SECTION B -- GENERAL INSTALLATION REQUIREMENTS

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TABLE B-1 – SUMMARY OF CHANGES IN SECTION B

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<th>Revision Date</th>
<th>Item</th>
<th>Action</th>
<th>Requirements Change Notification</th>
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<tbody>
<tr>
<td>08/01/2016</td>
<td>2.3</td>
<td>Modification</td>
<td>ATT-TP-76300-355</td>
</tr>
<tr>
<td>12/04/2017</td>
<td>1.2.19</td>
<td>Addition</td>
<td>ATT-TP-76300-390</td>
</tr>
<tr>
<td>07/24/2018</td>
<td>1.6</td>
<td>Addition</td>
<td>ATT-TP-76300-409</td>
</tr>
</tbody>
</table>
1. GENERAL

1.1. Introduction

1.1.1 The Installation Supplier shall ensure, as part of the evaluation of the installation, that all equipment added, rearranged or modified is properly installed and in conformance with AT&T installation specifications.

1.1.2 The Installation Supplier shall ensure, as part of the evaluation of the installation, that all work has been done in accordance with the detail specifications or approved changes to the detail specifications.

1.1.3 This section covers general requirements related to safety, environmental, care of building facilities and premises, compliance with laws, rules and ordinances, and equipment preparation for installation.

1.1.4 Changes in this issue Section B are summarized in Table B-1.

1.1.5 Many of the items addressed in this section (e.g., building facilities, building conditions, etc.) will require joint AT&T/Installation Supplier review in advance of the actual installation activity. Sufficient time will be incorporated into the total job schedule to allow for alterations, additions (prior to the equipment installation timetable) and/or the additional expense approval by AT&T Equipment Engineer.

1.1.6 For warranty purposes, the equipment manufacturer may have documented installation requirements pertaining to the “foot print of the equipment.” If these requirements conflict with the requirements given in ATT-TP-76300, the manufacturer’s requirements shall apply.

1.1.7 The Installation Supplier shall provide at a minimum, a Level 3 employee (see Section C) on-site to oversee any non-volatile work performed by the Installation Supplier’s non-approved subcontractors.

1.1.8 The Installation Supplier shall provide a Level 4 employee (see Section C) on-site to oversee any volatile work performed by the Installation Supplier’s non-approved subcontractors.

1.2. Safety

1.2.1 The Installation Supplier shall be entirely responsible for the safety and instruction of its employees or representatives.

1.2.2 All temporary installations shall adhere to the safety requirements for permanent installations.

1.2.3 The Installation Supplier shall take precautions to avoid harm to personnel, equipment and building (e.g., cutting installed threaded rod).

1.2.4 The Installation Supplier shall suspend work operations immediately when so instructed by AT&T.

1.2.5 The Installation Supplier shall immediately report to the AT&T Representative any accident, outside agency inspection or hazardous condition, including:
a) Any accident or injury that occurs to employees or subcontractors of the Installation Supplier while on AT&T premises.

b) Any OSHA inspection or citations issued to the Installation Supplier while on AT&T premises.

1.2.6 Floors and work area shall be kept free of all potential hazards. The Installation Supplier shall avoid creating a slip or trip hazard.

1.2.7 Temporary storage of combustible materials during installation projects in non-fire suppressed Technical Spaces and electrical/mechanical areas is not permitted without prior approval from the site manager and documented as appropriate (JSA, MOP, etc.).

1.2.8 If space is available, secured storage containers outside of the building should be provided by installation contractors for combustible storage. All installation materials and network equipment packaging or transport structures that may be considered combustible requiring storage on site shall be stored away from network equipment, in-service network equipment and energized electrical equipment areas. Package staging areas in the building protected by suppression systems may be used for temporary storage if available.

1.2.9 If there is no other option for the temporary storage of combustible packaging materials and transport structures except within equipment areas or non-fire suppressed staging areas, then a fire retardant and anti-static tarp shall be used. The tarp shall completely cover and be tucked securely under the material. The materials shall be stored a minimum of 10 ft. away from active network and electrical equipment. Temporary storage groups shall not exceed 100 sq. ft. in area. A minimum 10 ft. firebreak shall be provided between each tarped storage group.

1.2.10 The tarp shall meet NFPA 701 and ASTM E-84 Class A, be clearly marked as such and have a surface resistance between $10^5$ and $10^{12}$ ohms psi.

1.2.11 All combustible materials temporarily stored shall be provided with the date the material arrived at the temporary storage location. The material shall also be identified with the name and phone number of the installation contractor. The maximum time materials may be temporally stored in an equipment area cannot exceed 7 calendar days. The temporary storage arrangement may be extended, if approved by the site manager, but for never greater than 30 calendars days from arrival without making other suitable arrangements for removing combustible materials from inside the building.

1.2.12 During a construction project, all combustible packaging shall be removed from all materials kept in Technical Spaces. When this is not possible, e.g. a wood cable reel, these materials shall be stored under an approved tarp (as outlined in 1.2.9) and shall not exceed 100 sq. ft. of floor space. These materials shall only be present while the job is in progress and shall be removed immediately upon completion of the job.

1.2.13 The Installation Supplier shall store flammable materials i.e. spray paint, solvents, etc., outside the building in a fire rated cabinet, if available, or remove the material from AT&T property.
1.2.14 All waste materials, such as waste paper, foam, plastic, cloth bags, packing boxes, packing material and similar material supplied during the installation, shall be removed from the building by the Installation Supplier on a daily basis (or more frequently if required).

1.2.15 All walkways, entrance and exit routes through the equipment area shall be kept clear of tools, equipment, equipment packaging, cable, etc. Caution signs shall be posted where needed.

1.2.16 The Installation Supplier shall not obstruct doorways, equipment aisles, corridors, stairs, fire exits, fire extinguishers and fire fighting equipment, pull box alarms and electrical breaker/fuse panels.

1.2.17 If the Installation Supplier has any questions in regard to safety, contact the AT&T Representative.

1.2.18 The Installation Supplier shall ensure the following during the installation:

a) That its employees are informed of any hazards that may exist on the job and the action required, minimizing the risk of personal injury, property damage, or service interruption. Furthermore, all Installation Supplier personnel shall comply with the safety guidelines and policies that are followed by AT&T in installation equipment areas (e.g., safety glasses).

b) That personal protective clothing and equipment, such as cotton gloves, heat resistant gloves, low-voltage rubber gloves, ear protection, safety eyeglasses, etc., are provided and used to minimize the risk of personal injury.

c) That combustible furniture is not brought into equipment areas.

d) That apparatus or materials are not stored in equipment aisles, corridors, stairs or fire exits.

e) That Installation Supplier’s personnel adhere to AT&T’s no-smoking policy.

f) That precaution is taken to prevent fire resulting from the use of temporary wiring, test wiring, lamps, soldering irons and other similar equipment.

g) That Installation Supplier personnel are familiar with the building’s evacuation features.

h) That Installation Supplier personnel are familiar with the location and use of the fire extinguishing equipment in the installation area.

1.2.19 Fall protection is required at all AT&T facilities and work locations whenever employees are on a surface (i.e. roof, platform, tank, cable rack, platform or other surface) within 6 feet (1.8 m) of an unprotected edge that present a falling hazard of 4 or more feet (1.2 m) to a lower level. In addition, employees on surfaces that are less than 4 feet (1.2 m) above a lower level, but are above or adjacent to dangerous equipment, materials or operations shall be protected by an appropriate fall protection system. Fall Protection can be defined as a system used to catch a person in a fall or restrain that person from being able to fall. It consists of an anchorage, connectors, a body belt or full body harness and may include a lanyard, deceleration device, lifeline, or suitable combinations of these. The Supplier is responsible for training and equipment necessary for compliance with Fall Protection.
regulations. Verify state and local requirements prior to work. The following outlines general fall protection requirements per OSHA regulations.

<table>
<thead>
<tr>
<th>Equipment/ Location</th>
<th>Fall Protection Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portable Ladder</td>
<td>Fall Protection is not required when working from portable ladder</td>
</tr>
<tr>
<td>Scissor Lift</td>
<td>Fall Protection not required when working on scissor lift with standard railing system and toe board</td>
</tr>
<tr>
<td>Boom Lift or Articulating Boom Lift or Bucket Truck</td>
<td>Fall Protection Required</td>
</tr>
<tr>
<td>Working on a scaffold, platform or horizontal surface with standard rails and toe board</td>
<td>Fall Protection NOT Required when railings and toe boards meet OSHA regulation.</td>
</tr>
<tr>
<td>Working on a surface, rack, roof, tank or other surface 4 feet or more above the ground or other equipment where no rail and toe board meeting requirements are present</td>
<td>Fall Protection Required.</td>
</tr>
</tbody>
</table>

If the AT&T Project Manager has questions about these requirements, contact the EH&S hotline @ 1-800-KNOWEHS (1-800-566-9347) prompt 3.

1.3. Safety, Tools and Precautions

1.3.1 The Installation Supplier shall provide its own tools.

1.3.2 Extension cords shall be NRTL listed, three conductor, 14 gauge or larger, commercial grade.

1.3.3 All battery and AC powered tools shall be grounded or double insulated.

1.3.4 All tools used for installation activities on and adjacent to “hot power” environments, (e.g., the common battery supply and grounded battery return in the power room or area, and power distribution boards, cabinets or bays, BDFBs, PCFDs, UPSs, FDCs, PDUs, GPDFs, and AC panels), shall be factory (OEM) double insulated. Grounded tools shall not be used around “hot power”. Only double insulated compliant single ended box and open end wrenches, socket sets (including compliant ratchets, sockets, extension bars and torque wrenches), nut drivers, screwdrivers and hex (allen) type wrenches are approved for hot power installation.

1.3.5 The Installation Supplier shall inspect all tools that are used for installation activity in AT&T equipment areas before the start of each shift.

1.3.6 The Installation Supplier shall remove all personal jewelry when performing any installation activities.

1.3.7 Safety goggles, face shields, appropriate protective clothing for the job being performed (i.e. battery apron and gloves) shall be worn when working with batteries. (ref OSHA technical manual Section 8 chapter 1)

1.3.8 Metal framed ladders, metal desks and metal chairs shall not be allowed in the immediate vicinity of telecommunication, information services, or power equipment.

1.3.9 Non-conductive measuring devices shall be used in the vicinity of working equipment.
1.3.10 Insulating floor mats shall be used for personal protection from electrical shock while performing work on or adjacent to power equipment.

1.3.11 Caution shall be exercised when working in the vicinity of equipment and tools with rotating components. Loose clothing may become entangled in the equipment.

1.3.12 Insulated blankets that comply with ASTM D1048-93 or ASTM D1048-88a shall be used when working in or around primary and secondary power equipment.

1.4. Environmental Issues

1.4.1 The Installation Supplier shall follow the guidance provided in Sections G and V of ATT-TP-76300 when addressing Hazardous Materials and Waste management.

1.5. Vacuum Cleaners

1.5.1 A vacuum cleaner equipped with a High Efficiency Particulate Arresting (HEPA) filter may be used for removing metal shavings and other debris, except debris that contains or is presumed to contain asbestos. The vacuum cleaner used shall conform to the following requirements:

   a) The HEPA filters shall provide a particle collection efficiency of 99.97% or greater for particle size of 0.3 microns or smaller.

   b) Hoses and any other vacuum cleaner components that may come in contact with electronic equipment shall be made with insulating material.

1.5.2 When it is necessary to use vacuum cleaners in the Technical Space, the following procedures shall be followed:

   a) Vacuum cleaners shall be plugged into a wall- or pillar-mounted AC receptacle only. Vacuums may never be plugged into the receptacles located within an equipment rack or bay.

   b) Electrostatic discharge (ESD) protection procedures, per Section N of ATT-TP-76300 and shall be followed when vacuuming electronic equipment.

   c) Bumping the vacuum cleaner into frames shall be avoided.

   d) The secondary air source (exhaust) coming from any vacuum cleaner shall be directed to previously cleaned surfaces. Exhaust air shall not hit unclean surface where the dust could be disturbed.

   e) When vacuuming on cable racks or other areas above equipment, the Installation Supplier shall cover the equipment with ESD-coated sheeting to prevent debris from dropping into the frames.

1.6. Electrical Safety – Shock and Arc Flash Hazards

1.6.1 All AT&T facilities contain voltages greater than 50V, and thus have shock hazards and potential arc flash hazards. The Installation Supplier shall follow the safe work practices required by NFPA 70E®, Electrical Safety in the Workplace, when these hazards are encountered.
1.6.2 As described in NFPA 70E® and in sections 1.2 and 1.3 above, the Installation Supplier is responsible for ensuring electrical safety hazards are communicated to personnel, and that personnel are trained and equipped with appropriate personal protective equipment (PPE) when working in the presence of these hazards.

1.6.3 Electrically Safe Work Condition

AT&T or a qualified person designated by AT&T shall place all circuits / equipment greater than 50Vac or nominal 140Vdc in an electrically safe work condition, as defined in NFPA 70E® (i.e., de-energized, with lockout / tagout implemented), before working on them, unless 1.6.4 applies. “Working on” energized equipment means intentionally coming into contact with energized electrical conductors or circuit parts with any part of the body or with tools, probes, or test equipment, including for diagnostic testing, maintenance, repair, or replacement activities. This requirement applies to work on the following, as well as to other types of equipment:

a) PSCs and branch circuits (e.g., task lighting and convenience outlet ac circuits).

b) PDSCs and output distribution circuits (e.g., rectifier ac input feeds).

c) PPSCs and output distribution circuits (e.g., data cabinet ac input feeds, inverter systems, larger than 30kVA equipped with an ac bypass circuit).

See ATT-TP-76300 Section M for definitions of PSC, PDSC, and PPSC.

1.6.4 Working on Energized Equipment

The Installation Supplier may work on equipment that has not been placed in an electrically safe work condition only if either

a) de-energizing would introduce additional hazards or increased risk, or

b) the task to be performed is infeasible in a de-energized state due to equipment design or operational conditions. This would include, without limitation, testing of electric circuits that can only be performed with the circuit energized.

1.6.5 When the work will be performed energized, an Energized Electrical Work Permit shall be required, except for testing, troubleshooting and voltage measuring. See ATT-TP-76300 section D paragraph 4.1.11 and Figure D-2.

1.6.6 DC Circuits and Equipment

a) AT&T has performed arc flash hazard risk assessments for nominal ± 24V, -48V, ± 130V, and 140V dc circuits and equipment deployed in AT&T facilities, and found the incident energy (IE) to be < 1.2 calories per centimeter squared (< 1.2 cal/cm2) at a working distance of 18 inches.

When working on unfused nominal 140V and below dc circuits and equipment while energized, wear the electrical safety PPE prescribed in NFPA 70E® for an IE level of < 1.2 cal/cm2. (Although nominal dc voltages less than 140V pose neither a shock or arc flash hazard, a thermal hazard may exist when working around energized batteries and dc plant busbar.)
b) When working on greater than nominal 140V dc circuits and equipment while energized, such as a battery string within a UPS system, wear the electrical safety PPE specified in NFPA 70E® for dc systems (Table 130.7(C)(15)(B)).

c) **Exception:** The requirements at (a) and (b) above do not apply to circuits used for communications services (e.g., POTS, ADSL, HDSL, ISDN). The maximum steady-state dc voltage, power and current levels appearing in these communications circuits are 200 Vdc (190 Vdc nominal) to ground, 100 watts, and 1.3 amperes, while the instantaneous limits under fault conditions are 200 Vdc to ground, 150 watts and 2.4 amperes (all current- and duration-limited in the case of a fault condition to protect personnel). These limits are all in accordance with ANSI Standard ATIS-0600337.2016 and well within the limits of 400 V to ground and 150 W stated in the OSHA 29 CFR 1910.268(s)(11) definition of “communication lines.” All systems that can produce currents above 100 mA through simulated personnel contact conditions are duration-limited (reference Section 7.5.1 of Telcordia GR-1089-CORE, Electromagnetic Compatibility and Electrical Safety - Generic Criteria for Network Telecommunications Equipment). Therefore, these circuits do not pose either a shock or arc flash hazard, and may be contacted bare-handed.

1.6.7 AC Circuits and Equipment

All energized ac circuits and equipment greater than 50V pose a shock hazard. The arc flash hazard risk assessment label posted on the ac electrical equipment communicates the level of incident energy available at that equipment, and thus the level of arc flash rated PPE required to work on the equipment energized. The Installation Supplier shall read and follow the arc flash label when working on energized ac electrical equipment. If the label is missing, illegible, or states that “No safe PPE exists”, contact the AT&T Representative for resolution.

a) **Exception:** Arc flash studies are not being performed on PPSCs and their nominal 240Vac or below, single phase distribution circuits that are served by inverters, where the inverter system is served via -48Vdc input feeds only (i.e., no ac bypass circuit), or the inverter system is less than or equal to 30kVA, so such equipment will not have an arc flash label. However, AT&T has performed arc flash risk assessments for inverter-fed PPSCs that satisfy these parameters, and has found the incident energy is below 1.2 cal/cm² at a working distance of 18 inches. When working on these PPSCs or their distribution circuits, the Installation Supplier shall wear the electrical safety PPE prescribed in NFPA 70E® for an IE level of < 1.2 cal/cm². See ATT-TP-76300 Section M for definition of PPSC.

2. BUILDING FACILITIES AND CARE OF PREMISES

2.1. Access

2.1.1 Hours of access shall be specified in the Job Start Agreement before start of installation activity. Written agreement is not required when an AT&T employee accompanies the Installation Supplier for a site visit with no installation activity.

2.1.2 The Installation Supplier shall follow the directions from AT&T Equipment Engineer regarding the use of ID cards and electronic card keys and all metal keys.
2.1.3 Installation Supplier personnel shall wear his/her own approved company ID and their own AT&T approved Installation Supplier ID Card at all times while on AT&T premises. The cards shall be worn at or above the waist with the front side showing. The AT&T Representative may issue access cards and restrict Installation Supplier personnel to the facilities and dates specified on the card. Installation Supplier personnel shall surrender the card when so requested by the AT&T Representative.

2.1.4 Installation Supplier personnel shall sign AT&T building register, where required, upon entering and exiting the facility.

2.2. **AC Power, Heat and Light**

2.2.1 AT&T will provide electric power for all necessary purposes, with suitable outlets in areas in which work is to be performed. AC outlets located in equipment bays are for test equipment only and shall not be used for power tools, powering telecommunication, or information services equipment or any building maintenance apparatus (buffers, vacuums, etc.). Heat and general illumination (of a permanent or temporary nature) in rooms in which work is to be performed or material stored, will also be provided by AT&T.

2.2.2 The Installation Supplier shall provide temporary lighting for specific work operations. Use of fluorescent lights or other lights requiring ballast shall be approved by the AT&T Representative prior to their use. However, in no case shall fluorescent lights requiring ballast be used without an Alternating Current Equipment Ground (ACEG).

2.2.3 The Installation Supplier’s personnel shall make no adjustments to controls, thermostats or venting of the heating or cooling plant. Any adjustments needed shall be directed to the AT&T Representative.

2.2.4 Equipment aisle lighting that is controlled by switches rather than motion sensors shall be turned off when no work is being performed in the aisle.

2.3. **Floor Space For Administrative And Equipment Storage Purposes**

2.3.1 An agreement shall be reached with representatives of AT&T, the Installation Supplier(s), and the local operations group as to the availability of suitable floor space at installation start and during progress of the installation work, to be used for the following:

a) Storing major items of material. Floor space in equipment buildings shall not be used as warehouse space. Material shall not be stored in such a manner as to exceed the safe floor load of the building. If storage space is not available for storing job material, the Installation Supplier shall provide temporary storage space in an AT&T approved area.

b) Administrative space and luncheon facilities.

   1. Administrative space will only be provided at the location where the installation activity is occurring. Telephone services and office furniture are not included.

   2. Food or drink shall not be brought into the equipment areas.

c) Storing tools and other property belonging to the Installation Supplier.
d) Restroom facilities and supplies such as towels and soap at all locations in which work is in progress.

2.3.2 AT&T will not be responsible for:

a) Providing parking facilities for Installation Supplier’s vehicles without prior agreement.

b) The personal possessions of Installation Supplier’s employees (e.g., jewelry, tools, etc.).

c) Mail or equipment delivery service arrangements for the Installation Supplier.

d) FAX, internet access, or telephone service without prior agreement. All toll calls or charges are the responsibility of the Installation Supplier. When telephone services are to be used only for equipment testing purposes, the AT&T Representative will arrange for the necessary services.

e) Office Supplies

2.3.3 The Installation Supplier shall not use AT&T trash containers without approval.

2.3.4 Gas or electric welding/cutting equipment, torches or other open flame devices, and internal combustion engine-powered equipment will not be allowed in AT&T buildings without first obtaining a Hot Work Permit through the AT&T Representative. Refer to CRE Practice CRE-50-07-08-ATP-01 for Hot Work Permits and requirements and instructions for proper use of the permit.

2.3.5 The employees of the Installation Supplier shall not be allowed to bring any firearms, explosive devices, onto AT&T premises at any time. Powder actuated fastening devices, including exothermic welding devices, may not be brought onto AT&T premises without prior written approval.

2.4. **Openings, Alterations And Repairs To Buildings**

2.4.1 The Installation Supplier shall contact the AT&T Representative if openings, alterations or repairs to buildings are required to allow material to be placed in position or to provide necessary openings and ducts for cables/conductors in the floors and walls.

2.4.2 Installation supplier shall contact AT&T Equipment Engineer if existing openings have not been previously closed properly, not fire stopped to requirements, too full of cables or opening requires attention.

2.5. **Equipment Protection and Building Security**

2.5.1 The Installation Supplier shall provide adequate protection of buildings and equipment. Such protection shall be of a nature to ensure against any possible damage, or wear and tear to, or degradation of operational, physical, chemical and/or electrical properties of buildings and equipment. The following are examples of protection and are not the only cases where protection is required:

a) An approved method of dust containment shall be used while drilling floors, walls, and ceilings. (See Section G of ATT-TP-76300 for floor drilling requirements.).

b) Fiberboard (e.g., Masonite) or approved floor mats shall be used to protect floors.
c) Existing equipment shall be protected, horizontally and vertically, to prevent damage during installation activities, as identified in the pre-start job meeting. The need for protection within a 10 foot sphere surrounding the equipment shall be considered.

d) Fiberboard (e.g., Masonite) shall be used to protect equipment from physical damage.

e) Anti-static and fire retardant tarp shall be used to protect working equipment from dust and debris. The tarp shall meet NFPA 701 or UL 214 and have a surface resistivity between $10^5$ and $10^{12}$ ohms psi.

f) For protection of equipment that is cooled by either a forced air fan or a heat baffle, fiberboard, in the form of "pegboard" that is treated with approved flame-retardant shall be used. The pegboard shall be placed immediately before starting the daily activity and removed immediately after completion of the daily activity.

g) Stored cable reels shall be blocked or otherwise secured at all times to prevent their movement.

h) Cable shall not be dragged across unprotected flooring. The use of fiberboard or approved floor mats shall be used as floor protection while running cable in Technical Spaces.

i) Electrostatic discharge protective devices necessary for handling and storing circuit packs and other sensitive equipment shall be provided and used by the Installation Supplier.

2.5.2 Installation Supplier personnel shall avoid climbing, standing, or performing any installation or removal activity while on cable racks. If an installation or removal operation cannot be performed from ladders, protection for the cables shall be provided. The protection provided shall be fire retardant and of sufficient size and thickness to spread the load of the installer's weight on the cables and prevent damage to sheathing of the top layer of cables.

2.5.3 The Installation Supplier shall post warning signage identifying overhead work activity in progress.

2.5.4 All frames waiting installation or transportation and not bolted in place shall be secured to auxiliary framing or a building column with webbed polyester/nylon or equivalent straps of at least 1 inch width. Straps and buckles shall be rated at a minimum 1000 pounds tensile strength. In low seismic locations, one strap can be used. In high seismic locations two straps shall be used.

2.5.5 The Installation Supplier is responsible for Installation Supplier caused damages. The Installation Supplier shall correct the damage or reimburse AT&T for repair of damage before final job acceptance.

2.5.6 The Installation Supplier shall not act as an agent of AT&T.

2.5.7 The Installation Supplier shall guard against and take the necessary steps to prevent unauthorized visitors from entering that portion of AT&T premise for which the Installation Supplier is responsible. Exterior openings (e.g. doors, windows, etc.) or interior security openings shall not be left open and unattended.
2.5.8 AT&T may designate the particular gate and/or entrance to be used by the Installation Supplier to enter and leave the premises during installation activity.

2.5.9 The Installation Supplier shall comply with AT&T security policies by ensuring that the premises are locked and secured at all times. All security devices such as windows, screens, fences, doors, gates and other similar equipment shall be in place at all times, except when temporary removal is necessary for the installation of equipment. Any security equipment temporarily removed or disabled by the Installation Supplier shall be replaced at the end of each working day.

2.5.10 Radio frequency transmitting devices such as Cell phones, PCS, or two-way radios are restricted in Carrier Communications Spaces (CCS) such as COs and MTSOs. Two-way radios (e.g. commercial handheld radios, Family Radio Service FRS, or “walkie-talkies”) are prohibited and shall not be used in these areas due to the risk of equipment disturbance at significant distances. Personal mobile devices such as cell phones, PCS, and cellular-connected tablets are restricted to use no closer than 26” (twenty-six inches) from AT&T electronic equipment in these areas where equipment doors and covers may be removed, or no closer than 12” (twelve inches, one foot) from AT&T electronic equipment where doors and covers are all in place. See ATT-TELCO-002-200-354 for further information regarding use of RF transmitting devices in CCS.

2.5.11 Cell phones, PCSs, or two-way radios (e.g. commercial handheld radios, Family Radio Service FRS) can be used in an IS POP/Video room constructed within Carrier Communications Space (CCS) when the POP/video room is separated and enclosed within one hour rated fire walls.

2.5.12 Cell phones, PCSs, or a two-way radios (e.g. commercial handheld radios or FRS) can be used in Global Technical Spaces (GTS) unless otherwise posted.

2.5.13 Strobe flash equipment utilizing arc discharge devices (such as those used in flash photography) is prohibited in all Carrier Communications Spaces (CCS). The exception is visual alert safety devices associated with fire or other building alarms.

2.5.14 Cameras and Photo Equipment are prohibited in any room or area housing electronic telecommunication equipment with the following exceptions:

   a) Photos are taken for quality control or direct AT&T business purposes by a vendor with a current contract and non-disclosure agreement with AT&T. All photographs and videos in AT&T Technical Space are AT&T Proprietary and shall not be used or disclosed outside of AT&T except under written agreement. Photos must be deleted from vendor devices upon issue resolution.

2.6. Drilling in Ceilings and Walls

2.6.1 The Installation Supplier shall not install ceiling inserts unless authorized by the AT&T Representative.

2.6.2 Precautions shall be in place to protect equipment and personnel below, from falling debris.

2.6.3 Tools used for drilling holes into concrete ceilings shall be supplementally supported to avoid the craftsperson from having to hold tool unassisted.
2.6.4 A HEPA vacuum cleaner or drilling equipment equipped with a vacuum attachment shall be utilized when drilling holes in ceiling or walls.

2.6.5 If the drilling of holes in the ceiling or walls is within a 10-foot sphere or over working equipment, additional methods shall be utilized to isolate dust, debris or other air borne contaminates from equipment in the Technical Space. These methods may include but are not limited to:

a) Anti-static, fire retardant sheeting or canvas may be used to contain dust and masonry from equipment.

b) Drilling with various containment devices designed to control dust, debris or other air borne contaminates from equipment (i.e. cone, plunger or sphere surrounding shaft of drill).

2.6.6 Methods utilized to isolate dust, debris or other air borne contaminates from equipment in the Technical Space shall be addressed in a Job Start meeting.

2.7. Penetrating Waterproof Environments

2.7.1 Before drilling into any basement floor, basement wall, or power environment, the Installation Supplier shall determine from AT&T Representative whether waterproofing has been provided and the special requirements for anchoring equipment.

2.7.2 Concrete slabs on grade that have been unintentionally drilled all the way through the slab shall be sealed with silicon caulking at bottom of hole prior to installation of floor anchors.

2.8. Cutting, Filing or Drilling of Metal and Plastic

2.8.1 The Installation Supplier shall strictly control the cutting, filing or drilling of metal or plastic to prevent the introduction of metal filings and other contaminates in all Technical Spaces.

2.8.2 Any work activity that requires cutting, filing or drilling of metal or plastic shall be performed outside Technical Spaces. The Installation Supplier shall have AT&T Representative designate the location for this work activity.

2.8.3 The Installation Supplier shall maintain a clean work area by cleaning up the metal shavings and other contaminates as the work progresses.

2.8.4 Methods that must be used to prevent harm to AT&T equipment from debris from cutting, filing or drilling of metal or plastic outside of Technical Spaces may include but are not limited to:

a) A HEPA Vacuum cleaner shall be utilized to control metal filings and other contaminants.

b) Cutting, filing or drilling activity shall be performed in a manner that will prevent metal filings and other contaminates from entering Technical Spaces (i.e. cutting, filing or drilling activity performed over and into boxed area outside of walkways)

c) All surface areas of this material shall be wiped clean of all metal filings and contaminates before material is brought into Technical Spaces.
d) Materials used for cleaning metal filings and other contaminants shall be disposed of outside the Technical Spaces.

2.8.5 In unusual circumstances, where cutting, filing or drilling of metal or plastic cannot be performed outside Technical Space, the following precautions shall be taken to prevent the introduction of metal filings and other contaminants into the Technical Space.

a) A HEPA vacuum cleaner and/or cutting, filing or drilling equipment equipped with HEPA vacuum attachments shall be utilized.

b) Anti-static, fire retardant sheeting or canvas shall be utilized to control and contain metal filings and contaminants from Information Services and Central Office equipment. Various methods of deployment of anti-static, fire retardant sheeting or canvas are acceptable depending on the work activity to be performed. Precautions shall be taken in all methods of deployment not to restrict airflow to Information Services or Central Office equipment. Examples:

1. Placing or draping anti-static, fire retardant sheeting or canvas adjacent to Information Services and/or Central Office equipment in cutting, filing or drilling work area.

2. Taping and forming anti-static, fire retardant sheeting or canvas in the cutting, filing or drilling work area to prevent metal filings or other contaminants from entering Information Services and/or Central Office equipment.

3. Placing an anti-static, fire retardant sheeting or canvas curtain around the cutting, filing or drilling work area to prevent metal filings or other contaminants from entering Information Services and/or Central Office equipment.

4. When extensive cutting, filing or drilling activities are required, an anti-static, fire retardant sheeting or canvas partition wall shall be utilized to prevent metal filings or other contaminants from entering Information Services and/or Central Office equipment.

3. COMPLIANCE WITH LAWS, RULES AND ORDINANCES

3.1. Permits And Rights-of-Way

3.1.1 AT&T will provide the right-of-way, permits and authority for installation of equipment where the Installation Supplier is restricted from obtaining such right-of-way, permits, etc.

3.2. Laws, Rules And Ordinances

3.2.1 The Installation Supplier shall comply with all applicable federal, state, county and local laws, ordinances, regulations and codes.

3.2.2 The Installation Supplier shall comply with all applicable Occupational Safety and Health Administration (OSHA) and Environmental Protection Agency (EPA) regulations when dealing with hazardous materials and other work place hazards.
3.2.3 Where applicable, all work performed by the Installation Supplier shall meet or exceed the technical requirements of the National Electrical Code (NEC) and all state, county and local codes.

3.2.4 In the job start meeting, the Installation Supplier shall discuss with the AT&T Representative any hazardous materials existing in the Technical Space and/or hazardous materials to be used on the job and handled per the requirements of Section V.

4. EQUIPMENT

4.1. Cross-Connections

4.1.1 AT&T personnel will normally be responsible for installing/removing cross-connect terminations before, during and following all installation activities.

4.1.2 If the Installation Supplier is instructed to install cross-connections as part of the installation activity, the cross-connect termination lists shall be furnished by AT&T.

4.2. General Cleaning

4.2.1 The Installation Supplier shall perform general cleaning of the installed equipment and storage areas (e.g., cleaning floors of debris, packing material, etc.) daily during the entire installation period and at job completion for all types of installations.

4.2.2 The Installation Supplier shall ensure that all equipment is free of dust and foreign substances before being brought into an equipment area.

4.2.3 Cleaning shall be scheduled and performed consistent with local requirements. The frequency of required cleaning is affected by the type of ventilation and the presence of filtering systems. The Installation Supplier shall post the Safety Data Sheet (SDS) for chemicals used in cleaning operation.

Warning-1: All cleaners and polishes used on Information Services or Central Office equipment shall be silicone free.

Warning-2: Spray cleaners shall not be used unless specifically authorized by AT&T.

4.3. Test Equipment

4.3.1 The Installation Supplier shall use properly calibrated test equipment.

4.3.2 Test equipment owned by AT&T for equipment maintenance will not be available for installation purposes except in specific cases where prior arrangements are made with AT&T.

4.3.3 Any test equipment and/or spare equipment provided, as part of the job is the responsibility of the Installation Supplier. In most instances, the test equipment will not be turned over to AT&T until the associated equipment installation is completed. However, upon request, AT&T personnel may have access to the test equipment to permit the checking of circuit features or to allow the testing of added equipment to which test circuits can access.
4.4. **Installation Supplier Inventory and Inspections**

4.4.1 The Installation Supplier shall make a visual inspection of all equipment and apparatus shipped to the job site (prior to installation) to identify any physical damage, defects or problems that may prevent its proper installation, maintenance and/or operation. The Installation Supplier shall notify AT&T Representative verbally as soon as practical and in writing within 72 hours of the verbal notification for resolution when damaged or defective equipment is discovered.

4.4.2 The Installation Supplier shall inventory all equipment and material shipped to the job site prior to job start. Equipment and material received after job start shall be inventoried as well. Questions and/or shortages shall be directed to the appropriate AT&T Representative as specified in the job documentation.

4.4.3 All equipment reused from another job site and equipment relocated within the same job site shall be upgraded by the Installation Supplier to meet current ATT-TP-76300 requirements (e.g. replace mechanical lugs and parallel taps with crimp type lugs and H-taps, remove old stenciling, replace aluminum lugs with UL approved copper lugs, etc.). Information on equipment drawings rated Manufacturer Discontinued (MD) or Addition and Maintenance (A&M) shall be superseded by the latest apparatus and wiring figures, drawings and requirements.