Practice: Disassembling a 64-bit Function Call Idiom

Given the information presented here about a ***64-bit ELF*** program, complete the chart and describe what the program prints.
Reference information about the calling conventions for the System V (Linux) ABI can be found here:
https://wiki.osdev.org/System_V_ABI#x86-64.

Registers

Register	Value	Register	Value
rax		rbp	0x7ff50
rbx		rsp	0x7ff20
rcx		rsi	
rdx		rdi	

Program

```
push   rbp
mov    rbp,rsp
mov    esi,0x5
mov    edi,0x404040
mov    eax,0x0
call   401030 <printf@plt>
```

Stack Memory

Start Address	End Address	Contents
0x7ff30	0x7ff37	
0x7ff28	0x7ff2f	
0x7ff20	0x7ff27	
0x7ff18	0x7ff1f	
0x7ff10	0x7ff17	
0x7ff08	0x7ff0f	
0x7ff00	0x7ff07	
0x7fef8	0x7feff	
0x7fef0	0x7fef7	
0x7fee8	0x7feef	
0x7fee0	0x7fee7	
0x7fed8	0x7fedf	

On-Disk Data (in **hexdump –C** format)

```
00003010  20 3e 40 00 00 00 00 00  00 00 00 00 00 00 00 00  | >@.............|
00003020  00 00 00 00 00 00 00 00  36 10 40 00 00 00 00 00  |........6.@.....|
00003030  00 00 00 00 00 00 00 00  00 00 00 00 00 00 00 00  |................|
00003040  25 64 20 69 73 20 79 6f  75 72 20 6c 75 63 6b 79  |%d is your lucky|
00003050  20 6e 75 6d 62 65 72 20  2d 2d 20 6d 65 6e 74 69  | number -- menti|
00003060  6f 6e 20 69 74 20 61 6e  64 20 67 65 74 20 61 20  |on it and get a |
00003070  53 74 61 72 62 75 63 6b  73 20 67 69 66 74 20 63  |Starbucks gift c|
00003080  61 72 64 2e 0a 00 47 43  43 3a 20 28 47 4e 55 29  |ard...GCC: (GNU)|
00003090  20 31 32 2e 32 2e 31 20  32 30 32 32 31 31 32 31  | 12.2.1 20221121|
000030a0  20 28 52 65 64 20 48 61  74 20 31 32 2e 32 2e 31  | (Red Hat 12.2.1|
000030b0  2d 34 29 00 08 00 00 00  10 00 00 00 00 01 00 00  |-4)............|
000030c0  47 41 24 01 33 61 31 00  40 10 40 00 00 00 00 00  |GA$.3a1.@.@.....|
```

ELF Header Information

```
There are 31 section headers, starting at offset 0x5a30:

Section Headers:
  [Nr] Name              Type             Address           Offset
       Size              EntSize          Flags  Link  Info  Align
  [24] .data             PROGBITS         0000000000404020  00003020
       0000000000000066  0000000000000000  WA       0     0     32
```