



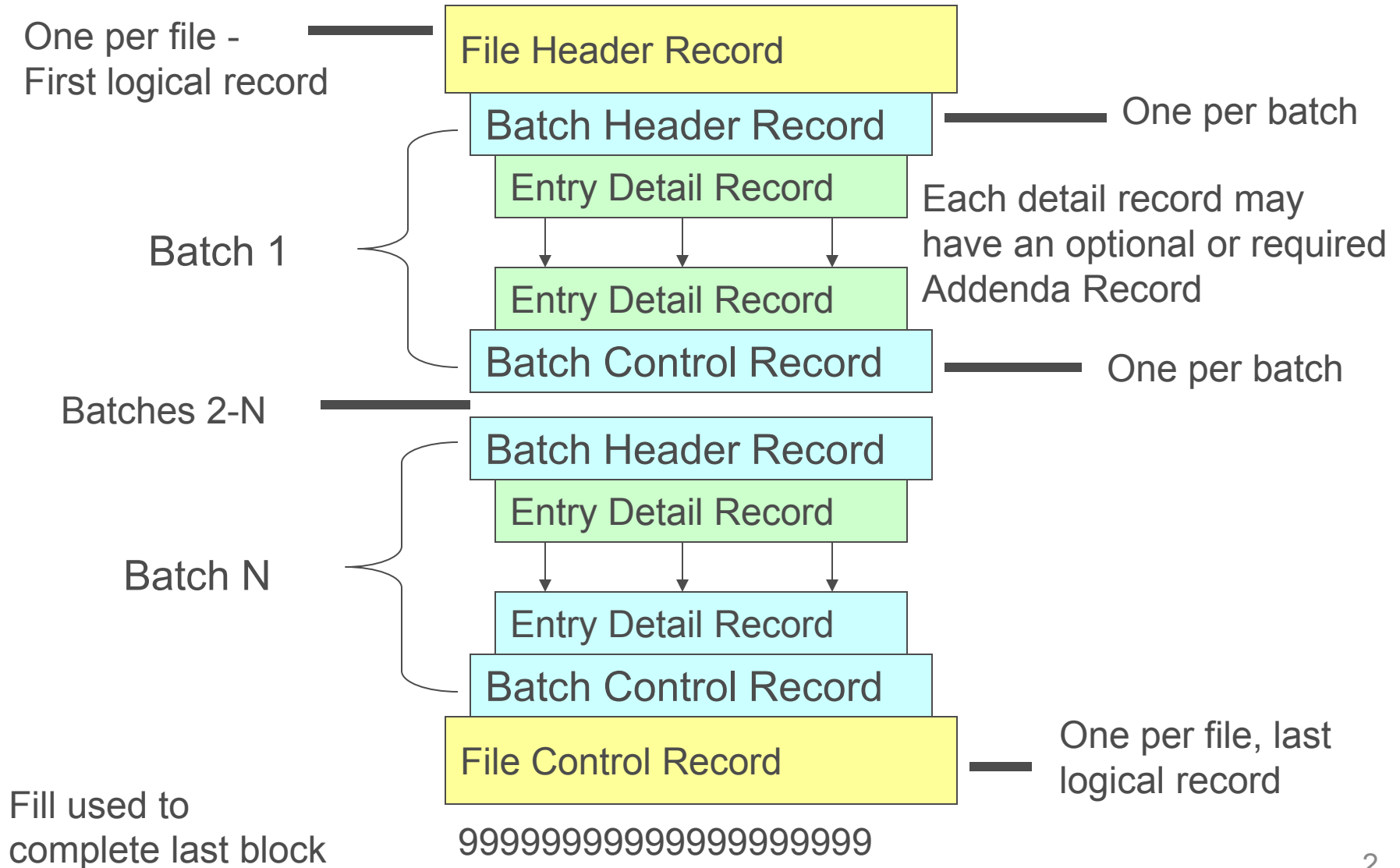
ACH File Formatting

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NACHA

Sequence of Records



Sequence of Records

- Sequence of ACH Records
 - File Header Record (1)
 - Company/Batch Header Record (5)
 - Entry Detail, Corporate Entry Detail Record (6)
 - Addenda Record (7)
 - Company/Batch Control Record (8)
 - File Control Record (9)
- Each ACH Record contains 94 characters
 - These characters are divided into “fields” within each record of the ACH file

File Structure

- An ACH file must be “BLOCKED”:
 - Contain enough ACH records to form a complete “block” (10 records = 1 block = 940 character)
 - All records within each ACH file are counted
 - file header, batch header, entry detail, addenda, batch control and file control
 - If total number of records do not equal a complete block, “9 filler records” must be added to complete the block
 - 94 characters of 9’s = One “9 filler record”

[illegible]

File Structure – Addenda Records

- Addenda records
 - Additional “payment-related information” pertaining to the entry detail record to which they are attached
- Addenda Record Requirement
 - Mandatory, Optional or None
 - Determined by Standard Entry Class (SEC) Code
- Number of Addenda Record(s)
 - Determined also by Standard Entry Class code
 - 1 Addenda Record
 - Up to 9,999 Addenda Records

Data Specifications

- Alphameric and Alphabetic Fields
 - Left-justified and space filled
- Numeric Fields
 - Right-justified, unsigned and zero filled
- Characters used are restricted to
 - 0-9, A-Z, a-z, space, special characters
- Field specific
 - Require specific data in them or a requirement to be left blank

Data Specifications

- Upper case characters MUST be used for:
 - Standard Entry Class (SEC) Code field
 - File ID modifier field
 - Change Code field and Refused COR Change field
 - Return Reason Code fields (all types of returns)
 - Company Entry Description fields containing any of these words:
 - REVERSAL (for Reversal entries)
 - RECLAIM (for Commercial Reclamation entries)
 - NONSETTLED (for entries where settlement can't be completed)
 - AUTOENROLL (for ENR entries)
 - REDEPCHECK (for RCK entries)
 - NO CHECK (for XCK entries)
 - RETURN FEE (Return Fee Entries)
 - HCCLAIMPMT (Health Care EFT Transactions)
 - Company Name field = CHECK DESTROYED (for XCK entries)

Field Inclusion Requirements

- **MANDATORY**

- This field is **NECESSARY** to ensure proper routing and processing. If not included, Operator will reject

- **REQUIRED**

- Omission will not cause the entry to reject at the Operator, but may cause a reject at the RDFI

- **OPTIONAL**

- Discretion of Originator or ODFI

Record Sequence

File Header
Batch Header
Entry detail 1
Entry detail 2
Entry detail 3
Batch Control
Batch Header
Entry detail 1
Addenda
Batch Control
File Control

Where did it come from and where is it going?

Who is it from and what is it?

What is the RDFI, Receiver and amount?

How many transactions and total amounts?

What is the purpose of the payment?

Grand total of transactions and amounts

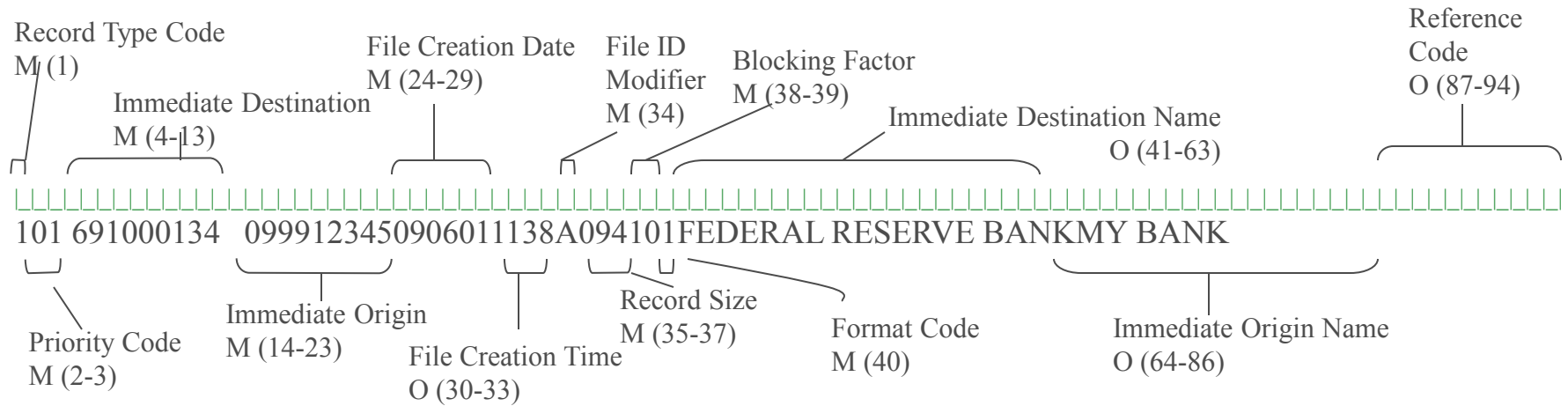
File Header Record (1)

ACH File Header Record [1]

FIELD	1	2	3	4	5	6	7	8	9	10	11	12	13
<i>DATA ELEMENT NAME</i>	Record Type Code	Priority Code	Immediate Destination	Immediate Origin	File Creation Date	File Creation Time	File ID Modifier	Record Size	Blocking Factor	Format Code	Immediate Destination Name	Immediate Origin Name	Reference Code
<i>Field Inclusion Requirement</i>	M	R	M	M	M	O	M	M	M	M	O	O	O
<i>Contents</i>	'1'	Numeric	bTTTTAAAC	bTTTTAAAC	YYMMDD	HHMM	A-Z 0-9	'94'	'10'	'1'	Alphanumeric	Alphanumeric	Alphanumeric
<i>Length</i>	1	2	10	10	6	4	1	3	2	1	23	23	8
<i>Position</i>	01-01	02-03	04-13	14-23	24-29	30-33	34-34	35-37	38-39	40-40	41-63	64-86	87-94

1 01 051000033 059999997 060210 2030 A 094 10 1 TCB SERVICES ABC TRUST

File Header Records



Company Batch Header

- Contains information about the Company (Originator) and the type of detail records to follow:
 - Service Class Code (Identifies debit/credit entries or both)
 - Company Name and Company Identification
 - Standard Entry Class (SEC) Code
 - Company Entry Description

Service Class Codes

- Identifies the general classification of dollar entries to be exchanged (i.e. debit and/or credit entries)
 - 200 ACH Entries Mixed Debits and Credits
 - 220 ACH Credits Only
 - 225 ACH Debits Only
 - 280 ACH Automated Accounting Advices

Standard Entry Class(SEC) Code

- Identifies the payment type (product) found within an ACH batch-using a 3-character code
- The SEC Code pertains to all items within batch
 - Determines format of the detail records
 - Determines addenda records (required or optional PLUS one or up to 9,999 records)
 - Determines rules to follow (return timeframes)
- Some SEC codes require specific data in predetermined fields within the ACH record

Standard Entry Class(SEC) Code

SEC Code	# Addenda Records	<u>O</u> ptional- <u>M</u> andatory	Debit or Credit Tran-Codes <u>or</u> Both	Consumer <u>or</u> Corporate <u>or</u> BOTH (Receiver)
ACK	1	O	Credit	Corporate
ADV	0	N/A	Both	N/A
ARC	0	N/A	Debit	BOTH (Receiver)
ATX	1	O	Credit	Corporate
BOC	0	N/A	Debit	BOTH (Receiver)
CCD	1	O	Both	Corporate
CIE	1	O	Credit	Corporate
COR	1	M	Both	ALL
CTX	9,999	O	Both	Corporate
DNE	1	M	Credit	Consumer
ENR	9,999	M	Credit	Consumer

Standard Entry Class(SEC) Code

SEC Code	# Addenda Records	Optional-Mandatory	Debit or Credit Tran-Codes or Both	Consumer or Corporate or Receiver
IAT	Incoming - up to 12 Outgoing - up to 9	M – 7 O – up to 2 remit O – up to 5 foreign correspondent	Both	Both
MTE	1	M (unless pre-note)	Both	Consumer
POS	1	M (unless pre-note)	Debit	Consumer
PPD	1	O (unless pre-note)	Both	Consumer
POP	0	N/A	Debit	BOTH (Receiver)
RCK	0	N/A	Debit	Consumer
SHR	1	M (unless pre-note)	Debit	Consumer
TEL	0	N/A	Debit	Consumer
TRC	0	N/A	Both	Both
TRX	9,999	M	Both	Both
WEB	1	O	Both	Consumer
XCK	0	N/A	Debit	Both

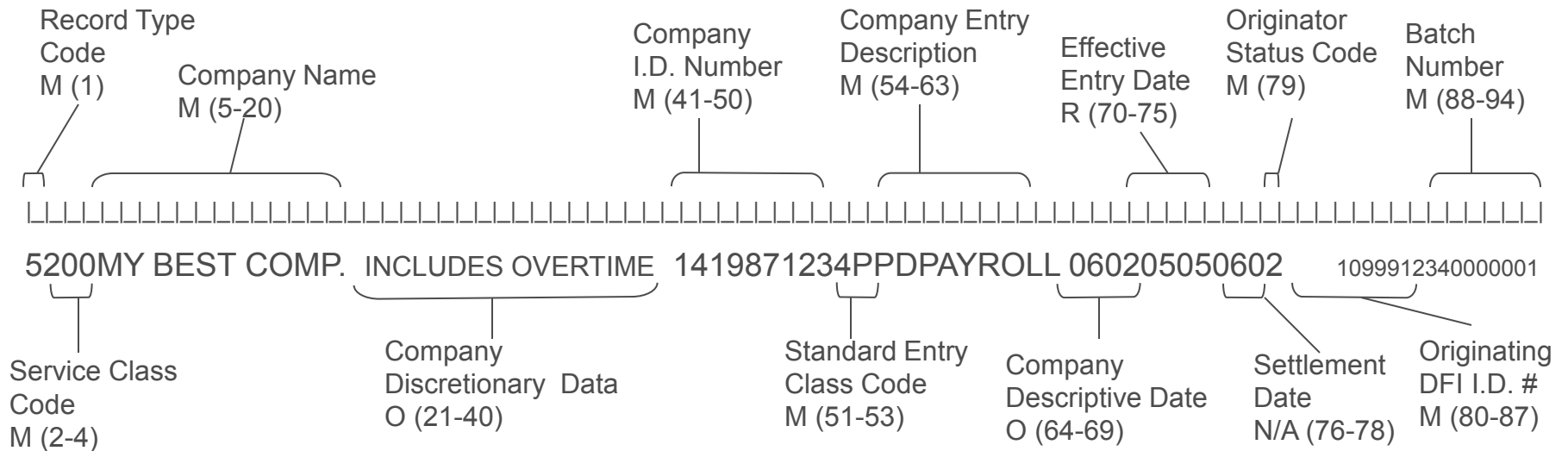
Company Batch Header

- Effective Entry Date (wish date)
- Settlement Date (inserted by ACH Operator)
- Originator Status Code (ACH Operator edits)
 - 0 - ADV file - prepared by an ACH Operator
 - 1 - Originator is a financial institution
 - 2 - Originator is a Government Agency or other agency not subject to ACH Rules
- Originating DFI Identification
 - ODFI's ABA number (first 8-digits)

Company Batch Header

Field	1	2	3	4	5	6	7	8	9	10	11	12	13
Data Element Name	Record Type Code	Service Class Code	Company Name	Co Disc Data	Company ID	SEC	Entry Description	Co Descriptive Date	Effective Entry Date	Settlement Date	Originator Status Code	ODFI ID	Batch Number
Field Inclusion Requirement	M	M	M	O	M	M	M	O	R	Inserted by Operator	M	M	M
Content	5	Number	Alpha	Alpha	Alpha	Alpha	Alpha	Alpha	YYMMDD	Number	Alpha	TTTTAA AA	Number
Length	1	3	16	20	10	3	10	6	6	3	1	8	7
Position	01-01	02-04	05-20	21-40	41-50	51-53	54-63	64-69	70-75	76-78	79-79	80-87	88-94

Company Batch Header



Entry Detail Record (6)

- Identifies Receiver's account information
 - Can be multiple detail records in each batch
- Transaction Code
 - Identifies whether entry is a debit or credit
 - Identifies what type of account demand, savings, loan
- RDFI ABA #
- Individual DFI Account Number

Transaction Code

- Identifies the entry as a debit and credit entry AND to what type of account (Savings, DDA, Loan)
- Transaction Codes

<i>Description</i>	<i>Automated Payment/Deposit</i>	<i>Return or NOCs</i>	<i>Prenotes</i>	<i>Zero Dollar Amount w/remittance data CCD & CTX entries only</i>
Demand Credit	22	21	23	24*
Savings Credit	32	31	33	34*
Demand Debit	27	26	28	29
Savings Debit	37	36	38	39
GL Credit	42	41	43	44
GL Debit	47	46	48	49
Loan Credit	52	51	53	54
Loan Debit	55 (Reversals Only)	56	N/A	N/A

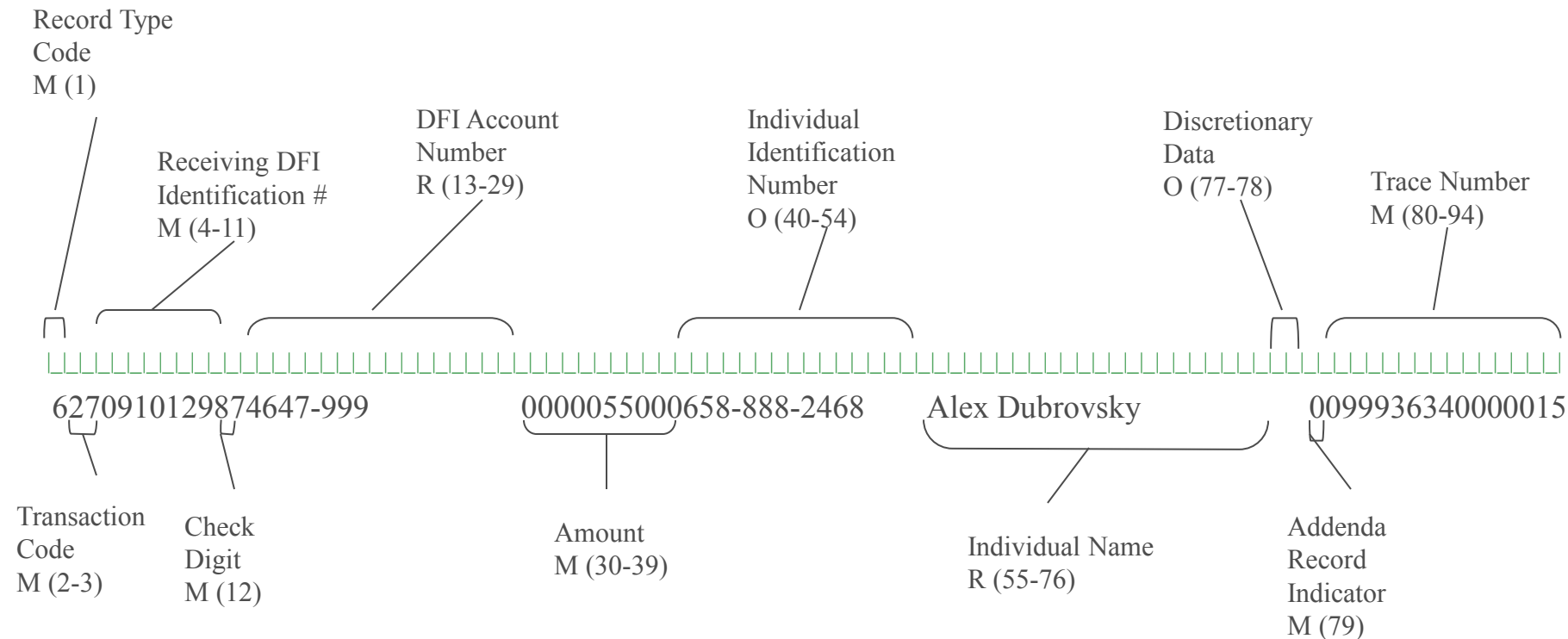
*These transaction codes also represent Acknowledgement Entries for ACK and ATX entries only.

Entry Detail Record (6)

- Individual Identification Number
 - Field name and requirements/rules change, based on SEC Code
 - Number by which Receiver is known to Originator
 - Check serial number
 - Number by which Originator is known to Receiver
 - Name of Originator of P2P entry
- Individual Name
 - Receiver's name (OPTIONAL for ARC , BOC and POP)
- Amount
 - Debit or Credit amount to be posted to Receiver's account
- Addenda Record Indicator
 - Indicates whether an addenda record will follow
 - 0 = none, 1= 1 or more (including up to 9,999)
- Trace Number
 - 15-digit number (first 8-digits identify the ODFI, and other 7 are unique)

PPD, TEL, WEB debit

Entry Detail Record



WEB uses the Discretionary Data Field as the Payment Type Code

Addenda Record (7)

- Addenda Records are used by the originator to supply additional payment related information)
 - When entry detail is being returned, addenda records associated with the entry detail or corporate entry detail records are not included (EXCEPTION – IAT entries)
- Addenda record information is used for transmitting payment related information ONLY. Any other use is prohibited.

Addenda Record (7)

- Can be multiple addenda records
- Addenda Type Code
- Addenda Sequence Number
 - Sequence number assigned to each addenda record consecutively
- Entry Detail Sequence Number
 - Number “matches” the last seven digits of the unique trace number (field 13) of the entry detail or corporate entry detail record to which it belongs

Addenda Type Code

- Defines the specific explanation and format for the addenda information contained in the same record
- Addenda Type Codes

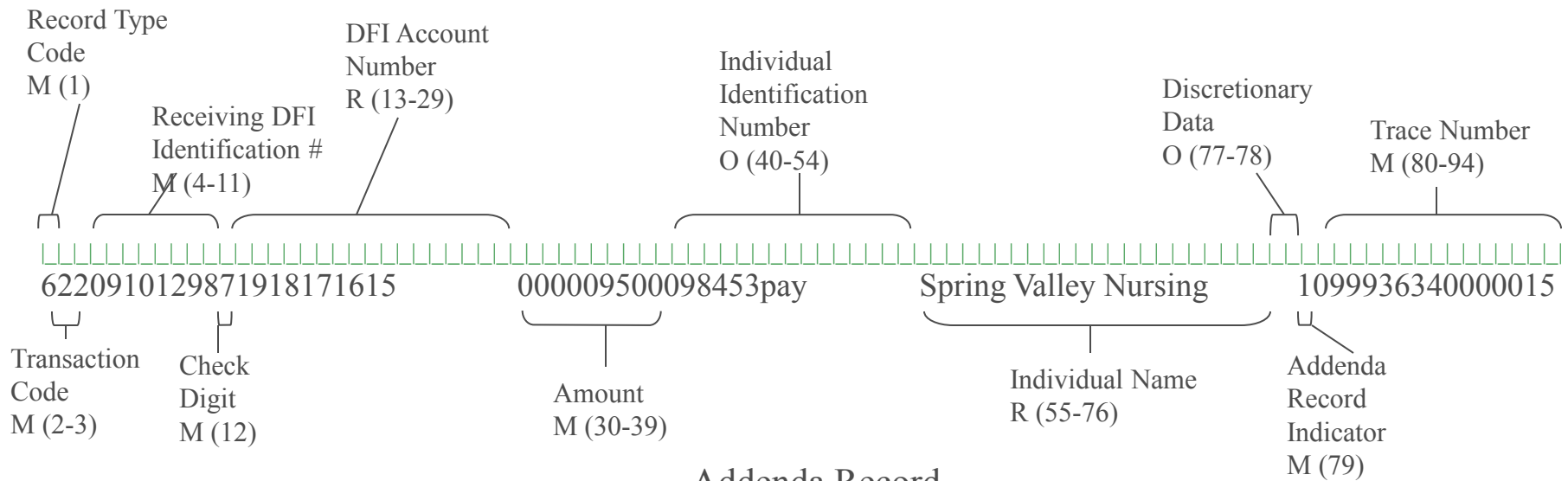
Addenda Type Code	Interpretation/Explanation
02	For POS, SHR or MTE Entries
05	Addenda Record (ACK, ATX, CCD, CIE, CTX, DNE, ENR, PPD, TRX and WEB Entries
98	Notification of Change and Refused Notification of Change Entry
99	Return, Dishonored Return and Contested Dishonored Return Entries

Payment-Related Information

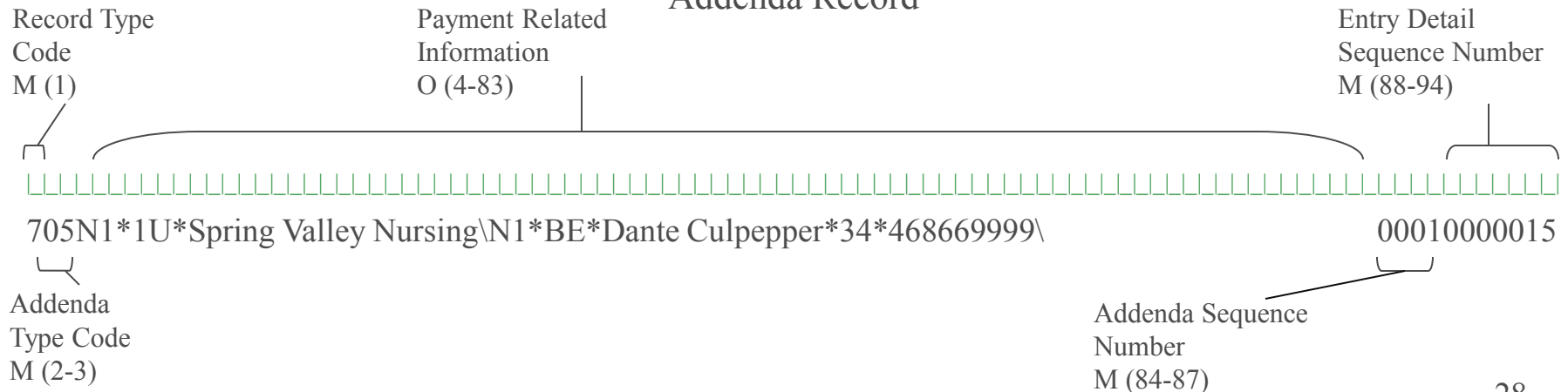
- A data element is the smallest unit
 - Delimiter = * (asterisk)
 - Used between the data elements
- A data segment consists of logically-related data elements in a defined sequence
 - Terminator = \ (backslash) or ~ (tilde)
 - Used between the data segments

PPD with Addenda

Entry Detail Record



Addenda Record



CIE

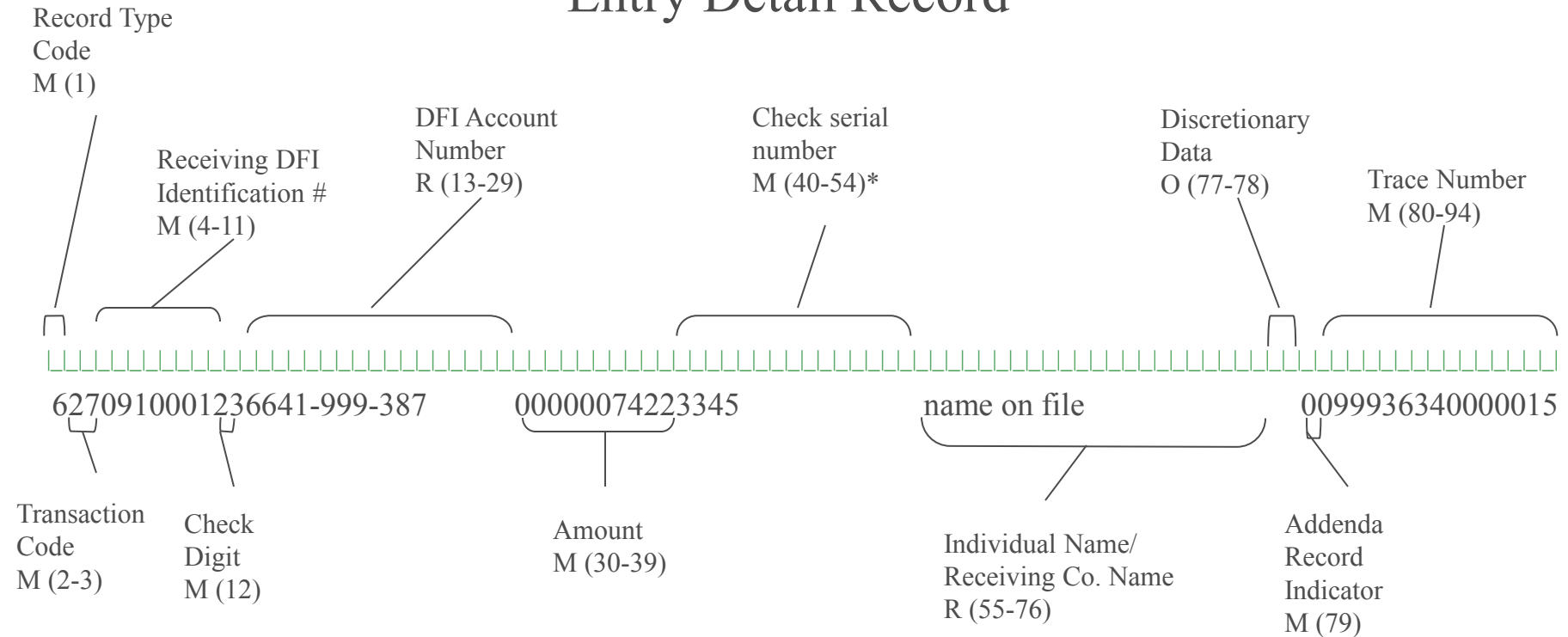
- CIE ONLY received by billing companies
- PPD Individual I.D. # = CIE Individual Name (40-54)
- PPD Individual Name = CIE Individual I.D. # (55-76)
- Addenda Record - No differences

WEB Credit

- Consumer Originator's (sender's) name placed in Individual ID Number field of the Entry Detail Record
- Name of Provider of P2P Service (including the sender's financial institution if it is the service provider) placed in the Company Name field of the Company/Batch Header Record
- Consumer Receiver's name placed in the Individual Name field of the Entry Detail Record
- Addenda allows Payment Related Information in plain text format

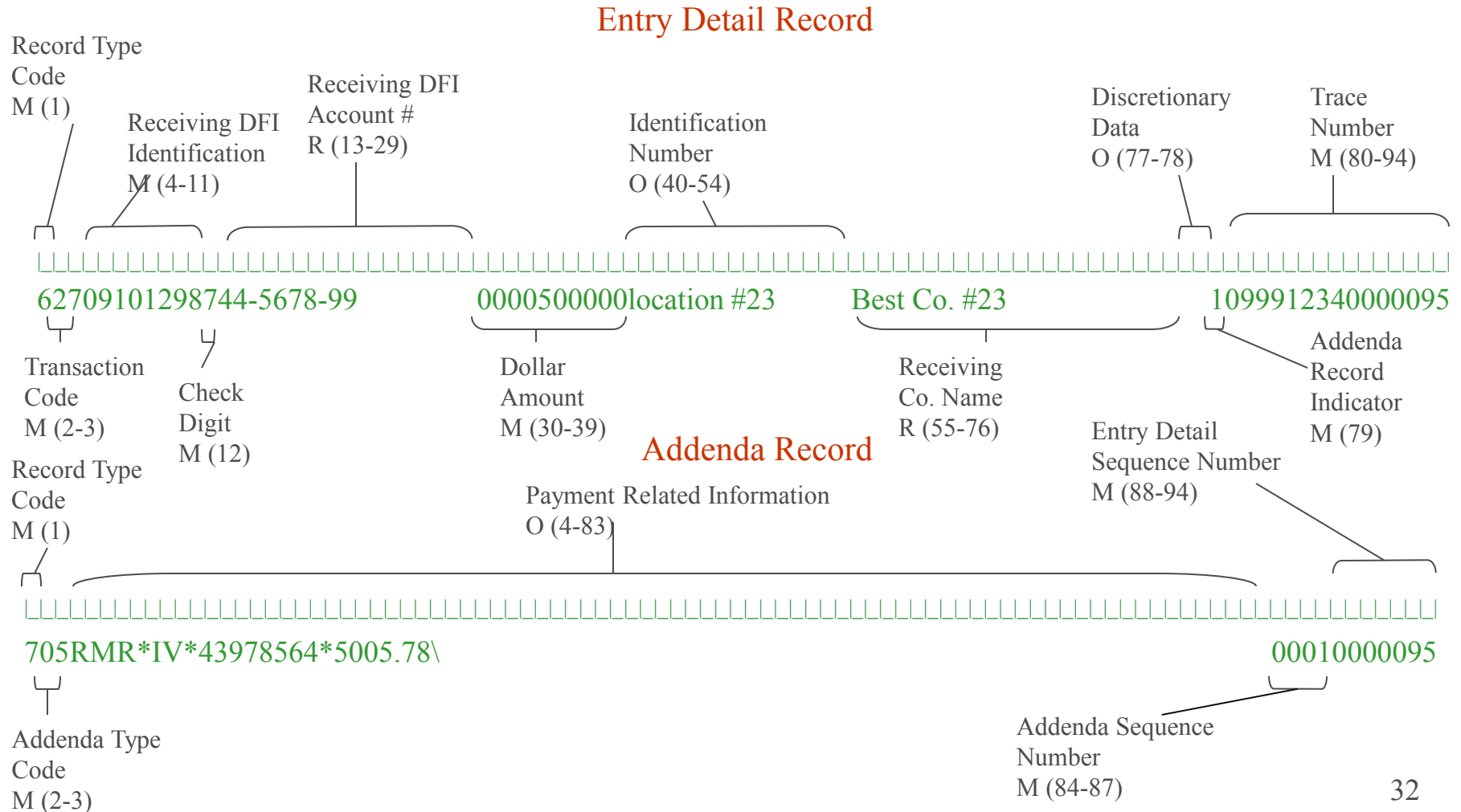
BOC, ARC, POP

Entry Detail Record

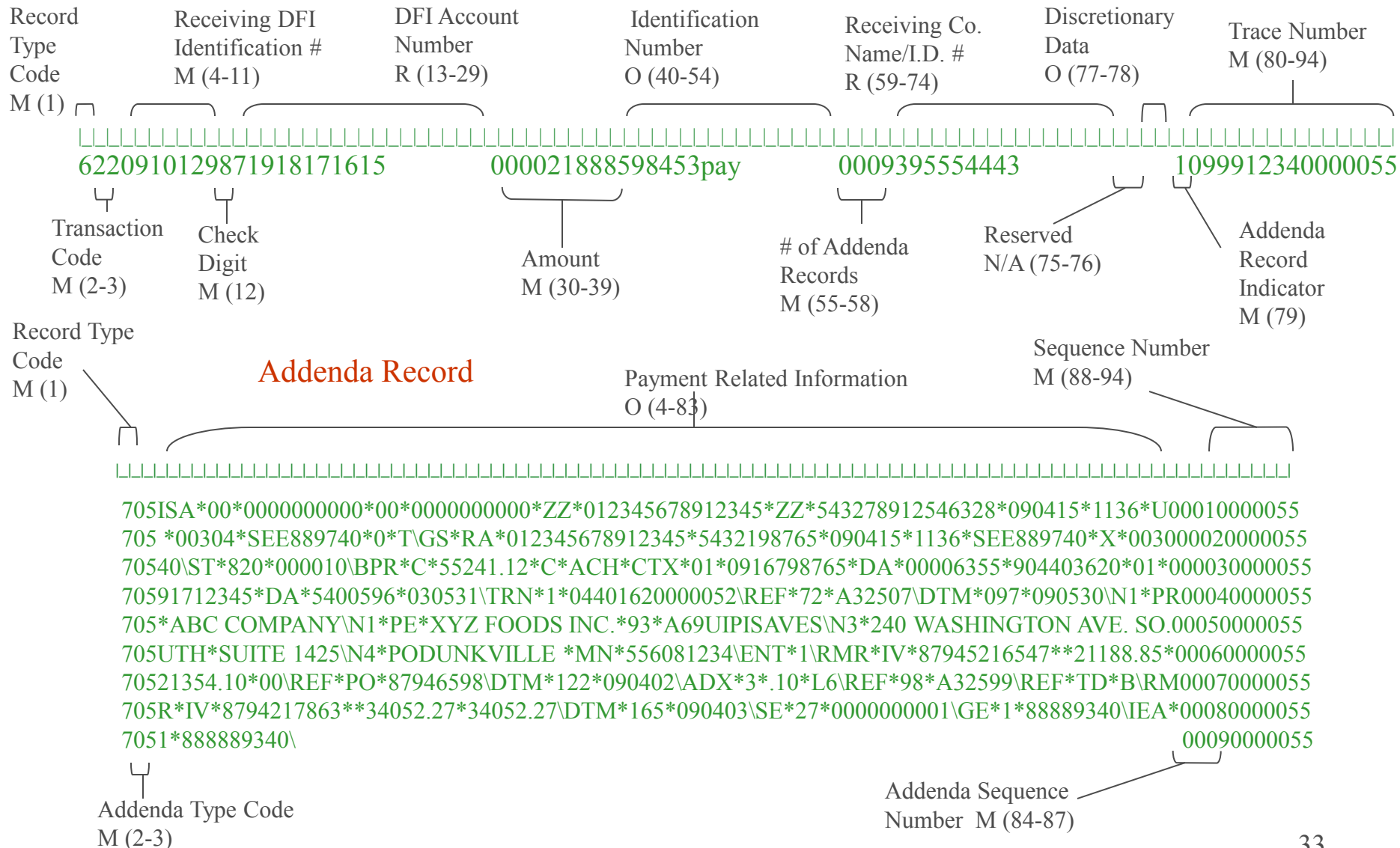


•For POP the Check Serial # Field incorporates two other fields, Terminal City (4) and Terminal State (2)

Cash Collection and Disbursement Entry (CCD)



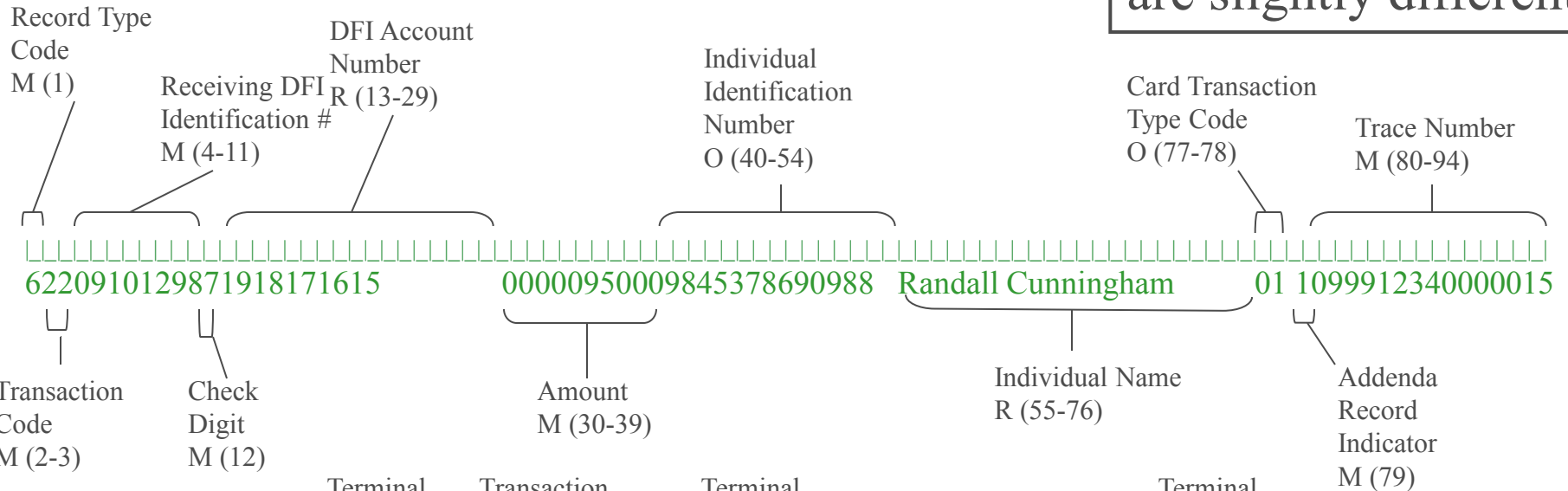
Corporate Trade Exchange Entry (CTX)



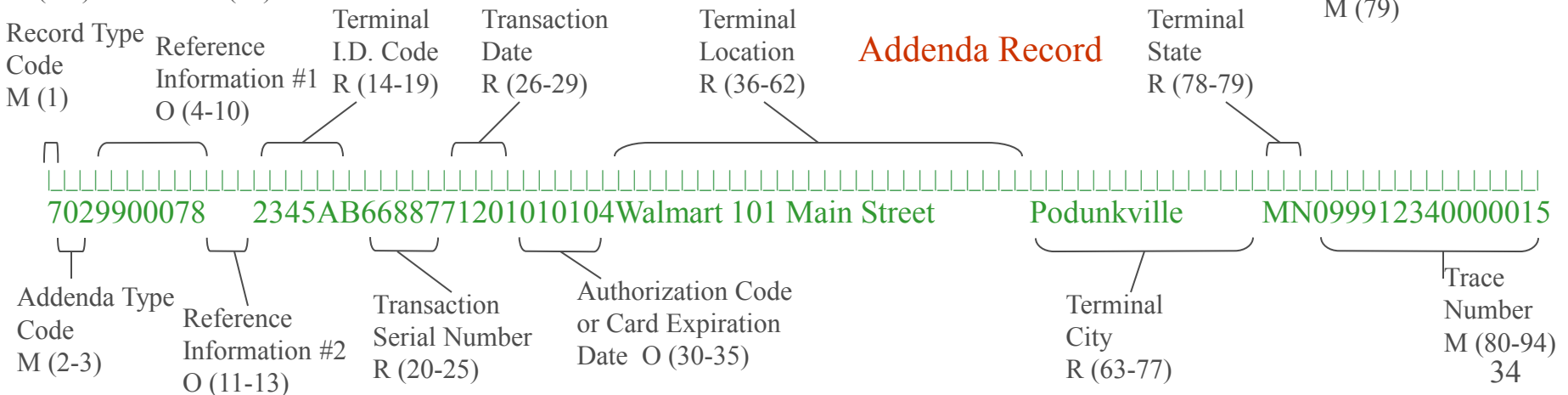
Point of Sale Entry (POS)

Entry Detail Record

SHR and MTE
are slightly different



Addenda Record

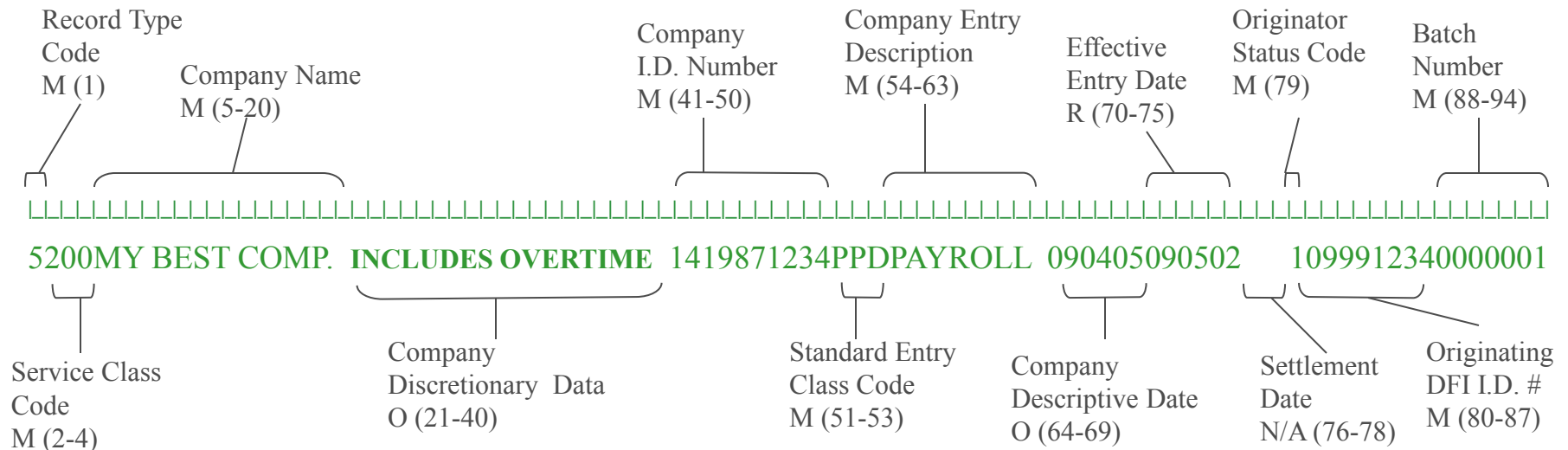


Company Batch Control (8)

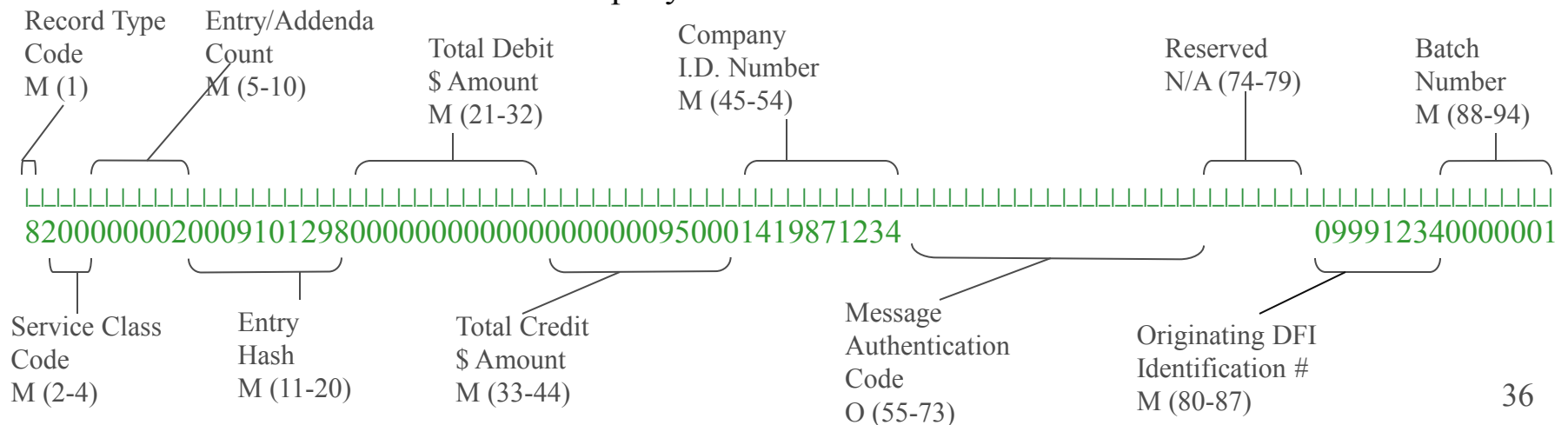
- Summarizes entry detail records (ACH entries) within each batch
- One Batch Control Record per batch
- Entry addenda counts
 - Entry Detail (6) and Addenda Records (7)
- Entry hash totals
 - Hash is the arithmetic sum of the 8-digit routing number of each RDFI within each Entry Detail Record (6)
 - If sum is more than 10 characters in length, the digits on the left are removed
- Total dollar controls
 - Sum of debit and credit totals of all Entry Detail Records in batch

Company Batch Header/Trailer Records

Company Batch Header Record



Company Batch Control Record

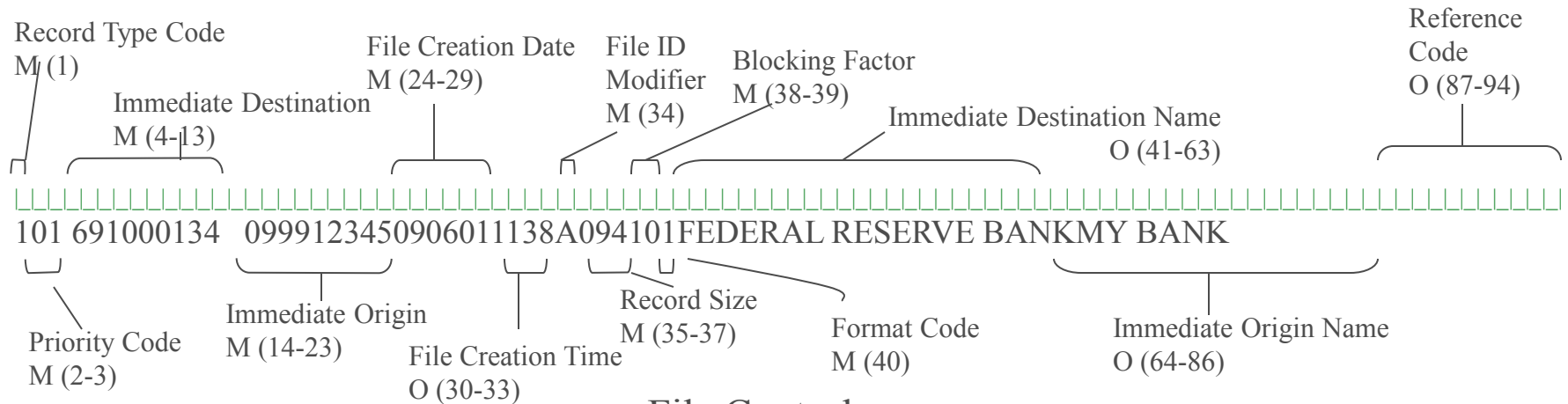


File Control Record

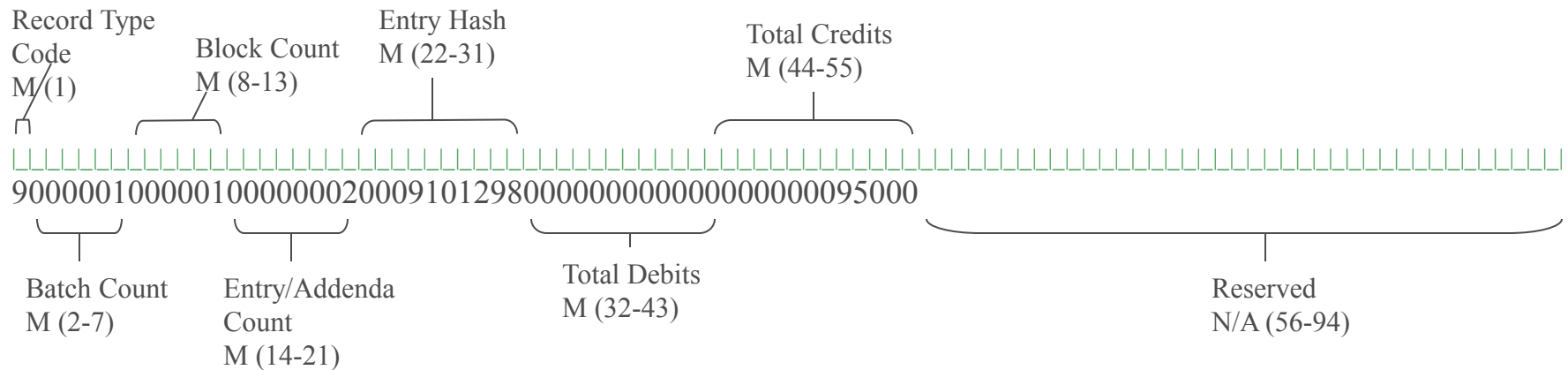
- The last logical record in an ACH file
 - Only one File Control Record per ACH file
- Batch count - Total number of batches within file
- Block count **
 - Sum of all physical blocks within the file (10 Records = 1 Block)
- Entry addenda counts
 - Sum of entry/addenda count totals (from all batch control records)
- Entry hash totals
 - Arithmetic sum of entry hash totals (from all batch control records)
- Total dollar controls
 - Sum of all debit and credit totals (from all batch control records)

File Header/Control Records

File Header



File Control



Putting It All Together...

[illegible]

5|2|2|0|V|L|S|_|I|N|C|_|_|_|_|_|_|_|_|_|_|D|I|R|E|C|T|_|D|E|P|O|S|I|T|_|_|_|_|_|_|_|_|_|_|9|1|1|1|1|1|1|1|1|1|9|P|P|D|D|I|R|E|C|T|_|P|A|Y|0|2|1|3|0|6|0|6|0|2|1|3|_|_|_|_|1|0|5|9|9|9|9|9|9|0|0|0|0|0|0|1|

[6|2|2|2|1|1|4|3|3|4|3|3|9|1|2|-|3|4|5|6|7|8|_|_|_|_|_|_|_|_|0|0|0|1|0|0|0|0|0|0|5|6|5|-|6|5|-|6|5|6|5|_|_|_|_|B|E|N|_W|A|T|S|O|N|_|_|_|_|_|_|_|_|_|_|0|1|0|0|5|9|9|9|9|9|9|0|0|0|0|0|0|1

6|3|2|2|1|7|7|7|7|7|7|3|9|8|7|6|5|4|3|2|1|2|_|_|_|_|_|_|_|_|_|_|0|0|0|1|0|0|0|0|0|0|9|1|1|-|9|1|-|1|9|1|1|_|_|_|_|J|A|N|E|I|T|_|D|A|V|I|S|_|_|_|_|_|_|_|_|_|_|_|_|_|_|0|1|0|0|5|9|9|9|9|9|9|0|0|0|0|0|0|2|

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171015111S1A1*10101*101010 1010101010101*10101-1010101010101010101*1Z1Z1*101121314151617181 91121314151*1Z1 Z1*151413121718191 16328*980415*1136*U00010000055

7|0|5|*|0|0|3|0|4|*|S|8|8|9|7|4|0|*|0|*|T|V|S|*|R|A|*|0|1|2|3|4|5|6|7|8|9|1|2|3|4|5|*|5|4|3|2|1|9|8|6|5|1|*|0|3|0|4|1|5|*|1|1|3|6|*|S|E|E|8|8|9|7|4|0|X|*|0|0|0|0|0|0|2|0|0|0|0|0|5|5|

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|Z|O|5||S|A|*|O|Q|*|O|Q|O| |O|Q|O|Q|O|Q|O|Q|*|O|Q|*|O|Q|O|Q|O|Q|O|Q|O|Q|O|Q|*|Z|Z|*|O|1|2|3|4|5|6|7|8|9|1|2|3|4|5|*|Z| |Z|*|5|4|3|2|7|8|9| 16328*980415*1136*| |00010000055
```

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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IAT - 7 Mandatory Lines of Addenda

Batch Header FX Codes Company Information Country Information
IAT Entry Detail FX Codes Co Info Country Info RDFI Acct # Amnt <i>OFAC Screening Indicator</i>
1 Addenda Tran Code Fx Amount Foreign Trace Receiver
2 Addenda Originator Name and Address
3 Addenda Originator City State and Country Code
4 Addenda ODFI Name and Identification and Country Code
5 Addenda RDFI Name and Identification and Country Code
6 Addenda Receiver Identification and Address
7 Addenda Receiver City State and Country Code
8 Addenda Correspondent Information

Reason for Payment (IAT)

- IAT “Reason for Payment”
 - Identified in the Transaction Type Code Field
 - ANN – annuity
 - BUS – Business/Commercial
 - DEP – Deposit
 - PEN – Pension
 - LOA - Loan
 - REM – Remittance
- Additional Transaction Type Code Values are listed in Appendix Three of the *ACH Rules*

Transaction Type Codes (IAT)

- Expanded use of Transaction Type Code field for Inbound IAT transactions:
 - Contain a “secondary SEC code” for WEB, TEL, ARC, POP, BOC, RCK, POS, MTE and SHR
- Information needed for specific SEC Codes can be found in the Remittance Information Addenda Record (banking conventions have been developed)
 - For ARC, BOC or RCK - check serial number
 - For POP - the check serial number and Terminal City and Terminal State/ Foreign Country
 - For POS, MTE and SHR – Terminal information

IAT Return Entries

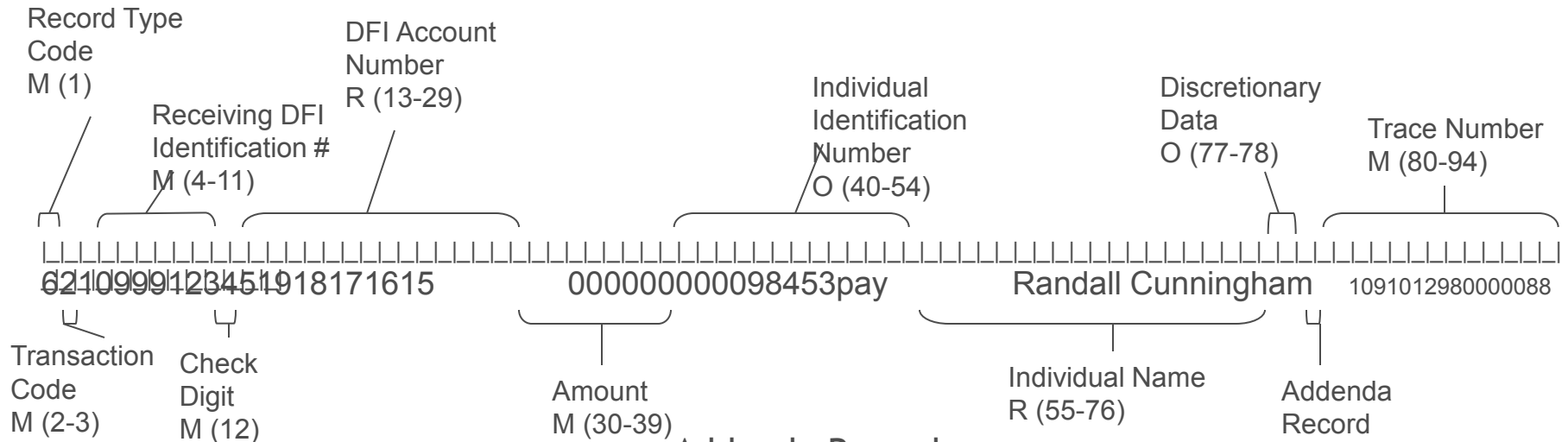
- All IAT returns MUST include the seven (7) mandatory addenda records from the original forward IAT entry
- Return information is included within one additional addenda record, Addenda 8
- Foreign Correspondent Bank and Remittance Information is not included with the return
- IAT format does not permit dishonored and contested dishonored returns. These issues must be addressed outside the network

IAT NOCs

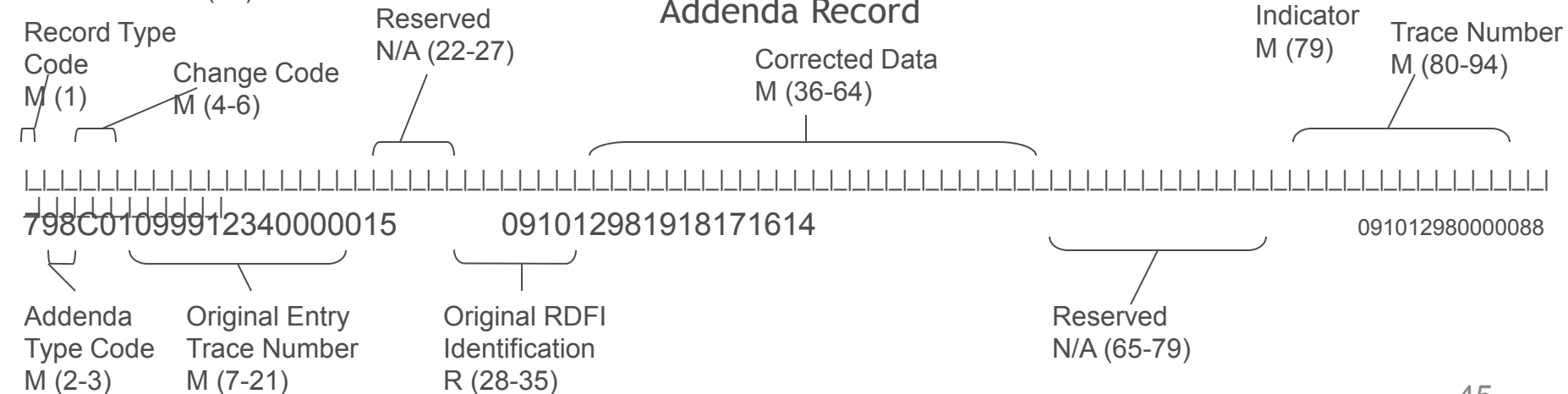
- NOCs are “optional” for IAT entries
- Foreign countries may NOT support NOCs
- NOC entries will not require the original 7 mandatory addenda records to be returned with the NOC
- When creating the NOC, the Company Batch Header Record – (field 3) – IAT Indicator must contain “IATCOR”
- Some Change Codes are not available
- Refused NOC transactions are not supported

Notification of Change Entry (COR)

Entry Detail Record



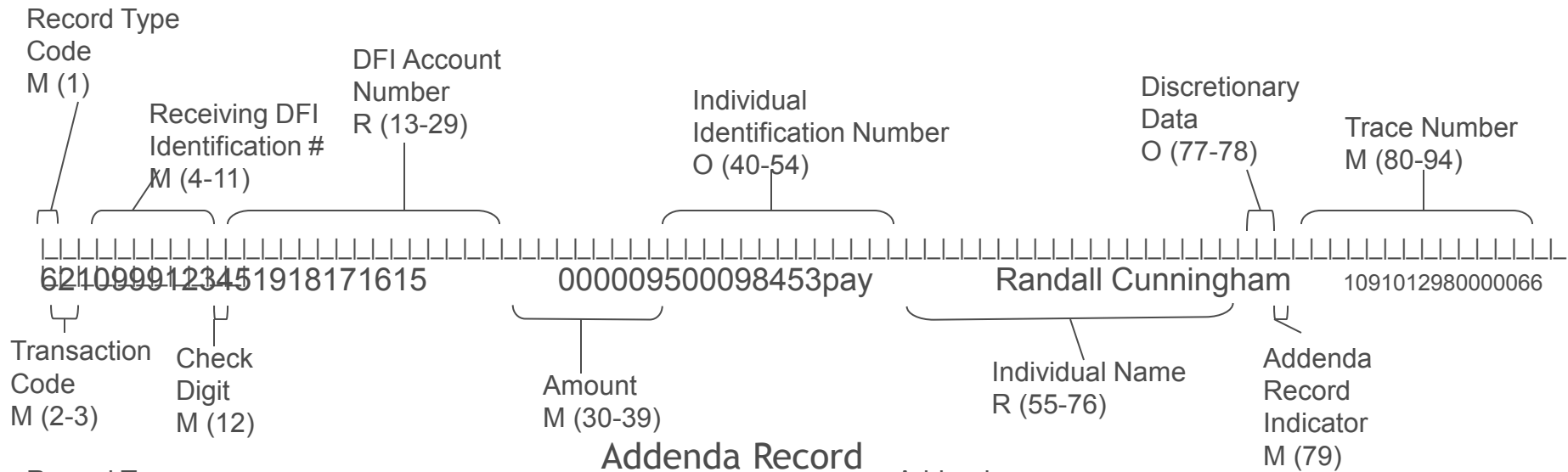
Addenda Record



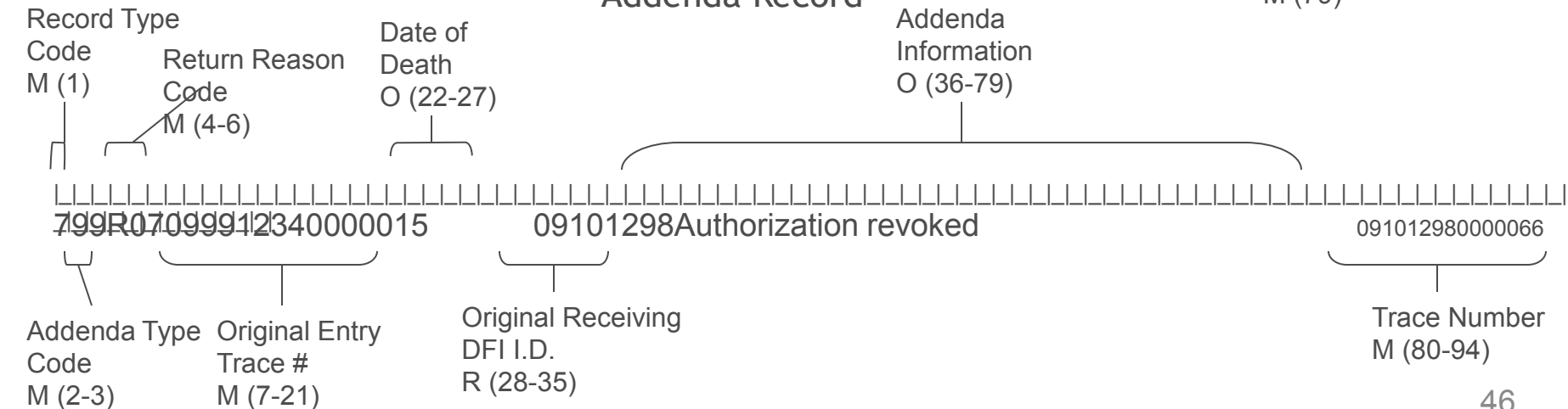
5/23/2014

Returns

Entry Detail Record



Addenda Record



Data Acceptance Criteria

- Data acceptance criteria apply to entries submitted by Sending Points or exchanged between ACH Operators; failure to meet will result in the rejection of an entire File, Batch, or individual Entry
- Sending Point must select either the File level or batch level reject option
- Each Originating ACH Operator generates an acknowledgment to the ODFI for every File Transmitted for processing. The acknowledgment is in the form of a message or report Transmitted or made available to the Sending Point as soon as possible after the completion of ACH Operator edits

Errors That Will Cause A File To Reject

- **File cannot be read:**
 - Data read failures
 - Improper block size
 - Presence of invalid header labels
 - Hardware/software errors
- **File contains an undefined record type**
- **Invalid sending point or Operator R/T#**
- **The sequence is not correct**
- **Mandatory fields in the File Header are not valid**
 - File ID modifier not uppercase A-Z or 0-9
 - Record size not 94
 - Blocking factor not 10
 - Format code not 1

Errors That Will Cause A File To Reject

- The Immediate Origin, File Creation Date, File Creation Time, and File ID Modifier are equal to that of a previously accepted file
- The file is “Out of Balance” meaning:
 - Summation of the counts, hash totals and total \$s on the Batch Control Record(s) does not agree with the File Control
 - The number of Blocks or Batches does not agree with the File Control counts

Errors That Will Cause A File To Reject

If Sending Point chooses the Batch Level reject option, any condition that would cause only a Batch to be rejected will allow the ACH Operator to accept the file but to reject the Erroneous Batch

- Invalid characters
- ODFI identification is not a valid ODFI
- Service Class Code is invalid
- Trace Numbers are not in ascending order
- Transaction Codes are invalid
- The Amount field is non-numeric (unless COR, DNE, ENR)
- The Batch is “out of balance” (hash totals, counts, dollars)
- The sequence of records in the Batch is incorrect

Errors That Will Cause A File To Reject

- Company Name is all spaces or zeros
- Company Entry Description is all spaces or zeros
- Company Identification is all spaces or zeros
- OSC is not = 2 for DNE if trancode is 23 or 33
- SEC code is invalid
- Service Class Code in Batch Header is different that in Batch Control
- Return and non-return entries are in the same batch

Errors That Will Cause A File To Reject

- First 8 positions of the Trace # are not the same as in the Origin # in the Batch Header
- Trancode is not valid for the Service Class Code
- Trancode is not valid for the SEC code (live dollars with prenotes, etc. – updated for newer transcodes recently)
- Returns, dishonored returns, and/or contested dishonored returns are in the same batch
- The batch number in the Batch Header and/or Batch control are non-numeric
- The batch number in the Batch Header is not the same as in the Batch Control

Errors That Will Cause An Entry To Be Rejected

- R13 - Invalid ACH Routing Number
- R18 – Improper Effective Entry Date
- R19 – Amount Field Error
- R25 – Addenda Error
- R26 - Mandatory field error (10 reasons - mostly tied to return codes or improperly completed fields, also check serial # or terminal city/State zeros or spaces)
- R27 - Trace number error
 - Original entry trace not present in addenda of a return
 - Trace # on an addenda does not match trace on preceding detail record
- R28 - Routing number check digit error
- R30 - RDFI not participant in a Check Truncation program
- R32 - The RDFI is not able to settle the entry
- R34 - Limited participation DFI (regulator based)
- R35 - Return of improper debit entry (CIE)
- R36 – Return of improper credit entry (ARC,BOC, POP, WEB, RCK)

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Questions?
