EMPIRE STATE
REALTY TRUST

REQUIRED SPECIFICATIONS AND PERFORMANCE CRITERIA

The Empire State Building
350 Fifth Avenue
New York, NY

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A. Demolition

1. All demolition must take place after 6pm or before 8am or on weekends.
2. For PCB ballast and lamps disposal, please contact Building Management to obtain empty barrels and to schedule pick – up of full barrels. All PCB ballasts and lamps to be salvaged for recycling by Building Management.
3. The contractor shall completely remove all abandoned tenant equipment (AC units, exhaust fans, piping, ducts, hangers, supports, receptacles, light fixtures, transformers, wiring, pull boxes, water heaters, etc.) all the way back to core risers, electrical panels, the nearest active branch main, and capped sealed watertight or airtight. All openings shall be properly patched, sealed and firestopped to maintain the original integrity and fire rating of all walls, partitions, ceiling clips, etc.
4. The entire fire alarm system shall be tested by Building Management before and after demolition to verify that all devices remain operational. Existing ceiling mounted speakers, smoke detectors and strobes shall be carefully removed. Contact Building fire alarm vendor (Siemens Building Technologies) and Building Management office for technical assistance in the event that existing devices or wiring are inadvertently damaged during demolition. It will be the demolition contractors' responsibility to pay any fees to correct and/or repair for such services.
5. Fire dampers in ducts (to remain) shall be removed upon removal of fired rated partitions. Ducts shall be properly reconnected after removal of fire damper.
6. Any and all equipment and devices serving other tenants are to remain.
7. All open floor outlets shall be capped with walker Parkersburg Duct Blanking Plate no. 1043-S (or approved equal).

B. Construction Waste Management and Recycling Requirements

1. General Contractor and subcontractors to collect targeted construction waste identified for recycling as per guidelines outlined on http://constructionwaste.sustainablecourses.com
2. Description of waste management procedures to be documented and reviewed with the building prior to commencement. A plan should include listing of transportation methods, collection methods and sorting facilities/companies. Any materials being repurposed, salvaged or reclaimed should be identified.
3. Off-site sorting to be sent to a building approved sorting facility/company.
4. All residual food waste and food containers to be segregated from recycled waste materials.
5. G.C. to submit documentation in the form of weigh tickets and/or receipts for all material reclaimed, landfilled and diverted from landfill. Hazardous materials to be identified and disposed of in accordance to Federal/ State and local law.
6. Hazardous materials to be identified and disposed of in accordance to local law.

C. Ceilings

1. All ceiling tile should have the highest recycled content whenever possible.
2. Perimeter ceilings should not be below top of window frame.
3. All ceiling tile should have the highest recycled content whenever possible.
4. All Hangers to be hung from reinforcing mesh in slab above. Drilling for hangers shall be done before 8:00AM or after 6:00PM. Hangers shall be a minimum of 1" X 1/8" flat black iron or ¼" galvanized rod, hung on maximum of 4'- 0" centers.

D. Flooring and Finishes

1. Specify highest recycled content materials whenever possible.
2. Specify and install low-emitting (low or no Volatile Organic Compounds) adhesives (GS-36), sealants, paints (Green Seal Standards GS-11), coating, flooring systems, composite wood and agrifiber products.
3. All carpet to have Green Label Plus Certification. All carpet should have backing recycled content face weight, 3rd party certified. (SCS or other)
4. Certification of fire and flame spread rating confirming to applicable. Law must be submitted to building management.
5. REQUIRED SPECIFICATION - Window treatment – building standard window treatment to be Phifer Sheerwave style 2100 10% openness with valance.

E. Architectural Woodwork

1. Woodwork shall be fire-retardant wood only and provide written certification that the same has been complied with.
2. Adhesives shall not contain urea-formaldehyde resins and be able to achieve Greenguard indoor air quality certification.
3. Building **will not** provide free day of AC to acclimate any millwork/wood flooring. Standard/lease defined charges will apply.
4. Specify and use wood products certified by the Forest Stewardship Council (FSC).

F. Furniture

1. All furniture located within 18”of existing perimeter convector unit enclosures to be open backed furniture and moveable to permit proper access to convector units. No furniture shall be less than 1 18”from the perimeter.

G. HVAC

1. Refer to “General Conditions/Requirements for All Work”, “Demolition” and “Design Guidelines” for more information.
2. All Mechanical Rooms must be waterproofed with a 4” curb.
3. Prior to commencing with design drawings, tenant to provide load letter to building to confirm impact on base building systems and envelop.
4. Heating, Ventilating and Air Conditioning (HVAC) systems shall be designed in accordance with the Empire State Building Mechanical Specifications and Guidelines, New York City Building Codes, New York State and City Energy Code, SMACNA, ASHRAE and the Requirements and Regulations of all local and national codes.
5. “Heating, Ventilating and Air Conditioning (HVAC) systems shall be designed to comply with the outdoor airflow requirements of ASHRAE 62.1. (current version) After installation or upgrade of any HVAC systems, outdoor airflow measurements shall be taken in order to verify that actual outdoor airflow meets or exceeds (ASHRAE 62.1 complaint) design values. Testing and/ or air balance reports shall be retained as record of the observed outdoor airflow. Documentation must be submitted to the building demonstrating that all new Air Handling Units in the building comply with ASHRAE 62.1 following completion of commissioning of the equipment or no later than 3 months following installation and start up. Outside air testing is required to verify the outside air rates.”
6. HVAC system design layout shall not have an adverse effect on the existing base building systems. New design supply air quantities shall not exceed base building design air quantities (CFM) and should be field verified. Prior to alterations, perform traverse air readings at all ducts entering the tenant space and design accordingly, record CFM and static pressure available. Submit results of pre-demolition traverse air readings to Building Management with design documents.

7. In the event a window needs to be converted to an outside air intake (supplemental units), the modification to the windows are to be done to manufacturers' specifications – color is to match the existing windows. Building management to approve any window modifications. Coordinate with Building Management. Shop drawings from the manufacturers are available for review at the building office.
8. Ductwork:
   - 8.1. Drawings shall show new and existing outside air, supply, return and exhaust air ducts, with all sizes indicated.
   - 8.2. Outside air ductwork shall be stainless steel and shall be pitched toward the louvers.
   - 8.3. All ductwork, except for special exhaust systems, shall be constructed of galvanized sheet metal. Flexible ductwork is not permitted. Supply and return ductwork upstream and downstream of handling units and terminal boxes for the first 15 feet, shall be provided with 1 inch acoustical lining.
   - 8.4. All ductwork shall be constructed in accordance with the latest SMACNA manual. Low pressure ductwork, 2 inch rating minimum for ductwork between VAV units and air outlets, and medium pressure ductwork, 6 inch rating minimum for ductwork between base building fans and VAV units.
   - 8.5. All ductwork shall be sealed air tight in accordance with and SMACNA seal classification – A.
   - 8.6. All ductwork being reused shall be inspected, sealed per SMACNA requirements, leak tested, and insulated by the mechanical contractor. All existing ductwork to be reused shall conform to specifications for new ductwork being installed.
   - 8.7. For full floor tenant build out, all new medium pressure ductwork (>2 in. construction) shall be leak tested. Leak testing shall be performed in accordance with SMACNA leak testing manual. Results to be submitted to Building Management office.
   - 8.8. Flexible canvas connections and vibration isolators shall be provided at ductwork connections to air handling units, fans and other rotating equipment.
   - 8.9. Opposed Blade Volume dampers shall be shown on drawings wherever required for air balancing purposes. Volume dampers above sheetrock or inaccessible ceilings shall be cable type.
   - 8.10. Access doors shall be indicated on the drawings wherever required for access and servicing of equipment such as coils, humidifiers, motors, fire/smoke dampers etc. and as necessary, and shall be a minimum of 18 inches x 18 inches. Access doors in insulated or lined ducts shall be double panel, insulated, minimum 20 ga.; access doors in non-insulated duct shall be double panel, minimum 20 ga. or single panel, minimum 18 ga. Access Door openings shall not be obstructed by pipes, conduits, lighting fixtures, sprinkler heads, etc.
   - 8.11. Duct hangers shall be indicated and specified in accordance with the New York City Building Code and SMACNA.
   - 8.12. Ductwork may not be suspended from electrical conduits, sprinkler piping, or water lines, hung ceiling, or any other existing or new mechanical or electrical system components. All ductwork shall be hung from building steel or existing duct attachments.
   - 8.13. All acoustical lining to be Armorflex.
9. Air Outlets:
   - 9.1. All air outlets shall be indicated on the drawings, including face size, neck size, and CFM.
   - 9.2. Refer to Design Guidelines for Specific models.
10. Air Terminal Units:
    - 10.1. New air terminal units shall be Variable Air Volume type (VAV), single duct, pressure independent with factory mounted controls. Controls are to be DDC electronic, compatible with Automated Logic system or BACNet (or other open protocol) compatible.
    - 10.2. Air terminal units shall not serve more than one tenant, and shall not be located on top of partitions, lighting fixtures, electrical conduits or piping. Operator and access doors of air terminal units shall be fully accessible.
    - 10.3. Tenant shall clean recondition, recalibrate and test all existing air terminal units to be reused, including controls. Submit results of test to Building Manager..

10.4. All VAV air terminal units shall open to maximum CFM setting during warm-up/cool-down cycle.
10.5. Refer to Design Guidelines for Specific models.

11. Fire and Smoke Dampers:
    11.1. Accessible fire and/or smoke dampers and access doors shall be shown on the drawings wherever required by the New York City Building Code or other authorities having jurisdiction. Dampers shall be BSA or MEA approved and conform to the NFPA standards latest edition.
    11.2. Combination Fire & Smoke dampers shall be leakage Class 1, constructed to meet the requirements of UL555S, be so labeled, and have MEA number, and be operated by an external two position electric actuator that meets the latest UL555S standard. Dampers shall be controlled by fire alarm system shut down. Interface relays, BMS connection, and all wiring to be provided by the tenant.
12. Special Exhaust Systems:
    12.1. By approval by Building Management.
    12.2. As per NYC Building Code.
    12.3. Drawings for range hood kitchen exhaust systems shall indicate manufacturer and model number of the rangehood(s), CFM exhaust and ductwork connection to the duct riser. Ductwork shall be insulated and installed in accordance with the New York City Building Code and the latest edition of NFPA. All equipment shall be BSA or MEA approved. Tenant is to render exhaust odor free as to not cause a nuisance to other tenants.
    12.4. Dishwasher exhaust ductwork shall be stainless steel, shall slope downwards in the direction of the dishwasher connection and shall be water tight.
13. Perimeter Radiators:
    13.1. Existing steam radiators shall be shown on drawings including unit, control valve and thermostat.
    13.2. Perimeter radiators should not serve more than one area or office. New control valves and traps should be installed to provide independent control to each office, and radiator control valves shall be integral to VAV boxes corresponding to the perimeter location of radiator as to prevent simultaneous heating and cooling. Coordinate with Base Building for specific requirements and model.
14. Insulation:
    14.1. Design and performance of components and methods specified herein shall comply with the applicable provisions of the NYC Code, New York State & City Energy Conservation Construction Code.
    14.2. All insulation, including jackets or facings, adhesives, mastics, cements, tapes and glass cloth for or as per NYC Code.
    14.3. Any treatment applied to jackets or facings to reduce flame spread or smoke production shall be permanent. The use of water soluble treatments is prohibited.
    14.4. All perimeter walls behind convector covers shall receive 1" foil rigid insulation attached with masonry screws.
15. Water Cooled Equipment:
    15.1. AC Units 65,000 BTU or less (Constant Volume, Ceiling Mounted, or Floor Mounted with airside economizer). Acceptable Manufacturers: York (JCI), FHP, Trane, Carrier, Mammoth, United Cool Air, or Approved Equal.
    15.2. AC Units greater than 65,000 BTU (VAV Floor Mounted with airside economizer). Acceptable Manufacturers: York (JCI), FHP, Trane, Carrier, Mammoth, United Cool Air, or Approved Equal.
    15.3. Supplemental AC: Water-cooled equipment with free cooling coil (economizer) tied to chilled water system.
16. Controls:
    16.1. To facilitate coordination, installation, start-up service and warranty, all automatic temperature control work shall be done by the automatic temperature control manufacturer.
    16.2. Tenant build-outs are to include demand based ventilation.

16.3. Tenant to install hard wired leak detection at all water cooled AC units and provide local alarms.

17. Freeze protection required for all outside air intakes.

18. Piping:
    18.1. All modifications to steam system to be approved and reviewed with Building Engineer prior to design. Design to be reviewed by building base building engineer. Tie-ins to be coordinated with Building Engineer.
    18.2. All design and system operating conditions for all systems to be reviewed with base Building Engineer prior to start of work.
    18.3. Provide dielectric fittings for all systems where dissimilar metal are joined.
    18.4. New systems to be flushed and cleaned upon installation being completed to remove any construction debris. Flushing to be performed in compliance with Base Building Water Treatment Vendor's requirements. Coordinate with base Building Management for vendor.
    18.5. Condenser & Chilled Water Systems – Allowable Piping Material:

Service / Pressure	**Pipe Size 3" and Smaller**	**Pipe Size 4" and up**
Pressure Classification "A" (0 to 150 PSI)	Non-Ferrous / Brazed Tubing: Type K drawn copper ASTM B88 Fittings: Wrought copper ANSI 16.22 Valves: Bronze class 125 Brazed ASTM B62 (Brazing materials melting range shall be above 1400 degrees F)	Ferrous / Butt Weld Piping: Schedule 40 seamless (carbon steel) ASTM A53 Fittings: Flanged steel couplings ASTM A865, malleable iron Class 150 ANSI 16.3, cast iron Class 125 ANSI 16.4 Valves: Cast iron Class 125 ASTM A126, ductile iron class 150 ASTM A395, malleable iron class 150 ASTM A197
Pressure Classification "B" (151 to 300 PSI)	Non Ferrous/Brazed Tubing: Type K drawn copper ASTM B88 Fittings: Wrought copper ANSI 16.22 Valves: Bronze class 200 threaded ends ASTM B62 (Brazing materials melting range shall be above	Ferrous/Butt Weld Piping: Schedule 40 seamless (carbon steel) ASTM A53 Fittings: Flanged steel couplings ASTM A865, malleable iron Class 150 ANSI 16.3, Cast iron Class 250 ANSI 16.4 Valves: Cast iron class 250 ASTM A126, forged steel Class 300 ASTM A105

19. All HVAC systems shall be balanced and adjusted in accordance with ASHRAE 111 (practices for measurement, testing, adjusting and balancing of building heating, ventilation, air conditioning, and refrigeration system), SMACNA (HVAC systems testing, adjusting and balancing) and TABB (international standards for environmental systems balance). The tenant is responsible to retain the services of a certified member of the Associated Air Balance Council (AABC) or the National Environmental Balancing Bureau (NEBB). Final balancing to be witnessed by building staff. A minimum of 24 hours' notice to the property manager is required. Complete balancing reports approved by tenant's engineer to be submitted to Building Management office.
20. Testing:
    20.1. The contractor shall complete all tests required by all rules, regulations, etc., of ASHRAE, National Codes and all New York City authorities having jurisdiction and shall prepare and file all forms, tabulations, plans, etc., pertinent thereto with the referenced authorities. The contractor shall accomplish all testing work with personnel of proper caliber, including design professionals, where so required.

20.2. The contractor shall flow balance every system to the quantities as shown on all related drawings.

20.3. After installation, all piping, valves, and fittings shall be hydrostatically tested to 150% of their maximum system design pressure but no less than 150 psig. Only water shall be used as a test medium. All testing shall be witnessed by the Building Engineer. The Manager shall document his/her observations of successful testing showing no failures or leakage in each system. Duration of test shall be a minimum of 4 hours with system valves capped, pressure apparatus disconnected, and no change in pressure.

21. Prior to accepting any system as ready for use, copies of the necessary Building Department, Fire Department, and DEP permits and record drawings shall be supplied to the Property Manager. Main riser valves to tenant system will not be opened until Building Engineer is fully satisfied that system has been properly cleaned, tested and treated. Main riser valve is only to be opened or closed by building personnel.

H. Plumbing

1. Refer to "General Conditions/Requirements for All Work", "Demolition" and "Design Guidelines" for more information.
2. All plumbing must be indicated on the drawings. Indicate make and model number for proper engineering and roughing. If a contractor must enter another tenant's area to perform work, it is the tenants' responsibility to make the arrangement with the Building Management.
3. All plumbing work, materials, equipment and fixtures shall be new and approved by Building Management and by authorities having jurisdiction over the work, including but not limited to, the New York City Plumbing Code.
4. All workmen employed to perform the work shall be skilled in their respective trades and under direct supervision of a New York City licensed plumber. All work shall be performed in a neat and workman like manner consistent with building practices.
5. No plumbing piping shall be run in, or through, electric closet rooms, telephone closet rooms, and elevator machine rooms.
6. Provide hangers and supports for horizontal and vertical piping in accordance with the current New York City Plumbing Code. No piping shall be supported from ductwork, other piping, or electrical conduit.
7. The plumbing contractor shall be responsible for insuring that access doors are installed for both new and existing valves concealed by masonry, plaster or drywall construction. Minimum size shall be 18 inches x 18 inches, unless otherwise approved and shall be rated when installed in rated construction. The rating of the access door shall match the construction it is installed in.
8. Plumbing riser diagrams shall be provide for any plumbing work, all waste drainage, storm drainage, vent, water and gas systems.
9. Hot water heating equipment shall be approved by the New York City Board of Standards and Appeals. Manufacturer's and model numbers shall be specified. M.E.A. numbers for gas fired equipment shall be indicated. Tenant shall provide supplemental tank type or instantaneous electric domestic hot water heater for new pantries, toilets, etc. Provide drip pan beneath heater and automatic shut off with local alarm for all tank type.
10. Tenant meters are generally not required for hot and cold domestic water services, but if such services are required, they shall be installed in compliance with the NYC DEP.
11. Replace isolation valves at riser prior to furnishing and installing new connections.
12. Provide PRV on domestic water where pressure will exceed 85 PSI as per current NYC Plumbing Code.
13. With Building Management office approval, tenant may install a sump pump for pantries. The sump pump shall be provided with a drip pan and leak detector for automatic shut off with local alarm.
14. All domestic water supply system piping, fittings and valves shall be insulated. All insulation shall be furnished and installed in compliance with the NYC Plumbing Code and New York State & City Energy Conservation Construction Code.

15. Install supplemental drip pan and leak detection to isolate water supply to hot water heaters.
16. Provide unions or flanges at connections to each piece of equipment to facilitate removal.
17. Prior to disconnecting and connecting new work to existing systems, the plumbing contractor shall notify the Building Manager and offer a proposed schedule of work. Building Management will authorize connections and coordinate necessary shut downs and drain downs as required. Shut downs and drain downs may be performed by Building Management. Two (2) days advance notice to the Building Manager is required.
18. Connecting new work to existing systems shall be performed in a neat and acceptable manner. All affected work is to be restored to its original condition and operation.
19. When connecting to existing stacks and risers, provision is to be made for future connections by providing capped and valved outlets on domestic water risers and plugged outlets on the sanitary and vent stacks.
20. Tests:
    - 20.1 Test all domestic water piping hydrostatically to 125 psig.
    - 20.2 Hydrostatic test pressures shall remain constant, with no variation for 120 minutes.
    - 20.3 Test shall be witnessed by Building Engineer.
    - 20.4 The plumbing contractor will be held responsible for all damage due to test failures and leakage in the test area and adjacent tenant or building spaces.

I. Electrical

1. Refer to "General Conditions/Requirements for All Work", "Demolition" and "Design Guidelines" for more information.
2. Engineer shall retrieve and review all relevant archived documents, which are available in the Property Manager's office. In addition to this review, the engineer shall field verify all existing conditions and indicate on plans: all meter numbers, panel board designations, circuit numbers, electrical closet designations, etc. This information must be provided regardless of whether or not the equipment will ultimately be removed.
3. Provide a complete power riser diagram including the main riser serving the construction floor/area. Indicate all floors served by the riser and indicate its main overcurrent protection rating. All new risers shall be copper; connections, taps etc. shall be of the high compression type.
4. Energy Efficient Lighting: All lighting layouts and installations shall exceed the New City and NY State Energy Code by 10%. Lighting fixtures shall be completely wired and constructed to comply with all NYC and National Electrical Codes and Underwriters Laboratories Standards for electrical lighting fixtures. Occupancy sensors to be installed in all rooms.
5. Energy Star equipment/appliances should be used whenever possible.
6. Emergency Powered Lighting: The tenant engineer must submit a letter to the Property Manager stating that the emergency lighting is code compliant. Emergency lighting fixtures must have self-contained battery back-up units. Battery shall be for 90 minutes of operation.
7. Provide a connected and demand load summary for all new and existing equipment and indicate the watts-per-square-foot usable based on the tenant's useable square footage.
8. Electric closets shall not be used to install wiring and/or conduit from floor to floor.
9. Lighting & Appliance Panel boards are maintained by the building and therefore, unless otherwise noted, panel boards shall be provided as follows:
    - 8.1 Panel boards exceeding 100 amperes must be approved by Building prior to installation.
    - 8.2 Panels shall be factory assembled, dead front, bolt-on circuit breaker type, UL listed.
    - 8.3 Trims shall have door-in-door construction.
    - 8.4 New electric panels shall be named as in the following example:

      LP-10-1

      LP = Lighting panel

      10 = Floor number

      1 = Panel ID (sequential)
10. EMT or rigid steel conduit shall be used when power distribution is exposed and is run outside of tenant space. Provide and install compression fittings when installing EMT. EMT can be used in accessible suspended ceiling and shall be run from room to room with a minimum of one junction

box in suspended ceiling in each room. MC Cable with ground wire shall be utilized for branch circuits in dry hollow locations, hung ceiling and block walls. MC Cable shall not be used for homeruns. BX Cable shall not be used.

11. All wire, cable and bus shall be copper.
12. Do not chop outlets, switches, or similar devices into core walls. "Poke through" floor devices are not permitted. All floor outlets and power and telephone conduits to have the first 2" saw cut then to be chopped into the deck will be a minimum of ¾" Rigid Steel conduit. Before cutting slab, contact Empire State Building Operations Department for approval. Floor Duct must be approved by Empire State Building. Surface of floor shall be saw cut in all cases. All noisy chopping work must be done after normal business hours.
13. Sub-Metering: Landlord shall supply and install, at tenant cost, building standard sub meters at all existing base building feeders supplying the leased premises in accordance with approved tenant engineering drawings. Tenant to sub meter data centers as defined by EPA for Energy Star. Tenant should review W & H Properties Energy Efficiency Guidelines for ways to reduce total tenant energy use.
14. All work must be filed with New York City Department of Buildings and the Bureau of Electrical Control. The permit must be posted at the job site and copies of Permit and Final Inspection must be sent to the Building Manager. The electrical drawings identified in the Tenant Work Consent letter must be at the job site at all times.
15. It shall be the contractor's responsibility to balance loads to within 10%, correct any existing violations and refurbish electric panels where necessary. The condition of all electric panels and closets at the project completion is subject to the review and approval of Building.
16. At the completion of the alteration, meter pans, safety switches, panels, and other distribution devices are to be correctly labeled. Previous labeling or markings are to be removed or painted over. Provide black lamicoid sheet with 1 inch white lettering, fastened with rivets.
17. All panel directories are to be type written with the main feeder number, main panel number, circuit number and the location and purpose of circuits. Panel board branch circuits shall be labeled as to space, room number, and purpose—"Space 503, Circuit #5, Lighting Outer Office"—by electrical contractor. This work will be done to the satisfaction of the Landlord.
18. The source of all new risers shall be identified in a manner consistent with existing switchboard designations. All pull boxes required for new riser installations must identify the riser and the tenant and/or equipment served.
19. Wiring must have solid color insulation.
20. The color of switch legs must match phase circuit color.
21. Blown fuses and tripped circuit breakers on floors not under construction are to be changed or reset by Building Engineer only.
22. When an electrical design involving emergency lighting is done by a licensed electrical contractor, the following statement must appear in the comments field of the work permit application: "I certify that the installation and design as indicated on this application complies with the requirements of the Building Code including Local Law 16."
23. Upon completion of the electrical work, the licensed electrical contractor must submit to the Building Manager, a copy of the Certificate of Electrical Inspection for all work performed including the installation of emergency lighting if applicable.
24. Electrical contractor shall remove all unused wiring back to the source. Any non-used outlets shall be abandoned, existing wires pulled out, and continuation of circuitry if needed to maintain other spaces shall be in scope of work.
25. Where demolition is to take place in the area of the building fire safety equipment such as alarms, speakers, smoke detectors, floor warden stations, etc., the building engineering department must be notified 48 hours prior to start of demolition so that equipment may be protected or removed (by contractor if necessary).

J. Security

1. Entrance door security system shall be building standard. Furnish and install in-wall J-box, wiring (provide 120V power) and a Siedle flush mounted housing item # GU611-3-1-0 part # KR611-3-1-0. Edge of housing to be 6" from door frame, 48" AFF center line.

K. Telecommunications

1. Refer to “General Conditions/Requirements for All Work”, “Demolition” and “Design Guidelines” for more information
2. Tenant to submit plan identifying cabling route, impact on building common areas and adjacent spaces.
3. Cable should not be attached, connected to any hangers that support ceilings or ducts. Cable to be properly labeled and independently hung up ‘J” hooks or cable tray.
4. Cable run outside of demised tenant space to be run in conduit or EMT.
5. Low voltage risers to be labeled on every floor.

L. Class “E”, Fire /Life Safety Systems

1. Refer to “General Conditions/Requirements for All Work”, “Demolition” and “Design Guidelines” for more information
2. The building is equipped with approved modified Class E Fire Alarm System. Tenant's engineer is responsible for meeting all code and Building requirements.
3. Base building fire alarm system vendor is Siemens Building Technologies. Contact Paul M. Johnson (973) 396-4055. All equipment, devices and system re-programming shall be provided by this vendor as retained by tenant’s contractor.
4. Tenant’s engineer shall contact Siemens Building Technologies in order to coordinate project requirements which shall be fully reflected on the design drawings submitted to the building manager for review.
5. Any work on the base building fire alarm system shall be performed with permission of the Building Manager. Work is to be performed at tenant's expense by contractors approved by Building Management. Final connections to the base building system are to be coordinated with the Building Manager.
6. Replace all existing fire speaker/strobe face plates with white, all new fire speaker/strobe to be white.
7. Field verify the location of all existing base building fire alarm devices and indicate all equipment, including duct smoke detectors on both the demolition and construction drawings submitted for review.
8. All new initiating devices installed by tenants shall be intelligent - addressable type compatible with the base building Siemens Building Technologies. fire alarm system and approved by the Building Manager. Drawings must be prepared using Building standard symbols and must be reviewed by the Building Manager.
9. Fire Guards (Alteration, Construction):
   A person holding a "Certificate of Fitness" F91, F93 (Fire Guard Construction) issued by the Fire Department shall be required to be on duty in the capacity of a fire guard during all hours whenever the smoke detector system or sprinkler system has been taken off-line. Certificate F91 covers 8am-5pm, Monday through Friday. Certificate F93 covers 5pm-8am, Monday through Friday, and all hours on Saturday and Sunday.
   Fire guards shall maintain log books recording the following:
   1) Date and time floor(s) taken off-line.
   2) Floor(s) taken off-line.
   3) Time of inspection and conditions found.
   4) Date and time floor(s) system restored.
   5) Name and Certificate number of Fire Guard.

   All systems must be restored at the close of the business day. In cases of after business hours demolition fire guards shall be on duty as long as the system is off-line.
   Certified Fire Guards are required to adhere to all duties of Fire Guard as required by the Certificate of Fitness and have on their person the Certificate of Fitness or photographic copy of such permit for inspection by the Fire Department and Empire State Building.
10. The tenant's engineer must field verify the location of all existing base building fire alarm devices and indicate them on both demolition and construction drawings submitted for review.

11. System Control Panels:
    11.1 Data gathering panels for tenant connection are located on miscellaneous floors. Additional capacity may be added as needed at the tenant's installation and maintenance expense. All building fire alarm panels including any tenant sub system panels, shall be fitted with Siemens Building Technologies key. Splicing is not permitted
    11.2 All wiring shall be of an approved 200°C jacketed Teflon type. In areas where wiring is susceptible to damage due to exposure to potential mechanical damage (e.g., service elevator lobby, MER, EMR, etc.), the wiring shall be installed in rigid steel conduit.
    11.3 All wiring within demised premises shall be upgraded to 200°C Teflon Standard. Replace existing wiring of devices to remain to suit.
12. Sub-Systems (Tenant Systems): Sub-system panels shall be installed within the Tenant demised space and must be readily accessible to Building personnel. Indicate the location of the panel on drawings submitted for review. Approved sub-systems must report to the base building system through interface modules. All sub-system wiring shall be installed in rigid steel conduit as required by code. Tenant sub-system panels shall be fitted with Siemens Building Technologies, key number, and shall be accessible to Building Management at all times.
13. If the total quantity of initiating devices (smoke detectors, duct detectors, pull stations, smoke dampers, water flow switches, etc.), exceeds base building system capacity, the tenant shall provide and install a separate subpanel or provide necessary components as coordinated with Siemens Building Technologies to accommodate devices.
14. Programming: Siemens Building Technologies is the agent to perform all programming and make computer graphic changes necessary to incorporate tenant fire alarm equipment into the base building fire alarm system. The tenant shall pay all programming costs and the cost to change computer graphics. The tenant's engineer must submit a fire alarm record drawing to facilitate all programming and computer graphics updates. Failure to do so will result in additional costs which will be charged to the tenant. Siemens Building Technologies shall provide installation shop drawings for review/approval prior to commencing installation.
15. Full floor tenants shall provide a two area smoke detectors in each of the passenger, night and freight elevator lobbies, for compliance with current RS-18 requirements. Detectors shall be connected to the addressable loop serving the floor.
16. Full floor tenants shall install new manual pull stations mounted at ADA conforming height at each existing pull station location that is not already at such conform height. When the new pull stations have been programmed, existing pull stations shall be removed and patched to match the exiting finish. No splices are permitted.
17. Full floor tenants shall relocate existing fire warden stations to ADA conforming mounting height. Warden station wiring shall be extended to the new location. Upon activation the existing outlet shall be removed and patched to match existing finish. No splices are permitted.

M. Sprinklers

1. Refer to “General Conditions/Requirements for All Work”, “Demolition” and “Design Guidelines” for more information.
2. Installation of sprinklers in electric closets is not permitted.
3. The building is equipped with automatic wet-pipe sprinkler systems. The design of the tenants’ sprinkler systems shall be coordinated with Building Management to ensure compatibility with existing building sprinkler system.
4. Sprinkler systems are to be designed in accordance with building codes of the City of New York, Fire Department rules and regulations, Factory Mutual recommendations, and all other authorities having jurisdiction.
5. The sprinkler drawing must include, in addition to a plan view showing all piping, a riser diagram showing proposed connections to the existing system.
6. Sprinkler floor control valve assembly details shall be indicated on drawings with all associated components.
7. Sprinkler head detail shall be shown on the design drawing for each installation type.
8. Sprinkler systems layout shall be designed to insure that all sprinkler heads provide adequate coverage. Associated drawings shall be submitted for review.

9. Pre-action sprinkler system piping layouts shall be indicated on the drawings and shall include the following: pre-action valve assembly, tamper water flow switch and all associated mechanical and electrical components. A separate electrical riser diagram indicating all electric components including but not limited to detectors, pull stations, A/V devices, bells, signage, etc. and tie-ins to existing system shall be provided to facilitate NY Fire Department electrical review and installation approval. Pre-action valve assembly details must be shown on the drawing with all associated components, including drain and test assembly.
10. Hydraulic calculations must be submitted to Building Engineer for all sprinkler system designs. Water density, areas of sprinkler operation and water supply requirements shall be in accordance with NFPA standards as modified by the NYC Building Code
11. The sprinkler system design basis shall be indicated including: Square feet area to be sprinkled, class of occupancy, design density (GPM/ sq.ft.), minimum remote sprinkler head pressure (psig). System description including sprinkler size, total number of heads, K-factor and C-factor used.
12. Water supply information including GPM and pressure required, for fire pumps or gravity tanks shall be provided.
13. Provide details for any modifications, including fire reserve modifications, to the existing gravity tanks where required.
14. Tenants to sprinkler all rooms on leased floor.
15. Sprinkler systems piping material, valves, fittings, hangers, switches, drain/test stations and all associated components shall be in accordance with applicable regulations. Model numbers and pressure ratings of all sprinkler system components shall be specified on the design drawings.
16. Piping: All sprinkler piping downstream of the sprinkler floor control valve assembly (FCVA) shall be Schedule 40 black steel, Schedule 10 piping shall not be used.
17. Fittings: All fittings shall be cast iron threaded, cut grooved or roll grooved.
18. All exposed vertical risers (and valve handwheels) shall be painted in accordance with local law 58.
19. All connections to existing FSP/Sprinkler risers shall utilize welded connections, Weldolet as manufactured by Bonney Forge Corp.
20. Valves: The valves tabulated below have been selected from the catalogs of Nibco & Milwaukee Mfg. Co. and are representative of the design, materials, and working features desired.

1) Gate Valves (all valves 3 inches and larger)

End	Model No.	P.S.I. W.W.P.	Materials	Spindle	Size
Flanged	F-609	250	IBBM	O.S.&Y.	3” & larger
Flanged	F-667-O	500	IBBM	O.S.&Y.	3” & larger

2) Butterfly valves (1 " through 2-1/2 inches) with built-in tamper switch

End	Model No.	P.S.I. W.W.P.	Materials	Size
Threaded	BB-SCS02	175	Bronze	2” & smaller
Grooved	BBVSCS02	175	Bronze	2 1/2” & smaller

3) Check Valves

End	Model No.	P.S.I. W.W.P.	Materials	Size
Flanged	F-908-W	175	IBBM	2-1/2” & larger
Flanged	F-968-B	500	IBBM	2 1/2” & larger

21. Sprinkler Heads: All sprinklers shall be of the quick response type. Spray type, with 1/2 inch normal discharge orifice. Temperature ratings 160°-175° F except where special conditions exist. Sprinkler heads shall be installed and secured in a workman-like manner, so that the finished area is not damaged. Sprinkler heads installed in ceiling tiles shall be located in the center of a tile with a tolerance of ± 1/2 inch. Where concealed type sprinkler heads are used, the cover plates shall be flush with the ceiling plane and per the manufacturer's installation guidelines to limit shadow effect. Refer to Design Guidelines for Specific models.
22. Waterflow Switches: Vane-type waterflow detectors shall be installed on the sprinkler system piping as designated on the drawings. Waterflow switches shall not be mounted in a fitting or within 12 inches of any fitting that changes the direction of waterflow. Detectors shall be designed for mounting on either vertical or horizontal piping, and have a sensitivity setting to signal any flow of water that equals or exceeds the discharge from one sprinkler head. Detector switch mechanisms shall incorporate an instantly recycling pneumatic retard element with an adjustable range of 0 to 70 seconds. Switches shall have a minimum rated capacity of 7 amp 125 volt A.C. - 25 amp 24 volt D.C. and shall be actuated by a polyethylene vane extending into the waterway of the piping. Detectors shall be of weatherproof dust tight construction, provide a 1/2 inch conduit entrance and be finished in red baked enamel. (Potter Electric)
23. Tamper Switch: Valve supervisory switches shall be provided on all control valves. The switch mechanism shall be contained in a weatherproof die cast aluminum body which shall provide a 1 inch tapped conduit entrance and incorporate the necessary facilities for attachment to the valve. Switch housings shall be finished in red baked enamel. The switch mechanism shall have a minimum rated capacity of 7 amp 125 Volt AC: 0.25 amp 24 volt D.C. (Potter Electric). Tamper switches shall be arranged so as not to interfere with normal operation of the valve and shall be adjusted to operate within 2 revolutions of the control valve or when the stem has moved no more than one fifth of the distance from its normal open position
24. Pressure Reducing Valves: Provide pressure reducing valves as required. The valve is to be of all bronze construction with bronze and stainless steel trim. The valve shall be UL listed and rated for 300 psi working pressure and able to be tested to its full rating stamped on valve without damage to any part of the valve. The valve shall be spring actuated, balanced piston, single seated type without diaphragm. All parts are to be easily removable or replaceable sealed at the factory; a seal is to be affixed to the valve at the factory for protection against tampering. Cla-Val, Model 90G-21or approved equal.
25. Pressure Relief Valves: All sprinkler systems requiring a pressure relief valve shall be provided with a diaphragm operated pressure relief valve. The valve seat and all working parts exposed to the fluid to be of non-ferrous material. Lonergan Co. - T Series or approved equal.
26. Pressure Gauges: Gauges are to be of a type approved by authorities having jurisdiction and shall have 4 1/2 inch dials, cast brass cases, and have a range equal to twice the working pressure. Each gauge shall have a shut-off cock or valve together with a plugged outlet for the connection of an inspector's test gauge. Gauges shall be double spring type. Provide a gauge on both sides of each pressure reducing valve.
27. Sprinkler mains exposed to the elements (freezing conditions) shall be adequately covered and heat-traced.
28. Provisions are to be made for electrical connection of the water flow and tamper switches to the Building Modified Class "E" Fire Alarm system, by the electrical contractor. Final connections to the sprinkler alarm riser are to be coordinated with the Building representative.
29. Closing of any building OS&Y control valve at any time is to be coordinated with the Building Property Manager. Provide a minimum of 3 day's notice.
30. All control valves, pressure reducing valves, check valves, water flow, tamper switches etc., shall be installed so as to be easily accessible for maintenance and removal.
31. Sprinkler system piping shall be installed so that all or any part of the system can be completely drained. Drain assemblies shall be connected to drain riser and are to be provided with a globe or angle type valve and spill to an approved receptacle to avoid flooding drain riser or slop sink. Provide dead leg drains, consisting of either a heel tee with a plugged outlet or a 1" nipple and cap, to allow for drainage of trapped branch lines.
32. Sprinkler piping and risers shall be adequately supported from the building structure. Types of hangers and installation methods shall be in accordance with the requirements of the applicable version of NFPA-13of 2002 as modified by Appendix Q the NYC Building Code. On branch

lines, there shall be not less than one hanger for each length of pipe. On loops or mains, there shall be at least one hanger between each two branch lines.

33. Inspector's test connection shall be at least 1 inch diameter terminating in an outlet giving a flow equivalent to one operating sprinkler. The test assembly shall include a globe or angle valve, sight glass, 1/2 inch orifice, union and all other appurtenances, required for a complete assembly.
34. For any modifications or additions to the existing system and prior to filling sprinkler system with water, air pressure testing is to be done. The air test shall be conducted at a pressure of 40 psig for 24 hours with a maximum pressure loss of 1½ psig. Test is to be witnessed by a Building representative. Arrangements are to be made, with a 24 hour notice, with the Building Engineering. After acceptance of the air pressure test by the Building representative, the system is to be water filled and arrangements made by the tenant to have the formal acceptance test by authorities having jurisdiction and witnessed by the Property Management office representative. A 24 hour notice is required by the Property Manager through the Building representative. In the course of this test, waterflow and tamper switches are to be connected electrically, at the tenant's expense. A hydrostatic test is to be performed on piping installed at a pressure of 200 psig for 2 hours with no loss in pressure, independent of the rest of the building for any modification or addition.
35. Furnish and install signs and seals as and where required by Building, NYC and NFPA. Signs shall be located near the device in a conspicuous location. Furnish and install updated signage at the floor control assemblies indicating required pressure, flow and the quantity of sprinkler heads calculated.
36. Furnish and install a 3 inch brass tag, with 1-1/2 inch red numbers to each valve. Also provide to the Building office representative, a piping diagram of the sprinkler system indicating the location of all control valves by number, and a valve chart, designating purpose or area served by each valve.
37. Upon acceptance of the system, a complete briefing for all personnel is to be conducted for all shifts. The briefing will include a complete demonstration of the system.
38. Furnish the Building Management office with the quantity of spare sprinkler heads and wrenches as specified in NFPA 13 of 2002 as modified by Appendix Q of the NYC Building Code and escutcheon plates.
39. It shall be the responsibility of the tenant to provide a copy of the agencies' signoffs and copies of approved drawings to the Building.