

CIS DOC1 Bill Template

CIS Implementation – DOC1 Bill Print

Detailed Design Document

CIS DOC1 BILL TEMPLATE

Detailed Design Document



Table of Content

TABLE OF CONTENT	3
1 REVISION HISTORY	7
1.1 Open Issues.....	7
1.1.1 Version 1.0	7
1.1.2 Version 1.1	7
2 INTRODUCTION.....	8
2.1 Project Overview.....	9
2.1.1 Scope.....	9
2.1.2 Assumptions.....	9
2.1.3 Exclusions.....	9
2.1.4 Group 1 Responsibilities.....	9
2.1.5 Customer Responsibilities	10
3 PROJECT TEAM.....	12
3.1 Group 1 Software Team Members	12
4 PROJECT ENVIRONMENT	13
4.1 Software.....	13
4.2 Print Streams	13
4.3 Hardware.....	13
5 HIGH-LEVEL SYSTEM FLOW	14
5.1 Step 01: Sort Extract	15
5.2 Step 02: Format Bills.....	16
5.3 Step 03: Identify Foreign Addresses.....	17
5.4 Step 04: Sort Foreign Addresses	18
5.5 Step 05: Address Correction.....	19
5.6 Step 06: Create Address Corrections File	20
5.7 Step 07: Identify Special Handling Bills.....	21
5.8 Step 08: Sort Special Handle	22
5.9 Step 09: USPS Pre-Sort	23
5.10 Step 10: Create Print Files.....	24
5.11 Step 11: Print Files.....	26
6 PROJECT RESOURCES.....	28

6.1 Text Fonts	28
6.2 Barcode Fonts	29
6.3 Images.....	29
6.4 Pre-Printed Paper Stock.....	29
7 DOCUMENT BEHAVIOR.....	30
7.1 Page Layout	30
7.2 Document Sections	30
7.3 General Bill Layout.....	32
7.4 Page Header Section	33
7.4.1 Page Header Example	36
7.5 Messages Section	36
7.5.1 Messages Example	37
7.6 Account Summary Section.....	38
7.6.1 Account Summary Examples	44
7.7 Remittance Coupon Section - Front.....	45
7.7.1 OCR Scan Line	49
7.7.2 OCR Scan Line Example.....	49
7.7.3 Remittance Coupon Examples	52
7.7.4 Remittance Coupon Section – Back	53
7.8 Service Detail Section	56
7.8.1 Service Address Subsection.....	56
7.8.2 Service Address Examples.....	58
7.8.3 Service Agreement Header	58
7.8.4 Service Agreement Header Example.....	59
7.8.5 Histogram Subsection	59
7.8.6 Histogram Examples	66
7.8.7 Bill Calculations Subsection	67
7.8.8 Bill Calc Example	70
7.8.9 Service Reading Subsection	71
7.8.10 Service Reading Example	74
7.8.11 Adjustments Subsection.....	74
7.8.12 Adjustments Example.....	75
8 POST-COMPOSITION REQUIREMENTS.....	76
8.1 Functional Processes.....	76
8.2 Inputs	77
8.3 Outputs.....	77
9 INSERTER REQUIREMENTS	78
9.1 OMR Mark Characteristics	79
9.2 Definition of OMR Marks	79
9.2.1 Controls for Producing OMR Marks.....	79
10 MAILING REQUIREMENTS	81
10.1 Sheet Fold Locations	82

10.2 Envelope Dimensions	83
11 AUDITING REQUIREMENTS	84
11.1 Audit File Example	84
12 OUTPUT PRINTSTREAMS	85
13 PROJECT FORMS	86
13.1 Detailed Document Specification Acceptance	87
13.2 Project Change Request	88
14 GLOSSARY OF TERMINOLOGY	89
15 FILE LAYOUTS	94
15.1 DOC1 Generate Input – Sorted CIS Bill Print Extract	95
15.1.1 Sortkey – All Records Types	95
15.1.2 0010 – File Header Record	96
15.1.3 0100 – Start of Bill Record.....	97
15.1.4 0300 – Current Charge Record	99
15.1.5 0600 – Payment Record.....	100
15.1.6 0700 – Deposit Record.....	100
15.1.7 0900 – Start of Premise Record	101
15.1.8 1100 – Start of Service Agreement Record	102
15.1.9 1300 – Start of Bill Segment Record.....	103
15.1.10 1500 – Start of Bill Calc Record.....	104
15.1.11 1700 – Bill Calc Detail Record	105
15.1.12 1900 – End of Bill Calc Record	105
15.1.13 2100 – Service Reading Record	106
15.1.14 2400 – Service Quantity Record	107
15.1.15 2700 – Item Detail Record	108
15.1.16 2900 – End of Bill Segment Record.....	108
15.1.17 3100 – Histogram Record.....	109
15.1.18 3400 – Adjustment Record	110
15.1.19 3600 – End of Service Agreement Record.....	111
15.1.20 3700 – End of Premise Record.....	112
15.1.21 3900 – Message Record	112
15.1.22 9999 – End of Bill Record	113
15.2 Record Hierarchy – Sorted CIS Bill Print Extract.....	113
15.3 Name / Address - Code-1 / MailStream / PCE Journal File	115
15.4 Audit File	121
15.4.1 SR – Start of Run Record.....	121
15.4.2 SF – Start of Print File Record.....	122
15.4.3 PD – Print Detail Record	122
15.4.4 EF – End of Print File Record	123
15.4.5 ER – End of Run Record	124
15.5 Record Hierarchy & Sequence – Audit File.....	124
15.6 Look-Up (ETS) File.....	125
15.6.1 Foreign Country Names	125

15.6.2 Look-Up Content for Foreign Country Names.....126

16 DOCUMENT SAMPLES.....133

Revision History

1

1 Revision History

The information listed below contains a history of the revisions made to this document until the final revision of the document has been approved.

Revisions	Revision Date	Comments
Version 1.0	May 22, 2006	Initial Draft of DDS – This is derived from the CIS template DDS created by Forrest Dillon
Version 1.1	May 25, 2006	Applied standard format to document removed customer specific references.

1.1 Open Issues

1.1.1 Version 1.0

Initial version of this document, created from an CIS template created by Forrest Dillon.

1.1.2 Version 1.1

Applied standard format practices. Removed customer specific references.

Introduction

2

2 Introduction

This document defines the detailed design requirements necessary to implement the DOC1 Bill Template application with the customer's CIS system. The CIS produces a Bill Print Extract that contains Bill data and controls to govern the document assembly and print distribution. The DOC1 Bill Application includes DOC1 Generate for document composition, Code-1 Plus for USPS address correction, MailStream Plus for USPS Pre-Sorting, and DOC1 Post Composition for creating production printstreams. The following information is covered within:

- Project overview including:
 - ▶ Scope
 - ▶ Assumptions
 - ▶ Exclusions
 - ▶ Group 1 responsibilities, and
 - ▶ Customer responsibilities
- Project team and environment
- System flow integrating DOC1, Code-1 Plus and MailStream Plus with the CIS Bill Print Extract
- Project resources
- Document behavior
- Post composition requirements
- Inserter requirements
- Mailing requirements
- Audit requirements
- Output print files
- Detailed Record structure of:
 - ▶ CIS Bill Print Extract,
 - ▶ Name/Address Journal (interface between DOC1 Generate, DOC1 Post Composition, Code-1 Plus, and MailStream)
 - ▶ Audit file produced by DOC1 for CIS reconciliation purposes
- Bill samples

2.1 Project Overview

2.1.1 Scope

The scope of this implementation is to perform the following tasks:

1. **Produce the CIS Bills. The format and the document behavior rules for formatting the Bills are described within this document. Only document behavior described within this document will be considered part of the implementation.**
2. **Produce an Audit file that can be used to reconcile DOC1 Bill production against a similar audit file produced by the customer's CIS.**

2.1.2 Assumptions

- All information to be included on any document is either passed from the Sorted CIS Bill Print Extract or can be derived by the DOC1 Bill Application.
- The Sorted CIS Bill Print Extract as defined later in this document will be used for the production of the Bills.
- The Bill document will be formatted in a portrait orientation and printed in a 1-up duplex mode.
- All document development will be based on the Bill samples developed by Group 1, and Customer. Any deviation from those samples or from these Detailed Document Specifications will require a Project Change Request approved by Customer.

2.1.3 Exclusions

- Any functionality not described in this Detailed Document Specification will not be provided. Should any additional required functionality be discovered, a Project Change Request describing the functionality, estimated delivery schedule, and estimated cost must be executed.

2.1.4 Group 1 Responsibilities

- Code, unit test, and deliver to client, the DOC1 Bill Application as described within this Detailed Document Specification. The specific files to be delivered are
 - ▶ Application Repository containing the DOC1 Bill Application components
 - ▶ Executable version of DOC1 Bill Application Rules (.HIP),
 - ▶ PCE Rules (.CTL)
 - ▶ Code-1 Parameters
 - ▶ MailStream Parameters
 - ▶ Initialization Files (.INI and .OPS)

- ▶ Look-Up File (.ETS)
- ▶ Shell script to execute DOC1, Code-1, and MailStream
- Assist client with the installation of the DOC1 Bill Application.
- Conduct a 1-day review of the DOC1 Bill Application at Customer's facility.
- Correct any functionality discrepancies reported by Customer.
- Provide remote support to Customer during system testing.

2.1.5 Customer Responsibilities

- Review and indicate understanding and acceptance of this Detailed Document Specification by signing the enclosed Specification Document Acceptance (within Appendix A) and sending the acceptance to Group 1.
- Modify the CIS Bill Extract as needed to meet unique Customer requirements.
- Provide test data to Group 1 that will test all required functionality.
- Install the DOC1 Bill Application with assistance from Group 1 at Customer's facility.
- Install Group 1 software at Customer's facility.
- Conduct system testing of the DOC1 Bill Applications to verify the functionality described within this Detailed Document Specification and report and discrepancies to Group 1.
- Migrate the DOC1 Bill Application into a production environment.
- Apply Code-1 Plus and MailStream Plus database updates as available.
- Design, develop, test, and integrate a program(s) and process to update the CIS database with address corrections made by Code-1 Plus.
- Acquire pre-printed paper stock adhering to the specifications within this document.
- Acquire envelopes adhering to the specifications within this document.
- Either select a third-party outsourcing facility for Bill printing, inserting and mailing or acquire and implement this functionality for Customer.
- Design, develop, test, and integrate a production audit process to reconcile the DOC1-produced Audit file against a similar audit output from CIS.
- Designate one or more individuals to be responsible for assuming ongoing maintenance and support of the installed DOC1 Bill Application. This person must attend the following training:
 - ▶ DOC1 Series 5 Basic training
 - ▶ DOC1 Series 5 PCE training

- ▶ 1-day review of the DOC1 Bill Application (to be held at Customer's facility)
- ▶ Optionally, but recommended, attend DOC1 Series 5 Advanced training

Project Team

3

3 Project Team

3.1 Group 1 Software Team Members

Member Name	Telephone	Email	Fax
Forrest Dillon Practice Manager	972-720-6765	forrest_dillon@g1.com	301.683.6670
John Stahl Business Analyst	972-587-6701	John_stahl@g1.com	301-683-6594

**Project
Environment**

4

4 Project Environment

4.1 Software

Description	Version
DOC1 Suite : Designer, Generate	V5.x
Code-1 Plus	3.0 or later
MailStream Plus	7.7 or later
Operating System – DOC1 Designer	Windows XP
Operating System – DOC1 Generate, Code-1 Plus, MailStream Plus	Optional

4.2 Print Streams

Description	Print Stream
Primary	PostScript
Secondary	PDF

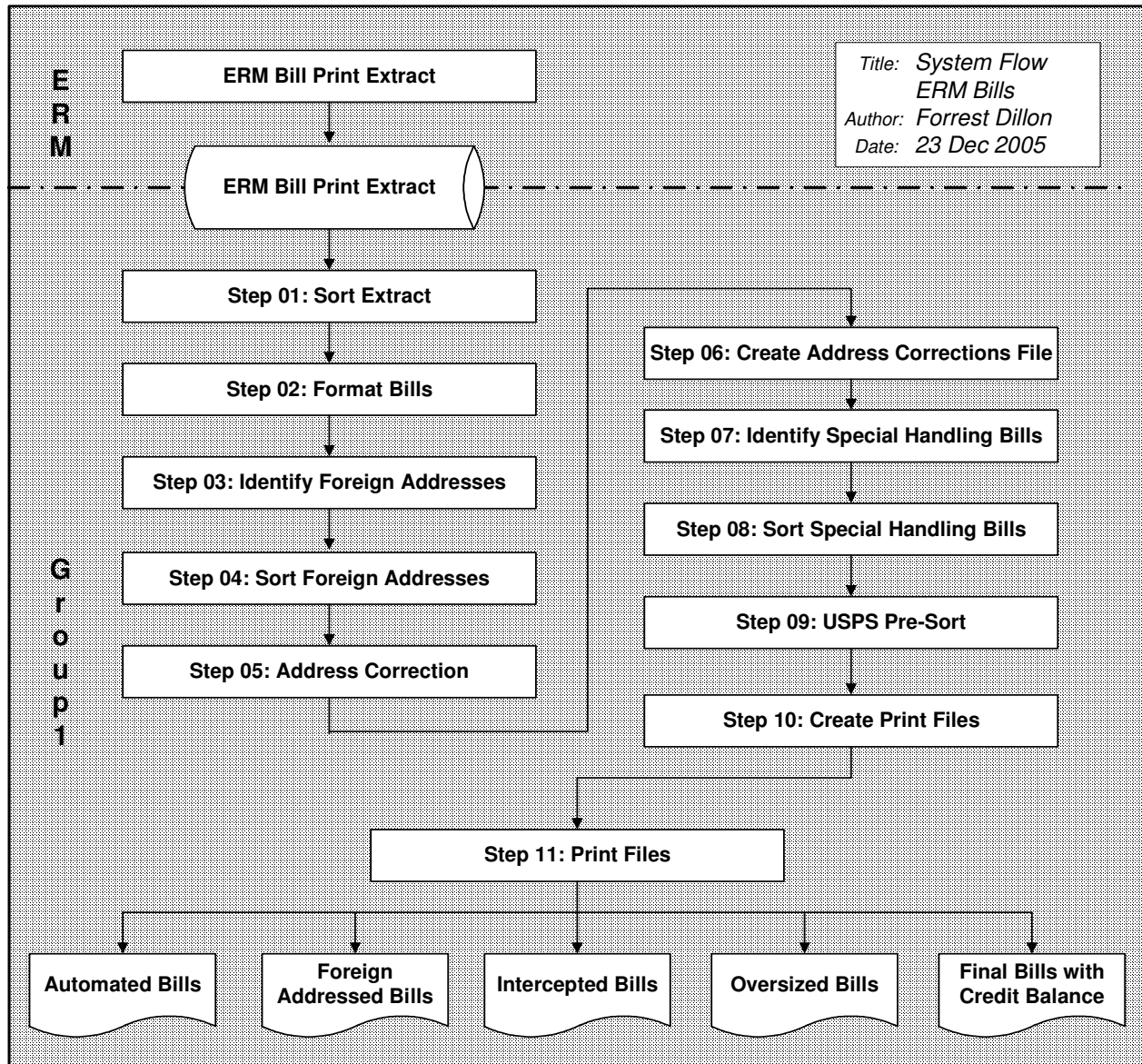
4.3 Hardware

Description	Manufacturer
Production Printer	TBD
Production Inserter	N/A

High Level System Flow

5

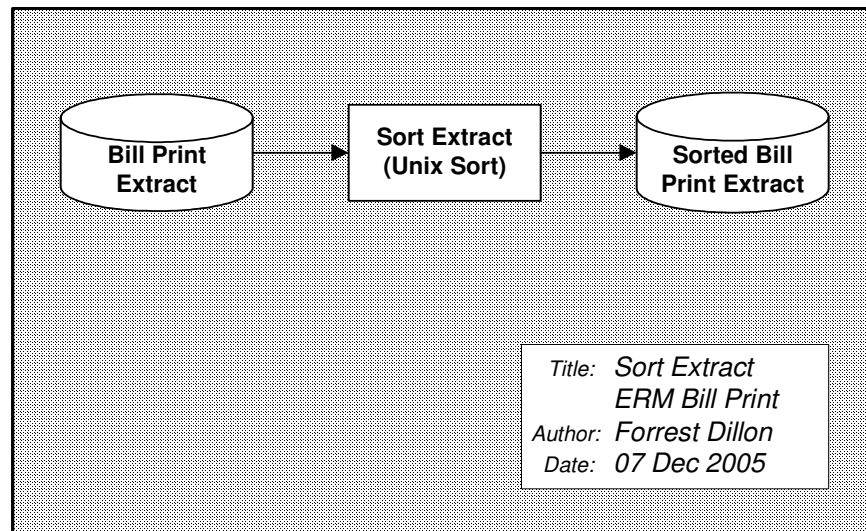
5 High-Level System Flow



5.1 Step 01: Sort Extract

The CIS Bill Print Extract must be sorted to re-arrange records within each Bill – additionally, the Bills will be sorted – primarily by Intercept Code and secondarily by Bill ID. The sorting will re-arrange Service Agreements within each Bill according to the print priority assigned within CIS. Additionally, different blocks of information are re-sequenced within the data to match the sequence the information is to be printed on the Bill; for example, the message records are moved ahead of the Premise / Service Agreement data.

Program: Unix-supplied Sort module
Production Input: Bill Print Extract (output by CIS)
Production Output: Sorted Bill Print Extract (input to Step 02)
Configuration Files: -none-



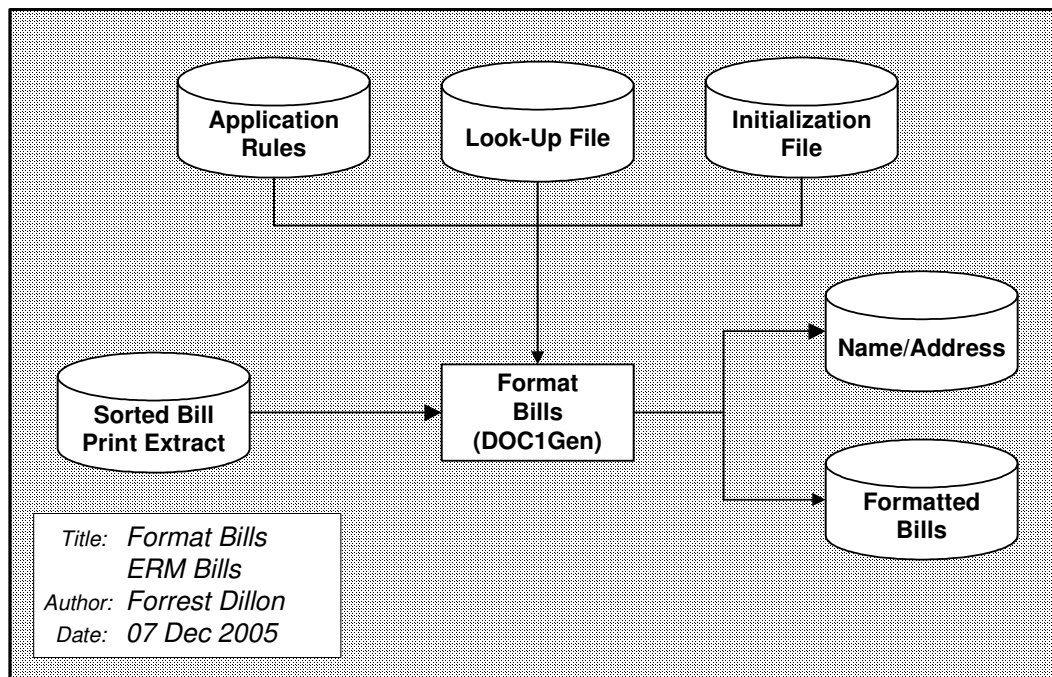
5.2 Step 02: Format Bills

The DOC1 Generate module (DOC1Gen) applies the DOC1 Application Rules (.HIP) against the Sorted CIS Bill Print Extract (output from Step 01) to create an Intermediate Print File of Bills. The Intermediate Print File will later be post-processed and divided into different print files according to operational processing requirements.

DOC1 Generate also creates a multi-purpose Name/Address Journal file containing a variety of data:

- Recipient address data that will be validated, corrected, and formatted by Code-1 Plus,
- Recipient address data used by MailStream for Postal Pre-Sorting,
- Data identifying special handling requirements for individual Bills,
- Data used by PCE to sequencing the bills by Postal Pre-Sort sequence,
- Data also used by PCE to place controls for inserting Bills into envelopes.

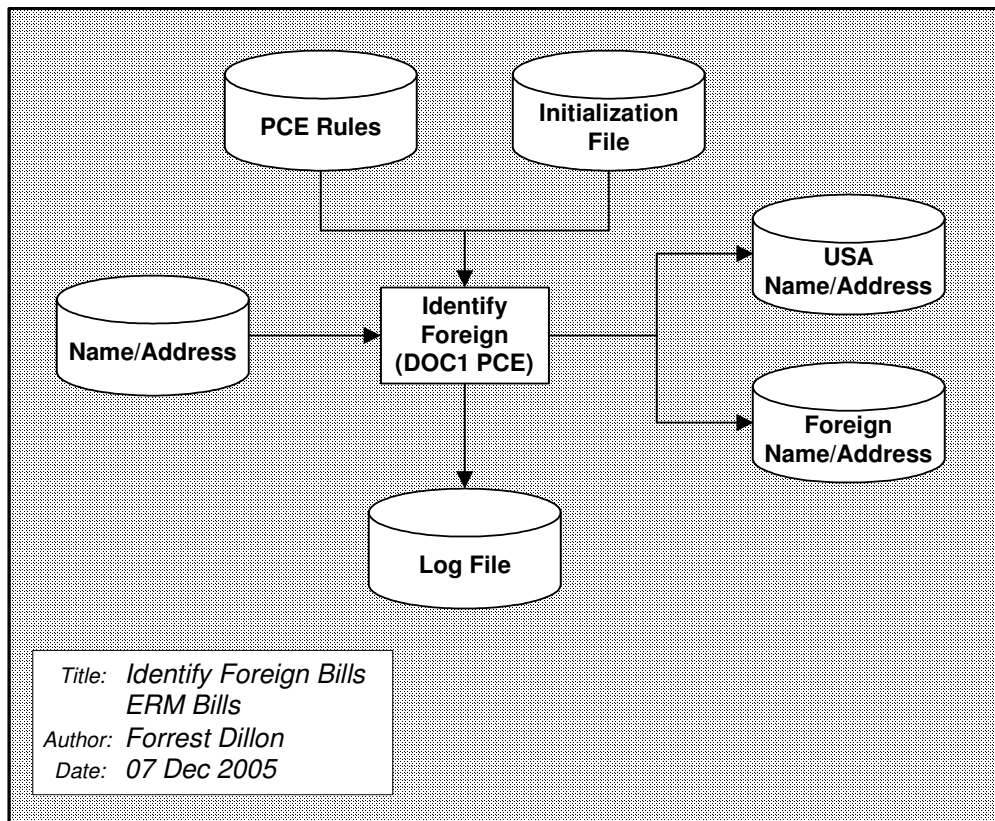
Program: DOC1Gen
Production Input: Sorted Bill Print Extract (output from Step 01)
Production Output: Formatted Bills (intermediate print file input to Step 10)
Name/Address (journal input to Step 03)
Configuration Files: DOC1 Application Rules (.HIP),
Text Look-Up (.ETS),
Initialization File (.INI)



5.3 Step 03: Identify Foreign Addresses

Bills being mailed to a non-USA address are identified and removed from the Code-1 input to prevent Code-1 from marking those addresses as invalid. A PCE application will read the Name / Address Journal (created in Step 02) and create two output journals – one with USA addresses and the other containing all other addresses.

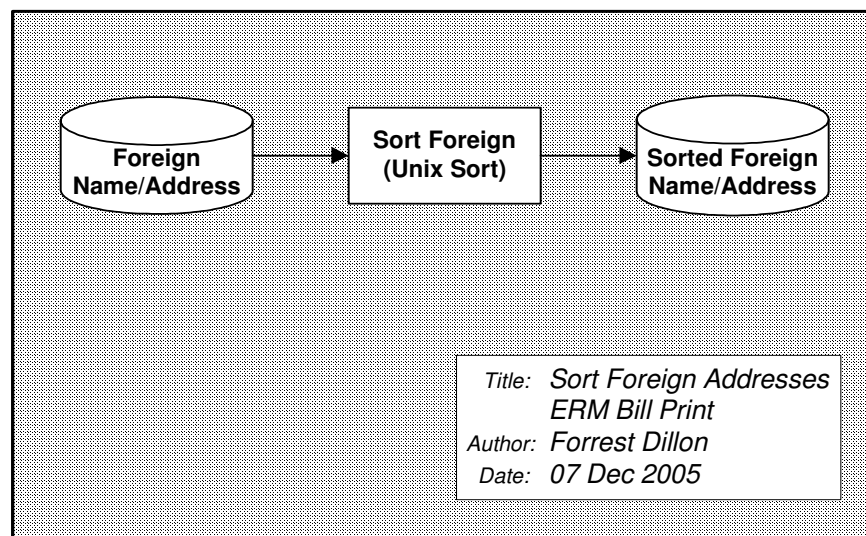
Program: DOC1PCE
Production Input: Name/Address (journal output from Step 02)
Production Output: USA Name/Address (journal input to Step 05)
Foreign Name/Address (journal input to Step 04)
Log File (text format)
Configuration Files: DOC1 PCE Rules (.CTL) and
Initialization File (.INI)



5.4 Step 04: Sort Foreign Addresses

Ultimately, the Foreign Addressed Bills will be produced in country code sequence. The Step 09 PCE application will produce a printstream of Foreign Addressed Bills using the order determined by this sort. This Sort step will sort the Foreign Address Journal output in Step 03 by country code.

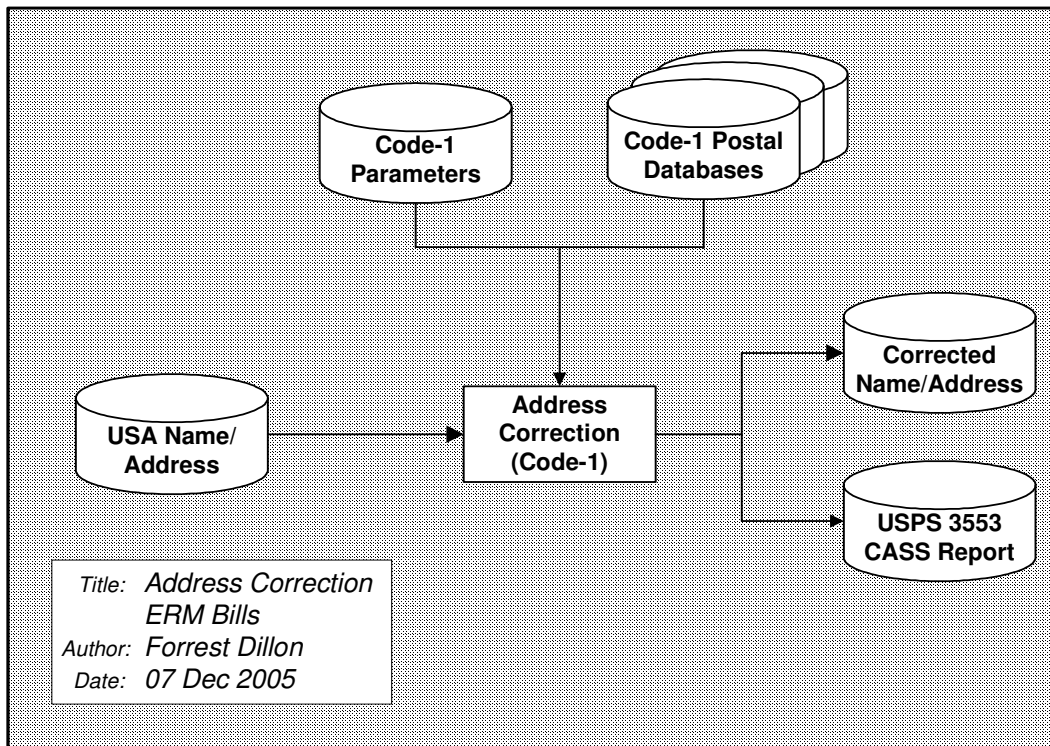
Program: Unix-supplied Sort module
Production Input: Foreign Name/Address (journal output from Step 03)
Production Output: Sorted Foreign Name/Address (journal input to Step 10)
Configuration Files: -none-



5.5 Step 05: Address Correction

Code-1 Plus is the Group1 product that performs the address correction, formatting, and validation required by the USPS to qualify for postal discounts. In the output journal, Code-1 will add address directionals (N – North, S – South, etc.), street suffixes (LN, DR, ST, etc.), assign a Zip+4 Zip Code, identify the Carrier Route, and determine the content of the Delivery Point Bar Code. The Step 10 PCE application will place the Code-1 formatted address and Delivery Point Bar Code on the Bill Remittance Coupon. Code-1 Plus also produces a USPS 3553 CASS Report.

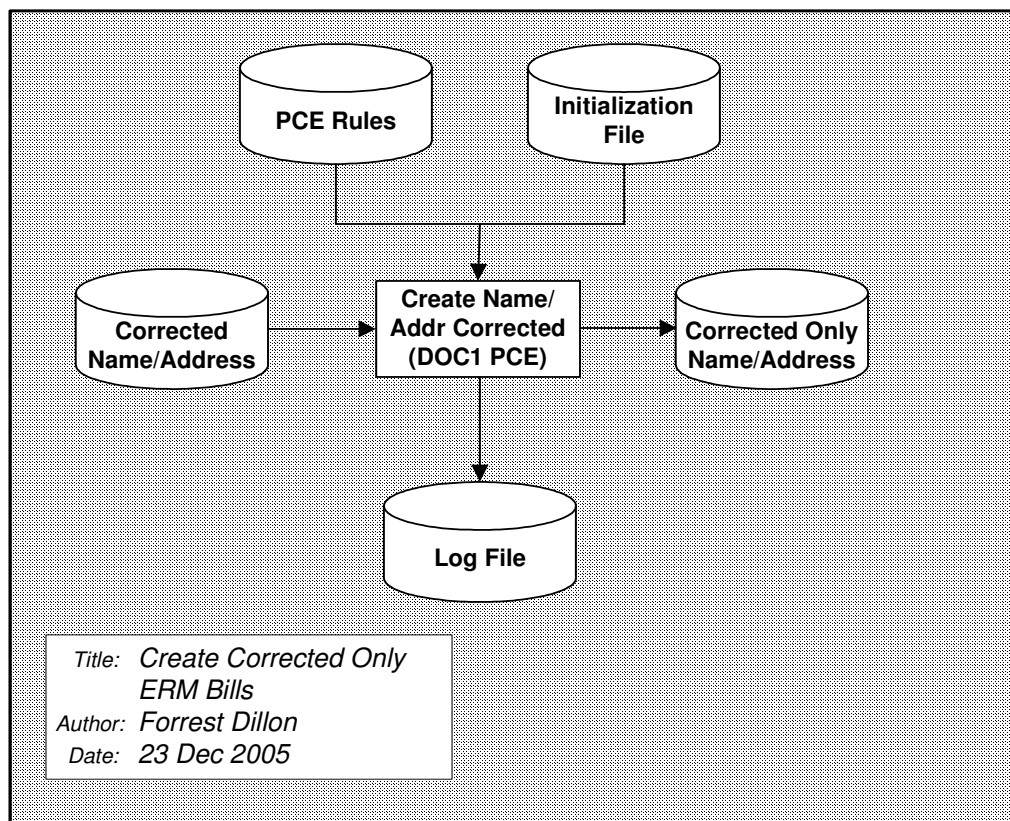
Program: Code-1 Plus
Production Input: USA Name/Address (journal output from Step 03)
Production Output: Corrected USA Name/Address (journal input to Steps 06 and 07)
USPS 3553 CASS Report (input to Step 11)
Configuration Files: Code-1 Parameters (.PRM)
Code-1 Postal Databases



5.6 Step 06: Create Address Corrections File

Using the Name/Address file output by Code-1 Plus, this PCE process will create a Name/Address file containing only the records that were updated by Code-1 Plus. This file will be input to a Customer written program to update their CIS database.

Program: DOC1PCE
Production Input: Corrected Name/Address (journal output from Step 05)
Production Output: Corrected Name/Address only (journal input to Customer program)
Log File (text format)
Configuration Files: DOC1 PCE Application Rules (.CTL)
Initialization File (.INI)



5.7 Step 07: Identify Special Handling Bills

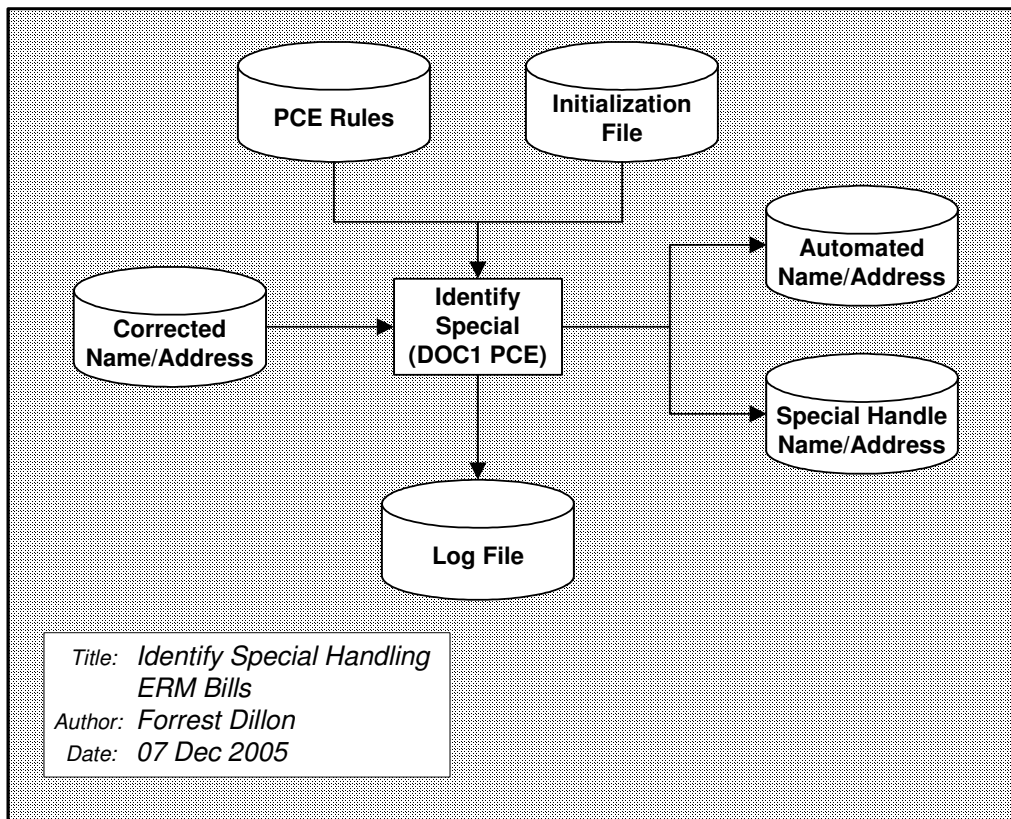
There are two possible types of special handling Bills: Oversized Bills and “Intercepted” Bills. Oversized bills contain more pages than the inserter can fit into an envelope and require manually handling. CIS marks a Bill for review because of some event that has occurred with the account – the Intercepted Bill is to be reviewed by a Customer Service Representative prior to mailing. Because these two types of special handling bills are not included with the automated mailing, they must be excluded from the input to MailStream; otherwise, MailStream postage calculations would not accurately reflect the mailing. A PCE application will read the Corrected USA Name/Address Journal (created in Step 05) and create two output journals – one for special handling and the other containing all automated bills.

Program: DOC1PCE

Production Input: Corrected Name/Address (journal output from Step 05)

Production Output: Automated Name/Address (journal input to Step 08)
Special Handling Name/Address (journal input to Step 10)

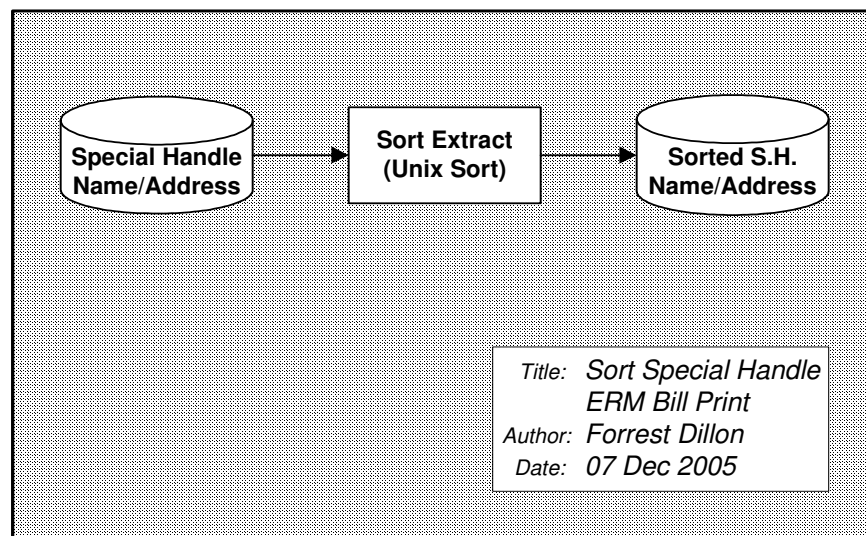
Configuration Files: Log File (text format)
DOC1 PCE Application Rules (.CTL)
Initialization File (.INI)



5.8 Step 08: Sort Special Handle

Special Handling Bills are to be produced so that Intercepted Bills are sequenced by Intercept ID and the Oversized Bills are sequenced by the number of sheets in the Bill sequence. The Step 10 PCE application will produce a printstream of Oversized Bills and a printstream of Special Handle Bills using the order determined by this sort. This Sort step will sort the Special Name Address Journal output in Step 07.

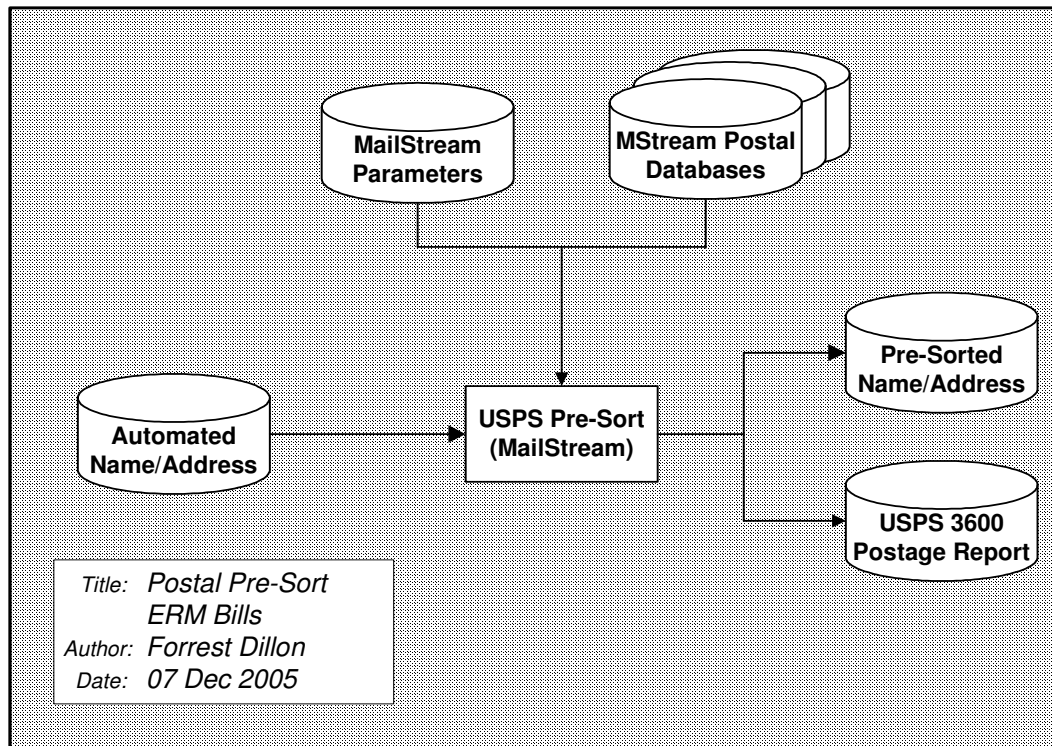
Program: Unix-supplied Sort module
Production Input: Special Handle Name/Address (journal output from Step 07)
Production Output: Sorted Special Handle Name/Address (journal input to Step 10)
Configuration Files: -none-



5.9 Step 09: USPS Pre-Sort

MailStream Plus is the Group1 product that determines USPS Pre-Sorting and calculates postage. The Step 10 PCE application will use the MailStream produced journal to place the Manifest data on the bills and produce an automated print file in the Pre-Sort sequence. The USPS 3600 Postage Report is produced by MailStream.

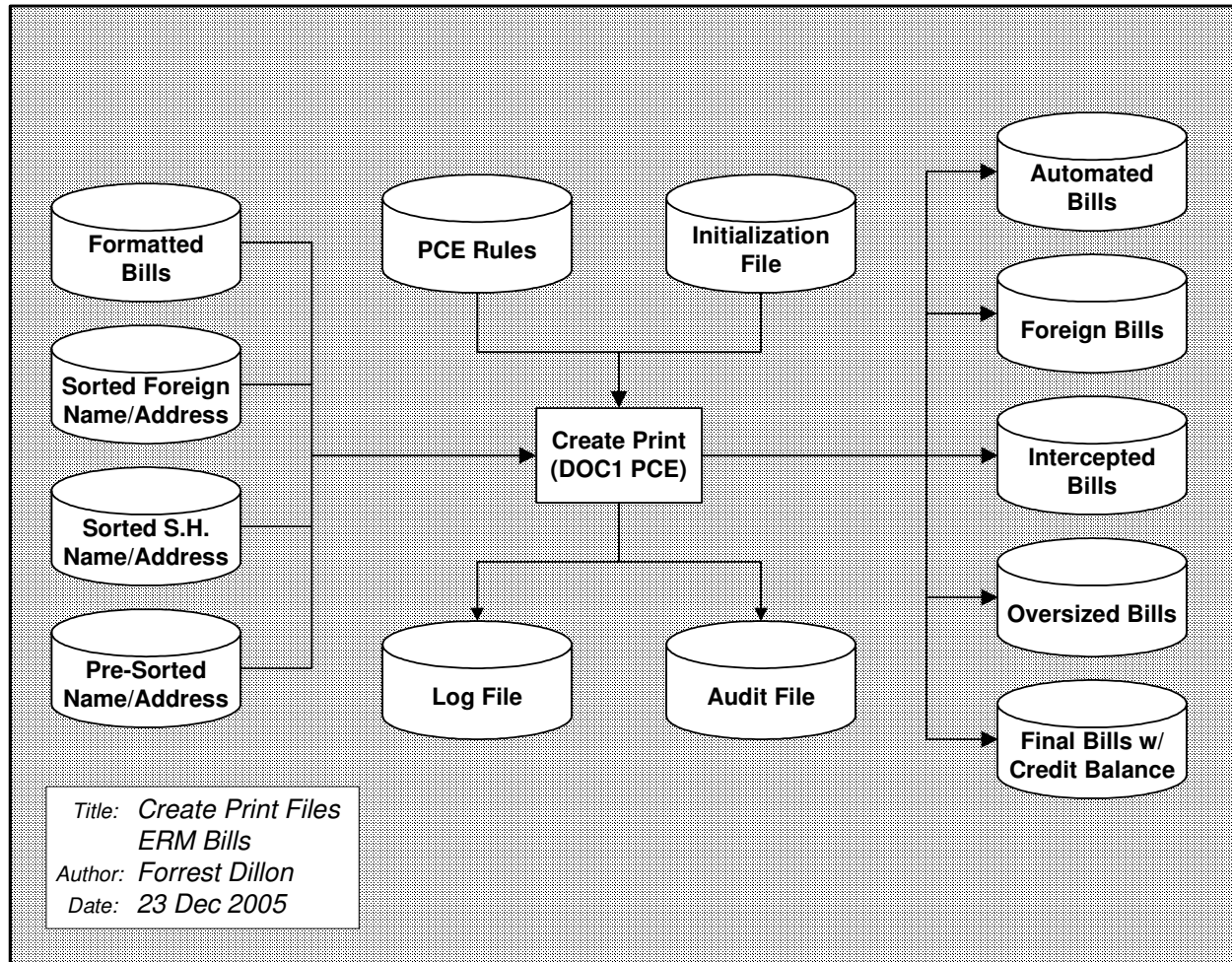
Program: MailStream Plus
Production Input: Automated Name/Address (journal output from Step 07)
Production Output: Pre-Sorted Name/Address (journal input to Step 10)
USPS 3600 Postage Report (input to Step 11)
Configuration Files: MailStream Parameters (.PRM)
Postal Databases



5.10 Step 10: Create Print Files

This PCE application creates the final print files. The Automated Bills will be printed in USPS Pre-Sort sequence and will have optical encoding for the inserter. The Foreign Address Bills will be printed in country code sequence, Intercepted Bills printed by Intercept ID sequence, and Oversized Bills printed based on the number of sheets.

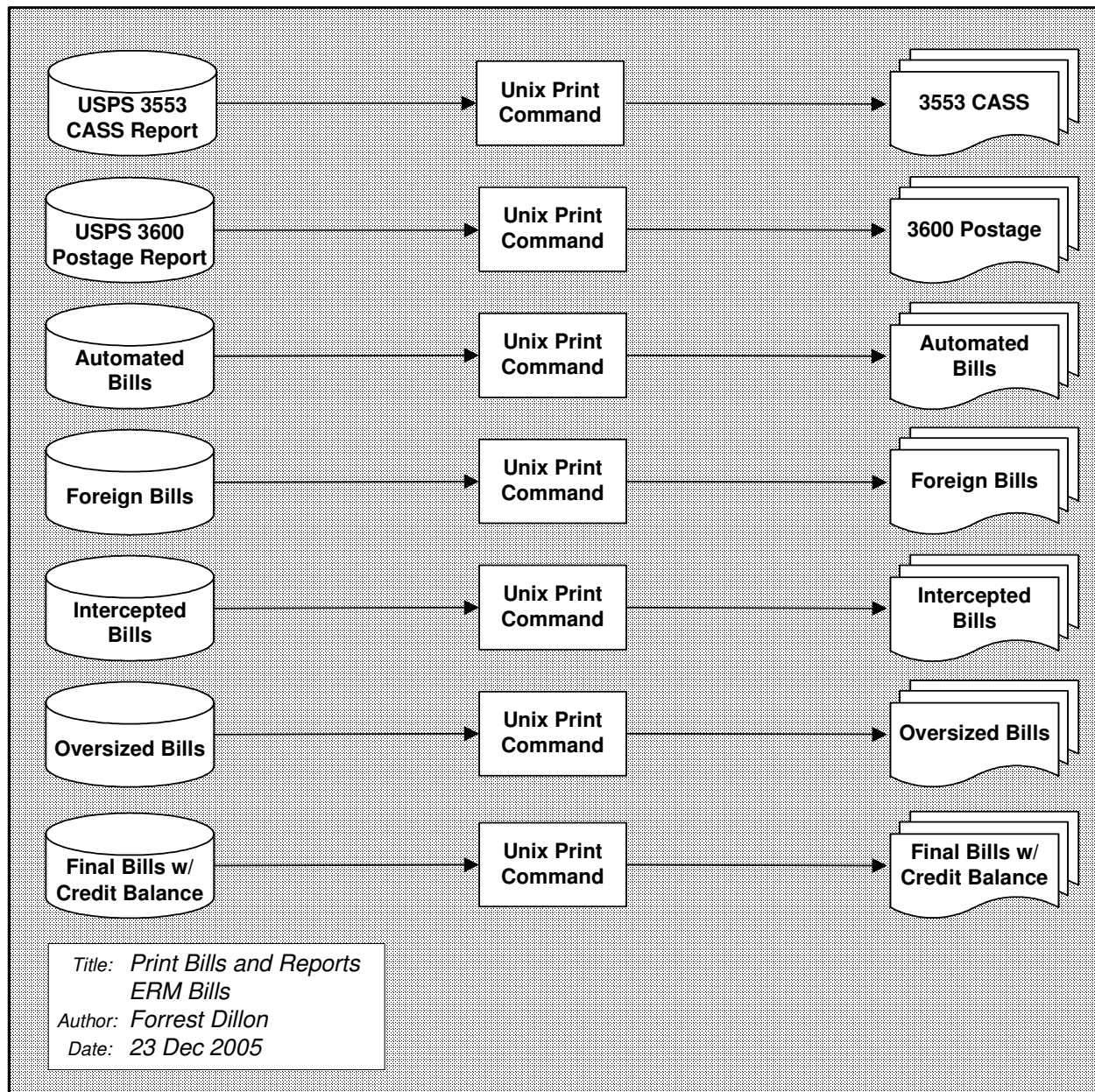
Program:	DOC1PCE	
Production Input:	Formatted Bills (intermediate printstream output from Step 02)	
	Sorted Foreign Name/Address (journal output from Step 04)	
	Sorted Special Handling Name/Address (journal output from Step 08)	
	Pre-Sorted Name/Address (journal output from Step 09)	
Production Output:	Automated Bills (printstream)	Foreign Bills (printstream)
	Intercepted Bills (printstream)	Oversized Bills (printstream)
	Final Bills w/ Credit Balance (printstream)	
	Audit File (flat file)	Log File (text format)
Configuration Files:	DOC1 PCE Application Rules (.CTL)	
	Initialization File (.INI)	



5.11 Step 11: Print Files

The print files of Bills, USPS 3553 CASS Report, and USPS 3600 Postage Report are sent to the printer using a standard Unix print command.

Program:	Unix Print Command	
Production Input:	CASS Report (output from step 05)	USPS Postage Report (output from Step 09)
	Automated Bills (output from step 10)	Foreign Addressed Bills (output from step 10)
	Intercepted Bills (output from step 10)	Oversized Bills (output from step 10)
	Final Bills w/ Credit Balance (output from step 10)	
Production Output:	CASS Report (print file)	USPS Postage Report (print file)
	Automated Bills (print file)	Foreign Addressed Bills (print file)
	Intercepted Bills (print file)	Oversized Bills (print file)
	Final Billw w/ Credit Balance (print file)	
Configuration Files:	-none-	



**Project
Resources**

6

6 Project Resources

The following is a list of the fonts, images, and paper stocks which will be used for the Utility Bill Project

6.1 Text Fonts

Type Face	Point Size	Weight	Stress
Helvetica	5	Regular	Non-Italic
Helvetica	6	Regular	Non-Italic
Helvetica	8	Regular	Non-Italic
Helvetica	8	Bold	Non-Italic
Helvetica	8	Regular	<i>Italic</i>
Helvetica	9	Regular	Non-Italic
Helvetica	9	Bold	Non-Italic
Helvetica	10	Regular	Non-Italic
Helvetica	10	Bold	Non-Italic
Helvetica	12	Regular	Non-Italic
Helvetica	14	Regular	Non-Italic
OCR-A	12	N/A	N/A

6.2 Barcode Fonts

Type Face	Attributes
PostNet Barcode	Point Size: 12

6.3 Images

In DOC1 images can be pre-printed on the paper stock or they can be printed by the printer through DOC1, or both. Images can also be printed based on information in the data file.

6.4 Pre-Printed Paper Stock

Two paper stocks will be used to print Bills – one paper stock is used for the first sheet of the Bill and is designed with a tear-off portion for the Remittance Coupon; the other stock is used when additional sheets are required for a Bill. Both paper stocks are plain with no items pre-printed

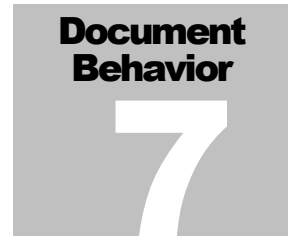
The first sheet paper stock will be horizontally perforated at 7.5 inches from the top of the sheet – this perforation allows the Bill recipient to easily detach the Remittance Coupon.

The Sample Documents in Appendix D reflect the pre-printed paper stock.

The dimensions below are based upon a 8.5 x 11 inch sheet.

Non-Variable Components

Text	Formatting	Attributes
Logo	<ul style="list-style-type: none">Top edge of logo is 0.18 inches from top of sheetLeft edge of logo is 0.76 inches from left of sheet	<ul style="list-style-type: none">1.19 inches tall1.07 inches wideFull color
Perforation	<ul style="list-style-type: none">Located 7.60 inches from top of sheet	<ul style="list-style-type: none">Runs full width of the sheet
Logo	<ul style="list-style-type: none">Top edge of logo is 7.07 inches from top of sheetLeft edge of logo is 0.76 inches from left of sheet	<ul style="list-style-type: none">1.19 inches tall1.07 inches wideFull color



7 Document Behavior

Samples of the Utility Bills can be found in Appendix D.

The samples used within in this section are for demonstration purposes only. Font information will be listed within the individual sections. Each section of the Bill document will be described in this chapter, along with the behavior of that section.

7.1 Page Layout

The right and left margins are 0.75 inches. The only exception will be to allow optical encoding to direct the inserter in these margins.

The Service Detail section of the Bill can contain more information than can be fit onto a one-page Bill. When a multi-page Bill is produced, the following rules are in effect.

- No text will be printed below 10.5 inches from the top of the sheet.
- The Page Header is printed only the top of the first page in the Bill
- On the second and successive pages, detail resumes printing 0.6 inches from the top of the sheet.
- As Service Detail is split across pages, header sections will not be “widowed” from their ensuing detail; for example, the Service Reading table header would not be printed at the bottom of a page with no detail lines – instead, the table header would be printed at the top of the next page.

Actual positions are specified for every variable and static item identified. The positions are specified in units of inches and are based upon a physical sheet of 8.5 in width and 11.0 inches in length and these positions are given from the left edge and the top edge of the physical sheet.

7.2 Document Sections

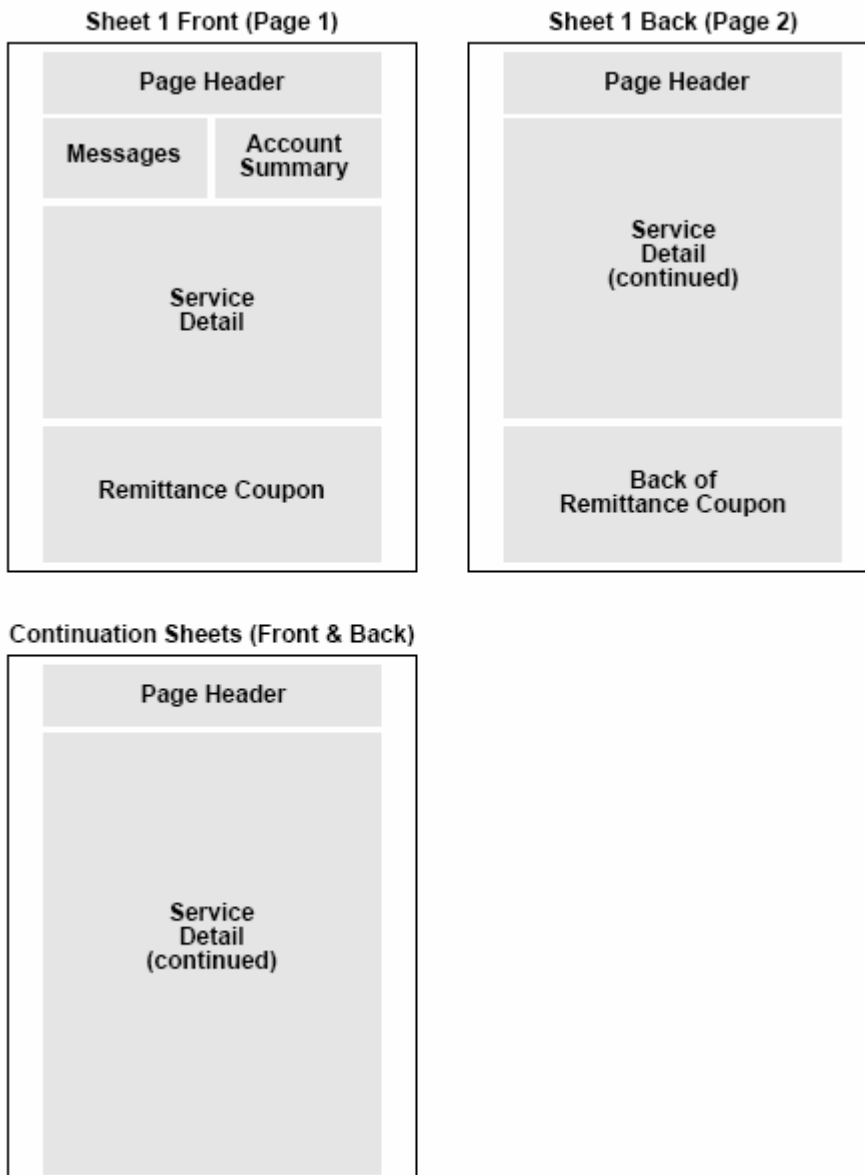
The Utility Bill will be composed of several sections, which flow in a logical order. Each section contains static text and information unique to the customer ranging from account level information to service consumption and charges. Each service provided to the customer is described in some level of detail using different subsections – service period, meter readings, adjustments, and the items comprising the charge for the service. Where appropriate, a bar chart is printed reflecting consumption for the previous 13 periods of service. The Bill has the potential of having multiple pages, particularly when a customer has either numerous services, multiple service locations, or a large amount of detail for any service.

The Utility Bill contains the following sections:


Page Header	Printed at the top of every page, the Page Header contains Customer logo and identifies the account name, account number, billing date, and current page number.
Messages	<p>The data feed architecture provides the ability for the Customer Information System to produce message text unique to each bill which will be printed on the bill. Messages typically vary from a generic customer service message to a specific message intended solely for the individual customer. Positioned immediately below the Page Header on the first page of the billed, Messages and the Account Summary are printed in a two-column format with Messages in the left column.</p>
Account Summary	<p>The Account Summary reflects the previous account balance, payments received, unpaid balance carried forward, current charges, adjustments, corrections, current balance, and due date for the current balance. Current Charges and Adjustments are detailed within the Service Agreement Section. The Account Summary is produced on the first page of the Bill.</p>
Remittance Coupon	<p>Intended to be detached at the perforation, the Remittance Coupon is returned to Customer along with payment. The Remittance Coupon contains a variety of information that assists the customer, mailing operations, and payment processing operations. The account is summarized at a high level reflecting the account number, overdue balance, due date for current charges, and total current charges. The recipient name, address, and postal delivery point bar code are positioned to be visible through a windowed envelope. Customer's return address is also printed so that it is visible through a windowed return envelope. A line is produced which contains the account number, current balance, and check digit printed in the OCR-A font to support automation in Customer's remittance processing operations. The Remittance Coupon is produced only on the first page of the Bill.</p>
Service Detail	<p>Details for every service provided to the customer are presented in the Service Detail. The service period, charge components, meter readings, adjustments, and a bar chart comprise the Service Detail – within this document, each of these components will be described as a subsection within the Service Detail section.</p> <ul style="list-style-type: none">• Service Address Heading• Service Agreement Heading• Service Readings• Histogram• Bill Calculation• Adjustments <p>While the amount of space required to detail an individual residential service might be fairly small, it is quite possible that a commercial service may contain numerous charge detail lines and numerous meters which can cause the Service Detail to be split across multiple pages. The Service Detail can be produced multiple times within a statement – once per service</p>

provided per premise associated with the account. The Service Detail begins printing on the first page of the bill immediately below the Messages and Account Summary.

7.3 General Bill Layout



7.4 Page Header Section

 PWR ENERGY 5555 MAIN STREET ROAD, CITY, STATE 12345-6789 CUSTOMER INQUIRIES: (555) 123-4567 TOLL FREE: (800) 555-1234 24 HOUR EMERGENCY (555) 987-6543	Account Number: [cn]	[shfont]
	Billing Date: [bd]	
	Due Date: [dd]	
	Page [pn] of [tp]	[intop]

This section contains customer specific information that appears on the upper portion of every page on the Bill.

Variables

Var. ID	Description	Data Source and Editing	Font
[cn]	Customer Name	<ul style="list-style-type: none"> 0100-Account-Entity-Name Names with a comma (Smith, Bob) are reformatted to appear as Bob Smith Left justified at 2.1 inches Baseline is 1.2 inches 	<ul style="list-style-type: none"> Helvetica 10 point Non-Bold Non-Italic
[an]	Account Number	<ul style="list-style-type: none"> 0100-Account-Num No editing performed Left justified at 2.1 inches Baseline is 1.5 inches 	<ul style="list-style-type: none"> Helvetica 10 point Non-Bold Non-Italic
[bd]	Billing Date	<ul style="list-style-type: none"> 0100-Bill-Date Formatted to appear as "12/31/2005" Left justified at 2.1 inches Baseline is 1.35 inches 	<ul style="list-style-type: none"> Helvetica 10 point Non-Bold Non-Italic
[dd]	Due Date	<ul style="list-style-type: none"> 0100-Due-Date Formatted to appear as "12/31/2005" Left justified at 2.1 inches Baseline is 1.35 inches 	<ul style="list-style-type: none"> Helvetica 10 point Non-Bold Non-Italic


[pn]	Page Number	<ul style="list-style-type: none"> • DOC1 Environment Variable • No leading zeroes • Baseline is 1.5 inches • Part of the phrase “Page x of y” that is right justified at 7.65 inches 	<ul style="list-style-type: none"> • Helvetica • 10 point • Non-Bold • Non-Italic
[tp]	Total Pages	<ul style="list-style-type: none"> • DOC1 Environment Variable • No leading zeroes • Baseline is 1.5 inches • Part of the phrase “Page x of y” that is right justified at 7.65 inches 	<ul style="list-style-type: none"> • Helvetica • 10 point • Non-Bold • Non-Italic
[intcp]	Intercept ID	<ul style="list-style-type: none"> • 0100-Intercept-ID • Landscape orientation – 270 rotation • Baseline 8.1 inches • Left justified at 1.44 inches 	<ul style="list-style-type: none"> • Helvetica • 9 point • Non-Bold • Non-Italic
[shtcnt]	Sheet Counter – sequence counter for entire stack of bills within a print file	<ul style="list-style-type: none"> • Determined by DOC1 • Landscape orientation – 270 rotation • 6 digits – zero padded to the left • Baseline 8.1 inches • Left justified at 0.68 inches 	<ul style="list-style-type: none"> • Helvetica • 9 point • Non-Bold • Non-Italic

Non-Variable Components

Text	Optional / Mandatory	Formatting	Font
Customer Logo	Mandatory	<ul style="list-style-type: none"> • Top Edge is 0.15 inches from top of sheet • Left edge if 0.75 inches from left of sheet 	Multi-Color
5555 MAIN STREET ROAD, CITY, STATE 12345-6789	Mandatory	<ul style="list-style-type: none"> • Left justified at 1.6 inches • Baseline 0.8 inches • Address on single line separated by comma and 	<ul style="list-style-type: none"> • Helvetica • 10 point • Non-Bold • Non-Italic

		single space.	
CUSTOMER INQUIRIES... TOLL FREE:.... 24 HOUR EMERGENCY	Mandatory	<ul style="list-style-type: none"> • Left justified at 1.6 inches • “CUSTOMER...” baseline 1.2 • “TOLL FREE:...” baseline 1.35 • “24 HOUR...” baseline 1.5 	<ul style="list-style-type: none"> • Helvetica • 10 point • Non-Bold • Non-Italic
Account Number: Billing Date; Due Date:	Mandatory	<ul style="list-style-type: none"> • Absolute Line Spacing of 11 pt. • Each item is part of a phrase right justified at 7.65 inches • “Account Number:” baseline 0.45 • “Billing Date:” baseline 0.60 • “Due Date:” baseline 0.75 	<ul style="list-style-type: none"> • Helvetica • 10 point • Bold • Non-Italic
Page x of y	Mandatory	<ul style="list-style-type: none"> • Part of the phrase “Page x of y” that is right justified at 7.65 inches • Baseline is 1.32 inches 	<ul style="list-style-type: none"> • Helvetica • 10 point • Non-Bold • Non-Italic
Horizontal Solid Line	Mandatory	<ul style="list-style-type: none"> • Left edge is 0.7 inches • Bottom of line is 1.50 inches 	<ul style="list-style-type: none"> • .04 inches thick • 7.0 inches long

7.4.1 Page Header Example

 PWR ENERGY	DAN SMITH	000001
	Account Number: 9999999999	
5555 MAIN STREET ROAD, CITY, STATE 12345-6789	Billing Date: 11/30/2005	million
	Due Date: 12/31/2005	
CUSTOMER INQUIRIES: (555) 123-4567		
TOLL FREE: (800) 555-1234		
24 HOUR EMERGENCY (555) 987-6543	Page 1 of 1	

7.5 Messages Section

Important Customer Message:
[msg-text]

The Messages section provides a means of passing informational messages to the recipient of the Bill. DOC1 will wrap the messages into multiple lines based on a 3.25 inch line length. Multiple messages are supported; however, in the event that more than three message records are triggered for a Bill, only the three highest priority messages will be printed. When multiple messages are present, they will be separated by .25 inches of horizontal white space. The messages are printed left aligned with the page layout and are located below the Page Header and to the left of the Account Summary

This section is optional – if no 3900 – Message Records are included in the Bill Record Group, then this section will not be produced and this section of the Bill will be blank.

Variables

Var. ID	Description	Data Source and Editing	Font
[msg]	Message Text	<ul style="list-style-type: none"> 3900-Message-Text Line length of 3.25 inches – may be wrapped to multiple lines Ragged right margin Left justified at 0.75 inches Baseline of first line is 2.18 inches; subsequent lines in same message are relatively positioned 0.125 inches downward For multiple messages, the baseline of the first line of the succeeding message is 0.25 inches below the baseline of the last line in the preceding message If more than three 3900 records are present for a bill, then only the three 3900-Message-Text with the top 3900-Message-Priority will be printed. 	<ul style="list-style-type: none"> Helvetica 9 point Non-Bold Non-Italic

Non-Variable Components

Text	Optional / Mandatory	Formatting	Font
Important Customer Message:	Optional – produced when any Messages are produced.	<ul style="list-style-type: none"> Left justified at 0.95 inches Baseline is 1.82 inches 	<ul style="list-style-type: none"> Helvetica 9 point Bold Non-Italic

7.5.1 Messages Example

Important Customer Message:
Hurricane ReLeaf – Adopt-A-Tree

7.6 Account Summary Section

Account Summary as of [bd]	
Previous Balance	[pb]
Payments Received	[pr]
Total Corrections	[tc]
Balance Forward	[bf]
Total Adjustments	[ta]
Current Charges – [cd]	[ca]
[total-msg]	[ad]
Past Due Balance	
Pay Immediately to Avoid Disconnection	

The Account Summary section provides a financial summary of the account displaying payment information, current charges, adjustments, corrections, the previous balance, and the new balance. The number of lines produced will vary based upon the data. Some of the text is fixed, while some of the text is passed to DOC1 in the Sorted CIS Bill Print Extract file. The Account Summary is located below the Page Header and to the right of the Messages.

The Previous Balance line will always be produced and will be produced once.

The Payments Received line will always be produced and will be produced once.

The Total Corrections line is optional and will be produced only if 0100-Current-Corrections on the Bill record (0100) is not zero. There may be either one or zero Total Correction lines printed in the Account Summary.

The Balance Forward line will always be produced and will be produced once.

The Total Adjustments line will always be produced and will be produced once

The number of Current Charge lines will vary based upon the number of 0300 – Current Charge Records included in the Bill Record Group. There will be one Current Charge line produced for each 0300 – Current Charge record present. The order that the Current Charge lines will be printed will match the order of the 0300 – Current Charge Records in the Sorted CIS Bill Print Extract – if the first Current Charge line printed is to be for “Water”, then the first 0300 – Current Charge Record must contain “Water” data. The Sorted CIS Bill Print Extract will not contain more than 7 0300 – Current Charge Records per Bill Record Group.

The Total Amount due line will always be produced and will be produced once.

An optional overdue message will be printed below the Total Amount due line when the balance forward exceeds \$10.00

The height of the Account Summary will vary based upon the number of lines printed. However, the Account Summary will never exceed one page in size due to the restriction on the number of Current Charge Records and Payment Records in a Bill.

The Account Summary section is mandatory.

Variables

Var. ID	Description	Data Source and Editing	Font
[bd]	Billing Date	<ul style="list-style-type: none"> 0100-Bill Date Formatted to appear as “December 01, 2003” Part of the phrase “Account Summary as of May 01, 2004” Phrase is left justified at 4.52 inches Baseline is 1.935 inches 	<ul style="list-style-type: none"> Helvetica 10 point Bold Non-Italic
[pb]	Previous Balance Amount	<ul style="list-style-type: none"> 0100-Current-Previous-Balance Currency formatted with \$ Negative amount will be formatted as “-10.00” Right justified at 7.62 inches Relatively positioned 0.14 inches below preceding detail line 	<ul style="list-style-type: none"> Helvetica 10 point Non-Bold Non-Italic
[pa]	Payments Received Amount	<ul style="list-style-type: none"> 0100-Current-Payments Currency formatted w/o \$ Negative amount will be formatted as “-10.00” Right justified at 7.62 inches Relatively positioned 0.14 inches below preceding detail line 	<ul style="list-style-type: none"> Helvetica 10 point Non-Bold Non-Italic
[bf]	Balance Forward Amount	<ul style="list-style-type: none"> Calculated by the DOC1 Bill Application by subtracting 0100-Current-Payments from 0100-Previous-Balance Currency formatted w/o \$ Negative amount will be formatted as “-10.00” Right justified at 7.62 inches Relatively positioned 0.14 inches 	<ul style="list-style-type: none"> Helvetica 10 point Non-Bold Non-Italic

Var. ID	Description	Data Source and Editing	Font
		below preceding detail line	
[ta]	Total Adjustments	<ul style="list-style-type: none"> • 0100-Current-Adjustments • Currency formatted w/o \$ • Negative amount will be formatted as “-10.00” • Right justified at 7.62 inches • Relatively positioned 0.14 inches below preceding detail line 	<ul style="list-style-type: none"> • Helvetica • 10 point • Non-Bold • Non-Italic
[tc]	Total Corrections	<ul style="list-style-type: none"> • 0100-Current-Corrections • Printed only if 0100-Current-Corrections is not zero. • Currency formatted w/o \$ • Negative amount will be formatted as “-10.00” • Right justified at 7.62 inches • Relatively positioned 0.14 inches below preceding detail line 	<ul style="list-style-type: none"> • Helvetica • 10 point • Non-Bold • Non-Italic
[cd]	Charge Description	<ul style="list-style-type: none"> • 0300-Debt-Class-Desc • Occurs once per 0300 – Current Charge Record present in Bill Record Group • Print 1st 25 bytes of the 30-byte 0300-Debt-Class-Desc field • Part of the phrase “Current Charges – Water” • Phrase is left justified at 4.52 inches • Baseline for 1st instance at 2.08 inches • Subsequent instances relatively positioned 0.14 inches down 	<ul style="list-style-type: none"> • Helvetica • 10 point • Non-Bold • Non-Italic
[ca]	Charge Amount	<ul style="list-style-type: none"> • 0300-Current-Charge-Amt • Occurs once per 0300 – Current Charge Record present in Bill Record Group • Currency formatted w/o \$ • Negative amount will be formatted as “-10.00” 	<ul style="list-style-type: none"> • Helvetica • 10 point • Non-Bold • Non-Italic

Var. ID	Description	Data Source and Editing	Font
		<ul style="list-style-type: none"> Right justified at 7.62 inches Baseline for 1st instance at 2.08 inches Subsequent instances relatively positioned 0.14 inches down 	
[total-msg]	Payment Due Date / Autopay Date	<ul style="list-style-type: none"> If 0100-APS-Date not blank, fill with “Total Amount To Be Drafted “ concatenated with 0100-APS-Date (result will appears as “Total Amount To Be Drafted 12/31/2005”; else fill with 0100-Due-Date Phrase is centered at 6.075 inches Relatively positioned 0.208 inches below Total Amount Due shading 	<ul style="list-style-type: none"> Helvetica 10 point Bold Non-Italic
[ad]	Amount Due	<ul style="list-style-type: none"> 0100-Current-Balance Currency formatted with \$ Negative amount will be formatted as “-\$10.00” Right justified at 7.62 inches Relatively positioned 0.175 inches below preceding detail line 	<ul style="list-style-type: none"> Helvetica 10 point Bold Non-Italic

Non-Variable Components

Text	Optional / Mandatory	Formatting	Font
Account Summary as of	Mandatory	<ul style="list-style-type: none"> Part of the phrase “Account Summary as of May 01, 2004” Phrase is left justified at 4.2 inches Baseline is 1.86 inches 	<ul style="list-style-type: none"> Helvetica 10 point Bold Non-Italic
Previous Balance	Mandatory	<ul style="list-style-type: none"> Left justified at 4.2 inches Relatively positioned 	<ul style="list-style-type: none"> Helvetica 10 point

Text	Optional / Mandatory	Formatting	Font
		0.16 inches below preceding line	<ul style="list-style-type: none"> • Non-Bold • Non-Italic
Payments Received	Mandatory	<ul style="list-style-type: none"> • Left justified at 4.2 inches • Relatively positioned 0.16 inches below preceding line 	<ul style="list-style-type: none"> • Helvetica • 10 point • Non-Bold • Non-Italic
Total Corrections	Optional – produced only if 0100-Current-Corrections not zero	<ul style="list-style-type: none"> • Left justified at 4.2 inches • Relatively positioned 0.16 inches below preceding detail line 	<ul style="list-style-type: none"> • Helvetica • 10 point • Non-Bold • Non-Italic
Balance Forward	Mandatory	<ul style="list-style-type: none"> • Left justified at 4.2 inches • Relatively positioned 0.16 inches below preceding detail line 	<ul style="list-style-type: none"> • Helvetica • 10 point • Non-Bold • Non-Italic
Total Adjustments	Mandatory	<ul style="list-style-type: none"> • Left justified at 4.2 inches • Relatively positioned 0.16 inches below preceding detail line 	<ul style="list-style-type: none"> • Helvetica • 9 point • Non-Bold • Non-Italic
Current Charges	Optional – produced once per 0300 record present	<ul style="list-style-type: none"> • Part of the phrase “Current Charge – Water” • Phrase is left justified at 4.2 inches • Relatively positioned 0.16 inches below preceding detail line • Subsequent instances relatively positioned 0.16 inches down 	<ul style="list-style-type: none"> • Helvetica • 9 point • Non-Bold • Non-Italic
Horizontal line Shading	Mandatory	<ul style="list-style-type: none"> • Line left edge is 4.2 inches • Line and top of shading relatively positioned 0.03 inches below previous line 	<ul style="list-style-type: none"> • Line weight .01 inches thick • Line/shading 3.55 inches long/wide • Shading is 0.25 inches tall

Text	Optional / Mandatory	Formatting	Font
			<ul style="list-style-type: none"> 7% shading
<p>Preceding horizontal line</p> <p>Shaded area</p>	Mandatory	<ul style="list-style-type: none"> Text left justified at 4.2 inches Text 0.20 inches below horizontal line Line and shading left edge is 4.2 inches Horizontal line and shading immediately below pr 	<ul style="list-style-type: none"> Helvetica 10 point Bold Non-Italic Line weight .01 inches thick 7% Shading Line and shading 3.25 inches long
Horizontal line above Past Due Balance	Optional – produce when the calculated balance forward exceeds \$10.00	<ul style="list-style-type: none"> Line floats 0.06 below [total-msg] 	<ul style="list-style-type: none"> Line weight .01 inches thick Box is 3.55 inches wide
Past Due Balance Pay Immediately to Avoid Disconnection	Optional – produce when the calculated balance forward exceeds \$10.00	<ul style="list-style-type: none"> Split onto 2 lines Horizontally centered at 5.925 inches First line baseline floats 0.17 below preceding horizontal line 	<ul style="list-style-type: none"> Helvetica 10 point Bold Non-Italic
Box around entire Account Summary	Mandatory	<ul style="list-style-type: none"> Top left corner is at 4.17 from the left and 1.7 down 	<ul style="list-style-type: none"> Line weight .01 inches thick Box is 3.55 inches wide Box depth is variable based upon number of lines enclosed

7.6.1 Account Summary Examples

- Multiple Current Charges,
- Payment of Zero
- Adjustments,
- Corrections,
- Non-Zero Balance Forward
- Manual Pay

Account Summary as of 12/31/2005	
Previous Balance	\$ 72.94
Payments Received	0.00
Total Corrections	-10.00
Balance Forward	62.94
Total Adjustments	50.00
Current Charges – Water/WW/Irrigation	63.14
Current Charges – Mandatory R/R	117.98
Total Amount Due	294.06
Past Due Balance	
Pay Immediately to Avoid Disconnection	

- Multiple Current Charges,
- No Adjustments,
- No Corrections,
- Payment Received,
- Zero Balance Forward
- Manual Pay

Account Summary as of 12/31/2005	
Previous Balance	\$ 72.94
Payments Received	-72.94
Balance Forward	0.00
Total Adjustments	0.00
Current Charges – Water/WW/Irrigation	63.14
Current Charges – Mandatory R/R	117.98
Total Amount Due	181.12

- No Current Charges,
- No Adjustments,
- No Corrections,
- Payment Received,
- Zero Balance Forward
- Manual Pay

Account Summary as of 12/31/2005	
Previous Balance	\$ 72.94
Payments Received	-72.94
Balance Forward	0.00
Total Adjustments	0.00
Account Balance – No Payment Due	0.00

- No Current Charges,
- No Adjustments,
- No Corrections,
- No Payments, and
- Non-Zero Balance Forward

Account Summary as of 12/31/2005	
Previous Balance	\$ 72.94
Payments Received	0.00
Balance Forward	72.94
Total Adjustments	0.00
Total Amount Due	72.94
Past Due Balance	
Pay Immediately to Avoid Disconnection	

- Manual Pay
- One Current Charge
- No Adjustments
- No Corrections
- No Payments
- Non-Zero Balance Forward
- Autopay Example


Account Summary as of 12/31/2005	
Previous Balance	\$ 72.94
Payments Received	0.00
Balance Forward	72.94
Total Adjustments	0.00
Current Charges – Water/WW/Irrigation	63.14
Total Amount Due	136.08
Past Due Balance	
Pay Immediately to Avoid Disconnection	

- Autopay Example

Account Summary as of 12/31/2005	
Previous Balance	\$ 72.94
Payments Received	-72.94
Balance Forward	0.00
Total Adjustments	0.00
Current Charges – Water/WW/Irrigation	63.14
Current Charges – Mandatory R/R	117.98
Total To Be Drafted On 1/31/2006	181.12

7.7 Remittance Coupon Section - Front


Format for USA Address – Manual Pay

	Return This Portion With Your Payment – Please make checks payable to PWR Energy Utilities Do Not Send Cash Through the Mail Cash Only Account – Pay in Person			
	Account Number	Total Due	Due Date	Amount Paid
	[acct-num]	[td]	[dd]	

[custname]
[street1]
[street2]
[csz]
[barcode]
[ocr scan]

SEND PAYMENTS TO:
PWR ENERGY UTILITIES
P.O. Box 123456
CITY, STATE 12345-6789


Format for USA Address – Autopay

Autopay Notice			
	Account Number	Total Due	Your account will be drafted for the Total Due on the date below
	[acct-num]	[td]	[aps-date]

[custname]
[street1]
[street2]
[csz]
[barcode]

Do Not Send Payment
Your Bill is Scheduled for Electronic Payment

Format for Foreign Address

	Return This Portion With Your Payment – Please make checks payable to PWR Energy Utilities Do Not Send Cash Through the Mail Cash Only Account – Pay in Person									
	<table border="1"> <thead> <tr> <th>Account Number</th> <th>Total Due</th> <th>Due Date</th> <th>Amount Paid</th> </tr> </thead> <tbody> <tr> <td>[acct-num]</td> <td>[td]</td> <td>[dd]</td> <td></td> </tr> </tbody> </table>	Account Number	Total Due	Due Date	Amount Paid	[acct-num]	[td]	[dd]		
Account Number	Total Due	Due Date	Amount Paid							
[acct-num]	[td]	[dd]								
[custname] [street1] [street2] [cdp] [country]		SEND PAYMENTS TO: PWR ENERGY UTILITIES P.O. Box 123456 CITY, STATE 12345-6789								
[ocr scan]										

Printed below the perforation on the paper stock, the Remittance Coupon section is intended to be detached from the upper portion of the sheet and returned along with payment to Customer. The Remittance Coupon contains a variety of information benefiting the customer, mailing operations, and Remittance Processing. The customer is instructed the amount to pay, when to pay, and where to return payment. A Delivery Point Bar Code (DPBC), required for postal discounts, is printed and an OCR line is printed for later scanning by remittance processing equipment.

Variables

Var. ID	Description	Data Source and Editing	Font
[acct-num]	Account Number	<ul style="list-style-type: none"> 0100-Account-Num Horizontally centered 4.2 inches Baseline is 8.88 inches 	<ul style="list-style-type: none"> Helvetica 9 point Bold Non-Italic
[td]	Total Due	<ul style="list-style-type: none"> 0100-Current-Balance Currency formatted with \$ If 0100-Current-Balance is 0.00 or less, print “**No Amount Due**” Horizontally centered 5.2 inches Baseline is 8.88 inches 	<ul style="list-style-type: none"> Helvetica 9 point Bold Non-Italic
[dd]	Due Date	<ul style="list-style-type: none"> 0100-Due-Date Formatted to appear as ‘12/13/2005’ Horizontally centered 6.2 inches 	<ul style="list-style-type: none"> Helvetica 9 point Bold Non-Italic

Var. ID	Description	Data Source and Editing	Font
		<ul style="list-style-type: none"> Baseline is 8.88 inches 	
[custname]	Customer Name	<ul style="list-style-type: none"> 0100-Entity-Name Names with a comma (Smith, Bob) are reformatted to appear as Bob Smith Left justified at 1.25 inches Relatively positioned 0.166 above Street Address 1 	<ul style="list-style-type: none"> Helvetica 12 point Non-Bold Non-Italic
[street1]	Street Address 1	<ul style="list-style-type: none"> 0100-Bill-Address1 May contain a “C/O” name; if so, CIS places the first address value in 0100-Bill-Address2 Updated by Code-1 to all upper case letters if a recognized address; otherwise unchanged Left justified at 1.25 inches Relatively positioned 0.166 above succeeding line 	<ul style="list-style-type: none"> Helvetica 12 point Non-Bold Non-Italic
[street2]	Street Address 2	<ul style="list-style-type: none"> 0100-Bill-Address2 Produced only if 0100-Bill-Address2 not blank Updated by Code-1 to all upper case letters if a recognized address; otherwise unchanged Left justified at 1.25 inches Relatively positioned 0.166 above succeeding line 	<ul style="list-style-type: none"> Helvetica 12 point Non-Bold Non-Italic
[csz]	City State Zip	<ul style="list-style-type: none"> Produced when 0100-Bill-Country equal “USA” 0100-Bill-City + 0100-Bill-State + 0100-Postal Updated and formatted by Code-1 as “CITY, ST 12345-6789” if a recognized address; otherwise will appear as “CITY, ST 12345” Updated by Code-1 to all upper case letters if a recognized address; otherwise unchanged Left justified at 1.25 inches 	<ul style="list-style-type: none"> Helvetica 12 point Non-Bold Non-Italic

Var. ID	Description	Data Source and Editing	Font
		<ul style="list-style-type: none"> Baseline is 10.17 inches 	
[cdp]	City District Post	<ul style="list-style-type: none"> Produced when 0100-Bill-Country not equal “USA” 0100-Bill-City + 0100-Bill-State + 0100-Postal Formatted as “Maidenhead Berks SL6 1XE” Left justified at 1.25 inches Relatively positioned 0.166 above Country Name line 	<ul style="list-style-type: none"> Helvetica 12 point Non-Bold Non-Italic
[country]	Country Name	<ul style="list-style-type: none"> Produced when 0100-Bill-Country not equal “USA” Name is determined by using 0100-Bill-Country to retrieve the Country name from the Extended Text Substitution file (see Appendix C) Left justified at 1.25 inches Baseline is 10.39 inches 	<ul style="list-style-type: none"> Helvetica 12 point Non-Bold Non-Italic
[ocrscan]	OCR Scan Line	<ul style="list-style-type: none"> -- see “OCR Scan Line Calculation” below – Left justified at 1.5 inches Baseline is 10.75 inches 	<ul style="list-style-type: none"> OCR-A
Vertical lines below [csz]	Post Net Delivery Point Bar Code (DPBC)	<ul style="list-style-type: none"> Data created by Code-1 Printed if Code-1 able to determine the full 12-byte DPBC Left justified at 1.5 inches Baseline is 10.438 inches Produced if 0100-Bill-Country equal “USA” and if Code-1 Plus able to identify a DPBC value for the address 	<ul style="list-style-type: none"> PostNet BarCode Font
Square Barcode	Barcode Representation of OCR Scan Line	<ul style="list-style-type: none"> Same content as [ocrscan] – see “OCR Scan Line Calculation” below Left Edge 5.8 inches from left of sheet Top Edge 9.3 inches from top of sheet 	<ul style="list-style-type: none"> Datamatrix BarCode Font Square Security Level 0

Var. ID	Description	Data Source and Editing	Font
[apds]	Autopay Date	<ul style="list-style-type: none"> • 0100-APS-Date • Formatted as MM/DD/YYYY • Right justified at 7.5 inches • Baseline is 8.85 inches • Produce if 0100-APS-Date not blank 	<ul style="list-style-type: none"> • Helvetica • 9 point • Bold • Non-Italic

7.7.1 OCR Scan Line



For many payment processing systems an OCR scan line is required to be on the returned portion of the invoice. DOC1 can handle the construction and placement of an OCR scan provided the content for the lien exists in the data feed.

An OCR Scan Line might consists of the following items:

- 10-byte Account Number (0100-Account-Number)
- 1-byte Check Digit for Account Number – calculated by the DOC1 Bill Application
- 15-byte Amount Due (0100-Current-Balance; left padded with zeroes – no decimal point)
- 1-byte Check Digit for Amount Due – calculated by the DOC1 Bill Application

7.7.2 OCR Scan Line Example

At the bottom of this remittance stub is an OCR scan line example in the shaded box.

		Return This Portion With Your Payment – Please make checks payable to PWR Energy Utilities Do Not Send Cash Through the Mail Cash Only Account – Pay in Person									
		<table border="1"> <thead> <tr> <th>Account Number</th> <th>Total Due</th> <th>Due Date</th> <th>Amount Paid</th> </tr> </thead> <tbody> <tr> <td>0123456789</td> <td>\$19.98</td> <td>12/31/2005</td> <td></td> </tr> </tbody> </table>	Account Number	Total Due	Due Date	Amount Paid	0123456789	\$19.98	12/31/2005		
Account Number	Total Due	Due Date	Amount Paid								
0123456789	\$19.98	12/31/2005									
DAN SMITH C/O JAMES SMITH 5678 HOVE CT CITY ST 12345-6789 		SEND PAYMENTS TO: PWR ENERGY UTILITIES P.O. Box 123456 CITY, STATE 12345-6789									
<div style="border: 1px solid black; padding: 5px; display: inline-block;"> 2613790180000000199849 </div>											

Non-Variable Components


Text	Optional / Mandatory	Formatting	Font
Customer logo	Mandatory	<ul style="list-style-type: none"> Left edge is 0.75 inches from left edge of sheet Top edge is 7.70 inches from top edge of sheet 	N/A
Return This Portion With Your Payment - Please make checks payable to Customer.	Optional – produce if 0100-APS-Date is blank and 0100-Cash-Only = “N”	<ul style="list-style-type: none"> Horizontally centered at 4.7 inches Baseline 7.81 inches 	<ul style="list-style-type: none"> Helvetica 9 point Non-Bold Non-Italic
Do Not Send Cash Through the Mail	Optional – produce only if 0100-APS-Date is blank and if 0100-Cash-Only = N	<ul style="list-style-type: none"> Horizontally centered at 4.7 inches Baseline 7.93 inches 	<ul style="list-style-type: none"> Helvetica 9 point Non-Bold Non-Italic
Return This Portion With Your Payment	Optional – produce if 0100-APS-Date is blank and 0100-Cash-Only = “N”	<ul style="list-style-type: none"> Horizontally centered at 4.7 inches Baseline 7.81 inches 	<ul style="list-style-type: none"> Helvetica 9 point Non-Bold Non-Italic
Cash Only Account - Pay in Person	Optional – produce only if 0100-APS-Date is blank and if 0100-Cash-Only = Y	<ul style="list-style-type: none"> Horizontally centered at 4.7 inches Baseline 7.93 inches 	<ul style="list-style-type: none"> Helvetica 9 point Non-Bold Non-Italic
Shaded Box around Account Number Billing Date Amount Due Vertical Separator Lines Horizontal Middle Line	Mandatory – except for vertical line at 6.7 – produced only if 0100-APS-Date is blank	<ul style="list-style-type: none"> Box left edge is 3.7 inches Box top 8.4 inches Vertical lines at 4.7, 5.7, and 6.7 inches Horizontal line at 8.7 down 	<ul style="list-style-type: none"> 14% Shading Line weight .01 inches thick Width 4.0 inches Height 0.3 inches Lines 0.6 tall
Account Number Total Due	Mandatory	<ul style="list-style-type: none"> “Account Number” horizontally centered 4.2 inches 	<ul style="list-style-type: none"> Helvetica 8 point

Text	Optional / Mandatory	Formatting	Font
		<ul style="list-style-type: none"> • “Total Due” horizontally centered 5.2 inches • First line baseline 5.55 inches; second line baseline 8.65 	<ul style="list-style-type: none"> • Bold • Non-Italic
Due Date Amount Paid	Optional – produce if 0100-APS-Date is blank	<ul style="list-style-type: none"> • “Due Date” horizontally centered 6.2 inches • “Amount Paid” horizontally centered 7.2 inches • First line baseline 5.55 inches; second line baseline 8.65 	<ul style="list-style-type: none"> • Helvetica • 8 point • Bold • Non-Italic
Your account will be drafted forthe Total Due on the date below	Optional – produce if 0100-APS-Date is not blank	<ul style="list-style-type: none"> • Right justified at 6.7 inches • First line baseline 5.55 inches; second line baseline 8.65 	<ul style="list-style-type: none"> • Helvetica • 8 point • Bold • Non-Italic
SEND PAYMENTS TO: PWR ENERGY UTILITIES P.O. Box 123456 CITY, STATE 12345-6789	Optional – produce if 0100-APS-Date is blank	<ul style="list-style-type: none"> • “SEND...” baseline is 10.2 inches • “PWR ENERGY...” baseline is 10.31 inches • “P.O. Box ...” baseline is 10.42 inches • “CITY, ST...” baseline is 10.53 inches • Left justified at 5.8 inches 	<ul style="list-style-type: none"> • Helvetica • 12 point • Non-Bold • Non-Italic <p>Bold for Customer Name</p>
Autopay Notice	Optional – produce if 0100-APS-Date is not blank	<ul style="list-style-type: none"> • Baseline 7.81 inches • Horizontally centered at 4.7 inches 	<ul style="list-style-type: none"> • Helvetica • 14 point • Bold • Non-Italic
Do Not Send Payment	Optional – produce if 0100-APS-Date is not	<ul style="list-style-type: none"> • Left justified at 5.55 inches • Baseline is 9.90 	<ul style="list-style-type: none"> • Helvetica • 14 point


Text	Optional / Mandatory	Formatting	Font
	blank	inches	<ul style="list-style-type: none"> • Bold • Non-Italic
Your Bill is Scheduled for Electronic Payment	Optional – produce if 0100-APS-Date is not blank	<ul style="list-style-type: none"> • Left justified at 5.55 inches • First line baseline 10.29 inches; second line baseline 10.48 inches 	<ul style="list-style-type: none"> • Helvetica • 14 point • Bold • Non-Italic
Do Not Mail Payment	Optional – produce if 0100-APS-Date is blank and 0100-Cash-Only = “Y”	<ul style="list-style-type: none"> • Left justified at 5.55 inches • Baseline is 9.90 inches 	<ul style="list-style-type: none"> • Helvetica • 14 point • Bold • Non-Italic
Cash Only Account Pay In Person	Optional – produce if 0100-APS-Date is blank and 0100-Cash-Only = “Y”	<ul style="list-style-type: none"> • Left justified at 5.55 inches • First line baseline 10.29 inches; second line baseline 10.48 inches 	<ul style="list-style-type: none"> • Helvetica • 14 point • Bold • Non-Italic

7.7.3 Remittance Coupon Examples

USA Example – Manual Pay – Cash Only

<p>Return This Portion With Your Payment Cash Only Account – Pay in Person</p>			
	Account Number	Total Due	Due Date
	1234567890	\$117.68	1/20/2006
<p>DAN SMITH 5678 HOVE CT CITY ST 32825 </p>		<p>Do Not Mail Payment Cash Only Account Pay In Person</p>	
<p>1234567890300000000000117689</p>			

USA Example – Autopay

Autopay Notice			
	Account Number	Total Due	Your account will be drafted for the Total Due on the date below
	[acct-num]	[td]	[aps-date]
[custname] [street1] [street2] [csz]			Do Not Send Payment Your Bill is Scheduled for Electronic Payment

7.7.4 Remittance Coupon Section – Back

PWR Energy Utilities is not responsible for undelivered or late mail. In the event you fail to receive a utility bill, please call our office (numbers shown below). Acceptable forms of payment: cash, check money order, debit card, Visa®, MasterCard®, Discover®, and American Express→.

Payment locations: 5555 Main Street Road, participating convenience stores equipped with Pay Station, and participating Grocery Stores equipped with ATM services. For your convenience, drop boxes are located at 5555 Main Street Road and 4444 South Min Street Road. Drop box payments are processed the following business day. Acceptable drop box payments are checks or money order.

5555 Main Street Road Lobby and Drive Through Hours: 8:00 AM – 5:00 PM Monday – Friday

Telephone Numbers:

General Inquiry and Trouble Calls	(555) 123-4567	TDD Number (Hearing Impaired)	(555) 123-7854
24-HOURS EMERGENCY	(555) 987-6543	Toll Free (Outside City)	(800) 555-1234

Mail All Correspondence To: PO Box 123457 City, ST 12345-8789

Para más información, por favor llame al Departamento de Utilidades PWR Energy y pida hablar con un representante en español. El numero de teléfono es 555-123-4568.

This block of fixed text is printing on the reverse of the Remittance Coupon. This section is always produced. The content of this section can change to meet Customer requirements.

Non-Variable Components

Text	Optional / Mandatory	Formatting	Font
PWR Energy Utilities is not responsible...	Mandatory	<ul style="list-style-type: none"> Horizontally centered at 4.25 inches Baseline 7.80 inches Wrapped onto 3 lines based on line length of 7.0 inches 	<ul style="list-style-type: none"> Helvetica 9 point Non-Bold Non-Italic
Payment locations: 5555 Main Street...	Mandatory	<ul style="list-style-type: none"> Horizontally centered at 4.25 inches Baseline 8.30 inches Wrapped onto 4 lines based on line length of 7.0 inches 	<ul style="list-style-type: none"> Helvetica 9 point Non-Bold Non-Italic
5555 Main Street Road Lobby and...	Mandatory	<ul style="list-style-type: none"> Horizontally centered at 4.25 inches Baseline 8.92 inches 	<ul style="list-style-type: none"> Helvetica 9 point Bold Non-Italic
Telephone Numbers:	Mandatory	<ul style="list-style-type: none"> Left aligned at 0.7 inches Baseline 9.30 inches 	<ul style="list-style-type: none"> Helvetica 9 point Bold Non-Italic
General Inquiry... 24-HOUR...	Mandatory	<ul style="list-style-type: none"> Left aligned at 0.7 inches “General Inquiry” baseline 9.42 inches “24-HOUR” baseline 9.54 inches 	<ul style="list-style-type: none"> Helvetica 9 point Non-Bold Non-Italic
(555) 123-4567 (555) 987-6543	Mandatory	<ul style="list-style-type: none"> Left aligned at 3.0 inches “(407) 836-5515” baseline 9.42 inches “(407) 836-2777” baseline 9.54 inches 	<ul style="list-style-type: none"> Helvetica 9 point Non-Bold Non-Italic

Text	Optional / Mandatory	Formatting	Font
TDD Number... Toll Free...	Mandatory	<ul style="list-style-type: none"> • Left aligned at 4.25 inches • “TDD Number” baseline 9.42 inches • “Toll Free” baseline 9.54 inches 	<ul style="list-style-type: none"> • Helvetica • 9 point • Non-Bold • Non-Italic
(555) 123-7654 (800) 555-1234	Mandatory	<ul style="list-style-type: none"> • Left aligned at 6.5 inches • “(407) 836-6207” baseline 9.42 inches • “(800) 626-1140” baseline 9.54 inches 	<ul style="list-style-type: none"> • Helvetica • 9 point • Non-Bold • Non-Italic
Mail All Correspondence To:	Mandatory	<ul style="list-style-type: none"> • Left aligned at 0.7 inches • Baseline 9.80 inches 	<ul style="list-style-type: none"> • Helvetica • 9 point • Bold • Non-Italic
PO Box 123456...	Mandatory	<ul style="list-style-type: none"> • Left aligned at 2.45 inches • Baseline 9.80 inches 	<ul style="list-style-type: none"> • Helvetica • 9 point • Non-Bold • Non-Italic
Para mas informacion....	Mandatory	<ul style="list-style-type: none"> • Horizontally centered at 4.25 inches • Baseline 10.20 inches • Wrapped onto 2 lines based on line length of 7.0 inches 	<ul style="list-style-type: none"> • Helvetica • 9 point • Non-Bold • Non-Italic

7.8 Service Detail Section

Service Address: 5678 Hove Ct, City ST 32825					
Residential Water					
Meter Number	Previous Meter Read		Current Meter Read		Water Usage
	Date	Reading	Date	Reading	
1234567890	5/30/2005	15 Est	6/29/2005	25 Est	10 KGAL
(KGAL = 1,000 Gallons)					
Water Usage At-A-Glance			Water Residential		
			Service from 5/31/05 – 6/30/05 Meter Fixed Charge \$5.63 First 3 KGAL at \$0.92 per KGAL 2.76 Next 7 KGAL at \$1.23 per KGAL 8.61 Total of Water Consumption Charges 11.37 Late Payment Penalty .26 Deposit Interest .13 Subtotal \$17.13		

The Sorted CIS Bill Print Extract employs a sophisticated data architecture that supports multiple locations, multiple services, and multiple billing periods. The top hierarchy is a Bill; each Bill may contain multiple Premises (i.e., Service Addresses); each Premise may contain multiple Service Agreements (i.e., Water Service, Garbage Service, etc.); each Service Agreement contains an optional Histogram, optional Bill Segment and optional Adjustments; each Bill Segment contains Bill Calculations and Multiple Service Readings.

7.8.1 Service Address Subsection

Service Address: [svc-addr]

The Service Address subsection is printed with the first Service Agreement in a Premise. The DOC1 Bill Application is written with widow control to prevent the Service Address subsection from being printed at the bottom of a page with the ensuing detail appearing at the top of the following page.

In the event that the services are not actual services but rather account level charges, then a single horizontal line will be printed instead without any service address nor customer id. (This is indicated in the CIS Bill Print extract by a value of “Y” in the 0900-Non-Premise-SW).

Variables

Var. ID	Description	Data Source and Editing	Font
[svaddr]	Service Address	<ul style="list-style-type: none">• 0900-Premise-Address1 + 0900-Premise-City+ 0900-Premise-State + 0900-Premise-Postal• Formatted to appear as “123 Main, San Jose, CA 95110”• This address is not updated by Code-1• There will be no conversion of the data from upper to lower case or vice-versa• The state name will be printed as passed – there is no type of conversion of the state such as conversion to 2-byte state code.• The Zip Code will be printed as it is passed in the CIS Bill Print extract with no editing of the zip code.• Printed if 0900-Non-Premise-SW is N• First Premise baseline relatively positioned 0.45 inches down from lower of Account Summary box or last line in the Messages section• Subsequent instances – relatively positioned 0.45 inches down• Part of phrase “Service Address: 123 Main...”• Phrase left justified at 0.75 inches	<ul style="list-style-type: none">• Helvetica• 10 point• Non-Bold• Non-Italic

Non-Variable Components

Text	Optional / Mandatory	Formatting	Font
Service Address:	Optional – printed if 0900-Non-Premise-SW is N	<ul style="list-style-type: none"> • Same baseline as [svaddr] • Part of phrase “Service Address: 123 Main....” • Phrase left justified at 0.75 inches 	<ul style="list-style-type: none"> • Helvetica • 10 point • Bold • Non-Italic

7.8.2 Service Address Examples

Service Address: 5678 Hove Ct, City ST 32825

7.8.3 Service Agreement Header

[sa-title]

The Service Agreement Header differs between services.

Variables

Var. ID	Description	Data Source and Editing	Font
[sa-title]	Service Agreement Description	<ul style="list-style-type: none"> • 1100-Ser vice-Type-Desc • Left justified at 0.75 inches • Floats 0.19 inches below horizontal line 	<ul style="list-style-type: none"> • Helvetica • 10 point • Bold • Non-Italic

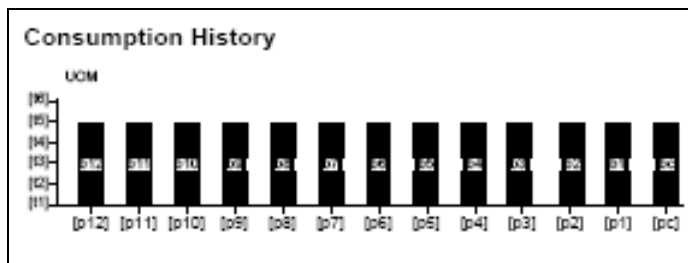
Non-Variable Components

Text	Optional / Mandatory	Formatting	Font
Horizontal line	Mandatory	<ul style="list-style-type: none"> Floats 0.11 below preceding item Left edge is at 0.7 inches 	<ul style="list-style-type: none"> Weight 0.03 inches thick Width 7.0 inches

7.8.4 Service Agreement Header Example

Residential Water

7.8.5 Histogram Subsection



The Histogram is a vertical bar chart showing service usage history for up to 13 periods. The optional chart is presented when the 3100 – Histogram Record is included in the bill data for a Service Agreement. The Histogram is printed below the Service Agreement Header subsection and to the left of the Bill Calculations subsection.

The chart is 3.25 inches wide and 0.55 inches tall. The Chart Vertical Axis is 0.55 inches from the left edge of the logical 8.5 x 11 sheet.

The Chart Vertical Axis represents consumptive quantity. The bottom of the axis is a zero value – the top of the axis represents the maximum value taken from the 3100 – Histogram Record. This axis has 6 major ticks labeled with numerical values representing 0%, 20%, 40%, 60%, 80%, and 100% of 3100-Chart-Max; however, the DOC1 software may produce fewer major ticks if 3100-Chart-Max is a fairly small value. No minor ticks are used.

The Chart Horizontal Axis represents the thirteen periods. There will be up to 13 vertical bars extending upward from the horizontal axis. The values for the vertical bars are taken from the 13 periods of data in the 3100 – Histogram Record – the height of each bar reflects a percentage of the maximum height determined by dividing the actual consumption by 3100-Chart-Max; the maximum height is 0.55 inches.

The field 3100-Num-Periods identifies the number of periods to be printed; this field has a maximum value of 13 (the DOC1 Bill Application will not verify that this field does not exceed 13). From left to right, the bars represent oldest to most recent periods – if fewer than 13 periods of data are present, the leftmost bars will be suppressed. Located below the horizontal axis, each bar is labeled with a three-byte abbreviation of the month associated with the period. The data is measured in units of one. The ratio of space between the bars and the white space between the bars is equal. Each bar is 0.12 inches wide. The distance from bar-to-bar is 0.241 inches center-to-center. The Chart Horizontal Axis is relatively positioned 1.20 inches below the bottom horizontal line of the Service Reading

Printed below the month abbreviations is a line containing the history from the first period in the chart and from the last period in the chart. In the event that fewer than 13 pairs of date/consumption are passed, the leftmost value will be 0 and the same month as the current will be used.

The Histogram will be printed a maximum of one time per Service Agreement. The 3100 – Histogram Record is optional – when omitted within the Service Agreement, the Histogram is not produced.

The month abbreviations printed will be based on the dates passed. The DOC1 Bill Application will not examine nor alter the dates to insure that they are in a calendar sequence. In other words, if the 3100 – Histogram Record contains three dates of “01/01/2004”, “08/01/2004”, and “05/01/2004”, the chart will print “Jan”, “Aug”, and “May”.

The DOC1 Bill Application does not validate that 3100-Chart-Max. Should the maximum value be less than one of the 13 consumptive amounts passed on the 3100 – Histogram Record, the results will be unpredictable.

All month abbreviations are horizontally centered below the Chart Bar they represent. Their baseline is 0.13 inches below the Chart Horizontal Axis.

Variables

Var. ID	Description	Data Source and Editing	Font
t6	Topmost Increment Amount	<ul style="list-style-type: none">• 3100-Chart-Max• Vertically centered 0.55 inches above the Chart Horizontal Axis	<ul style="list-style-type: none">• Helvetica• 5 point• Non-Bold• Non-Italic

Var. ID	Description	Data Source and Editing	Font
t5 t4 t3 t2 t1	Intermediate Increment Amounts	<ul style="list-style-type: none"> t5 – vertically centered 0.66 inches above the chart horizontal axis; value is 80% of 3100-Chart-Max t4 – vertically centered 0.57 inches above the chart horizontal axis; value is 60% of 3100-Chart-Max t3 – vertically centered 0.38 inches above the chart horizontal axis; value is 40% of 3100-Chart-Max t2 – vertically centered 0.19 inches above the chart horizontal axis; value is 20% of 3100-Chart-Max t1 – vertically centered with the chart horizontal axis; value is 0% of 3100-Chart-Max All are right justified at 0.825 inches 	<ul style="list-style-type: none"> Helvetica 5 point Non-Bold Non-Italic
[pc]	Current Period	<ul style="list-style-type: none"> 3100-Curr-Read-Date Month only – three letter abbreviation; format is “Jan” 	<ul style="list-style-type: none"> Helvetica 6 point Non-Bold Non-Italic
[yc]	Current Period	<ul style="list-style-type: none"> 3100-Curr-Read-Date Year only – 4-digit notation Blank unless 3100-Curr-Read-Date is for January 	<ul style="list-style-type: none"> Helvetica 6 point Non-Bold Non-Italic
[p1]	Current –1 Period	<ul style="list-style-type: none"> 3100-Curr-01-Read-Date Month only – three letter abbreviation; format is “Jan” Blank unless 3100-Num-Periods > 1 	<ul style="list-style-type: none"> Helvetica 6 point Non-Bold Non-Italic
[y1]	Current –1 Period	<ul style="list-style-type: none"> 3100-Curr-01-Read-Date Year only – 4-digit notation Blank unless 3100-Curr-01-Read-Date is for January 	<ul style="list-style-type: none"> Helvetica 6 point Non-Bold Non-Italic

Var. ID	Description	Data Source and Editing	Font
[p2]	Current –2 Period	<ul style="list-style-type: none"> • 3100-Curr-02-Read-Date • Month only – three letter abbreviation; format is “Jan” • Blank unless 3100-Num-Periods > 2 	<ul style="list-style-type: none"> • Helvetica • 6 point • Non-Bold • Non-Italic
[y2]	Current –2 Period	<ul style="list-style-type: none"> • 3100-Curr-02-Read-Date • Year only – 4-digit notation • Blank unless 3100-Curr-02-Read-Date is for January 	<ul style="list-style-type: none"> • Helvetica • 6 point • Non-Bold • Non-Italic
[p3]	Current –3 Period	<ul style="list-style-type: none"> • 3100-Curr-03-Read-Date • Month only – three letter abbreviation; format is “Jan” • Centered below bar • Blank unless 3100-Num-Periods > 3 	<ul style="list-style-type: none"> • Helvetica • 6 point • Non-Bold • Non-Italic
[y3]	Current –3 Period	<ul style="list-style-type: none"> • 3100-Curr-03-Read-Date • Year only – 4-digit notation • Blank unless 3100-Curr-03-Read-Date is for January 	<ul style="list-style-type: none"> • Helvetica • 6 point • Non-Bold • Non-Italic
[p4]	Current –4 Period	<ul style="list-style-type: none"> • 3100-Curr-04-Read-Date • Month only – three letter abbreviation; format is “Jan” • Centered below bar • Blank unless 3100-Num-Periods > 4 	<ul style="list-style-type: none"> • Helvetica • 6 point • Non-Bold • Non-Italic
[y4]	Current –1 Period	<ul style="list-style-type: none"> • 3100-Curr-04-Read-Date • Year only – 4-digit notation • Blank unless 3100-Curr-04-Read-Date is for January 	<ul style="list-style-type: none"> • Helvetica • 6 point • Non-Bold • Non-Italic
[p5]	Current –5 Period	<ul style="list-style-type: none"> • 3100-Curr-05-Read-Date • Month only – three letter abbreviation; format is “Jan” • Centered below bar • Blank unless 3100-Num-Periods > 5 	<ul style="list-style-type: none"> • Helvetica • 6 point • Non-Bold • Non-Italic

Var. ID	Description	Data Source and Editing	Font
[y5]	Current –5 Period	<ul style="list-style-type: none"> • 3100-Curr-05-Read-Date • Year only – 4-digit notation • Blank unless 3100-Curr-05-Read-Date is for January 	<ul style="list-style-type: none"> • Helvetica • 6 point • Non-Bold • Non-Italic
[p6]	Current –6 Period	<ul style="list-style-type: none"> • 3100-Curr-06-Read-Date • Month only – three letter abbreviation; format is “Jan” • Centered below bar • Blank unless 3100-Num-Periods > 6 	<ul style="list-style-type: none"> • Helvetica • 6 point • Non-Bold • Non-Italic
[y6]	Current –6 Period	<ul style="list-style-type: none"> • 3100-Curr-06-Read-Date • Year only – 4-digit notation • Blank unless 3100-Curr-06-Read-Date is for January 	<ul style="list-style-type: none"> • Helvetica • 6 point • Non-Bold • Non-Italic
[p7]	Current –7 Period	<ul style="list-style-type: none"> • 3100-Curr-07-Read-Date • Month only – three letter abbreviation; format is “Jan” • Centered below bar • Blank unless 3100-Num-Periods > 7 	<ul style="list-style-type: none"> • Helvetica • 6 point • Non-Bold • Non-Italic
[y7]	Current –7 Period	<ul style="list-style-type: none"> • 3100-Curr-07-Read-Date • Year only – 4-digit notation • Blank unless 3100-Curr-07-Read-Date is for January 	<ul style="list-style-type: none"> • Helvetica • 6 point • Non-Bold • Non-Italic
[p8]	Current –8 Period	<ul style="list-style-type: none"> • 3100-Curr-08-Read-Date • Month only – three letter abbreviation; format is “Jan” • Centered below bar • Blank unless 3100-Num-Periods > 8 	<ul style="list-style-type: none"> • Helvetica • 6 point • Non-Bold • Non-Italic
[y8]	Current –8 Period	<ul style="list-style-type: none"> • 3100-Curr-08-Read-Date • Year only – 4-digit notation • Blank unless 3100-Curr-08-Read-Date is for January 	<ul style="list-style-type: none"> • Helvetica • 6 point • Non-Bold • Non-Italic

Var. ID	Description	Data Source and Editing	Font
[p9]	Current –9 Period	<ul style="list-style-type: none"> 3100-Curr-09-Read-Date Month only – three letter abbreviation; format is “Jan” Centered below bar Blank unless 3100-Num-Periods > 9 	<ul style="list-style-type: none"> Helvetica 6 point Non-Bold Non-Italic
[y9]	Current –9 Period	<ul style="list-style-type: none"> 3100-Curr-09-Read-Date Year only – 4-digit notation Blank unless 3100-Curr-09-Read-Date is for January 	<ul style="list-style-type: none"> Helvetica 6 point Non-Bold Non-Italic
[p10]	Current –10 Period	<ul style="list-style-type: none"> 3100-Curr-10-Read-Date Month only – three letter abbreviation; format is “Jan” Blank unless 3100-Num-Periods > 10 	<ul style="list-style-type: none"> Helvetica 6 point Non-Bold Non-Italic
[y10]	Current –10 Period	<ul style="list-style-type: none"> 3100-Curr-10-Read-Date Year only – 4-digit notation Blank unless 3100-Curr-10-Read-Date is for January 	<ul style="list-style-type: none"> Helvetica 6 point Non-Bold Non-Italic
[p11]	Current –11 Period	<ul style="list-style-type: none"> 3100-Curr-11-Read-Date Month only – three letter abbreviation; format is “Jan” Blank unless 3100-Num-Periods > 11 	<ul style="list-style-type: none"> Helvetica 6 point Non-Bold Non-Italic
[y11]	Current –11 Period	<ul style="list-style-type: none"> 3100-Curr-11-Read-Date Year only – 4-digit notation Blank unless 3100-Curr-11-Read-Date is for January 	<ul style="list-style-type: none"> Helvetica 6 point Non-Bold Non-Italic
[p12]	Current –12 Period	<ul style="list-style-type: none"> 3100-Curr-12-Read-Date Month only – three letter abbreviation; format is “Jan” Blank unless 3100-Num-Periods = 13 	<ul style="list-style-type: none"> Helvetica 6 point Non-Bold Non-Italic

Var. ID	Description	Data Source and Editing	Font
[y12]	Current –12 Period	<ul style="list-style-type: none"> 3100-Curr-12-Read-Date Year only – 4-digit notation Blank unless 3100-Curr-12-Read-Date is for January 	<ul style="list-style-type: none"> Helvetica 6 point Non-Bold Non-Italic

Chart Bar Variables

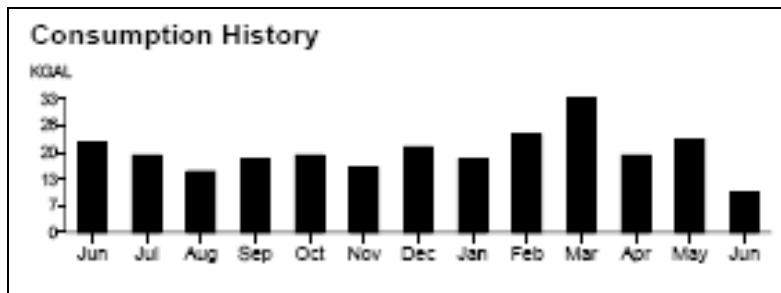
Bar	Data Source
bc	Bar height determined by dividing 3100-Curr-Read-Amt by 3100-Chart-Max
b1	Bar height determined by dividing 3100-Curr-01-Read-Amt by 3100-Chart-Max
b2	Bar height determined by dividing 3100-Curr-02-Read-Amt by 3100-Chart-Max
b3	Bar height determined by dividing 3100-Curr-03-Read-Amt by 3100-Chart-Max
b4	Bar height determined by dividing 3100-Curr-04-Read-Amt by 3100-Chart-Max
b5	Bar height determined by dividing 3100-Curr-05 Read-Amt by 3100-Chart-Max
b6	Bar height determined by dividing 3100-Curr-06-Read-Amt by 3100-Chart-Max
b7	Bar height determined by dividing 3100-Curr-07-Read-Amt by 3100-Chart-Max
b8	Bar height determined by dividing 3100-Curr-08-Read-Amt by 3100-Chart-Max
b9	Bar height determined by dividing 3100-Curr-09-Read-Amt by 3100-Chart-Max
b10	Bar height determined by dividing 3100-Curr-10-Read-Amt by 3100-Chart-Max
b11	Bar height determined by dividing 3100-Curr-11-Read-Amt by 3100-Chart-Max
b12	Bar height determined by dividing 3100-Curr-12-Read-Amt by 3100-Chart-Max

Non-Variable Components

Text	Optional / Mandatory	Formatting	Font
Water Usage At-A-Glance	Mandatory within chart	<ul style="list-style-type: none"> Baseline 0.80 above chart horizontal axis Left aligned at 0.75 inches 	<ul style="list-style-type: none"> Helvetica 9 point Non-Bold Non-Italic
KGAL	Mandatory within chart	<ul style="list-style-type: none"> Baseline 0.95 above chart horizontal axis Left aligned at 0.75 	<ul style="list-style-type: none"> Helvetica 5 point Non-Bold Non-Italic

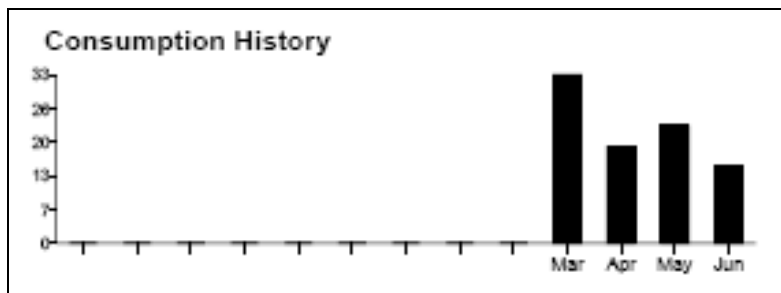
7.8.6 Histogram Examples

13 periods / 13 bars



In this example KGAL = 1000 gallons

4 periods / 13 bars



7.8.7 Bill Calculations Subsection

[sa-title]		
Service from [bdate] – [edate]		
[desc]	[in-amt]	[amt]
Subtotal		[s-ttl]

The Bill Calculation subsection itemizes the component charges that make up the total charge for the service. In most instances, fewer than eight lines are printed. However, the number of lines possible is infinite; therefore, the DOC1 Application must be able to split the Bill Calculation across pages. In order to avoid splitting a small Bill Calculations subsection across pages, the DOC1 application will be coded so that if the Bill Calculation contains eight or fewer lines, the Bill Calculation will not be split across two pages.

The number of detail lines printed is dependent upon the number of 1700 – Bill Calc Detail Records and 3400 – Adjustment Records passed in the extract for the Service Agreement.

The Bill Calculation subsection can be printed multiple times within a single Service Agreement dependent upon the business conditions for the account. For example, if a rate change were to occur during the billing period, the Bill Print extract could be created where two 1500/1900 range iterations were present – one representing the portion of the billing period under one rate and the other instance representing the remaining portion of the billing period.

Customer requires that Adjustments and Bill Calc be combined; when most than one set of 3400 – Adjustment Records are present within a Service Agreement (1100 / 3600 range iteration), the Adjustments will be combined with the first set of 1500/1900 records within the 1100/3600 block.

Variables

Var. ID	Description	Data Source and Editing	Font
[sa-title]	Service Agreement Description	<ul style="list-style-type: none"> 1100-Ser vice-Type-Desc Left justified at 4.25 inches Relatively positioned 0.27 inches down from preceding item 	<ul style="list-style-type: none"> Helvetica 9 point Bold Non-Italic
[bdate]	Begin Date	<ul style="list-style-type: none"> 1500-Start-Date Formatted to appear as “12/31/03” Part of the phrase “Service from 12/31/03 – 01/31/04” Phrase left justified at 4.25 inches Floats 0.15 below [sa-title] 	<ul style="list-style-type: none"> Helvetica 9 point Bold Non-Italic

Var. ID	Description	Data Source and Editing	Font
[edate]	End Date	<ul style="list-style-type: none"> 1500-End-Date Formatted to appear as “01/31/04” Part of the phrase “Service from 12/31/03 – 01/31/04” Phrase left justified at 4.25 inches Same baseline as [bdate] 	<ul style="list-style-type: none"> Helvetica 9 point Bold Non-Italic
[desc]	Descriptive Text	<ul style="list-style-type: none"> 1700-Bill-Calc-Desc Printed once per instance of 1700 – Bill Calc Detail Record within a 1500/1900 Bill Calc range iteration or once per instance of 3400 – Adjustment Record Print 1st 40 bytes of the 80-byte 1700-Bill-Calc-Desc field or 3400-Adjustment-Desc Left justified at 4.25 inches Baseline relatively positioned 0.15 inches below preceding line 	<ul style="list-style-type: none"> Helvetica 9 point Non-Bold Non-Italic
[in-amt]	Indented Amount	<ul style="list-style-type: none"> 1700-Bill-Calc-Amt Printed when 1700-App-In-Summ-SW = Y Printed once per instance of 1700 – Bill Calc Detail Record within a 1500/1900 Bill Calc range iteration Currency formatted w/o \$ Negative amount will be formatted as “-10.00” Right justified at 7.05 inches Same baseline as [desc] 	<ul style="list-style-type: none"> Helvetica 9 point Non-Bold Non-Italic

Var. ID	Description	Data Source and Editing	Font
[amt]	Amount	<ul style="list-style-type: none"> • 1700-Bill-Calc-Amt or 3400-Adjustment-Amt • Printed when 1700-App-In-Summ-SW = N (for 1700 record items) • Printed once per instance of 1700 – Bill Calc Detail Record within a 1500/1900 Bill Calc range iteration or once per 3400 – Adjustment Record • Currency formatted w/o \$ • Negative amount will be formatted as “-10.00” • Right justified at 7.65 inches • Same baseline as [desc] 	<ul style="list-style-type: none"> • Helvetica • 9 point • Non-Bold • Non-Italic
[s-ttl]	Subtotal	<ul style="list-style-type: none"> • Subtotal calculated by DOC1 Bill Application by adding all 1500-Current-Amount (not indented - i.e., 1700-App-In-Summ-SW = Y) and 3400-Adjustment-Amounts printed • Currency formatted with \$ • Negative amount will be formatted as “-10.00” • Right justified at 7.65 inches • Baseline 0.12 inches below horizontal line 	<ul style="list-style-type: none"> • Helvetica • 9 point • Bold • Non-Italic

Non-Variable Components

Text	Optional / Mandatory	Formatting	Font
Service From -	Optional – controlled by JWS Change ETS using combination of 1100-Business-Unit and 1100-Service-Type-Code to identify when to produce	<ul style="list-style-type: none"> Part of the phrase “Service from 12/31/03 – 01/31/04” Phrase left justified at 4.25 inches Same baseline as [bdate] 	<ul style="list-style-type: none"> Helvetica 9 point Bold Non-Italic
Horizontal line	Optional – controlled by ETS using combination of 1100-Business-Unit and 1100-Service-Type-Code to identify when to produce	<ul style="list-style-type: none"> Bottom of line relatively positioned 0.03 inches below [desc] line Left edge at 04.4 inches 	<ul style="list-style-type: none"> Line weight .01 inches thick Line length 3.45 inches long
Subtotal	Optional – controlled by ETS using combination of 1100-Business-Unit and 1100-Service-Type-Code to identify when to produce	<ul style="list-style-type: none"> Left aligned at 4.25 inches Baseline 0.12 inches below horizontal line 	<ul style="list-style-type: none"> Helvetica 9 point Bold Non-Italic

7.8.8 Bill Calc Example

Water Residential		
Service from 5/31/05 – 6/30/05		
Meter Fixed Charge	\$5.63	5.63
First 3 KGAL at \$0.92 per KGAL	2.76	
Next 7 KGAL at \$1.23 per KGAL	8.61	
Total of Water Consumption Charges		11.37
Late Payment Penalty		.26
Deposit Interest		.13
Subtotal		\$17.13

7.8.9 Service Reading Subsection

Meter Number	Previous Meter Read		Current Meter Read		Water Usage
	Date	Reading	Date	Reading	
[mtr-id]	[prev-date]	[prev-read] [pe]	[curr-date]	[curr-read] [ce]	[usage] [uom]

(UOM = x Units)

The Service Reading subsection contains consumptive details of a metered service based upon the current reading and the prior reading. Multiple detail lines are possible when multiple registers are present for a service or when a register is changed during a billing period. Each line produced is triggered by the presence of a 2100 – Service Reading Record within the Bill Segment 1300/2900 range iteration.

The baseline of the first detail line is 0.125 inches below the bottom horizontal line in the table header. The baseline of each subsequent detail is relatively positioned 0.15 inches below the preceding line.

The entire Service Reading subsection will be suppressed if 0900-Non-Premise-SW = Y

Variables

Var. ID	Description	Data Source and Editing	Font
[mtr-id]	Meter ID	<ul style="list-style-type: none"> 2100-Badge-Number Horizontally centered at 1.35 inches 	<ul style="list-style-type: none"> Helvetica 8 point Non-Bold Non-Italic
[curr-date]	Current Read Date	<ul style="list-style-type: none"> 2100-End-Read-Date Formatted to appear as “12/31/2005” Horizontally centered at 2.55 inches 	<ul style="list-style-type: none"> Helvetica 8 point Non-Bold Non-Italic
[curr-read]	Current Reading	<ul style="list-style-type: none"> 2100-End-Read-Qty Number of decimal positions printed controlled by 2100-Reading-Dec-Pos Right aligned at 3.8 inches 	<ul style="list-style-type: none"> Helvetica 8 point Non-Bold Non-Italic
[ce]	Estimate Indicator – Current Read	<ul style="list-style-type: none"> “Est” will be printed if 2100-End-Read-Est-SW = “Y”; otherwise blank Part of the phrase “[uom] [est]” Phrase left justified at 3.90 inches 	<ul style="list-style-type: none"> Helvetica 8 point Non-Bold Non-Italic

Var. ID	Description	Data Source and Editing	Font
[prev-date]	Previous Read Date	<ul style="list-style-type: none"> • 2100-Start-Read-Date • Formatted to appear as “12/31/2005” • Horizontally centered at 4.75 inches 	<ul style="list-style-type: none"> • Helvetica • 8 point • Non-Bold • Non-Italic
[prev-read]	Previous Reading	<ul style="list-style-type: none"> • 2100-Start-Read-Qty • Number of decimal positions printed controlled by 2100-Reading-Dec-Pos • Horizontally centered at 6.00 inches 	<ul style="list-style-type: none"> • Helvetica • 8 point • Non-Bold • Non-Italic
[pe]	Estimate Indicator – Previous Read	<ul style="list-style-type: none"> • “Est” will be printed if 2100-Start-Read-Est-SW = “Y”; otherwise blank • Part of the phrase “[uom] [est]” • Phrase left justified at 6.10 inches 	<ul style="list-style-type: none"> • Helvetica • 8 point • Non-Bold • Non-Italic
[usage]	Usage	<ul style="list-style-type: none"> • 2100-Msr-Qty • Number of decimal positions printed controlled by 2100-Reading-Dec-Pos • Right justified at 7.35 inches 	<ul style="list-style-type: none"> • Helvetica • 8 point • Non-Bold • Non-Italic
[uom]	Unit of Measure	<ul style="list-style-type: none"> • 2100-UOM-Code • Part of the phrase “[uom] [est]” • Phrase left justified at 7.40 inches 	<ul style="list-style-type: none"> • Helvetica • 8 point • Non-Bold • Non-Italic

Non-Variable Components

Text	Optional / Mandatory	Formatting	Font
Meter ID Current Meter Read Date Reading Previous Meter Read Date Reading Total Usage Next Scheduled Read Date	Optional – produced when a 2100 – Service Reading Record is present within a 1300 / 2900 Bill Segment record group.	<ul style="list-style-type: none"> Centered horizontally and vertically within table cell 	<ul style="list-style-type: none"> Helvetica 8 point Non-Bold Non-Italic
All lines except bottom-most horizontal	Optional – produced when a 2100 – Service Reading Record is present within a 1300 / 2900 Bill Segment record group.	Dimensions and placement defined in “Table Characteristics” below.	<ul style="list-style-type: none"> .01 inches thick
Bottom-Most horizontal line	Optional – produced when a 2100 – Service Reading Record is present within a 1300 / 2900 Bill Segment record group.	<ul style="list-style-type: none"> Bottom of line relatively positioned 0.06 inches below baseline of final detail line 	<ul style="list-style-type: none"> .03 inches thick 7.0 inches wide
(KGAL = 1,000 Gallons)	Optional – produced when a 2100 – Service Reading Record is present within a 1300 / 2900 Bill Segment record group.	<ul style="list-style-type: none"> Right justified at 7.65 inches Floats 0.17 inches below bottom horizontal line 	<ul style="list-style-type: none"> Helvetica 8 pt Non-Bold Italic

Table Characteristics

Column	Width
Column – Meter ID	1.30 inches
Column – Current Read Date	1.10 inches
Column – Current Reading	1.10 inches
Column – Previous Read Date	1.10 inches
Column – Previous Reading	1.10 inches
Column – Total Usage	1.30 inches

7.8.10 Service Reading Example

Meter Number	Previous Meter Read		Current Meter Read		Water Usage
	Date	Reading	Date	Reading	
[mtr-id]	[prev-date]	[prev-read] [pe]	[curr-date]	[curr-read] [ce]	[usage] [uom]
(UOM = x Units)					

* UOM = Unit of Measure. UOM can be based on multiples of units for example 1000 gallons.

7.8.11 Adjustments Subsection

Adjustments
[ad-date] [ad-desc] [ad-amt]

Adjustments are events which result in a financial adjustment to an account. One example of an Adjustment is to charge a customer a “tamper fee” for altering a meter. While rare, it is possible to have an infinite number of adjustments for a Service Agreement; therefore, the Adjustments subsection can be split across pages. The DOC1 Application will be coded to insure that a block containing 5 or fewer Adjustments will not be split across two pages.

The Adjustments subsection may be produced for both the Summarized Format and Detailed Format of a Service Agreement.

Variables

Var. ID	Description	Data Source and Editing	Font
[ad-date]	Adjustment Date	<ul style="list-style-type: none"> 3400-Adj-Date Formatted to appear as “12/31/03” Left justified at 4.45 inches Relatively positioned 0.15 inches below preceding item 	<ul style="list-style-type: none"> Helvetica 9 point Non-Bold Non-Italic
[ad-desc]	Adjustment Description	<ul style="list-style-type: none"> 3400-Adj-Type-Desc Left justified Left justified at 5.05 inches Same baseline as [ad-date] 	<ul style="list-style-type: none"> Helvetica 9 point Non-Bold Non-Italic
[ad-amt]	Adjustment Amount	<ul style="list-style-type: none"> 3400-Current-Amt Currency formatted w/o \$ Right justified at 7.65 inches Same baseline as [ad-date] Negative amount will be formatted as “-10.00” 	<ul style="list-style-type: none"> Helvetica 9 point Bold Non-Italic

Non-Variable Components

Text	Optional / Mandatory	Formatting	Font
Adjustments	Optional – control to produce is based upon a switch in the ETS retrieved using the first three bytes of the 1100-Service-Type-Code	<ul style="list-style-type: none"> Left justified at 4.45 inches Relatively positioned 0.15 inches below preceding item 	<ul style="list-style-type: none"> Helvetica 9 point Bold Non-Italic

7.8.12 Adjustments Example

Adjustments		
12/30/03	Meter Tamper Fee	\$100.00
12/30/03	Transfer Fee	\$25.00

8 Post-Composition Requirements

The DOC1 Bill Application DOC1 Post-Composition sequences intermediate print file output from DOC1 Generate so that the letters are sequenced by template code and produces an Audit File.

8.1 Functional Processes

- Separate Bills from the Intermediate print file (produced by DOC1 Generate) into the proper print file based on the type of handling required:
 - ▶ Automated Bills
 - ▶ Foreign Bills
 - ▶ Intercepted Bills
 - ▶ Oversized Bills
 - ▶ Finals Bill with Credit Balance
- For Bills with USA addresses, the Code-1 updated address is placed on the Remittance Coupon
- For each print file output, sequence the Bills as follows:
 - ▶ Automated Bills – USPS Pre-Sort
 - ▶ Foreign Bills – sorted by Country Code
 - ▶ Intercepted Bills – sorted by Intercept ID
 - ▶ Oversized Bills – sorted by number of pages
 - ▶ Final Bills w/ Credit Balance – sorted by account number
- Produce an Audit File identifying
 - ▶ For each output print file (Intercepted, Automated, etc.),
 - *A list of all Bills in that file and the sequence within that file*
 - *Number of Bills in that file*
 - *Number of pages produced for that file*
 - ▶ Number of Bills produced in the entire run
 - ▶ Number of pages produced in the entire run
- Add a sheet sequence number for output handling purposes.
- A basic execution log is produced

8.2 Inputs

- Intermediate Print file produced by DOC1 Generate
- Journals files with originally created by DOC1 Generate and subsequently divided into multiple files, each receiving certain updates:
 - ▶ Automated Journal
 - *Contains records with USA addresses*
 - *Received address correction and formatting by Code-1 Plus*
 - *Pre-Sorted by MailStream*
 - ▶ Foreign Address Journal
 - *Contains records with non-USA addresses*
 - *Sorted by country code so that the print file of Foreign Bills will be sorted by country code*
 - ▶ Special Handling Journal
 - *Contains records with USA addresses for Bills that are either Intercepted or produce enough pages to be classified as oversized*
 - *Sorted so that the print file of Intercepted Bills will sorted by Intercept ID and so that Oversized Bills will be sorted by the number of sheets in the Bill.*

8.3 Outputs

- Up to five print files of Bills – Bills are separated based upon the type of handling required:
 - ▶ Automated Bills
 - ▶ Foreign Addressed Bills
 - ▶ Intercepted Bills
 - ▶ Oversized Bills
 - ▶ Final Bills w/ Credit Balance
- Audit File – lists all letters produced along with totals for the entire run and for each template code.
- Basic execution log

Inserters Requirements

9

9 Inserter Requirements

Inserters marks are machine readable marks placed at a specific location. These marks would pass information to the equipment handling the paper. This information might be page counts, account numbers, dollar amount, or other information that might be needed.

One very common type of mark written to convey inserter instructions is Optical Mark Recognition (OMR), by placing a series of horizontal lines onto the logical pages.

The manufacturer, model, and configuration will affect the type, format and placement of OMR and or barcodes to control post print processes.

The illustration to the right reflects the location of the OMR marks

In this one-sheet Bill example, the following OMR marks are printed:

- ▶ Zip Mark
- ▶ Page Num (weight 1)
- ▶ End of Set
- ▶ Bench Mark

PWR ENERGY
5555 MAIN STREET ROAD, CITY, STATE 12345-6789
CUSTOMER INQUIRIES: (555) 123-4567
TOLL FREE: (800) 555-1234
24 HOUR EMERGENCY (555) 987-6543

DAN SMITH
Account Number: 999999999
Billing Date: 11/30/2005
Due Date: 12/31/2005

Page 1 of 1

Important Customer Message:
Hurricane Katrina Relief

Account Summary as of June 30, 2005

Previous Balance	62.13
Payments Received	-61.13
Total Corrections	-1.00
Balance Forward	0.00
Total Adjustments	.52
Current Charges - Water/WW/Irrigation	79.24
Current Charges - Mandatory R/R	135.08
Total Amount To Be Drafted 12/31/2005	\$19.98

Service Address: 5678 Hove Ct, City ST 32825

Residential Water

Meter Number	Previous Meter Read		Current Meter Read		Water Usage
	Date	Reading	Date	Reading	
1234567890	5/30/2005	15 Est	6/29/2005	25 Est	10 KGAL

(UOM = x Units)

Consumption History

Water Residential Service from 5/31/05 - 6/30/05

Meter Fixed Charge \$5.03	5.03
First 3 KGAL at \$0.52 per KGAL	2.76
Next 7 KGAL at \$1.23 per KGAL	8.61
Total of Water Consumption Charges	11.37
Late Payment Penalty	.26
Deposit Interest	.13
Subtotal	\$17.13

Bill Continued

Return This Portion With Your Payment - Please make checks payable to PWR Energy Utilities
Do Not Send Cash Through the Mail
Cash Only Account - Pay in Person

PWR ENERGY

Account Number	Total Due	Due Date	Amount Paid
0123456789	\$19.98	12/31/2005	

DAN SMITH
C/O JAMES SMITH
5678 HOVE CT
CITY ST 12345-6789

SEND PAYMENTS TO:
PWR ENERGY UTILITIES
P.O. Box 123456
CITY, STATE 12345-6789

261379018000000199849

9.1 OMR Mark Characteristics

- Each mark is 0.4 inches in length,
- Each mark is 0.02 inches thick and is a solid line
- The marks are drawn in a horizontal fashion on a physical portrait page
- The top mark is 8.375 inches from the top of the sheet
- The left edge of each mark begins at the edge of the sheet
- The marks are spaced at 8 lines per vertical inch

9.2 Definition of OMR Marks

Mark Number	Vertical Position	Description	Bill Sheet 1	Middle Sheets	Sheet of Bill
11	8.375	Insert 4	Always blank	Always blank	Always blank
10	8.500	Insert 3	Always blank	Always blank	Always blank
9	8.625	Zip Mark	Conditional	Conditional	Conditional
8	8.750	Insert 2	Always blank	Always blank	Always blank
7	8.875	Insert 1	Always blank	Always blank	Always blank
6	9.000	Return Envelope	Conditional	Conditional	Conditional
5	9.125	Page Number (weight of 4)	Conditional	Conditional	Conditional
4	9.250	Page Number (weight of 2)	Conditional	Conditional	Conditional
3	9.375	Page Number (weight of 1)	Conditional	Conditional	Conditional
2	9.500	End of Set	Conditional	Not printed	Always printed
1	9.625	Bench Mark	Always printed	Always printed	Always printed

9.2.1 Controls for Producing OMR Marks

Insert 4	Never printed
Insert 3	Never printed
Zip Mark	Print this when either the Zip Code changes between two Bills or when the MailStream determined Container ID changes.
Insert 2	Never printed
Insert 1	Never printed

Return Envelope	Print this mark when the 0100-APS-Date field is blank.
Page Num (wght 4)	Print this mark when the Bill has either 4 or 5 sheets.
Page Num (wght 2)	Print this mark when the Bill has either 2 or 3 sheets
Page Num (wght 1)	Print this mark when the Bill has either 1, 3 or 5 sheets
End of Set	Printed on the last sheet of a Bill.
Bench Mark	Always printed on every sheet of a Bill

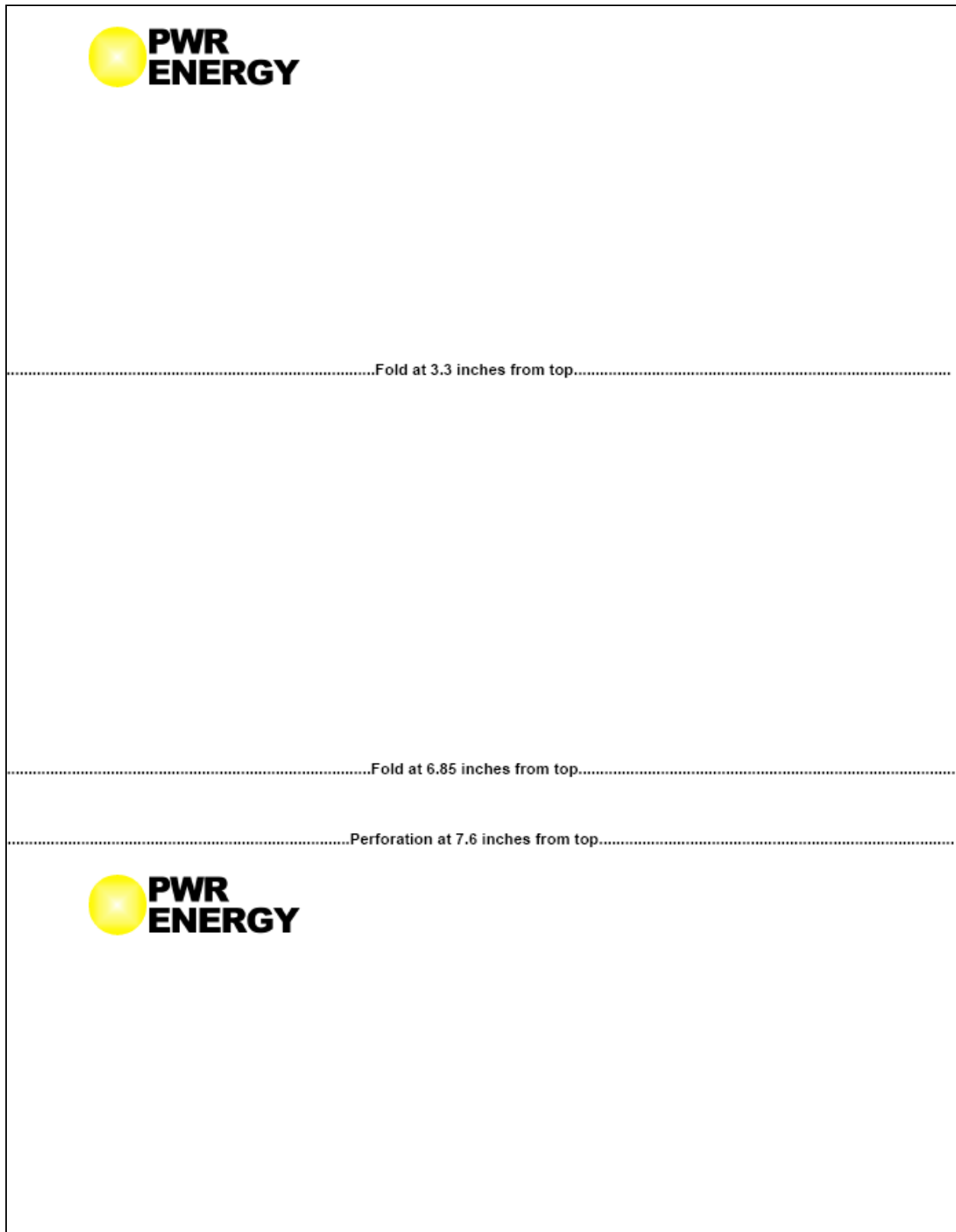


10 Mailing Requirements

Bills will be mailed as first class documents. Postage rates used are to be determined; Customer may choose to outsource mailing operations or keep them in house.. If the mailing address matches the USPS database and is standardized, the Bills produced by the DOC1 Bill Application will be eligible for USPS discounts – they will contain a Delivery Point Bar Code, addresses will be corrected by CASS-certified software (Code-1 Plus), and they will be produced in a Pre-Sort sequence.

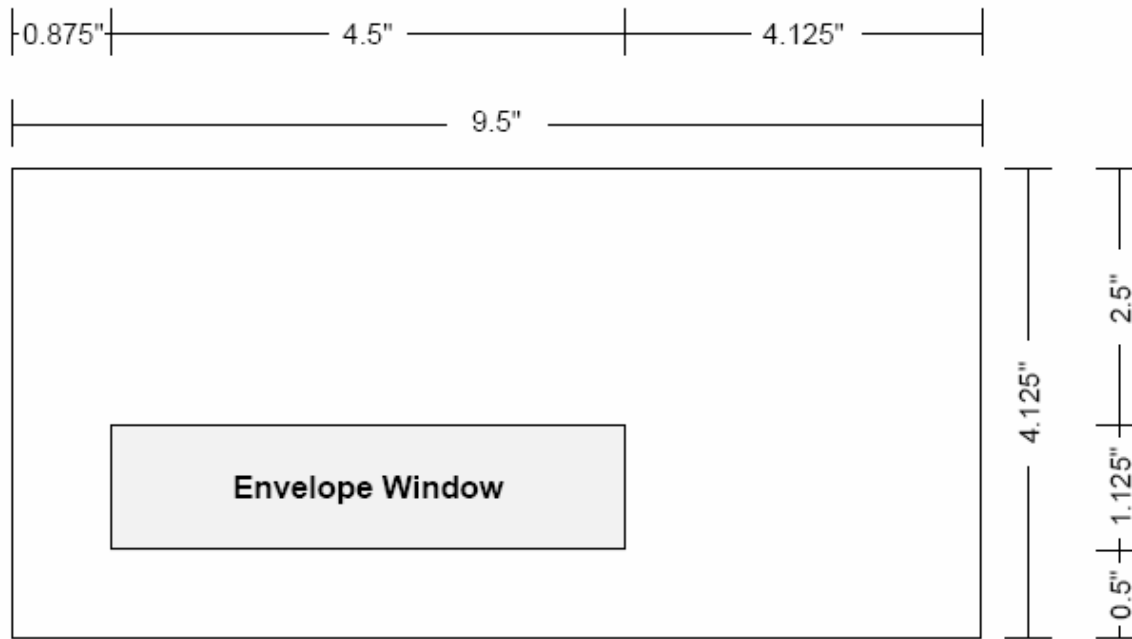
Bills will be horizontally bi-folded in a “Z” fashion with the topmost fold 3.625 inches from the top of the sheet and the lower fold at 7.5 inches from the top of the sheet.

10.1 Sheet Fold Locations



10.2 Envelope Dimensions

Automated Bills will be mailed in a windowed envelope 9.5 inches wide and 4.125 inches tall. The envelope window is 4.5 inches wide and 1.125 inches tall. The left edge of the window is 0.875 inches from the left of the envelope and the top edge is 2.5 inches from the top of the envelope.



Oversized Bills will be inserted into a different envelope. Specifications for that envelope are yet to be determined.

11 Auditing Requirements

The DOC1 Bill Application will produce an Audit File that will identify all Bills produced (Account Number, Bill-ID, Entity Name, and the Output Control Sheet Count Value). The report will group Bills by each printstream created, identifying the printstream, run date/time, and total number of Bills and pages in that printstream.

11.1 Audit File Example

```
SR Run Date: 31 Mar 2005 Run Time: 13:09:11
SF Print File = FOREIGN
PD 000001 0987600000 Dennis Eastland 000002718393 002
EF Bills Produced: 1 Pages Produced: 2
SF Print File = OVERSIZED
PD 000001 9722763326 Craig Barger 019722763326 002
EF Bills Produced: 1 Pages Produced: 2
SF Print File = INTERCEPTED
PD 000001 2145301903 Patrick Magness 012145301903 002
PD 000002 2145307751 City Hall 012145307751 002
EF Bills Produced: 2 Pages Produced: 4
SF Print File = AUTOMATED
PD 000001 0777600000 John Hazelden 000002999393 002
PD 000002 4938820000 Deborah Carnahan 883927463627 002
PD 000003 4889274908 Louise Smith 237483827433 004
PD 000005 4034847200 Arnold Walker 874362354234 004
PD 000007 6084294000 Reggie Woodward 152436438392 002
PD 000008 7498432700 Cynthia Dye 562536372722 004
PD 000010 9823028402 Ted Baker 726525356261 002
PD 000011 9848923742 Diana Williams 126352627287 002
PD 000012 8928737293 Homer Kellogg 736535652562 002
EF Bills Produced: 9 Pages Produced: 24
ER Total Bills Produced: 13 Total Pages Produced: 32
```

12 Output Printstreams

From a single Sorted CIS Bill Print extract, the DOC1 Bill Application will produce multiple print files segregating the bills by handling requirements. The print files produced are:

- **Intercepted Bills** – Bills where the 0100-Bill-Intercept-Code is not blank. In the event that a Bill is both Intercepted and Oversized, it will be in the Intercepted Bills print file. If a Bill is both Intercepted and contains a foreign address, it will be in the Intercepted Bills print file. Sequenced by Intercept Code.
 - ▶ Processed by Code-1: Yes
 - ▶ Processed by MailStream: No
 - ▶ Contains OMR Marks: Yes
- **Foreign Addressed Bills** – Bills where the 0100-Bill-Country is not USA. If a Bill is a combination of a foreign address and Oversized, it will be in the Foreign print file; however, if a Bill is both Intercepted and contains a foreign address, it will be in the Intercepted Bills print file. Sequenced by country code.
 - ▶ Processed by Code-1: No
 - ▶ Processed by MailStream: No
 - ▶ Contains OMR Marks: Yes
- **Oversized Bills** – Bills containing more than 5 sheets of paper. If an Oversized Bill is either Intercepted or has a foreign address, the bill will be in either the Intercept print file or the Foreign print file, respectively. Bills in this printstream are sequenced by the number of sheets in the Bill.
 - ▶ Processed by Code-1: Yes
 - ▶ Processed by MailStream: No
 - ▶ Contains OMR Marks: Yes
- **Automated Bills** – all other Bills. These Bills require no special handling. The Bills are printed in the USPS Pre-Sort sequence determined by MailStream.
 - ▶ Processed by Code-1: Yes
 - ▶ Processed by MailStream: Yes
 - ▶ Contains OMR Marks: Yes

13 Project Forms

This section contains various project forms, which include the Detailed Document Specification Acceptance form and Project Change Request form.

13.1 Detailed Document Specification Acceptance

Group 1 Software Professional Services Detailed Document Specification Acceptance

4200 Parliament Place, Suite 600
Lanham, MD 20706
1-800-368-5806

Client Name: CIS DOC1 Bill Template

Date: May 24, 2006

Project Name: Bill Project
Detail Design Specifications

Revision: 0.0

Overview:

The Detailed Design Document covers critical design elements of the Bill Print. This document covers the Detailed Design for the Designer and PCE requirements for the project including the document design and flow, font information, system flow and detailed information about the DOC1 Bill Application. Please sign/date the bottom to acknowledge approval of this document.

Customer Representative

☐ Accepted

Signature: _____

☐ Accepted with annotated changes

Name: _____

☐ Not Accepted

Date: _____

13.2 Project Change Request



Project Change Request

Client Name:
Name of Project: Bill Project

Contract No.
PCR No. 001

Description of Changes/Additions:

Proposed Implementation:

Estimated Time / Cost:

Client Acceptance

<input type="checkbox"/> Accepted	Signature: _____
<input type="checkbox"/> Accepted with annotated changes	Name: _____
<input type="checkbox"/> Not Accepted	Date: _____

Group 1 Acceptance

<input type="checkbox"/> Accepted	Signature: _____
<input type="checkbox"/> Accepted with annotated changes	Name: _____
<input type="checkbox"/> Not Accepted	Date: _____

14 Glossary of Terminology

1-up	A print style where a physical sheet will contain only one logical page. Typically, the paper size is US Letter and the document is formatted for US Letter paper.
2-up	A print style where a physical sheet is divided into two side-by-side logical pages and the actual pages are printed within these logical pages. For example two 8.5x11 logical pages could be printed side-by-side on a 17x11 sheet.
4-up	A print style where a physical sheet is divided into four logical pages (two pages side-by-side above another two side-by-side pages) and the actual pages are printed within these logical pages.
Baseline	For text, the imaginary horizontal line on which characters “sit.”
Business Logic	With Designer, document logic and/or paragraphs that is maintained as an independent file within the DOC1 Repository. A single Business Logic may be called by multiple Documents
CASS	Coding Accuracy Support System. A USPS-provided system that certifies address correction software to correctly match and correct addresses. Code-1 Plus is CASS certified.
Code-1 Plus	Group 1 software product that performs address standardization (formatting), correction, and validation necessary to qualify for USPS postal discounts; produces USPS 3553 CASS Report
Control File (.CTL)	PCE Application rules; this is an interpretative file and is not compiled.
Data Alias	An name of a data item that is independent of the actual physical file; Data Aliases are matched to actual Data Fields in the Data Map.
Data Dictionary	A collection of Data Aliases.
Data Field	Within the Data Format, the definition of an individual field of data in a record.
Data Flow	Group 1 Software produce that retrieves and manipulates data from various sources (files and databases) and stores the results in an output file.
Data Format	Defines the type of structure of data input to the DOC1 application. Describes individual fields in terms of names, data type, lengths, etc.

Data Map	A cross-reference that matches data fields in the Data Format to Data Aliases within a DOC1 application.
Designer	DOC1 Workstation module that combines the text, chart, and graphical elements used to compose a DOC1 document allowing a user to design pages with conditional logic to fulfill the requirements of a given application.
Document	Within Designer, the basic design unit of a Publication. The sum total of logical and visual elements referring to one type of final output.
Document Content	A visual piece of a document such as a letterhead, a paragraph, a line, a box, shading, or an image.
Document Record Group	The logical group of one or more records that make up all of the data for a document (i.e., a Letter, a Bill, a Statement, etc.).
DGP	DOC1 “Design, Generate, and Print”
DIME	Dynamic Internet Mailing Engine. This DOC1 program divides the composite PDF output from DOC1 Generate into multiple PDF files, one per letter/bill and, optionally, mails each PDF to a specified e-mail addresses.
DOC1 Generate	DOC1 Production Engine that applies compiled Application Rules (.HIP) against the Letter data and outputs formatted Letters and a Journal
Duplex	Print that is produced on both sides of a sheet of paper.
E2	Group 1 Software suite of software products for archiving and viewing documents.
E2 Present and Pay	A system within the Group 1 e2 Product Suite that enables a consumer to retrieve, view, and pay their bill over the Internet.
E2 Vault	Group 1 Software product which ingests and compresses printstreams and stores these images in the Vault for later human retrieval and viewing on a workstation.
Flow	A DOC1 feature where a document objects (line, text, shading, graphic, chart, etc.) may be positioned relative to the location of another document object. In other words, two detailed lines would be positioned one just below the other. Within a letter, the second paragraph would “flow” below the first paragraph; within a bill, a transaction detail line would “flow” below the transaction table header.
Font	A collection of graphic images used to present characters within a given style. Fonts differ by emphasis (bold vs. non-bold), stress (Italic vs. Roman), point size, and typeface (Helvetica, Times, Optima, etc.).
.HIP	Produced by “Publish” process within Designer, this is the compiled version of the Application Rules; used by DOC1 Generate to format the Letter
Image	A graphic used in a document. Examples include signatures, logos, icons, and pictures.
Index Data	Data used by DOC1 Archive to identify documents for retrieval purposes. Typical index data includes Policy Number, Policy Holder Name, and Agent Number.

Ingestion	DOC1 Archive process that loads the content of a formatted printstream into the DOC1 Archive Vault. This process also requires a Archive Journal that contains document index data.
.INI	Initialization file used by either DOC1 Generate or PCE to identify input data files, output files, and configuration files such as a Look-up file, or .CTL file.
.OPS	
Issue	A process within the Designer where a component of the application (data format, document, etc) is promoted from a coding stage to be available for inclusion in the next .HIP file output from the Publish process.
Iproof	Group 1 Software product that presents a composed printstream of documents on a workstation in WYSIWYG fashion and allows a user to indicate approval/disapproval of individual documents (letters, bills, policies, etc.)..
Journal	A file used to index a printstream. Most commonly produced by DOC1 Generate and read by DOC1 PCE. Typically has one record per document (bill, letter, etc.) in the printstream. Each record contains data such as a Vector, number of pages in the document, name and address information, audit information, inserter controls, criteria for dividing the intermediate print file into final print files. Also used by Code-1 and MailStream.
Landscape	Orientation of a composed image on a page. For landscape printing on a US-Letter sized sheet, the 11 inch edge would be the top / bottom of the sheet. The term landscape is used as landscape pictures are typically painted in this orientation.
Locale	A pre-defined setting where DOC1 Designer menus and windows use the local language and DOC1 Generate uses local standards for data formatting (dates and currency) for a particular country.
MailStream Plus	Group 1 Software product that sorts an address file following USPS Pre-Sort rules for PAVE certification and produces a USPS 3600 Postage Report
Mandatory	A record that must be present within the Document Record Group.
Orphan	A print element that appears at the top of a page or column that is separated from its logical group.
Parent / Child	A data hierarchy where a logical group of records begins with one particular record type and ends with a different record type; this hierarchy may be repeated within a Document Record Group. An example would be where a Parent / Child is used to represent multiple utility services within a letter; Parent / Children may be nested and may contain Transaction records.
PAVE	Pre-Sort Accuracy, Validation, and Evaluation. A USPS-provided system that certifies pre-sort software to sort address files in accordance with the USPS Domestic Mail Manual standards.. MailStream Plus is PAVE certified.

PCE	Post Composition Engine. DOC1PCE is production engine used to post process the data stream produced by DOC1 Generate. Such post processing tasks would be to resolve page 1 of x (for very large documents), create OMR marks, produce audit files, re-sequence a print file to reflect postal pre-sorting, etc.
Portrait	Orientation of a composed image on a page. For portrait printing on a US-Letter sized sheet, the 8.5 inch edge would be the top / bottom of the sheet. The term portrait is used as portrait pictures are typically painted in this orientation.
Print Description Language (PDL)	A document presentation protocol containing instructions for visually presenting (printing) text and graphics. DOC1 outputs in a number of PDL's including AFPDS, Metacode, PostScript, PDF, IJPDS, and PCL.
Printstream	A file containing composed images in a print description language.
.PRM	File containing parameter definitions for either MailStream Plus or Code-1 Plus.
Publication	Within Designer, an assembly of one or more Documents.
Publish	A process within the Designer which compiles the Publication into an optimized format (aka a ".HIP" file) for use by DOC1 Generate
Repository	A SQL database used to house the components (Publications, Documents, Business Logic, Data Formats, Data Maps, etc.) of DOC1 applications.
Sample Data	Used for application development, a file of test data representative of the actual production data.
Simplex	Print that is produced on only one side of a sheet of paper.
StreamWeaver	Software post processor to the data stream produced by DOC1 Generate. Typical post processing tasks include resolve page 1 of x, create OMR marks, print file splitting, etc.
Transaction Line	A line of variable data occurring within a table of transactions (i.e., a table of phone calls, credit card charges, etc.).
Transaction Record	Records with the same record key grouped together in succession each containing data that equates to a transaction line in a transaction table.
Text Look-Up (.ETS)	A file that serves as a keyed look-up table to retrieve data specific to the application. A common use of the look-up file is to use a two-byte state code as a key to retrieve a fully spelled state name; i.e., a key of TX would retrieve Texas.
US Legal	Paper size 8.5 inches wide and 14.0 inches long
US Letter	Paper size 8.5 inches wide and 11.0 inches long
USPS	United States Postal Service.
Vault	Database used by e2 Vault where electronic versions of the Document are kept in compressed format for a permanent record.

Vector	DOC1 journal-based variable used to locate an individual document within a printstream. For Unix and Windows environments, the value represents the number of bytes from the beginning of the printstream to the first page of a document. For MVS environments, the value represents the relative record number in a VSAM KSDS where the first document page is located.
Widow	A print element that appears at the bottom of a page or column that is separated from its logical group.
WYSIWYG	Acronym for “What You See Is What You Get”. Refers to a workstation displayed image of a document being an exact representation of the printed version of that document.

15 File Layouts

The following file layouts are included in this section:

- DOC1Gen Input – Sorted CIS Bill Print Extract
- Name/Address – Code-1 / Mailstream / PCE Journal File
- Audit File
- Look-up (ETS) File

15.1 DOC1 Generate Input – Sorted CIS Bill Print Extract

15.1.1 Sortkey – All Records Types

All records in the CIS Bill Print Extract contain a 194-byte sortkey; this sortkey begins in byte 5 of the record. Sorting the CIS Bill Print Extract produces two results:

1. Intercepted Bills are sortkey by Intercept Code
2. Records are re-arranged within a Bill to present the data to the DOC1 Bill Application in the sequence expected. Additionally, Service Agreements are re-sequenced according to print priorities defined within CIS.

Field Description	Start Pos.	Field Length	Data Type	Comments
Intercept Code	5	8	String	
Bill ID	13	12	String	
Sequence Number	25	2	Integer	
Copy Number	27	1	Integer	
Bill Record Group	28	2	String	“10” Bill Record “20” Current Charge Detail “30” Payment Detail “40” Bill Message Detail “50” Bill End
Premise State	30	6	String	
Premise City	36	30	String	
Premise Address 1	66	35	String	
Premise ID	101	10	String	
Premise Record Group	111	2	String	“10” Premise Record “20” SA Level Record “30” Premise End Record
SA Print Order Priority	113	2	String	
SA ID	115	10	String	

Field Description	Start Pos.	Field Length	Data Type	Comments
SA Record Group	125	2	String	“10” SA Detail “20” Histogram Detail “30” Current Charge “40” Adjustment Detail “50” SA End
Bill Segment End Date	127	10	Date	YYYY-MM-DD
Bill Segment ID	137	12	String	
Bill Segment Group	149	2	String	“10” Detail “20” Calc Group “30” Read Detail “40” Service Quantity “50” Item Detail “60” End
Bill Calc Header Sequence	151	2	Integer	
Bill Calc Header Group	152	2	String	“10” – Calc Header “20” – Calc Line “30” – End
Line Sequence	154	4	String	
Filler	155	1	String	Unused
Post Code	156	15	String	

15.1.2 0010 – File Header Record

This record only occurs once in the file and is the first record of the file (after the sort prior to DOC1 Generate is executed). The global information includes system time of extraction, batch number, batch code, etc.

Record Attributes

- Start of Document
- Occurs once per file
- First record of file
- Record key = “0010”

Field Name	Start	Field	Data	Comments
------------	-------	-------	------	----------

	Pos.	Length	Type	
Record Key	1	4	String	Value of “0010”
Sortkey	5	170	String	See prior definition
0010-Batch-Code	175	8	String	
0010-Batch-Number	183	10	Integer	
0010-Batch-Rerun-Number	193	10	Integer	
0010-Bill-Count	203	10	Integer	
0010-Extract-Date	213	10	Date	
0010-Extract-Time	223	16	String	
0010-Start-Bill-ID	239	10	String	
0010-End-Bill-ID	249	10	String	
0010-Thread-Number	259	10	Integer	
0010-Thread-Count	269	10	Integer	

15.1.3 0100 – Start of Bill Record

The Start of Bill Record indicates the beginning of the group of records comprising a Bill. The Start of Bill Record is paired with a 9999 – End of Bill Record. This record contains information global to the entire Bill including customer information such as name, address, account number and account information such as previous balance, total payments received, past-due balance, current balance, billing date, and due date.

Record Attributes

- Start of Document
- Occurs once per Bill
- Record key = “0100”

Field Name	Start Pos.	Field Length	Data Type	Comments
Record Key	1	4	String	Value “0100”
Sortkey	5	199	String	See prior definition
0100-Bill-ID	204	12	String	
0100-Account-Num	216	10	String	
0100-Bill-Date	226	10	Date	YYYY-MM-DD
0100-Due-Date	236	10	Date	YYYY-MM-DD
0100-Copy-Number	246	1	Integer	

0100-Number-Copies	247	1	Integer	
0100-Intercept-ID	248	8	String	
0100-Bill-Format-Flag	256	2	String	
0100-Reprint-SW	258	1	String	
0100-Cash-Only-SW	259	1	String	Cash only switch
0100-Current-Balance	260	16	Decimal	13.2
0100-Current-Charges	276	16	Decimal	13.2
0100-Current-Corrections	292	16	Decimal	13.2
0100-Current-Adjustments	308	16	Decimal	13.2
0100-Current-Payments	324	16	Decimal	13.2
0100-Current-Previous-Balance	340	16	Decimal	13.2
0100-Total-Balance	356	16	Decimal	13.2
0100-Total-Charges	372	16	Decimal	13.2
0100-Total-Corrections	388	16	Decimal	13.2
0100-Total-Adjustments	404	16	Decimal	13.2
0100-Total-Payments	420	16	Decimal	13.2
0100-Total-Previous-Balance	436	16	Decimal	13.2
0100-Currency-Code	452	3	String	
0100-Delinquent-Amount	455	16	Decimal	13.2
0100-Customer-PO-ID	471	20	String	
0100-Account-Entity-Name	491	50	String	
0100-Entity-Name	541	50	String	
0100-Bill-Country	591	3	String	
0100-Bill-Address1	594	64	String	
0100-Bill-Address2	658	64	String	
0100-Bill-Address3	722	64	String	
0100-Bill-Address4	786	64	String	
0100-Bill-City	850	30	String	
0100-Bill-Number1	880	6	String	
0100-Bill-Number2	886	4	String	
0100-Bill-House-Type	890	2	String	
0100-Bill-County	892	30	String	
0100-Bill-State	922	6	String	
0100-Bill-Postal	928	9	String	

0100-Bill-Postal-Delivery-Point	937	2	String	
0100-Bill-Postal-Check-Digit	939	1	String	
0100-Geo-Code	940	11	String	
0100-In-City-Limit	951	1	String	
0100-Final-Bill-SW	952	1	String	
0100-APS-Date	953	10	Date	YYYY-MM-DD
0100-In-Budget-SW	963	1	String	
0100-Person-ID	964	10	String	
0100-Bill-Address-Source-Flage	974	4	String	

15.1.4 0300 – Current Charge Record

The Current Charge Record indicates the type of charge and the amount of the charge for the billing period. This record may occur multiple times within a Bill Record Group. Each occurrence of this record causes a Current Charge detail line produced in the Account Summary – with the exceptions noted in the Document Behavior section of this document. If there are no Current Charges for the billing period, the Bill Record Group will not contain any Current Charge Records and there will be no Current Charge detail lines produced in the Account Summary section of the Bill.

Record Attributes

- Non-Compulsory / Single Iterated Key – included for a Bill only when Current Charges are present
- May occur multiple times within a Bill
- Record key = “0300”

Field Name	Start Pos.	Field Length	Data Type	Comments
Record Key	1	4	String	Value “0300”
Sortkey	5	199	String	See prior definition
0300-Debt-Class-Code	204	4	String	
0300-Debt-Class-Desc	208	30	String	
0300-Current-Charge-Amt	238	16	Decimal	13.2
0300-Total-Charge-Amt	258	16	Decimal	13.2

15.1.5 0600 – Payment Record

The Payment Record contains the Payment details for each Payment received during the billing period. The payment date and amount printed are taken from this record.

None of the information contained in this record is printed by the DOC1 Bill Application.

Record Attributes

- Non-Compulsory / Single Iterated Key – included for a Bill only when Payments are present
- May occur multiple times within a Bill
- Record key = “0600”

Field Name	Start Pos.	Field Length	Data Type	Comments
Record Key	1	4	String	Value “0600”
Sortkey	5	199	String	See prior definition
0600-FT-Type	204	2	String	
0600-Payment-Date	206	10	Date	YYYY-MM-DD
0600-Cancel-Reason-Code	216	4	String	
0600-Cancel-Reason-Desc	220	30	String	
0600-Current-Payment-Amt	250	16	Decimal	13.2
0600-Total-Payment-Amt	266	16	Decimal	13.2

15.1.6 0700 – Deposit Record

The Deposit Record contains the Deposit details for each type of Deposit on account. The deposit type and amount printed are taken from this record. This record is produced once per Deposit and each occurrence of the record causes a Deposit detail line produced after the services detailed. If no Deposits are present for the account, the Bill Record Group will not contain a Deposit Record and no Deposit detail lines will be produced in the Bill.

Record Attributes

- Non-Compulsory / Single Iterated Key – included for a Bill only when Deposits are present for an account
- May occur multiple times within a Bill
- Record key = “0700”

Field Name	Start	Field	Data	Comments
------------	-------	-------	------	----------

	Pos.	Length	Type	
Record Key	1	4	String	Value “0700”
Sortkey	5	199	String	See prior definition
0700-Deposit-Class-Code	204	8	String	
0700-Deposit-Class-Description	212	30	Date	YYYY-MM-DD
0700-Deposit-Amount-On-Hand	242	16	Decimal	13.2

15.1.7 0900 – Start of Premise Record

The Start of Premise Record denotes the beginning of a group of services provided for a particular location. For each Start of Premise Record, a corresponding 3700 – End of Premise record must be present within the bill record group; typically, a series of different record types detailing the service provided is found between the Start of Premise and End of Premise records. The Start of Premise/End of Premise group of records may be repeated within the Bill Record Group, once per location. This record contains information such as premise id and premise (service) address. In situations such as a Final Bill showing only a payment, the Start of Premise/End of Premise group may be omitted.

Record Attributes

- Non-Compulsory / End Range Iteration – if the Bill contains no Premises, then the 0900/3700 Premise range iteration is not included in the Bill
- May occur multiple times within in the Bill – there is a one-to-one correlation with the 3700 record; for each 3700 present in the Bill, a 0900 is required – will occur once per service at a premise
- Record key = “0900”

Field Name	Start Pos.	Field Length	Data Type	Comments
Record Key	1	4	String	Value “0900”
Sortkey	5	199	String	See prior definition
0900-Non-Premise-SW	204	1	String	
0900-Premise-ID	205	10	String	
0900-Premise-Country	215	3	String	
0900-Premise-Address1	218	64	String	
0900-Premise-Address2	282	64	String	
0900-Premise-Address3	346	64	String	
0900-Premise-Address4	410	64	String	
0900-Premise-City	474	30	String	
0900-Premise-Number1	504	6	String	

0900-Premise-Number2	510	4	String	
0900-Premise-House-Type	514	2	String	
0900-Premise-County	516	30	String	
0900-Premise-State	546	2	String	
0900-Premise-Postal	548	12	String	
0900-Premise-Geo-Code	560	11	String	
0900-Premise-In-City-Limit-SW	571	1	String	

15.1.8 1100 – Start of Service Agreement Record

The Start of Service Agreement Record denotes the beginning of a Service provided and the details of that Service. For each Start of Service Agreement Record, a corresponding 3600 – End of Service Agreement record must be present; typically, a series of different record types subordinate to the Service Agreement is found between the Start of Service Agreement and End of Service Agreement records. The Start of Service Agreement / End of Service Agreement group of records may be repeated, once per Service provided per location. This record contains information such as service type code, service description, business unit, customer read flag, etc.

Record Attributes

- Non-Compulsory / End Range Iteration – if the Premise contains no Service Agreements, then the 1100/3600 Service Agreement range iteration is not included within the 0900/3700 Premise range iteration
- May occur multiple times within the 0900/3700 Premise range iteration – there is a one-to-one correlation with the 3600 record; for each 3600 present in the Bill, a 1100 is required – will occur once per service at a premise
- Record key = “1100”

Field Name	Start Pos.	Field Length	Data Type	Comments
Record Key	1	4	String	Value “1100”
Sortkey	5	199	String	See prior definition
1100-SA-ID	204	10	String	
1100-Old-Account-Number	214	15	String	
1100-Customer-Read-Flag	229	2	String	
1100-SIC-ID	231	4	String	
1100-SIC-Desc	235	30	String	
1100-Business-Unit	265	10	String	
1100-Service-Type-Code	275	8	String	

Field Name	Start Pos.	Field Length	Data Type	Comments
1100-Service-Type-Desc	283	30	String	
1100-Service-Type-Default-Desc	313	80	String	
1100-SVC-Type-Code	393	2	String	
1100-SVC-Type-Desc	395	30	String	
1100-Rev-CL-Code	425	8	String	
1100-Char-Prem-ID	433	10	String	
1100-Rel-ID	443	10	String	
1100-Rel-Type-Code	453	8	String	
1100-Rel-Type-Description	461	30	String	
1100-SPR-Code	491	12	String	
1100-SPR-Description	503	50	String	
1100-SPR-Entity-Name	553	50	String	

15.1.9 1300 – Start of Bill Segment Record

The Start of Bill Segment Record denotes the beginning of the combination of Bill Calculation Information and Service Reading Information. For each Start of Bill Segment Record, a corresponding 2900 – End of Bill Segment Record must be present; within the Start of Bill Segment / End of Bill Segment pair, subordinate record groups will be present for Bill Calculation and for Service Reading.

Record Attributes

- Non-Compulsory / End Range Iteration – if the Service Agreement contains no Segments, then the 1300/2900 Bill Segment range iteration is not included.
- May occur multiple times within the 1100/3600 Service Agreement range iteration – there is a one-to-one correlation with the 2900 record; for each 2900 present in the Bill, a 1300 is required.
- Record key = “1300”

Field Name	Start Pos.	Field Length	Data Type	Comments
Record Key	1	4	String	Value “1300”
Sortkey	5	199	String	See prior definition
1300-Start-Date	204	10	Date	YYYY-MM-DD
1300-End-Date	214	10	Date	YYYY-MM-DD

1300-Closing-Bill-Seg-SW	224	1	String	
1300-Estimate-SW	225	1	String	
1300-Bill-Cycle-Code	226	4	String	
1300-SQ-Override-SW	230	1	String	
1300-Item-Overview-SW	231	1	String	
1300-Bill-Seg-Stat-Flag	232	2	String	
1300-Cancel-Reason-Code	234	4	String	
1300-Cancel-Reason-Desc	238	30	String	
1300-Current-Amt	268	16	Decimal	13.2
1300-Total-Amt	284	16	Decimal	13.2
1300-BOD-Date	300	10	Date	YYYY-MM-DD
1300-BOD-Value	310	60	String`	
1300-Nitrogen-Date	370	10	Date	YYYY-MM-DD
1300-Nitrogen-Value	380	60	String	
1300-Phosphorous-Date	440	10	Date	YYYY-MM-DD
1300-Phosphorous-Value	450	60	String	
1300-TSS-Date	510	10	Date	YYYY-MM-DD
1300-TSS-Value	520	60	String	

15.1.10 1500 – Start of Bill Calc Record

The Start of Bill Calc Record denotes the beginning of the detailed charges comprising a service. For each Start of Bill Calc Record, a corresponding 1900 – End of-Bill Calc Record must be present; within the Start of Bill Calc / End of Bill Calc pair, subordinate 1700 – Bill Calc Detail Records may be present. The Start of Bill Calc Record contains the total amount of charge calculated for the bill segment, start date, end date, and description are present.

Record Attributes

- Non-Compulsory / Begin Range Iteration – if the Bill Segment contains no Bill Calc, then the 1500/1900 Bill Calc range iteration is not included.
- May occur multiple times within the Bill Segment 1300/2900 range iteration – there is a one-to-one correlation with the 1900 record; for each 1900 present in the Bill, a 1500 is required.
- Record key = “1500”

Field Name	Start Pos.	Field Length	Data Type	Comments
Record Key	1	4	String	Value “1500”
Sortkey	5	199	String	See prior definition

1500-Start-Date	204	10	Date	YYYY-MM-DD
1500-End-Date	214	10	Date	YYYY-MM-DD
1500-Set-ID	224	10	String	
1500-Read-Schedule-Code	234	8	String	
1500-Calc-Amt	242	16	Decimal	13.2
1500-Desc-on-Bill	258	80	String	

15.1.11 1700 – Bill Calc Detail Record

The Bill Calc Detail Record contains details for the items comprising the charge for a Bill Calc group. This record contains a description and amount that are printed within the Service Agreement. This record is produced once per line item and each record causes a detail line produced in the Service Agreement; typically, several Bill Calc Detail Records are produced within each Bill Calc Group.

Record Attributes

- Non-Compulsory / Single Iterated Key – included for a Bill Calc range iteration only when Bill Calc Detail is present for that service
- May occur multiple times within each instance of the 1500/ 1900 Bill Calc range iteration – example is when multiple Bill Calc Detail lines are to be printed
- Record key = “1700”

Field Name	Start Pos.	Field Length	Data Type	Comments
Record Key	1	4	String	Value “1700”
Sortkey	5	199	String	See prior definition
1700-App-In-Summ-SW	204	1	String	
1700-Bill-Calc-Amt	205	16	Decimal	13.2
1700-Exempt-Amt	221	16	Decimal	13.2
1700-UOM-Code	237	4	String	
1700-TOU-Code	241	8	String	
1700-SQI-Code	249	8	String	
1700-Bill-SQ	257	19	Decimal	12.6
1700-Bill-Calc-Desc	276	80	String	

15.1.12 1900 – End of Bill Calc Record

Paired with the 1500 – Start of Bill Calc Record, the End of Bill Calc Record signals the end of the Bill Calculation detail.

Record Attributes

- Non-Compulsory / End Range Iteration – if the Bill contains no Bill Calc, then the 1500/1900 Bill Calc range iteration is not included.
- May occur multiple times – there is a one-to-one correlation with the 1500 record; for each 1500 present in the Bill, a 1900 is required.
- Record key = “1900”

Field Name	Start Pos.	Field Length	Data Type	Comments
Record Key	1	4	String	Value “1900”
Sortkey	5	199	String	See prior definition

15.1.13 2100 – Service Reading Record

The Service Reading Record contains consumption details such as the prior reading and current reading, an indicator that the reading was estimated, the prior read date and current read date, a multiplier factor, units of measure, and time-of-use from the reading of a meter device. The Service Reading Record may be present multiple times within a Bill Segment group – each instance causes a detail line to be printed. There will be multiple Service Reading Records if multiple meters are used for the service, if there are multiple time-of-use values for the reading (i.e., off-peak vs. peak consumption), or if a meter change occurred. Service Reading Records may be omitted within a Bill Segment group for non-metered services such as Garbage Disposal, Payment Arrangements or Fire Protection.

Record Attributes

- Non-Compulsory / Single Iterated Key – will be omitted from a Bill Segment when the service is non-metered
- May occur multiple times within each instance of the 1300/ 2900 Bill Segment range iteration – examples would be a meter change during a billing period or multiple meters for a service
- Record key = “2100”

Field Name	Start Pos.	Field Length	Data Type	Comments
Record Key	1	4	String	Value “2100”
Sortkey	5	199	String	See prior definition
2100-SP-ID	204	10	String	
2100-Badge-Number	214	16	String	
2100-UOM-Code	230	4	String	
2100-TOU-Code	234	8	String	
2100-Reading-Dec-Pos	242	1	Integer	Number of Decimal Pos to Print in Start/End Read Qty

Field Name	Start Pos.	Field Length	Data Type	Comments
2100-Start-Read-Qty	243	16	Decimal	9.6
2100-Start-Read-Date	259	10	Date	YYYY-MM-DD
2100-Start-Read-Est-SW	285	1	String	
2100-End-Read-Qty	286	16	Decimal	9.6
2100-End-Read-Date	302	10	Date	YYYY-MM-DD
2100-End-Read-Est-SW	328	1	String	
2100-Msr-Qty	329	19	Decimal	12.6
2100-Usage-Flag	348	2	String	
2100-Use-Percent	350	3	String	
2100-How-To-Use-Flag	353	2	String	
2100-Consumer-Sub-Flag	355	2	String	
2100-Mst-Peak-Quantity-SW	357	1	String	
2100-Reg-Constant	358	13	Decimal	6.6
2100-Qty-Dec-Pos	371	1	Integer	Number of Decimal Pos to Print in Final Reg Qty
2100-Final-UOM	372	4	String	
2100-Final-TOU	376	8	String	
2100-Final-Reg-Qty	384	19	Decimal	12.6
2100-Tap-Size	403	16	String	
2100-Number-of-Days	419	3	Integer	

15.1.14 2400 – Service Quantity Record

The Service Quantity Record contains information such as unit-of-measure code, time-of-use code, SQI code, SQ dec pos, and bill SQ.

None of the information contained in this record is printed by the DOC1 Bill Application.

Record Attributes

- Non-Compulsory
- The data on this record is not used in the DOC1 Bill Application
- May occur multiple times within each instance of the 1300/ 2900 Bill Segment range iteration
- Record key = “2400”

Field Name	Start Pos.	Field Length	Data Type	Comments
Record Key	1	4	String	Value “2400”
Sortkey	5	199	String	See prior definition
2400-UOM-Code	204	4	String	
2400-TOU-Code	208	8	String	
2400-SQI-Code	216	8	String	
2400-SQ-Dec-Pos	224	1	Integer	
2400-Bill-SQ	225	19	Decimal	12.6

15.1.15 2700 – Item Detail Record

The Item Detail Record contains information for a Bill Segment item. Information such as the start date, end date, item count, and the item description is contained in this record.

None of the information contained in this record is printed by the DOC1 Bill Application.

Record Attributes

- Non-Compulsory
- The data on this record is not used in the DOC1 Bill Application
- May occur multiple times within each instance of the 1300/ 2900 Bill Segment range iteration
- Record key = “2700”

Field Name	Start Pos.	Field Length	Data Type	Comments
Record Key	1	4	String	Value “2700”
Sortkey	5	199	String	See prior definition
2700-Start-Date	204	10	Date	YYYY-MM-DD
2700-End-Date	214	10	Date	YYYY-MM-DD
2700-Item-Number	224	12	Decimal	9.2
2700-Item-Type	236	30	String	

15.1.16 2900 – End of Bill Segment Record

Paired with the 1300 – Start of Bill Segment Record, the End of Bill Segment Record signals the end of the Bill Calculation and Service Reading.

Record Attributes

- Non-Compulsory / End Range Iteration – if the Bill contains no Segments, then the 1300/2900 Bill Segment range iteration is not included.
- May occur multiple times – there is a one-to-one correlation with the 1300 record; for each 1300 present in the Bill, a 2900 is required.
- Record key = “2900”

Field Name	Start Pos.	Field Length	Data Type	Comments
Record Key	1	4	String	Value “2900”
Sortkey	5	199	String	See prior definition

15.1.17 3100 – Histogram Record

The Histogram Record contains historical consumptive data which is used for the creation of a bar chart on the statement. The record may contain up to 13 periods of consumptive data. While multiple Histogram Records may be present within a Service Agreement group, only one bar chart is produced which reflects the information from the last Histogram Record.

Record Attributes

- Non-Compulsory / Single Iterated Key – included for a Bill Segment range iteration only when a Histogram chart is to be printed for a Bill Segment
- May occur multiple times within each instance of the 1300/ 2900 Bill Segment range iteration – however, only the data from the last instance will be printed
- Record key = “3100”

Field Name	Start Pos.	Field Length	Data Type	Comments
Record Key	1	4	String	Value “3100”
Sortkey	5	199	String	See prior definition
3100-UOM-Code	204	4	String	
3100-TOU-Code	208	8	String	
3100-SQI-Code	216	8	String	
3100-SQI-Dec-Pos	224	1	Integer	
3100-Num-Periods	225	2	Integer	Number of History Periods Present
3100-Chart-Max	227	19	Decimal	12.6

Field Name	Start Pos.	Field Length	Data Type	Comments
3100-Curr-Read-Date	246	10	Date	YYYY-MM-DD
3100-Curr-Read-Amt	256	19	Decimal	12.6
3100-Curr-01-Read-Date	275	10	Date	YYYY-MM-DD
3100-Curr-01-Read-Amt	285	19	Decimal	12.6
3100-Curr-02-Read-Date	304	10	Date	YYYY-MM-DD
3100-Curr-02-Read-Amt	314	19	Decimal	12.6
3100-Curr-03-Read-Date	333	10	Date	YYYY-MM-DD
3100-Curr-03-Read-Amt	343	19	Decimal	12.6
3100-Curr-04-Read-Date	362	10	Date	YYYY-MM-DD
3100-Curr-04-Read-Amt	372	19	Decimal	12.6
3100-Curr-05-Read-Date	391	10	Date	YYYY-MM-DD
3100-Curr-05-Read-Amt	401	19	Decimal	12.6
3100-Curr-06-Read-Date	420	10	Date	YYYY-MM-DD
3100-Curr-06-Read-Amt	430	19	Decimal	12.6
3100-Curr-07-Read-Date	449	10	Date	YYYY-MM-DD
3100-Curr-07-Read-Amt	459	19	Decimal	12.6
3100-Curr-08-Read-Date	478	10	Date	YYYY-MM-DD
3100-Curr-08-Read-Amt	488	19	Decimal	12.6
3100-Curr-09-Read-Date	507	10	Date	YYYY-MM-DD
3100-Curr-09-Read-Amt	517	19	Decimal	12.6
3100-Curr-10-Read-Date	536	10	Date	YYYY-MM-DD
3100-Curr-10-Read-Amt	546	19	Decimal	12.6
3100-Curr-11-Read-Date	565	10	Date	YYYY-MM-DD
3100-Curr-11-Read-Amt	575	19	Decimal	12.6
3100-Curr-12-Read-Date	594	10	Date	YYYY-MM-DD
3100-Curr-12-Read-Amt	604	19	Decimal	12.6

15.1.18 3400 – Adjustment Record

The Adjustment Detail Record contains information regarding any Adjustment made to a Service. Information such as adjustment date, adjustment type code, adjustment description, and total adjustment amount are included in this record. The Adjustment Record may be present multiple times within a Service Agreement group – each instance results in an Adjustment detail line being printed in the Service Agreement.

Record Attributes

- Non-Compulsory / Single Iterated Key – included for a Service Agreement only when Adjustments are present for that service
- May be present when a Service Agreement has no Bill Segment (1300/2900)
- May occur multiple times within each instance of the 1100/ 3600 Service Agreement range iteration – examples would be multiple Adjustments for a service
- Record key = “3400”

Field Name	Start Pos.	Field Length	Data Type	Comments
Record Key	1	4	String	Value “3400”
Sortkey	5	199	String	See prior definition
3400-Adj-Date	204	10	Date	YYYY-MM-DD
3400-FT-Type	214	2	String	
3400-Current-Amt	216	16	Decimal	13.2
3400-Total-Amt	232	16	Decimal	13.2
3400-Adj-Type-Code	248	8	String	
3400-Adj-Type-Desc	256	30	String	
3400-Adj-Desc	286	80	String	
3400-Cancel-Reason-Code	366	4	String	
3400-Cancel-Reason-Desc	370	30	String	

15.1.19 3600 – End of Service Agreement Record

Paired with the 1100 – Start of Service Agreement Record, the End of Service Agreement Record signals the end of details for a service.

Record Attributes

- Non-Compulsory / End Range Iteration – if the Bill contains no Service Agreements, then the 1100/3600 Service Agreement range iteration is not included.
- May occur multiple times – there is a one-to-one correlation with the 1100 record; for each 1100 present in the Bill, a 3600 is required.
- Record key = “3600”

Field Name	Start Pos.	Field Length	Data Type	Comments
Record Key	1	4	String	Value “3600”

Sortkey	5	199	String	See prior definition
---------	---	-----	--------	----------------------

15.1.20 3700 – End of Premise Record

Paired with the 0900 – Start of Premise Record, the End of Premise Record signals the end of services associated with a particular location.

Record Attributes

- Non-Compulsory – if the Bill contains no Premises (and therefore, no services), then the 0900/3700 Premise range iteration is not included.
- May occur multiple times – there is a one-to-one correlation with the 0900 record; for each 0900 present in the Bill, a 3700 is required.
- Record key = “3700”

Field Name	Start Pos.	Field Length	Data Type	Comments
Record Key	1	4	String	Value “3700”
Sortkey	5	199	String	See prior definition

15.1.21 3900 – Message Record

The Message Record contains message text produced by the CIS system. Multiple Message Records may be produced. Each Bill Message Record will translate into one message in the Messages section of the Bill – with the exceptions noted in the Document Behavior section of this document. If no messages are present, then the Message section is not produced but left blank.

Record Attributes

- Non-Compulsory / Single Iterated Key – included for a Bill only when a Message is to be printed
- May occur multiple times within a Bill
- Record key = “3900”

Field Name	Start Pos.	Field Length	Data Type	Comments
Record Key	1	4	String	Value “3900”
Sortkey	5	199	String	See prior definition
3900-Message-Code	204	4	String	
3900-Message-Priority	208	2	String	

3900-Insert-Code	210	8	String	
3900-Message-Text	218	254	String	

15.1.22 9999 – End of Bill Record

Paired with the 0100 – Start of Bill Record, the End of Bill Record signals the end of the records comprising a bill record group and thus the end of a Bill.

Record Attributes

- Compulsory – required
- Occurs once per Bill – last record for a Bill
- Record key = “9999”

Field Name	Start Pos.	Field Length	Data Type	Comments
Record Key	1	4	String	Value “9999”
Sortkey	5	199	String	See prior definition

15.2 Record Hierarchy – Sorted CIS Bill Print Extract

Record Key						Description of Record	Record Attributes
0010						File Header Record	Start-of-Document
0100						Start of Bill Record	Start-of-Document
	0300					Current Charge Record(s)	Non-Comp / Single Iterated
	0600					Payment Record(s)	Non-Comp / Single Iterated
	0700					Deposit Record(s)	Non-Comp / Single Iterated
	3900					Message Record(s)	Non-Comp / Single Iterated

Record Key						Description of Record	Record Attributes
	0900					Start of Premise Record	Non-Comp / Beg Range Iter
		1100				Start of Service Agreement Rec	Non-Comp / Beg Range Iter
			3100			Histogram Record(s)	Non-Comp / Single Iterated
			1300			Start of Bill Segment Record	Non-Comp / Beg Range Iter
				1500		Start of Bill Calc Record	Non-Comp / Beg Range Iter
					1700	Bill Calc Detail Record(s)	Non-Comp / Single Iterated
				1900		End of Bill Calc Record	Non-Comp / End Range Iter
				2100		Bill Segment Read Record(s)	Non-Comp / Single Iterated
				2400		Service Quantity Record(s)	Non-Comp / Single Iterated
				2700		Item Detail Record(s)	Non-Comp / Single Iterated
			2900			End of Bill Segment Record	Non-Comp / End Range Iter
			3400			Adjustment Record(s)	Non-Comp / Single Iterated
		3600				End of Service Agreement Record	Non-Comp / End Range Iter
	3700					End of Premise Record	Non-Comp / End Range Iter
9999							Compulsory

15.3 Name / Address - Code-1 / MailStream / PCE Journal File

DOC1Gen creates the Name / Address Journal (NAJ) file while also composing the Bill images. For each Bill, there is one corresponding record in the NAJ. The data in the NAJ is manipulated by a number of processes:

- DOC1Gen creates the initial NAJ
- A DOC1PCE process splits the initial NAJ into two files – USA Addresses and Foreign Addresses
- Code-1 Plus cleanses and corrects the USA Addresses NAJ and outputs two files – corrected USA Addresses and rejected addresses
- Another DOC1PCE process splits the corrected USA Address NAJ into two files – Automated Bills (no special handling required) and Special Handling Bills (Bills with either more than 6 pages or Intercepted Bills).
- A final DOC1PCE process uses the four journals (Automated, Special Handling, Rejected Addresses, and Foreign Addresses) to create the print files from the Formatted Bills Intermediate Print file.

The fields and records in the NAJ files are fixed length. The fields are separated by a single character delimiter, “|”.

Field Name	Start Pos.	Field Length	Data Type	Comments
Constant of “ * ”	1	3	String	• Created by DOC1GEN
NAJ-Vector	4	10	Number	• Created by DOC1GEN
Delimiter – “ ”	14	1	String	• Created by DOC1GEN
NAJ-Number-of-Pages-in-Bill	15	6	Number	• Created by DOC1GEN
Delimiter – “ ”	21	1	String	• Created by DOC1GEN
NAJ-Entity-Name	22	50	String	• Populated by DOC1GEN from 0100-Entity-Name
Delimiter – “ ”	72	1	String	• Created by DOC1GEN
NAJ-Address-1	73	64	String	• Created by DOC1GEN from 0100-Bill-Address1 • Cleansed by Code-1
Delimiter – “ ”	137	1	String	• Created by DOC1GEN
NAJ-Address-2	138	64	String	• Created by DOC1GEN from 0100-Bill-Address2 • Cleansed by Code-1

Field Name	Start Pos.	Field Length	Data Type	Comments
Delimiter – “ ”	202	1	String	<ul style="list-style-type: none"> Created by DOC1GEN
NAJ-Address-3	203	64	String	<ul style="list-style-type: none"> Created by DOC1GEN from 0100-Bill-Address3 Cleansed by Code-1
Delimiter – “ ”	267	1	String	<ul style="list-style-type: none"> Created by DOC1GEN
NAJ-Address-4	268	64	String	<ul style="list-style-type: none"> Created by DOC1GEN from 0100-Bill-Address4 Cleansed by Code-1
Delimiter – “ ”	334	1	String	<ul style="list-style-type: none"> Created by DOC1GEN
NAJ-City-State-Zip	335	64	String	<ul style="list-style-type: none"> Created by DOC1GEN by concatenating 0100-Bill-City 0100-Bill-State 0100-Bill-Postal with one space separating each field Updated by Code-1
Delimiter – “ ”	399	1	String	<ul style="list-style-type: none"> Created by DOC1GEN
NAJ-Country	400	64	String	<ul style="list-style-type: none"> Created by DOC1GEN If 0100-Bill-Country is “USA” then fill with spaces; otherwise, fill with 0100-Bill-County
Delimiter – “ ”	464	1	String	<ul style="list-style-type: none"> Created by DOC1GEN
NAJ-Country-Code	465	3	String	<ul style="list-style-type: none"> Created by DOC1GEN from 0100-Bill-Country
Delimiter – “ ”	468	1	String	<ul style="list-style-type: none"> Created by DOC1GEN
NAJ-SW-Intercepted	469	1	String	<ul style="list-style-type: none"> Created by DOC1GEN “Y” if 0100-Intercept-ID not blank; else “N”
Delimiter – “ ”	470	1	String	<ul style="list-style-type: none"> Created by DOC1GEN

Field Name	Start Pos.	Field Length	Data Type	Comments
NAJ-SW-Foreign	471	1	String	<ul style="list-style-type: none"> Created by DOC1GEN “Y” if 0100-Country-Code not “USA”; else “N”
Delimiter – “ ”	472	1	String	<ul style="list-style-type: none"> Created by DOC1GEN
NAJ-SW-Oversized	473	1	String	<ul style="list-style-type: none"> Created by DOC1GEN “Y” If NAJ-Number-of-Pages-in-Bill > 6; else “N”
Delimiter – “ ”	474	1	String	<ul style="list-style-type: none"> Created by DOC1GEN
NAJ-SW-Final-Credit	475	1	String	<ul style="list-style-type: none"> Created by DOC1GEN “Y” If 0100-Current-Balance is negative and 0100-Final-Bill-SW = Y; else “N”
Delimiter – “ ”	476	1	String	<ul style="list-style-type: none"> Created by DOC1GEN
NAJ-Autopay	477	1	String	<ul style="list-style-type: none"> Created by DOC1GEN “Y” If 0100-APS-Date is not blank; else “N”
Delimiter – “ ”	478	1	String	<ul style="list-style-type: none"> Created by DOC1GEN
NAJ-Unused-Flag-6	479	1	String	<ul style="list-style-type: none"> Blank
Delimiter – “ ”	480	1	String	<ul style="list-style-type: none"> Created by DOC1GEN
NAJ-Unused-Flag-7	481	1	String	<ul style="list-style-type: none"> Blank
Delimiter – “ ”	482	1	String	<ul style="list-style-type: none"> Created by DOC1GEN
NAJ-Unused-Flag-8	483	1	String	<ul style="list-style-type: none"> Blank
Delimiter – “ ”	484	1	String	<ul style="list-style-type: none"> Created by DOC1GEN
NAJ-Insert-1-SW	485	1	String	<ul style="list-style-type: none"> Blank
Delimiter – “ ”	486	1	String	<ul style="list-style-type: none"> Created by DOC1GEN
NAJ-Insert-2-SW	487	1	String	<ul style="list-style-type: none"> Blank
Delimiter – “ ”	488	1	String	<ul style="list-style-type: none"> Created by DOC1GEN

Field Name	Start Pos.	Field Length	Data Type	Comments
NAJ-Insert-3-SW	489	1	String	<ul style="list-style-type: none"> Blank
Delimiter – “ ”	490	1	String	<ul style="list-style-type: none"> Created by DOC1GEN
NAJ-Insert-4-SW	491	1	String	<ul style="list-style-type: none"> Blank
Delimiter – “ ”	492	1	String	<ul style="list-style-type: none"> Created by DOC1GEN
NAJ-Insert-5-SW	493	1	String	<ul style="list-style-type: none"> Blank
Delimiter – “ ”	494	1	String	<ul style="list-style-type: none"> Created by DOC1GEN
NAJ-Insert-6-SW	495	1	String	<ul style="list-style-type: none"> Blank
Delimiter – “ ”	496	1	String	<ul style="list-style-type: none"> Created by DOC1GEN
NAJ-Piece-ID	497	9	String	<ul style="list-style-type: none"> Created by DOC1GEN ; Value is left justified First byte of value is number of sheets in the Bill Second byte of value is a letter representing the number of inserts to be included in the Bill; <ul style="list-style-type: none"> A = 0 inserts B = 1 insert C = 2 inserts D = 3 inserts E = 4 inserts F = 5 inserts G = 6 inserts H = 7 inserts I = 8 inserts Bytes 3 – 9 unused
Delimiter – “ ”	506	1	String	<ul style="list-style-type: none"> Created by DOC1GEN
NAJ-Account-Number	507	10	String	<ul style="list-style-type: none"> Created by DOC1GEN from 0100-Account-Num

Field Name	Start Pos.	Field Length	Data Type	Comments
Delimiter – “ ”	517	1	String	<ul style="list-style-type: none"> Created by DOC1GEN
NAJ-Bill-ID	518	12	String	<ul style="list-style-type: none"> Created by DOC1GEN from 0100-Bill-ID
Delimiter – “ ”	530	1	String	<ul style="list-style-type: none"> Created by DOC1GEN
NAJ-Intercept-ID	531	8	String	<ul style="list-style-type: none"> Created by DOC1GEN from 0100-Intercept-ID
Delimiter – “ ”	539	1	String	<ul style="list-style-type: none"> Created by DOC1GEN
NAJ-Current-Balance	540	16	String	<ul style="list-style-type: none"> Created by DOC1GEN from 0100-Current-Balance
Delimiter – “ ”	556	1	String	<ul style="list-style-type: none"> Created by DOC1GEN
NAJ-Run-Date	557	10	Date	<ul style="list-style-type: none"> Created by DOC1GEN YYYY-MM-DD format
Delimiter – “ ”	567	1	String	<ul style="list-style-type: none"> Created by DOC1GEN
NAJ-Bill-Date	568	10	Date	<ul style="list-style-type: none"> Populated by DOC1GEN from 0100-Bill-Date YYYY-MM-DD format
Delimiter – “ ”	578	1	String	<ul style="list-style-type: none"> Created by DOC1GEN
NAJ-Due-Date-Field	579	10	Date	<ul style="list-style-type: none"> Created by DOC1GEN Currently unused
Delimiter – “ ”	589	1	String	<ul style="list-style-type: none"> Created by DOC1GEN
NAJ-Delivery-Point-Bar-Code	590	14	String	<ul style="list-style-type: none"> Initially populated by DOC1GEN from 0100-Postal Updated by Code-1 Includes Start and Stop bytes
Delimiter – “ ”	604	1	String	<ul style="list-style-type: none"> Created by DOC1GEN
NAJ-Carrier-Route	605	4	String	<ul style="list-style-type: none"> Populated by Code-1
Delimiter – “ ”	606	1	String	<ul style="list-style-type: none"> Created by DOC1GEN

Field Name	Start Pos.	Field Length	Data Type	Comments
NAJ-C1-AMOUT-General-RC	607	1	String	• Populated by Code-1
Delimiter – “ ”	608	1	String	• Created by DOC1GEN
NAJ-C1-AMOUT-Directional-RC	609	1	String	• Populated by Code-1
Delimiter – “ ”	610	1	String	• Created by DOC1GEN
NAJ-C1-AMOUT-Suffix-RC	611	1	String	• Populated by Code-1
Delimiter – “ ”	612	1	String	• Created by DOC1GEN
NAJ-C1-AMOUT-Apartment-RC	613	1	String	• Populated by Code-1
Delimiter – “ ”	614	1	String	• Created by DOC1GEN
NAJ-C1-AMOUT-Overall-CC	615	1	String	• Populated by Code-1
Delimiter – “ ”	616	1	String	• Created by DOC1GEN
NAJ-C1-AMOUT-Street-Match-SC	617	1	String	• Populated by Code-1
Delimiter – “ ”	618	1	String	• Created by DOC1GEN
NAJ-C1-AMOUT-Address-CC	619	1	String	• Populated by Code-1
Delimiter – “ ”	620	1	String	• Created by DOC1GEN
NAJ-C1-AMOUT-ZipCode-Stat	621	1	String	• Populated by Code-1
Delimiter – “ ”	622	1	String	• Created by DOC1GEN
NAJ-Mstream-Optional-Endorsement	623	35	String	• Populated by MailStream
Delimiter – “ ”	658	1	String	• Created by DOC1GEN
NAJ-Mstream-CONTRL	659	100	String	• Populated by Mailstream
Delimiter – “ ”	759	1	String	• Created by DOC1GEN
NAJ-Planet-Code	760	14	String	• Reserved for future use
Delimiter – “ ”	774	1	String	• Created by DOC1GEN
NAJ-MS-Manifest-Keyline	775	24	String	• Created by MailStream

Field Name	Start Pos.	Field Length	Data Type	Comments
Delimiter – “ ”	799	1	String	• Created by DOC1GEN
NAJ-MS-Piece-ID	800	9	String	• Created by DOC1GEN
Delimiter – “ ”	809	1	String	• Created by DOC1GEN
NAJ-MS-Postxx-Data	810	100	String	<ul style="list-style-type: none"> • Bytes 1 – 5 POSTEI • Bytes 6 – 10 POSTBI • Bytes 11 – 19 POSTLI • Bytes 20 – 28 POSTCI • Bytes 29 – 37 POSTPI • Bytes 38 – 46 POSTRI • Bytes 47 – 48 POSTRC • Bytes 49 - 95 POSTMK • Bytes 96 – 100 unused
Delimiter – “ ”	910	1	String	• Created by DOC1GEN

15.4 Audit File

The Audit File is produced for later use by a CIS Reconciliation Reporting process to compare the contents of this file against a similar file produced by the CIS Bill Print Extract process.

Containing a number of different record types, the Audit File has a hierarchical structure to identify results by the different output files the DOC1 Bill Application produces.

15.4.1 SR – Start of Run Record

The Start of Run Record indicates the beginning of the Reconciliation File. The Start of Run Record is paired with an ER – End of Run Record. This record contains the run date and run time.

Record Attributes

- Occurs once per file – first record of file
- Record key = “SR”

Field Name	Start Pos.	Field Length	Data Type	Comments
Record Key	1	2	String	• Value “SR”

-space-	3	1	String	
“Run Date: ”	4	11	String	
SR-Run-Date	15	11	Date	• DD Mmm YYYY - “17 Mar 2004”
“ Run Time: “	26	12	String	
SR-Run-Time	38	8	Time	• HH:MM:SS - “13:09:22”

15.4.2 SF – Start of Print File Record

The Start of Print File Record indicates the beginning of Bills output to a particular print file. The Start of Print File Record is paired with an EF – End of Print File Record. This record identifies the output printstream.

Record Attributes

- Occurs once per PrintStream file
- Record key = “SF”

Field Name	Start Pos.	Field Length	Data Type	Comments
Record Key	1	2	String	• Value “SF”
-space-	3	1	String	•
“Print File = ”	4	13	String	•
SF-Print-File	17	12	String	<ul style="list-style-type: none"> • Filled by DOC1PCE • Values will be: <ul style="list-style-type: none"> ○ INTERCEPT ○ AUTOMATED ○ OVERSIZED ○ FOREIGN ○ FINALCB

15.4.3 PD – Print Detail Record

The Print Detail Record is produced once per Bill output in the print file named in the preceding ST – Start of Print File Record. The Print Detail Record identifies the Bill by Sheet Count value produced, 0100-Account-Number, 0100-Entity-Name, 0100-Bill-ID, and number of pages produced.

Record Attributes

- Occurs once per Letter written to PrintStream

- Record key = “PD”

Field Name	Start Pos.	Field Length	Data Type	Comments
Record Key	1	2	String	• Value “PD”
-space-	3	1	String	
PD-SHTCNT	4	6	Integer	• Left padded with zeroes
-space-	10	1	String	
PD-Account-Number	11	10	String	• Source JRN-Account-Num
-space-	21	1	String	•
PD-Entity-Name	22	30	String	• Source JRN-Entity-Name
-space-	52	1	String	
PD-Bill-ID	53	12	String	• Source JRN-Bill-ID
-space-	65	1	String	
PD-Number-of-Pages-in-Bill	66	3	String	• Source JRN-Number-of-Pages-in-Bill

15.4.4 EF – End of Print File Record

Paired with the SF – Start of Print File Record, the End of Print File Record signals the end of the Bills output Print File named in the SF – Start of Print File Record. This record identifies the number of Bills produced and the total number of pages output for that Print file

Record Attributes

- Occurs once per PrintStream – last record for a PrintStream
- Record key = “ET”

Field Name	Start Pos.	Field Length	Data Type	Comments
Record Key	1	2	String	• Value “EF”
-space-	3	1	String	
“Bills Produced: ”	4	15	String	
ET-Number-of-Bills	19	8	Integer	<ul style="list-style-type: none"> • Right Justified • Padded with leading spaces • Calculated by PCE
“ Pages Produced: “	27	16	String	
ET-Number-of-Pages	43	6	Integer	• Right Justified

				<ul style="list-style-type: none"> • Padded with leading spaces • Calculated by PCE
--	--	--	--	---

15.4.5 ER – End of Run Record

Paired with the SR – Start of Run Record, the End of Run Record signals the end of the Bill process. This record identifies the number of Bills produced and the total number of pages output for all Print Files.

Record Attributes

- Occurs once per Run – last record for the Audit File
- Record key = “ER”

Field Name	Start Pos.	Field Length	Data Type	Comments
Record Key	1	2	String	<ul style="list-style-type: none"> • Value “ER”
-space-	3	1	String	
“Total Bills Produced: ”	4	21	String	
EF-Number-of-Bills	25	6	Integer	<ul style="list-style-type: none"> • Right Justified • Padded with leading spaces • Calculated by PCE
“ Total Pages Produced: “	29	22	String	
EF-Number-of-Pages	51	6	Integer	<ul style="list-style-type: none"> • Right Justified • Padded with leading spaces • Calculated by PCE

15.5 Record Hierarchy & Sequence – Audit File

The Audit File will be produced in the following sequence.

		Record Attributes
--	--	-------------------

Record Key Record Sequence Record Hierarchy							Record Description	Start of Document	Non-Compulsory	Begin Range Iteration	End Range Iteration	Single Iterated Key
SR							Start of Run Record	X				
	SF						Start of Print File Record		X	X		
		PD					Print Detail Record(s)		X			X
	EF						End of Print File Record		X		X	
ER							End of Run Record					

15.6 Look-Up (ETS) File

The Look-Up file provides a means of externalizing data from the DOC1 Bill Application giving flexibility to add new logic combinations without having to change logic within the Application Rules. The Look-up file uses a retrieval key of contiguous, non-blank, characters.

15.6.1 Foreign Country Names

The Look-up file is also used to retrieve names of foreign countries when the 0100-Bill-Country is not “USA”. The retrieved name will be printed in the recipient address in the Remittance Coupon.

The retrieval key will be made up of the following components:

Description	Data Source	Comments
Literal of “COUNTRY”	Hardcoded within Application Rules	7 bytes
Country Code	0100-Bill-Country	3 bytes; blanks replaced with “-”

For a Country code of “GBR”, the retrieval key will be “CNTRY-GBR”

The record layout for ETS Foreign Country Name records is:

Field Name	Start Pos.	Field Length	Data Type	Comments / Data Source
ETS-Country-Key	1	10	String	Retrieval Key
Space	11	1	String	Left blank
ETS-Country-Name	12	30	String	Left justified

15.6.2 Look-Up Content for Foreign Country Names

Country Code	Country Name
ABW	Aruba
AFG	Afghanistan
AGO	Angola
AIA	Anguilla
ALB	Albania
AND	Andorra
ANT	Netherlands Antilles
ARE	United Arab Emirates
ARG	Argentina
ARM	Armenia
ASM	American Samoa
ATA	Antarctica
ATF	French Southern Territories

Country Code	Country Name
LBN	Lebanon
LBR	Liberia
LBY	Libyan Arab Jamahiriya
LCA	Saint Lucia
LIE	Liechtenstein
LKA	Sri Lanka
LSO	Lesotho
LTU	Lithuania
LUX	Luxembourg
LVA	Latvia
MAC	Macau
MAR	Morocco
MCO	Monaco

Country Code	Country Name
ATG	Antigua and Barbuda
AUS	Australia
AUT	Austria
AZE	Azerbaijan
BDI	Burundi
BEL	Belgium
BEN	Benin
BFA	Burkina Faso
BGD	Bangladesh
BGR	Bulgaria
BHR	Bahrain
BHS	Bahamas
BIH	Bosnia and Herzegovina
BLR	Belarus
BLZ	Belize
BMU	Bermuda
BOL	Bolivia
BRA	Brazil
BRB	Barbados
BRN	Brunei Darussalam

Country Code	Country Name
MDA	Moldova, Republic of
MDG	Madagascar
MDV	Maldives
MEX	Mexico
MHL	Marshall Islands
MKD	Fmr Yugoslav Rep of Macedonia
MLI	Mali
MLT	Malta
MMR	Myanmar
MNG	Mongolia
MNP	Northern Mariana Islands
MOZ	Mozambique
MRT	Mauritania
MSR	Montserrat
MTQ	Martinique
MUS	Mauritius
MWI	Malawi
MYS	Malaysia
MYT	Mayotte
NAM	Namibia

Country Code	Country Name
BTN	Bhutan
BVT	Bouvet Island
BWA	Botswana
CAF	Central African Republic
CAN	Canada
CCK	Cocos (Keeling) Islands
CHE	Switzerland
CHL	Chile
CHN	China
CIV	Cote D'Ivoire
CMR	Cameroon
COD	Congo, The Democratic Republic
COG	Congo
COK	Cook Islands
COL	Colombia
COM	Comoros
CPV	Cape Verde
CRI	Costa Rica
CUB	Cuba
CXR	Christmas Island

Country Code	Country Name
NCL	New Caledonia
NER	Niger
NFK	Norfolk Island
NGA	Nigeria
NIC	Nicaragua
NIU	Niue
NLD	Netherlands
NOR	Norway
NPL	Nepal
NRU	Nauru
NZL	New Zealand
OMN	Oman
PAK	Pakistan
PAN	Panama
PCN	Pitcairn
PER	Peru
PHL	Philippines
PLW	Palau
PNG	Papua New Guinea
POL	Poland

Country Code	Country Name
CYM	Cayman Islands
CYP	Cyprus
CZE	Czech Republic
DEU	Germany
DJI	Djibouti
DMA	Dominica
DNK	Denmark
DOM	Dominican Republic
DZA	Algeria
ECU	Ecuador
EGY	Egypt
ERI	Eritrea
ESH	Western Sahara
ESP	Spain
EST	Estonia
ETH	Ethiopia
FIN	Finland
FJI	Fiji
FLK	Falkland Islands (Malvinas)
FRA	France

Country Code	Country Name
PRI	Puerto Rico
PRK	Korea, Democratic People's Rep
PRT	Portugal
PRY	Paraguay
PYF	French Polynesia
QAT	Qatar
REU	Reunion
ROM	Romania
RUS	Russian Federation
RWA	Rwanda
SAU	Saudi Arabia
SDN	Sudan
SEN	Senegal
SGP	Singapore
SGS	Sth Georgia & Sth Sandwich Is
SHN	Saint Helena
SJM	Svalbard and Jan Mayen
SLB	Solomon Islands
SLE	Sierra Leone
SLV	El Salvador

Country Code	Country Name
FRO	Faroe Islands
FSM	Micronesia, Federated States
GAB	Gabon
GBR	United Kingdom
GEO	Georgia
GHA	Ghana
GIB	Gibraltar
GIN	Guinea
GLP	Guadeloupe
GMB	Gambia
GNB	Guinea-Bissau
GNQ	Equatorial Guinea
GRC	Greece
GRD	Grenada
GRL	Greenland
GTM	Guatemala
GUF	French Guiana
GUM	Guam
GUY	Guyana
HI	Hawaii

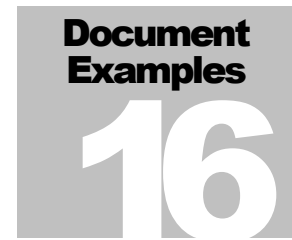
Country Code	Country Name
SMR	San Marino
SOM	Somalia
SPM	Saint Pierre and Miquelon
STP	Sao Tome and Principe
SUR	Suriname
SVK	Slovakia
SVN	Slovenia
SWE	Sweden
SWZ	Swaziland
SYC	Seychelles
SYR	Syrian Arab Republic
TCA	Turks and Caicos Islands
TCD	Chad
TGO	Togo
THA	Thailand
TJK	Tajikistan
TKL	Tokelau
TKM	Turkmenistan
TMP	East Timor
TON	Tonga

Country Code	Country Name
HKG	Hong Kong
HMD	Heard and McDonald Islands
HND	Honduras
HRV	Croatia
HTI	Haiti
HUN	Hungary
IDN	Indonesia
IND	India
IOT	British Indian Ocean Territory
IRL	Ireland
IRN	Iran (Islamic Republic Of)
IRQ	Iraq
ISL	Iceland
ISR	Israel
ITA	Italy
JAM	Jamaica
JOR	Jordan
JPN	Japan
KAZ	Kazakstan
KEN	Kenya

Country Code	Country Name
TTO	Trinidad and Tobago
TUN	Tunisia
TUR	Turkey
TUV	Tuvalu
TWN	Taiwan, Province of China
TZA	Tanzania, United Republic of
UGA	Uganda
UKR	Ukraine
UMI	US Minor Outlying Islands
URY	Uruguay
USA	United States
UZB	Uzbekistan
VAT	Holy See (Vatican City State)
VCT	St Vincent and the Grenadines
VEN	Venezuela
VGB	Virgin Islands (British)
VIR	Virgin Islands (U.S.)
VNM	Viet Nam
VUT	Vanuatu
WLF	Wallis and Futuna Islands

Country Code	Country Name
KGZ	Kyrgyzstan
KHM	Cambodia
KIR	Kiribati
KNA	Saint Kitts and Nevis
KOR	Korea, Republic of
KWT	Kuwait
LAO	Lao People's Democratic Rep

Country Code	Country Name
WSM	Samoa
YEM	Yemen
YUG	Yugoslavia
ZAF	South Africa
ZMB	Zambia
ZWE	Zimbabwe



16 Document Samples

To be added upon finalization of the Bill format.