NO. 1A AUTOMATIC MESSAGE ACCOUNTING RECORDING CENTER (AMARC) CALL DATA TRANSMITTER (CDT) TRANSLATIONS FOR GENERICS 3 AND 4

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1. GENERAL

1.01 This section provides a general description of the Call Data Transmitter (CDT) and translations performed by a No. 1A Automatic Message Accounting Recording Center (AMARC) to billing data transmitted by a CDT. It also provides an outline of nongeneric parameter data (NPD) form changes that are necessitated by growth and rearrangements affecting CDTs.

1.02 This section is being reissued to include Generic 4 and to add information that applies to both Generics 3 and 4. Revision arrows are used to emphasize the more significant changes. The following are the specific reasons for this reissue.

(a) To change section title

(b) To add paragraph 1.03 relative to the generic issue

(c) To add information about unanswered call recording

(d) To delete references to the recording of a customer identification number, a feature which will not be implemented for CDT

(e) To add information about long duration call recording

(f) To add information about channel assignments for a CDT served by an AMARC Generic 4 that also serves the No. 2B and No. 5 Electronic Switching System (ESS) entities.

(g) To revise the meaning of the **Answer** call record data field.

1.03 ▶When any information in this section applies to a particular generic issue, it will be so noted.◀

2. DESCRIPTION OF CDT

SYSTEM OVERVIEW

2.01 The CDT scans completing markers and trunks to determine when an Automatic Message Accounting (AMA) record is required and to collect data for the record.

2.02 After a marker has established the network linkage on a call and released, the CDT examines the collected data to determine whether further processing is required. If further processing is required, the CDT formats the data into an initial entry and stores the data in a buffer. The data are transmitted, via data link, to a No. 1A AMARC upon receipt by the CDT of a polling command from the AMARC.

2.03 The CDT continues to scan the trunk carrying the call. When a called party answer is detected, the CDT formats an answer timing entry and stores it for transmission to the AMARC when polled. When a called party disconnect or a calling party disconnect is detected, the CDT formats a called party disconnect timing entry or a calling party disconnect timing entry, respectively. The disconnect timing entries are stored for later transmission to the AMARC.

2.04 Upon receipt of data from a CDT, the AMARC stores the data until all entries associated with the particular call have been received. The AMARC then performs a billing translation to determine whether an AMA call record is required. If a record is required, the AMARC determines the call type and record format that is required and expands some of the data to meet the format requirements.

2.05 The data required by the AMARC for the determination of the call type and record format and for the expansion of data are provided by the telephone company on NPD forms.

2.06 The AMARC records the formatted call record on magnetic tape. The magnetic tape is processed by the telephone company revenue accounting center to provide customer billing and statistical data.

2.07 Section 958-314-100 provides a general description of the CDT System.

2.08 Section 201-900-103 provides a general description of the No. 1A AMARC, Generic 3,

including operation with a CDT. A description of the No. 1A AMARC, Generic 4, including operation with a CDT is provided in Section 201-900-104.

2.09 Section 218-060-295 provides instructions for determining CDT equipment quantities.

MAJOR EQUIPMENT COMPONENTS

2.10 The CDT System has three major equipment components: controllers, distribute and scan (DAS) equipment, and translator access (TA) circuits. Data links are provided as an interface with the No. 1A AMARC.

A. Controllers

2.11 The major functions of a controller are:

- Administer collection and storage of data from the DAS equipment
- Administer collection and storage of data from the TA circuits
- Receive and act upon messages transmitted from the AMARC
- Transmit billing data to AMARC in response to polling.

2.12 One or two controllers may be provided for a CDT. Both the single controller system and the dual controller system provide AMA recording for a maximum of 2880 trunks. The requirement for a single controller system or a dual controller system generally is based on whether the CDT will collect AMA data only for local calls or for toll as well as local calls.

2.13 Collection of billing data is through scanning of trunks by a controller. Existing AMA equipment may continue to be used for collection of toll AMA data by not equipping those trunks for CDT scanning. Any mixture of local/toll AMA recording may be provided by the CDT, but each trunk must be dedicated to either the existing system or the CDT, in order to prevent double billing.

2.14 The single controller system is suitable for a CDT that collects only local traffic billing data. A dual controller system should be provided for a CDT that collects both local and toll traffic billing data because of the added reliability of dual scanning. Toll and other high revenue trunks should be scanned with dual controller CDTs. Low revenue trunks, as typical in message rate service, can be scanned by a single controller.

2.15 In a dual controller system, both controllers collect some of the billing data, but only one controller transmits data to the AMARC. Selection of the controller to serve a particular call is based on the grounding of odd/even (ODD/EVN) scan points provided on a per marker basis. Selection alternates between the two controllers. In case of a controller failure, all calls are directed to the working controller.

B. Distribute and Scan Equipment

2.16 The DAS equipment provides an interface between the controller and the electromechanical equipment. This interface is provided by distribute and scan points.

2.17 Markers are scanned to determine the following data for a call:

- Originating line link frame location [or line equipment number (LEN)]
- Originating line class of service
- Called telephone number
- Translation lead grounded (LT, LT1, LT2, LT3, X11)
- Observed (OBS) (service or complaint) indication (OBS scan point)
- Traffic sampled (SMP) indication (SMPA, SMP1 through SMP15 scan points)
- Free number intraoffice call indication (ITG, FN, and FNA/FNB scan points)
- Record, nonrecord indication, if the flat rate route series screening feature is provided (RCD, NRD scan points).

2.18 Trunks are scanned to determine supervisory states. The supervisory states, determined by the CS and S1 leads for a trunk, identify trunk seizure and off-hook/on-hook conditions for the calling and called party.

C. Translator Access Circuits

2.19 A TA circuit provides the CDT with access to the AMA and Automatic Identifier Outward Dialing (AIOD) translators and access to the trouble recorder for trouble recording.

2.20 In a single controller system, a minimum of one TA is provided. A second TA may be provided if required for traffic reasons or for added reliability.

2.21 In a dual controller CDT system, each controller has a dedicated TA. A third TA, which is shared between (accessible by) both controllers, may be provided. If the shared TA is provided, the traffic is distributed between the dedicated TA and the shared TA, by alternating the preference.

D. Data Links

2.22 A minimum of one dedicated data link must be provided per controller. A second dedicated data link may be provided for a controller, if required for traffic reasons.

DATA BASES ASSOCIATED WITH CDT

2.23 The CDT requires three data bases: an office parameter data base, an AMA data base, and an AMARC data base.

A. Office Parameter Data Base

2.24 This data base, which is provided by a cross-connection field on the CDT frame, describes the equipment configuration of the office. The cross-connections cause scan points to be grounded, which provide the CDT with the office parameters. These scan points provide the following indications:

- Number of Trunk Scan Units equipped
- Customer class-of-service determination
- Simplex/duplex trunk scanning
- Number of line link frames provided
- Flat rate route series screening provided/not provided
- Completing marker equipped/not equipped (per marker)
- Traffic sampling application
- Shared translator access circuit equipped/not equipped
- Serial input/output (I/O) (data link) quantity
- CDT terminal identification (see Note) as assigned on NPD Form 0306

Note: This number is referred to as the sensor identification in SD-28130-01.

- CDT controller identification
- Markers equipped for service observing, provided/not provided
- Mode status for initial installation
- AIOD provided/not provided
- Markers equipped for Subscriber Line Usage (SLU) provided/not provided.

2.25 The addition of major equipment units, such as completing markers or trunk link frames, to the office requires appropriate changes in this wired cross-connect field.

B. AMA Data Base

2.26 The AMA data base provides the billing telephone number for each line equipment location in the office. The CDT utilizes the existing AMA data base in the No. 5 crossbar office for this purpose. The CDT translator access provides the CDT with access to this data base, via the AMA or AIOD translator.

C. Billing Translation Data Base

2.27 This data base is used by the AMARC to determine whether a particular call (for which the CDT transmitted data) should be recorded and, if so, in what call record format. This data base also contains the information needed by the AMARC to expand the transmitted data into the format required for the call record.

2.28 The information for the billing data base is determined by the telephone company, re-

corded on AMARC NPD forms, and entered into the AMARC memory via recent change (RC) input messages. Section 201-900-030 provides instructions for preparation of the NPD forms.

AUTOMATIC MESSAGE ACCOUNTING (AMA)/CALL RECORDING FEATURES PROVIDED

A. General

2.29 The CDT provides AMA recording for any mixture of local/toll traffic.

2.30 When all toll traffic is to be recorded, the marker must be changed to route all toll calls as non-AMA. When partial toll traffic is to be recorded, all call-carrying trunk groups that are scanned by CDT must be cross-connected as non-AMA and all nonscanned trunks are unchanged. When no toll traffic is to be recorded via the CDT, no marker cross-connection changes are necessary.

2.31 The CDT allows toll and measured service trunk groups to be combined. The Flat Rate Route Series screening feature (see Note) cannot be used with these trunk groups.

> ***Note:*** A description is given in this section under the Flat Rate Route Series Screening Feature beginning in paragraph 2.62.

2.32 Automatic Number Identification (ANI), if required, must be provided by existing equipment.

2.33 The CDT does not provide AMA recording for International Direct Distance Dialing (IDDD).

2.34 The CDT does not provide incoming AMA recording, such as for 800 Service, Centralized Automatic Message Accounting (CAMA), or tandem AMA. Existing Local Automatic Message Accounting-A (LAMA-A) with or without a Billing Data Transmitter (BDT) may continue to provide CAMA and tandem AMA recording without interference from a collocated CDT. Existing timers and registers must be used to provide billing data for 800 Service calls.

2.35 In combination with existing equipment, CDT provides the following AMA/call recording features:

- Local call records
- Local directory assistance call records
- Toll call records
- Wide area telephone service (WATS) call records
- Dial teletypewriter exchange (DTWX) call records
- Automatic Identifier Outward Dialing (AIOD)
- Complaint observing/service observing call records
- Hotel/motel guest call records; remote message register operation using message register trunks or junctors
- Unanswered call recording
- AMA call records for traffic sampled calls
- AMA call records for SLU studies.

2.36 The billing translation performed for a call by the AMARC determines whether a call record will be formatted for a call and, if so, what call type and record format applies to the call. The billing translation is described in Part 5.

2.37 For some types of calls, the CDT determines (during the processing of the call data obtained from marker scan points for the initial entry) that a call record is not required. The call data are then discarded by the CDT and are not sent to the AMARC. The description of the call data processing performed by the CDT which begins with paragraph 2.72 and specifies the types of calls which are discarded by the CDT.

2.38 The following paragraphs provide more detailed information about the provision of some of the AMA/call recording features which were previously listed.

B. AIOD

2.39 The CDT provides AIOD with the use of the existing AIOD translator and associated Station Identification Frame (SIF). The TA is arranged to access the AIOD translator.

2.40 It has been found that on an AIOD call, the TA circuit, in competition with a transverter, will

gain preference to the AIOD translator. This result causes service calls to be billed to the directory number of the private branch exchange (PBX), instead of the PBX station number on second trial after a first trial trouble record. Option Z must be added to the TA circuit to prevent processing of AIOD service calls by CDT prior to cutover. This option is described by Note 403 of SD-28131.

C. Complaint Observing/Service Observing

2.41 The CDT provides AMA recording for calls affected by complaint observing or service observing.

2.42 When a line requires complaint observing, a "shoe" is placed on the line in the central office. This shoe causes the grounding of the observed (OBS) marker scan point whenever the line originates a call. In response to the grounding of this scan point, the CDT sets the OBS special processing flag in the initial entry data transmitted to AMARC for the call.

2.43 When a line is service observed, the OBS marker scan point is grounded just as it is for complaint observing. During the billing translation for a call on which the OBS flag was set in the initial entry, the AMARC determines whether the call was service observed or complaint observed. This determination is made by a check for the calling telephone number in the Complaint Observed Number Table for the entity.

2.44 When the AMARC processes initial entry data in which the OBS flag is set, AMARC sets the OBS flag in the tape output register (TOR).

D. Hotel/Motel Guest Calls

2.45 The CDT provides for AMA recording of hotel/motel guest calls by scanning the message register trunks or junctors used for these calls.

2.46 Hotel/motel guest register operation is provided by use of the existing message register trunks or junctors. The CDT scans these trunks to obtain charging data for transmission to AMARC. The control of the trunk circuit as to the number of initial and overtime pulses, as well as the duration of the overtime period, remains a marker function.

E. Unanswered Call Recording

2.47 ▶Unanswered call recording is provided for the CDT by the use of the **ALW ATT** (allow attempts) input message at the AMARC. When this message is input at the AMARC, all answered and unanswered calls transmitted by all sensors are recorded. For CDT, an AMA call record is formatted for an unanswered call, regardless of whether the billing translation would have required a call record had the call been answered.

2.48 When **ALW ATT** has been input, each call record has a value of 2 or 3 in binary coded decimal (BCD) character 2 of the **study indicator** data field, indicating that ALW ATT (or unanswered call recording) was in effect.

2.49 Studied calls that are unanswered are always recorded regardless of whether the **ALW ATT** input message has been entered at the AMARC. Studied calls are those for which CDT has set any of the following special processing flags in the initial entry:

- OBS — Complaint or service observed
- SMPL — Common control switching arrangement (CCSA) traffic sampled
- PPS — Point-to-point traffic sampled
- NRCD — Study generated (call would not have been recorded had study condition not been in effect).

2.50 Unanswered calls from CDT that have Short Supervisory Transitions (SSTs) are also always recorded. The minimum chargeable duration for a call is 2.4 seconds. Any shorter supervisory transition is referred to as an SST.◀

F. Traffic Sampling

2.51 The traffic sampling feature permits an AMA call record to be made when a selected route (trunk group) or class of service is used. With CDT, the CCSA sampling circuit is not required in order to provide traffic sampling.

2.52 The traffic sampling feature requires the addition of 16 cross-connection terminals in each marker with access to the existing route relay "code pattern" cross-connection terminals.

2.53 The CDT provides two types of traffic sampling: CCSA and point-to-point. The CCSA

traffic sampling usually is taken for revenue sharing purposes and is taken on a class of service or route basis. Point-to-point traffic sampling usually is taken for engineering purposes and is taken on a route basis.

2.54 The CCSA traffic sampling may be applied to 100 percent or 20 percent (every fifth call) of the calls using the selected route or class of service. Point-to-point traffic sampling may be applied on a 20 percent basis only.

2.55 The CDT provides fifteen software counters, in the controller, for use when a 20 percent sample is desired for CCSA or point-to-point traffic sampling. Each counter may be used for either type of traffic sampling. If fifteen counters are not sufficient, existing No. 5 crossbar traffic sampling methods must continue to be used. Counters 1 through 15 are associated with marker scan points SMP1 through SMP15, respectively. Cross-connections on the CDT frame identify to the CDT whether a particular counter is being used for CCSA or point-to-point traffic sampling.

2.56 When CDT processes a call on which one of the SMP1 through SMP15 scan points has been grounded, CDT uses the cross-connections on the CDT frame to identify the type of traffic sampling that applies to the call. If the call is CCSA traffic sampled, CDT sets the SMPL flag in the initial entry data to be transmitted to AMARC. If the call is point-to-point traffic sampled, CDT sets the PPS flag.

2.57 When 100 percent CCSA traffic sampling is required for a selected route or class of service, the cross-connections in the marker are arranged to ground the SMPA (sample all) scan point. When this scan point is grounded, CDT sets the SMPL flag in the initial entry data for the call.

2.58 When AMARC processes the initial entry data for a traffic sampled call, AMARC sets the PPSM or SMPLM flag in the TOR in response to the PPS or SMPL flag set by the CDT.

G. Subscriber Line Usage (SLU) Studies

2.59 The SLU feature permits an AMA record to be made each time a selected class of service is used. The SLU studies typically are used to ascertain customer calling habits before and after the introduction of a new tariff.

2.60 An SLU study is implemented by setting an SLU flag for an originating line class (OLC), using NPD Form 0213A. A call is identified as being part of an SLU study when AMARC translates the OLC for the call.

2.61 An SLU study can be taken only on OLCs whose calls normally are transmitted to AMARC, ie, are not discarded by CDT. For example, in a CDT with the optional flat rate route series screening, an SLU study cannot be taken on an OLC that causes the operation of the NRCD (no record) relay in the marker. The SLU flag is not observed by CDT, since it is a part of the OLC translation; therefore, the SLU flag cannot override the no record condition identified to CDT by the grounding of the NRD marker scan point.

FLAT RATE ROUTE SERIES SCREENING

2.62 Flat Rate Route Series Screening is an optional feature that may be provided with CDT. This feature allows CDT to identify flat rate calls using a particular route (trunk group), in order to prevent the associated call data from being transmitted to AMARC when a call record is not required. The identification by CDT of flat rate calls that are not to be recorded reduces unnecessary CDT translator access time, AMA translator time, data link transmission time, and AMARC call processing time.

2.63 The application for flat rate route series screening is for large, high usage local routes that carry flat and measured rate traffic and are scanned by CDT. Flat rate classes of service using these routes should be arranged to operate a no record (NRCD) relay. Measured rate classes of service should be arranged to operate a record (RCD) relay. The NRCD relay is associated with NRD marker scan points. The RCD relay is associated with RCD marker scan points.

2.64 When the NRD scan point has been grounded on a call being processed by CDT, the CDT sets the NRCD flag in the initial entry data to be transmitted to AMARC. When AMARC processes the initial entry data, the AMARC sets the NRCD flag in the TOR entry for the call.

2.65 A traffic sampling requirement for a call, as identified to CDT by the grounding of the SMPA scan point or one of the SMP1 through SMP15 scan points, overrides the no record condition identified by the grounding of the NRD scan point. In this case, the CDT does transmit the call data to AMARC

so that an AMA record can be made for study purposes.

SEVEN-DIGIT LOCAL DIALING ACROSS NUMBERING PLAN AREA (NPA) BOUNDARIES

2.66 The CDT accommodates 7-digit local dialing across numbering plan area (NPA) boundaries. The NXX indicates number exchange. The billing translation performed by the AMARC provides for recording of the called number as NPA-NXX-station number.

2.67 If 7-digit local dialing across NPA boundaries is allowed and an allowed 7-digit NXX in a foreign NPA is duplicated in the home NPA, the following requirements must be met:

(a) The 1 plus dialing must be allowed only on nonlocal calls.

(b) The duplicate NXX in the home NPA must be reached only by dialing 1 plus seven digits.

2.68 If 7-digit local dialing across NPA boundaries is permitted in the CDT entity, the following NPD forms are affected:

(a) ***Form 0101, Entity Identification:*** This form includes a **Special Dialing Indicator** entry that identifies whether 7-digit local dialing across NPA boundaries is permitted.

(b) ***Form 0220, Called NPA Table:*** This form specifies, for each NPA Index used on Form 0218, the called NPA. Form 0220 also provides the called NPA that is to be used on a 7-digit call when the called NXX is not listed in the Called NXX to Called NPA Index Table. This NPA is the translation specified for called NPA 0. The translations provided by this form allow for recording of the called number as NPA-NXX-station number.

2.69 The following NPD forms must include each NXX outside the home NPA that can be dialed as a local 7-digit call:

(a) ***Form 0214, Flat Rate Billing Table:*** This form lists all NXXs that are included in the local dialing area of the originating line classes that use the specified billing table.

(b) ***Form 0215, Message Rate Billing Table:*** This form specifies for each called NXX, both local and nonlocal, the billing rate indicator (see Note) that applies to the originating line classes that use the specified billing table.

Note: A billing rate indicator (BRI) is translated on Form 0219 to local/nonlocal and bulk billed/detailed billed indicators.

(c) ***Form 0218, Called NXX to Called NPA:*** This form specifies, for each NXX that is located outside of the home NPA but can be dialed as a local 7-digit call, the NPA index that represents the called NPA.

TEN-DIGIT LOCAL DIALING ACROSS NPA BOUNDARIES

2.70 The CDT accommodates 10-digit local dialing across NPA boundaries. If 10-digit local dialing across NPA boundaries is permitted in the CDT entity, the following NPD forms are affected.

(a) ***Form 0101, Entity Identification:*** This form includes a **Special Dialing Indicator** entry that identifies whether 10-digit local dialing across NPA boundaries is permitted.

(b) ***Form 0221, Ten-Digit Local Dialing:*** This form lists all NPAs which can be dialed on a local basis by dialing ten digits. For each NPA, the Flat Rate Billing Table (Form 0214), Message Rate Billing Table (Form 0215), or Secondary Originating Line Class Table (Form 0213B), to be used for calls to the NPA is specified.

2.71 The following NPD forms must include each NXX outside the home NPA that can be dialed as a local call on a 10-digit basis:

(a) ***Form 0214, Flat Rate Billing Table:*** This form lists all NXXs that are included in the local dialing area of the originating line classes that use the specified billing table.

(b) ***Form 0215, Message Rate Billing Table:*** This form specifies for each called NXX, both local and nonlocal, the billing rate indicator (see Note) that applies to the originating line classes that use the specified billing table.

Note: A BRI is translated on Form 0219 to local/nonlocal and bulk/detailed billed indicators.

CDT PROCESSING OF CALL DATA

2.72 The CDT scans completing markers and trunks to determine when an AMA record is required. The CDT is alerted to the state of a call when trunk seizure is detected during a scan.

2.73 After a trunk has been seized, the CDT identifies the marker that has seized the trunk. Once the marker is identified, the following data are obtained from marker scan points:

- LEN of originating line
- Originating line class of service
- Called telephone number
- Translation lead grounded (LT, LT1, LT2, LT3, X11 scan points)
- Service observed/complaint observed indication (OBS scan point)
- Traffic sampled indication (SMPA, SMP1 through 15 scan points)
- Free number intraoffice call indication (ITG/SOG, FN, FNA/FNB scan points)
- Record, nonrecord indication, if the flat rate route series screening feature is provided (RCD, NRD scan points).

2.74 When the network linkage has been set and the marker releases, the CDT checks key pieces of information in the marker buffer to determine whether further call processing is required, such as for recordable service or for CDT test calls.

2.75 If the NRD scan point has been grounded on the call, the call is a flat rate call that has been identified by the use of the optional flat rate route series screening feature. Such a call may require AMA recording for study purposes.

2.76 If the SMPA scan point or one of the SMP1 through SMP15 scan points has been grounded along with the NRD scan point, the call is being traffic sampled. Traffic sampling overrides the no record indication identified by the grounded NRD scan point. In this case, the call data are sent to AMARC for recording. The CDT sets a study, no bill flag in the initial entry data for this call.

2.77 When the AMARC processes this initial entry data, the AMARC sets a study, no bill flag in the TOR.

2.78 If neither the SMPA scan point nor one of the SMP1 through SMP15 scan points has been grounded along with the NRD scan point, the call data are discarded by CDT.

2.79 If the ITR, FN, and FNA/FNB scan points have been grounded, the call is a free number intraoffice call and does not require AMA recording. The call data are discarded and are not sent to the AMARC.

2.80 If the CDT determines that the call requires further processing, the LEN is distributed to an idle TA. The TA then bids for the AMA or AIOD translator in competition with transverters and other TAs. When the translator is seized, the TA passes the LEN to it. The translator translates the LEN to a billing telephone number and registers the billing telephone number in the TA. The TA passes the number to the controller, and the controller releases both the TA and the translator. The billing telephone number is in the format: COI (Calling Office Index) plus station number.

2.81 Once the billing telephone number is determined, the initial entry is formatted. If the billing telephone number translation fails, the LEN is used in the initial entry in place of the billing telephone number. The initial entry includes the following:

(a) Calling party billing telephone number (or LEN if the billing telephone number translation failed)

(b) Called telephone number

(c) Originating line class of service (00 through 99)

(d) Identity of trunk used on call (trunk link frame and trunk number)

(e) Marker number

(f) Special processing flags (see Note):

Note: The indication that an SLU study applies to a call is determined during the transla-

tion, by the AMARC, of the originating line class of service. For this reason, there is no CDT special processing flag for SLU.

- OBS—Call is service or complaint observed.
- SMPL—Call is CCSA traffic sampled.
- PPS—Call is point-to-point traffic sampled.
- NRCD—Call would not have been recorded had study condition not been in effect (study, no bill).

(g) Time indication.

(h) Translation lead grounded (LT, LT1, LT2, LT3, X11).

2.82 With the exception of the failure of the billing telephone number translation, if bad data are obtained from the marker, such as for the calling party class of service, the bad data are replaced in the initial entry by an NCD (noncheck dummy) or "all ones" condition.

2.83 The initial entry is stored in a buffer until it can be transmitted to the AMARC in response to polling.

2.84 Simultaneously with these other operations, the CDT monitors the trunk used on the call for subsequent changes in supervisory scan points. When a called party off-hook condition is detected, an answer timing entry is formatted. When a calling party on-hook condition is detected, a calling party disconnect timing entry is formatted. When a called party on-hook condition is detected, a called party disconnect timing entry is formatted.

2.85 Timing entries include the following data:

- Identity of trunk used on call
- Trunk supervisory state indication
- Time indication.

2.86 Timing entries are stored in a buffer for later transmission to the AMARC.

2.87 The CDT call data are transmitted in a multiple entry format. Completed calls normally are transmitted in three entries: one at trunk seizure (initial entry), one at called party answer (answer timing entry), and one at calling party disconnect (disconnect timing entry). The following are variations to this format:

(a) If the called party disconnects before the calling party, there will be both a called party disconnect entry and a calling party disconnect entry.

(b) An unanswered call (transmitted and recorded when the **ALW ATT** [allow attempts] input message has been entered at the AMARC) will have only an initial entry and a calling party disconnect entry.

(c) Multiple answers (off-hook/on-hook transitions) on a call, reflecting short, supervisory transitions (SSTs), may result in any number of called party timing (answer or disconnect) entries.

3. CALL RECORD REGISTERS

3.01 A call record register (CRR) is an area in AMARC memory for the temporary storage of call data from a sensor. When the AMARC receives data for a call from a CDT entity, the data are stored in a CRR until all data associated with the particular call have been received.

3.02 Each trunk scanned by CDT has one or two dedicated CRRs. A trunk that is scanned by only one controller (single scan) has one dedicated CRR. A trunk that is scanned by two controllers (dual scan) has two dedicated CRRs. With dual scan, because of different data link delay times from each controller, two calls may appear to the AMARC to be "in progress" at the same time for a particular trunk. As a result, two CRRs are dedicated to each dual scanned trunk.

3.03 The AMARC assigns CRRs for a CDT based on the data specified on NPD Forms 0217 and 0307. Form 0217 specifies, for each CDT entity, the highest numbered trunk link frame that is equipped. Form 0307 specifies for each trunk scan board column that is equipped for the CDT, whether the scan points (ie, the trunks) on the column require dual or single scanning. A trunk scan board is part of the DAS equipment provided for a CDT.

4. AMARC CALL PROCESSING OF CDT CALL DATA

4.01 The following paragraphs describe the processing or translations that the AMARC performs for CDT billing data.

4.02 To complete the required translations for CDT billing data, the AMARC must read the various NPD tables contained in AMARC memory. Data from the NPD forms are used to build these tables. Section 201-900-030 provides a general description of the NPD and instructions for preparation of the NPD forms.

4.03 When the AMARC receives billing data, the data are loaded into the Input Assembly Table (IAT) associated with the transmitting channel. An IAT provides temporary storage for billing data transmitted through a specific channel.

4.04 While the billing data are in the IAT, the input entry format of the entity assigned to the channel through which the data were transmitted is determined.

4.05 The AMARC receives billing data from several different sensors. There are differences in the methods of operations of the various sensors. As a result, the billing data received from the various sensors require different amounts of processing. When billing data are received, the AMARC determines the functions or translations to perform based on the method of operation of the sensor transmitting the data. The method of operation is identified by the input entry format of the entity from which the billing data were received.

4.06 For Generic 3, the input entry format of an entity is determined by the following process.

(a) The AMARC accesses the Channel Table to determine the entity number assigned to the transmitting channel. The Channel Table specifies data associated with each channel, such as the entity assigned to the channel.

(b) The AMARC accesses the Entity Table to determine the input entry format of that entity. The Entity Table contains data that uniquely describe each entity which include the input entry format of the sensor with which the entity is equipped.

4.07 ◗For Generic 4, the input entry format is included in the Channel Table entry for a channel. To determine the input entry format of the sensor transmitting billing data, the AMARC accesses the Channel Table entry for the channel over which the data were transmitted.◖

4.08 The input entry format for a CDT entity is multiple entry.

4.09 Once the input entry format is determined to be CDT multiple entry, the billing data are loaded into the CRR associated with the trunk identity transmitted with the data. The AMARC determines the location in memory of the CRR page for the transmitting channel from the Call Record Register Page Descriptor Table.

4.10 When a disconnect timing entry is received, the initial entry and answer entry for the call are unloaded by the AMARC from the CRR into a tape output register and the appropriate study flags are set.

4.11 The AMARC then performs the following translations:

(a) Billing translation to determine whether the call requires AMA recording, and if so, the call type and record format to be used. The billing translation is described in Part 5.

(b) Expansion of COI to calling NPA and calling NXX. This translation is described in Part 7.

(c) Expansion of 7-digit called number to called NPA, called NXX, and called station number, if required. This translation is described in Part 8.

4.12 All of these translations require the use of NPD tables that are provided on an entity basis. To determine which entity transmitted call data, the AMARC accesses the Channel Table with the number of the channel over which the data were transmitted. The entry for the channel in the Channel Table specifies the entity with which it is associated. The AMARC then accesses the NPD tables for the appropriate entity.

4.13 If the billing translation indicates that the call is to be recorded, the other translations are performed and the data are assembled into the AMA call record format determined during the billing translation.

5. BILLING TRANSLATION

GENERAL

5.01 A billing translation is performed by the AMARC on the call data received for a call from CDT. The billing translation determines whether a call record is required, and if so, the AMA call record format that applies.

5.02 This part describes how the call record format is determined. Part 6 defines the data fields included in each call record format.

5.03 The CDT calls may be formatted as the following call types:

(a) ***Call Type 001, Detailed Message Rate, Timed, MBI:*** This message rate call type provides the called and calling number. The call is timed and a Message Billing Index (MBI) (see Note) is provided to indicate rate treatment.

Note: The BRI for the call, which is determined during the billing translation, is used as the MBI.

(b) ***Call Type 002, Message Rate, Timed, MBI:*** This message rate call type does not provide full call details. The called number is not provided. The call is timed and an MBI (BRI) is provided to indicate rate treatment.

(c) ***Call Type 006, Station Paid:*** This call type provides full call details for a direct dialed station paid toll call (both seven and ten digits), including a toll directory assistance call (NPA-555-1212 dialed).

(d) ***Call Type 007, WATS—Station Detail:*** This call type provides details for a call routed over a WATS facility, with a WATS station number provided in the **Originating Number** data field. A Full Business Day or a Measured Time indication and a WATS Band indication are included.

(e) ***Call Type 009, Directory Assistance:*** This call type provides details on a 411 local Directory Assistance call.

(f) ***Call Type 012, CCSA AFR WATS (Automatic Flexible Routing WATS):*** This call type is for a call that started on a CCSA network but was routed to a WATS line. The details recorded are WATS type information.

(g) ***Call Type 020, DTWX:*** This call type applies to a dialed TWX call.

(h) ***Call Type 021, CCSA Sampling:*** This call type provides details for a call routed over a CCSA facility.

(i) ***Call Type 030, WATS AFR WATS:*** This call type indicates that a WATS call was blocked on the original trunk and was routed to an alternate trunk (band).

(j) ***Call Type 033, Directory Assistance:*** This call type indicates a 7-digit 555 Directory Assistance call. All calls with a 555 terminating NXX are recorded with this call code independent of the dialed line number.

(k) ***Call Type 034, Signaling Irregularities:*** This call type indicates that the record in which it appears contains the details of a Short Supervisory Transition (SST) (see Note) that has occurred. Two or more AMA records are output by AMARC when an SST is reported by a CDT. All except the last one are an SST recording (Call Type 034), with timing information on the SST. The last is a call record (any call type) to identify the call on which the SST occurred.

Note: The minimum chargeable duration for a call is 2.4 seconds. Any shorter supervisory transition is referred to as an SST. If circuit release occurs at the end of the SST, the call is considered under minimum chargeable duration (UMCD).

(l) ***Call Type 067, Local Flat Rate:*** This call type provides AMA details for a call within a flat rate area of the customer. This call does not require AMA data for billing, but data are provided, as required, for studies.

(m) ***Call Type 068, WATS Billing Number:*** This call type provides details on a call routed over a WATS facility, with a WATS Billing Number provided in the **Originating Number** data field. A Full Business Day or a Measured Time indication and a WATS Band indication are provided.

(n) ***Call Type 069, WATS AFR DDD (Direct Distance Dialing):*** This call type indicates a call that originated on a WATS line and was routed to the DDD network.

(o) ***Call Type 070, CCSA AFR DDD:*** This call type indicates a call that originated on a CCSA line and was routed to the DDD network.

5.04 The following NPD tables are used for the billing translation. The NPD form on which data for each table are compiled by the telephone company is specified in parentheses following the table name.

(a) ***Entity Table (0101):*** This table contains data which uniquely identify an entity. For a

CDT entity, this table includes a definition of the special dialing patterns that are allowed in the entity.

(b) ***Originating Line Class to Message Billing Class Table (0213A):*** This table translates each line link frame vertical file class of service assigned in the office to an message billing class (MBC) and a Flat Rate Billing Table or a Message Rate Billing Table, if a Billing Table is required.

(c) ***Secondary Originating Line Class Tables (0213B):*** One of these tables specifies, for each originating line class (OLC), the billing table to be used on a 10-digit local call to the NPA linked to the table from the Ten-Digit Local Dialing Table. A Secondary Originating Line Class Table is used only when the billing table must be determined based on the OLC.

(d) ***Flat Rate Billing Tables (0214):*** These tables are used to determine whether a called NXX is local or nonlocal for a particular MBC.

(e) ***Message Rate Billing Tables (0215 and 0219):*** These tables are used to determine for each MBC the following billing data to be applied to each called NXX:

- Local/Nonlocal indicator
- Bulk/Detailed Billed indicator
- BRI.

(f) ***Dedicated Trunk Table (0216):*** This table is used on a call from a line with an MBC of CCSA or WATS automatic flexible routing (WAFR) to determine whether the trunk that carried the call is a regular network trunk, a WATS trunk, or a CCSA trunk.

(g) ***Ten-Digit Local Dialing Table (0221):*** This table is used only on a 10-digit call in an entity that allows 10-digit local dialing across NPA boundaries. This table specifies the Flat Rate Billing Table or Message Rate Billing Table to be used for each called NPA that can be dialed on a 10-digit local basis. If the billing table to be used on calls to a particular NPA must be determined as a function of the originating line class (OLC), a Secondary Originating Line Class Table is specified instead of a billing table.

(h) ***Complaint Observed Number Table (0401):*** This table lists up to 50 telephone numbers in a CDT entity that require complaint observing.

5.05 Figure 1 illustrates the billing translation.

5.06 The billing translation is based on the following data and in addition to that data, a flat rate call (which could have an MBC of FLAT, MESS, COIN, or CCSA) may be recorded for study purposes only.

- OLC only — If the MBC that applies to the OLC is DTWX, WBNF, WBNM, WSFX or WSMX
- OLC and call destination — If MBC is FLAT, MESS, or COIN
- OLC and trunk identity — If MBC is WAFR or CCSA.

POINT-TO-POINT, COMMON CONTROL SWITCHING ARRANGEMENT (CCSA) TRAFFIC SAMPLED, AND SUBSCRIBER LINE USAGE (SLU) STUDY CALLS

5.07 For all calls, AMARC determines whether a point-to-point, CCSA traffic sampled, or SLU study applies to the call, based on whether the PPSM or SMPLM flag is set in the TOR and on whether the SLU flag is set for the OLC (see Note). If a study applies to a call, AMARC identifies the study (studies) in the call record as follows:

(a) ***Point-to-point:*** The first binary coded decimal (BCD) character of the **Study Indicator** is 1 (Point-to-Point) or 3 (Point-to-Point and SLU).

(b) ***SLU:*** The first BCD character of the **Study Indicator** is 2 (SLU) or 3 (Point-to-Point and SLU).

(c) ***CCSA Traffic Sampled:*** The first BCD character of the **Service Observed, Traffic Sampled** data field is 2 (Not Service Observed, Traffic Sampled) or 3 (Service Observed, Traffic Sampled).

Note: In the paragraphs that follow, which describe the billing translation, reference to the study determination is made only where this determination affects whether the call is recorded.

5.08 For a call on which a point-to-point or a CCSA traffic sampled study applies, if the study, no bill flag has been set in the TOR, a no bill indication is included in the call record. This indication is made by a value of 2 for the third BCD character of the **Study Indicator** data field. If the study, no bill flag is not set, the no bill indication is not included in the call record.

5.09 For a call on which an SLU study applies, if the AMARC determines that the call is flat rate, the no bill indication is included in the call record. If the call is not flat rate, the no bill indication is not included.

ORIGINATING LINE CLASS TRANSLATION

5.10 The AMARC begins the billing translation by accessing the Originating Line Class To Message Billing Class Table (Form 0213A) with the originating line link frame vertical file class of service from the TOR. The OLC is translated to an MBC and an SLU indication. If the MBC is FLAT, MESS, COIN, CCSA or WAFR, the OLC is also translated to a Flat Rate Billing Table or a Message Rate Billing Table.

5.11 Each OLC has an SLU flag. If this flag is set, SLU studies are being taken on lines with that OLC and an AMA record is required for each call that uses the OLC. The SLU flag causes an AMA record to be taken, regardless of whether the billing translation determines that a call is a flat rate call.

LOCAL DIRECTORY ASSISTANCE

5.12 The AMARC next checks the called number for a match with 411 or 555-XXXX.

5.13 If the called number matches 411 or 555-XXXX, AMARC checks whether the MBC is COIN. If it is not COIN, AMARC formats a Directory Assistance call record (Call Type 009 for a 411 call or Call Type 033 for a 555-XXXX call). If the MBC is COIN, AMARC checks whether the PPSM or SMPLM flag is set in the TOR. If one of these flags is set, AMARC formats a Station Paid call record. In this case, the call is recorded for study purposes only.

ALL OTHER CALLS

5.14 If the called number does not match 411 or 555-XXXX, the billing translation continues, based on the MBC, as described in the following paragraphs.

A. FLAT (Flat Rate) MBC

5.15 The AMARC next determines whether the called number is ten digits.

Ten Digits Dialed

5.16 If the called number is ten digits, the AMARC accesses the Entity Table (Form 0101) to determine whether 10-digit local dialing across NPA boundaries is allowed in the entity.

Ten-Digit Local Dialing Not Allowed

5.17 If 10-digit local dialing is not allowed, the call is not local and the call is formatted as Station Paid.

Ten-Digit Local Dialing Allowed

5.18 If 10-digit local dialing is allowed, the AMARC accesses the Ten-Digit Local Dialing Table (Form 0221) for the entity with the called NPA from the TOR. If the called NPA is not listed, the call is not local and the call is formatted as Station Paid. If the called NPA is listed, the Secondary Originating Line Class Table (Form 0213B) or the Flat Rate Billing Table (Form 0214) to be used on calls to this NPA is obtained. The Ten-Digit Local Dialing Table specifies a Secondary Originating Line Class Table when the billing table must be determined as a function of the OLC. The number of the Flat Rate Billing Table that had been determined from the OLC is overwritten with this Billing Table number.

5.19 The AMARC accesses the specified Flat Rate Billing Table with the called NXX from the TOR to determine whether the NXX is local or nonlocal.

5.20 ***Nonlocal NXX:*** If the NXX is nonlocal, the call is formatted as Station Paid.

5.21 ***Local NXX:*** If the NXX is local, the AMARC determines whether a point-to-point, CCSA traffic sampling or an SLU study applies to the call, based on whether the PPSM or SMPLM flag is set in the TOR and on the OLC translation.

5.22 If none of these studies applies, the call is discarded and is not recorded.

5.23 If any of these studies apply, the call is formatted as Local Flat Rate. The study (studies) are identified in paragraph 5.07.

Ten Digits Not Dialed

5.24 If the called number is 1 plus seven digits, AMARC accesses the Entity Table to determine whether 1 plus dialing is used only on nonlocal calls.

5.25 If 1 plus dialing is used only on nonlocal calls, the call is formatted as Station Paid. If 1 plus dialing is not used only on nonlocal calls, AMARC proceeds as described in the following for a 7-digit call dialed without an access code.

5.26 If the called number is 7 digits (or 1 plus seven digits when this may be a local call), the AMARC accesses the Flat Rate Billing Table determined from the OLC to determine whether the NXX is local or nonlocal.

5.27 ***Nonlocal NXX:*** If the NXX is nonlocal, the call is formatted as Station Paid.

5.28 ***Local NXX:*** If the NXX is local, the actions taken are the same as described in paragraphs 5.21 through 5.23. If a study applies, the call is recorded as Local Flat Rate. If no study applies, the call is discarded.

B. MESS (Message Rate) MBC

5.29 The AMARC next determines whether the called number is ten digits.

Ten Digits Dialed

5.30 If the called number is ten digits, the AMARC accesses the Entity Table to determine whether 10-digit local dialing is allowed in the entity.

Ten-Digit Local Dialing Not Allowed

5.31 If 10-digit local dialing is not allowed, the call is not local and the call is formatted as Station Paid.

Ten-Digit Local Dialing Allowed

5.32 If 10-digit local dialing is allowed, the AMARC accesses the Ten-Digit Local Dialing Table for the entity with the called NPA. If the called NPA is not listed, the call is not local and the call is formatted as Station Paid. If the called NPA is listed, the Secondary Originating Line Class Table, the Message Rate Billing Table (Form 0215) to be used on calls to this NPA is obtained. The number of the Message Rate Billing Table that had been determined from the OLC is overwritten with this Billing Table number.

5.33 The AMARC accesses the specific Message Rate Billing Table with the called NXX to determine the BRI that applies to the call and to translate the BRI to call format requirements: local/nonlocal, bulk billed/detailed billed. (The BRI translations are specified on Form 0219.)

5.34 If the BRI equals 00, the called NXX is nonlocal and the call is formatted as Station Paid. The BRI 00 is defined generically as a nonlocal call treatment and may not be used otherwise.

5.35 If the BRI equals 15, the called NXX is local and is to receive flat rate call treatment. The BRI 15 is defined generically as a flat rate call and may not be used otherwise.

5.36 The actions taken when the BRI equals 15 are the same as described in paragraphs 5.21 through 5.23. If a study applies, the call is recorded as Local Flat Rate. If no study applies, the call is discarded.

5.37 If the BRI equals 01 through 14, AMARC uses the local/nonlocal, bulk billed/detailed billed requirements of the BRI to determine the call type and record format.

5.38 If the BRI represents a nonlocal call, the call is formatted as Station Paid.

5.39 If the BRI represents a local call with a detailed billed requirement, the call is formatted as Detailed Message Rate, Timed, MBI. The **WATS Indicator** data field specifies 0. The BRI determined for the call is used as the MBI in the **WATS Band or Type Indicator** data field.

5.40 If the BRI represents a local call with a bulk billed requirement, the AMARC next determines whether the OBS (Observed) flag is set in the TOR. This flag is set for either a complaint observed call or a line service observed call.

5.41 If the OBS flag is not set, the call is formatted as Message Rate, Timed, MBI. The **WATS**

Indicator data field specifies O. The BRI determined for the call is used as the MBI in the **WATS Band or Type Indicator** data field.

5.42 If a point-to-point or SLU study applies to the call, based on whether the PPSM flag is set in the TOR and on the OLC translation, the appropriate values are recorded in the **Study Indicator** data field as described in paragraph 5.07.

5.43 If the OBS flag is set, the AMARC accesses the Complaint Observed Number Table (Form 0401) to determine whether the originating number is being complaint observed.

5.44 If the originating number is listed in the table, it is being complaint observed. The call is formatted as Detailed Message Rate, Timed, MBI. The **Study Indicator** data field contains a value of 1 (Complaint Observed) or 3 (Complaint Observed and Network Completion) for the second BCD character. The **WATS Indicator** data field specifies 0. The BRI determined for the call is used as the MBI in the **WATS Band or Type Indicator** data field.

5.45 If the OBS flag is set but the originating number is not listed in the Complaint Observed Number Table, the call is line service observed. The call is formatted as Message Rate, Timed, MBI. The **Service Observed, Traffic Sampled** data field contains a value of 2 (Not Service Observed, Traffic Sampled) or 3 (Service Observed, Traffic Sampled) for the first BCD character. The **WATS Indicator** data field specifies O. The BRI determined for the call is used as the MBI in the **WATS Band or Type Indicator** data field.

Ten Digits Not Dialed

5.46 If the called number is 1 plus seven digits, AMARC accesses the Entity Table to determine whether 1 plus dialing is used only on nonlocal calls.

5.47 If 1 plus dialing is used only on nonlocal calls, the call is formatted as Station Paid. If 1 plus dialing is not used only on nonlocal calls, AMARC proceeds as described below for 7-digit calls dialed without an access code.

5.48 If the called number is seven digits (or 1 plus seven digits when this may be a local call), AMARC accesses the Message Rate Billing Table determined from the OLC. This table is accessed with the called NXX to determine the BRI that applies to the call and to translate the BRI to call format requirements. Call formatting then proceeds as explained in paragraphs 5.34 through 5.45.

C. COIN

5.49 The COIN calls are recorded for revenue sharing purposes only. Local calls and local Directory Assistance calls are recorded only if a point-to-point, CCSA traffic sampling or SLU study applies to the call.

5.50 The second through the third BCD characters of the **Service Feature** data field of a call record formatted for a call with a COIN MBC are 01 (Prepay Coin).

5.51 The billing translation for a COIN MBC is the same as for a FLAT MBC, with the exception that a flat rate call recorded for study purposes is recorded as Station Paid for a COIN MBC while it is recorded as Local Flat Rate for a FLAT MBC. The billing translation for a FLAT MBC is described in paragraphs 5.15 through 5.28.

D. DTWX (Dial Teletypewriter Exchange)

5.52 The DTWX customers are allowed to make only DTWX calls. All calls on which a DTWX MBC is determined are formatted as DTWX.

E. CCSA (Common Control Switching Arrangement)

5.53 Local Directory Assistance calls may be dialed by CCSA customers. Such a call is recorded as Call Type 009 or 033, Directory Assistance, as it is for any other MBC.

5.54 In order to determine the call format to use for a CCSA call, the AMARC first accesses the Dedicated Trunk Table for the entity with the identity of the trunk (Trunk Link Frame, Trunk Number) used on the call. This table lists all WATS and CCSA trunks scanned by the CDT. For a CCSA trunk, the table only identifies the trunk as a CCSA trunk. For a WATS trunk, the table specifies whether it is for Measured Time or Full Business Day service and the WATS band to which it is dedicated. Trunks not specifically entered into the table via data specified on Form 0216, default to a regular network trunk.

Regular Network Trunk

5.55 If the trunk is a regular network trunk, AMARC accesses the Flat Rate Billing Table

or Message Rate Billing Table determined from the OLC. If this is a Flat Rate Billing Table, the call is treated the same as a FLAT MBC (paragraphs 5.15 through 5.28). If this is a Message Rate Billing Table, the call is treated the same as a MESS MBC (paragraphs 5.29 through 5.48).

5.56 Any call record formatted as a result of the billing translation, however, is recorded as CCSA AFR DDD instead of the call type specified for FLAT or MESS.

WATS Trunk

5.57 If the trunk is a WATS trunk, the call is recorded as CCSA AFR WATS. The **WATS Indicator** data field identifies whether Full Business Day or Measured Time service applies to the call. The **WATS Band or Type Indicator** data field identifies the WATS band that applies to the call. The Full Business Day/Measured Time and the WATS Band data are obtained from the Dedicated Trunk Table entry for the trunk.

CCSA Trunk

5.58 If the trunk is a CCSA trunk, the call is recorded as CCSA Sampled. The **Study Indicator** data field indicates that the call is traffic sampled.

E. WAFR (WATS Automatic Flexible Routing)

5.59 A call from an OLC with a WAFR MBC is treated the same as a CCSA MBC, with the following exceptions:

(a) If the trunk is a regular network trunk, any call record formatted as a result of the billing translation is formatted as WATS AFR DDD.

(b) If the trunk is a WATS trunk, the call is formatted as WATS AFR WATS.

(c) The use of a CCSA trunk does not apply.

F. WBNF (WATS Billing Number, Full Business Day), WBNM (WATS Billing Number, Measured Time)

5.60 All calls are formatted as WATS Billing Number. The **WATS Indicator** data field identifies whether Full Business Day (WBNF) or Measured Time (WBNM) service applies to the call.

G. WSFX (WATS Station Number, Full Business Day), WSMX (WATS Station Number, Measured Time)

5.61 All calls are formatted as WATS Station Detail. The **WATS Indicator** data field identifies whether Full Business Day (WSFX) or Measured Time (WSMX) service applies to the call. The **WATS Band or Type Indicator** data field identifies the WATS band that applies to the call. The WATS band is the X value of the WSFX or WSMX MBC.

6. AMA CALL RECORD FORMATS

GENERAL

6.01 Comptroller's Letter M284A defines the call details that are to be included in call records for various call types. It also specifies the format of the call record for each call type. Every call recorded by any automatic recording system must conform to a call format defined in this comptroller's letter. The AMARC determines the appropriate call type for each CDT call and formats accordingly, conforming to the comptroller's letter.

6.02 Presently, Comptroller's Letter M284A does not include the formats used for the No. 1A AMARC Generic 3 or 4. A future update of the letter or its replacement will include these formats.

6.03 ▶All Call Type Call Codes (referred to as Call Types, for convenience, in this document) used for CDT call formatting have 14 common data fields. Each call type format has several optional data fields. The use of these optional data fields for a call is based on the following conditions which may occur:

- Call was answered.
- Call was unanswered.
- Call was a Long Duration call (see Note).

Note: For the CDT, a Long Duration call is a call that remained in progress through three successive midnights. The **Timing Indicator** data field for such a call identifies the call as a Long Duration call.

6.04 Each of the call conditions listed earlier is defined by a Structure Code. The Structure Code specifies the data fields that must be included in a particular record.

6.05 Call Type 006, Station Paid, for example, has the following three associated Structure Codes:

- 10001: Call was answered.
- 10002: Call was unanswered.
- 10101: Call was a Long Duration call.◀

6.06 The AMARC determines the Call Type that applies to a particular call, as explained in Part 5. The AMARC then chooses the appropriate Structure Code for that Call Type based on the call conditions. Table BB defines, for each Call Type that applies to CDT, the associated Structure Codes. This table also defines for each Structure Code the associated data fields.

CALL RECORD DATA FIELDS

6.07 The following paragraphs describe each data field that applies to the Structure Codes used for CDT call records. The description of each data field specifies only the values that apply to CDT calls.

6.08 ***AA or AB:*** Value AA indicates the start of record. Value AB indicates the start of record and that the "SIGN" value for one of the data fields was a hexadecimal D. Hexadecimal D indicates that one of the digits received from the sensor for the data field was mutilated or was a noncheck dummy (NCD)(see Note).

Note: The AMARC converts the mutilated digit to a hexadecimal F before recording. Only the mutilated digit is converted.

6.09 For a CDT, a hexadecimal D in the "SIGN" position for any of the following data fields results in an AB value for the start of record entry.

- **Originating NPA**
- **Originating Number**
- **Terminating NPA**
- **Terminating Number.**

6.10 A hexadecimal C in the "SIGN" position for a data field indicates that all data for the field are valid.

6.11 ***Structure Code:*** The Structure Code defines the optional data fields for a Call Type that are included in the particular call record (refer to Table A).

▶TABLE A◀

BCD CHARS	STRUCTURE CODE	DESCRIPTION
1-5	10001	Answered
	10002	Unanswered
	10015	Answered
	10016	Unanswered
	10020	Answered
	10021	Unanswered
	10028	Answered
	10068	Unanswered
	10077	Answered
	10078	Unanswered
	10101	Long Duration
	10115	Long Duration
	10120	Long Duration
	SIGN (hex C)	

6.12 ***Call Type Code:*** This field defines the call type format used for the call record (refer to Table B).

TABLE B

BCD CHARS	CALL TYPE CALL CODE	DEFINITION
1-3	001	Detailed Message Rate, Timed, MBI
	002	Message Rate, Timed, MBI
	006	Station Paid
	007	WATS-Station Detail
	009	Directory Assistance (411)
	012	CCSA AFR WATS
	020	DTWX
	021	CCSA Sampling
	030	WATS AFR WATS
	033	Directory Assistance (555)
	034	Signaling Irregularities
	067	Local Flat Rate
	068	WATS Billing Number
	069	WATS AFR DDD
	070	CCSA AFR DDD
4	SIGN (hex C)	

6.13 ***Sensor Type:*** This field identifies the type of sensor from which the call originated (refer to Table C).

TABLE C

BCD CHARS	SENSOR TYPE	SENSOR
1-3	021	CDT
4	SIGN (hex C)	

6.14 ***Sensor Identification:*** This field contains the 6-digit code that identifies the sensor entity (refer to Table D).

TABLE D

BCD CHARS	SENSOR IDENTIFICATION
1	Padding (0)
2-7	Identifying code
8	SIGN (hex C)

6.15 ***Recording Office Type:*** This field identifies the type of system that recorded the call record (refer to Table E).

TABLE E

BCD CHARS	RECORDING OFFICE TYPE	RECORDING OFFICE
1-3	018	No. 1A AMARC
4	SIGN (hex C)	

6.16 ***Recording Office Identification:*** For No. 1A AMARC, this field specifies the 6-digit identification number assigned by the telephone company to the recording AMARC. This number also is included on the label that is placed on the magnetic tape before it is sent to the accounting center (refer to Table F).

TABLE F

BCD CHARS	RECORDING OFFICE IDENTIFICATION
1	Padding (0)
2-7	Identifying code
8	SIGN (hex C)

6.17 ***Date:*** This field identifies the year, month, and day on which an answer occurred for the call. On an unanswered call, this field is used to record the circuit seize date (refer to Table G).

TABLE G

BCD CHARS	MEANING
1	Last digit of year
2-3	Month
4-5	Day
6	SIGN (hex C)

6.18 ***Timing Indicator:*** This field identifies special timing conditions that applied to the call (refer to Table H).

TABLE H

BCD CHARS	MEANING
1	0 = Not used
2	0 = Not used 1 = SST recorded (not at disconnect) 3 = SST + UMCD (at disconnect with SST)
3	0 = Not used 1 = Start of long duration call 2 = Continuation of long duration call 3 = End of long duration call
4	0 = Not used 1 = Charge guard
5	0 = Not used
6	SIGN (hex C)

6.19 ***Study Indicator:*** This field identifies various study conditions that applied to the call (refer to Table I).

TABLE I

BCD CHARS	MEANING
1	0 = Not used 1 = Point-to-Point 2 = SLUS 3 = Point-to-Point and SLUS
2	0 = Not used 1 = Complaint observed 2 = Unanswered Call Recording 3 = Complaint observed and Unanswered Call Recording
3	0 = Not used 2 = Study, not billed
4	0 = Not used
5	0 = Not used
6	0 = Not used
7	0 = Not used
8	SIGN (hex C)

6.20 ***Answer:*** A value of 0 indicates the call was answered and is billable. A value of 1 indicates either that the call was unanswered or that the call was answered but is not billable (refer to Table J).

TABLE J

BCD CHARS	MEANING
1	0 = Answer 1 = Unanswered
2	SIGN (hex C)

6.21 ***Service Observed, Traffic Sampled:*** This field identifies service observing and traffic sampling conditions that applied to the call (refer to Table K).

TABLE K

BCD CHARS	MEANING
1	0 = Not service observed, not traffic sampled 1 = Service observed, not traffic sampled 2 = Not service observed, traffic sampled 3 = Service observed, traffic sampled
2	SIGN (hex C)

6.22 ***Operator Action:*** This field identifies operator dialed and operator identified conditions that applied to the call (refer to Table L).

TABLE L

BCD CHARS	MEANING
1	0 = Not operator dialed, not operator identified
2	SIGN (hex C)

6.23 ***Service Features:*** This field identifies special services that applied to the call (refer to Table M).

TABLE M

BCD CHARS	MEANING
1	Padding (0)
2-3	00 = Other 01 = Prepay coin
4	SIGN (hex C)

6.24 ***Originating NPA:*** This field identifies the NPA of the line that originated the call (refer to Table N).

Note: For CDT, if the NPA is 000, the number recorded in the **Originating Number** data field is the calling line equipment number (LEN).

TABLE N

BCD CHARS	MEANING
1-3	NPA
4	SIGN (hex C)

6.25 ***Originating Number:*** This field identifies the 7-digit telephone number of the line that originated the call. If the billing telephone number translation failed at the CDT, the originating number is not available. In this case, this CDT transmits the line link frame location (line equipment number) of the calling line. The LEN then is recorded in the **Originating Number** data field.

6.26 If this data field contains a LEN, the **Originating NPA** data field specifies an NPA of 000 (refer to Table O).

TABLE O

BCD CHARS	MEANING
FOR ORIGINATING NUMBER DATA	
1-3	NXX
4-7	4-digit number
8	SIGN (hex C)
FOR ORIGINATING LINE EQUIPMENT DATA	
1	0 = Tip party 1 = Ring party 2 = Invalid translation 3 = Invalid translation
2-3	Line link frame (00-59)
4-5	Vertical group (00-11)
6	Horizontal group (0-9)
7	Vertical file (0-4)
8	SIGN (hex C)

6.27 ***Overseas Indicator:*** For a CDT call, this field always indicates that the call was not an overseas call (refer to Table P).

TABLE P

BCD CHARS	MEANING
1	0 = Not an overseas call (NPA dialed) 1 = Not an overseas call (NPA not dialed)
2	SIGN (hex C)

6.28 ***Terminating NPA:*** This field identifies the NPA of the number to which the call terminated (refer to Table Q).

TABLE Q

BCD CHARS	MEANING
1-2	Overseas expander positions (00)
3-5	NPA
6	SIGN (hex C)

6.29 ***Terminating Number:*** This field identifies the 7-digit number to which the call terminated (refer to Table R).

TABLE R

BCD CHARS	MEANING
1-3	NXX
4-7	4-digit number
8	SIGN (hex C)

6.30 ***Time:*** This field identifies the hours, minutes, seconds, and tenths of seconds at which answer occurred. On an unanswered call, this is the circuit seize time (refer to Table S).

TABLE S

BCD CHARS	MEANING
1-2	Hours
3-4	Minutes
5-6	Seconds
7	Tenths of seconds
8	SIGN (hex C)

6.31 ***Elapsed Time:*** This field identifies the duration of the call in minutes, seconds, and tenths of seconds. Zero duration answered calls (value 0 in **Answer** data field) are billable (refer to Table T).

Note: On attempts (unanswered calls), zeros are recorded for minutes, seconds, and tenths of seconds.

TABLE T

BCD CHARS	MEANING
1	Padding (0)
2-6	Minutes
7-8	Seconds
9	Tenths of seconds
10	SIGN (hex C)

6.32 ***Circuit Date:*** This field identifies the circuit release date. For an unanswered call recorded during a point-to-point study, this field is used to record the circuit seize date (refer to Table U).

TABLE U

BCD CHARS	MEANING
1	Last digit of year
2-3	Month
4-5	Day
6	SIGN (hex C)

6.33 ***Trunk Network Number:*** For a CDT call, this field contains the trunk link frame number and trunk number (refer to Table V).

TABLE V

BCD CHARS	MEANING
1	Padding (0)
2-7	Trunk Network Number (TNN): (2-3) Not used (4-5) Trunk link frame number (6-7) Trunk number
8	SIGN (hex C)

6.34 ***Circuit Time:*** This field records the circuit release time for attempts (unanswered calls), including those recorded during a point-to-point study. The circuit release time is the time the calling party goes on hook. For an answered call recorded during a point-to-point study, this field is used to record the circuit seize time (refer to Table W).

TABLE W

BCD CHARS	MEANING
1-2	Hours
3-4	Minutes
5-6	Seconds
7	Tenths of seconds
8	SIGN (hex C)

6.35 ***WATS Indicator:*** For a WATS call from a CDT, this field is used to differentiate between Full Business Day or Measured Time WATS service. For a message rate call from a CDT, this field specifies value 0 (not used) to indicate that the following data field, **WATS Band or Type Indicator** contains the MBI for the call (refer to Table X).

TABLE X

BCD CHARS	MEANING
1	0 = This character not used 1 = Full business day 2 = Measured time
2	SIGN (hex C)

6.36 ***WATS Band or Type Indicator (MBI):*** For a CDT, this field is used to record a WATS band for a WATS call or an MBI for a message rate call (refer to Table Y).

TABLE Y

BCD CHARS	MEANING
1-3	WATS Band or Type Indicator (MBI)
4	SIGN (hex C)

6.37 ***Present Date:*** This field identifies the date of this segment on a Long Duration call (refer to Table Z).

TABLE Z

BCD CHARS	MEANING
1	Last digit of year
2-3	Month
4-5	Day
6	SIGN (hex C)

6.38 ***Present Time:*** This field identifies the time of day of this segment on a Long Duration call (refer to Table AA).

TABLE AA

BCD CHARS	MEANING
1-2	Hours
3-4	Minutes
5-6	Seconds
7	Tenths of seconds
8	SIGN (hex C)

LONG DURATION CALLS (LDCs)

6.39 ▶A Long Duration Call (LDC) is a call that remained in progress through three successive midnights. The **Timing Indicator** data field for such a call identifies the call as an LDC. The following paragraphs describe how an LDC may result in several call records.

6.40 During the midnight processing of an AMARC that follows a third midnight of a call, the call is tagged as an LDC. The midnight processing occurs at about 0130 hours. If a call is connected through a second midnight but disconnects before the midnight processing of the third midnight of the call detects the LDC condition, the call is processed as a "normal", ie, nonlong duration call. The **Elapsed Time** data field for such a "normal" call may reach 74 hours.

6.41 If the call remains connected through midnight processing after the third midnight, an **A** record (value 1 in character 3 of the **Timing Indicator**) is produced. The **Elapsed Time** data field is the elapsed time from the answer up to the second midnight.

6.42 If the call remains connected through the midnight processing after the fourth midnight (and following midnights), a **B** record (value 2 in character 3 of the **Timing Indicator**) is produced for each day. Each **B** record represents the call record from midnight to midnight of consecutive days. The **Elapsed Time** is 24 hours for each **B** record.

6.43 When the call disconnects, a **C** record is output. A value of 3 is specified for character 3 of the **Timing Indicator**. This record contains an adjusted duration in the **Elapsed Time** data field and an adjusted time of disconnect in the **Present Time** data field.

6.44 If clock changes are made in such a manner that successive AMARC midnights do not occur within 10 seconds of 24 hours, AMARC suspects a call duration error. Under these conditions, AMARC terminates charges for an LDC by producing a **C** record that shows a zero duration in the **Elapsed Time** data field. The **Timing Indicator** data field contains a value of 3 in character 3 (to identify a **C** record) and a value of 1 in character 4 (to identify charge guard condition).◀

7. EXPANSION OF CALLING OFFICE INDEX (COI)

GENERAL

7.01 The calling telephone number is transmitted to the AMARC as a 2-digit COI and a 4-digit station number. The COI requires translation to a Calling NPA and a Calling NXX for AMA recording.

7.02 The following NPD tables are used for the COI translation. The NPD form on which data for each table are compiled by the telephone company is specified in parentheses following the table name.

(a) ***Calling NPA Table (0203):*** This table translates each Calling NPA Index used in the COI Translation Table to an NPA.

(b) ***COI Translation Table (0211):*** This table translates the COIs assigned in the entity to a Calling NPA Index, Calling NXX, and a Nonstandard COI indication. The Nonstandard COI indication identifies a COI that requires translation to be based on the message billing class of the originating line or based on the Left-Shift CCSA method.

(c) ***Message Billing Class to Calling NXX Table (0212):*** This table provides the Calling NXX translation for a COI that requires this translation to be based on the MBC of the originating line.

7.03 To translate the COI, the AMARC first accesses the COI Translation Table for the entity with the COI from the TOR. The **Nonstandard COI** entry for the COI is then obtained.

STANDARD TRANSLATION

7.04 If the **Nonstandard COI** entry indicates that standard translation is required, the AMARC translates the COI to the Calling NXX and the Calling NPA Index specified in this table.

7.05 The Calling NPA Index is then translated to an NPA, using the Calling NPA Table.

SPECIAL TRANSLATION

7.06 If the **Nonstandard COI** entry indicates that special translation, based on the MBC determined for the call, is required, the AMARC obtains only the Calling NPA Index from the COI Translation Table.

7.07 The AMARC next accesses the Message Billing Class to Calling NXX Table with the MBC. The MBC is translated to the Calling NXX specified in this table.

7.08 The Calling NPA Index is translated to an NPA, using the Calling NPA Table.

LEFT-SHIFT CCSA TRANSLATION

7.09 If the **Nonstandard COI** entry indicates that Left-Shift CCSA translation is required ***and*** the MBC determined for the call is CCSA, the calling NXX is formed by "left shifting" the calling number three places. The thousands, hundreds, and tens digits become the calling NXX. The original units digit becomes the modified thousands digit of the calling station number. The hundreds, tens, and units digits of the calling station number are filled in with zeros.

7.10 The Calling NPA Index specified for the COI in the COI Translation Table is translated to an NPA, using the Calling NPA Table.

7.11 If the **Nonstandard COI** entry indicates that Left-Shift CCSA translation is required but the MBC determined for the call is not CCSA, the COI is translated as if Standard Translation had been specified.

8. EXPANSION OF CALLED TELEPHONE NUMBER

8.01 When the called telephone number is required for a call record, AMARC records the number as a 10-digit number. For a 7-digit call, AMARC must expand the called NXX to an NPA and an NXX.

8.02 The following NPD tables are used for expansion of the called telephone number. The NPD form on which data for each table are compiled by the telephone company is specified in parentheses following the table name.

(a) ***Called NXX To Called NPA Index Table (0218):*** This table lists all called NXXs in NPAs other than the home NPA that can be dialed as a local 7-digit call. For each such NXX, a Called NPA Index is specified.

(b) ***Called NPA Table (0220):*** This table specifies the home NPA as the translation for Called NPA Index 0 and translates to an NPA the Called NPA Indexes specified in the Called NXX to Called NPA Index Table.

8.03 When only seven digits were dialed, AMARC accesses the Called NXX to Called NPA Index Table for the entity with the called NXX. (The Provision of this table for an entity is optional; see Note). If the called NXX is listed, AMARC obtains the Called NPA Index for the NXX and translates the Index to an NPA, using the Called NPA Table for the entity. If the called NXX is not listed or a Called NXX to Called NPA Index Table is not provided, AMARC accesses the Called NPA Table for the entity and uses the translation for NPA Index 0 as the called NPA.

> ***Note:*** A Called NXX to Called NPA Index Table is required only when 7-digit local dialing across NPA boundaries is allowed.

8.04 When 1 plus seven digits was dialed, AMARC accesses the Entity Table to determine whether, for the transmitting entity, 1 plus dialing is always nonlocal. The called NPA is then determined as follows:

(a) If 1 plus dialing is only nonlocal, AMARC accesses the Called NPA Table for the entity and uses the translation provided for Called NPA Index 0 as the called NPA.

(b) If 1 plus dialing is not only nonlocal, AMARC accesses the Called NXX to Called NPA Index Table for the entity, if provided, with the called NXX. If the called NXX is listed, AMARC obtains the Called NPA Index for the NXX and translates the Index to an NPA, using the Called NPA Table for the entity. If the called NXX is not listed or if a Called NXX to Called NPA Index Table is not provided, AMARC accesses the Called NPA Table for the entity and uses the translation for NPA 0 as the called NPA.

8.05 On all 7-digit and 1 plus 7-digit calls for which called number details are included in the call record, the first BCD character of the **Overseas Indicator** data field in the call record is always a "1". This indicates that an NPA was not dialed.

9. ADMINISTRATIVE CONSIDERATIONS FOR GROWTH AND REARRANGEMENTS

NPD FORMS REQUIRED FOR CHANGES AFFECTING CDT ENTITIES

9.01 Growth in an existing CDT entity, the addition of a new CDT, or the removal of a CDT may affect NPD. Table CC outlines the consequences on NPD forms that result from these changes. The following paragraphs explain the layout of the table.

9.02 ***Change:*** This column lists the usual changes which may be made to CDT entities.

9.03 ***NPD Forms:*** This column lists the NPD forms which may be affected by the change. For example, suppose an existing CDT established a new central office code. Table CC specifies that NPD forms 0211, 0212, 0214, 0215, and 0219 may be affected. With some analysis of these forms, it can be determined that:

(a) Form 0211, defining each COI in a CDT entity, is always affected.

(b) Form 0212, defining calling NXX translations for COIs that require translation based on the MBC of the calling line, is affected only if the new COI requires such translation.

(c) A Form 0214 for the entity is affected if the new central office code is a local call for the MBC associated with that Flat Rate Billing Table. New Form(s) 0214 are required, if customers served by the new code have local/nonlocal dialing areas that are different from those defined by existing Form(s) 0214. A Form 0214 for another CDT entity must be revised if the new central office code requires a nonlocal entry on the form.

(d) All Forms 0215 for the entity are affected, since each form must list all NXXs in the local and nonlocal dialing areas. New Form(s) 0215 are required if customers served by the new code have different local/nonlocal, bulk billed/detailed billed definitions from those provided by existing Form(s) 0215.

(e) Form 0219 for the entity adding the central office code or for other CDT entities is affected if any new BRI assignments have been made in an associated Message Rate Billing Table.

9.04 ***Explanations:*** This column contains any special considerations related to NPD that must be made as a result of the specified change.

ENTITY ASSIGNMENTS FOR CDT ENTITIES

9.05 Any unequipped entity may be equipped for a CDT entity provided sufficient memory is available for the additional memory requirements.

9.06 Any equipped entity may be unequipped provided no channels are equipped for the entity.

CHANNEL ASSIGNMENTS FOR CDT ENTITIES

9.07 Two primary channels may be provided for a CDT controller. If two channels are provided for a particular controller, they must be sequentially numbered channels. The lower-numbered channel must be primary channel 0 for the controller.

9.08 Any unequipped channel may be equipped as a CDT channel provided the following conditions are met:

(a) If this channel is to be primary channel 0 for a CDT controller provided with two channels, the next higher-numbered channel must be available to equip as primary channel 1 for the controller.

(b) If this channel is to be primary channel 1 for a CDT controller, the next lower-numbered channel must be equipped as primary channel 0 for the controller.

9.09 ♦For AMARC Generic 4, channel assignments for No. 2B ESS and No. 5 ESS entities must conform to an engineered plan. As a result, if an AMARC serves No. 2B ESS or No. 5 ESS entities, this assignment plan must be taken into consideration when assigning a channel to any entity. Instructions for Form 0300 in Section 201-900-030 describe these channel assignment requirements.♦

9.10 The following three conditions must be satisfied before the **RC CHL EQP** input message to equip a nondialup channel can be input:

(a) The multiplexer on which the channel is being equipped must be marked as equipped in the Multiplexer Table (via NPD Form 0103).

(b) The entity for which the channel is being equipped must be marked as equipped in the Entity Table (via NPD Form 0101).

(c) Additional memory for one Call Record Register must be available.

9.11 The following two conditions must be satisfied before the **RC CHL** input message to unequip a nondialup channel can be input:

(a) The channel must be marked as equipped in the Channel Table (via NPD Form 0300).

(b) The channel must not be equipped as a dialup in the Channel Table (via NPD Form 0105).

ENGINEERING JUDGEMENTS

9.12 Growth in an existing CDT entity, the addition of a CDT entity, or changes in the trunks scanned by a CDT may require reevaluation of the capability of the AMARC to continue to serve the remote offices in its present configuration. For example, if a change was made in the toll/local traffic mixture served by a CDT, the call processing capability of the AMARC may require reevaluation.

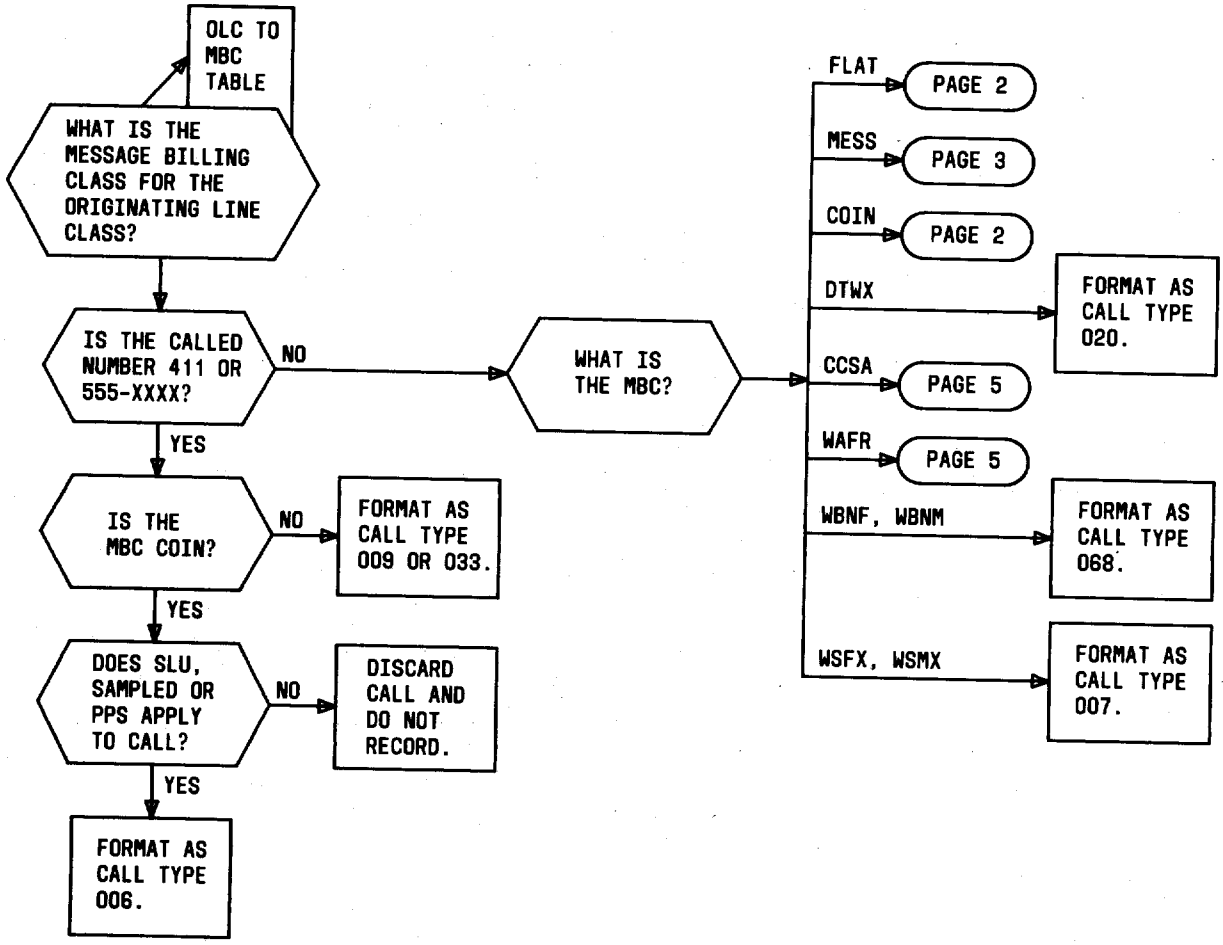

Fig. 1—Determination of Call Format (Sheet 1 of 5)

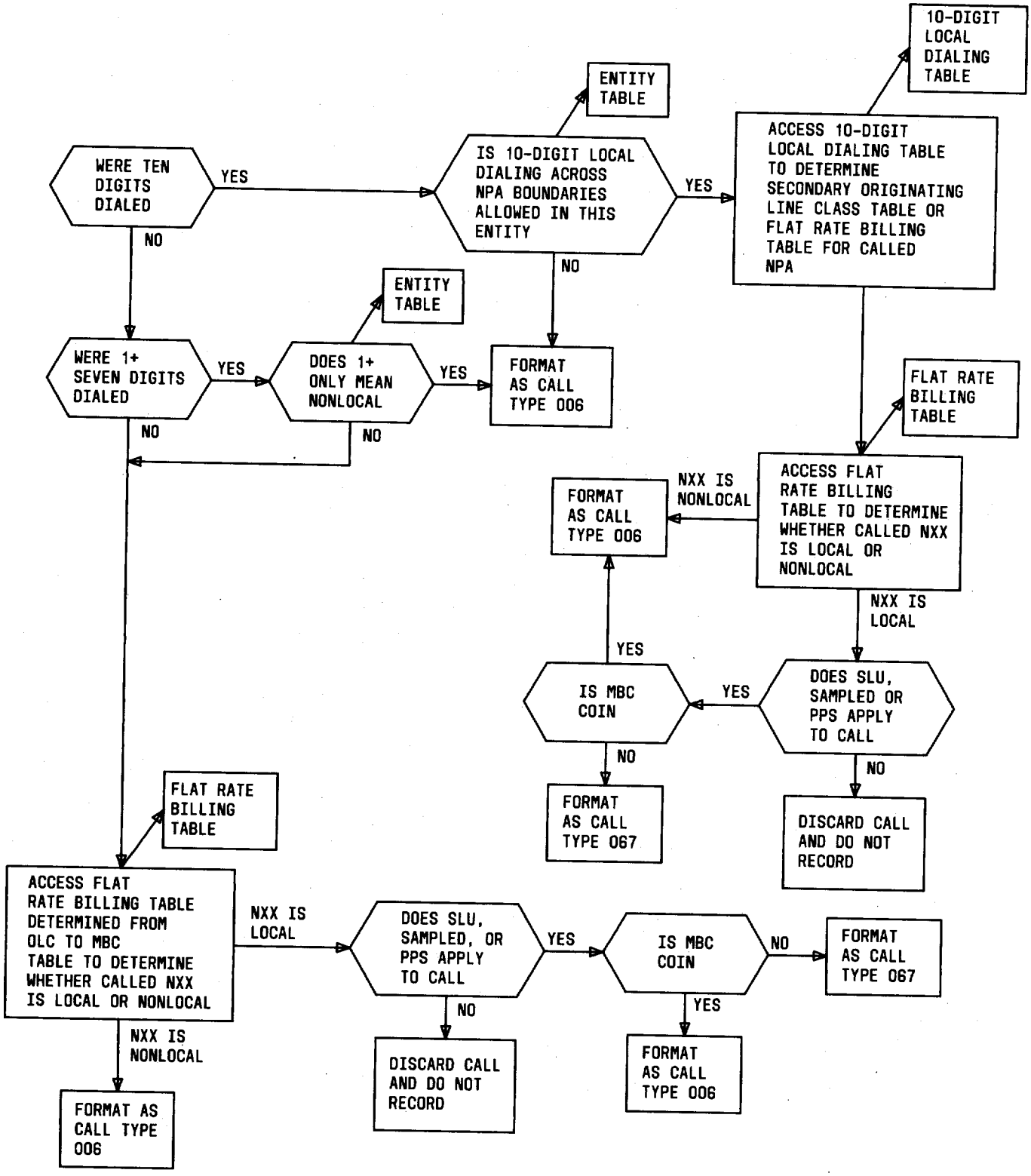

Fig. 1—Determination of Call Format (Sheet 2 of 5)

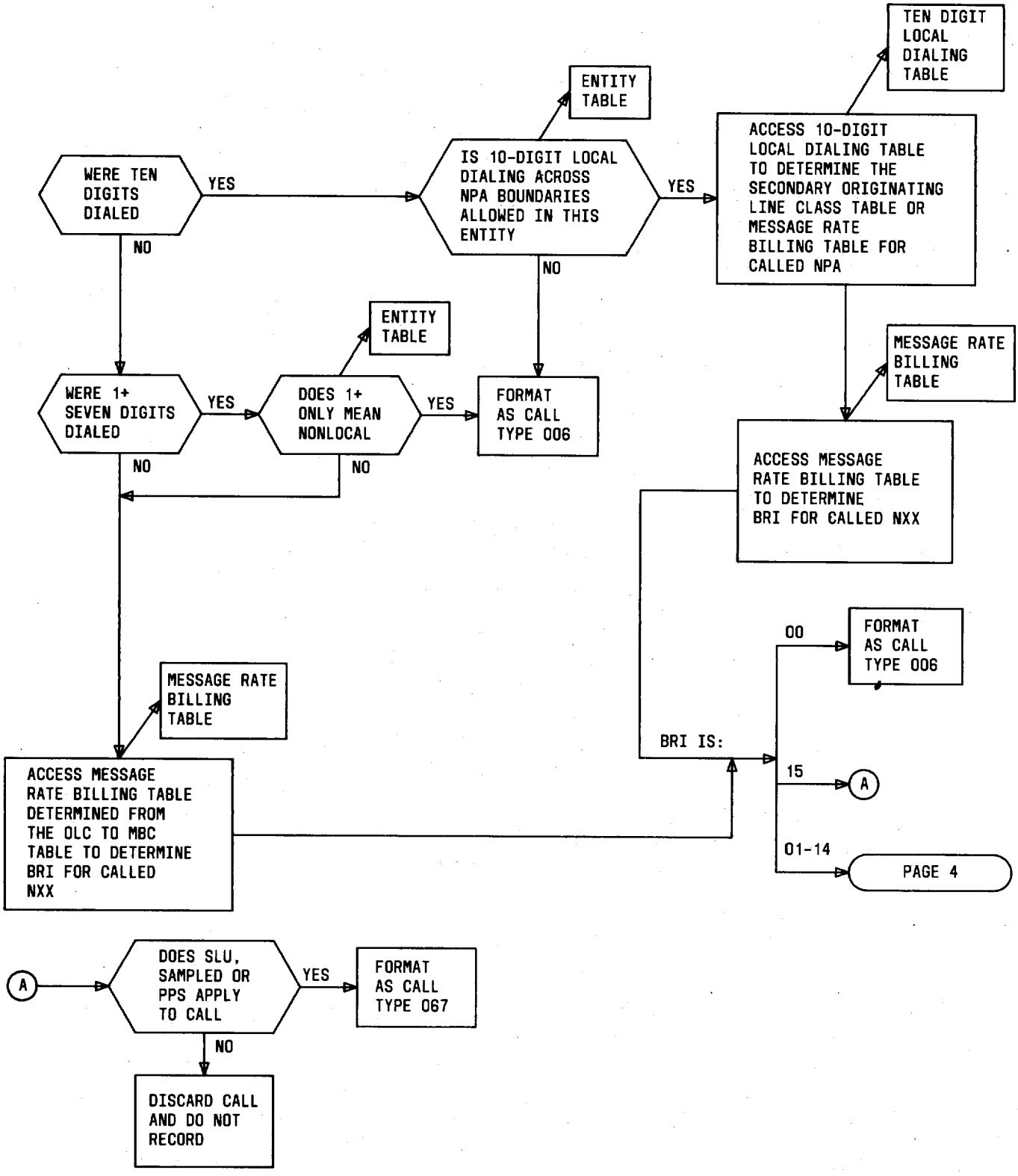

Fig. 1—Determination of Call Format (Sheet 3 of 5)

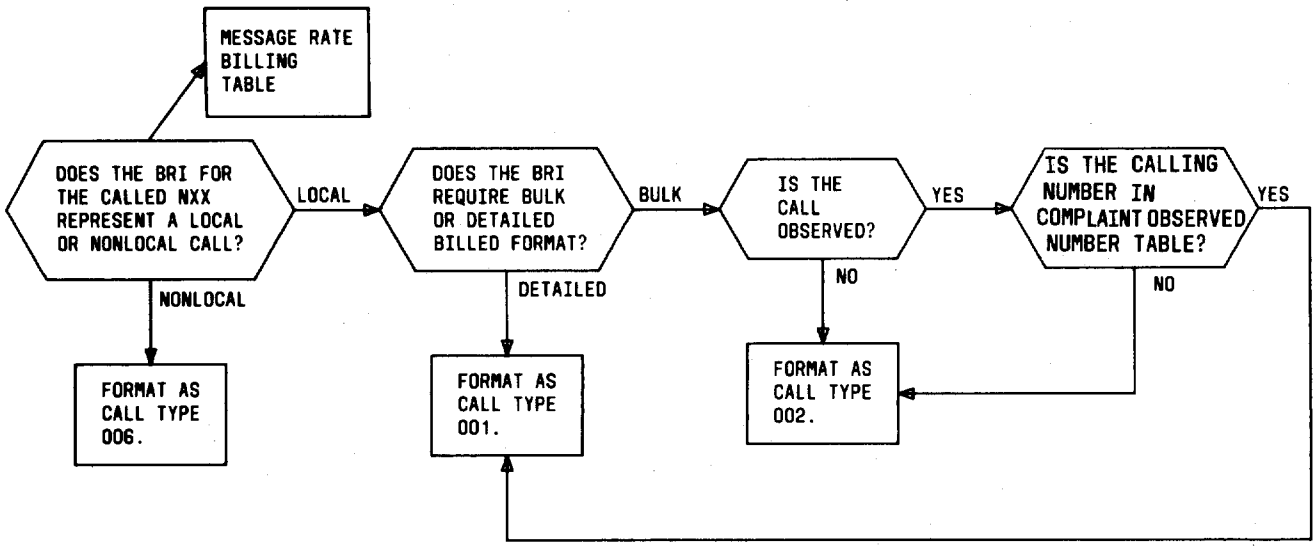

Fig. 1—Determination of Call Format (Sheet 4 of 5)

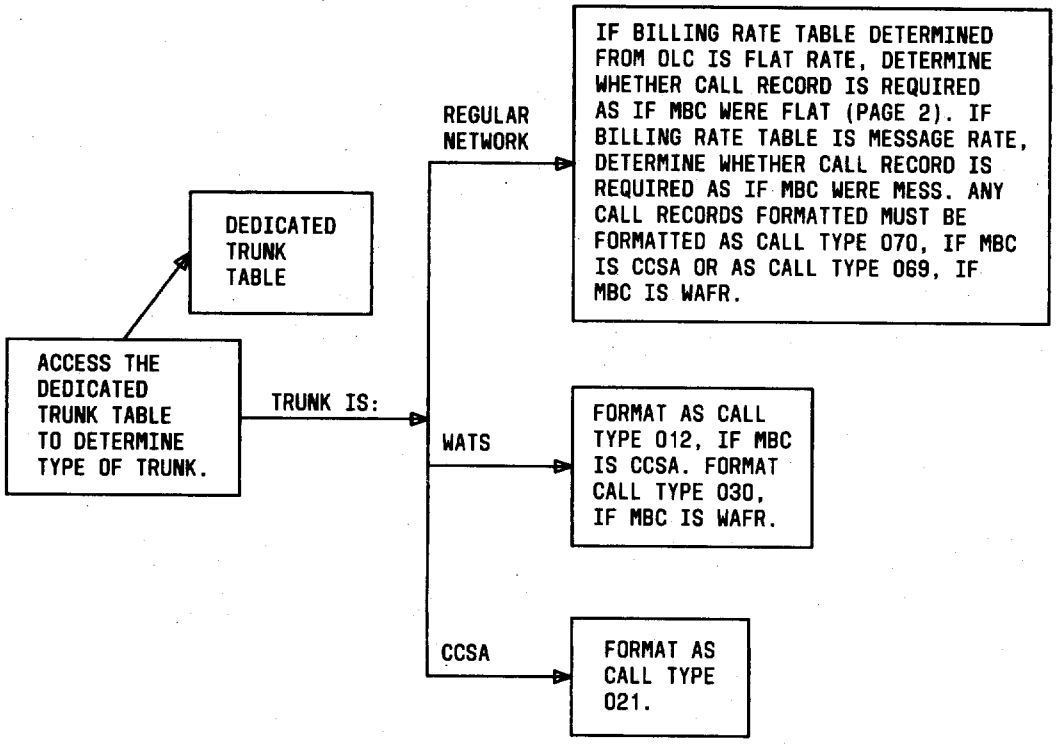

Fig. 1—Determination of Call Format (Sheet 5 of 5)

TABLE BB

DATA FIELDS AA/AB	CALL TYPE 001 DETAILED MESSAGE RATE, TIMED, MBI			CALL TYPE 002 MESSAGE RATE, TIMED, MBI			CALL TYPE 006 STATION PAID			CALL TYPE 007 WATS STATION DETAIL		
STRUCTURE CODE	10020	10021	10120	10015	10016	10115	10001	10002	10101	10020	10021	10120
Call Type Code	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sensor Type	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sensor Identification	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Recording Office Type	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Recording Office Identification	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Date	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Timing Indicator	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Study Indicator	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Answer	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Service Observed, Traffic Sampled	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Operator Action	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Service Features	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Originating NPA	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Originating Number	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Overseas Indicator	✓	✓	✓				✓	✓	✓	✓	✓	✓
Terminating NPA	✓	✓	✓				✓	✓	✓	✓	✓	✓
Terminating Number	✓	✓	✓				✓	✓	✓	✓	✓	✓
Time	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Elapsed Time	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Circuit Date		✓			✓			✓			✓	
Trunk Network Number	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Circuit Time		✓			✓			✓			✓	
WATS Indicator	✓	✓	✓	✓	✓	✓				✓	✓	✓
WATS Band or Type Indicator (MBI)	✓	✓	✓	✓	✓	✓				✓	✓	✓
Present Date			✓			✓			✓			✓
Present Time			✓			✓			✓			✓

TABLE BB (Contd)

DATA FIELDS / AA/AB	CALL TYPE 009 DIRECTORY ASSISTANCE (411)		CALL TYPE 012 CCSA AFR WATS			CALL TYPE 020 DTWX			CALL TYPE 021 CCSA SAMPLING		
STRUCTURE CODE	10028	10068	10020	10021	10120	10001	10002	10101	10001	10002	10101
Call Type Code	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sensor Type	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sensor Identification	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Recording Office Type	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Recording Office Identification	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Date	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Timing Indicator	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Study Indicator	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Answer	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Service Observed, Traffic Sampled	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Operator Action	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Service Features	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Originating NPA	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Originating Number	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Overseas Indicator			✓	✓	✓	✓	✓	✓	✓	✓	✓
Terminating NPA			✓	✓	✓	✓	✓	✓	✓	✓	✓
Terminating Number			✓	✓	✓	✓	✓	✓	✓	✓	✓
Time	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Elapsed Time			✓	✓	✓	✓	✓	✓	✓	✓	✓
Circuit Date		✓		✓			✓			✓	
Trunk Network Number	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Circuit Time		✓		✓			✓			✓	
WATS Indicator			✓	✓	✓						
WATS Band or Type Indicator (MBI)			✓	✓	✓						
Present Date					✓			✓			✓
Present Time					✓			✓			✓

TABLE BB (Contd)

DATA FIELDS / AA/AB	CALL TYPE 030 WATS AFR WATS			CALL TYPE 033 DIRECTORY ASSISTANCE		CALL TYPE 034 SIGNAL IRREGULARITY	CALL TYPE 067 LOCAL FLAT RATE		
STRUCTURE CODE	10020	10021	10120	10028	10068	10002	10001	10002	10101
Call Type Code	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sensor Type	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sensor Identification	✓	✓	✓	✓	✓	✓	✓	✓	✓
Recording Office Type	✓	✓	✓	✓	✓	✓	✓	✓	✓
Recording Office Identification	✓	✓	✓	✓	✓	✓	✓	✓	✓
Date	✓	✓	✓	✓	✓	✓	✓	✓	✓
Timing Indicator	✓	✓	✓	✓	✓	✓	✓	✓	✓
Study Indicator	✓	✓	✓	✓	✓	✓	✓	✓	✓
Answer	✓	✓	✓	✓	✓	✓	✓	✓	✓
Service Observed, Traffic Sampled	✓	✓	✓	✓	✓	✓	✓	✓	✓
Operator Action	✓	✓	✓	✓	✓	✓	✓	✓	✓
Service Features	✓	✓	✓	✓	✓	✓	✓	✓	✓
Originating NPA	✓	✓	✓	✓	✓	✓	✓	✓	✓
Originating Number	✓	✓	✓	✓	✓	✓	✓	✓	✓
Overseas Indicator	✓	✓	✓			✓	✓	✓	✓
Terminating NPA	✓	✓	✓			✓	✓	✓	✓
Terminating Number	✓	✓	✓			✓	✓	✓	✓
Time	✓	✓	✓	✓	✓	✓	✓	✓	✓
Elapsed Time	✓	✓	✓			✓	✓	✓	✓
Circuit Date		✓			✓	✓	✓		
Trunk Network Number	✓	✓	✓	✓	✓	✓	✓	✓	✓
Circuit Time		✓			✓	✓		✓	
WATS Indicator	✓	✓	✓						
WATS Band or Type Indicator (MBI)	✓	✓	✓						
Present Date			✓						✓
Present Time			✓						✓

TABLE BB (Contd)

DATA FIELDS / AA/AB	CALL TYPE 068 WATS BILLING NUMBER			CALL TYPE 069 WATS AFR DDD			CALL TYPE 070 CCSA AFR DDD		
STRUCTURE CODE	10077	10078	10177	10001	10002	10101	10001	10002	10101
Call Type Code	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sensor Type	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sensor Identification	✓	✓	✓	✓	✓	✓	✓	✓	✓
Recording Office Type	✓	✓	✓	✓	✓	✓	✓	✓	✓
Recording Office Identification	✓	✓	✓	✓	✓	✓	✓	✓	✓
Date	✓	✓	✓	✓	✓	✓	✓	✓	✓
Timing Indicator	✓	✓	✓	✓	✓	✓	✓	✓	✓
Study Indicator	✓	✓	✓	✓	✓	✓	✓	✓	✓
Answer	✓	✓	✓	✓	✓	✓	✓	✓	✓
Service Observed Traffic Sampled	✓	✓	✓	✓	✓	✓	✓	✓	✓
Operator Action	✓	✓	✓	✓	✓	✓	✓	✓	✓
Service Features	✓	✓	✓	✓	✓	✓	✓	✓	✓
Originating NPA	✓	✓	✓	✓	✓	✓	✓	✓	✓
Originating Number	✓	✓	✓	✓	✓	✓	✓	✓	✓
Overseas Indicator	✓	✓	✓	✓	✓	✓	✓	✓	✓
Terminating NPA	✓	✓	✓	✓	✓	✓	✓	✓	✓
Terminating Number	✓	✓	✓	✓	✓	✓	✓	✓	✓
Time	✓	✓	✓	✓	✓	✓	✓	✓	✓
Elapsed Time	✓	✓	✓	✓	✓	✓	✓	✓	✓
Circuit Date		✓			✓			✓	
Trunk Network Number	✓	✓	✓	✓	✓	✓	✓	✓	✓
Circuit Time		✓			✓			✓	
WATS Indicator	✓	✓	✓						
WATS Band or Type Indicator (MBI)									
Present Date			✓			✓			✓
Present Time			✓			✓			✓

TABLE CC

CHANGE	NPD FORMS	EXPLANATIONS
CHANGES TO AN EXISTING CDT ENTITY		
Add channel	0300, 0307	
Add trunk link frame	0216, 0217, 0307	Form 0216 requires revising if any new trunks are dedicated to WATS or CCSA.
Add OLC	0213A, 0213B, 0214, 0215, 0219	Depending on the dialing privileges of the new OLC, Form 0214 or Forms 0215, 0219 may require revising. If the new OLC has an MBC of WAFR or CCSA and trunks are newly dedicated to this service, the dedicated trunks must be listed on Form 0216.
Rate Structure	0213A, 0213B, 0214, 0215, 0219	Form 0213B is affected if 10-digit local dialing is allowed in the entity and determination of the rate table to use for an NPA is a function of the MBC of the OLC.
Allow 7-digit local dialing across NPA boundaries	0101, 0214, 0215, 0218, 0219, 0220	
Allow 10-digit local dialing across NPA boundaries	0101, 0213B, 0214, 0215, 0219, 0221	
Add central office code	0211, 0212, 0214, 0215, 0219	Form 0212 is affected only if the new COI requires calling NXX translation based on the MBC of the OLC. A Form 0214 for the entity is affected if the new central office code is a nonlocal call for the MBC associated with the Flat Rate Billing Table. New Form(s) 0214 are required, if customers served by the new code have different local/nonlocal dialing areas than those defined by existing Form(s) 0214. A Form 0214 for another CDT entity must be revised if the new central office code requires a nonlocal entry on the form. A Form 0215 for the entity and for other CDT entities are affected since each form must list all NXXs in the local and nonlocal dialing areas. New Form(s) 0215 are required if customers served by the new code have different local/nonlocal, bulk billed/detailed billed definitions than those provided by existing Form(s) 0215. Form 0219 for the entity adding the central office code or for other CDT entities is affected if any new BRI assignments have been made in an associated Message Rate Billing Table.

TABLE CC (Contd)

CHANGE	NPD FORMS	EXPLANATIONS
ADDITIONS OF CDT ENTITY (NOTE 1)		
Add CDT entity to AMARC	0100	If this is the first CDT to be served by the AMARC, the input entry format specified on this form must be changed.
REMOVAL OF CDT ENTITY (NOTE 2)		
Remove CDT entity and associated channels		

Note 1: All forms listed for a CDT entity are in Section 201-900-030.

Note 2: Same forms as for addition of CDT entity are in Section 201-900-030.