

STATE OF KANSAS
DESIGN BUILD PROJECT NO. A-014454

ADDENDUM NO. 08
PRE-PROPOSAL
September 26, 2022

ISSUED BY:

Department of Administration (DOA)
Office of Facilities and Property Management (OFPM)
Design, Construction & Compliance (DCC)
700 SW Harrison St., Suite 1200
Topeka, Kansas 66603-3929

NOTICE ALL RESPONDENTS FOR THE:

Kansas Department of Administration
Docking State Office Building Reconstruction
Topeka, Kansas

You are instructed to read and to note the following described changes, corrections, clarifications, omissions, deletions, additions, approvals and pertinent statements.

Article 8-1; Environmental Survey and Report

- A. Proposers may utilize link communicated via email to access 2022 09 22 **Environmental Inspection Report** for reference. This report focuses on floors 1 through 14 for the complete removal of those levels of the building. The Design Build team should assume that all asbestos-containing items encountered during renovation of the basement or subbasement will also be removed if they are impacted by the proposed renovation scope of work. Replacement and/or repairs to areas where abatement occurs will also be the responsibility of the Contractor, in order to return the building to conditions consistent with existing surrounding construction and level of finish, and to meet all applicable codes.

Article 8-2; Geotechnical Engineering Report

- A. Proposers may utilize link communicated via email to access **Geotechnical Engineering Report** for reference. The Design Build team should review the report and assume that all requirements indicated in the report need to be accommodated within the proposed design solution and Technical Proposal.

Article 8-3; Code Footprint

- A. Proposers may utilize link communicated via email to access **Draft Code Footprint** for reference.

Article 8-4; Revit Models

- A. Following receipt of signed Architect-Contractor Electronic Data License and Release Agreement, **Revit Models** were extended for reference on 2022 09 16 via email link to each team.

Article 8-5; Energy Modeling (attachment)

- A. See attached **Energy Model Input Values** for reference (4 pages).

Article 8-6; Demolition Clarifications

- A. All existing abandoned furniture and equipment is to be disposed of as part of the demolition.
- B. Not all interior partition walls are indicated in the plans for floors 1 through 14. It is assumed that the Contractor will remove all finishes and structure regardless of whether it is indicated on the plans.
- C. A partial raised floor and mechanical system is present and is also intended to be demolished.
- D. The existing buried fuel tanks on the east side of the site are to remain and be protected.

Article 8-7; Design Intent Narratives Clarifications (attachments)

- A. Refer to updates included in the attached **MEP Design Intent Narrative Clarifications** document (6 pages).
- B. Refer to updated **Code Approach** (10 pages), and **Smoke Control Narrative** (2 pages), attached.
- C. Proposers are encouraged to include in their interview presentation ideas for leveraging the public spaces within the Docking building for historic exhibits, display, and state-agency rotating exhibits.

Article 8-8; Response to Inquiries

- A. Each Inquiry as submitted with response as follows:

1. Per the “2013-11-15 DSOB Supplementary Survey” provided in Addendum 2, tremolite fireproofing materials on the upper ceilings and the associated overspray on the underside of the metal deck is identified as containing less than 1% ACM. NESHAP considers this concentration of ACM as trace asbestos, therefore it is not regulated by the EPA. However, OSHA regulations still apply to materials containing less than 1% ACM, therefore its removal would need to follow special work practice requirements as outlined by OSHA in Section 29 CFR 1926.1101(g). These work practice requirements include wet methods, leak-tight containers, employee monitoring, prohibition of certain removal equipment, etc. The OSHA-compliant removal of this material prior to structural demolition activities would have significant cost and schedule implications. Please verify that the in-process environmental survey referenced in Addendum #5 will include updated test results for this material to confirm if it does in fact contain asbestos. It should be noted that the “Docking State Office Building Asbestos Chart” provided in Addendum 2 indicates this material as not being ACM. OSHA’s interpretation of materials containing less than 1% ACM can be found here: <https://www.osha.gov/laws-regs/standardinterpretations/2003-11-24-0>. It’s important all proposers are treating removal of this material in the same OSHA compliant manner if it does contain Asbestos.
 - a. *Refer to Environmental Inspection Report.*
2. Please confirm if the in-process environmental survey referenced in Addendum #5 will include LBP testing of the existing structural steel. The structural demolition portion of the project will require torching and/or cutting of the existing structural steel, and the level of worker protection will be dependent on the potential exposure to LBP.
 - a. *Refer to Environmental Inspection Report. No other testing will be provided by the Owner.*
3. Please clarify what level of “occupancy” should be expected for the existing basement and subbasement throughout construction. For example, should teams expect that these areas will have several maintenance staff personnel coming and going throughout the day, or should teams assume there will be minimal maintenance staff in these areas only when necessary for ongoing operations? What level of vehicular traffic should be expected in the dock area?
 - a. *The Owner will limit occupancy of the Sub Basement and Basement to critical staff only, but this will include some 24hr staff for boiler operations during heating season, and daily access for other staff as needed. There will be arrangements made with the selected Contractor for necessary daily access of Owner’s staff. Two separate and protected means of egress will be required from each level at all times when any staff are present. The below grade tunnel connection to the Statehouse will be one of these egress/entrance routes. The contractor will be responsible for working with the Owner to develop temporary egress plans for each phase of demolition and construction per the OFPM requirements. Owner anticipates less than 20 total staff at any time. Deliveries to the dock will be coordinated with the Contractor but should be assumed to occur once per week.*
4. Regarding the Supplementary Conditions Part E Economic Price Adjustment (EPA) clause: It notes in B3a that cost adjustment is not applicable to items purchased prior to the effective date of each 1 year adjustment. If a material is required to be released prior to that date to maintain schedule, and has significant escalation, how will that be managed? Up or down, are fee and insurance mark-ups applicable to any adjustment from the EPA that occurs?
 - a. *See revised **Supplementary Conditions Section E** (2 pages, attached).*
5. Please provide further explanation and background of the salvage material concept. Has there been testing, etc. completed on these items and a loss factor been accounted for in the current re-use plan?
 - a. *Yes, loss has been accounted for. Refer to Architectural Demolition Drawings for quantities of existing and reused materials.*
6. Will the teams need to include an Emergency Responders Radio Communications (ERRC) in their response or just the infrastructure with the State providing testing and additional cost if the system is required?
 - a. *A conduit will be installed as a part of this project, see updated Design Intent Narrative information included with this Addendum. The Contractor will not be required to provide radio signal testing or signal booster installation.*
7. Elevation/Glass legend is included in bottom right corner of Design Guide Illustrations Sheet A200. However, none of the elevations shown are tagged. Please provide further clarification on what glass types are to be included in which elevation. Specifically, IG1/2/3 – all glass types in the legend do not have distinguishable markings differentiating from one another.

- a. *IG-1 is typical glazing, IG-2 is ballistic glazing indicated on elevations with a letter B, IG-3 is the electrochromatic glazing which is hatched on the elevations with a medium gray dot grid pattern (gray).*
8. Design Guide Illustrations Sheet S001 indicates the structure is classified as a risk category III facility. 2018 IBC Table 1604.5 requires police stations to be assigned to risk category IV. With program space for the Capitol Police dispatch and offices, verify risk category IV is not required for this facility. Verify the programmed Capitol Police areas are not intended for “critical emergency operations” use per 2018 IBC Section 423.3 and the hardened wall constructed area is not required to comply with ICC 500 storm shelter requirements.
 - a. *Risk category IV is not required, as this is not considered a police facility or a required space for “critical emergency operations”. The hardened wall area is not required to meet ICC 500 storm shelter requirements.*
9. Please advise if the Design-Build teams have the ability to make product substitutions that differ from the basis-of-design products outlined in the bridging documents during the RFP response phase, assuming the substitutions are considered an equal.
 - a. *Proposer shall meet standard of basis-of-design product. If product substitution is not accepted prior to Proposal and/or Owner finds the proposed product to not meet required standard, Design Builder shall provide basis-of-design Owner’s Minimum Requirement product.*
10. Please clarify the intent of the 3 different Façade A cladding options, i.e. can teams select which options they would like to utilize, or should three different prices be submitted for each option?
 - a. *The Proposers should maximize the use of reused limestone in their proposals. If all limestone needed for the project cannot be sourced as reused from the existing Docking Building, then the alternatives 2 and 3 are optional materials for teams to utilize instead. The Owner encourages teams to present their strategy for maximizing the limestone reuse as a part of the interview presentation.*
11. Please confirm the intent of the salvaged/reused limestone is that it looks new instead of existing/weathered, i.e. it is intended to be trimmed and resurfaced.
 - a. *Yes, salvaged/reused limestone shall be finished to clean stone (new appearance) prior to reinstallation.*
12. Please clarify intended quantities and/or locations for the motorized roller shades, as the reflected ceiling plans and building sections conflict with each other.
 - a. *Quantities, types, and locations for roller shades are correctly indicated on the Reflected Ceiling plans.*
13. Please review and clarify requirements for wall types throughout the building from both an acoustical and fire-rating perspective. For example, stair enclosures are indicated to have walls that only extend 6” above ceiling. Should teams assume the wall types as indicated are correct, or should teams account for what they believe will ultimately be required?
 - a. *All partitions noted as type A should be changed to type B. In addition, refer to Code Footprint Plans and Code Narrative for locations of fire rated assemblies.*
14. Please confirm if Skyfold partition dimensions can be slightly modified to accommodate typical panel sizes, therefore reducing the premium for custom Skyfold partitions.
 - a. *Partition shown in room 301 may be shortened to 24 feet. Other partitions should be provided as shown on the plans.*
15. Please confirm the scope (new finishes and lighting) of pedestrian tunnel is intended to extend to the Capitol; and, if so, please provide a drawing or overall length for the remainder of the tunnel through termination point.
 - a. *The intent of the tunnel upgrades should be for the entire tunnel, which is approximately 444 feet long (not including the North/South portion at Docking).*
16. Please confirm that teams should assume a new fire pump will not be required.
 - a. *Refer to Design Narrative amendments issued with this Addendum.*
17. Design Narrative page DIT-4 indicates the existing sanitary sewer is to be televised and states “It is likely that the VCP services will require replacement”. Considering a determination cannot be made until an investigation is conducted, please advise if pricing should assume the sanitary sewer will need to be replaced, or if pricing should assume it will remain as-is.
 - a. *Refer to Design Narrative amendments issued with this Addendum.*

18. Please define the mechanical requirements for “Agency Spaces”, i.e. please provide quantity of terminal units per space and type of diffuser to be utilized.
 - a. *Refer to Design Narrative amendments issued with this Addendum.*
19. Please define any plumbing requirements for “Agency Spaces”.
 - a. *Refer to Design Narrative amendments issued with this Addendum.*
20. Specifications require welded fittings for carbon steel hydronic piping while schedule on M301 allows grooved, please advise if Victaulic coupling can be utilized.
 - a. *Refer to Design Narrative amendments issued with this Addendum.*
21. Specifications require soldered fittings for copper water piping while schedule on M301 allows grooved fittings, please confirm grooved fittings can be utilized. In addition, please advise if press fittings be used for copper piping systems.
 - a. *Refer to Design Narrative amendments issued with this Addendum.*
22. Is the smoke system associated with the Atrium a “Smoke Control System” and therefore requires UL 864 listing for the entire BMS system as the BMS system is being utilized for smoke control VAV terminal unit control?
 - a. *Refer to Design Narrative amendments issued with this Addendum.*
23. Is the 30% increased ventilation air a contractual requirement?
 - a. *Refer to Design Narrative amendments issued with this Addendum.*
24. Design Narrative page DIT-26 “Existing below grade drain and waste piping in the sub-basement is being replaced by a separate project. The required venting in this project utilizes air admittance valves. The venting for the sub-basement drainage system shall be connected and extended into the permanent building venting system as part of the renovation project.” Please provide plans for this replacement project or at a minimum provide vent connections points where these air admittance valves are located.
 - a. *Refer to Design Narrative amendments issued with this Addendum.*
25. Program Summary page 19 states “The above ground domestic water piping is copper. The piping appears to be in good condition; however, jointing methods in buildings of this age utilized solder which contained lead.” Please confirm the potential lead solder can remain and be reused. If piping cannot be reused, please provide locations of piping to be replaced.
 - a. *Refer to Design Narrative amendments issued with this Addendum.*
26. Please confirm the plaza snow melt system is intended to be a hydronic system fed by the existing boiler. Specification Section 238113 indicates the basis of design product as an electric system.
 - a. *Refer to Design Narrative amendments issued with this Addendum.*
27. Sheet M103 indicates areas for “AHU-9 EXISTING HVAC IN THIS AREA SHALL BE REPLACED” does this include all ductwork including grilles and diffusers or can the existing ductwork be reused?
 - a. *Refer to Design Narrative amendments issued with this Addendum.*
28. Please provide anticipated number of doors that will require security rough-in. Please also provide anticipated number of cameras that will require rough-in. Please also provide rough-in requirements for the sound reinforcement system.
 - a. *Refer to Design Narrative amendments issued with this Addendum.*
29. Please confirm that plug load control is required per Specification 260925.2.09.
 - a. *Refer to Design Narrative amendments issued with this Addendum.*
30. Specification Section 261100.2.1.E indicates that MC cable will only be allowed for fixture whips. Please confirm that MC cable is allowed for branch circuiting, and that home runs shall be in conduit.
 - a. *Refer to Design Narrative amendments issued with this Addendum.*
31. Specification Section 262100 requires the use of copper feeder conductors. Please advise if aluminum conductors would be acceptable.
 - a. *Refer to Design Narrative amendments issued with this Addendum.*
32. Specification Section 269100.1.5.A has conflicting information regarding generator run time. Please confirm if the run time should be 48-hours, 24-hours, or the code-required 2-hours. Please also confirm the generator shall have its own tank and will not use the existing fuel storage. Please also advise if any fuel containment will be required.
 - a. *Refer to Design Narrative amendments issued with this Addendum.*

33. The program summary section 05.5 Electrical Distribution Paragraph 5 states that the existing generator needs to be reconfigured to 480Y277V from its existing 208/120. The bridging documents do not reflect this scope and show a new 480/277 generator. Please confirm the new generator scope indicated in the Drawings is correct.
 - a. *Refer to Design Narrative amendments issued with this Addendum.*
34. Sheet C302 indicates existing south parking lot lights to remain, however ES101 indicates new lighting for the south parking lot. Please confirm the south parking lot is intended to receive new lighting.
 - a. *Refer to Design Narrative amendments issued with this Addendum.*
35. Please confirm that the reference to circadian lighting in the lower level in the Design Narrative is in reference to the new lighting in the tunnel.
 - a. *Refer to Design Narrative amendments issued with this Addendum.*
36. Please confirm that the Design-Build teams should do their own design for the lighting in the penthouse and mechanical mezzanine areas, as these areas are not shown on the lighting sheets.
 - a. *Refer to Design Narrative amendments issued with this Addendum.*
37. Please confirm that the Design-Build teams will need to maintain the integrity of the existing security systems serving the basement and subbasement during the course of construction. If possible, please clarify the extent of the systems that will need to remain operational.
 - a. *Refer to Design Narrative amendments issued with this Addendum.*
38. Please confirm that a lightning protection system will be required for the new building.
 - a. *Refer to Design Narrative amendments issued with this Addendum.*
39. Please confirm that the following low voltage systems will be OFOI with rough-in provided by the Design-Build teams: security, A/V, data/telecom, and sound reinforcement. For example, Plan Note 17 and General Note 7 in the architectural drawings indicate A/V equipment and data to be OFCI.
 - a. *Refer to Design Narrative amendments issued with this Addendum.*
40. Will light fixture alternatives be acceptable?
 - a. *A list of alternative fixtures will be issued in a subsequent Addendum.*
41. May 11x17s be included within proposal response or are proposers limited to 8.5x11 format?
 - a. *11x17s are acceptable*

Attachments: Supplementary Conditions – Part E, Energy Model Inputs, Code and Smoke Control Narrative, MEP Design Intent Narrative Clarifications.

*** RECEIPT OF THIS ADDENDUM IS TO BE ACKNOWLEDGED WITHIN PROPOSAL A-014454***

DESIGN, CONSTRUCTION & COMPLIANCE

SUPPLEMENTARY CONDITIONS – PART E

A. ECONOMIC PRICE ADJUSTMENT

1. A fixed-price contract with economic price adjustment provides for upward and downward revision of the stated contract price (the Stipulated Sum) upon the occurrence of specified contingencies.
2. Adjustments based on actual costs of material. These price adjustments are based on increases or decreases in specified costs of material that the contractor actually experiences during contract performance.
3. Price adjustments based on material costs shall be limited to contingencies beyond the Contractor's control, and are defined below.

B. ECONOMIC PRICE ADJUSTMENT - MATERIAL

1. Within the Price Proposal, the Contractor must include a Schedule of Values specifically identifying those Materials subject to an Economic Price Adjustment. The amount shown in the Schedule of Values will establish the baseline cost. Price changes for Materials not identified in the initial Schedule of Values will not be candidates for an Economic Price Adjustment. Upon the procurement of Materials subject to an Economic Price Adjustment, the Contractor shall notify the Owner if the prices for material shown in the Schedule of Values either increase or decrease. The notice shall include the Contractor's proposal for an adjustment in the Stipulated Sum to be negotiated under paragraph (2) of this clause, and shall include, in the form required by the Owner, supporting data explaining the cause, effective date, and amount of the increase or decrease and the amount of the Contractor's adjustment proposal.
2. Promptly after the Owner receives the notice and data under paragraph (1) of this clause, the Owner and the Contractor shall negotiate a price adjustment in the Stipulated Sum and its effective date. The Owner shall modify this contract (1) to include the price adjustment and its effective date and (2) to revise the prices of material as shown in the Schedule of Values to reflect the increases or decreases resulting from the adjustment. The Contractor shall continue performance pending agreement on, or determination of, any adjustment and its effective date.
3. Any price adjustment under this clause is subject to the following limitations:
 - a) Any adjustment shall be limited to the effect on prices for material shown in the Schedule of Values. There shall be no adjustment for-
 - (i) Supplies for which the production cost is not affected by such changes;
 - (ii) Changes in prices other than those shown in the Schedule; or
 - (iii) Changes in the quantities of material used from those shown in the Schedule for each item.
 - b) No upward adjustment shall apply to materials that are required to be procured, delivered or performed before the effective date of the adjustment, unless the Contractor's failure to deliver or perform according to the delivery schedule results from causes beyond the Contractor's control and without its fault or negligence, within the meaning of the Default clause.
 - c) The aggregate of the increases in the total overall cost of Materials identified as subject to an Economic Price Adjustment made under this clause shall not exceed annual

accrual rate of 6 percent of the original material price. There is no percentage limitation on the amount of decreases that may be made under this clause.

4. The Owner may examine the Contractor's books, records, and other supporting data relevant to the cost material during all reasonable times until the end of 3 years after the date of final payment under this contract.

September 23, 2022

DOCKING STATE OFFICE BUILDING

Energy Model Input Assumptions

GENERAL PARAMETERS

Weather File	Topeka Municipal Ap; USA
Building Type	Office
Building Area	276,000 ft ² (approximately 193,000 sf fully conditioned)
Modeling Software	Open Studio 3.3.0 + EnergyPlus v9.6 + KIVA (ground modeling)

ENVELOPE PARAMETERS | Design Case

Exterior Walls	Assembly U: 0.071 Btu/hr-ft ² -°F [R-14]
Roof Construction	Assembly U:0.033 Btu/hr-ft ² -°F [R-30]
Windows	Assembly U:0.45 Btu/hr-ft ² -°F SHGC: 0.36 (based on Solarban 90 + thermally broken aluminum frames)
Window to Wall Ratio	Overall 36% N 27% E 58% S 21% W 20%
Infiltration Rates	0.045 cfm/ft ² -envelope area
Internal Mass	Furnishings included Lobby thermal mass per design
Thermal labyrinth	Per design, modeled using KIVA for heat/ground transfer & storage
Earth tube	Per design, modeled in EnergyPlus
Transpired Solar Collectors	Per design, modeled in EnergyPlus

ENVELOPE PARAMETERS | Basecase (code)

Exterior Walls	Assembly U: 0.033 Btu/hr-ft ² -°F [R-30]
Roof Construction	Assembly U:0.02 Btu/hr-ft ² -°F [R-50]
Windows	Assembly U:0.38 Btu/hr-ft ² -°F SHGC: 0.23 (based on Solarban 90 + thermally broken aluminum frames)
Window to Wall Ratio	Overall 36% N 27% E 58% S 21% W 20%
Infiltration Rates	0.045 cfm/ft ² -envelope area
Internal Mass	Furnishings included

SPACE LOAD PARAMETERS | Design Case

Space Type	Lighting ¹	Equipment ²	Occupants ³	Outside Air (basecase)
Perimeter Office	0.55 W/ft ²	1.0 W/ft ²	175 ft ² /person	7.5 cfm/person + 0.088 cfm/ft ²
Core Office	0.55 W/ft ²	1.0 W/ft ²	150 ft ² /person	7.5 cfm/person + 0.088 cfm/ft ²

Core Support (unoccupied)	0.15 W/ft ²	0.75 W/ft ²	-	7.5 cfm/person + 0.088 cfm/ft ²
Lobby	0.75 W/ft ²	0.5 W/ft ²	150 ft ² /person	7.5 cfm/person + 0.088 cfm/ft ²
Core Amenities	0.2 W/ft ²	3.0 W/ft ²	1000 ft ² /person	11 cfm/person + 0.18 cfm/ft ²
Conference/Training A	0.65 W/ft ²	1.5 W/ft ²	25 ft ² /person	7.5 cfm/person + 0.088 cfm/ft ²
Conference/Training B	0.65 W/ft ²	1.5 W/ft ²	25 ft ² /person	7.5 cfm/person + 0.088 cfm/ft ²
Conference/Training C	0.65 W/ft ²	1.5 W/ft ²	25 ft ² /person	7.5 cfm/person + 0.088 cfm/ft ²
Conference/Training D	0.65 W/ft ²	1.5 W/ft ²	25 ft ² /person	7.5 cfm/person + 0.088 cfm/ft ²

SPACE LOAD PARAMETERS | Basecase (code)

Space Type	Lighting ¹	Equipment ²	Occupants ³	Outside Air (basecase)
Perimeter Office	0.9 W/ft ²	1.0 W/ft ²	175 ft ² /person	5 cfm/person + 0.06 cfm/ft ²
Core Office	0.9 W/ft ²	1.0 W/ft ²	150 ft ² /person	5 cfm/person + 0.06 cfm/ft ²
Core Support (unoccupied)	0.9 W/ft ²	0.75 W/ft ²	-	5 cfm/person + 0.06 cfm/ft ²
Lobby	0.9 W/ft ²	0.5 W/ft ²	150 ft ² /person	5 cfm/person + 0.06 cfm/ft ²
Core Amenities	0.9 W/ft ²	3.0 W/ft ²	1000 ft ² /person	7.5 cfm/person + 0.12 cfm/ft ²
Conference/Training A	0.9 W/ft ²	1.5 W/ft ²	25 ft ² /person	5 cfm/person + 0.06 cfm/ft ²
Conference/Training B	0.9 W/ft ²	1.5 W/ft ²	25 ft ² /person	5 cfm/person + 0.06 cfm/ft ²
Conference/Training C	0.9 W/ft ²	1.5 W/ft ²	25 ft ² /person	5 cfm/person + 0.06 cfm/ft ²
Conference/Training D	0.9 W/ft ²	1.5 W/ft ²	25 ft ² /person	5 cfm/person + 0.06 cfm/ft ²

*Conference/Training A-D differ only in schedule. Included to capture the way these spaces can be highly variable in occupancy, and do not all follow the same occupancy pattern, at the same time. A is more lightly occupied (through schedules) whereas D is very dense, with B & C in between.

*Design ventilation rates significantly exceed code minimum. The Basecase model follows the actual code minimum, which would result in approximately 20,500 cfm. Actual design is 30,000 cfm.

*Basecase lighting follows the Building Area Method (same density across the building), as allowed by ASHRAE 90.1. Design case follows achievable high performance design with LED lighting and daylight harvesting per code.

SCHEDULE

HVAC (Design Case)

System Type	Ventilation: 30,000 cfm DOAS
Fan	VFD. 6" TSP supply fan, 3.5" TSP on exhaust.
Outside Air Controls	DCV per mechanical design. Controls per controls narrative. As a simplification, this includes: Winter: Transpired Solar Collectors to preheat outside air, with a bypass controlled based on the <i>leaving</i> temperature of the labyrinth. Summer: Night flush of the labyrinth in opposite direction (end of labyrinth gets most cooled). Occupied mode is earth tube to thermal labyrinth for pretreat. Coils are included at end of labyrinth to supplement the passive strategies, able to work in tandem with them. Dehumidification is based on 55F <i>dewpoint</i> temperature. Reheat is accomplished with heat recovery off a campus chiller, which has available free heat whenever dehumidification is required. Ventilation air passes through atrium before being circulated throughout building. Coils at end of labyrinth are controlled based on atrium requirements
Local Cooling	VAV cooling. Individual VAV boxes allowed to go to zero position, as ventilation is handled separately. Dual duct boxes. VAV systems modeled with 6" TSP
Cooling Source	District Cooling, simulated by modeling water cooled chiller with rated COP of 6.3 and a cooling tower with 8 degree approach.
Local Heating	Hydronic heating to dual duct boxes.
Heating Source	District Heating by condensing boilers. Modeled at 87% efficiency to capture not full condensing.
DHW Source	Central Domestic Hot Water 90% efficiency; 140°F Supply
Hours	6am – 8pm, cycles after hours to meet temperature. Cooling: 75F, setback 80F Heating: 70F, setback 60F

HVAC (Basecase)

System Type	ASHRAE 90.1 System 7 (VAV with reheat + water cooled chiller, cooling tower and boiler).
Outside Air	Ventilation: 20,500 cfm, System capable of economizing. 50% effective heat recovery.
Fan	VFD. 6" TSP supply fan, 3.5" TSP on exhaust.
VAV control	SAT reset, 55F to 62F.
Local Heating/ Cooling	30% minimum box position. Hot water reheat. Reverse acting dampers. 102F max supply temp.

Cooling Source	District Cooling, simulated by modeling water cooled chiller with rated COP of 6.3 and a cooling tower with 8 degree approach.
Heating Source	District Heating by condensing boilers. Modeled at 87% efficiency to capture not full condensing.
DHW Source	Central Domestic Hot Water 90% efficiency; 140°F Supply
Hours	6am – 8pm, cycles after hours to meet temperature. Cooling: 75F, setback 80F Heating: 70F, setback 60F

DOCKING STATE OFFICE BUILDING BUILDING CODE APPROACH NARRATIVE

The scope of the project includes the demolition of the existing above grade portion of the Docking State Building and construction of a new four-story building on top of the existing two basement levels with business and assembly uses. The two basement levels are existing nonsprinklered levels and will be provided with automatic sprinklers as part of the project.

1.1 Applicable Codes and Standards

The authority having jurisdiction (AHJ) for the project will be the Office of Facilities and Property Management and the Kansas State Fire Marshal's Office.

1.2 Codes Enforced

- International Building Code (IBC), 2018 Edition.
 - (i) Chapter 11, Accessibility, is deleted.
- International Fire Code (IFC), 2018 Edition.
- International Existing Building Code (IEBC), 2018 Edition
- International Mechanical Code (IMC), 2018 Edition.
- International Plumbing Code (IPC), 2018 Edition.
- International Fuel Gas Code (IFGC), 2018 Edition.
- International Energy Conservation Code (IECC), 2018 Edition or 2013 Edition of ASHRAE 90.1.
- NFPA 10 – 2018 Edition – Portable Fire Extinguishers
- NFPA 13 – 2016 Edition – Installation of Sprinkler Systems
- NFPA 14 – 2016 Edition – Installation of Standpipe and Hose Systems
- NFPA 20 - 2016 Edition – Installation of Stationary Pumps for Fire Protection
- NFPA 25 – 2017 Edition – Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems
- NFPA 70 – 2017 Edition – National Electric Code (NEC)
- NFPA 72 – 2016 Edition – National Fire Alarm Code
- NFPA 96 – 2017 Edition – Ventilation Control and Fire Protection for Commercial Cooking Operations
- NFPA 110 – 2016 Edition – Emergency and Standby Power Systems
- NFPA 241 – 2013 Edition – Safeguarding Construction, Alteration and Demolition Operations
- ASME A17.1/CSA B44-2016 – Safety Code for Elevators and Escalators
- Kansas Fire Prevention Code

- K.S.A. 58-1301 et seq – 2010 ADA Standards for Accessible Design (2010 ADA Standards).
- Kansas State Boiler Code (K.S.A. 44-913 et seq)

1.3 Construction Classification

The building consists of a four-story structure that encloses the office, meeting room and building service spaces above two basement levels . The basement contains building mechanical, service and storage areas.

A. Occupancy Group Classification

- Assembly (Meeting Rooms), Group A-3
- Business, Group B
- Storage, Group S-1

The building design uses the nonseparated mixed use occupancy separation provisions. The Group A-3 use is the most restrictive use and will be used to determine the applicable construction classification and fire protection provisions for the entire building.

B. Construction Type Classification

- Type II-A Construction

C. Allowable Building Height and Area (fully sprinklered building)

- Height
 - The allowable height is 85 feet per Table 504.3.
 - The upper roof height is 74 feet
 - The allowable number of stories is 4.
 - The actual number of stories is 4.
- Area
 - The allowable area for Group A-3 (most restrictive) is 46,500 square feet + $(0.75 \times 15,500) = 58,125$ square feet per floor in accordance with Table 506.2 and Section 506.3.3 (open yards).
 - The maximum actual area per floor is 56,200 sf on the third floor. The floor areas are noted below.

4th Floor: 31,075

3 rd Floor:	56,200
2 nd Floor	54,785
1 st Floor:	53,555
<hr/>	<hr/>
New	195,615 gsf

<u>Existing Areas</u>	
Basement:	65,110
Sub-Basement:	48,400
<hr/>	<hr/>
Existing	113,510 gsf

Total New & Existing Area: 309,125 gsf

1.4 Fire Resistive and Occupancy Separation

A. Occupancy Separation

- The building will be a nonseparated mixed occupancy building with no fire-rated separation between the occupancies. The nonseparated mixed use occupancy approach applies the most restrictive requirements for construction type and fire protection systems of the occupancies involved to all occupancies. The Group A-3 use is the most restrictive use.

B. Special Use / Incidental Use Areas (Table 509)

- Incidental uses (trash rooms over 100 square feet, mechanical equipment greater than 400,000 BTU/hour input, boilers over 15 psi or 10 hp) require smoke-resistant construction (when provided with automatic sprinkler protection within the room).
- Dry-type transformers over 112-1/2 kVA are required to be separated by 1-hour construction per NFPA 70 Article 450.21(B).
- The paint shop is required to be separated with 1 hour fire resistive construction.

1.5 Fire Resistive Requirements for Elements of the Structure

A. The following fire-resistive requirements for elements of the structural frame are noted for Type II-A construction: (Table 601)

- | | |
|---|-----------------|
| • Primary Structural Frame (columns and beams): | 1-hour required |
| • Bearing Exterior Walls: | 1-hour required |
| • Bearing Interior Walls: | 1-hour required |
| • Nonbearing Exterior Walls: | 0-hour required |
| • Nonbearing Interior Walls: | 0-hour required |

- Floor Construction: 1-hour required
- Roof Construction: 1-hour required
- Shafts Connecting 4 or More Floors * 2-hour required
- Shafts Connecting 3 or Fewer Floors 1-hour required

* Where 2-hour shaft construction is required, supporting construction (floors, columns, beams, etc.) for the shaft is required to be the same 2-hour level of protection.

1.6 Fire Resistive Protection of Openings / Penetrations

A. Openings in Exterior Walls

- Fire separation distance to a lot line is greater than 30 feet and requires no opening protection or limit on amount of openings.

B. Openings in Interior Walls

- Walls that require a fire resistance rating (electrical rooms described above) require a 1-hour fire-rated fire door that complies with NFPA 80.

C. Corridor requirements

- Exit access corridors in assembly, business and storage occupancies do not require a fire resistance rating where the entire building is protected with automatic sprinklers.

D. Shaft requirements

- 2 hours * – Shafts connecting 4 or more floors.
- 1 hour – Shafts connecting 3 or fewer floors.

* Where 2-hour shaft construction is required, supporting construction (floors, columns, beams, etc.) for the shaft is required to be the same 2-hour level of protection.

E. Atrium requirements

- The building contains a 3-story atrium connecting the 1st through the 3rd floors. IBC 404 requires the following:
 - The use of the atrium area is not restricted since sprinklers are provided within the atrium.
 - Fire-rated separation of the 1st, 2nd and 3rd floors connected to the atrium is not provided not required by IBC Section 404.6, exception 3.

The two basement levels are separated from the atrium by the 1-hour rated first floor.

- The interior finish within the stories unseparated from the atrium is required to be a minimum Class B finish rating.
- Travel distance on the 2nd and 3rd floors is limited to 200 feet within the atrium.
- A smoke exhaust system is required to be provided within the atrium, designed to keep the smoke layer 6 feet above the 3rd floor egress path (highest level of egress).

1.7 Interior Finish Requirements

A. Floor Finish

- A minimum Class II floor finish is required for all occupancies (804.4.2, Exception).

B. Wall Finish

- A minimum Class C finish is required for all occupancies within the basement and sub-basement (Table 803.13) for all enclosed spaces. A minimum Class B finish is required within the 1st, 2nd and 3rd floors since they are unseparated from the atrium.
- A minimum Class B finish is required for exit access corridors and interior stairs.

1.8 Exit Requirements

A. Exit width factors for level exit components (doors, passageways, etc.)

- With sprinklers and emergency voice alarm (1005.3.2, Exception 1):
 - 0.15 inches / person (80 people / foot)

B. Exit width factors for stairs

- With sprinklers and emergency voice alarm (1005.3.1, Exception 1):
 - 0.20 inches / person (60 people / foot)

C. Exit width requirements

- Occupant load per floor
 - Sub-Basement – 147 occupants
 - Basement – 234 occupants

- 1st floor – 567 occupants
 - 2nd floor – 345 occupants
 - 3rd floor – 959 occupants
 - 4th floor – 78 occupants
- Required number of exits per floor
 - Sub-Basement – 2 exits required, 2 provided
 - Basement – 2 exits required, 3 provided
 - 1st floor – 2 exits required, 7 provided
 - 2nd floor – 2 exits required, 3 provided
 - 3rd floor – 3 exits required, 3 provided
 - 4th floor -2 exits required, 2 exits provided
- Required exit width per floor
 - Sub-Basement – 88” stairs required, 96” provided.
 - Basement – 88” stairs required, 96” provided.
 - 1st floor – 86” doors required, 476” provided.
 - 2nd floor – 88” stairs required, 168” provided.
 - 3rd floor – 144” stairs required, 168” provided. The doors into the stair towers are required to provide 3’-9” clear to match the stair capacity.

D. Minimum egress width requirements

- Doors in the means of egress are required to be minimum 32 inches.
- Passageways require a minimum 44-inch width where serving 50 or more people.
- Passageways require a minimum 36-inch width where serving 50 or fewer people.

E. Number of means of egress and remoteness requirements

- At least three (3) means of egress are required where the occupant load is more than 500 but no more than 1,000.
- If the occupant load is less than 500, two exits are required.
- Spaces serving less than 50 occupants may have one (1) means of egress.
- Where two means of egress are required, at least two (2) are required to be separated by at least one-third (1/3) the length of the maximum overall diagonal dimension of the space; all other means of egress so that if one is blocked the others are available.

F. Dead-end corridor requirements (for a fully sprinklered building)

- Assembly occupancies may have a maximum dead-end corridor length of 20 feet.
- Business and Storage occupancies may have a maximum dead-end corridor length of 50 feet.

G. Common path of travel distance (for a fully sprinklered building)

- Assembly occupancies may have a maximum common path of travel length of 75 feet.
- Business and storage occupancies may have a maximum common path of travel length of 100 feet.

H. Exit access travel distance (for a fully sprinklered building)

- Assembly and mercantile occupancies may have a maximum travel distance of 250 feet. (Limited to 200 feet on the 2nd and 3rd floors due to the atrium.)
- Business occupancies may have a maximum travel distance of 300 feet. (Limited to 200 feet on the 2nd and 3rd floors due to the atrium.)

1.9 Fire Protection Requirements

A. Fire Suppression

- Automatic sprinkler protection is required throughout the building for Group A-3 uses on elevated floors or if they are greater than a 12,000 square foot fire area according to Section 903.2.1.3.
- The existing basement levels are not provided with automatic sprinklers. These levels will be provided with automatic sprinklers as part of the new construction project in order to meet the nonseparated mixed use approach which requires the most stringent fire protection requirements be applied to the entire building (automatic sprinklers are required throughout a Group A-3 occupancy).

B. Fire Department Standpipes

- Class I Standpipes are required by Section 905.3.1, exception 2 since the 4th floor elevation is greater than 30 feet above the lowest level of fire department vehicle access.

C. Fire Alarm

- A fire alarm system is required by Section 907.2.1 for assembly occupancies with more than 300 occupants. An emergency voice alarm system is

required in order to allow the relaxed egress width provisions of Section 1005.3.1, Exception 1 and 1005.3.2, Exception 1 that were applied to size the exit stairs and doors.

- The International Mechanical Code section 606.2 requires duct smoke detection in the return ducts or plenums for all heating, ventilation and air-conditioning (HVAC) systems greater than 2,000 CFM capacity. For an HVAC system serving two or more stories with greater than 15,000 CFM capacity, duct smoke detection is required in common return air ducts at every story.
- A fire alarm system is also required in occupancies with an atrium that connects more than two stories per Section 907.2.13.

D. Kitchen Hood and Suppression Requirements

- Suppression systems for Type I kitchen hoods where cooking produces grease-laden vapors is required. No grease producing cooking is planned to occur.
- Type II kitchen hoods are required for appliances that produce steam or heat only and no grease-laden vapors (dishwashers, ovens, etc.).

E. Atrium Smoke Control System

- A smoke exhaust system designed to keep smoke a minimum of 6 feet above the 3rd floor egress route is required. Smoke exhaust fans activated by the building's sprinkler system and a smoke detection system in the atrium are required to be installed to control the smoke generated by a fire and maintain the smoke layer above the highest level of egress in the atrium. Beam smoke detectors located at the underside of the 2nd floor and 3rd floor levels monitoring the floor opening, along with smoke detectors in the 1st, 2nd and 3rd floor common area corridors are required.
- Exhaust ducts at the top of the atrium within the clearstory are required to provide a minimum of 140,000 cfm capacity.
- Make-up air is required to be provided mechanically at each floor. 88,000 cfm will be provided at the 1st floor, 28,000 cfm at the 2nd floor and 28,000 at the 3rd floor. Make up air from each floor is as follows:
 - 1st Floor
 - 8,000 cfm AHU-1
 - 8,000 cfm AHU-2
 - 5,000 cfm AHU-3
 - 7,500 cfm AHU-4
 - 4,500 cfm AHU-5
 - 30,000 cfm Atrium Supply
 - 25,000 cfm Labyrinth Recharge

- 2nd Floor
 - 8,000 cfm AHU-1
 - 8,000 cfm AHU-2
 - 12,000 cfm AHU-3
- 3rd Floor
 - 8,000 cfm AHU-1
 - 8,000 cfm AHU-2
 - 12,000 cfm AHU-6
-
- Standby power is required for the smoke control system.

1.10 Emergency and Standby Power Requirements

- A. Section 2702 requires Emergency and/or Standby Power for a 2-hour duration for the following:
- Atrium smoke control system – Standby Power
 - Fire and voice alarm – Emergency Power
 - Exit signs and egress lighting (90-minute duration) - Emergency Power

1.11 Plumbing Fixture Requirements

- A. Plumbing fixture requirements are regulated by Chapter 29 of the IBC.
- The design proposes the following occupant loads for Group A-3 (assembly), Group B (business) and Group S-1 (storage) occupancies.
 - The following occupant loads were used for the calculations:
 - Assembly (Group A-3): 905 Total (253 men and 253 women)
 - Business (Group B): 1026 Total (513 men and 513 women)
 - Storage (Group S-1): 399 Total (200 men and 200 women)
 - Table 2902.1 requires a minimum of 17 water closets for men and 21 water closets for women.
 - Assembly (Group A-3): 1 water closet per 125 men
 - Assembly (Group A-3): 1 water closet per 65 women
 - Business (Group B): 1 water closet per 50 occupants*
(men or women)

* The first 50 occupants of each sex require 2 fixtures, then 1 per 50 for the rest of each population

- Storage (Group S-1): 1 water closet per 100 occupants (men or women)
- Table 2902.1 requires a minimum of 19 lavatories for men and 19 lavatories for women.
 - Assembly (Group A-3): 1 lavatory per 200 occupants (men or women)
 - Business (Group B): 1 lavatory per 40 occupants* (men or women)
 - * The first 80 occupants of each sex require 2 fixtures, then 1 per 80 for the rest of each population
 - Storage (Group S-1): 1 lavatory per 100 occupants (men or women)
- Table 2902.1 requires a minimum of 13 drinking fountains for all building occupancies present.
 - Assembly (Group A-3): 1 drinking fountain per 500 occupants
 - Business (Group B): 1 lavatory per 100 occupants
 - Storage (Group S-1): 1 drinking fountain per 1,000 occupants



Docking Building Atrium Smoke Control System and Smoke Model Overview

1. An atrium connecting the 1st through 3rd floors of the Docking Building is provided. A smoke exhaust system designed to keep smoke a minimum of 6 feet above the 3rd floor egress route is required. Smoke exhaust fans activated by the building's sprinkler system and a smoke detection system in the atrium are required to be installed to activate the mechanical exhaust system designed to control the smoke generated by a fire and maintain the smoke layer 6 feet above the highest level of egress in the atrium.
2. Smoke exhaust collection points at the top of the atrium within the clearstory are required to provide a minimum of 140,000 cfm capacity.
3. Make-up air is required to be provided mechanically at each floor. Mechanical fans will provide 75,500 cfm at the 1st floor, 28,000 cfm at the 2nd floor and 28,000 cfm at the 3rd floor. Make up air is provided at approximately 90% of the exhaust rate. Make up air from each floor is provided by the mechanical fans as follows:
 - 1st Floor
 - 8,000 cfm AHU-1
 - 8,000 cfm AHU-2
 - 5,000 cfm AHU-3
 - 7,500 cfm AHU-4
 - 4,500 cfm AHU-5
 - 25,000 cfm Atrium Supply
 - 17,500 cfm Labyrinth Recharge
 - 2nd Floor
 - 8,000 cfm AHU-1
 - 8,000 cfm AHU-2
 - 12,000 cfm AHU-3
 - 3rd Floor
 - 8,000 cfm AHU-1
 - 8,000 cfm AHU-2
 - 12,000 cfm AHU-6
4. Air velocities at the supply air louvers was assumed to be no greater than 500 fpm.
5. A computational fluid dynamics (CFD) fire model, Fire Dynamics Simulator (FDS), was used to confirm the mechanical smoke exhaust design. The model assumed the following:



- Two (2) fire scenarios were modeled. One model assumed a 2,000 kW fire in the atrium space with an axisymmetric plume and no sprinkler activation during the 20 minute evaluation period. The second model assumed a sprinkler controlled fire limited to 750 kW in the 1st floor corridor adjacent to the atrium. This resulted in a balcony spill plume from the corridor into the atrium.
 - Fuel packages were assumed to grow to the maximum fire size and then burn in a steady state at the heat release rate noted above until the end of the evaluation period.
 - The fuel package was assumed to have a heat of combustion of 13,400 kJ/kg. This fuel load resembles a wood/plastic mix.
 - The tenability factors studied were visibility, temperature and carbon monoxide (CO) levels. Of these, visibility was the limiting factor. A minimum of 10 meters visibility, 140^o F and 1,400 ppm CO concentration were used as the limit for the design.
 - Activation of the mechanical system was assumed to be via smoke detection and sprinkler system water flow.
 - Beam smoke detectors located at the underside of the 2nd and 3rd floor levels monitoring the floor opening, along with smoke detectors in the 1st, 2nd and 3rd floor common area corridors, were modeled. Activation of a single beam detector in the atrium opening, or two detectors in the common area prior to initiation of the smoke exhaust fans was assumed.
 - The model assumed a 75-second delay in the mechanical systems to start ramping up to account for signal delay and damper operations. An additional 30-second delay (105 seconds total) was assumed to allow the fans to ramp up to 100% capacity.
 - The system design resulted in visibility, temperature and CO levels being maintained within the tenability limits for 20 minutes.
6. Standby power is required for all components of the smoke control system per the Code.
7. A UUKL-listed fire fighter's smoke control panel is required for the smoke control system per the Code.



Docking State Office Building Reconstruction – MEP Design Intent Narrative Clarifications_2022 09 23

1. Narrative

- a. Chiller Plant: omit the requirement to provide pricing for the replacement of each of the two oldest chillers.
- b. Radio antenna: provide a minimum 2" conduit from the ceiling plenum of the dispatch area at the north end of the first floor for a radio antenna.
- c. Security:
 - A. All interior and exterior doors shall be prepared for a future security system. This includes:
 1. preparing the frames to receive position switches, automatic locks and / or strikes, and request to exit devices. Provide a minimum ¾" concealed conduit from the back box to a location above an accessible ceiling.
 2. Provide a backbox on the exterior or public side of the respective door, at 48" above finished grade for exterior doors and 48" above finished floor for interior doors, with a minimum ¾" concealed conduit from the back box to a location above an accessible ceiling. Provide a blank cover plate over the backbox.
 - B. Any additional pathways for security systems will be provided by others.
- d. Services in the basement and sub-basement:
 - A. The integrity of all services will need to be maintained in the basement to allow maintenance functions to continue to operate. The work required to replace the existing HVAC in that area shall be coordinated with the building occupants so as to minimize the inconvenience to those who occupy that space. Any work required for the maintenance staff to temporarily relocate into other areas of the basement or subbasement for short periods of time in order to allow the contractor to complete the work associated with the replacement of the HVAC system and to install the sprinkler system will be completed by the Owner.
- e. Audio Visual:
 - A. All pathways for audio/visual shall be provided by others.
 - B. The backbox and conduit indicated on the original bridging documents at each monitor location, however, shall be provided.
- f. Data / Telecom:
 - A. Backboxes, conduit, cable tray indicated on the original bridging documents for data / telecom shall be provided.
- g. Fire protection:
 - A. It is assumed that no fire pump will be required.
 - B. Include a flow test to verify water supply static and residual pressure and flow rates.
 - C. All sprinkler heads shall be of the "concealer" design where not installed in acoustic ceiling tile or areas that are open to the structure.
- h. Zoning for HVAC:
 - A. In the agency spaces zoning / dual duct terminal units shall be provided as follows:
 1. In areas that have an exterior exposure, provide one dual duct terminal unit for each 200 square feet of floor area. For each terminal unit provide required low velocity insulated ductwork and a minimum of (2) 4-foot slot style diffusers. Provide one return grille with insulated sound boot. Provide all required controls.
 2. In areas that are completely internal, provide one dual duct terminal unit for each 800 square feet of floor area. For each terminal unit provide required low velocity insulated ductwork and a minimum of (4) 4-foot slot

style diffusers. Provide one return grille with insulated sound boot.
Provide all required controls.

- B. Conference and meeting rooms:
 - 1. Provide one dual duct terminal unit for each conference or meeting room. For each terminal unit provide required low velocity insulated ductwork and appropriate number of 4-foot slot style diffusers. Provide one return grille with insulated sound boot. Provide all required controls.
- C. Training Area
 - 1. Provide one dual duct terminal unit for each training room; except for training room "A" provide two dual duct terminal units, one for each the north and the south half of the room. For each terminal unit provide required low velocity insulated ductwork and appropriate number of 4-foot slot style diffusers. Provide one return grille with insulated sound boot. Provide all required controls.
- D. Offices, toilet room, janitor's closets and other similar spaces
 - 1. Provide one dual duct terminal unit for each room. For each terminal unit provide required low velocity insulated ductwork and appropriate number of 4-foot slot style diffusers. Provide one return grille with insulated sound boot. Provide all required controls.
- i. Basement HVAC.
 - A. Sheet M103 indicates areas for "AHU-9 EXISTING HVAC IN THIS AREA SHALL BE REPLACED" .
 - 1. All existing ductwork, diffusers and grilles shall be removed and replaced by the new air handling system.
- j. Smoke Control System:
 - A. The smoke system associated with the Atrium "Smoke Control System" and therefore requires UL 864 listing for the entire BMS system as the BMS system is being utilized for smoke control VAV terminal unit control.
 - 1. UL 864 will be a requirement for any equipment that is connected to and/or used as a part of the smoke control system.
- k. Ventilation:
 - A. The 30% increased ventilation is a contractual requirement.
- l. Lightning protection:
 - A. A complete UL "Master Label" lightning protection system shall be provided to protect the entire building.
- m. Plumbing:
 - A. Domestic hot and cold-water piping
 - 1. All interior water piping in the basement and sub-basement shall be replaced.
 - 2. In the basement maintenance area, where an existing countertop sink exists, and in the sub-basement, where a recent toilet room was constructed, piping that is concealed in a wall or cabinet shall remain. New piping shall be connected to this existing piping so as to provide new domestic hot and cold water service to these fixtures.
 - B. Drain waste and vent piping in the sub-basement
 - 1. A current project is scheduled to replace all of the existing below slab drain waste and vent piping. As a part of this project, new vent piping will be provided for all of the new floor drains. This new vent piping is scheduled to connect to the existing vertical vent stacks, these connections occur in four (4) locations. Note that air admittance valves indicated in the original narrative will not be allowed.

2. The vent piping in the sub-basement and basement, that is scheduled to connect to the existing vertical vent risers as a part of the current sub-basement drain waste and vent piping replacement project, shall be extended and reconnected, as a part of the Docking State Office Building Reconstruction project, to the new venting system.
- C. Site building sewer and storm sewer:
1. All exterior sanitary building sewer and storm water piping shall be replaced.
 2. Sizes shall match existing.
 3. Building sewer piping shall be replaced to, and shall connect to, the existing sanitary manhole that is located in the City main that is located just to the east of Topeka Boulevard. The existing sanitary manhole, that is located to the west of the building shall remain. This new building sewer piping shall reconnect to the existing manhole, located just west of the building, and shall reconnect to the existing manhole in the City main.
 4. Storm water piping shall be replaced to, and shall reconnect to, the existing stormwater piping at a location immediately east of the east curb of Topeka Boulevard. The two existing storm water manholes, that are located to the west of the building shall remain. This new storm water piping shall reconnect to the existing manholes, located just west of the building, and shall reconnect to the existing storm water piping just east of the east curb of Topeka Boulevard.
 5. Materials
 - a. Specifications require welded fittings for carbon steel hydronic piping while schedule on M301 allows grooved, please advise if Victaulic coupling can be utilized.
 - i. Groove style fittings will be an acceptable alternative.
 - b. Specifications require soldered fittings for copper water piping while schedule on M301 allows grooved fittings, please confirm grooved fittings can be utilized. In addition, please advise if press fittings be used for copper piping systems.
 - i. Soldered fittings for piping in sizes 2" and smaller will be required. Groove style fittings on piping that is 1-2" and larger will be an acceptable alternative.
 - ii. Press fit will not be allowed.
- D. Accommodation for future plumbing fixtures in the respective Agency spaces:
1. One 3" vertical waste line and a corresponding 2" vertical vent line shall be provided in each of the agency spaces for future connection to fixtures that handle clear effluent (no urinals or water closets will be connected to this line). These waste lines shall follow an interior column line and shall be contained within the column furring.
 2. For agency spaces "A" and "B" this waste line shall be connected to the building drain waste and vent system in the basement and shall extend up through the floors 1, 2 and 3 with the vent line extending up through the mechanical penthouse and through the roof.
 3. For agency space "C" this waste line shall be connected to the building drain waste and vent system in the basement and shall extend up through the floors 1 and 2 with the vent line extending up through floor 3, the mechanical penthouse and through the roof.
 4. Provide a ¾" domestic hot and a ¾" domestic cold-water line and provide a ½" domestic hot water recirculating line with pump for each of these

vertical risers. This piping shall connect to domestic hot and cold-water piping in the basement.

- n. Plaza Snow Melt System:
 - A. The plaza snow melt system is intended to be a hydronic system fed by the existing steam boiler system.
 - B. New steam to water heat exchangers will be installed in the basement, northeast mechanical room for both the snow melt system and the exterior water fountain.
 - C. Specification Section 238113 indicates the basis of design product as an electric system. Disregard as the indication of electric snow melt was incorrect.
- o. Fire Alarm System:
 - A. In all "hard-lid" areas of the atrium (all levels) and in the elevator lobbies on floors 1, 2 and 3 smoke detection and occupant notification shall be as follows:
 - 1. Smoke Detection
 - a. Provide an air sampling system with concealed piping and intake ports similar to the "VESDA" system.
 - 2. Notification Appliances:
 - a. Provide concealed notification appliances similar to "CONCEALITE" model FA900 combination speaker / strobe. Note that this system shall accommodate the voice notification fire alarm requirements.
- p. Lighting System Control
 - A. Agency spaces:
 - 1. In areas that have an exterior exposure:
 - a. provide one single zone stand-alone low voltage lighting dimming control module for each 200 square feet of floor area.
 - b. Provide a low voltage wall switch that will provide light level raise/lower control and on/off control.
 - c. Provide a low voltage ceiling mounted dual technology motion sensor. Set this sensor up as a "vacancy" sensor.
 - d. Provide a low voltage ceiling mounted light level sensor for daylight harvesting.
 - 2. In interior areas:
 - a. provide one single zone stand-alone low voltage lighting dimming control module for each 800 square feet of floor area.
 - b. Provide a low voltage wall switch on a column that will provide light level raise/lower control and on/off control
 - c. Provide a low voltage ceiling mounted dual technology motion sensor. Set this sensor up as a "vacancy" sensor.
 - d. Provide a low voltage ceiling mounted light level sensor for daylight harvesting.
 - B. Conference and meeting rooms:
 - 1. Provide one stand-alone 3 zone low voltage lighting dimming control module for each room.
 - 2. Provide a low voltage wall switch that will provide light level raise/lower control for each zone and on/off control for all zones collectively.
 - 3. Provide a low voltage ceiling mounted dual technology motion sensor. Set this sensor up as a "vacancy" sensor.
 - 4. Provide an RS-232 input output module for future A/V integration.
 - C. Training Area
 - 1. Provide one stand-alone 3 zone low voltage lighting dimming control module for each room, except for training room "A" provide one 3 zone

low voltage lighting dimming control module for each the north half and the south half of the room.

2. For each lighting dimming control module, provide a low voltage wall switch that will provide light level raise/lower control for each zone and on/off control for all zones collectively.
3. For each lighting dimming control module, provide a low voltage ceiling mounted dual technology motion sensor. Set this sensor up as a "vacancy" sensor.
4. Provide an RS-232 input output module for future A/V integration.

D. Offices:

1. provide one single zone stand-alone low voltage lighting dimming control module for each individual office.
2. Provide a low voltage wall switch that will provide light level raise/lower control and on/off control.
3. Provide a low voltage ceiling mounted dual technology motion sensor. Set this sensor up as a "vacancy" sensor.
4. Provide a low voltage ceiling mounted light level sensor for daylight harvesting.

E. Toilet rooms, janitor's closets, storage rooms and other similar spaces:

1. Provide one single zone stand-alone low voltage lighting control relay for each respective space.
2. Provide a low voltage ceiling mounted dual technology motion sensor for control of that space.

F. In mechanical and electrical spaces:

1. Provide one single zone stand-alone low voltage lighting control relay for each respective space.
2. Provide a low voltage wall mounted switch for control of that space.

G. In all "hard-lid" areas of the atrium (all levels) and in the elevator lobbies on floors 1, 2 and 3:

1. Provide a lighting control system capable of controlling a minimum of 10 separate zones.
2. Control shall consist of time-of-day / day-of-week scheduling and dimming for each zone.
3. The system shall be connected to the building LAN and shall provide programming for control from a remote operator workstation with password protection.
4. The control system shall be connected to the building automation system.

q. Tunable Lighting:

- A. Circadian lighting in the Docking to Statehouse tunnel is not required.

r. Lighting in the mechanical penthouse and mezzanine areas:

- A. Lighting in the penthouse and mechanical mezzanine shall be provided. The layout shall be provided by the design build team. Provide adequate lighting to assure all required maintenance functions can be accomplished and all required circulation is adequately illuminated.

s. Plug Loads

- A. Plug load control is not required.

t. Circuiting:

- A. MC cable will be allowed for branch circuiting; however, all home runs shall be EMT conduit.

- B. The feeder conductors shall be copper.
- u. UPS:
 - A. The UPS shall be minimum 160 kVA and shall be provided with distribution circuit breakers as required to support the panelboards as indicated on the plans and electrical riser diagram.
 - B. Provide batteries as required to support the load for a minimum of 10 minutes.
- v. New Generator Switchgear
 - A. This switchgear shall be located in the sub-basement in the area located to the east of the new switchboard 1.
- w. Generator:
 - A. The generator shall have a base mounted double wall tank. Provide 48 hours run time.
 - B. The existing 450 kW generator shall remain 208Y120. The new 750kW generator shall be 480Y277.
- x. Basement Lighting
 - A. Refer to plan sheet E201 and EL101B
 - 1. New lighting that is required as a part of the Docking State Office Building Reconstruction project is indicated on plan sheet EL101B.
 - 2. Where indicated on plan sheet E211 that "...Owner will replace with new 2x4. Reinstall existing fixtures" or "...Owner will replace with new 2x4. Provide new lighting" any new lighting fixtures required in these areas will be provided by the Owner.
- y. South Parking Lot Lighting
 - A. The existing lighting fixtures and poles in the parking lot, that is located to the south of the building, shall be removed and salvaged for reinstallation. New fixtures and poles shall match those existing salvaged fixtures.
 - B. New lighting layout shall be as indicated in the bridging documents.
 - C. New conduit, conductors, controls etc. shall be provided so as to result in a complete and fully operational system.
- z. Miscellaneous low voltage systems:
 - A. Except as previously indicated here-in, rough ins for security, audio/visual and sound reinforcement will be provided by others.
 - B. The rough ins indicated on the plans for data/telecom and where monitors are indicated shall be provided.

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