

JPMorgan Chase Tower
Contractor Rules and Regulations
Revised 07-07-07

Attached is a revision to the JPMorgan Chase Tower Contractor Rules and Regulations. The additions and/or changes are listed below and have been incorporated into the Contractor Rules and Regulations. If you have any questions, please contact the Engineering Department at 713-223-0441.

Please complete and sign the information below. All Architects, General Contractor and all sub-contractors must individually complete the acknowledgement and acceptance form. Upon completion, please fax the sheet to 713-224-7811, Attention: Hines Management.

ACKNOWLEDGMENT & ACCEPTANCE

Acknowledged and Accepted

Date

Print Name

Title

Type of Work Performed

Print Company Name

Phone Number

Name of Tenant

A FULLY COMPLETED AND SIGNED COPY OF THESE RULES AND REGULATIONS MUST BE RETURNED TO THE PROPERTY MANAGER, PRIOR TO COMMENCING WORK BY THE ARCHITECT, ENGINEER, GENERAL CONTRACTOR AND EACH SUB-CONTRACTOR.

“Exhibit A” Insurance Requirements

CONTRACTOR AND SUB-CONTRACTOR INSURANCE REQUIREMENTS:

Prior to inception of any project, all General Contractors and Sub-Contractors must supply a vendor’s Certificate of Insurance with the following criteria as a **minimum**.

Coverage	Limit of Liability
General Liability <i>Please make sure that the “General Liability” box and the “Occur” box are checked within the General Liability section.</i>	\$1,000,000 Per Occurrence Combined, Single Limit Bodily Injury and Property Damage
Auto Liability <i>Please make sure that one type of Auto Liability is checked.</i>	\$1,000,000 Per Occurrence Combined, Single Limit Bodily Injury and Property Damage
Workers Compensation <i>The “WC Statutory Limits” box must be checked.</i>	As determined by Statute
Employers Liability	\$500,000 Per Accident
Umbrella Liability	\$5,000,000 Per Occurrence, Combined, Single Limit Bodily Injury and Property Damage

Named as Additional Insured:

Wording to be used on certificate: **“Texas Tower Limited and Hines Interests Limited Partnership are additional insured’s as their interests may appear with respect to all policies except Worker’s Compensation.”**

CERTIFICATE HOLDER:

Hines Interests LP
Texas Tower Limited
600 Travis, Suite 6920
Houston Texas 77002
(713) 223-0441
FAX (713) 222-7828

Should you have any questions regarding these requirements, please contact the Hines Management office at (713) 223-0441.

JPMorgan Chase Tower Contractor Rules and Regulations

Recent Changes:

04/03/07 Loading Dock

- Loading dock parking is for delivery of materials and equipment only (no hand held items). Upon completion of any delivery, all vehicles must be removed and parked off premises.
- All spaces are on a first come, first serve basis. All vehicles parked on the loading dock are governed by a 30 minute parking limitation.
- Management reserves the right to tow vehicles after 30 minutes should the contractor, mover, truck driver, etc. not adhere to the rules and regulations outlined.
- Stocking of material and large deliveries that can disrupt the normal operation and flow of the freight elevators will not be allowed access into the loading dock and are required to be scheduled for after hour loading dock access.

04/03/07 Freight Elevators

- All construction materials, tools and trash are to be transferred to and from the work area via the freight elevators.
- Propping of the freight elevator doors is prohibited. Contractor is responsible to pay for damages, service call outs and housekeeping.
- Under no circumstances shall the passenger elevators be used for the purpose of moving tools, materials, equipment or trash.
- Use of the freight elevators during normal business hours will be on a first come, first serve basis.
- All after hours use must be scheduled through the Property Management Office. Contractors reserving a freight elevator will be expected to sign in at the security console in the building lobby.
- All freight elevator reservations must be made in writing (24 hours notice required) to the Property Management Office; there are no guarantees and sharing may be necessary.
- In the event the building furnishes an approved operator for after hour operations, an hourly fee will be assessed for after hours use (4-hour minimum).

04/03/07 Welding / Cutting Torch/ Grinding Use:

- At no time is any welding, cutting torch, grinding or any open flame tool to be used in the building without prior approval in the form of a **Hot Work Permit**.
- Hot work permits can be obtained from the engineering department in suite B2-7. If approval is granted, the contractor must coordinate the timing with the Property Management Office.
- Base Building hours are Monday thru Friday (**6 AM to 7 PM**).
- After hour hot work must be scheduled through the Property Management Office. With the exception of soldering, a building engineer must be onsite to assist at all times that hot work is performed. GC will be billed for the time expended. An hourly fee will be assessed for after hour hot work (3 hour minimum).

04/03/07 Life Safety

- Contractor **shall be imposed a fine of \$300** by the owner for labor incurred responding to false alarms, caused by the contractor or construction.

07/07/07 New AHU Filter Sizes

General contractor must install or have Hines engineering install a blanket construction filter over the base building filters prior to demolition of the area. In addition, construction floors with the filter rack box filter systems, require the mini pleat filter to be removed and stored. A construction filter (Gold series 3 ply link 2ea. 20x96-102 w/aegis north units / Gold series 3 ply link 2ea. 24x96-102 w/aegis for the south AHU) and a blanket filter wrap is to be installed. Occupied floors where construction is in progress must have a construction filter installed prior to and following demolition. These changes are at a cost of \$75 per AHU.

07/07/07

Reuse DDC sensors by mounting them to the deck before walls are removed.

07/07/07

Any after hour work or testing of the Fire Alarm System or Fire Sprinkler System will be manned by building personnel. GC will be billed for the time expended (3 hour minimum). **No alarm testing during normal business hours.**

07/07/07

New equipment location to be field verified and shown accurately on drawings. All new chilled water hot taps require a minimum 2 ½ inch connection.

07/07/07

Include watts/sq. ft. of low and high voltage within tenant space to electrical drawings.

07/07/07

After hours security is required for access into adjacent tenant suites and this labor is a billable service.

Introduction

1. The intent of these Rules and Regulations is to establish working criteria for all construction and/or maintenance activity that may take place in the building. Prime Asset Management and Hines appreciate your cooperation in following these rules.
2. A copy of these Rules and Regulations, acknowledged and accepted by the General Contractor, must be posted on the job site in a manner allowing easy access by all workers. It is the General Contractors responsibility to instruct all sub-contractor workers to familiarize themselves with these rules.

Permits / Submittals

1. **Requirement:** Permits and Licenses necessary for the completion of work shall be secured and paid for by the Contractor. A copy of all permits will be posted, at all times, in a readily accessible area at the construction site.
2. **Submittals:** Upon completion of work, the contractor shall immediately supply to Landlord the following items:
 - A) Certificate of Occupancy
 - B) Operations and Maintenance Manuals, when applicable
 - C) As-built drawings / MEP, Architectural, Structural (Hard copy & Auto Cad files)
 - D) Copies of all permits related to the job
 - E) Substantial Completion Letter (for warranty)
 - F) Contractor's & Manufacturers' Guarantees
 - G) GC & Sub-Contractor Lien Releases (See sample below. **Partial Release** with each invoice and **Final Release** with Final Payment invoice. Typical retainer included in Final Payment is 10% of total.)
 - H) NEBB/Air Balance (Verified by Engineering), when applicable

Insurance

1. Prior to commencement of work, The General Contractor shall provide the Landlord a certificate of insurance, in compliance with the requirements outlined in Exhibit "A" (attached), for themselves and each of the sub-contractors.

Work Approval / Base Building MEP Requirements / Gov Regulations

1. **Work Approval:** The Building's Property Manager, prior to the start of construction must approve all drawings, sub contractors and material.
2. **Governmental Regulations:** Contractor shall comply with all applicable government regulations regarding the construction process.
3. **MEP Requirements:** The General Contractor and all sub-contractors are required to comply with all base-building specifications and this document. If any work is found that does not comply with the aforementioned specifications, contractor will be responsible for making the necessary changes in order to comply. Any such changes that are made will be at the contractors' expense.
4. **Plan Submittal:** The Property Manager will require one copy of the plans. A copy of the plans shall also be submitted to the Building Control Contractor for review and pricing.
5. TDLR Plan Review (ACI is the Landlord's ADA Consultant)

6. Signed Construction Rules (GC & Subs)
7. Subcontractor Contact List
8. Contractor & Subcontractor Insurance Certificates (See insurance requirements.)
9. MSDS Worksheet
10. Asbestos Survey Report (Landlord supplies.) EFI is the Landlord's Asbestos Consultant.
11. Commercial Energy Code Compliance Form (From MEP P.E. or Electrician before permitting. Landlord to review for Watts/SF compliance with terms Tenant Lease.
12. Lien Waiver. Required with all invoices. (Sample form is on next page)

Lien Waiver

STATE OF TEXAS (COUNTY OF HARRIS)

Before the undersigned Notary Public, personally appeared _____ who being duly sworn, deposed and said on oath that:

_____ as contractor or supplier, has furnished specially fabricated materials for the owner's project called _____ located at _____ (including land, improvements and appurtenances), such work generally described as follows:

In consideration for the payment in full of all sums owing to the undersigned contractor or supplier, the receipt and sufficiency of which are hereby acknowledged by the undersigned, the undersigned contractor or supplier hereby WAIVES, RELEASES, and DISCHARGES any and all liens, claims, and lien rights with respect to the named project and/or against such owner on account of the work and/or materials furnished.

The undersigned contractor or supplier certifies to owner that all such work and materials furnished by or for the undersigned in connection with the named project all applicable taxes have been paid for in full and agrees to indemnify owner against any and all losses, damages, costs, expenses, claims, and/or liens that may be assorted or arise by reason of claims for such work performed and/or material used.

Given on the _____ day of _____ 2007.

CONTRACTOR

By: _____
Name: _____
Title: _____

SWORN TO AND SUBSCRIBED before me the undersigned Notary Public this _____ day of _____, 2007.

If for Corporate entity:

BEFORE ME, the undersigned authority, on this day personally appeared _____ of (_____) a corporation known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he expressed, in the capacity therein stated and as the act and deed of said Corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE on this _____ day of _____ 2007.

Notary Public in and for Harris County, Texas

Workers Conduct / Construction Practices

1. **Quality Control:** Basic expectation for all trades is for work to be done in a first class manner. In areas behind mechanical room doors and/or above the ceiling, coordination of work with other trades will be necessary to ensure that expectation. Easy access to all electrical junction boxes and mechanical devices such as VAV's, FCU's etc. are required.
2. **Alcohol:** No alcohol, drugs, or persons under the influence are admissible on the premises at any time.
3. **Smoking:** Pursuant to the City of Houston Tobacco Smoking Ordinance, there will be no smoking permitted in the building.
4. **Access to other areas of building:** Workers are not allowed to access any part of the building other than the designated construction work area / freight elevator and loading dock.
5. **Professionalism:** No abusive language, actions or radios will be permitted. It will be the responsibility of the General Contractor to enforce this regulation on a continual basis.
6. **Work Disruption:** Any work that has the potential to disrupt normal business activity of other tenants must be performed outside normal business hours. Normal business hours for construction projects are defined as 6 a.m. – 7 p.m. (these times are subject to change at any time). Examples of this type of work are defined, but not limited to the following:
 - A) Drilling or cutting of concrete floors, or structural members.
 - B) Any work in which machine noise or vibration may disrupt normal office procedures.
 - C) Material stocking, demolition, and trash removal.
 - D) Any work requiring access to occupied tenant space. In such cases, please allow ample time for coordination with affected tenant.
 - E) High VOC painting.
7. **Protection of Property:** Contractor will take necessary precautions to protect existing property (i.e.: walls, wall coverings, carpet, floors, furniture and fixtures) and shall repair or replace, without cost to Landlord, any damage that may occur as a result of construction work.
8. **Shielding of Work Area:** Construction on multi-tenant floors shall be demised so that activities cannot be viewed outside of the construction site. This can be done by keeping the entry door/doors closed or if needed by constructing a demised wall with entry door. Such wall should be painted and provided with cove base so as to blend with the surrounding common area. After construction, this demised wall shall be removed and the common area corridor restored to its pre-construction condition.
9. **Housekeeping:**
 - A) **Daily Requirement:** For life and fire safety, the General Contractor shall maintain the construction site free from the accumulation of waste material and debris. Trash should be removed daily and site left with broom finish.
 - B) **Common Area:** Tracking of dust and debris into building common area is not allowed. In the event that the Landlord is required to cleanup after the contractor's crew, the General Contractor shall be invoiced accordingly.
 - C) **Final Cleanup:** The final cleanup by the General Contractor shall encompass corridor and lease space light fixtures, walls, floors, windows, sills, mini blinds, cabinets, counters, HVAC diffusers or grilles, or blank off plates, mechanical rooms, restrooms and/or any area associated with the project. If the Landlord is forced to clean any of the above, the General Contractor shall be invoiced accordingly.

10. **Tool cleanup:** The building's restroom facilities are not to be used for the cleaning of tools or paint materials. Anyone caught putting paint, joint compound, etc. down any drains inside Chase Tower will be asked to leave the building. The General Contractor will be responsible for any riser blockages caused by adding materials to the drains.
11. **Removal of Existing Material:** All existing material not reused in the construction project, except as directed by the Property Manager, shall be disposed of by the General Contractor as waste or unwanted material. Materials, which may be reused, should be referred to the Property Manager prior to disposition.
12. **Trash Removal:** Contractor is responsible for the removal of all construction-related trash.
13. **Dumpsters:** Dumpster placement and removal is only allowed during the hours of 6:00 p.m. through 6:00 a.m. and Property Management must be notified. Dumpsters larger than 30 yards in size are not permitted on the loading dock. Security must be present to observe dumpster delivery/pick-up in case damage to overhead sprinkler pipe and ductwork occurs. Any damage due to delivery or removal of dumpsters is the responsibility of the General Contractor. Dumpsters should be clearly labeled with the contractors' company name on the loading side of the dumpster.
14. **Roof:** All materials must be removed from the roof or secured on a daily basis to ensure that nothing becomes airborne or noise.
15. **After hours security** is required for access into adjacent tenant suites and this labor is a billable service.

Indoor Air Quality

- 1 **Responsibility:** Contractor will take whatever steps necessary in order to assure that no air quality problems are created by the construction process. The General Contractor shall be imposed a fine of \$200 for each incident in which building personnel are called upon to respond to a tenant complaint. The General Contractor should be aware of the hazards associated with all products used in the construction process. Final responsibility is accepted by the General Contractor for all claims or damages that arise as a result of building contamination.

The General Contractor is required to control all odors, fumes and VOC's associated with the construction process.

- 2 **Ventilation:** Exterior window exhaust fans equipped with collapsible rain proof dampers or vanes are required on all construction floors and must be sized to achieve a negative pressure within the entire construction area. **A minimum of one fan per 5,000 square feet is required.** The General Contractor is responsible to ensure that a negative pressure is achieved within the entire construction area.

- Exterior window exhaust fans must be used in construction areas. Schedule with Hines engineering for access to construction exhaust fans when needed.
- A negative pressure must be maintained during hours of actual construction beginning with Demo activities. A negative pressure must be maintained 24 hours a day beginning with the use of paints, solvents, floor coverings, adhesives, or any other similar product until the completion of construction.

If during construction, it is necessary to operate additional ventilation equipment, the general contractor will reimburse Chase Tower for all associated energy consumption and man-hours to coordinate.

3 **VOC Product Selection, (Building Materials Specifications):**

A. Pollutant Specifications

Target Standards are designed to maintain building air concentration of chemical emissions within acceptable levels. Expressed in terms of air concentrations of microgram per cubic meter ($\mu\text{g}/\text{m}^3$) for specific pollutants, the Target Standards are:

1. **Formaldehyde (CHOH)** - $60 \mu\text{g}/\text{m}^3$
2. **Total Volatile Organic Compounds (VOC)** - $500 \mu\text{g}/\text{m}^3$
3. **Total Particulates** - $50 \mu\text{g}/\text{m}^3$
4. **4-phenylcyclohexene (4-PC)** - $6.5 \mu\text{g}/\text{m}^3$ (butastylene backed carpet only)

5. Any regulated pollutant should meet an emission rate standard that will not generate an air concentration greater than that promulgated by the National Ambient Air Quality Standard under specified conditions (U.S. EPA, Code of Federal Regulations, Title 40, Part 50).
6. Any pollutant not specifically mentioned above should meet an emission rate standard that will not produce an air concentration level greater than 1/10 the Threshold Limit Value (TLV) industrial workplace standard at the anticipated building loading within 30 days of installation under specified conditions. (Reference: American Conference of Governmental Industrial Hygienists, 6500 Glenway, Building D-7, and Cincinnati, Ohio 45211-4438). The predicted 30-day post installation building air concentration shall be based on the emission rate as derived from the appropriate empirical decay model (e.g. ASTM D5116-90).
7. All testing pursuant to this specification shall be completed in accordance with ASTM D5116-90 and/or EPA-600/8-89-074 and all data shall be made available for review and approval.

B. Documentation Requirements

1. Pollutant emissions data provided by the manufacturer for specified interior furnishings and materials indicating compliance with target specifications are required to be submitted to the Management Office prior to installation.
2. All pollutant specifications must be included in the contract documents.
3. For all interior design materials, furnishings and finishes Contractor shall provide manufacturer's written disclosure of any substance emitted by each product listed on:
 - a. The International Agency for Research on Cancer list of chemical carcinogens.
 - b. The Carcinogen List of the National Toxicology Program.
 - c. The Reproductive Toxin List of the Catalog of Teratogenic Agents.
4. Many materials used in a building product or furnishing require a Material Safety Data sheet (MSDS). Contractor must provide a MSDS for chemicals that can be emitted by installed products.

C. Supplement Building Requirements

1. Each material and substance shall be installed in such a manner that it will produce the lowest practical level of emissions. In accordance with manufacturer's recommendations, drying times should be chosen so that pollutant emission rates, as set forth in these IAQ standards, are achieved prior to installation of the "dry" furnishings.

2. The least amount feasible of “wet” materials, such as adhesives, sealants; glazes, caulks, paints, etc. shall be used during construction and applications. Control strategies for achieving this minimal use must be prepared and submitted to Landlord for review.
3. “Dry” furnishings material, such as carpet, acoustical panels, textiles, etc. shall not be installed until “wet” materials have been applied and allowed to dry to the fullest extent feasible.

D. Building Product Selection

The availability of product emission data will allow informed selection of building materials. These selections can be weighted in the following manner:

1. Competing products that have emission rates below the target specification can be selected based solely on cost, most favorable emission rates or other product characteristics.
2. Selection among competing products of equivalent cost and features should be weighted to select the product with the lowest emission rate.
3. Significant cost increases from a low and high emission product should trigger a renewed search for a better alternative. **If none is found, and the high emission product is selected based on cost considerations, special handling protocols must be developed that ensure controlled product application.** For example: Varnish, lacquers or high VOC odor producing products are not to be used in the building without approval of the Management Office. This type of work should be done off premises or in a well-ventilated area approved by Engineering Dept.

E. Product Categories

1. Research will be required by Architect and/or Contractor to determine which manufacturers provide products that meet the emission rate standard. The following list of product categories is not all-inclusive but provides a guide to basic types of building products for which emission standards will apply:
 - (a) adhesives
 - (b) ceiling substances
 - (c) ceiling tiles/other ceiling systems
 - (d) floor covering, textile/non-textile
 - (e) insulation
 - (f) office furniture systems/seating
 - (g) office machines
 - (h) paints and coatings
 - (i) sealants and caulks
 - (j) textiles, decorative
 - (k) wall covering and wall units
 - (l) window treatments
 - (m) wood fixtures, trim and millwork

F. During the Construction period

Contractor must actively manage the construction process from an IAQ standpoint:

1. Confirm that all products actually used in the building are those for which VOC compliance certification test results were provided.
2. Plan the timing of construction activities so heavily polluting activities, Typically “wet” material application (painting) should occur before absorbent materials (carpet and furniture) are installed.
3. Follow IAQ ventilation procedures to ensure that the bulk of emissions are removed before exposing the occupants to off-gassing.
4. Provide adequate documentation and records to show that IAQ procedures were followed.

■ End Of IAQ Issues –

Electrical Issues:

1. All electrical circuits, panels and associated metering devices will be appropriately marked as to the area and or equipment serviced by the circuit(s) in question.
2. All electrical panels, junction or pull boxes which have covers or doors removed or any new electrical panels that are installed shall be fully covered, closed, or replaced
3. Any cabling, wiring, electrical conduit, electrical panel boards, transformers, etc. which are not to be reused in the tenant buildout must be demoed 100% back to the original source or origin. No materials or equipment are to be left unused in any mechanical room, maid's closet or ceiling space.
4. All connections to new or existing bus taps shall utilize flexible connections as per bus way manufacturer's recommendations.
5. All step down transformers providing power to 120V emergency lighting shall be located in the maid's closet, or tenant's mechanical room, protected with a smoke detector.
6. Circuits shall be identified in the field, at each junction box, by legibly marking with permanent marker the following: voltage, panel and circuit breaker number. This identification shall be made on each conduit leaving the j-box.
7. All free air cabling shall be routed close to the structural deck, supported by ring clips. Cabling is not allowed on top of ceiling grid.
8. All flexible conduit, (BX), shall be routed close to the structural deck, inline with ceiling grid. BX is not allowed on top of or supported by the ceiling grid.
9. All emergency circuits shall be run with RED colored BX.
10. **Wire/Conduit/Cabling management.** In all cases, all electrical components shall be installed in such a way so as to allow ease of access into the ceiling space and to mechanical/electrical components therein. Wire runs shall be routed high, close to the structural deck and out of the way of ceiling access. EXP: Choose routing along ceiling main support T's instead of over and across ceiling tile openings. For clarification, see engineering department.
11. "Looping" of electrical circuits inside walls from electrical device to electrical device is not allowed.
12. All flexible conduit, unless otherwise approved by management must be kept at a maximum of 18 inches, i.e., heat strips, water heaters, etc. It is approved to have one j-box above an office and run flex conduit to wall plugs. All other conduit in the space shall be EMT.
13. Trenching of the concrete floor for under floor routing of conduit/piping, etc is not allowed for any reason. All coring for electrical or plumbing shall be scheduled with the tenant above and below to minimize the disturbance to any adjacent tenants.
14. Electrical metering shall be installed for any usage over the building supplied wattage per square foot as explained in the lease agreement and shall be tied into the building automation computer, (BAC). A junction box shall be installed before any metered transformer to allow adequate room to install the meter's CT's, (Current Transducers). Power for the meter shall be from a local electrical circuit, protected by a breaker and manufacture supplied fuse.

Approved electrical meter for JPMorgan Chase Tower is the Veris Hawkeye Power Meter Model Number 8163CB. (See controls contractor, for proper selection and BAC compatibility.) Veris Industries Inc. phone number 1-800-354-8556 ext. 223

Responsibilities:

The electrical system is the overall responsibility of the Electrical contractor. Connection to the BAC shall be done by the controls contractors working as a sub to the electrical contractor.

15. FCU Related Issues:

- 120V Power Supply for VAV's: The electrical contractor will install a 120V power supply with local switch at the service location of the VAV to be used by control contractor for VAV controls.
- UV Light Issues: Electrical contractor shall provide a 120V switch for local disconnect of UV light.
- Start/Stop Control: Electrical contractor to install fan relay, (provided by control contractor), for stop/start control of Fan Coil Unit. Control contractor will provide 24VAC to fan relay and interface with the base building AHU or tenant control.
- Tenant should retain start/stop control of all tenant FCU's.
- All FCU's supplying tenant office space should be tied into the Building Automation Computer. Cooling units for tenant equipment, i.e., telephone or computer rooms should not be tied into the BAC.
- AHU/FCU starter. All AC units shall be installed with a starter equipped with a Hand/Off/Automatic switch.

16. **Labeling:** All switches, (with exception of standard wall switches for lighting), shall be labeled by electrical contractor identifying the equipment/devices controlled.

17. **Include watts/sq. ft.** of low and high voltage within tenant space to electrical drawings.

HVAC Issues:

1. Air Balance:

- A) Deliver to landlord a certified air balance report which will verify airflow delivery per the construction drawings at the end of construction.
- B) For partial floor build-outs the contractor shall provide an air balance report noting total air velocity in CFM for each zone outlet and the total AHU air velocity (pre and post construction) in CFM as obtained via traversing all of the main supply ducts in the mechanical room. In addition, any and all zones that partially serve the new construction space will be traversed at the point(s) where the zone duct serves any other lease space(s). The air balance for the new tenant shall not adversely affect surrounding tenants.
- C) HVAC contractor shall balance the outside air to achieve 20 CFM/per person.

2. Air Distribution:

- A) All flex ducts must be externally insulated.
- B) Flex ducts shall not exceed 8' in length.
- C) Duct tap cutouts not used shall be covered with a duct plate and insulation.
- D) All new ductwork must be externally lined.
- E) Any time there is drywall to deck; the Engineer will calculate proper openings for return air.
- F) Leave access or control for operating all dampers/mechanical devices.

3. HVAC Controls:

- A) Demonstrate to Engineering Department that all thermostats/DDC sensors function correctly, are controlling the correct zone, and are properly calibrated.
- B) The contractor is responsible for the proper function of all zone thermostats/DDC sensors and, (if required), the removal and safe storage of all thermostats / DDC sensors during the course of the construction. If the construction requires the relocation and/or replacement of any thermostats / DDC sensors, this shall be coordinated with the Engineering dept. at the contractors expense.
- C) Reuse DDC sensors by mounting them to the deck before walls are removed.
- D) If during construction activities, the wiring to the sensor is cut; it shall be replaced at contractor's cost. Wiring must be taken back to the field panel with no cuts/breaks/or connection, ensuring one continuous circuit. **Note:** The control wiring for floors already under DDC is bright pink in color. Use caution during demolition.

4. Filtration:

- A) General contractor must install construction filters - (Gold series 3 ply link 2ea. 20x96-102 w/aegis north units / Gold series 3 ply link 2ea. 24x96-102 w/aegis for the south AHU) and a blanket filter.
- B) Base building AHU filters must be changed by the engineering department following the completion of construction at a cost of \$400 per unit.

5. Other Miscellaneous Requirements:

- **IMPORTANT** – Any work in the exterior offices on the Southwest face of the building must have ½” plywood fully covering the exterior windows to prevent accidental breakage. These plywood panels need to be painted black on the window side to maintain our exterior appearance. See Property Manager for installation procedures or any questions. No demolition or construction shall start until these windows are protected.
- Mechanical room doors shall remain closed and locked during construction. Contractors requiring access can check out a key from the management office.
- Mechanical rooms shall not be used for storage and will be kept clean at all times.
- The General contractor shall have both AHU’s and mechanical rooms thoroughly cleaned to Hines satisfaction after the completion of the construction project. Hines engineering must be contacted to inspect the condition after the cleaning is complete.
- Unused Products: Any piping, HVAC equipment, exhaust fans, etc. which are not to be reused in the tenant buildout must be demoed 100% back to the original source or origin. No materials or equipment are to be left unused in any mechanical room, maid’s closet or ceiling space.
- Vacant tenant spaces cannot be used for any type of construction material storage or any other use without approval from the Property Manager.
- Air Cooled AC Units: Not allowed in the building.
- Temp. Air Cooled AC Units: Allowed on a temporary basis. However a window must be pulled and heat exhausted from the building.

6. Supplemental Chilled Water Fan Coil Units Specifications

I. Fan Coil Unit Specifications

1. Filters will meet Merv 11 specifications.
2. Install UVC lights as recommended by manufacturer. Local distributor is Sterile Air (Bill Tillman) See Specs below, (#17)
3. Copper tube aluminum fin chilled water coil designed at 300 PSIG working pressure
4. Low pressure forward curved fan
5. ODP motor
6. Adjustable pitch drives
7. 304 stainless steel drain pan with 2nd drain connection
8. Casing liner
9. Double wall construction
10. Hinged fan section access doors with handles
11. 1 inch 1.5 PCF fiberglass insulation
12. Pillow block bearings
13. 42-degree entering chill water temperature with an 18-degree temperature difference across the coil.
14. Stainless steel coil casing.
15. Coil and support to be a minimum 1” above the bottom of the primary drain pan
16. Heat Load Analysis: Heat load analysis shall be on the blue print detailing the anticipated load at the time of design.
17. FCU Specs: Shall be noted on plans. Unit size will be compared to heat load

analysis.

18. Recommended units are:

- Specialty Mechanical Products “Customaire “. The local manufacturer for these units is A/C Engineered Systems. **Contact: Gus Rodriguez: Phone #: 281-530-3700**
- “Reco” The local manufacturer for these units is Roessler Equipment Co., Inc. **Contact: Davis Porterfield: Phone #: 713-782-2701**

19. UVC Germicidal Disinfection Unit

UVC device shall be installed on all new and existing fan coil units. Device should be installed after fan coil units are installed and commissioned. Power should be turned immediately after installation and exposure to the cold side of the coil. Unit specs are:

General: Factory assembled and tested, consisting of a housing, power source, reflector, emitter sockets and emitter. Constructed to withstand HVAC environments. Manufactured by Sterile Aire USA, Model DE 241 VO or Sterile Ladder Series. The UVC manufacturer in conjunction with the air handling unit manufacturer shall select and design the UVC device for maximum effective control of micro organisms on coils, condensate drain pans and internal air handling unit surfaces.

Housing: Constructed of hospital grade stainless steel with 1/2" electrical knockout on both ends.

Power Source: 120V, Class P2 rapid start type with power factor of 9.95 and power conversion of not less than seventy-five (75%) percent. Designed to maximize photon production, radiance and reliability and suppress RF and line noise in airstreams of 41-132°F and air flows to 1000fpm.

Reflector: Constructed of heavy gauge, specular finished aluminum allow with a minimum eighty-six (86%) percent reflectance at 254mm.

Sockets: Medium bi-pin, double click safety, twist lock type, constructed of UVC resistant polycarbonate.

Emitter: VHO, T5 diameter, medium bi-pin type to produce the specified output, constructed of Type "L", hard glass quartz, producing no ozone. Igniter shall be 10mm, tri-coil type, clamped to a short mount, nickel inner lead. Base shall be ceramic with cast in power pins. Emitter life shall not be less than five thousand (5000) hours.

Testing: Independently test unit under typical HVAC conditions and in accordance with IES Lighting Handbook, 1981 Applications. Total output per one inch of length not less than 10 uW/cm² at 1 meter in 45°F air at 400fpm.

II. Fan Coil Unit Installation Specifications

1. Fan coil unit, drain piping, chilled water piping and ductwork is to be hung as high as possible above the ceiling.
2. The fan coil unit must be secured to the deck utilizing properly sized vibration isolators (spring type).
3. Provide 30" of free and clear access on **All Sides** (Excluding the discharge side) of the fan coil unit. Nothing shall inhibit access to the access panels, drain line connections, control valves, unions, isolation valves, electrical boxes or controls. This to include the following: beams, walls, piping, electrical conduit, light fixtures, etc.
4. A secondary drain pan must be installed. It must be made of 16 gauge galvanized metal (minimum) with a cross breaking sloped towards a 3/4" drain connection. The sides must be a minimum of 2" high and must extend on all sides a minimum of 6" beyond the sides of the fan coil unit. It must have soldered watertight edges and a 2" hem for stability.

The secondary drain line must be routed to a conspicuous location (Example: Above kitchen sink or private Restroom sink) with a minimum slope of 1/8". If the secondary drain line absolutely cannot be run to a conspicuous location, it can be tied into the primary drain line or routed to the floor drain in an AHU room only if the secondary drain pan is installed with a water detection device. This device must be located at the drain connection of the secondary pan and must turn the AHU off in the event of water detection.

The drain pan must be supported so that the unit is not in contact with the bottom of the secondary drain.

5. All chilled water piping is to be ASTM black steel screw pipe rated appropriately for each individual floor. All fittings (unions, 90's, 45's and couplings) are to be of equal ratings. Riser PSI ratings are as follows:

Floors "D" Level to 12th	400 PSI
Floors 13 to 37	300 PSI
Floors 38 to 47	150 PSI
Floors 48 to 69	300 PSI
Floors 70 to Roof	150 PSI

Primary drain pan lines must be galvanized steel pipe or hard drawn copper and insulated in the same manner as chilled water piping.

6. The chill water piping must be so that all devices (chilled water control valves, isolation valves and balancing valves) have unions on both sides to accommodate repairs. Main isolation valves off the riser are to be located in the mechanical room and have a capped drain valve after the isolation valve for draining purposes.
7. All ball valves are to be bronze two piece body, stainless steel ball, Teflon seats and stuffing box ring, lever handle, balancing stops and threaded ends.

8. All chilled water piping is to be insulated with a 1” glass fiber pipe insulation with an all service jacket finish. All joints to be reinforced with a white vapor barrier and hanger locations are to be reinforced with shields and protection blocking. Armeflex insulation is not to be used under any circumstances.
9. Metering of the chilled water and electricity of the fan coil unit is required.

Chilled Water: BTU totalization via BTU meter connected to the BAC. BAC contractor shall work as a sub to tenants HVAC contractor for this part of the job scope.

Approved BTU meter: Onicon System-10 or Data Industrial 340-N2, tied into building automation computer. (Coordinate w/BAC contractor to ensure that the meter’s output device and BAC is compatible).

Electrical: Tenant is responsible for all electricity consumed by any supplemental HVAC equipment. (See electrical for metering info). All meters are to be mounted in a visible and accessible location.

10. Chilled water piping shall slope back to the mechanical room so that all water can be drained from the piping.

Any work that disrupts any part of the chilled water riser insulation must be coordinated through Hines Engineering located on level “B”. Hot tap locations must be spotted by Hines Engineering prior to the tap.

All CHW piping must be hydro tested for a minimum of three hours at 1 ½ times the normal operating pressure of the system. This test must be verified and witnessed by Hines Engineering.

All CHW systems must utilize PT’s plugs to balance all control valves and coils. All systems must be balanced to design specifications and witnessed by Hines Engineering.

-- End of HVAC Issues --

DDC Conversions

Building ownership, as a capital project, has elected to retrofit the HVAC controls from pneumatic to DDC utilizing the Computrols automation system. Floors will be retrofitted during construction activities. The decision to retrofit will be made on a case by case basis, depending on the scope of the project. If a floor is to be retrofitted, please note the following.

Tenant Systems:

- **All new tenant HVAC equipment, i.e., FCU's & VAV's shall be DDC and compatible with the building's BAC.**
- Demo of existing pneumatic tubing in ceilings: Assuming that there will be no pneumatically controlled devices on the floor, tenant or base building, all pneumatic tubing can be removed during the demo process.

Phone / Data Cable Identification: All phone and data cables must be securely tagged with the tenant's name and suite number at the origin and every location where it crosses a corridor wall or adjacent tenant wall. All floor-to-floor vertical cable/conduit installations must be approved in advance, in writing by Hines Property Management. at 713-223-0441. Any abatement for floor to floor vertical wire pulls will be paid by the tenant.

Tenant's phone equipment shall be installed inside their space, not inside the mechanical room.

Plumbing Issues:

1. **Unused products:** Any piping, water heaters, drain lines, etc. which are not to be reused in the tenant buildout must be demoed 100% back to the original source or origin. No materials or equipment are to be left unused in any mechanical room, maid's closet or ceiling space.
2. **Future Connections:** When connecting to existing domestic water systems, a new full sized valve should be provided downstream of new connection for future use.
3. **Floor Drains/Waterproofing:** Floor drains and waterproofing are required in all kitchens, coffee bar locations and tenant restrooms. The concrete deck and surrounding walls shall be water proofed to prevent water migration. Floor shall be sloped to the drain by building up the floor where possible, while still maintaining ADA accessibility. Areas protected by waterproofing shall pass a one hour water test, achieved by damming the area, plugging floor drain and filling work area with water. Coordinate with engineering department.
4. **Water Heaters:** Contact Building Engineer to position water heater prior to installation.
5. **Drain Risers:** Provide "drain riser" in mechanical room, in locations with multiple drain lines being routed on floor of mechanical room as follows:
 - Pipe should be 3" copper.
 - Pipe turns down into drain.
 - Route pipe to nearest wall and up 7 feet.
 - Provide funnel at top of pipe.
6. **Kitchen Areas:** No plastic or Polyethylene tubing is allowed to hook up coffee machines, refrigerators, etc. Copper tubing shall be utilized for these types of connections.

Structural Beams:

Penetrating Structural Beams: Any routing of plumbing, sprinklers, ductwork, etc.

shall be installed around any beam. If penetrating a structural beam is necessary, a drawing must be provided by an approved Structural Engineering company and approved by Hines before any work proceeds. Any work performed on structural beams in this building will be done by Lucky Steel. See approved contractor list for phone number and contact.

Life Safety:

1. Electronic Locks:

- All lock installations shall comply with any and all applicable governmental codes.
- Design drawings for the installation shall be submitted to Landlord for review and comment prior to installation.
- Pre-Test: Prior to City inspection and lock activation, a function test must be conducted. This test must be witnessed by Landlord's engineering personnel. All trades associated with the lock installation shall be present for the test.
- All electronic locks shall have a Master Key by-pass installed prior to the lock activation, allowing building personnel access as required in emergency situations. The T1 approved override switch is **Securitron Model #SCR901494**
- **No alarm testing during normal business hours.**

Electronic locks cannot be energized prior to this function test.

- Following approval by the City Inspector, a copy of the drawings, and approved permit, must be forwarded to building management.
 - If a lock is removed from service the building's Engineering Manager must be notified so that building and City of Houston documentation can be kept up to date.
- 2. Floor Penetrations:** All floor penetrations shall be caulked, cemented or filled (immediately upon coring or discovery) with materials which are fire rated and match specifications of the original floor composition. **All floor penetrations shall be sealed by the building approved fire proofing contractor as identified in the approved contractors list.**
- 3. Welding / Cutting Torch/ Grinding Use:**
- At no time is any welding, cutting torch, grinding or any open flame tool to be used in the building without prior approval in the form of a **Hot Work Permit**.
 - Hot work permits can be obtained from the engineering department in suite B2-7. If approval is granted, the contractor must coordinate the timing with the Property Management Office.
 - Base Building hours are Monday thru Friday (**6 AM to 7 PM**).
 - After hours hot work must be scheduled through the Property Management Office. With the exception of soldering, a building engineer must be onsite to assist at all times that hot work is performed. GC will be billed for the time expended. An hourly fee will be assessed for after hour hot work (3 hour minimum).
- 4. Fireproofing :**
- The General Contractor is responsible for all fireproofing issues.
 - Any damage to the integrity of the base building fireproofing whether existing or caused by construction activities will be restored by an approved fire proofing contractor as identified in the approved contractors list. Fire proofing will match or supercede the building standard. Because the fireproofing design varies according to beam size and location, reference the blue print # A105 in the Engineering office for specific design information.
 - Immediately following the demo phase, all areas that have been compromised and any existing areas will be properly fireproofed. **NO EXCEPTIONS.** Reference the blue print # A105 in the Engineering office for specific design information.
 - The engineering department will make inspections with the General contractor during demo phase and during the construction of the lease area to ensure compliance regarding fireproofing.
 - **All fire proofing shall be done by the approved fire proofing contractor as identified on the approved contractor list.**
- 5. Fire System**
- All sprinkler work on multi-tenant or occupied floors must be done after hours. All precautions must be taken to avoid unpleasant fire system drain downs and sprinkler work, are to be done before or after normal base building hours. Base Building hours are Monday thru Friday (**6 AM to 7 PM**)

- Twenty-four (24) hour notice must be submitted to the building management office for approval for any work affecting base building, MEP, sprinkler, fire safety or security systems.
- The Contractor shall coordinate all Fire Alarm System and Fire Sprinkler System related work with the building Management office. None of the aforementioned work shall commence until appropriate measures have been taken, and approved to assure that no false alarms will occur, that adequate building protection shall be maintained, and that all proper agencies have been notified of the shutdown parameters. Contractor shall be responsible for insuring restoration of such systems to normal operations immediately following completion of the work including notification to building management that the system is restored.
- Contractor **shall be imposed a fine of \$300 by the** owner for labor incurred responding to false alarms, caused by the contractor or construction.
- The contractor shall coordinate with building approved fire alarm company to remove/reinstall the smoke detectors with heat detectors to ensure proper protection while minimizing the potential for false alarms.
- Any after hour work or testing of the Fire Alarm System or Fire Sprinkler System will be manned by building personnel. GC will be billed for the time expended (3 hour minimum). **No alarm testing during normal business hours.**

■ End Of Life Safety Issues –

Light Bulbs and Ballast's: Contractor is responsible for insuring that all light fixtures in the work area are working properly and are fully operational and cleaned upon job completion. This includes replacement of tubes and ballast's as required in light fixtures that are replaced added or re-positioned. The ballast will carry a 5-year warranty with a \$25 replacement labor allowance.

The JPMorgan Chase Tower light bulb and ballast spec is:

- Phillips Alto lamps.
- **Ballast Spec: Ballast must be a <10% THD Low Watt Rapid Start Ballast.**

Exit Signs: the Re-Energy bulb as distributed in Houston by E.Sam Jones shall illuminate all exit signs.

Locks and Keyways: Only building standard locks and keyways are to be installed in the leased premises and all keying must be coordinated through **Setec Lockshop Services**. Prior to installation, all proposed hardware and keyways must be reviewed and approved by building management.

Abatement:

Any abatement performed will be paid for by tenant.

Hazardous Materials: Hazardous materials may not be brought onto or stored on the premises until obtaining written permission from the management office. Permission will not be given unless such material is properly stored in appropriate containers, (i.e.: flammable liquid cabinet), and all required permits are obtained from the City of Houston. Hazardous Materials are defined, but not limited to, the following:

Flammable Liquids	Combustible Metals
Cryogenics	Oxidizing Agents
Pressurized Gases	Flammable Solids
Liquefied Gases	Radioactive Materials / Explosives

Contractor shall provide to the management office, prior to the start of construction, a complete MSDS binder for all chemicals used on the job.

Penetrations: All penetrations of piping, duct work, conduits, etc. through wall partitions, and doors shall be fire sealed to the landlord's satisfaction in order to maintain the integrity of the structures fire safety rating. The building's approved fire proofing contractor shall be utilized.

SALVAGE ITEMS

All items salvaged for Owner's future use shall be removed to the storage staging area specified by the Property Manager **by the General Contractor**. Masonite shall be used to protect flooring while transporting materials to storage areas. This activity shall be coordinated with the Property Manager.

Doors: Remove and box all door hardware from existing doors and transport to the storage staging area. Transport all re-usable laminated doors that are in good condition to the storage staging area. All others should be discarded. Transport all re-usable wood faced doors to the

storage staging area.

Door Frames: Separate incomplete door frames sets by LH, RH, & Top Track and transport to the storage staging area. All doorframes, which are bent, cut, modified, or painted a non-building standard color, should be discarded. Complete doorframes shall be disassembled, bound, labeled as to swing, and transported to the storage staging area.

Top Track & Window Track / Framing: All top track which is bent, deeply scratched, painted, and are cut shorter than 8', should be discarded. All window track and framing should be discarded.

Ductwork /Air Distribution Devices / Electrical Duct Reheats: All ductwork shall be discarded. All air distribution devices (i.e. diffusers/strip diffusers, circular non-insulated hard duct, and troffers) that are bent irreversibly, split open, or custom made are to be discarded. All others shall be transported to the storage staging area. All electrical reheats shall be transported to the storage staging area.

Lights: All light fixtures which are bent, deeply scratched, or painted shall be discarded. All light fixture lenses (without bases) which are scratched shall be discarded. All good fixtures shall be transported to the storage staging area.

Restroom Partitions & Hardware: All Restroom hardware and partitions, which are re-usable, will be salvaged and shall be transported to the storage staging area.

Ceiling Tile / Gridwork: All building standard ceiling tiles (12" x 12") which are not chipped, painted, or cracked shall be transported to the storage staging area. All others shall be discarded.

Miscellaneous: All items not identified above shall be brought to the attention of the Property Manager to determine disposition.

The General Contractor shall reimburse the owner for expenses related to removing the above mention items if they are neglected during the project.

SECURITY

Building Access

Normal business hours are from 6:00 A.M. to 6:30 P.M. Monday through Friday. After 7 P.M. and through the weekend, all entrances to the building are locked and ingress is by card-key access or pre-approved access list only.

Any and all access after normal business hours must be approved and coordinated through the Hines Management Office. **No exceptions.**

All workers shall use the loading dock entrance located off of Texas Street, so visitor ID badges can be issued. These badges must be worn at all times.

Loading Dock

- Loading dock parking is for delivery of materials and equipment only (no hand held items). Upon completion of any delivery, all vehicles must be removed and parked off premises.
- All spaces are on a first come, first serve basis. All vehicles parked on the loading dock are governed by a 30 minute parking limitation.
- Management reserves the right to tow vehicles after 30 minutes should the contractor, mover, truck driver, etc. does not adhere to the rules and regulations outlined.
- Stocking of material and large deliveries that can disrupt the normal operation and flow of the freight elevators will not be allowed access into the loading dock and are required to be scheduled for after hour loading dock access.

Freight Elevators

- All construction materials, tools and trash are to be transferred to and from the work area via the freight elevators.
- Propping of the freight elevator doors is prohibited. Contractor is responsible to pay for damages, service call outs and housekeeping.
- Under no circumstances shall the passenger elevators be used for the purpose of moving tools, materials, equipment or trash.
- Use of the freight elevators during normal business hours will be on a first come, first serve basis.
- All after hours use must be scheduled through the Property Management Office. Contractors reserving a freight elevator will be expected to sign in at the security console in the building lobby.
- All freight elevator reservations must be made in writing (24 hours notice required) to the Property Management Office; there are no guarantees, sharing may be necessary.
- In the event the building furnishes an approved operator for after hour operations, an hourly fee will be assessed for after hours use (4-hour minimum).

Approved Contractor List for JPMorgan Chase Tower

The contractors on this list were approved by using the following guidelines:

Contractors must supply a current Certificate of Insurance with adequate coverage amounts and correct Additional Insured/Certificate Holder information, found in Exhibit A (Insurance Requirements) in this document.

Contractors must have a favorable Dunn and Bradstreet rating, where applicable.

Contractor must supply a comprehensive list of references including projects of similar size and scope to the proposed project.

Building Management has final approval of the contractor, based on interview(s) with the contractor, their work history in the building, their work history in other buildings and their reputation in the industry.

<u>Company</u>	<u>Contact</u>	<u>Phone</u>	<u>E-Mail/Fax</u>
<u>Mechanical</u>			
AMS	Bob Henry	281-403-1701	Rhenry@amsfusa.com
A/W Mechanical Services	George O’Keeffe	O: 713-869-7584 C: 713-302-2920	George.okeeffe@awmechanical.com
Graco	Mark Reed	713-978-7000	Mreed@gracomechanical.com
Gowan	Scott Joutraw	O: 713-696-5400 C: 713-817-2315	sjoutraw@goweninc.com
Letsos	Dan Riley	713-783-3201 Extn. 3367	driley@letsos.com
MLN	Roy Cizmar	O: 713-783-3201 C: 713-828-4702	roy_cizmar@mlncompany.com
TD Industries	Wendy Hipes	O: 713-996-2711 C: 832-309-4444	Wendy.hipes@tdindustries.com
<u>Certified Air Balancers</u>			
SCI	Adam Vilnoski	713-696-5404	
<u>Plumbing</u>			
AMS		281-364-1944 C: 832-473-1089	
CE Anderson	CE Anderson	O: 281-937-0191	
Gowan	James Carman	O : 713-696-5400 C : 713-829-7884	
Graco	Jug Cochran	O: 713-978-7000 C: 713-201-3554 Pgr: 713-720-7304	jug@gracomechanical.com
Letsos	Dan Riley	713-783-3201 Extn. 3367	
MLN Company	Roy Cizmar	C: 713-828-4702	roy_cizmar@mlncompany.com

HVAC Controls

Computrols	Wayne Leatherwood	281-352-8910	waynel@computrols.com
AW Mechanical	George O’Keeffe	O: 713-869-7584 C: 713-302-2920	George.okeeffe@awmechanical.com

Fireproofing

Fireproof Contractors	Chris Yargo	O: 713 - 690 - 7600 C: 713-818-2368	chris@fireproofcontractors.com
Payless Insulation	Elisa Dias	O: 713 -868- 1021 C: 281-667-5608	edd@paylessinsulation.com

Insulation

FGH Insulation	Robert Grein	713 – 462 - 3474	
Paragon Insulation	Charlie Rodriguez	713 – 678 - 4024	Charlieparagon@aol.com
Farley’s Insulation	Rev. R.L. Farley	281-442-8814	

Electrical

Fisk Electric	Toby Davis	O: 713 – 224 - 1081 C: 713- 545-2546 H: 281- 350-2852	toby_fiskelectric@sbcglobal.net
	Karl Juergen	O: 713-865-9498 F: 713-865-9130	Kjuergen@fiskcorp.com
Britain Electric	Dennis Beavers	713 – 228 - 4509	
Commercial Electric	James Calhoun	O: 713-290-8026 C: 281-733-8284	Jamesc_commerciaelectric@hotmail.com
Design Electric	Donald Curruthers	O: 713 - 690 - 6301 C: 832-256-9527	donaldc@fsgconnect.com
ECP	Mike Wedliech	O: 713 – 222 - 9195 C: 713-208-7292	mwedelich@ecptech.com
McDonald Electric	Randy Berry	O: 713 – 759 - 1828 C: 713-875-0427	rberry@mcdonaldinc.com
Melton Electric	Tommy Garman	O: 713 – 680 - 0011 C: 281541-3018	tgarman@meltonelectric.com
Merit Electrical Company	John Frazier	713 – 290 - 9109	JFrazier@meritelectric.com
Midwest Electric	Mike Morgan	O: 713 – 681 - 0627 C: 281-808-4780	mgm@mwemail.com michaelm@mwemail.com

Riser Cable Pulls

IeSmartSystems	Gary Colvin	O: 281 – 447 - 6278 C: 713-557-9275	Gcolvin@iesystems.com
3 rd Coast Cabling	Jim Krok	O: 713 – 690 - 7702 C: 713-208-4461	Jkrok@houston.rr.com
General Cabling Services, LLC	W.C. Langdon	O: 713 – 721 – 9732 C: 281-726-1480	Wclangdon@bcglobal.net

Any of the electrical contractors listed above.

Fire Alarm

Firetron	Glen Christmas	O: 281-499-1500 C: 281- 831-6187	gchristmas@firetron.com
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Firetron Tom Balou O: 281-499-1500 tbalou@firetrom.com

Sprinklers

Universal	Jack Andrews	O: 713 – 937 – 3332 Extn. 120 C: 713-725-6127	Jandrews@universalsprinkler.com
Fire Water	Erin Milford	O: 281 – 855 - 1970 C: 713-480-4943	eric@firewaterservices.com
Western States	Patrick Edwards	O: 713 – 896 - 9941 C: 832-256-8888	Patrick.Edwards@wsfp.us

Glass and Glazing

H&P Glass	Pete Rodriguez	O: (713) 455-2462 C: 713-824-8063	
Bosshammer Glass	Jimmy Bosshammer	713-937-3917	Bosshammer@msn.com

Security and Mag Locks

AIC	Ken Zetka	O: 281-277-9667	ken@aic-security.com
	Eddie Smith	C: 832-642-4079	esmith@aic-security.com

Roofing

Chamberlin	Ed Lamont	O: 713-880-1432 C: 713-857-7197	emont@cwrsl.com
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Waterproofing

Taylor Waterproofing	Bob Taylor	O: 713-691-1430 C: 281-831-0296	btaylor@taylorwaterproofing.com
AMST	Phil Sokulski	O: 713- 520-9573 C: 713-875-6264	p.sokulski@jobs-amst.com
Chamberlin	Mike Lawrence	O: 713- 880-1432 C: 713-857-7211	mike@cwrsl.com
Western Waterproofing	Charlie West	O: 713) 667-6682 C: 713-542-5203	charlie@westernwaterproofing.com

Structural Engineering

Carter Burgess	Javed Malik	O: 713-869-7900 C: 713-817-6022	javed.malik@c-b.com
CBM Engineers, Inc.	Nick Tahtaouh	713-629-1982	nick@cbmengineers.com

Structural Beams

Lucky Steel	Bruce Smith	O: 281-403-5013	Bsmith3284@aol.com
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Approved General Contractor List

Company	Contact	Phone	E-Mail
Basic Builders	Don Baer	O: 713-460-3966 C: 832-309-0769	dbaer@basicbuilders.net
Cactus Builders	Johnny York	O: 713-228-0808 C: 713-824-0220	jyork@cactusbuilders.com
Constructors	John Cooper	O: 713-650-6420 C: 713-539-0444	jcooper@constructors.com
D.E. Harvey Construction	Rusty Gorman	O: 713-780-8710	
JR Thompson	Chuck Micus	O: 713-722-0222 C: 713-865-0074	cemicus@jrconstruction.com
JE Dunn Construction	Debra Brock	O: 713-521-4664 C: 713-834-1359	Debra.brock@jedunn.com
Meridian Constructors	Mike Galvin	O: 281-759-1200 C: 713-705-1431	mgalvin@meridianconstructors.com
O'Donnell/Snider	Randy O'Donnell	O: 713-782-7660 C: 713-502-0261	rodnell@odonellsnider.com
Pride Services Co., Inc., The	Jeff Thornton	O: 281-821-7383 F: 281-821-7391	jthornton@prideservices.net
South Coast	John Barrow	O: 713-222-2308 C: 281-620-3638	jbarrow@sccsi.net
Spaw Maxwell	David Spaw	O: 713-222-0900 C: 713-806-4668	spaw@spawmax.com
Turner Construction	Stan D. Jablonski	O: 713- 358-8223 C: 832-250-6186	SDJablonski@tcco.com
Tejas Interior Renovations	Joel Hernandez	O: 713-222-7750 C: 281-541-5609	Tejasdrywall00@sbcglobal.net
Trademark	Chris Hines	O: 713-688-9496 C: 281-850-3403	chines@trademarkconst.com

Door Repair, Painting, Refinishing

Company	Contact	Phone	E-Mail
Al Dowden	Al Dowden	C: 832-922-0860 F: 281-376-3682	abdowden@aol.com
Scantlan, Glenn & Rene(door)	Glenn & Rene Scantlan	O: 281- 429-2763 C: 832-274-8621	

Approved Mechanical Engineering List

Company	Contact	Phone	E-Mail
Dominion Interest	Michael Green	O: 713-626-7155 C: 713-864-6856	mjgreen@dominioninterests.com
Naman	Rachel Brandenburg	713-860-3600	rbrandenburg@ianaman.com
Redding Linden Burr	Robert Thomas	O: 713-237-9800 C: 713-256-9677	www.rlbengineers.com bthomas@rlbengineers.com
Telios	Brian Peterson	O: 281- 265-1636 C: 281-793-4042	bpeterson@teliospc.com
Wylie	Ben Wylie	O: 713-785-2526 C: 713-806-2856	gwylie@wylieassociates.com

Approved Asbestos Survey/Asbestos Abatement

EFI Global	Rick Anderson	832-518-5145
ARC Abatement		713-849-7738

Approved Accessibility and Code Services (ADA)

American Construction Investigations, LTD	Jeromy Murphy	713-864-8494	jmurphy@acico.com
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CHASE TOWER
BUILDING STANDARD MATERIALS

Light Fixtures 2' x 4'	Match Existing Motorola / Phillips Alto T-8 Lamp 277 Volt Motorola <10% TDH Low Watt Instart Start Ballast
Light Fixtures 2' x 2'	Motorola / Phillips Alto T-8 Lamp 277 Volt Motorola <10% TDH Low Watt Instart Start Ballast
Locksets	Sargeant 8205 LNB US-26
Vinyl Wallcovering	Genon Stardust Type II Natural 2-46-47
Closures	Sargeant EB-1250 UO
Electromagnetic Closures	Chapmin Smidt LCN-4010-SE 24 Volt
ADA Door Assist	LCN Door Closure Middle Swing Automatic Operator
Ceiling Tile (N/A Sheetrock)	Armstrong Minatone Cortega P745 K4C4 Beveled Edge Vinyl latex finish 12" x 12" x 5/8" Concealed Spline Armstrong World Industries 1912 Ultima, Beveled Tegular/Lay-In 24" x 24" Factory Applied Latex, White Class A 15/16" Grid
Occupancy Sensors	Sensorswitch Passive Dual Tech Decorator Wall Sensors WSD-PDT Series
Doors	Teak Veneer Solid Core 3' x 9'

Door Frames	Raco FS-123 Fastrack Frames Bronze Duralaq, Series 375
Hinges	T2731 4 1/2 x 4 D3
Electric Locks	Security Door Controls Marty Galis (817)461-2079 HiTower Serials 5051 Lock Template # 8T35334 (Specify right or left hand door), 115/120 Volts
Postal Area	Dark Green paint, Flat finish enamel, Devoe Vinyl Wondertone Light Green, Devoe eggshell enamel

INTERIOR FINISHES

Main Lobby

Floor:	Laurentain Rose - Flame Finish Insets - Barre Grey - Flame Finish
Walls:	Barre Grey - Polished Finish (Typical)

Elevator Cabs

Walls:	Krypton
Floor:	Karastan – Fortitude, Color# 1142 Chicory (Direct glue down), Floor is steel base with wood glued, screwed & floated to taper down to threshold.
Doors:	Stainless Steel - #8 Mirror Finish
Handrails:	2 1/2” Outside Diameter - Stainless Steel
Ceiling:	Stainless Steel - Tyler #104 - Imperial Finish

Typical Corridors

Carpet:	Prince Street – Simply Irresistible, Color# 404516, Ez Like Butter (Direct glue down)
Accent Carpet*:	* At the elevator entries in the passenger lobby. Masland – Keystone, Color# 287, Black (Direct glue down)
Base:	4” Resilient Straight Roppe Rubber, Black

Door Frame: Raco FS123 Series 375 - Bronze Duralaq

Doors: Teak

Ceiling: 12" x 12" Armstrong Minetone
Cortga - 5/8" with Donn Grid System

24" x 24" Armstrong 705A
Armstrong Prelude
15/16" Exposed Tee System

VWC: Genon Stardust - Color Natural

Hardware: Sergeant - Lever Handle US 26 Finish with Butts to Match
Frame

Paint: M3 - 9916 SW paint eggshell (for hallways)
869 SW paint - eggshell or flat (for tenant suites)

Fixtures – Building Standard are:

Sink: Ovalyn II 0496.001

Fittings: Chicago

Faucet: Chicago #404-A317CP

P-Trap: McGuire #8902

STOP: Chicago #1006

Insulate drain and supply lines with Plumberex #3011 or Equal

Grab Bars: Bobrick B-2840

Toilet Tissue Dispenser: Bobrick B-2840

Restrooms - Men's

Counter: Sierra Grey Granite - Polished

Floor: 1" Tile, Daltile, Mosaics Unglazed Mottled Light Gray D336

Wall & Base 1" Tile, American Olean A-12 Pepper White, plus Cove Piece at transition

Tiles: 1" Tile, Daltile, Mosaics Unglazed Mottled Light Gray D336

Grout: Laticrete Daltile 544 Bright White

Toilet Partitions: Benjamin Moore, M01775 (yellowish beige), oil-based high gloss (M22), Electrostatic or HVLP applied (Use a “rapid dry” solvent and an odor eliminator if using HVLP)
*Partitions on some floors have custom colors. See Landlord to confirm specifications.

Restrooms - Women’s

Tile: 1” Tile, American Olean A-20 Beachtan

Counter: Imperial Red Granite - Polished

Floor: 1” x 1” Beach Tan (American Marble)

Wall & Base 1” Tile, American Olean A-12 Pepper White, Plus Cove Piece at transition

Grout: Laticrete Daltile 85 Almond

Toilet Partitions: Benjamin Moore, M01775 (yellowish beige), oil-based high gloss (M22), Electrostatic or HVLP applied (Use a “rapid dry” solvent and an odor eliminator if using HVLP)
*Partitions on some floors have custom colors. See Landlord to confirm specifications.

Fire Extinguisher Cabinets

Model: ESM - A; Trim: 3/8; JL Industries

Exit Signs

Regardless of style of sign chosen within a tenant space, the following company shall illuminate it with the appropriate Re-Energy Xtrabright Exit Sign light kit. For local distributor contact:

Re-Energy
415-951-0900
415-951-0308 fax
www.re-energy.com

All common area exit lights shall be the following:

Exitronix,
623-580-3948 – 800 LED-EXIT
LED Edge-Lit 900 Series
6” Lettering, Recessed Mounting, Red Lettering, Brushed Aluminum

Freight Lobby Tile

Armstrong - Standard EXCELON Imperial Texture – 51904 Sterling

MINIMUM MEP ENGINEERING REQUIREMENTS

This outline identifies mechanical and electrical engineering requirements that should be included with the base proposal for all engineered lease space at Chase Tower.

Schematic Design

1. Consult with client and owner to ascertain requirements for the project
2. Assist in block space requirement for M/E systems. (If necessary)
3. Conduct equipment survey of existing space to determine power and wiring requirements of existing equipment. (If any)

Design Development

1. Consult with client and owner to ascertain refined requirements. (If necessary)
2. Prepare schematic design development documents indicating zoning and areas with 24- hour air conditioning. (If necessary)
3. Provide alternate for supplemental air and independent controls for all conference, LAN, computer and other special use rooms.
4. Small projects may not require this development. (To be determined by owner)

Contract Documentation

A. Mechanical Requirements

1. Engineer shall use backgrounds from CAD disks showing reflected ceiling plan which indicates partition walls, doors (including door swings), and pattern and location of light fixtures to show the following:
 - a. Existing ductwork, diffusers and air quantities for entire floor
 - b. Air supply and return outlet types
 - c. Air supply and return outlets, locations and air quantities
 - d. Total CFM quantities of AHUs.

- e. CFM quantities of each zone
 - f. Thermostat and building automatic control temperature sensor locations
 - g. Fire and smoke dampers where required by code
 - h. Schedule of capacity for new equipment
 - i. Base building AHU zone identification. Drawing attached.
 - j. Engineer shall design the metering of tenant's Chilled Water service in accordance with the tenants lease language. The recommended meter type is listed below:
BTU Meter Type
 Onicon System – 10
 Data Industrial 340-N2
2. New equipment location to be field verified and shown accurately on drawings. All new chilled water hot taps require a minimum 2 ½ inch connection.

B. Electrical Lighting Requirements

- 1. Engineer shall use backgrounds on CAD disks showing reflected ceiling plan indicating partition walls, doors (including door swings), and pattern and location of light fixtures to show the following:
 - a. Circuiting of building standard light fixtures.
 - b. Designation of fixture types (Client to select fixtures)
 - c. Switching of light fixtures
 - d. Tabulation of circuits and electrical loads to show compliance with base building load allocation.
 - e. Emergency egress and exit lighting where required by code.
- 2. New equipment location to be field verified and shown accurately on drawings.
- 3. Indicate area fire alarm system devices where required by code.

C. Electrical Power Requirements

- 1. Engineer shall use backgrounds on CAD disks showing building perimeter, core layout, locations of partition walls, doors, telephone outlets, electrical equipment

outlets, receptacle outlets, data/signal outlets, and dimensions of floor and wall outlets (where a specific dimension is required) to show the following:

- a. Circuiting of general purpose electrical outlets and standard office equipment
 - b. Special electrical requirements
 - c. Tabulation of circuits and electrical loads to show compliance with base building load allocation
 - d. Include watts/sq. ft. of low and high voltage within tenant space to electrical drawings.
2. Engineer shall design the metering of tenant's electrical service in accordance with the tenants lease language. The recommended meter type is listed below:

Veris - Hawkeye

D. Plumbing Requirements

1. Engineer shall show plumbing requirements on mechanical background along with necessary riser diagrams, details and equipment specifications.
2. Water services for coffee bars including sanitary waste and vent piping.
3. New equipment location to be field verified and accurately shown on drawings.

Administration Requirements

1. Review shop drawings and other submittal data at least twice.
2. Make at least two job visits and provide a written report of each visit to the building Property Manager and engineering department.
3. Make a final job site visit and provide written report to building Property Manager and engineering department.
4. Review and provide a written report on the mechanical air balance report.

Other Requirements

1. All design work will adhere to Chase Tower base building mechanical electrical and plumbing specifications.
2. All design work will comply and reference, in the mechanical notes, Chase Tower Contractors Rules and Regulations.

3. Mechanical design must include and follow Chase Tower Mechanical / Electrical Notes (TME - 1).
4. Mechanical design must include and follow Chase Tower AHU / FCU specifications.
5. Metering Devices: A schedule of all utility meters as part of the project is required.

SUPPLEMENTAL CHILLED WATER FAN COIL UNIT MAINTENANCE SPECIFICATIONS

These are minimum maintenance specifications that are to be followed by all outside contractors or individuals who are to perform preventive maintenance on supplemental AHU's at Chase Tower. Additional specifications other than the ones listed below can be added to any maintenance contract but must be specified in writing to Hines and tenant.

Frequency	Maintenance Requirement
Quarterly	<ol style="list-style-type: none">1. Change Air Filters2. Clean Primary Pan with a solution of 90% water and 10% bleach, let stand for 5 minutes, then rinse thoroughly. Verify proper coil drainage.3. Inspect internal insulation for damage, growth or wetness4. Inspect Drive Assembly for wear, rust & vibration5. Inspect Control Valves for leaks, condensation and verify they seat 100%6. Calibrate temperature controls7. Grease shaft bearings and clean excess grease8. Inspect conditions of pan tabs and replace if needed9. Inspect Chilled Water piping insulation
Annually	<ol style="list-style-type: none">1. Perform quarterly maintenance items2. Clean evaporator coil3. Clean squirrel cage, bearing housings and motor4. Clean and tighten electrical connections5. Grease motor bearings and clean excess grease6. Address any rust present with cold galvanizing paint7. Inspect and verify check operation and calibration of the chilled water measuring device.

Following the completion of all scheduled maintenance Hines must be presented with documentation within 5 days noting the following:

1. Tenant Name and Suite #
2. Service Technicians name(s)
3. Identification of AHU Serviced
4. Verification (check list) that all items mentioned above were completed.
5. Any problems found which are outside the maintenance specifications.
6. A proposal to correct items found during quarterly maintenance inspections that are outside the scope of the maintenance specifications or any other additional work.
7. Companies, which are contracted through HINES, must use Chase Tower Maintenance Checklist

Note: Documentation must be separate for each AHU serviced.

