

CONSTRUCTION CRITERIA

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Introduction

Information contained in this section has been assembled to assist the architect and the architect's consultants in preparation of Construction Documents and Specifications. The architect is responsible for adhering to the requirements outlined in the **Lease Criteria** as well as the following criteria.

Sunvalley Shopping Center will provide an opportunity for Tenant's to express their individual identity & branding through the use of high end, sophisticated and sustainable materials.

The following Construction Document Criteria and the Design Criteria, which are available on our website at <http://tenantcoordination.taubman.com>, were created to help define the Design Philosophy.

We encourage the use of sustainable design and construction practices for all aspects of Tenant improvements. Please reference the U.S. Green Building Council's website at usgbc.org for more information.

Landlord's approval of Tenant's design is intended to ensure that the Tenant's design respects the limitations of the Base Building systems; to ensure that the interfaces between the tenant systems and the Base Building systems conform to the respective limitations; and to assess that the Tenant's demand on the Base Building systems can be satisfied. Landlord approval does not insure satisfactory performance of tenant systems, nor compliance with any Code regulations and ordinances. It is the Tenant's sole responsibility to ensure that tenant systems will perform to the Tenant's satisfaction.

Project Information

Landlord's Tenant Coordinator: The role of the Tenant Coordinator is to serve as liaison between Landlord and the Tenant, Tenant's architect and Tenant's contractor. All plans and correspondence concerning Tenant's construction are to be submitted to the Landlord's Tenant coordination Department.

Tenant Coordination

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Building Information

Construction Type: IIA, 1 Hour Construction

Zoning Classification: Mercantile

Building Heights

First to Second Floor: +/-16'-0", Clear Height to underside of structure: +/- 14'-0", field verify

Second Floor to Roof: +/- 18'0", Clear Height to underside of structure: +/- 14'-0", field verify

Allowable Ceiling Height: First Floor = 11'-0"
Second floor = 13' 0"

Structural

Modifications and Alterations: Modifications and alterations to Landlord's framing structure and floors will not be permitted without Landlord's prior written approval. In the event that Landlord

approves Tenant's request, Tenant shall leave Landlord's structure as strong as or stronger than original design with finishes unimpaired. Conditions vary by location. Refer to Base Building Structural drawings for more information and Field verify all structural conditions:

1. **Floors on Grade:** Tenant shall provide a 4" concrete slab with a minimum strength of 3,000 PSI on a reinforced with 6" x 6" – W2.9 x W2.9 WWF in upper 1/3 of concrete on a vapor barrier (10 mil minimum). **Tenant shall provide additional compacted sand fill and remove excess as required.**
 - a. **Structural Design Loads:** First Level: 125 psf (unreducible) - subject to Landlord review and approval.
 - b. **Coordinate X-ray** requirements with Mall Facilities
2. **Upper Level Floors:** 2" concrete topping over concrete waffle floor structure. Approximate 2" depression may occur within concrete slab in designated areas adjacent to the Tenant's storefront lease line.
 - a. **Structural Design Loads:** Second Level: 75 psf (reducible).
 - b. **Coordinate X-ray** requirements with Mall Facilities
3. **Mezzanines:** Upper level floor framing has not been designed to support mezzanines. In the event an upper level Tenant is approved for a mezzanine, all structural enhancements of the floor framing and associated structure is the sole responsibility of the Tenant. Tenant shall submit structural mezzanine framing drawings and structural calculations verifying capacity of the base building structure, prepared by a structural engineer registered in the State of California for Landlord's review and approval.
4. **Roof:** Structural design loads subject to Landlord review and approval. Tenant shall submit loading, roof framing analysis and support details - prepared by a structural engineer registered in the State of California for Landlord's review and approval.
 - a. **Structural Design Loads:** Roof Level: 20 psf (reducible).
5. **Concrete Floor Penetrations:** Required by Tenant shall be coordinated with Landlord's Field Representative structural consultant and shall be engineered to fit existing conditions and installed according to the Standard Floor Penetrations on the website.
 - a. All floor penetrations in food service/preparation areas and toilet rooms shall have water tight sleeves.
6. **Vibration Isolation and Sound Attenuation:** Vibration isolation requirements must be provided for all equipment (floor mounted and suspended).
 - a. Speaker systems must provide sound attenuation materials and installation methods so as not to infringe on adjacent tenants quiet enjoyment.

- b. **Speakers must be located +/- 20ft from store entry.**

Floor - General Requirements

1. **Transitions: All floor finishes at the storefront lease line shall be the same finish floor elevation (flush) as the Landlord's mall floor and provide recessed Schluter Type or equivalent transition strips**
 - a. All toilet rooms are to have an ADA compliant marble threshold (or equivalent) to contain water in the event of a leak.
2. **Expansion Joints:** Expansion joints in sales areas must be detailed and illustrated in the Construction Documents. Expansion joint material must be compatible with the floor finish materials.
3. **Anti-Fracture Membrane - Floor Isolation:** It is recommended to install an Anti-Fracture Membrane at the column lines, transitions between the structural slab and any shrinkage cracks that are evident.
4. **Seismic Information** - Seismic restraint requirements must be provided for all equipment (floor mounted and suspended). The Seismic Joint must be detailed and illustrated in the Tenant Construction Documents for the storefront or floor areas. Joint materials must be compatible with the storefront and floor finish materials.

Mechanical Design

1. Landlord Provisions

a. Design Conditions (Based on Governing Energy Code)

- i. Indoor Conditions
 - i. Summer – Minimum 75° FDB
 - ii. Winter – Maximum 70° FDB
- ii. Outdoor Conditions
 - i. Summer – 95° FDB / 69° FWB
 - ii. Winter – 33° FDB

b. Toilet Exhaust System

- i. Tenant will need to connect ductwork to Landlord provided shafts for lower level tenants. Upper level tenants are responsible for their own roof openings which must be approved by Landlord.

2. Tenant General Requirements

a. Tenants designated to install Individual Heating, Ventilating and Air Conditioning Systems:

- i. Each Tenant shall provide its own individual system as designated by specific lease requirements (i.e. heating, ventilation and air-conditioning equipment and controls, ducts, insulation, water supply, venting and drainage, fresh air supply and return, exhaust and make-up air, dehumidification and humidification equipment, water saving equipment and all structural, plumbing and electrical work related thereto). All equipment shall be designed in accordance with governing codes and adhere to the criteria below where applicable.

b. Base Building Systems

- i. Tenant shall not make modifications to landlord's base building systems without prior approval from landlord.
- ii. Any damage done to the landlord's base building or systems by tenant during construction shall be repaired by the landlord at the tenant's expense.
- iii. Lower level tenants are to use Landlord provided common shafts for their outside air, relief air and general exhaust. The ductwork will need to be connected with backdraft dampers.

c. Professional Engineer: Tenant shall engage a professional engineer licensed in the state of California to prepare mechanical construction drawings and specifications.

d. Load Calculations:

- i. Tenant shall include space load calculations on the construction drawings.

- ii. Calculations shall conform to California Building Code – Energy Conservation, ASHRAE standards, and the landlord provided design conditions.
 - e. **Construction Standards:** All mechanical work shall be installed per governing codes and the landlord’s tenant criteria.
 - f. **As-Builts:** Upon completion of tenant build out, the tenant shall provide one (1) set of pdf as-built plans for all mechanical work to the landlord.
 - g. **Testing and Balancing**
 - i. The tenant shall use an AABC or NEBB certified HVAC balancing contractor to adjust and balance the tenant's HVAC systems.
 - ii. Balance shall be done per the design air quantities indicated on the tenant's design drawings, but not in excess of airflow capacity designated by the Landlord.
 - iii. A certified balancing report must be submitted to the landlord for review and approval at least two weeks prior to opening of the leased premises or as directed by landlord.
 - iv. If balancing is not performed by tenant the landlord shall balance the tenant’s HVAC system at the tenant’s expense.
 - h. **Space Odors:** Tenants that produce odors must make provisions for maintaining acceptable negative air pressures within their space with respect to adjacent tenants and the mall concourse. All exhaust roof equipment needs to be pointed a minimum of 30’ away from outside air intakes and locations approved by the landlord.
 - i. **Existing Work:** Existing systems from previous tenant cannot be abandoned in place and must be demolished entirely if not being re-used.
 - j. **Roof Openings:** Cutting and patching of roof openings shall be performed by the landlord’s contractor at tenant’s expense.
 - k. **Labeling:** Equipment shall be labeled as required by landlord tenant construction rules and regulations manual.
 - l. **Mechanical Load Calculation Check Sheets**
 - i. Shall be certified by engineer of record
 - ii. Submit with construction documents for landlord review process
- 3. Tenant Equipment and Control Requirements**
- a. **Equipment Access:** Proper access shall be provided and maintained for landlord and tenant installed equipment/accessories.
 - b. **Roof Mounted Equipment**
 - i. Tenant rooftop equipment shall be located in areas designated by landlord at specified heights and shall submit a roof plan showing all existing and new equipment within the vicinity of the tenant space.
 - i. Should the weight or location of tenant rooftop equipment require additional supports, screens, catwalks, roof hatches, etc.

they shall be provided by the tenant according to the landlord's specifications.

- ii. Tenant shall submit a roof loading analysis and support details prepared by a structural engineer registered in California. All equipment shall be mounted on rails and anchored to the supporting structure to withstand wind and seismic effects per governing codes. Anchorage requirements shall be provided on mechanical plans.
- iii. Roof equipment placement shall be done by crane or helicopter, equipment shall not be rolled across or improperly rested upon the roof. An equipment pick plan shall be submitted to the landlord for approval before commencement of rooftop equipment placement work.
 - i. If a crane or helicopter is being used, Tenant needs to contact FAA for approval. Verify required height for crane. Approval letter or documentation needs to be provided to Facilities team.
- iv. All rooftop equipment shall be painted according to landlord's specifications.

c. Restroom Exhaust Fans

- i. Inline or ceiling mounted.
- ii. Connect to landlord provided duct shaft.

d. Auxiliary Heat

- i. All tenant supplemental heating equipment shall be approved by landlord.
- ii. Reheat of conditioned supply air is not permitted per governing codes.
- iii. Electrical resistance heating shall be powered from tenant's panel.

e. Fire Dampers

- i. Shall be UL listed.
- ii. Provide at locations where ductwork penetrates a fire rated assembly.

4. Tenant Material and Installation Requirements

a. Hangers and Supports

- i. Shall be supported from structural members only (not secured to the deck above).
- ii. Additional intermediate structural supports for hangers shall be installed as needed upon landlord approval.
- iii. All duct hangers exposed to public view shall be wire or rod type, shall be evenly spaced, and shall be grouped as much as possible with other trades for uniformity.

b. Main and Branch Ductwork

- i. Shall be fabricated of minimum 26 gauge galvanized steel, flexible ductwork is permitted for final connection to air devices (maximum length as specified per governing code).

- ii. Main duct branch connections shall be via 45 degree entry, bellmouth, or conical type and shall be provided with a locking quadrant type volume damper.
- iii. Square and rectangular duct elbows shall have double thickness turning vanes.
- iv. Supply and outside air ductwork shall be insulated as required by governing codes.

c. SMACNA Ductwork Construction Standards

- i. Duct Class – 2 in. water gauge
- ii. Seal Class – A
- iii. Rectangular Metal Leakage Class – 6
- iv. Round Metal Leakage Class – 3

5. Tenant Food Service Requirements

a. Kitchen Hoods

- i. Type I hoods shall be installed where cooking appliances produce grease or smoke as a result of the cooking process.
 - i. Shall include UV light system for grease mitigation in ductwork.
 - ii. Shall be provided with an approved automatic fire suppression system complying with governing codes.
 - a. Before the fire suppression system is fabricated, the system's supplier shall obtain a permit from the Contra Costa County Fire Protection District CCCFPD.
- ii. Type II hoods shall be installed above dishwashers and appliances that produce heat or moisture and do not produce grease or smoke as a result of the cooking process.
- iii. Kitchen hoods shall be constructed and installed as required by governing codes.

b. Grease Ductwork

- i. Grease ductwork shall be constructed, installed, and tested as required by governing codes.
- ii. Grease ductwork shall be encompassed by an approved rated enclosure where required by governing codes.
- iii. Routing of grease ductwork and placement of access doors beyond the tenant's space shall be approved by landlord.

c. Kitchen Exhaust Fans

- i. Shall be up-blast discharge type bearing evidence of UL & NSF approval for kitchen exhaust service.
- ii. Locate a minimum of 30 feet horizontally away from outside air intakes or openings to the building.
- iii. Grease drain and trap.
- iv. Cleanout port.

- v. G2 grease guard rooftop defense system
 - vi. Minimum 40" discharge above the roof.
- d. Make-Up Air Units**
- i. Make-up air units shall be installed a minimum of 36" above the roof surface.
 - ii. Make-up air units shall be interlocked to start with the associated exhaust air system
- e. General Maintenance**
- i. Food service tenants shall clean their filters, hoods, duct systems, and grease collecting devices on a regular basis as determined by landlord.
 - ii. Tenants shall take the appropriate steps necessary to prevent the depositing and accumulation of grease on the roof, damage to the roof resulting from tenant neglect shall be repaired by the landlord at tenant's expense.
 - iii. The Landlord reserves the right to maintain the tenant's hoods, duct systems, and grease collecting devices at Tenant's expense.
- f. Kitchen Systems**
- i. Shall be designed and constructed such that the space is maintained at a negative pressure relative to the mall common area.
 - ii. Tenant make-up air systems shall replace the minimum amount of exhaust air as required by governing codes.
- g. Duct Lining:** Food service tenants shall not use internally lined ductwork.

Plumbing Design

1. Landlord Provisions

- a. **Domestic Water:** Point of connection within leased premises (above or below premises), tenant to verify size and location in field.
- b. **Sanitary Waste:** Point of connection below leased premises, tenant to verify size and location in field.
- c. **Sanitary Vent:** Point of connection within leased premises, tenant to verify size and location in field.
- d. **Grease Waste:** Point of connection may be existing for food and beverage service tenants, tenant to verify existence and location in field.
- e. **Gas Distribution:** Distribution system and metering banks are located on the roof. Tenant to verify location and capacity in field. Gas piping to leased premises may be existing from previous tenant and can be reused if deemed to be in acceptable condition upon inspection and test. Tenant to make arrangements with Utility Company but pipe routing needs to be approved by Landlord.

2. Tenant General Requirements

- a. **Base Building Systems**
 - i. Tenant shall not make modifications to landlord's base building systems without prior approval from landlord.
 - ii. Any damage done to the landlord's base building or systems by tenant during construction shall be repaired by the landlord at the tenant's expense.
- b. **Professional Engineer:** Tenant shall engage a professional engineer licensed in the state of California to prepare plumbing construction drawings and specifications.
- c. **Construction Standards:** All plumbing work shall be installed per governing codes and the landlord's tenant criteria.
- d. **As-Builts:** Upon completion of tenant build out, the tenant shall provide one (1) set of pdf as-built plans for all plumbing work to the landlord.
- e. **Plumbing Calculations:** Plumbing tabulations shall be provided on drawings to include water supply fixture units (WSFU), drainage fixture units (DFU), and grease interceptor sizing calculations (if applicable).
- f. **Tenant Criteria Sections:** Refer to Architectural and Structural sections of tenant criteria for information on floor and wall construction requirements.
- g. **Existing Work:** Existing systems from previous tenant cannot be abandoned in place and must be demolished entirely if not being re-used.
- h. **Roof Openings:** Cutting and patching of roof openings shall be performed by the landlord's contractor at tenant's expense.

- i. **Labeling:** Equipment and piping shall be labeled as required by landlord tenant construction rules and regulations manual.
- 3. Tenant Equipment and Fixture Requirements**
- a. **Equipment Access:** Proper access shall be provided and maintained for landlord and tenant installed equipment/accessories.
 - b. **Water Shut Off Valve**
 - i. Main water shut off valve shall be installed in an accessible location a maximum of 5 feet above finished floor (preferably in tenant restroom). Needs to be labeled per Landlord's specifications.
 - c. **Water Heaters**
 - i. Tenants shall provide instantaneous or storage type water heater(s) as required.
 - ii. Storage type water heaters shall be floor mounted and provided with the following:
 - i. Vacuum relief valve
 - ii. Temperature and pressure relief valve with discharge piping to an indirect waste receptor
 - iii. 3/4" drain valve with male garden hose threads
 - iv. Heat trap nipples
 - v. Expansion tank
 - vi. Minimum 24 gage galvanized steel drain pan with discharge piping to an indirect waste receptor
 - vii. Earthquake strapping required per code
 - d. **Plumbing fixtures**
 - i. Shall be commercial grade.
 - ii. Shall Comply with ADA guidelines.
 - iii. Shall not exceed code specified maximum flow rates.
 - iv. A minimum of one (1) mop sink shall be provided within tenant space.
 - i. ***Mop sink for kiosks shall be concealed from public view and requirements shall be verified with local municipality.***
 - v. Restrooms, janitor closets, etc. shall include at least one (1) floor drain, minimum size 3" (all floor drains shall be provided with trap primers).
 - e. **Hair interceptors**
 - i. Shall be installed on all sinks, basins, special sanitary units, etc. which in any way receive human or animal hair.
 - ii. All hair interceptors must be made accessible and maintained.
- 4. Tenant Material and Installation Requirements**
- a. **Hangers and Supports**
 - i. Shall be supported from structural members only (not secured to the deck above).

- ii. Additional intermediate structural supports for hangers shall be installed as needed upon landlord approval.
- iii. Cast iron pipe must be supported at least every five feet and at every joint/fitting.
- iv. All hangers exposed to public view shall be evenly spaced and grouped as much as possible with other trades for uniformity.

b. Domestic Water Piping

- i. Above Grade: Type L drawn-temper copper tubing conforming to ASTM B88 with solder-joint fittings.
- ii. Below Grade: Type K drawn-temper copper tubing conforming to ASTM B88 with solder-joint fittings.
- iii. All valves for domestic water shall have a minimum CWP rating of 125 psi.

c. Sanitary Waste and Vent Piping

- i. Above Grade: Service weight hubless cast-iron pipe conforming to ASTM A 888 with stainless steel shield and clamps no-hub coupling.
- ii. Below Grade: Solid-wall schedule 40 PVC conforming to ASTM D 2665 with PVC socket fittings.

d. Gas Piping

- i. Black steel schedule 40 pipe conforming to ASTM A 53 with steel press-connect fittings conforming to CSA LC-4 or as may be required by governing codes and landlord's insurance provider.
- ii. All valves for natural gas piping shall be bronze plug valves with a minimum pressure rating of 125 psi.
- iii. Tenants requiring natural gas shall arrange for gas service directly with gas utility.
- iv. Tenant shall install all gas piping to and within their space.
- v. All exterior gas piping shall be painted per landlord's specification.
- vi. Gas piping on roof shall be installed on landlord specified roller supports.
- vii. Gas piping shall be labeled per governing codes along with the tenant's name and space number.

e. Condensate Piping: Shall be routed to an indirect waste receptacle as required by governing code.

f. Pipe Sleeves: Shall be installed for penetrations through floor slabs.

g. Escutcheons: Shall be provided at pipe penetrations through walls and partitions within finished areas.

h. Insulation: All hot water and condensate piping shall be insulated as required by governing codes and be rated for use in a return air plenum.

i. Drain Pans: An auxiliary drain pan with leak detection shall be provided below plumbing piping that is routed through base building mechanical/electrical rooms and under air handling units with evaporator coils located indoors.

5. Tenant Food Service Requirements

a. Grease Waste

- i. Tenant shall provide a grease waste disposal system in accordance with governing codes.
- ii. Certain tenant spaces as designated by landlord have been provided with a grease waste system point of connection routed to an external grease interceptor.
- iii. A floor mounted grease interceptor shall be provided for each three (3) compartment sink.
- iv. Tenant furnished grease interceptors shall be in accordance with governing codes.
 - i. Provide grease waste sampling port as required by governing code.

b. Floor Drains

- i. Kitchens, walk in coolers, and other wet areas shall include at least one (1) floor drain, minimum size 3" (all floor drains shall be provided with trap primers).

c. Condensate Piping

- i. Rooftop air conditioning unit condensate line routing shall be coordinated with landlord.

Electrical Design

1. Landlord Provisions

a. Electrical Service

- i. 120/208 Volt, 3 Phase, 4 Wire, 60 Hertz

b. Metering

- i. Metering is covered in the lease.

c. Telecommunications

- i. Telecommunications service backbone from minimum point of entry (MPOE) to intermediate distribution frames (IDF) throughout the center.
- ii. Point of connection to IDF located within tenant space for connection by tenant, tenant to verify location in field.

2. Tenant General Requirements

a. Base Building Systems

- i. Tenant shall not make modifications to landlord's base building systems without prior approval from landlord.
- ii. Any damage done to the landlord's base building or systems by tenant during construction shall be repaired by the landlord at the tenant's expense.

b. Professional Engineer: Tenant shall engage a professional engineer licensed in the state of California to prepare electrical construction drawings and specifications.

c. Constructions Standards: All electrical work shall be installed per governing codes and the landlord's tenant criteria.

d. As-Builts: Upon completion of tenant build out, the tenant shall provide one (1) set of pdf as-built plans for all electrical work to the landlord.

e. Existing Work: Existing systems from previous tenant cannot be abandoned in place and must be demolished entirely if not being re-used.

f. Roof Openings: Cutting and patching of roof openings shall be performed by the landlord's contractor at tenant's expense.

g. Compliance Forms: Tenant shall complete energy compliance forms as required per governing codes.

h. Electrical Data Tabulation Sheets

- i. Shall be certified by engineer of record
- ii. Submit with construction documents for landlord review process

i. Labeling: Equipment shall be labeled as required by landlord tenant construction rules and regulations manual.

3. Tenant Equipment and Fixture Requirements

a. Required Access: Proper access shall be provided and maintained for landlord and tenant installed equipment, junction boxes, and accessories.

b. Electrical Meter

- i. Tenant does not have a meter. Metering is covered under the lease.
- c. Circuit Breakers**
 - i. Tenant shall use landlord approved contractor to furnish and install circuit breaker as required for electrical service in landlord provided metering switchboard.
- d. Fuses and Disconnects**
 - i. Tenant shall use landlord approved contractor to furnish and install fusible disconnect in landlord provided metering switchboard.
- e. Panelboards**
 - i. Provide panelboard(s) designed for 20% minimum spare ampacity (based on connected load) and 20% spare breaker space.
 - ii. Loads shall be balanced across all phases.
 - iii. ***Electrical Panels for kiosks shall be concealed from public view and requirements shall be verified with local municipality.***
 - iv. ***Ensure sufficient space in front of electrical equipment is provided to meet electrical code requirements. Consider marking the floor areas in front of electrical equipment to ensure items are not placed or stored in these areas.***
- f. Transformers (for tenants with 480V only)**
 - i. Provide three phase dry type transformer
 - ii. Transformers shall be mounted on the floor or structural wall, not from the building structure or demising walls.
- g. Lighting Fixtures (Refer to Architectural Design Section)**
- h. Exit/Emergency Lighting System**
 - i. Tenant shall provide exit and emergency lighting system as required by governing codes.
 - ii. Emergency lighting shall be battery-operated with recessed or twin-head configuration.
 - iii. In areas visible to customers, battery assembly for exit and emergency lights shall be concealed and remote type light fixtures used.
 - iv. **Exit signs must be green on edge lit or white background per governing codes.**
- i. Signage**
 - i. Circuits serving sign(s) shall be connected by a time switch.
- j. Telecommunications**
 - i. ***Tenant shall coordinate with landlord's telecommunications service provider (Granite) for account set up and scheduling service activation.***
 - ii. Telecommunications service cabling from the nearest Telecommunications Closet to the tenant's leased premises shall be by Granite and/or Landlord.
- k. Television and Security Systems**

- i. The installation of any roof mounted antennas or equipment must be approved by landlord and installed by landlord approved contractor.
- ii. All equipment shall be mounted on rails and anchored to the supporting structure to withstand wind and seismic effects per governing codes.

I. Service Call System

- i. Tenant shall provide and install a buzzer call system located at the back service corridor.
- ii. Buzzer call system shall not be audible in sales floor area.

4. Tenant Material and Installation Requirements

a. Hangers and Supports

- i. Shall be supported from structural members only (not secured to the deck above).
- ii. Additional intermediate structural supports for hangers shall be installed as needed upon landlord approval.
- iii. All hangers exposed to public view shall be evenly spaced and grouped as much as possible with other trades for uniformity.

b. Electrical Wiring

- i. All conductors shall be insulated soft-drawn annealed copper type THHN/THWN building wire and color coded (aluminum conductors are not allowed).
- ii. Tenant shall provide electrical service feeders in conduit from landlord's metering switchboard to tenant's premises.
 - i. Electrical feeders shall be sized for no more than a three percent (3%) voltage drop.

c. Conduit

- i. ***Homerun electrical wiring systems shall be in conduit (metal-clad cable is not permitted). Whips can be installed in walls.***
- ii. Speaker, security, or other low voltage wiring within the tenant's leased premises shall be installed in conduit.

d. Neutral Conductor

- i. The neutral conductor shall not be bonded to ground at the tenant's electrical distribution equipment. The ground fault protection in the landlord's distribution system will not function properly if the neutral is bonded to ground anywhere.

Fire Alarm Design

1. Landlord Provisions

- a. **Fire Alarm Panel:** Located in base building Fire Command Center.
- b. **Tenant Interface Junction Box (TIB)**
 - a. Signaling and notification circuits from base building fire alarm panel routed to terminal strip within TIB for future connection by tenant.
 - b. Tenant to verify location of TIB in field.

2. Tenant General Requirements

a. **Base Building Systems**

- i. Tenant shall not make modifications to landlord's base building systems without prior approval from landlord.
- ii. Any damage done to the landlord's base building or systems by tenant during construction shall be repaired by the landlord at the tenant's expense.

b. *Approved Contractor: Tenant shall engage landlord approved contractor to prepare fire alarm construction drawings/specifications and install the fire alarm system within the tenant's space.*

c. **Construction Standards:** All fire alarm work shall be installed per governing codes and the landlord's tenant criteria.

d. **As-Builts:** Upon completion of tenant build out, the tenant shall provide one (1) set of pdf as-built plans for all fire alarm work to the landlord.

e. **Existing Work**

- i. Existing systems from previous tenant cannot be abandoned in place and must be demolished entirely if not being re-used.
- ii. Tenant shall use landlord approved contractor to safe-off fire alarm system before any demolition work occurs.

f. **Labeling:** Equipment shall be labeled as required by landlord tenant construction rules and regulations manual.

3. Tenant Equipment and Control Requirements

a. **Code Compliance:** Tenant is required to provide a code compliant fire alarm system within their leased premises as required by governing codes and in accordance with NFPA 72, tenant shall use landlord approved contractor for design and install of fire alarm system within the leased premises.

b. **Fire Alarm System Devices:** Tenant will provide and install all initiating devices, notification appliances, addressable modules, auxiliary power supplies, junction boxes, etc. as required by governing codes and landlord specifications.

c. **Junction Box:** Tenant is required to connect fire alarm system serving the leased premises to the landlord provided tenant interface junction box (TIB).

d. **HVAC Systems**

- i. Tenants providing independent packaged rooftop HVAC systems shall provide unit or duct mounted smoke detectors per landlord tenant construction rules and regulations manual, addressable through the center's fire alarm system.
 - ii. All tenant provided supplemental ducted HVAC equipment shall interface with the center's fire alarm system for appropriate sequencing during a fire alarm emergency.
- e. Final Acceptance: Testing of the tenant fire alarm system shall be performed by the landlord approved contractor concurrent with the base building fire alarm system at the tenant's expense.***

Fire Protection Design

1. Landlord Provisions

a. Tenant Fire Service Main (TFSM)

- i. Ordinary hazard pipe scheduled fire protection sprinkler system main routed to tenant space with a point of connection for tenant use.
 - i. Tenant is only allowed one (1) point of connection of fire protection sprinkler system main.
 - ii. Tenant to verify location in field.
- ii. Fire protection sprinkler system is provided with a supervised alarm system, the system is monitored by the local fire department, center security, and various alarm companies.

2. Tenant General Requirements

a. Base Building Systems

- i. Tenant shall not make modifications to landlord's base building systems without prior approval from landlord.
- ii. Any damage done to the landlord's base building or systems by tenant during construction shall be repaired by the landlord at the tenant's expense.

b. Approved Contractor

- i. ***Tenant shall use landlord approved contractors to prepare fire sprinkler shop drawings and perform scope of work.***
- ii. Fire sprinkler drawings and calculations must be submitted to landlord's insurance provider for approval before commencement of work.

c. Construction Standards: All fire protection work shall be installed per governing codes, the landlord's tenant criteria, and the landlord's insurance provider.

d. As-Builts: Upon completion of tenant build out, the tenant shall provide one (1) set of pdf as-built plans for all fire protection work to the landlord.

e. Existing Work

- i. Existing systems from previous tenant cannot be abandoned in place and must be demolished entirely if not being re-used.
- ii. Tenant shall use landlord approved contractor to safe-off fire sprinkler system before any demolition work occurs.

f. Service Interruptions: All fire protection work must be accomplished without interrupting fire protection service to the remainder of the center during operating hours.

g. Tenant Responsibility: Tenant shall be solely responsible for the fire protection system within the leased premises.

h. High Piled Storage: Where storage/merchandise is high piled or hazard commodities are stored, coordinate design criteria with NFPA and landlord insurance provider.

- i. **Mobile Storage Shelving:** *The solid shelving on mobile storage systems should be wire mesh shelves to allow for adequate flue spaces on the mobile (compact) storage systems. Manufacturers typically offer two options for “wire grid” shelf decking, one with 2 in. by 4 in. openings and the other with 1 in. by 4 in. openings. A less desirable alternative would be to install minimum 3 in. bumper extenders every 4 ft. to 5 ft. throughout the mobile storage system.*

3. Tenant Material and Installation Requirements

- a. **System Components:** All fire protection sprinkler system components shall be UL listed and landlord insurance provider approved.
- b. **Pipe Material**
 - i. Minimum schedule 40 steel pipe conforming to ASTM A53 is required.
- c. **Sprinkler Heads**
 - i. Sprinkler heads at the storefront, in show windows, and in all hard-surface ceilings must be fully concealed type.
 - ii. Semi-recessed (or concealed) type heads may be used in lay-in or other approved type ceiling systems (where accessible to the public).
 - iii. Fully pendant type sprinkler heads are permitted only in stock/storage or open ceiling areas.
 - iv. No stock or merchandise shall be within 18” of sprinkler heads.
 - v. All walk-in coolers/freezers shall be provided with a minimum of one dry sprinkler head as required by governing codes and/or landlord insurance provider.
 - vi. *Ductwork greater than 4 ft. or a combination of requires sprinkler protection to be extended below the ductwork as required by governing codes and/or landlord insurance provider.*
- d. **Valves**
 - i. Individual tenant control valves are not allowed in the sprinkler system.
 - ii. Permanent system isolation valves are not permitted in the system.
 - iii. Valve operation and alarm system are accomplished at source by landlord.