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ATTACHMENT NO. 1 SCOPE OF SERVICES
CONTRACT NO. XXXX, PROJECT NO. XXXXXXXX
211 S. Livingston Street – Capitol East Parking Garage

In this Attachment No. 1; the word “City” means City of Madison, Wisconsin. The City of Madison will include the City’s Designated Representative and/or Owner’s Representative and/or Commissioning Agent and/or Contractor to provide energy modeling; the word “A/E” means the licensed design professional(s) **A/E TBD**; and the word “General Building Contractor” means the entity which will construct the structure.

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PROJECT GENERAL REQUIREMENTS

1. Purpose of the Scope of Services Document

This documentation contains minimum policy and technical criteria to be used in the programming, design, construction, measurement & verification, and documentation of the **Capital East Parking Garage**.

 - a. Nothing included in this document shall be a substitute for technical architectural, engineering, and design competence.
 - b. This document must be used in conjunction with all current federal, state, local or other applicable codes governing all architectural, engineering, and/or professional design of public buildings.
2. Communication
 - a. The A/E should have any ambiguities or conflicts in this document clarified in writing by the City Project Manager prior to beginning design.
 - b. All dealings between the City and the A/E with respect to the subject matter of the Agreement shall be with the City's Project Manager. The City's Project Manager shall inform the A/E as to groups and staff with which it is to consult, provide prompt evaluation of requests of such groups, examine documents and receive inquiries submitted by the A/E, refer information and requests submitted by the A/E to appropriate officials, departments and bodies and obtain or render decisions promptly with respect thereto so as to avoid delays in the work of the A/E. The designation of the project manager representative thereof shall not limit those with whom the A/E may have contact if, in the A/E and project manager's judgment, consultation with others will be of assistance.
 - c. Sharepoint: The City will utilize a project Sharepoint website from programming through construction and warranty to store project files, communicate design review comments, process work flows, administer construction, etc. The A/E must utilize this project website to communicate with the Owner, third-party consultants, and contractors throughout the life of the project.
3. Minimum A/E Team Qualifications
 - a. Architects (including project manager, project architect, and construction administrator, landscape): Licensed and 10 years experience
 - b. Interior Designer: Licensed with 10 years experience
 - c. Structural Design: PE license with 10 years experience
 - d. HVAC Design: PE license with 10 years experience
 - e. Electrical Design: PE license with 5 years experience
 - f. Plumbing/Fire Protection Design: PE license with 5 years experience; or certified "Designer of Engineering Systems" with 15 years experience
 - g. Lighting Design: PE license and 5 years experience or certified "Designer of Engineering Systems" and 15 years experience
 - h. Acoustical, Security, A/V and other peripheral consultants shall have appropriate credentials.
4. Environmental Protection
 - a. In addition to building-specific codes, all A/E design must comply with all federal, state, and local environmental laws and regulations.
5. Accessibility
 - a. All accessibility related design shall meet current applicable code(s).
 - b. Building design elements in the path of travel to all public and all staff work areas shall be accessible and shall be designed to meet or exceed the minimum standards of ADA Accessibility Guidelines.
 - c. The project shall include design that accommodates building and site use without special facilities for persons with disabilities. Standard building products set at code prescribed heights and maneuvering clearances to allow easy access to disabled employees and visitors. Building elements designated specifically for use by persons with disabilities should be avoided.
 - d. Absolute versus "maximum" or minimum" dimensions shall be clarified on all drawings where applicable.
6. Occupational Safety and Health Regulations
 - a. The construction, operation, and occupation of the facilities must comply with OSHA regulations. The A/E must ensure that facilities can be constructed in a manner compliant with all current OSHA regulations applicable to construction, operation, and occupation of the facilities.
7. Building Codes
 - a. The A/E shall use the latest edition of applicable local, state, and federal building codes throughout design and construction of this project.
8. National Standards



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- a. Organizations writing voluntary codes including NFPA, the American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE), the Sheet Metal and Air Conditioning Contractor’s National Association (SMACNA), the Institute of Electrical and Electronics Engineers (IEEE), and the American Society of Mechanical Engineers (ASME), publish standards on health, safety, welfare, and security relevant to this project. This project shall comply with the most current version of these nationally recognized standards to the extent practicable and specified in this document.
 9. State and Local Government Review
 - a. The A/E must prepare documentation and presentations as needed for the approval by appropriate committees, commissions, and plan review processes.
 - i. Prepare oral and visual presentations as required for presentations to committees and commissions including but not be limited to Urban Design Commission, Plan Commission, Board of Public Works, Common Council and similar.
 - ii. Prepare plan review sets as required for Department of Safety and Professional Services (DSPA), Department of Natural Resources, Department of Transportation, and City agency reviews by Zoning, Building Inspection, Fire, City Engineering, Traffic Engineering, and other similar agencies as necessary.
 10. Program Space Standard
 - a. The space standards to be utilized shall be common industry wide space standards.
 11. Energy, Sustainable Design.
 - a. Environmental sensitivity and high performance characteristics are part of the project objectives. The City is particularly interested in integrated design principles and technology that optimize site potential, optimize energy performance, protect and conserve water, enhance indoor environmental quality, reduce environmental impact of materials, and optimize operations and maintenance practices. The result shall be a balance of cost, environmental, societal, and human benefits while meeting the mission and function of the facility. These principles must serve as the basis for planning, programming, design, budgeting, construction, and commissioning of the facilities.
 - b. Design shall include appropriate concrete mixes and material coatings to provide for a minimum 75 year life for the parking garage assuming industry recommended maintenance is performed.
 - c. The parking garage shall be post tensioned cast in place concrete.
 12. LEED
 - a. Meet and exceed City of Madison’s policy requiring “green” building certification requirements. See City of Madison legislative file <http://tinyurl.com/kwz6z4q>. LEED Silver rating is required as a minimum.
 - b. Provide services to organize and manage the LEED documentation and certification process. Meet and confer with representatives of the Architect, and City to prepare LEED documentation. Include coordination of meetings, document preparation, and assistance to the City in preparation of Owners Project Requirements (OPR) report and Basis of Design (BOD) report. Register the project with USGBC (U.S. Green Building Council). Registration fees shall be paid by the City. Prepare submittals for credit rulings from the USGBC for interpretation of credit language, principles, and implementation strategies. Credit ruling fees required by USGBC shall be paid by the City. Prepare and submit a LEED Rating Application for the project to the USGBC. Include required calculations and documentation for each LEED credit claimed in accordance with the LEED Rating Plan. Prepare responses and submit additional documentation required by comments or questions received from the USGBC after review of the original submission for LEED certification. Prepare and distribute meeting minutes for meetings related to LEED Documentation services.
 - c. Applicable LEED Documentation shall be coordinated and updated at each design phase with LEED checklist submittal and other documentation as applicable.
 13. Energy Use Targets
 - a. The A/E must design all facilities to have an energy target at a minimum of (% TBD during design) below ASHRAE 90.1, 2013.
 - b. From pre-design through each design phase, the project must demonstrate that it meets the energy target.
 - c. Use energy modeling that includes the building enclosure systems in concert with mechanical systems and provides documentation showing that systems were chosen based on life-cycle cost analysis.



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14. Health and Safety
 - a. The A/E must take a systems approach to risk management, utilizing codes, regulations, guidelines, and best practices to identify and mitigate facility-created health and safety risks early in the design phases of the of the project life cycle.
 - b. If a hazard cannot be eliminated, the associated risk must be reduced to an acceptable level through design, the risk must be reduced to an acceptable level using engineering controls, protective safety features, or devices.
 - c. If safety devices do not adequately lower the risk of the hazard, cautions and warnings must be provided using detection and warning systems, as appropriate.
 - d. Specific Health and Safety Requirements
 - i. Confined Spaces: The A/E must avoid the creation of confined spaces except where required as part of a system (e.g. tanks, pits).
 - ii. Fall Protection: The A/E must consider the inspection operations, and maintenance of the site, facility, and equipment. Access and fall protection, especially to difficult maintenance needs in high locations, including light fixtures, mechanical equipment, and skylights, must be included in the design.
 15. Building Operations and Maintenance
 - a. Systems must be designed for ease of operation and cost-effective maintenance and repair. System accessibility is a critical consideration in building design. The A/E must ensure building systems and elements are physically accessible for cleaning, maintenance, repair, and replacement (e.g. tall spaces must provide methods to clean skylights, replace lamps, maintain fire alarm devices, etc).
 - b. The A/E must collaborate with the City operations and maintenance personnel during design to provide for optimal life-cycle performance.
 - c. At the conclusion of design, the A/E must provide an electronic document describing intent for all building systems. These instructions must be developed during the design phase and incorporated into the comprehensive training for operations and maintenance personnel.
 16. Life-Cycle Costs
 - a. This project must be designed to achieve the lowest life-cycle cost. The A/E design must comprehensively define reasonable scope and performance requirements within the authorized budget for design and construction. Consistent with these constraints, building systems and features must be analyzed and selected to achieve lowest life-cycle cost.
 - b. Life-cycle costing (LCC) must be used when selecting a system from several alternative systems or components for a project to evaluate the cost effectiveness of systems that use energy and water. LCC must compare initial investment options and operating and salvage costs over the life of the equipment and identifies the least costly alternatives. Examples of building systems to be addressed that affect energy use are the building thermal envelope, passive solar features, fenestration, HVAC, domestic hot water, building automation, and lighting.
 - c. The project team – including the A/E - must integrate the LCC analysis into pre-design process, and the analysis must be complete by the design development phase.
 17. American Transmission Company easement/buried power line
 - a. The American Transmission Company has an easement over this property for a buried power line. The design shall accommodate this easement and provide the necessary access and clearance around the line per their specifications. As part of this design, the power line shall be encased in a thermal backfill material. See attached ATC specifications and requirements.
 18. Environmental remediation
 - a. Madison Gas & Electric has conducted phase one and two environmental assessments and will be developing a remedial action plan. Designer shall follow this plan with respect to site treatment and construction methods.

URBAN PLANNING & DESIGN FOR PUBLIC USE

1. There a number of urban planning issues that must be considered and addressed by the A/E as part of this project.
 - a. The A/E shall balance community goals, while also meeting City agency needs, wherever possible. The A/E must consider how the building responds to its site, to the surrounding neighborhood design and plans, and its potential for interactions with the general public.



- b. The A/E must consider access to transit, bike friendly paths and corridors, proximity to neighborhood amenities that meet daily needs of employees and visitors, and maximization of existing infrastructure.
 - c. The A/E must understand local plans and conditions, neighborhood context, and local perspectives early in the project’s development and design. Collaboration with the City project team, city agencies, regulatory groups, stakeholder groups, and the general public will be required throughout the design construction phases.
2. The A/E must consider and address how the project may encourage use of the facility for public, cultural, and/or educational, activities. Although much of this responsibility falls to how the City manages and makes space available, the design of the spaces – both interior and exterior is fundamental.
- a. Interior examples designed for public use both during and after business hours must have direct and clear wayfinding from building entrances.
 - b. Exterior examples include landscape elements shall be designed in order to provide access, comfort, and visual interest that encourages passive and programmed public use by building visitors and general public.

SITE UTILITIES

- 1. The routing of site utilities (e.g. electrical, water, gas, storm, sanitary, fiber optic, etc) must be determined early in the design process in coordination with the A/E’s site civil engineer. The A/E must coordinate with the City (City Engineering and Parking Utility) and applicable utility entities (Madison Gas and Electric, City Water Utility, etc.) to determine the capabilities, rate structure options, and associated initial costs to the project and must evaluate the available utility service options.

LANDSCAPE

- 1. Prepare plans, details, and specifications for landscape design. Landscape shall consist of materials, systems, equipment, and furnishings for land forms, lawns, and plantings. Landscape design shall be based on program requirements, physical site characteristics, design objectives, and environmental determinants.
- 2. All proposed site design must meet baseline compliance with all applicable federal, state, and local regulation and/or guidance. This includes all elements of work performed under the scopes of the landscape architect, architect, civil engineer, and geotechnical engineer. The applicable regulations must be determined by the A/E and authority having jurisdiction.
- 3. Identify proposed new tree/plant locations and quantities, as well as a protection plan for existing trees/plants during the construction activity.
- 4. The A/E shall provide a protection zone(s) on the drawings to define the area surrounding individual trees, groups of trees, shrubs, other vegetation or site features to be protected during construction. This shall include protection zone(s) for plantings outside the property boundaries. Trees in the city right of way shall be shown to be protected per the City of Madison standard Board of Public Work specification.

ARCHITECTURE: ENCLOSURE AND INTERIOR DESIGN

ENCLOSURE - GENERAL

- 1. Calculation of envelope assemblies: Isothermal-Planes Method per ASHRAE. Simulation (i.e. THERM).

ENCLOSURE – THERMAL PERFORMANCE GOALS

	Maximum overall U-Value	Minimum overall R-value	Maximum overall SHGC	Notes
Roof	0.02	50	0.01	
Wall SE-SW	0.77	13	0.045	
Wall SW-NW	0.77	13	0.035	
Wall NW-NE	0.77	13	NA	
Wall NE-SE	0.77	13	0.035	
Wall Basement	0.05	20	NA	simulated
Floor Basement	0.05	20	NA	simulated
Slab on Grade	0.025	40	NA	simulated



ENCLOSURE - MOISTURE CONTROL

1. A/E design of the above-grade building enclosure must be demonstrated early in the design development phase. ASHRAE 160, Criteria for Moisture Control Design Analysis in Buildings is an acceptable basis of design. Demonstration of the transient hydrothermal behavior of the various multi-layer building components for all critical building enclosure systems must be confirmed through modeling. Construction documents must clearly depict all drainage and air passages. Detail in three dimensions where practical, indicating critical corner terminations, interface of all differing systems, proper sealant methodologies, etc.

ENCLOSURE - BELOW GRADE SYSTEMS Below grade items to consider are as follows.

1. Ground Water Control: If necessary, drainage mats and soil filters should be considered to relieve hydrostatic pressure on substructure walls and allow water drainage to the level of existing or new drains. Pipes slope per the specified Board of Public Works Standard Specification requirements. Subsurface drainage should discharge into the storm drain, by gravity if possible. Cleanouts must be provided at grade to facilitate washing out the system
2. Waterproofing: Where below grade waterproofing is required the design shall follow the recommendations of the National Roofing Contractors Association (NRCA) in The NRCA Waterproofing Manual. Below-grade waterproofing must be applied to the positive pressure side and must be covered by a protection mat to shield the waterproofing membrane from deleterious effects of construction activities, ultraviolet radiation, or aggressive vegetation.
3. Water Stops: Water stops must be used at construction joints in below-grade walls, footings and other elements where a waterproof system is required. Wherever possible use level changes to create a redundancy with the substrate in the event the water barrier fails.

ENCLOSURE WALL SYSTEMS

1. Connections and Fasteners Exposed to Weather: No designs shall include Products constructed of carbon steel in exterior construction, which includes exterior walls, soffits, or roofs, except where protected by appropriate galvanic zinc coating other equivalent protection.
2. Material with Organic Content: Do not use vinyl wall coverings as the interior finish of exterior walls. On mass storage walls where water may penetrate the wall, avoid interior finishes made from paper-faced gypsum sheathing or other highly processed organic materials that may promote mold growth.
3. Air/Moisture Barrier System: An air/moisture barrier is required of all new construction. The air barrier system is:
 - a. A continuous element or combination of elements designed to control the movement of air across an exterior enclosure system.
 - b. Continuous in three-dimensions from roof-to-wall-to-foundation.
 - c. Consisting of materials and components that are, either individually or collectively, sufficient in stiffness and rigidity to resist air pressure differentials across the exterior wall assembly without permanent deformation or failure.
 - d. Durable and structurally rigid to withstand the construction process.
4. The interior and exterior air pressures across an air barrier system that need to be examined include, but are not limited to, pressures caused by wind, stack effect, and mechanical systems. Air barriers may be located at different locations within a wall system, and the placement of the air barrier needs to be indicated by the designer on the drawings. The designer must carefully consider placement of the air barrier when the air barrier material(s) will act both as an air barrier and as a vapor retarder to determine if drying of the system will be inhibited by the location of this material within the assembly. Portions of the air barrier may require regular maintenance and an allowance should be made within the design to accommodate this maintenance.
5. A continuous plane of air tightness, herein called the air barrier system, must be installed as part of the building enclosure (both above- and below-grade) to effectively separate all conditioned air from outdoor and polluted spaces.
6. The air barrier system must be shown on the drawings as continuous through all section drawings of the enclosure. The air barrier materials and components of each assembly must be clearly identified and labeled as "Air barrier" on construction documents, and detailed at all penetrations, joints, and transitions. The pressure boundary of the air barrier system(s) and the zone(s) to be tested must also be shown on the drawings.



7. The air barrier material of each assembly must be joined and sealed to the air barrier material of adjacent assemblies with sufficient flexibility to allow for the relative differential movement and with sufficient strength to resist expected peak air pressure differences.
8. Penetrations of the air barrier system must be sealed to the air barrier system in an airtight manner. These penetrations include, but are not limited to: lighting fixtures, wiring, conduit, gas lines, cable services, windows, doors, ducts, fire protection standpipe connections, and plumbing pipes.
9. The air barrier system (and all materials and components comprising it) must last the anticipated service life of the enclosure or allow for easy maintenance, repair, and/or replacement.
10. Where required in the IBC, elevator hoistways shall be provided with a means for venting smoke to the outside air in case of fire. Vents shall be permitted to open automatically upon detection of smoke in the elevator lobbies or hoistway, upon power failure, or upon activation of a manual override control.
11. Parking garages, and any storage with contents that can negatively affect indoor air quality must be separated from all other conditioned spaces by an air barrier system. Access to such spaces must be provided by doors in air-tight vestibules or airtight hatches at building access points.
12. Boiler rooms not using sealed combustion equipment must be separated from the rest of the building space by an air barrier system and provided with make-up air for combustion.
13. Additional equipment and other items required for testing the building's air-tightness are to be included in the design and construction documents for installation by the contractor as specified. This may include: indoor-to-outdoor pressure taps at various locations across the air barrier system, air flow and pressure measuring stations in air conveyance and handling systems, and tight-sealing dampers on all ducts carrying air across the air barrier.

ENCLOSURE - MASONRY AND CONCRETE MATERIALS

1. Brick masonry design must follow the recommendations of the Brick Institute of America contained in the publication, Technical Notes on Brick Construction.
2. Concrete masonry design must follow the recommendations of the National Concrete Masonry Association contained in the publication, TEK Manual for Concrete Masonry Design and Construction.
3. Architectural precast concrete design must follow the recommendations of the Precast Concrete Institute (PCI) contained in PCI publication, Architectural Precast Concrete, Current Edition.
4. Exterior limestone design must follow the guidelines of the handbook published by the Indiana Limestone Institute of America.

ENCLOSURE - FENESTRATION SYSTEMS

1. Metal Windows: Aluminum windows must meet the requirements of ANSI/AAMA Standard 101-85. The City prefers Kawneer 451 UT, AA 250, AA 425 (Glazing $U=0.19$; $SHGC=0.26$; $VT=0.6$) or equal. Only optimal performance classes may be used. Metal windows other than aluminum must meet the requirements of the National Association of Architectural Metal Manufacturers Standard SW-1 for the performance class required.
2. Window Frames: Aluminum frames must have thermal breaks. Window mullions, where applicable, should be located on the floor-planning grid to permit the abutment of interior partitions.
3. Metal windows other than aluminum must meet the requirements of Steel Window Institute's (SWI) Specifier's Guide to Steel Windows for the performance class required.
4. Entrance Doors: Entrance doors may be aluminum and/or glass of heavy duty construction. Glazed exterior doors and frames must be steel and meet the requirements of SDI Grade III with a G-90 galvanic zinc coating. Vestibules are desired to control air infiltration. All door assemblies installed in the means of egress must meet the requirements of the relevant building code.

ENCLOSURE - ROOF SYSTEMS

1. Roofing Design: Roofing design must follow the recommendations of the National Roofing Contractors Association as contained in NRCA publication, NRCA Roofing and Waterproofing Manual. The design of metal flashing, trim, and roofing must follow the recommendations of the Sheet Metal and Air Conditioning Contractors' National Association publication, Architectural Sheet Metal Manual. In addition, all roof assemblies and rooftop structures must meet the requirements in the International Building Code (IBC).



- a. Note: The City requires the following for roofs.
 - i. A 30-year warranty as a standard specification.
2. Access to the Roof: Permanent access to all roof levels must be provided to facilitate reoccurring inspection and maintenance of both the roof and Madison Gas & Electric owned photovoltaic panels.
3. Insulation: Shall be R-50 minimum created via multiple layers of insulation with staggered joints to reduce thermal breaks.
4. Roof Mounted Equipment: Roof mounted equipment must be kept to a minimum and must be housed in penthouses or screened by walls. Penthouses and screen walls should be integrated into the building design and constructed of materials used elsewhere in the building exterior. Some roof-mounted equipment, such as photo voltaic panels, antennae, lightning rods, flagpoles, etc., does not have to be screened, but these elements must be integrated into the building design. Roof-mounted equipment should be elevated as recommended in the NRCA Roofing and Waterproofing Manual and set back from the roof edge to minimize visibility. Critical roof-mounted equipment should be installed in such a way to permit roof system replacement or maintenance without disruption of equipment performance.
5. Penetrations through the roof to support equipment are extremely vulnerable to leaks. Flashing details must be studied for appropriate continuation of the waterproof barrier. Do not use pitch pockets as part of the roof design.
6. Provide walkways on the roof along routes to and around equipment for maintenance. No building element may be supported by the roofing system except walkways.
7. When installing roof top photovoltaic systems, consult with City Engineering the local building and fire code official for additional access and safety requirements.
8. Exterior Soffits: Design exterior soffits to resist displacement and rupture by wind uplift. Design soffits for access to void space where operating equipment is located or maintenance must be performed. Soffits can be considered totally exposed to weather and should therefore be designed to be moisture resistant. Provide expansion and contraction control joints at the edges and within the soffit. Spacing and configuration of control joints should be in accordance with the recommendations of the manufacturer of the soffit material. Operating equipment or distribution systems that may be affected by weather should not be located inside soffits. Where it is necessary to insulate the floors over soffits, the insulation should be attached to the underside of the floor construction so that the soffit void may be ventilated to prevent condensation.
9. Skylights and Sloped Glazing: If skylights are pursued the skylight design must follow the guidelines of AAMA Standard 1600. For the design of sloped glazing, two AAMA publications are available: Glass Design for Sloped Glazing and Structural Design Guidelines for Aluminum Framed Skylights.
 - a. Skylights and sloped glazing should use low emissivity glass. Placement should be calculated to prevent glare or overheating in the building interior. Condensation gutters and a path for the condensation away from the framing should be designed.
 - b. Consideration must be given to cleaning of all sloped glazing and skylights, including access and equipment required for both exterior and interior faces.
 - c. Skylights must be guarded for fall protection or meet OSHA structural requirements.
10. Edge Protection: Flat roofs designed for access must include a parapet or perimeter railing at least 42 inches in height. Where parapets and railings are not feasible, personal fall protection anchorage points must be provided. Equipment should be located away from roof edges and oriented with access panels inboard of the roof edge.

ENCLOSURE - QUALITY ASSURANCE

1. Mock-ups: Unique building solutions shall include specifications for full scale, laboratory, and on-site mock-ups of critical portions of the building façade. A/E to coordinate with City, and Commissioning Agent to establish mock-up requirements. A/E and City to review all mock-ups during construction for compliance with specifications. If it is determined mock-ups would be helpful during the design phase the A/E shall coordinate with the City Project Manager to pursue options.
2. Air/Moisture Barrier Testing: The specifications shall include provisions for air and moisture testing.
3. Window Cleaning: The facility must have provisions for cleaning the interior and exterior surfaces of all windows, skylights, and other glazed openings. The A/E must demonstrate that cleaning and maintenance of interior glazing



surfaces can be achieved without extraordinary means and methods. Submit this information with the construction documents.

INTERIOR CONSTRUCTION AND INTERIOR FINISHES PERFORMANCE ATTRIBUTES - GENERAL

1. Interior construction – for the purpose of organization – will be addressed as two categories: construction products and materials, those elements that are built to create functional spaces, and finish materials, those products that are applied to the construction products to conceal, protect, or enhance the appearance of construction products or to provide wearing surfaces.
2. Construction Products and Materials: A/E shall design all doors, windows, permanent partitions, demountable partitions, operable partitions, and millwork. Each product shall be evaluated based on its applicable characteristics. Products shall be evaluated for construction, durability, acoustic properties, security, operability/flexibility, and other characteristics that reflect the functional requirements of the product under consideration.
 - a. The A/E must design - and review with the City - all specifications for building products throughout the design and construction phases to confirm the products are meeting the City’s expectations for interior construction products and materials. This includes, but is not limited to, doors/frames/hardware, interior windows/”lights”, metal stud partitions, masonry partitions, demountable partitions, operable walls, millwork cabinets, etc..
3. Interior Finishes and Materials: A/E shall address performance levels of typical floor, wall, and ceiling finishes, focusing on each product’s durability, maintenance, service life, and environmental qualities. Metrics and attributes vary by finish based on performance need. Durability describes composition/content, thickness, hardness, strength, wear resistance, load limit, and water absorption. Maintenance addresses wear layer/sealer, barrier/backing, ease of cleaning, stain resistance, microbial resistance, and mold/mildew resistance. Service life is described in terms of the length of warranty available. Environmental addresses recycled content, renewable resources, local materials, and VOC emissions.
 - a. Finishes must meet requirements of the most current International Building Code. Other codes (Example: NFPA Fire Safety Codes) and application specific performance attributes (Examples: Severe traffic area; Raised access flooring) need to be taken into account. Finishes should incorporate recycled-content materials to the maximum extent where possible.
 - b. The A/E must design - and review with the City - all specifications for building products throughout the design and construction phases to confirm the products are meeting the City’s expectations for interior construction. This includes, but is not limited to, flooring, tile, paint, wall panels, ceilings, wall base, MEP finish, etc.
 - c. The City prefers or does not prefer the following standards/performance requirements for the following select group of finishes. If the A/E intends to vary from this approach it must be thoroughly reviewed and approved by the City:
 - i. Flooring: Office Areas: Rubber Flooring (Nora); Bathrooms/Locker Rooms: Ceramic Tile (also at walls); Maintenance/Janitorial/Shop/Storage/Elect Rm/IT Rm: Sealed Concrete or Epoxy Coated Concrete as applicable; Walk-off mats type to be non-corrosive metal grate type.
 - ii. Ceilings (Acoustical): Sag, impact and scratch resistant surface. 20 year systems warranty. Recycled content greater than or equal to 50%. Recyclable in a closed loop process. Light reflectance no less than 85%. Acoustical qualities as follows: Open Plan NRC ≥ 0.95 ; Open Plan CAC = N/A; Closed Plan NRC ≥ 0.70 ; Closed Plan = ≥ 35

INTERIOR - WORKSPACE REQUIREMENTS

1. As part of the pre-design project planning effort the A/E shall work with the City and applicable agencies to develop customer requirements.
2. The A/E must ensure the City’s requirements are translated into the design, confirm the workspace requirement are being maintained throughout design development, and reflected in the final construction documents.

ACOUSTICS (The standards in this section establish adequate acoustic qualities. Post-construction commissioning will confirm that the acoustical standards have been met).

1. Mechanical and Plumbing Noise: All mechanical equipment must be vibration isolated from the building frame. Ambient noise from mechanical equipment must not exceed noise criteria (NC) values described in the approved acoustical plan established in the pre-design phase. Diffusers with an NC rating 5 points less than the noise criterion for the space being



served must be used where occupied space occurs adjacent to, above, or below mechanical or electrical equipment or machine rooms, or adjacent to HVAC or elevator shafts. The intervening structure (partitions, shaft walls, doors, floor and ceiling assemblies, etc.) must be sufficient to control noise intrusion to no greater than the maximum NC or room criteria (RC) values. Where an elevator shaft or equipment room occurs adjacent to noise-sensitive spaces (NC/RC 35 or lower), the maximum intrusion level of elevator noise must be limited to 5 dB below the maximum NC/RC for the space in all octave bands. In the walls, ceilings, and floors enclosing noise-sensitive spaces (Table 3-2, column 1, RC/NC 35 or less), all water, wastewater, and drain piping must be vibration-isolated from the structure, finishes, and other piping. Install R-11 batt insulation in all wall spaces where such piping is located and install the piping at least 200 mm (1 in.) away from the gypsum wall board. All wastewater and drain piping above slab on grade must be specified as cast iron.

FIRE PERFORMANCE AND SMOKE DEVELOPMENT

1. Interior wall and ceiling finish materials shall comply with the applicable requirements in the International Building Code (IBC) for fire performance and smoke development (i.e., flame spread index and smoke developed index). This applies to all decorative materials applied on or over the building interior finish for decorative, acoustical or other effect (such as curtains, draperies, fabrics, streamers and surface coverings), and all other materials utilized for decorative effect (such as batting, cloth, cotton, hay, stalks, straw, vines, leaves, trees, moss and similar items), including foam plastics and materials containing foam plastics. This also applies to all furnishings included with the interior design.

STRUCTURE

1. The structural design must be in full compliance with the latest edition of the IBC. Any variance for any reason must be reviewed with the City.

MECHANICAL

HVAC GENERAL

1. The A/E's goal shall be to achieve high level of building performance in order to achieve indoor environments that are most conducive to comfort, health, and productivity, to increase the longevity of the property, and to deliver these in an optimally energy efficient and cost effective manner.
2. A/E shall select HVAC as requested by City where specified. Develop a report analyzing initial cost vs. Operating costs to demonstrate energy efficiency and life cycle costing, such that the City can evaluate the benefits of incorporating components of varying energy efficiencies in the project. Coordinate locations of HVAC with other disciplines.
3. Comfort shall be based on thermal comfort based on ASHRAE 55.
4. Energy Performance: Perform energy simulation to determine best system options and improve design and control strategy. Exceed current ASHRAE guidelines by 40%. Employ most efficient equipment for each technology type (if not contradicting maintainability).
5. Energy Simulation: Preliminary simulation: Revit, Trane Trace or eQuest. Final simulation: Trane Trace.
6. Indoor Air quality: Ventilate to meet OSHA, code and ASHRAE requirements (whichever is higher).
7. Unacceptable Design Practices: Obsolete or soon to be phased out technologies (i.e. R22), Electric heat.

HVAC COMPONENTS

1. **BASIS OF DESIGN** (at time of contract, subject to being updated throughout life of contract)
 - a. Cooling: For small systems DX system (variable speed compressors for modulation, variable speed condenser fan). For large systems water-cooled multi-chillers.
 - b. Cooling/Ventilation: Static pressure reset, Zone motion sensors, Zone window sensor, Supply temperature reset, ERV with DOAS for dehumidification, CO₂-sensor for system ventilation reset and VAV control in critical zones (i.e. conference room), ECM-motor direct-drive fan, Radiators and/or in-floor radiant heating for space heating (no VAV system for heating).
 - c. Shop / Garage Ventilation: ERV with hydronic heat preferable.
2. **CONTROLS:** Honeywell WEBs Building Automation System (All equipment shall be controlled by BAS as much as possible)



3. **FILTRATION:** MERV 8 for Air intake; MERV 13 for recirculated air occupied space; MERV 8 recirculated for air unoccupied
4. **BOILERS:** Condensing and modulating (down to 46,000 Btu/h), AERCO, Design for 90-140°F and dT of 30°F.
5. **ACTUATORS AND CONTROLS VALVES:** Honeywell. Pressure-independent control valves in lieu of balancing valves.
6. **FANS:** Greenheck, Carnes
7. **PUMPS:** B&G, Grundfos
8. **MAKE-UP AIR UNITS:** Modine, Greenheck
9. **UNIT HEATERS:** Modine; Sterling Gas-fired units (Condensing units)
10. **IT EQUIPMENT COOLING:** cool with transient air from conditioned spaces where feasible due to IT load. Recover heat where possible.

PLUMBING FIXTURES

1. **GENERAL:** A/E to specify plumbing fixtures that comply with the International Plumbing Code and local building codes. Water conservation technologies must be applied to the extent that the technologies are life-cycle cost-effective.
2. **FIXTURES TYPE:** Sloan, Chicago faucet (automatic on/off sensor) Hard-wire sensors.
3. **WATER CLOSETS (toilets) flushometer valve type.** Water closets must be either dual-flush or low-flow type, manually controlled. For single flush, maximum flush volume when determined in accordance with ASME A112.19.2– (1.28 gal). For dual-flush, effective flush volume determined in accordance with ASME A112.19.14 and USEPA WaterSense Tank-Type High Efficiency Toilet Specification – (1.28 gal).
4. **HIGH EFFICIENCY TOILETS (HET) WATER CLOSETS — TANK-TYPE:** Tank-type water closets must comply with the performance criteria of the U.S. EPA WaterSense Tank-Type High-Efficiency Toilet Specification.
5. **HIGH EFFICIENCY URINALS (HEU):** Urinals must be low-flow, flush-type fixtures. Maximum flush volume when determined in accordance with ASME A112.19.2 – 0.5 L (0.125 gal).
6. **WATER COOLER:** Elkay
7. **WATER SOFTENER:** Capital Windsor Series.

OPERABILITY AND MAINTAINABILITY

1. **ACCESSIBLE FOR MAINTENANCE:** Install equipment so that it can be safely and easily maintained and inspected. Comply with requirements for mechanical room sizes and manufacturer’s recommended clearances around installed equipment.
2. **SIMPLE/UNDERSTANDABLE TO OPERATE:** The sequence of operation for the control systems must be clearly described and comprehensively documented. The HVAC system design should minimize the need for overly complex control systems.
3. **OPERATIONS:** Design the HVAC system so that equipment failures and normal maintenance have minimal impact on the tenants. Failure of one piece of equipment should not shut down large portions of the building. Install piping and valves so that equipment can be easily isolated for repair and so that different combinations of equipment can be used during replacement and overhaul. Equipment components, spare parts, and materials should be readily available and the equipment should be repairable by crafts people available in the local area.
4. **ROBUST AND RELIABLE: EXTENDED LIFE EXPECTANCY:** City facilities have a longer life expectancy than most commercial office buildings. Mechanical systems are expected to have extended service lives. They will be modified many times over the life of the building and operated by many different maintenance teams and occupied by many different tenants. Selection of robust, reliable, energy efficient equipment is important. Systems that can be reliably operated at near design conditions over the long term are needed.

ELECTRICAL ENGINEERING - GENERAL:

1. Minimum Services include power distribution, electrical service, circuiting of lighting and controls (lighting design not by electrical engineer), lighting design (lighting designer as indicated below), equipment connection schedules, integration of renewable energy equipment, and utility coordination. Separate electrical services shall be provided for the parking garage and the commercial/retail building.



2. A detailed load study, including connected loads and anticipated maximum demand loads, as well as the estimated size of the largest motor, must be included in the initial contact with the local utility company to prepare its personnel for discussions relative to the required capacity of the new electrical service.
3. The service entrance location for commercial electrical power must be determined concurrently with the development of conceptual design space planning documents. Standards for equipment furnished by utility companies must be incorporated into the concept design. Locations of transformers, vaults, meters, and other utility items must be coordinated with the architectural design to avoid conflicts with critical architectural features such as main entrances and must accommodate both equipment ventilation and equipment removal. All major electrical equipment must be located 5 feet above the 100-year flood plain.

ELECTRICAL ENGINEERING - COMPONENTS:

1. Panels: Manufacturer: For the Parking Garage, Square D Powerlink as used in the Capitol Square north Garage. For the commercial/retail building, Square D or Siemens. Transient voltage surge suppression (TVSS) at main panel. All panels with at least 40% spare capacity for future expansion. Subpanels on each floor (multiple if required) and separate panels for high-usage areas (i.e. shops)
2. Switches, receptacles and electric devices: Acceptable manufacturers include Hubble (Commercial Grade) and LeGrand (Commercial Grade). 20A rated minimum outlets.

LIGHTING - GENERAL

1. GENERAL: Lighting design must be performed by a lighting practitioner with a minimum of 10 years full time experience in lighting design with at least two of the three following qualifications of LC, IES member, or IALD member, and that devotes the majority of his/her professional time to the design of architectural lighting. The A/E and lighting practitioner shall design all lighting including, but not limited to the interaction of daylighting and electric lighting; illumination of means of egress; luminaires; emergency lighting; site lighting; artwork lighting, etc.
2. A/E shall meet code-required lighting and/or IES recommended levels
3. W/ft² 40% lower than code-required.

LIGHTING – COMPONENTS

1. Occupant switching for improved comfort; bi-level switching and dimming wherever possible. No wall-mounted sensors
2. Occupancy sensor control in all areas except where code prohibits
3. Daylight dimming in areas near large windows
4. Parking garage deck lighting shall be Holophane model PLED2.05L.4K.AS.UN.G.L5H or Parking Utility approved equal.
5. Outdoor Lighting control by central photocell, motions sensor (step-dimming), and timed lighting
6. Outdoors: LED (Beta, RAB, Lithonia), 5000K-6000K
7. Indoors: fluorescent 4' lamps (Lithonia, Daybrite); T8 with parallel-wired ballast (GE UltraStart); LED spotlights Edison-base; LED task lights w/ motion sensor (Phillips); LED Downlights Edison base (Capri) for non-proprietary replacement and when not much light is needed; 4100 K; LED EXIT signs (Lithonia)
8. Emergency lighting: Separate emergency lighting fixture (Lithonia). Battery backup ballasts and drivers are not acceptable. Consider central inverter for new installations (Lithonia, Myers)

FIRE PROTECTION

1. GENERAL: A fire protection engineer must be a full participant of the A/E team for each phase of the project from concept through design, construction, and occupancy. The design team fire protection engineer must be licensed and have at least six years' experience, of which at least three consecutive years are directly involved in fire protection engineering and life safety applicable to the specific project as determined by the City, and which can be verified by documentation. The A/E and fire protection engineer must perform the following minimum requirements and review with the Madison Fire Department Fire Protection Engineer at each phase of design and any revisions during construction:
 - a. Analysis of: Building construction, occupancy classification, means of egress, fire alarm system, water-based fire extinguishing system(s), non-water-based fire extinguishing system(s), smoke control system(s)



- b. Calculations for: egress, water supply, smoke control (fire dynamics) and timed egress, audibility for fire alarm system
- c. Design of all fire protection and life safety systems, including but not limited to: Fire alarm system, water-based fire extinguishing system(s), smoke control systems and stair pressurization systems.

TELECOMMUNICATIONS/IT/AV/RADIO

1. **GENERAL:** The A/E shall design and coordinate - in collaboration with the City - telecommunications, IT elements, AV, and radio items, with all other building systems. This includes, but is not limited to all exterior and interior fiber conduit and cabling, IT rooms and racks, major IT equipment, data conduit and cabling, wireless communication systems, “Keyscan” Card Access System, and security cameras.

SECURITY

1. **GENERAL:** The A/E and their security consultant shall work with the City at each phase of design (starting with pre-design) to develop a site/building specific risk assessment. The assessment shall evaluate credible threats, identify vulnerabilities, and assess consequences. This process will primarily be in collaboration with the City’s Project Manager, Madison Police Department, and City IT; but will also require agency input. Past and current solutions include both architectural (open plans without hiding areas, physical barriers, proper staff locations) and technological solutions (access control, security cameras, glass break alerts, panic alarms, etc.).

SIGNAGE

1. The A/E shall design clear and coordinated systems of interior and exterior signage and way finding that allow users to locate parking as quickly and directly as possible. A standardized system of signage, with interchangeable components, must be provided throughout the facility. Signage details and specifications shall be included in the construction documents bid package.
2. Follow all ADA guideline specifics for parameters of design, including location, size, color, and tactile qualities of signage and use of graphic symbols to assist nonreaders.
3. The A/E shall design the following signs
 - a. Identification and Information Signage: Building identification/seal; level/area identification.
 - b. Directional Signage: Directional signage for building access by persons with physical challenges; Directional signage for parking/restricted entrances.
 - c. Regulatory/Security Signage; Signage for core functions—stairs, telephones, and other elements on ADA path to building services; Signage for controlled access areas—staff areas; if admission to controlled areas is based on acceptable identification. Signage for dedicated systems/facilities—elevators, stairs, staff restrooms (identification as dedicated and regulations for use must be stated).
 - d. Note: A well-designed site shall use as few signs as possible. Signs should make the site way finding clear to the first-time user by identifying multiple site entrances, parking, and the main building entrance. Generally, graphics and style of site signage should be consistent with signage used inside the building. Signs integrated with architectural elements can also be very effective. Signage must be consistent in font, style, and color as well as with any directional symbology used in site and building signage. Signage placement can be an important detail element of the building design whether prominently displayed and tooled into the exterior building wall materials or as a freestanding component near the entrance to the facility. Exterior signs identifying permanent rooms and spaces must comply with all ADA requirements.

FURNISHING

1. **GENERAL:** The A/E shall design and prepare a general furniture plan during the SD and DD design phases.
 - a. The furnishing package will be bid by the City separate from the building construction bid set.
 - b. The furnishing package shall be installed during the construction contract to facilitate completion in time for owner occupancy.
2. **STANDARDS:** The City has standard furnishing requirements as follows. These standards shall be reviewed with the City prior to preparing furniture layouts.



- a. DESKING: Herman Miller 5000 Series, Metal Finish: BU Black Umber (textured paint on smooth steel), Desktop: HP Light Anigre (laminated), Standard pulls. Note: The City has allowed the dark blue finish as well in circumstances.
- b. STORAGE: Herman Miller Meridian, Metal Finish: BU Black Umber, Standard pulls, Standard upright and lateral file cabinets, storage cabinets, bookcases, etc.
- c. DESK CHAIRS: Herman Miller Mirra, Frame: Graphite, Armpad: Black, Back Finish: Graphite, Seat Material: Graphite AireWeave

LEED

1. LEED Documentation Services: Provide services to organize and manage the LEED documentation and certification process. Meet and confer with representatives of the City to prepare LEED documentation. Include coordination of meetings, document preparation, and assistance to the City in preparation of Owners Project Requirements (OPR) report and Basis of Design (BOD) report. Register the project with USGBC (U.S. Green Building Council). Registration fees shall be paid by the City. Prepare submittals for credit rulings from the USGBC for interpretation of credit language, principles, and implementation strategies. Credit ruling fees required by USGBC shall be paid by the City. Prepare and submit a LEED Certification Application for the project to the USGBC. Include required calculations and documentation for each LEED credit claimed in accordance with the LEED Certification Plan. Prepare responses and submit additional documentation required by comments or questions received from the USGBC after review of the original submission for LEED certification. Prepare and distribute meeting minutes for meetings related to LEED Documentation services.

OWNER PROVIDED SERVICES/DELIVERABLES

1. ENHANCED COMMISSIONING AND ENERGY MODEL
2. GEOTECHNICAL REPORT
3. SITE TOPOGRAPHIC SURVEY
4. OTHER AS APPLICABLE OR REQUIRED.

DELIVERABLES

DELIVERABLES BY PHASE - GENERAL REQUIREMENTS

1. These design services submission requirements have been developed to ensure a rational, well-documented design process and to facilitate reviews by the City project team, tenant agencies, local regulatory agencies, review boards, user groups, and the general public as the design develops. These requirements are the minimum standards.
2. During development of all pre-design and design phases the A/E shall meet and review progress documents with the City's Project Manager, City's Project Team, applicable tenant agency representatives as required. Prepare appropriate presentation materials which may include large color presentation boards, power point presentations, handout sheets, project schedules, and similar project design related materials. The City and the A/E will develop a schedule of meetings that will be mutually agreed upon.
3. Prior to completion of programming, preliminary concepts, schematic design, and design development meet and review progress documents with the public and community stakeholder groups (e.g. business associations, neighborhood associations, tenant agency customer groups, etc.). Prepare appropriate presentation materials which may include large color presentation boards, power point presentations, handout sheets, project schedules, and similar project design related materials. The City and the A/E will develop a schedule of meetings that will be mutually agreed upon.
4. Prior to completion of each phase meet and confer with regulatory agencies as required to obtain necessary preliminary approvals, final approvals, permits, and the like. This may include, but not be limited to, Urban Design Commission, Plan Commission, Board of Public Works, Common Council, Zoning, Conditional Use Approvals, Building Inspection Plan Review, WI Department of Safety and Professional Services, Department of Natural Resources, Department of Transportation, Madison Fire Department, City Engineering, Traffic Engineering, Parking Utility, and similar agencies or committees.
5. In each phase of work, project documents must be submitted to City in electronic and hard copy format as determined by the City Project Manager.
 - a. For regulatory agencies having jurisdictional review provide digital or printed copies, of required print size, and required scale as required by the reviewing agencies application requirements.



- b. For City agency reviews provide the number of copies, required print size, and required scale shall be as requested by the reviewing agencies application requirements.
 - c. For handouts to committees and commissions size and scale as appropriate to show the level of detail necessary to convey the project or project component clearly.
 - d. For City design team plan review, minimum of three (3) sets, full plan sheet size, to scale. Reductions will not be allowed.
6. Design Quality Reviews will be performed by the City of Madison staff and third party consultants at each design, construction document, bidding document, and construction administration phase. The review teams will evaluate each project for applications of best practices, conformance with criteria, building and systems performance, efficient and effective design, cost drivers, risk factors for successful execution, and customer satisfaction, as well as several other indicators of overall project suitability and readiness to move to the next phase in execution. The A/E should plan for City design quality review time after each phase delivery. All outstanding phase issues will need to be completed prior to proceeding to the next phase.
 7. No design phase is considered completed before all of the City’s review comments are resolved in a timely manner. Unless approved by the City, a resolution of a problem shall not take more than one week. Furnish interim documents for review as requested by the City Project Manager. The A/E shall not proceed to future phases without written authorization from the City Project Manager.
 8. Provide all project-specific information on plan set. Provide City with proposed general and technical specifications.
 9. Consultant shall accommodate pausing or delays of the project (i.e. bidding delays, budget delays) at no extra charge.
 10. At all times, the City reserves the right to make public all information concerning this project and to choose the form, content, method of presentation, by whom presented, and the time of release; and at any time during or after completion of this project.
 11. Unilateral deviations from City preferred (or undesired) manufacturers, equipment, and construction methods is not permitted without City approval. The consultant shall adhere to these preferences and thoroughly discuss deviations of those if deviating is of advantage for the specific project.
 12. Whenever possible plans and details shall be prepared to be complete and show sufficient detail so as not to require the use of additional materials. All design data shall be included on plans. This includes, but is not limited to lighting calculation data, energy densities and structural details. All equipment shall be specified by naming specific models that are basis of design.
 13. Design shall provide clear distinction between design-build (i.e. pre-cast, light-gauge metal framing) and design-bid-build features. Consultant shall provide all design and details that is not provided by design-build part of contractor’s work. Consultant shall perform design changes that are required due to changes in final design after contract award to contractor.

DELIVERABLES BY PHASE - DRAWINGS

1. Drawing Size: All drawings of a single project must be a uniform standard size. Reports, narratives, etc. must be 8.5 x 11 and/or 11 x 17. Drawing sets must be 24 x 36 or 30 x 42 format.
2. Drawing Lettering: Lettering on drawings must be legible when drawings are reduced to half size. This applies to drawings at all phases.
3. Drawing Scale: All drawings are to be created at full scale and plotted at a selected scale. The drawings or views (such as details) should include numeric and graphic scales. The scale selected should be appropriate for high resolution and legibility to include reduced copies (such as half-sized).
4. Seals: The construction documents must bear the seal and signature of the responsible design professional as required by the authority having jurisdiction. On cover sheet provide code certification statement for compliance with specified codes and standards by each discipline with the professional seal and signature. The intent is to formally recognize the responsibility for compliance.
5. Building Information Modeling: The City requires the use of interoperable Building Information Models (BIM) on all projects throughout the project lifecycle. During all phases of the project, BIM models must be included with all deliverable requirements. BIM models must be delivered in both native and IFC file formats.
6. BIM Standards: Building Information Modeling (BIM) based on current Autodesk Revit software. Use actual families for each equipment and insert devices with actual size and clearance spaces. Perform clash detection with all equipment,



pipes, ducts etc. The BIM shall be set up such that 2D CAD drawings should be derived from the model.

DELIVERABLES BY PHASE - SPECIFICATIONS

1. The A/E is responsible for providing and assembling all project specifications necessary to reflect the project design intent, City policy requirements, and law. This shall include but not be limited to:
 - a. Incorporating all City supplied specifications (PDF format) into the overall specification document. The A/E will not edit these documents. The A/E will not be required to provide any specifications supplied by the City.
 - b. Providing and editing additional specifications as needed and carefully coordinating the specifications with the drawings to ensure that everything shown on the drawings is specified.
 - i. This shall include editing specifications to incorporate any City furnished design or equipment guide lines.
2. Format: Specification sections shall be edited and compiled into a single PDF document.
 - a. Specifications should be produced according to the latest edition Construction Specification Institute (CSI) division format.
 - b. Specifications shall have a Table of Contents (TOC) organized by CSI divisions and indicating all sections and section titles used. Each section in the TOC shall be linked directly to that section within the specification.
 - c. Each page shall be numbered and shall incorporate the specification section in the numbering sequence (01 35 14 – 1, etc)
 - d. The specification shall be created directly to PDF to keep the integrity of word recognition, linked headings, etc. Printing to PDF or saving a scanned image as PDF will not be accepted.
3. Editing of Specifications:
 - a. The A/E shall thoroughly edit all specifications supplied by the A/E to ensure any specification language that is not applicable to the project has been removed and all necessary language has been added.
 - b. The A/E shall thoroughly review all specifications supplied by the City to ensure any specification language that is not applicable to the project has been removed and all necessary language has been added. The A/E shall work with the City to edit City provided specifications as necessary.

DELIVERABLES BY PHASE - DESIGN NARRATIVES AND CALCULATIONS

1. Format: Typed, bound narratives should be produced for each design discipline and accompany the Pre-Design, Schematic Design, Design Development and Construction Document Submittals.
2. Content: Narratives shall serve to explain the design intent and to document decisions made during the design process. Like drawings and specifications, narratives are an important permanent record of the building design. Drawings and specifications are a record of what systems, materials, and components the building contains; narratives should record why they were chosen. The narrative of each submittal may be based on the previous submittal, but it must be revised and expanded at each stage to reflect the current state of the design.
3. Calculations: Manual and/or computer based calculations should accompany narratives to support technical analysis. Each set of calculations should start with a summary sheet, which shows all assumptions, references applicable codes and standards, and lists the conclusions. Calculations should include engineering sketches as an aid to understanding by reviewers. The calculations for each submittal should be cumulative, so that the final submittal contains all calculations for the project. Calculations submitted at early stages of the project must be revised later to reflect the final design. Calculations must refer to code, paragraph of code used, standards, and text books used for specific portion of calculation. Refer to drawing number where the results of the calculations have been used. A few examples: number and sizes of re-bars used in reinforced concrete members, enclosure R-values, HVAC equipment and duct sizing, etc.
4. Performance Criteria: As part of the development of concepts through construction documents there must be a check of building performance criteria established in pre-design and refined in subsequent phases.
5. Energy Simulation: In addition to the City's requirement of USGBC LEED Silver Rating the City has established additional energy, maintenance, and operational standards to maintain manageable life cycle costs. An energy model will be commissioned by the City and will be submitted to the design team in the pre-design phase of design and updated at significant milestones (e.g. completion of schematic design, and design development) in the project with the intent to continually explore creative ways to reduce energy use while meeting maintenance/operational goals.
 - a. The design team must provide all necessary documentation for the energy model and be available to support this



activity.

- b. The A/E shall look for opportunities for the reduction, recycling, or production of new energy in site, architectural, and building systems design throughout the design and construction process.

PHASE 1: PRE-DESIGN PRELIMINARY CONCEPT

GENERAL – PRIOR TO COMPLETION OF PRELIMINARY CONCEPT

1. At the beginning of each project, the City’s project team, tenants and design A/E need to define the functional objectives of a project. A functional objectives matrix, or similar method shall be established by the A/E to confirm goals.
2. During the schematic design phase high impact issues will require formal design team technical discussions to help optimize design solutions. These technical discussions must take place with the appropriate members of the City’s project team and others as applicable. The technical discussion agenda can be organized by discipline (systems) and/or by functional objective heading, but should address:
 - a. Functional performance goals
 - b. Integrated solution options
 - c. Heading off what can go wrong
 - d. Inspections/certification requirements
 - e. Coordinating construction and turnover-phase issues/deliverables
4. During schematic design effort the A/E shall conduct meetings to develop clear and quantitative goals. The meetings shall be attended by the various disciplines of the design firm, its consultants, the City’s project team and others as applicable. The design goal setting session shall be used to develop consensus of the strategies and technologies to be explored during design. Goals are (not ordered by priority):
 - a. optimize use of fiscal resources to meet design goals
 - b. optimize constructability of project and implement cost evaluation at the beginning of the project
 - c. optimize energy efficiency
 - d. Improve sustainability
 - e. optimize maintainability and longevity of installed equipment
 - f. Promote occupant productivity and health
 - g. Promote resource conservation and environmental responsibility
 - h. ADA compliance

DOCUMENT DELIVERABLES – PRELIMINARY CONCEPT

1. Site location plan [at least one mile around site], showing:
 - a. Site relative to location of city center, major landmarks, major parking facilities, major roads, and airport
 - b. Location of transit links
 - c. Location of distinct land use types and districts in the vicinity of the site (e.g., historic districts, retail nodes, civic districts, etc.)
2. Existing site plan (at least one block around site), describing:
 - a. Site boundaries, approximate topography, existing buildings, setbacks, and easements
 - b. Climatic conditions including path of sun; Description of flood plain issues related to building location and mechanical and electric equipment
 - c. Location of on-site and off-site utilities
 - d. Natural landscape
 - e. Pedestrian and vehicular circulation (include direction of traffic on adjoining streets)
 - f. Neighboring land uses, existing and planned
3. Site plan showing:
 - a. Building location and massing
 - b. Parking and service area
 - c. Plans for surrounding area, relation of each concept to those plans, and summary of relevant recommendations.
4. Floor plans, showing at a minimum:



-
- a. Entrances, lobbies, corridors, stairways, elevators, work areas, special spaces, mechanical rooms for major equipment and air handlers, and service spaces (with the principal spaces labeled). Dimensions for critical clearances, such as vehicle access, should be indicated.
 5. Building sections (as necessary), showing:
 - a. Floor-to-floor heights and other critical dimensions
 - b. Labeling of most important spaces
 - c. Labeling of floor and roof elevations
 6. Photographs showing the site and elevations of existing buildings (or landscape, as applicable) surrounding the site
 7. Narrative:
 - a. Site statement, describing:
 - i. Existing site features,
 - ii. Climatic conditions,
 - iii. Topography and drainage patterns,
 - iv. Any existing erosion conditions,
 - v. Wetlands and locations of flood plains,
 - vi. Surrounding buildings (style, scale),
 - vii. Circulation patterns around site.
 - b. Site access:
 - i. Noise/visual considerations
 - ii. Local zoning restrictions
 - iii. Federal Aviation Administration requirements
 - iv. Hazardous waste (report to be supplied by City)
 - v. Pollution
 - c. Historic preservation considerations:
 - i. Site photographs, showing contiguous areas and affected preservation zones
 - ii. Existing major site utilities
 - iii. Potential archeological artifacts
 - d. Description of each architectural design scheme, explaining:
 - i. Organizational concept
 - ii. Expansion potential
 - iii. Building efficiency
 - iv. Energy considerations
 - v. Advantages and disadvantages
 - e. Sustainable design considerations:
 - i. Potential for incorporation of renewable energy systems in the design
 - ii. Potential use of geothermal systems
 - f. Mechanical system and strategy to comply with energy goals.
 - g. Description of structural design scheme considerations for each design scheme explaining:
 - i. design loads
 - ii. foundation system
 - iii. building framing system
 - iv. lateral load resisting system
 - v. advantages and disadvantages
 - h. Fire protection design considerations
 - i. Security features
 - j. Code statement. Provide a brief statement from each design team discipline member regarding the code requirements that relate to the site and occupancy use. For example, items such as, but not limited to: classification of construction and occupancy group(s), fire resistance requirements and general egress requirements, etc., would be prepared by the design team fire protection engineer.
 - k. Preliminary concept phase cost estimates to be completed by third party after completion of preliminary submission.



PHASE II: SCHEMATIC DESIGN

GENERAL – PRIOR TO COMPLETION OF SCHEMATIC DESIGN

1. See “DELIVERABLES BY PHASE – GENERAL REQUIREMENTS” above for meeting/presentation/approvals expectations.

DOCUMENT DELIVERABLES – SCHEMATIC DESIGN

1. Site Plan (At least one block around site), describing:
 - a. Site boundaries, approximate topography, existing buildings, setbacks, and easements
 - b. Building orientation with respect to path of sun
 - c. Building massing and relationship to massing of surrounding buildings
 - d. Location of on-site and off-site utilities
 - e. Grading and drainage
 - f. General landscape design, showing location of major features
 - g. Pedestrian and vehicular circulation (include direction of traffic on adjoining streets)
 - h. Parking and service areas
 - i. Fire protection, water supplies, fire hydrants, and fire apparatus access roads.
2. Site Narrative:
 - a. Description of site and landscape design final concept
 - b. Demolition, if required
 - c. Circulation
 - d. Parking
 - e. Paving,
 - f. Landscape design
 - g. Irrigation, if any
 - h. Utility distribution and collection systems
 - i. Method for storm water detention or retention
 - j. Landscape maintenance concept
 - k. Fire protection, water supplies, fire hydrants, and fire apparatus access roads
 - l. Accessibility path for the physically disabled
 - m. Summary of site and architectural design and the design’s response to relevant recommendations by City staff.
3. Architectural Drawings:
 - a. Demolition plans at all areas both interior and exterior
 - b. Floor plans, showing at a minimum work areas, lobbies, corridors, entrances, stairways, elevators, special spaces, and service spaces (with the principal spaces labeled and dimensions for critical clearances indicated)
 - c. Office areas must show proposed layouts down to the office level of detail verifying the integration between the approved program and the building concept is achievable
 - d. Proposed interior layouts showing open office plan and enclosed office plan
 - e. Indicate how major mechanical and electrical equipment can be removed/replaced
 - f. Elevations of major building facades showing fenestration, exterior materials, and cast shadows
 - g. Elevations of major interior spaces, showing lobby, typical public elevator lobby
 - h. Building sections showing adequate space for structural, mechanical and electrical, telecommunications, and fire protection systems, mechanical penthouses, floor-to-floor and other critical dimensions, labeling of spaces; labeling of floor and roof elevations
 - i. Color Renderings providing sufficient detail to convey the architectural intent of the design at exterior, major lobby areas, and major and typical office spaces
 - j. Acoustical calculations including noise transmission through envelope, interior walls, floors (including raised floors), ceilings, mechanical and electrical equipment
 - k. Heat transfer through and dew point locations in building envelope
 - l. Toilet fixture count analysis



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- m. Illumination, day lighting, and glare analysis
 - n. Passenger and freight elevator analysis
 - o. Loading dock analysis
 - p. Energy analysis.
4. Architectural Narrative (architectural program requirements):
- a. Show in tabular form how the final concept meets the program requirements for each critical function
 - b. A revised description of any deviation from City standards
 - c. description of final concept, explaining expansion potential and building floor efficiency
 - d. Location and sizes of mechanical equipment rooms for accessibility, maintenance and replacement of equipment (including cooling towers and emergency generators)
 - e. Conveying systems design (passenger and freight elevators)
 - f. Loading docks
 - g. Thermal, air leakage, and operational performance and maintainability of the building envelope
 - h. Design strategy to attain the assigned energy goal
 - i. treatment of historic zones, as applicable
 - j. Operations and maintenance goals (exterior and interior window washing, relamping, etc.)
 - k. Sustainable design concepts (LEED strategy)
 - l. Vertical transportation analysis (passenger and freight elevators and escalators)
 - m. Code analysis (The Code criteria must be reviewed by each design team discipline member to the degree of detail necessary to assure that tasks accomplished in this phase meet all the Code requirements. A Code/Criteria analysis must be prepared by each design team discipline member that documents an investigation of the applicable codes and agency criteria that will govern the design of a specific project. This analysis should alert the City to any conflicts in the project's design criteria so that they can be resolved early. The analysis should also provide a common perspective for the design and review of the project. This analysis is critical in building modernization and repair/alteration projects.)
5. Structural Drawings:
- a. Framing and foundation plans of the proposed structural system showing column locations, bay sizes, and location of expansion and seismic joints
6. Structural Narrative:
- a. Identification of unusual local code requirements
 - b. Code compliance statement
 - c. Name of model building code followed (should be most current)
 - d. Building classification
 - e. Identification of region of seismicity, wind speed, etc.
 - f. Identification of special requirements.
7. Mechanical Drawings: For the system approved and selected from the relevant concepts, provide the following:
- a. Demolition plans
 - b. HVAC Systems including floor plan (Identification of equipment spaces for mechanical equipment and location of mechanical equipment, including size, weight, access to loading docks and freight elevators, and clearance requirements for operation, maintenance, and replacement) and flow diagram(s) (Air flow riser diagrams representing supply, return, outside air, and exhaust systems and water flow riser diagrams of the main mechanical systems in the mechanical room(s) and throughout the building)
 - c. Plumbing systems including floor plan (Proposed building zoning and major piping runs and locations of proposed plumbing fixtures and equipment) and systems schematics and flow diagrams.
11. Mechanical Narrative:
- a. A written HVAC narrative describing the selected mechanical systems and equipment (including indoor and outdoor design conditions for all spaces under occupied, 24-hour, and unoccupied conditions; ventilation rates dehumidification, and pressurization criteria for all spaces under occupied, 24-hour, and unoccupied conditions; equipment capacities, weights, sizes, and power requirements; Description of heating, cooling, ventilating, and dehumidification systems for each major functional space; Description of heating, cooling, ventilating, and



- dehumidification control strategies for each air handling system under occupied, 24-hour, and unoccupied conditions; Fuel and utility requirements; and a code compliance statement)
- b. Plumbing (including Description of proposed plumbing systems, including domestic cold and hot water, sanitary and storm drainage, and irrigation; Evaluation of alternate sources for preheating of domestic water; solar or heat recovery)
 - c. Calculations and energy and water analyses (including building heating and cooling load calculations, and Psychrometric calculations for HVAC systems at full load and partial loads; Partial loads at 50% and 25%, and unoccupied periods, and Energy consumption calculations and analysis in accordance); Water consumption calculations and analysis including make-up water for HVAC systems, domestic water consumption, and water consumption for irrigation, and fuel consumption estimates.
12. Mechanical Specifications: Table of contents identifying specifications to be used on the project
 13. Fire Protection Drawings: Plans showing equipment spaces for fire protection systems (e.g., fire pump, fire command center, etc.) and fire protection water supplies, fire hydrant locations, fire apparatus access roads, and fire lanes
 14. Fire Protection Narrative, including:
 - a. Description of the building’s proposed fire protection systems including the egress system
 - b. Code compliance analysis (including the design team fire protection engineer must prepare an analysis of the applicable codes and agency criteria that will govern the design of the specific project. For example, items such as, but not limited to classification of construction and occupancy group(s), rating of structural components, fire resistance requirements, interior finish, occupant load calculations, exit calculations, identification of areas to receive automatic sprinkler systems and/or automatic detection systems, smoke control systems, etc. would be prepared by the design team fire protection engineer as necessary to provide a complete fire protection and life safety analysis for the final concept.)
 15. Electrical Drawings, including: Plans showing equipment spaces for all electrical equipment to include: panels; switchboards; transformers; uninterruptible power supply (UPS); and generators.
 16. Electrical Narrative, including:
 - a. Description of at least two potential electrical systems
 - b. Describe the proposed lighting and lighting control system
 - c. Proposed special features of electrical system
 - d. Code compliance statement.
 17. Building Information Model: A BIM for schematic design is required. The contents of the BIM shall be such that the BIM shall be the source for 2D drawings. When 2D deliverables require a finer level of detail, the BIM shall be the central source for 2D details and/or be modeled in greater detail to accommodate the specific requirements.
 18. Certification Requirements, including: The architect/engineer (lead designer) must certify that the concept design complies with the program requirements and energy goals, and local regulatory agencies and review boards. In bullet form, identify how proposed design features will support performance expectations of the project. Expectations are shall be identified in the project’s design program.
 19. Energy Analysis: This deliverable will be completed after submission of the final schematic design submission by the City’s third party commissioning agent.
 20. LEED Report:
 - a. Prepare and present to City for review and approval a LEED design report to include the LEED checklist of proposed strategy
 - b. Identify proposed elements and highlight features on schematic design documents in both graphic and written summary that address the LEED requirement.
 21. Life-Cycle Cost Analysis: A/E shall provide applicable design documentation to support City Life-Cycle cost review.
 22. Final Concept Cost Estimate: This deliverable will be completed after submission of the final schematic design submission by the City’s third party construction consultant.

PHASE III: DESIGN DEVELOPMENT

GENERAL – PRIOR TO COMPLETION OF DESIGN DEVELOPMENT

1. See “DELIVERABLES BY PHASE – GENERAL REQUIREMENTS” above for meeting/presentation/approvals expectations.



2. This set of submissions shall reflect a more comprehensive project design developed from the selected final schematic design. In DD the A/E and City shall finalize the selection of all systems with respect to type, size, and other material characteristics. Systems are not only structural, mechanical, fire protection, and electrical, but include all other building components such as the building envelope (wall, window, and roof), interior construction (flooring, ceiling, and partitions), service spaces, elevators, security, signage, furnishings, and so on.
3. All UDC approvals (including exterior signage) must be complete prior to proceeding beyond the design development phase.
4. A/E shall complete all draft specifications for all sections at the design development phase. Outline specifications are not acceptable. Mark out all content that does not apply to the project.

DOCUMENT DELIVERABLES – DESIGN DEVELOPMENT

1. Site Planning and Landscape Design Calculations:
 - a. Site storm drainage combined with building storm drainage and sanitary sewer calculations
 - b. Storm water detention calculations, if applicable
 - c. Parking calculations, if applicable
 - d. Dewatering (Calculations including calculations modeling dewatering rates during dry and wet season excavation. Calculations must take into account effect of dewatering on adjacent structures and improvements; Calculations must assume a specific shoring system as part of a comprehensive excavation system.)
2. Site Planning Narrative:
 - a. Site circulation concept (explaining Reasons for site circulation design and number of site entrances, Reasons and/or calculations for number of parking spaces provided, Proposed scheme for waste removal, Proposed scheme for fire apparatus access and fire lanes)
 - b. Site utilities distribution concept (provide description of fire protection water supplies, description of fire hydrant locations, drainage design concept)
 - c. Landscape design concept (explaining Reasoning for landscape design, paving, site furnishings, and any water features; reasoning for choice of plant materials; Proposed landscape maintenance plan and water conservation plan; Brief operating description of irrigation system)
 - d. Site construction description of materials proposed for pavements and utilities
 - e. Code analysis (The code criteria must be reviewed by each design team discipline member to the degree of detail necessary to ensure that tasks accomplished in this phase meet all the code requirements; Identify local zoning and all building code requirements and provide a complete analysis as they pertain to the project).
3. Site Planning Drawings:
 - a. Demolition drawings
 - b. Site layout plan (showing All buildings, roads, walks, parking, and other paved areas including type of pavement; Accessible route from parking areas and from public street to main facility entrance; Fire apparatus and fire lanes)
 - c. Grading and drainage plan (showing Site grading and storm drainage inlets, including storm water detention features)
 - d. Site utilities plan (showing: sizes and locations of domestic and fire protection water supply lines, sanitary sewer lines, and all other utilities as applicable)
 - e. Landscape design plan (showing General areas of planting, paving, site furniture, water features, etc.) and irrigation plan, if applicable.
4. Architectural Calculations:
 - a. Acoustical calculations, including noise transmission through envelope interior walls, floors (including raised floors), and ceilings, and mechanical and electrical equipment
 - b. heat transfer through dew point locations in building envelope
 - c. Toilet fixture count
 - d. Illumination, day lighting, and glare
 - e. Passenger and freight elevator analysis
 - f. Loading dock analysis
 - g. Energy analysis
 - h. vibration isolation between parking garage and commercial/retail space.



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5. Architectural Narrative:
- a. Building concept (explaining Reasons for building massing, entrance locations, and service locations; Building circulation and arrangement of major spaces; Energy conservation design elements; Water conservation considerations; Explain how all these design considerations are combined to provide a well integrated cohesive design concept; Analysis of refuse removal, recycled materials storage and removal, and maintenance requirements)
 - b. Building construction description, (explaining Structural bay size; Exterior materials, waterproofing, air barriers/vapor retarders, and insulation elements; Roofing system(s); Exterior glazing system; Interior finishes (including signage and furnishing), with detailed explanation for public spaces)
 - c. Potential locations for artwork, as a result of collaboration between the artist, A/E, and City Arts Program Administrator
 - d. Use of recycled materials
 - e. Sustainable design concepts and LEED strategy
 - f. Review of project for code compliance (Code criteria should be reviewed by each discipline to the degree of detail necessary to assure that tasks accomplished in this phase meet the code requirements)
 - g. Building maintenance (explaining how unique and tall architectural spaces will be cleaned, have their light fixtures maintained, have interior and exterior glass surfaces cleaned and typical maintenance performed; If applicable explain how assembly spaces with fixed seating, multilevel spaces, or with sloped floors will have their ceilings, lights, and other ceiling elements maintained and repaired; Proposed scheme for window washing equipment; Consideration and prevention of bird nesting on exterior surfaces; How major mechanical and electrical equipment can be serviced and/or replaced in future years giving the necessary dimension clearances)
 - h. Describe the project-specific security design
 - i. Report verifying the current design's compliance with the approved space program. Any deviations must be clearly reported
 - j. Curtain Wall Report, if applicable (in projects with complex curtain wall systems, describe size and locations of major movement joints to accommodate structural drift due to seismic and/or wind loading. Describe proposed curtain wall attachment methods to accommodate these lateral movements; Describe water migration; Describe exterior fire safety systems, if applicable; Describe typical interfaces between exterior wall system and interior finishes; Describe interfaces between major enclosure assemblies such as glass curtain wall or windows to precast or stone panels; Identification of at least three suppliers that can provide proposed exterior window system)
 - k. Design development energy analysis
 - l. Building keying: Report must fully define the keying hierarchy for the entire building incorporating various levels of access, security, and fire egress; Signage Report: Signage system and room numbering system must be integrated with keying system
 - m. Provide two finish boards for both public and tenant interior areas and two finish boards of exterior finishes composed of actual material samples and color coded plans, sections, and elevations of major space showing their use.
6. Architectural Drawings:
- a. Demolition drawings
 - b. Building floor plans (showing Spaces individually delineated and labeled; Enlarged layouts of special spaces; Dimensions; Planning module)
 - c. Building reflected ceiling plans (showing Enlarged layouts of special spaces; Spaces individually delineated; Materials labeled; Ceiling heights labeled; Lighting fixture types indicated and scheduled)
 - d. Building roof plan (showing Drainage design, including minimum roof slope; Dimensions; Membrane and insulation configuration of the roofing system; Mechanical equipment rooms and their relationship to freight elevators)
 - e. Elevations (showing Entrances, window arrangements, doors; Exterior materials with major vertical and horizontal joints; Roof levels; Suspended ceiling space; Dimensions)
 - f. Interior elevations (showing: Lobby; Public corridors; Typical public elevator lobby)
 - g. One longitudinal and one transverse section (showing Floor-to-floor dimensions; Stairs and elevators; Typical ceiling heights; General roof construction)



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- h. Exterior wall sections (showing Materials of exterior wall construction, including flashing, connections, method of anchoring, insulation, vapor retarders, and glazing treatments; Vertical arrangement of interior space, including accommodation of mechanical and electrical services in the floor and ceiling zones)
 - i. Proposed room finish schedule submitted on a drawing set (showing floors, bases, walls, and ceilings; renderings)
 - j. Proposed site furniture (showing Site furniture cut sheets or photos and proposed locations)
 - k. Diagrams illustrating the ability to access, service, and replace mechanical/electrical equipment showing the pathway with necessary clearance
 - l. Location of accessible pathways and services for the physically disabled
 - m. Design of building signage, including code signs, way-finding and room identification, building directory, exterior building signage, and major interior building identification
 - n. Design of furnishings (including office)
7. Structural Design Report Calculations:
 - a. Gravity load and lateral load calculations, with tabulated results showing framing schedules
 - b. Foundation calculations
 - c. Calculations showing that the system is not vulnerable to progressive collapse
 - d. Vibration calculations
 8. Structural Design Narrative:
 - a. Code criteria should be reviewed by each discipline to the degree of detail necessary to ensure that tasks accomplished in this phase meet the code requirements
 - b. Description of recommended structural concept (including Choice of framing system, including lateral load-resisting elements, and proposed foundation design; Verification of adequacy of all assumed dead and live loads)
 - c. Identify all code requirements and provide a complete analysis as it pertains to this project (including but not limited to Required fire-resistance rating of structural elements and Summary of special requirements resulting from applicable local codes)
 - d. Proposed methods of corrosion protection, if applicable; g. Geotechnical engineering report by City, including boring logs (if part of scope of work).
 9. Structural Drawings: Framing plans and key details.
 10. Mechanical Calculations and Energy and Water Analyses:
 - a. Updated building heating and cooling load calculations
 - b. Updated psychrometric calculations for HVAC systems at full and partial loads (partial loads at 50% and 25%, and unoccupied periods)
 - c. Updated energy consumption calculations
 - d. Updated water consumption calculations and analysis including make-up water for HVAC systems, domestic water consumption, and water consumption for irrigation
 - e. Updated fuel consumption estimates
 11. Mechanical Drawings (HVAC):
 - a. Demolition drawings
 - b. Floor plan(s) (including Single line piping and ductwork schematic layout; terminal air units; Perimeter terminal units; Quarter-inch scale drawings of mechanical equipment room(s) showing all mechanical equipment, ductwork, and piping, including equipment access and service requirements in plan, elevations, and cross-sections)
 - c. Roof plan showing all roof-mounted equipment and access to roof
 - d. Show adequate access from mechanical equipment room(s) to freight elevators
 - e. Single line schematic flow and riser diagram(s) (including Airflow quantities and balancing devices for all heating/cooling equipment; Water flow quantities and balancing devices for all heating/cooling equipment; Flow/energy measuring devices for water and air systems for all cooling, heating, and terminal equipment)
 - f. Automatic control diagram(s) (including Control flow diagrams showing all sensors, valves, and analog and digital controllers; and Sequence of operations of all the systems that describes the control sequences during occupied, 24-hour operations, and unoccupied conditions)
 - g. Schedules (including schedules of major equipment that includes chillers, boilers, pumps, air handling units, and terminal units, cooling towers, and all equipment required for 24-hour operations)



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- h. Air terminal devices
 - i. Air balance relationships between spaces
 12. Mechanical Drawings (Plumbing):
 - a. Demolition drawings
 - b. Floor plan(s) including Proposed building zoning and major piping runs and Locations of proposed plumbing fixtures and equipment
 - c. Systems schematics and flow diagrams.
 13. Mechanical Narrative (HVAC): A written narrative describing the final mechanical system and equipment selection including:
 - a. Updated indoor and outdoor design conditions for all spaces under occupied, 24-hour, and unoccupied conditions
 - b. Provide a dew point analysis
 - c. Updated ventilation rates, dehumidification, and pressurization criteria for all spaces under occupied, 24-hour, and unoccupied conditions
 - d. Updated equipment capacities, weights, sizes, and power requirements
 - e. A complete description of the air side and water side systems and the associated components including operating characteristics, ranges, and capacities, spaces served, and special features
 - f. Descriptions of control strategy and sequence of operations for all spaces under occupied, 24-hour, and unoccupied conditions
 - g. Updated fuel and utility requirements
 - h. A description of any deviation from the HVAC system as approved in the Schematic Design Phase.
 14. Mechanical narrative (Plumbing):
 - a. Updated description of plumbing system, including domestic cold and hot water, sanitary and storm drainage, and irrigation systems
 - b. Updated evaluation of alternate sources for reheating of domestic water (solar or heat recovery)
 15. Fire Protection Calculations:
 - a. Occupant load and egress calculations
 - b. Fire protection water supply calculations (Includes water supply flow testing data)
 - c. Fire pump calculations where applicable
 - d. Smoke control calculations where applicable
 - e. Stairway pressurization calculations where applicable
 - f. Calculate sound attenuation through doors and walls for placement and location of fire alarm system audible notification appliances.
 16. Fire Protection Drawings:
 - a. Floor plans showing (Equipment spaces for fire protection systems including fire pump and fire command center; Fire protection water supply lines, fire hydrant locations, fire apparatus access roads, and fire lanes; Standpipes and sprinkler risers; Remoteness of exit stairways; Location of firewalls and smoke partitions; Identification of occupancy type of every space and room in building; Calculated occupant loads for every space and room in the building; Location of special fire protection requirements including computer rooms, storage)
 - b. Riser diagrams for sprinkler system
 - c. Riser diagram for fire alarm system
 17. Fire Protection Narrative:
 - a. Building egress description (Includes egress calculations and stairway exit capacities, remoteness, exit discharge, etc.)
 - b. All building fire alarm and suppression systems
 - c. Smoke control system(s), where applicable
 - d. Special fire protection systems where applicable
 - e. Fire resistance rating of building structural elements to be coordinated with structural engineer
 - f. Fire alarm system (Interface of fire alarm system with BAS and security systems and Review of building for compliance with life safety requirements and building security requirements)
 - g. Interior finish requirements as they pertain to the life safety requirements
 - h. Mass notification system.



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18. Electrical Calculations:
 - a. Lighting calculations for a typical open office plan with system furniture
 - b. Power calculations from building entry to branch circuit panel
 - c. Load calculations
 - d. Life-cycle cost analysis of luminaire/lamp system and associated controls
 - e. Power density analysis for lighting of each area.
 19. Electrical Narrative:
 - a. Description of alternative power distribution schemes
 - b. Proposed power distribution scheme (Provide a detailed description and justification for the selected scheme. Address special power and reliability requirements, including emergency power and UPS systems)
 - c. Proposed lighting systems (Discuss typical lighting system features, including fixture type, layout, and type of controls; Discuss special spaces such as lobbies. Discuss exterior lighting scheme; Discuss lighting control systems and day lighting; Describe the energy usage of the lighting system; Interface with BAS; Methods proposed for energy conservation and integration with BAS; Engineering analysis for demand limit controls)
 - d. Description of each proposed signal system (Description of proposed security systems' features and intended mode of operation; Proposed zone schedule; Proposed card access controls, CCTV assessment and intrusion protection system)
 - e. Proposed telecommunications Infrastructure (Systems proposed for infrastructure and cabling to accommodate the communications systems. These must be designed and provided in compliance with building telecommunications wiring standards)
 - f. Code criteria should be reviewed by each discipline to the degree of detail necessary to ensure that tasks accomplished in this phase meet the code requirements.
 20. Electrical Drawings:
 - a. Site plan (Proposed site distribution for power and communications, proposed service entrance and location of transformers, generators, and vaults, etc.)
 - b. Floor plans (including Proposed major electrical distribution scheme and locations of electrical rooms and closets and communication closets; Proposed major routing of major electrical feeder runs, bus duct, communication backbone systems, and security systems; Plan layouts of electrical rooms, showing locations of major equipment, including size variations by different manufacturers)
 - c. Single line diagram of the building power distribution system
 - d. Plan of typical office lighting layout
 - e. Single line diagram of other signal system including: telephones, security, public address, and others
 - f. Security system site plan (including Proposed locations for surveillance cameras, duress alarm sensors, and access controls. If the system is not extensive, these locations may be shown on the electrical site plan; Security system floor plans; Proposed locations for access controls, intrusion detection devices, CCTV, and local panels); Lightning protection and building grounding
 21. Building Information Model: A BIM for design development is required. The contents of the BIM shall be such that the BIM shall be the source for 2D drawings. When 2D deliverables require a finer level of detail, the BIM shall be the central source for 2D details and/or be modeled in greater detail to accommodate the specific requirements.
 22. Certification Requirements, including: The architect/engineer (lead designer) must certify that the design development complies with the program requirements and energy goals, and local regulatory agencies and review boards. In bullet form, identify how proposed design features will support performance expectations of the project. Expectations are shall be identified in the project's design program.
 23. Energy Analysis: This deliverable will be completed after submission of the final design development submission by the City's third party commissioning agent.
 24. LEED Report:
 - a. Prepare and present to City for review and approval a LEED design report to include the LEED checklist of proposed strategy
 - b. Identify proposed elements and highlight features on design development documents in both graphic and written summary that address the LEED requirement.
 25. Life-Cycle Cost Analysis: A/E to provide design documentation to support City's life-cycle cost analysis.



26. Design Development Cost Estimate: This deliverable will be completed after submission of the final schematic design submission by the City's third party construction consultant.

PHASE IV: CONSTRUCTION DOCUMENTS

GENERAL – PRIOR TO COMPLETION OF CONSTRUCTION DOCUMENTS

1. See “DELIVERABLES BY PHASE – GENERAL REQUIREMENTS” above for meeting/presentation/approvals expectations.

DOCUMENT DELIVERABLES – CONSTRUCTION DOCUMENTS

1. Site Planning and Landscape Design Calculations:
 - a. Final drainage calculations, including stormwater detention
 - b. Final parking calculations, if applicable
 - c. Pipe sizing calculations for water and sewer pipes
 - d. Pavement design calculations
2. Site Planning and Landscape Design Drawings, General:
 - a. Demolition plans
 - b. Site layout plan (Location of all buildings, roads, walks, accessible routes from parking and public street to building entrance, parking and other paved areas, and planted areas; Limits of construction; Locations and sizes of fire protection water supply lines, fire hydrants, fire apparatus access roads, and fire lanes; Location of floodplains and wetlands)
 - c. Grading and drainage plan (showing Existing and new contours 2 ft. interval minimum in area around buildings; Spot elevations at all entrances and elsewhere as necessary; Elevations for walls, ramps, terraces, plazas, and parking lots; All surface drainage structures; Water retention and conservation)
 - d. Site utilities plan (showing All utilities, including inlets, manholes, clean-outs, and invert elevations)
 - e. Planting plan, showing (Building outline, circulation, parking, and major utility runs; Size and location of existing vegetation to be preserved including construction protection measures; Location of all new plant material; Erosion control); Planting schedule (showing Quantity of plants, botanical names, planted size, and final size)
 - f. Irrigation plan, if applicable (Include schematic of irrigation control system)
 - g. Planting and construction details, profiles, sections, and notes as necessary to fully describe design intent.
3. Architectural Calculations and Compliance Reports:
 - a. Final acoustical calculations, including noise transmissions through Envelope, Interior walls, floors, and ceilings, Mechanical and electrical equipment
 - b. Final heat transfer through and dew point locations in building envelope
 - c. Final toilet fixture count
 - d. Final illumination, day lighting, and glare analysis
4. Architectural Drawings:
 - a. Project title sheet, drawing index
 - b. Demolition plans
 - c. Floor plans
 - d. Show planning grids (Reflected ceiling plans; Show ceiling grid and location of all elements to be placed in the ceiling)
 - e. Building sections (Vertical zoning for electrical and mechanical utilities must be indicated on sections)
 - f. Roof plans (Roof plans must show slopes, low points, drains and scuppers, equipment, equipment supports, roof accessories, and specialty items)
 - g. Exterior elevations
 - h. Wall sections
 - i. Interior elevations
 - j. Details
 - k. Schedules
 - l. Diagrams illustrating proper clearance for servicing and replacement of equipment



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5. Architectural Specifications Complete: Room finish, ceiling types, floor finish, color, and door schedules must be incorporated on drawings
 6. Structural Calculations:
 - a. Gravity loads
 - b. Lateral loads (seismic and wind)
 - c. Foundations
 - d. Thermal loads where significant
 - e. Vibration propagation
 - f. Progressive collapse
 - g. Supports for nonstructural elements, including mechanical and electrical equipment on the roof and in equipment rooms, louvers, and other penetrations
 - h. Steel connections
 - i. Blast analysis
 7. Structural Drawings:
 - a. Demolition plans
 - b. Full set of structural construction drawings (Drawings must be fully dimensioned, noted and detailed for accurate bidding and construction; Load criteria for all floor live loads, roof live load, roof snow load, wind load, earthquake design data, and special loads must be shown on drawings. Live load reduction of the uniformly distributed floor live loads, if used in the design, must be indicated; Basic wind speed (3-second gust), miles per hour (km/hr), wind importance factor, I, and building category, wind exposure, the applicable internal pressure coefficient must be indicated; Seismic design criteria, such as seismic use group, spectral response coefficients SDS and SD1, site class, basic seismic-force-resisting system, design base shear, and analytical procedure must be indicated. Additional information may be required by the local building official; Soil bearing pressure and lateral earth pressure must be indicated; Properties of basic materials must be indicated; Indicate the codes and standards used to develop the project)
 - c. Structural Schedules (Schedules for foundations, columns, walls, beams, slabs, and decks, as applicable)
 - d. Structural details. (All typical details must be shown on the drawings; Include details for steel connections; Include details for all fire-rated assemblies, indicating Underwriters Laboratories Inc. or other nationally recognized testing laboratory fire resistance directory design numbers; Include details indicating if the assembly is restrained or unrestrained; Include details for anchorage of building system equipment and nonstructural building elements (may be shown on mechanical, electrical, or architectural drawings, as applicable). The anchorage details, if shown on other disciplines, must be referenced on the structural drawings.)
 8. Mechanical Drawings (HVAC):
 - a. Demolition plans
 - b. Floor plan(s) (Double line piping and ductwork layout; Show terminal air units; Perimeter terminal units; Show locations of automatic control sensors for example temperature, relative humidity, CO₂, room pressurization)
 - c. Roof plan showing all roof-mounted equipment and access to roof (Show adequate access from mechanical equipment room(s) to freight elevators)
 - d. Mechanical details (Quarter-inch scale drawings of mechanical equipment room(s) showing all mechanical equipment, ductwork, and piping including access and service requirements in plan, elevations, and cross-sections; All valves must be shown. Indicate locations where temperature, pressure, flow, contaminant/combustion gases, or vibration gauges are required, and if remote sensing is required; Mechanical room piping and ductwork layout must be double line; All dampers—both fire dampers and volume control dampers—must be shown. Ductwork ahead of the distribution terminals must be indicated in true size (double line))
 - e. Single line schematic flow and riser diagram(s) (Airflow quantities and balancing devices for all heating/cooling equipment; Water flow quantities and balancing devices for all heating/cooling equipment; Show location of all flow/energy measuring devices for water and air systems for all cooling, heating, and terminal equipment, and their interface with the BAS.)
 - f. Automatic control diagrams (Control flow diagrams showing all sensors, valves, and controllers (analog and digital inputs for controllers, front end equipment, and system architecture)); Diagrams to show control signal interfaces,



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- complete with sequence of operation of all heating, ventilating, and cooling systems during occupied, 24-hour, and unoccupied conditions
- g. Schedules (Provide schedules of equipment that includes chillers, boilers, pumps, air handling units, terminal units, cooling towers, and all equipment required for 24-hour operations; Air terminal devices)
 - h. Air balance relationships between spaces.
9. Mechanical Drawings (Plumbing):
- a. Demolition plans
 - b. Floor plans (Plumbing layout and fixtures, equipment and piping; large-scale plans should be used where required for clarity)
 - c. Riser diagrams for waste and vent lines
 - d. Riser diagrams for domestic cold and hot water lines
 - e. Plumbing fixture schedule.
10. Mechanical Narrative (HVAC):
- a. A written narrative describing the final mechanical system and equipment selection (including Final indoor and outdoor design conditions for all spaces under occupied, 24-hour, and unoccupied conditions; Final ventilation rates, dehumidification, and pressurization criteria for all spaces under occupied, 24-hour, and unoccupied conditions; Final equipment capacities, weights, sizes, and power requirements; Final psychometrics of HVAC systems; A final description of the air side and water side systems and the associated components including operating characteristics, ranges, and capacities, spaces served, and special features; Final descriptions of the control strategy and sequence of operations for all spaces under occupied, 24-hour, and unoccupied conditions)
 - b. Final fuel and utility requirements
 - c. A final code compliance statement
 - d. A final description of any deviation from the HVAC system as approved in the Final Concept.
11. Mechanical Narrative (Plumbing):
- a. A final description of plumbing system, including domestic cold and hot water, sanitary and storm drainage, and irrigation systems
 - b. A final evaluation of alternate sources for preheating of domestic water (solar or heat recovery).
12. Calculations and Energy and Water Analyses HVAC:
- a. Final building heating and cooling load calculations
 - b. Final system pressure static analysis at peak and minimum block loads for occupied and unoccupied conditions
 - c. Building pressurization analysis for peak and minimum block loads for occupied and unoccupied conditions
 - d. Acoustical calculations for peak and minimum block loads for occupied conditions
 - e. Flow and head calculations for pumping systems for peak and minimum block loads for occupied conditions
 - f. Final selection of equipment, cut sheets of selected equipment
 - g. Final psychrometric calculations for the selected HVAC systems at full and partial loads (partial loads at 50% and 25%, and unoccupied periods)
 - h. Final energy consumption calculations and analysis
 - i. Final fuel consumption estimates
 - j. Sizing of fuel storage and distribution system
 - k. Sizing of vibration isolators for mechanical equipment.
13. Calculations (Plumbing):
- a. Include entire building, including roof drainage calculations and hot water heating calculations
 - b. Water supply calculations, including pressure
 - c. Roof drainage calculations
 - d. Sanitary waste sizing calculations
 - e. Final water consumption calculations and analysis including make-up water for HVAC systems, domestic water consumption, and water consumption for irrigation
14. Mechanical Specifications: Completely edited version of each specification section to be used on the project.
15. Fire Protection Drawings:
- a. Demolition plans if applicable



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- b. Full set of fire protection construction drawings (Drawings must be carefully dimensioned, noted, and detailed for accurate bidding and construction)
 - c. Fire protection details (all typical details must be shown on the drawings including Firewalls and smoke partition, Panel and curtain walls, Fire-stopping configurations. Include details of all openings between the exterior walls (including panel, curtain, and spandrel walls) and floor slabs, openings in floors, and shaft enclosures; Mass notification system equipment; Horizontal exits; Each required fire door; Stairway pressurization fans; Security door hardware, including operation procedures; Fire pump configuration; Anchorage of underground fire protection water supply lines; Standpipe riser; waterflow switches and tamper switches; Sprinkler floor control valves, sectional valves, and inspector text assembly; Special fire extinguishing systems (e.g., wet chemical); Fire alarm riser; Typical firefighter telephone station; Typical firefighter telephone jack; Electrical closets for fire alarm system panels; Fire alarm telephone panel including voice paging microphone and firefighter telephone system; Visual indicating device control and power detail, typical for floors stating location; Amplifier rack stating location; Typical location of duct smoke detectors; Outdoor fire alarm speaker; Wall-mounted cone fire alarm speaker; Typical terminal cabinet; Lay-in ceiling-mounted fire alarm speaker; Lay-in ceiling-mounted fire alarm combination speaker/strobe; Wall-mounted strobe device; Typical manual fire alarm box installation; Fire alarm system input/output matrix; Graphic annunciator panel; Fire command center showing the locations of each panel to be installed.
16. Fire Protection Specifications: Completely edited version of each specification section to be used on the project.
 17. Fire Protection Calculations (For any fire modeling generated results, submit a copy of the input data and all pertinent program material and assumptions required to understand the output and the analysis. A narrative of the input and results must be part of the calculations.):
 - a. Final occupant load and egress calculations
 - b. Final fire protection water supply calculations including water supply flow testing data
 - c. Final fire pump calculations where applicable
 - d. Final smoke control calculations where applicable
 - e. Final stairway pressurization calculations
 - f. Fire modeling
 - g. Final calculations for calculating sound attenuation through doors and walls for placement and location of fire alarm system audible notification appliances
 18. Electrical Drawings (General Systems must be fully drawn and sized to permit accurate bidding and construction):
 - a. Demolition plans
 - b. Floor plans (Show lighting, power distribution, and communications raceway distribution, and locations of fire alarm and annunciator panels)
 - c. Single-line diagram of primary and secondary power distribution
 - d. Include normal power, emergency power, and UPS
 - e. Single-line diagram of fire alarm system
 - f. Single-line diagram of telecommunications/IT/AV/radio system
 - g. Circuit layout of lighting control system
 - h. Details of distribution system
 - i. Site plan (Indicate service locations, manholes, ductbanks, and site lighting)
 - j. Layout of electrical equipment spaces (Show all electrical equipment. Include elevations of substation transformers and disconnect switches)
 - k. Schedules for switchgear, switchboards, motor control centers, panelboards, and unit substations
 - l. Grounding diagram
 - m. Complete phasing plan (if required) for additions and alterations
 - n. Security systems site plan
 - i. Final locations of all security devices and conduit runs
 - o. Security system floor plans
 - i. Layout of all security systems
 - p. Storage areas for electrical equipment/spare parts.



19. Electrical Specifications: Completely edited version of each specification section to be used on the project. All zone schedules to be shown on drawings.
20. Electrical Calculations:
 - a. Illumination level and lighting power calculations
 - b. Short circuit calculations
 - c. Voltage drop calculations
 - d. Overcurrent coordination study
 - e. Generator calculation (Include starter loads)
21. Building Information Model: A BIM for construction documents is required. The contents of the BIM shall be such that the BIM shall be the source for 2D drawings. When 2D deliverables require a finer level of detail, the BIM shall be the central source for 2D details and/or be modeled in greater detail to accommodate the specific requirements.
22. Certification Requirements: The A/E (lead designer) must provide certification that the project has been designed and is in compliance with ASHRAE 90.1 and will meet City energy goal requirements. Certification will also indicate that the architectural/engineering design elements have been integrated with the overall project design, and that the building can meet the programmed LEED rating. The A/E certification must be signed and sealed by a principal of the architectural/engineering firm in charge of the project.
23. Energy Analysis: This deliverable will be updated by City third party consultant if there are any significant changes in the construction document phase.
24. LEED Report:
 - a. Prepare and present to City for review and approval a LEED design report to include the LEED checklist of proposed strategy
 - b. Identify proposed elements and highlight features on construction documents in both graphic and written summary that address the LEED requirement.
25. Construction Document Cost Estimate: This deliverable will be updated by City third party consultant if there are any significant changes in the construction document phase.

PHASE V: BIDDING PHASE

1. The A/E, following the City's approval of the PHASE IV CONSTRUCTION DOCUMENTS, and the latest construction estimate; and the City's declaration of its intent to put the project out for bidding, shall assist the City in preparation and assembly of the final standard City contract specifications.
2. The City's contract specifications will be prepared by the City's Project Manager and shall include statements relating to advertising for bid, instructions to bidders, small business enterprise program information, special provisions, proposal, bid bond, agreement, payment bond, performance bond, prevailing wage rates, and Best Value Contracting. Bidding, bid opening, building contractor selection, and contract signing will be provided by the City Engineering Division and the Board of Public Works.
3. A/E shall assist the City in obtaining printing for bid sets of plans and specifications. The cost of bid set printing will be by the City.
4. A/E shall attend pre-bid conference meeting.
5. A/E shall answer questions during bidding and contract negotiations and develop addendums promptly in order to give bidders sufficient time to adjust bids. No design-related addendum shall be submitted past one week before bids are received.
6. Upon receipt and acknowledgment of lowest responsible bidder the A/E will update the bidding set to incorporate all changes that occurred during the bid set. The revised set must be completed in an expeditious manner.
7. The A/E shall provide electronic digital drawing files, in applicable 3D or 2D format, for the General Building Contractor and its subcontractors to use as may be necessary during design and construction of the project.
8. As the City has a total construction cost limitation for this project, the A/E shall adhere to this limitation. Should the total bid for all work exceed the estimated probable costs of construction by more than eight (8) percent, the City shall have the discretion to require the A/E to revise the design at no additional cost to the City, whether or not the City ultimately decides to complete the project according to the redrafted plans or the original plans.



PHASE VI: CONSTRUCTION ADMINISTRATION

1. The construction phase will commence with the award of the construction contract and will terminate when the common council accepts the construction. A pre-construction meeting held by owner shall be attended by A/E. A separate Sharepoint construction administration orientation must be attended by the A/E team responsible for construction administration activities.
2. All communication and filing shall be primarily electronically. The City will receive a set of all design documents in electronic and hard copy form. Electronic files shall be in universal format (i.e. PDF) and in the design tool specific file format (i.e. Revit file, Trane trace file).
3. The A/E, and when appropriate to the progress of the project any sub-consultants, shall attend field project meetings. The A/E shall conduct the meetings and shall prepare minutes of the meetings. Such meetings shall be held at regular intervals (bi-weekly minimum) and as required by City.
4. The A/E shall make periodic visits to the site at least once per week and more often as necessary to maintain familiarity generally with the progress and quality of the work and to determine in general if the work is proceeding in accordance with the contract documents.
5. A/E shall inspect field installation of critical design features and elements were installed as intended per design. This includes pre-installation meetings, inspection of mockups, and inspection of partial builds during construction.
6. A/E shall review (for conformance with the construction documents) and take other appropriate action upon the general building contractor's submittals such as shop drawings, product data, and samples and make recommendations regarding such to the City's Project Manager.
7. A/E shall work with contractor, owner and other designers to resolve questions, conflicts and unforeseen situations. The A/E shall prepare, reproduce, and distribute supplemental drawings, specifications, and interpretations in response to requests for clarification by general building contractor or the City.
8. A/E shall prepare, reproduce, and distribute drawings and specifications with revisions to describe work to be added, deleted, or modified.
9. Review all change order requests, provide determination to City, and present proposed changes to the board of public works for approval. Such documents shall be prepared in a timely manner.
10. The A/E shall communicate with the City on design and construction related issues and shall not issue documents or give instructions to the contractor without knowledge and approval of the City. Documents received by the A/E from the contractor shall be shared with the City. The City maintains the right to object to instructions or approvals.
11. Based on construction observations at the site and on the general building contractor's applications for payment, the consultant shall assist the City to determine the amount owing to the general building contractor by verifying and approving quantities of work put in place on the general building contractor's application for payment. The A/E shall assist in determining the dates of completion, substantiated by creation and distribution of punch lists.
12. The consultant shall report to the board of public works and other entities on all claims of the City or general building contractor relating to the execution and progress of the work and on all other matters or questions related thereto.
13. A/E shall receive and review written guarantees and related documents assembled by the general building contractor, and shall transmit said data to the City's designated representative who will prepare the final certificate for payment.
14. The A/E's punch list review shall be conducted with the City's project team and third-party consultants to check conformance of the construction work with the requirements of the contract documents and to verify the accuracy and completeness of the list of submitted items by the general building contractor of construction work to be completed or corrected.
15. The A/E shall review and approve for accuracy and completeness, the general building contractors submission of "record" drawings and operations and maintenance manuals and transmit same to the City prior to certification of the general building contractors application for final payment.
16. At the end of the project the A/E will prepare electronic as-built drawings based on field observations and contractor's markup.
17. Warranty period is considered construction phase for the purpose of the consultant assisting in resolving issues that are design or installation related.



PERSONNEL (CITY)

A core group of approximately ten City staff will comprise the main design team for the City of Madison. Each staff member represents specific areas of design or construction knowledge and also includes the prime contact for the owner agency. In addition the owner agency may provide additional staff as needed for design and functionality requirements of specific areas. The A/E may be directed to other City staff regarding specific requirements of the design including but not limited to storm water management, fire protection, safety, facility maintenance, enclosure, and finishes.

Additional consultants may be hired by the City to perform independent verification of various aspects of the design or provide support to the design as needed including but not limited to Energy Analysis, Enhanced Commissioning, Geotechnical Surveying, etc.

PERSONNEL (A/E)

1. List TBD after selection of A/E
2. Employees or sub-consultants of the A/E shall not in any way be construed as employees of the City. Activities to be performed by a Principal, either the A/E, sub-consultant, or both, as described in this Contract including the attachments and exhibits, shall be performed by or under the supervision of the appropriate Principal named above. In the event of the death or disability of the named Principal such as to be unable to participate in the above described activities, or if the named principal leaves the employment of the (Architect / Design Professional / Engineer), or in any other way becomes incapable of performing the above-described activities, the City may accept another as Principal or terminate this Agreement pursuant to the provisions of this Agreement, at its option.

PAYMENT SCHEDULE - TBD

1. The City shall make periodic payment to the A/E in approximate proportion to services performed so that the compensation on the completion of each task described herein shall not exceed the percentage of the contract price at the table below.
2. No itemized expenses are allowed. All expenses including but not limited to travel, communication, reproductions, delivery, and other project-related expenditures are included in the total contract price.

I	Preliminary Design
II	Schematic Design
III	Design Development
IV	Construction Documents
V	Bidding
VI	Construction Administration

COMPLETION SCHEDULE

The City and A/E shall collaborate and develop a programming design and construction project schedule indicating the completion date of each phase or segment of work. The design and construction project schedule shall include review periods with the City, tenant agencies, committees or commissions, stakeholder groups, regulatory agencies, etc. as may be required for project design approvals and acceptance, or of similar items. The City and A/E shall update and resubmit the project schedule whenever scheduling changes occur. The work shall commence after final contract execution by the City and upon issuance by the City’s Project Manager of official notice to proceed. The table below lists a preliminary schedule. The A/E shall be prepared to advance the schedule as opportunities arise during the duration of the A/E scope of work.

Approx. Time Frame	Milestone Description
2016	
February 15	Advertise RFQ/P
March 16	Proposals Due
March 21	Selection of Design Team
April 4	Finalize A/E contract
April-July	Design Complete and Project out for Bid



October - December	Review bids and select contractor
2017	
January	Construction Starts
September 1	Project complete

EXTRA SERVICES

1. Any extra services to be per the Contract for Purchase of Services Agreement. Additional requirements for use in establishing an equitable agreement for extra services as follows below.
 - a. The rates shall be limited to the usual overhead such as clerical and office support and benefits, insurance, and training.
 - b. City may require proof of cost (i.e. payroll records, invoices).
 - c. Reimbursable expenses can be billed at the actual cost rate and have to be pre-approved by the City and shall be limited to:
 - i. Travel to meetings beyond 50 miles of City of Madison. Mileage will be paid at federal reimbursement rate
 - ii. Delivery / Shipping
 - iii. Printing in excess of usual customary project printing
 - iv. Equipment rental and material in excess of usual tools

END OF DOCUMENT