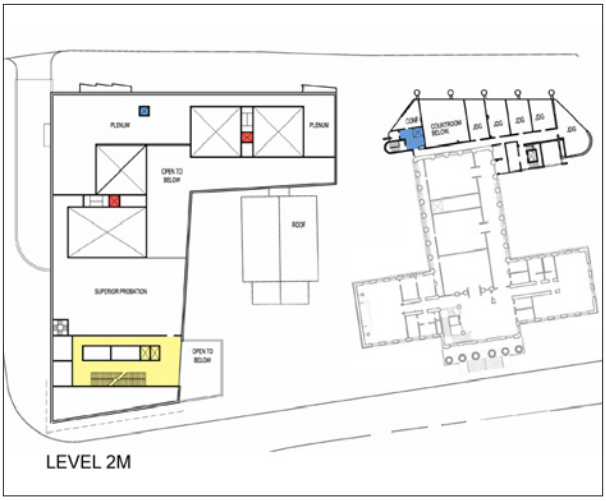
**PROS**

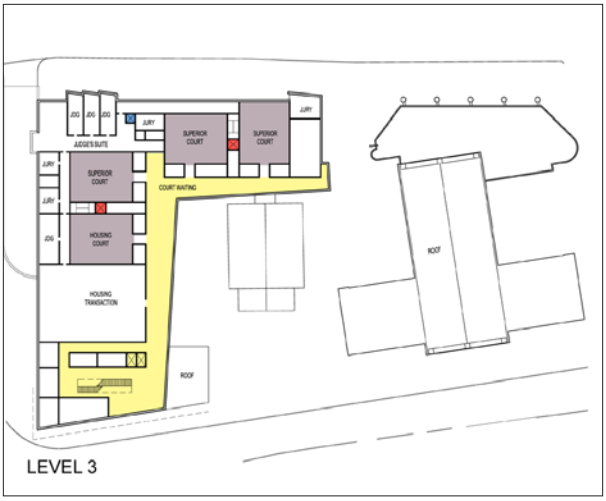
Preserves the historical position of the church on its property with its front courtyard opening to Federal Street.
Saves the cost of moving the church.
Direct connections for utilities, staff and detainees between the Trial Court building and the Probate and Family Court are possible.

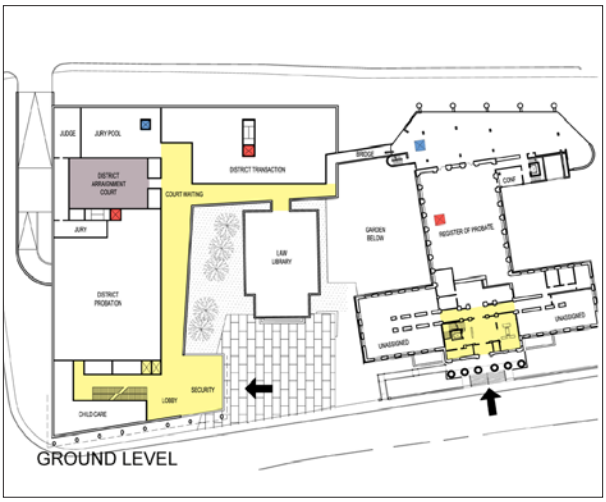
**CONS**

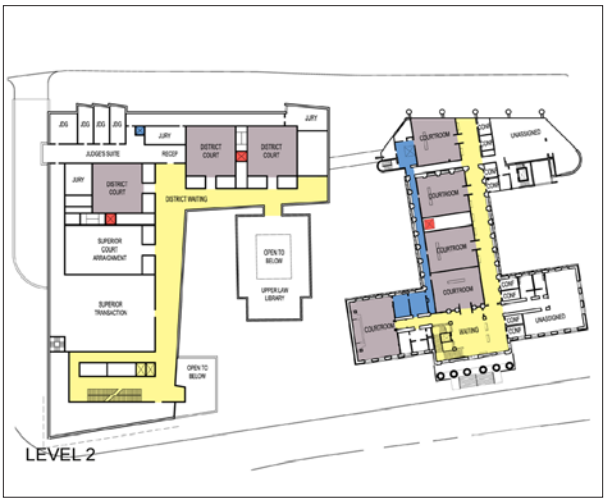
Due to lack of space between the church and Bridge Street, more mass of the Trial Court building is moved to Federal Street.
The church is mostly hidden from view due to the mass of the Trial Court building on North Street and Federal Street.
The **L** shaped plan results in excessive staff and public circulation.
There is no modulation in scale at the corner of Federal and North Streets.

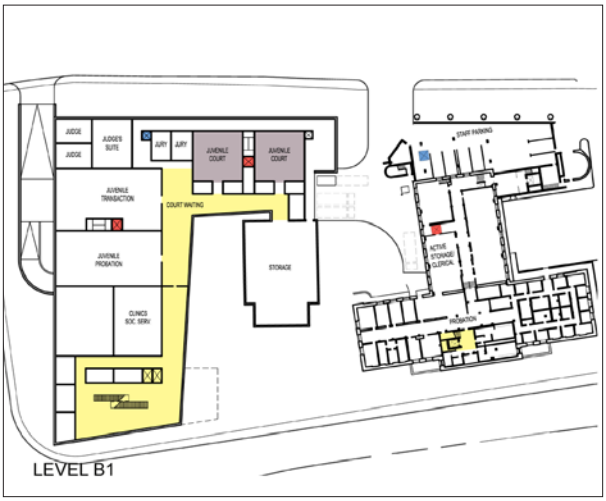
**FIGURE 8C** Scheme A1

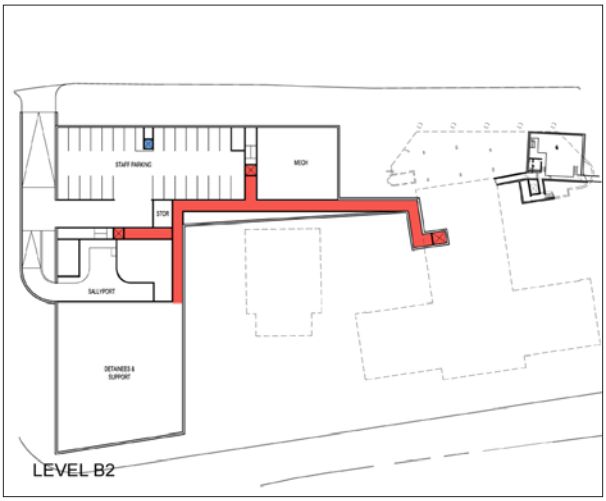



0 50 100' N

***Scheme A1***

## 8.6 Scheme A2

Scheme A2 incorporates the church as part of the court project, but moves it forward towards Federal Street. This scheme of approximately 190,000 GSF has a U-shaped plan, connecting to the church at the new building's southeast corner. The public entry is on Federal Street at the corner of Federal and North Streets. Like scheme A1, staff, service and detainees enter off Bridge Street. A tunnel connection to the Probate and Family Court for utilities and detainees is possible as well as a pedestrian bridge for staff.

**PROS**

Moving the church forward allows the Trial Court building's floor plate to be larger. A larger floor plate allows the Juvenile Court to be moved from the lower level to the Federal Street level.

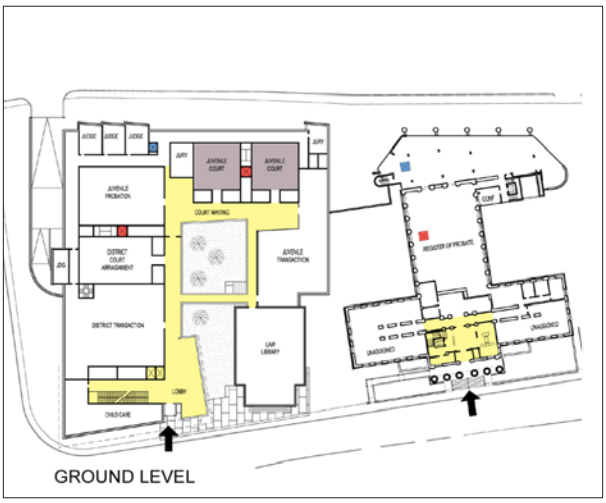
Direct connections for utilities, staff and detainees between the proposed Trial Court building and the Probate and Family Court are possible.

**CONS**

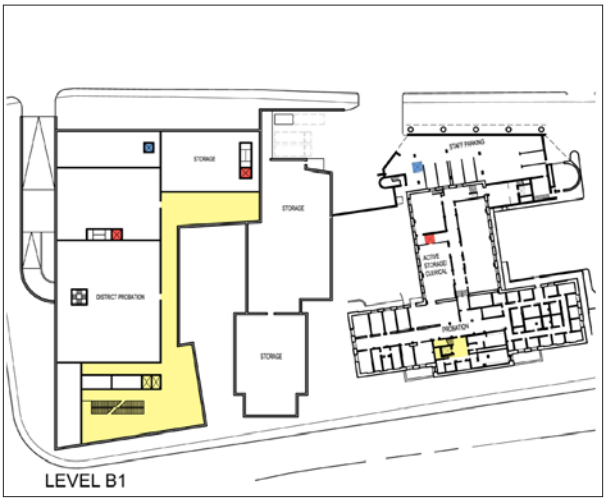
The U shaped plan configuration results in circuitous staff and public circulation that will be difficult to monitor, potentially a security issue.

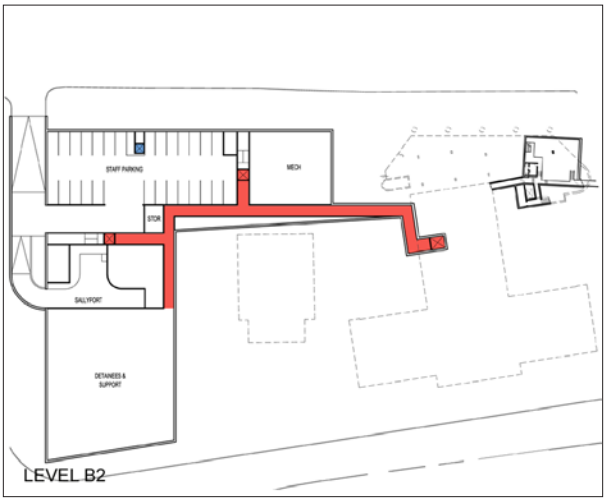
If the church is to be moved, the preferred location is the corner of Federal Street and North Street where it continues a pattern of churches located on corners in historic Salem and can be seen looking down Federal Street from each direction.

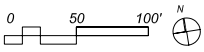
**FIGURE 8D** Scheme A2






***Scheme A2***

## 8.7 Scheme A3

In Scheme A3, the addition at the rear of the church is demolished, and the church is moved to the corner of Federal Street and North Street. The main portion of the proposed Trial Court building is oriented north-south fronting on Federal Street and Bridge Street. A Juvenile Court wing extends to the west behind the Church.

**PROS**

A The church is located on the corner of Federal Street and North Street continuing a pattern of churches located on street corners along Federal Street. The Church in this location relates to the scale of residences across Federal Street and down Federal Street on the other side of North Street to the west. Because of its prominent position and the fact that Federal Street bends at this intersection, the Church will be seen looking down Federal Street from the west.

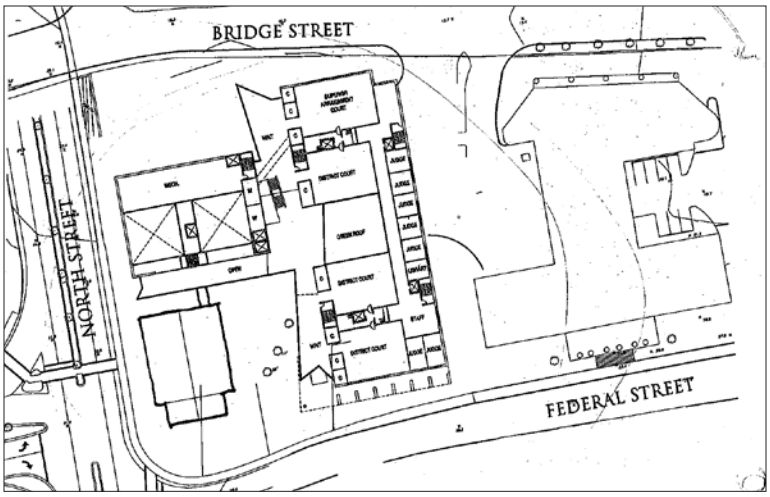
B The entrance to the proposed Trial Court building is adjacent to the Probate and Family Court building and will share the same drop-off and handicap access. Juvenile Court is in a separate wing.

**CONS**

A The courtroom block is oriented north-south on the site putting too much mass fronting directly on Federal Street.

B The layout of the detainee level, on grade with Bridge Street, requires an underground tunnel connecting detainee elevators in the courtroom block due to a plan conflict with the loading dock/storage/workshop area.

**FIGURE 8E** Scheme A3 plan



## 8.8 Additional Studies

The following additional studies were undertaken, at the request of interested neighborhood and preservationist groups in Salem, to determine the feasibility of constructing a new Trial Court building on the site with a slip ramp connecting North Street to Bridge Street, and on the site with the three residential structures retained in place and relocated on the site:

- With slip ramp, church property untouched, houses untouched.
- With slip ramp, church moved (with addition removed), houses relocated (fronting on the slip ramp).
- No slip ramp, church property untouched, houses removed.
- With slip ramp, church moved (with addition removed), houses removed.
- No slip ramp, church moved (with addition removed), houses removed.

All the studies were compared as to their impact on civic goals and court goals. See Goody Clancy's report in Appendix 1.1 entitled *Salem Site Evaluation Study, Site Options for the New Trial Courts Building*, draft June 29, 2006. The conclusions drawn from the study show that a new Trial Court building on a larger site, unencumbered by a slip ramp or houses and with the church moved, ranked the highest in achieving both the civic goals and the court goals.

# 9 Project Costs

## 9.1 Total Project Costs

PAGE 263-290

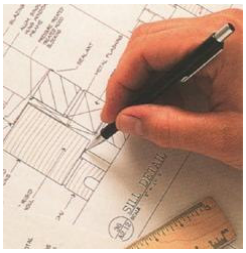
# J. Michael Ruane Judicial Center

## Federal Street, Salem, MA

Goody Clancy Architects

Study Cost Estimate

March 22, 2007




**Faithful+Gould**
55 Summer Street, 3rd Floor, Boston, MA 02110
phone: 617.423.5548 fax: 617.423.5578

FAITHFUL GOULD
CONSTRUCTIVE EXPERTISE

55 SUMMER STREET THIRD FLOOR BOSTON MA 02110 PH 617.423.5548 FX 617.423.5578

March 22, 2007

Mr. Paul Dudec
**Goody Clancy**
420 Boylston Street
Boston, Ma 02116

Dear Paul:

**Re: J. Michael Ruane Judicial Center**

Please find enclosed our Construction Cost Estimate for the above referenced project based on schematic design information.

| | Construction Start | Gross Floor Area | $/sf | Estimated Cost |
|---|---|---|---|---|
| Trial Court Building | Jul-08 | 190,071 | $429.38 | $81,613,401 |
| **ESTIMATED CONTRACT AWARD** | | **190,071** | **$429.38** | **$81,613,401** |

This estimate includes all direct construction costs, construction manager's overhead and profit and design contingency. Cost escalation assumes start dates indicated above.

Excluded from the estimate are: construction contingency (for change orders), hazardous waste removal, loose furnishings and equipment (except where stated), architect's and engineer's fees, moving, administrative and financing costs

Bidding conditions are expected to reflect a CM at risk with competitive open bidding for sub-contractors, open specifications for materials and manufacturers.

The estimate is based on prevailing union wage rates for construction in this market and represents a reasonable opinion of cost. It is not a prediction of the successful bid from a contractor as bids will vary due to fluctuating market conditions, errors and omissions, proprietary specifications, lack or surplus of bidders, perception of risk, etc. Consequently the estimate is expected to fall within the range of bids from a number of competitive contractors or subcontractors, however we do not warrant that bids or negotiated prices will not vary from the final construction cost estimate.

If you have any questions or require further analysis please do not hesitate to contact us.

Sincerely,
**Faithful+Gould**

Neal Fontana
Associate

UNITED STATES UNITED KINGDOM CONTINENTAL EUROPE ASIA INFO@FGOULD.COM FGOULD.COM
Faithful+Gould is a part of the ATKINS Group

**J. Michael Ruane Judicial Center** March 22, 2007
Federal Street, Salem, MA

## Study Cost Estimate

### INTRODUCTION

This Construction Cost Estimate was produced from drawings, specifications and other documentation prepared by Goody Clancy and their design team dated February 16, 2007. Design and engineering changes occurring subsequent to the issue of these documents have not been incorporated into this estimate.

This estimate is based upon the measurement of quantities where possible. For the remainder, parametric measurements were used in conjunction with references from similar projects recently estimated by Faithful+Gould.

### PROJECT OUTLINE

This project comprises the construction of a new courthouse of approximately 190,000 sf together with associated site work.

Key program elements include arraignment courtrooms, district courtrooms and superior courtrooms together with all supporting, jury rooms, magistrate areas and support facilities. Law library, district attorney, district court probation and clerk magistrate, superior court probation and clerk magistrate, secure parking area and detainee areas.

Site work includes roadways, walkways and all associated soft and hard landscaping

### BASIS FOR PRICING

This estimate reflects the fair construction value for the construction of this project and should not be construed as a prediction of low bid. Prices are based on probable local prevailing union wage construction costs at the time the estimate was prepared, however an escalation line item is included to project the current costs to the projected mid-point of construction approximately 26 months from the date of this report. Pricing assumes a procurement process with competitive bidding for every portion of the construction work, which is to mean a minimum of 4 bids including for all subcontractors and materials/equipment suppliers, and assuming Chapter 147 applies. If fewer bids are solicited or received, prices can be expected to be higher. **Please note that this estimate assumed a CM at risk procurement.**

Subcontractor's markups have been included in each line item unit price. Markups cover the cost of bond, field overhead, home office overhead and subcontractor's profit. Subcontractor's markups typically range from 5% to 15% of the unit price depending on market conditions.

Construction Manager's general conditions' cost is calculated on a percentage basis. Construction Manager's overhead and fees is based on a percentage of the total direct (trade) costs plus general conditions, and covers the contractor's bond, insurance, site office overheads, building permit applications, and profit.

Unless identified otherwise, the cost of such items as shift premiums, and allowances for temporary occupancy permits, police details or street/sidewalk permits are excluded.

We have included a Design Contingency/Design Reserve percentage to cover cost increases that will occur during design elaboration or unforeseen design issues. As the design develops, the design contingency is reduced, and is eliminated at the final Construction Document estimate.

Construction / change order contingencies are not included in this estimate and are assumed to be carried by the owner.

**J. Michael Ruane Judicial Center** March 22, 2007
Federal Street, Salem, MA

## Study Cost Estimate

### ITEMS NOT CONSIDERED IN THIS ESTIMATE

Items not included in this estimate are:

- Land acquisition, feasibility, and financing costs
- All professional fees and insurance
- Site or existing conditions surveys investigations costs, including to determine subsoil conditions
- Structural fill due to poor soil conditions
- Items identified in the design as Not In Contract (NIC)
- Owner supplied and/or installed items (e.g.. draperies, furniture and equipment)
- Tel/data, security and AV networks, equipment or software (unless identified otherwise)
- Rock excavation; special foundations (unless indicated by design engineers)
- Hazardous materials investigations and abatement
- Utility company back charges, including work required off-site
- Work to City streets and sidewalks, (except as noted in this estimate)
- Construction or occupancy phasing or off hours' work, (except as noted in this estimate)
- Compact & library shelving
- Owners Construction Contingency for scope changes

### ITEMS THAT MAY AFFECT THIS ESTIMATE

Such items include, but are not limited to the following:

- Modifications to the scope of work subsequent to the preparation of this estimate
- Unforeseen subsurface conditions
- Special requirements for site access, off-hour work or phasing activities
- Restrictive technical specifications, excessive contract or non-competitive bid conditions
- Sole source specifications for materials or products
- Bid approvals delayed beyond the anticipated project schedule

**ALLOWANCES (per owner)**

General Conditions contingency of 10.5% to include Insurance, Bond & Permit
Estimating & Design contingency @ 10% each
CM/GMP markup of 3%
$1,500,000 for moving of existing church building

### STATEMENT OF PROBABLE COST OF CONSTRUCTION

Faithful+Gould requests that the Owner and Architect carefully review this estimate, including all line item descriptions, unit prices, clarifications, exclusions, inclusions and assumptions, contingencies, escalation, and markups to ensure that requirements have been correctly identified. If this estimate does not correspond to the Owner's budgetary objectives, Faithful+Gould strongly suggests that evaluations of other design alternatives/project procurement options should be made before proceeding further.

Faithful+Gould has prepared this estimate in accordance with generally accepted principles and practices to reflect the fair market value of the project. This estimate is made on the basis of the experience, qualifications, and the best judgment of professional consultants who are familiar with the construction industry.

However, Faithful+Gould has no control over the method of determining prices adopted by any individual general contractor, subcontractor or supplier. Faithful+Gould cannot control the cost of labor and materials, the bidding environment or other market conditions, and it is not possible to provide any guarantee that proposals, bids, or actual construction costs will not deviate from this or subsequent cost estimates.

Any requests for modifications to this document must be made to Faithful+Gould within ten (10) days of receipt. Otherwise, it will be understood that the contents are fully concurred with and accepted. Notifications of any apparent errors or omissions should be made to Faithful+Gould as soon as they are discovered.

**J. Michael Ruane Judicial Center** March 22, 2007
**Federal Street, Salem, MA**

**Study Cost Estimate** 190,071 GFA

## *CONSTRUCTION COST SUMMARY*

| *BUILDING SYSTEM* | | *TOTAL* |
|---|---|---|
| A10 | FOUNDATIONS | $2,894,720 |
| A20 | BASEMENT CONSTRUCTION | $1,739,995 |
| B10 | SUPERSTRUCTURE | $5,706,669 |
| B20 | EXTERIOR CLOSURE | $7,775,962 |
| B30 | ROOFING | $714,465 |
| C10 | INTERIOR CONSTRUCTION | $8,641,399 |
| C20 | STAIRCASES | $740,810 |
| C30 | INTERIOR FINISHES | $5,998,880 |
| D10 | CONVEYING SYSTEMS | $1,728,250 |
| D20 | PLUMBING | $1,196,750 |
| D30 | HVAC | $6,449,964 |
| D40 | FIRE PROTECTION | $1,012,917 |
| D50 | ELECTRICAL | $5,952,101 |
| E10 | EQUIPMENT | $529,000 |
| E20 | FURNISHINGS | $65,000 |
| F10 | SPECIAL CONSTRUCTION | $0 |
| F20 | SELECTIVE DEMOLITION & CHURCH MOVE | $1,557,000 |
| G | SITE PREP/DEVELOPMENT | $1,786,788 |
| ***TOTAL DIRECT COST (Trade Costs)*** | | ***$54,490,670*** |
| MARK UP | | |
| | General Conditions/Permit/Insurance | $5,721,520 |
| | Overhead/Fee/Profit | $1,806,366 |
| ***SUBTOTAL CONSTRUCTION*** | | ***$62,018,556*** |
| CONTINGENCIES/ESCALATION | | |
| | Pricing/Estimating Contingency | $5,449,067 |
| | Design Contingency | $5,449,067 |
| | Escalation | $6,538,880 |
| | Construction Contingency | $2,157,831 |
| ***ESTIMATED CONTRACT AWARD*** | | ***$81,613,401*** |

Salem Trial Court SD 3.20.07 Page 3 Faithful+Gould

**J. Michael Ruane Judicial Center**
**Federal Street, Salem, MA**

March 22, 2007

**Study Cost Estimate**

190,071 GFA

## *CONSTRUCTION COST SUMMARY*

| | *BUILDING SYSTEM* | | *SUB-TOTAL* | *TOTAL* | *$/SF* | *%* |
|---|---|---|---|---|---|---|
| **A10** | **FOUNDATIONS** | | | | | |
| | A1010 | Standard Foundations | $778,744 | | | |
| | A1020 | Special Foundations | $1,252,575 | | | |
| | A1030 | Lowest Floor Construction | $863,401 | **$2,894,720** | $15.23 | 5.3% |
| **A20** | **BASEMENT CONSTRUCTION** | | | | | |
| | A2010 | Basement Excavation | $1,321,815 | | | |
| | A2020 | Basement Walls | $418,180 | **$1,739,995** | $9.15 | 3.2% |
| **B10** | **SUPERSTRUCTURE** | | | | | |
| | B1010 | Upper Floor Construction | $4,520,966 | | | |
| | B1020 | Roof Construction | $1,185,703 | **$5,706,669** | $30.02 | 10.5% |
| **B20** | **EXTERIOR CLOSURE** | | | | | |
| | B2010 | Exterior Walls | $3,792,474 | | | |
| | B2020 | Windows | $3,854,960 | | | |
| | B2030 | Exterior Doors | $128,528 | **$7,775,962** | $40.91 | 14.3% |
| **B30** | **ROOFING** | | | | | |
| | B3010 | Roof Coverings | $696,465 | | | |
| | B3020 | Roof Openings | $18,000 | **$714,465** | $3.76 | 1.3% |
| **C10** | **INTERIOR CONSTRUCTION** | | | | | |
| | C1010 | Partitions | $4,605,220 | | | |
| | C1020 | Interior Doors | $853,596 | | | |
| | C1030 | Specialties/Millwork | $3,182,583 | **$8,641,399** | $45.46 | 15.9% |
| **C20** | **STAIRCASES** | | | | | |
| | C2010 | Stair Construction | $650,850 | | | |
| | C2020 | Stair Finishes | $89,960 | **$740,810** | $3.90 | 1.4% |
| **C30** | **INTERIOR FINISHES** | | | | | |
| | C3010 | Wall Finishes | $2,858,611 | | | |
| | C3020 | Floor Finishes | $1,467,051 | | | |
| | C3030 | Ceiling Finishes | $1,673,218 | **$5,998,880** | $31.56 | 11.0% |
| **D10** | **CONVEYING SYSTEMS** | | | | | |
| | D1010 | Elevator | $1,728,250 | | | |
| | D1020 | Escalators and Moving Walkways | $0 | | | |
| | D1030 | Other Conveying Systems | $0 | **$1,728,250** | $9.09 | 3.2% |
| **D20** | **PLUMBING** | | | | | |
| | D20 | Plumbing | $1,196,750 | **$1,196,750** | $6.30 | 2.2% |

**J. Michael Ruane Judicial Center**
**Federal Street, Salem, MA**

March 22, 2007

**Study Cost Estimate**

190,071 GFA

## *CONSTRUCTION COST SUMMARY*

| | *BUILDING SYSTEM* | | *SUB-TOTAL* | *TOTAL* | *$/SF* | *%* |
|---|---|---|---|---|---|---|
| **D30** | **HVAC** | | | | | |
| | D30 | HVAC | $6,449,964 | **$6,449,964** | $33.93 | 11.8% |
| **D40** | **FIRE PROTECTION** | | | | | |
| | D40 | Fire Protection | $1,012,917 | **$1,012,917** | $5.33 | 1.9% |
| **D50** | **ELECTRICAL** | | | | | |
| | D5010 | Service & Distribution | $1,457,688 | | | |
| | D5020 | Lighting & Power | $2,290,356 | | | |
| | D5030 | Communication & Security Systems | $1,992,496 | | | |
| | D5040 | Other Electrical Systems | $211,561 | **$5,952,101** | $31.32 | 10.9% |
| **E10** | **EQUIPMENT** | | | | | |
| | E10 | Equipment | $529,000 | **$529,000** | $2.78 | 1.0% |
| **E20** | **FURNISHINGS** | | | | | |
| | E2010 | Fixed Furnishings | $65,000 | | | |
| | E2020 | Movable Furnishings | NIC | **$65,000** | $0.34 | 0.1% |
| **F10** | **SPECIAL CONSTRUCTION** | | | | | |
| | F10 | Special Construction | $0 | **$0** | $0.00 | 0.0% |
| **F20** | **SELECTIVE DEMOLITION & CHURCH MOVE** | | | | | |
| | F2010 | Building Elements Demolition | $1,557,000 | | | |
| | F2020 | Hazardous Components Abatement | $0 | **$1,557,000** | $8.19 | 2.9% |
| **G** | **SITE PREP/DEVELOPMENT** | | | | | |
| | G10 | Site Preparation/Demolition | $144,811 | | | |
| | G20 | Site Improvements | $1,112,303 | | | |
| | G30 | Civil / Mechanical Utilities | $276,424 | | | |
| | G40 | Electrical Utilities | $253,250 | | | |
| | G90 | Other Site Construction | $0 | **$1,786,788** | $9.40 | 3.3% |
| ***TOTAL DIRECT COST (Trade Costs)*** | | | | ***$54,490,670*** | *$286.69* | *100.0%* |
| **MARK UP** | | | | | | |
| | General Conditions/Permit/Insurance | | $5,721,520 | | | |
| | Overhead/Fee/Profit | | $1,806,366 | **$7,527,886** | $39.61 | |
| ***SUBTOTAL CONSTRUCTION*** | | | | ***$62,018,556*** | *$326.29* | |
| **CONTINGENCIES/ESCALATION** | | | | | | |
| | Pricing/Estimating Contingency | | $5,449,067 | | | |
| | Design Contingency | | $5,449,067 | | | |
| | Escalation | | $6,538,880 | | | |
| | Construction Contingency | | $2,157,831 | **$19,594,845** | $103.09 | |
| ***ESTIMATED CONTRACT AWARD*** | | | | ***$81,613,401*** | ***$429.38*** | |

**J. Michael Ruane Judicial Center**
**Federal Street, Salem, MA**

March 22, 2007

**Study Cost Estimate**

190,071 GFA

| DESCRIPTION | QTY | UNIT | UNIT COST | EST'D COST | SUB TOTAL | TOTAL COST |
|---|---|---|---|---|---|---|
| ***GROSS FLOOR AREA CALCULATION*** | | | | | | |
| Ground Floor | | | 33,655 | | | |
| First Floor | | | 37,009 | | | |
| Second Floor | | | 32,029 | | | |
| Third Floor | | | 35,274 | | | |
| Fourth Floor | | | 34,045 | | | |
| Mezzanine | | | 6,571 | | | |
| Fifth Floor | | | 11,488 | | | |
| ***TOTAL GROSS FLOOR AREA (GFA)*** | | | | ***190,071*** | ***sf*** | |
| ***A10 FOUNDATIONS*** | | | | | | |
| **A1010 STANDARD FOUNDATIONS** | | | | | | |
| Strip footings to basement walls at main building - 3'-6" x 2'-0" | | | | | | |
| Excavation | 191 | cy | 8.00 | 1,528 | | |
| Remove off site | 191 | cy | 15.00 | 2,865 | | |
| Backfill with gravel | 32 | cy | 20.00 | 640 | | |
| Formwork | 2,340 | sf | 10.00 | 23,400 | | |
| Re-bar - 70# cy | 11,130 | lbs | 0.85 | 9,461 | | |
| Concrete material | 159 | cy | 105.00 | 16,695 | | |
| Placing concrete | 159 | cy | 50.00 | 7,950 | | |
| Strip footings to foundation walls at main building - 3'-6" x 2'-0" | | | | | | |
| Excavation | 242 | cy | 8.00 | 1,936 | | |
| Remove off site | 242 | cy | 15.00 | 3,630 | | |
| Backfill with gravel | 40 | cy | 20.00 | 800 | | |
| Formwork | 2,975 | sf | 10.00 | 29,750 | | |
| Re-bar - 70# cy | 14,140 | lbs | 0.85 | 12,019 | | |
| Concrete material | 202 | cy | 105.00 | 21,210 | | |
| Placing concrete | 202 | cy | 50.00 | 10,100 | | |
| Strip footings to basement walls at Law Library, - 3'-6" x 2'-0" | | | | | | |
| Excavation | 126 | cy | 8.00 | 1,008 | | |
| Remove off site | 126 | cy | 15.00 | 1,890 | | |
| Backfill with gravel | 21 | cy | 20.00 | 420 | | |
| Formwork | 1,550 | sf | 10.00 | 15,500 | | |
| Re-bar - 70# cy | 7,350 | lbs | 0.85 | 6,248 | | |
| Concrete material | 105 | cy | 105.00 | 11,025 | | |
| Placing concrete | 105 | cy | 50.00 | 5,250 | | |
| Spread footings, 4' 0" x 4' 0" x 1'-0" @ Law Library | *15* | *ea* | | - | | |
| Excavation | 142 | cy | 8.00 | 1,136 | | |
| Remove off site | 142 | cy | 15.00 | 2,130 | | |
| Backfill with gravel | 133 | cy | 20.00 | 2,660 | | |
| Formwork | 240 | sf | 10.00 | 2,400 | | |
| Re-bar, allow 80#/cy | 720 | lbs | 0.85 | 612 | | |
| Concrete material | 9 | cy | 105.00 | 945 | | |
| Placing concrete | 9 | cy | 50.00 | 450 | | |
| Set anchor bolts & grout plates | 15 | ea | 125.00 | 1,875 | | |
| Pile cap, 6' x 4' | *101* | *ea* | | - | | |
| Excavation | 1,547 | cy | 8.00 | 12,376 | | |
| Remove of site | 1,547 | cy | 15.00 | 23,205 | | |
| Backfill with gravel | 1,248 | cy | 20.00 | 24,960 | | |
| Formwork | 6,403 | sf | 10.00 | 64,030 | | |
| Re-bar, allow 90#/cy | 26,910 | lbs | 0.85 | 22,874 | | |
| Concrete material | 299 | cy | 105.00 | 31,395 | | |
| Placing concrete | 299 | cy | 50.00 | 14,950 | | |
| Set anchor bolts grout plates | 101 | ea | 125.00 | 12,625 | | |

**J. Michael Ruane Judicial Center**
**Federal Street, Salem, MA**

March 22, 2007

**Study Cost Estimate**

190,071 GFA

| | DESCRIPTION | QTY | UNIT | UNIT COST | EST'D COST | SUB TOTAL | TOTAL COST |
|---|---|---|---|---|---|---|---|
| 59 | Exterior Foundation Wall-18" th | *595* | *lf* | | - | | |
| 60 | Formwork | 5,950 | sf | 10.00 | 59,500 | | |
| 61 | Re-bar - 90#/cy | 15,660 | lbs | 0.92 | 14,407 | | |
| 62 | Concrete material | 174 | cy | 102.00 | 17,748 | | |
| 63 | Placing concrete | 174 | cy | 50.00 | 8,700 | | |
| 64 | Waterproofing foundation wall and footing | 3,570 | sf | 1.00 | 3,570 | | |
| 65 | Insulation to foundation walls | 2,380 | sf | 1.00 | 2,380 | | |
| 66 | Grade beams to interior at bracing areas of slab - 1'-6" x 3' deep | *1,800* | *lf* | | - | | |
| 67 | Excavation | 900 | cy | 9.00 | 8,100 | | |
| 68 | Remove off site | 900 | cy | 15.00 | 13,500 | | |
| 69 | Backfill with gravel | 585 | cy | 20.00 | 11,700 | | |
| 70 | Formwork | 10,800 | sf | 10.00 | 108,000 | | |
| 71 | Re-bar - 80# cy | 25,200 | lbs | 0.92 | 23,184 | | |
| 72 | Concrete material | 315 | cy | 102.00 | 32,130 | | |
| 73 | Placing concrete | 315 | cy | 50.00 | 15,750 | | |
| 74 | Miscellaneous | | | | | | |
| 75 | Allow for piers/pilasters @ Law Library | 15 | ea | 500.00 | 7,500 | | |
| 76 | Local de-watering during excavation | 1 | ls | 30,000.00 | 30,000 | | |
| 77 | Miscellaneous concrete costs (pumping, admixtures etc.) | | | | | | |
| 78 | Premium for pump grade concrete mix | 1,061 | cy | 7.00 | 7,427 | | |
| 79 | Pump and operator | 11.0 | days | 1,200.00 | 13,200 | | |
| 80 | SUBTOTAL | | | | | $778,744 | |
| 81 | | | | | | | |
| 82 | **A1020 SPECIAL FOUNDATIONS** | | | | | | |
| 83 | Mobilization/demobilization associated with piling | 1 | ls | 30,000.00 | 30,000 | | |
| 84 | Testing piles | 1 | ls | 45,000.00 | 45,000 | | |
| 85 | Pressure injected footings | 450 | ea | 2,600.00 | 1,170,000 | | |
| 86 | Cut back/remove top of piles | 101 | ea | 75.00 | 7,575 | | |
| 87 | Allowance for breakages in piles - Not required | | | | | | |
| 88 | SUBTOTAL | | | | | $1,252,575 | |
| 89 | | | | | | | |
| 90 | **A1030 LOWEST FLOOR CONSTRUCTION** | | | | | | |
| 91 | Two way pressure slab @ new bldg. | *37,009* | *sf* | | | | |
| 92 | 8" drainage layer | 918 | cy | 18.00 | 16,524 | | |
| 93 | 3" mud slab | 37,009 | sf | 3.00 | 111,027 | | |
| 94 | 10" two way slab w/ anti-hydro additive | 1,138 | cy | 110.00 | 125,180 | | |
| 95 | Re-bar for two way slab | 301,993 | lbs | 0.85 | 256,694 | | |
| 96 | 8" gravel/sand layer | 1,837 | ton | 30.00 | 55,110 | | |
| 97 | Wire mesh reinforcing, 15% overlap | 42,560 | sf | 0.65 | 27,664 | | |
| 98 | Crystalline waterproofing | 74,018 | sf | 1.25 | 92,523 | | |
| 99 | Slab on Grade, 6" thick @ Law Library | *4,256* | *sf* | | - | | |
| 100 | Gravel fill, 12" | 158 | cy | 20.00 | 3,160 | | |
| 101 | Rigid insulation under slab on grade | 4,256 | sf | 1.50 | 6,384 | | |
| 102 | Vapor barrier | 4,256 | sf | 0.25 | 1,064 | | |
| 103 | Mesh reinforcing 15% lap | 4,894 | sf | 0.65 | 3,181 | | |
| 104 | Concrete - 6" thick | 83 | cy | 105.00 | 8,715 | | |
| 105 | Place and finish concrete | 83 | cy | 50.00 | 4,150 | | |
| 106 | Control joints - saw cut | 4,256 | sf | 0.35 | 1,490 | | |
| 107 | Perimeter joints | 309 | lf | 1.50 | 464 | | |
| 108 | Elevator Pits | | | | | | |
| 109 | Excavation for elevator pit | 588 | cy | 9.00 | 5,292 | | |
| 110 | Remove off site | 588 | cy | 15.00 | 8,820 | | |
| 111 | Backfill with gravel | 29 | cy | 20.00 | 580 | | |
| 112 | Elevator pit walls | | | | | | |
| 113 | formwork | 3,360 | sf | 12.00 | 40,320 | | |
| 114 | reinforcement | 5,040 | lbs | 0.85 | 4,284 | | |
| 115 | concrete material | 44 | cy | 105.00 | 4,620 | | |
| 116 | placing concrete | 44 | cy | 50.00 | 2,200 | | |

**J. Michael Ruane Judicial Center**
**Federal Street, Salem, MA**

March 22, 2007

**Study Cost Estimate**

190,071 GFA

| | DESCRIPTION | QTY | UNIT | UNIT COST | EST'D COST | SUB TOTAL | TOTAL COST |
|---|---|---|---|---|---|---|---|
| 117 | Slab | | | | | | |
| 118 | formwork | 420 | sf | 8.00 | 3,360 | | |
| 119 | reinforcement | 5,250 | lbs | 0.85 | 4,463 | | |
| 120 | concrete material in slab | 41 | cy | 105.00 | 4,305 | | |
| 121 | placing concrete | 41 | cy | 50.00 | 2,050 | | |
| 122 | Cementitious waterproofing to elevator pit | 2,380 | sf | 9.00 | 21,420 | | |
| 123 | Allow for equipment pads | 1 | ls | 20,000.00 | 20,000 | | |
| 124 | Miscellaneous | | | | | | |
| 125 | Isolation joints at columns | 808 | lf | 2.50 | 2,020 | | |
| 126 | Perimeter joints | 1,063 | lf | 1.50 | 1,595 | | |
| 127 | Miscellaneous concrete costs (pumping, admixtures etc.) | | | | | | |
| 128 | Premium for pump grade concrete mix | 1,306 | cy | 7.00 | 9,142 | | |
| 129 | Pump and operator | 13.0 | days | 1,200.00 | 15,600 | | |
| 130 | SUBTOTAL | | | | | $863,401 | |
| 131 | | | | | | | |
| 132 | ***TOTAL - FOUNDATIONS*** | | | | | | ***$2,894,720*** |
| 133 | | | | | | | |
| 134 | | | | | | | |
| 135 | ***A20 BASEMENT CONSTRUCTION*** | | | | | | |
| 136 | | | | | | | |
| 137 | **A2010 BASEMENT EXCAVATION** | | | | | | |
| 138 | Main Building | | | | | | |
| 139 | Excavate for basement | 16,204 | cy | 8.00 | 129,632 | | |
| 140 | Excavate working space to basement wall | 3,828 | cy | 8.00 | 30,624 | | |
| 141 | Excavate 2' of subgrade | 2,493 | cy | 7.50 | 18,698 | | |
| 142 | Remove excavated material from site | 22,525 | cy | 15.00 | 337,875 | | |
| 143 | Backfill around basement walls with gravel | 3,828 | cy | 24.00 | 91,872 | | |
| 144 | Compacted structural fill, 2' | 2,493 | cy | 24.00 | 59,832 | | |
| 145 | Foundation drainage | 1,063 | lf | 18.00 | 19,134 | | |
| 146 | Steel sheet piling support of excavation | 19,875 | sf | 25.00 | 496,875 | | |
| 147 | Law Library | | | | | | |
| 148 | Excavate for basement | 2,049 | cy | 8.00 | 16,392 | | |
| 149 | Excavate working space to basement wall | 1,488 | cy | 8.00 | 11,904 | | |
| 150 | Excavate 2' of subgrade | 315 | cy | 7.50 | 2,363 | | |
| 151 | Remove excavated material from site | 3,852 | cy | 15.00 | 57,780 | | |
| 152 | Backfill around basement walls with gravel | 1,488 | cy | 24.00 | 35,712 | | |
| 153 | Compacted structural fill, 2' | 315 | cy | 24.00 | 7,560 | | |
| 154 | Foundation drainage | 309 | lf | 18.00 | 5,562 | | |
| 155 | SUBTOTAL | | | | | $1,321,815 | |
| 156 | | | | | | | |
| 157 | **A2020 BASEMENT WALLS** | | | | | | |
| 158 | Basement Wall at Main Building, 18" thick | | | | | | |
| 159 | Formwork to basement wall | 12,168 | sf | 12.00 | 146,016 | | |
| 160 | Reinforcement in basement walls (5 lbs/sf) | 30,420 | lbs | 0.85 | 25,857 | | |
| 161 | Concrete material in basement walls | 355 | cy | 105.00 | 37,275 | | |
| 162 | Placing concrete | 355 | cy | 50.00 | 17,750 | | |
| 163 | Waterproofing to basement walls | 6,084 | sf | 1.25 | 7,605 | | |
| 164 | Rigid insulation to basement walls | 6,084 | sf | 1.50 | 9,126 | | |
| 165 | Furring & GWB lining to basement walls | 6,084 | sf | 2.50 | 15,210 | | |
| 166 | Basement Wall at Law Library, 12" thick | | | | | | |
| 167 | Formwork to basement wall | 8,060 | sf | 12.00 | 96,720 | | |
| 168 | Reinforcement in basement walls (5 lbs/sf) | 20,150 | lbs | 0.85 | 17,128 | | |
| 169 | Concrete material in basement walls | 157 | cy | 105.00 | 16,485 | | |
| 170 | Placing concrete | 157 | cy | 50.00 | 7,850 | | |
| 171 | Waterproofing to basement walls | 4,030 | sf | 1.25 | 5,038 | | |
| 172 | Rigid insulation to basement walls | 4,030 | sf | 1.50 | 6,045 | | |
| 173 | Furring & GWB lining to basement walls | 4,030 | sf | 2.50 | 10,075 | | |
| 174 | SUBTOTAL | | | | | $418,180 | |
| 175 | | | | | | | |
| 176 | ***TOTAL - BASEMENT CONSTRUCTION*** | | | | | | ***$1,739,995*** |
| 177 | | | | | | | |
| 178 | | | | | | | |

**J. Michael Ruane Judicial Center**
**Federal Street, Salem, MA**

March 22, 2007

**Study Cost Estimate**

190,071 GFA

| | DESCRIPTION | QTY | UNIT | UNIT COST | EST'D COST | SUB TOTAL | TOTAL COST |
|---|---|---|---|---|---|---|---|
| 179 | ***B10 SUPERSTRUCTURE*** | | | | | | |
| 180 | | | | | | | |
| 181 | **B1010 UPPER FLOOR CONSTRUCTION** | | | | | | |
| 182 | Floor Structure - Steel: | | | | | | |
| 183 | Steel beams and columns in floor framing - w sections (12 lbs/sf) | 918 | tns | 3,100.00 | 2,845,800 | | |
| 184 | Shear studs (20 per 100sf) | 30,612 | ea | 3.00 | 91,836 | | |
| 185 | Metal decking | 153,062 | sf | 2.85 | 436,227 | | |
| 186 | Premium for add'l steel @ compact dense shelving | 14 | tns | 3,100.00 | 43,400 | | |
| 187 | Concrete toppings | | | | | | |
| 188 | Mesh reinforcement in concrete topping | 176,021 | sf | 0.65 | 114,414 | | |
| 189 | Concrete topping to metal decking, 3-1/4" thick | 2,381 | cy | 105.00 | 250,005 | | |
| 190 | Place and finish concrete | 2,381 | cy | 50.00 | 119,050 | | |
| 191 | Control and construction joints | 153,062 | sf | 0.35 | 53,572 | | |
| 192 | Miscellaneous | | | | | | |
| 193 | Miscellaneous concrete costs (pumping, admixtures etc.) | | | | | | |
| 194 | Premium for pump grade concrete mix | 2,381 | cy | 7.00 | 16,667 | | |
| 195 | Pump and operator | 24.0 | days | 1,200.00 | 28,800 | | |
| 196 | Fire proofing floor construction, (beams and columns only) | 153,062 | sf plan | 2.00 | 306,124 | | |
| 197 | Fire stopping floors | 5 | flrs | 5,000.00 | 25,000 | | |
| 198 | Allowance for miscellaneous metals not identifiable at this design stage | 190,071 | sf | 1.00 | 190,071 | | |
| 199 | SUBTOTAL | | | | | $4,520,966 | |
| 200 | | | | | | | |
| 201 | **B1020 ROOF CONSTRUCTION** | | | | | | |
| 202 | Structural Steel Roof | | | | | | |
| 203 | Steel beams and columns in flat roof framing - w sections (14.5 lbs/sf) | 268 | tns | 3,100.00 | 830,800 | | |
| 204 | Metal decking to flat roof | 37,009 | sf | 2.85 | 105,476 | | |
| 205 | Concrete toppings (assume req'd over whole area) | | | | | | |
| 206 | Mesh reinforcement in concrete topping | 42,560 | sf | 0.65 | 27,664 | | |
| 207 | Concrete topping to metal decking, 3-1/4" thick | 576 | cy | 105.00 | 60,480 | | |
| 208 | Place and finish concrete | 576 | cy | 50.00 | 28,800 | | |
| 209 | Control and construction joints | 37,009 | sf | 0.35 | 12,953 | | |
| 210 | Miscellaneous | | | | | | |
| 211 | Miscellaneous concrete costs (pumping, admixtures etc.) | | | | | | |
| 212 | Premium for pump grade concrete mix | 576 | cy | 7.00 | 4,032 | | |
| 213 | Pump and operator | 6.0 | days | 1,200.00 | 7,200 | | |
| 214 | Lightweight concrete | 576 | cy | 30.00 | 17,280 | | |
| 215 | Fire proofing roof construction (beams and columns only) | 37,009 | sf plan | 2.00 | 74,018 | | |
| 216 | Fire stopping | 1 | ls | 5,000.00 | 5,000 | | |
| 217 | Allowance for work to Law Library | 1 | ls | 12,000.00 | 12,000 | | |
| 218 | SUBTOTAL | | | | | $1,185,703 | |
| 219 | | | | | | | |
| 220 | ***TOTAL - SUPERSTRUCTURE*** | | | | | | ***$5,706,669*** |
| 221 | | | | | | | |
| 222 | | | | | | | |
| 223 | ***B20 EXTERIOR CLOSURE*** | | | | | | |
| 224 | | | | | | | |
| 225 | **B2010 EXTERIOR WALLS** | | | | | | |
| 226 | Exterior skin | | | | | | |
| 227 | Stone cladding, 1 1/2" granite | 11,631 | sf | 70.00 | 814,170 | | |
| 228 | Anodized aluminum non-insulated panels | 9,516 | sf | 30.00 | 285,480 | | |
| 229 | Brick veneer | 33,410 | sf | 32.00 | 1,069,120 | | |
| 230 | Stone cladding, 1 1/2" granite @ columns | 4,572 | sf | 80.00 | 365,760 | | |
| 231 | Lintels - steel | 3,178 | lf | 25.00 | 79,450 | | |
| 232 | Louvers | 180 | sf | 50.00 | 9,000 | | |

**J. Michael Ruane Judicial Center**
**Federal Street, Salem, MA**

March 22, 2007

**Study Cost Estimate**

190,071 GFA

| | DESCRIPTION | QTY | UNIT | UNIT COST | EST'D COST | SUB TOTAL | TOTAL COST |
|---|---|---|---|---|---|---|---|
| | Interior skin | | | | | | |
| | LGMF, 6" metal stud | 59,129 | sf | 7.00 | 413,903 | | |
| | Insulation | 59,129 | sf | 0.75 | 44,347 | | |
| | Vapor barrier | 59,129 | sf | 1.60 | 94,606 | | |
| | Dens-glas | 59,129 | sf | 3.50 | 206,952 | | |
| | Drywall lining to interior face of stud backup | 54,557 | sf | 2.00 | 109,114 | | |
| | Miscellaneous | | | | | | |
| | Scaffolding to exterior wall | 108,119 | sf | 2.00 | 216,238 | | |
| | Flashings at sills and lintels | 6,356 | lf | 7.00 | 44,492 | | |
| | Flashing, thruwall, at parpet | 1,522 | lf | 15.00 | 22,830 | | |
| | Control joints in exterior wall | 1,753 | lf | 4.00 | 7,012 | | |
| | Allowance for work to Law Library | 1 | ls | 10,000.00 | 10,000 | | |
| | SUBTOTAL | | | | | $3,792,474 | |
| **B2020** | **WINDOWS** | | | | | | |
| | Curtainwall, including windows (fixed & operable) | 45,632 | sf | 80.00 | 3,650,560 | | |
| | Metal trim | 845 | lf | 35.00 | 29,575 | | |
| | Sunshades, fixed | 1,295 | lf | 135.00 | 174,825 | | |
| | SUBTOTAL | | | | | $3,854,960 | |
| **B2030** | **EXTERIOR DOORS** | | | | | | |
| | Egress doors, single leaf, hollow metal | 5 | ea | 2,000.00 | 10,000 | | |
| | Entry doors, glazed, single leaf | 2 | ea | 3,500.00 | 7,000 | | |
| | Entry doors, glazed, double leaf | 2 | ea | 6,000.00 | 12,000 | | |
| | Door operator | 4 | ea | 2,000.00 | 8,000 | | |
| | Overhead doors | | | | | | |
| | Sallyport, 11x8 (dbl. door) | 1 | ea | 9,240.00 | 9,240 | | |
| | Loading dock, 8x8 | 3 | ea | 4,800.00 | 14,400 | | |
| | Trash area, 9x8 | 1 | ea | 5,400.00 | 5,400 | | |
| | Revolving door, 6' diam | 1 | ea | 45,000.00 | 45,000 | | |
| | Automatic controls to revolving door | 1 | ls | 16,000.00 | 16,000 | | |
| | Paint to doors | 5 | ea | 75.00 | 375 | | |
| | Backer rod & double sealant | 159 | lf | 4.00 | 636 | | |
| | Wood blocking at openings | 159 | lf | 3.00 | 477 | | |
| | SUBTOTAL | | | | | $128,528 | |
| | ***TOTAL - EXTERIOR CLOSURE*** | | | | | | ***$7,775,962*** |
| ***B30*** | ***ROOFING*** | | | | | | |
| **B3010** | **ROOF COVERINGS** | | | | | | |
| | Flat roofing | | | | | | |
| | 3-ply modified bitumen roof | 37,009 | sf | 10.50 | 388,595 | | |
| | Insulation tapered | 37,009 | sf | 3.50 | 129,532 | | |
| | Fiberboard/gypsum sheathing and the like to roof - 1 layers | 37,009 | sf | 2.00 | 74,018 | | |
| | Miscellaneous Roofing | | | | | | |
| | Allowance for working membrane roofing around pipe and duct penetrations | 1 | ls | 5,000.00 | 5,000 | | |
| | Flashings | 1,522 | lf | 10.00 | 15,220 | | |
| | Parapet coping | 1,522 | lf | 50.00 | 76,100 | | |
| | Roof pavers, allow | 2,000 | sf | 4.00 | 8,000 | | |
| | SUBTOTAL | | | | | $696,465 | |
| **B3020** | **ROOF OPENINGS** | | | | | | |
| | Precurbed pyramidal skylights, 5'x5' | 4 | ea | 2,000.00 | 8,000 | | |
| | Allow for roof hatch/ elevator vents | 1 | ls | 10,000.00 | 10,000 | | |
| | SUBTOTAL | | | | | $18,000 | |
| | ***TOTAL - ROOFING*** | | | | | | ***$714,465*** |

**J. Michael Ruane Judicial Center**
**Federal Street, Salem, MA**

March 22, 2007

**Study Cost Estimate**

190,071 GFA

| | DESCRIPTION | QTY | UNIT | UNIT COST | EST'D COST | SUB TOTAL | TOTAL COST |
|---|---|---|---|---|---|---|---|
| 294 | ***C10 INTERIOR CONSTRUCTION*** | | | | | | |
| 295 | | | | | | | |
| 296 | **C1010 PARTITIONS** | | | | | | |
| 297 | Interior cmu partitions, 8" thick, fully grouted, reinforced at detainee areas | 31,177 | sf | 18.00 | 561,186 | | |
| 304 | CMU mechanical rooms | 2,795 | sf | 18.00 | 50,310 | | |
| 307 | Shaft wall around staircases, elevators and mechanical shafts - CMU | 45,763 | sf | 18.00 | 823,734 | | |
| 314 | Double stud wall at courtrooms - high STC rating, double studs, insulation, 1 layer GWB e/s, 1 layer impact resistant GWB | 27,811 | sf | 13.40 | 372,667 | | |
| 321 | Interior partitions, 6" stud, one layer GWB e/s, one layer impact-resistant GWB e/s, batt insulation - party walls | 24,564 | sf | 16.00 | 393,024 | | |
| 328 | Interior partitions, 6" stud, one layer gwb e/s, one layer impact-resistant GWB e/s, batt insulation | 83,742 | sf | 12.50 | 1,046,775 | | |
| 335 | Chase wall partitions | 5,273 | sf | 12.00 | 63,276 | | |
| 342 | Premium cost for veneer plaster to gwb - Allowance (Public areas and courtrooms, above panels) | 23,636 | sf | 2.75 | 64,999 | | |
| 343 | Furring & impact resistant GWB lining to cmu walls | 73,561 | sf | 5.00 | 367,805 | | |
| 350 | Glazed partitions at suite entries | 1,197 | sf | 55.00 | 65,835 | | |
| 351 | Secure glass at control area | 168 | sf | 120.00 | 20,160 | | |
| 352 | Observation windows | 8 | ea | 1,500.00 | 12,000 | | |
| 353 | Borrowed lites at perimeter offices | 1,348 | sf | 50.00 | 67,400 | | |
| 354 | Glass at open to below areas | 1,274 | sf | 85.00 | 108,290 | | |
| 355 | GWB column covers - allowance | 1 | ls | 20,000.00 | 20,000 | | |
| 356 | Sealants & caulking at partitions | 190,071 | sf | 0.35 | 66,525 | | |
| 357 | Rough blocking | 31,192 | lf | 2.00 | 62,384 | | |
| 358 | Lintels in masonry partitions | 530 | lf | 25.00 | 13,250 | | |
| 359 | Allowance for work to Law Library (complete-partitions, doors, windows, interior finishes, specialties/millwork) including basement | 8,512 | sf | 50.00 | 425,600 | | |
| 360 | SUBTOTAL | | | | | $4,605,220 | |
| 361 | | | | | | | |
| 362 | **C1020 INTERIOR DOORS** | | | | | | |
| 363 | Doors, frames & hardware | | | | | | |
| 364 | single leaf, wood / HM | 331 | ea | 1,100.00 | 364,100 | | |
| 365 | double leaf, wood / HM | 5 | pr | 2,025.00 | 10,125 | | |
| 366 | premium for judge's door | 13 | ea | 750.00 | 9,750 | | |
| 367 | single leaf, secure | 28 | ea | 3,000.00 | 84,000 | | |
| 368 | Suite entrances | | | | | | |
| 369 | single leaf | 8 | ea | 1,250.00 | 10,000 | | |
| 370 | double leaf | 4 | pr | 3,500.00 | 14,000 | | |
| 371 | Courtroom entrance doors | 22 | pr | 10,000.00 | 220,000 | | |
| 372 | Sidelights - 2' wide | 82 | ea | 720.00 | 59,040 | | |
| 373 | Paint doors and frames | 385 | ea | 100.00 | 38,500 | | |
| 374 | Sealants & caulking | 385 | ea | 75.00 | 28,875 | | |
| 375 | Allowance for access doors | 1 | ls | 15,205.68 | 15,206 | | |
| 376 | SUBTOTAL | | | | | $853,596 | |
| 377 | | | | | | | |
| 378 | **C1030 SPECIALTIES / MILLWORK** | | | | | | |
| 379 | Toilet Partitions; handicapped | 18 | ea | 1,200.00 | 21,600 | | |
| 380 | Toilet Partitions; regular | 17 | ea | 1,000.00 | 17,000 | | |
| 381 | Toilet Partitions; urinal screens | 17 | ea | 400.00 | 6,800 | | |
| 382 | Miscellaneous metal to ceiling supported toilet partitions | 35 | ea | 150.00 | 5,250 | | |
| 383 | Vanity counters, granite surface | 156 | lf | 200.00 | 31,200 | | |
| 384 | Security desk - allow | 30 | lf | 1,000.00 | 30,000 | | |
| 385 | Information desk - allow | 14 | lf | 1,000.00 | 14,000 | | |
| 386 | Information display - allowance | 1 | ls | 10,000.00 | 10,000 | | |
| 387 | Public waiting benches - allow | 378 | lf | 500.00 | 189,000 | | |
| 388 | Grand jury reception desk - allow | 13 | lf | 1,000.00 | 13,000 | | |

**J. Michael Ruane Judicial Center**
**Federal Street, Salem, MA**

March 22, 2007

**Study Cost Estimate**

190,071 GFA

| | DESCRIPTION | QTY | UNIT | UNIT COST | EST'D COST | SUB TOTAL | TOTAL COST |
|---|---|---|---|---|---|---|---|
| 389 | Transaction counters | 119 | lf | 1,250.00 | 148,750 | | |
| 390 | Break room / kitchenette - allow 6 ea | | | | | | |
| 391 | Base cabinet and countertop | 60 | lf | 300.00 | 18,000 | | |
| 392 | Wall cabinet | 60 | lf | 200.00 | 12,000 | | |
| 393 | Wood shelving at judges chambers - Allowance | 1 | ls | 15,000.00 | 15,000 | | |
| 394 | Shelving in storage rooms - FF&E | | | | NIC | | |
| 395 | Concessions fitout - allowance | 1 | ls | 15,000.00 | 15,000 | | |
| 396 | SC Arraignment Courtroom | 1 | ea | | - | | |
| 397 | Judge's platform | 70 | sf | 20.00 | 1,400 | | |
| 398 | Judge's bench | 10 | lf | 1,800.00 | 18,000 | | |
| 399 | Witness stand | 1 | ea | 10,000.00 | 10,000 | | |
| 400 | Detainee enclosure - glass | 63 | sf | 250.00 | 15,750 | | |
| 401 | Detainee enclosure - to 4' | 42 | lf | 300.00 | 12,600 | | |
| 402 | Wood wall / rail @ spectators | 34 | lf | 300.00 | 10,200 | | |
| 403 | Rail behind judge's bench | 10 | lf | 175.00 | 1,750 | | |
| 404 | Wood shelving behind judge | 25 | lf | 50.00 | 1,250 | | |
| 405 | Court clerk platform | 25 | sf | 20.00 | 500 | | |
| 406 | Court clerk bench | 4 | lf | 1,000.00 | 4,000 | | |
| 407 | Side bar | 1 | ea | 12,000.00 | 12,000 | | |
| 408 | Attorneys tables | 2 | ea | 3,000.00 | 6,000 | | |
| 409 | Officers bench - 3 ea | 9 | lf | 1,000.00 | 9,000 | | |
| 410 | Spectator benches | 250 | lf | 350.00 | 87,500 | | |
| 411 | Access Ramps to Judge Bench | 16 | sf | 25.00 | 400 | | |
| 412 | Rail to ramp | 8 | lf | 200.00 | 1,600 | | |
| 413 | SC Large Jury Courtroom | 3 | ea | | - | | |
| 414 | Jury platform | 408 | sf | 20.00 | 8,160 | | |
| 415 | Judge's platform | 210 | sf | 20.00 | 4,200 | | |
| 416 | Judge's bench | 30 | lf | 1,800.00 | 54,000 | | |
| 417 | Witness stand | 3 | ea | 10,000.00 | 30,000 | | |
| 418 | Detainee enclosure - glass | 189 | sf | 250.00 | 47,250 | | |
| 419 | Detainee enclosure - to 4' | 126 | lf | 300.00 | 37,800 | | |
| 420 | Wood wall / rail @ jury stand | 90 | lf | 300.00 | 27,000 | | |
| 421 | Wood wall / rail @ spectators | 102 | lf | 300.00 | 30,600 | | |
| 422 | Foot rail @ jury stand | 105 | lf | 150.00 | 15,750 | | |
| 423 | Rail behind judge's bench | 30 | lf | 175.00 | 5,250 | | |
| 424 | Wood shelving behind judge | 75 | lf | 50.00 | 3,750 | | |
| 425 | Court clerk platform | 60 | sf | 20.00 | 1,200 | | |
| 426 | Court clerk bench | 12 | lf | 1,000.00 | 12,000 | | |
| 427 | Side bar | 3 | ea | 12,000.00 | 36,000 | | |
| 428 | Attorneys tables | 6 | ea | 3,000.00 | 18,000 | | |
| 429 | Officers bench - 3 ea | 27 | lf | 1,000.00 | 27,000 | | |
| 430 | Jury seats - FF&E | | | | NIC | | |
| 431 | Spectator benches | 750 | lf | 350.00 | 262,500 | | |
| 432 | Access Ramps to Judge Bench | 48 | sf | 25.00 | 1,200 | | |
| 433 | Rail to ramp | 24 | lf | 200.00 | 4,800 | | |
| 434 | DC Arraignment Courtroom | 1 | ea | | - | | |
| 435 | Judge's platform | 70 | sf | 20.00 | 1,400 | | |
| 436 | Judge's bench | 10 | lf | 1,800.00 | 18,000 | | |
| 437 | Witness stand | 1 | ea | 10,000.00 | 10,000 | | |
| 438 | Detainee enclosure - glass | 63 | sf | 250.00 | 15,750 | | |
| 439 | Detainee enclosure - to 4' | 42 | lf | 300.00 | 12,600 | | |
| 440 | Wood wall / rail @ spectators | 34 | lf | 300.00 | 10,200 | | |
| 441 | Rail behind judge's bench | 105 | lf | 175.00 | 18,375 | | |
| 442 | Wood shelving behind judge | 25 | lf | 50.00 | 1,250 | | |
| 443 | Court clerk platform | 25 | sf | 20.00 | 500 | | |
| 444 | Court clerk bench | 4 | lf | 1,000.00 | 4,000 | | |
| 445 | Side bar | 1 | ea | 12,000.00 | 12,000 | | |
| 446 | Attorneys tables | 2 | ea | 3,000.00 | 6,000 | | |
| 447 | Officers bench - 3 ea | 9 | lf | 1,000.00 | 9,000 | | |
| 448 | Spectator benches | 250 | lf | 350.00 | 87,500 | | |
| 449 | Access Ramps to Judge Bench | 16 | sf | 25.00 | 400 | | |
| 450 | Rail to ramp | 8 | lf | 200.00 | 1,600 | | |

**J. Michael Ruane Judicial Center**
**Federal Street, Salem, MA**

March 22, 2007

**Study Cost Estimate**

190,071 GFA

| | DESCRIPTION | QTY | UNIT | UNIT COST | EST'D COST | SUB TOTAL | TOTAL COST |
|---|---|---|---|---|---|---|---|
| 451 | DC Large Jury Courtroom | 1 | ea | | - | | |
| 452 | Jury platform | 136 | sf | 20.00 | 2,720 | | |
| 453 | Judge's platform | 70 | sf | 20.00 | 1,400 | | |
| 454 | Judge's bench | 10 | lf | 1,800.00 | 18,000 | | |
| 455 | Witness stand | 1 | ea | 10,000.00 | 10,000 | | |
| 456 | Detainee enclosure - glass | 63 | sf | 250.00 | 15,750 | | |
| 457 | Detainee enclosure - to 4' | 42 | lf | 300.00 | 12,600 | | |
| 458 | Wood wall / rail @ jury stand | 30 | lf | 300.00 | 9,000 | | |
| 459 | Wood wall / rail @ spectators | 34 | lf | 300.00 | 10,200 | | |
| 460 | Foot rail @ jury stand | 35 | lf | 150.00 | 5,250 | | |
| 461 | Rail behind judge's bench | 10 | lf | 175.00 | 1,750 | | |
| 462 | Wood shelving behind judge | 25 | lf | 50.00 | 1,250 | | |
| 463 | Court clerk platform | 20 | sf | 20.00 | 400 | | |
| 464 | Court clerk bench | 4 | lf | 1,000.00 | 4,000 | | |
| 465 | Side bar | 1 | ea | 12,000.00 | 12,000 | | |
| 466 | Attorneys tables | 2 | ea | 3,000.00 | 6,000 | | |
| 467 | Officers bench - 3 ea | 9 | lf | 1,000.00 | 9,000 | | |
| 468 | Jury seats - FF&E | | | | NIC | | |
| 469 | Spectator benches | 250 | lf | 350.00 | 87,500 | | |
| 470 | Access Ramps to Judge Bench | 16 | sf | 25.00 | 400 | | |
| 471 | Rail to ramp | 8 | lf | 200.00 | 1,600 | | |
| 472 | DC Medium Jury Courtroom | 2 | ea | | - | | |
| 473 | Jury platform | 272 | sf | 20.00 | 5,440 | | |
| 474 | Judge's platform | 140 | sf | 20.00 | 2,800 | | |
| 475 | Judge's bench | 20 | lf | 1,800.00 | 36,000 | | |
| 476 | Witness stand | 2 | ea | 10,000.00 | 20,000 | | |
| 477 | Detainee enclosure - glass | 126 | sf | 250.00 | 31,500 | | |
| 478 | Detainee enclosure - to 4' | 84 | lf | 300.00 | 25,200 | | |
| 479 | Wood wall / rail @ jury stand | 60 | lf | 300.00 | 18,000 | | |
| 480 | Wood wall / rail @ spectators | 68 | lf | 300.00 | 20,400 | | |
| 481 | Foot rail @ jury stand | 70 | lf | 150.00 | 10,500 | | |
| 482 | Rail behind judge's bench | 20 | lf | 175.00 | 3,500 | | |
| 483 | Wood shelving behind judge | 50 | lf | 50.00 | 2,500 | | |
| 484 | Court clerk platform | 40 | sf | 20.00 | 800 | | |
| 485 | Court clerk bench | 8 | lf | 1,000.00 | 8,000 | | |
| 486 | Side bar | 2 | ea | 12,000.00 | 24,000 | | |
| 487 | Attorneys tables | 4 | ea | 3,000.00 | 12,000 | | |
| 488 | Officers bench - 3 ea | 18 | lf | 1,000.00 | 18,000 | | |
| 489 | Jury seats - FF&E | | | | NIC | | |
| 490 | Spectator benches | 168 | lf | 350.00 | 58,800 | | |
| 491 | Access Ramps to Judge Bench | 32 | sf | 25.00 | 800 | | |
| 492 | Rail to ramp | 16 | lf | 200.00 | 3,200 | | |
| 493 | Housing Large Jury Courtroom | 1 | ea | | - | | |
| 494 | Jury platform | 136 | sf | 20.00 | 2,720 | | |
| 495 | Judge's platform | 70 | sf | 20.00 | 1,400 | | |
| 496 | Judge's bench | 10 | lf | 1,800.00 | 18,000 | | |
| 497 | Witness stand | 1 | ea | 10,000.00 | 10,000 | | |
| 498 | Detainee enclosure - glass | 63 | sf | 250.00 | 15,750 | | |
| 499 | Detainee enclosure - to 4' | 42 | lf | 300.00 | 12,600 | | |
| 500 | Wood wall / rail @ jury stand | 30 | lf | 300.00 | 9,000 | | |
| 501 | Wood wall / rail @ spectators | 34 | lf | 300.00 | 10,200 | | |
| 502 | Foot rail @ jury stand | 35 | lf | 150.00 | 5,250 | | |
| 503 | Rail behind judge's bench | 10 | lf | 175.00 | 1,750 | | |
| 504 | Wood shelving behind judge | 25 | lf | 50.00 | 1,250 | | |
| 505 | Court clerk platform | 20 | sf | 20.00 | 400 | | |
| 506 | Court clerk bench | 4 | lf | 1,000.00 | 4,000 | | |
| 507 | Side bar | 1 | ea | 12,000.00 | 12,000 | | |
| 508 | Attorneys tables | 2 | ea | 3,000.00 | 6,000 | | |
| 509 | Officers bench - 3 ea | 9 | lf | 1,000.00 | 9,000 | | |
| 510 | Jury seats - FF&E | | | | NIC | | |
| 511 | Spectator benches | 250 | lf | 350.00 | 87,500 | | |
| 512 | Access Ramps to Judge Bench | 16 | sf | 25.00 | 400 | | |
| 513 | Rail to ramp | 8 | lf | 200.00 | 1,600 | | |

**J. Michael Ruane Judicial Center**
**Federal Street, Salem, MA**

March 22, 2007

**Study Cost Estimate**

190,071 GFA

| | DESCRIPTION | QTY | UNIT | UNIT COST | EST'D COST | SUB TOTAL | TOTAL COST |
|---|---|---|---|---|---|---|---|
| 514 | Juvenile Jury Courtroom | 2 | ea | | - | | |
| 515 | Jury platform | 272 | sf | 20.00 | 5,440 | | |
| 516 | Judge's platform | 140 | sf | 20.00 | 2,800 | | |
| 517 | Judge's bench | 20 | lf | 1,800.00 | 36,000 | | |
| 518 | Witness stand | 2 | ea | 10,000.00 | 20,000 | | |
| 519 | Detainee enclosure - glass | 126 | sf | 250.00 | 31,500 | | |
| 520 | Detainee enclosure - to 4' | 84 | lf | 300.00 | 25,200 | | |
| 521 | Wood wall / rail @ jury stand | 60 | lf | 300.00 | 18,000 | | |
| 522 | Wood wall / rail @ spectators | 68 | lf | 300.00 | 20,400 | | |
| 523 | Foot rail @ jury stand | 70 | lf | 150.00 | 10,500 | | |
| 524 | Rail behind judge's bench | 20 | lf | 175.00 | 3,500 | | |
| 525 | Wood shelving behind judge | 50 | lf | 50.00 | 2,500 | | |
| 526 | Court clerk platform | 40 | sf | 20.00 | 800 | | |
| 527 | Court clerk bench | 8 | lf | 1,000.00 | 8,000 | | |
| 528 | Side bar | 2 | ea | 12,000.00 | 24,000 | | |
| 529 | Attorneys tables | 4 | ea | 3,000.00 | 12,000 | | |
| 530 | Officers bench - 3 ea | 18 | lf | 1,000.00 | 18,000 | | |
| 531 | Jury seats - FF&E | | | | NIC | | |
| 532 | Spectator benches | 168 | lf | 350.00 | 58,800 | | |
| 533 | Access Ramps to Judge Bench | 32 | sf | 25.00 | 800 | | |
| 534 | Rail to ramp | 16 | lf | 200.00 | 3,200 | | |
| 535 | Rail at open to below area | 21 | lf | 450.00 | 9,450 | | |
| 536 | White boards / tackboards - Allowance | 1 | ls | 5,000.00 | 5,000 | | |
| 537 | Signage/Directories - Allowance | 190,071 | sf | 1.00 | 190,071 | | |
| 538 | Fire extinguisher cabinets - allowance | 1 | ls | 20,000.00 | 20,000 | | |
| 539 | Janitors Accessories - allowance | 5 | rms | 500.00 | 2,500 | | |
| 540 | Toilet Accessories in small bathrooms- allowance | 33 | rms | 750.00 | 24,750 | | |
| 541 | Toilet Accessories in large bathrooms- allowance | 18 | rms | 2,000.00 | 36,000 | | |
| 542 | Lockers | 80 | ea | 195.00 | 15,600 | | |
| 543 | Allowance for specialties not identifiable at this design stage | 190,071 | sf | 1.00 | 190,071 | | |
| 544 | Miscellaneous sealants throughout building | 190,071 | sf | 0.50 | 95,036 | | |
| 545 | SUBTOTAL | | | | | $3,182,583 | |
| 546 | | | | | | | |
| 547 | ***TOTAL - INTERIOR CONSTRUCTION*** | | | | | | ***$8,641,399*** |
| 548 | | | | | | | |
| 549 | | | | | | | |
| 550 | ***C20 STAIRCASES*** | | | | | | |
| 551 | | | | | | | |
| 552 | **C2010 STAIR CONSTRUCTION** | | | | | | |
| 553 | Feature staircase - custom metal frame and railings | | | | | | |
| 554 | floor 1 - 2 | 4 | flts | 50,000.00 | 200,000 | | |
| 555 | Glass Rail at Landings | 83 | lf | 450.00 | 37,350 | | |
| 556 | Egress staircase, including rails and handrails | 27 | flt | 15,000.00 | 405,000 | | |
| 557 | concrete material in pan infill | 50 | cy | 105.00 | 5,250 | | |
| 558 | placing and finishing concrete | 50 | cy | 65.00 | 3,250 | | |
| 559 | SUBTOTAL | | | | | $650,850 | |
| 560 | | | | | | | |
| 561 | **C2020 STAIR FINISHES** | | | | | | |
| 562 | Granite treads | 1,277 | sf | 40.00 | 51,080 | | |
| 563 | Stained / sealed concrete | 5,130 | sf | 1.00 | 5,130 | | |
| 564 | Paint and concrete sealer to egress staircases | 27 | flt | 1,250.00 | 33,750 | | |
| 565 | SUBTOTAL | | | | | $89,960 | |
| 566 | | | | | | | |
| 567 | ***TOTAL - STAIRCASES*** | | | | | | ***$740,810*** |
| 568 | | | | | | | |
| 569 | | | | | | | |

**J. Michael Ruane Judicial Center**
**Federal Street, Salem, MA**

March 22, 2007

**Study Cost Estimate**

190,071 GFA

| | DESCRIPTION | QTY | UNIT | UNIT COST | EST'D COST | SUB TOTAL | TOTAL COST |
|---|---|---|---|---|---|---|---|
| 570 | ***C30 INTERIOR FINISHES*** | | | | | | |
| 571 | | | | | | | |
| 572 | **C3010 WALL FINISHES** | | | | | | |
| 573 | Wood wainscot at courtrooms and grand jury room - 5' high | 10,590 | sf | 60.00 | 635,400 | | |
| 574 | Wood wainscot at judge's offices and court conference rooms - 30% wall surface | 5,874 | sf | 60.00 | 352,440 | | |
| 575 | Paint to GWB | 333,021 | sf | 0.70 | 233,115 | | |
| 576 | Paint to CMU - epoxy | 41,233 | sf | 2.00 | 82,466 | | |
| 577 | Glazed wall finish at toilet rooms | 13,284 | sf | 2.00 | 26,568 | | |
| 578 | Ceramic tile to public toilets, 6' | 9,936 | sf | 12.00 | 119,232 | | |
| 579 | Fabric wrapped acoustic panels | 7,943 | sf | 30.00 | 238,290 | | |
| 580 | Stone to walls at public spaces and transaction areas - 10' | 16,730 | sf | 70.00 | 1,171,100 | | |
| 581 | SUBTOTAL | | | | | $2,858,611 | |
| 582 | | | | | | | |
| 583 | **C3020 FLOOR FINISHES** | | | | | | |
| 584 | 1' x 2' large format porcelain tile to public spaces | 24,735 | sf | 22.00 | 544,170 | | |
| 585 | Courtrooms - carpet | 23,213 | sf | 5.00 | 116,065 | | |
| 586 | Carpeting | 106,587 | sf | 4.00 | 426,348 | | |
| 587 | Ceramic tiles in bathrooms | 5,973 | sf | 11.00 | 65,703 | | |
| 588 | Wood base at courtrooms | 2,114 | lf | 20.00 | 42,280 | | |
| 589 | Wood base at judge's offices, court conference rooms | 1,958 | lf | 12.00 | 23,496 | | |
| 590 | Granite base | 2,806 | lf | 30.00 | 84,180 | | |
| 591 | Tile base | 2,580 | lf | 12.00 | 30,960 | | |
| 592 | Vinyl base | 18,803 | lf | 2.50 | 47,008 | | |
| 593 | Marble thresholds @ bathrooms | 51 | ea | 55.00 | 2,805 | | |
| 594 | Epoxy resin flooring at detainee areas | 10,508 | sf | 7.00 | 73,556 | | |
| 595 | Concrete sealer @ sallyport (No traffic topping), mech rooms | 19,055 | sf | 0.55 | 10,480 | | |
| 596 | SUBTOTAL | | | | | $1,467,051 | |
| 597 | | | | | | | |
| 598 | **C3030 CEILING FINISHES** | | | | | | |
| 599 | Ceiling at public spaces - GWB w/ veneer plaster - Allowance | 24,735 | sf | 15.00 | 371,025 | | |
| 600 | Ceiling at courtrooms - Plaster/GWB/Coffers - Allowance | 23,213 | sf | 20.00 | 464,260 | | |
| 601 | Ceiling at judge's offices, court conference rooms - GWB w/ veneer plaster - Allowance | 6,431 | sf | 15.00 | 96,465 | | |
| 604 | GWB at bathrooms | 5,973 | sf | 8.00 | 47,784 | | |
| 605 | ACT | 100,156 | sf | 4.00 | 400,624 | | |
| 606 | Secure metal ceiling at detainee areas | 10,508 | sf | 20.00 | 210,160 | | |
| 607 | Paint to ceilings | 60,352 | sf | 0.90 | 54,317 | | |
| 608 | Paint to exposed structure and exposed MEP systems, sprayed | 19,055 | sf | 1.50 | 28,583 | | |
| 609 | SUBTOTAL | | | | | $1,673,218 | |
| 610 | | | | | | | |
| 611 | ***TOTAL - INTERIOR FINISHES*** | | | | | | ***$5,998,880*** |
| 612 | | | | | | | |
| 613 | | | | | | | |

**J. Michael Ruane Judicial Center**
**Federal Street, Salem, MA**

March 22, 2007

**Study Cost Estimate**

190,071 GFA

| DESCRIPTION | QTY | UNIT | UNIT COST | EST'D COST | SUB TOTAL | TOTAL COST |
|---|---|---|---|---|---|---|
| ***D10 CONVEYING SYSTEMS*** | | | | | | |
| **D1010 ELEVATOR** | | | | | | |
| *All electric traction elevators* | | | | | | |
| Public, E-2, front opening, 5-stop, 3500 lb capacity | 1 | ea | 160,000.00 | 160,000 | | |
| Public, E-3, front opening, 5-stop, 3500 lb capacity | 1 | ea | 160,000.00 | 160,000 | | |
| Public, E-4, front opening, 4-stop, 3500 lb capacity | 1 | ea | 139,000.00 | 139,000 | | |
| Premium for cab finishes | 3 | ea | 25,000.00 | 75,000 | | |
| Judges, E-6, front opening, 7-stop, 3000 lb capacity | 1 | ea | 197,000.00 | 197,000 | | |
| Judges, E-7, front opening, 7-stop, 3000 lb capacity | 1 | ea | 197,000.00 | 197,000 | | |
| Judges, E-9, front opening, 3-stop, 3000 lb capacity | 1 | ea | 113,000.00 | 113,000 | | |
| Premium for cab finishes | 3 | ea | 25,000.00 | 75,000 | | |
| Prisoner, E-1, front & rear opening, 3-stop, 3500 lb capacity | 1 | ea | 148,000.00 | 148,000 | | |
| Prisoner, E-5, front & rear opening, 4-stop, 3500 lb capacity | 1 | ea | 169,000.00 | 169,000 | | |
| Prisoner, E-8, front & rear opening, 4-stop, 3500 lb capacity | 1 | ea | 169,000.00 | 169,000 | | |
| Law library, front opening, 2-stop, 3000 lb capacity | 1 | ea | 100,000.00 | 100,000 | | |
| Premium for cab finishes | 1 | ea | 15,000.00 | 15,000 | | |
| Pit ladders | 7 | ea | 350.00 | 2,450 | | |
| Sill angles | 352 | lf | 25.00 | 8,800 | | |
| SUBTOTAL | | | | | $1,728,250 | |
| **D1020 ESCALATORS & MOVING WALKWAYS** | | | | | | |
| No items in this section | | | | | | |
| SUBTOTAL | | | | | $0 | |
| **D1030 OTHER CONVEYING SYSTEMS** | | | | | | |
| No items in this section | | | | | | |
| SUBTOTAL | | | | | $0 | |
| ***TOTAL - CONVEYING SYSTEMS*** | | | | | | ***$1,728,250*** |
| ***D20 PLUMBING*** | | | | | | |
| **D20 PLUMBING, GENERALLY** | | | | | | |
| Gas fired water heater | 2 | ea | 10,000.00 | 20,000 | | |
| Water service, 4" | 1 | ea | 7,500.00 | 7,500 | | |
| Thermostatic mixing valve | 1 | ea | 3,200.00 | 3,200 | | |
| RPBP (HVAC) | 2 | ea | 1,700.00 | 3,400 | | |
| Duplex domestic water booster pump | 1 | ea | 10,000.00 | 10,000 | | |
| HW Recirculating pump | 1 | ea | 1,200.00 | 1,200 | | |
| Valves, specialties, etc | 1 | ls | 10,000.00 | 10,000 | | |
| SUBTOTAL | | | | | $55,300 | |
| Fixtures, including piping | 182 | ea | 3,000.00 | 546,000 | | |
| Watercloset | 68 | ea | | | | |
| Lavatory | 85 | ea | | | | |
| Urinal | 17 | ea | | | | |
| kitchen sink, SS | 2 | ea | | | | |
| Drinking fountain | 6 | ea | | | | |
| Janitor's service basin | 4 | ea | | | | |
| WC - LAV Security combo; wall hung, | 35 | ea | 10,000.00 | 350,000 | | |
| Floor drain / secure | 35 | ea | 450.00 | 15,750 | | |
| Hose bibb | 20 | ea | 110.00 | 2,200 | | |
| Wall hydrant | 10 | ea | 300.00 | 3,000 | | |
| SUBTOTAL | | | | | $916,950 | |
| Storm drainage | | | | | | |
| Roof drains, complete (allowance) | 15 | ea | 3,000.00 | 45,000 | | |
| SUBTOTAL | | | | | $45,000 | |

**J. Michael Ruane Judicial Center**
**Federal Street, Salem, MA**

March 22, 2007

**Study Cost Estimate**

190,071 GFA

| DESCRIPTION | QTY | UNIT | UNIT COST | EST'D COST | SUB TOTAL | TOTAL COST |
|---|---|---|---|---|---|---|
| Natural Gas | | | | | | |
| Piping & connection to HW heaters & boilers | 1 | ls | 20,000.00 | 20,000 | | |
| SUBTOTAL | | | | | $20,000 | |
| Miscellaneous | | | | | | |
| Work associated with general construction | 1 | ls | 90,000.00 | 90,000 | | |
| Testing & disinfection | 1 | ls | 12,000.00 | 12,000 | | |
| Shop drawings, coordination | 1 | ls | 15,000.00 | 15,000 | | |
| Commissioning | 1 | ls | 10,000.00 | 10,000 | | |
| Permit, fees | 1 | ls | 8,000.00 | 8,000 | | |
| SUBTOTAL | | | | | $135,000 | |
| Work @ Law Library/Church | | | | | | |
| Water service | 1 | ls | 5,000.00 | 5,000 | | |
| Water heater, point of use | 1 | ls | 500.00 | 500 | | |
| Valves & specialties | 1 | ls | 2,500.00 | 2,500 | | |
| SUBTOTAL | | | | | $8,000 | |
| Fixtures, including piping | 3 | ea | 3,000.00 | 9,000 | | |
| Watercloset | 1 | ea | | 0 | | |
| Lavatory | 1 | ea | | 0 | | |
| Janitor's service basin | 1 | ea | | 0 | | |
| SUBTOTAL | | | | | $9,000 | |
| Storm drainage piping | | | | | | |
| Gutters & downspouts - NIC | | | | | | |
| SUBTOTAL | | | | | $0 | |
| Miscellaneous | | | | | | |
| Work associated w/general construction | 1 | ls | 4,000.00 | 4,000 | | |
| Testing & disinfection | 1 | ls | 1,000.00 | 1,000 | | |
| Shop drawings, coordination, fees, etc. | 1 | ls | 2,500.00 | 2,500 | | |
| SUBTOTAL | | | | | $7,500 | |
| ***TOTAL - PLUMBING*** | | | | | | ***$1,196,750*** |
| ***D30 HVAC*** | | | | | | |
| **D30 HVAC, GENERALLY** | | | | | | |
| Heating | | | | | | |
| Boiler, Hot water, 3 @ 100 BHP | 300 | hp | 400.00 | 120,000 | | |
| - Boiler flues & breeching | 1 | ls | 20,000.00 | 20,000 | | |
| Pump, Hot water, 230 gpm w/ VFD | 7 | ea | 4,000.00 | 28,000 | | |
| Radiation, UH's, etc | 188,331 | sf | 2.00 | 376,662 | | |
| Piping, valves, etc | 188,331 | sf | 4.00 | 753,324 | | |
| Valves, specialties, etc | 1 | ls | 150,000.00 | 150,000 | | |
| SUBTOTAL | | | | | $1,447,986 | |
| Cooling | | | | | | |
| Chiller, water cooled w/ VFD - 2 @ 275 ton | 560 | ea | 500.00 | 280,000 | | |
| Cooling Tower, w/ VFD - 2@ 280 ton | 560 | ea | 200.00 | 112,000 | | |
| Pump, Chilled water, w/ VFD, 550 gpm | 6 | ea | 5,000.00 | 30,000 | | |
| - VFD's | 6 | ea | 6,000.00 | 36,000 | | |
| Pump. Condenser water, 825 gpm | 3 | ea | 6,500.00 | 19,500 | | |
| Condenser water piping (assume 8") | 1 | ls | 80,000.00 | 80,000 | | |
| - Equipment connections | 1 | ls | 45,000.00 | 45,000 | | |
| Chilled water piping | 1 | ls | 120,000.00 | 120,000 | | |
| - Equipment connections | 1 | ls | 80,000.00 | 80,000 | | |
| Valves, specialties | 1 | ls | 65,000.00 | 65,000 | | |
| SUBTOTAL | | | | | $867,500 | |
| Radiant slab system | | | | | | |
| Piping, valves, etc (allowance) | 6,000 | sf | 12.00 | 72,000 | | |
| SUBTOTAL | | | | | $72,000 | |

**J. Michael Ruane Judicial Center**
**Federal Street, Salem, MA**

March 22, 2007

**Study Cost Estimate**

190,071 GFA

| | DESCRIPTION | QTY | UNIT | UNIT COST | EST'D COST | SUB TOTAL | TOTAL COST |
|---|---|---|---|---|---|---|---|
| 731 | Air distribution | | | | | | |
| 732 | Outdoor Air Handling Units, w/ Heating & Cooling coils, SA & RA fans & Energy Recovery Enthalpy Wheel | | | | | | |
| 733 | - OSA -1 | 22,000 | cfm | 5.50 | 121,000 | | |
| 734 | - OSA -2 | 22,000 | cfm | 5.50 | 121,000 | | |
| 735 | - OSA -3 | 14,000 | cfm | 5.50 | 77,000 | | |
| 736 | Recirculating Air Handling Units, w/ Heating & Cooling coils, SA & RA fans & Economizer section | | | | | | |
| 737 | - AHU-1-4 (22,000 cfm ea) | 88,000 | cfm | 3.75 | 330,000 | | |
| 738 | - AHU-5+6 (14,000 cfm ea) | 28,000 | cfm | 3.75 | 105,000 | | |
| 739 | Terminal units | 188,331 | sf | 1.00 | 188,331 | | |
| 740 | Special rooms cooled by main building system | | | | | | |
| 741 | Elev. Machine rooms | 4 | ea | | | | |
| 742 | Tel/data rooms | 1 | ea | | | | |
| 743 | Fans | | | | | | |
| 744 | Stair-well presurization | 5 | ea | 15,000.00 | 75,000 | | |
| 745 | Elevator pressurization | 5 | ea | 5,000.00 | 25,000 | | |
| 746 | Loading dock ventilation | 1 | ea | 4,000.00 | 4,000 | | |
| 747 | Exhaust, toilet | 3 | ea | 3,000.00 | 9,000 | | |
| 748 | Mechanical / electric rooms | 4 | ea | 1,200.00 | 4,800 | | |
| 749 | SUBTOTAL | | | | | $1,060,131 | |
| 750 | Sheet metal | | | | | | |
| 751 | Galvanized steel ductwork | 188,331 | lb | 8.50 | 1,600,814 | | |
| 752 | Air distribution devices | 188,331 | sf | 1.25 | 235,414 | | |
| 753 | SUBTOTAL | | | | | $1,836,228 | |
| 754 | Building Automatic Control System | | | | | | |
| 755 | HVAC equipment | 188,331 | sf | 3.25 | 612,076 | | |
| 756 | SUBTOTAL | | | | | $612,076 | |
| 757 | Miscellaneous | | | | | | |
| 758 | Testing & balancing | 188,331 | sf | 0.30 | 56,499 | | |
| 759 | Work associated with general construction | 1 | ls | 188,000.00 | 188,000 | | |
| 760 | Shop drawings, coordination, fees, etc. | 188,331 | sf | 0.25 | 47,083 | | |
| 761 | SUBTOTAL | | | | | $291,582 | |
| 762 | Work @ Law Library/Church | | | | | | |
| 763 | Heating | 8,512 | sf | 6.00 | 51,072 | | |
| 764 | Cooling | 8,512 | sf | 5.00 | 42,560 | | |
| 765 | Air Distribution | | | | | | |
| 766 | Air Handling Units, preheat & cooling coils, VAV | 12,000 | cfm | 3.50 | 42,000 | | |
| 767 | Terminal units, fans, etc | 8,512 | sf | 1.00 | 8,512 | | |
| 768 | Sheet Metal | 8,512 | sf | 10.00 | 85,120 | | |
| 769 | Controls | 8,512 | sf | 2.50 | 21,280 | | |
| 770 | Testing and balancing | 8,512 | sf | 0.30 | 2,554 | | |
| 771 | Work associated with general construction | 8,512 | ls | 1.00 | 8,512 | | |
| 772 | Shop drawings, coordination, fees, etc. | 8,512 | sf | 0.10 | 851 | | |
| 773 | SUBTOTAL | | | | | $262,461 | |
| 774 | | | | | | | |
| 775 | ***TOTAL - HVAC*** | | | | | | ***$6,449,964*** |
| 776 | | | | | | | |
| 777 | | | | | | | |

**J. Michael Ruane Judicial Center**
**Federal Street, Salem, MA**

March 22, 2007

**Study Cost Estimate**

190,071 GFA

| | DESCRIPTION | QTY | UNIT | UNIT COST | EST'D COST | SUB TOTAL | TOTAL COST |
|---|---|---|---|---|---|---|---|
| 778 | ***D40 FIRE PROTECTION*** | | | | | | |
| 779 | | | | | | | |
| 780 | **D40 FIRE PROTECTION, GENERALLY** | | | | | | |
| 781 | Fire pump assembly | 1 | ea | 60,000.00 | 60,000 | | |
| 782 | Double check valve assembly - 8" | 1 | ea | 9,700.00 | 9,700 | | |
| 783 | Master alarm valve assembly - 8" | 1 | ea | 5,800.00 | 5,800 | | |
| 784 | Pre-action valve assembly | 1 | ea | 3,000.00 | 3,000 | | |
| 785 | Dry pipe valve assembly | 1 | ea | 3,000.00 | 3,000 | | |
| 786 | Fire Department connection | 1 | ea | 1,200.00 | 1,200 | | |
| 787 | Fire pump test connection | 1 | ea | 1,000.00 | 1,000 | | |
| 788 | Floor control valve assembly | 5 | ea | 1,000.00 | 5,000 | | |
| 789 | Fire department valve (allowance) | 25 | ea | 350.00 | 8,750 | | |
| 790 | Sprinkler head w/ complete piping system | 188,331 | sf | 4.25 | 800,407 | | |
| 791 | Miscellaneous | | | | | | |
| 792 | Valves, specialties | 1 | ls | 30,000.00 | 30,000 | | |
| 793 | Hydraulic calculations, shop drawings, coordination | 1 | ls | 15,000.00 | 15,000 | | |
| 794 | Commissioning | 1 | ls | 20,000.00 | 20,000 | | |
| 795 | Permit, fees | 1 | ls | 7,500.00 | 7,500 | | |
| 796 | Work @ Law Library/Church | | | | | | |
| 797 | Allowance for fire protection | 8,512 | sf | 5.00 | 42,560 | | |
| 798 | SUBTOTAL | | | | | 1,012,917 | |
| 799 | | | | | | | |
| 800 | ***TOTAL - FIRE PROTECTION*** | | | | | | ***$1,012,917*** |
| 801 | | | | | | | |
| 802 | | | | | | | |
| 803 | ***D50 ELECTRICAL*** | | | | | | |
| 804 | | | | | | | |
| 805 | **D5010 SERVICE & DISTRIBUTION** | | | | | | |
| 806 | Service and distribution gear | | | | | | |
| 807 | Normal power service and distirbution gear | | | | | | |
| 808 | 4000A 277/480V switchboard | 2 | ea | 120,000.00 | 240,000 | | |
| 809 | 1600A 277/480V switchboard | 2 | ea | 45,000.00 | 90,000 | | |
| 810 | 277/480V panelboard | 7 | ea | 4,000.00 | 28,000 | | |
| 811 | 277/480V double tub panelboard | 5 | ea | 7,000.00 | 35,000 | | |
| 812 | 112.5KVA dry type transformer | 2 | ea | 6,150.00 | 12,300 | | |
| 813 | 120/208V panelboard | 12 | ea | 2,000.00 | 24,000 | | |
| 814 | Normal power feeders | 190,071 | sf | 1.50 | 285,107 | | |
| 815 | Grounding and bonding | 1 | ls | 5,000.00 | 5,000 | | |
| 816 | Generator Power | | | | | | |
| 817 | 1250KW 277/480V diesel powered generator set in weather proof enclosure | 1 | ls | 255,000.00 | 255,000 | | |
| 818 | Hoisting | 1 | ls | 10,000.00 | 10,000 | | |
| 819 | Life safety automatic transfer switch | 1 | ea | 9,000.00 | 9,000 | | |
| 820 | Elevator automatic transfer switch | 1 | ea | 6,500.00 | 6,500 | | |
| 821 | Standby automatic transfer switch | 1 | ea | 9,000.00 | 9,000 | | |
| 822 | 277/480V switchboard | 1 | ea | 20,000.00 | 20,000 | | |
| 823 | 277/480V panelboard | 4 | ea | 4,000.00 | 16,000 | | |
| 824 | Dry type transformer | 4 | ea | 4,500.00 | 18,000 | | |
| 825 | 120/208V panelboard | 4 | ea | 2,000.00 | 8,000 | | |
| 826 | Generator power feeders | 190,071 | sf | 0.75 | 142,553 | | |
| 827 | Law Library | | | | | | |
| 828 | 400A 277/480V panelboard | 1 | ea | 4,500.00 | 4,500 | | |
| 829 | 45KVA dry type transformer | 1 | ea | 3,250.00 | 3,250 | | |
| 830 | 150A 120/208V panelboard | 1 | ea | 1,500.00 | 1,500 | | |
| 831 | Power feeders | 1 | ls | 10,000.00 | 10,000 | | |

**J. Michael Ruane Judicial Center**
**Federal Street, Salem, MA**

March 22, 2007

**Study Cost Estimate**

190,071 GFA

| | DESCRIPTION | QTY | UNIT | UNIT COST | EST'D COST | SUB TOTAL | TOTAL COST |
|---|---|---|---|---|---|---|---|
| 832 | Equipment wiring | | | | | | |
| 833 | Boiler feed, connection, & disconnect switch | 3 | ea | 1,250.00 | 3,750 | | |
| 834 | Boiler control panel feed & connection | 1 | ea | 850.00 | 850 | | |
| 835 | Pump feed, connection, & disconnect switch | 16 | ea | 1,250.00 | 20,000 | | |
| 836 | Chemical feed system control panel feed & connection | 1 | ea | 850.00 | 850 | | |
| 837 | Chiller feed, connection, & FSS | 2 | ea | 3,500.00 | 7,000 | | |
| 838 | AHU feed, connection, & FSS | 2 | ea | 2,500.00 | 5,000 | | |
| 839 | OSA feed, connection, & FSS | 1 | ea | 2,500.00 | 2,500 | | |
| 840 | Heat trace feeds & connections | 1 | ls | 5,000.00 | 5,000 | | |
| 841 | DDC system feeds & connections | 1 | ls | 5,000.00 | 5,000 | | |
| 842 | AHU feed, connection, & FSS WP, connection to VFD | 4 | ea | 4,000.00 | 16,000 | | |
| 843 | OSA feed, connection, & FSS WP, connection to VFD | 2 | ea | 4,000.00 | 8,000 | | |
| 844 | Cooling tower feed, connection, & FSS WP, connection to VFD | 2 | ea | 3,000.00 | 6,000 | | |
| 845 | AHU feed, connection, & FSS WP, connection to VFD (Law Library) | 1 | ea | 3,000.00 | 3,000 | | |
| 846 | Elevator FSS, enclosed CB, feed and connection | 9 | ea | 3,500.00 | 31,500 | | |
| 847 | Elevator cab power feed, connection, & disconnect switch | 9 | ea | 1,500.00 | 13,500 | | |
| 848 | Sally port system feeds, controls, connections, & disconnect switch | 1 | ls | 10,000.00 | 10,000 | | |
| 849 | Loading dock leveller feed, connection, & disconnect switch | 3 | ea | 2,000.00 | 6,000 | | |
| 850 | Trash compactor feed, connection, & disconnect switch | 1 | ea | 2,000.00 | 2,000 | | |
| 851 | Entry screening equipment feed and connection | 2 | ea | 1,500.00 | 3,000 | | |
| 852 | Mechanical equipment feeds, connections, & disconnect switches for equipment not yet specified | 190,071 | sf | 0.40 | 76,028 | | |
| 853 | SUBTOTAL | | | | | $1,457,688 | |
| 854 | | | | | | | |
| 855 | **D5020 LIGHTING & POWER** | | | | | | |
| 856 | Lighting | | | | | | |
| 857 | Lighting fixtures | 190,071 | sf | 7.00 | 1,330,497 | | |
| 858 | Lighitng control | 190,071 | sf | 0.60 | 114,043 | | |
| 859 | Small power devices | | | | | | |
| 860 | Small power devices | 190,071 | sf | 0.45 | 85,532 | | |
| 861 | Branch circuitry | | | | | | |
| 862 | Branch circuitry | 190,071 | sf | 4.00 | 760,284 | | |
| 863 | SUBTOTAL | | | | | $2,290,356 | |
| 864 | | | | | | | |
| 865 | **D5030 COMMUNICATION & SECURITY SYSTEMS** | | | | | | |
| 866 | Fire alarm | | | | | | |
| 867 | Fire alarm control panel | 1 | ea | 50,000.00 | 50,000 | | |
| 868 | Fire alarm remote annunciator | 1 | ea | 1,250.00 | 1,250 | | |
| 869 | Master box | 1 | ea | 3,200.00 | 3,200 | | |
| 870 | Exterior beacon | 1 | ea | 150.00 | 150 | | |
| 871 | Knox box | 1 | ea | 600.00 | 600 | | |
| 872 | Fire alarm devices | 190,071 | sf | 0.60 | 114,043 | | |
| 873 | Fire alarm circuitry | 190,071 | sf | 0.80 | 152,057 | | |
| 874 | Testing and programming | 1 | ls | 15,000.00 | 15,000 | | |
| 875 | Telephone/CATV/Data System | | | | | | |
| 876 | Devices and cabling | 190,071 | sf | 2.50 | 475,178 | | |
| 877 | Rough In | 190,071 | sf | 0.90 | 171,064 | | |
| 878 | MDF fit out | 1 | ea | 3,000.00 | 3,000 | | |
| 879 | IDF fit out | 8 | ea | 1,500.00 | 12,000 | | |
| 880 | Closet backboard | 9 | ea | 350.00 | 3,150 | | |
| 881 | Communication closet grounding | 9 | ea | 500.00 | 4,500 | | |
| 882 | Public Address System | | | | | | |
| 883 | Public Address System | 190,071 | sf | 1.00 | 190,071 | | |

**J. Michael Ruane Judicial Center**
**Federal Street, Salem, MA**

March 22, 2007

**Study Cost Estimate**

190,071 GFA

| | DESCRIPTION | QTY | UNIT | UNIT COST | EST'D COST | SUB TOTAL | TOTAL COST |
|---|---|---|---|---|---|---|---|
| | AV Systems | | | | | | |
| | Head-end equipment and devices | | | | | | |
| | AV system rough-in | 190,071 | sf | 1.00 | 190,071 | | |
| | Courtroom AV rough-in | 16 | ea | 10,000.00 | 160,000 | | |
| | Jury Pool AV rough-in | 1 | ea | 10,000.00 | 10,000 | | |
| | Security system | | | | | | |
| | CCTV head-end & devices | | | | | | |
| | Card Access head-end & devices | | | | | | |
| | Intercom head-end & devices | | | | | | |
| | Graphic User Interface head-end & devices | | | | | | |
| | CCTV rough-in | 190,071 | sf | 0.75 | 142,553 | | |
| | Card Access rough-in | 190,071 | sf | 0.75 | 142,553 | | |
| | Intercom rough-in | 190,071 | sf | 0.40 | 76,028 | | |
| | Graphic User Interface rough-in | 190,071 | sf | 0.40 | 76,028 | | |
| | Specialty Systems | | | | | | |
| | Emergency call system | | | | | | |
| | Cell emergency call system | | | | | | |
| | Judge emergency call/intercom system | | | | | | |
| | SUBTOTAL | | | | | $1,992,496 | |
| **D5040** | **OTHER ELECTRICAL SYSTEMS** | | | | | | |
| | Lightning protection | | | | | | |
| | Lightning protection | 190,071 | sf | 0.35 | 66,525 | | |
| | Temporary services | | | | | | |
| | Temporary power and lights | 190,071 | sf | 0.50 | 95,036 | | |
| | Reimbursables | | | | | | |
| | Fees & permits | 1 | ls | 50,000.00 | 50,000 | | |
| | SUBTOTAL | | | | | $211,561 | |
| | ***TOTAL - ELECTRICAL*** | | | | | | ***$5,952,101*** |
| ***E10*** | ***EQUIPMENT*** | | | | | | |
| **E10** | **EQUIPMENT, GENERALLY** | | | | | | |
| | Appliances - allowance | 1 | ls | 25,000.00 | 25,000 | | |
| | Cell doors | 38 | ea | 8,000.00 | 304,000 | | |
| | Detention Equipment - Allowance | 1 | ls | 200,000.00 | 200,000 | | |
| | Security Screening System - By Others | | | | NIC | | |
| | SUBTOTAL | | | | | $529,000 | |
| | ***TOTAL - EQUIPMENT*** | | | | | | ***$529,000*** |
| ***E20*** | ***FURNISHINGS*** | | | | | | |
| **E2010** | **FIXED FURNISHINGS** | | | | | | |
| | Entry mats & frames - Allowance | 300 | sf | 50.00 | 15,000 | | |
| | Interior mini-blinds - Allowance | 1 | ls | 50,000.00 | 50,000 | | |
| | Mecho shades/blinds - NIC | | | | | | |
| | Library shelving - NIC | | | | | | |
| | Compact shelving - NIC | | | | | | |
| | Chairs - NIC | | | | | | |
| | SUBTOTAL | | | | | $65,000 | |
| **E2020** | **MOVABLE FURNISHINGS** | | | | | | |
| | All movable furnishings to be provided and installed by owner | | | | | | |
| | SUBTOTAL | | | | | NIC | |
| | ***TOTAL - FURNISHINGS*** | | | | | | ***$65,000*** |

**J. Michael Ruane Judicial Center**
**Federal Street, Salem, MA**

March 22, 2007

**Study Cost Estimate**

190,071 GFA

| | DESCRIPTION | QTY | UNIT | UNIT COST | EST'D COST | SUB TOTAL | TOTAL COST |
|---|---|---|---|---|---|---|---|
| 946 | ***F10 SPECIAL CONSTRUCTION*** | | | | | | |
| 947 | | | | | | | |
| 948 | **F10 SPECIAL CONSTRUCTION** | | | | | | |
| 949 | No items in this section | | | | | | |
| 950 | SUBTOTAL | | | | | $0 | |
| 951 | | | | | | | |
| 952 | ***TOTAL - SPECIAL CONSTRUCTION*** | | | | | | ***$0*** |
| 953 | | | | | | | |
| 954 | | | | | | | |
| 955 | ***F20 SELECTIVE BUILDING DEMOLITION*** | | | | | | |
| 956 | | | | | | | |
| 957 | **F2010 BUILDING ELEMENTS DEMOLITION** | | | | | | |
| 958 | Demo back of church | 9,500 | sf | 6.00 | 57,000 | | |
| 959 | Move church to new location | 1 | ls | 1,500,000.00 | 1,500,000 | | |
| 960 | SUBTOTAL | | | | | $1,557,000 | |
| 961 | | | | | | | |
| 962 | **F2020 HAZARDOUS COMPONENTS ABATEMENT** | | | | | | |
| 963 | Allowance | | | | | | |
| 964 | SUBTOTAL | | | | | $0 | |
| 965 | | | | | | | |
| 966 | ***TOTAL - SELECTIVE BUILDING DEMOLITION*** | | | | | | ***$1,557,000*** |
| 967 | | | | | | | |
| 968 | | | | | | | |
| 969 | ***G SITE PREP/DEVELOPMENT*** | | | | | | |
| 970 | | | | | | | |
| 971 | **G10 SITE PREPARATION & DEMOLITION** | | | | | | |
| 972 | Site Clearing | | | | | | |
| 973 | Allowance for site clearance - Assume clear site following demolitions by others | | | | | | |
| 974 | Site Demolitions and Relocations | | | | | | |
| 975 | Site construction fence/barricades | 1,100 | lf | 15.00 | 16,500 | | |
| 976 | Relocate existing utilities w/ civil utilities | | | | | | |
| 977 | Site Earthwork | | | | | | |
| 978 | Strip topsoil, store | 700 | cy | 5.00 | 3,500 | | |
| 979 | Site cuts to fills, dispose offsite | 5,000 | cy | 18.00 | 90,000 | | |
| 980 | Remove asphalt @ ramps | 14,300 | sf | 0.50 | 7,150 | | |
| 981 | Remove curbing @ ramps | 1,774 | sf | 1.50 | 2,661 | | |
| 982 | Allowance for site dewatering | 1 | ls | 25,000.00 | 25,000 | | |
| 983 | Rock cut - Not included | | | | | | |
| 984 | Hazardous Waste Remediation | | | | | | |
| 985 | Remove contaminated soils - Assume not required | | | | | | |
| 986 | Dispose/treat contaminated water - Assume not required | | | | | | |
| 987 | SUBTOTAL | | | | | $144,811 | |
| 988 | | | | | | | |
| 989 | **G20 SITE IMPROVEMENTS** | | | | | | |
| 990 | Roadways and Parking Lots | | | | | | |
| 991 | Bituminous concrete paving | *17,581* | *sf* | | - | | |
| 992 | excavate to reduce levels | 651 | cy | 6.00 | 3,906 | | |
| 993 | remove excavated material off site | 651 | cy | 15.00 | 9,765 | | |
| 994 | gravel base | 430 | cy | 20.00 | 8,600 | | |
| 995 | bituminous concrete | 674 | tns | 78.00 | 52,572 | | |
| 996 | Vehicular concrete pavement | *2,787* | *sf* | | - | | |
| 997 | excavate to reduce levels | 155 | cy | 6.00 | 930 | | |
| 998 | remove excavated material off site | 155 | cy | 15.00 | 2,325 | | |
| 999 | gravel base | 69 | cy | 20.00 | 1,380 | | |
| 1000 | rebar | 8,361 | lbs | 0.85 | 7,107 | | |
| 1001 | concrete | 2,787 | sf | 8.00 | 22,296 | | |
| 1002 | Vertical granite curb, 8" | 767 | lf | 30.00 | 23,010 | | |
| 1003 | 12" vehicular granite curb | 30 | lf | 42.00 | 1,260 | | |
| 1004 | Transition granite curb | 1 | ea | 200.00 | 200 | | |
| 1005 | Road signage - Allowance | 1 | ls | 10,000.00 | 10,000 | | |
| 1006 | Wheel stops | 22 | ea | 125.00 | 2,750 | | |

**J. Michael Ruane Judicial Center**
**Federal Street, Salem, MA**

March 22, 2007

**Study Cost Estimate**

190,071 GFA

| | DESCRIPTION | QTY | UNIT | UNIT COST | EST'D COST | SUB TOTAL | TOTAL COST |
|---|---|---|---|---|---|---|---|
| 1007 | Pedestrian paving | | | | | | |
| 1008 | Granite pavers | *7,969* | *sf* | | - | | |
| 1009 | excavate to reduce levels | 295 | cy | 6.00 | 1,770 | | |
| 1010 | remove excavated material off site | 295 | cy | 15.00 | 4,425 | | |
| 1011 | gravel base | 198 | cy | 20.00 | 3,960 | | |
| 1012 | concrete, 3" | 7,969 | sf | 3.00 | 23,907 | | |
| 1013 | granite pavers | 7,969 | sf | 35.00 | 278,915 | | |
| 1014 | Concrete pavement | *1,894* | *sf* | | - | | |
| 1015 | excavate to reduce levels | 70 | cy | 6.00 | 420 | | |
| 1016 | remove excavated material off site | 70 | cy | 15.00 | 1,050 | | |
| 1017 | gravel base | 47 | cy | 20.00 | 940 | | |
| 1018 | concrete, 3" | 1,894 | sf | 3.00 | 5,682 | | |
| 1019 | Site Development | | | | | | |
| 1020 | Concrete retaining walls | | | | | | |
| 1021 | Footing | | | | | | |
| 1022 | Formwork | 1,603 | sf | 10.00 | 50,220 | | |
| 1023 | Re-bar | 2,170 | lbs | 0.85 | 1,845 | | |
| 1024 | Concrete material | 31 | cy | 105.00 | 3,255 | | |
| 1025 | Placing concrete | 31 | cy | 50.00 | 1,550 | | |
| 1026 | Wall - 12" thick | | | | | | |
| 1027 | Excavation | 600 | cy | 8.00 | 4,800 | | |
| 1028 | Remove off site | 600 | cy | 15.00 | 9,000 | | |
| 1029 | Backfill with gravel | 569 | cy | 20.00 | 11,380 | | |
| 1030 | Formwork | 5,022 | sf | 11.00 | 55,242 | | |
| 1031 | Re-bar | 10,044 | lbs | 0.85 | 8,537 | | |
| 1032 | Concrete material | 98 | cy | 105.00 | 10,290 | | |
| 1033 | Placing concrete | 98 | cy | 50.00 | 4,900 | | |
| 1034 | Facing to retaining walls, textured CMU | 2,511 | sf | 15.00 | 37,665 | | |
| 1035 | Cap to retaining wall, stone | 364 | lf | 50.00 | 18,200 | | |
| 1036 | Steel picket vehicular security gate | 1 | ea | 50,000.00 | 50,000 | | |
| 1037 | 6' steel picket fence | 123 | lf | 250.00 | 30,750 | | |
| 1038 | Rebuild granite | | | | | | |
| 1039 | Site furnishings | | | | | | |
| 1040 | Flagpole including base | 3 | ea | 3,000.00 | 9,000 | | |
| 1041 | Bench, 6' length - Allowance | 5 | ea | 2,200.00 | 11,000 | | |
| 1042 | Trash receptacles - Allowance | 5 | ea | 1,100.00 | 5,500 | | |
| 1043 | Security bollards | 13 | ea | 2,500.00 | 32,500 | | |
| 1044 | Site sign | 1 | ea | 5,000.00 | 5,000 | | |
| 1045 | Tree grates | 4 | ea | 1,500.00 | 6,000 | | |
| 1046 | Landscaping & Plantings: | | | | | | |
| 1047 | Deciduous shade tree | 40 | ea | 1,800.00 | 72,000 | | |
| 1048 | Deciduous accent tree | 15 | ea | 1,400.00 | 21,000 | | |
| 1049 | Evergreen tree | 10 | ea | 1,200.00 | 12,000 | | |
| 1050 | Deciduous shrub | 5,364 | sf | 13.00 | 69,732 | | |
| 1051 | Evergreen shrub | 2,692 | sf | 20.00 | 53,840 | | |
| 1052 | Groundcover | 2,860 | sf | 5.00 | 14,300 | | |
| 1053 | Lawn, seeded | 17,062 | sf | 0.30 | 5,119 | | |
| 1054 | Perennials/grasses | 661 | sf | 5.00 | 3,305 | | |
| 1055 | Purchased topsoil/loam | 316 | cy | 30.00 | 9,480 | | |
| 1056 | Irrigation system, standard | 17,723 | sf | 1.00 | 17,723 | | |
| 1057 | SUBTOTAL | | | | | $1,112,303 | |
| 1058 | | | | | | | |
| 1059 | **G30 CIVIL MECHANICAL UTILITIES** | | | | | | |
| 1060 | Water Service | | | | | | |
| 1061 | CLDI piping - 10 " Combination main | 55 | lf | 77.00 | 4,235 | | |
| 1062 | CLDI piping - 8" Fire Protection | 25 | lf | 63.00 | 1,575 | | |
| 1063 | CLDI piping - 4" Domestic | 20 | lf | 39.00 | 780 | | |
| 1064 | Gate valve - 8" (Fire Protection) | 1 | ea | 950.00 | 950 | | |
| 1065 | Gate valve - 4" (Domestic) | 1 | ea | 550.00 | 550 | | |
| 1066 | Post Indicator Valve (P.I.V.) | 1 | ea | 700.00 | 700 | | |
| 1067 | Tapping sleeve w/gate valve | 1 | ea | 2,750.00 | 2,750 | | |
| 1068 | Trench support / work in street | 1 | ls | 2,500.00 | 2,500 | | |
| 1069 | Excavation & trenching | 1 | ls | 2,500.00 | 2,500 | | |
| 1070 | Testing & disinfection | 1 | ls | 500.00 | 500 | | |

**J. Michael Ruane Judicial Center**
**Federal Street, Salem, MA**

March 22, 2007

**Study Cost Estimate**

190,071 GFA

| DESCRIPTION | QTY | UNIT | UNIT COST | EST'D COST | SUB TOTAL | TOTAL COST |
|---|---|---|---|---|---|---|
| Sanitary Sewer System | | | | | | |
| PVC piping - 8" | 80 | lf | 20.00 | 1,600 | | |
| Connect to existing | 1 | ea | 2,000.00 | 2,000 | | |
| Trench support / work in street | 1 | ls | 4,000.00 | 4,000 | | |
| Excavation & trenching | 1 | ls | 3,000.00 | 3,000 | | |
| Gas Service | | | | | | |
| Gas piping - by Gas Co. | | | | | | |
| Excavation & backfill-- allowance | 100 | lf | 15.00 | 1,500 | | |
| Storm Drainage System | | | | | | |
| Drainage manholes ( 7'- 10' deep) | 10 | ea | 2,000.00 | 20,000 | | |
| Catch basins (5' deep) | 8 | ea | 1,500.00 | 12,000 | | |
| Outlet Control Structure | 1 | ea | 4,000.00 | 4,000 | | |
| Water Quality Structure (Stormceptor) | 1 | ea | 15,000.00 | 15,000 | | |
| Water Reuse Tank, 25,000 gal Fiberglass | 1 | ea | 20,000.00 | 20,000 | | |
| - Excavation, sheeting, base slab, installation & backfill | 1 | ls | 30,000.00 | 30,000 | | |
| Trench drain | 40 | lf | 200.00 | 8,000 | | |
| Connect to existing | 1 | ea | 2,000.00 | 2,000 | | |
| Trench support / work in street | 1 | ls | 3,000.00 | 3,000 | | |
| Drainage Piping | 1,135 | lf | 40.00 | 45,400 | | |
| Excavation & trenching | 757 | cy | 5.00 | 3,785 | | |
| Bedding | 315 | cy | 21.00 | 6,615 | | |
| Backfill & compaction | 442 | cy | 15.00 | 6,630 | | |
| Subsurface Detention System | | | | | | |
| Access manhole | 4 | ea | 1,800.00 | 7,200 | | |
| 36" Perf CPP | 300 | lf | 80.00 | 24,000 | | |
| - Volume of pipe per LF | 0.26 | cu yd | | | | |
| - Volume of pipe - total | 78.00 | cu yd | | | | |
| Geotextilre fabric, wrap stones | 4,590 | sf | 1.00 | 4,590 | | |
| Miscellaneous costs | 1 | ls | 1000.00 | 1,000 | | |
| Excavation 75'L X 24'W X 6'D | 400 | cy | 5.00 | 2,000 | | |
| Crashed stone - 5' | 255 | cy | 18.00 | 4,590 | | |
| Gravel / Loam covering - 1' | 67 | cy | 22.00 | 1,474 | | |
| Work @ Law Library/Church | | | | | | |
| Water Service | | | | | | |
| Allowance for pipe, excavation, etc | 1 | ls | 7,500.00 | 7,500 | | |
| Sewer System | | | | | | |
| Allowance for pipe, excavation, etc | 1 | ls | 15,000.00 | 15,000 | | |
| Storm Drainage | | | | | | |
| Allowance to connect to site drainage | 1 | ls | 3,500.00 | 3,500 | | |
| SUBTOTAL | | | | | 276,424 | |

**J. Michael Ruane Judicial Center**
**Federal Street, Salem, MA**

March 22, 2007

**Study Cost Estimate**

190,071 GFA

| | DESCRIPTION | QTY | UNIT | UNIT COST | EST'D COST | SUB TOTAL | TOTAL COST |
|---|---|---|---|---|---|---|---|
| 1117 | **G40 ELECTRICAL UTILITIES** | | | | | | |
| 1118 | Electrical distribution | | | | | | |
| 1119 | Manhole | 1 | ea | 6500.00 | 6500 | | |
| 1120 | Primary electrical service ductbank, empty conduit, allow | 500 | lf | 65.00 | 32500 | | |
| 1121 | Primary conductors | | | | National Grid | | |
| 1122 | Switch | 1 | ea | | National Grid | | |
| 1123 | 2000KVA transformer | 2 | ea | | National Grid | | |
| 1124 | Transformer pad | 2 | ea | 2000.00 | 4000 | | |
| 1125 | Secondary electrical service ductbank (2-3000A feeders) | 100 | lf | 1225.00 | 122500 | | |
| 1126 | Site lighting | | | | | | |
| 1127 | Site lighting and circuitry, allow | 1 | ls | 70000.00 | 70000 | | |
| 1128 | Site communications and security | | | | | | |
| 1129 | Communication service ductbank (empty conduit), allow | 150 | lf | 75.00 | 11250 | | |
| 1130 | CCTV cabling | | | | Verizon | | |
| 1131 | Manhole | 1 | ea | 6500.00 | 6500 | | |
| 1132 | SUBTOTAL | | | | | $253,250 | |
| 1133 | | | | | | | |
| 1134 | **G90 OTHER SITE CONSTRUCTION** | | | | | | |
| 1135 | No items in this section | | | | | | |
| 1136 | SUBTOTAL | | | | | $0 | |
| 1137 | | | | | | | |
| 1138 | ***TOTAL - SITE DEVELOPMENT*** | | | | | | ***$1,786,788*** |
| 1139 | | | | | | | |
| 1140 | | | | | | | |
| 1141 | ***TOTAL DIRECT COST (Trade Costs)*** | | | | | | ***$54,490,670*** |
| 1142 | | | | | | | |
| 1143 | ***MARK UP*** | | | | | | |
| 1144 | | | | | | | |
| 1145 | **GENERAL COND. / PERMIT / INS.** | | | | | | |
| 1146 | General Conditions | 10.50% | | 54,490,670 | 5,721,520 | | |
| 1147 | Insurance & bond - Included above | 0.00% | | 60,212,190 | - | | |
| 1148 | Permit - Included above | 0.00% | | 60,212,190 | - | | |
| 1149 | SUBTOTAL | | | | | $5,721,520 | |
| 1150 | | | | | | | |
| 1151 | **FEE** | | | | | | |
| 1152 | Overhead & profit | 3.00% | | 60,212,190 | 1,806,366 | | |
| 1153 | SUBTOTAL | | | | | $1,806,366 | |
| 1154 | | | | | | | |
| 1155 | ***TOTAL - MARK UP*** | | | | | | ***$7,527,886*** |
| 1156 | | | | | | | |
| 1157 | | | | | | | |
| 1158 | ***CONTINGENCIES/ESCALATION*** | | | | | | |
| 1159 | | | | | | | |
| 1160 | **DESIGN & PRICING** | | | | | | |
| 1161 | Pricing/estimating contingency (reduces to 0% at Construction Documents) based on Trade Costs | 10.00% | | 54,490,670 | 5,449,067 | | |
| 1162 | Design contingency (reduces to 0% at Construction Documents) based on Trade Costs | 10.00% | | 54,490,670 | 5,449,067 | | |
| 1163 | SUBTOTAL | | | | | $10,898,134 | |
| 1164 | | | | | | | |
| 1165 | **ESCALATION** | | | | | | |
| 1166 | Price escalation to mid-point of construction due to increases in labor and material costs (Included per owner) | 10.00% | | 65,388,804 | 6,538,880 | | |
| 1167 | SUBTOTAL | | | | | $6,538,880 | |
| 1168 | | | | | | | |
| 1169 | **GMP/CM CONSTRUCTION CONTINGENCY** | | | | | | |
| 1170 | GMP/CM Contingency | 3.00% | | 71,927,684 | 2,157,831 | | |
| 1171 | SUBTOTAL | | | | | $2,157,831 | |
| 1172 | | | | | | | |
| 1173 | ***TOTAL - CONTINGENCIES/ESCALATION*** | | | | | | ***$19,594,845*** |

Salem Trial Court SD 3.20.07 Page 25 Faithful+Gould

**J. Michael Ruane Judicial Center** March 22, 2007
**Federal Street, Salem, MA**

**Study Cost Estimate** 190,071 GFA

## *ALTERNATES (incl Markups)*

| | *DESCRIPTION* | *TOTAL* |
|---|---|---|
| 1 | CMU w/ furred gwb to interior of exterior wall in lieu of LGMF w/ gwb cladding interior and "dens-glass" sheathing | $1,095,900 |
| 2 | Zinc coated copper standing seam in lieu of anodized aluminum roof panels on vertical walls. | $156,800 |
| 3a | Building integrated photovoltaic sunshade in lieu of aluminum sunshade. | $288,500 |
| 3b | C/S operating sunshades in lieu of aluminum sunshade. | $192,300 |
| 4 | Substitute Tuff-hide wall coating for veneer plaster. | ($96,500) |
| 5 | Raised floor system with carpet tiles at all raised floor locations. (34,311sf) | $1,783,500 |
| 6 | Thin set terrazzo and integral base in lieu of paver tile. | $15,300 |
| 7 | Provide stainless steel toilet partitions in lieu of solid phenolic. | $61,800 |
| 8 | MRL units in lieu of electric traction elevators. | $133,700 |
| 9 | Paver/ballast pattern at interior courtyard in lieu of 3-ply modified bitumen roof. | $26,700 |
| 10 | Substitute shrubs/groundcover for lawn. | $119,100 |
| 11 | Substitute state-of-art water saving irrigation fixtures in lieu of regular. | $39,500 |
| 12 | 4" granite in lieu of 1 1/2" at exterior. | $361,000 |
| 13 | Provide sustainable rainwater collection system. | $219,800 |
| 14 | Delete wood wainscot in judges offices & court conf. rooms and leave a chair rail only. | ($488,500) |
| 15 | Early construction package including church demo, site prep & demo, church fdn. Walls & slab | $819,800 |
| 16 | Project escalated to midpoint of construction wth 18 months of design in lieu of 12 months. | $5,839,286 |
| 17 | Substitute corian for granite vanity counters. | $0 |

## 9.2 Life Cycle, Operations, Maintenance, and Renewal Costs

PAGE 293

The following worksheet has been developed to estimate the anticipated operating costs for the new Trial Court Facility in Salem. The estimated maintenance costs are derived from industry standards developed by the International Facility Management Association. The maintenance costs are a combination of several different categories of costs. The estimates reflect only maintenance costs, not the capitalized cost of improvements. These costs include all repair, preventative, materials, direct labor and contract costs. Administration expenses are associated with an O & M Supervisor and a CAMIS Operator. Tradespeople are estimated under the other categories. These costs will be reviewed and refined as the design progresses.

| Estimated O & M Budget requirements for Salem Courthouse | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | sq ft | | | | | | | |
| | | | | | | | | |
| | External Building | Interior Systems | Roads and Grounds | Process treatment & environmental stystems | Custodial | Administration | Utilities | **Total** |
| Cost per sq ft | $ 0.20 | $ 1.14 | $ 0.18 | $ 0.06 | $ 1.07 | $ 0.60 | $ 2.88 | **$ 6.13** |
| 175,000.00 | $ 35,000.00 | $ 199,500.00 | $ 31,500.00 | $ 10,500.00 | $ 187,250.00 | $ 105,000.00 | $ 504,000.00 | **$ 1,072,750.00** |

IFMA Maintenance Categories (Not all apply to Salem)

TPC $106,000,000
O/M % TPC 1%

**External building maintenance**
Roof
Skin (siding, masonry, sash, glazing, window washing, external doors)
Exterior signage
Caulking of expansion joints

**Interior systems maintenance**
Electrical systems (primary and secondary systems, emergency electrical systems, UPS, lighting systems, egress signage, fire/life safety systems and alarms and remote monitoring, elevator maintenance/repair)
Mechanical systems (HVAC, chillers, boilers, plumbing, extinguishing systems, backflow prevention, refrigeration and non process related pumps)
Base building general maintenance (interior walls, doors, ceilings, partitions and interior finishes, pest control)
Interior signage
Administrative support staff

**Roads & Grounds maintenance**
Roadways, sidewalks, parking lots (paving repairs, sealing, striping, parking,roadway lighting, power washing) snow removal, de-icing
Landscaping (planting, mowing, ittigation, plant/tree replacement)
Parking structures (surface repairs, sealing, striping, lighting and drainage systems)
Storm sewers (catch basins, manholes, sub-surface drainage systems)

**Process treatment and environmental systems**
Process cooling water system
Process gas systems
Air discharge scrubbers
Waste water systems
Water treatment
Solid waste management system

**Custodial**
wages, staff support, supervision, administration, supplies and non-capital equipment (e.g., brooms, floor polishers)

**Administration**
O & M Supervisor
Camis Operator

## 9.3 Cost Considerations for Final Design

Items to reduce construction cost:

A After more geotechnical investigation, analyze to determine the most cost effective foundation system.

B Consider using Tuff-Hide Primer-Surfacer in lieu of veneer plaster wall finish.

Items that will increase construction cost but add flexibility for future:

A Consider installing a low profile raised floor system at all transaction areas (about 34,300 SF).

B Use carpet tiles in lieu of carpet in conjunction with the raised floor system (about 34,300 SF).

Items that will increase construction cost but will reduce operating cost:

A Replace fixed exterior shading devices with automatically controlled operable sunshades to provide optimum solar shading while reducing heat gain.

B Replace fixed exterior shading devices with a building integrated photovoltaic sunshade that generates solar power while providing optimal solar shading.

C HVAC: See Section 3.16 Salem Courthouse Energy Conservation Measures, HVAC items 1 through 10.

D Lighting Systems: See Section 3.16 Salem Courthouse Energy Conservation Measures, Lighting Systems, items 1 through 3.

E Renewable Energy: See Section 3.16 Salem Courthouse Energy Conservation Measures, Renewable Energy, items 1 through 3.

Other functional Items:

A Lower detainee elevator to a sub-basement level and construct a detainee passageway to the exterior wall of the building for future connection to the PFC.

B Build in structural supports and a knockout panel for a future pedestrian bridge connecting to the PFC.

# 10 Implementation Plan

## 10.1 Introduction

The implementation plan has three main pieces: Site acquisition and preparation; the disposition of the Superior Court building and the County Commissioner's building and the construction of the new Trial Court Building. Due to budget constraints, the planned renovation of the existing Probate and Family Court / Registry of Deeds building will be certified as its own study pending funding and will not be considered as part of this project.

This section outlines work to be done for Site Acquisition, renovation of the Probate and Family Court / Registry of Deeds building in the future, and the construction of the new J. Michael Ruane Judicial Center.

## 10.2 Site Acquisition and Site Preparation

Assembling the site requires the acquisition of several properties, both municipal and privately owned. One parcel (containing an existing cloverleaf ramp between North and Bridge Streets) will be gifted to the State by the City of Salem. The other remaining parcels—58, 60 and 62 Federal Street and the First Baptist Church of Salem—will be purchased by the State. Steps and current status are as follows:

A DCAM to acquire the North Street ramp parcel from the City of Salem as a gift.
*Status*: in progress. City Council voted unanimously to gift this parcel to the Commonwealth and land transfer is underway.

- Redesign the Federal Street/North Street intersection.
  *Status*: in progress. Currently at 25% design, MassHighway has given the go-ahead for 75% design and is in the process of scheduling a public hearing to present changes to the existing North Street Improvement project.
- Add reconfiguration of intersection to Mass Highway Department's North Street Project. This will happen contractually as part of the 75% design.
- Demolish existing ramp. Abandon existing curb cuts.
- Relocate Utilities within the ramp area.

B DCAM to acquire three houses on Federal Street (58, 60 & 62)
*Status*: all houses acquired as of February 2007.

- Houses to be relocated off site or demolished.
  *Status*: DCAM currently investigating offering houses to public to be moved. RFP for this process is in development.
- House foundations to be removed and filled. (Further details to be contained in RFP or determined by CM).

C DCAM to acquire First Baptist Church Property (56 Federal Street)
*Status*: negotiations in final stages.

- Perform an existing condition survey and make measured drawings.
- Conduct sub-surface soil investigation as necessary for building foundations.
- Perform Haz/Mat survey; abatement as necessary.
- Demolish rear addition including foundations.
- Construct new Church foundations in new location.
- Move church onto new foundations.

## 10.3 Disposition of the Superior Court Building and the County Commissioner's Building

The disposition of the Superior Court and County Commissioner's Building will take place under a separate process by DCAM's Office of Real Estate. Planning for this process is already underway.

The boiler room under the Administrative Addition to the Probate and Family Court/ Registry of Deeds building supplies steam via a utility tunnel to heat the Superior Court building and the County Commissioners' building. DCAM has made a commitment to MassHistoric to warm-mothballing the buildings prior to disposition to protect against building deterioration; therefore, the connection between the buildings will not be severed until the disposition process is complete. During a renovation of the boiler room in the Probate and Family Court building, it would be possible to continue to supply steam from one of the three existing boilers. A temporary boiler could be located on the new lot to serve these buildings after disposition so that the steam line could be disconnected and the remaining boiler can be upgraded.

The primary time limit for disposing of the Superior Court building and the County Commissioner's building relates to the cost of keeping them heated. While it is desirable to replace the boiler serving them when the mechanical work is being performed under the main construction contract, it would be possible to keep one existing boiler on line until two of the existing boilers were replaced and operational. The two operational boilers could feed the Superior Court building and County Commissioner's building while the third existing boiler was being replaced. There is also the option of having a temporary boiler

installed outside on the Superior Court building site to serve the two buildings. This option is to be considered unlikely.

## 10.4 Construction of the J. Michael Ruane Judicial Center

Construction will start after site acquisition is complete and a Construction Manager is under contract. The Construction Manager selection process in underway and a contract will be awarded by July 2007.

## 10.5 Schedule

Producing the design and construction documents for the proposed Trial Court Building will take 12 months, bidding and award of the construction contract another 2.5 months, for a total of 14.5 months. (Some of the tasks can be done as early packages with the Construction Management team.) This allows a period of 14.5 months to accomplish the following activities so that construction of the new Trial Court building can proceed:

A Removal from the site of the houses.
B Removal of the house foundations.
C Demolition/Removal of the cloverleaf ramp.
D Relocation of the utilities in the ramp vicinity.
E Existing condition survey and haz/mat survey of the church
F Construction of new foundations for the church in its new location.
G Demolition of the rear addition on the church including removal of the foundations.
H Moving the church onto the new foundations.
I Clearing the remainder of the site in preparation for construction of the proposed new Trial Court building.

## 10.6 Renovation of the Probate and Family Court / Registry of Deeds Building

The original intent of DCAM/AOTC was to fully renovate the Probate and Family Court/ Registry of Deeds building (PFC) for the sole use of the Probate and Family Court. That plan requires the building to be vacated, the Registry of Deeds to be permanently relocated, and all other occupants to be temporarily relocated for the duration of construction.

Due to steep escalation costs, it became apparent that the project budget of $106 million would not be adequate for both the proposed new Trial Court building and the PFC. Initially, Goody Clancy was asked to undertake studies to determine what levels of partial renovation could be accomplished with reduced budgets. See *Salem Additional Service—Alternate Plan B Draft Study, Task 9–Identify Possible Levels of Partial Renovation of the PFC*, November 21, 2006, Appendix A2.5. Even after reducing the scope of renovation, the funding would not permit work on both buildings. DCAM decided to proceed with new construction only and plans to continue with the full renovation of the PFC when funds are authorized in the future.

Although the full renovation of the Probate and Family Court/Registry of Deeds building for the sole use of the Probate and Family Court is now not part of this project, the Trial Court facility will be designed to accommodate this renovation in the future.

**OVERVIEW**

The Probate and Family Court building consists of the original 1912 building with a 1979-81 addition, referred to as the Administrative Addition. The original building has three levels, a lower level that opens onto Bridge Street, the first floor that opens onto Federal Street, a second floor and an attic. The first and second floors have a floor-to-floor height of about 21'-6".

The Administrative Addition has four levels above grade, with the first and third levels matching the floor elevations of the first and second floors of the PFC. Because of the 21'-6" floor to floor height within the PFC the Administrative Addition was able to insert level 2 between the first and second floor of the PFC and level 3 between the second floor and attic of the PFC. The ground floor of the Administrative Addition is open and accommodates parking for staff and judges.

The entry lobby on the first floor, the lower level lobby and the second floor lobby, the connecting monumental stair and the wrought iron elevator cage, the two public east west corridors and the session one courtroom will be restored and preserved. Goody Clancy's preliminary study recommends that the remaining portions of the building including the Administrative Addition undergo a gut rehab with the installation of all new mechanical and electrical systems. See the Existing Conditions Report attached in the Appendix (*Salem Probate and Family Court Existing Conditions Report, Draft dated 9.26.05/Revised 11.11.05, Goody Clancy*).

Studies indicate that the building will comfortably accommodate the program consisting of five courtrooms, transaction space for The Register of Probate and Probation and supplemental operations. At the time the studies for the PFC were done, it was proposed that the existing heating plant could become a central plant serving the Probate and Family Court building and the proposed new Trial Court building. It was also proposed that a central cooling plant for both facilities could be located in the PFC. The plans were developed under this assumption.

**THE PREFERRED SCHEME**

The preferred scheme is shown in figures 10A–10G and described below. Options for layouts for Probation in the Lower Level and Registry of Probate on the First Floor were studied and discussed below. Figures 10H through 10L show the earlier scheme with options, from which the preferred scheme was selected and developed.

**LOWER LEVEL (15,120 NSF)** (see Figure 10A) The lower level accommodates Probation (6,450 GSF) along with public toilet rooms and mechanical and electrical rooms. Staff parking for 7 vehicles is located under the Administrative Addition. There are three options for laying out Probation.

All options have the waiting and transaction counter directly off the lower level lobby. Option P1 (the preferred option) locates the clerks, active files and administrative offices behind the transaction counter in the west wing. Dispute Intervention offices are located in the main body of the building and Probation Officers are located in the east wing (see Figure 10H).

Option P2 locates clerks and active files directly behind the transaction counter in the north wing. Administrative offices are located the west wing and Probation Officers along with Dispute Intervention offices are located in the east wing (see Figure 10I).

Option P3 locates the clerks and active files directly behind the transaction counter in the west wing along with some Probation Officers and some administrative offices. Administrative offices are located in the north wing. Dispute Intervention offices and the remaining Probation Officers are located in the east wing (see Figure 10J).

**FIRST FLOOR (21,533 NSF)** (see Figure 10B) The first floor will accommodate the Register of Probate (13,704 NSF). The preferred plan locates the public waiting area and transaction counter directly off the main public lobby. Active files are located immediately behind the transaction counter in the large main room, currently the Registry of Deeds file room. Clerks and Administrative offices are located behind the main file room in the Administrative Addition. Additional active files are located in the east wind along with a public conference room. A public research area is located directly adjacent to the public waiting room. A Family Law center and an office for the Department of Revenue are located in the west wing.

Two additional layout options were developed, Option T-1 and T-2. Both options have the public waiting area directly off the main public lobby with the transaction counter, the research room and the public conference room directly adjacent to the public waiting area. Both options utilize the west wing for a Hearing Room and Family Information Center. Both options locate clerks and active files in the large main room formerly occupied by the Registry of Deeds and the Administrative Addition and more active files in the east wing.

The difference between the two options is that Option T-1 locates offices for the Register, Administrative Deputy Register, 1st Assistant Register, and Assistant Registers in the

Administrative Addition, where Option T-2 locates these office in the large main room, closer to the transaction counter, opposite some of the clerks and active files (see figures 10K and 10L2).

**SECOND FLOOR (21,533 NSF)** (see Figure 10D) The original Session One courtroom in the west wing will be refurbished and three new courtrooms will be constructed in the main large room formerly occupied by the Register of Probate with a fourth courtroom constructed in the Administrative Addition. All five courtrooms share secure staff circulation and public circulation. Given the minimal need for people in custody in the Probate and Family Court, it was agreed that not all courtrooms needed to provide for detainees. Therefore, two courtrooms share a common detainee holding area. A hearing room and a public conference room are located in the east wing off public circulation. Social Services and the Court Clinic are located in the Administrative Addition off public circulation.

**FIRST FLOOR MEZZANINE (6,413 NSF)** (see Figure 10C) This second floor of the Administrative Addition functions as a mezzanine between the first and second floors of the original building. It comfortably accommodates five judges' chambers with associated staff and conference rooms.

**SECOND FLOOR MEZZANINE (6,413 NSF)** (see Figure 10E) This third floor of the Administrative Addition is proposed to be converted to a roof top mechanical area for cooling towers and emergency generator, by removing the roof above, but keeping the exterior walls to shield the mechanical equipment from view. The preferred option shows the fifth courtroom, located on the floor below, extending up though the roof top mechanical area for increased height of the courtroom. As a cost-saving measure, an option which does not extend the courtroom through the floor above would save money in structural framing and simplify the layout of roof top mechanical equipment.

**DETAINEE CIRCULATION:** A detainee/staff elevator serving one courtroom set on the 2nd floor may originate at the lower level or may originate one level below the lower level, to open to an underground tunnel connecting to the detainee area in the new Trial Court building.

**MECHANICAL SYSTEMS:** (see Figure 10F) The preferred scheme for the lower level of the PFC has a large mechanical room to accommodate chillers for a central cooling plant. There is an option to move this mechanical room to the space currently occupied by parking for staff and judges under the Administrative Addition. Secure parking for the Judges could be located in the parking area located on the east side of the building. This would allow room for expansion of Probation. In the current preferred scheme Probation is a tight fit.

Three approaches to providing heating and cooling to the Probate and Family Court building and the proposed new Trial Court building were studied: 1. A central mechanical plant in the PFC; 2. A central mechanical plant in the proposed new Trial Court building; and 3. Two separate independent mechanical plants, one in the PFC and on in the proposed new Trial Court building. The benefits and drawbacks of these options are outlined as follows:

A Central Mechanical Plant in PFC

**PROS**

- Reuse of existing boiler plant space and chimney
- Available space exists for one central chiller plant
- Consolidated location for improved maintenance, efficiency and operation
- Cooling towers all on existing PFC Addition building roof
- Helps balance electrical loads
- Lower first cost

**CONS**

- Some phasing required to keep temporary steam system for Superior Court and County Commissioner's Building

B Central Mechanical Plant in New Trial Court Building—Cost Premium of about $427,000

**PROS**

- Consolidated location for improved maintenance, efficiency and operation.
- Existing steam plant serves only the Superior Court/County Commissioner's building.
- Plant can be easily configured within a new space.

**CONS**

- PFC cannot become operational until new Trial Court building is complete.
- Additional new square footage required.
- Unused existing boiler plant.
- Cooling towers on roof of new building.
- New chimney required for new boiler plant.
- More expensive than location in Probate and Family Court building.
- Unbalanced electrical service between new and Probate and Family Court buildings.

C Two separate independent Mechanical Plants, one in Probate and Family Court & one in new Trial Court Building—Cost Premium of about $565,000

**PROS**

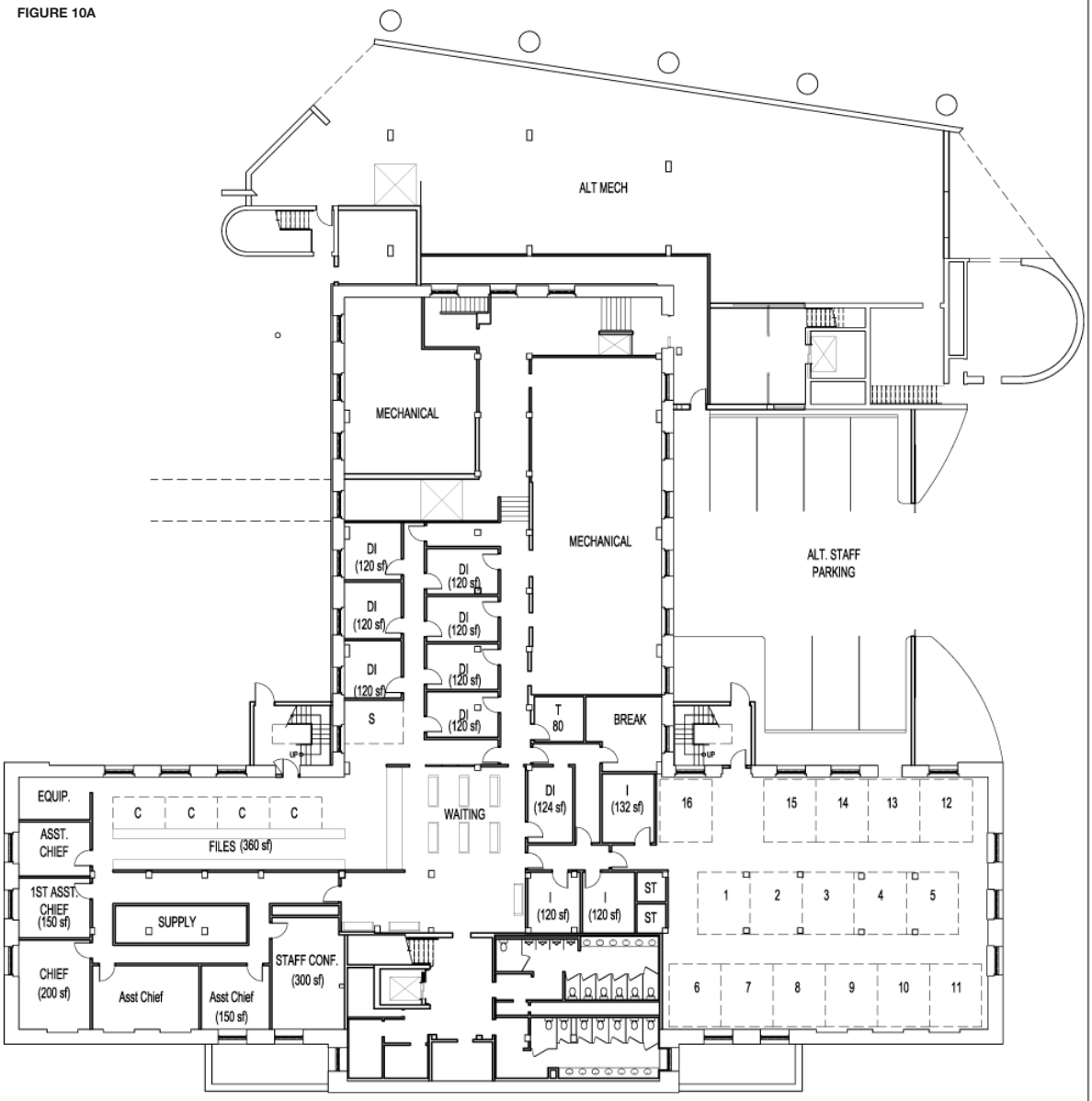
- Smaller equipment—sized for each building configuration.
- Flexibility for buildings coming on line at different times.

**CONS**

- Largest square footage requirement.
- Highest first cost.
- Highest maintenance and operational cost.
- Largest installed equipment capacity.
- Duplication required of some large equipment including all ancillary equipment.
- Dual cooling tower configurations for increased maintenance.
- Cost premium for construction of mechanical space and duplicate mechanical equipment.

For the complete Probate and Family Court mechanical and electrical systems description see *Salem Trial Courts Mechanical and Electrical Systems Analysis, SEi Companies*, Appendix A1.2. For an analysis of MEP options for minimal renovation to the PFC see *Salem Courts, MEP HVAC Options for Minimal Renovation to PFC*, dated September 27, 2006, Appendix A2.7.

FIGURE 10A




PROBATION

Scale = 1:20 0 10 20 30 40

GOODY CLANCY ARCHITECTURE PLANNING PRESERVATION

334 Boylston Street
Boston, Massachusetts 02116-3866
617.262.2760 fax 617.262.9512
arch@goodyclancy.com
www.goodyclancy.com

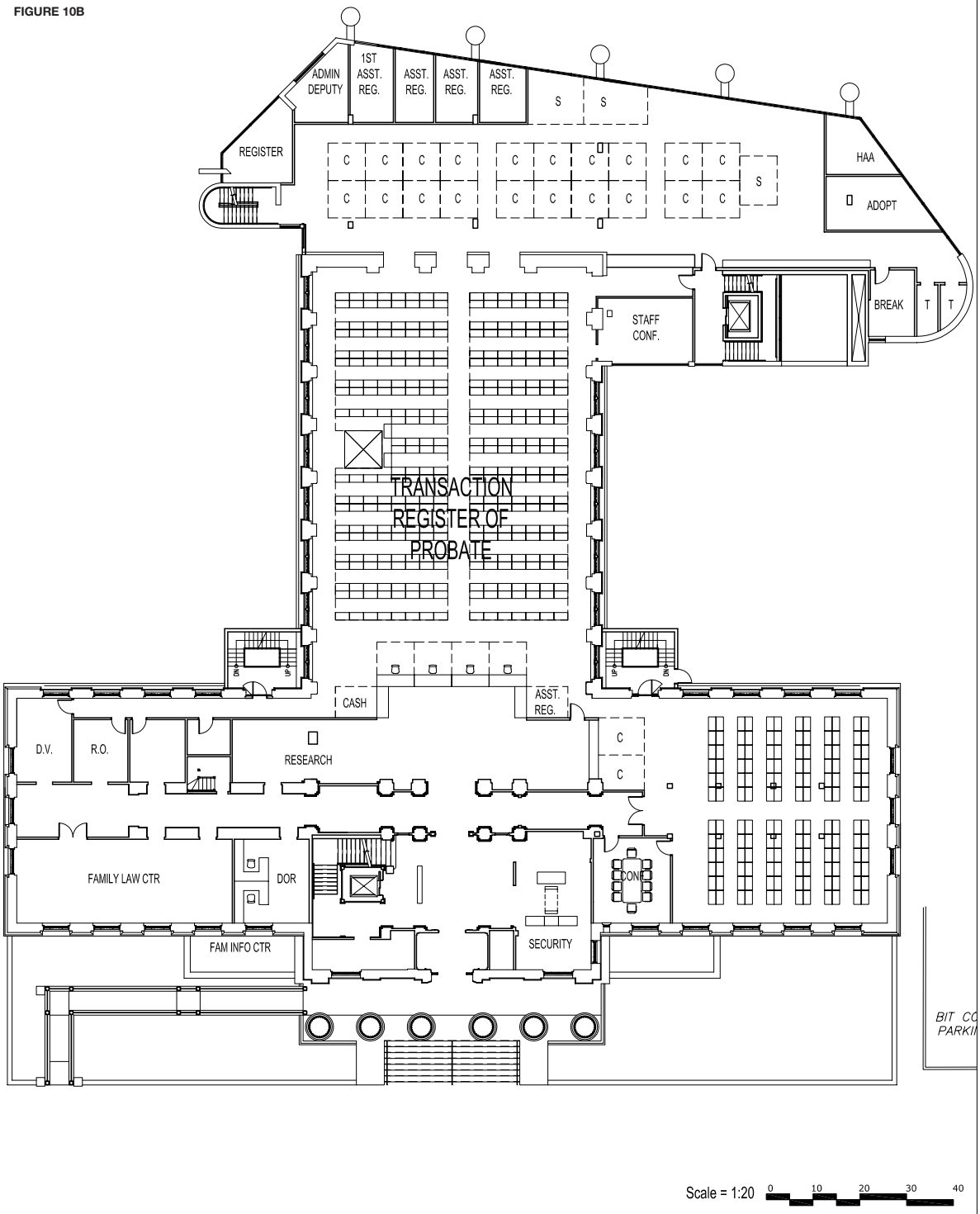
# PROPOSED BASEMENT PLAN

**Salem Family & Probate Courts**
36 Federal Street
Salem, Massachusetts

DCAM
One Ashburton Place
Boston, Massachusetts
TRC9910ST2

| | | |
|---|---|---|
| GOODY CLANCY PROJECT NO.: 6290.00 | | |
| FILE NAME: pfc-planb1.dwg | | |
| DRAWN: | CHECKED: | DATE: |
| JMT | JEG | 03-17-2006 |

FIGURE 10B




Scale = 1:20 0 10 20 30 40

GOODY CLANCY ARCHITECTURE PLANNING PRESERVATION

334 Boylston Street
Boston, Massachusetts 02116-3866
617.262.2760 fax 617.262.9512
arch@goodyclancy.com
www.goodyclancy.com

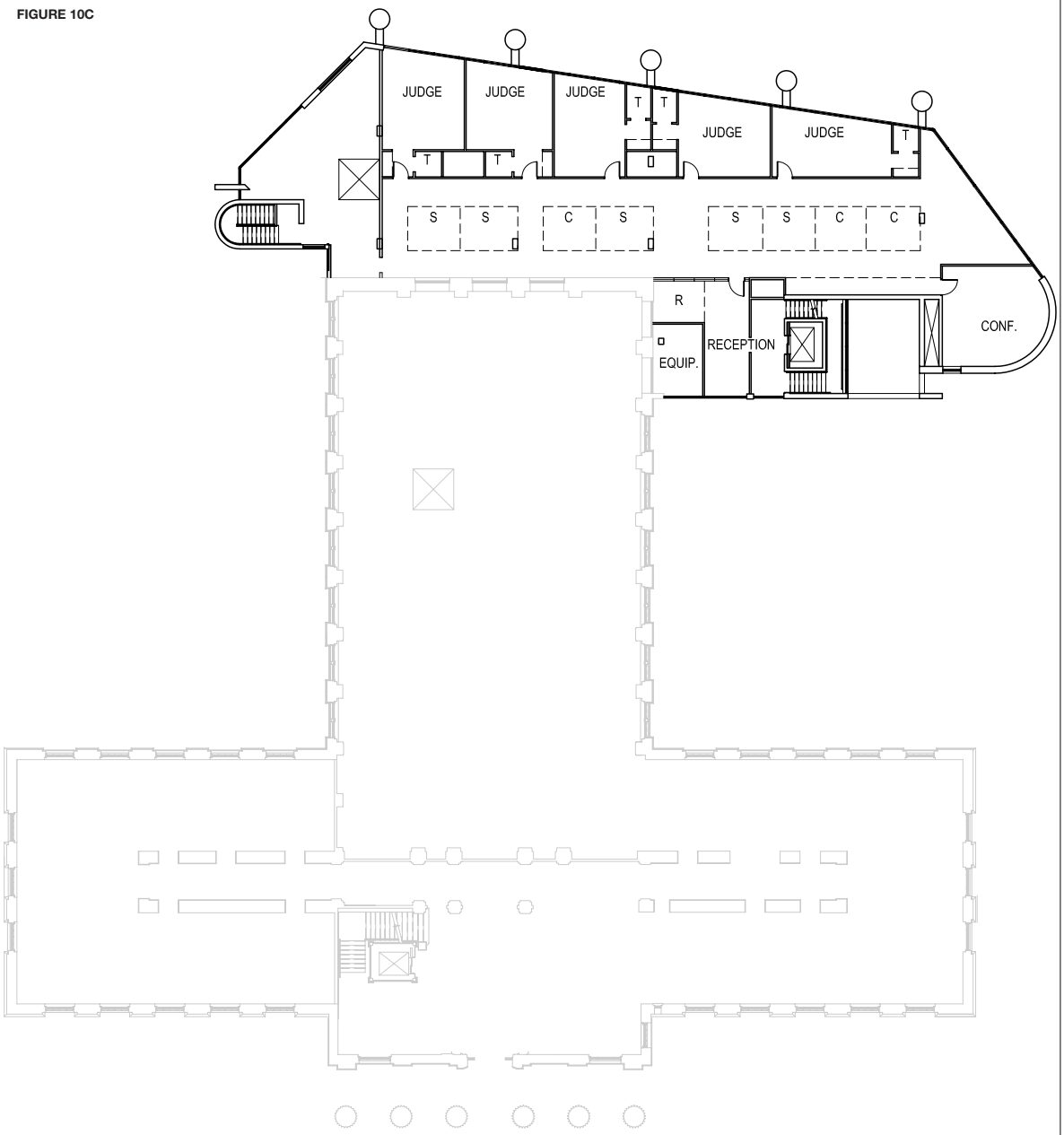
# PROPOSED FIRST FLOOR PLAN

**Salem Family & Probate Courts**
36 Federal Street
Salem, Massachusetts

DCAM
One Ashburton Place
Boston, Massachusetts
TRC9910ST2

| | | |
|---|---|---|
| GOODY CLANCY PROJECT NO.: 6290.00 | | |
| FILE NAME: pfc-plan01.dwg | | |
| DRAWN: | CHECKED: | DATE: |
| JMT | JEG | 03-17-2006 |

FIGURE 10C




Scale = 1:20 0 10 20 30 40

GOODY CLANCY ARCHITECTURE PLANNING PRESERVATION

334 Boylston Street
Boston, Massachusetts 02116-3866
617.262.2760 fax 617.262.9512
arch@goodyclancy.com
www.goodyclancy.com

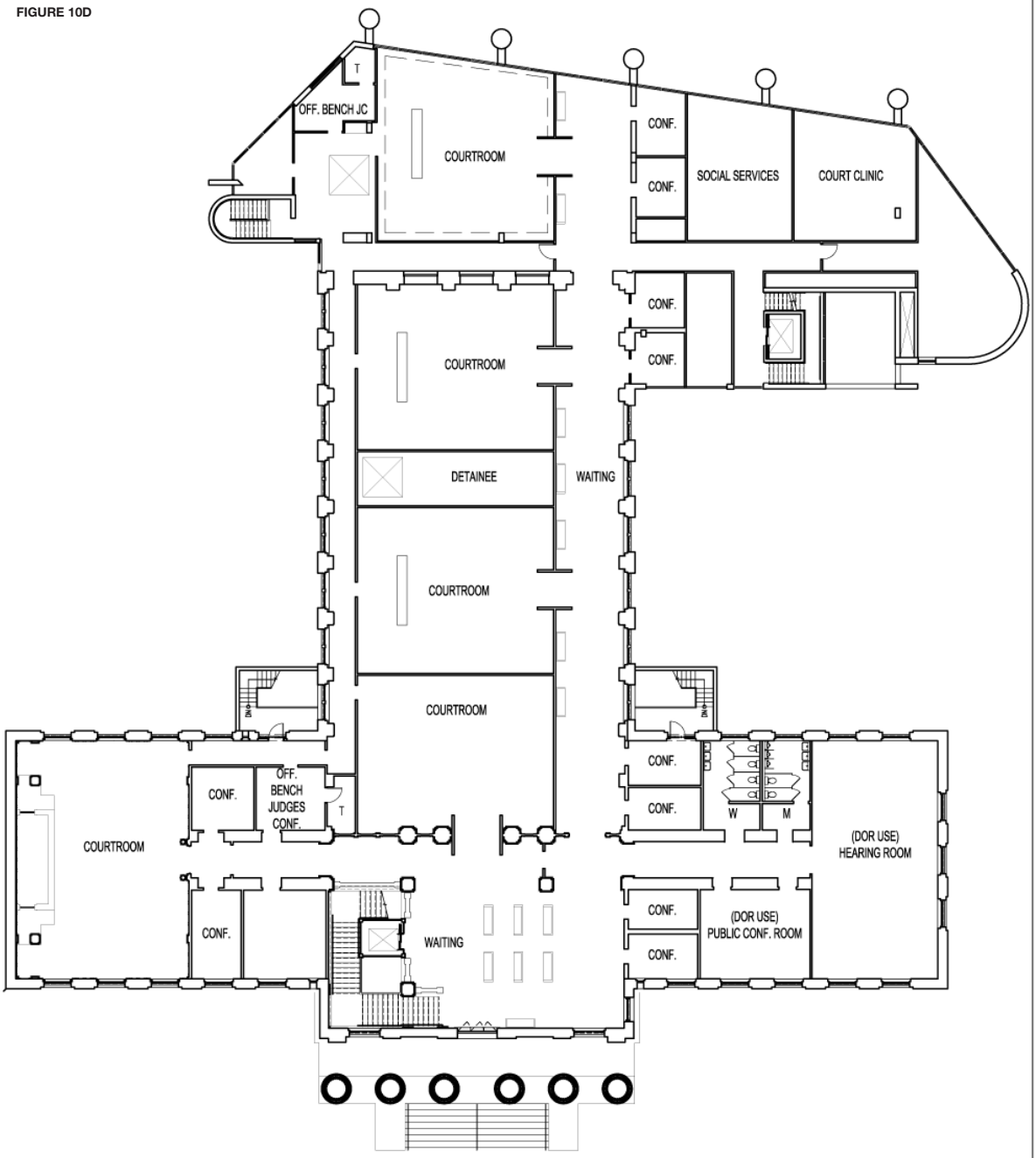
# PROPOSED 1ST FLOOR MEZZ.PLAN

**Salem Family & Probate Courts**
36 Federal Street
Salem, Massachusetts

DCAM
One Ashburton Place
Boston, Massachusetts
TRC9910ST2

| | | |
|---|---|---|
| GOODY CLANCY PROJECT NO.: 6290.00 | | |
| FILE NAME: pfc-plan01m.dwg | | |
| DRAWN: | CHECKED: | DATE: |
| JMT | JEG | 03-17-2006 |

FIGURE 10D




GOODY CLANCY ARCHITECTURE PLANNING PRESERVATION

334 Boylston Street
Boston, Massachusetts 02116-3866
617.262.2760 fax 617.262.9512
arch@goodyclancy.com
www.goodyclancy.com

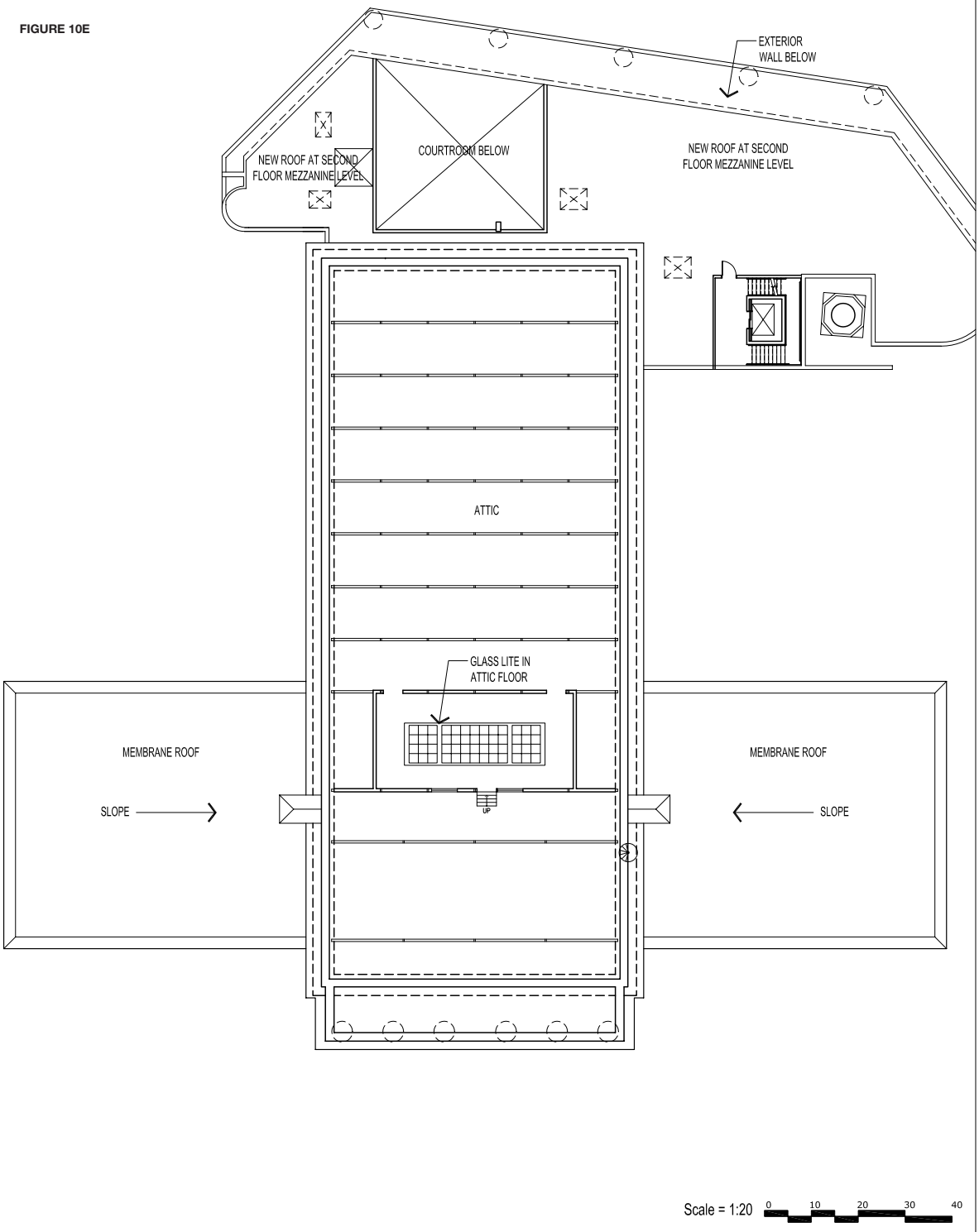
# PROPOSED SECOND FLOOR PLAN

**Salem Family & Probate Courts**
36 Federal Street
Salem, Massachusetts

DCAM
One Ashburton Place
Boston, Massachusetts
TRC9910ST2

| | | |
|---|---|---|
| GOODY CLANCY PROJECT NO.: 6290.00 | | |
| FILE NAME: pfc-plan02.dwg | | |
| DRAWN: | CHECKED: | DATE: |
| JMT | JEG | 03-17-2006 |

FIGURE 10E




GOODY CLANCY ARCHITECTURE PLANNING PRESERVATION
334 Boylston Street
Boston, Massachusetts 02116-3866
617.262.2760 fax 617.262.9512
arch@goodyclancy.com
www.goodyclancy.com

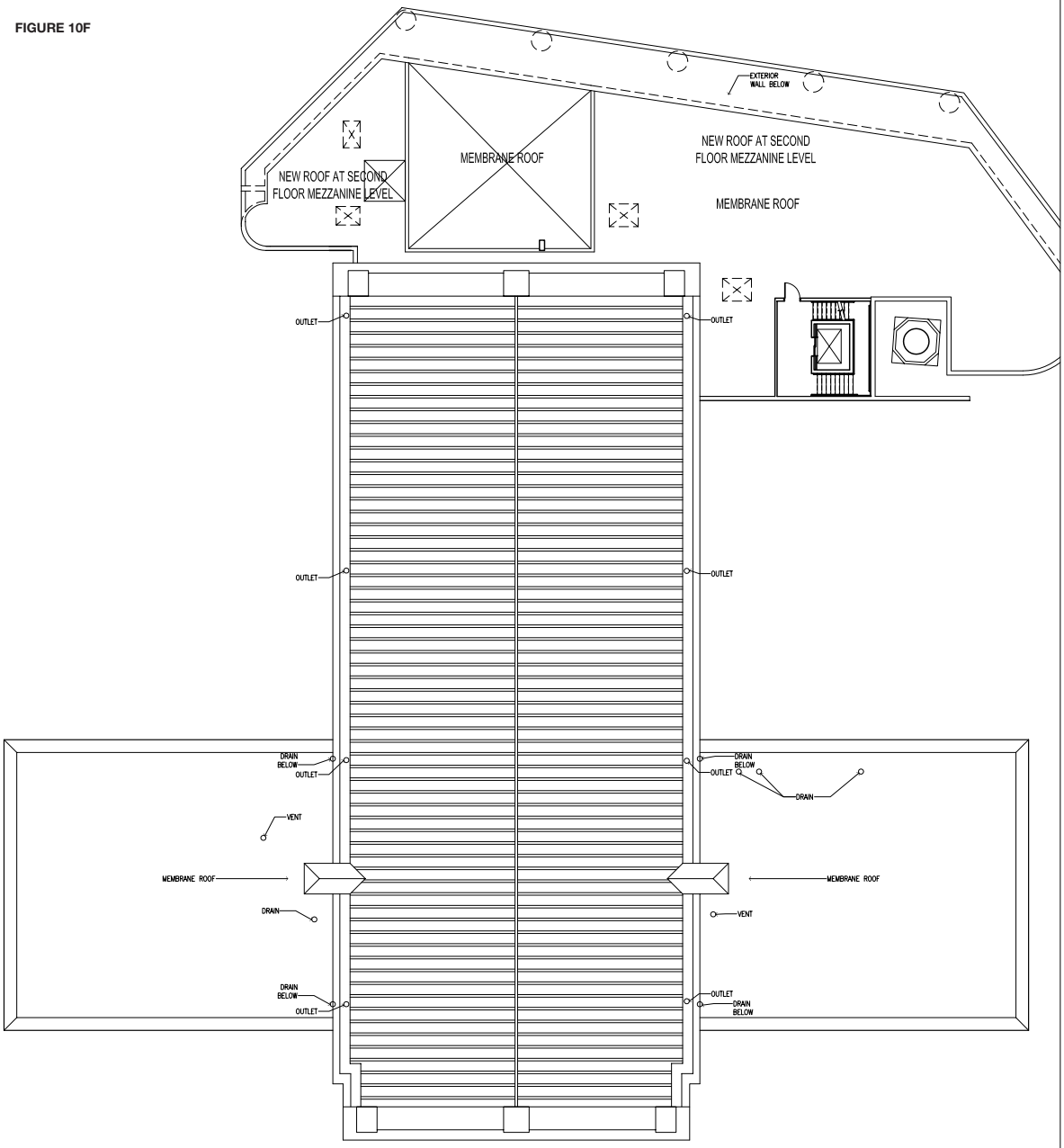
# PROPOSED ATTIC PLAN

**Salem Family & Probate Courts**
36 Federal Street
Salem, Massachusetts

DCAM
One Ashburton Place
Boston, Massachusetts
TRC9910ST2

| | | |
|---|---|---|
| GOODY CLANCY PROJECT NO.: 6290.00 | | |
| FILE NAME: pfc-attic.dwg | | |
| DRAWN: | CHECKED: | DATE: |
| JMT | JEG | 03-17-2006 |

FIGURE 10F




Scale = 1:20 0 10 20 30 40

GOODY CLANCY ARCHITECTURE PLANNING PRESERVATION

334 Boylston Street
Boston, Massachusetts 02116-3866
617.262.2760 fax 617.262.9512
arch@goodyclancy.com
www.goodyclancy.com

# PROPOSED ROOF PLAN

**Salem Family & Probate Courts**
36 Federal Street
Salem, Massachusetts

DCAM
One Ashburton Place
Boston, Massachusetts
TRC9910ST2

| | | |
|---|---|---|
| GOODY CLANCY PROJECT NO.: 6290.00 | | |
| FILE NAME: pfc-roof.dwg | | |
| DRAWN: | CHECKED: | DATE: |
| JMT | JEG | 03-17-2006 |

**FIGURE 10G**


HEARING ROOM
MECHANICAL PLEN.
MECHANICAL
PUBLIC CIRC. & WAITING
COURTROOM 1
P&FC TRANSACTION
PROBATION
STAFF CIRC.
MECHANICAL
COURTROOM
MECHANICAL PLEN.
2nd Floor
1st Floor
Lower Level
Probate & Family Court - Transverse Section (A)
Federal Street
PUBLIC WAITING
SECURITY BEYOND
PROBATION
COURTROOM 1
P&FC TRANSACTION
COURTROOM 2
DETAINEE ELEVATOR SHAFT
MECH.
COURTROOM 3
DETAINEE CIRCULATION
COURTROOM 4
JUDICIAL SUITES
P&FC TRANSACTION
PARKING
2nd Floor
1st Floor
Lower Level
Bridge Street
Probate & Family Court - Longitudinal Section (B)
Salem Family & Probate Courts
DCAM
Goody Clancy

**FIGURE 10H**


GOODY CLANCY ARCHITECTURE PLANNING PRESERVATION
334 Boylston Street
Boston, Massachusetts 02116-3866
617.262.2760 fax 617.262.9512
arch@goodyclancy.com
www.goodyclancy.com

PROPOSED LOWER LEVEL FLOOR PLAN
OPTION P-1

DRAWN JMT DATE 02-13-2008
CHECKED JEG SCALE 1/8" = 1'-0"

**Salem Family & Probate Courts**
36 Federal Street
Salem, MA

DCAM
One Ashburton Place
Boston, MA
TRC9910ST2

**FIGURE 10I**


GOODY CLANCY ARCHITECTURE PLANNING PRESERVATION
334 Boylston Street
Boston, Massachusetts 02116-3866
617.262.2760 fax 617.262.9512
arch@goodyclancy.com
www.goodyclancy.com

PROPOSED LOWER LEVEL FLOOR PLAN
OPTION P-2

**Salem Family & Probate Courts**
36 Federal Street
Salem, MA

DCAM
One Ashburton Place
Boston, MA
TRC9910ST2

**FIGURE 10J**


GOODY CLANCY ARCHITECTURE PLANNING PRESERVATION
334 Boylston Street
Boston, Massachusetts 02116-3866
617.262.2760 fax 617.262.9512
arch@goodyclancy.com
www.goodyclancy.com

PROPOSED LOWER LEVEL FLOOR PLAN
OPTION P-3


GOODY CLANCY PROJECT NO. 0306.00
FILE NAME p5-plan01.dwg
DRAWN JMT DATE 02-13-2006
CHECKED JEG SCALE 1/8" = 1'-0"

**Salem Family & Probate Courts**
36 Federal Street
Salem, MA

DCAM
One Ashburton Place
Boston, MA
TRC9910ST2

**FIGURE 10K**

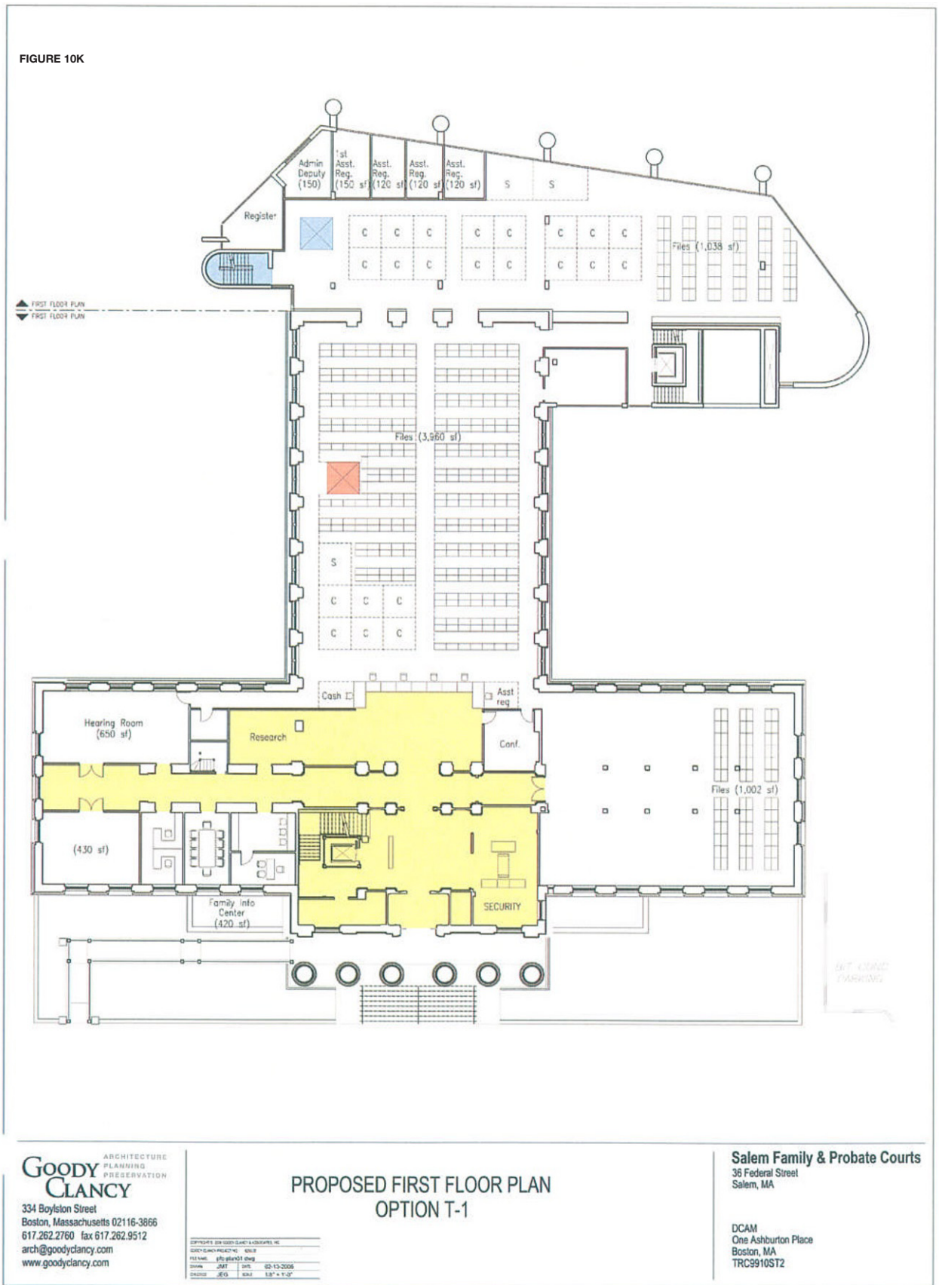

Admin Deputy (150)
1st Asst. Reg. (150 sf)
Asst. Reg. (120 sf)
Asst. Reg. (120 sf)
Asst. Reg. (120 sf)
S
S
Register
C
Files (1,038 sf)
FIRST FLOOR PLAN
FIRST FLOOR PLAN
Files (3,960 sf)
S
Cash
Asst req
Hearing Room (650 sf)
Research
Conf.
Files (1,002 sf)
(430 sf)
Family Info Center (420 sf)
SECURITY
GOODY CLANCY
ARCHITECTURE PLANNING PRESERVATION
334 Boylston Street
Boston, Massachusetts 02116-3866
617.262.2760 fax 617.262.9512
arch@goodyclancy.com
www.goodyclancy.com
PROPOSED FIRST FLOOR PLAN
OPTION T-1
Salem Family & Probate Courts
36 Federal Street
Salem, MA
DCAM
One Ashburton Place
Boston, MA
TRC9910ST2

**FIGURE 10L**


Staff Conf. (251 sf)
Files (513 sf)
FIRST FLOOR PLAN
FIRST FLOOR PLAN
1st Asst Reg. (150 sf)
Asst Reg. (120 sf)
Asst Reg. (120 sf)
Asst Reg. (120 sf)
Register (200 sf)
Admin. Dep. Reg. (150 sf)
Files (2,483 sf)
Cash
Asst reg
Hearing Room (650 sf)
Research
Conf.
Files (3,004 sf)
(430 sf)
Family Info Center (420 sf)
SECURITY
GOODY CLANCY
ARCHITECTURE PLANNING PRESERVATION
334 Boylston Street
Boston, Massachusetts 02116-3866
617.262.2760 fax 617.262.9512
arch@goodyclancy.com
www.goodyclancy.com
PROPOSED FIRST FLOOR PLAN
OPTION T-2
Salem Family & Probate Courts
36 Federal Street
Salem, MA
DCAM
One Ashburton Place
Boston, MA
TRC9910ST2

## 10.7 Procurement Method

The construction of this project will be performed utilizing a construction management at-risk (CMAR, sometimes referred to as CM/GC) contract (in accordance with Chapter 193 of the Acts of 2004 and the MGL Chapter 149A), wherein the construction manager (CM) provides consulting and estimating services during the design phase of the project, and then acts as the general contractor (GC) during the construction phase, holding trade contracts and providing both management and construction services. The CM will be brought on board before the design phase begins, in this case, July 2007. The Designer will work closely with the CM, who will play a major role in the cost estimating, scheduling, value engineering, and constructability analyses throughout the design phase of the project.

## 10.8 Preliminary Project Schedule

**PAGE 317-323**

| Activity ID | Activity Name | Original Duration | Remaining Duration | Schedule % Complete | Total Float | Early Start | Early Finish | Actual Start | Actual Finish | Late Start | Late Finish |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Salem New Superior, District and Juvenile Courthouse** | | 952 | 848 | 0% | 0 | Mar-20-07 | Jul-13-10 | Dec-12-06 | | Mar-20-07 | Jul-13-10 |
| AA11111 | Project Schedule Begins | 0 | 0 | 100% | | Mar-20-07 | | Dec-12-06 | | Mar-20-07 | |
| **CM@Risk Procurement** | | 916 | 848 | 0% | 0 | Mar-20-07 | Jul-13-10 | Dec-12-06 | | Mar-20-07 | Jul-13-10 |
| **Critical Activites Before Design Phase** | | 219 | 151 | 0% | 45 | Mar-20-07 | Oct-19-07 | Dec-12-06 | | Mar-20-07 | Dec-26-07 |
| **Church and Three Houses** | | 40 | 30 | 0% | 166 | Mar-20-07 | Apr-30-07 | Dec-12-06 | | Sep-24-07 | Dec-26-07 |
| A1000 | Aquire the Houses | 40 | 0 | 100% | | Mar-20-07 | Mar-20-07 | Dec-12-06 | Jan-02-07 | Dec-26-07 | Dec-26-07 |
| A1010 | Aquire Church | 40 | 29 | 100% | 130 | Mar-20-07 | Apr-30-07 | Dec-12-06 | | Sep-24-07 | Nov-01-07 |
| **Historical** | | 152 | 151 | 0% | 0 | Mar-20-07 | Oct-19-07 | Mar-17-07 | | Mar-20-07 | Oct-19-07 |
| **Mass Historical Consultation Process** | | 152 | 151 | 0% | 0 | Mar-20-07 | Oct-19-07 | Mar-17-07 | | Mar-20-07 | Oct-19-07 |
| MHD10000 | First MHC Consultation Mtg | 0 | 0 | 100% | | Mar-20-07 | Mar-20-07 | Mar-17-07 | Mar-20-07 | Mar-20-07 | Mar-20-07 |
| MHD10020 | MHC Issues Written Response to First Consultation Mtg | 21 | 21 | 0% | 0 | Mar-20-07 | Apr-18-07 | Mar-20-07 | | Mar-20-07 | Apr-18-07 |
| MHD10040 | DCAM Issues Written Response to MHC request for addtional information and addtional mtg request | 8 | 8 | 0% | 0 | Apr-19-07 | Apr-30-07 | | | Apr-19-07 | Apr-30-07 |
| MHD10050 | Schedule and Meet for Second MHC Consultation Mtg | 20 | 20 | 0% | 0 | May-01-07 | May-29-07 | | | May-01-07 | May-29-07 |
| MHD10060 | MHC issues Written Response to Second Consultation Mtg | 21 | 21 | 0% | 0 | May-30-07 | Jun-27-07 | | | May-30-07 | Jun-27-07 |
| MHD10070 | DCAM Issues Written Request MHC to Prepare a MOA | 5 | 5 | 0% | 0 | Jun-28-07 | Jul-05-07 | | | Jun-28-07 | Jul-05-07 |
| MHD10080 | MHC Issues a MOA | 21 | 21 | 0% | 0 | Jul-06-07 | Aug-03-07 | | | Jul-06-07 | Aug-03-07 |
| MHD10090 | DCAM Issues Written Response notifying MHC it fails to agree with MHC MOA and provides thier | 5 | 5 | 0% | 0 | Aug-06-07 | Aug-10-07 | | | Aug-06-07 | Aug-10-07 |
| MHD10100 | MHC Commission consider DCAM's counter MOA | 22 | 22 | 0% | 0 | Aug-13-07 | Sep-12-07 | | | Aug-13-07 | Sep-12-07 |
| MHD10110 | MHC Issues Written Response rejecting DCAM's counter MOA | 14 | 14 | 0% | 0 | Sep-13-07 | Oct-02-07 | | | Sep-13-07 | Oct-02-07 |
| MHD10120 | DCAM Issues Written Response rejecting MHC's alternatives | 5 | 5 | 0% | 0 | Oct-03-07 | Oct-09-07 | | | Oct-03-07 | Oct-09-07 |
| MHD10130 | DCAM proceeds with the project without MHC approval | 8 | 8 | 0% | 0 | Oct-10-07 | Oct-19-07 | | | Oct-10-07 | Oct-19-07 |
| **MEPA Process** | | 52 | 0 | 0% | 78 | Mar-20-07 | Mar-20-07 | Feb-22-07 | Feb-23-07 | Jul-10-07 | Jul-10-07 |
| **Evironmental Notification Form** | | 52 | 0 | 0% | 78 | Mar-20-07 | Mar-20-07 | Feb-22-07 | Feb-23-07 | Jul-10-07 | Jul-10-07 |
| ENF12000 | Begin & Develop ENF | 0 | 0 | 100% | | Mar-20-07 | | Feb-22-07 | | Jul-10-07 | |
| ENF12100 | MEPA ENF Certificate Issued | 0 | 0 | 100% | | | Mar-20-07 | | Feb-23-07 | | Jul-10-07 |
| **Environmental Impact Report** | | 0 | 0 | 0% | 0 | | | | | | |
| **DSBContinuation Of Services** | | 12 | 12 | 0% | 0 | Apr-17-07 | May-02-07 | | | Apr-17-07 | May-02-07 |

Massachusetts State Project TRC99-10 # DC1, Salem New Superior, District and Juvenile Courthouse, Trial Court

Data Date: Mar-20-07; Filter: TASK filter: All Activities
; Run Time: 19:36; Page:1 of 8;

| Activity ID | Activity Name | Original Duration | Remaining Duration | Schedule % Complete | Total Float | Early Start | Early Finish | Actual Start | Actual Finish | Late Start | Late Finish |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **DSB Activites** | | 2 | 2 | 0% | 0 | Apr-17-07 | Apr-18-07 | | | Apr-17-07 | Apr-18-07 |
| DB10000 | Develope & Submitt Continuation Request of GCA Services | 1 | 1 | 0% | 0 | Apr-17-07 | Apr-17-07 | | | Apr-17-07 | Apr-17-07 |
| DB10010 | DSB Continuation of GCA Approved | 1 | 1 | 0% | 0 | Apr-18-07 | Apr-18-07 | | | Apr-18-07 | Apr-18-07 |
| **Goody Clancey Design Fee Negotiations** | | 10 | 10 | 0% | 0 | Apr-19-07 | May-02-07 | | | Apr-19-07 | May-02-07 |
| DF10000 | Negotiate and Agree a Design Fee and Process Design Contract | 10 | 10 | 0% | 0 | Apr-19-07 | May-02-07 | | | Apr-19-07 | May-02-07 |
| **Study/Design/Construction Milestones** | | 916 | 848 | 0% | 0 | Mar-20-07 | Jul-13-10 | Dec-12-06 | | Mar-20-07 | Jul-13-10 |
| STM10880 | Study Phase Complete | 0 | 0 | 0% | 0 | | Apr-13-07 | | | | Apr-13-07 |
| DPM10410 | Design Contract Signed | 1 | 1 | 0% | 0 | May-03-07 | May-03-07 | | | May-03-07 | May-03-07 |
| DPM10310 | Design Begins | 0 | 0 | 0% | 0 | May-04-07 | | | | May-04-07 | |
| THD10410 | Three Houses' Disposition Begins | 0 | 0 | 0% | 161 | May-07-07 | | | | Dec-26-07 | |
| CHR11050 | Church Relocation Process Begins | 5 | 5 | 0% | 126 | May-07-07 | May-11-07 | | | Nov-02-07 | Nov-08-07 |
| MHD10140 | MHC Process Complete | 0 | 0 | 0% | 0 | | Oct-19-07 | | | | Oct-19-07 |
| THD10670 | Three Houses' Disposition Complete | 0 | 0 | 0% | 665 | | Nov-26-07 | | | | Jul-13-10 |
| CHR11120 | Church Relocation Complete | 0 | 0 | 0% | 74 | | Dec-04-07 | | | | Mar-19-08 |
| CCM10360 | New Courthouse Construction Begins | 0 | 0 | 0% | 0 | Mar-20-08 | | | | Mar-20-08 | |
| DPM10300 | Design Complete | 0 | 0 | 0% | 0 | | May-30-08 | | | | May-30-08 |
| CCM10520 | New Courthouse Construction Ends | 0 | 0 | 0% | 0 | | Jul-13-10 | | | | Jul-13-10 |
| **Study Phase** | | 87 | 19 | 0% | 0 | Mar-20-07 | Apr-13-07 | Dec-12-06 | | Mar-20-07 | Apr-13-07 |
| **Study Certification** | | 87 | 19 | 0% | 0 | Mar-20-07 | Apr-13-07 | Dec-12-06 | | Mar-20-07 | Apr-13-07 |
| ST10000 | Finalize Study Documents | 50 | 4 | 100% | 0 | Mar-20-07 | Mar-23-07 | Dec-12-06 | | Mar-20-07 | Mar-23-07 |
| ST10010 | User Agency Study Certification | 10 | 10 | 0% | 0 | Mar-26-07 | Apr-06-07 | | | Mar-26-07 | Apr-06-07 |
| ST10020 | DCAM Study Certification | 5 | 5 | 0% | 0 | Apr-09-07 | Apr-13-07 | | | Apr-09-07 | Apr-13-07 |
| **Design Phase** | | 274 | 274 | 0% | 0 | May-04-07 | May-30-08 | | | May-04-07 | May-30-08 |
| **Design Schematics** | | 57 | 57 | 0% | 24 | May-04-07 | Jul-25-07 | | | May-04-07 | Aug-28-07 |
| SS10000 | D-CONF Rev of DCAM Procedures Manual | 1 | 1 | 0% | 0 | May-04-07 | May-04-07 | | | May-04-07 | May-04-07 |
| SS11000 | SD-00 Schematic Design Kick-Off Workshop A | 1 | 1 | 0% | 0 | May-14-07 | May-14-07 | | | May-14-07 | May-14-07 |
| SS12000 | Schematic LEED Workshop B | 1 | 1 | 0% | 0 | May-22-07 | May-22-07 | | | May-22-07 | May-22-07 |
| SS13000 | Designer Prepares Schematics | 30 | 30 | 0% | 0 | May-23-07 | Jul-05-07 | | | May-23-07 | Jul-05-07 |
| SS14000 | SD-01ASchemDesignProgressWorkshop C Sust Design | 1 | 1 | 0% | 7 | May-31-07 | May-31-07 | | | Jun-11-07 | Jun-11-07 |
| SS15000 | SD-02 SchemDesign Progress Submission&workshp D | 1 | 1 | 0% | 7 | Jun-08-07 | Jun-08-07 | | | Jun-19-07 | Jun-19-07 |

Massachusetts State Project TRC99-10 # DC1, Salem New Superior, District and Juvenile Courthouse, Trial Court

Data Date: Mar-20-07; Filter: TASK filter: All Activities
; Run Time: 19:36; Page:2 of 8;

| Activity ID | Activity Name | Original Duration | Remaining Duration | Schedule % Complete | Total Float | Early Start | Early Finish | Actual Start | Actual Finish | Late Start | Late Finish |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SS16000 | SD-GW Global Workshop E (Inc Sust Design) | 1 | 1 | 0% | 7 | Jun-25-07 | Jun-25-07 | | | Jul-05-07 | Jul-05-07 |
| SS17000 | SD-03 Schematic Design Final Submission | 1 | 1 | 0% | 0 | Jul-06-07 | Jul-06-07 | | | Jul-06-07 | Jul-06-07 |
| SS18000 | SD-04 Schematic Design Transmittal to Agency | 1 | 1 | 0% | 24 | Jul-09-07 | Jul-09-07 | | | Aug-10-07 | Aug-10-07 |
| SS19000 | Designer Refines Adgendas for DD Phase | 1 | 1 | 0% | 34 | Jul-09-07 | Jul-09-07 | | | Aug-24-07 | Aug-24-07 |
| SS20000 | Schematic Design Submission Workshop E | 1 | 1 | 0% | 0 | Jul-09-07 | Jul-09-07 | | | Jul-09-07 | Jul-09-07 |
| SS21000 | DCAM Sch Review | 10 | 10 | 0% | 24 | Jul-10-07 | Jul-23-07 | | | Aug-13-07 | Aug-24-07 |
| SS22000 | User Agency Schematics Review | 10 | 10 | 0% | 24 | Jul-10-07 | Jul-23-07 | | | Aug-13-07 | Aug-24-07 |
| SS23000 | DCAM Workshop @ User Agency Doc Review #UA-1 | 1 | 1 | 0% | 29 | Jul-16-07 | Jul-16-07 | | | Aug-24-07 | Aug-24-07 |
| SS24000 | UA Schematic Comments to DCAM | 1 | 1 | 0% | 24 | Jul-24-07 | Jul-24-07 | | | Aug-27-07 | Aug-27-07 |
| SS25000 | SD-EV Transmit SD Evaluation to Designer | 1 | 1 | 0% | 24 | Jul-24-07 | Jul-24-07 | | | Aug-27-07 | Aug-27-07 |
| SS26000 | SD-APPR Schematic Approval | 1 | 1 | 0% | 24 | Jul-25-07 | Jul-25-07 | | | Aug-28-07 | Aug-28-07 |
| **Design Development** | | 134 | 134 | 0% | 0 | Jul-10-07 | Jan-17-08 | | | Jul-10-07 | Jan-17-08 |
| DD10060 | Design Development Begins | 0 | 0 | 0% | 0 | Jul-10-07 | | | | Jul-10-07 | |
| DD10065 | Designer Prepares Design Development Docs | 115 | 115 | 0% | 0 | Jul-10-07 | Dec-20-07 | | | Jul-10-07 | Dec-20-07 |
| DD10066 | DD-01A DD Prog. Workshop A Sust Des/H.C. Access | 1 | 1 | 0% | 24 | Aug-02-07 | Aug-02-07 | | | Sep-06-07 | Sep-06-07 |
| DD10067 | DD-01B Design Development Progress Workshop B | 1 | 1 | 0% | 24 | Aug-24-07 | Aug-24-07 | | | Sep-28-07 | Sep-28-07 |
| DD10117 | DD-02 Design Dev Progress Submission &Workshop C | 1 | 1 | 0% | 24 | Sep-25-07 | Sep-25-07 | | | Oct-29-07 | Oct-29-07 |
| DD10137 | DD-GW Global Workshop D (Inc Sust Design) | 1 | 1 | 0% | 24 | Nov-15-07 | Nov-15-07 | | | Dec-20-07 | Dec-20-07 |
| DD10070 | DD-03 Design Development Final Submission | 0 | 0 | 0% | 0 | | Dec-20-07 | | | | Dec-20-07 |
| DD10080 | DD-04 Design Development Transmittal to Agency | 1 | 1 | 0% | 0 | Dec-21-07 | Dec-21-07 | | | Dec-21-07 | Dec-21-07 |
| DD10210 | DD-03 Design Dev Final Submission Workshop E | 1 | 1 | 0% | 0 | Dec-21-07 | Dec-21-07 | | | Dec-21-07 | Dec-21-07 |
| DD10075 | DCAM DD Review | 15 | 15 | 0% | 0 | Dec-24-07 | Jan-15-08 | | | Dec-24-07 | Jan-15-08 |
| DD10085 | User Agency DD Review | 15 | 15 | 0% | 0 | Dec-24-07 | Jan-15-08 | | | Dec-24-07 | Jan-15-08 |
| DD10086 | DCAM Workshop@ User Agency Doc Review #UA-2 | 1 | 1 | 0% | 5 | Jan-08-08 | Jan-08-08 | | | Jan-15-08 | Jan-15-08 |

Massachusetts State Project TRC99-10 # DC1, Salem New Superior, District and Juvenile Courthouse, Trial Court

Data Date: Mar-20-07; Filter: TASK filter: All Activities
; Run Time: 19:36; Page:3 of 8;

| Activity ID | Activity Name | Original Duration | Remaining Duration | Schedule % Complete | Total Float | Early Start | Early Finish | Actual Start | Actual Finish | Late Start | Late Finish |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DD10090 | DD-User Agency comments to DCAM | 1 | 1 | 0% | 0 | Jan-16-08 | Jan-16-08 | | | Jan-16-08 | Jan-16-08 |
| DD10110 | DD-EV Transmit DD Evaluation to Designer | 1 | 1 | 0% | 0 | Jan-16-08 | Jan-16-08 | | | Jan-16-08 | Jan-16-08 |
| DD10180 | DD-APPR Design Development Approval | 1 | 1 | 0% | 0 | Jan-17-08 | Jan-17-08 | | | Jan-17-08 | Jan-17-08 |
| **Construction Documents** | | 112 | 112 | 0% | 0 | Dec-24-07 | May-30-08 | | | Dec-24-07 | May-30-08 |
| CD10120 | Construction Documents Begins | 0 | 0 | 0% | 0 | Dec-24-07 | | | | Dec-24-07 | |
| CD10125 | Designer Prepares CD | 66 | 66 | 0% | 0 | Dec-24-07 | Mar-26-08 | | | Dec-24-07 | Mar-26-08 |
| CD10135 | C Conference | 1 | 1 | 0% | 0 | Jan-25-08 | Jan-25-08 | | | Jan-25-08 | Jan-25-08 |
| CD10126 | CD-01Const Docs Workshop A @ 40%CD Progress | 1 | 1 | 0% | 0 | Feb-11-08 | Feb-11-08 | | | Feb-11-08 | Feb-11-08 |
| CD10127 | CD-02 Const Docs Workshop B @ 65%CD Progress | 1 | 1 | 0% | 0 | Feb-26-08 | Feb-26-08 | | | Feb-26-08 | Feb-26-08 |
| CD10128 | CD-03 Const Docs Workshop C @ 95% CD Progress | 1 | 1 | 0% | 0 | Mar-19-08 | Mar-19-08 | | | Mar-19-08 | Mar-19-08 |
| CD10130 | CD-05 Final Documents Submittal | 0 | 0 | 0% | 0 | | Mar-26-08 | | | | Mar-26-08 |
| CD10140 | DCAM CD Review | 20 | 20 | 0% | 7 | Mar-27-08 | Apr-24-08 | | | Apr-07-08 | May-05-08 |
| CD10150 | CD-06 Final Documents to User Agency | 1 | 1 | 0% | 0 | Mar-27-08 | Mar-27-08 | | | Mar-27-08 | Mar-27-08 |
| CD10160 | User Agency CD Review | 20 | 20 | 0% | 0 | Mar-28-08 | Apr-25-08 | | | Mar-28-08 | Apr-25-08 |
| CD10162 | DCAM Workshop #UA-3 @ User Agency Doc Review | 1 | 1 | 0% | 4 | Apr-18-08 | Apr-18-08 | | | Apr-25-08 | Apr-25-08 |
| CD10290 | CD-EV Transmit CD Evaluation to Designer | 1 | 1 | 0% | 7 | Apr-25-08 | Apr-25-08 | | | May-06-08 | May-06-08 |
| CD10170 | CD-07 Final Documents From User Agency | 1 | 1 | 0% | 0 | Apr-28-08 | Apr-28-08 | | | Apr-28-08 | Apr-28-08 |
| CD10180 | C-5, DCAM/User Agency CD Comments to Desigenr | 5 | 5 | 0% | 0 | Apr-29-08 | May-05-08 | | | Apr-29-08 | May-05-08 |
| CD10270 | CD-08 Final Documents Review MTG | 1 | 1 | 0% | 0 | May-06-08 | May-06-08 | | | May-06-08 | May-06-08 |
| CD10260 | CD-09 Final Documents Approved | 1 | 1 | 0% | 0 | May-07-08 | May-07-08 | | | May-07-08 | May-07-08 |
| CD10275 | Designer Prepares Reprod CD | 15 | 15 | 0% | 0 | May-08-08 | May-29-08 | | | May-08-08 | May-29-08 |
| CD10280 | CD-10 Reproducibles & Estimates Submit to DCAM | 1 | 1 | 0% | 0 | May-30-08 | May-30-08 | | | May-30-08 | May-30-08 |
| **Site Investigation/Testing** | | 60 | 60 | 0% | 90 | Jul-10-07 | Oct-02-07 | | | Nov-07-07 | Feb-08-08 |
| SI10590 | GeoTech Investigation Bldg | 40 | 40 | 0% | 89 | Jul-10-07 | Sep-04-07 | | | Nov-14-07 | Jan-11-08 |
| SI10710 | Water Supply Capacity/Pressure Testing | 20 | 20 | 0% | 95 | Jul-10-07 | Aug-06-07 | | | Nov-22-07 | Dec-20-07 |
| SI10720 | Verify Loc & Capacity of Gas Utilities | 30 | 30 | 0% | 85 | Jul-10-07 | Aug-20-07 | | | Nov-07-07 | Dec-20-07 |
| SI10730 | Verify Firepump is necessary | 10 | 10 | 0% | 105 | Jul-10-07 | Jul-23-07 | | | Dec-07-07 | Dec-20-07 |

Massachusetts State Project TRC99-10 # DC1, Salem New Superior, District and Juvenile Courthouse, Trial Court

Data Date: Mar-20-07; Filter: TASK filter: All Activities
; Run Time: 19:36; Page:4 of 8;

| Activity ID | Activity Name | Original Duration | Remaining Duration | Schedule % Complete | Total Float | Early Start | Early Finish | Actual Start | Actual Finish | Late Start | Late Finish |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SI10780 | Verify Location of Sewer and Video Condition | 20 | 20 | 0% | 95 | Jul-10-07 | Aug-06-07 | | | Nov-22-07 | Dec-20-07 |
| SI10790 | Verify Loc & Capacity of Water Utilities | 30 | 30 | 0% | 85 | Jul-10-07 | Aug-20-07 | | | Nov-07-07 | Dec-20-07 |
| SI10800 | Verify Loc & Capacity of Electrical Utilities | 30 | 30 | 0% | 85 | Jul-10-07 | Aug-20-07 | | | Nov-07-07 | Dec-20-07 |
| SI11100 | Survey Missing Topo/Verify Property Boundry | 30 | 30 | 0% | 85 | Jul-10-07 | Aug-20-07 | | | Nov-07-07 | Dec-20-07 |
| SI10620 | GeoEnvironmental Report | 15 | 15 | 0% | 89 | Sep-05-07 | Sep-25-07 | | | Jan-14-08 | Feb-01-08 |
| SI10810 | ID Foundation Design | 5 | 5 | 0% | 89 | Sep-26-07 | Oct-02-07 | | | Feb-04-08 | Feb-08-08 |
| SI10820 | ID Hazardous/Unsiutable Soil Conditions | 5 | 5 | 0% | 89 | Sep-26-07 | Oct-02-07 | | | Feb-04-08 | Feb-08-08 |
| **Permits - Building** | | 60 | 60 | 0% | 7 | Feb-27-08 | May-20-08 | | | Feb-27-08 | May-30-08 |
| AJ10600 | Submit 65% CD Plans & Specs Local Fire Dep | 1 | 1 | 0% | 0 | Feb-27-08 | Feb-27-08 | | | Feb-27-08 | Feb-27-08 |
| AJ10660 | Submit 65 % CD Plans & Specs to DPS | 1 | 1 | 0% | 0 | Feb-27-08 | Feb-27-08 | | | Feb-27-08 | Feb-27-08 |
| AJ10760 | Submit 65% CD Plans & Specs to Local Elect Dep | 1 | 1 | 0% | 0 | Feb-27-08 | Feb-27-08 | | | Feb-27-08 | Feb-27-08 |
| AJ10930 | Submit 65% CD Plans & Specs to Plumbing Board | 1 | 1 | 0% | 0 | Feb-27-08 | Feb-27-08 | | | Feb-27-08 | Feb-27-08 |
| AJ10650 | 65% CD Identify & Incorporate in CDs Salem Police Detail Requirements | 5 | 5 | 0% | 16 | Feb-27-08 | Mar-04-08 | | | Mar-20-08 | Mar-26-08 |
| AJ10640 | Resolve Loacl Fire Dept Questions of 65% CD | 20 | 20 | 0% | 0 | Feb-28-08 | Mar-26-08 | | | Feb-28-08 | Mar-26-08 |
| AJ10670 | Resolve DPS Questions of 65% CD | 20 | 20 | 0% | 0 | Feb-28-08 | Mar-26-08 | | | Feb-28-08 | Mar-26-08 |
| AJ10880 | Resolve Local Elect Dep Questions of 65% CD | 20 | 20 | 0% | 0 | Feb-28-08 | Mar-26-08 | | | Feb-28-08 | Mar-26-08 |
| AJ10960 | Resolve Plumbing Board Questions of 65% CD | 20 | 20 | 0% | 0 | Feb-28-08 | Mar-26-08 | | | Feb-28-08 | Mar-26-08 |
| AJ10610 | Local Fire Dept Rev/App of Final CD | 10 | 10 | 0% | 7 | May-07-08 | May-20-08 | | | May-16-08 | May-30-08 |
| AJ10770 | Local Electrical Rev/App of Final CD | 10 | 10 | 0% | 7 | May-07-08 | May-20-08 | | | May-16-08 | May-30-08 |
| AJ10920 | DPS Review/APP of Final CD | 10 | 10 | 0% | 7 | May-07-08 | May-20-08 | | | May-16-08 | May-30-08 |
| AJ10940 | Plumbing Board Review/APP of Final CD | 10 | 10 | 0% | 7 | May-07-08 | May-20-08 | | | May-16-08 | May-30-08 |
| **Salem Utiltiies** | | 60 | 60 | 0% | 7 | Feb-27-08 | May-20-08 | | | Mar-12-08 | May-30-08 |
| UT10440 | Set-up MTG with Natural Gas Utility 65% CD | 1 | 1 | 0% | 10 | Feb-27-08 | Feb-27-08 | | | Mar-12-08 | Mar-12-08 |
| UT10500 | Set-up MTG with Salem Water 65% CD | 1 | 1 | 0% | 10 | Feb-27-08 | Feb-27-08 | | | Mar-12-08 | Mar-12-08 |
| UT10530 | Set-up MTG with Salem DPW 65% CD | 1 | 1 | 0% | 10 | Feb-27-08 | Feb-27-08 | | | Mar-12-08 | Mar-12-08 |
| UT10570 | Set-up MTG with Mass Electric 65% CD | 1 | 1 | 0% | 10 | Feb-27-08 | Feb-27-08 | | | Mar-12-08 | Mar-12-08 |
| UT10460 | Resolve Gas Utility Questions of 65% CD | 10 | 10 | 0% | 10 | Feb-28-08 | Mar-12-08 | | | Mar-13-08 | Mar-26-08 |

Massachusetts State Project TRC99-10 # DC1, Salem New Superior, District and Juvenile Courthouse, Trial Court

Data Date: Mar-20-07; Filter: TASK filter: All Activities
; Run Time: 19:36; Page:5 of 8;

| Activity ID | Activity Name | Original Duration | Remaining Duration | Schedule % Complete | Total Float | Early Start | Early Finish | Actual Start | Actual Finish | Late Start | Late Finish |
|---|---|---|---|---|---|---|---|---|---|---|---|
| UT10490 | Resolve Mass Elect Questions of 65% CD | 10 | 10 | 0% | 10 | Feb-28-08 | Mar-12-08 | | | Mar-13-08 | Mar-26-08 |
| UT10540 | Resolve Salem Water Questions of 65% CD | 10 | 10 | 0% | 10 | Feb-28-08 | Mar-12-08 | | | Mar-13-08 | Mar-26-08 |
| UT10550 | Resolve Salem DPW Questions 65% CD | 10 | 10 | 0% | 10 | Feb-28-08 | Mar-12-08 | | | Mar-13-08 | Mar-26-08 |
| UT10450 | Gas Co Rev/App of Final CD | 10 | 10 | 0% | 7 | May-07-08 | May-20-08 | | | May-16-08 | May-30-08 |
| UT10480 | Mass Elect Rev/App Final CD | 10 | 10 | 0% | 7 | May-07-08 | May-20-08 | | | May-16-08 | May-30-08 |
| UT10510 | Salem Water Rev/App Final CD | 10 | 10 | 0% | 7 | May-07-08 | May-20-08 | | | May-16-08 | May-30-08 |
| UT10560 | Salem DPW Rev/App Final CD | 10 | 10 | 0% | 7 | May-07-08 | May-20-08 | | | May-16-08 | May-30-08 |
| **CM Procurement** | | 275 | 272 | 0% | 0 | Mar-20-07 | Apr-11-08 | Mar-06-07 | | Oct-30-07 | Apr-11-08 |
| **Assign a CM** | | 86 | 83 | 0% | 157 | Mar-20-07 | Jul-16-07 | Mar-06-07 | | Oct-30-07 | Feb-26-08 |
| CM11620 | CMAR-01 CM RFQ Produced | 1 | 0 | 100% | | Mar-20-07 | Mar-20-07 | Mar-06-07 | Mar-07-07 | Oct-30-07 | Oct-30-07 |
| CM11630 | CMAR-02 Sent for Re-Advertisement RFQ | 5 | 0 | 60% | | Mar-20-07 | Mar-20-07 | Mar-07-07 | Mar-14-07 | Oct-30-07 | Oct-30-07 |
| CM11930 | Prepare CM RFP | 20 | 20 | 15% | 168 | Mar-20-07 | Apr-17-07 | Mar-15-07 | | Nov-16-07 | Dec-14-07 |
| CM11960 | CM Prepares Respnse to RFQ | 21 | 21 | 0% | 156 | Mar-20-07 | Apr-18-07 | | | Oct-30-07 | Nov-28-07 |
| CM11940 | Incorporate the Study Documents | 5 | 5 | 0% | 168 | Apr-18-07 | Apr-24-07 | | | Dec-17-07 | Dec-21-07 |
| CM11640 | CMAR-03 CM Qualifications Received | 1 | 1 | 0% | 156 | Apr-19-07 | Apr-19-07 | | | Nov-30-07 | Nov-30-07 |
| CM11650 | CMAR-03 Evaluate Qualifications | 10 | 10 | 0% | 156 | Apr-20-07 | May-03-07 | | | Dec-03-07 | Dec-14-07 |
| CM11660 | CMAR-05 Notification Of Prequalication | 5 | 5 | 0% | 156 | May-04-07 | May-10-07 | | | Dec-17-07 | Dec-21-07 |
| CM11670 | CMAR-06 Distribute RFP | 20 | 20 | 0% | 156 | May-11-07 | Jun-08-07 | | | Dec-24-07 | Jan-22-08 |
| CM11680 | CMAR-07 CM Proposals Received | 0 | 0 | 0% | 156 | | Jun-08-07 | | | | Jan-22-08 |
| CM11690 | CMAR-08 Review CM Proposals | 10 | 10 | 0% | 156 | Jun-11-07 | Jun-22-07 | | | Jan-23-08 | Feb-05-08 |
| CM11700 | CMAR-09 Negotiation And Award | 10 | 10 | 0% | 156 | Jun-25-07 | Jul-09-07 | | | Feb-06-08 | Feb-19-08 |
| CM11710 | CMAR-10 CM Notice To Proceed WithPreConstruction | 5 | 5 | 0% | 156 | Jul-10-07 | Jul-16-07 | | | Feb-20-08 | Feb-26-08 |
| **GMP Phase** | | 32 | 32 | 0% | 0 | Feb-27-08 | Apr-11-08 | | | Feb-27-08 | Apr-11-08 |
| GMP11730 | GMP Contract Documents Received From Designer | 1 | 1 | 0% | 0 | Feb-27-08 | Feb-27-08 | | | Feb-27-08 | Feb-27-08 |
| GMP11740 | Request For GMP From CM | 1 | 1 | 0% | 0 | Feb-28-08 | Feb-28-08 | | | Feb-28-08 | Feb-28-08 |
| GMP11750 | GMP Review And Negotiation | 20 | 20 | 0% | 0 | Feb-29-08 | Mar-27-08 | | | Feb-29-08 | Mar-27-08 |
| GMP11760 | DCAM Issues GMP Contract Amendment | 10 | 10 | 0% | 0 | Mar-28-08 | Apr-10-08 | | | Mar-28-08 | Apr-10-08 |
| GMP11720 | CMAR-11 CM Notice To Proceed With Construction | 0 | 0 | 0% | 0 | Apr-11-08 | | | | Apr-11-08 | |
| **Construction Phase** | | 848 | 848 | 0% | 0 | Mar-20-07 | Jul-13-10 | Mar-20-07 | | Jul-19-07 | Jul-13-10 |
| **Construction Activites** | | 848 | 848 | 0% | 0 | Mar-20-07 | Jul-13-10 | Mar-20-07 | | Jul-19-07 | Jul-13-10 |
| **Pre Courthouse Building Construction Activites** | | 182 | 182 | 0% | 74 | Mar-20-07 | Dec-04-07 | Mar-20-07 | | Jul-19-07 | Mar-19-08 |

Massachusetts State Project TRC99-10 # DC1, Salem New Superior, District and Juvenile Courthouse, Trial Court

Data Date: Mar-20-07; Filter: TASK filter: All Activities ; Run Time: 19:36; Page:6 of 8;

| Activity ID | Activity Name | Original Duration | Remaining Duration | Schedule % Complete | Total Float | Early Start | Early Finish | Actual Start | Actual Finish | Late Start | Late Finish |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Three Houses' Demo** | | 142 | 142 | 0% | 75 | May-07-07 | Nov-26-07 | | | Dec-26-07 | Mar-12-08 |
| THD10420 | Houses' Hazmat Abatement (ACM, Lead, UTRemoval,etc & Utility Scoping | 15 | 15 | 0% | 161 | May-07-07 | May-25-07 | | | Dec-26-07 | Jan-16-08 |
| THD10430 | Houses' Demo Plans and Spec Development | 15 | 15 | 0% | 161 | May-29-07 | Jun-18-07 | | | Jan-17-08 | Feb-06-08 |
| THD10650 | Advertise & Award Houses' Demo Const Docs | 10 | 10 | 0% | 74 | Oct-22-07 | Nov-02-07 | | | Feb-07-08 | Feb-20-08 |
| THD10660 | Houses' Demo Phase | 15 | 15 | 0% | 74 | Nov-05-07 | Nov-26-07 | | | Feb-21-08 | Mar-12-08 |
| **Church Relocation** | | 143 | 143 | 0% | 74 | May-14-07 | Dec-04-07 | | | Nov-09-07 | Mar-19-08 |
| CHR11060 | Church Hazmat Abatement (ACM, Lead, UTRemoval,etc & Utility Scoping | 15 | 15 | 0% | 126 | May-14-07 | Jun-04-07 | | | Nov-09-07 | Dec-03-07 |
| CHR11080 | Church Demo, Foundation and Reloc Plans and Spec Development (Includes Entire Site Prep for | 40 | 40 | 0% | 126 | Jun-05-07 | Jul-31-07 | | | Dec-04-07 | Jan-30-08 |
| CHR11090 | Advertise & Award Church Const Docs | 15 | 15 | 0% | 126 | Aug-01-07 | Aug-21-07 | | | Jan-31-08 | Feb-20-08 |
| CHR11110 | Church Relocated Begins (begins with installation of the Foundation) | 20 | 20 | 0% | 74 | Nov-05-07 | Dec-04-07 | | | Feb-21-08 | Mar-19-08 |
| **North Street Mass Highway** | | 172 | 172 | 0% | 84 | Mar-20-07 | Nov-19-07 | Mar-20-07 | | Jul-19-07 | Mar-19-08 |
| NST10000 | North Street Design Begins | 0 | 0 | 0% | | Mar-20-07 | | Mar-20-07 | | Jul-19-07 | |
| NST10010 | Earth Tech Prepares & Completes 75% Report | 49 | 49 | 0% | 84 | Mar-20-07 | May-29-07 | | | Jul-19-07 | Sep-26-07 |
| NST10005 | 25% MHD Public Hearing | 23 | 23 | 0% | 110 | Mar-20-07 | Apr-20-07 | | | Aug-24-07 | Sep-26-07 |
| NST10020 | Mass Highway Approves 75% Report | 14 | 14 | 0% | 84 | May-30-07 | Jun-18-07 | | | Sep-27-07 | Oct-16-07 |
| NST10030 | City of Salem Approves 75% Report | 14 | 14 | 0% | 84 | May-30-07 | Jun-18-07 | | | Sep-27-07 | Oct-16-07 |
| NST10040 | Earth Tech Prepares & Completes 100% Report | 14 | 14 | 0% | 84 | Jun-19-07 | Jul-09-07 | | | Oct-17-07 | Nov-05-07 |
| NST10050 | Mass Highway Approves 100% Report | 30 | 30 | 0% | 84 | Jul-10-07 | Aug-20-07 | | | Nov-06-07 | Dec-19-07 |
| NST10060 | City of Salem Approves 100% Report | 30 | 30 | 0% | 94 | Jul-10-07 | Aug-20-07 | | | Nov-21-07 | Jan-04-08 |
| NST10070 | DCAM Prepares & Submits Draft MOA w/ MH & Salem | 2 | 2 | 0% | 94 | Aug-21-07 | Aug-22-07 | | | Jan-07-08 | Jan-08-08 |
| NST10090 | Eath Tech Desing to MHD Contractor for Pricing and MHD negotiates final Change Order Price | 14 | 14 | 0% | 84 | Aug-21-07 | Sep-10-07 | | | Dec-20-07 | Jan-10-08 |
| NST10080 | DCAM Prepares & Submitts Final MOA w/ MH & Salem | 2 | 2 | 0% | 94 | Aug-23-07 | Aug-24-07 | | | Jan-09-08 | Jan-10-08 |
| NST10100 | North Street Constriion Begins | 0 | 0 | 0% | 84 | Sep-11-07 | | | | Jan-11-08 | |
| NST10110 | North Street Construction | 49 | 49 | 0% | 84 | Sep-11-07 | Nov-19-07 | | | Jan-11-08 | Mar-19-08 |
| NST10120 | North Street Constrution Complete | 0 | 0 | 0% | 84 | | Nov-19-07 | | | | Mar-19-08 |
| **New Courthouse Bluilding** | | 592 | 592 | 0% | 0 | Mar-20-08 | Jul-13-10 | | | Mar-20-08 | Jul-13-10 |
| **Site Preparation Activities** | | 0 | 0 | 0% | 0 | | | | | | |

Massachusetts State Project TRC99-10 # DC1, Salem New Superior, District and Juvenile Courthouse, Trial Court

Data Date: Mar-20-07; Filter: TASK filter: All Activities ; Run Time: 19:36; Page:7 of 8;

| Activity ID | Activity Name | Original Duration | Remaining Duration | Schedule % Complete | Total Float | Early Start | Early Finish | Actual Start | Actual Finish | Late Start | Late Finish |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **New Courthouse Building Activites** | | 592 | 592 | 0% | 0 | Mar-20-08 | Jul-13-10 | | | Mar-20-08 | Jul-13-10 |
| CNEW11210 | New Bldg Construction Begins | 0 | 0 | 0% | 0 | Mar-20-08 | | | | Mar-20-08 | |
| CNEW11570 | New Bldg XXX Construction | 586 | 586 | 0% | 0 | Mar-20-08 | Jul-13-10 | | | Mar-20-08 | Jul-13-10 |
| NEW11580 | All New Bldg Construction Ends | 0 | 0 | 0% | 0 | | Jul-13-10 | | | | Jul-13-10 |
| **Trade Contractors** | | 9 | 9 | 0% | 567 | Apr-11-08 | Apr-23-08 | | | Jul-01-10 | Jul-13-10 |
| **#1 XX Trade Contractor Bid** | | 9 | 9 | 0% | 567 | Apr-11-08 | Apr-23-08 | | | Jul-01-10 | Jul-13-10 |
| CC11770 | #1 XX Trade Contractor RFQ Produced | 1 | 1 | 0% | 562 | Apr-11-08 | Apr-11-08 | | | Jul-01-10 | Jul-01-10 |
| CC11780 | Advertise #1 XX Trade RFQ | 1 | 1 | 0% | 562 | Apr-14-08 | Apr-14-08 | | | Jul-02-10 | Jul-02-10 |
| CC11790 | #1 XX Trade Contractor Quals Received | 1 | 1 | 0% | 562 | Apr-15-08 | Apr-15-08 | | | Jul-06-10 | Jul-06-10 |
| CC11800 | DCAM Review/Approval of #1 XX Trade Contractors | 1 | 1 | 0% | 562 | Apr-16-08 | Apr-16-08 | | | Jul-07-10 | Jul-07-10 |
| CC11810 | Prequal List Sent To All #1 XX Trade Contract | 1 | 1 | 0% | 562 | Apr-17-08 | Apr-17-08 | | | Jul-08-10 | Jul-08-10 |
| CC11820 | RFB(Req For Bids)ToPrequal #1 XXTradeContractors | 1 | 1 | 0% | 562 | Apr-18-08 | Apr-18-08 | | | Jul-09-10 | Jul-09-10 |
| CC11830 | Bids Received From #1 XX Trade Contractors | 1 | 1 | 0% | 562 | Apr-22-08 | Apr-22-08 | | | Jul-12-10 | Jul-12-10 |
| CC11840 | #1 XX Trade Contractor Bid Review & Award | 1 | 1 | 0% | 562 | Apr-23-08 | Apr-23-08 | | | Jul-13-10 | Jul-13-10 |
| **Non-Trade Contractors** | | 9 | 9 | 0% | 567 | Apr-11-08 | Apr-23-08 | | | Jul-01-10 | Jul-13-10 |
| **#1 XX Non -Trade Contractor Bid** | | 9 | 9 | 0% | 567 | Apr-11-08 | Apr-23-08 | | | Jul-01-10 | Jul-13-10 |
| CC11920 | Advertise #1 XX Non-Trade RFQ | 1 | 1 | 0% | 562 | Apr-11-08 | Apr-11-08 | | | Jul-01-10 | Jul-01-10 |
| CC11850 | Solicit Quals From #1 XX Non-Trade Contractor | 1 | 1 | 0% | 562 | Apr-14-08 | Apr-14-08 | | | Jul-02-10 | Jul-02-10 |
| CC11860 | #1 XX Non-Trade Contractor Quals Received | 1 | 1 | 0% | 562 | Apr-15-08 | Apr-15-08 | | | Jul-06-10 | Jul-06-10 |
| CC11870 | DCAM Review/Appr Of #1 XX Non-Trade Contractors | 1 | 1 | 0% | 562 | Apr-16-08 | Apr-16-08 | | | Jul-07-10 | Jul-07-10 |
| CC11880 | Prequal List To Prequal #1 XX NonTrade Contracto | 1 | 1 | 0% | 562 | Apr-17-08 | Apr-17-08 | | | Jul-08-10 | Jul-08-10 |
| CC11890 | RFBToPrequal #1 XX NonTradeContractors | 1 | 1 | 0% | 562 | Apr-18-08 | Apr-18-08 | | | Jul-09-10 | Jul-09-10 |
| CC11900 | Bids Received From #1 XX Non-Trade Contractors | 1 | 1 | 0% | 562 | Apr-22-08 | Apr-22-08 | | | Jul-12-10 | Jul-12-10 |
| CC11910 | #1 XX Non-Trade Contractor Best & Final Price | 1 | 1 | 0% | 562 | Apr-23-08 | Apr-23-08 | | | Jul-13-10 | Jul-13-10 |

Massachusetts State Project TRC99-10 # DC1, Salem New Superior, District and Juvenile Courthouse, Trial Court

Data Date: Mar-20-07; Filter: TASK filter: All Activities
; Run Time: 19:36; Page:8 of 8;