ALASKA COURT SYSTEM

PALMER COURTHOUSE EXPANSION MASTER PLAN

April 17, 2023

PREPARED BY:

MCG
EXPLORE
DESIGN

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PURPOSE & BACKGROUND

The Alaska Court System (ACS) is experiencing an increase in services at the Palmer Courthouse which is straining the available capacity at the courthouse. The primary driver of this increase in usage is the significant popultion growth within the Matanuska-Sustina Borough (MSB). The MSB has seen sustained growth near or above double-digit percentages for several years running. In order meet the current population and accomodate future growth, ACS seeks to expand the Palmer Courthouse.

ACS tasked MCG Explore Design to prepare a program, concept plan, and estimate to create an addition at the Palmer Courthouse. This master plan conceptualizes renovation of existing areas for increased efficiency and capacity as well as creating an addition to provide additional judicial capacity. The goal of this master plan is to identify opportunities to modify the existing courthouse to increase capacity.

The MCG Explore Design consultant team included firms with experience of courthouse building types, and direct experience with the Palmer Courthouse:

- MCG Explore Design, Project Manager & Architectural and Interior Design
- RSA Engineering, Mechanical & Electrical Engineering
- CRW Engineering, Civil & Structural Engineering
- Estimations, Inc., Estimating

This master plan was developed in close collaboration with ACS staff including:

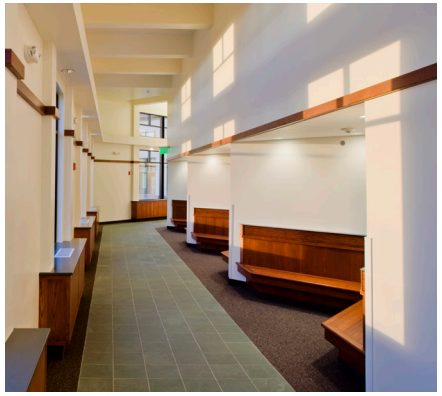
- Anna Harrison, ACS Facilities Manager
- Sam Duke, ACS Project Manager
- Babz Cloud, ACS Clerk of Court, Palmer
- Jonathan Woodman, Superior Court Judge, Third Judicial District
- Thomas Matthews, Superior Court Judge, Third Judicial District
- Rhonda McLeod, ACS Chief Financial Officer
- Carol McAllen, ACS Area Court Administrator, Third Judicial District
- Stacey Marz, ACS Administrative Director

PROJECT JUSTIFICATION

ACS engaged MCG Explore Design to complete this master planning based on analysis of the population growth of the Matanuska-Sustina Borough. Their findings include the following summary of analysis of U.S. Census Bureau data and provide the basis of justification for this project.

According to the U.S. Census Bureau, the Matanuska-Susitna Borough has grown 21.7% in the past decade. The Department of Labor Alaska published its Population Projections 2021 to 2050 in June 2022, finding that the Mat-Su Borough's population is expected to increase by close to 30,000, an expected gain of 26%, by the year 2040, and a 36% growth by 2050. In comparison, the entire state of Alaska is projected to grow by only 3.4% by 2040 and 2050. The Mat-Su Valley is the only region in Alaska with substantial sustained growth expected, with many areas projecting population declines or no gains. In 2020, the Mat-Su Borough accounted for 15% of the statewide population, and by 2050, it is expected to rise to close to 20%.

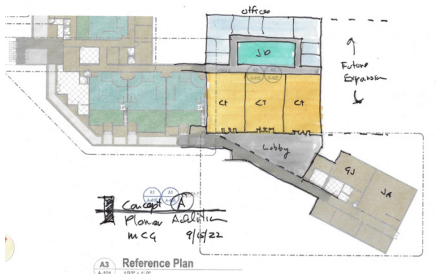
The Palmer Courthouse serves the region with nine judicial officers using eight courtrooms, with an additional magistrate judge likely approved during the FY 24 legislative session. All courtrooms are in use throughout the day. The Palmer court has the highest number of superior court filings per superior court judge in the state. The case filings have grown along with the population increase. To provide relief to the Palmer court, pro tem judges and judges from other courts in the third district are traveling to Palmer to hold trials and other court proceedings. Due to the limited availability of courtrooms, accommodating additional judges and juggling court calendars is very challenging, and, at times impossible. Adding additional space to hold trials and hearings in the Palmer Courthouse would reduce delays in court proceedings and better serve the region's residents. In FY23, the Alaska Court System received funding in the amount of $350,000 to complete conceptual design planning. For planning purposes, this would also accommodate future new Palmer judicial officers if it is determined that the continued increased population in the Mat-Su Valley and related case filings require additional judges for that court.

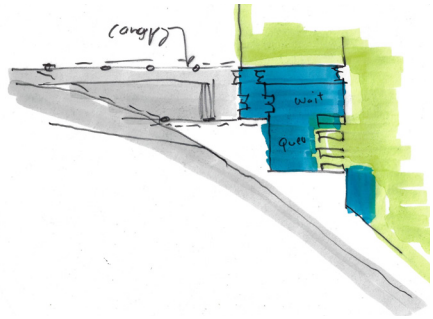


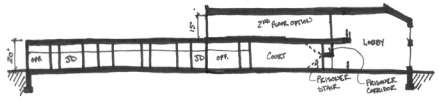
METHODOLOGY

This concept Master Plan was developed through a series of investigations, analyses, and collaborations with key ACS stakeholders to develop the program and design priorities. The process involved the following major milestones:

- Stakeholder Meeting: conducted a kick-off meeting to establish key needs for an expansion, project goals and timeline.
- Existing Facility Investigation: conducted walk-throughs of existing ACS facilities identifying positives and challenges of existing layouts and designs.
- Space Program: developed a program of spaces to gain consensus on overall direction of concept design.
- Clerk Survey: conducted a meeting to establish impacts to, and priorities of the Clerk Office as part of expanding services and capacity at the courthouse.
- Concept Development: conducted multiple reviews with key ACS staff to review concept design and modify to meet needs and expectations.
- Cost Estimating: With input from subconsultants to outline major scope, establish a cost estimate to identify funding requirement.
- Final Report: This report synthesizes the information collected from each step listed above to develop a Master Plan document outlining a design approach which will provide the spaces ACS requires to meet current and future needs.







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PRELIMINARY SPACE PROGRAM

Palmer Courthouse Addition

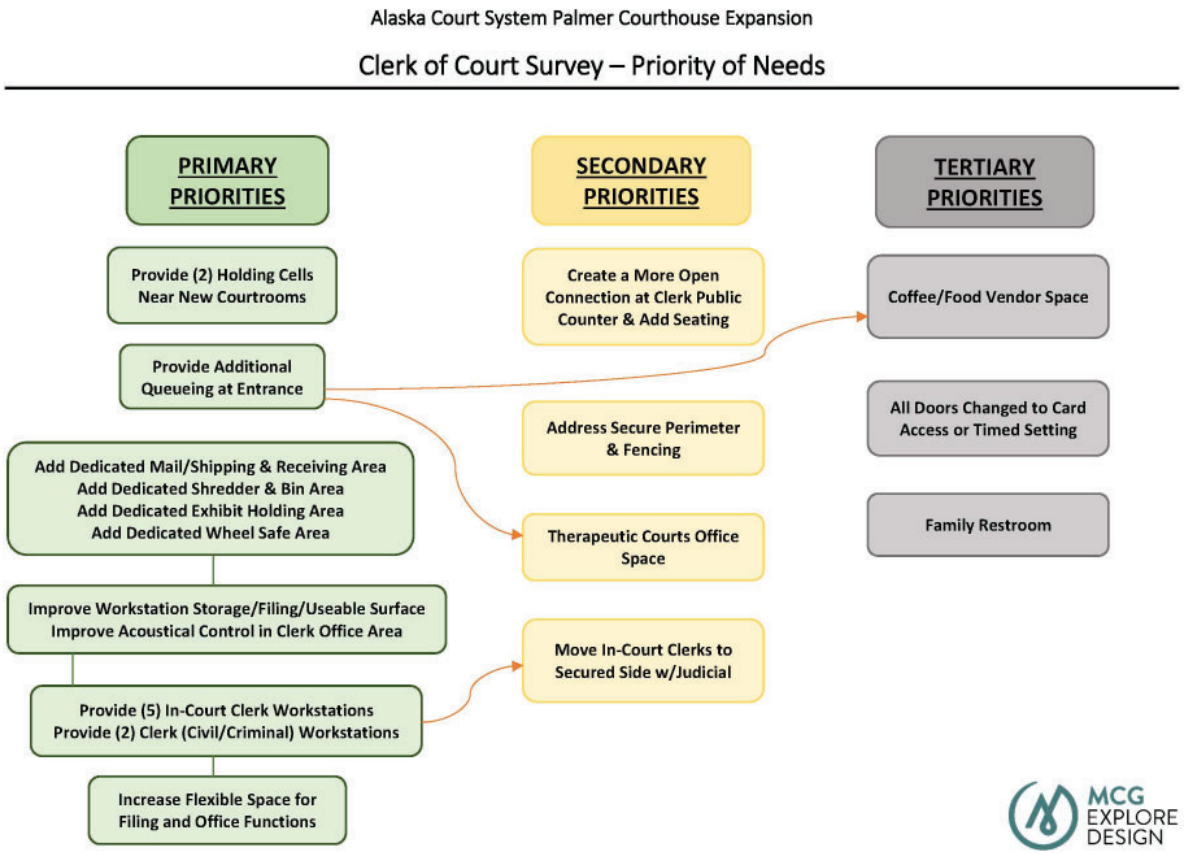
3/6/2023

MCG EXPLORE DESIGN

Quantity	Space	Space/Unit	Extended total
COURTS			
Superior Court			
2	Superior Courtroom w/ Sound Lock	1725	3,450
2	Superior Court Judge's Chambers with toilet	350	700
2	Superior Court Judicial Assist Office	200	400
2	Superior Court Law Clerk Office	200	400
District Court			
1	District Courtroom w/ Sound Lock	1725	1,725
1	District Court Judge's Chambers with toilet	350	350
1	District Court Judicial Assist Office	200	200
Remote/Hybrid Courtrooms			
1	Remote Proceedings Courtroom	300	300
1	Hybrid Proceedings Courtroom	700	700
2	Remote Participation Booths	80	160
Special Courtrooms			
1	Theraputic Court	700	700
Judicial Support Spaces			
3	Public Waiting assoc. w/ ctrms. (30'x15')	450	1,350
2	Jury Deliberation Room, w/ toilets	420	840
2	Attorney Conference	80	160
1	Judicial Gathering Area	250	250
1	Multipurpose Conf Room	250	250
1	Duplication/Supplies/Storage	200	200
16	Incourt Stations	65	1,040
	SECTION SUBTOTAL		13,175
	Circulation Factor (12%)		1,581
	SUBTOTAL, Net Assignable SF		**14,756**
CLERK of COURT			
1	Deputy Clerk of Court	150	150
2	Clerks	85	170
2	Future Clerk Stations	85	170
1	Files & Storage	800	800
1	Mail Receiving/Shipping & Receiving	150	150
1	Expanded Supply Room	50	50
1	Exhibit Storage	60	60
1	Shredder & Bin Storage Area	20	20
1	Wheel Safe Area	20	20
1	Expanded Work Area	500	500
11	In-Court Clerk Relocation	50	550
1	Flex Office (Judicial Corridor)	400	400
	SECTION SUBTOTAL		3,040
	Circulation Factor (20%)		608
	SUBTOTAL, Net Assignable SF		**3,648**
JUDICIAL SERVICES			
0	JS Clerk	65	0
0	CSO Office	85	0
2	Mezzanine Level Holding Cell	100	200
	SECTION SUBTOTAL		200
	Circulation Factor (12%)		24
	SUBTOTAL, Net Assignable SF		**224**
SUPPORT SERVICES			
1	Mechanical / Electrical	1225	1,225
1	Building Storage	400	400
1	Prescreening Waiting/Queue Area	750	750
1	Breakroom	300	300
	SUBTOTAL, Net Assignable SF		**2,675**
	TOTAL ASSIGNABLE SQUARE FOOTAGE		**21,303**
	grossing factor (25%) *		5,326
	TOTAL ESTIMATED GROSS SQUARE FOOTAGE		26,629

The program identifies the spaces and areas required to add three additional courtrooms. It is anticiapted that one judge per courtroom will be colocated at the courthouse and include two Superior judges and one District Court judge.

All of the program spaces identified are provided on a first floor addition to the courtroom. The master plan identifies additional potential second floor square footage, but this built out space is not committed to any specific programmatic function in this master plan concept design. The intent is that this available additional space is adapted as needed by ACS in the future.



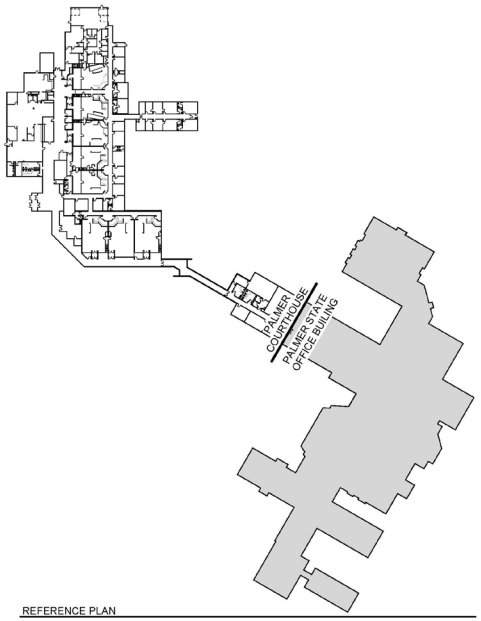
Increasing the courthouse's capacity by three additional courtrooms, the Clerk identified the priorities as shown in the adjacent chart as areas to address to improve the Clerk's office to not only accomodate additional staff, but to improve efficiency and service capacity.

Priorities that had significant relationship in their function are identified, indicating that through providing the primary priority within the design the secondary or tertiary priority is likely accomodated within the design with minor additional scope.

The Palmer Courthouse located in Palmer, Alaska, is sited on a 13.82 acre lot (602,000 square feet) and is an approximately 121,241 gross square foot facility. The site is located within the Central Business District of Palmer.

This facility is occupied by two distinct user groups. The Alaska Court System in the northeast portion of the facility operates in approximately 53,719 square feet of the total. The Palmer State Office (PSO), which occupies the southeast portion of the facility, operates in approximately 67,522 square feet of the total.

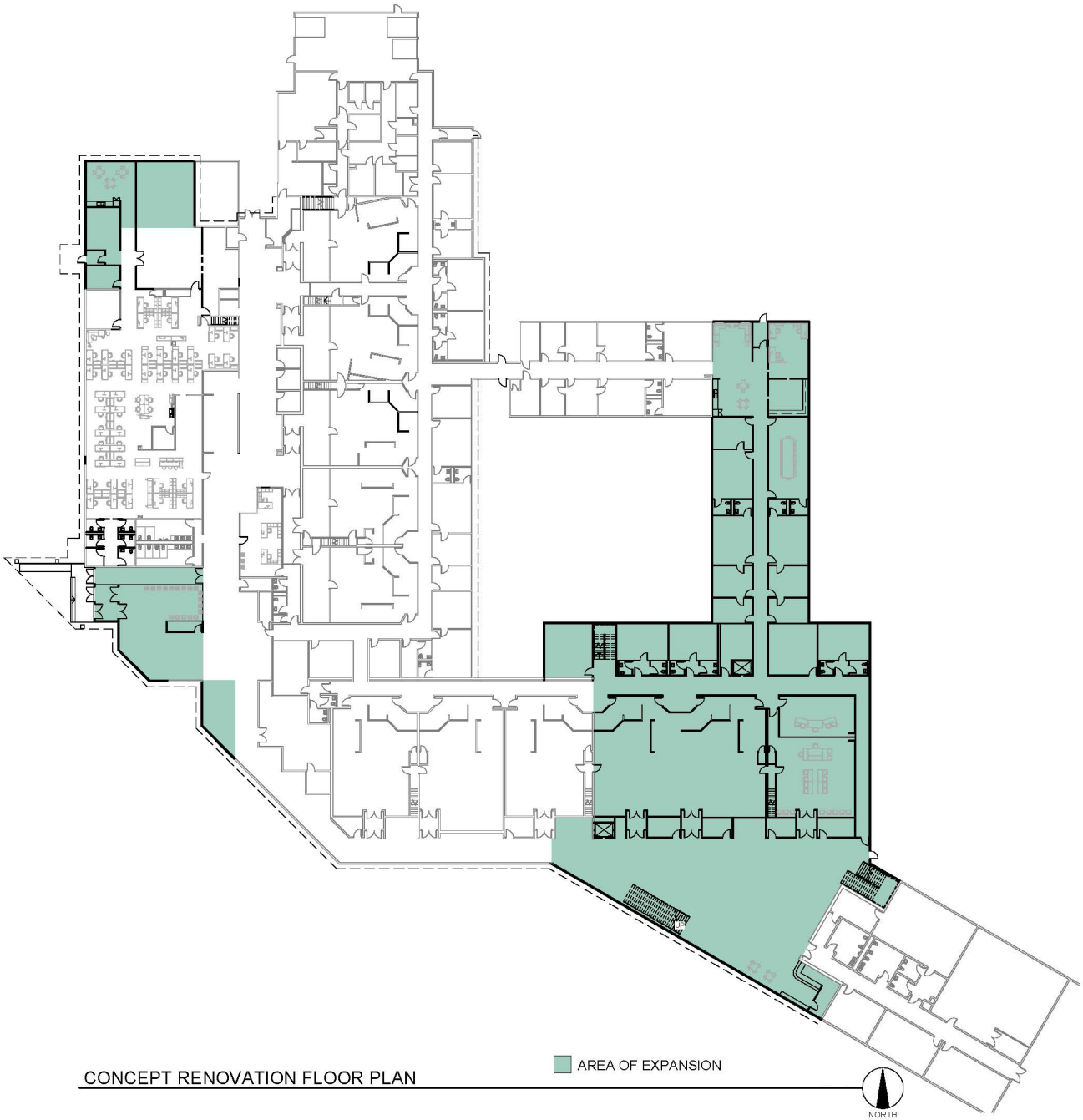
The courthouse administers judicial proceedings through its 8 existing courtrooms.



The existing courthouse is arranged around two primary functions- public and judicial. The public side provides access to Clerk services which includes jury selection and the courtrooms. Further, the public accesses support spaces such as attorney conference rooms. The judicial function is controlled and secured from the public access side with direct access to courtrooms. Judicial Services transports and transfers prisoner personnel on the north end of the building and utilizes multiple holding cells for judicial proceedings. All courtrooms are connected to the holding area via a hallway.

The existing building layout includes an original 1987 structure with additions in 2000, 2007, and 2015.

This master plan builds off of that delineation between user groups as part of safety considerations. The adjacent floor plan highlights the major user groups within the existing building.



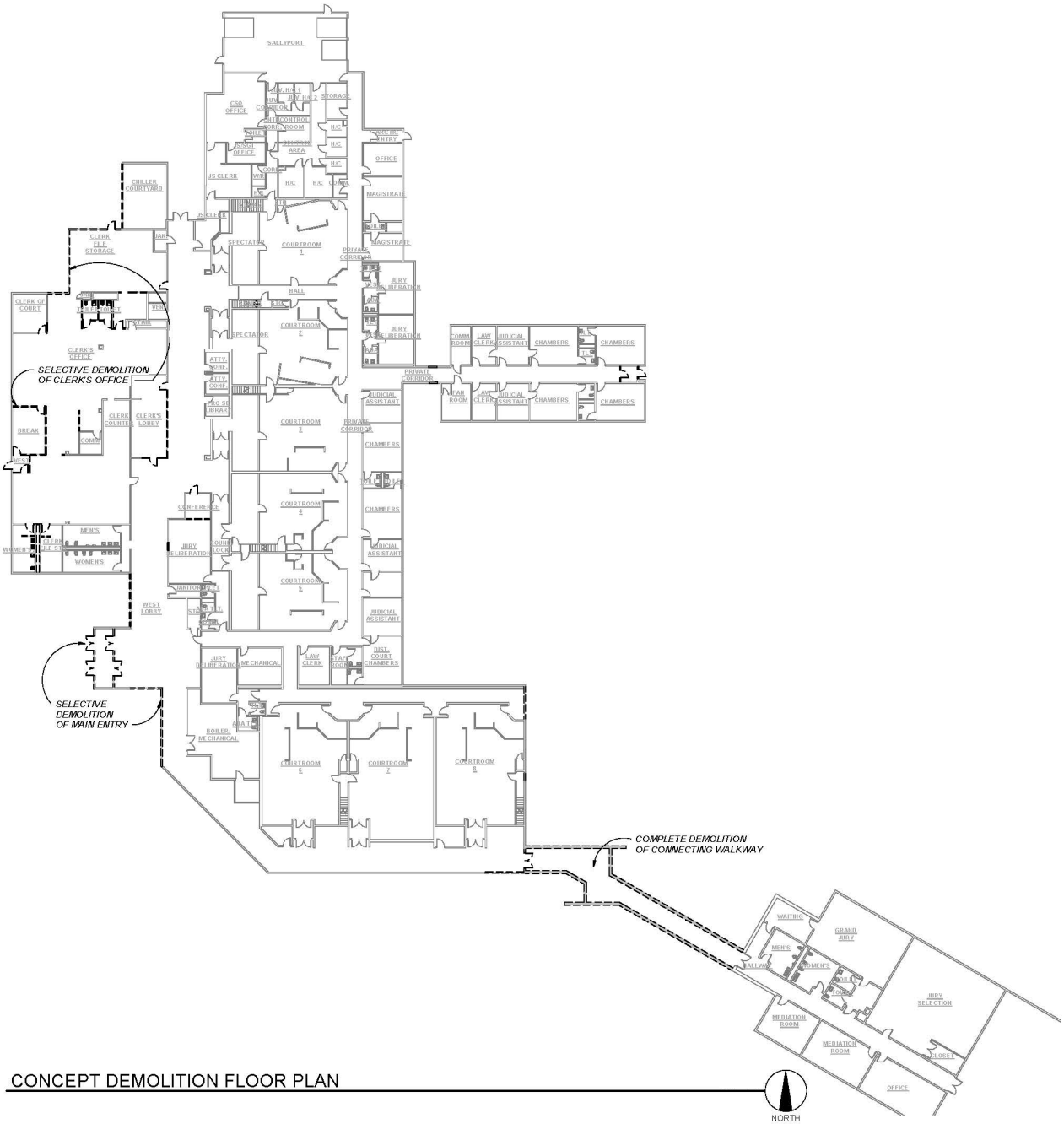
CONCEPT RENOVATION FLOOR PLAN

The concept expansion is centered around the idea to create cohesiveness for the judicial function of the building. As a result of the multiple additions, the layout and space organization is fragmented resulting in long corridors for staff to traverse to connect and collaborate. By creating a link from one end to the office extension, the concept creates a circular flow that improves access from office to office and ensures that new offices are located within close proximity to existing offices.

The concept expansion also looks to future planning and growth needs. By expanding to the west of the existing three courtrooms on the south side, sufficient area exists between the expansion and the edge of the PSO to accomodate a second three courtroom expansion.

This concept includes accomodation for a second floor over a portion of the first floor expansion. This second floor offers additional future growth, and it will be most efficient if the structure and exterior shell are included as part of the expansion.

DEMOLITION CONCEPT



CONCEPT DEMOLITION FLOOR PLAN

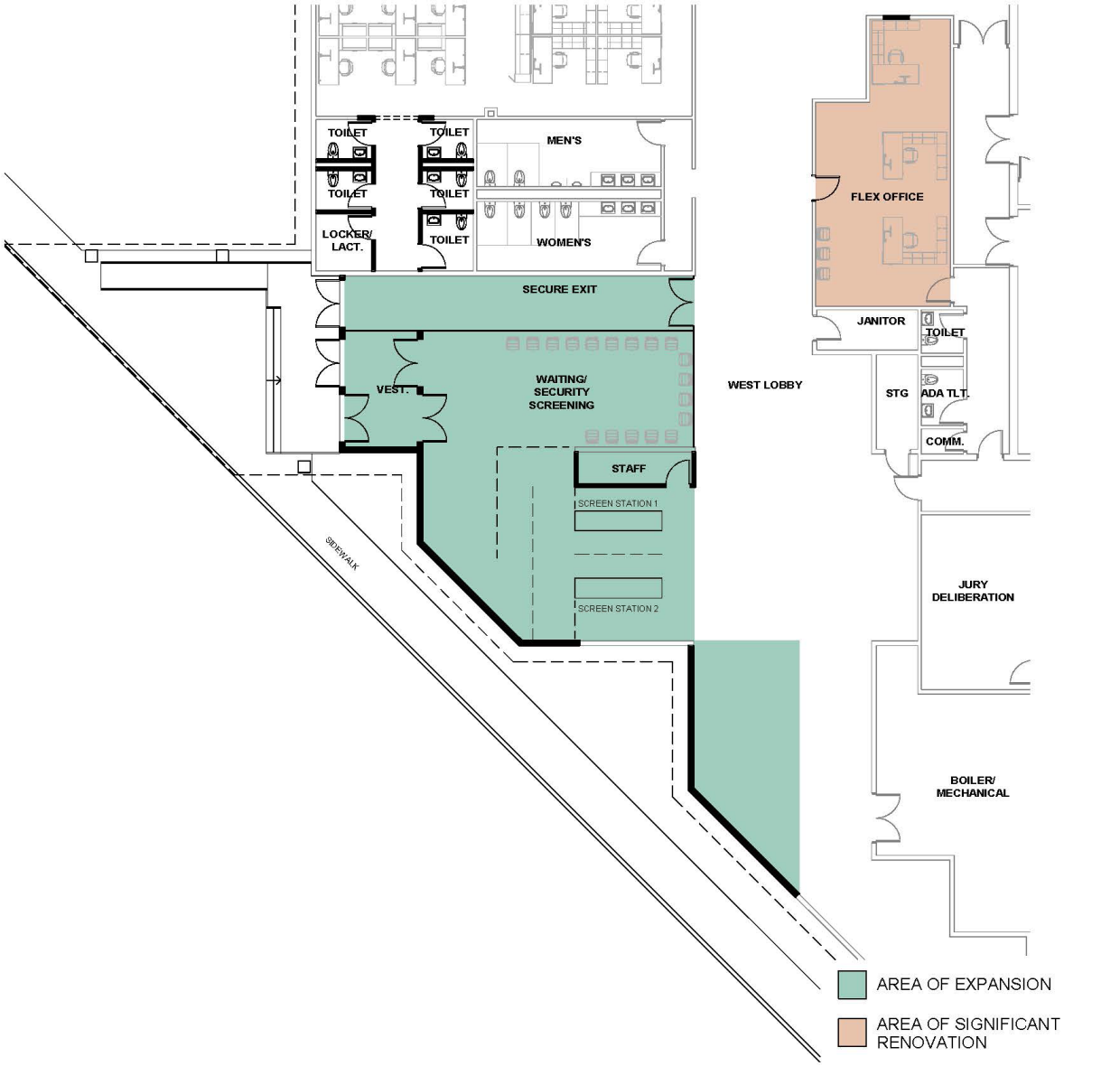
Demolition of the existing facility is mainly limited to the Clerk's Office, Entry, and along the south and west end of the building.

The Entry will include full demolition of the existing arctic entry vestibule and removal of some exterior walls at and south of Grid M.

The connecting walkway/link between the courthouse and the PSO will be demolished in its entirety including foundations. Selective demolition will need to occur along the west exterior wall of Courtroom 9 to accomodate the expansion, as well as along Grid 12 at the office wing to the north.

Two exterior walls of the Clerk's Office will be fully demolished to allow for a modest expansion of that area. Most of the demolition in the Clerk's Office involves removal of existing partition walls, toilet rooms, and restrooms.

Overall, the goal of this concept expansion is to use selective demolition to create opportunities for the most impactful change to existing space. Additionally, through targeted areas of demolition and in selective locations, it preserves existing operations to the greatest extent possible and allows for more opportunities to phase portions of the project which will limit disruption to staff and services.



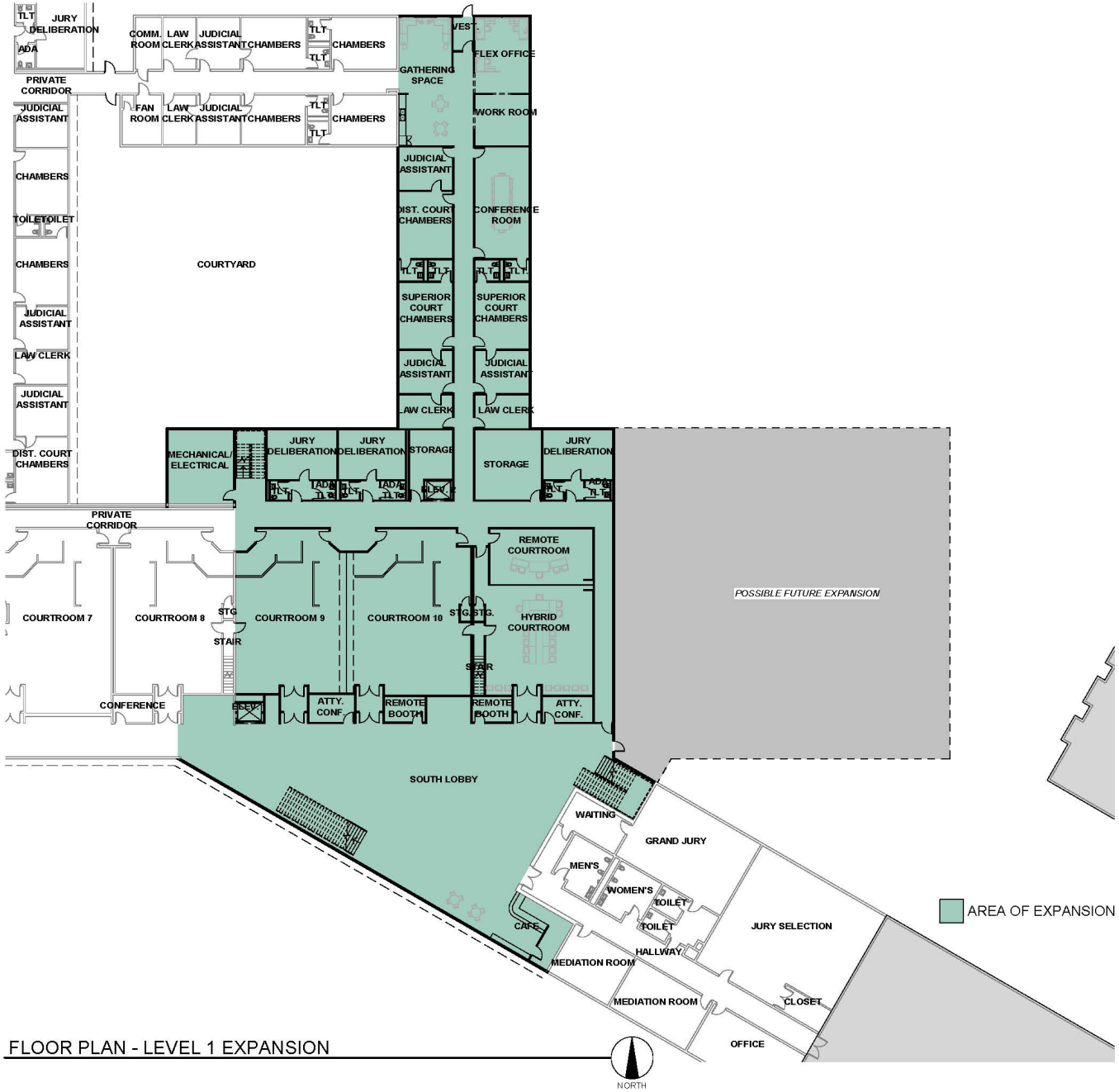
ENLARGED CONCEPT PLAN - MAIN ENTRY

The main entry is organized to manage current challenges and address current deficiencies. The courthouse may see upwards of 80 people waiting to access the building at opening hours from events such as multiple jury selection. The current entry area does not offer sufficient waiting space prior to the security lane. This concept extends the entry area as well as infilling the space between the existing entry and the outside wall of the Clerk's Office. It also provides a dedicated area in front of the security screening point for queueing. This queueing can be expanded into the waiting area as needed to accomodate the volume of visitors. The security screening is increased from one to two lanes. A dedicated secure exit is provided for improved safety and traffic flow.

A second expansion occurs south of the new entry. This provides more collector space after the security screening point and eliminates the circulation pinch point adjacent to the Boiler/ Mechanical room.

Also included is a repurposing of the Jury Deliberation room between Grid 4 and 7 to a flexible office space. ACS notes that some courthouse divisions have public facing business that currently pass through the controlled private corridor. Three jury deliberation rooms are provided in the expansion, allowing for a direct public access office space outside of the controlled private corridor.

EXPANSION CONCEPT



The main expansion occurs off of existing Courtroom 8, and provide four additional courtroom spaces within the footprint of 3 typical courtrooms. This layout utilizes guidelines from National Center for State Courts which highlight the changes occurring throughout society to leverage digital platforms to conduhtct meetings. Courtroom 9 and 10 are based on a typical size layout but are divided by an acoustical foldable wall partition. This will allow for larger proceedings to be held in a joint space.

The third courtroom space is divided into a Hybrid and Remote setup. This will provide long term flexibility in the types of proceedings the Courthouse can accomodate. These rooms are divided by an acoustical foldable wall partition which will allow the space to accomodate a typical courtroom setup.

The judicial side completes the connectivity by creating a circular circulation flow. By connecting the two ends of the controlled private corridor, a secure courtyard is provided to ensure daylight access to all offices. One amenity provided in the concept is the creation of a Gathering Area at the intersection of corridor west and south and what is likely to be the primary employee entrance. This space offers not only an employee break area, but will allow for more cross-collaboration and social opporunities for staff.

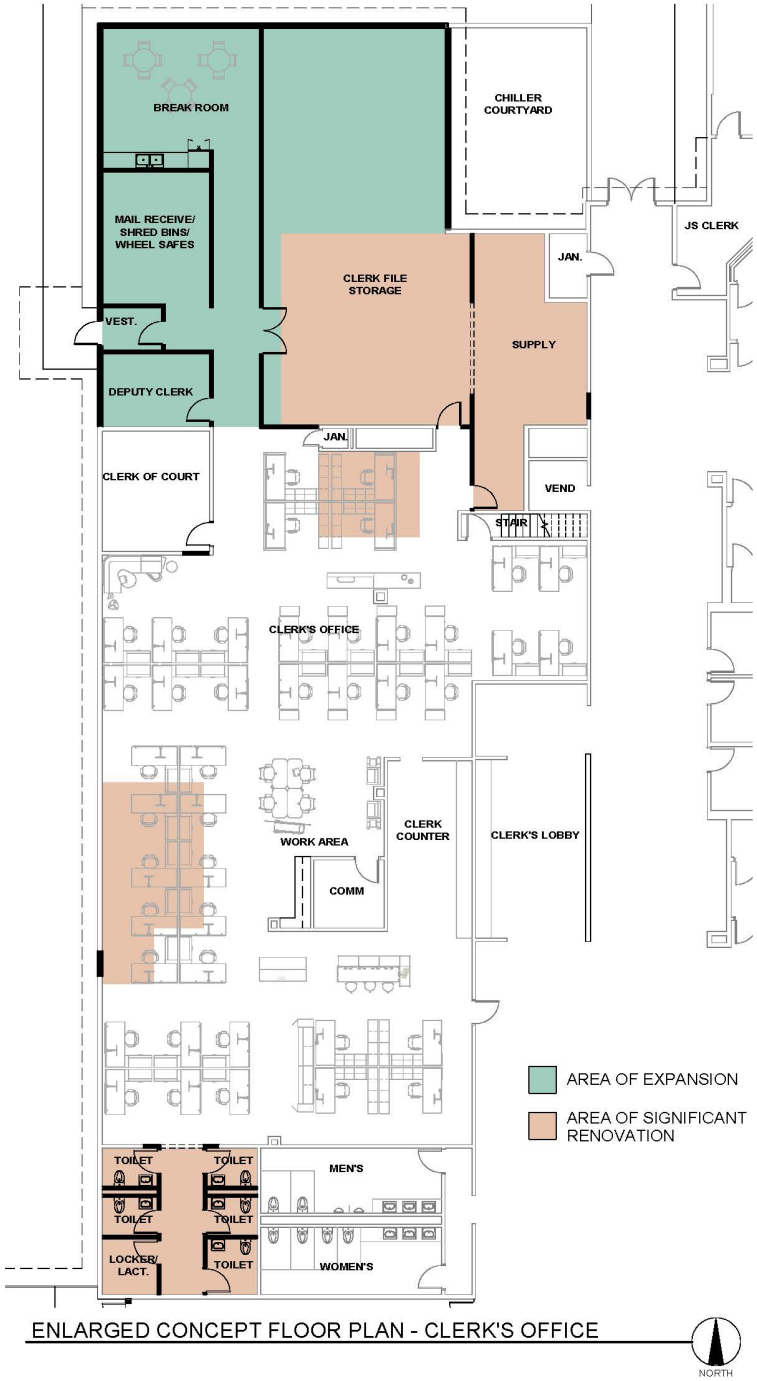
EXPANSION CONCEPT

FLOOR PLAN - LEVEL 2 EXPANSION

This concept includes a second floor provided over a portion of the new first floor, roughly limited to the extent of the lobby and courtroom spaces. This arrangement keeps in line with the existing massing which is higher over Courtroom 6, 7, and 8. This creates a defined node within the courthouse, creating an anchoring public space that is served by a cafe.

As noted previously, the concept looks ahead to future expansion opportunities to afford the greatest flexibility and opportunity to ACS to achieve the highest potential from this location and facility. With an expansive yard between the concept expansion and the edge of the PSO portion of the facility, there could be a nearly equal second future addition, first and second floor. For this Master Plan, no specific function is identified for the second floor space. However to understand the relative size, the second floor with the Possible Future Expansion could provide up to 9 additional typical courtrooms for a total of 12 courtrooms between the concept expansion and the possible future expansion. However, with digital capacity being able to replace some of the on-site use and demand, this space could be allocated for any administrative, judicial, or record keeping program spaces ACS needs. The second floor does not require finishing to meet current needs, but is most efficient to be built out with core and shell as part of the proposed concept expansion.

CLERK'S OFFICE CONCEPT



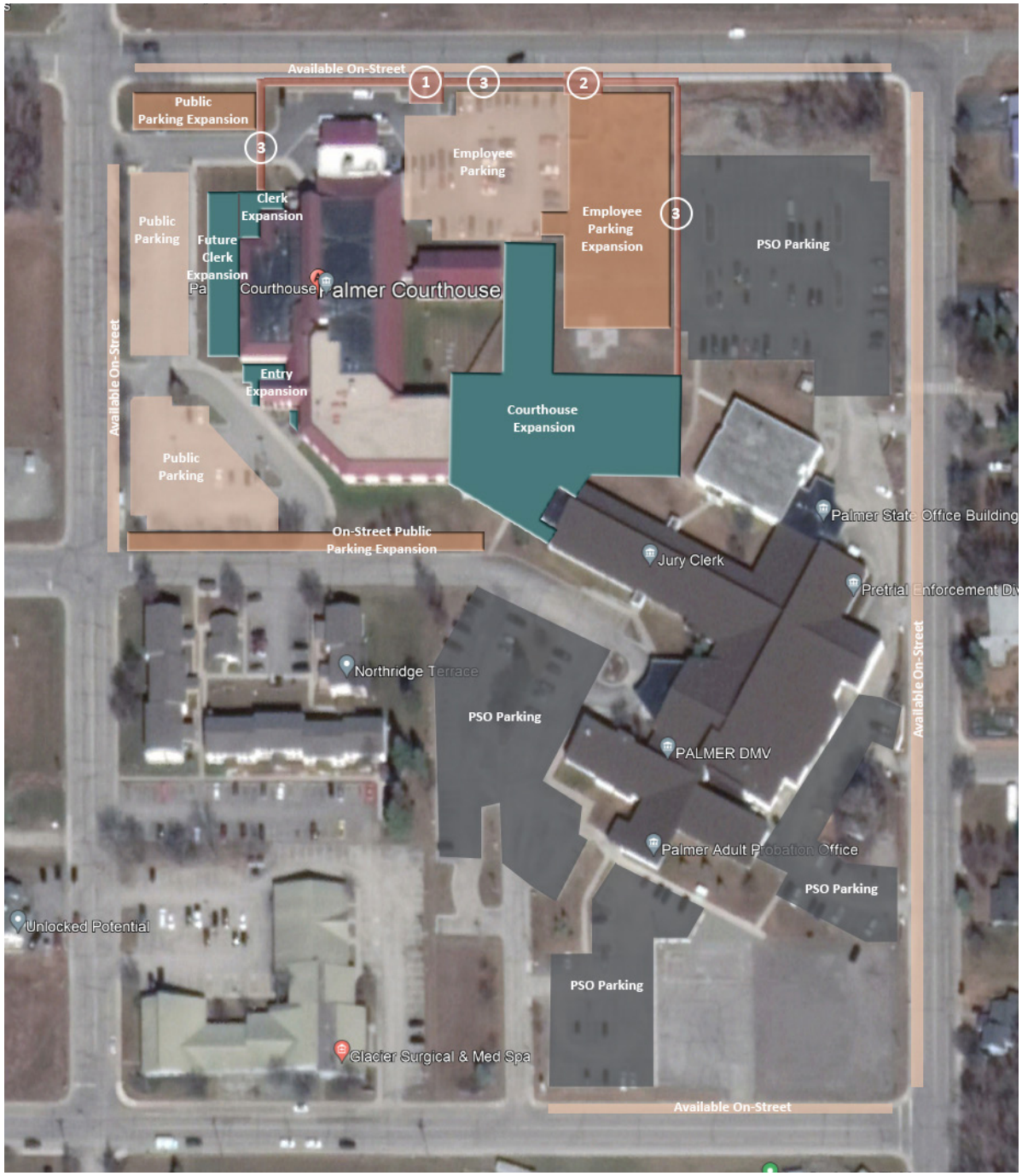
One of the primary challenges of the Clerk's Office is management of document storage. The current file storage room is at capacity and two additional rooms in the courthouse have been converted to file storage. The concept expansion extends the Clerk's area to provide nearly double the storage space for files and other documentation. The need for file storage may decrease in the future as digital storage is phased in. The proposed file storage area can easily be reconfigured in the future to reduce the storage and increase available space for staff workstations as needed.

This concept removes the employee entrance and break room from within the main office area, relocating these functions north. This opens the office area an allows workstations around the perimeter with a new central work and collaboration area.

Toilet rooms are relocated adjacent to the existing public restrooms and includes an employee locker or lactation room. By utilizing individual toilet rooms, this allows a more flexible response for staff make-up and is less limiting than male/female restrooms.

The concept improves space efficiency through a larger dedicated Supply storage and dedicated area to store and stage mail receiving and shipping, document shredding, and wheel safe access and storage.

PARKING & SITE CONCEPT



Priorities for exterior site improvements include additional parking and a better defined and secure fence perimeter around the staff parking.

While opportunities to expand parking are present on the existing site, if future build-outs are completed, parking minimums and demand will require additional consideration and planning. Refer to the Civil Design Narrative in the Appendix for additional detail on parking minimums, requirements and considerations.

The existing security fence perimeter does not provide the necessary level of separation and control. The fence perimeter will include full and complete replacement.

This site concept denotes the area along the west side of the Clerk's Office as a possible future expansion. This additional area to expand may be valuable if the full extent of possible expansion is realized.

Key Number

1. Reconfigure current employee parking to an exit only driveway and improve security with automatic gate.
2. Create new employee driveway entrance and secure with automatic/ card activated gate.
3. Replace and extend fence perimeter.

PROBABLE CONSTRUCTION COST

Project Area A: Entryway	
Demolition, Renovation, & Addition	$ 2,225,979
Project Area B: Clerk of Court	
Demolition, Renovation, & Addition	$ 3,084,946
Project Area C: Expansion	
First Floor- Demolition, Renovation, & Addition	$ 13,596,929
Second Floor Shell- Addition	$ 4,848,196
Subtotal	$ 18,445,125
Project Area D: Site, Utilities	
Site	$ 1,623,822
Utilities	$ 1,058,611
Subtotal	$ 2,682,433
Courthouse Addition & Renovation Construction Subtotal	$ 26,438,484
Soft Costs: All Project Areas	
Design, Permitting, FF&E, Contingency (Est. 35% of Construction Cost)	$ 9,253,469
Total Estimated Project Cost	**$ 35,691,953**

The probable construction cost is based on the concept design as presented above and supplemental detail provided in the design narratives.

The estimated construction cost assumes the second floor is included within the scope of this project to facilitate ease of future build-out and reduction in overall project costs.

If a second floor is not constructed with the expansion concept, providing this at a later date will probably not be reasible due to disruption of the operation of the existing courtrooms below.

The probable cost identifies a total project cost based on assumptive conditions for permitting and design.

APPENDIX A - DESIGN NARRATIVES

C

CIVIL DESIGN NARRATIVE

1. General

The Palmer Courthouse is located in the City of Palmer's Central Business District. The legal description of the parcel is Lot 1A Deneke Park and includes the courthouse and the Palmer State Office Building on the same parcel. Each facility has its own separate designated parking and access points. The parcel is zoned as part of the Public Use District and a courthouse is a permitted use.

Access to the site is provided from three separate streets that include Denali Street to the west, Cottonwood Avenue to the north, and Dogwood Avenue to the south. Both Denali Street and Cottonwood Avenue are through streets, but Dogwood Avenue dead ends at the entrance to the State Office Building. Denali Street is two-lane road with on-street parking provided on the shoulders and sidewalks on both sides of the street. Denali Street is classified as a minor collector in the Matanuska Susitna Borough Official Streets and Highways Plan. Cottonwood Avenue is a two-lane road with on-street parking provided on the shoulders and sidewalks on both sides of the street. Dogwood Avenue is a narrow two-lane road with no pedestrian facilities. All roads are signed at 25 mph.

Valley transit provides on demand service to the courthouse. The transit stop is located on the east side of Denali Street just north of the Dogwood Avenue intersection. Pedestrian access to the courthouse is provided from Denali Street and includes a sidewalk that runs from Denali Street to the main entrance of the courthouse.

2. Parking Lots

The courthouse has approximately 139 parking spaces and 5 accessible stalls split between multiple parking lots that include visitor and employee parking. A secure loading area is provided on the north face of the building. Additional on-street parking is provided on Cottonwood Avenue and Denali Street. Up to 80 parking spaces can be accommodated on street. Access to the facility and parking areas includes two driveways on Denali Street, one driveway on Dogwood Avenue, and one driveway from Cottonwood Drive. The employee parking area is not currently secure and non-authorized vehicles can enter the parking areas. The adjoining state office building includes 183 parking spaces and 12 accessible stalls.

Palmer Municipal Code Chapter 17.64 outlines parking requirements in the City of Palmer. The City of Palmer requires one parking space for every 400 sqft for office buildings and financial institutions in the central business district. They do not provide parking requirements for

the more specific courthouse use and it is assumed that one parking space for every 400 sqft will be required unless a parking study is performed. By code, additional parking will be required since the addition will create additional parking demand.

The footprint of the existing courthouse is 121,241 sqft. Approximately 26,629 sqft of space will be added to the facility. Existing parking does not meet municipal code requirements (300 required spaces.) The addition will require an additional 67 parking spaces to meet municipal code. An analysis of existing and predicted staff and public users of the courthouse showed a peak load for courthouse parking of 291 stalls with the addition of 3 courtrooms. The addition of 3 courtrooms (6 total) will require an additional 34 spaces (325 total,) and an additional 9 courtrooms (12 total) will require an additional 112 spaces (403 total.) A detailed parking study should be completed to better understand the parking needs for the courthouse including the use of on-street parking and the potential for shared parking with the State Office Building.

There are several opportunities for additional parking on the courthouse facility site. This includes extending the existing employee parking area east, adding on-street parking to Dogwood Avenue, and extending the visitor parking area north. Additional parking opportunities are shown in Figure C-1. An additional 24 (includes 12 on street parking spaces) visitor parking spaces and 73 employee parking spaces can be provided on the site. Total on-site parking will be 229 parking spaces with expanded parking areas. Seven of the 229 parking spaces will be required to be accessible parking spaces. Total parking including on-street parking will be 321 parking spaces. Additional shared parking opportunities should be explored with the State Office Building.

Standard parking stalls shall be a minimum of nine feet in width and 20 feet in length. With 90-degree parking, stalls shall have a minimum aisle width of 25 feet. Lighting is required for parking lots serving non-residential facilities. The installation of the visitor parking shall require relocation of one light pole.

3. Drainage

The new parking areas will sheet flow to new curb and gutter where drainage will be collected in the gutter pan. The curb and gutter will also provide visual guidance on the boundary of the parking lot and provide separation between parking aisles. The employee parking addition will require extension of the existing storm drain system currently collecting drainage in the existing parking areas to the additional parking area. It is estimated that approximately 200 lf of 18” storm drain including two catch basin manholes will be required to provide drainage to the new parking area. Drainage from the expansion of the visitor parking area should be able to sheet flow to the existing storm drain systems.

4. Security

Security improvements to the site will include securing the employee parking area by installing 820 lf of security fence and adding an additional access point from Cottonwood Drive. The new access from Cottonwood Drive will include a 16-foot security gate and card reader for entrance

to the site and the existing access to Cottonwood Drive will be reconfigured to exit only and include a 16-foot security gate and sensors to allow for vehicles to exit the site.

5. Geotechnical Considerations

   A geotechnical report will be required for determining pavement sections and building foundations. For the basis of estimating, it is assumed that the new pavement sections will be similar to pavement sections constructed as part of to the State Office Building completed in 2009. This pavement section included 2 inches of asphalt pavement, 2 inches of leveling course, and 36 inches of Select Type A material. Geotextile for separation is also recommended for the bottom of the pavement section.

6. Landscape Requirements

   The City of Palmer requires commercial parking lots have landscaping. This includes a 5 foot landscaped buffer between the Municipal ROW and the parking area. A landscaped area equal to at least 10 percent of the parking area which is visible to the street shall be included.

7. Erosion Control

   A Storm Water Pollution Prevention Plan (SWPPP) in accordance with the Alaska Department of Environmental Conservation (ADEC) Alaska Pollutant Discharge Elimination system (APDES) Construction General Permit (CGP) is required prior to any groundbreaking activities on site.

   As part of storm water best management practices, wattles, silt fences, and stabilized construction entrances will be provided for perimeter erosion control during construction. It is recommended that existing asphalt on-site be retained if feasible to minimize erosion and prevent the need for additional stabilization. Plantings, grass seeding, and storm treatment structures will provide post-construction erosion control. Runoff from paved areas will be pretreated prior to discharge into the municipal storm drain system.

8. Fire Access

   Continuous fire access will be provided across the site. The proposed parking lot east of the employee parking lot shall be designed to accommodate fire access. Fire lanes shall be a minimum of 20 feet wide. Additionally, an on-property fire hydrant will be required north of the building addition and south of Cottonwood Avenue.

9. Utilities

Existing on-site utilities include natural gas, telecommunications, electricity, water, sewer and storm drain. Electric service from Matanuska Electric Association is provided via electric lines on Cottonwood Drive. An electric meter is located on the northwest side of the courthouse. Natural gas, managed by Enstar Natural Gas Company is provided from gas lines on Denali Street and enters the facility on the north side.

The City of Palmer maintains water, sewer and storm drain adjacent to the site. Water service from a 10-inch ductile iron water main in Denali Street serves the facility on the west side. Sewer service to the facility is provided by an 12-inch concrete main on Denali Street and enters the facility on the west side. A private storm drain system runs on the north side of the parcel and collects runoff from the parking lot. Additionally, a rain leader located on the west side of the facility collects roof runoff. Both of these systems outfall in the municipal storm drain system located in Denali Street. If additional roof drains are required in the addition, rain leaders can be installed that connect to either the Denali Street system or the Dogwood Avenue system.

30' 0 30' 60'

PROJECT:

STATUS: PRELIM

CRW ENGINEERING GROUP, INC.
3940 ARCTIC BLVD., SUITE 300
ANCHORAGE, ALASKA 99503
PHONE: (907) 562-3252
@CRWENG

PALMER COURTHOUSE EXPANSION

PARKING EXPANSION

DATE 02/2023

SCALE 1"=60'

FIGURE C-1

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A

ARCHITECTURAL DESIGN NARRATIVE

1. Codes and Standards (Currently Enforced by City of Palmer)

   - 1997 Uniform Administrative Code
   - 1997 Uniform Code for the Abatement of Dangerous Buildings
   - 2015 International Building Code
   - 2015 International Existing Building Code
   - 2015 International Mechanical Code
   - 2014 National Electrical Code
   - 2015 Uniform Plumbing Code
   - 2015 International Fuel Gas Code
   - 2015 International Fire Code
   - 2015 International Energy Conservation Code (including Building Energy Efficiency Standard (BEES) amendments adopted by the State of Alaska)
   - ANSI 117.1 Accessible and Usable Buildings and Facilities

2. Overview

   The Alaska Court System identifies the Palmer Courthouse as a facility which requires additional capacity to serve the current and projected case load of the Matanuska-Susitna Borough. The proposed design as shown in the Executive Summary is the basis for this narrative which covers the architectural systems expected as part of the addition and renovation work proposed in the concept design. The overall scope will include significant renovation and selective addition to the main entry and Clerk's office. The existing connecting link to the Palmer State Office building will be demolished in its entirety to make space for the new addition.

   The new addition is designed to facilitate not only this expansion to meet capacity needs, but it is also set up to allow a second future addition to support additional court services and capacity. The basis of the design provided in this master plan includes a minimum of an exterior shell build-out of a second level on the new addition. The benefit of this approach is that it economizes construction and design costs by incorporating the most challenging aspect of two level construction by allowing foundation and primary structural frame erection as part of the first construction phase. This approach avoids a costly and disruptive shut down of existing courtrooms. Expansion on to a second floor is strongly recommended as the existing site is limited on allowable area for the first floor based on International Building Code requirements. Further, planning for a second level allows for a second future two story expansion, identified in the concept drawings,

on the west side of the first expansion. To give a sense of scale, this approach would allow ACS to plan not only to add 2 typical courtrooms and 2 multipurpose/flexible courtrooms in the first floor addition, but up to another 3 on the second floor, and an additional 6 courtrooms in the possible future two story addition. However, this design concept does not commit the second floor space to any specific function. Currently, court systems nationwide are reimagining how courts can best serve the public, and with changes in operation that were successful during the COVID-19 pandemic, traditional courtrooms sizes may not be as necessary as they were. Therefore, ACS may decide to utilize a second floor space for administration, judiciary, or storage needs.

3. Exterior Walls

The existing building derives its current layout from multiple additions on to the original 1987 structure. Additions appear to have occurred in 2000, 2007, and 2015. The proposed additions around the Clerk of Court area as well as at the main entry will employ matching material and construction type. This will include and interior finish layer of gypsum board and vapor retarder layer attached to structural stud framing. Stud framing cavities will be fully insulated. The exterior side of structural stud framing will include any required sheathing, air infiltration barrier, and a matching plaster finish with a concrete masonry wainscot approximately 36 inches high.

The addition to the southeast of the existing courthouse building will occur from the existing exterior wall face at the end courtroom, Courtroom 8 and at the northeast office wing. This will likely involve removing the existing siding and air barrier to allow for new adjacent construction. The interface of the new walls to the existing requires seismic or other expansion joint treatment.

New walls will likely be constructed of metal stud framing. At new exterior walls of the addition the wall assembly will include interior gypsum board finish, metal stud framing, exterior gypsum sheathing or structural sheathing, 5 inch rigid insulation with exterior finish system (EIFS). Utilizing EIFS allows for continuous insulation on the exterior of the framing system, which provides a better thermal envelope, and at 5 inch thickness, will exceed the minimum BEES requirement of R-20 for metal framed walls.

Windows will include a variety of fixed picture and storefront system, and are best suited in a thermally broken aluminum frame. Aluminum framed windows can offer other added features such as enhanced protection for rooms or spaces in which it may be desired.

4. Roof System

The existing roof is comprised of two roof systems, a single pitch truss which extends from the exterior wall horizontally 10 feet over the building, and a low sloped roof set behind the pitched truss. The two roof systems work to present a mansard style from the human perspective. At the Clerk’s office and main entry which will have small expansions added onto the existing building, roof lines will extend, matching the existing. The new addition will utilize similar systems and matching style. The truss portion of the roof will meet the BEES standard of R-49 (Attic and other), while the low sloped portion of the roof will meet the BEES standard of R-35ci (Insulation entirely above deck). The truss portion of the roof will be clad in a standing seam metal roof, and an EPDM membrane over the low slope portion with internal roof drain system.

5. Interior Walls

To meet the privacy requirements of proceedings held within the Courthouse, a portion of the interior walls will require additional construction requirements to maintain acoustical separation. Walls between new courtrooms and at most perimeter locations will employ an assembly of double studs at imbalanced widths and air space, acoustical batt insulation, and layers of gypsum board finish that vary on each side such as one and two. Walls at offices, conference rooms, and deliberation rooms are best served with acoustical batt insulation in the stud framing cavity. Toilet rooms and janitor closets will have at minimum a 4 foot high FRP wainscot. Public restrooms will be provided with 4 foot high tile wainscot. The South Lobby will have additional wall cladding to enhance the public experience and benefit. These finishes may include one or more of tile, wood, or stone.

6. Doors

As with interior walls, doors at select locations within the courthouse will need to meet acoustical standards to protect privacy and proceedings. Doors to courtrooms, conference rooms, and offices should be provided with a minimum STC 35. This is achieved not only through acoustically rated doors but will include perimeter and base seals. All door frames will be hollow metal for durability and will be insulated at exterior locations. Interior doors to utility rooms, janitor closets, and storage rooms can be equipped with hollow metal doors. Doors to offices, courtrooms, conference rooms, and other regular use public or employee room will be fitted with flush wood doors.

7. Finishes

This design assumes offices, courtrooms, conference rooms, and employee hallways will be provided with carpet tile flooring to provide acoustical control within spaces. Vestibules used for entry and exit from the building will be provided with walk-off carpet tile. The main entry will use tile, which is consistent with the existing lobby area and provides a durable and easy to maintain surface. Ceilings will be predominantly acoustical ceiling tile and grid. Courtrooms will have coffered ceilings for acoustical and aesthetic considerations. Additionally, the walls will have wood panel wainscoting and acoustical panels above. Any room or space which may have elevated moisture levels will be provided with moisture resistant gypsum board such as restrooms, toilet rooms, janitor closets, and over kitchenette areas.

8. Furniture, Fixtures, and Equipment

As part of the renovation and addition there are several furniture and furniture systems identified as scope. The renovation and expansion within the Clerk’s office will include all new furniture systems for the employees in this area. A total of 43 workstations are anticipated for existing and new staff with the concept plan which adds 2 traditional courtrooms, and 2 flexible/multipurpose courtrooms. The design also provide a flexible work area at the addition which includes 3 additional workstations. A total of 8 new judicial offices will require outfit of furniture including but not limited to, desk, chair, table, guest chairs, and wardrobe or other personal belongings storage closet.

The provision of the Remote and Hybrid Courtrooms will require a layout of moveable furniture. The layouts shown on the concept plan follows the conceptual layouts provided by the National Center for State Courts. In addition to moveable furniture, the Bench in Courtrooms

9 and 10 require configuration on some type of caster or other moveable system to allow for full function of the foldable partition between the courtrooms. This movable furniture will be designed into the project and built by the contractor.

The concept design provides two new break areas for employees, one in the Clerk's office at the north end, and one in the Gathering Space at the north end of the expansion. Additionally, the Clerk's office and the Gathering Area will be provided with some soft seating arrangements and other collaborative workstation systems.

9. Special Features

The wall dividing Courtroom 9 and 10 will be an automatic vertical lift operable partition to allow the space to be utilized as either 2 standard courtrooms or one large courtroom. Additionally, the wall between the Remote Courtroom and the Hybrid Courtroom will be an automatic foldable wall partition to allow the space to be utilized as either 2 flexible courtrooms or one standard courtroom. The foldable partitions will need to provide sufficient STC rating to ensure privacy between proceedings when configured for two courtrooms. Manufacturers, such as Skyfold, offer acoustical partition systems that achieve an STC rating of 50-60.

S

STRUCTURAL DESIGN NARRATIVE

1. Codes & Standards

Building construction will conform to the following codes and standards:

2021 International Building Code (IBC)
American Society of Civil Engineers: Minimum Design Loads for Buildings and Other Structures (ASCE 7-16)
National Design Specification for Wood Construction (ANSI/AF&PA NDS)
American Concrete Institute (ACI) Manual of Concrete Practice
American Institute of Steel Construction (AISC) Steel Construction Manual
American Society for Testing and Materials (ASTM) Standards
American Welding Society Structural Welding Code (AWS D1.1)
Steel Structures Painting Council Publications

2. Design Load Criteria

Structural design loads will be established according to the IBC for a Risk Category III building.

Snow:	
Ground Snow Load	50 psf
Roof Snow Load	50 psf minimum
Snow Importance Factor	1.0
Floor Live Loads:	
Slabs on Grade	125 psf minimum
Lobbies and Entrances	100 psf
Mechanical Rooms	125 psf
Courtrooms	100 psf
Offices	50 psf
Lobbies and Corridors	100 psf
High Density File Storage	400 psf
Wind:	
Basic Wind Speed	127 mph (3-second gust)
Exposure Factor	C

Seismic:	
Seismic Design Category	D
Seismic Importance, I_e	1.25
0.2s Spectral Response Acceleration, S_S	1.52
1.0s Spectral Response Acceleration, S_1	0.7

In addition to the building mass, 20 percent of the roof snow load, 25 percent of any storage load, the weight of any permanent equipment and the weight of partitions will be included in the seismic computations per the IBC.

3. Project Description

The existing construction appears to consist of a combination of wood and steel framing with multiple additions over the years. Three new additions are planned. The new entry and clerk of courts areas are relatively small and will be appended to the existing building. The courtroom addition is a fairly large addition and will be seismically separated from the existing structure.

4. New Entry and Clerk of Court Additions

These two additions will likely be light framed wood with concrete slab on grade. Roof framing will be plywood over pre-engineered wood trusses. Walls will be 2x framed and sheathed with plywood. Foundations will be conventional concrete stem walls over concrete strip footings.

5. Courthouse Expansion

The courthouse expansion consists of a 2-story addition. This addition will be steel framed. The roof deck shall consist of 1 ½” light gauge metal deck welded to structural steel joists and beams. Roof construction shall consist of steel bar joists and wide flange beams supported by steel columns. Second floor construction shall consist of concrete on metal deck (2 ½” concrete on 1 ½” metal deck, 4” total thickness) supported by wide flange beams.

The lateral force resisting system shall consist of steel concentric braced frames placed at strategic locations throughout the structure. The ground floor will be 4” reinforced concrete slab on grade. Slab reinforcing will consist of steel rebar or steel welded-wire mesh. Foundation walls around the exterior shall support the exterior walls. The stemwalls will sit on strip footings that extend minimum 42” below exterior finished grade. Foundations for columns shall be concrete piers with spread footings extending down to the strip footing elevation.

Exterior structural walls shall consist of light gauge metal framing. All exterior walls shall bear on concrete stem walls.

6. Non-structural components

Design of non-structural components shall be in accordance with the IBC 2012 and ASCE 7-10 and shall require project specific design prepared by a registered professional engineer or manufacturer's testing based on a nationally recognized testing procedure. Non-structural components shall include architectural, mechanical, and electrical components, supports, and attachments where damage due to earthquake may present a hazard to occupants or impair the continued operation of the facility.

M

MECHANICAL DESIGN NARRATIVE

1. Design Criteria

   The latest adopted version of the following codes and standards, as amended by the State of Alaska, are currently applicable for this project:

   - International Building Code 2021 (IBC)
   - International Energy Conservation Code 2021 (IECC)
   - International Fire Code 2021 (IFC)
   - International Fuel Gas Code 2021 (IFGC)
   - International Mechanical Code 2021 (IMC)
   - Uniform Plumbing Code 2018 (UPC)
   - National Electrical Code 2020 (NEC)
   - Americans with Disabilities Act (ADA)
   - NFPA 13 Standard for the Installation of Sprinkler Systems in Commercial Buildings
   - Sheet Metal & Air Cond. Contractors (SMACNA) – HVAC Duct Construction Standards

2. Design Conditions

   Design conditions for determining building loads and equipment sizing will be in accordance with climatic conditions as indicated in the 2013 ASHRAE Fundamentals Handbook, Climatic Design Data Tables. The climate conditions for Palmer, Alaska are as follows:

Winter Design (99.6% Occurrence):	-20 °F DB
Winter Indoor Heating Design	72 °F
Extreme Annual Minimum:	-25 °F DB
Summer Design:	80 °F DB
	60 °F WB
Summer Indoor Heating Design	75 °F

3. Plumbing

The building will be provided with waste, vent, and domestic water systems to serve the plumbing fixtures in the facility. Water will be supplied from an existing cold-water service from the city utility. A new 2” cold water line will be routed over to the expansion for the existing service. Water distribution piping will be either Type L copper, joined with soldered, brazed or a listed press-fit joining system or polypropylene PP-RCT piping, joined together with electrofusion fittings. PEX piping will be used for floor drain trap primers.

Waste from the building will be conveyed by gravity to the city sanitary sewer utility. We anticipate a new sewer service line will be required (the existing west wing currently uses a lift station). Waste piping will be DWV copper or cast iron in the crawlspace and return air plenums, and DWV, cast iron or ABS in all other locations. All cast iron piping will be hubless with no-hub neoprene couplings. Waste cleanouts will be provided at the end of all branch lines and as otherwise required by code. Floor and wall cleanout locations will be coordinated with Architectural for adequate maintenance access and in discrete locations. The vent system will be DWV, cast iron or ABS (except in return air plenums) and terminated at vent through roof (VTR) openings.

Plumbing fixtures will be commercial grade vitreous china, specified with low flow, water conserving technologies. Fixture trim will be commercial grade and lead free. Water closets will be 1.28 gallons per flush (gpf) wall mounted with infrared “touchless” hardwired flush valves. Lavatories will be wall mount or counter mount, as shown on the plans, with infrared “touchless” hardwired 0.5 gallon per minute (gpm) faucets and ASSE 1070 point-of-use thermostatic mixing valves set to 115 °F. Wall mount lavatories will be specified with wall carriers. All sinks will be stainless steel, self-rimming, with trim appropriate for the needs of the space. ADA complaint fixtures, trim, and pipe insulation will be installed where indicated by Architectural and required by code. Additional facility plumbing fixtures include mop sinks with associated trim and accessories, and wall-mounted dual-height drinking fountains with automatic bottle fillers and mechanical cooling. Floor drains will have round nickel-plated grid strainers and trap primer connections and will be provided for slab mounting in group restrooms, mechanical rooms, and any other necessary service locations.

Roof drains and overflow drains will be provided for roofs and exterior canopies. Roof and overflow drains will have cast iron sumps and cast iron dome strainers. Overflow drains will have a 2” dam around the sump inlet. Rain and overflow leader piping will be routed separately in the facility above ceilings. The primary rain leader will connect to the site storm water conveyance pipe just outside the building. The overflow leader will terminate at the building exterior with a bronze spout that discharges to grade. Rain and overflow leader piping may be cast iron or PVC and will be insulated throughout the building.

Domestic hot water will be provided via a gas fired 50-gallon hot water heater. A digital thermostatic mixing valve will be installed at the water heater to temper water down to 120°F for building fixtures. A recirculation pump will be installed at the water heaters along with recirculation piping to provide immediate hot water at the furthest fixtures.

Insulation will be installed on all piping and equipment as required by the energy conservation code (IECC). This will include piping for water, venting, rain leader, and rain/overflow drain sumps. Insulation will be preformed fiberglass for piping and fiberglass batt for rain/overflow drain sumps. Insulation with integral vapor barrier will be provided for cold water and rain leader piping. Pipe exposed in mechanical equipment rooms, or in finished spaces below ten feet above finished floor will have protective jacketing.

4. Heating

The existing cast iron boilers in the 2007 addition mechanical room will be replaced with three new boilers. The new boilers will be 1000 MBH gas fired high efficiency boilers, each sized for approximately 50% of the building heating load (building heat loss + ventilation) with one boiler acting as a redundant standby in an N+1 configuration. The boilers will be stainless steel fire tube boilers with a 96% annual fuel utilization efficiency (AFUE). Boiler trim and controls will include high water shut offs, redundant high limits, and ASME rated pressure relief valves. The boilers will be direct vented to the outdoors via the existing boiler flue. A new combustion air shaft will be routed up to the roof through the existing fan room next to the existing flue. The boilers will be provided with an outdoor reset schedule so the boiler temperature may be adjusted based on ambient temperature in order to reduce energy consumption during warm weather. The boilers will be piped into the main building heating loop in primary-secondary fashion.

The existing boiler and main circulation pumps will be replaced with new pumps. Each boiler will be provided with a constant volume 90 gpm pump to maintain adequate flow through the boiler. The main heating loop will be provided with two 180 gpm variable speed pumps. The main heating pumps will operate in a lead-lag fashion. The pumps will vary their flow based on the heating demand of the building, with one pump running as the primary, and the other on standby should the primary pump fail.

Heating supply and return piping will be either Type L copper, joined with soldered, brazed or a listed press-fit joining system up to 4”, with black steel piping and welded fittings over 4” or polypropylene PP-RCT piping, joined together with electrofusion fittings. Heating piping will be insulated in accordance with the IECC throughout the building and supported in accordance with industry standards. The building heating fluid will be a premix of 50% water and propylene glycol with inhibitors. A glycol storage/pumping tank will be installed in the boiler room to maintain pressure in the system.

Terminal heating devices will be sized for 140°F supply glycol and 120°F return, except for air handler heating coils, which will be sized for 120°F supply. All rooms except for courtrooms with exterior walls will be provided with fintube in metal baseboard enclosures. In rooms where casework is on the exterior walls the fintube will be installed behind the casework with convective airflow openings and outlets coordinated with Architectural. In the courtrooms with exterior walls ceiling mounted radiant panels will be installed. Entryway vestibules, stairwells, and the lobby will be provided with cabinet unit heaters. Utility rooms will be provided with ceiling mounted unit heaters. The facility air handling units (AHUs) will have heating coils for tempering building supply air. Heat recovery coils will be installed in the exhaust and supply air streams to capture heat and use for pre-heating incoming outside air. Variable air volume (VAV) boxes will have hydronic reheat coils for tempering room supply air to non-residential rooms.

The boilers will burn number natural gas supplied from the existing meter on south side of the 2007 addition. We anticipate replacing the existing gas line to the 2007 addition with a new 3” gas line.

5. Cooling

Building cooling will be provided by a direct expansion chiller via the air handling. The chiller will be approximately 75 tons and be directly connected to the AHU cooling coil with refrigerant piping. All refrigeration piping will be Type ACR copper with brazed fittings.

Electrical and comm rooms will be provided with individual standalone min-split cooling units as necessary.

6. Ventilation

Building ventilation (outside air supply) will be designed in accordance with the International Mechanical Code (IMC). Building ventilation will be provided using a variable speed air handling unit (AHU). The AHU will be a 30,000 cfm unit located in a penthouse/fan room above the expansion. The AHU will be provided with a supply fan, direct expansion cooling coil, heating coil, filter section (MERV 13), and mixing box section. An airflow sensor will be installed at the outside air inlet of the air handler to monitor and control for accurate ventilation rates. Relief fans will also have airflow measuring sensors. Under heating conditions, the air handlers will supply the minimum outside airflow required to ventilate each space, with fan speed modulating as necessary to accommodate the cumulative demand by all the spaces being served. Under cooling conditions, the air handlers will increase fan speed as needed to provide economizer or mechanical cooling for the building depending on the outdoor air temperature.

The air handler will be connected to VAV boxes with sound insulated outlet plenums and heating coils serving the occupied spaces. We anticipate separate VAV boxes for each courtroom, jury room and judge's chambers.

A 28,000 cfm variable speed relief fan will be used in conjunction with the AHU and will vary speed based on the outside air rate to maintain the building interior slightly positive with respect to the building exterior. Air handlers and relief fans will have premium efficiency direct drive motors.

Individual exhaust fans will serve restrooms, janitor closets, and any other exhaust needs per floor.

All ductwork will be constructed for medium or low pressure operation and routed above ceilings. Flexible ductwork will be shown at all supply diffusers. Where applicable, the return air system will be a plenum style. All outside air ductwork will be insulated, complete with vapor barriers. Exhaust ductwork will be insulated within ten feet of the building exterior. All outside air intakes and relief/exhaust outlets will utilize louvers mounted on the exterior walls to mitigate the entrainment of rain into the HVAC system.

Supply air diffusers will have either be slot diffusers or square type. For plenum areas, return grilles will be aluminum egg crate-type with sound lined duct "boots" above ceiling to mitigate sound transfer between rooms. In non-plenum areas, return air will be fully ducted back to the respective air handler. In spaces with suspended ceilings diffusers and grilles will be lay-in type. Diffusers and grilles in spaces with sheet rock ceilings will be specified with surface-mounting frames.

The boiler room will have an engineered combustion air system via a new 24x24 shaft up to the roof through the existing fan room above the boiler room.

7. HVAC Controls

The building will be provided with a direct digital control (DDC) system for operation and monitoring of the mechanical equipment and will integrate into the existing Siemens DDC system. The DDC system will be capable of integrating multiple building functions including equipment supervision and control, alarm management, energy management, and historical data collection and archiving. The system will consist of standalone DDC panels, standalone application specific controllers (ASCs) and a personal computer operator workstation. The system will be modular in nature, and will permit expansion of both capacity and functionality through the addition of sensors, actuators, standalone DDC panels, and operator devices, allowing room for additional controls to be added if the facility is expanded or remodeled in the future. The system architecture will eliminate dependence upon any single device for alarm reporting and control execution. Each DDC panel will operate independently by performing its own specified control, alarm management, operator I/O, and historical data collection. The failure of any single component or network connection will not interrupt the execution of control strategies at other operational devices. Standalone DDC panels will be able to access any data from, or send control commands and alarm reports directly to any other DDC panel or combination of panels on the network without dependence upon a central processing device. Standalone DDC panels will also be able to send alarm reports to multiple operator workstations without dependence upon a central processing device.

8. Fire Sprinkler Protection

The existing building has wet pipe and dry pipe sprinkler system risers located in the original basement level boiler room. The building is fed by a 6” water line that is routed into the boiler room and then split into a 3” domestic water line and a 6” fire sprinkler line. The sprinkler system is separated into two sprinkler risers a wet pipe riser and a dry pipe riser. The 6” service line is large enough to support the expansion, however an addition sprinkler riser will need to be added. The new riser will be located next to the existing risers in the basement boiler room. A new 4” sprinkler rise will be routed across the building to the new expansion.

The building will be provided with an NFPA 13 wet fire sprinkler protection system throughout. The facility will be primarily Light Hazard occupancy, with mechanical spaces designated as Ordinary Hazard 1. Sprinkler piping will be specified as schedule 40 or schedule 10 black iron and sprinkler heads will be quick response. Dry heads will be installed in the vestibules and at any combustible canopies extending four feet or more beyond the facility.

E

ELECTRICAL DESIGN NARRATIVE

1. Design Criteria

   The latest adopted version of the following codes and standards, as amended by the State of Alaska, are currently applicable for this project:

   - International Building Code 2021 (IBC)
   - International Fire Code 2021 (IFC)
   - National Electrical Code 2020 (NEC)
   - NFPA 72 National Fire Alarm Code 2019
   - Americans with Disabilities Act (ADA)
   - ANSI/TIA Telecommunications Building Wiring Systems
   - IES Lighting Library, latest published edition of standards
   - ASHRAE/IES Standard 90.1

   The design parameters listed in this narrative may be considered a working document. As the design progresses, the parameters in this document may be revised as a result of changing technology, payback analysis and/or feedback from Court System personnel.

2. Site Utilities

   There are two services to the building. The older service is a 120/208V, 3-phase service with 1200A equipment. The newer service from the last building expansion is a 277/480V, 3-phase service with 600A equipment. The instantaneous reading on the 120/208V service was less than 250A during a recent site visit. The 277/480V meter was inaccessible due to deep snow but the Court System has said that the demand readings will be made available. Our assumption is that the 277/480V service is going to be lightly loaded similar to the other service.

   The 120/208V transformer and service entrance equipment will be impacted by the proposed clerk area expansion on the front of the building. The transformer appears to be out of the footprint of the expansion, but the service entrance equipment is mounted to the building in direct conflict with the expansion. Per our discussion with the Court System, the preferred approach would be to abandon the 120/208V service and re-feed that portion of the building from the 277/480V service so that maintenance personnel only have to account for one service and set of disconnects. Pending confirmation of capacity on that service for the whole building plus the expansion, the

recommended course of action at this time will be to provide a new service disconnect connected to the 277/480V utility transformer that will then be routed to a new dry-type transformer (estimate size 225kVA) that will then serve the existing 1200A main distribution panel (MDP). The location of the dry-type transformer will be in the basement near the existing MDP if space allows as this would minimize the size of the conductors needed. Estimated conduit/conductor size from the new service disconnect would be 4" conduit with #500kcmil conductors fed from a 400A service disconnect.

The existing 277/480V utility transformer, meter, and service disconnect would remain in place during the expansion, and the new 120/208V service disconnect could be fed directly from the utility transformer with a new set of secondary conductors by the utility company. The building expansion would be powered from the existing 277/480V service.

3. Power Distribution:

Main distribution panel and branch panelboards in the existing building will remain. There are spare circuit breakers available in the 277/480V MDP to power new branch panelboards in the expansion area. At this time, we assume a 175A circuit breaker will be installed in an available space, with #2/0 conductors in 2.5" conduit routed to a 112.5kVA dry-type transformer located in the expansion area's electrical room. A 120/208V panelboard will be powered from this transformer, which will then feed 2-3 panelboards in the expansion. Estimated sizes are one 200A panel for mechanical equipment, one 100A panel for general receptacles and equipment, and one 100A panel for the new telecom room. Lighting circuits in the expansion area will be routed to existing panels and fed at 277V from the same panel as other lighting.

4. Standby Power

The building currently does not have a generator. A generator connector enclosure was installed during the last expansion with disconnects and feeders installed to power selected loads on both the 277/480V side and 120/208V side of the building utilizing manual transfer switches. This system proved to be ineffective during a prolonged power outage, as a generator was not brought in and connected and essential building systems were not powered.

As the existing infrastructure is in place, a new generator in arctic enclosure can be located outside of the building near the existing generator disconnect, and conductors from the generator routed to the existing exterior panel that contains 200A circuit breakers feeding the manual transfer switches in both the newer and older portions of the building. Estimated size of the generator is 200kW/250kVA, with a single 4" conduit and #500kcmil conductors routed to the existing exterior panel. In the newer and older electrical rooms, the existing manual transfer switches will be replaced with a 200A automatic transfer switch. New standby panels for the expansion area will be fed from the existing standby system, with one panel each assumed to come from the newer and older portions of the system depending on proximity of equipment and systems. A 100A 277/480V panel and 100A 120/208V panel will be provided, with essential heating, circulation pumps, and limited receptacle circuits powered from the generator. Per Court System protocol, a prolonged power outage will result in the building being closed and the calendar/docket either postponed or shifted to a separate site, so the intent of the generator is only to keep the building from freezing and power enough lighting to be able to safely empty the building.

5. Utilization Devices:

   All receptacles in the building will be 20A, 120V duplex or quadraplex with white nylon face and stainless steel faceplates unless otherwise noted for special purposes. The telecom room is assumed to require 30A circuits (either 120V or 208V depending on the equipment installed by Court System personnel), and receptacles of different amperages and voltages may be required for mechanical equipment, kitchenette equipment, copier/printers, other office equipment, etc.

   GFCI duplex receptacle outlets with while-in-use weatherproof covers will be provided on the exterior areas, with one located near each entrance and additional receptacles located at areas of frequent use such as the enclosed courtyard.

   Power will be provided for all equipment supplied by others such as mechanical equipment, appliances, office equipment, powered furniture, etc. Coordination will be performed with all disciplines to provide power as needed for all equipment.

6. Grounding System:

   Service equipment enclosures, exposed non-current carrying metal parts of electrical equipment, metal raceway system, equipment-grounding conductor in all feeders and branch circuits and receptacle grounding connectors will be bonded.

   Equipment grounding conductor will always be a green insulated copper conductor unless otherwise indicated. There will be no interconnection between equipment grounding conductors and neutral conductors except at the main service grounding point. All connections to equipment to be grounded will be made with a grounding connector specifically intended for that purpose.

   The generator will be connected to the existing building grounding system. The 120/208V ground bus in the existing service disconnect will be demolished, so a replacement inside of the building will be required and re-connected to the existing grounding system on the 277/480V side.

7. Lighting / Emergency Lighting System:

   All new lighting will meet current Illuminating Engineering Society (IES) lighting standards. The lighting design will comply with the Lighting Unit Power Densities in accordance with ASHRAE/IES Standard 90.1 in accordance with AAC 44.42.067.

   All new lighting shall be LED, with integral or standalone occupancy sensors except for mechanical/electrical spaces. All courtrooms, lobbies, office areas, conference rooms, workrooms, and similar staff areas shall have dimming controls. In accordance with ASHRAE 90.1, daylight controls shall be installed where required near windows.

   Luminaire types will be similar to those in use in the existing building if continuity is important, but will use current/updated models.

Lobbies and courtrooms will use a combination of direct/indirect pendants, 2x2 or 2x4 troffers in acoustical ceilings, downlights in soffits, and wall sconces where aesthetics are required.

Office areas will use primarily 2x2 or 2x4 troffers unless ceiling types dictate otherwise. Support spaces with hard ceilings will use low-profile surface-mounted wraps, with strip lights used in electrical/mechanical/telecom spaces if open to structure. Holding cells will require IK10 vandal-resistant correctional style luminaires. Restrooms will use a combination of downlights and vanity luminaires in single-stall rooms, with recessed slot or cove lighting and vanity luminaires used in multi-stall restrooms.

Exit signs will consist of energy efficient, LED type, self-contained emergency power pack with red letters on white background. Exit signs will be mounted above doors and along egress pathways.

Emergency egress lighting will be provided in all exit corridors, Mechanical/Electrical Room, and other locations as required by the IBC such as rooms requiring two exits. Emergency lighting will consist of emergency lighting units, selected LED fixtures with emergency battery inverters or emergency drivers, which will provide an average of 1 foot-candle along egress paths in the event of a power outage. Emergency egress lighting will be installed on the exterior at each exit doorway.

8. Exterior Lighting:

   Exterior lighting will consist of building mounted LED downlights and wall packs at selected locations. This is assumed to be all entrances/exits, as well as the exterior perimeter where pedestrian or vehicular traffic may be present. Remote heads will be installed to provide code-required emergency egress lighting.

   All exterior lighting will be controlled by photocell and time clock, with connection to existing exterior controls desired.

   New pole-mounted lighting will be provided in the expanded parking areas, with integral motion/photocell sensors installed on the new LED luminaires for local control.

9. Fire Alarm System:

   The expansion will be connected to the existing fire alarm control panel located in the basement of the older portion of the building. Code-minimum detection will be provided, including at any NAC booster panels, door closers in rated assemblies or at horizontal exits, duct detectors for return air systems over 2000 cfm, and activation of any fire/smoke dampers if installed. Preliminary concept plans do not appear to include rated assemblies or horizontal exits, and this item will be coordinated as design progresses.

   Addressable pull stations will be single action and will be provided at each exit door and horizontal exit (if included). All pull stations in areas normally accessible to general public will have vandal covers with audible alarms.

Fire sprinkler pressure, flow, and tamper switches, and generator suppression shall be monitored using addressable modules.

Note that while the existing fire alarm system is assumed to have capacity and parts can be obtained for the expanded area of work, it is recommended that the Court System consider replacement of the fire alarm control panel and connected devices under this project. The fire alarm control panel is an older IFC 640 model that may be unsupported and have issues with parts availability by the time construction of this project occurs.

10. Telecommunications:

A complete telecommunication system will be provided for the expansion. The horizontal cabling will be plenum-rated Category 6 UTP cable that runs from each telecom outlet to the designated patch panel in the telecom racks. A minimum of (2) 2-port outlets will be required in each office/chambers, with multiple outlets located in courtrooms and other administrative/staffed areas. Telecom outlets in the ceiling will be provided for wireless access points at locations designated by Court System personnel, with the assumption of one per courtroom and one every 40-50’ of corridor.

A new telecom room will be required in the expansion area, as the existing rooms do not have expansion capability and distance would become an issue from the furthest rooms. A minimum of 2 racks should be provided, with one 2-post for cabling and one 4-post for deeper equipment.

All horizontal and backbone cabling will be distributed throughout the building via J-hook pathways located above accessible ceilings. Conduit will be used from the telecom outlet to the space above the accessible ceiling, as well as in all inaccessible areas. 1” minimum conduit will be routed to each new telecommunication outlet location.

All horizontal and backbone cabling will be terminated on modular patch panels installed in the new network equipment racks. The entire cabling infrastructure will be designed and engineered to be in compliance with NFPA 70, ANSI/TIA 568-B, 569, and all applicable local, state and federal codes, rules, regulations and ordinances. All telecommunication system cables and components will be clearly marked and labeled and will conform to ANSI/TIA-606 Standards. Telecommunications systems grounding and bonding will be provided in accordance with TIA/EIA-607.

11. Access Control:

Controlled doors will be added to the existing Lenel access control system. Based on prior projects, these doors are assumed to include exterior doors, courtroom secure entrances (judge/clerk) to secured hallways, telecom room, evidence/secure storage, clerk’s area, and similar sensitive access areas. Exact location/quantities of controlled doors will be coordinated with Division 08 door hardware and the Court System. Per discussion on-site, existing doors in the connector to the Palmer State Office Building will be added to the access control system, including the jury assembly and grand jury rooms. New access control panels will be provided in the new telecom room and all doors routed either to these panels, or to existing panels if proximity allows.

12. Video:

    New video cameras will be installed at locations identified by the Court System. Based on past projects, these are assumed to include courtrooms, public corridors/lobbies, exterior at entry/exit points, holding cells/prisoner transport areas, and exterior areas subject to pedestrian traffic. All cameras will be cabled to new and existing telecom rooms depending on proximity, and connected to the existing Genetec video system.

13. Duress

    Duress buttons will be provided at judge/clerk benches, prisoner transport areas, expanded clerk's areas, and other similar areas subject to potential duress situations. All duress buttons will be connected to the existing Lynx duress system unless the Court System migrates to another system before this project is constructed.

14. Audio/Video

    Courtroom audio/video requirements will be coordinated with current Court System requirements but similar to other project are assumed to include microphones, speakers, connections to ACS-furnished control equipment, HDMI cabling for TV's/projectors, and conduit pathways for other equipment installed by the ACS.

APPENDIX B - COST ESTIMATE

Palmer Courthouse Expansion Master Plan

Alaska Court System

Palmer, Alaska

Construction Cost Estimate
Concept Design Submittal
March 6, 2023

ESTIMATIONS
1225 E. International Airport Road, Suite 235
Anchorage, Alaska 99518
907.561.0790

Prepared for:
MCG Explore Design
421 W 1st Avenue, Suite 300
Anchorage, Alaska 99501
907.563.8474

Palmer Courthouse Expansion Master Plan
Alaska Court System
Prepared for MCG Explore Design by Estimations

Construction Cost Estimate
Concept Design Submittal
March 6, 2023

Documents	**Dated**
Palmer Courthouse Expansion Master Plan	2/3/2023 Draft
Final Report Draft	28-Feb-23
Architectural, Civil, Structural, Mechanical & Electrical Narratives	

Notes and Assumptions

1 Based on 2025 procurement/2025 construction.
2 Labor rates based on Davis Bacon, 50 hours/week.
3 Assumes open competitive bid procurement.
4 Local contractor.
5 Project and phasing cost included at 20%.

Palmer Courthouse Expansion Master Plan
Alaska Court System
Prepared for MCG Explore Design by Estimations

Construction Cost Estimate
Concept Design Submittal
March 6, 2023

Description	Qty	Unit	Total
New Entryway Configuration	2,610	GSF	$2,225,979
New Clerk of Court Concept	6,667	GSF	$3,084,946
Expansion Concept - Single Story Finished	16,600	GSF	$13,596,929
Expansion Concept 2nd Floor Shell Option	8,800	GSF	$4,848,196
Outdoor & Site	250,000	GSF	$1,623,822
Upgrade Facility HVAC & Electrical Services	950	GSF	$1,058,611
Total Estimated Cost			**$26,438,484**
Additional Costs to Add 2nd Story Listed Above at a Future Date Includes the Demolition & Construction of Roofing & Ceiling Finishes + Extensive Phasing Considerations. 2 Calendar Years Added to Escalation.	8,800	GSF	$2,301,177

Line No.	Description	Qty	UNITS	Material Costs Unit	Material Costs Total	Labor Hours Units	Labor Hours Totals	Labor Cost	Equip Cost	Total Cost	Total Cost w/ OH & P
1											
2	**New Entryway Configuration**	**2,610**	**SF**								
3											
4	**Demolition**										
5	Demolish Existing Entry Canopy	900	SF			0.171	153.9	$14,740	$4,500	$19,240	$23,088
6	Demo Roof Assy - Mansard	1,000	SF			0.086	86.0	$8,237	$2,000	$10,237	$12,284
7	Demo Entry & Renovated Spaces Doors, Partitions & Finishes	950	SF			0.086	81.7	$7,825	$1,900	$9,725	$11,670
8	Demo Mech & Elec	950	SF			0.086	81.7	$7,825		$7,825	$9,390
9											
10	**Excavation & Fill**										
11	Perimeter Foundation	117	LF	$18.39	$2,152	0.606	70.9	$6,791	$4,230	$13,173	$15,808
12	Slab & Flatwork Areas	2,500	SF	$1.09	$2,725	0.018	45.0	$4,310	$2,953	$9,988	$11,985
13											
14	**Substructure**										
15	Perimeter Footing & Wall Foundation	117	LF	$70.17	$8,210	1.422	166.4	$16,751	$637	$25,598	$25,598
16	Slab On Grade	1,660	SF	$4.97	$8,250	0.049	81.3	$8,184	$753	$17,187	$17,187
17											
18	**Exterior Flatwork**										
19	Ramp W/ Guardrails	200	SF	$118.90	$23,780	0.291	58.2	$5,859	$91	$29,730	$29,730
20	Sidewalks	700	SF	$4.97	$3,479	0.049	34.3	$3,453	$318	$7,250	$7,250
21	24' Wide Steps	4	RISERS	$761.75	$3,047	9.975	39.9	$4,017	$163	$7,227	$7,227
22											
23	**Shell**										
24	Roof Structure, Flat Wood Framed	1,830	SF	$7.00	$12,810	0.041	75.0	$8,556	$275	$21,641	$25,969
25	Roof Structure, Mansard Framing	117	LF	$90.00	$10,530	0.735	86.0	$9,811	$263	$20,604	$24,725
26	Exterior - EIFS, Studs, GWB	1,521	SF	$16.95	$25,781	0.409	622.1	$68,111	$1,521	$95,413	$114,496
27	Windows	150	SF	$100.00	$15,000	0.200	30.0	$3,020		$18,020	$18,020
28	Ext Doors, Dbl Alum/Glass	3	PR	$12,000.00	$36,000	18.000	54.0	$5,436		$41,436	$41,436
29	Roofing, EPDM Flat	1,830	SF	$11.60	$21,228	0.088	161.0	$14,967		$36,195	$43,434
30	Roofing, Mansard Sheet Metal	500	SF	$16.85	$8,425	0.139	69.5	$6,461		$14,886	$17,863
31											
32											
33											

Line No.	Description	Qty	UNITS	Material Costs Unit	Material Costs Total	Labor Hours Units	Labor Hours Totals	Labor Cost	Equip Cost	Total Cost	Total Cost w/ OH & P
34											
35	**Entry Canopy**	**450**	**SF**	$65.00	$29,250	1.000	450.0	$45,300	$2,250	$76,800	$76,800
36											
37	**Interiors**	**3,560**	**SF**								
38	Partitions, Frame & GWB	1,066	SF	$4.10	$4,371	0.120	127.9	$12,820		$17,191	$20,629
39	Partitions, Storefront	585	SF	$80.00	$46,800	0.229	134.0	$13,432		$60,232	$72,278
40	Doors, Interior Dbl Alum/Glass	3	PR	$6,000.00	$18,000	16.000	48.0	$4,832		$22,832	$22,832
41	Doors	2	LV	$1,710.00	$3,420	12.000	24.0	$2,416		$5,836	$5,836
42	Fittings	3,560	SF	$4.00	$14,240					$14,240	$17,088
43	Wall Finishes (Mostly Paint, Some Tile, FRP)	6,153	SF	$1.86	$11,445	0.040	246.1	$21,294		$32,739	$39,287
44	Floor Finishes (Resilient, Cpt, Tile, Concrete Sealer)	3,560	SF	$5.60	$19,936	0.037	131.7	$11,396		$31,332	$37,598
45	Ceilings (ACT and SGWB)	3,560	SF	$7.20	$25,632	0.044	156.6	$13,550		$39,182	$47,018
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Line No.	Description	Qty	UNITS	Material Costs Unit	Material Costs Total	Labor Hours Units	Labor Hours Totals	Labor Cost	Equip Cost	Total Cost	Total Cost w/ OH & P
66											
67	**Services**	**2,610**	**SF**								
68	Roof Drainage	2	EA	$2,400.00	$4,800	18.500	37.0	$3,636		$8,436	$10,545
69	HVAC - Heat Generation	130	MBH	$89.61	$11,649	0.119	15.5	$1,523		$13,172	$16,465
70	HVAC - Heat Distribution	240	LF	$96.00	$23,040	1.183	283.9	$27,899		$50,939	$63,674
71	HVAC - Vent - HRV	2,610	SF	$17.95	$46,850	0.130	339.3	$33,344		$80,194	$100,243
72	Controls	2,610	SF	$9.00	$23,490					$23,490	$29,363
73	Fire Protection	2,610	SF	$7.00	$18,270					$18,270	$22,838
74	Electrical (Service, Lights, Power)	2,610	SF	$20.00	$52,200	0.143	373.2	$37,447		$89,647	$112,059
75	Electrical - Communications	10	EA	$855.00	$8,550	9.700	97.0	$9,765		$18,315	$18,315
76	Electrical - FA	2,610	SF	$5.00	$13,050					$13,050	$16,313
77	Electrical - Access Control	5	EA	$3,500.00	$17,500					$17,500	$21,875
78	Electrical - CCTV	4	EA	$4,000.00	$16,000					$16,000	$20,000
79											
80											
81											
82											
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84											
85											
86											
87											
88											
89											
90	**General Requirements**	12%									$147,386
91	**General Contractor Overhead & Profit**	8%									$110,048
92	**Contingency**	15.0%									$222,848
93	**Escalation (2025)**	12.4%									$183,626
94	**Phasing**	20.0%									$333,855
95											
96	**Subtotal: New Entryway Configuration**				$589,910		4,461.1	$443,008	$21,853	$1,054,771	**$2,225,979**
97	Average Unit Price for this division is: $852.87 per SF based on 2,610 SF										
98											

Line No.	Description	Qty	UNITS	Material Costs Unit	Material Costs Total	Labor Hours Units	Labor Hours Totals	Labor Cost	Equip Cost	Total Cost	Total Cost w/ OH & P
99											
100	**New Clerk of Court Concept**	**6,667**	**SF**								
101											
102	**Demolition**										
103	Demo Exterior Wall Assy Down To Framing	1,152	SF			0.057	65.7	$6,293	$1,152	$7,445	$8,934
104	Demo Roof Assy - Mansard	800	SF			0.086	68.8	$6,589	$1,600	$8,189	$9,827
105	Demo Renovated Spaces Doors, Partitions & Finishes	4,897	SF			0.086	421.1	$40,331	$9,794	$50,125	$60,150
106	Demo Mech & Elec	4,897	SF			0.086	421.1	$40,331		$40,331	$48,397
107											
108	**Excavation & Fill**										
109	Perimeter Foundation	97	LF	$118.90	$11,533	0.291	28.2	$2,701	$44	$14,278	$17,134
110	Slab Area	1,770	LF	$1.09	$1,929	0.018	31.9	$3,055	$2,091	$7,075	$8,489
111											
112	**Substructure**										
113	Perimeter Footing & Wall Foundation	97	LF	$70.18	$6,807	1.421	137.8	$13,872	$528	$21,207	$21,207
114	Slab On Grade	1,770	SF	$4.97	$8,797	0.049	86.7	$8,728	$803	$18,328	$18,328
115											
116	**Exterior Flatwork**										
117	Entry Sidewalk	60	SF	$4.97	$298	0.049	2.9	$292	$27	$617	$617
118											
119	**Shell**										
120	Roof Structure, Flat Wood Framed	2,575	SF	$7.00	$18,025	0.041	105.6	$12,047	$386	$30,458	$36,550
121	Roof Structure, Mansard Framing	97	EA	$90.00	$8,730	0.735	71.3	$8,134	$218	$17,082	$20,499
122	Exterior - EIFS, Studs, GWB	1,261	SF	$16.95	$21,374	0.409	515.7	$56,461	$1,261	$79,096	$94,915
123	Windows	126	SF	$100.00	$12,610	0.200	25.2	$2,537		$15,147	$15,147
124	Ext Doors, Sgl	1	EA	$2,800.00	$2,800	12.000	12.0	$1,208		$4,008	$4,008
125	Roofing, EPDM Flat	1,608	SF	$11.60	$18,653	0.088	141.5	$13,154		$31,807	$38,168
126	Roofing, Mansard Sheet Metal	970	SF	$16.66	$16,160	0.138	133.9	$12,448		$28,608	$34,330
127											
128											
129											
130											

Line No.	Description	Qty	UNITS	Material Costs Unit	Material Costs Total	Labor Hours Units	Labor Hours Totals	Labor Cost	Equip Cost	Total Cost	Total Cost w/ OH & P
131											
132	**Interiors**	**6,667**	**SF**								
133	Partitions, Frame & GWB	2,600	SF	$4.10	$10,660	0.120	312.0	$31,274		$41,934	$50,321
134	Doors	5	LV	$1,710.00	$8,550	12.000	60.0	$6,040		$14,590	$14,590
135	Fittings	6,667	SF	$4.00	$26,668					$26,668	$32,002
136	Wall Finishes (Mostly Paint, Some Tile, FRP)	6,461	SF	$1.86	$12,017	0.040	258.4	$22,359		$34,376	$41,251
137	Floor Finishes (Resilient, Cpt, Tile, Concrete Sealer)	6,667	SF	$5.60	$37,335	0.037	246.7	$21,346		$58,681	$70,417
138	Ceilings (ACT and SGWB)	6,667	SF	$7.20	$48,002	0.044	293.3	$25,378		$73,380	$88,056
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Line No.	Description	Qty	UNITS	Material Costs Unit	Material Costs Total	Labor Hours Units	Labor Hours Totals	Labor Cost	Equip Cost	Total Cost	Total Cost w/ OH & P
163											
164	**Services**	**6,667**	**SF**								
165	Roof Drainage	2	EA	$2,400.00	$4,800	18.500	37.0	$3,636		$8,436	$10,545
166	Plumbing	1	FIX	$2,120.00	$2,120	36.000	36.0	$3,538		$5,658	$7,073
167	HVAC - Heat Generation	330	MBH	$89.61	$29,571	0.119	39.3	$3,862		$33,433	$41,791
168	HVAC - Heat Distribution	400	LF	$96.00	$38,400	1.183	473.2	$46,502		$84,902	$106,128
169	HVAC - Vent - HRV	6,667	SF	$17.95	$119,673	0.130	866.7	$85,172		$204,845	$256,056
170	Controls	6,667	SF	$9.00	$60,003					$60,003	$75,004
171	Fire Protection	6,667	SF	$7.00	$46,669					$46,669	$58,336
172	Electrical (Service, Lights, Power)	6,667	SF	$20.00	$133,340	0.143	953.4	$95,664		$229,004	$286,255
173	Electrical - Communications	40	EA	$330.00	$13,200	5.500	220.0	$22,075		$35,275	$44,094
174	Electrical - FA	6,667	SF	$5.00	$33,335					$33,335	$41,669
175	Electrical - Access Control	5	EA	$3,500.00	$17,500					$17,500	$21,875
176	Electrical - CCTV	4	EA	$4,000.00	$16,000					$16,000	$20,000
177											
178											
179											
180											
181											
182											
183											
184											
185											
186											
187	**General Requirements**	12%									$204,260
188	**General Contractor Overhead & Profit**	8%									$152,514
189	**Contingency**	15.0%									$308,840
190	**Escalation (2025)**	12.4%									$254,485
191	**Phasing**	20.0%									$462,684
192											
193	**Subtotal: New Clerk of Court Concept**				$785,559		6,065.4	$595,027	$17,904	$1,398,490	**$3,084,946**
194	Average Unit Price for this division is: $462.72 per SF based on 6,667 SF										
195											

Line No.	Description	Qty	UNITS	Material Costs Unit	Material Costs Total	Labor Hours Units	Labor Hours Totals	Labor Cost	Equip Cost	Total Cost	Total Cost w/ OH & P
196											
197	**Expansion Concept - Single Story Finished**	**16,600**	**SF**								
198											
199	**Demolition**										
200	Demo Exterior Wall Assy Down To Framing	1,176	SF			0.057	67.0	$6,417	$1,176	$7,593	$9,112
201	Demo Roof Assy - Mansard	980	SF			0.086	84.3	$8,074	$1,960	$10,034	$12,041
202	Demo Facility Link Hallway Structure	930	SF			0.143	133.0	$12,738	$2,790	$15,528	$18,634
203	Demo Mech & Elec	930	SF			0.086	80.0	$7,662		$7,662	$9,194
204											
205	**Excavation & Fill**										
206	Perimeter Foundation	740	LF	$18.40	$13,616	0.607	449.2	$43,023	$26,754	$83,393	$100,071
207	Slab Area	16,600	SF	$1.09	$18,094	0.018	298.8	$28,618	$19,606	$66,318	$79,582
208											
209	**Substructure**										
210	Perimeter Footing & Wall Foundation	740	LF	$28.24	$20,898	0.520	384.8	$38,737	$2,279	$61,914	$61,914
211	Column Footings	60	EA	$550.00	$33,000	9.757	585.4	$58,930	$3,675	$95,605	$95,605
212	Slab on Grade	16,600	SF	$4.97	$82,502	0.049	813.4	$81,882	$7,531	$171,915	$171,915
213											
214	**Exterior Flatwork**										
215	Entry Sidewalk	250	SF	$550.00	$137,500	9.757	2,439.3	$245,556	$15,313	$398,369	$398,369
216											
217	**Shell**										
218	Roof Structure	16,600	SF	$29.36	$487,376	0.069	1,145.4	$130,664	$13,280	$631,320	$757,584
219	Roof Structure, Mansard Framing	532	LF	$90.00	$47,880	0.735	391.0	$44,604	$1,197	$93,681	$112,417
220	Exterior - EIFS, Studs, GWB	7,980	SF	$16.95	$135,261	0.409	3,263.8	$357,338	$7,980	$500,579	$600,695
221	Windows	798	SF	$100.00	$79,800	0.200	159.6	$16,066		$95,866	$95,866
222	Ext Doors, Sgl	2	EA	$2,800.00	$5,600	12.000	24.0	$2,416		$8,016	$8,016
223	Roofing, EPDM Flat	11,280	SF	$11.60	$130,848	0.088	992.6	$92,276		$223,124	$267,749
224	Roofing, Mansard Sheet Metal	5,320	CY	$14.69	$78,151	0.130	691.6	$64,294		$142,445	$170,934
225											
226											

Line No.	Description	Qty	UNITS	Material Costs Unit	Material Costs Total	Labor Hours Units	Labor Hours Totals	Labor Cost	Equip Cost	Total Cost	Total Cost w/ OH & P
227											
228	**Interiors**	**16,600**	**SF**								
229	Partitions	15,405	SF	$4.10	$63,161	0.120	1,848.6	$185,297		$248,458	$298,150
230	Partitions - Skyfold	62	LF	$5,000.00	$310,000					$310,000	$372,000
231	Doors	52	LV	$1,710.00	$88,920	12.000	624.0	$62,816		$151,736	$151,736
232	Fittings	16,600	SF	$4.00	$66,400					$66,400	$79,680
233	Wall Finishes (Mostly Paint, Wood Paneling In Court Rooms, FRP)	34,050	SF	$3.74	$127,347	0.080	2,724.0	$235,700		$363,047	$435,656
234	Floor Finishes (Resilient, Cpt, Tile, Concrete Sealer)	16,600	SF	$5.80	$96,280	0.041	680.6	$58,890		$155,170	$186,204
235	Ceilings (ACT, SGWB, Linear WC, Acoustic Panels)	16,600	SF	$14.40	$239,040	0.062	1,029.2	$89,054		$328,094	$393,713
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Line No.	Description	Qty	UNITS	Material Costs Unit	Material Costs Total	Labor Hours Units	Labor Hours Totals	Labor Cost	Equip Cost	Total Cost	Total Cost w/ OH & P
258											
259	**Services**	**16,600**	**SF**								
260	Plumbing	18	FIX	$2,236.67	$40,260	37.167	669.0	$65,744		$106,004	$132,505
261	Roof Drainage	16	EA	$2,400.00	$38,400	18.500	296.0	$29,088		$67,488	$84,360
262	HVAC - Heat Generation	830	MBH	$89.61	$74,376	0.119	98.8	$9,709		$84,085	$105,106
263	HVAC - Heat Distribution	532	LF	$96.00	$51,072	1.183	629.4	$61,852		$112,924	$141,155
264	HVAC - Vent - HRV	16,600	SF	$17.95	$297,970	0.130	2,158.0	$212,070		$510,040	$637,550
265	Controls	16,600	SF	$9.00	$149,400					$149,400	$186,750
266	Fire Protection	16,600	SF	$7.00	$116,200					$116,200	$145,250
267	Electrical (Service, Lights, Power)	16,600	SF	$20.00	$332,000	0.143	2,373.8	$238,188		$570,188	$712,735
268	Electrical - Communications	75	EA	$242.50	$18,188	4.800	360.0	$36,240		$54,428	$54,428
269	Electrical - FA	16,600	SF	$5.00	$83,000					$83,000	$103,750
270	Electrical - Access Control	26	EA	$3,500.00	$91,000					$91,000	$113,750
271	Electrical - CCTV	20	EA	$4,000.00	$80,000					$80,000	$100,000
272	Duress System	15	EA	$1,500.00	$22,500					$22,500	$28,125
273	Courtroom A/V	10	ROOMS	$7,000.00	$70,000					$70,000	$70,000
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282	**General Requirements**	12%									$900,276
283	**General Contractor Overhead & Profit**	8%									$672,206
284	**Contingency**	15.0%									$1,361,217
285	**Escalation (2025)**	12.4%									$1,121,643
286	**Phasing**	20.0%									$2,039,285
287											
288	**Subtotal: Expansion Concept - Single Story Finished**				$3,726,040		25,494.6	$2,523,943	$103,540	$6,353,523	**$13,596,929**
289	Average Unit Price for this division is: $819.09 per SF based on 16,600 SF										
290											

Line No.	Description	Qty	UNITS	Material Costs Unit	Material Costs Total	Labor Hours Units	Labor Hours Totals	Labor Cost	Equip Cost	Total Cost	Total Cost w/ OH & P
291											
292	**Expansion Concept 2nd Floor Shell Option**	**8,800**	**SF**								
293											
294	**This Concept Does Not Include The Finished Build-Out Of The Space.**										
295											
296	**Shell**										
297	Floors Above Grade	8,800	SF	$52.33	$460,504	0.146	1,284.8	$146,566	$16,313	$623,383	$748,059
298	Exterior - EIFS, Studs, GWB	7,455	SF	$16.95	$126,362	0.409	3,049.1	$333,831	$7,455	$467,648	$561,178
299	Windows	746	SF	$100.00	$74,550	0.200	149.1	$15,009		$89,559	$89,559
300	Ext Doors, Sgl, Roof Access	1	EA	$2,800.00	$2,800	12.000	12.0	$1,208		$4,008	$4,008
301											
302	**Interiors**	**8,800**	**SF**								
303	Partitions, Temporary Balcony To Unfinished Space	1,140	SF	$4.10	$4,674	0.119	135.7	$13,602		$18,276	$21,931
304	Doors	2	LV	$1,710.00	$3,420	12.000	24.0	$2,416		$5,836	$5,836
305	Stairs	1	EA	$20,000.00	$20,000					$20,000	$24,000
306	Stairs, Open Lobby (Glass Railings)	2	EA	$50,000.00	$100,000					$100,000	$120,000
307	Guardrail, Open Lobby (Glass Railings)	75	LF	$400.00	$30,000	1.000	75.0	$8,556	$750	$39,306	$47,167
308	Wall Finishes (Mostly Paint)	4,845	SF	$3.49	$16,909	0.079	382.8	$33,123		$50,032	$60,038
309	Floor Finishes (Carpet @ Balcony)	1,100	SF	$5.00	$5,500	0.029	31.9	$2,760		$8,260	$9,912
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Line No.	Description	Qty	UNITS	Material Costs Unit	Material Costs Total	Labor Hours Units	Labor Hours Totals	Labor Cost	Equip Cost	Total Cost	Total Cost w/ OH & P
321											
322	**Services**	**8,800**	**SF**								
323	Elevator	1	EA	$135,000.00	$135,000					$135,000	$135,000
324	Plumbing, Rough-In Only	8	FIX	$1,420.00	$11,360	32.000	256.0	$25,158		$36,518	$45,648
325	HVAC - Heat Generation	440	MBH	$89.61	$39,428	0.119	52.4	$5,149		$44,577	$55,721
326	HVAC - Heat Distribution	500	LF	$96.00	$48,000	1.183	591.5	$58,128		$106,128	$132,660
327	HVAC - Vent - HRV	8,800	SF	$17.95	$157,960	0.130	1,144.0	$112,423		$270,383	$337,979
328	Controls, Minimal For Future T.I.	8,800	SF	$1.00	$8,800					$8,800	$11,000
329	Fire Protection	8,800	SF	$7.00	$61,600					$61,600	$77,000
330	Electrical (Service, Lights, Power), Minimal For Future T.I.	8,800	SF	$10.00	$88,000	0.071	624.8	$62,693		$150,693	$188,366
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344	**General Requirements**	12%									$321,007
345	**General Contractor Overhead & Profit**	8%									$239,686
346	**Contingency**	15.0%									$485,363
347	**Escalation (2025)**	12.4%									$399,939
348	**Phasing**	20.0%									$727,139
349											
350	**Subtotal: Expansion Concept 2nd Floor Shell Option**				$1,394,867		7,813.1	$820,622	$24,518	$2,240,007	**$4,848,196**
351	Average Unit Price for this division is: $550.93 per SF based on 8,800 SF										
352											

Line No.	Description	Qty	UNITS	Material Costs Unit	Material Costs Total	Labor Hours Units	Labor Hours Totals	Labor Cost	Equip Cost	Total Cost	Total Cost w/ OH & P
353											
354	**Outdoor & Site**	**250,000**	**SF**								
355											
356	18" Storm Drain	200	LF	$41.93	$8,386	0.487	97.4	$9,805	$2,281	$20,472	$20,472
357	Catch Basin M.H.	2	EA	$2,500.00	$5,000	6.000	12.0	$1,208	$770	$6,978	$6,978
358	Site Vehicle Circulation (2" AC, Paving, Lights, Curbs)	30,600	SF	$5.47	$167,382	0.044	1,346.4	$128,953	$54,603	$350,938	$421,125
359	HBH	50	EA	$1,750.00	$87,500	17.143	857.2	$82,100		$169,600	$203,520
360	Fencing	820	LF	$65.00	$53,300					$53,300	$63,960
361	Gates, Security W/ Card Reader	2	EA	$12,000.00	$24,000					$24,000	$28,800
362	Topsoil & Seed Repairs	4,444	SY	$5.00	$22,222	0.057	253.3	$24,260	$4,444	$50,926	$61,112
363	Plantings	1	LS	$75,000.00	$75,000					$75,000	$90,000
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375											
376	**General Requirements**	12%									$107,516
377	**General Contractor Overhead & Profit**	8%									$80,279
378	**Contingency**	15.0%									$162,564
379	**Escalation (2025)**	12.4%									$133,953
380	**Phasing**	20.0%									$243,543
381											
382	**Subtotal: Outdoor & Site**				$442,790		2,566.3	$246,326	$62,098	$751,214	**$1,623,822**
383	Average Unit Price for this division is: $6.50 per SF based on 250,000 SF										
384											

Line No.	Description	Qty	UNITS	Material Costs Unit	Material Costs Total	Labor Hours Units	Labor Hours Totals	Labor Cost	Equip Cost	Total Cost	Total Cost w/ OH & P
385											
386	**Upgrade Facility HVAC & Electrical Services**	**75,117**	**SF**								
387											
388	**HVAC**										
389	Replace Natural Gas Boilers, 1000 MBH	3	EA	$30,000.00	$90,000	80.000	240.0	$24,160	$3,000	$117,160	$117,160
390	Appurtenances	3	EA	$20,000.00	$60,000	60.000	180.0	$18,120		$78,120	$78,120
391	Cooling	75	TON	$2,500.00	$187,500					$187,500	$187,500
392											
393	**Electrical**										
394	Covered In Options Above										
395											
396	**Generator**										
397	Standby Generator, 200KW W/ Arctic Enclosure	1	EA	$180,000.00	$180,000	60.000	60.0	$6,040	$2,000	$188,040	$188,040
398	200amp Circuit	150	LF	$47.00	$7,050	0.343	51.5	$5,184	$1,050	$13,284	$13,284
399											
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402											
403											
404											
405	**General Requirements**	12%									$70,092
406	**General Contractor Overhead & Profit**	8%									$52,336
407	**Contingency**	15.0%									$105,980
408	**Escalation (2025)**	12.4%									$87,327
409	**Phasing**	20.0%									$158,772
410											
411	**Subtotal: Upgrade Facility HVAC & Electrical Services**				$524,550		531.5	$53,504	$6,050	$584,104	**$1,058,611**
412	Average Unit Price for this division is: $14.09 per SF based on 75,117 SF										
413											