SECTION Q -- EQUIPMENT REMOVAL AND CABLE MINING

CONTENTS PAGE

1. GENERAL ......................................................................................................................... Q-2
   1.1. Introduction ................................................................................................................. Q-2
   1.2. General Requirements ............................................................................................. Q-2
   1.3. Alarm Circuits ............................................................................................................ Q-3
   1.4. Disconnecting Live Circuits From Service ............................................................... Q-3
   1.5. Clearing Trouble ....................................................................................................... Q-4
   1.6. Protection Of Working Equipment ........................................................................... Q-4
   1.7. Disposition Of Removed Equipment ....................................................................... Q-5
   1.8. Use Of Cable Markers ............................................................................................. Q-5

2. HAZARDOUS MATERIAL ................................................................................................. Q-5
   2.1. General Requirements ............................................................................................. Q-5

3. RETIRED IN PLACE ......................................................................................................... Q-5
   3.1. Requirements ............................................................................................................. Q-5

4. REMOVALS ...................................................................................................................... Q-6
   4.1. Removing Frame, Bays And Units ......................................................................... Q-6

5. CABLE MINING ............................................................................................................... Q-7
   5.1. Introduction ................................................................................................................. Q-7
   5.2. Requirements ............................................................................................................. Q-8

TABLE Q-1 – SUMMARY OF CHANGES IN SECTION Q

<table>
<thead>
<tr>
<th>Revision Date</th>
<th>Item</th>
<th>Action</th>
<th>Requirements Change Notification</th>
</tr>
</thead>
<tbody>
<tr>
<td>01/04/2016</td>
<td>4.1.4</td>
<td>Modification</td>
<td>ATT-TP-76300-319</td>
</tr>
<tr>
<td>04/01/2016</td>
<td>Entire Subsection 1</td>
<td>Modification</td>
<td>ATT-TP-76300-327</td>
</tr>
<tr>
<td>04/01/2016</td>
<td>4.1</td>
<td>Modification</td>
<td>ATT-TP-76300-328</td>
</tr>
<tr>
<td>04/01/2016</td>
<td>5.2</td>
<td>Modification</td>
<td>ATT-TP-76300-329</td>
</tr>
<tr>
<td>06/01/2016</td>
<td>1.2.14</td>
<td>Modification</td>
<td>ATT-TP-76300-336</td>
</tr>
<tr>
<td>06/01/2016</td>
<td>3.1.2</td>
<td>Modification</td>
<td>ATT-TP-76300-350</td>
</tr>
<tr>
<td>07/01/2016</td>
<td>3.1</td>
<td>Modification</td>
<td>ATT-TP-76300-352</td>
</tr>
</tbody>
</table>

Q-1
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 the requirements for equipment removal activities.

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

1.2. General Requirements

1.2.1 The Installation Supplier shall not remove equipment from service unless authorized by the AT&T Representative. A detailed MOP shall be prepared and approved by an AT&T Equipment Engineer prior to any removal activities.

1.2.2 Removal work shall include an analysis of the equipment space ground paths. Connectivity to equipment space ground shall be maintained for frames and bays not being removed. It is the responsibility of the Installation Supplier to maintain the integrity of the ground system.

1.2.3 Before removing frames or bays from a lineup, the frame or bay ground shall be temporarily bridged to insure the ground path is not interrupted. The minimum size used for the bridge shall be a #6 AWG stranded conductor.

1.2.4 When the MGB is removed, the Installation Supplier shall maintain ground reference continuity between the battery return of the power plant and Central Office Ground (CO GRD).

1.2.5 Frame and aisle lighting, switches and appliance outlet circuits that are modified or removed will have the AC power removed and the circuit breaker or fuse tagged with an installer created “Warning Tag”, before work begins. A positive lockout device and tag at AC source shall be used to prevent any possibility of energizing circuit.

1.2.6 After removing fluorescent lighting or outlet circuits, verify that the remaining circuits have the correct polarity and the ACEG is continuous.

1.2.7 Ensure that all junction box holes produced by the removal of conduit etc. are plugged. All remaining, open-ended conduit shall be capped. All junction box cover plates shall be in place.

1.2.8 All through penetrations in fire rated walls and all floors created by removal activities shall be filled with approved fire stoppage products as listed in ATT-TP-76300, Section F.
1.2.9 The Installation Supplier shall update all databases, equipment designations, assignments, etc. for which they have responsibility to maintain to reflect any revised circuit and/or fuse assignments, per requirements in Section L.

1.2.10 All designations on equipment remaining in an office associated with removed equipment shall be updated accordingly. This includes, but is not limited to, distributing frames, end guards, fuse and power board assignments, and DSX panels.

1.2.11 The Installation Supplier shall coordinate with the trucking, hauling or scrap company, specified in job documentation, or, as instructed by the AT&T Equipment Engineer, to ensure that all scrap materials are properly removed from the job site.

1.2.12 The Installation Supplier shall adhere to ATT-TP-76300, Section D, when performing any volatile removal work in addition to the "Ask Yourself Handbook" and "Back-Out-Procedure". All materials and personnel required to enforce these procedures are to be present during the performance of all volatile removal work.

1.2.13 The Installation Supplier shall have personnel experienced in cable tracing and splicing on the job site at all times during cable cutting operations in the vicinity of working equipment.

1.2.14 The Installation Supplier shall have the appropriate type and size battery spill kit on site for all battery removal activities.

1.2.15 The Installation Supplier shall ensure that all battery vents and filling tubes are plugged with a shipping plug prior to shipment of batteries containing acid. Also, terminals shall be protected from short circuit with tape, caps, or protective packaging.

1.2.16 The Installation Supplier shall verify (with a clamp-on ammeter) the absence of current for each power lead to be removed. When multiple leads are being removed, the Installation Supplier shall verify the absence of current immediately before removing each lead.

1.2.17 Before the fuse at the power source end of the cable is removed, a clamp-on ammeter shall be utilized to verify the absence of current.

1.3. **Alarm Circuits**

1.3.1 The Installation Supplier shall conduct a joint inspection of all visual and audible equipment and building alarms associated with the removal activity with the AT&T Representative prior to the start of the removal activity.

1.3.2 Alarm circuits shall be kept operational at all times, unless the current work activity dictates temporary disabling of the alarm circuit.

1.3.3 Any alarms disconnected shall be restored and verified for visual and audible accuracy at the completion of each work shift and when removal operations are completed. Alarm verification shall be confirmed for both equipment space and building alarms by the appropriate AT&T alarm monitoring group.

1.4. **Disconnecting Live Circuits From Service**
1.4.1 The Installation Supplier shall verify, via detailed steps in the removal MOP that the AT&T Representative has made the equipment busy and removed all associated fuses, patch cords, cross-connections, etc., before any removal operation is started.

1.5. Clearing Trouble

1.5.1 If trouble is encountered during removal activity, the Installation Supplier shall notify the AT&T Representative immediately.

1.5.2 It is the joint responsibility of the Installation Supplier and the AT&T Representative to promptly locate and clear service interruptions and circuit troubles.

1.6. Protection Of Working Equipment

1.6.1 The Installation Supplier shall protect working equipment during removal operations.

1.6.2 All materials used for protection shall be anti-static, fire retardant and approved by the AT&T Representative.

1.6.3 When extensive equipment removal activities are required, an anti-static, fire retardant sheeting or canvas partition wall shall be constructed and placed between working equipment and the equipment removal area to protect working equipment from airborne contaminants resulting from removal activity.

1.6.4 All applicable safety precautions shall be adhered to during cable removal and mining operations. Sharp objects shall not be used to separate cable bundles. Wedges, lifting, or separating tools shall be non-metallic and non-conductive.

1.6.5 During the mining operation, if it is observed that the ironwork, auxiliary framing or cable rack is becoming distorted, coming loose from its connecting hardware or displays unanticipated movement, the installation supplier shall immediately stop the work activity and notify the AT&T Engineer.

1.6.6 Cable cutting tools shall be equipped with a protective ring during the cable removal or mining operations in the vicinity of working equipment.

1.6.7 During cable removal or mining operations, cable ends shall be passed through the protective ring of cable cutting tools when they are to be cut.

1.6.8 Under no circumstances, shall a loop of cable or wire be inserted through the protective ring of cable cutting tool to be cut.

1.6.9 Under no circumstances shall a cable or wire be cut while on a cable rack.

1.6.10 If there is a possibility of the cut portion of cable striking working equipment when it is cut, the cable cutting activity shall be performed on the floor, or appropriate equipment protection shall be installed to ensure that the cut cable ends do not strike working equipment.

1.6.11 To avoid the possibility of cutting loops of live cables hanging off cable racks, the potentially live cables shall be temporarily separated away from the cables to be cut. When possible, the cables shall be separated on the cable rack. If due to the amount of cable on the cable rack the cables cannot be separated on the cable rack, then the cables shall be temporarily
supported with trunk straps (or equivalent) to the side of the cable rack away from the cable cutting activity.

1.7. Disposition Of Removed Equipment

1.7.1 All removed equipment shall be disposed of at the direction of the AT&T Equipment Engineer.

1.7.2 The Installation Supplier shall contact the AT&T Equipment Engineer to obtain shipping containers if containers are not specified in the detail specification.

1.8. Use Of Cable Markers

1.8.1 The Installation Supplier shall conspicuously identify cabling to be removed with colored labels or tape.

2. HAZARDOUS MATERIAL

2.1. General Requirements

2.1.1 Before the removal or shipment of any equipment, the Installation Supplier shall contact the AT&T Equipment Engineer for instructions for the identification and handling of hazardous material.

2.1.2 If the installation supplier uncovers hazardous materials during the removal and/or cable mining operation (e.g. lead cable, arsenic cable, PCB’s, etc.) the work in that area shall be stopped immediately. The AT&T Representative shall be contacted for disposition and no work in that area shall continue until AT&T has a resolution for the hazardous material identified.

3. RETIRED IN PLACE

3.1. Requirements (Refer to ATT-JA-000-003-812)

3.1.1 Hazardous material shall not be removed.

3.1.2 All equipment, retired in place (RIP), shall be identified by attaching a “RIP” label. Place the RIP label on the equipment so it does not cover any identifying designations.

The following information is required on the RIP label:

a) The words, “Retired In Place. Equipment shall not be redeployed”.

b) The date the equipment was retired (e.g. Date Retired: xx/xx/xxxx).

c) The project number (e.g. Project #: xxxxxxx).

d) TEO Order Number (e.g. TEO Order #: xxxxxxxx).

Note-1: If only a part of the bay is RIP’d include a description of what equipment within the bay is RIP’d (e.g. Nortel OC48, Shelf #1).
Note-2: Use “Not Applicable” if neither a Project nor a TEO Order Number is associated with the work activity.


3.1.3 Only the AT&T authorized representative shall remove power supply fuses. The far end cabling associated with the removed fuse is not required to be disconnected and/or removed from the equipment framework.

3.1.4 Dummy fuses shall be installed within each vacated open face; GMT and Type 70 fuse position(s).

3.1.5 Switchboard cable and wire terminating on the equipment frame, bay, unit or position shall not be disconnected.

3.1.6 Switchboard cable and wire associated with the far end (i.e., distributing frame, fuse boards, other frames, bays, units or positions, etc.) are not required to be disconnected.

3.1.7 Vacated frame blocks shall be removed at the distributing frame if their cabling has been disconnected.

4. REMOVALS

4.1. Removing Frame, Bays And Units

4.1.1 The Installation Supplier shall not remove power supply fuses unless authorized by the AT&T Representative in the MOP. The Installation Supplier shall disconnect and remove from the bay all cables associated with the removed fuses and insure disposition is in accordance with the TEO and/or spec.

4.1.2 The Installation Supplier shall install dummy fuses in each vacated fuse position.

4.1.3 When equipment frame(s) or bay(s) providing support to existing superstructure are to be removed proper support of remaining superstructure is to be maintained. Additional superstructure support shall be provided by means of additional ceiling support, pipe stand(s), stanchion pole(s), etc.

4.1.4 The Installation Supplier shall remove all far end wiring terminations associated with equipment being removed.

Exceptions:

a) When the removed equipment frame power return lead is terminated “Back-to-Back” at the BDFB return bar with another non-job related service providing equipment power return lead, and this non-job related power return lead cannot be safely worked on without potential disruption to network service.
b) When the removed equipment frame power lead is terminated within a BDFB but cannot be safely removed/disconnected within the BDFB due to the existing BDFB power cable congestion and physical location of lead designated to be removed.

c) When the removed equipment far end termination point is associated with a DACS system that utilizes a "paddleboard" (non-BNC) style connector. This type of termination panel utilizes a high concentration of DS3 cables and the sensitivity of the existing non-BNC connectors at the DACS III bay increases the possibility that an active DS3 circuit could be taken down while removing an inactive DS3 circuit.

Designated far end removal exceptions require the concurrence and agreement of the job Implementation and Planning Engineers responsible for said removal project. All non-removed termination cable points are to be clearly labeled and designated accordingly.

4.1.5 Opened alarm multiples shall be reconnected.

4.1.6 When distributing frame terminal strips are partially cleared, all wiring and designations associated with the removed circuits shall be removed.

4.1.7 When a frame or bay is removed, the floor fastener (e.g., Loxin, Hilti, etc.) shall not extend above the floor lines. If the floor fastener extends above the floor line, it shall be removed.

4.1.8 Removed equipment frame anchorage points are to be conditioned in accordance with ATT-812-000-713.

4.1.9 If equipment is to be reused, the Installation Supplier shall:
   a) Remove solder wire wrapped connections and excessive solder from rectangular terminals. Remove wire ends, clear wire holes and remove excessive solder from flat terminals.
   b) Remove the unit and/or frame and prepare it for shipment in accordance with Implementation Engineers direction.
   c) Not remove the hazardous material from the frame or bay.

4.1.10 When equipment frame or bay removal activities take place near open cable holes, the installation supplier shall provide adequate protection to protect personnel and equipment from the danger of material or personnel falling through the cable hole to the floor(s) below.

4.1.11 Equipment frames and bays shall be removed systematically and shall be raised or lowered with hoisting equipment of an adequate size and type to safely perform the hoisting activity. Under no circumstances shall the equipment frame or bay removal process involve dropping frames or bays to the floor.

5. CABLE MINING

5.1. Introduction

5.1.1 Cable mining is defined as the removal of non-working cable (power, switchboard, armored, etc.) from cable racks (vertical or horizontal) that may be mixed with working cables on the same rack.
5.1.2 Cable mining is an operation with a potentially high risk of service problems, equipment damage, personnel injury and fire hazards.

5.1.3 A bulk cable mining operation involves the removal of a significant number of dead cables from a cable route. A bulk cable mining operation does not imply that all the cables on a cable rack are dead and will be removed.

5.1.4 A dead cable is a cable that has been disconnected at both ends and cut back to a point on the cable rack, as a result of equipment removals, relocations, modifications, etc.

5.1.5 Refer to ATT-TP-76305 and ATT-TP-76305-001 for additional cable mining requirements. Refer to ATT-TP-76300, Section O, Requirement 4.1.16, for additional optical jumper requirements.

5.2. Requirements

5.2.1 The Installation Supplier shall immediately stop work and notify the AT&T Representative if any of the following job conditions are observed.
   a) Sparks, ashes, or other signs of arcing
   b) Cables that are warm to the touch
   c) Worn, frayed, or damaged insulation on working cables
   d) Armored cable.

5.2.2 The Installation Supplier shall exercise care when mining cable not to disturb H-tap covers. If an H-tap cover is opened, it shall be secured in accordance with manufactures guidelines.

5.2.3 Cable mining on vertical cable racks between floors where large cables or large amounts of cables are being removed shall be unsecured and removed no more than one floor at a time to prevent excessive unsecured cable hanging weight.

5.2.4 The Installation Supplier shall ensure that remaining cables are placed and secured in accordance with Section J of ATT-TP-76300.

5.2.5 The ends of dead power cables remaining after mining shall be protected with heat shrink caps.

5.2.6 If required, only a nonmetallic cable mining wedge shall be used to separate cables. The wedge shall not be driven between cables; it shall be inserted by hand.

5.2.7 Protection shall be provided for live equipment in the vicinity of cable mining and cutting operations.

5.2.8 Switchboard-type cable shall be cut initially as close to the termination of the cable at the equipment or frame as possible and mined toward its source.

5.2.9 Power cable shall be removed initially between the source protection device and the cable rack before power cable mining starts.

5.2.10 All identified cables to be removed shall be disconnected at both ends, have the ends protected, and left in place for 24 hours prior to any cutting and mining activities.
5.2.11 After the 24 hour waiting period, the Installation Supplier shall cut identified cables as follows:

a) Pull the dead cable off the cable rack until the cut end is in hand (do not, under any circumstances, cut cable loops).

b) The installer shall pass the end of the identified cable through a ring cutter.

c) The initial cut shall be at or through the cable at the colored label or tape.

d) The installer shall continue to pass the dead end of the cable through a ring cutter when making additional cuts.

e) Cables shall be cut not less than 15 inches from the cable rack, with the hanging loose end visible.

f) The Installer shall make sure the cable or wire does not fall into live equipment.

5.2.12 The Installation Supplier shall remove cables off of the cable rack by hand. Excessive force shall not be used.