

TECHNICAL CRITERIA

KINGS PLAZA SHOPPING CENTER



KINGS PLAZA SHOPPING CENTER

ADDENDUM LOG

December, 2012 Updated to current layout	April, 2017 Replaced with language regarding Communications Services (t21)
February, 2013 Content revised per TC to conform to KPSC original criteria content	February, 2018 Updated to new layout
March, 2014 Distribution of utilities through exit corridors is prohibited with exception (t5)	
October, 2014 At grade level electrical conduit is not allowed to be installed in the slab (t14) HVAC type and usage maps (LVLS 1&2) added (t14, t15)	
December, 2014 Wiring language updated (t16 in System Design)	
March, 2015 Updated Plumbing content to list specific location for main water shut off valve to be at eye level. (t19)	
March, 2016 Added Electric / Water Sub-meter Requirements (t4)	
April, 2016 Added Water Efficiency language. (t20)	
January, 2017 Content updated by TC and MEP Engineers	

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REGULATIONS

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Demolition & Renovations

Any existing materials or equipment not to be reused must be completely removed and disposed of properly including any and all materials and equipment above the ceiling line that is not part of Landlord base building architecture, structural or MEP systems. Repairs required to roofing systems or other parts of the Center must be completed to Landlord's specifications, using Landlord's designated roofer, at Tenant's cost. Penetrations that are not to be reused shall be repaired to match existing surfaces and brought to original roofing condition. No curb cap permitted.

Roof Penetrations

Roof Penetrations may not be made unless Mall Management has reviewed and approved area with a visual inspection. Mall roof has high voltage wiring in certain locations. When mounting roof top units use Mall typical roof top curb details.

Do not shoot or drill into roof deck from second floor space until Mall Management has reviewed and approved.

First floor to underside of deck – 17'6"

Second floor deck height – 15'6"

Floor Slabs and Penetrations

All floor penetrations through structural concrete slabs must be core-bored or saw-cut, sleeved, sealed, firestopped and waterproofed. All piping sleeves shall extend a minimum of four inches in height or equal to the height of the base. Provide temporary protection until construction is complete. All core drilling and Landlord approved trenching, where permitted, is to be done by Landlord's designated contractor at Tenant's expense.

Structure must be x-rayed and field verified with mall management prior to any penetrations.

Any trenching of first floor structurally supported concrete slab shall be designed by a licensed New York P.E. utilizing Landlord recommended details.

Concrete floor slabs are provided by landlord as part of base building construction in AS IS condition. All preparation to receive Tenant finishes is to be by the Tenant. When applicable proper landlord approved expansion joint flooring detail to be followed.

Construction Ratings

Where a Tenant abuts and exit corridor or exit passageway, Tenant shall install one layer of 5/8" fire rated gypsum wall board in accordance with UL Design specifications.

The Tenant demising wall separating Tenant spaces shall be of a 1-hour fire resistive rating. All metal stud demising walls shall be finished with one layer of 5/8" fire rated gypsum wallboard in accordance with UL Design acceptable construction. Batt sound installation will be required for all new demising walls as per UL Design specifications.

Structured floor assemblies require a 2-hour fire resistance assembly.

The columns of the primary structure shall have a 3-hour spray on rating. Any additional structural columns necessitated by Tenant Work shall require a 3-hour fire resistance rated assembly.

The fire rating on all structural members shall be maintained and repaired by Tenant as required, if damaged. The fire protection provided for any structural component shall not be compromised in any manner by the Tenant.

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Structural Modifications

The Tenant shall be responsible for all costs associated with any modifications of, or connections to, the Base Building structural system. Additionally, the Tenant shall be responsible for costs associated with the disruption of the operations of adjacent Tenants. Structural modifications must be performed and tested by the Landlord's designated contractors at Tenant's expense. Any attachments to, or modifications of, the building's structural systems must be approved by the Landlords Engineer. Review of proposed structural modifications by Landlord's Structural Engineer shall be at Tenant's expense.

Proposed modifications to the base building and structural work of any kind shall be designed, sealed and signed by Professional Structural Engineer licensed to practice in the state of New York. Tenant shall notify the Landlord in writing of any loads in excess of Landlord's design. Additional structural reinforcement shall be provided for all roof openings and equipment by the Tenant's GC at Tenant's expense. Structural dowels/mesh/welding as per code for all trenching concrete pour backs.

Do not shoot screw drill or weld to Landlord's second floor deck or structure. Use nested studs, cleats, clamps or through bolts as attachment methods.

All structural work must be inspected by a Borough of Brooklyn approved and licensed inspection company. A list

of approved inspection companies may be obtained by contacting the Borough of Brooklyn Building Department.

Broadcast Data Communications

Individual installations of satellite dishes or antenna installations will be allowed with prior approval from the Landlord and installation is coordinated as per mall management specifications.

Exit Corridors

Distribution of utilities through a newly constructed or an altered exit passageway is prohibited except for equipment and ductwork specifically serving the exit passageway, sprinkler piping, standpipes, electrical raceway for fire department communication and electrical raceway serving the exit passageway.

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MECHANICAL CRITERIA

General Requirements For Tenant HVAC Scope

Tenant shall design, furnish and install HVAC, heating and ventilation equipment that shall serve their Demised Premises at all times. Tenant shall provide and install make-up air, relief air, smoke purge and exhaust system, as required, including balancing and back-draft dampers, fire dampers, curbs, exhaust and intake air hood(s).

Tenants without Landlord granted roof access will be provided with a pathway for Tenants installation of ducted, untempered ventilation (outside) air and ducted exhaust as required. Tenants are not permitted to use a water-cooling tower or any evaporative cooling apparatus.

NOTE: All abandoned MEP equipment within demised tenant space must be completely removed by Tenant.

Environmental Criteria

Tenant is required to design and install an HVAC system to serve the demised Tenant space based upon the following environmental design criteria:

- Cooling – Indoor: 75° F dry bulb (DB) / 50% Relative Humidity (RH)
- Cooling – Outdoor: 94° F dry bulb (DB) / 75° F wet bulb (WB). Apply ASHRAE Fundamentals 1% DB / MCWB data
- Heating – Indoor: 70° F dry bulb (DB) / Relative Humid-

ity (RH) per ASHRAE 55

- Heating – Outdoor: 10° F dry bulb (DB). Apply ASHRAE Fundamentals 99% Winter Heating data

Ventilation (Outdoor Air)

Ventilation air to be provided per the requirements of applicable NYC DoB codes (NYCMC, Table 403.3.) All unique zones, uses, occupancies and equipment with demised tenant area shall be evaluated to provide code compliant ventilation. Ventilation air quantiles shall be identified in a Ventilation Schedule published on the construction documents.

Central Heating & Cooling Infrastructure Characteristics For Tenant Design

Kings Plaza operates a Total Energy Plant (TEP) which utilizes cogeneration principles to provide centralized chilled and heating hot water to some tenants through a 4-pipe distribution piping network. Other Tenants are provided with conditioned air through a dedicated supply duct. ***Please review the maps on pages 14-17 to determine which system is to be utilized for design.*** Tenants are required to provide air handling equipment which utilizes the Landlord's infrastructure.

Design characteristics to be used by Tenants on the chilled water system when selecting equipment are:

Heating / Cooling Medium: Water (0% Glycol)

- Chilled Water: CHWS: 43° F. / CHWR: 58° F. ($\Delta T = 15^\circ$ F at peak load)
- Heating Hot Water: HWS: 190° F. / HWR: 150° F. ($\Delta T = 40^\circ$ F at peak load)

Heat Transfer Coil Requirements:

- Maximum working pressure of all Tenant heat transfer coils and controls: 125 PSIG
- Maximum allowable pressure drop through all heat transfer coils and controls: 30 ft. W.G.
- NOTE: Maximum allowable pressure drop noted is without the use of booster pumps.

Chilled Water & Heating Hot Water Piping Design Requirements:

- Piping shall be sized per requirements of NYC Energy Conservation Code and ASHRAE 90.1, Table 6.5.4.5.

Availability of Services

- Chilled Water: Available during normal business hours during the cooling season. Cooling season is when outdoor conditions are $\pm 61^\circ$ F. or greater.
- Heating Hot Water: Available during normal business

hours during the cooling season. Cooling season is when outdoor conditions are $\pm 60^{\circ}$ F. or lower.

Design characteristics to be used by Tenants on the **conditioned air system** are:

- Air temperature is delivered to the space at approximately 60° F.
- Tenants are also provided a hot water line ($1\frac{1}{4}''$ - 160° F supply water temp and 50° F return temperature)
- Tenants are to install a heating coil for heat during the winter months and set a thermostat within the space.
- Tenants are permitted to install a VAV box if desired.
- There is no EMS system to connect into for the conditioned air system.

General Equipment Requirements

- Where required and permitted by Landlord, direct expansion air-cooled condensing equipment shall be selected at $ARI\ 95^{\circ}$ F ambient outdoor dry bulb design temperature.
- Equipment shall be provided with low ambient control if recommended by unit manufacturer.
- Tenants with spaces greater than 6,000 square feet are required to furnish multiple air handling units to limit the concentration of loads on the structure.
- City of New York and Landlord require that no roof top

equipment is visible from public areas. Landlord will determine if screening is required which will be provided by Tenant at Tenant's expense.

- Tenant must submit roof plans, hanger details / structural calculations, framing details and curb/penetration details for all HVAC equipment installations
- All roof cuts required by design must be by Landlord's designated contractor at Tenant's expense.

Roof-Mounted Equipment

- All roof-mounted equipment shall be located on curbs flashed to the structural substrate or on raised support platforms. Where practical, all ducts, conduits, drains and refrigerant lines shall penetrate the roof inside the curb support.
- Fabricated support platforms for all roof-mounted equipment shall be sized to span from centerline to centerline of the supports within the structural bay as approved by Landlord. Tenant shall arrange for installation one-half inch ($\frac{1}{2}''$) thick roof pads around all roof top equipment and connecting to Landlord's service walkway for equipment maintenance.
- All roof work must be completed by Landlord's approved roofing contractor at Tenant's expense. Location of all roof-mounted equipment must be approved by Landlord at Tenant's submittal.

- A visual inspection with Mall Management will be required prior to penetrations as some roof areas may contain high voltage conduit and conductors.
- All remote piping, conduit, control or wiring system penetrating the roof shall utilize a horizontal, capped curb penetration system. Flexible neoprene boots, pitch pockets or other vertical systems are not permitted. All pipe penetration system details must be approved by Landlord prior to installation.
- All RTU units must have condensate trap and extensions fabricated of Type L copper, individually supported on 5'-0" centers which spill to the nearest roof drain. All work to be coordinated with Landlord's designated roofing contractor and mall management.
- All Tenant equipment, ductwork, control dampers, supporting systems and insulation shall be fabricated from materials suitable for long life in exterior applications within this geographic location.
- Tenant's contractor shall remove any HVAC units over the Demised Premise not being used and repair the roof to match adjacent conditions and construction. No curb caps will be permitted.
- All roof penetrations made by Tenant shall be subject to Landlord approval as related to location and construction details. Weatherproofing of all Tenant roof installations shall be performed by Landlord's authorized roofing contractor. Tenant's General Contractor is

required to pay all costs directly to such roofing contractor.

- Tenant's General Contractor is required to provide temporary weatherproofing for all roof penetrations until Landlord's roofing contractor has made the final patch.

Heat Recovery Equipment

- Tenant's condensing unit and/or packaged roof-mounted units shall be located on the roof in areas specifically designated for such equipment. Units shall conform to Landlord's requirements with respect to location, weight, size and service clearances.
- Equipment shall not exceed six feet (6'-0") in height (installed), and shall furnish a minimum twelve inch (12") clearance from the top of the roof-mounted curb or support platforms to the top finished surface of the roof. Any additional reinforcement of the roof structure necessary to support equipment shall be at Tenant's expense.
- Maximum size of RTU shall be 15 tons on Main Mall and 20 tons on former Sears building. In any given bay there shall not be more than two Tenant RTU's and two Tenant condensing units. No Tenant RTU or condensing units can rest on a joist supporting another Tenant's unit.
- Tenants whose Demised Premises are not located directly under the existing roof areas specifically designated for mechanical equipment, shall use a split type

HVAC system. Compressor/ condenser or heat pump shall be located on the roof areas designated for such equipment, and the fan coil section located within the Tenant Space. Tenant shall install interconnecting conduits, wiring, and refrigeration piping.

- All Tenant heating / cooling equipment shall incorporate Total Energy Recovery (e.g. ERV, total enthalpy recovery, sensible / latent energy recovery, etc.) This requirement is mandated by the Landlord and is over and above any minimum requirements set by the applicable codes.

General HVAC

Air handling units, heating equipment, water heaters and other equipment located within the Demised Premises are required to be located over the toilet or storage areas using support systems provided by Tenant. Equipment and supports are not to exceed maximum live loads for structure. Tenant to provide location and mounting details certified by a licensed engineer at time of submittal.

Tenant's HVAC system shall be provide with all necessary controls and devises and be compatible with the Landlord's HVAC system and fire alarm system. All low voltage controls shall be in conduit.

Tenants that have odor producing operations shall install a forced draft ventilation system to maintain a negative pressure within the Tenant Space and discharge into the atmosphere via code approved means that are approved by

Landlord. Tenant is responsible for proper diffusion of the exhaust in such a manner as to prevent odors from entering air intakes of other ventilation systems. Tenant shall furnish complete data indicating system air balance in the Demised Premises and a certified third-party balance report no more than thirty (30) days after opening.

HVAC system shall be in operation whenever Landlord-provided HVAC services are operating. Tenants are required to install a DDC system of programmable controls with time-clock functionality for control of their HVAC systems. Life safety alarms shall be connected to the Landlord fire/smoke alarm system.

In accordance with all governing codes, Tenant shall install all condensate drains from air-handling units to flow indirectly (air gap) into Tenant's sanitary line. All condensate lines shall be insulated of Type L copper.

Tenant is required to install all controls and devises required to furnish complete compatibility to the Landlords fire alarm system. Route piping connections around the air-fan coil unit to permit access for filter changes.

Post-Fire Smoke Purge Exhaust

NYC Building Code requires a Post Fire Smoke Purge System be provided for all occupied areas.

Most Tenants with access only from the Main Mall Common area will be included in the Mall's common smoke exhaust. Tenants over 1500 square feet are to verify with Tenant Coordination if supplemental Post Fire Smoke Purge is required.

Tenants needing Post Smoke Purge Exhaust shall be required to furnish a rooftop mounted smoke exhaust fan as part of their Tenant improvements to meet the requirements of the code. Tenant Engineer shall be responsible for the sizing of the smoke purge exhaust fan in accordance with applicable codes and AHJ requirements. Exhaust volume shall not be less than one (1) cfm per square foot or six (6) air changes per hour, whichever is greater.

Tenant space area and volume used to calculate the exhaust volume, shall be measured from the front to rear of the store, including all storage/stockroom(s), the full width of the space and from the finished floor to the underside of permanent structure, (roof, mezzanine, etc.) above (even when ceilings are provided in the Tenant Space).

The sequence of operation of the Tenant's HVAC system and smoke exhaust fan, during an emergency, shall be in accordance with the smoke control system requirements, as

stipulated in the latest adopted NYC Building Code (including applicable amendments) and the requirements of this Tenant Handbook, Smoke/Fire Alarm Design and Construction Criteria.

Toilet Exhaust

Where the Landlord has not provided for an exhaust duct tap, the Tenant shall design and procure and install an active toilet exhaust system, consisting of fan(s), back draft damper(s), ductwork, registers and exhaust louver / hood.

System shall be sized for 75 CFM per flushing rim fixture (water closet or urinal), as required to meet code and Tenant's requirements. Such system shall discharge to the atmosphere via the roof, through Landlord approved exterior wall locations, or into Landlord provided exhaust ducts where applicable.

No exhaust(s) or vent(s) can be located within a minimum of 10 feet (10'-0") of any supply or air intakes.

Duct Work

Hanger-wires, duct-straps, fastening devices, etc. shall be fastened to top chord of joists and/or beams above and conform to the Mechanical Code of the State of New York. Tenants may not attach anything directly to the upper level slab or the roof deck.

All ductwork shall be fabricated from galvanized sheet metal,

stainless steel or black steel in accordance with the standards of American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE), and Sheet Metal and Air Conditioning Contractors National Association (SMACNA) for low pressure, low velocity ductwork. Flexible metal ductwork shall be allowed only in branch ducts, in a length not to be more than six feet (6'-0"). Plastic liner ductwork with internal wire reinforcement is not permitted.

Tenant is required to specify the type of duct and duct insulation used, as per NFPA, SMANCA and applicable standards and Landlord's insurance carrier's requirements. All ductwork systems shall be designated as low velocity (under 2,500 fpm) and low pressure (under 2" water gauge).

Branches from main low-velocity trunk ductwork shall be furnished with splitters, dampers or similar balancing devices in accordance with the standards of the Associated Air Balance Council. Fire dampers shall be provided, as required. Supply and return ductwork shall be insulated with a minimum of two inch (2") thick 3/4lb thick blanket-type insulation with a vapor barrier. All duct work new or existing which passes through the space must be fitted with appropriately rated fire dampers when passing through fire rated partitions.

Acoustical liner may be furnished, as required per NFPA standards, Landlord's insurance carrier's requirements, and be UL rated. Flame spread rating shall not be more than twenty-five (25) and smoke developed rating shall not

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exceed fifty (50). Air distribution supply registers and/or diffusers shall be designed and specified for 50 fpm terminal velocity.

The entire installation is required to be performed by a licensed HVAC contractor in a first-class, workman-like manner.

All material shall be new and of commercial grade, and bear an underwriter's label, where such labeling is applicable.

Food Service Tenants

All the items indicated with the General Requirements apply with the following additional criteria:

- The Tenant shall review and comply with NFPA #96 and related codes and standards concerning cooking exhaust system requirements.
- All roof-mounted kitchen exhaust fans that handle a grease discharge shall be provided with an integral grease collector assembly and grease drain. Roofing protection and grease containment pads are required to be installed around the perimeter of each Tenants smoke/grease exhaust stack. The grease drain shall be emptied via a drain line to the Tenant's grease waste line, and connected to a point prior to that line entering the grease receptor.
- Tenants who specify the use of a rooftop centrifugal exhauster for their cooking facilities shall furnish proper

clearance between the exhauster and the roof.

- All cooking exhaust ducts shall be seamless and welded of at least sixteen (16) gage . Slope all ductwork at minimum of 2% (1/4" per foot) towards hood. Provide intermediate grease sumps and drains as required.
 - Grease ducts with cross section ≤ 155 square inches = 16 gage steel
 - Grease ducts with cross section > 155 square inches but < 200 square inches = 14 gage steel
 - Grease ducts with cross section > 200 square inches = 12 gage steel
- Range exhaust hoods shall be fabricated in accordance with all codes and shall be at least sixteen (16) gauge, or heavier, black steel, with all joints welded.
- Access doors shall be provided and be in the vertical face of the horizontal run, at the bottom of the vertical riser and/or as required by code.
- Provide automatic and manual devices for shutting down fuel or power supply.
- Kitchen range hood exhaust ducts shall be insulated with zero clearance, ceramic, 2 hour fire-rated insulation or installed in a 2-hour rated chase per applicable codes, and Landlord's insurance carrier's requirements at the actual in-use temperature design. Tenant shall furnish complete specifications of type of insulation on their submittal drawings.

- Hoods and exhaust systems for food processing shall be protected by a fire extinguishing system, installed in accordance with all the requirements of the jurisdictional authorities and Landlord's insurance carrier. All systems shall be furnished with access panels, as required.
- Make-up air systems are required for all exhaust systems designed for a minimum of eighty percent (80%) of all exhausted air quantity. The exhaust and make-up air systems shall be electrically interlocked for simultaneous operation of both exhaust and make-up.
- Exhaust hoods shall be fabricated in accordance with all codes and shall be at least sixteen (16) - gauge or heavier stainless steel, with all joints welded.
- Tenant shall be responsible for installing grease traps for its premises in accordance with all local requirements and codes per the NYC Building Code. Existing to be field verified. All costs at Tenant's expense.
- Prior to the use or concealment of any portion of a grease duct system, a leakage test shall be performed. Ducts shall be considered to be concealed where installed in shafts or covered by coatings or wraps that prevent the ductwork from being visually inspected on all sides. The duct installer shall be responsible for providing the necessary equipment and performing the grease duct leakage test. A duct leakage test, in accordance with this section, shall be per-

formed for the entire duct system, including the hood to duct connection. All tests must be performed in the presence of the Special Inspector.

Noise Level Limits

Any Tenant whose operations generate sound that would disturb or affect neighboring tenants is required to limit noise transmission from their space.

Tenant is responsible for isolation of all equipment so that vibrations and

noises are not transmitted. Any noise deemed objectionable by Landlord’s Site Representative shall be corrected at Tenant’s expense.

The source of sound may include but not be limited to: patrons, background music, activity levels, Tenant’s HVAC system or equipment noise and/or vibration, and food preparation.

In the event that the maximum Sound Pressure Level values are exceeded, the Tenant shall propose noise mitigation measures that may include but not be limited to: a suspended acoustical or gypsum board ceiling on vibration isolation hangers; sound attenuators at return air openings in the event that the space above the suspended ceiling functions as a return air plenum; sound attenuation glass-fiber batts in the ceiling cavity.

In the event that the Tenant’s operation includes loud background music or noisy food preparation or other major noise producing activity or equipment, Tenant shall engage a professional acoustical consultant to provide the following information:

- A listing and location of the major noise or vibration sources within and at the limits of their demised space along with measured values for each element.
- A noise and vibration mitigation plan for each of the noise/ vibration sources.
- The acoustical consultant shall be a member of one or more of the following: National Council of Acoustical Consultants; Institute of Noise Control Engineers; Acoustical Society of America. The Tenant shall provide a written report, prior to construction, for review by the Landlord containing the following Information:
- A summary of the acoustical consultant’s analysis and calculations.
- Recommended noise mitigation measures, if required.

Vibration Mitigation

Tenant shall provide the following vibration isolation of suspended equipment, piping and ductwork:

Fan coil units, makeup air or exhaust air fans hung from

structure above: Vibration isolation hangers equal to Mason Industries Type 30. Provide minimum 1.0” static deflection springs for equipment less than 5 hp. And 1.5” deflection springs for equipment 5 hp. and above.

HVAC and plumbing piping; Vibration hangers equal to Mason Industries Type HD with a minimum static deflection of 0.2”.

A.C. Units or fans on roof above: Package rooftop units shall include a pre-fabricated isolation roof curb by the unit manufacturer. Condensing units for split system or fans shall be isolated using neoprene pad isolators in between unit and rooftop support system.

All ductwork, piping and equipment shall be supported per SMACNA and applicable codes.

Drawing Requirements

Tenant shall submit HVAC plans, prepared by a licensed mechanical engineer, for Landlord’s review and approval. Tenant’s HVAC drawings shall consist of, but not be limited to the following:

Floor plan and/or reflected ceiling plan at one-quarter inch (¼”) scale or larger, including all duct-work, exhaust systems, hoods, piping, and equipment.

Partial roof plan, if applicable, including location of roof-mounted installations and roof penetration details.

Schematic diagram of the HVAC system controls, including all fire/smoke detection and alarm devices with all manufacturers' model numbers indicated.

Equipment schedules, including air-handling units, condensing units, roof units, exhaust fans, air devices (diffusers, registers and grilles) and any other equipment including manufacturers' name and model number.

Interior elevations and complete details sufficient for construction.

Material and equipment specifications.

Heating, cooling and ventilation load calculations.

Design/Construction Coordination

The following items shall be noted on Tenant's plan, for clarification:

- Prior to making any pipe or duct roof penetration and/or positioning of any equipment on the roof, all the proposed locations and/or penetrations shall match locations, as indicated on Landlord-approved plans, and approved by Landlord's construction field coordinator.
- All equipment is to be supported from top chord of joists/beams only. No weight can be placed on the roofing deck or insulation.
- Tenant's General Contractor shall be required to furnish temporary weatherproofing of all roof penetrations, until Landlord's roofing contractor has made final patch.
- Tenant's General Contractor shall provide a fire watch and portable fire extinguisher (minimum size 2A-20BC), wherever any welding is done within the Tenant Space. The person performing the fire watch shall remain in the Demised Premises for at least one (1) hour after the completion of any welding.
- Any required roof penetrations shall be performed in coordination with Landlord's roofing contractor and as outlined in HVAC Design and Construction Criteria.
- All mechanical equipment, pipes and ducts penetrating and/or located on roof shall be painted to match color of the existing roof. Use the appropriate coats of primer

pre-treatment, prior to the final coat. The final coat of the roof matching color shall be approved by Landlord. Tenant's store space number shall be permanently stenciled on one side of the roof-mounted HVAC unit with minimum three-inch (3") high letters.

- Tenant contractor shall furnish air-balancing reports for HVAC/smoke exhaust equipment.
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Tenant is to install a new meters that meet Macerich's meter specifications. Work is to be performed by a Landlord-approved electrician / plumber and verified by Macerich, and will be at the Tenant's sole cost.

METER SPECS

Tenant may install the meter specified by Macerich or approved equal. Meter must meet the following criteria:

Electric:

- Meters must be revenue grade.
- There must be at least a 6-digit display.
- Meter must be able to read demand (kW) and usage (kWh).
- The meter must capture the electric usage of the entire Tenant space, including HVAC units. If this is not possible, then it must be noted.
- If using a meter with CTs, note if a multiplier is required and what the multiplier is on the face of the meter.

Water:

- Meter must be properly sized for the water flow in the space. basd of flow and pressure drop.
- Typically, the size of the meter should match the size of the water line being served, or the meter can be 1/4" smaller than the line. For example, if a 1" water line servicing the space, a properly sized meter would be 3/4" or 1".

Installation Requirements:

- Meters must be installed by a Landlord approved electrician / plumber.
- Installation / location must be verified and approved by the Operations Manager, or a member of the Operations staff, at the property.
- Proof of inspection must be sent to the Energy Management Department (Alaine Marx, alaine.marx@macerich.com) and should include the following:
 - Date of installation or recommissioning
 - Picture of the meter at time of installation or recommissioning.
 - Picture should be clear and should display kWh and kW legibly.
 - Confirmation that the meter indicates all utilization within the tenant space.
 - Meter make and model
 - Metering Units (e.g. gallons, kWh, kW, etc.)
 - Multiplier, if applicable

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Landlord Work

Landlord will provide for Tenant electrical service connection in the switchboard room with spare breaker.

Landlord may furnish an empty service conduit(s) from Landlord's service area to a location within or near Tenant's Demised Premises selected by Landlord. Service conduit shall terminate at location determined by Landlord. Where Landlord has not provided a service conduit, Tenant Contractor shall install to Premises. At grade level electrical conduit may be installed at least 4" under the slab and must be in Schedule 40 PVC conduit. Conduit is never allowed to be installed in the slab or less than 4" below slab.

Landlord provided electrical service for Tenant is based on twenty (20) watts per square foot of floor area of the Tenant Space for retail shops and thirty-five (35) watts per square foot for food service Tenants.

Landlord will provide main telephone terminal board at a location outside the Tenant Space, selected by Landlord, for Tenant connection to telephone service. Landlord may furnish empty conduit from the main telephone terminal board to the Tenant's demised premises. Service conduit shall terminate at an location determined by hte Landlord.

Tenant shall furnish and install complete wiring within the Demised Premises for the telephone system, including backboard cabinet, outlets and service cable to the Tenant

Space from the main terminal board located outside the Demised Premises. Apply for telephone service to the serving telephone company and comply with their regulations and requirements.

System Design

All Tenant electrical metering is a redistribution by Landlord, Tenants to install new meter per required specification from Source One. The Landlord is the Tenant's electrical utility contact.

All conduits shall be concealed in finished areas. Minimum conduit shall be one-half inch ($\frac{1}{2}$ ") diameter. All conduit concealed under slab shall be three-fourths inch ($\frac{3}{4}$ "). No conduit shall be allowed to be installed in the slab unless approved by Landlord.

As required, Tenant shall place properly sized main-fusible disconnect switch with fuses, or main circuit breaker in panel boards, within the Demised Premises.

All homeruns to panels are to be rigid conduit or EMT (compression fittings required) within space. In Plaza common areas, rigid conduit to be used in location where the height of the conduit is 7'-0" AFF or less, subject to Mall Management.

All wiring within the demising walls shall be installed in conduit. "BX" or "MC" is acceptable within partition walls only, for runs not greater than 6'-0" in length. "ROMEX" type

wiring shall not be permitted.

All wiring shall be copper only. All conductors are to have 600-volt insulation, type THW, THWN, or THHN.

Minimum wire size shall be No. 12 AWG excluding low voltage wiring.

All wiring shall be color coded per NEC. Same color shall identify same phase throughout the system.

Any exposed low voltage wiring must be plenum rated.

Tenant shall provide flexible metal conduits only for connections to vibrating equipment, lighting fixtures, show cases, etc., as required, maximum length six feet (6'-0"), minimum one-half inch ($\frac{1}{2}$ ") electrical trade size. Furnish liquid-tight flexible conduits for outdoor installations. Install all flexible conduit in accordance with NEC.

Watertight fittings shall be furnished, as required by NEC. Motors $\frac{1}{2}$ HP or less shall be 120 volts, single phase. Motors $\frac{3}{4}$ HP or more shall be 208 volts, 3 phase or 480 volt 3 phase as applicable.

Main service feeders shall be treated for the sum of all loads, plus twenty-five percent (25%) spare capacity at a minimum. Branch conduit connected loads shall not be in excess of eighty percent (80%) of rated capacity.

Panel connected loads within the Tenant Space and main

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ELECTRICAL CRITERIA

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feeder conductors (from Landlord switch gear to panel) shall be balanced within plus or minus ten percent (10%) across all phases.

As required by governing codes, Tenant shall furnish exit and emergency lights throughout the Demised Premises.

Provide weatherproof disconnect switch and 120 volt duplex service outlet on all roof-mounted HVAC units.

Conduit and raceway hangers, clamps, light fixtures, junction boxes, supports, etc. shall be fastened to joists or beams. Do not attach anything directly to the upper level slab, roof deck, piping or ductwork above.

The electrical system serving the Tenant Space shall be grounded in accordance with the latest requirements of the NEC. System shall be grounded to the main cold water pipe and structural steel in the Demised Premises, where applicable.

Ground fault circuit interrupters shall be installed in branch circuits, where required by code.

Manual or magnetic starters, switches, contacts, relays, time switches, safety devices and other controls shall be commercial-type with heavy-duty ratings and shall be installed in strict conformance with the manufacturer's recommendations and applicable codes.

Voltage drop, based on actual loads, shall be indicated on

the one line riser diagrams for all feeders and sub-feeders, per NEC. Furnish flexible conduits only for short connections to vibrating equipment, lighting fixtures, show cases, etc., as required. Minimum size is one half inch ($\frac{1}{2}$ " diameter. As required, provide lock-on devices on panel circuit breakers for exit and emergency light and fire/smoke alarm system. Furnish a complete typewritten identification directory card for all main and branch circuits in the panel door.

All devices and equipment in finished areas shall be flush mounted where possible. No lighting can be installed outside the Tenant Space, in the common area, and/or ceiling for storefront lighting or sign illumination.

Prior to making any conduit, pipe or duct-roof penetration and/or positioning any equipment on the roof, all the proposed locations and/or penetrations shall match locations, as indicated on the Landlord approved plans, and be approved by Landlord's on-site representative.

All necessary roof penetrations made by required Landlord roofing contractor, coordinated with Tenant's General Contractor at Tenant's expense, shall be subject to Landlord's approval. Weatherproofing of any installation shall be performed by Landlord's authorized roofing contractor. Tenant's General Contractor shall pay all costs directly to such roofing contractor. Tenant's General Contractor shall be required to provide temporary weatherproofing for all roof penetrations until Landlord's roofing contractor has made the final patch.

Tenant's electrical contractor shall furnish an identification nameplate on Tenant's main disconnect switch in Landlord's switch board. Nameplates shall be one-eighth inch ($\frac{1}{8}$ " thick plastic, black on white, and etched letters. The minimum size shall be one inch (1") with only the Tenant's space number engraved on such, permanently affixed.

All materials are required to be new and of commercial grade and have affixed Underwriter's Laboratories labels, where such labeling applies. All conduits shall be galvanized rigid heavy wall steel, or EMT. Sizes shall be determined per NEC. Watertight fittings shall be provided, as required by code.

Pull boxes or junction boxes are required to be minimum twelve (12) gauge galvanized steel. Boxes in wall shall be galvanized pressed steel or cast metal. Caulk around boxes to eliminate noise transmission is mandatory.

Lighting panels shall have quick-lag molded case breakers bolted to buss. Half-size or tandem breakers or plug-ins shall not be allowed. Distribution panels shall be either fusible-type (with quick-make, quick-break interrupter switches) or molded case breaker type.

Electrical Service

Tenants with a service size of 200 amps or below shall provide the following:

- Properly sized fuses in the main fusible disconnect

switch or circuit breaker (minimum of 100 amps) in Landlord’s switchboard.

- Provide a meter base and meter, per New York Power Authority requirements and as directed by Landlord.
- Tenant to extend, as required within the Tenant Space, the electrical service conduit to Tenant’s main disconnect switch or main circuit breaker equipped panel board.
- Tenant shall install four (4) properly sized copper conductors from Landlord switchgear, through the Landlord conduit to the Tenant’s main disconnect device within the Demise Premises.

Tenants requiring a total electrical load of 201 amps and above shall furnish the following:

- Free-standing, single-section, indoor-type, front-accessible switchboard with a Current Transformer (CT) compartment and meter socket on the front panel, fused main disconnect switch and properly sized fuses. All outgoing conduits shall be through top of section. Tenant shall provide CT cabinet and metering as per New York Power Authority requirements to be installed in the Tenant premises.
- A main fusible disconnect switch, to be installed by Landlord’s electrical contractor at Tenant’s sole cost and expense.
- Where applicable, Tenant’s engineer to design sized

KVA transformers where voltage is stepping down.

Communications Services

1. Landlord has installed a high-speed fiber infrastructure at the Center for purposes of providing voice and data access throughout the Center. All access for Tenant’s voice and data services must be sourced through Landlord’s designated provider which is currently Granite Telecommunications or such alternative provider as designated by Landlord. The vendor contact for voice and data services can be found in the Tenant Criteria Package under General Information.
2. For all wiring needs in common electrical rooms, a required vendor must be used to maintain the integrity of the electrical room. The vendor contact for low voltage wiring needs can be found in the Tenant Criteria Package under General Information.

Lighting Efficiency

Tenants are required to upgrade their lighting system to meet or exceed New York City Energy Conservation code in accordance with New York City Council File Number Int 1165-2016. Lighting designs shall be submitted and approved by the Landlord and local authority prior to tenant build-out. The Landlord reserves the right to back charge installation fees to Tenant found not to be in compliance with New York City Energy Conservation Code.

Drawing Requirements

Tenant’s electrical drawings shall consist of, but not limited to, the following:

- Electrical floor plan at one-quarter inch (1/4”) scale or larger (for power).
- Reflected ceiling plan at one-quarter inch (1/4”) scale or larger (for lighting).
- Electrical riser diagram, including type and size of feeders, fuses, disconnect switches and main breakers.
- Electrical panel schedule(s), including breaker sizes and all connected load calculations.
- Lighting fixture schedule, including type, lamps, mounting, wattages, quantities and manufacturer’s catalog number.
- Fire/smoke alarm system controls and inter-connections.
- HVAC control schematic details.
- Electrical load summary, including all connected and demand load calculations.
- Equipment and materials specifications.
- Smoke exhaust fan control and connection details, if applicable.

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PLUMBING CRITERIA

Design/Construction Coordination

The following items shall be noted on Tenant's plans for clarification:

- Core drilling, where permitted, is to be provided by Landlord's designated contractor, at Tenant's expense, per project standards. Coordinate with Landlord representative.
- Prior to making any pipe or duct roof penetration and/or positioning of any equipment on the roof, all the proposed locations and/or penetrations shall match locations as indicated on Landlord approved plans, and approved by Landlord's on-site representative.
- No roof work of any kind can be performed prior to onsite meeting with the Landlord's On-Site Representative. Any required roof penetrations shall be performed in coordination with Landlord's roofing contractor, as outlined in HVAC Design and Construction Criteria.
- All roof and slab penetrations made by Tenant's General Contractor shall conform to Landlord's standard criteria and shall be subject to Landlord's approval as to location and construction details.
- Weatherproofing of any roof penetrations required by Tenant shall be performed by Landlord's authorized roofing contractor. Tenant's General Contractor shall pay all such costs, therefore, directly to such roofing contractor upon their demand. Any failure to follow this

procedure, and any damages resulting there from, shall be at the Tenant's sole cost and expense.

- All pipes penetrating and/or located on the roof shall be painted to contrast roof color, grey specification to be provided by Landlord (for non gas pipings only). Use the appropriate coats of pre-treatment primer prior to the final coat. Final coat of the roof matching color shall be approved by Landlord.
- Tenant's General Contractor shall provide a fire watch whenever any welding is done within the Demised Premises. The person performing the fire watch shall remain in the Tenant Space for at least one (1) hour after the completion of any welding.

Landlord Work

Mall is master metered. Tenant is responsible to install remote meter at a height no higher than five (5) feet that will be read by Landlord representative and billed on the basis of usage. If applicable, a cold water service distribution system and valved outlet connections within or adjacent to the Tenant Space. The outlet shall be valved, sized and placed at a location determined by the Landlord.

A sanitary sewer service main line and four-inch (4") plugged wye (Y) connection shall be installed beneath the slab and/or grade of the Demised Premises, at a location and invert elevation selected by Landlord.

Natural gas service is available for food service Tenants from the gas service manifold and meter area located outside the Demised Premises, as selected by Landlord. Tenant shall apply for a Direct Meter from National Grid.

The Landlord shall provide a minimum three-fourths inch (3/4") cold water service system and valved outlet connection within or adjacent to Food Service lease spaces.

A four-inch (4") sewer connection shall be located below grade or slab for Food Service lease space. See Plumbing General Requirements for grease interceptor requirements.

System Design

Tenant shall design and develop a complete plumbing system with all the necessary facilities to serve the Demised Premises. This includes installing a sanitary sewer system, a domestic hot and cold water system and gas system, if required. Tenant shall make all connections to the existing utility services provided by Landlord.

Sanitary sewer vents are required to be routed and connected to the existing sanitary sewer vent system (where available) to lower level Tenants or run along the rear demising walls and building columns, if possible, and through the upper level and roof, as directed by Landlord.

As a minimum, Tenant shall design, furnish and install one (1) complete Handicapped accessible toilet room facility for Tenant's employees meeting both local and ADA require-

PLUMBING CRITERIA

KINGS PLAZA SHOPPING CENTER

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ments. Toilet room shall include at least one (1) water closet, one (1) hand sink (with hot and cold water provisions), one (1) floor drain and one (1) sanitary floor or wall clean out.

Tenant shall provide a main water shut off valve located at eye level in a wall behind a labelled access door. Locate in or near employee restroom as designated by Landlord.

Water Efficiency

1. The Tenant is required to install waterless urinals in tenant restrooms when urinals are used.
2. Low-Flow water closets using 1.6 GPF or less gallons per flush will be installed in all tenant spaces.
3. Operation sensors and low-flow heads using 0.5 GPM or less in lavatories.

General Requirements for Tenant Work

All roof and slab penetrations made by Tenant are subject to Landlord's approval as to location and construction details. Weatherproofing of any roof penetrations shall be performed by Landlord's authorized roofing contractor. Tenant shall pay directly to the Landlord required roofing sub-contractor and expense for Landlord roof work.

Core drilling, where permitted is to be provided by Landlord's designated contractor, at Tenant's expense, per project standards. Coordinate with Landlord representative.

Where Landlord has not provided a plumbing vent Tenant connection, Tenant is required to route and/or locate, all toilet vent stacks so that all roof penetrations occur at a minimum of ten feet (10'-0") away from any mechanical equipment intakes or outside air intake hoods, per Landlord's direction.

Tenant shall provide floor or wall clean-outs at every fifty foot (50'-0") (minimum) length of sanitary piping, at the most remote end of each sanitary sewer branch and at each change of direction of waste line that is greater than forty-five (45) degrees. Ready access to the clean-out shall be furnished.

Three-inch (3") floor drains with trap primers are required in the toilet and storage room areas.

Traps shall be on all fixtures, except those with integral traps. Trap primer shall be provided, if denoted by Code.

Grease traps must be approved by by NYC Department of Buildings (NYC DoB) and Sewer Authority. Cast iron grease traps and/or hair interceptors, as required by code and Landlord for use in Tenant's food processing, product processing, hair styling or pet stores, shall be procured and installed by Tenant in accordance with code.

All cold and hot water piping shall be type "L" seamless hard-drawn copper tubing above ground and type "K" below ground and be in conformance with ASTM B88-48. Fittings

are required to be wrought, suitable for 200 psi. Connections to dissimilar materials shall be made with dielectric unions. Joints shall be 95-5 tin antimony for 200 psi.

All exposed piping above Tenant's ceiling shall be insulated with minimum of one-half inch (1/2") glass fiber with non-combustible UL rated vapor barrier jacket, insulation shall conform with all fire and smoke ratings per ASTM E84, NFPA 255, UL 723 and Landlord's Insurance Carrier.

Tenant shall provide and install an electric domestic hot-water heater supported from the floor or on a platform above the toilet room with an ASME approved temperature and pressure relief valve. Discharge from said hot-water heater temperature and pressure relief valve shall be piped to a floor drain. At Tenant's option, instantaneous water heaters may be used.

Tenant shall furnish a four-inch (4") high, watertight drip pans under all water heaters (located above the ground floor) with a drain piped to the floor drain. Install vacuum breaker to typical relink valve piped to floor drain. All piping, clamps, supports, etc., shall be fastened to joists or beams. Do not attach anything directly to the deck or ductwork above.

Gas Service

Natural gas service may be available for restaurant Tenants for gas-fired cooking, as available and approved by Land-

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lord. Tenant shall notify Landlord of such requirement(s) during or prior to the Preliminary Plan submission. If available and approved, Tenant shall indicate on Tenant's final drawings the complete design, including the load calculations of the gas system in the Demised Premises. The entire piping system and equipment or fixtures shall be furnished with automatic shut-off devices/controls and color coded or identified as such, as required. Tenant shall arrange with the local utility company for gas service to the Tenant Space, comply with their requirements for metering and service and extend main pipe (properly seized) to the multi-meter manifold area (if available) located outside the Demised Premises. The complete routing and installation of the piping shall be at Tenant's sole cost and expense. Landlord reserves the right to deny gas service.

All gas piping shall be by Tenant and shall be schedule 40 black steel, ASTM A53 with welded or 150 lb. screwed fittings. All valves, fittings and specialties shall conform to governing codes and requirements of the utility company, as it relates to piping and equipment installation and testing methods and procedures.

Tenant is required to ensure that all slab penetrations within the Tenant Space (and through the roof) are properly sealed and remain watertight to prevent possible water leakage and/or damage, by Landlord's designated contractor at Tenant's expense. Any damage caused from failure to do so shall be at Tenant's sole risk and expense.

Shut-off valves shall be provided at all connections to fixtures. All underground sanitary and vent piping shall be service-weight cast-iron, with fittings of the same weight as pipe or PVC Schedule 40 may be used in accordance with the requirements of the local authority. All above ground sanitary piping within the demising walls shall only be service-weight cast-iron, with fittings of the same weight as the pipe.

All materials shall be new and of commercial grade and bare underwriter's label(s), where such labeling applies.

Landlord Work

Landlord will provide either a service main or a capped branch line connection to the Tenant Space, at a location selected by Landlord. Landlord may furnish, as deemed necessary, a sprinkler system for the Demised Premises that is in compliance with all local codes and Landlord's insurance carrier. Tenant is required to modify and upgrade the system as required by the store design and provide hydraulic calculations to validate their design. Confirm with Tenant Coordination.

Drawing Requirements

Tenant's plumbing drawings shall consist of, but not be limited to, the following:

- Plumbing floor plan at one-fourth inch (1/4") scale or larger, including all plumbing fixtures, proper piping

sizes, equipment locations and plumbing to Landlord's existing system.

- Isometric diagram of water system (hot and cold) within the Demised Premises.
- Isometric diagram of sanitary system and venting system within the Tenant Space.
- All applicable details for floor drains, cleanouts, slab and roof penetrations, etc., sufficient for construction.
- Specifications including all materials and equipment with also the manufacturer's name and model number.
- Plumbing fixture unit calculations.
- Schedules of fixtures and equipment including, but not necessarily limited to, water heater, lavatory, water closet, water meter and floor drains.
- Isometric diagram of gas system, including all equipment locations within the Demised Premises, and at the gas header and meter location placed outside the Tenant Space.
- Gas load calculations, as applicable.

The following items shall be noted on tenant's plans for clarification:

"Prior to making any pipe or duct roof penetration and/or positioning of any equipment on the roof all the proposed locations and/or penetrations shall match locations indicated on Landlord-approved plans."

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FIRE SUPPRESSION CRITERIA

System Design

Tenant shall connect a fire protection system, to either Landlord's sprinkler main or a branch line connection to the Tenant Space, using approved mechanical fittings. Tenant shall furnish all branch piping and sprinklers required to complete the sprinkler system within the Demised Premises.

Tenant's sprinkler system design in remodel areas shall be based upon a single source of supply, Ordinary Hazard hydraulically calculated system as outlined in NFPA #13, FDNY and Landlord's insurance carrier's requirements.

- Density – 0.19 gpm/square foot.
- Operating Area: Hydraulically most remote 1,500 square feet (the location at partitions shall be ignored when choosing the remote area).
- Temperature Rating: 165° F.
- Orifice Size: one-half inch (1/2") or 17/32" (no mixing orifice sizes).
- Sprinkler Spacing: 130 square feet maximum.
- Hose allowance: Hose stream allowances are not required within Tenant system calculations. Hose stream allowances have been included in the calculations for the service main.
- Water supply available at the Tenant connection to service main will depend on the location. Landlord shall

supply tenant with hydraulic nodes as required.

Tenant shall furnish an inspector's test connection. The test connection shall be installed off the most remote sprinkler, as physically possible, from the sprinkler supply main or capped outlet connection located in the Tenant Space. Inspector's test connection shall be equipped with a one inch (1") corrosion-resistant shut-off valve, and minimum three quarter inch (3/4") hose bib connection with five feet (5'-0") length of hose piped to discharge to a suitable sanitary sewer receptor within the Demised Premises. All sprinkler system tests shall be witnessed by Landlord's On-Site Representative and local jurisdictional authorities, as required.

All piping shall be supported from the top chord of beams or joists only. Do not attach anything directly to the upper lever slab or roof deck. Fastening and/or suspension devices shall be attached to the building structure only. Final connection to the Landlord's sprinkler main shall not be made until the entire system within the Tenant Space is pressure-tested and ready for service.

All piping shall be designed in accordance with NFPA #13 and installed per Landlord's insurance carrier's requirements. All piping shall be threaded schedule 40 black steel meeting ASTM A135. All pipe fittings are required to be pressure class 175.

All hangers are to be of an approved type and spaced in accordance with NFPA #13. (Seismic bracing to be installed per I.B.C)

Tenant shall provide appropriate-type fire extinguishers in stock room areas and elsewhere throughout the Tenant Space, as required by all local authorities having jurisdiction and Landlord's insurance carrier. Fire extinguishers shall be furnished, as directed by the Fire Marshal, and be easily accessible. Fire extinguishers shall be serviced and inspected periodically. The entire installation is required to be performed by a licensed sprinkler contractor in a first-class, workman-like manner.

Tenant shall not be allowed to stock the Demised Premises until the entire sprinkler system has been inspected, approved and put into operation. All materials and equipment under this section shall be new and listed by Underwriter's Laboratories, Inc. and Factory Mutual for fire protection system installation, and approved by all authorities having jurisdiction and governing codes.

Food Service Tenants

All the items indicated within the Fire Protection System General Requirements apply with the following additional criteria:

- All walk-in coolers/freezers shall be supplied with non-freezing sprinklers.
- Demised Premises with exhaust hoods, grilles and/or cooking facilities shall be equipped with a fire extinguishing system, including an alarm system. Furnish specific details on the sprinkler plans. Sprinkler system shop drawings shall be approved by the local authorities prior to the installation. The sprinkler system shall comply with all applicable sections of the NFPA #96 pamphlet. Upon activation of this system all cooking equipment is required to shut down automatically.
- Connected to Landlord's Fire Alarm System at Tenant's expense.

Drawing Requirements

Tenant's sprinkler drawings shall include, but not be limited to, the following:

- A reflected ceiling plan at one-quarter inch (1/4") scale or larger, including all sprinkler locations, pipe size and locations.
- Specifications, including all details, materials and equipment.
- Sprinkler shop drawings, as prepared by Tenant's sprinkler contractor.

Sprinkler Shop Drawing Submittal

The Tenant's sprinkler contractor shall submit Sprinkler Shop drawings per the NYC Department of Buildings requirements.

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SMOKE/FIRE ALARM CRITERIA

Landlord Work

Landlord will provide a fire alarm system as follows:

A central fire alarm system serving the business center.

A fire alarm junction box and SIGA-CT Addressable Modules for Tenant's system connection.

The junction box and SIGA-CT Addressable Modules shall be located by Landlord.

Landlord's fire alarm contractor shall make final connections and all associated EST-3 program updates related to the interconnection to Landlord's fire alarm system at the Tenant's sole cost and expense, and update per the latest NYFD code.

General Requirements for Tenant Work

Tenants shall furnish all fire alarm devices from New York Fire Detection, Inc. (required) to be connected to the Landlord's EST-3 Fire Alarm and Life Safety Network System including:

- An EST/Edwards fire alarm control panel with Initiation Device Circuits (IDC) and Notification Appliance Circuits (NAC) configured for a minimum of 24 hours standby power followed by 5 minutes of a full load alarm condition.
- All Tenant initiation devices shall be addressable (con-

nected to the building system) utilizing Signaling Line Circuits (SLC) for all initiation devices.

- Smoke detectors shall be located in accordance with NFPA-72 as follows:
 - Electrical closets/rooms
 - Tenant stockrooms
 - Tenant sales areas
 - In all areas where required by local Authorities Having Jurisdiction or other governing laws, codes or standards.
- Duct smoke detector(s) shall be installed as required by the International Mechanical Code (IMC) in accordance with NFPA-72.
- A waterflow switch and tamper switch shall be installed by the Fire Sprinkler Contractor on the sprinkler main at point of entry into Tenant's Demised Premises. The waterflow and tamper switches SHALL BE readily accessible for recurring inspection, testing and maintenance. The condition of the location of the switches SHALL BE carefully coordinated with the Fire Sprinkler Contractor and the Landlord's General Contractor.
- An approved inspector test valve IS REQUIRED TO BE PROVIDED by the fire sprinkler contractor in accordance with NFPA-13 section 8.17.4.2 to appropriately and efficiently test the required waterflow device. A test connection utilizing a hose is prohibited.

- A recessed strobe light shall be located at the storefront ceiling adjacent to the storefront lease line and visible from the Center Common Area.
- An HVAC shutdown relay shall be provided and configured in accordance with NFPA-72.
- Provide all wiring in accordance with most recent editions of NFPA-70, The National Electric Code (NEC), and NFPA-72, The National Fire Alarm and Signaling Code and as indicated in Tenant Fire Alarm Panel Interface Diagram.
- Initiating Device Circuit (IDC) and Signaling Line Circuit (SLC) wiring to be 18 gauge FPLP, Class B, Notification Appliance Circuit (NAC) wiring to be 14 gauge FPLP, Class B.
- A Tenant utilizing kitchen hood(s) is required to have an independent fire suppression system within the hood(s) and is required to connect the suppression system to Landlord's fire alarm system. (For final connections, see Landlord Work.) Tenant shall install an independent fire suppression system and provide conduit and wire to Landlord's SIGA-CT Addressable Modules.
- Wiring, as specified by the Fire Alarm Manufacturer and Authorized EST/Edwards fire alarm equipment distributor.
- Alarm sounders shall be audible from the Center Common Area.

- All zones shall be clearly labeled on the Tenant fire alarm control panel. Separate initiation device zones shall be provided for smoke detectors, manual pull stations, duct smoke detectors, heat detectors, water flow switches, and tamper switches. If Tenant Space occupies more than one level, additional zones shall be provided so that the separate initiation device zones are assigned to each level independently.
- Tenant shall furnish a fire watch and portable fire extinguisher minimum size 2A:20BC whenever any welding is done within the Demised Premises. The person performing the fire watch shall remain in the Tenant Space for at least one (1) hour after the completion of any welding.

Sequence of Operation – Fire Alarm System

The shut down/loss of power to Tenant's panel shall initiate a trouble signal at the Tenant's panel and Landlord's main fire alarm panel. The sub panel for the Tenant fire alarm system shall transmit all signals, alarms, troubles and supervisory conditions to the Landlord's EST-3 Addressable Fire Alarm and Life Safety Network. The Mall EST-3 shall provide the off premises signaling and Fire Department Notification.

When required, all Tenant panels shall transmit each signal individually as distinct outputs to the SIGA-CT modules.

Activation of the Tenant's water flow switch, manual pull stations, smoke detectors and heat detectors are required

to initiate an alarm signal at the Tenant's fire alarm control panel that shall then:

- Produce sprinkler signal at the Tenant's panel and Landlord's EST-3 fire alarm network panels
- Activate the Tenant's audible and visual alarm indicating devices.
- Shutdown all required HVAC systems(s).

Activation of the duct smoke detector shall initiate a supervisory signal to Tenant's fire alarm control panel that then shall:

- Produce a smoke signal condition at Tenant's panel and Landlord's EST-3 fire alarm network panels.
- Shut down all required HVAC system(s).

Activation of the fire sprinkler valve tamper shall initiate a supervisory signal to Tenant's fire alarm control panel that then shall:

- Produce a supervisory signal condition at Tenant's panel and Landlord's EST-3 fire alarm network panels.

Note: The fire sprinkler valve supervisory and duct detector supervisory shall be independent and distinct signals transmitted to the Landlord's EST-3.

The activation of the kitchen-hood fire-suppression system then would send an alarm signaling directly to Landlord's

main fire alarm panel and Tenant fire alarm panel simultaneously.

Final Testing of Fire Alarm System

Each Tenant fire alarm system shall be acceptance tested in accordance with NFPA-72 by the EST/Edwards equipment supplier PRIOR TO REQUESTING final inspections with the FDNY. The EST/Edwards Fire Alarm equipment supplier shall provide a printed and electronic copy of both the NFPA-72 *Fire Alarm and Emergency Communication System Record of Completion* and the *Fire Alarm and Emergency Communication System Record Inspection and Testing Form* to be stored at the fire alarm panel prior to the FDNY inspections which shall be scheduled with and witnessed by Landlord's on-site representative. Written approval of the Tenant's fire alarm system and operation shall be obtained from the Building Department and the FDNY offices and a copy shall be submitted to Landlord's on-site representative.

- The fire sprinkler waterflow and valve tamper switches MUST be readily accessible or the waterflow and valve tamper switches will be required to be relocated to an accessible location at the Tenant's sole cost and expense.
- The fire sprinkler waterflow test SHALL be conducted utilizing an approved inspector's test valve arrangement in complete compliance with NFPA-13. If the test valve is not provided as required it shall be installed at the

Tenant's sole cost and expense. A test connection utilizing a hose is prohibited.

Food Service Tenants

All the items indicated within the Smoke/Fire Alarm System General Requirements apply, along with the following criteria:

- Heat detectors may be utilized in place of smoke detectors in the Food Tenant Demised Premises. An evaluation conducted by a NICET Level IV Fire Alarm Senior Engineering Technician shall investigate potential sources of ambient smoke, moisture, dust or fumes to determine if heat detectors should be installed rather than smoke detectors to minimize nuisance alarms in such areas. The intent to install heat detectors rather than smoke detectors shall be submitted to and approved by the FDNY.

Drawing Requirements Smoke Alarm Details & Standards

Tenant's fire alarm system drawings shall consist of, but not be limited to, the following:

- A fire alarm system riser diagram shall be incorporated as part of the electrical drawings.
- Location and wiring of equipment shall be indicated on the electrical floor and reflected ceiling plans (i.e. strobe light, smoke detectors, fire alarm control panel, etc.)
- A location map showing any duct detector and fire sprinkler shutoff valve is required to be affixed on the rear door of the fire control panel and shall be protected by a Plexiglas cover. Minimum size 8 ½" x 11".
- Fire Alarm shop drawings including a fire alarm layout floor plan and a fire alarm riser diagram shall be developed and signed by an authorized EST/Edwards representative that is also a NICET Level IV Fire Alarm Senior Engineering Technician to assure compatibility of equipment and design with the overall mall fire and life safety objectives and integrated alarm notification and smoke control functions.

All fire alarm "Completion Documents" shall be provided in accordance with NFPA-72 Section 10.18.2.

A copy of the required as-built fire alarm drawing(s), the "Fire Alarm and Emergency Communications System Record of Completion" form and the "Fire Alarm and Emergency Communication System Record Inspection and Testing Form" shall be stored at the tenant's fire alarm panel in an approved red cabinet permanently and clearly labeled "Fire Alarm Documents".

A second copy of the above listed documents shall be provided to the Landlord.

An approved cabinet is manufactured by Space Age Electronics, Model #SSU00672 "Fire Alarm Control Unit (FACU) Document Box".