LIBRARY OF CONGRESS
National Library Service
for the Blind and
Physically Handicapped

Specification 901:2012

Duplication and Distribution of Digital Talking Book Magazines

Version 1.0, March 2012

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Table of Contents

1. Scope

This specification covers the requirements for distribution of audio magazines on digital talking-book cartridges produced for the National Library Service for the Blind and Physically Handicapped (NLS), Library of Congress.

2. Reference Documents

The following documents and publications form a part of this specification. In the event of conflict between the documents and publications referenced herein and the content of this specification, the content of this specification shall be considered a superseding requirement.

2.1 Specifications

American National Standards Institute (ANSI)

ANSI/NISO Z39.86-2002
Specifications for the Digital Talking Book

The document cited above is available from:

American National Standards Institute, Inc.
25 West 43rd Street
4th Floor
New York, NY 10036
Tel: (212) 642-4900
Fax: (212) 398-0023
and at
www.niso.org/workrooms/daisy/Z39-86-2002.html

Braille Authority of North America

English Braille, American Edition 1994, Revised 2002
BANA Braille Codes Update 2007

available at
www.brailleauthority.org/update07/codesupdate2007-rev1.pdf

DAISY Consortium

DAISY Protected Digital Talking-Book Specification, Version 2.0

available at:
www.daisy.org/projects/pdtb

United States Postal Service

Domestic Mail Manual

available at
http://pe.usps.com/text/dmm300/dmm300_landing.htm

2.2 Standards

American National Standards Institute (ANSI)

ANSI/ASQ Z1.4-2003
Sampling Procedures and Tables for Inspection by Attributes

The document cited above is available from:

American Society for Quality
Quality Press
611 East Wisconsin Ave.
P.O. Box 3005
Milwaukee, WI 53201-3005
and at
www.asq.org/quality-press/index.html

Microsoft

Microsoft Extensible Firmware Initiative FAT32 File System Specification, Rev 1.03

available at:
http://msdn.microsoft.com/en-us/windows/hardware/gg463080

Internet Engineering Task Force Network Working Group

Common Format and MIME Type for Comma-Separated Values (CSV) Files

available at:
www.ietf.org/rfc/rfc4180.txt

GS1 US

GS1-128 Barcode

The document cited above is available from:

GS1 US
7887 Washington Village Drive
Suite 300
Dayton, OH 45459
Tel: (937) 435-3870

2.3 Definitions

Contractor Code		The 3-digit code assigned by NLS to uniquely identify the contractor
CSV	Comma-Separated Values	A generic file format that contains data, in printable format, that can be imported into a database
Digital Magazine		A periodical produced in the form of a DTB
DTB	Digital Talking Book	A collection of XML, compressed audio, and other computer files that hold the elements of a talking book under the NISO Z39.86:2002 and DAISY PDTB2 standards
DTBC	Digital Talking-Book Cartridge	The USB flash drive (physical media) on which DTBs are stored
DTBM	Digital Talking-Book Machine	The stand-alone electronic device to play a DTB, also referred to as a "player"
Magazine Edition		A unique instance of a magazine periodical
FAT32		A file system used to format a DTBC for file storage
GFE	Government-Furnished Equipment	
LC	Library of Congress	
NLS NLS/BPH	National Library Service for the Blind and Physically Handicapped	Division of the Library of Congress that exists to execute the United States laws codified in 2 USC §135a, 2 USC §135a-1, and 2 USC §135b
Picking List		A CSV database file containing duplication orders for DTB magazines to be sent to patrons. Each entry will identify the patron and the edition of a publication that patron is to receive
QAS	Quality Assurance Section	Section within the NLS Materials Development Division that ensures, by sampling and testing, that products produced adhere to the applicable NLS specifications required by the contract
Regional Libraries		Cooperating group of state institutions that receive recorded and braille books from NLS and circulate them to eligible patrons
ZIP		A single archive used to contain the files of a DTB

3. Requirements

3.1 Picking List Database

Patrons of the NLS magazine service shall receive digital magazines, contained on USB flash memory cartridges, based on data contained in picking lists generated by NLS. The number of magazines an individual patron will receive is dependent upon the specific magazines to which he/she has subscribed, the available editions of those magazines that he/she has not already received, and the time elapsed since he/she was last sent a magazine cartridge. The picking list files are in the form of comma-separated values (CSV). The following data will be provided in each file:

a. Library ID – The 4-digit NLS code for the patron's regional library

b. Patron ID – The unique identifier for each patron within the regional library

c. Patron Instance – A single digit to distinguish which of multiple cartridges, for the same patron within a picking slip, the magazine edition shall be applied (in the unlikely event that the cumulative size of all magazines to be sent to a patron can not be contained on a single cartridge) (0 being the first instance)

d. Magazine ID – The NLS 3-letter code for a specific magazine publication

e. Edition ID – The 8-digit code identifying the magazine edition comprising the concatenated print publication year, the sequence number of the edition (1 being the first edition of the calendar year) and the revision number (0 being the original)

f. Picking List ID – A 10-letter/digit code comprising the concatenated contractor code, year, and sequence number of the picking list

See Appendix E.2 for an example.

3.2 Delivery Medium

3.2.1 Digital Talking-Book Cartridge (DTBC)

The digital magazines shall be written to a digital talking-book cartridge (DTBC). Cartridges containing magazines are blue to distinguish them from cartridges containing books.

3.2.2 DTBC Serial Number Database

NLS provides a database of DTBC serial numbers. This data is in the form of CSV files and may be used in identifying cartridges during the production, duplication, and refurbishment life cycle. The following data is contained in these files:

a. Barcode with check digit – The external etched barcode on the DTBC housing

b. USB serial number – The electronically readable USB serial number

See Appendix E.3 for an example.

3.2.3 DTBC Shipped Database

A database containing all DTBCs shipped to patrons shall be compiled and supplied to NLS. These DTBC shipped databases shall be provided as CSV files containing the following information (in the order shown):

a. Library ID – The 4-digit NLS code for the patron's regional library

b. Patron ID – A unique identifier for each patron

c. Cartridge ID – The USB serial number or the barcode of the DTBC

d. Cartridge ID type – The type of ID used for the cartridge: 0 for barcode or 1 for USB serial number

e. Picking List ID – A 10-digit code comprising the concatenated year and sequence number of the picking list

See Appendix E.4 for an example.

3.3 File System

3.3.1 File System Format

The DTBC shall be partitioned using the Master Boot Record (MBR) partitioning scheme. The first partition shall be a primary partition and contain a single FAT32 file system according to FAT32 File System Specification, Rev 1.03 (see Section 2.2). The formatted partition shall be large enough to hold the required files but may be less than the total capacity of the cartridge.

3.3.2 File System Directory Structure

All files composing individual magazine editions (with the exception described in 3.4.2) shall be written into separate sub-directories within the DTBC root directory. The sub-directory names shall be in the form `NNNyyyynnnr` (where "`NNN`" is the 3-character NLS magazine code and "`yyyynnnr`" is the 8-digit edition ID).

3.4 Files

3.4.1 Magazine Files

The magazine DTBs will be available for downloading from NLS servers via the Internet as ZIP archives. Each archive will contain the files of an individual magazine edition. The magazine sub-directories described in 3.3.2 shall contain all the files and only the uncompressed files contained in the ZIP archive without alteration.

3.4.2 DTBM Software Upgrade Files

NLS may determine that digital talking-book machine software upgrade files be included on cartridges sent to patrons. The software upgrade files shall be supplied as a ZIP archive that must be uncompressed onto the cartridge, maintaining the directory structure. The upgrade will be identified in the picking list with the Magazine ID of UPG. Unlike the directory-naming convention described in 3.3.2, the upgrade files and directories shall be those contained within the supplied ZIP file. The directory "upgrade" (from the ZIP archive file) shall be placed in the root directory of the cartridge file system.

3.4.3 Contractor Metadata File

An XML file containing the duplicator's alphabetic 3-letter code and the Picking List ID number supplied by NLS shall be written to the root folder of the cartridge. The name of this file will be "`contractor.xml`". An example of this file for a duplicator with a code of `ACM` and a Picking List ID of `ACM20120027` is given in Appendix C.

3.5 Write Protection

3.5.1 DTBC Write-Enabled Passcode

DTBCs from the NLS cartridge manufacturer are write protected by a 16-digit, 8-bit binary sequence. This sequence will be provided by NLS. The DTBC shall be enabled for writing by applying this sequence as described in Appendix D.1.

3.5.2 DTBC Write-Protected Passcode

The DTBC shall be protected to ensure only NLS authorized parties have the ability to alter files. NLS will supply a hexadecimal representation of a 16-byte passcode that shall be used to write protect the cartridge. These numbers represent a 16-digit, 8-bit binary string that forms the

passcode used to write protect and subsequently write enable the cartridge. The DTBC shall be protected from erasure or writing by applying this sequence as described in Appendix D.2. The same sequence will be used during refurbishment of DTBCs.

3.5.3 Security of DTBC Passphrases

The recipient of the DTBC passphrases is responsible for their security. No more than 3 persons within the recipient's organization shall have access to the NLS passphrases. Prior to obtaining passphrases from the contract monitor, the recipient organization shall provide NLS with a plan to secure the passphrases and its MD5 checksum from compromise. Equipment to be used in cartridge duplication shall not store either the passphrases or the passphrase digest in its unencrypted form.

The passphrases will only be supplied upon the contract monitor's assessment that its security is assured.

3.6 Cartridge Print and Braille Label

An adhesive embossed PRINT/BRAILLE combination label shall be furnished and adhered to the DTBC in the space provided. To ensure consistent placement of printed elements, a standard layout grid and typographic style have been established for DTBC labels. The label is to be white with black ink. Print must be at a minimum resolution of 300 dpi. The label dimensions and tolerances are defined in drawing 500001014B (Appendix A.2). The information specified (see Section 3.6.1) and only the specified information shall be printed and embossed onto the label. Printing directly onto the cartridge is not permitted.

Note: Where the Helvetica font is specified, it is permissible to substitute Arial.

3.6.1 Magazine Week Identifier

3.6.1.1 Print

The magazine week identifier shall be a single line printed in 30-point Helvetica font, left justified to fit the space defined in drawing 500001014B, note 5 (Appendix A.2). The text of the cartridge identifier shall be set in the form "Magazines: Week NN" (where "NN" is the production week number, commencing on Sunday, with week 01 being the week with the year's first Thursday in it).

3.6.1.2 Braille

The braille cartridge identifier shall consist of two lines of up to 14 and 11 cells respectively, in the position and space defined in drawing 500001014B, note 6 (Appendix A.2). The braille cartridge identifier shall be set in the form "Magazines: Week NN" (where "NN" is the production week number, commencing on Sunday, with week 01 being the week with the year's first Thursday in it). The braille shall be contracted according to the rules defined by the Braille Authority of North America (BANA) in "Engilsh Braille, American Edition" (see Section 2.1).

3.6.1.3 Compressed Braille Cell/Dot Size and Spacing

a. The nominal height of the cartridge label braille dots shall be 0.019 inches.

b. The nominal base diameter of the cartridge label braille dots shall be 0.053 inches.

c. The cell spacing of dots shall conform to the following:

   1. The nominal distance from center-to-center of adjacent cartridge label dots (horizontally or vertically, but not diagonally) in the same cell shall be 0.078 inches.

2. The nominal distance for center-to-center of corresponding cartridge label dots in adjacent cells shall be 0.245 inches.

d. The nominal line spacing of braille cells from center-to-center of nearest corresponding cartridge label dots in adjacent lines shall be 0.312 inches.

3.6.2 NLS Identifier

The NLS identifier shall be four lines total. The first three lines shall be printed in 14-point Helvetica font, left justified and ragged right. The final line shall be printed in 14-point Helvetica Bold font, left justified. The position and area are defined in drawing 500001014B, note 7 (Appendix A.2). The text of the NLS identifier shall be set in the form "National Library Service for the Blind and Physically Handicapped" for the first three lines and "Library of Congress" for the final line.

3.6.3 Production Week Date

The production week date shall be a single line printed in 30-point Helvetica Bold font, left justified to fit the space defined in drawing 500001014B, note 8 (Appendix A.2). The text of the date shall be set in the form "month dd, yyyy" (where "month" is the unabbreviated month, "dd" is the 2-digit day, and "yyyy" is the 4-digit year). The date printed on all cartridges written and mailed in any week shall be that of the Monday of that week.

3.7 Containers

The duplicated cartridges are to be packaged in government furnished containers. Magazine containers will be a color to distinguish them from book containers. Cartridges shall be placed in the containers with their labels facing up.

3.7.1 Address Database

A database containing the information necessary for creating the address cards will be provided by NLS. The address database shall be provided in the form of one or more CSV files.

Each entry in the file contains the following fields:

a. Library ID – The 4-digit NLS code for the patron's regional library

b. Patron ID – A unique identifier for each patron

c. Name – The prefix (e.g. Mr., Mrs., or Sir) followed by first and last name of the patron

d. Address Line 1 – The first line of the patron's street address

e. Address Line 2 – The second line of the patron's street address

f. Address Line 3 – The third line of the patron's street address

g. City – The patron's city of residence

h. State – The patron's state of residence

i. ZIP or ZIP+4 – The patron's 5-digit or 9-digit zip code (for international patrons this will contain the equivalent postal code if it exists)

j. Country – The patron's country of residence (if not U.S.A.)

k. Foreign or Domestic – 1 if the address is foreign and 0 if it is within the U.S.A.

l. Library Phone Number – The telephone number of the patron's regional library

See Appendix E.1 for an example.

3.7.2 Address Cards

Address cards shall be 3 inches (+0, -0.0625) by 5 inches (+0, -0.0625) in dimension, shall be double-sided, and shall include a tactile indicator to distinguish between front and back. The weight shall be 110-pound card stock. The address card shall appear as defined in drawing 500001015 (Appendix A.3).

3.7.2.1 Front

Address cards shall contain the following information on the front face and visible when inserted into the container.

a. Return address of the producer in the upper-left corner of the card, note 3 in drawing 500001015 (Appendix A.3)

b. Postal Routing Barcode, GS1-128 compliant as defined in Mailing Standards of the United States Postal Service Domestic Mail Manual section 708.5.2 (see Section 2.1), with the Application Identifier (AI), destination ZIP code data field containing the 5-digit or 9-digit zip code of the patron as supplied, and the check digit, note 4 in drawing 500001015 (Appendix A.3). Clear zone around barcode must be as defined in drawing 500001015.

c. Printed text “Free Matter for the Blind or Handicapped,” note 5 in drawing 500001015 (Appendix A.3)

d. Printed text “Questions? Call (xxx) xxx-xxxx,” note 6 in drawing 500001015 (Appendix A.3), telephone number supplied from the address database (see Section 3.7.1)

e. Address of the patron, note 7 in drawing 500001015 (Appendix A.3); blank address lines in the address database shall be suppressed

f. Patron ID and Library ID, note 14 in drawing 500001015 (Appendix A.3), supplied from the address database (see Section 3.7.1)

3.7.2.2 Back

Address cards shall contain the following information on the back.

a. Return address of the duplicator in the center of the card, note 8 in drawing 500001015 (Appendix A.3)

b. Printed text “Free Matter for the Blind or Handicapped,” note 5 in drawing 500001015 (Appendix A.3)

c. Postal Routing Barcode, GS1-128 compliant as defined in Mailing Standards of the United States Postal Service Domestic Mail Manual section 708.5.2 (see Section 2.1), with the Application Identifier (AI), destination ZIP code data field containing the 9-digit zip code of the duplicator, and the check digit, note 4 in drawing 500001015 (Appendix A.3). Clear zone around barcode must be as defined in drawing 500001015.

3.7.3 Container Large Face (Belly) Label

Each container shall contain a label within the mailing-card-holder area. The label shall appear as defined in drawing 500001016 (Appendix A.4). The large face (belly) label shall contain the following information, all of which shall be legible:

a. Return address of cartridge duplicator in the center of the card, note 6 in drawing 500001016 (Appendix A.4)

b. Postal Routing Barcode, GS1-128 compliant as defined in Mailing Standards of the United States Postal Service Domestic Mail Manual section 708.5.2 (see Section 2.1), with the Application Identifier (AI), destination ZIP code data field containing the 9-digit zip code of

the duplicator, and the check digit, note 4 in drawing 500001016 (Appendix A.4). Clear zone around barcode must be as defined in drawing 500001016.

c. Printed text “Free Matter for the Blind or Handicapped,” note 5 in drawing 500001016 (Appendix A.4)

Print must be at a minimum resolution of 300 dpi.

3.8 Refurbishment

Patrons will return DTBCs and containers for refurbishment. DTBCs and containers will be cleaned, inspected, and certified for reuse.

3.8.1 Refurbished DTBC

Refurbished DTBCs must meet the following criteria:

a. Label and adhesive residue must be cleared from the housing

b. Cartridge must be free from physical damage

c. Cartridge must be clean and free of dirt or other contamination

d. USB connector must be free from physical damage

e. Cartridge must operate and be recognized by a computer

f. Contents of the flash memory must be erased (if duplication equipment requires)

Any DTBC that does not meet the above criteria shall not be reused. The NLS contract monitor shall be notified in writing of all DTBCs that do not meet the criteria for reuse. Notification shall include the USB serial number and barcode of the cartridge.

Cartridges determined by the contractor to be unusable shall be retained by the contractor and only be disposed of following the approval of the NLS Quality Assurance Section.

3.8.2 Refurbished Container

Refurbished containers must meet the following criteria:

a. Address card must be removed

b. Container must latch properly and be free from excessive physical damage

c. Large face container label must be legible and free from damage (illegible or damaged labels should be removed and replaced with a new label)

d. Container barcode must be legible and free from damage

Any container that does not meet the above criteria shall not be reused. The NLS contract monitor shall be notified in writing of all containers that do not meet the criteria for reuse.

Containers determined by the contractor to be unusable shall be retained by the contractor and only be disposed of following the approval of the NLS Quality Assurance Section.

3.8.3 DTBC Received Database

A database shall be created, updated, and transmitted to NLS to provide information on DTBCs returned for refurbishment. This database shall be provided to NLS as one or more CSV files.

The following information shall be contained in the CSV files:

a. Cartridge ID – The USB serial number or the barcode of the DTBC

b. Cartridge ID type – The type of ID used for the cartridge, 0 for barcode or 1 for USB serial number

See Appendix E.5 for an example.

4. Quality Assurance

4.1 Lot Inspection

4.1.1 Incoming Inspection for DTBCs from NLS Manufacturer

The contractor is required to perform an incoming lot-sampling inspection of the blank GFE DTBCs produced by the NLS cartridge manufacturer. A lot shall be considered the quantity received by the producer in a single shipment from the cartridge manufacturer.

The acceptable quality level (AQL) shall be level II "normal" 0.4%. The AQL can be modified to "reduced" with approval from NLS QAS. The sampling shall be in accordance with *ANSI/ASQ Z1.4-2003, Sampling Procedures and Tables for Inspection by Attributes*.

The lot inspection shall consist of the following requirements from NLS Drawing Number 500001013 *Housing, Magazine Cartridge* or this specification:

- Hardware interface:
  - The USB plug shall be flush or below external surfaces of the cartridge. See note 11 on NLS Drawing Number 500001013B (Appendix A.1)
  - The USB plug shall be oriented so that the electrical contacts face the bottom of the cartridge. See note 15 on NLS Drawing Number 500001013B (Appendix A.1)
- Housing text: A visual inspection and comparison with the control sample of the cartridge text is required to ensure contrast, clarity, and orientation. All markings shall be black. The following text shall be inspected:
  - Library of Congress Washington DC 20542
  - PROPERTY OF THE U.S. GOVERNMENT
  - Further reproduction or distribution in other than a specialized format is prohibited
  - FC
- Housing barcode: The housing barcode shall be readable by a barcode scanner and appear clear to a visual inspection.
- Housing dimensions: The cartridge dimensions enclosed by an ellipse as defined by note 18 on NLS Drawing Number 500001013B (Appendix A.1) shall conform to the requirements specified.
- Housing color: A visual inspection and comparison with the control sample under natural sunlight is required to ensure a reasonable match in color.
- Electrical interface:
  - Verify cartridge is recognized by a computer and identified as an LoC.NLS Talking Book USB Device (not generic device)
  - DTBC write-enabled passcode: Verification of the cartridge write-enabled passcode supplied to the contractor per Section 3.5.1 and Appendix D.1

The producer shall report any failed cartridge lot to NLS QAS, via e-mail address qas@loc.gov, within 24 hours.

4.1.2 Outgoing Inspection

The contractor is required to use an outgoing lot-inspection sampling plan of the finished product for the following requirements from this specification. Acceptable Quality Level (AQL) shall be level II "normal" 0.65%. The lot size shall be the total number of units produced in one 8-hour production shift. The inspection shall test the following requirements:

- Existence and validity of all files per Section 3.4 of this specification on the DTBC
- DTBC is write protected
- DTBC can be write enabled by applying the write-enabled passcode and ensuring it is writeable. Any failure to write enable a cartridge must be reported immediately to the NLS QAS, via e-mail at qas@loc.gov, and shipments halted. If the cartridge is successfully write enabled, then the cartridge must be write protected and included with the shipment.
- DTBC label is present with legible printing
- Address card is present with legible printing
- Address card contains the correct patron information for the corresponding DTBC
- Container large face label is present with legible printing
- Container latches properly

4.1.3 Defective Cartridges

New government-furnished USB flash-memory cartridges found to be defective shall be returned to NLS QAS or, on the direction of the contract monitor, directly to the manufacturer. The contractor is responsible for reporting all defective government-furnished cartridges to NLS QAS or the contract monitor within 1 week from the date the defect was discovered.

4.2 Contractor's Quality-Control Plan

The contractor is required to provide written documentation showing that the contractor's methods of quality control incorporate those established by this specification under Section 4.1.

4.3 Correction of Faults by Contractor

Should NLS determine that a significant fault or faults have been found in production units, then correction of the fault or faults in previously produced units and production inspections or controls for prevention shall be instituted without additional charge to NLS.

4.4 Contractor's Warranty

The contractor shall agree to unconditionally warrant each finished product for a period of 1 year. The warranty shall include only the materials supplied by and work performed by the contractor. The contractor will not be responsible for defects or damage of GFE cartridges and containers unless the damage was caused by the contractor. Finished cartridges and containers produced by the contractor that are not in conformance with this specification will be returned to the contractor and shall be refurbished for reuse at the contractor's expense. Replacements shall be mailed to the patron within two (2) working days.

A monthly report on warranty returns shall be forwarded to the NLS QAS. This report should be sent to qas@loc.gov, and is due by the 7th of the following month. The monthly report document shall be submitted for approval as part of the written documentation described in Section 4.2.

4.5 Inspection of Contractor by NLS

The National Library Service for the Blind and Physically Handicapped, Library of Congress, reserves the right to inspect any process or tests being performed. The Library representative shall have the authority to select, at random, a sample of the cartridges for testing to the specified requirements at any time during the course of the contract. The National Library Service for the Blind and Physically Handicapped, Library of Congress, reserves the right to reject any production lot represented by a sample that has been tested and rejected.

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Appendix
A. Specification Drawings
A.1 Magazine Cartridge

NOTES:
1. INTERPRET DIMENSIONS AND TOLERANCES PER ASME Y14.5M-1994.
2. MARKINGS SHALL BE BLACK.
3. ALPHANUMERIC, BARCODE, AND LOGO MARKING SHALL BE APPLIED BY LASER MARKING OR DIRECT PRINTING.
4. MARKINGS SHALL BE PERMANENT IN ACCORDANCE WITH UL 60065 AUDIO, VIDEO, AND SIMILAR ELECTRONIC APPARATUS-SAFETY REQUIREMENTS, SECTION 5.

5. "PROPERTY OF THE U.S. GOVERNMENT" SHALL BE ARIAL, 12 POINT FONT. THIS MARKING SHALL NOT BE PRINTED ON CARTRIDGES SOLD TO NON U.S. GOVERNMENT ENTITIES.

6. CHAFEE AMENDMENT STATEMENT "FURTHER REPRODUCTION OR DISTRIB UTION IN OTHER THAN A SPECIALIZED FORMAT IS PROHIBITED" SHALL BE ARIAL, 5.5 POINT FONT.

7. COMBINED MEMORY CAPACITY CODE, YEAR OF MANUFACTURE, AND LOT NUMBER: "AYLOT"
   - CHARACTERS SHALL BE ARIAL, 14 POINT FONT.
   - FIRST CHARACTER: LETTER CODE FOR MEMORY CAPACITY (SEE MEMORY CAPACITY CODE TABLE)
   - SECOND CHARACTER: ONE NUMBER REPRESENTING THE CALENDAR YEAR (JANUARY 1ST THROUGH DECEMBER 31ST) OF CARTRIDGE MANUFACTURE (E.G. "8" FOR 2008, "9" FOR 2009, "A" FOR 2010).
   - CHARACTERS THREE THROUGH FIVE: LOT NUMBER ASSIGNED BY THE CARTRIDGE MANUFACTURER (E.G. 100 FOR THE 100TH LOT OF THE INDICATED CALENDAR YEAR).

8. BARCODE CONTAINS EIGHT CHARACTERS AND COMPLIES WITH ANSI/AIM BC1-1995, USS CODE 39.
   - FIRST CHARACTER IS MEMORY CAPACITY LETTER CODE (SAME AS DESCRIBED IN NOTE 7).
   - BARCODE CHARACTERS USE A CONVERSION CODE FOR YEAR AND LOT NUMBER:
   - SECOND CHARACTER: CALENDAR YEAR CODE SHALL BE A=2008, B=2009, C=2010….Z=2033
   - THIRD AND FOURTH CHARACTERS: LOT NUMBER CODE SHALL BE AA=1, AB=2, AC=3….BA=27, BB=28…ZZ=676
   - FIVE THROUGH SEVEN CHARACTERS: PRODUCT SERIES NUMBER CODE SHALL BE AAA=1, AAB=2, AAC=3…AAZ=26, ABA=27…BAA=677, BAB=678…ZZZ=17576
   - EIGHTH CHARACTER: CHECK CHARACTER.
   - NOMINAL WIDTH OF ELEMENTS (BARS AND SPACES) SHALL BE 0.0125 (NARROW) AND 0.025 (WIDE).
   - BAR HEIGHT SHALL BE AT LEAST 0.30 INCH.
   - 0.125 INCH MINIMUM QUIET ZONE BETWEEN ALPANUMERIC CODE AND BARCODE; BARCODE AND FCC LOGO

9. FCC LOGO.

10. "Library of Congress Washington DC 20542", SHALL BE ARIAL NARROW, 12 POINT FONT. TWO (2) LINES.

11. PLUG TO BE FLUSH OR BELOW EXTERNAL SURFACES OF CARTRIDGE

12. REFERENCE DOCUMENT 4824590048, MEMORY CARTRIDGE PROCUREMENT SPECIFICATION
13. SHALL BE COMPLIANT WITH DIRECTIVE 2002/95/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL OF 27 JANUARY 2003 ON THE RESTRICTION OF THE USE OF CERTAIN HAZARDOUS SUBSTANCES IN ELECTRICAL AND ELECTRONIC COMPONENTS.

14. USB 2.0 SERIES A, MALE PLUG WITH OPTION III PLUG CONTACT MATERIALS (REF.SECTION 6.5.4.3)
   - APPLY MODIFICATION ON OPTION III SPEC:
   - SUBSTRATE MATERIAL: 0.25 +/- 0.1mm BRASS CONTACT.
   - SOLDER TAILS: MINIMUM 2.5 MICROMETERS (100 MICROINCHES) LEADFREE TIN OVER THE UNDERPLATE.

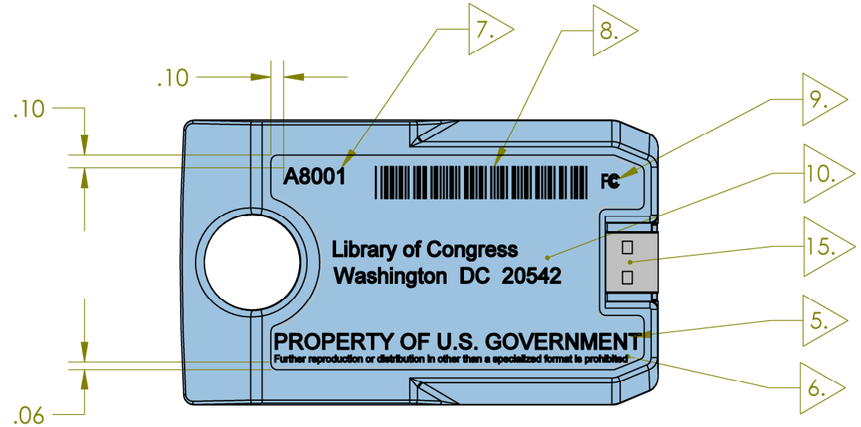
15. USB PLUG SHALL BE ORIENTED SO THAT THE ELECTRICAL CONTACTS FACE AS SHOWN.

16. TEXTURE SURFACE AND TANGENT SURFACES TO MT-1055-4 OR EQUIVALENT, UNLESS OTHERWISE NOTED

17. TEXTURE: MT-11001 OR EQUIVALENT

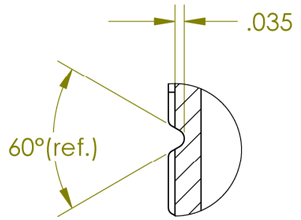
18. DIMENSIONS ENCLOSED WITHIN THIS SYMBOL (XXX), ARE INSPECTION DIMENSIONS.
19. NO REGRIND PERMISSIBLE.
20. PARTING LINE MISMATCH NOT TO EXCEED .005 INCHES, FLASH NOT TO EXCEED .008 INCHES.
21. GEOMETRY NOT DEFINED BY THIS DRAWING TO BE WITHIN A 0.010" PROFILE TOLERANCE TO ELECTRONIC FILE.
22. MATERIAL: BAYER BAYBLEND FR3010
    COLOR: BLUE, PANTONE 277U

MEMORY CAPACITY CODE	
CODE LETTER	MEMORY (NOM) (MEGABYTES)
A	128
B	256
C	512
D	1024
E	2048
F	4096

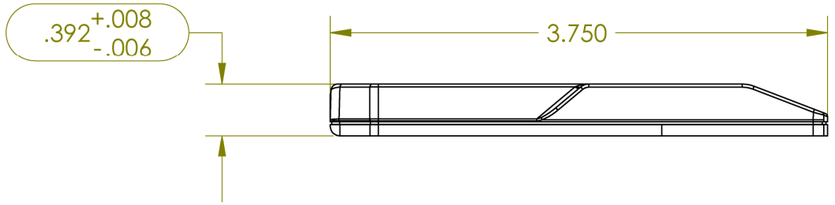


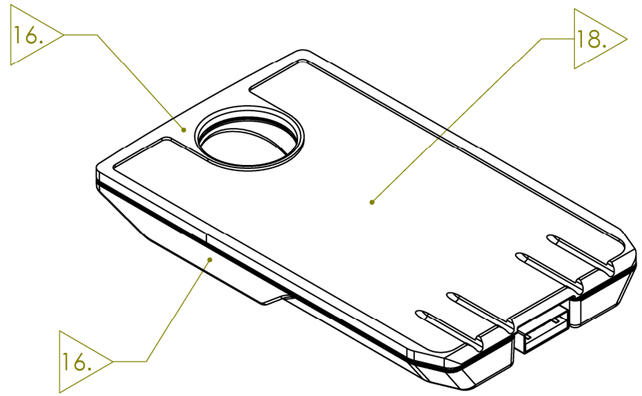
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES, TOLERANCES ARE
.X ± .032 .XX ± .015 XXX ± .005
ANGLES ± 1/2°

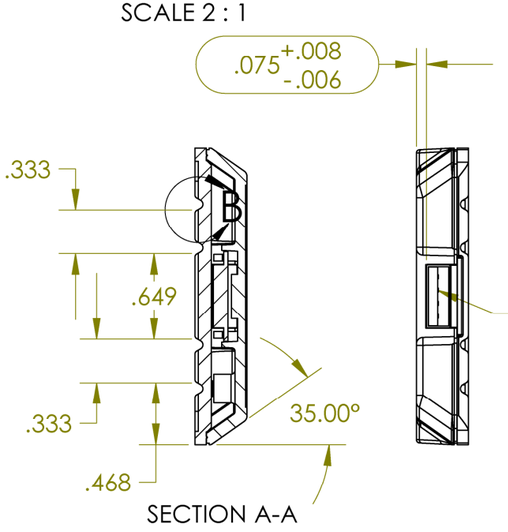
CONTRACT NO.		NATIONAL LIBRARY SERVICE FOR THE BLIND AND PHYSICALLY HANDICAPPED LIBRARY OF CONGRESS
APPROVAL	DATE	TITLE: HOUSING, MAGAZINE CARTRIDGE
DRAWN: J.BROWN	1/2012	
		DWG NO. 500001013B — REV. 1
		SCALE: DO NOT SCALE DRAWING — SHEET 1 OF 3



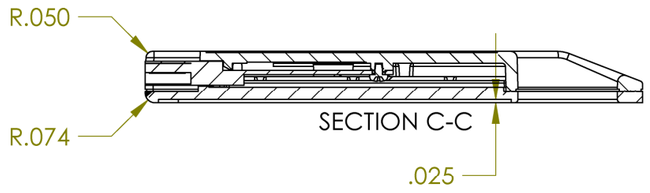
DETAIL B
SCALE 2 : 1







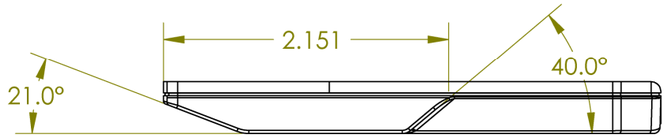
SECTION A-A

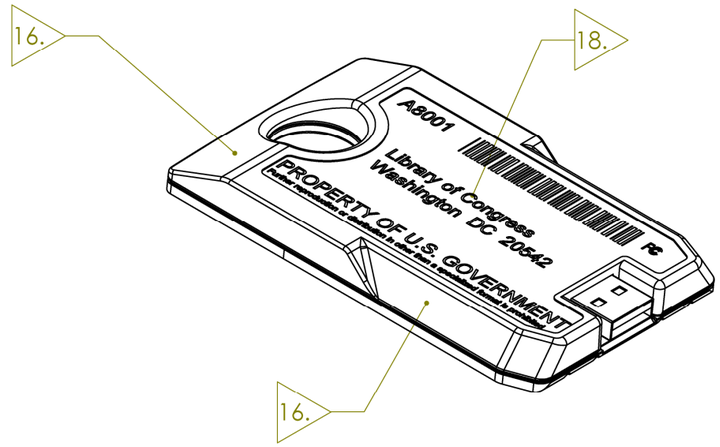


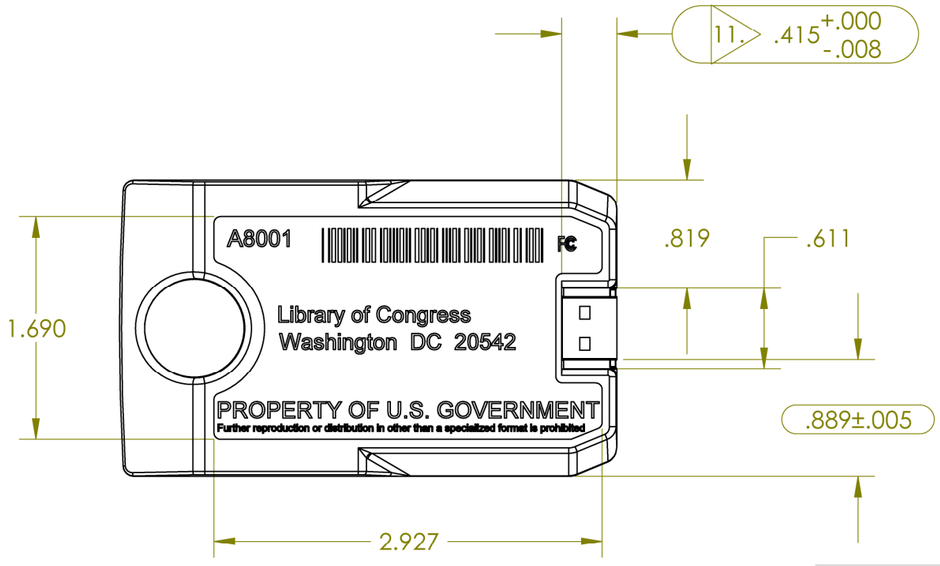
SECTION C-C

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES, TOLERANCES ARE
.X ± .032 .XX ± .015 XXX ± .005
ANGLES ± 1/2 °

CONTRACT NO.		NATIONAL LIBRARY SERVICE FOR THE BLIND AND PHYSICALLY HANDICAPPED LIBRARY OF CONGRESS
APPROVAL	DATE	TITLE: HOUSING, MAGAZINE CARTRIDGE
DRAWN: J.BROWN	1/2012	
		DWG NO. 500001013B — REV. 1
		SCALE: DO NOT SCALE DRAWING — SHEET 2 OF 3







UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES, TOLERANCES ARE
.X ± .032 .XX ± .015 XXX ± .005
ANGLES ± 1/2°

CONTRACT NO.		NATIONAL LIBRARY SERVICE FOR THE BLIND AND PHYSICALLY HANDICAPPED LIBRARY OF CONGRESS
APPROVAL	DATE	TITLE: HOUSING, MAGAZINE CARTRIDGE
DRAWN: J.BROWN	1/2012	
		DWG NO. 500001013B — REV. 1
		SCALE: DO NOT SCALE DRAWING — SHEET 3 OF 3

A.2 Magazine Label

NOTES:
1. INTERPRET DIMENSIONS AND TOLERANCES PER ASME Y14.5M-1994
2. FACESTOCK: 0.0025 INCH WHITE POLYSTYRENE
   3M EMTECH FS182, CONSOLIDATED LABEL AT333, OR EQUIVALENT.
3. ADHESIVE: REMOVABLE TYPE 3M R3500, OR EQUIVALENT
4. BRAILLE: NLS COMPRESSED IN ACCORDANCE WITH SPECIFICATION 901:2012

5. "Magazines: Week #": 30 POINT, HELVETICA NARROW OR ARIAL NARROW FONT, BLACK. (LEFT JUSTIFIED +/- .032)

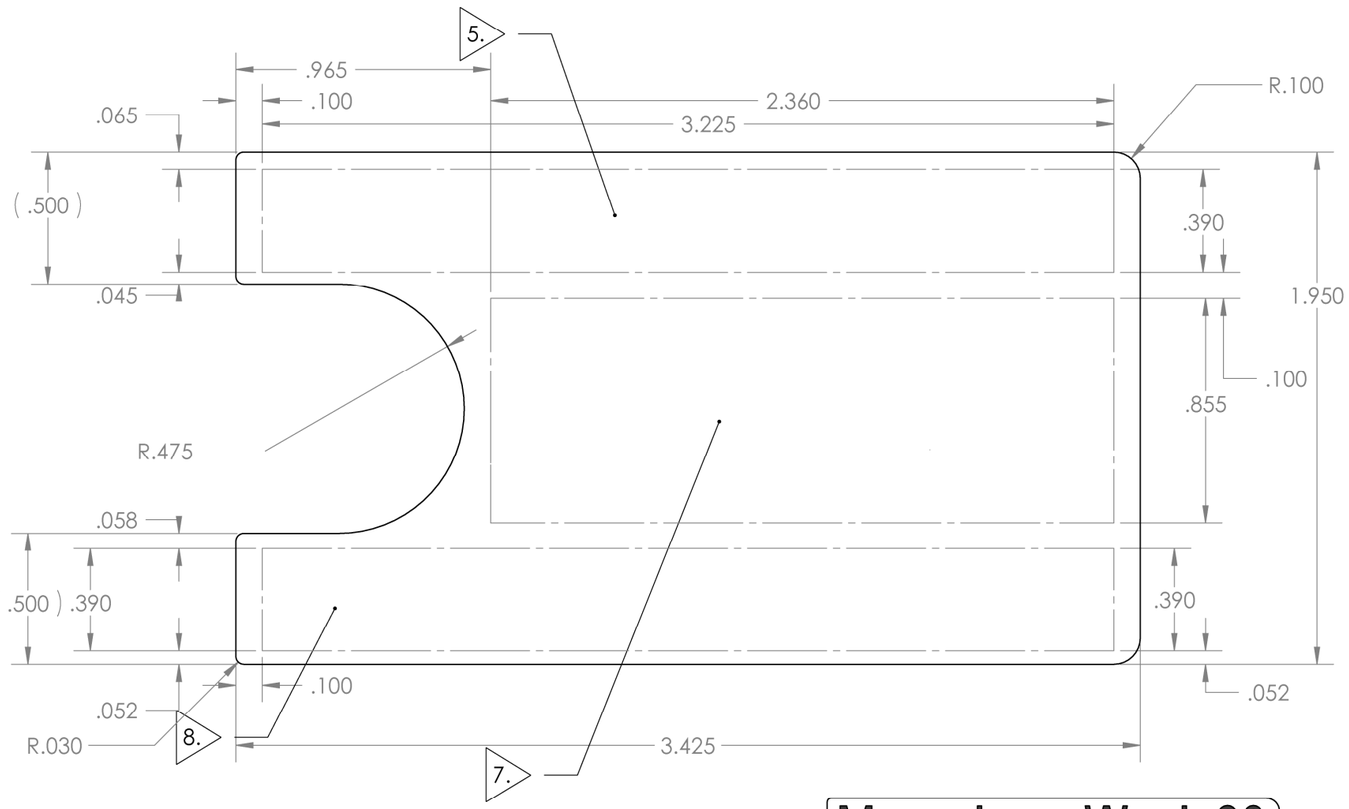
6. BRAILLE: MAGAZINE PRODUCTION WEEK, FIRST LINE UP TO 14 CELLS; SECOND LINE UP TO 11 CELLS

7. "National Library Service
   for the Blind and Physically
   Handicapped"
   14 POINT, HELVETICA OR ARIAL FONT, BLACK. (LEFT JUSTIFIED +/- .032).
   "Library of Congress"
   14 POINT, HELVETICA BOLD OR ARIAL BOLD FONT.

8. DATE AS "MONTH DAY, YEAR": 30 POINT HELVETICA NARROW OR ARIAL NARROW FONT, BLACK. (LEFT JUSTIFIED +/- .032)

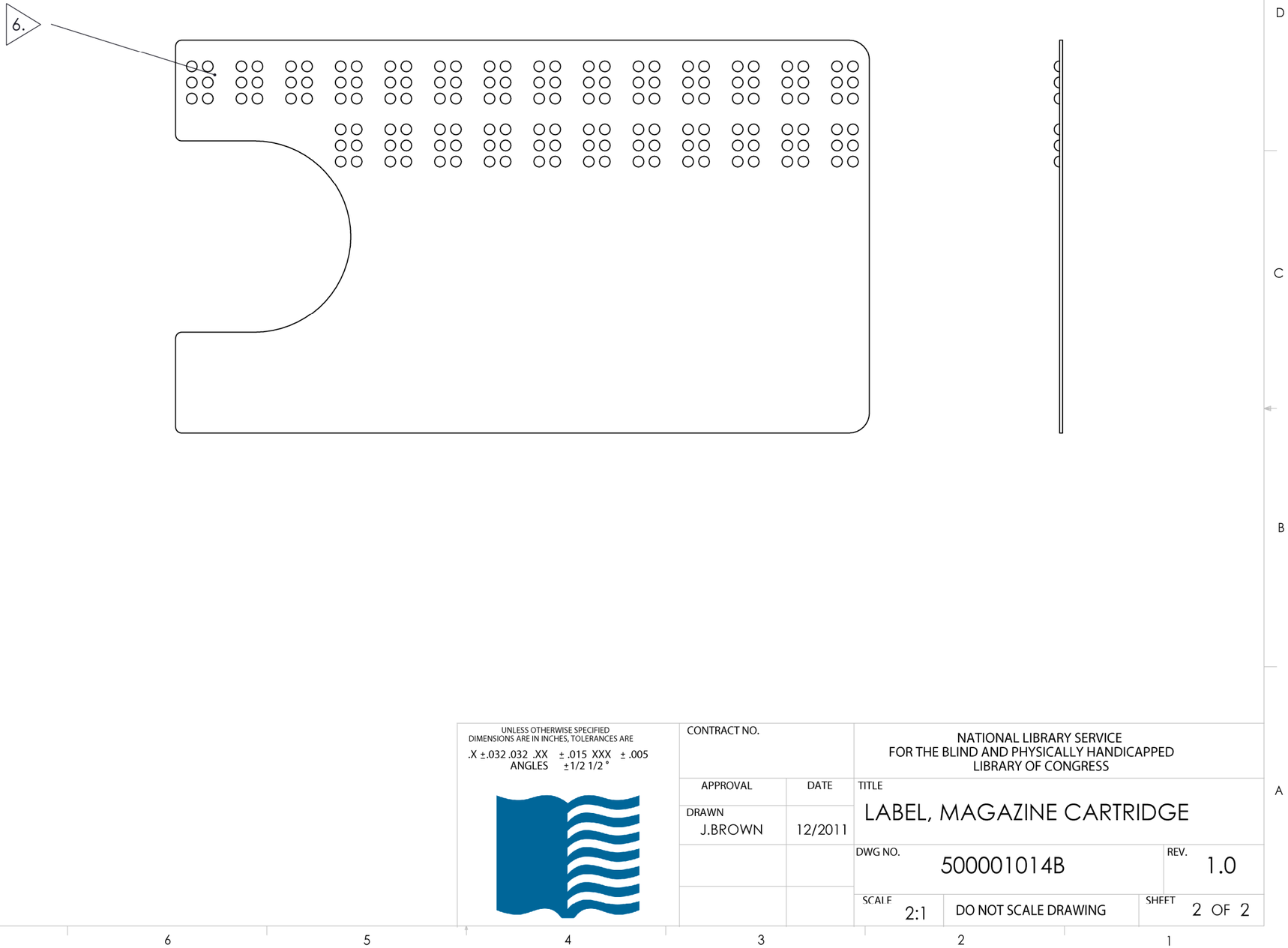
9. MARKINGS SHALL NOT BE VISIBLY DEGRADED TO THE UNAIDED EYE AFTER THE FOLLOWING TREATMENTS:
   - SCRATCHING 10 TIMES WITH A FINGERNAIL.
   - RUBBING WITH MODERATE PRESSURE 5 TIMES

10. TEXT SHALL BE EVENLY SPACED AND CENTERED VERTICALLY WITHIN THE AREAS SPECIFIED



Magazines: Week 38
National Library Service
for the Blind and Physically
Handicapped
Library of Congress
September 20, 2010

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES, TOLERANCES ARE .X ±.032 .032 .XX ± .015 XXX ± .005 ANGLES ±1/2 1/2°	CONTRACT NO.	NATIONAL LIBRARY SERVICE FOR THE BLIND AND PHYSICALLY HANDICAPPED LIBRARY OF CONGRESS
	APPROVAL / DATE	TITLE: LABEL, MAGAZINE CARTRIDGE
	DRAWN: J.BROWN / 12/2011	
		DWG NO.: 500001014B — REV.: 1.0
		SCALE: 2:1 — DO NOT SCALE DRAWING — SHEET: 1 OF 2



UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES, TOLERANCES ARE
.X ±.032 .032 .XX ± .015 XXX ± .005
ANGLES ±1/2 1/2 °

CONTRACT NO.		NATIONAL LIBRARY SERVICE FOR THE BLIND AND PHYSICALLY HANDICAPPED LIBRARY OF CONGRESS
APPROVAL	DATE	TITLE: LABEL, MAGAZINE CARTRIDGE
DRAWN: J.BROWN	12/2011	
DWG NO.: 500001014B		REV.: 1.0
SCALE: 2:1	DO NOT SCALE DRAWING	SHEET: 2 OF 2

A.3 Address Card

NOTES:
1. INTERPRET DIMENSIONS AND TOLERANCES PER ASME Y14.5M-1994
2. CARD STOCK: 110 POUND, 3 in. X 5 in., (+0, -0.0625)

3. DUPLICATOR RETURN ADDRESS, 8 POINT ARIAL NARROW

4. POSTAL ROUTING BARCODE, PATRON DESTINATION 5-DIGIT OR 9-DIGIT ZIP CODE, SEE NOTE 12 FOR SPACING REQUIREMENTS

5. "Free Matter for the Blind or Handicapped", 9 POINT ARIAL BOLD NARROW

6. "Questions? Call (800) 424-8567", 9 POINT ARIAL NARROW, NUMBER SHOWN IS ONLY AN EXAMPLE, ACTUAL NUMBER WILL BE FOR THE PATRON'S REGIONAL LIBRARY

7. PATRON ADDRESS, 10 POINT ARIAL

8. DUPLICATOR RETURN ADDRESS, 10 POINT ARIAL

9. POSTAL ROUTING BARCODE, DUPLICATOR 9-DIGIT ZIP CODE, SEE NOTE 12 FOR SPACING REQUIREMENTS

10. TEXT BOX DIMENSIONS ARE MAXIMUMS

11. DIMENSIONS ENCLOSED WITHIN THIS SYMBOL (XXX) HAVE TOLERANCE (+0.015, -0)

12. BARCODE ELEMENT SPACING: THE WIDTH OF NARROWEST BAR OR SPACE ELEMENT WITHIN THE BARCODE MUST BE BETWEEN 0.013 In. AND 0.018 In. THE WIDTH MUST REMAIN CONSTANT THROUGH THE BARCODE

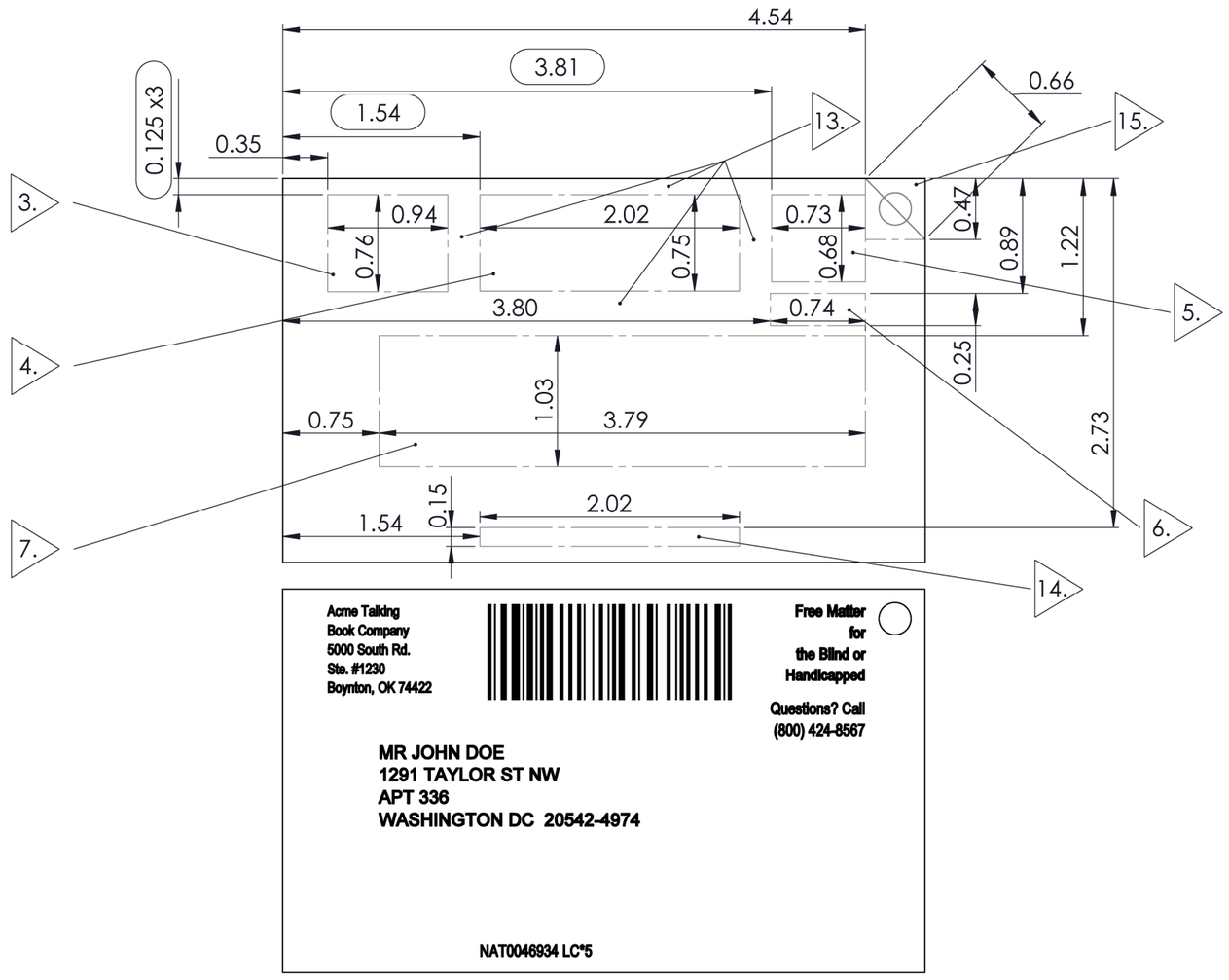
13. BARCODE CLEAR ZONE REQUIREMENTS: 0.125 In. ABOVE AND BELOW, 0.25 In. LEFT AND RIGHT, TOLERANCE FOR CLEAR ZONE SPACING IS (+0.015, -0)

14. PATRON ID AND LIBRARY ID, 9 POINT ARIAL NARROW

15. TACTILE INDICATOR, MUST FIT IN DEFINED BOX 0.47 In. x 0.47 In. (+0, -0.1), ONE OF TWO METHODS REQUIRED

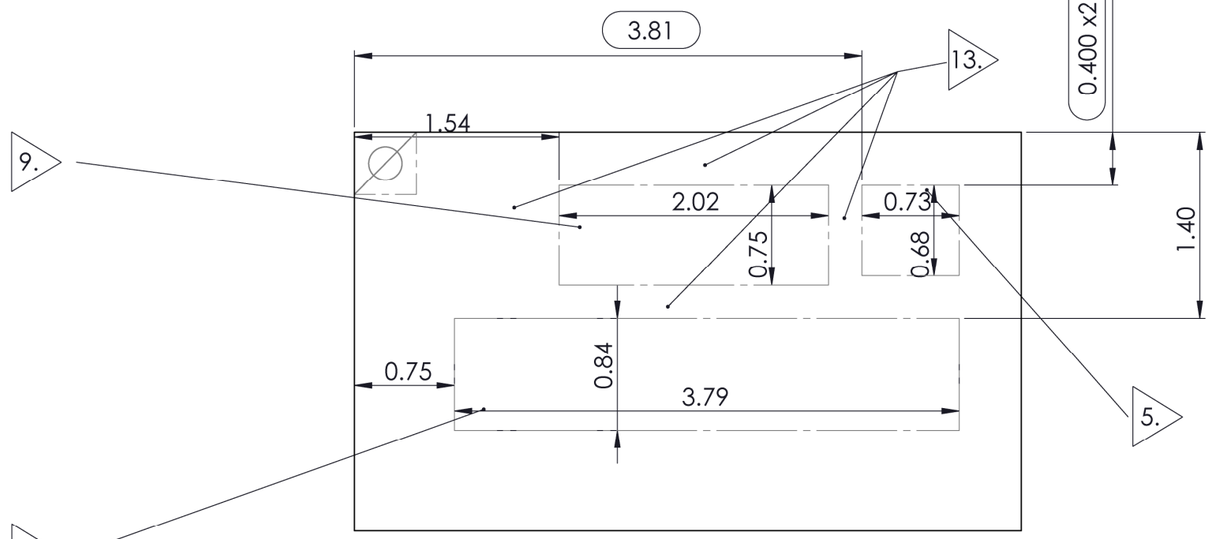
-ANGLED EDGE, NOMINAL 45 (+/- 5) DEGREES FROM CARD EDGES, LENGTH OF EDGE IS 0.66 In. (+0,-0.25)

-HOLE, NOMINAL 0.25 In. (+/- 0.05) DIAMETER



FRONT VIEW

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES, TOLERANCES ARE .X ± .032 .XX ± .015 XXX ± .005 ANGLES ± 1/2°	CONTRACT NO.	NATIONAL LIBRARY SERVICE FOR THE BLIND AND PHYSICALLY HANDICAPPED LIBRARY OF CONGRESS
	APPROVAL / DATE	TITLE: ADDRESS CARD, MAGAZINE
	DRAWN: J.BROWN / 2/2012	
	DWG NO.: 500001015	REV.: 1.0
	SCALE: DO NOT SCALE DRAWING	SHEET: 1 OF 2



Free Matter
for
the Blind or
Handicapped

ACME TALKING BOOK COMPANY
5000 SOUTH RD
STE #1230
BOYNTON OK 74422-1234

BACK VIEW

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES, TOLERANCES ARE
.X ± .032 .XX ± .015 XXX ± .005
ANGLES ± 1/2 °

CONTRACT NO.		NATIONAL LIBRARY SERVICE FOR THE BLIND AND PHYSICALLY HANDICAPPED LIBRARY OF CONGRESS
APPROVAL	DATE	TITLE: ADDRESS CARD, MAGAZINE
DRAWN: J.BROWN	2/2012	
		DWG NO.: 500001015 — REV.: 1.0
		SCALE: DO NOT SCALE DRAWING — SHEET: 2 OF 2

A.4 Large Face Label

NOTES:
1. INTERPRET DIMENSIONS AND TOLERANCES PER ASME Y14.5M-1994
2. FACESTOCK: 0.0025 INCH WHITE POLYSTYRENE
   3M EMTECH FS182, CONSOLIDATED LABEL AT333, OR EQUIVALENT
3. ADHESIVE: 3SIGMA PE18 OR EQUIVALENT

4. POSTAL ROUTING BARCODE, DUPLICATOR 9-DIGIT ZIP CODE SEE NOTE 9 FOR SPACING REQUIREMENTS

5. "Free Matter for the Blind or Handicapped", 9 POINT ARIAL NARROW BOLD

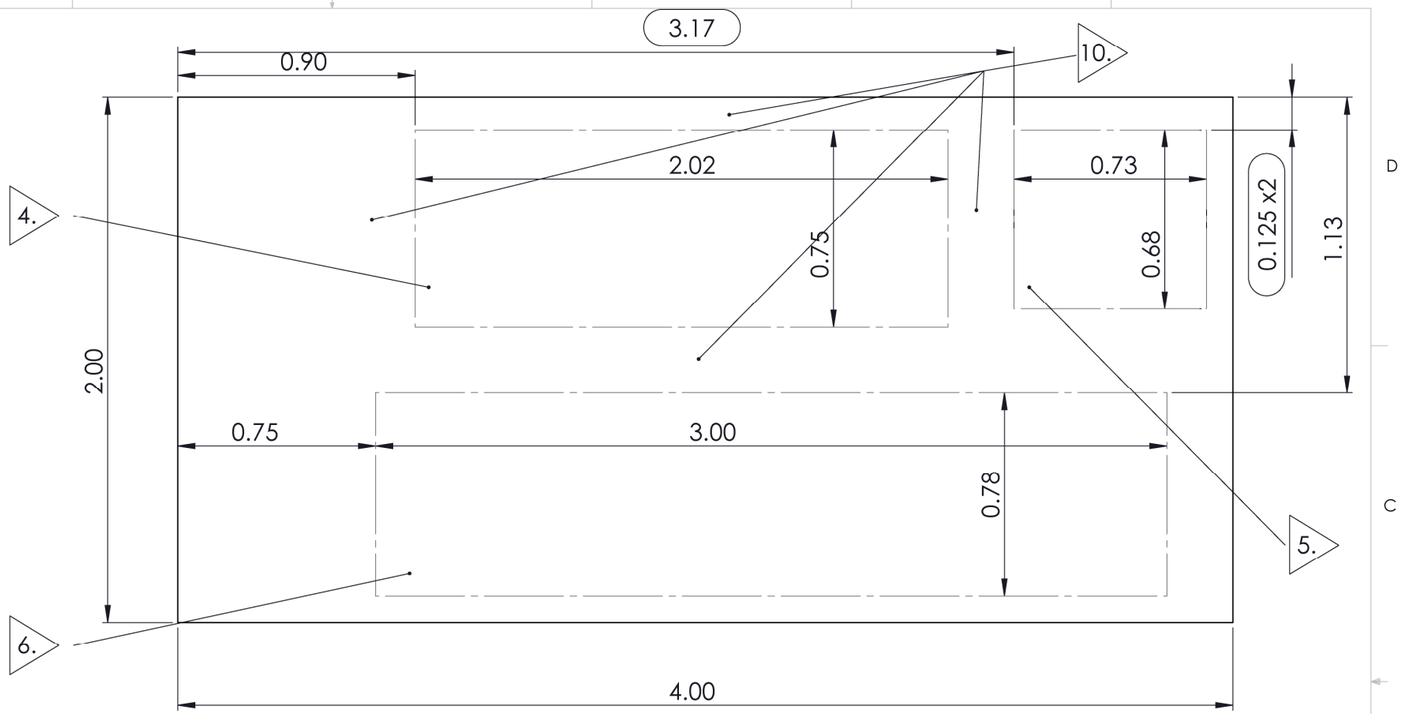
6. DUPLICATOR ADDRESS, 10 POINT ARIAL

7. TEXT BOX DIMENSIONS ARE MAXIMUMS

8. DIMENSIONS ENCLOSED WITHIN THIS SYMBOL (XXX) HAVE TOLERANCE (+0.015, -0)

9. BARCODE ELEMENT SPACING: THE WIDTH OF NARROWEST BAR OR SPACE ELEMENT WITHIN THE BARCODE MUST BE BETWEEN 0.013 In. AND 0.018 In. THE WIDTH MUST REMAIN CONSTANT THROUGH THE BARCODE

10. BARCODE CLEAR ZONE REQUIREMENTS: 0.125 In. ABOVE AND BELOW, 0.25 In. LEFT AND RIGHT, TOLERANCE FOR CLEAR ZONE SPACING IS (+0.015, -0)

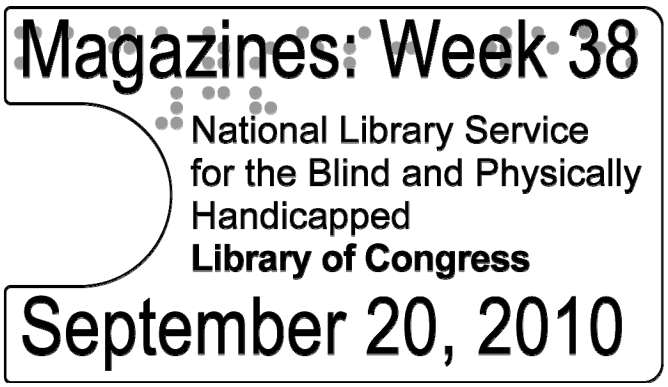


UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES, TOLERANCES ARE
.X ± .032 .XX ± .015 XXX ± .005
ANGLES ± 1/2 °

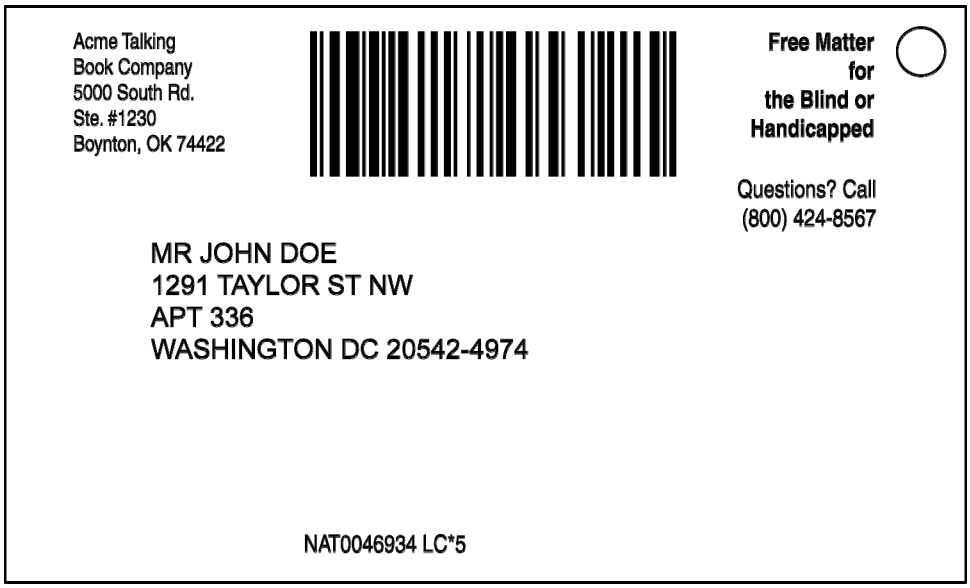
CONTRACT NO.		NATIONAL LIBRARY SERVICE FOR THE BLIND AND PHYSICALLY HANDICAPPED LIBRARY OF CONGRESS
APPROVAL	DATE	TITLE: LARGE FACE LABEL, CONTAINER
DRAWN: J.BROWN	2/2012	
DWG NO.: 500001016		REV.: 1.0
SCALE: 2:1	DO NOT SCALE DRAWING	SHEET: 1 OF 1

B. Examples

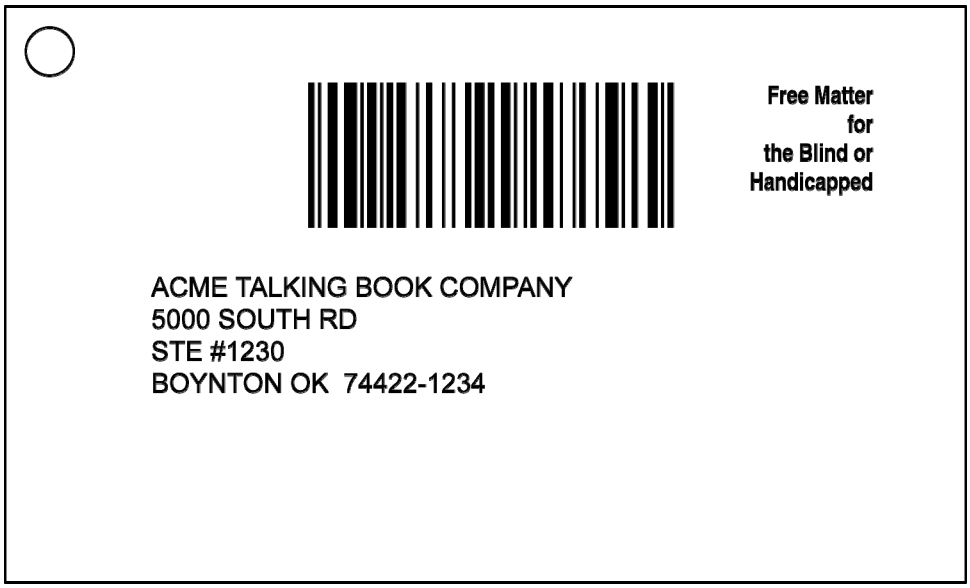
B.1 Magazine Print/Braille Label



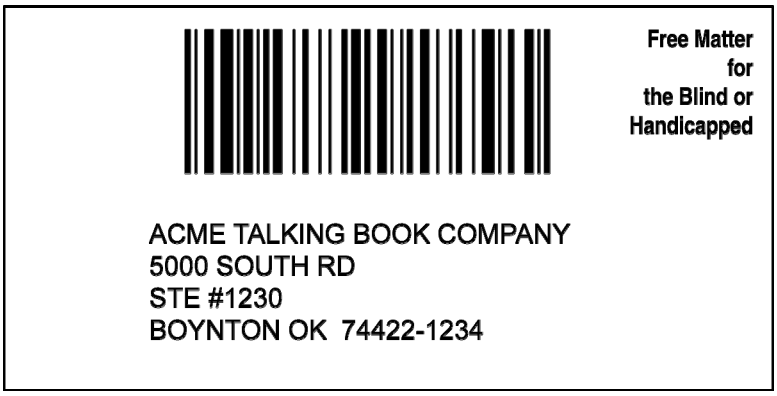
B.2 Address Card Front



B.3 Address Card Back



B.4 Large Face Label



C. contractor.xml

```
<?xml version="1.0" encoding="utf-8"?>
<dtbc xmlns="http://www.loc.gov/nls/dtbc">
<!-- Contractor's 3-letter abbreviation, upper case -->
     <contractor>ACM</contractor>
     <listId>ACM20120027</listId>
</dtbc>
```

D. DTBC Passphrase

D.1 DTBC Write Enable

The digital talking-book cartridge (DTBC) is implemented as a mass storage class device using USB Bulk Only Transport and the SCSI Transparent Command Set. A vendor-specific SCSI command is used to write enable the cartridge.

The write-enable SCSI command block is 6 bytes long and contains an operation code byte (10h) and a passcode parameter length.

To enable a device for writing, once a "Set Passcode" command has been executed at any time since manufacture, the "Write-Enable" command shall be executed with the last passcode set each time power is applied to the device. The passcode is the 16-byte, 8-bit sequence represented by the hexadecimal passphrase supplied by NLS for cartridges provided as GFE. The passcode shall be contained in the parameter list and be 16 bytes.

Example hexadecimal representation of 16 byte passphrase:
"9E107D9D372BB6826BD81D3542A419D6"

Vendor Specific SCSI command 0x10

Byte \ Bit	7	6	5	4	3	2	1	0
0	Operation Code (10h)							
1	Reserved (0)							
2	Not Used (0)							
3	Not Used (0)							
4	Parameter List Length (10h)							
5	Control (0)							

Parameter List

Byte \ Bit	7	6	5	4	3	2	1	0
0	Byte 0 of passcode (0x9E)							
1	Byte 1 of passcode (0x10)							
2	Byte 2 of passcode (0x7D)							
3	Byte 3 of passcode (0x9D)							
4	Byte 4 of passcode (0x37)							
5	Byte 5 of passcode (0x2B)							
6	Byte 6 of passcode (0xB6)							
7	Byte 7 of passcode (0x82)							
8	Byte 8 of passcode (0x6B)							
9	Byte 9 of passcode (0xD8)							
10	Byte 10 of passcode (0x1D)							
11	Byte 11 of passcode (0x35)							
12	Byte 12 of passcode (0x42)							
13	Byte 13 of passcode (0xA4)							
14	Byte 14 of passcode (0x19)							
15	Byte 15 of passcode (0xD6)							

D.2 DTBC Write Protect

The digital talking-book cartridge (DTBC) is implemented as a mass storage class device using USB Bulk Only Transport and the SCSI Transparent Command Set. A vendor-specific SCSI command is used to write enable the cartridge.

The write-protect SCSI command block is 6 bytes long and contains an operation code byte (11h) and a passcode parameter length.

To protect a device against writing, the "Write-Protect" command shall be executed with the 16-byte passcode. The passcode is the 16-byte, 8-bit sequence represented by the hexadecimal passphrase supplied by NLS. The passcode shall be contained in the parameter list and be 16 bytes.

Example hexadecimal representation of 16-byte passphrase:
"076827E5E002E0A4CFCB990EF3E8CDB3"

Vendor Specific SCSI command 0x11

Byte \ Bit	7	6	5	4	3	2	1	0
0	Operation Code (11h)							
1	Reserved (0)							
2	Not Used (0)							
3	Not Used (0)							
4	Parameter List Length (10h)							
5	Control (0)							

Parameter List

Byte \ Bit	7	6	5	4	3	2	1	0
0	Byte 0 of passcode (0x07)							
1	Byte 1 of passcode (0x68)							
2	Byte 2 of passcode (0x27)							
3	Byte 3 of passcode (0xE5)							
4	Byte 4 of passcode (0xE0)							
5	Byte 5 of passcode (0x02)							
6	Byte 6 of passcode (0xE0)							
7	Byte 7 of passcode (0xA4)							
8	Byte 8 of passcode (OxCF)							
9	Byte 9 of passcode (0xCB)							
10	Byte 10 of passcode (0x99)							
11	Byte 11 of passcode (0x0E)							
12	Byte 12 of passcode (0xF3)							
13	Byte 13 of passcode (0xE8)							
14	Byte 14 of passcode (0xCD)							
15	Byte 15 of passcode (0xB3)							

E. Database Files

E.1 Address Database File

The file containing patron addresses shall be in Comma-Separated Value (CSV) format as defined in the Internet Engineering Task Force RFC4180. The file does not contain the optional header line.

The fields in each entry shall contain the following data:

Field	Description	Format	Example
1	Library ID	Alphanumeric (4 characters)	FL1A
2	Patron ID	Alphanumeric (variable length)	M6677167
3	Name	Alphanumeric (variable length)	DR JOHNATHAN DOE
4	Address Line 1	Alphanumeric (variable length)	54321 NORTH MAIN STREET
5	Address Line 2	Alphanumeric (variable length)	APT 123
6	Address Line 3	Alphanumeric (variable length)	
7	City	Alphanumeric (variable length)	PENSACOLA
8	State	Alphabetic (2 characters)	FL
9	ZIP or ZIP+4	Numeric (5 or 9 digits)	325146277
10	Country (if not USA)	Alphanumeric (variable length)	
11	Foreign	Single Digit (0 if US else 1)	0
12	Library Phone Number	Numeric (10 digit)	8004248567

E.2 Picking List Database File

The file containing orders for duplication of magazine editions shall be in Comma-Separated Value (CSV) format as defined in the Internet Engineering Task Force RFC4180. The file does not contain the optional header line.

The fields in each entry shall contain the following data:

Field	Description	Format	Example
1	Library ID	Alphanumeric (4 characters)	FL1A
2	Patron ID	Alphanumeric (variable length)	M6677167
3	Patron Instance	Numeric (1 digit)	0
4	Magazine ID	Alphabetic (3 characters)	TWK
5	Edition ID	Numeric (8 digits)	20120070
6	Picking List ID	Alphanumeric (10 characters)	ACM2012027

E.3 DTBC Serial Number Database File

The file containing DTBC barcodes and their corresponding USB electronic serial numbers shall be in Comma-Separated Value (CSV) format as defined in the Internet Engineering Task Force RFC4180. The file does not contain the optional header line.

The fields in each entry shall contain the following data:

Field	Description	Format	Example
1	Barcode with check digit	Alphanumeric (8 characters)	EDDGAAC8
2	Electronic USB serial number	Alphanumeric (12 characters)	801144008491

E.4 DTBC Shipped Database File

The file containing the DTBC identifier and the identifier for the patron to whom it was sent shall be in Comma-Separated Value (CSV) format as defined in the Internet Engineering Task Force RFC4180. The file does not contain the optional header line.

The fields in each entry shall contain the following data:

Field	Description	Format	Example
1	Library ID	Alphanumeric (4 characters)	FL1A
2	Patron ID	Alphanumeric (variable length)	M6677167
3	Cartridge ID	Alphanumeric (variable length)	801144008491
4	Cartridge ID type	Bool (0 – barcode or 1 – ESN)	1
5	Picking List ID	Alphanumeric (10 characters)	ACM2012027

E.5 DTBC Received Database File

The file containing the DTBC identifiers for cartridges returned from patrons shall be in Comma-Separated Value (CSV) format as defined in the Internet Engineering Task Force RFC4180. The file does not contain the optional header line.

The fields in each entry shall contain the following data:

Field	Description	Format	Example
1	Cartridge ID	Alphanumeric (variable length)	801144008491
2	Cartridge ID type	Bool (0 – barcode or 1 – ESN)	1