

## RIDER “D”

### Temporary Services for Construction Purposes

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#### Javits Expansion – Transformer Building 650 West 39<sup>th</sup> Street 12<sup>th</sup> Avenue, New York, NY 10001

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- 1) **GENERAL REQUIREMENTS** Temporary services for construction purposes shall be provided for as specified herein by the following Contractors (where stated herein, “provide” shall mean “furnished, installed and provided functional” for the use intended):
- 2) The value of each building temporary services should be listed individually.
  - a) Temporary light and power for construction purposes shall be provided by the Electrical Contractor from the start of the erection of structural steel or as directed by the Construction Manager.
  - b) Temporary plumbing work for construction purposes shall be provided by the Plumbing Contractor from the start of erection of structural steel or as directed by the Construction Manager.
  - c) Temporary standpipe work for construction purposes shall be provided by the Fire Protection Contractor from the start of erection of structural steel or as directed by the Construction Manager.
  - d) Temporary protection of equipment and materials, including temporary freeze protection for piping systems, shall be provided by each Contractor as noted herein.  
Note: Applicable to all trades. Each trade is entirely responsible for the protection of their work.
  - e) All Stand-By times and banks of hours/days listed in this Rider are allowances. All unused allowances shall be credited back to the Owner at the conclusion of the project at the agreed upon labor rates. Contractors are responsible to have field tickets signed and authorized by the Construction Manager for all stand-by work and shall track all allowances.
- 3) **SPECIAL REQUIREMENTS** Contractors requiring temporary services additional to those specified herein shall pay all costs to provide such services. Such additional services shall include but not be limited to the following:
  - a) Temporary services at times other than the hours specified herein, including all associated standby trade labor costs.
  - b) Extensions and/or connections of temporary services additional to those specified herein.
  - c) Applicable energy costs.
- 4) **TEMPORARY LIGHT AND POWER (BY ELECTRICAL CONTRACTOR)**
  - a) **General** At the commencement of the erection of structural steel and throughout the construction period, until completion of the work and acceptance of the space by Owner, the Electrical Contractor shall furnish, install, maintain and remove temporary light and power which will conform to all Occupational Safety and Health Administration (OSHA), local codes, state labor law and union requirements. Temporary light and power provisions included in this scope shall be as herein after specified.
    - i) The Electrical Contractor shall obtain and pay for all permits, approvals and inspections pertaining to the temporary electrical installation as defined herein.
    - ii) Any temporary light and power maintenance required by the Construction Manager is included. All lamps, fuses, switches, transformers, etc., shall be replaced as required for the entire temporary power distribution system shall be kept onsite at all times. Electrical contractor and PL to submit shop drawings to Construction Manager for temp distribution for approval prior to installing work.
    - iii) Scheduling the installation of the temporary light and power work shall be coordinated closely with the Construction Manager. The Contractor understands that the installation of this work will not be continuous and will require that the Contractor perform work “out-of-sequence.” All associated costs are included.
    - iv) The Electrical Contractor shall comply with OSHA requirements that a lighting level of at least 10 foot-candles be maintained in all work areas including, but not limited to: (water, gas and steam) meter rooms, (communications, hub, data and electrical) equipment rooms, elevator machine rooms and indoor toilet rooms, etc.
    - v) Providing temporary electrical power for the construction equipment of other trades not specifically called for in these documents shall not be included in the Electrical Contractor scope of work. However, the Electrical Contractor shall provide such services under separate agreements directly with any other contractors requesting such additional services.

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- vi) As the life of these temporary installations are limited, and as these installations will not form a part of the finished building, minimum cost is allowable, consistent with material and workmanship which will satisfactorily meet the job and safety requirements and all the provisions of this Contract.
  - vii) The temporary power system shall be designed to accommodate a smooth transition to the permanent power service with minimal impact to construction operations. The Electrical Contractor shall provide new 3-phase, 4-wire service for temporary light and power. The temporary service and temporary power distribution system shall be sized to facilitate the power requirements outlined in this Contract. The service shall be modified as required to facilitate the temporary service including but not limited to: transformations to serve equipment, tools on the job and permanent equipment served by temporary services. Temporary electric cost to be by Owner
  - viii) The Contractor shall perform multiple “swing overs” from the temporary electrical services to the permanent electrical service as required by the Construction Manager. All costs are included to perform the “swing overs” in stages, including the installation of all required temporary transformers and the performance of work outside of normal working hours in a sequence agreed upon with the Construction Manager. All “swing-overs” shall be outside the hours of temp services.
  - ix) The Electrical Contractor shall provide grounding, fused main switches, distribution boards, panels, cutouts, risers, feeders (size to maintain proper voltage at all equipment supplied), transformers (for all loads serviced requiring power characteristics different than those supplied by Con Edison (or the Local utility), except for temporary hoisting equipment, for which transformers will be supplied by the Hoisting Contractor) and all other work necessary to make the temporary power system complete and operational in all respects.
  - x) Service equipment and distribution for temporary light and power shall be sized in accordance with Code for the connected power and lighting loads, and represents the overall anticipated requirements for all trades operating at the project. The Electrical Contractor shall be responsible for providing service, distribution (primary and secondary), transformers, and hook-ups for all equipment to handle these loads as part of this scope of work.
  - xi) Provide temporary power, with permanent power characteristics, to both temporary and permanently installed mechanical equipment requiring such service before permanent power is available for same, including but not limited to elevator drives, motors, fans, sump pumps and ejectors.
  - xii) Provide any and all relocations of the temporary electric service and associated distribution at no additional cost, as necessary to clear the permanent installations of all trades, and as required by the Construction Manager for coordination of the work.
  - xiii) Furnish, install, maintain and remove as directed by the Construction Manager, all temporary distribution feeders, for specific items of construction equipment as herein specified. The Electrical Contractor shall include out of sequence removal, and performance of this work outside of normal working hours as directed by the Construction Manager. Permanent bus ducts shall not be used for temp distribution. Any permanent wall that is used for temp power shall be approved by the Construction Manager prior to installation and indicated on shop drawings of temp services.
  - xiv) All temporary services if NOT provided by Con Edison shall have a meter or meters as required by the Construction Manager.
- b) Light and Power Requirements
- i) The temporary light and power systems for the building shall consist of all temporary feeder cables, fuse cutouts, temporary circuit breakers, temporary circuit wiring, double lamp sockets, lamps, wire guards, receptacles, etc., as required for the following:
    - (1) One (1) double lamp socket at each stair landing and intermediate landings including lamps and relamping to maintain continuous illumination as required by the Construction Manager.
    - (2) One (1) double lamp socket for each 400 sq. ft maximum on each floor with a minimum of 10 foot candles in wall, including lamps and re-lamping areas to maintain continuous illumination as required by the Construction Manager. Pigtail power outlets shall be provided at all lamp sockets, not to exceed four tails per circuit.
    - (3) All floors over 16'-0" in height (including, but not limited to lobby, podium, MER's, and temporary loading dock) are to be considered as double level areas and require, at a minimum, two level of lighting coverage with a minimum of 10 foot-candle illumination per level or column mounted halogens as directed by the Construction Manager depending upon specific areas.
    - (4) Lighting shall be provided under and above all scaffolding (i.e. lobby, double-level areas, temporary protection over transformers & fire pump room, etc.). Lighting levels shall be a minimum of 10 foot- candles illumination per level. The lighting for the sidewalk sheds on 12<sup>th</sup>

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Avenue & 39<sup>th</sup> Street plus an additional 20’ on each end of the sheds shall be 4’ fluorescent exterior type fixtures with removable hard plastic lens with a gasket seal. All sidewalk sheds shall be 18’ high. Submit for approval prior to installation. Maintenance of all shed lighting is included in this Contract. All conduit work shall be in rigid conduit with leak proof fixtures. All sidewalk shed shall be lit within 24hrs of installation.

- (5) The Contractor shall furnish, install, maintain, augment, relocate and ultimately remove existing work associated with the Sidewalk Sheds lighting and Truck Drives. For estimate purposes, assume five electrical relocations with associated re-circuiting will be required to accommodate configurations shown on the TCCNY Site Logistics plans. All sidewalk shed lighting shall be connected to circuits energized 24 hours per day/7 days a week. All associated maintenance, regardless of cause necessitating said maintenance, is included, as required by TCCNY.
  - (6) As rooms become closed-off by partitions, temporary light & power stringers shall be added removed, and/or reconfigured too ensure that all of the requirements of this Contract are met or as directed by the Construction Manager. Each room shall have it’s own lighting to meet the criteria discussed above.
  - (7) Lighting shall be provided, maintained and removed at all roof areas, including at a minimum ten (10) halogen lights on Roof areas. Roof lighting shall be strategically placed to maintain adequate illumination of all roof spaces.
  - (8) The temporary light and power installation shall be moved and relocated as required to facilitate the installation of walls/ ceilings and the work of the other mechanical trades.
  - (9) Provide aircraft warning lights on all crane masts and on all required points of the building after the cranes are removed. Aircraft warning lights shall be furnished with crane mast, installed by electrician.
  - (10)Electrician shall replace the 200 Amp feeder and Panel fed from the Construction Manager’s office to the site. Provide a 20 circuit panel and 20 connections of other equipment and lighting.
  - (11)Additional lighting underneath the building (over the existing ramp & over the existing fire pump room)
- ii) Provide 24-hour circuits for all site lighting. Ground Floor lighting, material/personnel hoist platforms, truck drivers, loading dock, and personnel cars, egress corridors, public access corridors streets, stairways, all heat tracing, plumbing pumps and associated heaters, all shanties, Construction Manager field offices, Owner offices, guard shacks, etc.
  - iii) Provide and maintain Fire Department Code compliant red light fixtures with lamp guards to indicate the location of all Fire Department Siamese connections connected to 24-hour circuits, including relocation(s) of such fixtures as required by the Construction Manager.
  - iv) Provide one-hundred (100) kindorf type light stands with double quartz light fixtures, bulbs and power pigtail connections with each. The delivery locations for each fixture shall be determined by the Construction Manager. Written receipt of light stands is required by Construction Manager by verification of signed tickets in order to be counted against the One-hundred (100) count allowance. Including repairs of each light stand.
  - v) All lamping and re-lamping of the temporary light system, including permanent lighting utilized for temporary purposes (prior to Owner’s acceptance of space), and quartz light stands, is the responsibility of the Electrical Contractor.
  - vi) Provide distribution boards, power feeds, pull boxes, panels, disconnect switches, transformers and connections for the following equipment being connected to the temporary power system as part of the scope:
    - (1) Provide 24-hour circuits for electric heat tracing and heaters for all temporary plumbing (including temporary toilets, pumps and piping) and fire protection systems. There shall be temp toilets on every 4<sup>th</sup> floor (see Temp Toilet requirements for Plumbing Contractor).
    - (2) In addition to providing thirty (30) welding machine hook-ups for miscellaneous trades, the Electrical Contractor shall provide the following power connections and disconnects. All welding hookups will be located at the panels via pigtails outlets:

TY Building

<u>Location</u>	<u>Welding Machine</u>	<u>Tools</u>
Level 1	6 @ 208V, 60A	12 @ 110V, 30A
Level 2	6 @ 208V, 60A	12 @ 110V, 30A
Level 3	6 @ 208V, 60A	12 @ 110V, 30A
Roof	6 @ 208V, 60A	12 @ 110V, 30A
Roof	6 @ 208V, 60A	12 @ 110V, 30A

- (3) Provide all electrical work associated with the following equipment power connections, including temporary hook-ups with code required disconnect switches, disassembly, removals and providing labor outside of normal work hours for jumps, disconnects, reconnects, relocations, feeders, extensions and removal as required. Not all Hoists will be operational at the same time. All welding hookups will be located at the panels via pigtails outlets

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- (a) **Exterior Hoisting-** Hoist Complex, Northwest corner of building site: One (1) tower mast with (2) dual-purpose personnel and material cars. Requires 200 amps 208V 3 phase 60 cycles power connection (transformers supplied by Hoisting Contractor for installation by the Electrical Contractor). Electrical contractor shall be responsible for providing lighting at all hoist platforms and loading docks. Final power requirements shall be coordinated with the Hoist Contractor.
  - (b) **Concrete Pump-** One (1) concrete pump (208V power connections), one (1) associated ventilation fan (120V power connections). Included are two (2) relocations and moves of each. Final power requirements shall be coordinated with the Concrete Contractor.
  - (c) Climbing Forms- Not Applicable
  - (d) **Spray-Fireproofing, Machines-** One (1) spray-fireproofing machines, requiring 208V/3/60 300 amp power connections (100 hp motors). Two connected (3) and running and capabilities for a standby hookup. Final power requirements shall be coordinated with the Spray Fireproofing Contractor.
  - (e) The following items will require initial installation and two (2) relocations: Five (5) masonry mortar mixers and Five (5) mason wet saws on separate floors.
  - (f) **Curtainwall Contractor Requirements-**Ten (10) welding machine hook-ups on various floors- Ten (10) hanging scaffold hook-ups at roof (pigtailed provided by Curtainwall Contractor). 24-hour power connections for electric pallet jack chargers at loading docks and four (4) other locations to be coordinated with the Curtainwall Contractor.
- (4) Provide 24 hour circuits for power connections to one (1) temporary 20 HP 208V/ 3 phase/ 100 amp duplex water/booster pumps (one located on or around the ground floor).
- (5) Heat trace cabling systems and heat coils (including cabling, thermostats, disconnect switches, etc.) shall be furnished by the Plumbing Contractor for all temporary Plumbing Systems and by the Fire Protection Contractor for all temporary Fire Protection Systems. All such heat trace and associated components shall be installed and maintained by the Electrical Contractor and connected to circuits providing power twenty-four (24) hours per day, seven (7) days per week. Included in this contract is the furnishing & installation of a 1,000 linear ft (in 200 ft increments) of heat trace cabling as directed by the Construction Manager, in addition to the coverage for the temp jobsite systems described above. Also included in this 2000 linear feet allowance is all temp power connections and operation verification for this trace to the jobsite temp electrical system being furnished and installed by this contractor.
- (6) Furnish and install temporary heaters in the locations indicated below (208 volt electric heaters with switches with thermostats sufficient to maintain the indicated temperatures):
- (a) The temporary and permanent pump/water meter rooms- 50 deg. F.
  - (b) (5) temporary toilets- 60 deg. F
  - (c) Five (6) masons cutting/mixing stations
  - (d) Fuel Oil tank - 50 deg. F
  - (e) Fire Pump Room- 50 deg. F
- All such heating units shall be permanently affixed to walls and labeled with their operating voltage.
- (7) Provide maintain and remove power and connections for temporary through-wall A/C unit(s) (approximately 2 tons cooling effect per elevator machine) in each elevator machine room and shafts of machine room-less elevators (A/C units to be provided by HVAC Contractor, The Electrical and HVAC Contractor shall coordinate voltage requirements of units).
- (8) Install and maintain electrical heating coils at all wall barrel locations (one per floor). The Heater coils shall be provided by Plumbing Contractor.
- (9) Provide, maintain and relocate one (1) time all lights (fixtures, lamps and telephone lines) and receptacles (convenience and circuits for AC, heating and electrical heaters) for the following shanties and field office:
- 1 Construction Manager field office (3,500 sq. ft.) - Offsite
  - 1 Construction Manager Superintendent trailer (800 sq. ft.)- Onsite
  - 1 Teamster (100 sq. ft.)
  - 2 Laborer (500 sq. ft.)
  - 6 Security (25 sq. ft. each)

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1 Master Mechanic (100 sq. ft.)  
20 (4) Temporary toilets locations (400 sq. ft) - Both Men’s and Women’s facilities shall be included. (Only two (2) toilet facilities shall be relocated once)  
10 Material storage (300 sq. ft. each)  
4 Material hoist shanties (350 sq. ft. each)  
1 Bricklayer (100 sq. ft.)  
Contractor shall also provide power hookups for the HVAC units to be installed in the Construction Managers Field Office. The Contractor shall fitout the Construction Manager field office per the attached sketch with lighting, power & data. The Construction Manager field office will be located offsite. The Construction Manager Superintendent trailer will required power & data.

(10) For the purpose of obtaining a base building temporary certificate of occupancy the Electrical Contractor may be responsibly to install fire alarm pull stations, speaker strobes and smoke detectors on a temporary basis as required by the New York City Department of Buildings and FDNY. This work shall be done when so directed by the Construction Manager.

(11) Provide temporary power with permanent power characteristics to the permanent fire pump, and included is the swing-over to permanent power for this machine. This fire pump must be operational prior to the building height exceeding 300ft as per FDNY. This is a non-coincident load with the rest of the temporary electrical requirements.

(12) Provide a minimum of two relocations of the power feed for the temporary air compressor station for the Sprinkler Contractor.

(13) If allowable, Contractor can coordinate with the Javits facility to provided/use temporary power for means of construction. It is the electrical contractor responsibility to install this temporary service whether it is overhead or underground. A meter is required on this service.

(14) **Miscellaneous**

Included in this Contract is 1) a wireless, PC base security system with both disc and DVR storage, and a mininium of 10 cameras, two PTZ with joystick controller for each loading dock areas. All signal & external wiring in protective conduit, and 2) one intrusion detection system for CM & teamster jobsite shanties/ offices. Includes also temp electrical power & hook-ups for **one (1) 20 ton and one (1) 10 ton** de-humidification units (to be furnished and installed by others). Location to be determined by Construction Manager.

(16) Temporary electrical services and standby labor shall be provided at the direction of the Construction Manager as follows, (if required): Provide “Temporary electric” - Mon thru Fri 6:30 AM to 4:00 PM, (30) Saturdays 6:30 AM to 4:00 PM. Also include “Temporary Electric” for Concrete Finishing after 6:00 PM. It is anticipated that there will be 20 placements of concrete that will require finishing until midnight.

c) **Overload Protection** While the building is under construction, provide and maintain at all times a full and complete set of fuses on site in a locked box in an areas where building temporary service equipment is installed. The electrical Contractor shall provide and install replacement fuses for temporary equipment.

d) **Hours of Operation**

i) **Omitted**

ii) The electrical contractor shall provide a stand-by electrician at the overtime rate (straight time plus premium time) for **Two-Thousand (2,000) hours**, for standby labor and electrical maintenance. Any unused portion of this allowance shall be credited back to the Owner @ the approved labor rates.

(1) Omitted

iii) All hours itemized in Paragraph 3.d above are included at the overtime rate.

iv) All hours itemized in Paragraph 3.d shall be used at the discretion of the Construction Manager. All such hours shall be verified by signed Time & Material Work Orders and reimbursed accordingly. Additionally, all hours described in Paragraph 3.d are to be used only with specified written direction from the Construction Manager. The Contractor will not be reimbursed for any hours expended without such specific written authorization. Wire Construction Manager’s office AC units and included 320 hours general work at straight time.

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- e) **Removal of Temporary Service** This Electrical Contractor shall relocate and/or remove all temporary light and power installations when so directed by the Construction Manager. All penetrations remaining in fire or acoustic rated wall shall be patched by this Contractor with approved materials.
  - f) **Permanent Feeders** The Electrical Contractor may, at its own risk, make use of permanent feeder cables, conduit, panels and transformers for temporary lighting and power. However, should any representative of a code enforcing authority or the Construction Manager find that, after use on the temporary system any materials or equipment are not satisfactory for permanent operation, then such equipment and/or materials shall be replaced at no additional cost to the Construction Manager, in order that the Owner obtain a meaningful warranty upon completion of this Contractor’s work. The Electrical Contractor shall provide megger and high potential testing performed by an independent testing organization to verify that any such temporary feeders or distribution equipment was not detrimental to their permanent function. If any permanent switches are used, they shall be tested and refurbished to new condition. Certified test reports/results by an approved independent testing company, shall be submitted to the Construction Manager. All back-boxes and covers shall be refurbished to new condition or replaced if damaged during construction.
  - g) **Omitted**
  - h) **Omitted**
- 5) **Temporary Plumbing Work for Construction Purposes (by Plumbing Contractor)**
- a) **General** Temporary plumbing provisions and services included in this scope are as hereinafter are as hereinafter specified: The Plumber shall also include the fitout of a pantry and bathroom for the Construction Manager field office. This office will be located offsite. See attached sketch for layout of field office.
    - i) The plumbing work for construction purposes shall comply with all OSHA, Federal, State and City code requirements, all labor laws and particularly with the Building Laws of New York City. This Plumbing Contractor shall obtain and pay for all permits and/or inspections pertaining to this work.
    - ii) As the life of this installation is limited, and as it will not form a part of the finished building, minimum cost is allowable consistent with materials and workmanship which will satisfactorily meet job conditions and safety requirements.
    - iii) Temporary work shall be installed in such a manner as not to interfere with the permanent construction. If such interference does occur, as determined by the Construction Manager, it will be the responsibility of this Plumbing Contractor to make such relocations as may be required to overcome said interference. If required, such relocations shall be done on an overtime basis to expedite the start of permanent installation. This Plumbing Contractor will not be reimbursed for such relocations.
    - iv) All work provided under this scope is to be maintained for the construction duration by the Plumbing Contractor.
  - b) **Responsibility** Work includes but is not limited to providing the following items for construction purposes and such items are to be maintained during the construction duration by the Plumbing Contractor: Work includes but is not limited to providing the following items for construction purposes and such items are to be maintained during the construction duration by the Plumbing Contractor:
    - i) Temporary water supply and water meters. Contractor is responsible for obtaining meter permits.
    - ii) Water supply ‘booster’ pumps.
    - iii) Workmen’s toilet facilities (Men’s and Women’s).
    - iv) Sewage ejector and sump pumps.
    - v) Water barrels and temporary waste water drainage.
    - vi) Removal and salvage.
    - vii) Maintenance.
    - viii) Freeze protection (including heat tracing cable, (coordinate size of disconnects and locations with base building electrician), thermostats and minimum (2) inch thick frost proof insulation and drain downs) temp elevator sump pumps.

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c) **Temporary Plumbing Service, Pathways & Provision Provided By Others**

- i) As soon as it is practical to do so, this Plumbing Contractor shall arrange for the permanent water services to be extended and placed into operation for construction purposes.
- ii) The Plumbing Contractor shall provide water metering on the temporary services.
- iii) Coordinate and cooperate with the Fire Protection Contractor for obtaining Fire Department approval of temporary fire protection system including portions of the system provided by the Plumbing Contractor.
- iv) Plumbing Contractor shall provide water for ten (10) wet saws, five (5) mason mortar mixers, one (1) concrete pump and one (1) spray fireproofing machines at a minimum 1” diameter valved outlet at locations required by these Contractors. Note: this work will be done in winter and freeze protection of waterlines will be required by this Plumbing Contractor.
- v) Provide one (1) temporary water risers; one (1) street pressure water riser dedicated for lower building levels use, and the other (1) solely dedicated water riser to the suction side of the water booster pumps. Ground floor and above, are to be fed by dedicated riser and distribution piping using street water main pressure. The lower workmen’s toilets may be fed with street pressure water service. Other locations on the lower floors may also be fed from this street pressure service as long as pipe sizing is adequate and outlet pressures are maintained.
- vi) Provide one (1) water riser, with offsets, as required, to the roof and pressurized by water supply from the temp booster pumps. The water risers shall closely follow the construction and be placed in service within two (2) days of completion of the metal deck. The water risers shall be connected with valves through the highest slab poured, and the connected water barrels shall be no more than two floors behind the highest concrete poured floor. The water risers shall be extended as the structure progresses and the top shall be kept plugged. The entire system shall be heat traced and insulated, and provided with drain valves so that it can be drained by the Plumbing subcontractor, when required.

d) **Water Supply Booster Pump**

- i) The Plumbing Contractor shall provide a water supply booster system sized to deliver 100 GPM of water, available at the Roof Level, at a pressure of 40 PSI, with 30% of hose bibs opened (assuming outlets on each floor). Should water pressure and flow rate not be sufficient at any floor to suit the needs of the project, additional booster pumps shall be provided by the Plumbing Contractor, and at no additional cost. Pump sets shall be provided with a gate valve, drain valve and compound pressure gauges on both suction and discharge sides; and with check valve, drain down valve, and gate valve. Each pump shall be installed between flanges or unions so that it can be removed and replaced with a standby unit without decommissioning the temporary service piping. These Pumps shall be either 460V/ 3P or 208V/ 3P and shall be compatible with the site / building temporary electric service by the Plumbing Contractor prior procurement. In the event that there is a lack of sufficient temporary water supply that arises from the failure on the part of the Plumbing Contractor to furnish, install, and maintain the temporary water supply system, and if this insufficient water supply results in delays to, or additional costs incurred by, the work of other Trades, or by the Project, then the Plumbing Contractor shall be responsible for such delays and/or costs.
- ii) For each pump, provide a lockable combination disconnect and across the line magnetic starter with fuses, overload and low voltage protection and with push buttons controls located within the cover. The Electrical Contractor shall set the starters and wire the motors.
- iii) Between the suction and discharge of the pumps, provide a bypass hydraulically sized (approx not less than 1 1/2”), equipped with a globe valve and pressure relief valve, and piped back to the suction side of the pumps to prevent overheating and pump damage due to operation at cut-off head pressure.

e) **Workmen’s Toilet Facilities**

- i) As the construction progresses, the Plumbing Contractor shall provide temporary toilet facilities every four (4) floors. At each location facilities shall be provided for separate men and women use. The Plumbing Contractor will also provide, in the Construction Manager’s field office: (a) two complete restrooms including toilet, sink, and hot water heater, and (b) one complete plumbing installation of a sink and countertop, including hot water sourced from the heater provided in (a) of this paragraph.
- ii) Each toilet shall be on a raised platform of sufficient height to permit the piping to run above the floor slab. The platforms, toilet enclosures and steps will be furnished and erected by others. Men’s and Women’s toilets shall contain water closets (frost-proof with weighted toilet seats) equipped with flush

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meter valves and composition seats, and Men’s toilet shall contain one 4’ galvanized iron trough urinal, equipped with a loose key stop and spray pipes. Soil connections shall be made to a permanent soil stack. Water connections shall be made from the temporary water riser with valved outlets and shall be heat traced with 2” thick insulation.

- iii) The Plumbing Contractor shall provide the following quantity of water closets: One (2) location containing eight (8) water closets (2 women + 6 men) at the first floor. Final locations for the items above shall be determined by the Construction Manager.
- iv) The urinal troughs are to be manually controlled and are to be furnished with spring loaded faucets.
- v) On the outside of each Men's temporary toilet facility the Plumbing Contractor shall furnish, install and maintain a hand washing trough. Women’s temporary toilet facilities shall have hand washing troughs and mirrors within the walls of the room. There shall be an equal amount of spring-loaded water spouts as there are toilets at each location.
- vi) This Plumbing Contractor shall include any and all required items (i.e., pumps, etc.) to have waste discharge from temporary toilets out to the sewer.
- vii) As construction progresses, this Plumbing Contractor shall remove the temporary toilets in the tower and activate the permanent toilet rooms on each floor as directed by Construction Manager. The permanent toilet rooms shall be maintained by this Contractor, and shall be refurbished to Owner’s satisfaction prior to Owner’s acceptance.
- f) **Water Barrels** provide one (1) full size, 55 gallon watertight water barrel on each floor. Water barrel shall have overflow piped to permanent or temporary soil stack and two (2) hose-bibs (one of the self-closing type). The Plumbing Contractor is solely responsible for monitoring the condition of the water barrels and preventing freeze-up of the water barrels. A drop in heating coil for each barrel may be provided for this purpose by the Plumbing Contractor and installed and maintained by Electrical Contractor. When directed by the Construction Manager, removal of barrels, after normal work hours, is included.
- g) **Drainage Below Sewer Level**
  - i) Where drainage is provided for work on floors below the gravity sewer, the permanent drain lines may be used or temporary lines shall be provided to the sump of ejector.
  - ii) Temporary piping, pumps and starters shall be installed in the sub-cellar level ejector / sump pits for use during the construction period. The permanent pumps or controls shall not be used during the construction period. Pumps shall be activated by automatic float.
  - iii) Pits and piping shall be cleaned by the Plumbing Contractor at regular intervals and shall be left free of all sludge, grit and debris prior to installing permanent equipment.
  - iv) Lines shall be flushed and cleaned, by the Plumbing Contractor and, if obstructed or reduced in internal diameter, the line shall be removed and replaced to the satisfaction of the Construction Manager. This Contractor shall include the services of a sewer cleaning company for fifteen (15) team days, to perform cleaning and **video scoping** on all permanent drain lines used for temporary construction. This Contractor shall also include cleaning of the sand, sump and ejector pits, **ten (10)** times during the course of construction.
  - v) Furnish, install and remove 6” temporary drains at the following areas for mason, spray fireproofing and concrete operations:
    - Second floor - two (2) drains
    - Third Floor- Four (4) drain
    - Roof- four (4) drains
- h) **Roof Drains and other Cast-In-Place Drains**
  - i) Roof drainage shall be connected and made operational within two (2) weeks of the completion of the concrete placement on the associated floor slabs.
  - ii) Mechanical Equipment Room floor drainage on the roof shall be connected and made operational within two (2) weeks of the placement of concrete on the roof Floor slab.

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- iii) The permanent roof drains shall be installed at all roof drain locations, and placed into service, as soon as the work is made available to the Plumbing Contractor. To ensure that water is diverted into the drainage piping prior to the installation of the permanent roofing system and associated flashing, the Plumbing Contractor may be required to install temporary roof drains. This work may include the installation of temporary drain fixtures that will be removed and replaced with extensions to the permanent roof drain fixtures upon completion of the roofing system and/or lead flashing, etc. The method and arrangement for achieving the above shall be reviewed with, and approved by the Construction Manager prior to any installation work.
- iv) It is the intent of the Construction Manager that instead of installing temporary drains, the permanent drains be installed and used as temporary drains. It is the Plumbing Contractor's responsibility to have the permanent drain system in place to achieve this work. If any temporary drain piping is needed/required, because the permanent system is not available, it is the plumbing contractor's responsibility to perform this work as directed by the Construction Manager.
- v) Contractor shall furnish Heat Trace and furnish and install insulation at horizontal runs for these temps. roof/floor drains. Temporary drain covers shall be provided on all roof drains and on all MER floor drains. Additionally, the Contractor shall provide protection, and the maintenance of such protection, as required in order to prevent fixture damage caused by the ongoing construction activities occurring within the associated spaces and to prevent dirt and construction debris from entering the drainage systems. The Contractor shall be responsible for all required repair work caused by the failure to adequately protect and/or maintain the protection on all such devices.
- vi) The Contractor shall provide replacement covers for all drains and cleanouts as directed by the Construction Manager.
- vii) Temporary roof drains will be furnished, installed, maintained and removed by the Plumbing Contractor. All drains shall be piped with PVC to leaders within one (1) week of concrete placement for the respective floors indicated in this paragraph. Any unused quantities shall be credited back to the Owner.
- i) **Removal and Salvage**
- j) The Plumbing Contractor shall disassemble and remove from the property all temporary piping and plumbing equipment after twenty-four (24) hours notice by Construction Manager.
- k) **Maintenance and Freeze Protection**
  - i) The Plumbing Contractor shall maintain all temporary plumbing systems, including those which have been provided by others. The Plumbing Contractor shall provide the maintenance of all permanent facilities that are used during construction and shall provide the restoration of all such permanent items to “like new” condition prior to Owner acceptance.
  - ii) The Plumbing Contractor shall furnish all heat tracing system components (installation and maintenance by others) and furnish and install insulation for all temporary plumbing systems that are subject to freezing conditions. Additionally, all heat tracing and insulation shall be removed and reinstalled (and/or replaced if required) if piping requires relocation because of coordination with permanent construction. Contractor shall include an allowance of 100 man hours for a sewer service to unclog drains.
- iii) **OMITTED**
- l) **Hours of Operation**
  - i) Temporary plumbing services and standby labor shall be provided at the direction of the Construction Manager as follows, (if required): Provide “Construction Water” - Mon thru Fri 6:30 AM to 4:00 PM, (30) Saturdays 6:30 AM to 4:00 PM. Also include “Construction Water” for Concrete Finishing after 6:00 PM. It is anticipated that there will be 20 placements of concrete that will require finishing until midnight.
  - ii) In addition to the hours specified above, the Contractor shall provide a stand-by plumber at the overtime rate (straight time plus premium time) **for two-hundred (200) hours**. Any unused portion will be credited back to the Owner. There shall be no escalation to the overtime rate applied to this item for the duration of the contract.
  - iii) **OMITTED**

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- iv) All hours itemized in Paragraph 4.k.i and 4.k.ii shall be used at the discretion of the Construction Manager. All such hours shall be verified by signed Time & Material Work Orders and reimbursed accordingly. Additionally, all hours described in Paragraph 4.k.i are to be used only with specific written direction from the Construction Manager. The Contractor will not be reimbursed for any hours expended without such specific written authorization.
- m) **Electrical Operating Characteristics of Temporary Equipment** All temporary plumbing equipment furnished for construction purposes shall be compatible with the buildings temporary 208V/460V electrical service. All costs associated with additional electrical work (i.e. transformers) due to plumbing equipment provided with electrical characteristics not compatible with the temporary electric service shall be the responsibility of the Plumbing Contractor.
- n) OMITTED

#### 6) **TEMPORARY FIRE PROTECTION SPRINKLER AND STANDPIPE WORK FOR CONSTRUCTION PURPOSES (by Fire Protection Contractor)**

- a) **General** Temporary fire protection provisions and services included in this scope are as hereinafter specified.
  - i) The temporary sprinkler and standpipe work for construction purpose shall comply with all OSHA, Federal, State and City requirements, all labor laws and particularly with the New York City Fire Department (NYCFD) Requirements. This Fire Protection Contractor shall obtain and pay for all required permits and/or inspections pertaining to this work.
  - ii) As the life of the temporary portions of this installation is limited, and will not form a part of the finished building, minimum cost is allowable consistent with materials and workmanship which will satisfactorily meet job conditions and safety requirements.
  - iii) Temporary work shall be installed in such a manner as not to interfere with the permanent construction. If such interference does occur, as determined by the Construction Manager, it will be the responsibility of the Fire Protection Contractor to make such relocations as may be required to overcome said interference. If required, such relocations shall be done on an overtime basis to expedite the start of permanent installation. The Fire Protection Contractor will not be reimbursed for such relocations.
  - iv) All work provided under this scope shall be maintained for the construction duration by the Fire Protection Contractor. This contractor is responsible for ensuring the temp standpipe is operational and functional during the course of this project. Contractor shall label temp standpipe piping stating “standpipe - Do not tamper with” and shall inspect piping at a minimum first thing in the morning and at the end of every shift or whatever is required to ensure operation. Contractor shall run tests and will keep a small amount of air in the system with a gauge at convenient location to indicate that it is in tact. Contractor shall also install an alarm with a bell to indicate a loss of pressure in the system.
- b) **Temporary Fire Protection Services-** The Fire Protection Contractor shall furnish install and maintain the following items for the construction duration.
  - i) Temporary construction standpipe risers in each stairwell, including temporary hose valves on all floors (located in all permanent hose valve locations), or as required by code.
  - ii) Installation of the construction fire standpipe riser shall closely follow the erection of the Building and shall always be extended and capped through the deck where steel is being installed. Extensions of the system after normal working hours are included.
  - iii) The tops of all standpipes shall be capped after sections of them have been erected. As much of the permanent cross connections shall be used as available and practical, supplemented with whatever temporary piping is necessary. As required by NYCFD, provide adequate hose valves on each floor. Temporary fire standpipe riser shall be tested to one-and-one-half working pressure a maximum of every (4) floors to ensure that it is ready for NYCFD use.
  - iv) Temporary hose valves with temporary caps shall be installed in locations where permanent valves are called for on the drawings or where required (i.e. temporary drain valves with piping to building drainage system, etc.)

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- v) Temporary sprinkler Siamese connections to fire standpipe risers for NYCFD use and compliant with local laws, and NYCFD requirements, include the furnishing and installing where required, of all necessary signs for sprinkler system fire department connection locations.
  - vi) Additionally, the Fire Protection Contractor shall perform the relocate of temporary fire department Siamese connections and associated piping as necessary due to the relocation of the sidewalk sheds. It is understood that these relocations shall take place a minimum of three (3) times at each Siamese location, or as directed by the Construction Manager to facilitate the installation of work by other trades.
  - vii) The Temporary Standpipe Siamese connections and cross connect piping shall all be temporary piping in a different location than the final permanent piping. Contractor shall include eight (8) gang days for relocation of this line in conflict with other trades. Permanent piping for standpipe risers shall be made available for temporary use.
  - viii) Furnish all heat tracing system components (installation and maintenance by others) and furnish and install all insulation for all wet piping that is part of the temporary fire protection systems. As part of this scope, all heat tracing and insulation shall be removed and reinstalled (and/or replaced if required) if piping requires relocation because of coordination with permanent construction.
  - ix) The Fire Protection Contractor shall obtain NYCFD approval of the temporary systems, as required, and shall prepare drawings and written descriptions of the temporary fire fighting system to be used during construction for submission to NYCFD. The temporary sprinkler system for this scope herein shall be designed by a NYS Licensed Professional Engineer.
  - x) Furnish and install, including all testing and approvals, the permanent manual fire pump prior to the building steel decking exceeding the 300 feet in elevation from grade. The pump shall be placed into service in accordance with FDNY regulations. Manual fire pump electric motor power requirements, and any load shedding power sequences to the temporary construction site electrical power distribution (to ensure adequate power feed) shall be coordinated with electrical contractor.
  - xi) Furnish, install and remove seventy-five (75) sprinkler heads and associated piping and connections for temporary fire protection of all Construction Managers shanties.
  - xii) The Contractor shall provide detailed shop drawing submissions depicting all elements and phases of the construction standpipe installation arrangement for review and approval by the NYFD, and any other authorities claiming jurisdiction on the site. All design work shall be performed and stamped by a Licensed Professional Engineer as necessary to secure the approval of such entities.
- c) **Removal and Salvage** The Fire Protection Contractor shall disassemble and remove from the property all temporary piping and equipment after 24 hours notice by the Construction Manager.
- d) **Maintenance and Freeze Protection**
- i) It shall be the Fire Protection Contractor’s responsibility to furnish, install and maintain all temporary fire protection, fire standpipe and sprinkler systems and keep them in good working order at all times. The Fire Protection Contractor shall include the maintenance of such permanent facilities as will be in use until the end of the job and restoration of all permanent fire protection, fire standpipe and sprinkler systems to “like-new” condition.
  - ii) During the winter months, where piping systems etc shall be subject to freezing, the Fire Protection Contractor shall furnish and have installed frost-proofing (i.e., heat trace cable and 2” thick insulation) as necessary to protect all water systems subject to freeze damage. The Fire Protection Contractor is responsible for coordination of electric heat tracing capacity that is required to protect the piping noted. If there is a freeze-up, the Fire Protection Contractor shall respond within three (3) hours of notification, 24 hours per day, 7 days per week.
  - iii) Furnish all heat tracing system components, (installation and maintenance by others) and furnish and install all insulation for all temporary fire protection systems that are subject to freezing conditions. As part of this scope, all heat tracing and insulation shall be removed and reinstalled (and/or replaced if required) if piping requires relocation because of coordination with permanent construction.

#### 7) **TEMPORARY AIR CONDITIONING (by Heating Ventilation and Air Conditioning Contractor)**

- a) Omitted.

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- b) Furnish, install, place, maintain, and remove upon completion one (1) 20 ton and one (1) 10 ton de-humidification units in the lower levels for the protection of the Switchboard room, and ATS room. Electrical hook-ups by others. Filter changers expected to be weekly. Labor and interim maintenance for temporary units is included in the contract.
- c) Provide drip pans with drain piping as required to manage condensate for all temporary equipment installed.
- d) The HVAC subcontractor shall include all maintenance of all HVAC equipment serving the Tishman field offices.

**8) OMITTED**

**9) Temporary Air Conditioning**

- a) Provide One (1) adequately sized 208V Mitsubishi Mr. Slim Heat Pump units with thermostats and 4\_fan coils each designed for a capacity of 5,200 sq. ft. and 71 degrees F, for the Construction Manager’s\_field office, including one (1) relocation, and one (1) adequately sized 208V AC unit with thermostat designed for a capacity of 500 sq. ft. and 71 degrees For the Owner/Architect’s field office. Duct distribution should also be included for a fitout of the space referenced above. See attached drawing showing Construction Manager Field office layout. Construction Manage field office will be located offsite.
- b) Generator sign-offs and registrations shall be by the HVAC Contractor.

**11) Construction Manager Field Office (by Carpentry Contractor)**

- a) The Carpentry Contractor shall fit the Construction Manager Field office as per the attached sketch. This shall include all partition walls including finishes and misc flooring. Ceiling is not required.