

# City of Columbia, MO – Concept Design Report

## City Hall 1<sup>st</sup> Floor UCS / Treasury Remodel



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## **ACKNOWLEDGEMENTS:**

Thank you to the City of Columbia personnel who took the time and energy to provide input and insight during the development of this study.

Specifically, we extend our appreciation to the following individuals who were critical to the success of this study:

### **City of Columbia:**

Kent Hayes, Building Facilities Manager  
Ricki Jones, Utility Customer Service Manager  
Chelsea Miller, Treasurer  
James McDonald, Assistant Finance Director  
Matthew Lue, Director of Finance

### **SOA Architecture:**

Brad Stegemann AIA, Architect / Principal  
Jody Miller AIA, Project Architect

### **J Squared Engineering:**

Jeremy Patrick, Project Manager / Principal  
Noah Phillips, Project Engineer



## 1.1 – STUDY OVERVIEW & PURPOSE

### **Study Overview & Purpose:**

The goal of this project is to reconfigure approximately 2,350 square feet for Utility Customer Service (UCS) and Treasury functions on the First Floor of the Daniel Boone Lobby. The primary objective is to provide seven ballistic separation service counter areas. Additionally, it is desired to open up the departments to the lobbies.

The City initiated this study with SOA to provide:

1. **Pre-Proposal Tour:** SOA Architecture and J-Squared Engineering have done a preliminary tour of the spaces.
2. **Field Verification:** As the project develops it may be necessary to do more in-depth verification of various areas to better document existing conditions.
3. **Preliminary Design:** Work through floor plan options to support the workflow and organization and create the upgraded ballistic service counters.
4. **Code Guidance:** Research code for requirements related to the proposed modifications of the building.
5. **Project Narrative:** Present findings and outline the proposed updates to the building. Including evaluation of existing mechanical, electrical, plumbing and fire protection infrastructure systems and determine what modifications and/or replacements are required related to the proposed space changes.
6. **Project Schedule:** Suggest overall timeline
7. **Opinion of Probable Cost (OPC):** Develop a preliminary OPC for the associated work and coordinate estimated construction costs with overall project costs.



## 1.2.1 – PROJECT COSTS FOR UCS/TREASURY REMODEL

### Summary of scope included in Estimated Construction Cost:

- Demolition of lower portions of lobby walls to create openings to make the customer service areas more visible and accessible. Lintels / headers for carrying the load of the upper portion of the walls will be installed per the instruction of a structural engineer. Some plastering and patching will be required to finish it off.
- Demolition of storefronts and walls that separate the departments from the lobby. Bullet resistant walls and glazing (compliant with level-3) will be constructed at customer service windows.
- Modifications to electrical, mechanical, and fire protection systems to serve all modified spaces.
- Demolition of suspended ceilings for MEP ductwork modifications in select areas.
- New LED lighting installed throughout modified spaces.
- Removal of one corridor display case to add access doorway into the Southeast space of first floor.
- Flooring and wall base removal and replacement to accommodate wall demolition and new work. New paint throughout modified spaces.
- New furniture workstations at the built-in customer service windows. The remaining workstations within the open office areas are proposed to be reused. Also included is an owner cost allowance for miscellaneous IT reconfiguration, equipment and signage.
- For more detail refer to Appendix 3.1

City of Columbia - Opinion of Probable Cost

Preliminary

UPDATED: Friday, September 5, 2025

Note: Cost per Square Foot shown does not include Professional Services or Direct Owner Costs

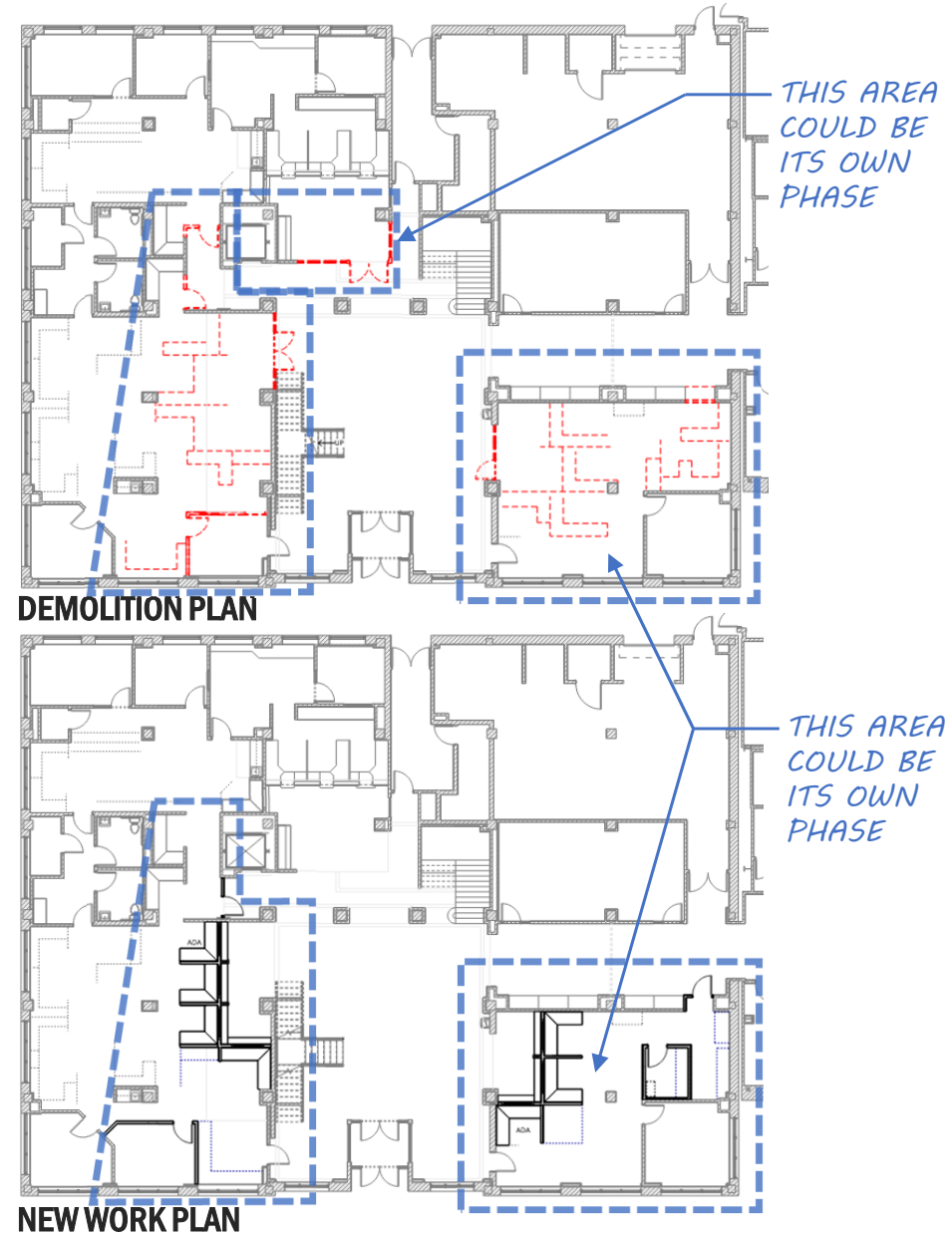
| UCS/TREASURY REMODEL TOTAL PROJECT COST                                                                                             |  |          |    | \$         | 748,048    |
|-------------------------------------------------------------------------------------------------------------------------------------|--|----------|----|------------|------------|
| UCS/TREASURY Construction Costs                                                                                                     |  | 2,350 SF | \$ | 243.73 /SF |            |
| Architectural Interior Selective Demolition                                                                                         |  |          |    | \$         | 29,890     |
| Architectural - Interior                                                                                                            |  |          |    | \$         | 167,610    |
| Mechanical                                                                                                                          |  |          |    | \$         | 49,500     |
| Electrical                                                                                                                          |  |          |    | \$         | 97,250     |
| Plumbing                                                                                                                            |  |          |    | \$         | -          |
| Fire Protection                                                                                                                     |  |          |    | \$         | 9,000      |
| Access Controls Allowance                                                                                                           |  |          |    | \$         | 13,000     |
| SUBTOTAL                                                                                                                            |  |          |    | \$         | 366,250    |
| Phases                                                                                                                              |  |          |    |            |            |
| Contingency (Design & Construction)                                                                                                 |  |          |    | 15.0%      | \$ 54,938  |
| 3.00 % Increase per added phase                                                                                                     |  |          |    | 5.0%       | \$ 63,178  |
| General Conditions                                                                                                                  |  |          |    | 10.0%      | \$ 48,437  |
| Contractor Profit                                                                                                                   |  |          |    | 5.0%       | \$ 26,640  |
| Perf / Pay Bond                                                                                                                     |  |          |    | 2.0%       | \$ 11,189  |
| Permitting                                                                                                                          |  |          |    | 0.375%     | \$ 2,140   |
|                                                                                                                                     |  |          |    |            | \$ 572,771 |
| Professional Services (Architecture/Engineering)                                                                                    |  |          | \$ |            | 57,277     |
| Direct Owner Costs (content supplied by owner)                                                                                      |  |          | \$ |            | 118,000    |
| (Would include costs for Signage, Artwork, Insurance, Furnishings, Fixtures, Equipment, IT, computer systems, and security systems) |  |          |    |            |            |



## 1.3 – SCHEDULE & PHASING

### Summary of Schedule:

- Upon approval of the project, the City will initiate a contract for Architectural & Engineering Services to continue with development of the design and final construction documentation.
- Approximately 3 - 4 months will be required to complete Design Development, Construction Documentation, Permitting, & Bidding services.
- Phasing could be utilized to keep the departments as operational as possible. Could be two phases, one for each side. Or a third phase could be used to get the demolition at the North area done so those stations can be used throughout.
- The length of construction time is estimated at approximately 6 months.
- Further development of the phasing and floor plans would be required if the project is approved to proceed.



## 1.4 – HISTORIC OVERVIEW

### HISTORIC OVERVIEW:

Due to the historic significance of the Daniel Boone portion of the building, special consideration has been given to keeping the existing character of the DB lobby space. Any work around the DB lobby will be in keeping with the historical look and finishes already in place.



EXISTING LOOKING WEST

DEMO PORTION OF  
ENCLOSURE BENEATH  
STAIRS (FOR  
MAXIMUM VISIBILITY)

DEMO LOWER PORTION  
OF WALL ONLY - TOP  
TO REMAIN

EXISTING LOOKING EAST



## 2.1.1 – FIRST FLOOR PLAN NARRATIVE

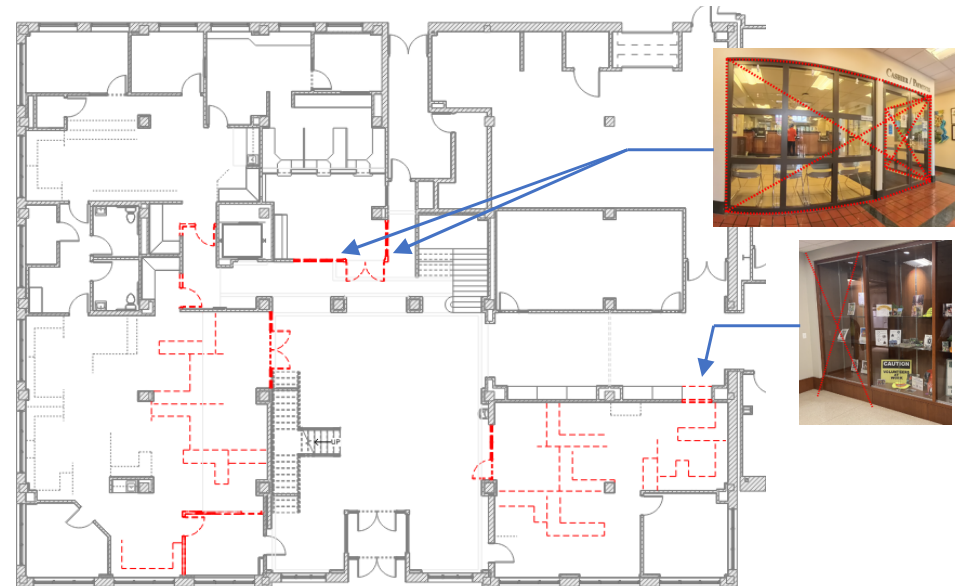
### Summary of First Floor:

- The North area stays much the same with the main exception being that it becomes more open to the lobby.
- The space West of the elevator is renovated to allow better flow between the upper and lower parts.
- The West side is renovated to create four ballistic customer service windows and open the service windows space to the lobby. The office off the lobby switches places with the training area to create a staff access path.
- The Southeast area is renovated to create three ballistic customer service windows and open the service windows space to the lobby. A small office enclosure is added to house a new small vault. A back exit is created by removing one section of the corridor display case.
- Existing workstation furniture will be used for staff in the open office areas and new workstations are included at the customer windows.
- Exterior windows will receive ballistic film.
- Customer service windows will receive roller shades to pull down when office hours are closed
- The historic Daniel Boone lobby is to retain its character.

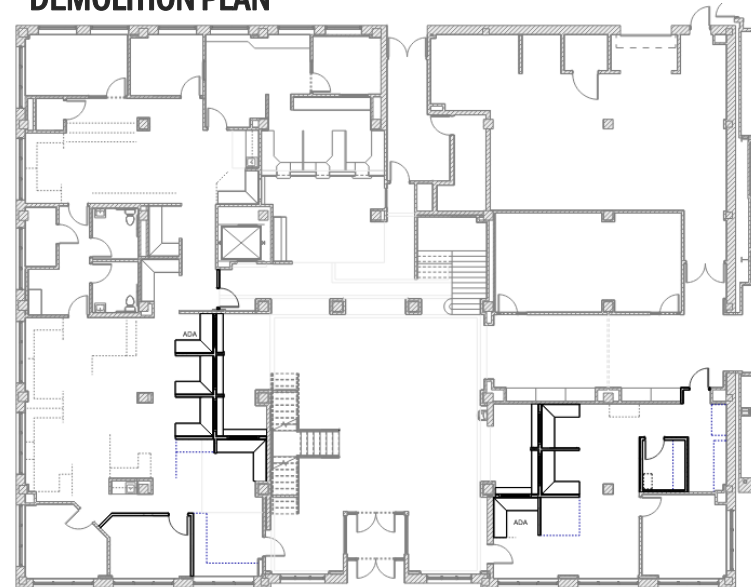


#### NOTE:

Gray walls = Existing to Remain  
Red Dashed lines = Demolition  
Black walls = New Construction  
Dashed lines = furniture boundary  
Solid lines = built-in



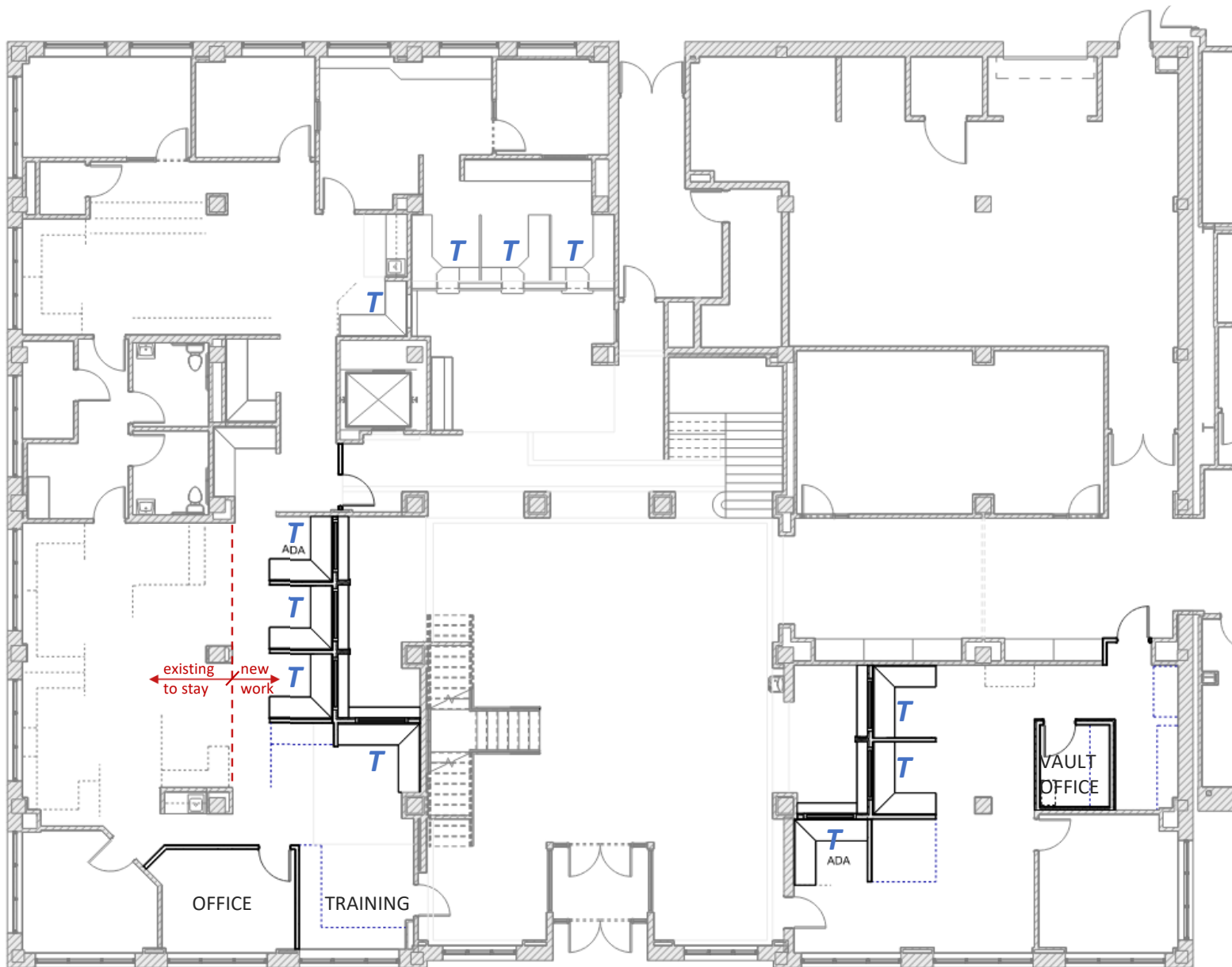
DEMOLITION PLAN



NEW WORK PLAN



## 2.1.2 – FIRST FLOOR PLAN ENLARGED



### NOTE:

Gray walls = Existing to Remain  
 Black walls = New Construction  
 Dashed lines = furniture system  
 Solid lines = built-in

**T** = Bullet Resistant Teller Window

Safe: basis-of-design Nationwide  
 Safes & Security model 2075-E  
 Fireproof Safe (14.4 Cu. Ft.)



### INSIDE DIMENSIONS

55.5" (H) x 28.5" (W) x 15.8" (D)



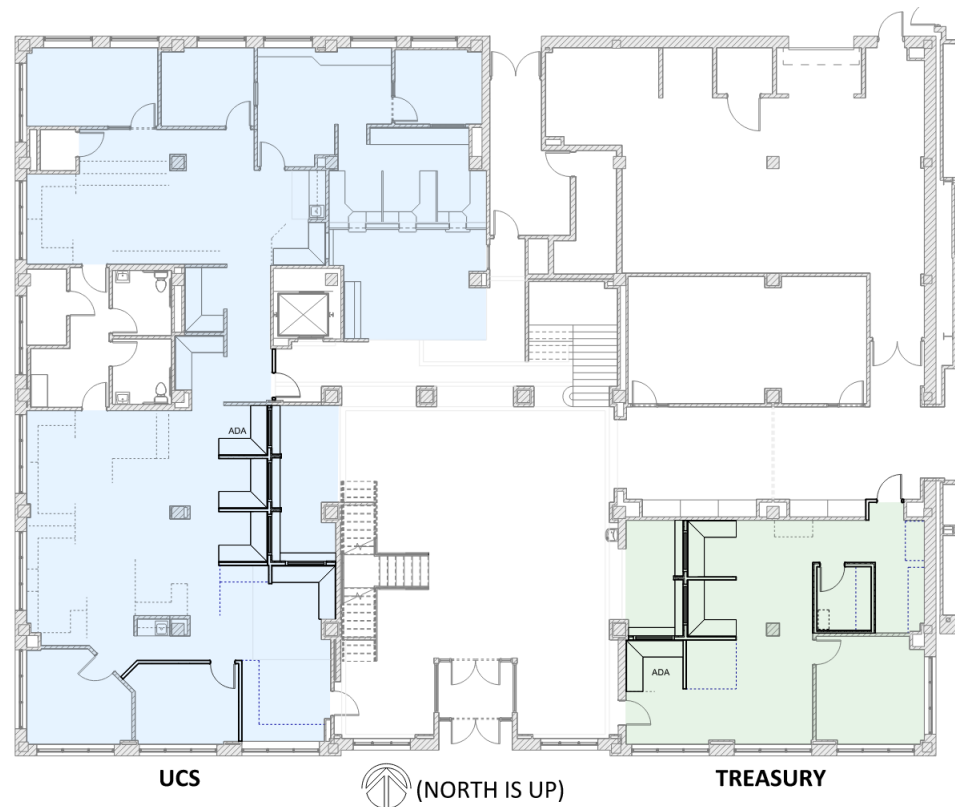
## 2.2 – ENGINEERING NARRATIVE

### ENGINEERING SYSTEMS OVERVIEW:

The study's objective was to identify a cost estimate to modify existing office space to a new customer experience center. To perform the cost estimate, J-Squared Engineering did a walkthrough of the existing office spaces and reviewed existing drawings provided by the City of Columbia.

### Design References:

International Building Code 2018  
International Mechanical Code 2018  
International Plumbing Code 2018  
International Fire Code 2018  
National Electric Code 2011 & 2017  
International Energy Code 2018



## 2.3.1 – MECHANICAL NARRATIVE - OVERVIEW

### MECHANICAL SYSTEM OVERVIEW:

The existing space is supplied by fan coil units for heating and cooling while a dedicated outside air unit provides the required outside air. The heating and cooling systems have a ducted supply and return, with most of the supply grilles being a downward discharge slot diffuser, which appears to have caused comfort issues. The outside air is being delivered straight into the spaces via diffusers, which appears to have caused some comfort issues as well.

#### **Modification for First-floor Southwest corner (UCS Customer Service Counter / Office):**

This existing area is comprised of an open office, a customer service counter & two private offices. The existing HVAC equipment appears to be adequate in tonnage but two of the existing fan coils will need to be relocated, ductwork will need to be modified and the existing supply diffusers and return grilles will need to be relocated in some areas per the new floorplan. We have planned to change the slot diffusers for plaque diffusers during the relocation of the supplies. Outside air supply grilles will be replaced with new grilles that allow for directional control. A return air transfer will be added between the customer area & office area.

#### **Modification for First-floor Southeast corner (Treasury Customer Service Counter / Office):**

This area is comprised of an open office, one private office and a customer service counter. The existing HVAC appears to be adequate in tonnage, but existing ductwork will need to be modified and the existing supply diffusers and return grilles will need to be relocated in some areas per the new floorplan. We have planned to change the slot diffusers for plaque diffusers during the relocation of the supplies. Outside air supply grilles will be replaced with new grilles that allow for directional control and the outside air that serves the open office area will be ducted directly into the return side of the fan coil unit. A return air transfer will be added between the customer area & office area.

#### **Modification for first floor north-center (UCS Customer Service Counter):**

This area will stay mostly the same with the main exception being that the storefront will be removed and it will become open to the lobby. The existing HVAC will remain as existing in this area.



## 2.3.2 – MECHANICAL NARRATIVE - SPECIFICS

### MECHANICAL SYSTEM SPECIFICS:

**Sheetmetal:** Ductwork construction shall utilize galvanized prime grade steel sheets per ASHRAE and SMACNA Standards.

All supply ductwork shall be internally insulated per current ASHRAE 90.1-2019 standards.

**Supply, Return, and Exhaust Diffusers:** All supply, return, and outside air shall be steel or aluminum and coordinated with reflected ceiling plans. New supply diffusers shall be on average 24" x 24", 4-way square plaque style and new return and grilles shall be on average 24" x 24" egg-crate face type.

**Ductwork Accessories:** Provide single thickness turning vanes in all supply duct turns. Provide duct access doors for all internal mounted equipment. Provide 45° take-off fittings with volume damper for all round take-offs to diffusers. Provide dampers in all branch runs for proper balancing.

**Control Wiring:** All temperature control wiring shall be by Mechanical or Temperature Control Contractor.

**Pipe, Fittings, and Valves Drain Piping:** Type "L" Copper Pipe: Provide with wrought copper fittings 50/50 solder joint. Provide with plugged tee cleanouts unless otherwise accessible for cleaning. Trap all air unit condensate drains.

**Heating / Cooling Water Piping:** Type "L" Copper Pipe: Provide with wrought copper fittings 50/50 solder joint.

**Valves:** Quarter turn ball valves.

**Condensate drain piping:** Insulate condensate drain lines with ½" thick of Armaflex II slip on type insulation. Do not split.

**Testing and Adjusting:** Contractor shall operate and test the air conditioning and ventilation systems and instruct the Owner of its operation.

- Perform a series of general capacity and operating tests. The tests shall demonstrate the specified capacities of various pieces of equipment.
- The entire temperature controls systems shall be adjusted and balanced and put in operating condition to cause the equipment to maintain the temperature in accordance with the intent of the specifications. Operate and test equipment during summer and winter seasonal start-up.
- Piping should be cleaned and tested before equipment and insulation installation. Test piping system to 1 ½ times the operating pressure but not less than 50 PSI.
- Submit the complete test and balance report for review to the Architect / Engineer. Test procedure and report shall conform to NEBB standards



## 2.4 - ELECTRICAL NARRATIVE

### ELECTRICAL SYSTEM OVERVIEW:

The existing electrical system that feeds this area is 277/480V, 3ph & 120/208V, 3ph. We believe that demolition will free up enough spare circuits to use to refeed the new receptacles for the customer service counters / desks. For the fan coils that are being relocated in the UCS office, power will need to be relocated as well.

We plan to install new light fixtures in renovated spaces as well as replace existing light fixtures in place in the south UCS office & the Treasury office. Exit & egress lighting will remain as existing. New fixtures will be LED troffers with a center basket equal to Metalux Cruze SB. The lighting controls for the south UCS office & Treasury office will be replaced with new local occupancy / vacancy controls and will be disconnected from the existing lighting control panel. Existing lighting circuits will be traced and will be reused to feed new light fixtures. Target average foot candle levels in all office spaces will be 40 fc.

### Telecommunications:

Each data box shall be 4" square with a single gang ring and shall be provided with a 1-1/4" conduit and pull string.

### Access Control:

Door access control devices will be salvaged at demolished locations & will be reinstalled on new doors by the Electrical Contractor.

### Security:

Cameras will be relocated as needed in renovated spaces by Owner. Any new devices required will be provided and installed by Owner.



## 2.5 – FIRE PROTECTION NARRATIVE

### FIRE PROTECTION SYSTEMS OVERVIEW:

#### Fire Alarm System:

The fire alarm system will be modified as required for the new space configurations. Fire alarm contractor shall provide deferred submittal package for fire alarm system. Submittal shall include battery calculations, voltage drop calculations, equipment specifications for devices and panels, etc. Design shall be sealed by a qualified design professional licensed by the state.

#### Fire Sprinkler System:

The fire sprinkler system will be modified as required for the new space configurations. System shall be laid out and installed per NFPA 13. Fire sprinkler contractor to provide deferred submittal package for fire sprinkler system. Submittal shall include hydraulic calculations and sprinkler system drawings sealed by a qualified design professional licensed by the state.



# APPENDIX - 3.1 – ARCHITECTURAL & ENGINEERING OPINION OF PROBABLE COST

Note: Cost per Square Foot shown does not include Professional Services or Direct Owner Costs

| UCS/TREASURY REMODEL TOTAL PROJECT COST                                                                                             |          |  |               |      |                   | \$ 748,048        |
|-------------------------------------------------------------------------------------------------------------------------------------|----------|--|---------------|------|-------------------|-------------------|
| UCS/TREASURY Construction Costs                                                                                                     | 2,350 SF |  | \$ 243.73 /SF |      |                   |                   |
| Architectural Interior Selective Demolition                                                                                         |          |  |               |      | \$ 29,890         |                   |
| Architectural - Interior                                                                                                            |          |  |               |      | \$ 167,610        |                   |
| Mechanical                                                                                                                          |          |  |               |      | \$ 49,500         |                   |
| Electrical                                                                                                                          |          |  |               |      | \$ 97,250         |                   |
| Plumbing                                                                                                                            |          |  |               |      | \$ -              |                   |
| Fire Protection                                                                                                                     |          |  |               |      | \$ 9,000          |                   |
| Access Controls Allowance                                                                                                           |          |  |               |      | \$ 13,000         |                   |
| <b>SUBTOTAL</b>                                                                                                                     |          |  |               |      | <b>\$ 366,250</b> |                   |
| Contingency (Design & Construction)                                                                                                 |          |  |               |      | 15.0%             | \$ 54,938         |
| Phases 3.00 % Increase per added phase                                                                                              |          |  |               |      | 5.0%              | \$ 63,178         |
| General Conditions                                                                                                                  |          |  |               |      | 10.0%             | \$ 48,437         |
| Contractor Profit                                                                                                                   |          |  |               |      | 5.0%              | \$ 26,640         |
| Perf / Pay Bond                                                                                                                     |          |  |               |      | 2.0%              | \$ 11,189         |
| Permitting                                                                                                                          |          |  |               |      | 0.375%            | \$ 2,140          |
|                                                                                                                                     |          |  |               |      |                   | <b>\$ 572,771</b> |
| Professional Services (Architecture/Engineering)                                                                                    |          |  | \$            |      |                   | <b>57,277</b>     |
| Direct Owner Costs (content supplied by owner)                                                                                      |          |  | \$            |      |                   | <b>118,000</b>    |
| (Would include costs for Signage, Artwork, Insurance, Furnishings, Fixtures, Equipment, IT, computer systems, and security systems) |          |  |               |      |                   |                   |
| IT/Security/Cameras                                                                                                                 |          |  |               | \$ - | \$ 8,000          | 7%                |
| HVAC / Controls (included in Mechanical above)                                                                                      |          |  |               | \$ - | \$ -              | 0%                |
| Furnishings, Fixtures, and Equipment                                                                                                |          |  |               | \$ - | \$ 107,500        | 91%               |
| Artwork                                                                                                                             |          |  |               | \$ - | \$ -              | 0%                |
| Signage / Wayfinding                                                                                                                |          |  |               | \$ - | \$ 2,500          | 2%                |
| Insurance / Taxes / etc.                                                                                                            |          |  |               | \$ - | \$ -              | 0%                |
| Note: Cost per Square Foot shown does not include Professional Services or Direct Owner Costs                                       |          |  |               |      |                   |                   |



## APPENDIX – 3.2 –CONCEPTUAL RENDERINGS

