

HH	HH	EEEEEEEEEEEE	RRRRRRRRRR	CCCCCCCC	00000000	11	AAAAAAAAAA
HH	HH	EEEEEEEEEEEE	RRRRRRRRRR	CCCCCCCCCC	0000000000	111	AAAAAAAAAAAA
HH	HH	EE	RR RR	CC CC	00 00	1111	AA AA
HH	HH	EE	RR RR	CC	00 00	11	AA AA
HH	HH	EE	RR RR	CC	00 00	11	AA AA
HHHHHHHHHH	EEEEEE	RRRRRRRRRR	CC	00 00	11	AAAAAAAAAA	
HHHHHHHHHH	EEEEEE	RRRRRRRRRR	CC	00 00	11	AAAAAAAAAA	
HH	HH	EE	RR RR	CC	00 00	11	AA AA
HH	HH	EE	RR RR	CC	00 00	11	AA AA
HH	HH	EE	RR RR	CC CC	00 00	11	AA AA
HH	HH	EEEEEEEEEEEE	RR RR	CCCCCCCC	0000000000	1111111111	AA AA
HH	HH	EEEEEEEEEEEE	RR RR	CCCCCCCC	00000000	1111111111	AA AA

JJ	0000000000	BBBBBBBBBB	44	5555555555	00000000
JJ	0000000000	BBBBBBBBBB	444	5555555555	0000000000
JJ	OO OO	BB BB	4444	55	00 00
JJ	OO OO	BB BB	44 44	55	00 00
JJ	OO OO	BB BB	44 44	55	00 00
JJ	OO OO	BBBBBBBBBB	44 44	5555555555	00 00
JJ	OO OO	BBBBBBBBBB	44 44	5555555555	00 00
JJ	OO OO	BB BB	4444444444	55	00 00
JJ	OO OO	BB BB	4444444444	55	00 00
JJ	OO OO	BB BB	44	55 55	00 00
JJJJJJJJJJJ	0000000000	BBBBBBBBBB	44	5555555555	0000000000
JJJJJJJJJJJ	0000000000	BBBBBBBBBB	44	5555555555	00000000

PPPPPPPPPP	RRRRRRRRRR	00000000	00000000	EEEEEEEEEEEE	
PPPPPPPPPP	RRRRRRRRRR	0000000000	0000000000	EEEEEEEEEEEE	
PP	PP	RR RR	00 00	00 00	EE
PP	PP	RR RR	00 00	00 00	EE
PP	PP	RR RR	00 00	00 00	EE
PPPPPPPPPP	RRRRRRRRRR	00 00	00 00	EEEEEE	
PPPPPPPPPP	RRRRRRRRRR	00 00	00 00	EEEEEE	
PP	RR RR	00 00	00 00	EE	
PP	RR RR	00 00	00 00	EE	
PP	RR RR	00 00	00 00	EE	
PP	RR RR	0000000000	0000000000	EEEEEEEEEEEE	
PP	RR RR	00000000	00000000	EEEEEEEEEEEE	

PPPPPPPPPP	RRRRRRRRRR	TTTTTTTTTTTT	11	44	00000000	3333333333	
PPPPPPPPPP	RRRRRRRRRR	TTTTTTTTTTTT	111	444	0000000000	33333333333	
PP	PP	RR RR	TT	1111	4444	00 00	33 33
PP	PP	RR RR	TT	11	44 44	00 00	33
PP	PP	RR RR	TT	11	44 44	00 00	33
PPPPPPPPPP	RRRRRRRRRR	TT	11	44 44	00 00	3333	
PPPPPPPPPP	RRRRRRRRRR	TT	11	44 44	00 00	3333	
PP	RR RR	TT	11	4444444444	00 00	33	
PP	RR RR	TT	11	4444444444	00 00	33	
PP	RR RR	TT	11	44	00 00	33 33	
PP	RR RR	TT	1111111111	44	0000000000	33333333333	
PP	RR RR	TT	1111111111	44	00000000	3333333333	


```
IAT6140 JOB ORIGIN FROM GROUP=ANYLOCAL, DSP=IR , DEVICE=INTRDR , 000
01:02:32 IAT4401 LOCATE FOR STEP=ASM DD=SYSLIB DSN=SYS1.MACLIB
01:02:32 IAT4402 UNIT=3350 ,VOL(S) N/A: UNIT NOT JES3
01:02:32 IAT4401 LOCATE FOR STEP=ASM DD=SYSLIB DSN=SYS2.MACLIB
01:02:32 IAT4402 UNIT=3350 ,VOL(S) N/A: UNIT NOT JES3
01:02:32 IAT4401 LOCATE FOR STEP=ASM DD=SYSLIB DSN=SYS1.MACLIB
01:02:32 IAT4402 UNIT=3350 ,VOL(S) N/A: UNIT NOT JES3
01:02:32 IAT4401 LOCATE FOR STEP=ASM DD=SYSLIB DSN=SYS1.MACLIB
01:02:32 IAT4402 UNIT=3350 ,VOL(S) N/A: UNIT NOT JES3
01:02:33 IAT2000 JOB 0450 HERC01A SELECTED TK4A GRP=JS3BATCH
01:02:33 IEF403I HERC01A - STARTED - TIME=01.02.33
01:02:33 IEFACRT - Stepname Procstep Program Retcode
01:02:33 HERC01A PRIMES ASM IFOX00 RC= 0000
01:02:33 + 9592 primes up to 99999 found
01:02:33 HERC01A PRIMES GO LOADER RC= 0000
01:02:33 IEF404I HERC01A - ENDED - TIME=01.02.33
```



```

//HERC01A JOB (BAL), *
//          'ASSEMBLER FX PRIME', *
//          CLASS=A, *
//          MSGCLASS=A, *
//          TIME=1440, *
//          MSGLEVEL=(1,1), *
//          USER=HERC01,PASSWORD=          GENERATED BY GDL
//*****
//*
//* Name: SYS2.JCLLIB(PRIMASM)
//*
//* Desc: Sieve of Eratosthenes programmed in Basic Assembler Language
//*       All prime numbers up to the value entered via PARM.GO
//*       are computed.
//*
//*****
//PRIMES EXEC ASMFCG,PARM.ASM=(OBJ,NODECK),MAC1='SYS2.MACLIB',
//          REGION.GO=928K,PARM.GO='/99999'
//ASM.SYSIN DD *
/*
//GO.SYSPRINT DD SYSOUT=*
1 //HERC01A JOB (BAL), *
//          'ASSEMBLER FX PRIME', *
//          CLASS=A, *
//          MSGCLASS=A, *
//          TIME=1440, *
//          MSGLEVEL=(1,1), *
//          USER=HERC01,PASSWORD=          GENERATED BY GDL
//*****
//*
//* Name: SYS2.JCLLIB(PRIMASM)
//*
//* Desc: Sieve of Eratosthenes programmed in Basic Assembler Language
//*       All prime numbers up to the value entered via PARM.GO
//*       are computed.
//*
//*****
2 //PRIMES EXEC ASMFCG,PARM.ASM=(OBJ,NODECK),MAC1='SYS2.MACLIB',
//          REGION.GO=928K,PARM.GO='/99999'
3 XXASMFCG PROC MAC='SYS1.MACLIB',MAC1='SYS1.MACLIB', 00000100
XX          MAC2='SYS1.MACLIB',MAC3='SYS1.MACLIB',SOUT='*' 00000200
4 XXASM EXEC PGM=IFOX00,PARM=OBJ,REGION=128K 00000300
5 XXSYSLIB DD DSN=&MAC,DISP=SHR 00000400
6 XX DD DSN=&MAC1,DISP=SHR 00000500
7 XX DD DSN=&MAC2,DISP=SHR 00000600
8 XX DD DSN=&MAC3,DISP=SHR 00000700
9 XXSYSUT1 DD DSN=&&SYSUT1,UNIT=SYSSQ,SPACE=(1700,(600,100)), 00000800
XX          SEP=(SYSLIB) 00000900
10 XXSYSUT2 DD DSN=&&SYSUT2,UNIT=SYSSQ,SPACE=(1700,(300,50)), 00001000
XX          SEP=(SYSLIB,SYSUT1) 00001100
11 XXSYSUT3 DD DSN=&&SYSUT3,UNIT=SYSSQ,SPACE=(1700,(300,50)) 00001200
12 XXSYSPRINT DD SYSOUT=&SOUT,DCB=BLKSIZE=1089 00001300
13 XXSYSPUNCH DD SYSOUT=B 00001400
14 XXSYSGO DD DSN=&&OBJSET,UNIT=SYSSQ,SPACE=(80,(200,50)), 00001500
XX          DISP=(MOD,PASS) 00001600
15 //ASM.SYSIN DD *,DCB=BLKSIZE=80
16 XXGO EXEC PGM=LOADER,PARM='MAP,PRINT,NOCALL,LET', 00001700
XX          COND=(8,LT,ASM) 00001800
17 XXSYSLIN DD DSN=&&OBJSET,DISP=(OLD,DELETE) 00001900
18 XXSYSLOUT DD SYSOUT=&SOUT 00002000
19 //GO.SYSPRINT DD SYSOUT=*

```



```

SSSSSSSSSS YY YY SSSSSSSSSS MM MM SSSSSSSSSS GGGGGGGGGG
SSSSSSSSSSSS YY YY SSSSSSSSSSSS MMM MMM SSSSSSSSSSSS GGGGGGGGGGGG
SS SS YY YY SS SS MMMM MMMM SS SS GG GG
SS YY YY SS MM MM MM MM SS GG
SSS YYY SSS MM MMMM MM SSS GG
SSSSSSSSS YY SSSSSSSSSS MM MM MM SSSSSSSSSS GG
SSSSSSSSS YY SSSSSSSSSS MM MM SSSSSSSSSS GG GGGGG
SSS YY SSS MM MM SSS GG GGGGG
SS SS YY SS SS MM MM SS GG GG
SSSSSSSSSSSS YY SSSSSSSSSSSS MM MM SSSSSSSSSSSS GGGGGGGGGGGG
SSSSSSSSSSS YY SSSSSSSSSS MM MM SSSSSSSSSS GGGGGGGGGGG

```

```

AAAAAAAAAA
AAAAAAAAAAAA
AA AA
AA AA
AA AA
AAAAAAAAAAAA
AAAAAAAAAAAA
AA AA
AA AA
AA AA
AA AA
AA AA
AA AA

```

```

00000000
0000000000
00 00
00 00
00 00
00 00
00 00
00 00
00 00
00 00
0000000000
00000000

```

STMT NO. MESSAGE

5 IEF653I SUBSTITUTION JCL - DSN=SYS1.MACLIB,DISP=SHR
6 IEF653I SUBSTITUTION JCL - DSN=SYS2.MACLIB,DISP=SHR
7 IEF653I SUBSTITUTION JCL - DSN=SYS1.MACLIB,DISP=SHR
8 IEF653I SUBSTITUTION JCL - DSN=SYS1.MACLIB,DISP=SHR
12 IEF653I SUBSTITUTION JCL - SYSOUT=*,DCB=BLKSIZE=1089
18 IEF653I SUBSTITUTION JCL - SYSOUT=*

IEF236I ALLOC. FOR HERC01A ASM PRIMES

IEF237I 148 ALLOCATED TO SYSLIB
IEF237I 148 ALLOCATED TO
IEF237I 148 ALLOCATED TO
IEF237I 148 ALLOCATED TO
IEF237I 170 ALLOCATED TO SYSUT1
IEF237I 190 ALLOCATED TO SYSUT2
IEF237I 140 ALLOCATED TO SYSUT3
IEF237I JES3 ALLOCATED TO SYSPRINT
IEF237I JES3 ALLOCATED TO SYSPUNCH
IEF237I 180 ALLOCATED TO SYSGO
IEF237I JES3 ALLOCATED TO SYSIN

IEF142I HERC01A ASM PRIMES - STEP WAS EXECUTED - COND CODE 0000

IEF285I SYS1.MACLIB KEPT *-----43
IEF285I VOL SER NOS= MVSRES.
IEF285I SYS2.MACLIB KEPT *-----0
IEF285I VOL SER NOS= MVSRES.
IEF285I SYS1.MACLIB KEPT *-----0
IEF285I VOL SER NOS= MVSRES.
IEF285I SYS1.MACLIB KEPT *-----0
IEF285I VOL SER NOS= MVSRES.
IEF285I SYS16261.T010232.RA000.HERC01A.SYSUT1 DELETED *-----243
IEF285I VOL SER NOS= WORK01.
IEF285I SYS16261.T010232.RA000.HERC01A.SYSUT2 DELETED *-----43
IEF285I VOL SER NOS= WORK03.
IEF285I SYS16261.T010232.RA000.HERC01A.SYSUT3 DELETED *-----10
IEF285I VOL SER NOS= WORK00.
IEF285I ASM.PRIMES.SYSPRINT SYSOUT
IEF285I ASM.PRIMES.SYSPUNCH SYSOUT
IEF285I SYS16261.T010232.RA000.HERC01A.OBJSET PASSED *-----23
IEF285I VOL SER NOS= WORK02.
IEF285I JESI0001 SYSIN

IEF373I STEP /ASM / START 16261.0102

IEF374I STEP /ASM / STOP 16261.0102 CPU 0MIN 00.20SEC SRB 0MIN 00.02SEC VIRT 128K SYS 160K

* 1. Jobstep of job: HERC01A Stepname: ASM Program name: IFOX00 Executed on 17.09.16 from 01.02.33 to 01.02.33 *
* elapsed time 00:00:00,28 CPU-Identifer: TK4- Page-in: 0 *
* CPU time 00:00:00,22 Virtual Storage used: 128K Page-out: 0 *
* corr. CPU: 00:00:00,22 CPU time has been corrected by 1 / 1,0 multiplier *
*

* I/O Operation *
* Number of records read via DD * or DD DATA: 284 *
* 148.....43 148.....0 148.....0 148.....0 170.....243 190.....43 140.....10 DMY.....0 DMY.....0 180.....23 *
* DMY.....0 *
*

* Charge for step (w/o SYSOUT): 0,36 *

IEF236I ALLOC. FOR HERC01A GO PRIMES

IEF237I 180 ALLOCATED TO SYSLIN
IEF237I JES3 ALLOCATED TO SYSLOUT
IEF237I JES3 ALLOCATED TO SYSPRINT
9592 primes up to 99999 found

IEF142I HERC01A GO PRIMES - STEP WAS EXECUTED - COND CODE 0000

IEF285I SYS16261.T010232.RA000.HERC01A.OBJSET DELETED *-----24
IEF285I VOL SER NOS= WORK02.

```
IEF285I  GO.PRIMES.SYSLOUT          SYSOUT
IEF285I  GO.PRIMES.SYSPRINT         SYSOUT
IEF373I  STEP /GO / START 16261.0102
IEF374I  STEP /GO / STOP 16261.0102 CPU    OMIN 00.03SEC SRB    OMIN 00.00SEC VIRT  928K SYS  168K
*****
*      2. Jobstep of job: HERC01A      Stepname: GO          Program name: LOADER      Executed on 17.09.16 from 01.02.33 to 01.02.33 *
*      elapsed time 00:00:00,04          CPU-Identifier: TK4-          Page-in: 0 *
*      CPU time 00:00:00,03          Virtual Storage used: 928K          Page-out: 0 *
*      corr. CPU: 00:00:00,03    CPU time has been corrected by 1 / 1,0 multiplier *
*
*      I/O Operation *
*      Number of records read via DD * or DD DATA: 0 *
*      180.....24 DMY.....0 DMY.....0 *
*
*
*      Charge for step (w/o SYSOUT): 0,05 *
*****
IEF375I  JOB /HERC01A / START 16261.0102
IEF376I  JOB /HERC01A / STOP 16261.0102 CPU    OMIN 00.23SEC SRB    OMIN 00.02SEC
```

```
AAAAAAAAAA  SSSSSSSSSS  MM      MM
AAAAAAAAAAAA  SSSSSSSSSSSS  MMM     MMM
AA      AA  SS      SS  MMMM    MMMM
AA      AA  SS      MM MM  MM MM
AA      AA  SSS     MM  MMMM  MM
AAAAAAAAAAAA  SSSSSSSSSS  MM     MM  MM
AAAAAAAAAAAA  SSSSSSSSSS  MM      MM
AA      AA      SSS  MM      MM
AA      AA      SS  MM      MM
AA      AA  SS      SS  MM      MM
AA      AA  SSSSSSSSSSSS  MM      MM
AA      AA  SSSSSSSSSS  MM      MM
```

```
PPPPPPPPPPP  RRRRRRRRRRR  IIIIIIIIII  MM      MM  EEEEEEEEEEE  SSSSSSSSSS
PPPPPPPPPPP  RRRRRRRRRRR  IIIIIIIIII  MMM     MMM  EEEEEEEEEEE  SSSSSSSSSSSS
PP      PP  RR      RR      II      MMMM    MMMM  EE      SS      SS
PP      PP  RR      RR      II      MM MM  MM MM  EE      SS
PP      PP  RR      RR      II      MM  MMMM  MM  EE      SSS
PPPPPPPPPPP  RRRRRRRRRRR  II      MM     MM  EEEEEEE  SSSSSSSSSS
PPPPPPPPPPP  RRRRRRRRRRR  II      MM      MM  EEEEEEE  SSSSSSSSSS
PP      RR      RR      II      MM      MM  EE      SSS
PP      RR      RR      II      MM      MM  EE      SS
PP      RR      RR      II      MM      MM  EE      SS      SS
PP      RR      RR  IIIIIIIIII  MM      MM  EEEEEEEEEEE  SSSSSSSSSSSS
PP      RR      RR  IIIIIIIIII  MM      MM  EEEEEEEEEEE  SSSSSSSSSS
```

```
SSSSSSSSSS  YY      YY  SSSSSSSSSS  PPPPPPPPPP  RRRRRRRRRRR  IIIIIIIIII  NN      NN  TTTTTTTTTTTT
SSSSSSSSSSS  YY      YY  SSSSSSSSSSSS  PPPPPPPPPP  RRRRRRRRRRR  IIIIIIIIII  NNN     NN  TTTTTTTTTTTT
SS      SS  YY      YY  SS      SS  PP      PP  RR      RR      II      NNNN     NN      TT
SS      YY      YY  SS      PP      PP  RR      RR      II      NN  NN     NN      TT
SSS      YYY     SSS      PP      PP  RR      RR      II      NN  NN     NN      TT
SSSSSSSSS  YY      SSSSSSSSS  PPPPPPPPPP  RRRRRRRRRRR  II      NN      NN     NN      TT
SSSSSSSSS  YY      SSSSSSSSS  PPPPPPPPPP  RRRRRRRRRRR  II      NN      NN     NN      TT
SSS      YY      SSS  PP      RR      RR      II      NN      NN     NN      TT
SS      YY      SS  PP      RR      RR      II      NN      NNN     TT
SS      SS  YY      SS      SS  PP      RR      RR      II      NN      NNN     TT
SSSSSSSSSSS  YY      SSSSSSSSSSSS  PP      RR      RR  IIIIIIIIII  NN      NN      TT
SSSSSSSSSS  YY      SSSSSSSSSS  PP      RR      RR  IIIIIIIIII  NN      N      TT
```

```
AAAAAAAAAA  00000000
AAAAAAAAAAAA  0000000000
AA      AA  00      00
AA      AA  00      00
AA      AA  00      00
AAAAAAAAAAAA  00      00
AAAAAAAAAAAA  00      00
AA      AA  0000000000
AA      AA  00000000
```

SYMBOL	TYPE	ID	ADDR	LENGTH	LDID
--------	------	----	------	--------	------

ASM 0201 01.02 09/17/16

PRIMASM	SD	0001	000000	000450	
---------	----	------	--------	--------	--

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM 0201 01.02 09/17/16
				2	*****	00020000
				3	***	00030000
				4	*** Program: PRIMASM	00040000
				5	***	00050000
				6	*** Purpose: Find all prime numbers up to a given limit	00060000
				7	*** using Eratosthenes' sieve algorithm.	00070000
				8	***	00080000
				9	*** Usage: The following JCL is required to run PRIMASM:	00090000
				10	***	00100000
				11	*** //PRIMASM EXEC PGM=PRIMASM,REGION=<size>,PARM=<limit>	00110000
				12	*** //STEPLIB DD DSN=<loadlib>,DISP=SHR	00120000
				13	*** //SYSPRINT DD SYSOUT=*	00130000
				14	***	00140000
				15	*** The parameters are defined as follows:	00150000
				16	***	00160000
				17	*** <limit> the largest number to sieve. All primes	00170000
				18	*** up to this number will be found. If the	00180000
				19	*** limit given is too high for the algorithm	00190000
				20	*** to execute within the bounds of the	00200000
				21	*** available virtual storage, <limit> will be	00210000
				22	*** adjusted to fit into the given region. If	00220000
				23	*** no PARM value is given, a default limit of	00230000
				24	*** 2000 will be used.	00240000
				25	***	00250000
				26	*** <size> the amount of virtual storage the program	00260000
				27	*** is allowed to use. The program will always	00270000
				28	*** allocate the maximum amount of storage	00280000
				29	*** allowed by the REGION parameter. If no	00290000
				30	*** REGION parameter is specified, results will	00300000
				31	*** be unpredictable.	00310000
				32	***	00320000
				33	*** <loadlib> the load library containing the PRIMASM	00330000
				34	*** program.	00340000
				35	***	00350000
				36	*** Function: 1. Allocate all virtual storage available and adjust	00360000
				37	*** the sieve limit if necessary. This storage is	00370000
				38	*** used as flags, where each bit indicates whether	00380000
				39	*** the odd number corresponding to the bit's position	00390001
				40	*** is prime or not. Odd numbers are assigned to these	00394001
				41	*** bits in sequence, i.e. numbers 1,3,5,7,9,11,13,15	00398001
				42	*** correspond to bits 0,1,2,3,4,5,6,7 and so forth.	00402001
				43	***	00410000
				44	*** 2. Set all prime flags to one, except the first.	00420001
				45	*** The first flag corresponds to the number one,	00425001
				46	*** which isn't prime. Note that there don't exist	00430001
				47	*** flags for even numbers, because even numbers	00435001
				48	*** (except the two) are never prime.	00440001
				49	***	00450000
				50	*** 3. Run Eratosthenes' sieve which will result in	00460000
				51	*** clearing the prime flags of all none prime numbers	00470000
				52	*** up to the given limit.	00480000
				53	***	00490000
				54	*** 4. Print all numbers having their prime flag set to	00500000
				55	*** SYSPRINT. The "irregular" two is printed manually	00510001
				56	*** for the sake of completeness.	00513001

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM 0201 01.02 09/17/16
				57	***	*** 00520000
				58	***	*** 00530000
				59	***	*** 00540000
				60	***	*** 00550000
				61	***	*** 00560000
				62	***	*** 00570000
				63	***	*** 00580000
				64	***	*** 00590000
				65	***	*** 00600000
				66	*** Updates: 2014/07/18 original implementation.	*** 00610001
				67	*** 2014/07/21 eliminate even numbers from prime flags.	*** 00613001
				68	***	*** 00620000
				69	*** Author: Juergen Winkelmann, ETH Zuerich.	*** 00630001
				70	***	*** 00640000
				71	*****	*** 00650000
000000				72	PRIMASM CSECT	00660000
				73	SAVE (14,12),,* save registers	00670000
000000	47F0 F00C	0000C		74+	B 12(0,15) BRANCH AROUND ID	02150000
000004	07			75+	DC AL1(7)	02200000
000005	D7D9C9D4C1E2D4			76+	DC CL7'PRIMASM' IDENTIFIER	02250000
00000C	90EC D00C	0000C		77+	STM 14,12,12(13) SAVE REGISTERS	02950000
000010	18CF			78	LR R12,R15 establish module addressability	00680000
			00000	79	USING PRIMASM,R12 tell assembler of base	00690000
000012	4120 C278	00278		80	LA R2,SAVEA chain ..	00700000
000016	50D0 2004	00004		81	ST R13,4(,R2) .. the ..	00710000
00001A	5020 D008	00008		82	ST R2,8(,R13) .. save ..	00720000
00001E	18D2			83	LR R13,R2 .. areas	00730000
				84	*	00740000
				85	* Initialize sieve limit and virtual storage	00750000
				86	*	00760000
000020	5820 1000	00000		87	L R2,0(,R1) parameter list address	00770000
000024	4810 2000	00000		88	LH R1,0(,R2) length of PARM field	00780000
000028	1211			89	LTR R1,R1 PARM field specified?	00790000
00002A	4780 C058	00058		90	BZ NOPARM no, use default sieve limit	00800000
00002E	5830 C2D8	002D8		91	L R3,HIGHLIM maximum PARM allowed	00810000
000032	4140 000A	0000A		92	LA R4,10 maximum PARM length allowed	00820000
000036	1914			93	CR R1,R4 maximum PARM length exceeded?	00830000
000038	4720 C052	00052		94	BH HIGHPARM yes -> use maximum as sieve limit	00840000
00003C	4130 C2F4	002F4		95	LA R3,PARM+10 right justify ..	00850000
000040	1B31			96	SR R3,R1 .. to 10 digits	00860000
000042	0610			97	BCTR R1,0 decrement for EXecute	00870000
000044	4410 C2C0	002C0		98	EX R1,MOVEPARM get PARM	00880000
000048	F279 C2D0 C2EA	002D0 002EA		99	PACK NUMDEC(8),PARM(10) pack PARM and ..	00890000
00004E	4F30 C2D0	002D0		100	CVB R3,NUMDEC .. convert to binary	00900000
000052	5030 C2DC	002DC		101	HIGHPARM ST R3,LIMIT set sieve limit	00910000
				102	NOPARM OPEN (SYSPRINT,OUTPUT) open SYSPRINT	00920000
000056	0700			103+	CNOP 0,4 ALIGN LIST TO FULLWORD	01740001
000058	4510 C060	00060		104+	NOPARM BAL 1,*+8 LOAD REG1 W/LIST ADDR.	01780000
00005C	8F			105+	DC AL1(143) OPTION BYTE	01900000
00005D	0003E0			106+	DC AL3(SYSPRINT) DCB ADDRESS	01920000
000060	0A13			107+	SVC 19 ISSUE OPEN SVC	04000000
				108	GETMAIN VU,LA=GETMAX,A=ISPRIME allocate all available storage	00930000
				109+*	OS/V2 RELEASE 4 VERSION -- 10/21/75	00004804
000062	0700			110+	CNOP 0,4	00366000
000064	4510 C072	00072		111+	BAL 1,*+14 BRANCH AROUND LIST	00368000

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE	STATEMENT	ASM 0201 01.02 09/17/16
000068	00000440			112+	DC	A(GETMAX)	ADDR. OF LENGTH LIST 00386000
00006C	00000448			113+	DC	A(ISPRIME)	ADDR. OF ADDR. LIST 00406002
000070	C0			114+	DC	BL1'11000000'	MODE AND OPTION FLAGS 00462002
000071	00			115+	DC	AL1(0)	SUBPOOL VALUE 00510000
000072	0A04			116+	SVC	4	ISSUE GETMAIN SVC 00820002
000074	5870 C44C	0044C		117	L	R7,MAXMEM	storage amount obtained times 16 .. 00940001
000078	8970 0004	00004		118	SLL	R7,4	.. is maximum sieve limit possible 00946001
00007C	5970 C2DC	002DC		119	C	R7,LIMIT	does requested limit fit into storage? 00960000
000080	47B0 C088	00088		120	BNL	*+8	yes -> use requested limit 00970000
000084	5070 C2DC	002DC		121	ST	R7,LIMIT	no -> use maximum possible 00980000
000088	5860 C448	00448		122	L	R6,ISPRIME	address of storage obtained 00990000
00008C	5880 C2DC	002DC		123	L	R8,LIMIT	sieve limit 01000000
000090	1799			124	XR	R9,R9	clear R9 for modulo 01010000
000092	8C80 0004	00004		125	SRDL	R8,4	divide sieve limit by 16 01020001
000096	1878			126	LR	R7,R8	amount of storage to be initialized 01030000
000098	1299			127	LTR	R9,R9	sieve limit modulo 16 = 0? 01040001
00009A	4780 C0A2	000A2		128	BZ	*+8	yes -> use computed storage amount 01050000
00009E	4170 7001	00001		129	LA	R7,1(,R7)	no -> increment amount by one 01060000
0000A2	1788			130	XR	R8,R8	clear R8 for MVCL 01070000
0000A4	5890 C2E0	002E0		131	L	R9,FF	get initialization pattern for MVCL 01080001
0000A8	0E68			132	MVCL	R6,R8	initialize prime indication flags 01090000
0000AA	5860 C448	00448		133	L	R6,ISPRIME	start of prime indication flags 01100000
0000AE	927F 6000	00000		134	MVI	0(R6),X'7F'	make one not prime 01110001
				135	*		01120000
				136	*	Sieve of Eratosthenes	01130000
				137	*		01140000
0000B2	5810 C448	00448		138	L	R1,ISPRIME	address of prime flag array 01150000
0000B6	4120 C2FC	002FC		139	LA	R2,CROSSOUT	masks to cross out primes 01160000
0000BA	1733			140	XR	R3,R3	clear for prime test EXecuted later 01170000
0000BC	4140 C2F4	002F4		141	LA	R4,PRIMFLGS	masks for prime test 01180000
0000C0	4150 0001	00001		142	LA	R5,1	candidate bit offset \ sieve starts 01190001
0000C4	1861			143	LR	R6,R1	candidate address > at 01200000
0000C6	4170 0003	00003		144	LA	R7,3	candidate value / three 01210000
0000CA	41E0 0002	00002		145	LA	R14,2	incrementor for large numbers 01220001
0000CE	1897			146	SIEVE	LR R9,R7	is square of .. 01230000
0000D0	1C87			147	MR	R8,R7	.. candidate value .. 01240000
0000D2	5990 C2DC	002DC		148	C	R9,LIMIT	.. higher than sieve limit? 01250000
0000D6	4720 C12C	0012C		149	BH	PRNTPRIM	yes -> sieve complete, go print 01260000
0000DA	4335 4000	00000		150	IC	R3,0(R5,R4)	is prime flag for .. 01270000
0000DE	4430 C2C6	002C6		151	EX	R3,TESTPRIM	.. this candidate set? 01280000
0000E2	47E0 C112	00112		152	BNO	SIEVENXT	no -> check next candidate 01290000
0000E6	8970 0001	00001		153	CLRMULT	SLL R7,1	only odd multiples need to be cleared 01300001
0000EA	18A9			154	CLRMULTL	LR R10,R9	current prime multiple 01303001
0000EC	06A0			155	BCTR	R10,0	decrement for addressing 01310000
0000EE	88A0 0001	00001		156	SRL	R10,1	divide by two (address compression) 01315001
0000F2	8CA0 0003	00003		157	SRDL	R10,3	divide by eight 01320000
0000F6	1AA1			158	AR	R10,R1	address of prime multiple 01330000
0000F8	88B0 001D	0001D		159	SRL	R11,29	bit offset of prime multiple 01340000
0000FC	433B 2000	00000		160	IC	R3,0(R11,R2)	get cross out mask 01350000
000100	4430 C2CA	002CA		161	EX	R3,CLRPRIM	cross out prime multiple 01360000
000104	1A97			162	AR	R9,R7	is next odd prime multiple .. 01370001
000106	5990 C2DC	002DC		163	C	R9,LIMIT	.. not higher than sieve limit? 01380000
00010A	47D0 C0EA	000EA		164	BNH	CLRMULTL	yes -> go cross it out 01390001
00010E	8870 0001	00001		165	SRL	R7,1	restore candidate value 01393001
000112	1A7E			166	SIEVENXT	AR R7,R14	next please, skip even numbers 01400000

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE	STATEMENT	ASM 0201 01.02 09/17/16
000114	4150 5001	00001		167	LA	R5,1(,R5)	next bit position 01410001
000118	4950 C2E8	002E8		168	CH	R5,EIGHT	end of byte reached 01420000
00011C	4740 C0CE	000CE		169	BL	SIEVE	no -> check candidate 01430000
000120	4150 0000	00000		170	LA	R5,0	yes -> reset candidate bit offset .. 01440001
000124	4160 6001	00001		171	LA	R6,1(,R6)	.. and increment to next byte 01450001
000128	47F0 C0CE	000CE		172	B	SIEVE	go check it 01470000
				173	*		01480000
				174	*	Print primes	01490000
				175	*		01500000
00012C	4150 0001	00001		176	PRNTPRIM LA	R5,1	candidate bit offset \ print starts 01510001
000130	1861			177	LR	R6,R1	candidate address > at 01520000
000132	4170 0003	00003		178	LA	R7,3	candidate value / three 01530000
000136	4120 0002	00002		179	LA	R2,2	incrementor for large limits 01540000
00013A	4180 0001	00001		180	LA	R8,1	number of primes found, the two is .. 01550000
00013E	41A0 0001	00001		181	LA	R10,1	.. pre set and .. 01560000
000142	4190 C313	00313		182	LA	R9,PRNTLINE+11	.. pre printed 01570000
000146	17BB			183	XR	R11,R11	no lines printed on this page yet 01580000
000148	47F0 C158	00158		184	B	*+16	skip page initialization on first page 01590000
00014C	D2A5 C307	C306 00307	00306	185	NEWLINE MVC	CC(166),NL	new line 01600000
000152	4190 C308	00308		186	LA	R9,PRNTLINE	current print position 01610000
000156	17AA			187	XR	R10,R10	no numbers printed on this line yet 01620000
000158	49B0 C2E4	002E4		188	CH	R11,LPP	page full? 01630000
00015C	4770 C166	00166		189	BNE	CHKPRIME	no -> check next number 01640000
000160	17BB			190	XR	R11,R11	no lines printed on this page yet 01650000
000162	92F1 C307	00307		191	MVI	CC,C'1'	next line starts a new page 01660000
000166	5970 C2DC	002DC		192	CHKPRIME C	R7,LIMIT	sieve limit reached? 01670000
00016A	4720 C1D2	001D2		193	BH	LASTLINE	yes -> print last line 01680000
00016E	4335 4000	00000		194	IC	R3,0(R5,R4)	is prime flag for .. 01690000
000172	4430 C2C6	002C6		195	EX	R3,TESTPRIM	.. this candidate set? 01700000
000176	47E0 C1B8	001B8		196	BNO	CHKNEXT	no -> check next candidate 01710000
00017A	4180 8001	00001		197	LA	R8,1(,R8)	yes -> increment number of primes found 01720000
00017E	4E70 C2D0	002D0		198	CVD	R7,NUMDEC	convert prime to decimal 01730000
000182	D20A 9000	C3B6 00000	003B6	199	MVC	0(11,R9),EDIT	get print format into print position 01740000
000188	DE0A 9001	C2D3 00001	002D3	200	ED	1(11,R9),NUMDEC+3	format prime 01750000
00018E	41A0 A001	00001		201	LA	R10,1(,R10)	increment number of primes and .. 01760000
000192	4190 900B	0000B		202	LA	R9,11(,R9)	.. print position 01770000
000196	49A0 C2E6	002E6		203	CH	R10,NPL	is current line filled up? 01780000
00019A	4770 C1B8	001B8		204	BNE	CHKNEXT	no -> check next candidate 01790000
				205	PUT	SYSPRINT,CC	yes -> print line 01800000
00019E	4110 C3E0	003E0		206+	LA	1,SYSPRINT	LOAD PARAMETER REG 1 01900002
0001A2	4100 C307	00307		207+	LA	0,CC	LOAD PARAMETER REG 0 02500002
0001A6	58F0 1030	00030		208+	L	15,48(0,1)	LOAD PUT ROUTINE ADDR 00550000
0001AA	05EF			209+	BALR	14,15	LINK TO PUT ROUTINE 00600000
0001AC	41B0 B001	00001		210	LA	R11,1(,R11)	increment number of lines on this page 01810000
0001B0	41F0 C14C	0014C		211	LA	R15,NEWLINE	next loop initializes a new line 01820000
0001B4	47F0 C1BC	001BC		212	B	*+8	skip adding to current line 01830000
0001B8	41F0 C166	00166		213	CHKNEXT LA	R15,CHKPRIME	next loop adds to current line 01840000
0001BC	1A72			214	AR	R7,R2	next please, skip even numbers 01850000
0001BE	4150 5001	00001		215	LA	R5,1(,R5)	next bit position 01860001
0001C2	4950 C2E8	002E8		216	CH	R5,EIGHT	end of byte reached 01870000
0001C6	074F			217	BLR	R15	no -> check candidate 01880000
0001C8	4150 0000	00000		218	LA	R5,0	yes -> reset candidate bit offset .. 01890001
0001CC	4160 6001	00001		219	LA	R6,1(,R6)	.. and increment to next byte 01900001
0001D0	07FF			220	BR	R15	go check it 01920000
0001D2	12AA			221	LASTLINE LTR	R10,R10	not yet printed primes in this line? 01930000

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE	STATEMENT	ASM 0201 01.02 09/17/16
0001D4	4780 C1F0	001F0		222	BZ	SUMMARY no -> print summary	01940000
				223	PUT	SYSPRINT,CC yes -> print last primes	01950000
0001D8	4110 C3E0	003E0		224+	LA	1,SYSPRINT LOAD PARAMETER REG 1	01900002
0001DC	4100 C307	00307		225+	LA	0,CC LOAD PARAMETER REG 0	02500002
0001E0	58F0 1030	00030		226+	L	15,48(0,1) LOAD PUT ROUTINE ADDR	00550000
0001E4	05EF			227+	BALR	14,15 LINK TO PUT ROUTINE	00600000
0001E6	D2A5 C307 C306	00307	00306	228	MVC	CC(166),NL new line	01960000
0001EC	41B0 B001	00001		229	LA	R11,1(,R11) increment number of lines on this page	01970000
0001F0	95F1 C307	00307		230	SUMMARY CLI	CC,C'1' new page already started?	01980000
0001F4	4780 C210	00210		231	BE	PRINTSUM yes -> print summary line	01990000
0001F8	41B0 B001	00001		232	LA	R11,1(,R11) no -> increment number of lines	02000000
0001FC	49B0 C2E4	002E4		233	CH	R11,LPP page almost full?	02010000
000200	47B0 C20C	0020C		234	BNL	*+12 yes -> start new page	02020000
000204	92F0 C307	00307		235	MVI	CC,C'0' no -> skip one line	02030000
000208	47F0 C210	00210		236	B	*+8 print summary	02040000
00020C	92F1 C307	00307		237	MVI	CC,C'1' start new page	02050000
000210	4E80 C2D0	002D0		238	PRINTSUM CVD	R8,NUMDEC convert number of primes to decimal	02060000
000214	D228 C308 C3B6	00308	003B6	239	MVC	PRNTLINE(LSUMMARY),EDIT get summary line and formats	02070000
00021A	DE0A C309 C2D3	00309	002D3	240	ED	PRNTLINE+1(11),NUMDEC+3 format number of lines	02080000
000220	5880 C2DC	002DC		241	L	R8,LIMIT get sieve limit	02090000
000224	4E80 C2D0	002D0		242	CVD	R8,NUMDEC convert to decimal	02100000
000228	DE0A C321 C2D3	00321	002D3	243	ED	PRNTLINE+LIMITEBC+1(11),NUMDEC+3 format sieve limit	02110000
				244	PUT	SYSPRINT,CC print number of primes and sieve limit	02120000
00022E	4110 C3E0	003E0		245+	LA	1,SYSPRINT LOAD PARAMETER REG 1	01900002
000232	4100 C307	00307		246+	LA	0,CC LOAD PARAMETER REG 0	02500002
000236	58F0 1030	00030		247+	L	15,48(0,1) LOAD PUT ROUTINE ADDR	00550000
00023A	05EF			248+	BALR	14,15 LINK TO PUT ROUTINE	00600000
00023C	D203 C304 C3AE	00304	003AE	249	MVC	TELLUSER(4),SUMWTOP get WTO prefix and suffix ..	02130000
000242	D203 C331 C3B2	00331	003B2	250	MVC	PRNTLINE+LSUMMARY(4),SUMWTOS .. around summary line	02140000
				251	WTO	MF=(E,TELLUSER) print summary line in job log	02150000
000248	4110 C304	00304		252+	LA	1,TELLUSER LOAD PARAMETER REG 1	01900002
00024C	0A23			253+	SVC	35 ISSUE SVC	01500002
				254 *			02160000
				255 *		Cleanup and return	02170000
				256 *			02180000
				257		FREEMAIN VU,A=ISPRIME release storage	02190000
				258+*		OS/V2 RELEASE 3 VERSION -- 10/25/74	00001603
00024E	0700			259+	CNOP	0,4	00092000
000250	4510 C25E	0025E		260+	BAL	1,*+14 BRANCH AROUND LIST	00093000
000254	00000000			261+	DC	A(0)	00107000
000258	00000448			262+	DC	A(ISPRIME) AREA LIST ADDRESS	00109000
00025C	C0			263+	DC	AL1(192) MODE BYTE	00119000
00025D	00			264+	DC	AL1(0) SUBPOOL VALUE	00127000
00025E	0A05			265+	SVC	5 ISSUE FREEMAIN SVC	00311202
				266	CLOSE	SYSPRINT close printer	02200000
000260				267+	CNOP	0,4	02420002
000260	4510 C268	00268		268+	BAL	1,*+8 LOAD REG1 W/LIST ADDR	02460002
000264	80			269+	DC	AL1(128) OPTION BYTE	02580000
000265	0003E0			270+	DC	AL3(SYSPRINT) DCB ADDRESS	02600000
000268	0A14			271+	SVC	20 ISSUE CLOSE SVC	01640000
00026A	58D0 D004	00004		272	L	R13,4(,R13) caller's save area pointer	02210000
				273	RETURN	(14,12),RC=0 restore registers and return	02220000
00026E	98EC D00C	0000C		274+	LM	14,12,12(13) RESTORE THE REGISTERS	00650000
000272	41F0 0000	00000		275+	LA	15,0(0,0) LOAD RETURN CODE	01750000
000276	07FE			276+	BR	14 RETURN	02000000

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE STATEMENT	ASM 0201 01.02 09/17/16
				277 *		02230000
				278 * Data area		02240000
				279 *		02250000
000278				280 SAVEA DS 18F	save area	02260000
0002C0	D200 3000 2002 00000 00002			281 MOVEPARM MVC 0(1,R3),2(R2)	EXecuted to retrieve PARM field	02270000
0002C6	9100 6000 00000			282 TESTPRIM TM 0(R6),0	EXecuted to test for being prime	02280000
0002CA	9400 A000 00000			283 CLRPRIM NI 0(R10),0	EXecuted to cross out a prime multiple	02290000
0002D0				284 NUMDEC DS D	target for decimal conversion	02300000
0002D8	7FFFFFFF			285 HIGHLIM DC F'2147483647'	highest possible fullword value	02310000
0002DC	000007D0			286 LIMIT DC F'2000'	default sieve limit	02320000
0002E0	FF000000			287 FF DC X'FF000000'	prime flags initialization pattern	02330001
0002E4	0040			288 LPP DC H'64'	lines to print per page	02340000
0002E6	000F			289 NPL DC H'15'	prime numbers to print per line	02350000
0002E8	0008			290 EIGHT DC H'8'	used for loops and comparisons	02360000
0002EA	4040404040404040			291 PARM DC 10C' '	PARM field goes here	02370000
0002F4	80			292 PRIMFLGS DC B'10000000'	.. the set ..	02380000
0002F5	40			293 DC B'01000000'	.. bit's ..	02390000
0002F6	20			294 DC B'00100000'	.. position ..	02400000
0002F7	10			295 DC B'00010000'	.. represents ..	02410000
0002F8	08			296 DC B'00001000'	.. a ..	02420000
0002F9	04			297 DC B'00000100'	.. potential ..	02430000
0002FA	02			298 DC B'00000010'	.. prime ..	02440000
0002FB	01			299 DC B'00000001'	.. number ..	02450000
0002FC	7F			300 CROSSOUT DC B'01111111'	.. masks ..	02460000
0002FD	BF			301 DC B'10111111'	.. used ..	02470000
0002FE	DF			302 DC B'11011111'	.. to ..	02480000
0002FF	EF			303 DC B'11101111'	.. cross ..	02490000
000300	F7			304 DC B'11110111'	.. out ..	02500000
000301	FB			305 DC B'11111011'	.. none ..	02510000
000302	FD			306 DC B'11111101'	.. prime ..	02520000
000303	FE			307 DC B'11111110'	.. numbers ..	02530000
000304				308 DS 0F		02540000
000304				309 TELLUSER DS H	WTO plist for summary message goes here	02550000
000306	40			310 NL DC C' '	newline carriage control	02560000
000307	F1			311 CC DC C'1'	formfeed on first output line	02570000
000308	4040404040404040			312 PRNTLINE DC 10C' '	line to be printed ..	02580000
000312	F2			313 DC C'2'	.. the prime two is ..	02590000
000313	4040404040404040			314 DC 154C' '	.. pre printed on initial line	02600000
0003AD	40			315 DC C' '	filler to receive EDit garbage	02610000
0003AE	002D8000			316 SUMWTOP DC X'002D8000'	prefix for summary message WTO	02620000
0003B2	02000020			317 SUMWTOS DC X'02000020'	suffix for summery message WTO	02630000
0003B6	4040202020202020			318 EDIT DC 2C' ',9X'20'	EDit pattern to format 9 digits	02640000
0003C1	409799899485A240			319 DC C' primes up to'	.. skeleton ..	02650000
		00018		320 LIMITEBC EQU *-EDIT	.. for ..	02660000
0003CE	4040202020202020			321 DC 2C' ',9X'20'	.. summary ..	02670000
0003D9	408696A49584			322 DC C' found'	.. line ..	02680000
		00029		323 LSUMMARY EQU *-EDIT	summary line length	02690001
				324 SYSPRINT DCB DSORG=PS,MACRF=PM,DDNAME=SYSPRINT, RECFM=FBA,LRECL=166,BLKSIZE=16600	DCB for SYSPRINT	X02700000 02710000
				326+*	DATA CONTROL BLOCK	22770000
				327+*		22860000
0003DF	00					
0003E0				328+SYSPRINT DC 0F'0'	ORIGIN ON WORD BOUNDARY	22914000

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE	STATEMENT	ASM 0201 01.02 09/17/16
				330+*		DIRECT ACCESS DEVICE INTERFACE	27360000
0003E0	0000000000000000			332+	DC	BL16'0'	27540000
0003F0	00000000			333+	DC	A(0)	27720000
				335+*		COMMON ACCESS METHOD INTERFACE	48690000
0003F4	00			337+	DC	AL1(0)	49050000
0003F5	000001			338+	DC	AL3(1)	54720000
0003F8	0000			339+	DC	AL2(0)	55170000
0003FA	4000			340+	DC	BL2'0100000000000000'	*55800000
				+			55890000
0003FC	00000001			341+	DC	A(1)	56340000
				343+*		FOUNDATION EXTENSION	56610000
000400	00			345+	DC	BL1'00000000'	59850000
000401	000001			346+	DC	AL3(1)	65970000
000404	94			347+	DC	BL1'10010100'	*66150000
				+			66240000
000405	000000			348+	DC	AL3(0)	66330000
				350+*		FOUNDATION BLOCK	66690000
000408	E2E8E2D7D9C9D5E3			352+	DC	CL8'SYSPRINT'	66870000
000410	02			353+	DC	BL1'00000010'	68220000
000411	00			354+	DC	BL1'00000000'	68310000
000412	0050			355+	DC	BL2'0000000001010000'	*68400000
				+			*68490000
				+		MACR	68580000
				357+*		BSAM-BPAM-QSAM INTERFACE	74430000
000414	00			359+	DC	BL1'00000000'	*74610000
				+			RER1 74700000
000415	000001			360+	DC	AL3(1)	74790000
000418	00000001			361+	DC	A(1)	74880000
00041C	0000			362+	DC	H'0'	74970000
00041E	40D8			363+	DC	AL2(16600)	75240000
000420	00000000			364+	DC	F'0'	75870000
000424	00000001			365+	DC	A(1)	75960000
000428	00			366+	DC	AL1(0)	76050000
000429	000001			367+	DC	AL3(1)	76140000
				369+*		QSAM INTERFACE	81450000
00042C	00000001			371+	DC	A(1)	81630000
000430	0000			372+	DC	H'0'	81810000
000432	00A6			373+	DC	AL2(166)	80730000
						LRECL	
000434	00			374+	DC	BL1'00000000'	82530000
000435	000001			375+	DC	AL3(1)	82620000
000438	00000000			376+	DC	F'0'	82710000
00043C	00000001			377+	DC	A(1)	82800000
						EOB	
000440	00000008			378	DC	F'8'	02720000
						GETMAIN plist to obtain maximum ..	
000444	00FFFFFFF8			379	DC	X'00FFFFFFF8'	02730000
						.. storage available in region	

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	SOURCE	STATEMENT	ASM 0201 01.02 09/17/16
000448				380	ISPRIME	DS F address of allocated storage	02740000
00044C				381	MAXMEM	DS F amount of storage allocated	02750000
				382		YREGS , register equates	02760000
		00000		384+R0		EQU 0	00060000
		00001		385+R1		EQU 1	00070000
		00002		386+R2		EQU 2	00080000
		00003		387+R3		EQU 3	00090000
		00004		388+R4		EQU 4	00100000
		00005		389+R5		EQU 5	00110000
		00006		390+R6		EQU 6	00120000
		00007		391+R7		EQU 7	00130000
		00008		392+R8		EQU 8	00140000
		00009		393+R9		EQU 9	00150000
		0000A		394+R10		EQU 10	00160000
		0000B		395+R11		EQU 11	00170000
		0000C		396+R12		EQU 12	00180000
		0000D		397+R13		EQU 13	00190000
		0000E		398+R14		EQU 14	00200000
		0000F		399+R15		EQU 15	00210000
000000				401	END	PRIMASM end of PRIMASM	02770000

POS.ID	REL.ID	FLAGS	ADDRESS
0001	0001	08	00005D
0001	0001	0C	000068
0001	0001	0C	00006C
0001	0001	0C	000258
0001	0001	08	000265

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SYMBOL	LEN	VALUE	DEFN	REFERENCES	ASM 0201 01.02 09/17/16
CC	00001	00000307	00311	00185 00191 00207 00225 00228 00230 00235 00237 00246	
CHKNEXT	00004	000001B8	00213	00196 00204	
CHKPRIME	00004	00000166	00192	00189 00213	
CLRMULTL	00002	000000EA	00154	00164	
CLRPRIM	00004	000002CA	00283	00161	
CROSSOUT	00001	000002FC	00300	00139	
EDIT	00001	000003B6	00318	00199 00239 00320 00323	
EIGHT	00002	000002E8	00290	00168 00216	
FF	00004	000002E0	00287	00131	
GETMAX	00004	00000440	00378	00112	
HIGHLIM	00004	000002D8	00285	00091	
HIGHPARM	00004	00000052	00101	00094	
ISPRIME	00004	00000448	00380	00113 00122 00133 00138 00262	
LASTLINE	00002	000001D2	00221	00193	
LIMIT	00004	000002DC	00286	00101 00119 00121 00123 00148 00163 00192 00241	
LIMITEBC	00001	00000018	00320	00243	
LPP	00002	000002E4	00288	00188 00233	
LSUMMARY	00001	00000029	00323	00239 00250	
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MOVEPARM	00006	000002C0	00281	00098	
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NOPARM	00004	00000058	00104	00090	
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NUMDEC	00008	000002D0	00284	00099 00100 00198 00200 00238 00240 00242 00243	
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PRNTPRIM	00004	0000012C	00176	00149	
R1	00001	00000001	00385	00087 00088 00089 00089 00093 00096 00097 00098 00138 00143 00158 00177	
R10	00001	0000000A	00394	00154 00155 00156 00157 00158 00181 00187 00187 00201 00201 00203 00221 00221 00283	
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R3	00001	00000003	00387	00091 00095 00096 00100 00101 00140 00140 00150 00151 00160 00161 00194 00195 00281	
R4	00001	00000004	00388	00092 00093 00141 00150 00194	
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R7	00001	00000007	00391	00117 00118 00119 00121 00126 00129 00129 00144 00146 00147 00153 00162 00165 00166 00178 00192 00198 00214	
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SIEVENXT	00002	00000112	00166	00152	
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SYMBOL	LEN	VALUE	DEFN	REFERENCES
TELLUSER	00002	00000304	00309	00249 00252
TESTPRIM	00004	000002C6	00282	00151 00195

ASM 0201 01.02 09/17/16

ASM 0201 01.02 09/17/16

NO STATEMENTS FLAGGED IN THIS ASSEMBLY

HIGHEST SEVERITY WAS 0

OPTIONS FOR THIS ASSEMBLY

ALIGN, ALOGIC, BUFSIZE(STD), NODECK, ESD, FLAG(0), LINECOUNT(55), LIST, NOMCALL, YFLAG, WORKSIZE(2097152)

NOMLOGIC, NONUMBER, OBJECT, NORENT, RLD, NOSTMT, NOLIBMAC, NOTERMINAL, NOTEST, XREF(SHORT)

SYSPARM()

WORK FILE BUFFER SIZE/NUMBER = 8702/ 1

TOTAL RECORDS READ FROM SYSTEM INPUT 284

TOTAL RECORDS READ FROM SYSTEM LIBRARY 4443

TOTAL RECORDS PUNCHED 23

TOTAL RECORDS PRINTED 507

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GGGGGGGGGGGG 00000000000
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GG      00      00
GG      00      00
GG      00      00
GG      GGGGG 00      00
GG      GGGGG 00      00
GG      GG    00      00
GG      GG    00      00
GGGGGGGGGGGG 00000000000
GGGGGGGGGG  00000000000
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PP      PP  RR      RR      II      MMMM    MMMM  EE      SS      SS
PP      PP  RR      RR      II      MM MM   MM MM  EE      SS
PP      PP  RR      RR      II      MM  MMMM  MM  EE      SSS
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PP      RR      RR      II      MM      MM  EE      SS
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VS LOADER

OPTIONS USED - PRINT,NOMAP,NOLET,CALL,RES,NOTERM,SIZE=307200,NAME=**GO

TOTAL LENGTH 450
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199	211	223	227	229	233	239	241	251	257	263	269
283	293	307	311	313	317	331	337	347	349	353	359
383	389	397	401	409	419	421	431	433	439	443	449
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577	587	593	599	601	607	613	617	619	631	641	643
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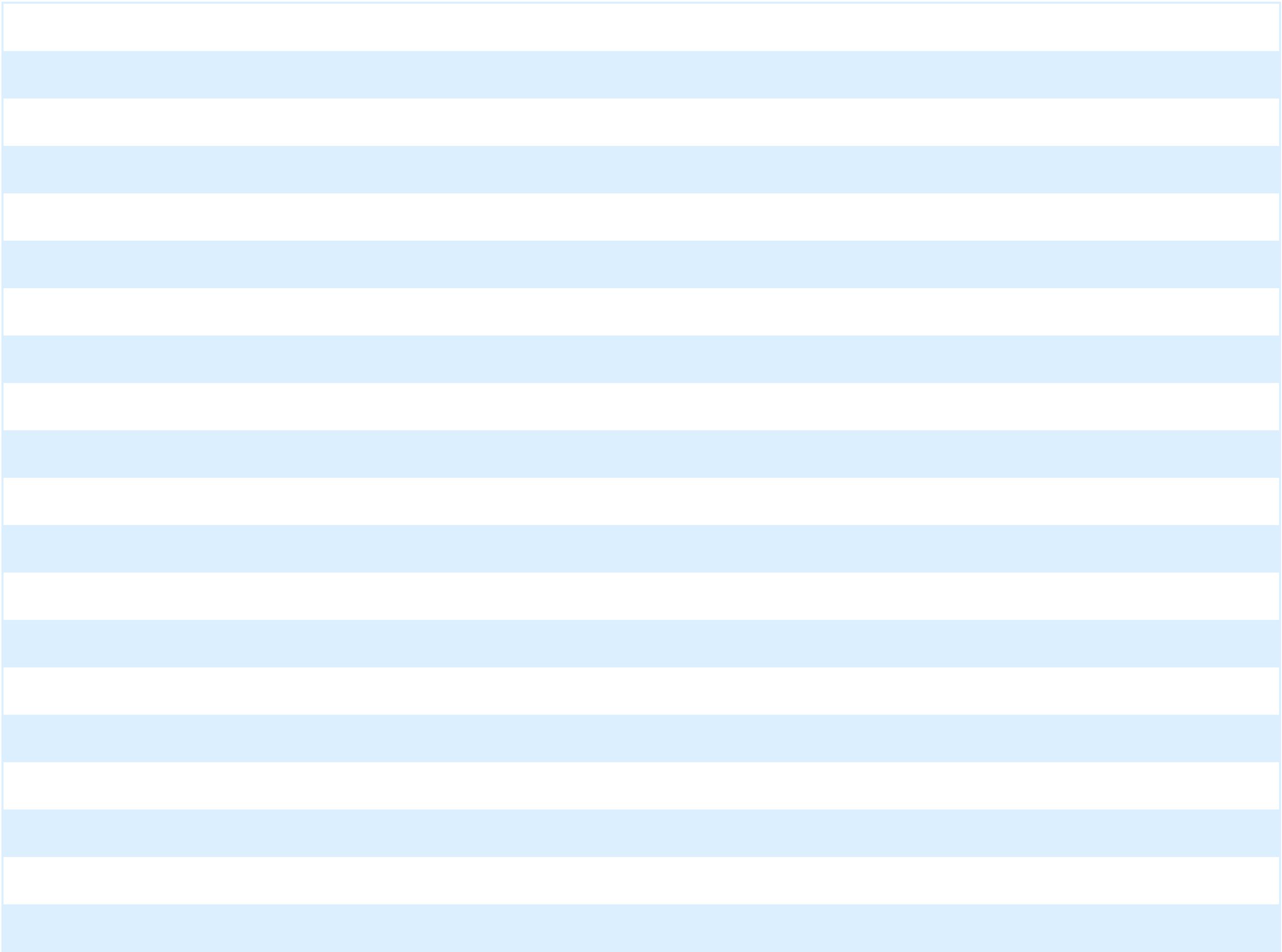
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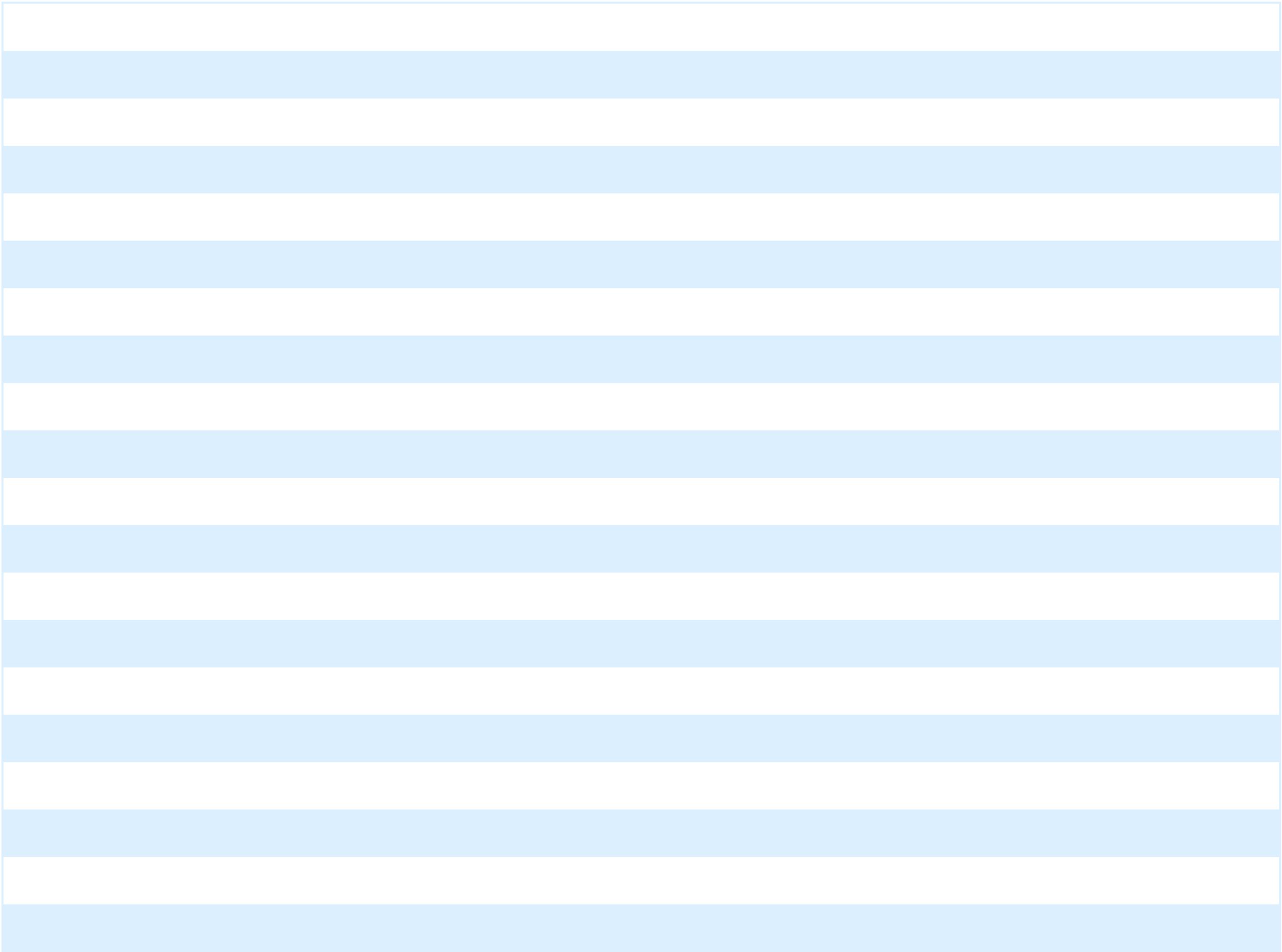
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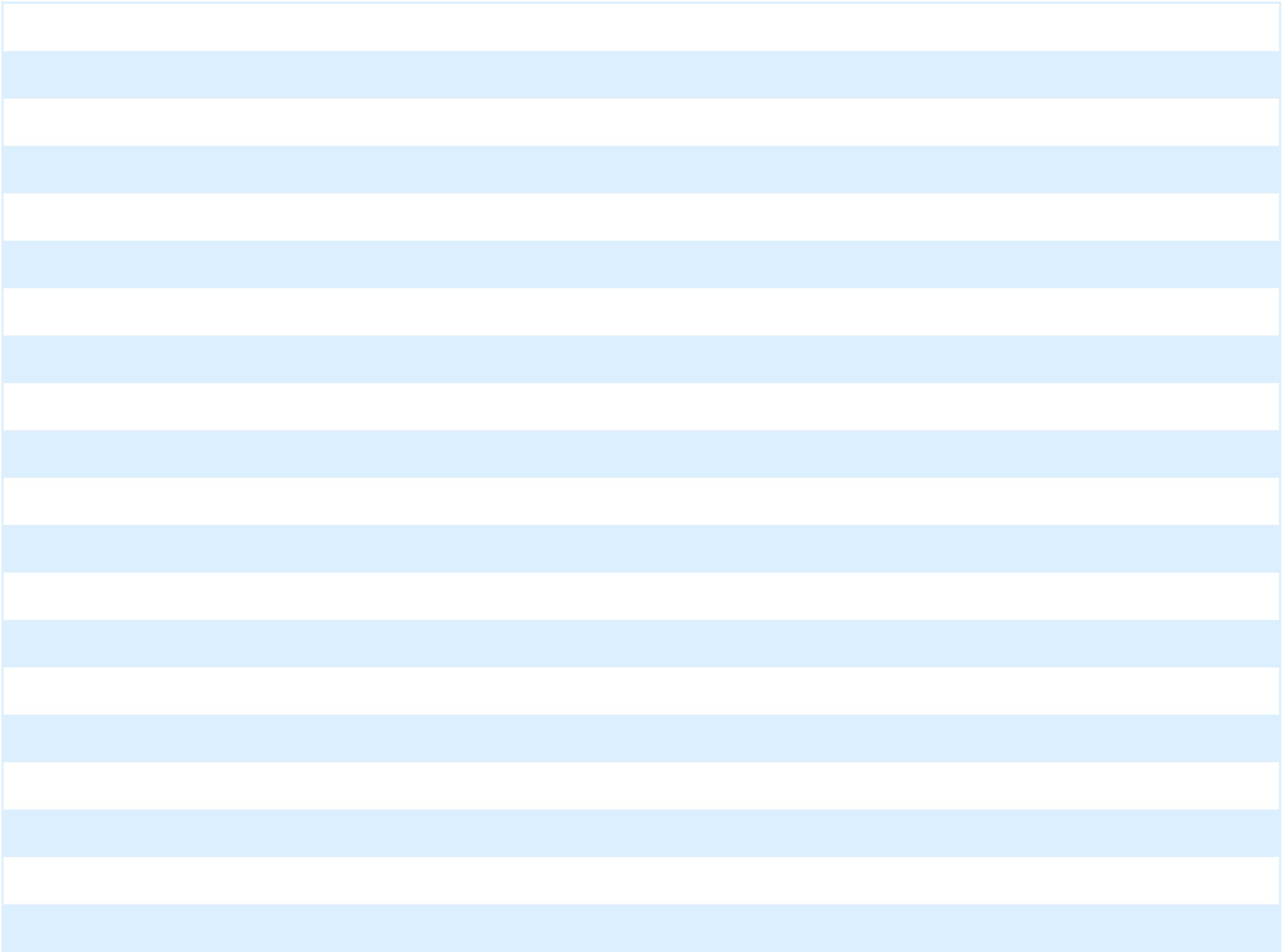
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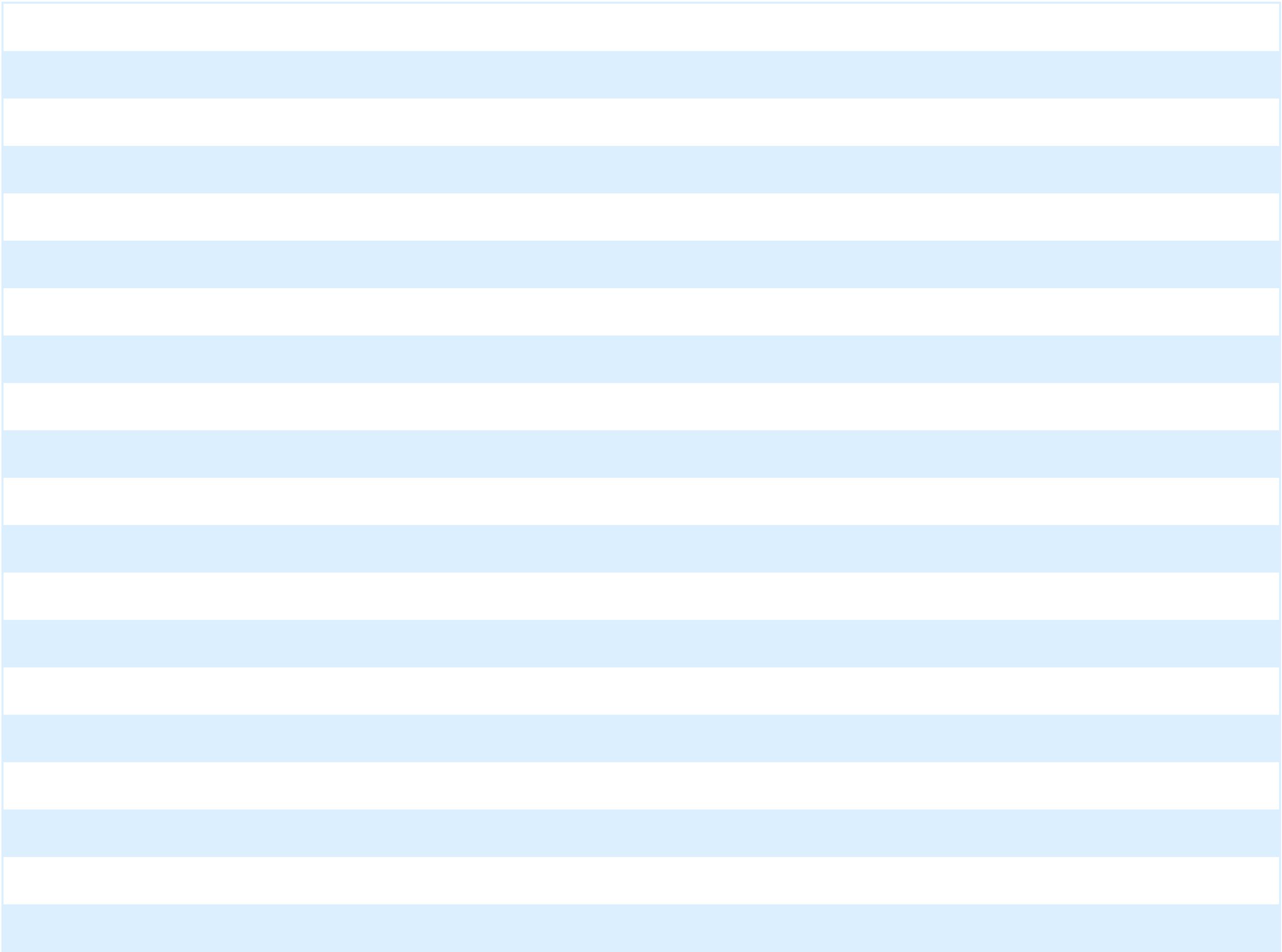
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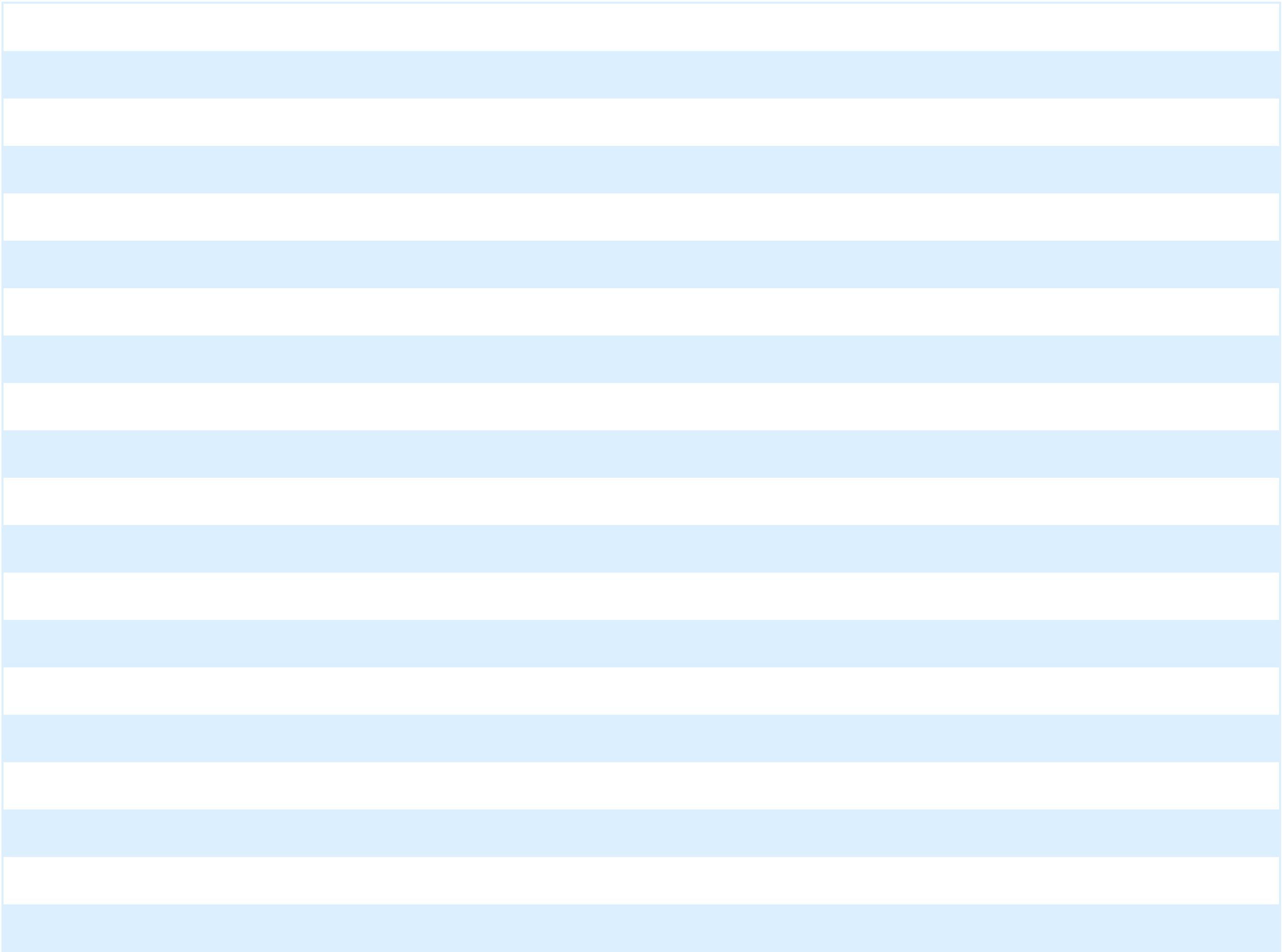
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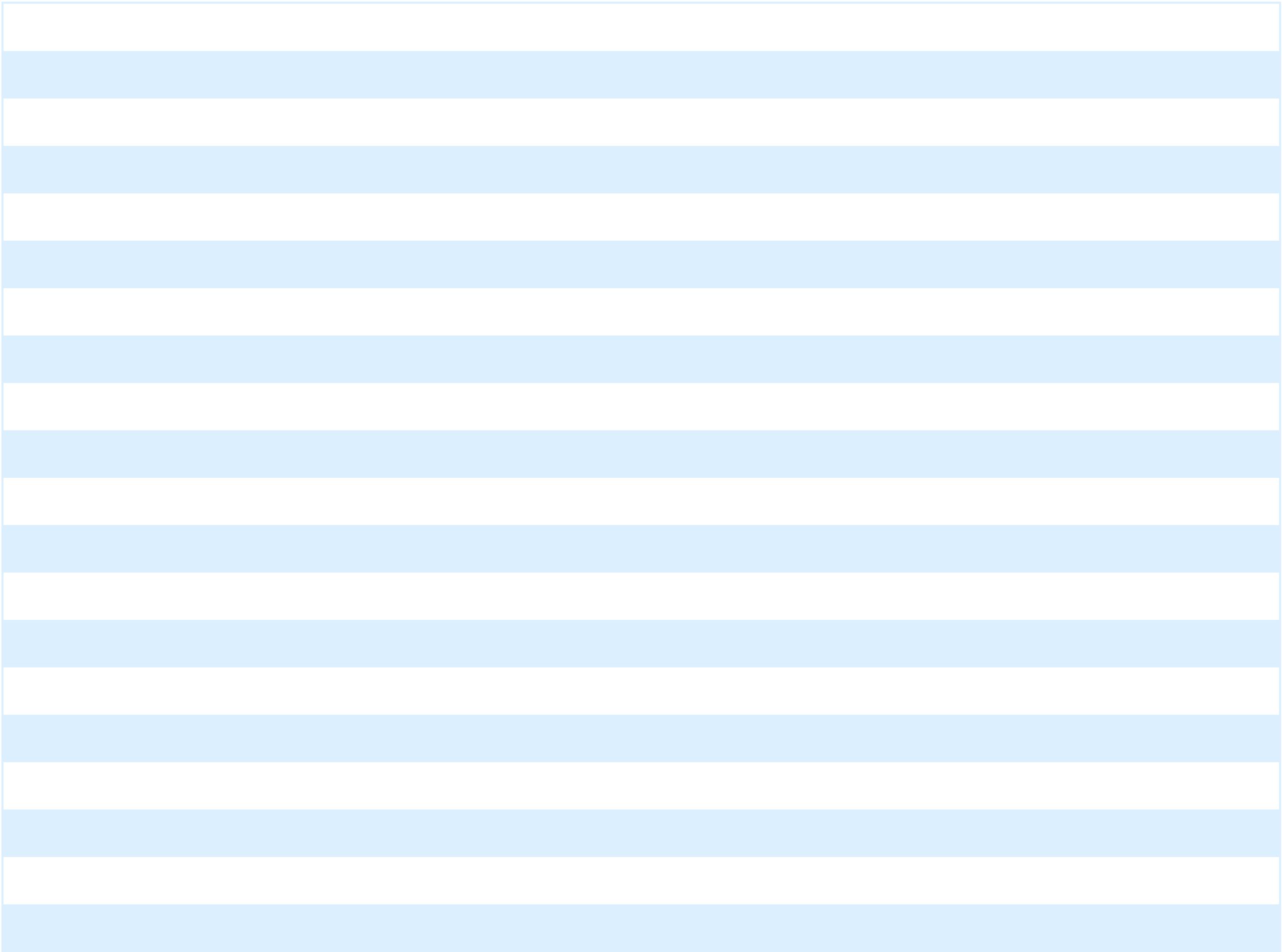
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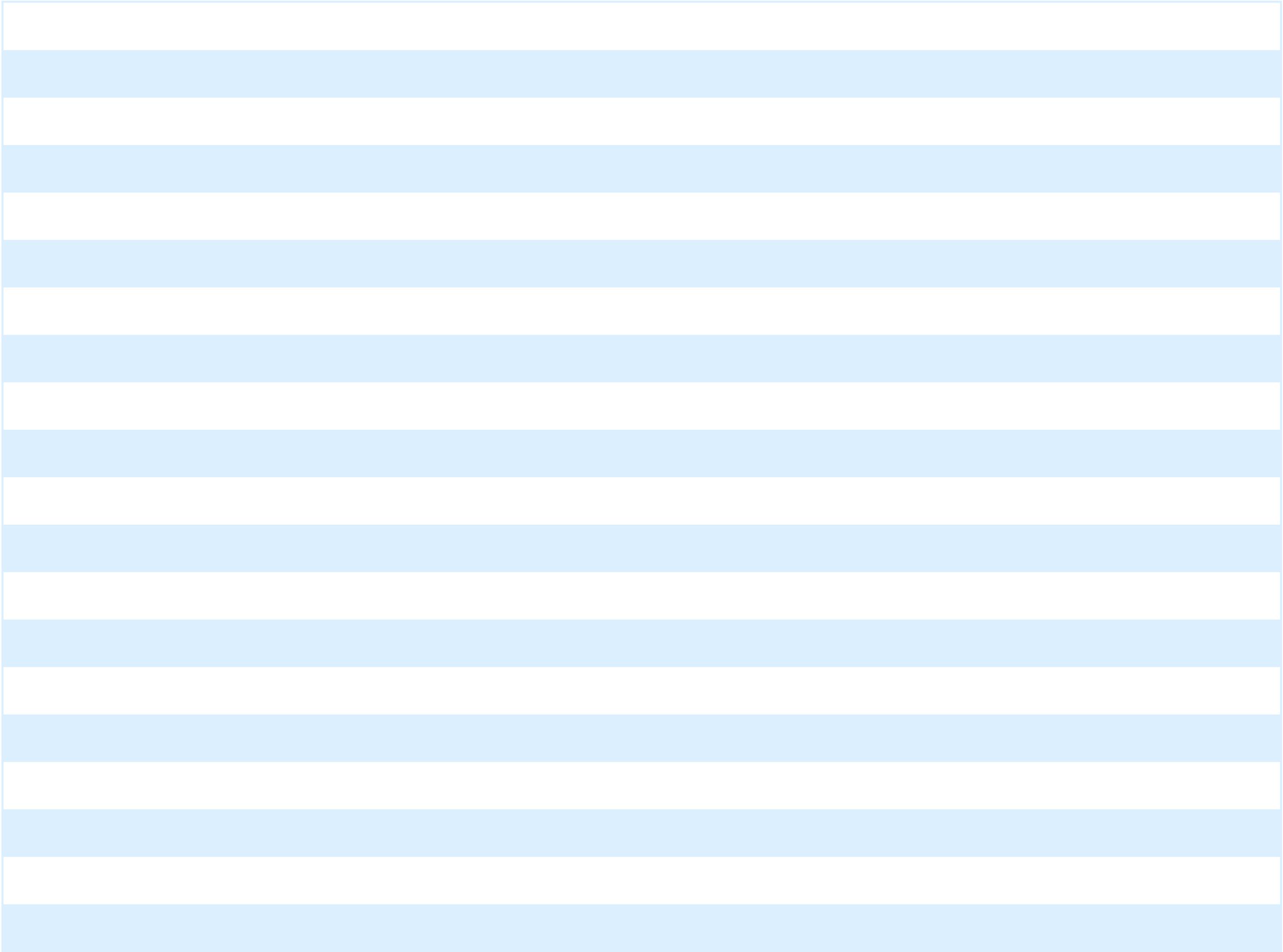
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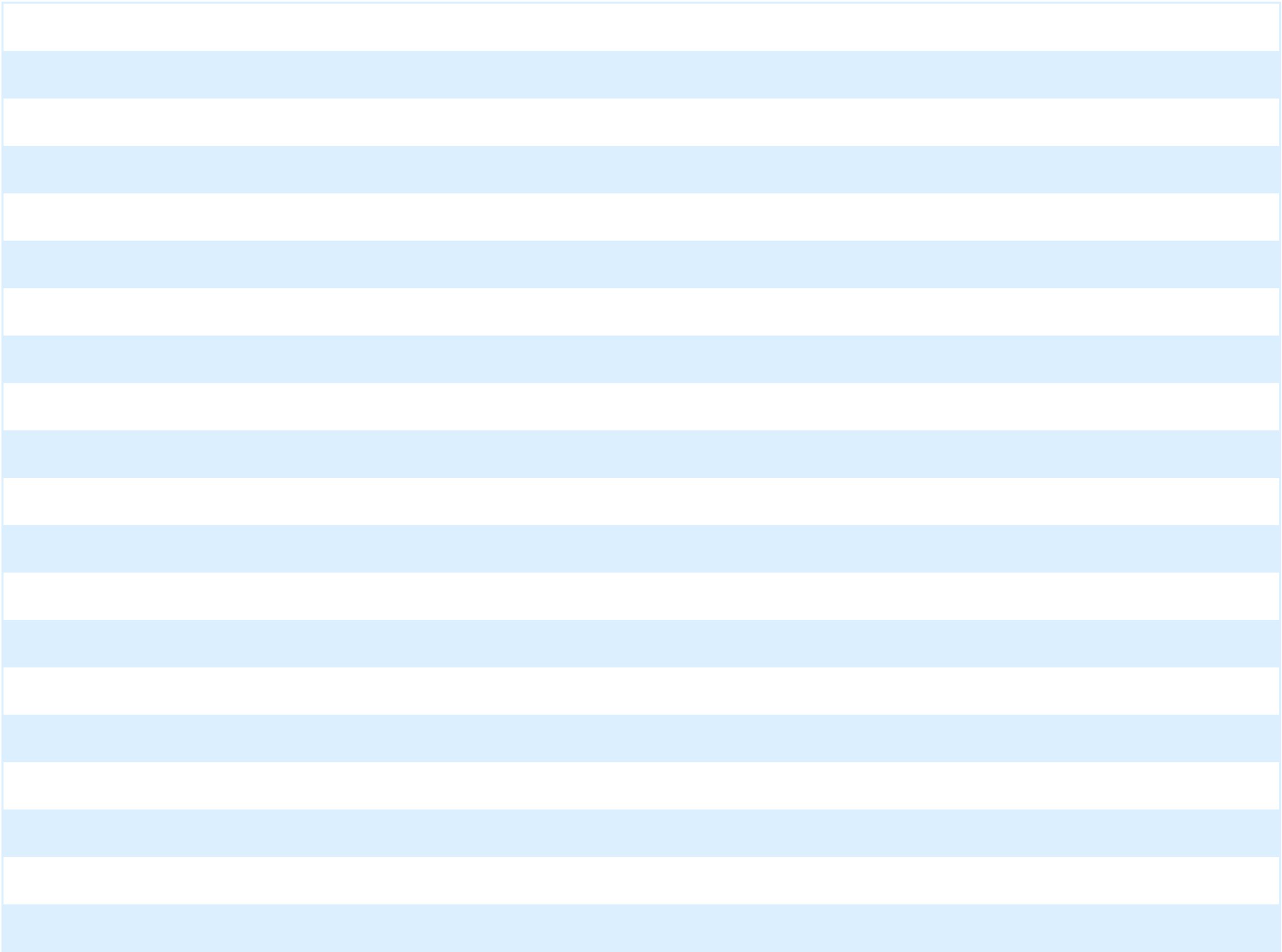
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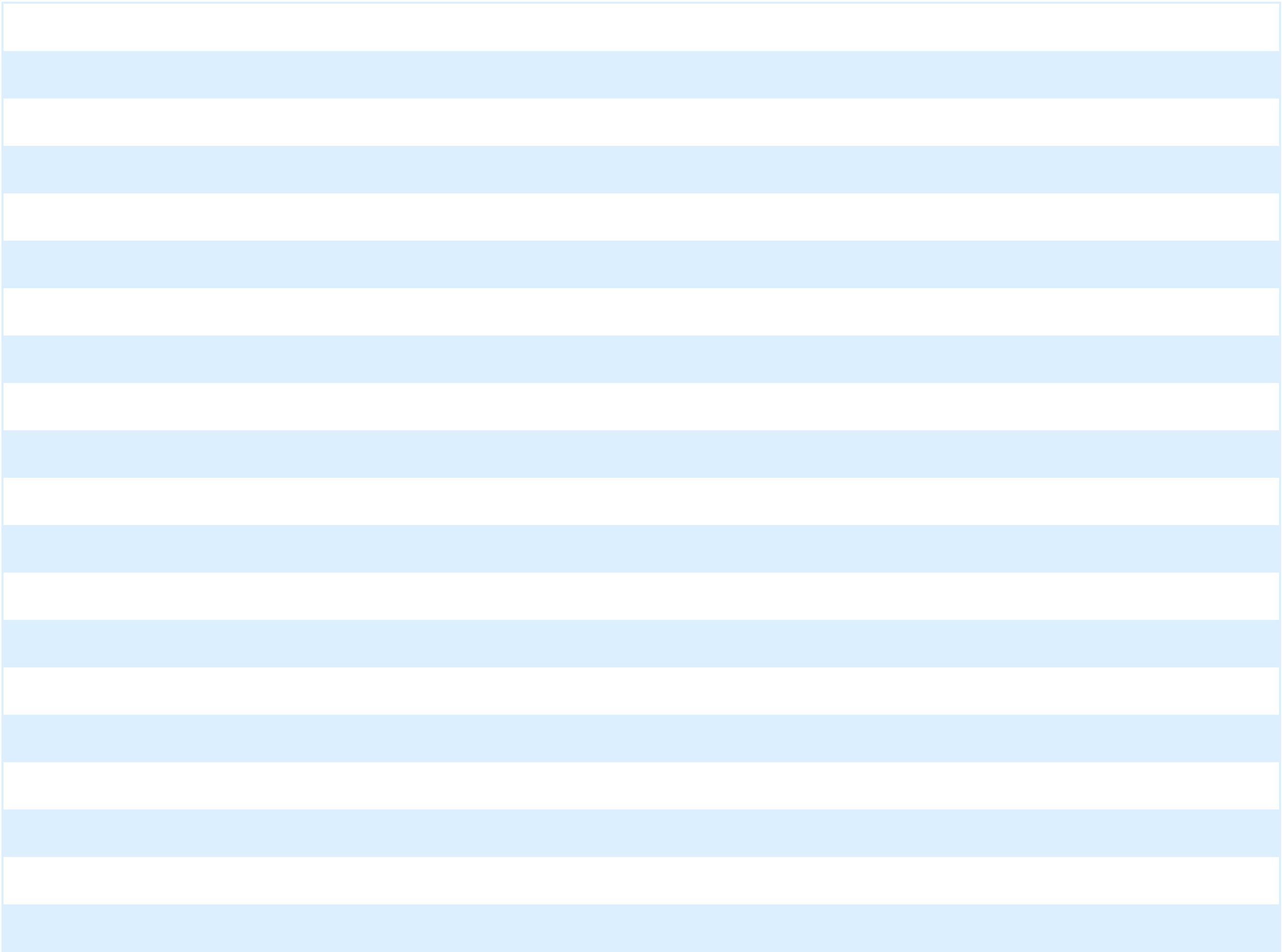
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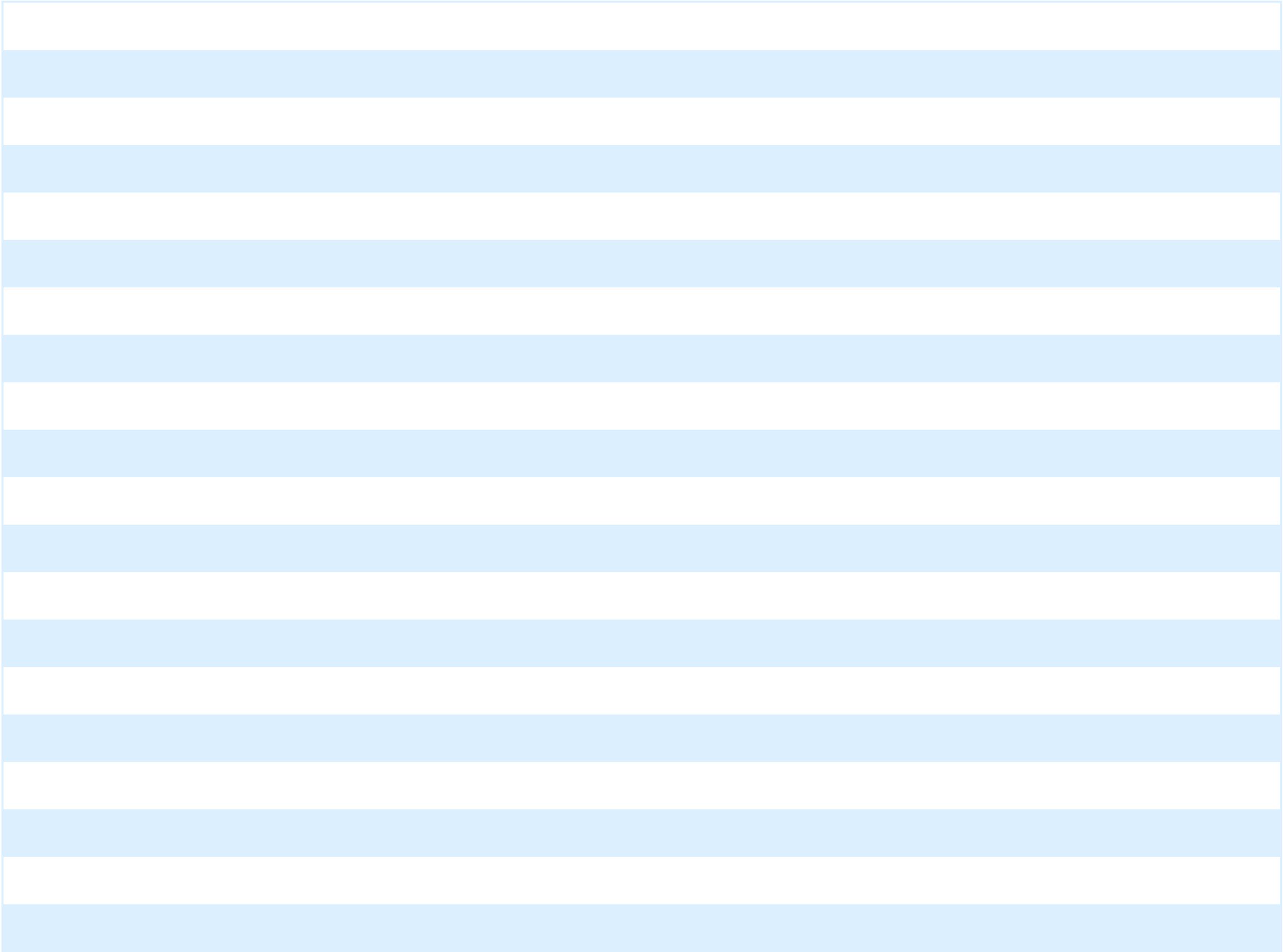
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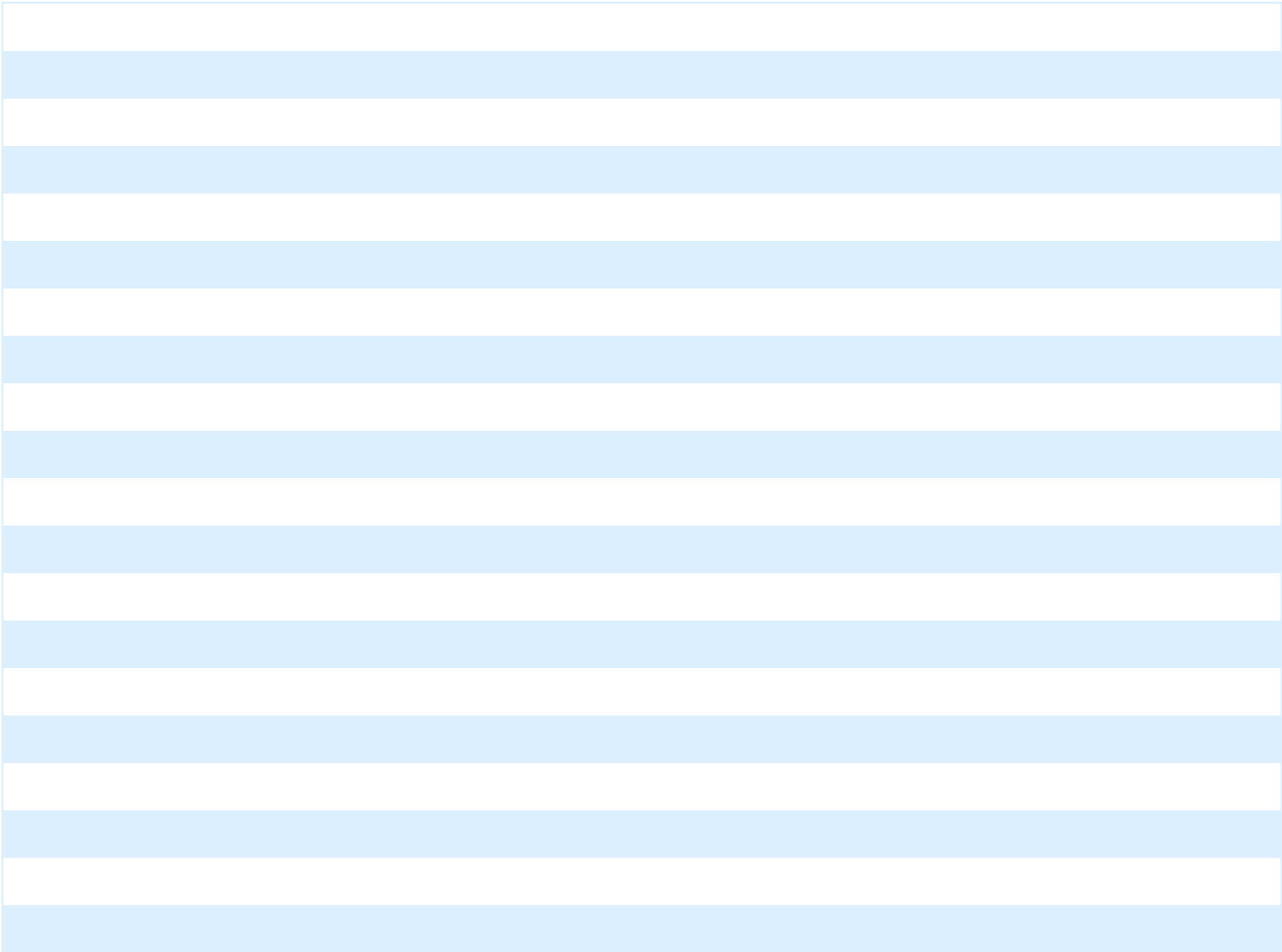
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