Nick Liu

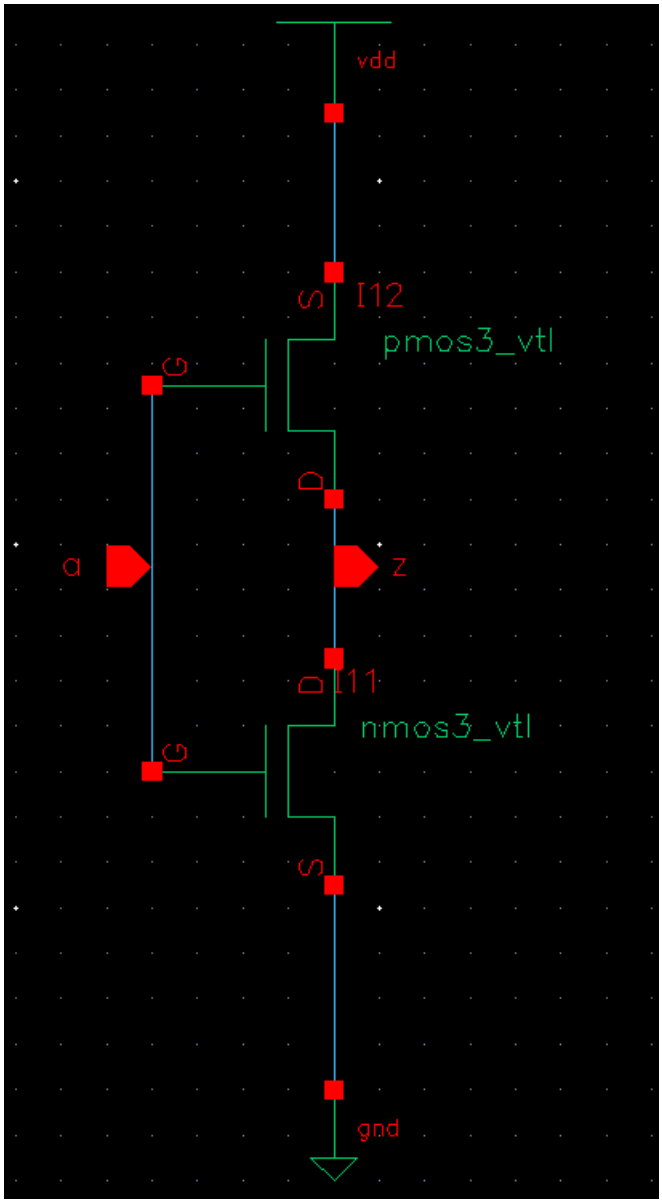
What I have done:

- Full Schematic
- Simulation of schematic
- Sizing to equal rise and fall time
- Layout of full 32 bit adder
- Sizing in layout to equal rise and fall time
- LVS and DRC of full layout
- Area of layout is 26 x 23

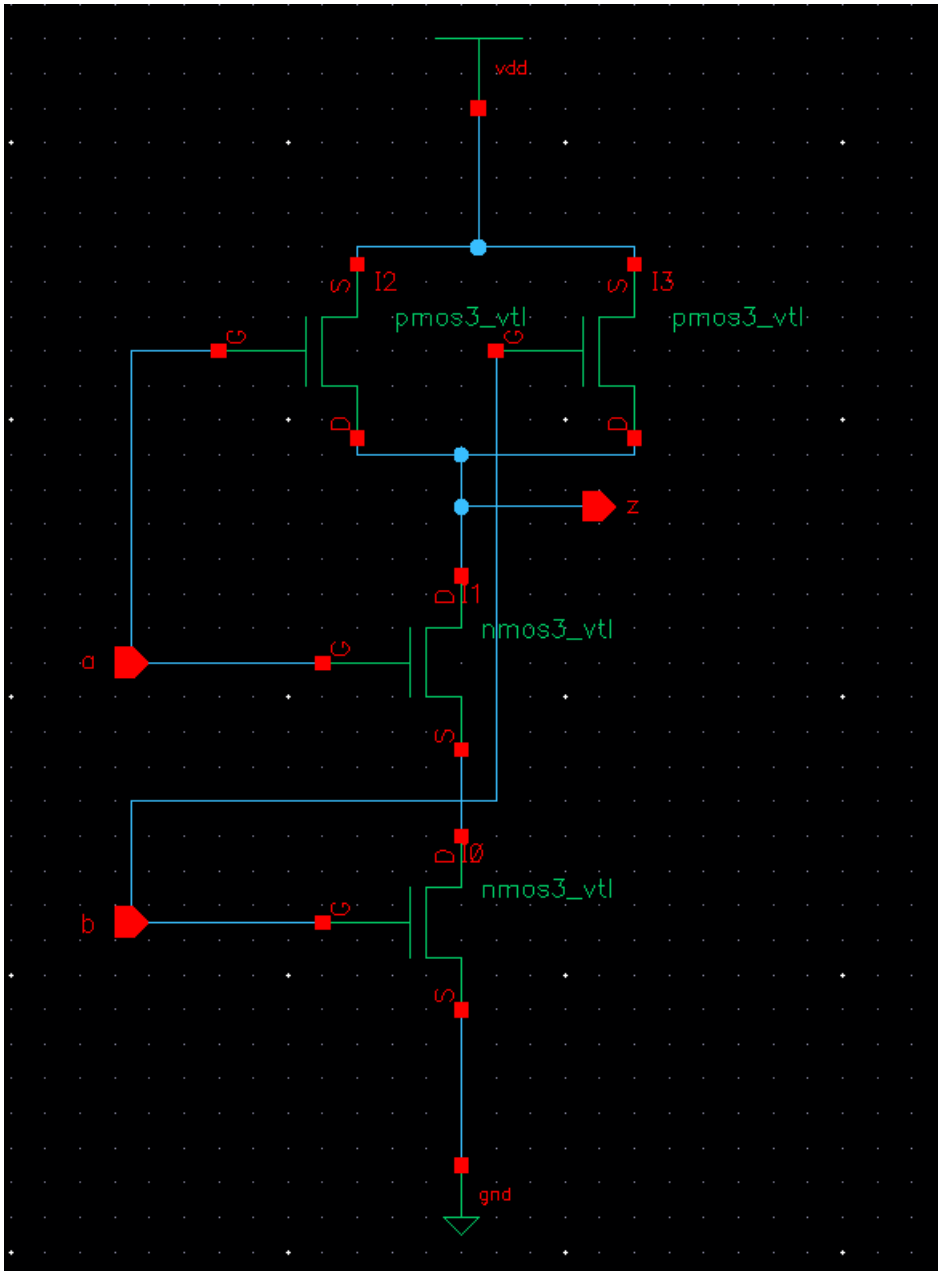
Report

1. Schematic and Simulation
2. Layout
3. DRC and LVS

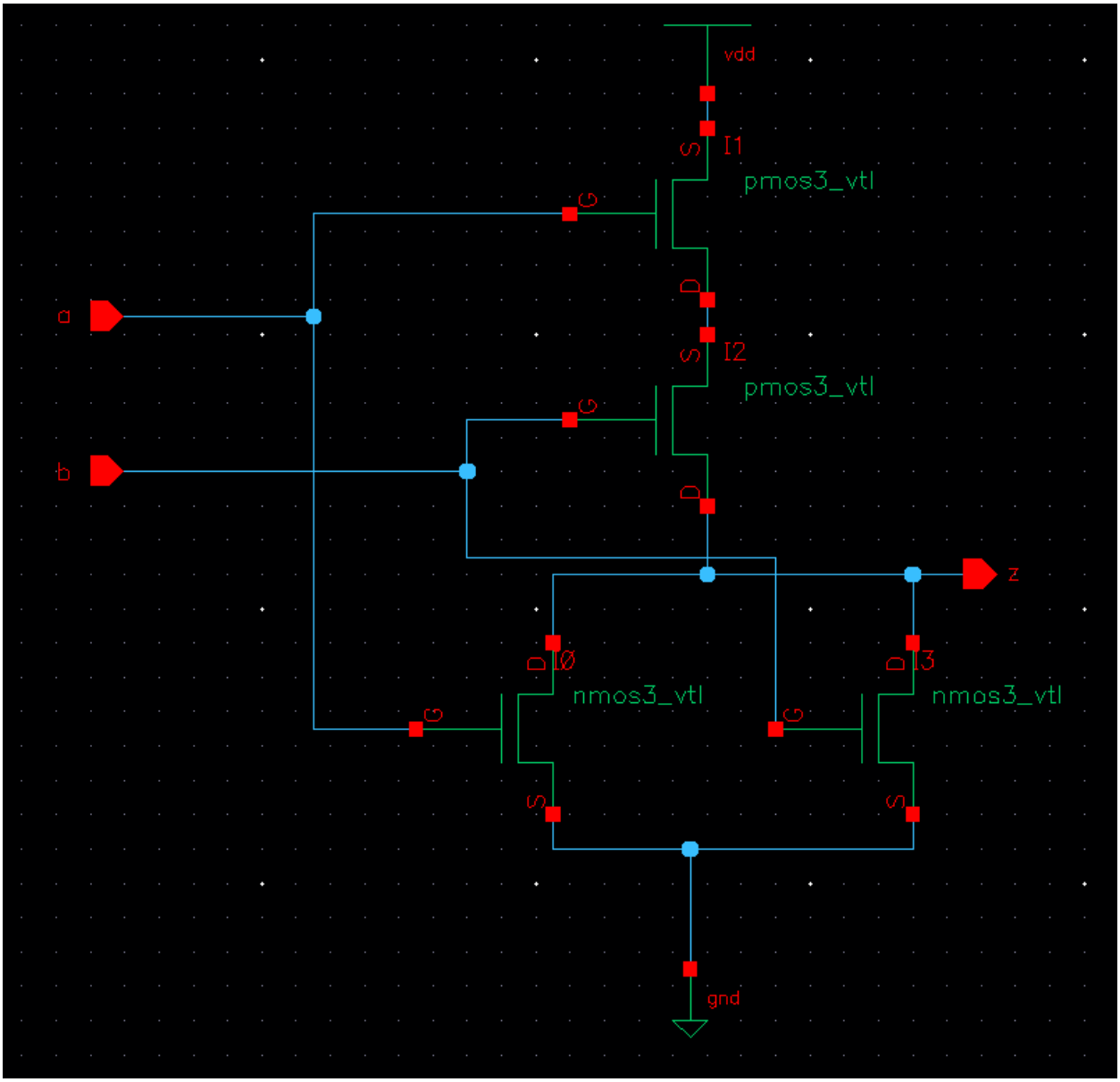
32 Bit Carry Look ahead Adder



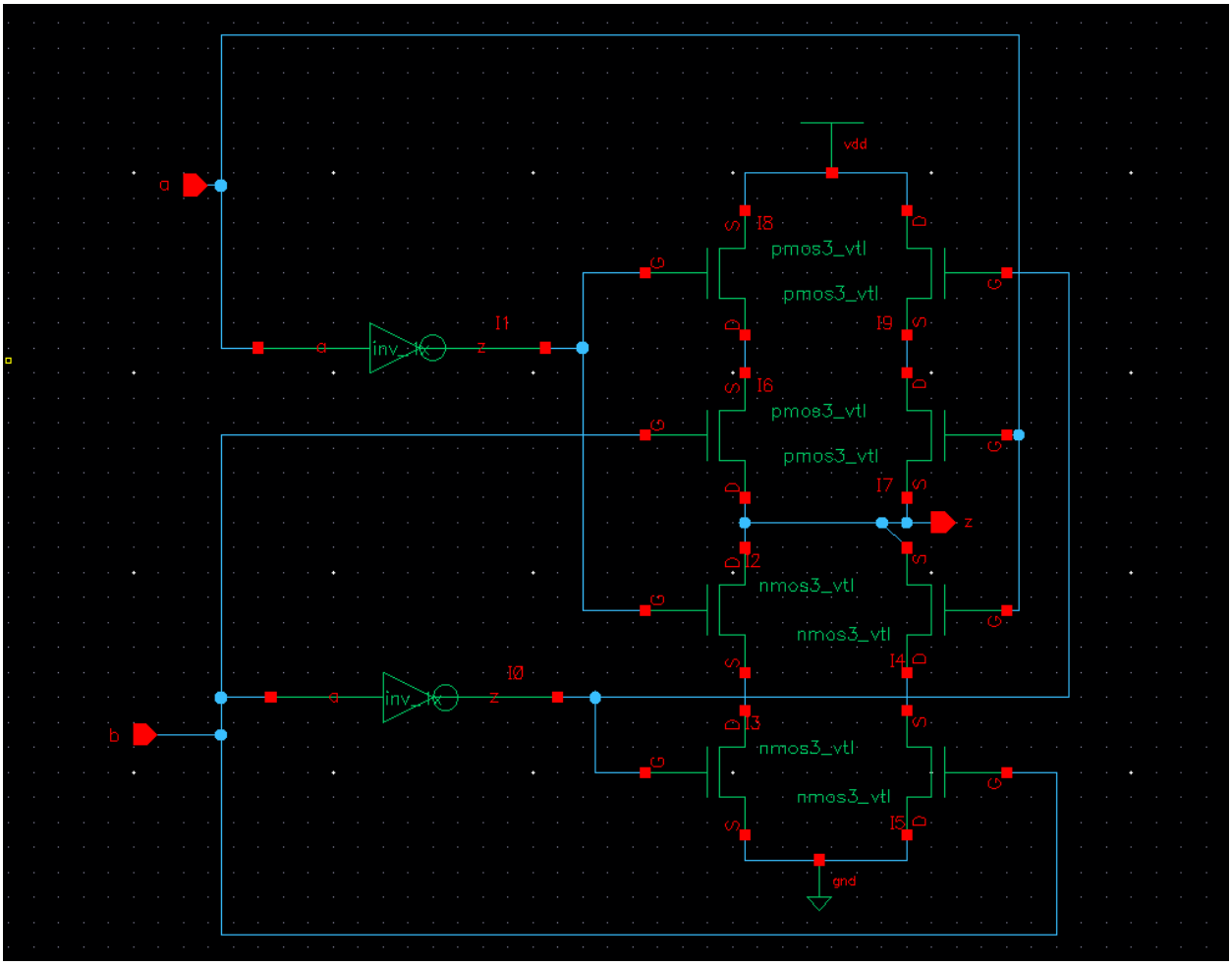
Inverter


vdd
I2
pmos3_vtl
I3
pmos3_vtl
z
I1
nmos3_vtl
a
I0
nmos3_vtl
b
gnd

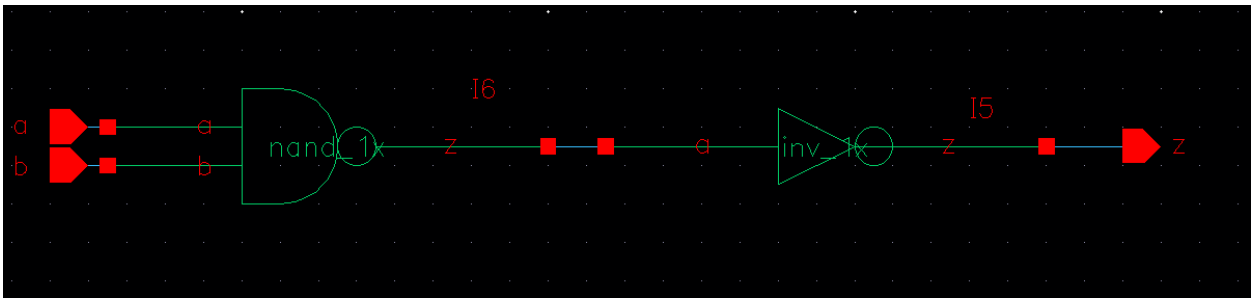
NOR



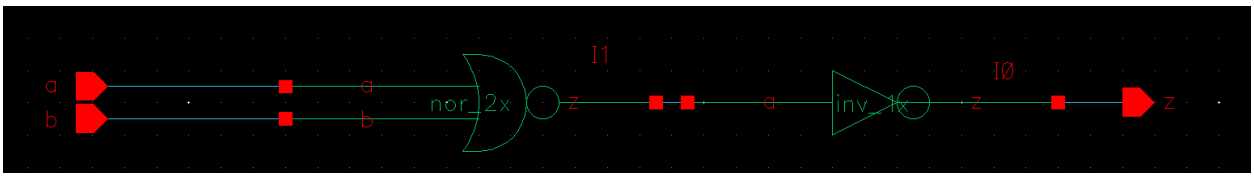
NAND



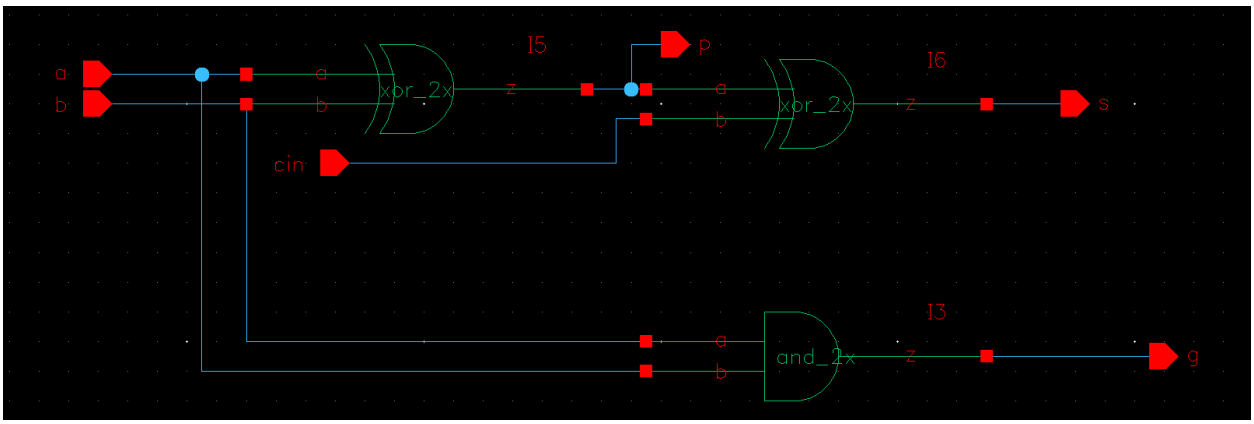
XOR Gate



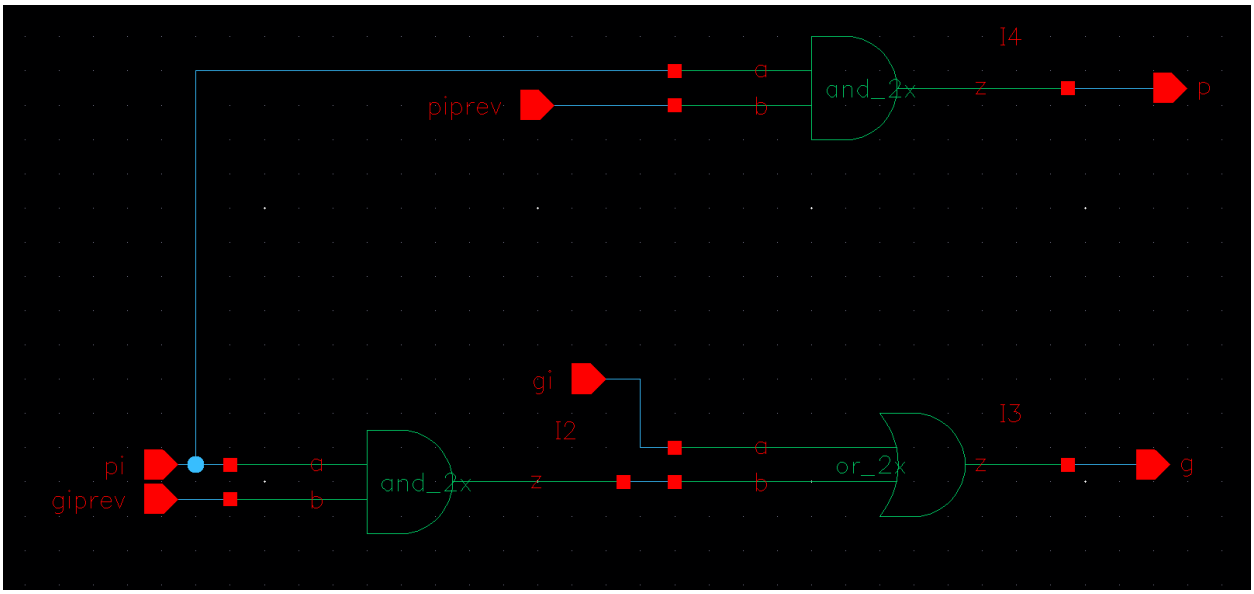
AND Gate



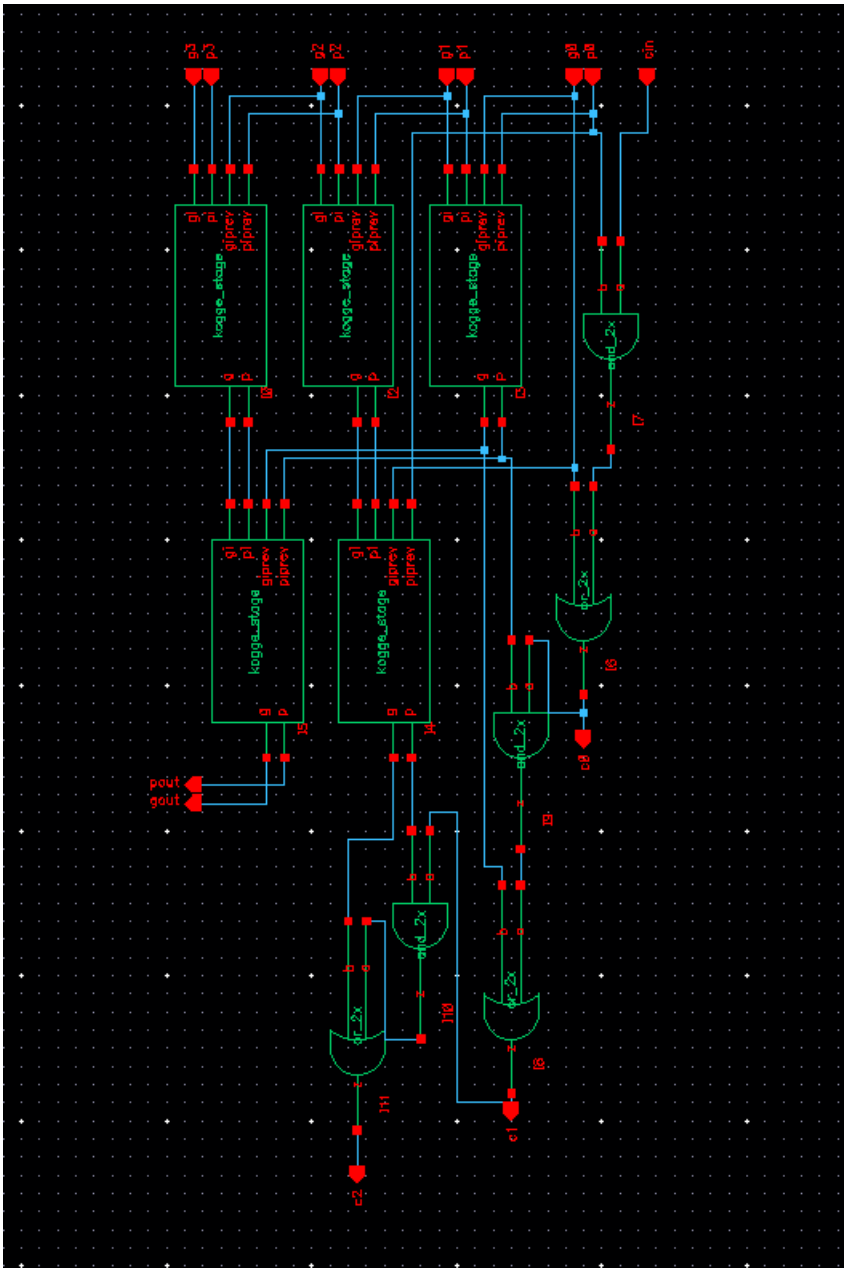
OR Gate



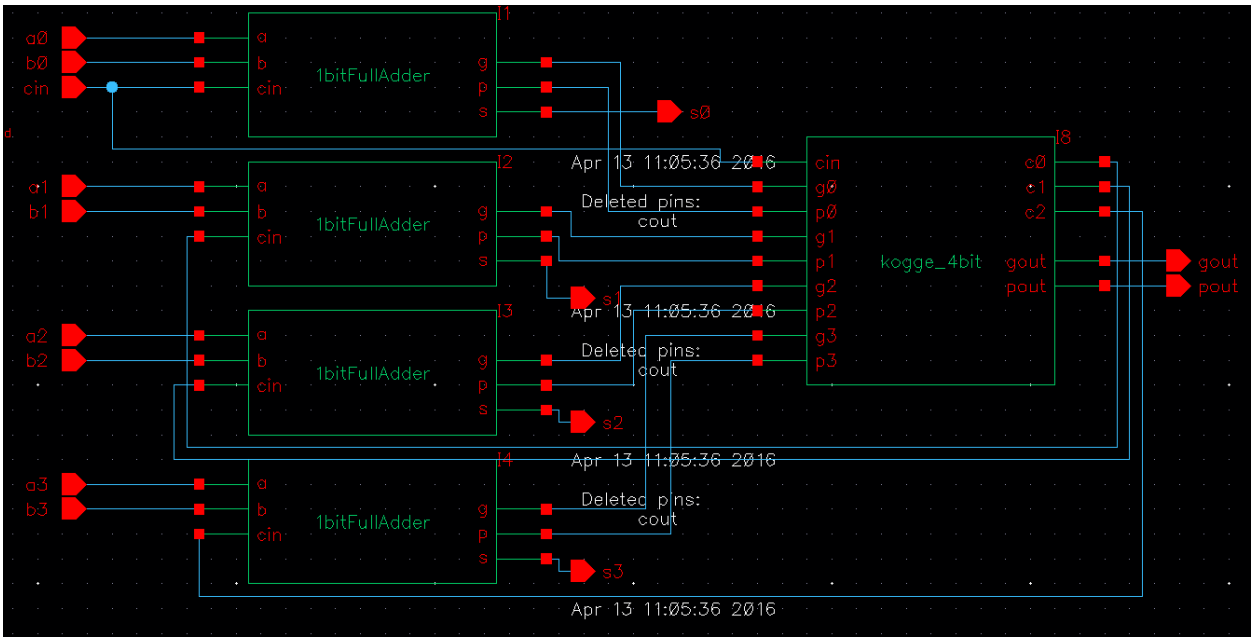
1 Bit Adder



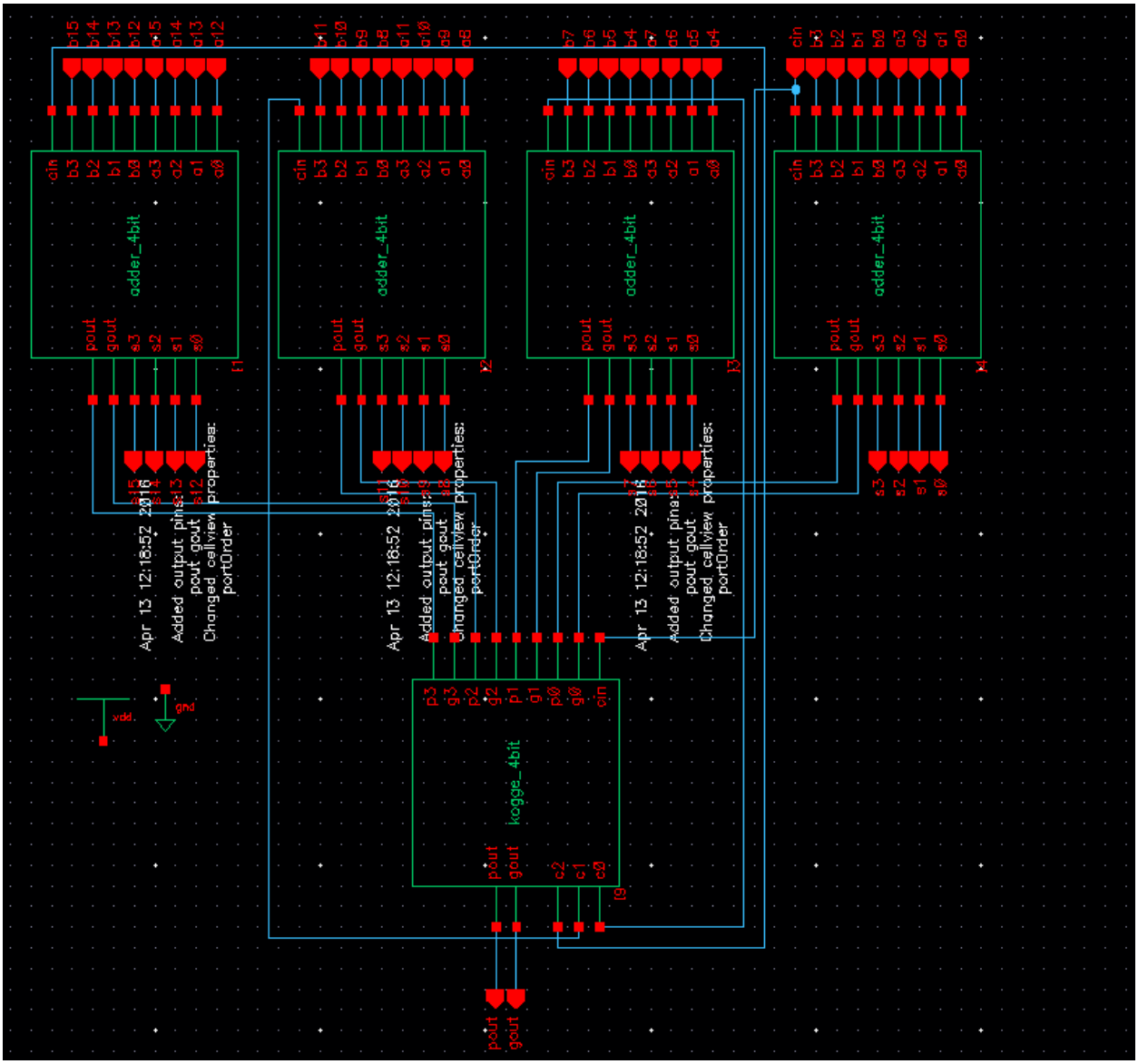
Stage in CLA



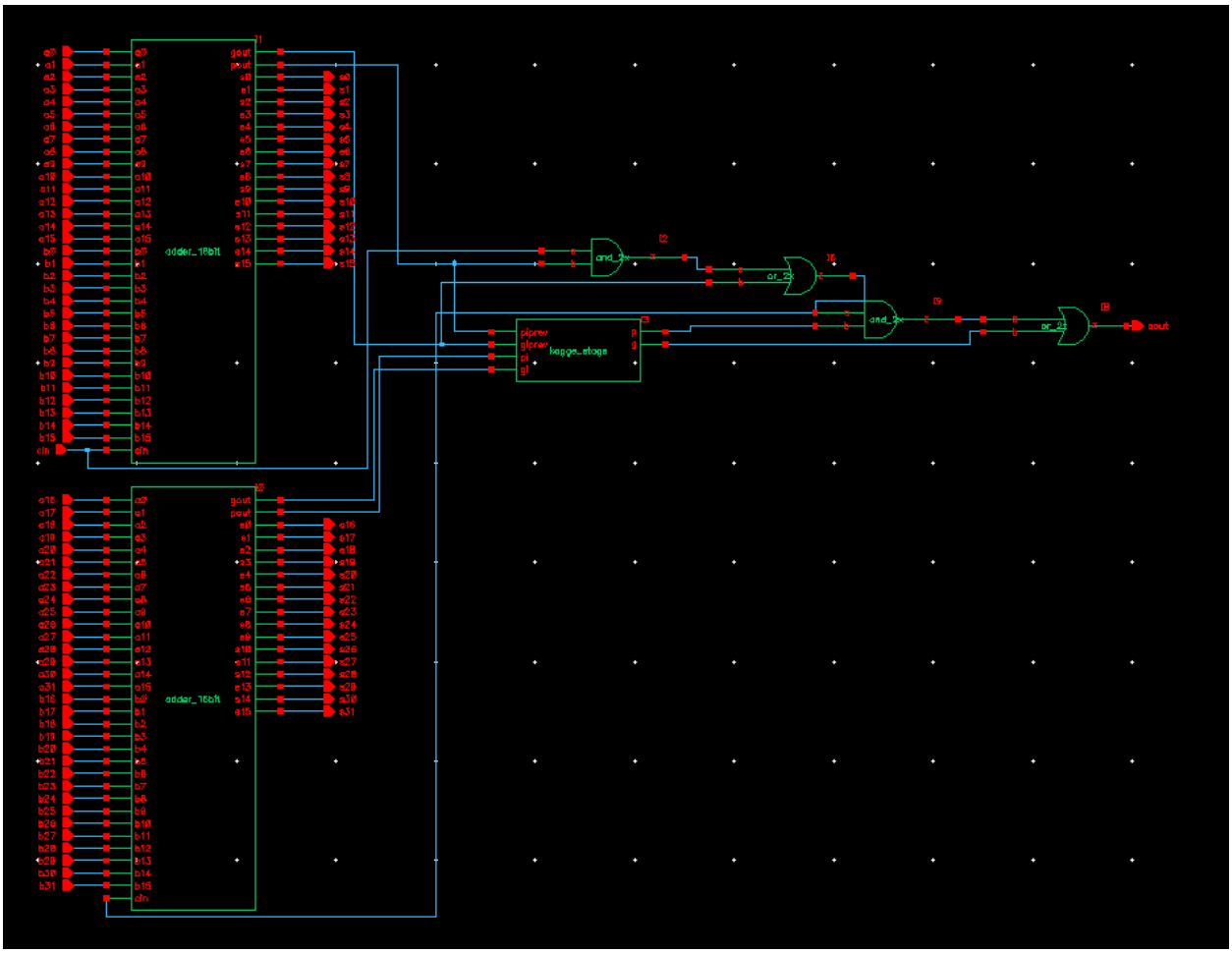
4 Input CLA logic unit



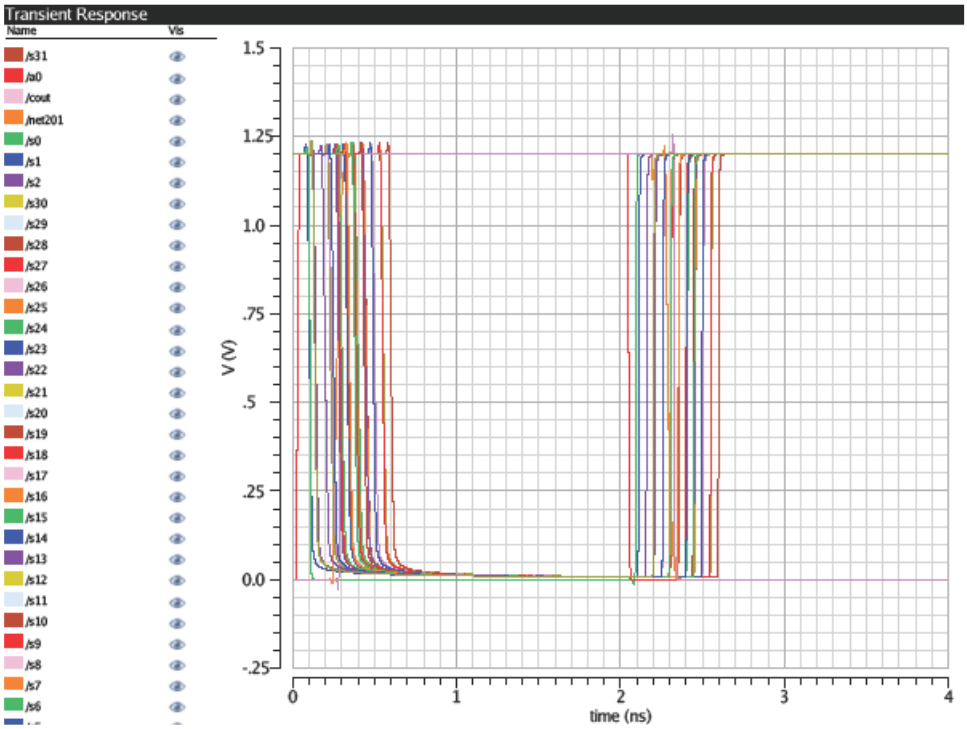
4 Bit CLA Adder



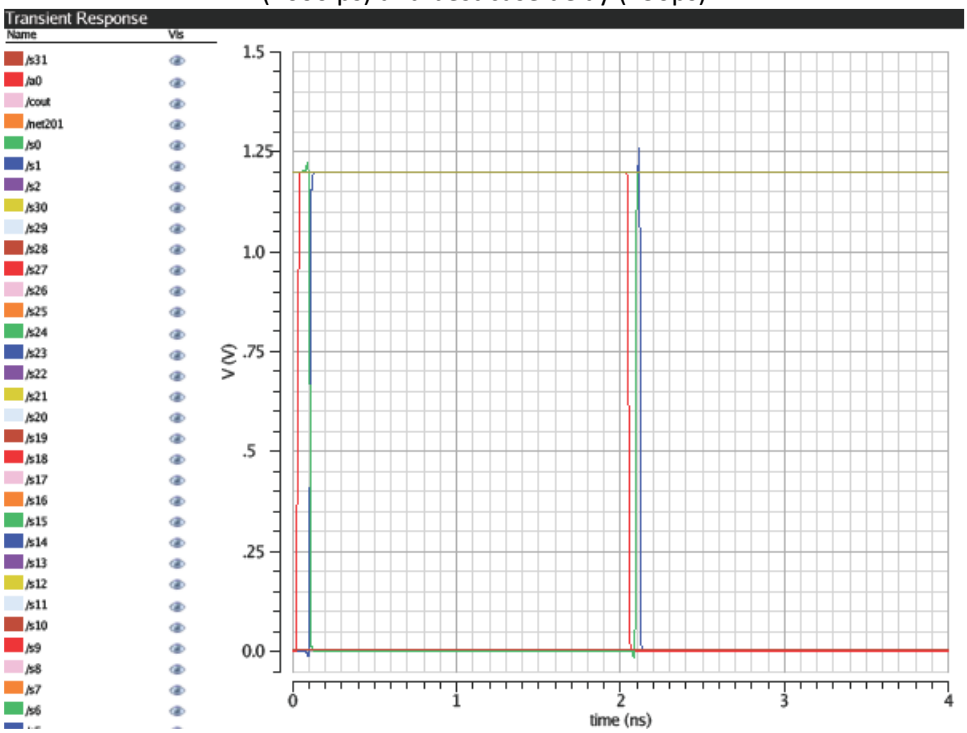
16 Bit CLA Adder



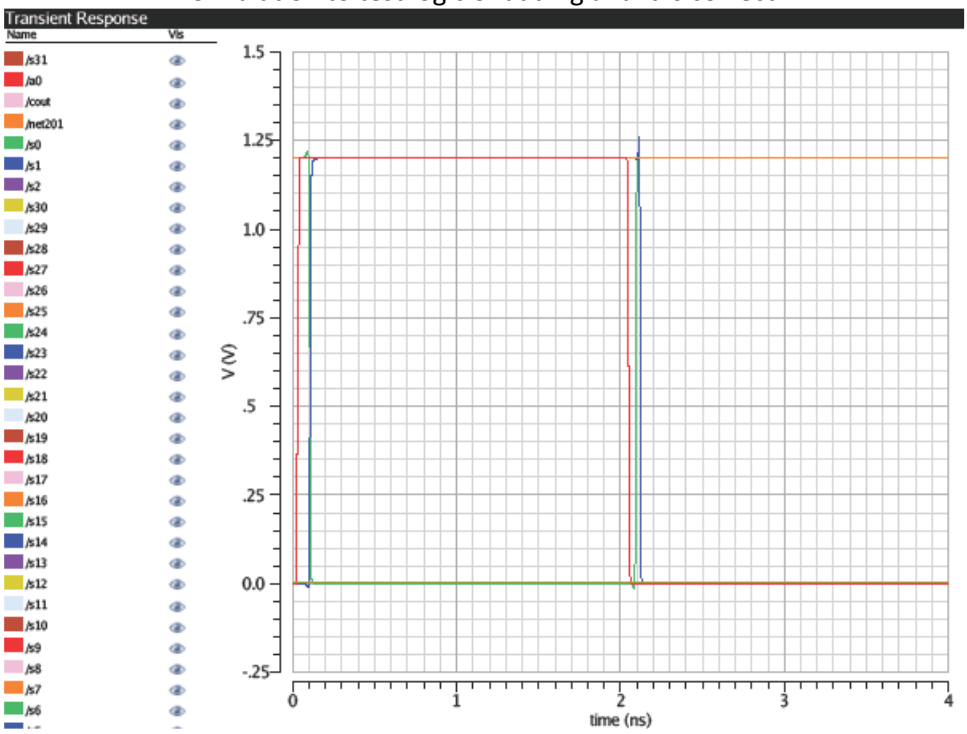
32 Bit CLA Adder



Simulation of Adding A (0x0000) to B (0x1111) and then changing A to 0x0001 to find worse case delay (~600 ps) and best case delay (~30ps)

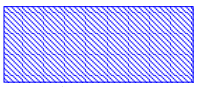


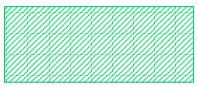
Simulation to test logic of adding and it is correct



Simulation to test logic of adding and it is correct

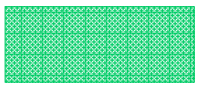
USER: nliu41
DATE: Fri Apr 29 20:29:31 2016
PLOT SIZE: 8.17 x 9.93 Inches
Magnification: 262681.02X
Library: sandbox
Cell: nand2_1x
View: layout
Plot Area: ((0.0 0.0) (0.79 0.9675))

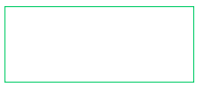

metal1 drawing


nwell drawing

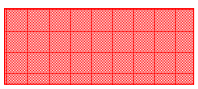

pwell drawing

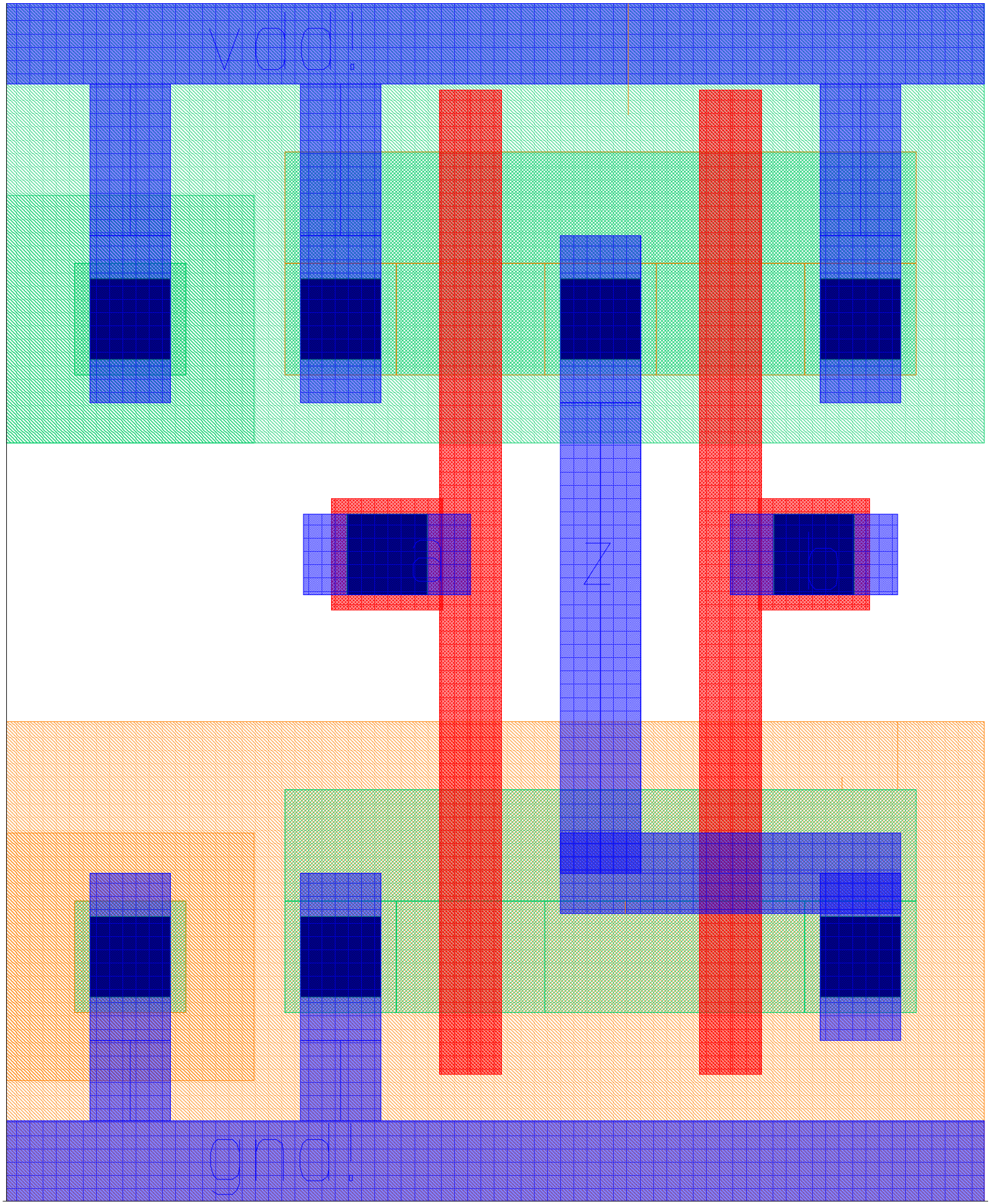

pimplant drawing


active drawing

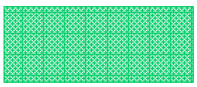

nimplant drawing

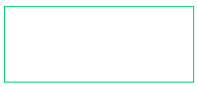

contact drawing

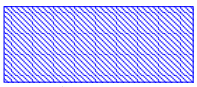

poly drawing


vdd
A
B
Z
gnd

USER: nliu41
DATE: Fri Apr 29 20:29:46 2016
PLOT SIZE: 7.97 x 10.59 Inches
Magnification: 256281.80X
Library: sandbox
Cell: nor2_1x
View: layout
Plot Area: ((0.0 0.0) (0.79 1.0575))

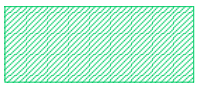

active drawing


nimplant drawing


metal1 drawing

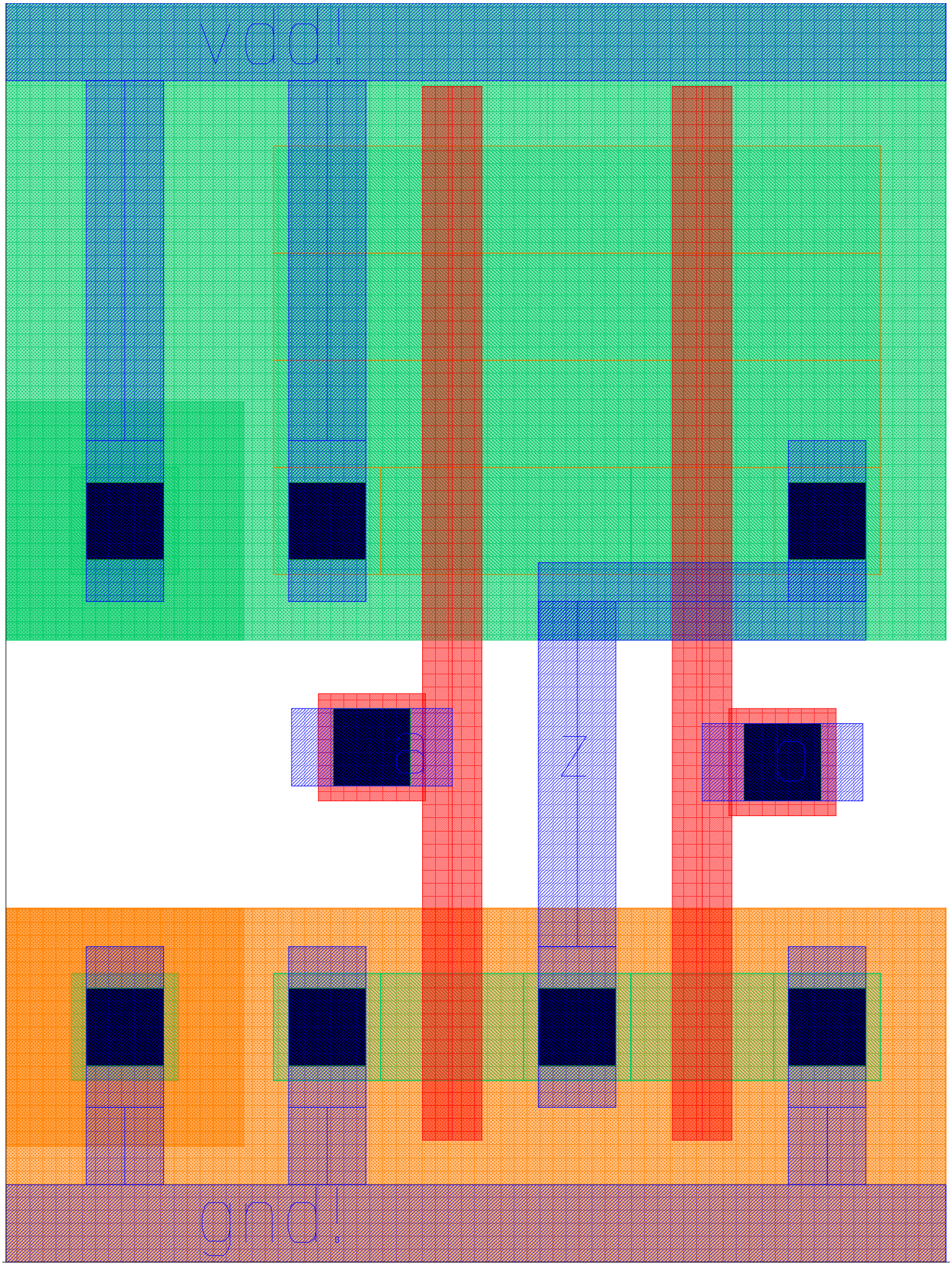

poly drawing


pwell drawing

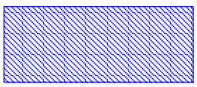

nwell drawing

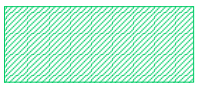

contact drawing


pimplant drawing


vdd!
G
Z
D
gnd!

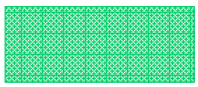
USER: nliu41
DATE: Fri Apr 29 20:29:17 2016
PLOT SIZE: 6.99 x 10.67 Inches
Magnification: 308852.42X
Library: sandbox
Cell: inv_1x
View: layout
Plot Area: ((0.0 0.0) (0.58 0.8775))

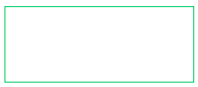

metal1 drawing


nwell drawing

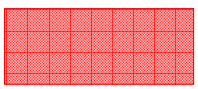

pwell drawing

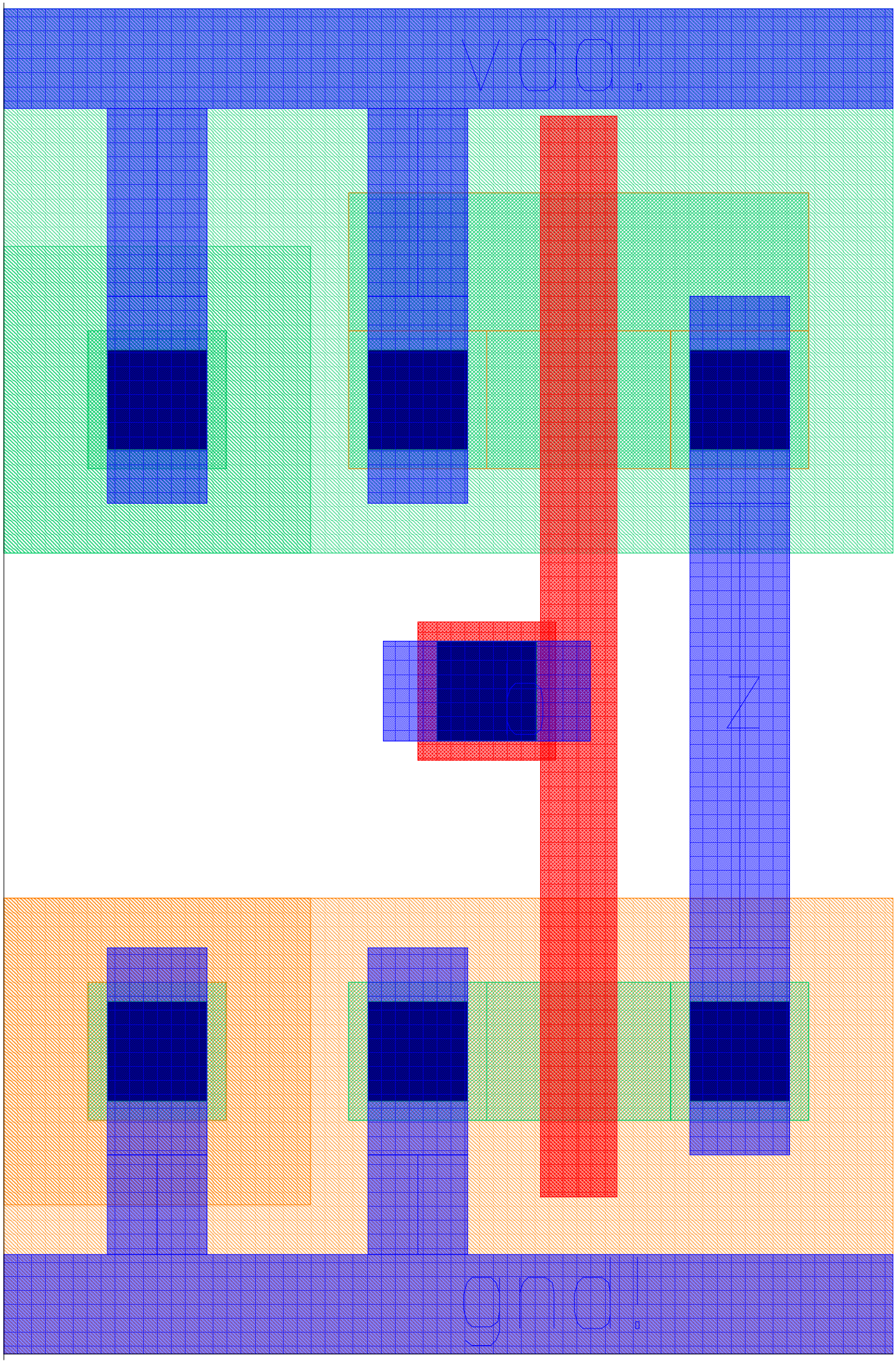

pimplant drawing


active drawing

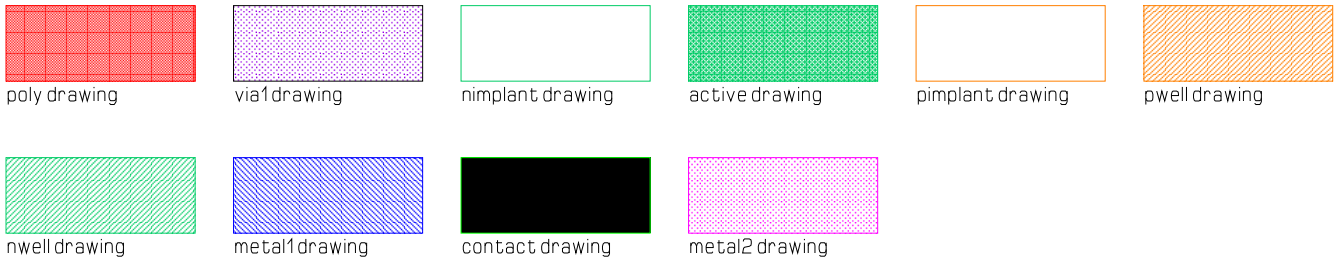

nimplant drawing

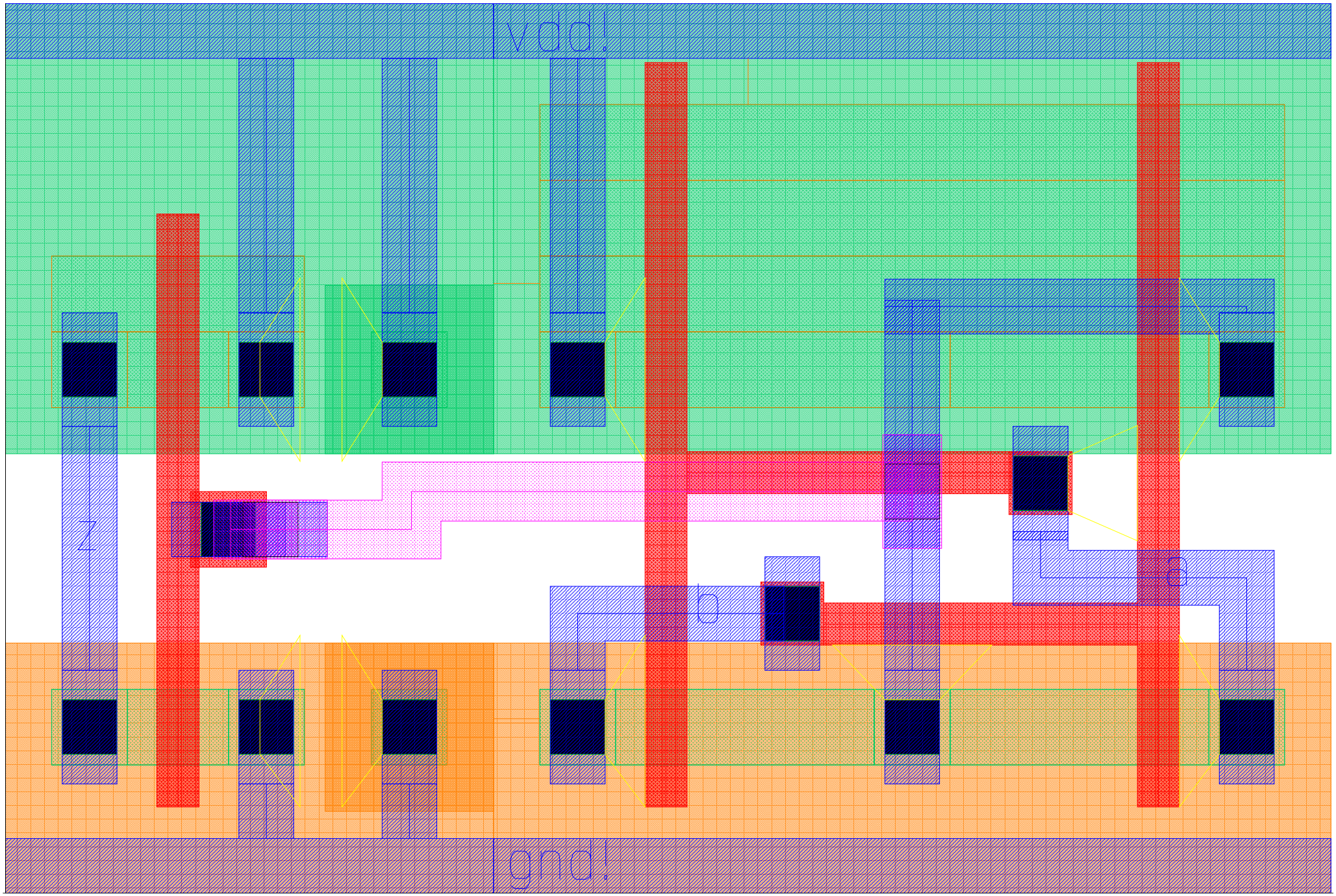

contact drawing


poly drawing

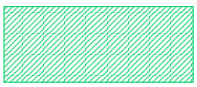

VDD
C
A
GND

USER: nliu41
DATE: Fri Apr 29 20:30:45 2016
PLOT SIZE: 7.14 x 10.67 Inches
Magnification: 172074.92X
Library: sandbox
Cell: xor2_1x
View: layout
Plot Area: ((0.0 0.0) (1.575 1.0575))



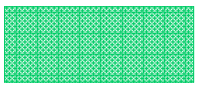

vdd!
z
b
a
n
gnd!

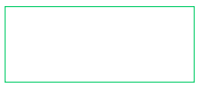
USER: nliu41
DATE: Tue Apr 26 13:29:09 2016
PLOT SIZE: 5.11 x 10.66 Inches
Magnification: 94678.78X
Library: sandbox
Cell: stage
View: layout
Plot Area: ((-0.0025 0.0) (1.3675 2.8625))


nwell drawing

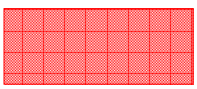

pwell drawing

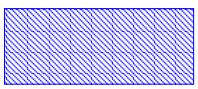

pimplant drawing


active drawing

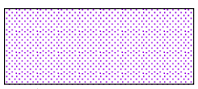

nimplant drawing

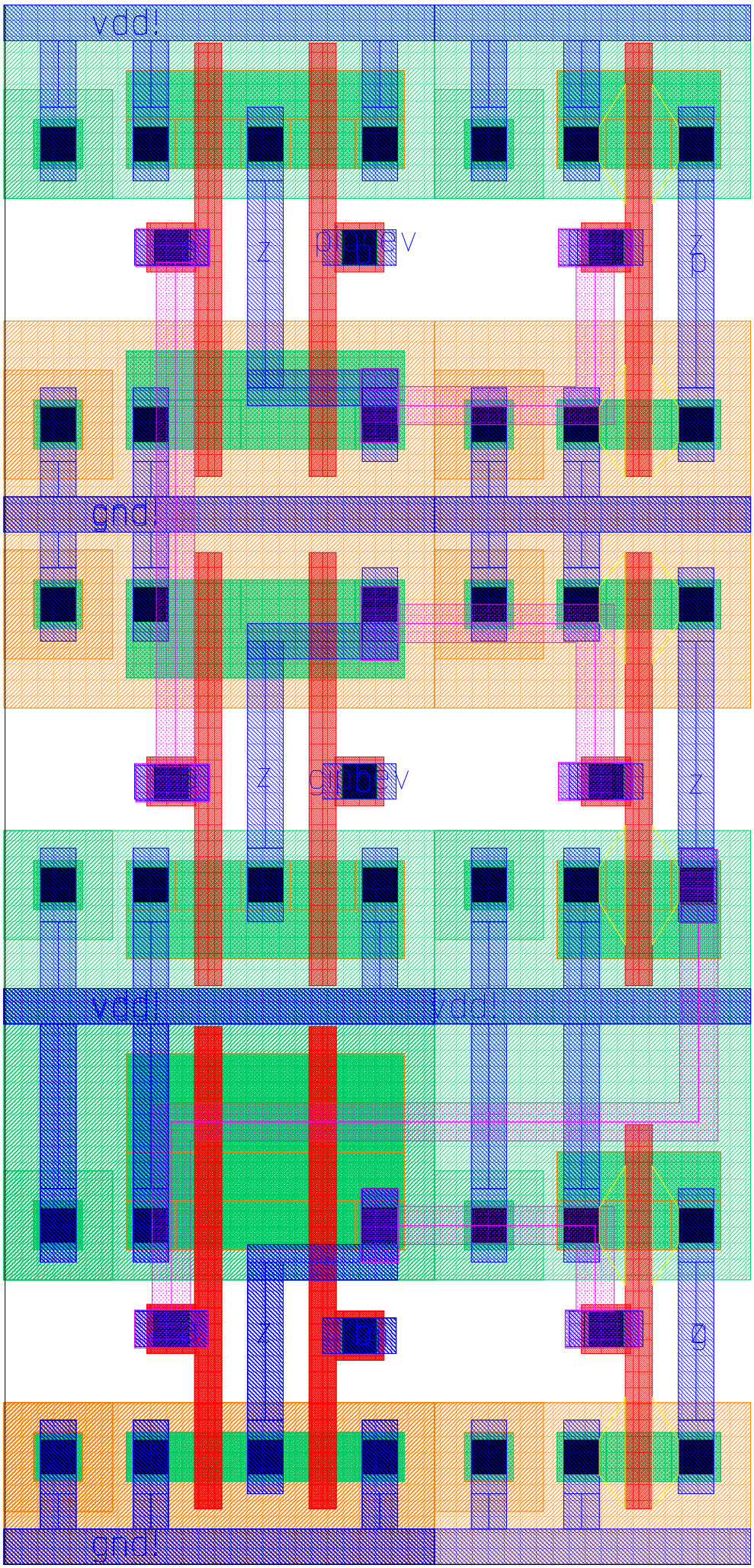

contact drawing


poly drawing


metal1 drawing

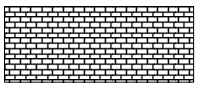

metal2 drawing

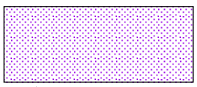

via1 drawing


vdd!
Z
gnd!
Z
gnd!
vdd!
A
B

USER: nliu41
DATE: Tue Apr 26 13:27:07 2016
PLOT SIZE: 8.17 x 8.43 Inches
Magnification: 36663.96X
Library: sandbox
Cell: kogge_4bit
View: layout
Plot Area: ((-0.065 0.0)(5.7725 5.66))

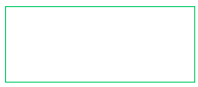
via3 drawing

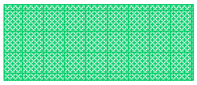

via2 drawing

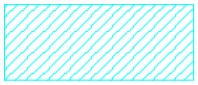

via1 drawing

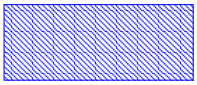

poly drawing

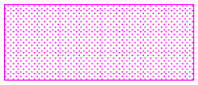

contact drawing


nimplant drawing


active drawing

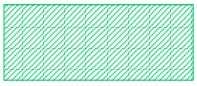

metal3 drawing

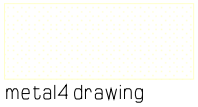

metal1 drawing

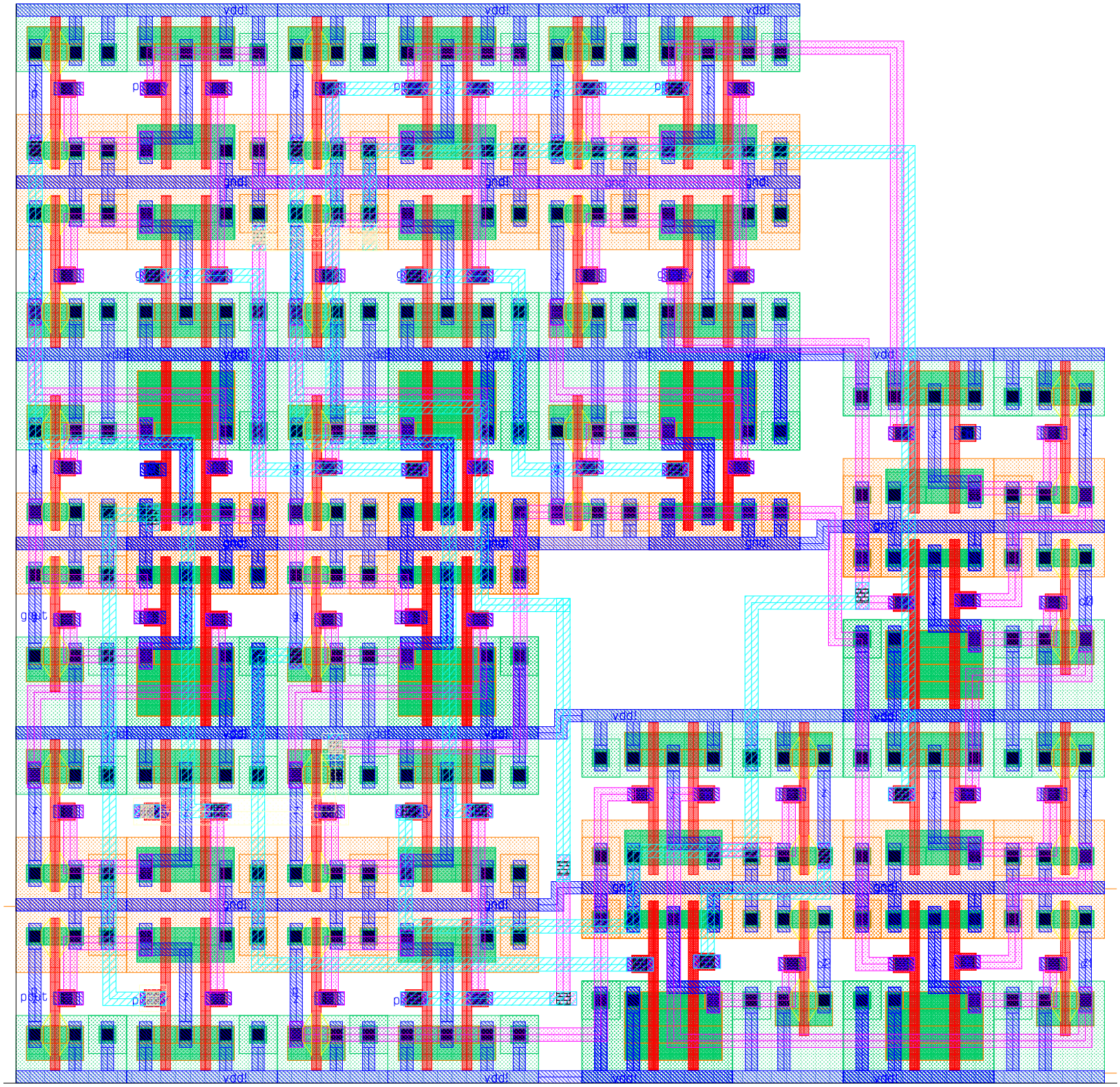

metal2 drawing


pimplant drawing

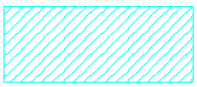

pwell drawing

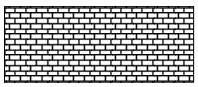

nwell drawing

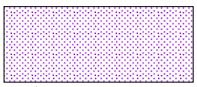

metal4 drawing


vdd!
gnd!

USER: nliu41
DATE: Tue Apr 26 13:29:36 2016
PLOT SIZE: 5.68 x 10.67 Inches
Magnification: 91792.72X
Library: sandbox
Cell: 1bitFullAdder
View: layout
Plot Area: ((0.0 0.0) (1.575 2.9525))

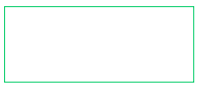

metal3 drawing

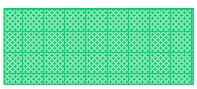

via2 drawing


via1 drawing


poly drawing

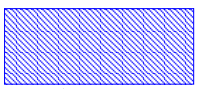

contact drawing

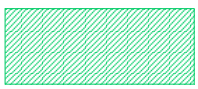

nimplant drawing


active drawing

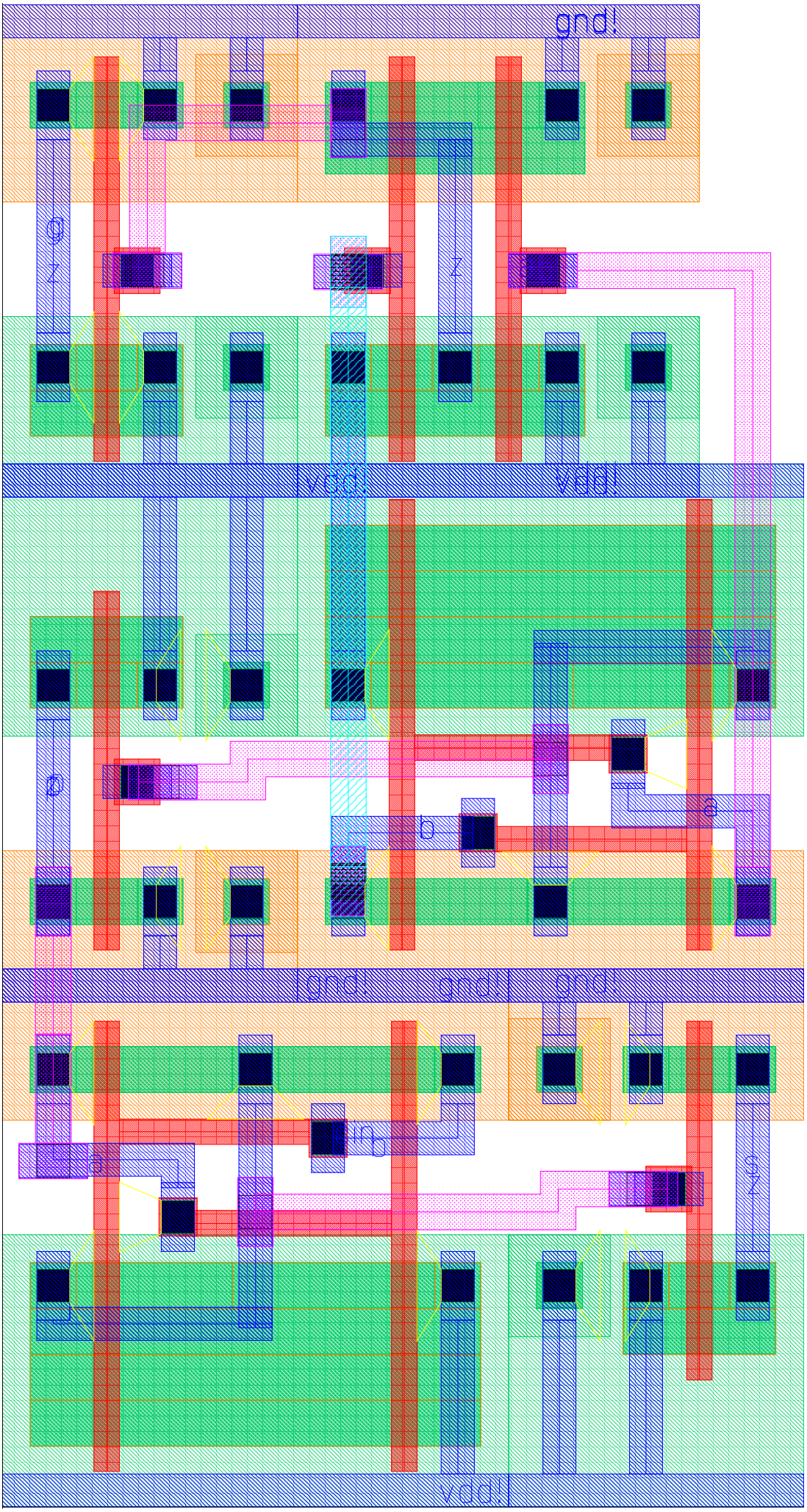

pimplant drawing


pwell drawing

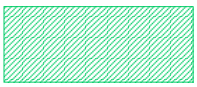

metal1 drawing


nwell drawing


metal2 drawing

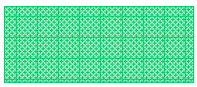

gnd!
vdd!
vdd!
gnd!
gnd!
vdd!
a
b
a
b
a
b
out

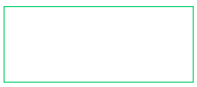
USER: nliu41
DATE: Tue Apr 26 13:26:34 2016
PLOT SIZE: 8.10 x 10.66 Inches
Magnification: 31707.28X
Library: sandbox
Cell: adder4bit
View: layout
Plot Area: ((0.005 0.0) (6.4975 8.5475))


nwell drawing

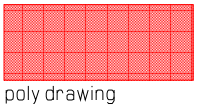

pwell drawing

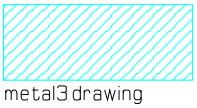

pimplant drawing

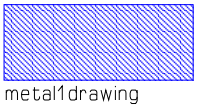

active drawing

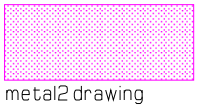

nimplant drawing

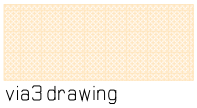

contact drawing

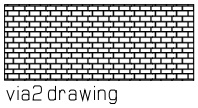

poly drawing

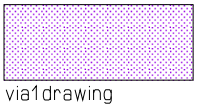

metal3 drawing

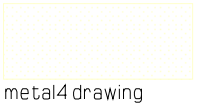

metal1 drawing

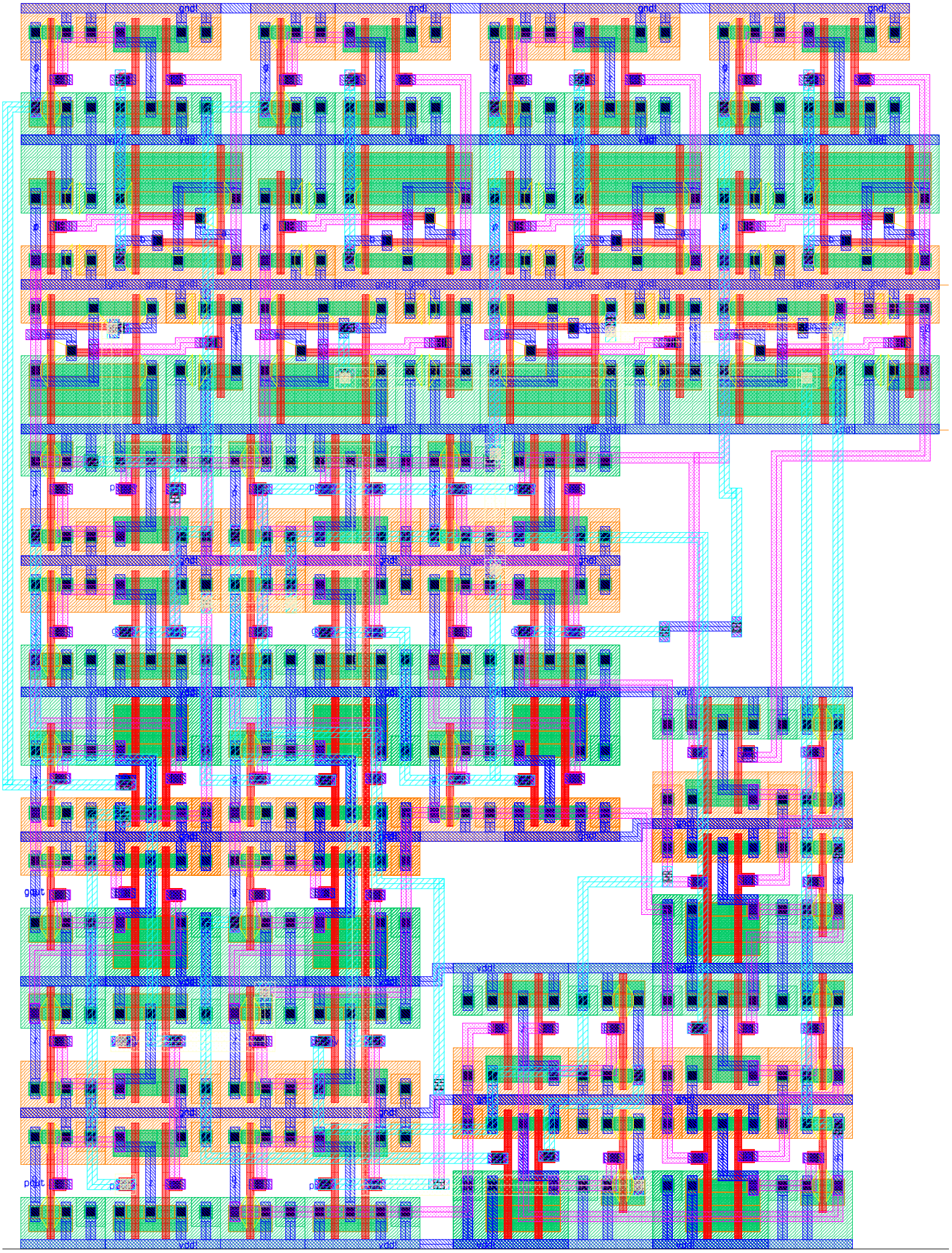

metal2 drawing


via3 drawing

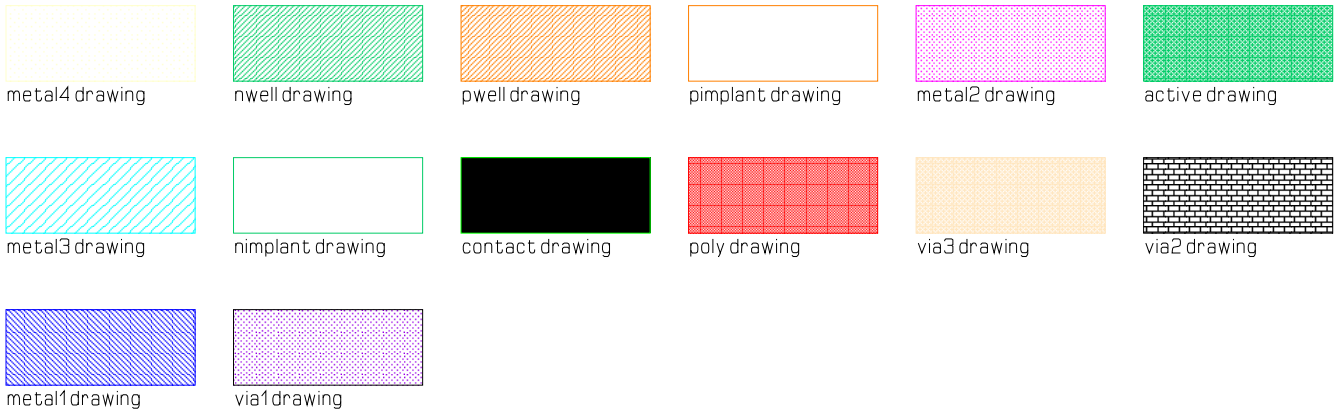

via2 drawing

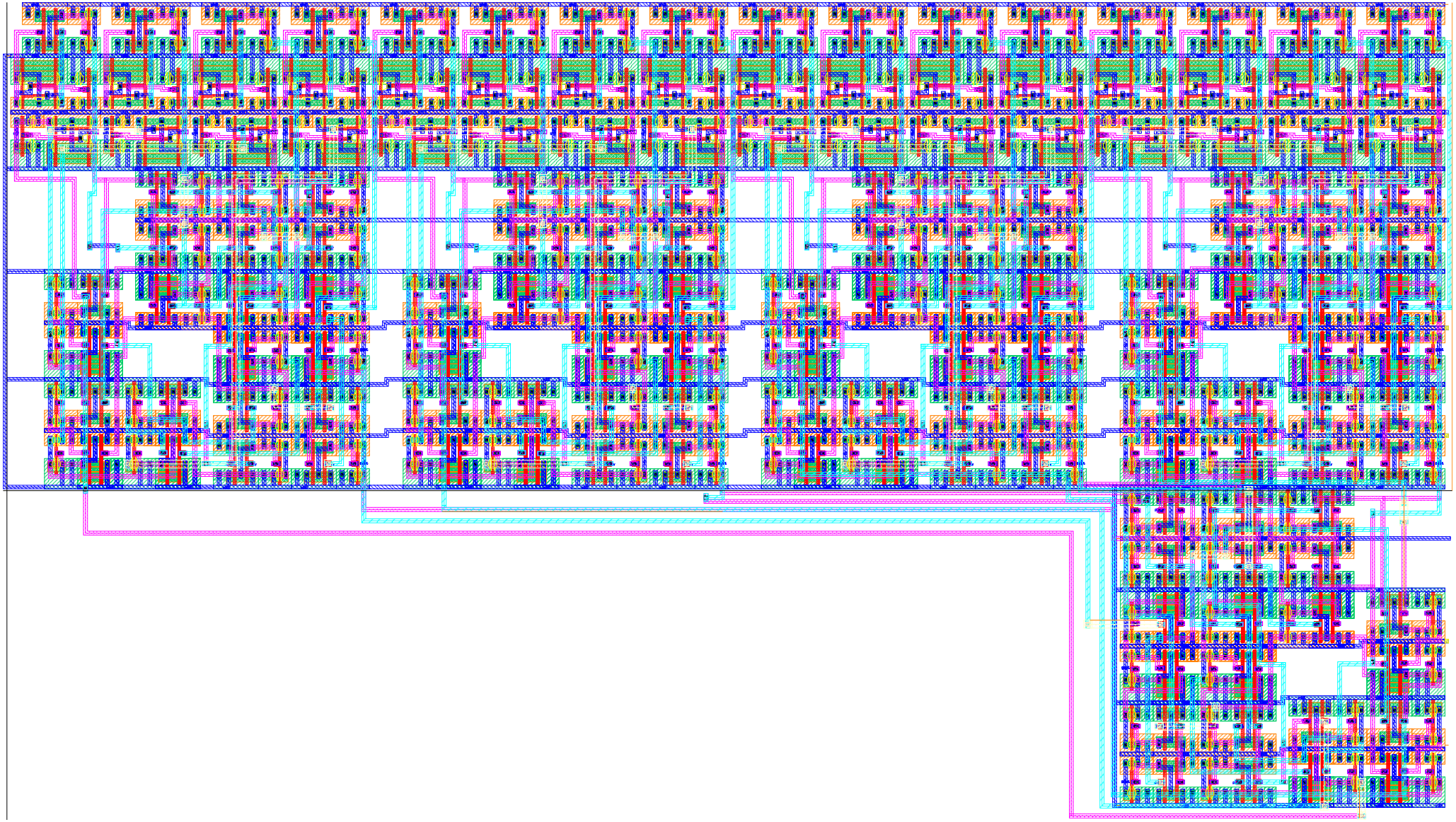

via1 drawing


metal4 drawing

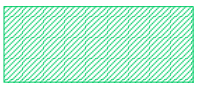

gndl
vddl
pdxt
gnxt
vdd

USER: nliu41
DATE: Tue Apr 26 13:25:49 2016
PLOT SIZE: 6.02 x 10.67 Inches
Magnification: 10642.76X
Library: sandbox
Cell: adder_16bit
View: layout
Plot Area: ((-0.065 -5.785) (25.4 8.58))



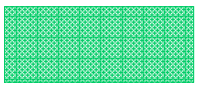


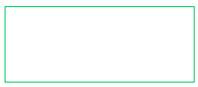
USER: nliu41
DATE: Tue Apr 26 13:23:35 2016
PLOT SIZE: 8.17 x 8.96 Inches
Magnification: 8733.92X
Library: NCSU_Devices_FreePDK45
Cell: adder_32bit
View: layout
Plot Area: ((0.0 0.0) (26.06 23.76))


nwell drawing

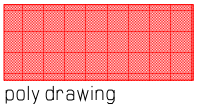

pwell drawing

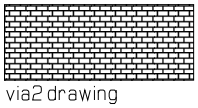

pimplant drawing

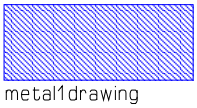

active drawing

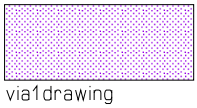

nimplant drawing


contact drawing

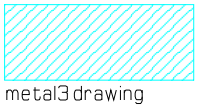

poly drawing


via2 drawing

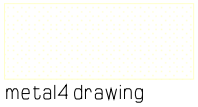

metal1 drawing

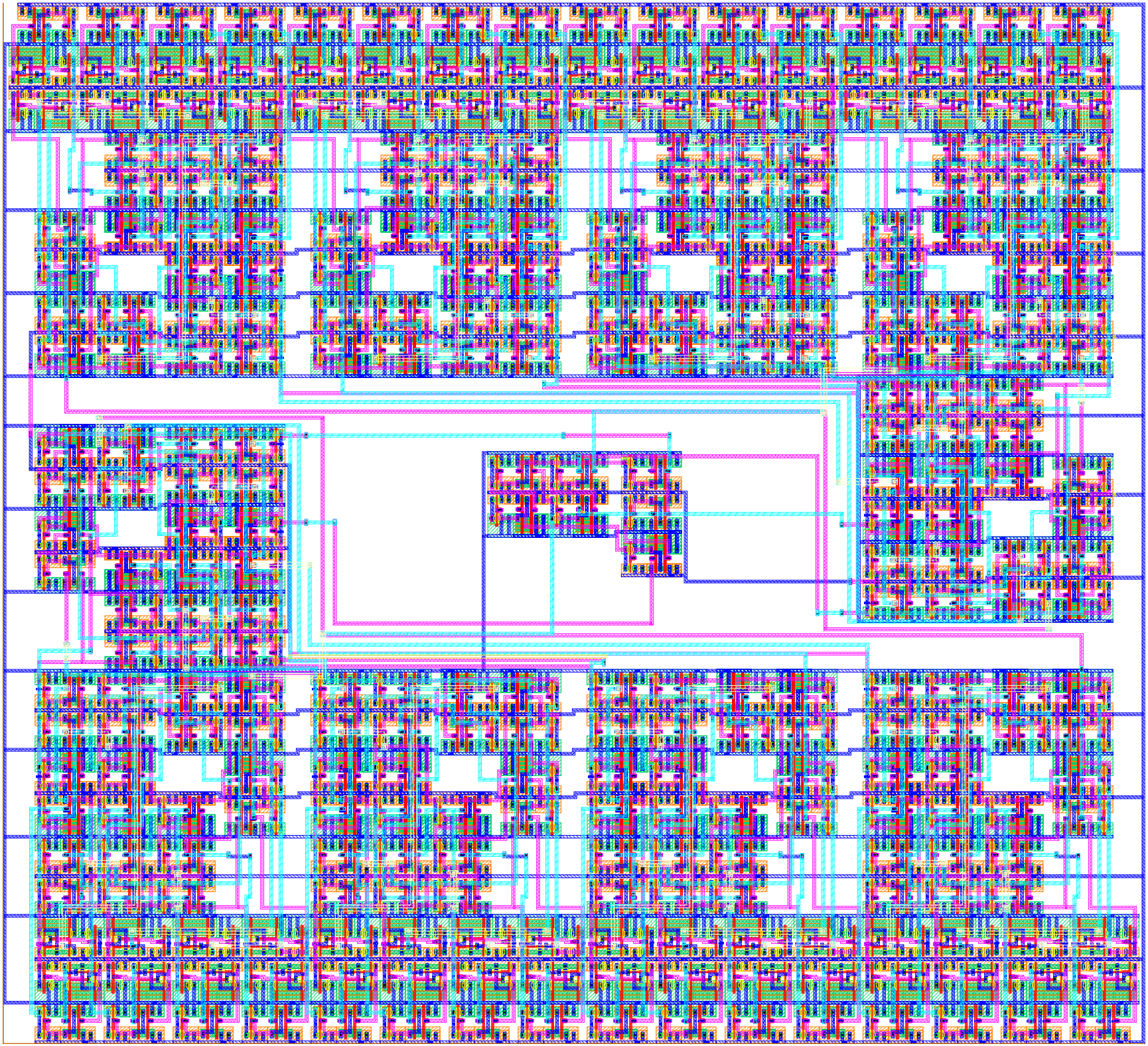

via1 drawing


via3 drawing


metal3 drawing


metal2 drawing


metal4 drawing



DRC of nor, nand, xor, and adder32bit

```
================================================================================
=== CALIBRE::DRC-H SUMMARY REPORT
===
Execution Date/Time:      Fri Apr 29 20:54:24 2016
Calibre Version:          v2015.2_27.20    Tue Jun 2 10:53:48 PDT 2015
Rule File Pathname:       /nethome/nliu41/Documents/ece3150/_calibreDRC.rul_
Rule File Title:
Layout System:            GDS
Layout Path(s):           nor2_1x.calibre.db
Layout Primary Cell:      nor2_1x
Current Directory:        /nethome/nliu41/Documents/ece3150
User Name:                nliu41
Maximum Results/RuleCheck: 1000
Maximum Result Vertices:   4096
DRC Results Database:     nor2_1x.drc.results (ASCII)
Layout Depth:             ALL
Text Depth:               PRIMARY
Summary Report File:      nor2_1x.drc.summary (REPLACE)
Geometry Flagging:        ACUTE = NO  SKEW = NO  ANGLED = NO  OFFGRID = NO
                          NONSIMPLE POLYGON = NO  NONSIMPLE PATH = NO
Excluded Cells:
CheckText Mapping:        COMMENT TEXT + RULE FILE INFORMATION
Layers:                   MEMORY-BASED
Keep Empty Checks:        YES
--------------------------------------------------------------------------------
--- RUNTIME WARNINGS
---
--------------------------------------------------------------------------------
--- ORIGINAL LAYER STATISTICS
---
LAYER pwell ...... TOTAL Original Geometry Count = 2  (2)
LAYER nwell ...... TOTAL Original Geometry Count = 2  (2)
LAYER active ..... TOTAL Original Geometry Count = 11 (14)
LAYER poly ....... TOTAL Original Geometry Count = 3  (4)
LAYER pimplant ... TOTAL Original Geometry Count = 6  (7)
LAYER nimplant ... TOTAL Original Geometry Count = 4  (6)
LAYER vth ........ TOTAL Original Geometry Count = 0  (0)
LAYER vtg ........ TOTAL Original Geometry Count = 0  (0)
LAYER metal1 ..... TOTAL Original Geometry Count = 14 (18)
LAYER metal2 ..... TOTAL Original Geometry Count = 0  (0)
LAYER metal3 ..... TOTAL Original Geometry Count = 0  (0)
LAYER metal4 ..... TOTAL Original Geometry Count = 0  (0)
LAYER metal5 ..... TOTAL Original Geometry Count = 0  (0)
LAYER metal6 ..... TOTAL Original Geometry Count = 0  (0)
```

LAYER metal7 ..... TOTAL Original Geometry Count = 0 (0)
LAYER metal8 ..... TOTAL Original Geometry Count = 0 (0)
LAYER metal9 ..... TOTAL Original Geometry Count = 0 (0)
LAYER metal10 .... TOTAL Original Geometry Count = 0 (0)
LAYER contact .... TOTAL Original Geometry Count = 5 (9)
LAYER via1 ..... TOTAL Original Geometry Count = 0 (0)
LAYER via2 ..... TOTAL Original Geometry Count = 0 (0)
LAYER via3 ..... TOTAL Original Geometry Count = 0 (0)
LAYER via4 ..... TOTAL Original Geometry Count = 0 (0)
LAYER via5 ..... TOTAL Original Geometry Count = 0 (0)
LAYER via6 ..... TOTAL Original Geometry Count = 0 (0)
LAYER via7 ..... TOTAL Original Geometry Count = 0 (0)
LAYER via8 ..... TOTAL Original Geometry Count = 0 (0)
LAYER via9 ..... TOTAL Original Geometry Count = 0 (0)

--- RULECHECK RESULTS STATISTICS

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RULECHECK Poly.6 ..... TOTAL Result Count = 0 (0)
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RULECHECK Contact.4 ... TOTAL Result Count = 0 (0)
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RULECHECK Via1.3 ..... TOTAL Result Count = 0 (0)

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RULECHECK Via3.4 ..... TOTAL Result Count = 0 (0)
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RULECHECK Metal2.7 .... TOTAL Result Count = 0 (0)
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RULECHECK Grid.12 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.13 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.14 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.15 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.16 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.17 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.18 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.19 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.20 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.21 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.22 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.23 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.24 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.25 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.26 ..... TOTAL Result Count = 0 (0)

--- RULECHECK RESULTS STATISTICS (BY CELL)

--- SUMMARY

TOTAL CPU Time: 0
TOTAL REAL Time: 0
TOTAL Original Layer Geometries: 47 (62)
TOTAL DRC RuleChecks Executed: 156
TOTAL DRC Results Generated: 0 (0)

MGC_HOME = /tools/mentor/calibre/ixl2015/ixl_cal_2015.2_27.20
$MGC_HOME/bin/calibre -drc -hier -nowait /nethome/nliu41/Documents/ece3150/_calibreDRC.rul_

// Mentor Graphics software executing under x86-64 Linux
//
// Running on Linux ecelinsrvx.ece.gatech.edu 2.6.32-573.18.1.el6.x86_64 #1 SMP Wed Jan 6 11:20:49 EST 2016 x86_64 glibc 2.12/NPTL 2.12
//
// Entries in /proc/meminfo:
//
// MemTotal: 198290828 kB
// MemFree: 73322956 kB
// Buffers: 800512 kB
// Cached: 94683704 kB
// SwapCached: 141024 kB
// Active: 43290112 kB
// Inactive: 76836864 kB
// Active(anon): 18396532 kB
// Inactive(anon): 6286840 kB
// Active(file): 24893580 kB
// Inactive(file): 70550024 kB
// Unevictable: 18976 kB
// Mlocked: 8756 kB
// SwapTotal: 4194300 kB
// SwapFree: 3024224 kB
// Dirty: 748 kB
// Writeback: 0 kB
// AnonPages: 24540388 kB
// Mapped: 1900972 kB
// Shmem: 38312 kB
// Slab: 2974048 kB
// SReclaimable: 2563832 kB
// SUnreclaim: 410216 kB
// KernelStack: 73680 kB
// PageTables: 322680 kB
// NFS_Unstable: 0 kB
// Bounce: 0 kB
// WritebackTmp: 0 kB

```
//  CommitLimit:    103339712 kB
//  Committed_AS:   46532604 kB
//  VmallocTotal:   34359738367 kB
//  VmallocUsed:      697932 kB
//  VmallocChunk:   34206552836 kB
//  HardwareCorrupted:     0 kB
//  AnonHugePages:  11087872 kB
//  HugePages_Total:       0
//  HugePages_Free:        0
//  HugePages_Rsvd:        0
//  HugePages_Surp:        0
//  Hugepagesize:       2048 kB
//  DirectMap4k:        4928 kB
//  DirectMap2M:     2045952 kB
//  DirectMap1G:    199229440 kB
//
//  CPU Info: Cores = 32, SMT enabled with 32 additional virtual processors
//  Max file descriptors: 1024
//  64 bit virtual addressing enabled
//  Running ixl_cal_2015.2_27.20/pkgs/icv/pvt/calibre -drc -hier -nowait
/nethome/nliu41/Documents/ece3150/_calibreDRC.rul_
//  Process ID: 59357
//
//  Starting time: Fri Apr 29 20:48:26 2016
//
//  Running on 1 CPU (pending licensing)
//
//

--- CALIBRE::DRC-H - Fri Apr 29 20:48:26 2016

------------------------------------------------------------------------------
------------------------------------------------------------------------------
-----         STANDARD VERIFICATION RULE FILE COMPILATION MODULE         -----
------------------------------------------------------------------------------
------------------------------------------------------------------------------

--- RULE FILE = /nethome/nliu41/Documents/ece3150/_calibreDRC.rul_

//
//  Rule file generated on Fri Apr 29 20:48:25 EDT 2016
//     by Calibre Interactive - DRC (v2015.2_27.20)
//
//      *** PLEASE DO NOT MODIFY THIS FILE ***
//
//

LAYOUT PATH  "nand2_1x.calibre.db"
```

LAYOUT PRIMARY "nand2_1x"
LAYOUT SYSTEM GDSII

DRC RESULTS DATABASE "nand2_1x.drc.results" ASCII
DRC MAXIMUM RESULTS 1000
DRC MAXIMUM VERTEX 4096

DRC CELL NAME YES CELL SPACE XFORM
DRC SUMMARY REPORT "nand2_1x.drc.summary" REPLACE HIER

VIRTUAL CONNECT COLON NO
VIRTUAL CONNECT REPORT NO

DRC ICSTATION YES

INCLUDE
"/nethome/nliu41/Documents/ece3150/FreePDK45/ncsu_basekit/techfile/calibre/calibreDRC.rul"

--- STANDARD VERIFICATION RULE FILE COMPILATION MODULE COMPLETED. CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/3/4

--- CALIBRE_* ENVIRONMENT VARIABLES:

CALIBRE_CMD_LINE='/tools/mentor/calibre/ixl2015/ixl_cal_2015.2_27.20/pkgs/icv/pvt/calibre -drc -hier -nowait /nethome/nliu41/Documents/ece3150/_calibreDRC.rul_'
CALIBRE_ECHO_RULE_FILE=
CALIBRE_HOME=/tools/mentor/calibre/ixl2015/ixl_cal_2015.2_27.20
CALIBRE_INITIAL_CMD_LINE='/tools/mentor/calibre/ixl2015/ixl_cal_2015.2_27.20/bin/calibre -drc -hier -nowait /nethome/nliu41/Documents/ece3150/_calibreDRC.rul_'
CALIBRE_READDB_LD_LIBRARY_PATH=/tools/mentor/calibre/ixl2015/ixl_cal_2015.2_27.20/pkgs/calibre_base/lib64:/tools/mentor/calibre/ixl2015/ixl_cal_2015.2_27.20/pkgs/icv_lib/lib64:/tools/mentor/calibre/ixl2015/ixl_cal_2015.2_27.20/pkgs/icv_qt_comp/plugins:/tools/mentor/calibre/ixl2015/ixl_cal_2015.2_27.20/pkgs/umc_libs/lib/lnx32:/tools/mentor/calibre/ixl2015/ixl_cal_2015.2_27.20/shared/pkgs/icv_oa/22.41.004/lib/linux_rhel40_64/opt:/tools/cadence/ic615hf171/tools/lib:/tools/cadence/ic615hf171/share/oa/lib/linux_rhel40_gcc44x_64/opt:/tools/cadence/ic615hf171/tools/Qt/64bit/lib:/tools/cadence/ic615hf171/tools/dfII/lib/64bit:/tools/cadence/ic615hf171/tools/sev/lib/64bit:/tools/cadence/ic615hf171/tools/lib/64bit:/tools/cadence/ic615hf171/tools/inca/lib/64bit:/tools/synopsys/hspice/g201206/hspice/amd64/interfaces:/usr/X11R6/lib:/tools/cadence/mmsim131/tools/lib:/usr/lib64/mpich/lib:/usr/local/lib:/usr/local/lib64:/usr/apps/lib:/usr/apps/lib64:/tools/cadence/ic615hf171/share/oa/lib:/tools/cadence/cni/plat_linux_gcc411_64/3rd/lib:/tools/cadence/cni/plat_linux_gcc411_64/3rd/oa/lib/linux_rhel30_32/opt:/tools/cadence/cni/plat_linux_gcc411_64/lib
CALIBRE_SKIP_OS_CHECKS=
CALIBRE_SSE3_SUPPORTED=1

--- SELECTED RULE CHECKS:

Well.1
Well.2
Well.4
Poly.1
Poly.2
Poly.3
Poly.4
Poly.5
Poly.6
Active.1
Active.2
Active.3
Active.4
Implant.1
Implant.2
Implant.3
Implant.4
Implant.6
Contact.1
Contact.2
Contact.3
Contact.4
Contact.5
Contact.6
Metal1.1
Metal1.2
Metal1.3
Metal1.4
Via1.1
Via1.2
Via1.3
Via1.4
Metal2.1
Metal2.2
Metal2.3
Metal2.4
Via2.1
Via2.2
Via2.3
Via2.4
Metal3.1
Metal3.2
Metal3.3
Metal3.4
Via3.1
Via3.2
Via3.3
Via3.4

Metal4.1
Metal4.2
Metal4.3
Via4.1
Via4.2
Via4.3
Via4.4
Metal5.1
Metal5.2
Metal5.3
Via5.1
Via5.2
Via5.3
Via5.4
Metal6.1
Metal6.2
Metal6.3
Via6.1
Via6.2
Via6.3
Via6.4
Metal7.1
Metal7.2
Metal7.3
Via7.1
Via7.2
Via7.3
Via7.4
Metal8.1
Metal8.2
Metal8.3
Via8.1
Via8.2
Via8.3
Via8.4
Metal9.1
Metal9.2
Metal9.3
Via9.1
Via9.2
Via9.3
Via9.4
Metal10.1
Metal10.2
Metal10.3
Metal1.5
Metal1.6
Metal1.7

Metal1.8
Metal1.9
Metal2.5
Metal2.6
Metal2.7
Metal2.8
Metal2.9
Metal3.5
Metal3.6
Metal3.7
Metal3.8
Metal3.9
Metal4.5
Metal4.6
Metal4.7
Metal4.8
Metal5.5
Metal5.6
Metal5.7
Metal5.8
Metal6.5
Metal6.6
Metal6.7
Metal6.8
Metal7.5
Metal7.6
Metal7.7
Metal8.5
Metal8.6
Metal8.7
Metal9.5
Metal9.6
Metal10.5
Metal10.6
Grid.1
Grid.2
Grid.3
Grid.4
Grid.5
Grid.6
Grid.7
Grid.8
Grid.9
Grid.10
Grid.11
Grid.12
Grid.13
Grid.14

Grid.15
Grid.16
Grid.17
Grid.18
Grid.19
Grid.20
Grid.21
Grid.22
Grid.23
Grid.24
Grid.25
Grid.26

--- UNSELECTED RULE CHECKS:

----- CALIBRE::DRC-H - LICENSING MODULE -----

// Applying licensing policy...
// calibrepvs_s license acquired (calibrehdrc requested).

// Licensed Products
// ----------
// Base products running on 1 core:
// - DRC (Hierarchical)

--- CALIBRE::DRC-H LICENSING MODULE COMPLETED. CPU TIME = 0 REAL TIME = 0

----- CALIBRE LAYOUT DATA INPUT MODULE -----

--- LAYOUT SYSTEM = GDS
--- LAYOUT MAGNIFICATION = 1

----- GDS FILE SUMMARY INFORMATION -----

GDS FILENAME: nand2_1x.calibre.db
GDS VERSION: 5
LIBRARY NAME: sandbox

LAST MODIFIED: ON 2016/4/29 AT 20:29:29
LAST ACCESSED: ON 2016/4/29 AT 20:48:25
DATABASE PRECISION: 0.0005 user units per database unit
PHYSICAL PRECISION: 5e-10 meters per database unit
MAGNIFICATION: 1

----- GDS INPUT DATA FOR INDIVIDUAL CELLS -----

CELL NAME	PLACEMENTS	ARRAYS	POLYGONS	PATHS	TEXTS
NTAP_CDNS_461977305390	0	0	5	0	0
PTAP_CDNS_461977305391	0	0	5	0	0
M1_P_CDNS_461977305392	0	0	4	0	0
M1_N_CDNS_461977305393	0	0	4	0	0
M1_POLY_CDNS_461977305394	0	0	3	0	0
nand2_1x	9	0	16	9	5

NOTE: UNUSED geometric data is present on the following layer/datatype pairs:

NOTE: USED geometric data is present on the following layer/datatype pairs:
  SIMPLE LAYER = 1
    LAYER = 1 DATATYPE = 0
  SIMPLE LAYER = 2
    LAYER = 2 DATATYPE = 0
  SIMPLE LAYER = 3
    LAYER = 3 DATATYPE = 0
  SIMPLE LAYER = 4
    LAYER = 4 DATATYPE = 0
  SIMPLE LAYER = 5
    LAYER = 5 DATATYPE = 0
  SIMPLE LAYER = 9
    LAYER = 9 DATATYPE = 0
  SIMPLE LAYER = 10
    LAYER = 10 DATATYPE = 0
  SIMPLE LAYER = 11
    LAYER = 11 DATATYPE = 0

NOTE: The following required simple layers are EMPTY:
  6
  7
  12
  13
  14
  15
  16
  17
  18

19
20
21
22
23
24
25
26
27
28
29

--- LAYOUT DATABASE CONSTRUCTOR COMPLETED. CPU TIME = 0 REAL TIME = 0 LVHEAP = 2/4/4

CONSTRUCTING HIERARCHICAL DATABASE
  COPYING LAYOUT DATABASE
  PROCESSING TEXT
  ELIMINATING DUPLICATE TEXT
  ELIMINATING EMPTY CELLS
  COMPUTING RECTANGULAR EXTENTS
  ELIMINATING DUPLICATE PLACEMENTS
  IDENTIFYING TOP LAYER CELLS
  IDENTIFYING ADDITIONAL TOP LAYER CELLS
  IDENTIFYING VERY SMALL CELLS
    M1_POLY_CDNS_461977305394
    M1_N_CDNS_461977305393
    M1_P_CDNS_461977305392
    PTAP_CDNS_461977305391
    NTAP_CDNS_461977305390
  CHECKING ACUTE/SKEW/ANGLED/OFFGRID
  FLATTENING SELECTED LAYERS
  EXPANDING UNIQUE VERY SMALL CELL PLACEMENTS
    NTAP_CDNS_461977305390 in nand2_1x at (0,0.6125)
    PTAP_CDNS_461977305391 in nand2_1x at (0,0.0975)
  EXPANDING UNIQUE TOP LAYER CELL PLACEMENTS
  EXPANDING UNIQUE MONO-GEOMETRIC CELL PLACEMENTS
  COMPUTING RECTILINEAR EXTENTS
  SORTING PLACEMENTS
  ELIMINATING DUPLICATE PLACEMENTS
  EXPANDING UNIQUE TRANSPARENT CELL PLACEMENTS
  EXPANDING UNIQUE LIGHT-WEIGHT CELL PLACEMENTS
  EXPANDING UNIQUE ROW CELL PLACEMENTS
  EXPANDING TRIVIAL CELL PLACEMENTS
  EXPANDING VERY SPARSE ARRAY PLACEMENTS
  EXPANDING LARGE CELL ARRAY PLACEMENTS
  EXPANDING VERY SPARSE CELL PLACEMENTS
  ELIMINATING DUPLICATE SUPER-HIERARCHICAL PLACEMENTS
  EXPANDING DENSE OVERLAPS

EXPANDING UNIQUE META-CELL PLACEMENTS
ANALYZING HIERARCHY FOR AUTOMATIC TURBO FLEX
M1_N_CDNS_461977305393 (2)
M1_P_CDNS_461977305392 (3)
M1_POLY_CDNS_461977305394 (2)
INJECTING HIERARCHY
COMPUTING RECTANGULAR EXTENTS
SORTING PLACEMENTS
PUSHING VERY SMALL CELL PLACEMENTS
PUSHING TOP LAYER CELL PLACEMENTS
COMPUTING CELL-TO-WORLD TRANSFORMS
SORTING PLACEMENTS
PACKING HIERARCHY
COMPUTING PLACEMENT OVERLAP RECORDS
COMPUTING CELL OVERLAP AREAS
INTERSECTING PLACEMENTS AND OVERLAP AREAS
HIERARCHICAL DATABASE CONSTRUCTOR COMPLETE.
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5

----- TEXT OBJECTS FOR CONNECTIVITY EXTRACTION -----

----- TEXT OBJECTS FOR WITH TEXT OPERATIONS -----

----- TEXT OBJECTS FOR EXPAND TEXT OPERATIONS -----

----- TEXT OBJECTS FOR CAPI OPERATIONS -----

----- LAYER READ SUMMARY (SIMPLE LAYER GEOMETRIES) -----

SIMPLE LAYER GEOMETRIES

---

1 10
2 2
3 2

4	5
5	5
6	0
7	0
9	3
10	5
11	14
12	0
13	0
14	0
15	0
16	0
17	0
18	0
19	0
20	0
21	0
22	0
23	0
24	0
25	0
26	0
27	0
28	0
29	0

----- LAYER READ SUMMARY (ORIGINAL LAYER GEOMETRIES) -----

ORIGINAL LAYER	INITIAL GEOMETRIES	FINAL GEOMETRIES
pwell	2 (2)	2 (2)
nwell	2 (2)	2 (2)
active	10 (13)	10 (13)
poly	3 (4)	3 (4)
pimplant	5 (7)	5 (7)
nimplant	5 (6)	5 (6)
vth	0 (0)	0 (0)
vtg	0 (0)	0 (0)
metal1	14 (18)	14 (18)
metal2	0 (0)	0 (0)
metal3	0 (0)	0 (0)
metal4	0 (0)	0 (0)
metal5	0 (0)	0 (0)
metal6	0 (0)	0 (0)
metal7	0 (0)	0 (0)
metal8	0 (0)	0 (0)

metal9	0 (0)	0 (0)
metal10	0 (0)	0 (0)
contact	5 (9)	5 (9)
via1	0 (0)	0 (0)
via2	0 (0)	0 (0)
via3	0 (0)	0 (0)
via4	0 (0)	0 (0)
via5	0 (0)	0 (0)
via6	0 (0)	0 (0)
via7	0 (0)	0 (0)
via8	0 (0)	0 (0)
via9	0 (0)	0 (0)

----- LAYER READ SUMMARY (TEXT FOR CONNECTIVITY EXTRACTION) -----
---
SIMPLE LAYER TEXTS

----- LAYER READ SUMMARY (TEXT FOR WITH TEXT OPERATIONS) -----
---
SIMPLE LAYER TEXTS

----- LAYER READ SUMMARY (TEXT FOR EXPAND TEXT OPERATIONS) -----
---
SIMPLE LAYER TEXTS

----- LAYER READ SUMMARY (TEXT FOR CAPI OPERATIONS) -----

SIMPLE LAYER TEXTS

----- CELL AND PLACEMENT SUMMARY -----

CELL TYPE CELLS PLACEMENTS FLAT PLACEMENTS

USER 4 7 7

```
 VERY SMALL              3              7              7
 TOP LAYER               0              0              0
  VERY SMALL             0              0              0
PSEUDO                   0              0              0
TOTAL                    4              7              7

---------------------------------------------------------------------------
-----              LAYOUT DATA INPUT MODULE SUMMARY               -----
---------------------------------------------------------------------------

--- TOTAL GEOMETRIES READ FROM SIMPLE LAYERS = 46
--- TOTAL GEOMETRIES READ FROM ORIGINAL LAYERS = 46 (61)
--- TOTAL GEOMETRIES WRITTEN TO ORIGINAL LAYERS = 46 (61)
--- LVHEAP = 1/5/5
--- DATABASE EXTENT = [ 0 , 0 ] -> [ 0.79 , 0.9675 ]
--- GEOMETRIC DEPTH = ALL
--- TEXT DEPTH FOR CONNECTIVITY EXTRACTION = PRIMARY
--- TOTAL TEXT OBJECTS FOR CONNECTIVITY EXTRACTION = 0 (0)
--- TOTAL TEXT OBJECTS FOR WITH TEXT OPERATIONS = 0 (0)
--- TOTAL TEXT OBJECTS FOR EXPAND TEXT OPERATIONS = 0 (0)
--- TOTAL TEXT OBJECTS FOR CAPI OPERATIONS = 0 (0)
--- GEOMETRY FLAGGING = ACUTE (NO)  SKEW (NO)  ANGLED (NO)  OFFGRID (NO)
                        NONSIMPLE POLYGON (NO)  NONSIMPLE PATH (NO)
--- PRIMARY CELL = nand2_1x
--- EXCLUDED CELLS =
--- LAYOUT BASE LAYER = (NOT SPECIFIED)
--- LAYOUT TOP LAYER = (NOT SPECIFIED)

--- CALIBRE LAYOUT DATA INPUT MODULE COMPLETED.  CPU TIME = 0  REAL TIME = 0

---------------------------------------------------------------------------
---------------------------------------------------------------------------
-----       CALIBRE::DRC-H - RESULTS DATABASE INITIALIZATION MODULE       -----
---------------------------------------------------------------------------
---------------------------------------------------------------------------

--- GLOBAL DRC RESULTS DATABASE FILE = nand2_1x.drc.results (ASCII)
--- GLOBAL MAXIMUM RESULTS PER RULECHECK = 1000
--- GLOBAL MAXIMUM VERTICES PER RESULT POLYGON = 4096
--- CHECK TEXT MAPPING = COMMENTS + RULE FILE INFORMATION
--- KEEP EMPTY RULE CHECKS = YES
--- DRC RESULTS MAGNIFICATION = 1
--- DRC RESULTS DATABASE PRECISION = 2000

---------------------------------------------------------------------------
-----            DRC RULECHECK -> RESULTS DATABASE MAPPING            -----
---------------------------------------------------------------------------
                                        DATA       MAX    MAX
```

RULECHECK	RESULTS DATABASE	TYPE	LAYER	TYPE	RESULT	VERTEX
Well.1	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Well.2	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Well.4	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Poly.1	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Poly.2	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Poly.3	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Poly.4	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Poly.5	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Poly.6	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Active.1	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Active.2	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Active.3	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Active.4	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Implant.1	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Implant.2	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Implant.3	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Implant.4	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Implant.6	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Contact.1	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Contact.2	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Contact.3	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Contact.4	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Contact.5	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Contact.6	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal1.1	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal1.2	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal1.3	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal1.4	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Via1.1	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Via1.2	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Via1.3	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Via1.4	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal2.1	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal2.2	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal2.3	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal2.4	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Via2.1	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Via2.2	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Via2.3	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Via2.4	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal3.1	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal3.2	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal3.3	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal3.4	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Via3.1	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Via3.2	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096

Via3.3	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Via3.4	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal4.1	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal4.2	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal4.3	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Via4.1	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Via4.2	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Via4.3	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Via4.4	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal5.1	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal5.2	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal5.3	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Via5.1	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Via5.2	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Via5.3	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Via5.4	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal6.1	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal6.2	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal6.3	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Via6.1	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Via6.2	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Via6.3	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Via6.4	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal7.1	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal7.2	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal7.3	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Via7.1	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Via7.2	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Via7.3	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Via7.4	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal8.1	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal8.2	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal8.3	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Via8.1	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Via8.2	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Via8.3	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Via8.4	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal9.1	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal9.2	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal9.3	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Via9.1	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Via9.2	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Via9.3	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Via9.4	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal10.1	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal10.2	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal10.3	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal1.5	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096

Metal1.6	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal1.7	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal1.8	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal1.9	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal2.5	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal2.6	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal2.7	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal2.8	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal2.9	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal3.5	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal3.6	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal3.7	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal3.8	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal3.9	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal4.5	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal4.6	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal4.7	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal4.8	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal5.5	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal5.6	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal5.7	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal5.8	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal6.5	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal6.6	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal6.7	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal6.8	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal7.5	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal7.6	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal7.7	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal8.5	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal8.6	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal8.7	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal9.5	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal9.6	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal10.5	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Metal10.6	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Grid.1	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Grid.2	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Grid.3	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Grid.4	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Grid.5	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Grid.6	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Grid.7	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Grid.8	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Grid.9	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Grid.10	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Grid.11	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096
Grid.12	nand2_1x.drc.results	ASCII	N/A	N/A	1000	4096

```
Grid.13         nand2_1x.drc.results   ASCII  N/A  N/A     1000  4096
Grid.14         nand2_1x.drc.results   ASCII  N/A  N/A     1000  4096
Grid.15         nand2_1x.drc.results   ASCII  N/A  N/A     1000  4096
Grid.16         nand2_1x.drc.results   ASCII  N/A  N/A     1000  4096
Grid.17         nand2_1x.drc.results   ASCII  N/A  N/A     1000  4096
Grid.18         nand2_1x.drc.results   ASCII  N/A  N/A     1000  4096
Grid.19         nand2_1x.drc.results   ASCII  N/A  N/A     1000  4096
Grid.20         nand2_1x.drc.results   ASCII  N/A  N/A     1000  4096
Grid.21         nand2_1x.drc.results   ASCII  N/A  N/A     1000  4096
Grid.22         nand2_1x.drc.results   ASCII  N/A  N/A     1000  4096
Grid.23         nand2_1x.drc.results   ASCII  N/A  N/A     1000  4096
Grid.24         nand2_1x.drc.results   ASCII  N/A  N/A     1000  4096
Grid.25         nand2_1x.drc.results   ASCII  N/A  N/A     1000  4096
Grid.26         nand2_1x.drc.results   ASCII  N/A  N/A     1000  4096

--- CALIBRE::DRC-H RESULTS DATABASE INITIALIZATION MODULE COMPLETED.  CPU TIME = 0  REAL
TIME = 0

--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
-----              CALIBRE::DRC-H - EXECUTIVE MODULE              -----
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------

nwell = OR nwell
----------------
nwell (HIER TYP=1 CFG=1 HGC=1 FGC=1 HEC=4 FEC=4 IGC=1 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 1 OF 338  ELAPSED TIME = 0

Original Layer nwell DELETED -- LVHEAP = 1/5/5

pwell = OR pwell
----------------
pwell (HIER TYP=1 CFG=1 HGC=1 FGC=1 HEC=4 FEC=4 IGC=1 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 2 OF 338  ELAPSED TIME = 0

Original Layer pwell DELETED -- LVHEAP = 1/5/5

Well.1::<1> = nwell AND pwell
-----------------------------
Well.1::<1> (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 3 OF 338  ELAPSED TIME = 0

Layer Well.1::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Well.1 COMPLETED. Number of Results = 0 (0)

Well.2::<1> = EXT nwell pwell < 0.225
```

```
-------------------------------------
Well.2::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 4 OF 338  ELAPSED TIME = 0

Layer Well.2::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Well.2 COMPLETED. Number of Results = 0 (0)

well = nwell OR pwell
---------------------
well (HIER TYP=1 CFG=1 HGC=2 FGC=2 HEC=8 FEC=8 IGC=2 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 5 OF 338  ELAPSED TIME = 0

Layer nwell DELETED -- LVHEAP = 1/5/5

Layer pwell DELETED -- LVHEAP = 1/5/5

Well.4::<1> = INT well < 0.2
----------------------------
Well.4::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 6 OF 338  ELAPSED TIME = 0

Layer Well.4::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Well.4 COMPLETED. Number of Results = 0 (0)

poly = OR poly
--------------
poly (HIER TYP=1 CFG=1 HGC=3 FGC=4 HEC=12 FEC=16 IGC=1 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 7 OF 338  ELAPSED TIME = 0

Original Layer poly DELETED -- LVHEAP = 1/5/5

Poly.1::<1> = INT poly < 0.05
-----------------------------
Poly.1::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 8 OF 338  ELAPSED TIME = 0

Layer Poly.1::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Poly.1 COMPLETED. Number of Results = 0 (0)

active = OR active
------------------
active (HIER TYP=1 CFG=1 HGC=6 FGC=9 HEC=36 FEC=48 IGC=2 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 9 OF 338  ELAPSED TIME = 0

Original Layer active DELETED -- LVHEAP = 1/5/5
```

```
gate = poly AND active
----------------------
gate (HIER TYP=1 CFG=1 HGC=4 FGC=4 HEC=16 FEC=16 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 10 OF 338  ELAPSED TIME = 0

Poly.2::<1> = EXT gate < 0.14
-----------------------------
Poly.2::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 11 OF 338  ELAPSED TIME = 0

Layer Poly.2::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Poly.2 COMPLETED. Number of Results = 0 (0)

Poly.5::<1> = EXT active poly < 0.05
Poly.3::<1> = ENC active poly < 0.05
Poly.4::<1> = ENC poly active < 0.07
-----------------------------------
Poly.5::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
Poly.3::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
Poly.4::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 14 OF 338  ELAPSED TIME = 0

Layer Poly.3::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Poly.3 COMPLETED. Number of Results = 0 (0)

Layer Poly.4::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Poly.4 COMPLETED. Number of Results = 0 (0)

Layer Poly.5::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Poly.5 COMPLETED. Number of Results = 0 (0)

fieldpoly = poly NOT active
---------------------------
fieldpoly (HIER TYP=1 CFG=1 HGC=7 FGC=8 HEC=28 FEC=32 IGC=1 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 15 OF 338  ELAPSED TIME = 0

Poly.6::<1> = EXT fieldpoly < 0.075
-----------------------------------
Poly.6::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 16 OF 338  ELAPSED TIME = 0

Layer fieldpoly DELETED -- LVHEAP = 1/5/5
```

Layer Poly.6::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Poly.6 COMPLETED. Number of Results = 0 (0)

Active.2::<1> = EXT active < 0.08
Active.1::<1> = INT active < 0.09

Active.2::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
Active.1::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 18 OF 338 ELAPSED TIME = 0

Layer Active.1::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Active.1 COMPLETED. Number of Results = 0 (0)

Layer Active.2::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Active.2 COMPLETED. Number of Results = 0 (0)

Active.3::<1> = ENC active well < 0.055

Active.3::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 19 OF 338 ELAPSED TIME = 0

Layer Active.3::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Active.3 COMPLETED. Number of Results = 0 (0)

Active.4::<1> = active NOT well

Active.4::<1> (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 20 OF 338 ELAPSED TIME = 0

Layer Active.4::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Active.4 COMPLETED. Number of Results = 0 (0)

nimplant = OR nimplant
---
nimplant (HIER TYP=1 CFG=1 HGC=3 FGC=4 HEC=16 FEC=20 IGC=1 VHC=F VPC=F)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 21 OF 338 ELAPSED TIME = 0

Original Layer nimplant DELETED -- LVHEAP = 1/5/5

pimplant = OR pimplant
---
pimplant (HIER TYP=1 CFG=1 HGC=3 FGC=5 HEC=20 FEC=28 IGC=1 VHC=F VPC=F)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 22 OF 338 ELAPSED TIME = 0

Original Layer pimplant DELETED -- LVHEAP = 1/5/5

implant = nimplant OR pimplant
---
implant (HIER TYP=1 CFG=1 HGC=6 FGC=9 HEC=36 FEC=48 IGC=2 VHC=F VPC=F)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 23 OF 338 ELAPSED TIME = 0

Implant.1::<1> = EXT implant gate < 0.07

Implant.1::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 24 OF 338 ELAPSED TIME = 0

Layer gate DELETED -- LVHEAP = 1/5/5

Layer Implant.1::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Implant.1 COMPLETED. Number of Results = 0 (0)

contact = OR contact
---
contact (HIER TYP=1 CFG=1 HGC=5 FGC=9 HEC=20 FEC=36 IGC=0 VHC=F VPC=F)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 25 OF 338 ELAPSED TIME = 0

Original Layer contact DELETED -- LVHEAP = 1/5/5

Implant.2::<1> = EXT implant contact < 0.025

Implant.2::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 26 OF 338 ELAPSED TIME = 0

Layer Implant.2::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Implant.2 COMPLETED. Number of Results = 0 (0)

Implant.3::<1> = EXT implant < 0.045
Implant.4::<1> = INT implant < 0.045

Implant.3::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
Implant.4::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 28 OF 338 ELAPSED TIME = 0

Layer Implant.3::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Implant.3 COMPLETED. Number of Results = 0 (0)

Layer Implant.4::<1> DELETED -- LVHEAP = 1/5/5

```
DRC RuleCheck Implant.4 COMPLETED. Number of Results = 0 (0)

Implant.6::<1> = nimplant AND pimplant
---------------------------------------
Implant.6::<1> (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 29 OF 338  ELAPSED TIME = 0

Layer nimplant DELETED -- LVHEAP = 1/5/5

Layer pimplant DELETED -- LVHEAP = 1/5/5

Layer Implant.6::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Implant.6 COMPLETED. Number of Results = 0 (0)

Contact.2::<1> = EXT contact < 0.075
Contact.1::<1> = INT contact < 0.065
-----------------------------------
Contact.2::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
Contact.1::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 31 OF 338  ELAPSED TIME = 0

Layer Contact.1::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Contact.1 COMPLETED. Number of Results = 0 (0)

Layer Contact.2::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Contact.2 COMPLETED. Number of Results = 0 (0)

contactenc1 = active OR poly
----------------------------
contactenc1 (HIER TYP=1 CFG=0 HGC=6 FGC=10 HEC=65 FEC=81 IGC=3 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 32 OF 338  ELAPSED TIME = 0

metal1 = OR metal1
------------------
metal1 (HIER TYP=1 CFG=1 HGC=6 FGC=10 HEC=46 FEC=62 IGC=2 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 33 OF 338  ELAPSED TIME = 0

Original Layer metal1 DELETED -- LVHEAP = 1/5/5

contactenc = contactenc1 AND metal1
-----------------------------------
contactenc (HIER TYP=1 CFG=0 HGC=12 FGC=16 HEC=52 FEC=68 IGC=3 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 34 OF 338  ELAPSED TIME = 0

Layer contactenc1 DELETED -- LVHEAP = 1/5/5
```

```
Contact.3::<1> = contact NOT contactenc
----------------------------------------
Contact.3::<1> (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 35 OF 338  ELAPSED TIME = 0

Layer contactenc DELETED -- LVHEAP = 1/5/5

Layer Contact.3::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Contact.3 COMPLETED. Number of Results = 0 (0)

Contact.4::<1> = ENC contact active < 0.005
-------------------------------------------
Contact.4::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 36 OF 338  ELAPSED TIME = 0

Layer Contact.4::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Contact.4 COMPLETED. Number of Results = 0 (0)

Contact.6::<1> = EXT contact poly < 0.035
Contact.5::<1> = ENC contact poly < 0.005
-----------------------------------------
Contact.6::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
Contact.5::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 38 OF 338  ELAPSED TIME = 0

Layer Contact.5::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Contact.5 COMPLETED. Number of Results = 0 (0)

Layer Contact.6::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Contact.6 COMPLETED. Number of Results = 0 (0)

Metal1.2::<1> = EXT metal1 < 0.065
Metal1.1::<1> = INT metal1 < 0.065
---------------------------------
Metal1.2::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
Metal1.1::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 40 OF 338  ELAPSED TIME = 0

Layer Metal1.1::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal1.1 COMPLETED. Number of Results = 0 (0)

Layer Metal1.2::<1> DELETED -- LVHEAP = 1/5/5
```

```
DRC RuleCheck Metal1.2 COMPLETED. Number of Results = 0 (0)

Metal1.3::<1> = RECTANGLE ENCLOSURE contact metal1
                        GOOD 0 0.035 OPPOSITE 0 0.035 OPPOSITE
--------------------------------------------------------------------------
Metal1.3::<1> (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 41 OF 338  ELAPSED TIME = 0

Layer Metal1.3::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal1.3 COMPLETED. Number of Results = 0 (0)

via1 = OR via1
--------------
via1 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 42 OF 338  ELAPSED TIME = 0

Original Layer via1 DELETED -- LVHEAP = 1/5/5

Metal1.4::<1> = RECTANGLE ENCLOSURE via1 metal1
                        GOOD 0 0.035 OPPOSITE 0 0.035 OPPOSITE
--------------------------------------------------------------------------
Metal1.4::<1> (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 43 OF 338  ELAPSED TIME = 0

Layer Metal1.4::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal1.4 COMPLETED. Number of Results = 0 (0)

Via1.2::<1> = EXT via1 < 0.075
Via1.1::<1> = INT via1 < 0.065
------------------------------
Via1.2::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
Via1.1::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 45 OF 338  ELAPSED TIME = 0

Layer Via1.1::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Via1.1 COMPLETED. Number of Results = 0 (0)

Layer Via1.2::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Via1.2 COMPLETED. Number of Results = 0 (0)

Via1.3::<1> = via1 NOT metal1
-----------------------------
Via1.3::<1> (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
```

```
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 46 OF 338  ELAPSED TIME = 0

Layer Via1.3::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Via1.3 COMPLETED. Number of Results = 0 (0)

metal2 = OR metal2
------------------
metal2 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 47 OF 338  ELAPSED TIME = 0

Original Layer metal2 DELETED -- LVHEAP = 1/5/5

Via1.4::<1> = via1 NOT metal2
-----------------------------
Via1.4::<1> (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 48 OF 338  ELAPSED TIME = 0

Layer Via1.4::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Via1.4 COMPLETED. Number of Results = 0 (0)

Metal2.2::<1> = EXT metal2 < 0.07
Metal2.1::<1> = INT metal2 < 0.07
---------------------------------
Metal2.2::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
Metal2.1::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 50 OF 338  ELAPSED TIME = 0

Layer Metal2.1::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal2.1 COMPLETED. Number of Results = 0 (0)

Layer Metal2.2::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal2.2 COMPLETED. Number of Results = 0 (0)

Metal2.3::<1> = RECTANGLE ENCLOSURE via1 metal2
                        GOOD 0 0.035 OPPOSITE 0 0.035 OPPOSITE
-------------------------------------------------------------------------
Metal2.3::<1> (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 51 OF 338  ELAPSED TIME = 0

Layer Metal2.3::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal2.3 COMPLETED. Number of Results = 0 (0)

via2 = OR via2
```

```
--------------
via2 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 52 OF 338  ELAPSED TIME = 0

Original Layer via2 DELETED -- LVHEAP = 1/5/5

Metal2.4::<1> = RECTANGLE ENCLOSURE via2 metal2
                        GOOD 0 0.035 OPPOSITE 0 0.035 OPPOSITE
--------------------------------------------------------------------------
Metal2.4::<1> (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 53 OF 338  ELAPSED TIME = 0

Layer Metal2.4::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal2.4 COMPLETED. Number of Results = 0 (0)

Via2.2::<1> = EXT via2 < 0.075
Via2.1::<1> = INT via2 < 0.065
------------------------------
Via2.2::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
Via2.1::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 55 OF 338  ELAPSED TIME = 0

Layer Via2.1::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Via2.1 COMPLETED. Number of Results = 0 (0)

Layer Via2.2::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Via2.2 COMPLETED. Number of Results = 0 (0)

Via2.3::<1> = via2 NOT metal2
-----------------------------
Via2.3::<1> (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 56 OF 338  ELAPSED TIME = 0

Layer Via2.3::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Via2.3 COMPLETED. Number of Results = 0 (0)

metal3 = OR metal3
------------------
metal3 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 57 OF 338  ELAPSED TIME = 0

Original Layer metal3 DELETED -- LVHEAP = 1/5/5

Via2.4::<1> = via2 NOT metal3
```

```
------------------------------
Via2.4::<1> (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 58 OF 338  ELAPSED TIME = 0

Layer Via2.4::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Via2.4 COMPLETED. Number of Results = 0 (0)

Metal3.2::<1> = EXT metal3 < 0.07
Metal3.1::<1> = INT metal3 < 0.07
---------------------------------
Metal3.2::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
Metal3.1::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 60 OF 338  ELAPSED TIME = 0

Layer Metal3.1::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal3.1 COMPLETED. Number of Results = 0 (0)

Layer Metal3.2::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal3.2 COMPLETED. Number of Results = 0 (0)

Metal3.3::<1> = RECTANGLE ENCLOSURE via2 metal3
                        GOOD 0 0.035 OPPOSITE 0 0.035 OPPOSITE
-------------------------------------------------------------------------
Metal3.3::<1> (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 61 OF 338  ELAPSED TIME = 0

Layer Metal3.3::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal3.3 COMPLETED. Number of Results = 0 (0)

via3 = OR via3
--------------
via3 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 62 OF 338  ELAPSED TIME = 0

Original Layer via3 DELETED -- LVHEAP = 1/5/5

Metal3.4::<1> = RECTANGLE ENCLOSURE via3 metal3
                        GOOD 0 0.035 OPPOSITE 0 0.035 OPPOSITE
-------------------------------------------------------------------------
Metal3.4::<1> (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 63 OF 338  ELAPSED TIME = 0

Layer Metal3.4::<1> DELETED -- LVHEAP = 1/5/5
```

```
DRC RuleCheck Metal3.4 COMPLETED. Number of Results = 0 (0)

Via3.2::<1> = EXT via3 < 0.075
Via3.1::<1> = INT via3 < 0.065
------------------------------
Via3.2::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
Via3.1::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 65 OF 338  ELAPSED TIME = 0

Layer Via3.1::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Via3.1 COMPLETED. Number of Results = 0 (0)

Layer Via3.2::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Via3.2 COMPLETED. Number of Results = 0 (0)

Via3.3::<1> = via3 NOT metal3
------------------------------
Via3.3::<1> (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 66 OF 338  ELAPSED TIME = 0

Layer Via3.3::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Via3.3 COMPLETED. Number of Results = 0 (0)

metal4 = OR metal4
------------------
metal4 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 67 OF 338  ELAPSED TIME = 0

Original Layer metal4 DELETED -- LVHEAP = 1/5/5

Via3.4::<1> = via3 NOT metal4
------------------------------
Via3.4::<1> (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 68 OF 338  ELAPSED TIME = 0

Layer Via3.4::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Via3.4 COMPLETED. Number of Results = 0 (0)

Metal4.2::<1> = EXT metal4 < 0.14
Metal4.1::<1> = INT metal4 < 0.14
---------------------------------
Metal4.2::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
Metal4.1::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 70 OF 338  ELAPSED TIME = 0
```

Layer Metal4.1::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal4.1 COMPLETED. Number of Results = 0 (0)

Layer Metal4.2::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal4.2 COMPLETED. Number of Results = 0 (0)

Metal4.3::<1> = ENC metal4 via3 < 0.0025

Metal4.3::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 71 OF 338 ELAPSED TIME = 0

Layer Metal4.3::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal4.3 COMPLETED. Number of Results = 0 (0)

via4 = OR via4
---
via4 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 72 OF 338 ELAPSED TIME = 0

Original Layer via4 DELETED -- LVHEAP = 1/5/5

Via4.2::<1> = EXT via4 < 0.14
Via4.1::<1> = INT via4 < 0.14

Via4.2::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
Via4.1::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 74 OF 338 ELAPSED TIME = 0

Layer Via4.1::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Via4.1 COMPLETED. Number of Results = 0 (0)

Layer Via4.2::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Via4.2 COMPLETED. Number of Results = 0 (0)

Via4.3::<1> = via4 NOT metal4

Via4.3::<1> (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 75 OF 338 ELAPSED TIME = 0

Layer Via4.3::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Via4.3 COMPLETED. Number of Results = 0 (0)

```
metal5 = OR metal5
------------------
metal5 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 76 OF 338  ELAPSED TIME = 0

Original Layer metal5 DELETED -- LVHEAP = 1/5/5

Via4.4::<1> = via4 NOT metal5
-----------------------------
Via4.4::<1> (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 77 OF 338  ELAPSED TIME = 0

Layer Via4.4::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Via4.4 COMPLETED. Number of Results = 0 (0)

Metal5.2::<1> = EXT metal5 < 0.14
Metal5.1::<1> = INT metal5 < 0.14
---------------------------------
Metal5.2::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
Metal5.1::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 79 OF 338  ELAPSED TIME = 0

Layer Metal5.1::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal5.1 COMPLETED. Number of Results = 0 (0)

Layer Metal5.2::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal5.2 COMPLETED. Number of Results = 0 (0)

Metal5.3::<1> = ENC metal5 via4 < 0.0025
----------------------------------------
Metal5.3::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 80 OF 338  ELAPSED TIME = 0

Layer Metal5.3::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal5.3 COMPLETED. Number of Results = 0 (0)

via5 = OR via5
--------------
via5 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 81 OF 338  ELAPSED TIME = 0

Original Layer via5 DELETED -- LVHEAP = 1/5/5
```

```
Via5.2::<1> = EXT via5 < 0.14
Via5.1::<1> = INT via5 < 0.14
------------------------------
Via5.2::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
Via5.1::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 83 OF 338  ELAPSED TIME = 0

Layer Via5.1::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Via5.1 COMPLETED. Number of Results = 0 (0)

Layer Via5.2::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Via5.2 COMPLETED. Number of Results = 0 (0)

Via5.3::<1> = via5 NOT metal5
------------------------------
Via5.3::<1> (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 84 OF 338  ELAPSED TIME = 0

Layer Via5.3::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Via5.3 COMPLETED. Number of Results = 0 (0)

metal6 = OR metal6
------------------
metal6 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 85 OF 338  ELAPSED TIME = 0

Original Layer metal6 DELETED -- LVHEAP = 1/5/5

Via5.4::<1> = via5 NOT metal6
------------------------------
Via5.4::<1> (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 86 OF 338  ELAPSED TIME = 0

Layer Via5.4::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Via5.4 COMPLETED. Number of Results = 0 (0)

Metal6.2::<1> = EXT metal6 < 0.14
Metal6.1::<1> = INT metal6 < 0.14
---------------------------------
Metal6.2::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
Metal6.1::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 88 OF 338  ELAPSED TIME = 0

Layer Metal6.1::<1> DELETED -- LVHEAP = 1/5/5
```

```
DRC RuleCheck Metal6.1 COMPLETED. Number of Results = 0 (0)

Layer Metal6.2::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal6.2 COMPLETED. Number of Results = 0 (0)

Metal6.3::<1> = ENC metal6 via5 < 0.0025
----------------------------------------
Metal6.3::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 89 OF 338  ELAPSED TIME = 0

Layer Metal6.3::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal6.3 COMPLETED. Number of Results = 0 (0)

via6 = OR via6
--------------
via6 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 90 OF 338  ELAPSED TIME = 0

Original Layer via6 DELETED -- LVHEAP = 1/5/5

Via6.2::<1> = EXT via6 < 0.14
Via6.1::<1> = INT via6 < 0.14
-----------------------------
Via6.2::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
Via6.1::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 92 OF 338  ELAPSED TIME = 0

Layer Via6.1::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Via6.1 COMPLETED. Number of Results = 0 (0)

Layer Via6.2::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Via6.2 COMPLETED. Number of Results = 0 (0)

Via6.3::<1> = via6 NOT metal6
-----------------------------
Via6.3::<1> (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 93 OF 338  ELAPSED TIME = 0

Layer Via6.3::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Via6.3 COMPLETED. Number of Results = 0 (0)

metal7 = OR metal7
```

```
------------------
metal7 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 94 OF 338  ELAPSED TIME = 0

Original Layer metal7 DELETED -- LVHEAP = 1/5/5

Via6.4::<1> = via6 NOT metal7
-----------------------------
Via6.4::<1> (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 95 OF 338  ELAPSED TIME = 0

Layer Via6.4::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Via6.4 COMPLETED. Number of Results = 0 (0)

Metal7.2::<1> = EXT metal7 < 0.4
Metal7.1::<1> = INT metal7 < 0.4
--------------------------------
Metal7.2::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
Metal7.1::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 97 OF 338  ELAPSED TIME = 0

Layer Metal7.1::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal7.1 COMPLETED. Number of Results = 0 (0)

Layer Metal7.2::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal7.2 COMPLETED. Number of Results = 0 (0)

Metal7.3::<1> = ENC metal7 via6 < 0.0025
----------------------------------------
Metal7.3::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 98 OF 338  ELAPSED TIME = 0

Layer Metal7.3::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal7.3 COMPLETED. Number of Results = 0 (0)

via7 = OR via7
--------------
via7 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 99 OF 338  ELAPSED TIME = 0

Original Layer via7 DELETED -- LVHEAP = 1/5/5

Via7.2::<1> = EXT via7 < 0.44
Via7.1::<1> = INT via7 < 0.4
```

```
----------------------------
Via7.2::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
Via7.1::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 101 OF 338  ELAPSED TIME = 0

Layer Via7.1::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Via7.1 COMPLETED. Number of Results = 0 (0)

Layer Via7.2::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Via7.2 COMPLETED. Number of Results = 0 (0)

Via7.3::<1> = via7 NOT metal7
----------------------------
Via7.3::<1> (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 102 OF 338  ELAPSED TIME = 0

Layer Via7.3::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Via7.3 COMPLETED. Number of Results = 0 (0)

metal8 = OR metal8
------------------
metal8 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 103 OF 338  ELAPSED TIME = 0

Original Layer metal8 DELETED -- LVHEAP = 1/5/5

Via7.4::<1> = via7 NOT metal8
----------------------------
Via7.4::<1> (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 104 OF 338  ELAPSED TIME = 0

Layer Via7.4::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Via7.4 COMPLETED. Number of Results = 0 (0)

Metal8.2::<1> = EXT metal8 < 0.4
Metal8.1::<1> = INT metal8 < 0.4
--------------------------------
Metal8.2::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
Metal8.1::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 106 OF 338  ELAPSED TIME = 0

Layer Metal8.1::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal8.1 COMPLETED. Number of Results = 0 (0)
```

Layer Metal8.2::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal8.2 COMPLETED. Number of Results = 0 (0)

Metal8.3::<1> = ENC metal8 via7 < 0.0025

Metal8.3::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 107 OF 338 ELAPSED TIME = 0

Layer Metal8.3::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal8.3 COMPLETED. Number of Results = 0 (0)

via8 = OR via8
---
via8 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 108 OF 338 ELAPSED TIME = 0

Original Layer via8 DELETED -- LVHEAP = 1/5/5

Via8.2::<1> = EXT via8 < 0.44
Via8.1::<1> = INT via8 < 0.4

Via8.2::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
Via8.1::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 110 OF 338 ELAPSED TIME = 0

Layer Via8.1::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Via8.1 COMPLETED. Number of Results = 0 (0)

Layer Via8.2::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Via8.2 COMPLETED. Number of Results = 0 (0)

Via8.3::<1> = via8 NOT metal8

Via8.3::<1> (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 111 OF 338 ELAPSED TIME = 0

Layer Via8.3::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Via8.3 COMPLETED. Number of Results = 0 (0)

metal9 = OR metal9
---
metal9 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)

```
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 112 OF 338  ELAPSED TIME = 0

Original Layer metal9 DELETED -- LVHEAP = 1/5/5

Via8.4::<1> = via8 NOT metal9
-----------------------------
Via8.4::<1> (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 113 OF 338  ELAPSED TIME = 0

Layer Via8.4::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Via8.4 COMPLETED. Number of Results = 0 (0)

Metal9.2::<1> = EXT metal9 < 0.8
Metal9.1::<1> = INT metal9 < 0.8
--------------------------------
Metal9.2::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
Metal9.1::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 115 OF 338  ELAPSED TIME = 0

Layer Metal9.1::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal9.1 COMPLETED. Number of Results = 0 (0)

Layer Metal9.2::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal9.2 COMPLETED. Number of Results = 0 (0)

Metal9.3::<1> = ENC metal9 via8 < 0.0025
----------------------------------------
Metal9.3::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 116 OF 338  ELAPSED TIME = 0

Layer Metal9.3::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal9.3 COMPLETED. Number of Results = 0 (0)

via9 = OR via9
--------------
via9 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 117 OF 338  ELAPSED TIME = 0

Original Layer via9 DELETED -- LVHEAP = 1/5/5

Via9.2::<1> = EXT via9 < 0.88
Via9.1::<1> = INT via9 < 0.8
----------------------------
Via9.2::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
```

```
Via9.1::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 119 OF 338  ELAPSED TIME = 0

Layer Via9.1::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Via9.1 COMPLETED. Number of Results = 0 (0)

Layer Via9.2::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Via9.2 COMPLETED. Number of Results = 0 (0)

Via9.3::<1> = via9 NOT metal9
-----------------------------
Via9.3::<1> (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 120 OF 338  ELAPSED TIME = 0

Layer Via9.3::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Via9.3 COMPLETED. Number of Results = 0 (0)

metal10 = OR metal10
--------------------
metal10 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 121 OF 338  ELAPSED TIME = 0

Original Layer metal10 DELETED -- LVHEAP = 1/5/5

Via9.4::<1> = via9 NOT metal10
------------------------------
Via9.4::<1> (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 122 OF 338  ELAPSED TIME = 0

Layer Via9.4::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Via9.4 COMPLETED. Number of Results = 0 (0)

Metal10.2::<1> = EXT metal10 < 0.8
Metal10.1::<1> = INT metal10 < 0.8
---------------------------------
Metal10.2::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
Metal10.1::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 124 OF 338  ELAPSED TIME = 0

Layer Metal10.1::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal10.1 COMPLETED. Number of Results = 0 (0)

Layer Metal10.2::<1> DELETED -- LVHEAP = 1/5/5
```

```
DRC RuleCheck Metal10.2 COMPLETED. Number of Results = 0 (0)

Metal10.3::<1> = ENC metal10 via9 < 0.0025
-----------------------------------------
Metal10.3::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 125 OF 338  ELAPSED TIME = 0

Layer Metal10.3::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal10.3 COMPLETED. Number of Results = 0 (0)

L111 = SIZE metal1 BY 0.045 UNDEROVER
-------------------------------------
L111 (HIER TYP=1 CFG=0 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 126 OF 338  ELAPSED TIME = 0

L112 = L111 AND metal1
----------------------
L112 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 127 OF 338  ELAPSED TIME = 0

Layer L111 DELETED -- LVHEAP = 1/5/5

L113 = metal1 COINCIDENT EDGE L112
----------------------------------
L113 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 128 OF 338  ELAPSED TIME = 0

Layer L112 DELETED -- LVHEAP = 1/5/5

L114 = LENGTH L113 >= 0.3
-------------------------
L114 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 129 OF 338  ELAPSED TIME = 0

Layer L113 DELETED -- LVHEAP = 1/5/5

Metal1.5::<1> = EXT L114 < 0.09
-------------------------------
Metal1.5::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 130 OF 338  ELAPSED TIME = 0

Layer L114 DELETED -- LVHEAP = 1/5/5

Layer Metal1.5::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal1.5 COMPLETED. Number of Results = 0 (0)
```

```
L115 = SIZE metal1 BY 0.135 UNDEROVER
-------------------------------------
L115 (HIER TYP=1 CFG=0 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 131 OF 338  ELAPSED TIME = 0

L116 = L115 AND metal1
----------------------
L116 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 132 OF 338  ELAPSED TIME = 0

Layer L115 DELETED -- LVHEAP = 1/5/5

L117 = metal1 COINCIDENT EDGE L116
----------------------------------
L117 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 133 OF 338  ELAPSED TIME = 0

Layer L116 DELETED -- LVHEAP = 1/5/5

L118 = LENGTH L117 >= 0.9
-------------------------
L118 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 134 OF 338  ELAPSED TIME = 0

Layer L117 DELETED -- LVHEAP = 1/5/5

Metal1.6::<1> = EXT L118 < 0.27
-------------------------------
Metal1.6::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 135 OF 338  ELAPSED TIME = 0

Layer L118 DELETED -- LVHEAP = 1/5/5

Layer Metal1.6::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal1.6 COMPLETED. Number of Results = 0 (0)

L119 = SIZE metal1 BY 0.25 UNDEROVER
------------------------------------
L119 (HIER TYP=1 CFG=0 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 136 OF 338  ELAPSED TIME = 0

L120 = L119 AND metal1
----------------------
L120 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 137 OF 338  ELAPSED TIME = 0
```

```
Layer L119 DELETED -- LVHEAP = 1/5/5

L121 = metal1 COINCIDENT EDGE L120
----------------------------------
L121 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 138 OF 338  ELAPSED TIME = 0

Layer L120 DELETED -- LVHEAP = 1/5/5

L122 = LENGTH L121 >= 1.8
-------------------------
L122 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 139 OF 338  ELAPSED TIME = 0

Layer L121 DELETED -- LVHEAP = 1/5/5

Metal1.7::<1> = EXT L122 < 0.5
------------------------------
Metal1.7::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 140 OF 338  ELAPSED TIME = 0

Layer L122 DELETED -- LVHEAP = 1/5/5

Layer Metal1.7::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal1.7 COMPLETED. Number of Results = 0 (0)

L123 = SIZE metal1 BY 0.45 UNDEROVER
------------------------------------
L123 (HIER TYP=1 CFG=0 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 141 OF 338  ELAPSED TIME = 0

L124 = L123 AND metal1
----------------------
L124 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 142 OF 338  ELAPSED TIME = 0

Layer L123 DELETED -- LVHEAP = 1/5/5

L125 = metal1 COINCIDENT EDGE L124
----------------------------------
L125 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 143 OF 338  ELAPSED TIME = 0

Layer L124 DELETED -- LVHEAP = 1/5/5

L126 = LENGTH L125 >= 2.7
-------------------------
```

```
L126 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 144 OF 338  ELAPSED TIME = 0

Layer L125 DELETED -- LVHEAP = 1/5/5

Metal1.8::<1> = EXT L126 < 0.9
------------------------------
Metal1.8::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 145 OF 338  ELAPSED TIME = 0

Layer L126 DELETED -- LVHEAP = 1/5/5

Layer Metal1.8::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal1.8 COMPLETED. Number of Results = 0 (0)

L127 = SIZE metal1 BY 0.75 UNDEROVER
------------------------------------
L127 (HIER TYP=1 CFG=0 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 146 OF 338  ELAPSED TIME = 0

L128 = L127 AND metal1
----------------------
L128 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 147 OF 338  ELAPSED TIME = 0

Layer L127 DELETED -- LVHEAP = 1/5/5

L129 = metal1 COINCIDENT EDGE L128
----------------------------------
L129 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 148 OF 338  ELAPSED TIME = 0

Layer L128 DELETED -- LVHEAP = 1/5/5

L130 = LENGTH L129 >= 4
-----------------------
L130 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 149 OF 338  ELAPSED TIME = 0

Layer L129 DELETED -- LVHEAP = 1/5/5

Metal1.9::<1> = EXT L130 < 1.5
------------------------------
Metal1.9::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 150 OF 338  ELAPSED TIME = 0

Layer L130 DELETED -- LVHEAP = 1/5/5
```

Layer Metal1.9::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal1.9 COMPLETED. Number of Results = 0 (0)

L211 = SIZE metal2 BY 0.045 UNDEROVER

L211 (HIER TYP=1 CFG=0 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 151 OF 338 ELAPSED TIME = 0

L212 = L211 AND metal2

L212 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 152 OF 338 ELAPSED TIME = 0

Layer L211 DELETED -- LVHEAP = 1/5/5

L213 = metal2 COINCIDENT EDGE L212

L213 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 153 OF 338 ELAPSED TIME = 0

Layer L212 DELETED -- LVHEAP = 1/5/5

L214 = LENGTH L213 >= 0.3

L214 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 154 OF 338 ELAPSED TIME = 0

Layer L213 DELETED -- LVHEAP = 1/5/5

Metal2.5::<1> = EXT L214 < 0.09

Metal2.5::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 155 OF 338 ELAPSED TIME = 0

Layer L214 DELETED -- LVHEAP = 1/5/5

Layer Metal2.5::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal2.5 COMPLETED. Number of Results = 0 (0)

L215 = SIZE metal2 BY 0.135 UNDEROVER

L215 (HIER TYP=1 CFG=0 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 156 OF 338 ELAPSED TIME = 0

L216 = L215 AND metal2

```
----------------------
L216 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 157 OF 338  ELAPSED TIME = 0

Layer L215 DELETED -- LVHEAP = 1/5/5

L217 = metal2 COINCIDENT EDGE L216
---------------------------------
L217 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 158 OF 338  ELAPSED TIME = 0

Layer L216 DELETED -- LVHEAP = 1/5/5

L218 = LENGTH L217 >= 0.9
-------------------------
L218 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 159 OF 338  ELAPSED TIME = 0

Layer L217 DELETED -- LVHEAP = 1/5/5

Metal2.6::<1> = EXT L218 < 0.27
-------------------------------
Metal2.6::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 160 OF 338  ELAPSED TIME = 0

Layer L218 DELETED -- LVHEAP = 1/5/5

Layer Metal2.6::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal2.6 COMPLETED. Number of Results = 0 (0)

L219 = SIZE metal2 BY 0.25 UNDEROVER
------------------------------------
L219 (HIER TYP=1 CFG=0 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 161 OF 338  ELAPSED TIME = 0

L220 = L219 AND metal2
----------------------
L220 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 162 OF 338  ELAPSED TIME = 0

Layer L219 DELETED -- LVHEAP = 1/5/5

L221 = metal2 COINCIDENT EDGE L220
----------------------------------
L221 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 163 OF 338  ELAPSED TIME = 0
```

Layer L220 DELETED -- LVHEAP = 1/5/5

L222 = LENGTH L221 >= 1.8

L222 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 164 OF 338 ELAPSED TIME = 0

Layer L221 DELETED -- LVHEAP = 1/5/5

Metal2.7::<1> = EXT L222 < 0.5

Metal2.7::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 165 OF 338 ELAPSED TIME = 0

Layer L222 DELETED -- LVHEAP = 1/5/5

Layer Metal2.7::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal2.7 COMPLETED. Number of Results = 0 (0)

L223 = SIZE metal2 BY 0.45 UNDEROVER

L223 (HIER TYP=1 CFG=0 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 166 OF 338 ELAPSED TIME = 0

L224 = L223 AND metal2

L224 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 167 OF 338 ELAPSED TIME = 0

Layer L223 DELETED -- LVHEAP = 1/5/5

L225 = metal2 COINCIDENT EDGE L224

L225 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 168 OF 338 ELAPSED TIME = 0

Layer L224 DELETED -- LVHEAP = 1/5/5

L226 = LENGTH L225 >= 2.7

L226 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 169 OF 338 ELAPSED TIME = 0

Layer L225 DELETED -- LVHEAP = 1/5/5

Metal2.8::<1> = EXT L226 < 0.9

```
Metal2.8::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 170 OF 338  ELAPSED TIME = 0

Layer L226 DELETED -- LVHEAP = 1/5/5

Layer Metal2.8::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal2.8 COMPLETED. Number of Results = 0 (0)

L227 = SIZE metal2 BY 0.75 UNDEROVER
-------------------------------------
L227 (HIER TYP=1 CFG=0 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 171 OF 338  ELAPSED TIME = 0

L228 = L227 AND metal2
----------------------
L228 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 172 OF 338  ELAPSED TIME = 0

Layer L227 DELETED -- LVHEAP = 1/5/5

L229 = metal2 COINCIDENT EDGE L228
----------------------------------
L229 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 173 OF 338  ELAPSED TIME = 0

Layer L228 DELETED -- LVHEAP = 1/5/5

L230 = LENGTH L229 >= 4
-----------------------
L230 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 174 OF 338  ELAPSED TIME = 0

Layer L229 DELETED -- LVHEAP = 1/5/5

Metal2.9::<1> = EXT L230 < 1.5
------------------------------
Metal2.9::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 175 OF 338  ELAPSED TIME = 0

Layer L230 DELETED -- LVHEAP = 1/5/5

Layer Metal2.9::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal2.9 COMPLETED. Number of Results = 0 (0)

L311 = SIZE metal3 BY 0.045 UNDEROVER
-------------------------------------
```

```
L311 (HIER TYP=1 CFG=0 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 176 OF 338  ELAPSED TIME = 0

L312 = L311 AND metal3
----------------------
L312 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 177 OF 338  ELAPSED TIME = 0

Layer L311 DELETED -- LVHEAP = 1/5/5

L313 = metal3 COINCIDENT EDGE L312
----------------------------------
L313 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 178 OF 338  ELAPSED TIME = 0

Layer L312 DELETED -- LVHEAP = 1/5/5

L314 = LENGTH L313 >= 0.3
-------------------------
L314 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 179 OF 338  ELAPSED TIME = 0

Layer L313 DELETED -- LVHEAP = 1/5/5

Metal3.5::<1> = EXT L314 < 0.09
-------------------------------
Metal3.5::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 180 OF 338  ELAPSED TIME = 0

Layer L314 DELETED -- LVHEAP = 1/5/5

Layer Metal3.5::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal3.5 COMPLETED. Number of Results = 0 (0)

L315 = SIZE metal3 BY 0.135 UNDEROVER
-------------------------------------
L315 (HIER TYP=1 CFG=0 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 181 OF 338  ELAPSED TIME = 0

L316 = L315 AND metal3
----------------------
L316 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 182 OF 338  ELAPSED TIME = 0

Layer L315 DELETED -- LVHEAP = 1/5/5

L317 = metal3 COINCIDENT EDGE L316
```

```
-----------------------------------
L317 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 183 OF 338  ELAPSED TIME = 0

Layer L316 DELETED -- LVHEAP = 1/5/5

L318 = LENGTH L317 >= 0.9
-------------------------
L318 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 184 OF 338  ELAPSED TIME = 0

Layer L317 DELETED -- LVHEAP = 1/5/5

Metal3.6::<1> = EXT L318 < 0.27
-------------------------------
Metal3.6::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 185 OF 338  ELAPSED TIME = 0

Layer L318 DELETED -- LVHEAP = 1/5/5

Layer Metal3.6::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal3.6 COMPLETED. Number of Results = 0 (0)

L319 = SIZE metal3 BY 0.25 UNDEROVER
------------------------------------
L319 (HIER TYP=1 CFG=0 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 186 OF 338  ELAPSED TIME = 0

L320 = L319 AND metal3
----------------------
L320 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 187 OF 338  ELAPSED TIME = 0

Layer L319 DELETED -- LVHEAP = 1/5/5

L321 = metal3 COINCIDENT EDGE L320
----------------------------------
L321 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 188 OF 338  ELAPSED TIME = 0

Layer L320 DELETED -- LVHEAP = 1/5/5

L322 = LENGTH L321 >= 1.8
-------------------------
L322 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 189 OF 338  ELAPSED TIME = 0
```

Layer L321 DELETED -- LVHEAP = 1/5/5

Metal3.7::<1> = EXT L322 < 0.5

Metal3.7::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 190 OF 338 ELAPSED TIME = 0

Layer L322 DELETED -- LVHEAP = 1/5/5

Layer Metal3.7::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal3.7 COMPLETED. Number of Results = 0 (0)

L323 = SIZE metal3 BY 0.45 UNDEROVER

L323 (HIER TYP=1 CFG=0 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 191 OF 338 ELAPSED TIME = 0

L324 = L323 AND metal3

L324 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 192 OF 338 ELAPSED TIME = 0

Layer L323 DELETED -- LVHEAP = 1/5/5

L325 = metal3 COINCIDENT EDGE L324

L325 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 193 OF 338 ELAPSED TIME = 0

Layer L324 DELETED -- LVHEAP = 1/5/5

L326 = LENGTH L325 >= 2.7

L326 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 194 OF 338 ELAPSED TIME = 0

Layer L325 DELETED -- LVHEAP = 1/5/5

Metal3.8::<1> = EXT L326 < 0.9

Metal3.8::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 195 OF 338 ELAPSED TIME = 0

Layer L326 DELETED -- LVHEAP = 1/5/5

Layer Metal3.8::<1> DELETED -- LVHEAP = 1/5/5

```
DRC RuleCheck Metal3.8 COMPLETED. Number of Results = 0 (0)

L327 = SIZE metal3 BY 0.75 UNDEROVER
------------------------------------
L327 (HIER TYP=1 CFG=0 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 196 OF 338  ELAPSED TIME = 0

L328 = L327 AND metal3
----------------------
L328 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 197 OF 338  ELAPSED TIME = 0

Layer L327 DELETED -- LVHEAP = 1/5/5

L329 = metal3 COINCIDENT EDGE L328
----------------------------------
L329 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 198 OF 338  ELAPSED TIME = 0

Layer L328 DELETED -- LVHEAP = 1/5/5

L330 = LENGTH L329 >= 4
-----------------------
L330 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 199 OF 338  ELAPSED TIME = 0

Layer L329 DELETED -- LVHEAP = 1/5/5

Metal3.9::<1> = EXT L330 < 1.5
------------------------------
Metal3.9::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 200 OF 338  ELAPSED TIME = 0

Layer L330 DELETED -- LVHEAP = 1/5/5

Layer Metal3.9::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal3.9 COMPLETED. Number of Results = 0 (0)

L415 = SIZE metal4 BY 0.135 UNDEROVER
-------------------------------------
L415 (HIER TYP=1 CFG=0 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 201 OF 338  ELAPSED TIME = 0

L416 = L415 AND metal4
----------------------
L416 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 202 OF 338  ELAPSED TIME = 0
```

Layer L415 DELETED -- LVHEAP = 1/5/5

L417 = metal4 COINCIDENT EDGE L416

L417 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 203 OF 338 ELAPSED TIME = 0

Layer L416 DELETED -- LVHEAP = 1/5/5

L418 = LENGTH L417 >= 0.9

L418 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 204 OF 338 ELAPSED TIME = 0

Layer L417 DELETED -- LVHEAP = 1/5/5

Metal4.5::<1> = EXT L418 < 0.27

Metal4.5::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 205 OF 338 ELAPSED TIME = 0

Layer L418 DELETED -- LVHEAP = 1/5/5

Layer Metal4.5::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal4.5 COMPLETED. Number of Results = 0 (0)

L419 = SIZE metal4 BY 0.25 UNDEROVER

L419 (HIER TYP=1 CFG=0 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 206 OF 338 ELAPSED TIME = 0

L420 = L419 AND metal4

L420 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 207 OF 338 ELAPSED TIME = 0

Layer L419 DELETED -- LVHEAP = 1/5/5

L421 = metal4 COINCIDENT EDGE L420

L421 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 208 OF 338 ELAPSED TIME = 0

Layer L420 DELETED -- LVHEAP = 1/5/5

L422 = LENGTH L421 >= 1.8

```
-------------------------
L422 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 209 OF 338  ELAPSED TIME = 0

Layer L421 DELETED -- LVHEAP = 1/5/5

Metal4.6::<1> = EXT L422 < 0.5
-----------------------------
Metal4.6::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 210 OF 338  ELAPSED TIME = 0

Layer L422 DELETED -- LVHEAP = 1/5/5

Layer Metal4.6::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal4.6 COMPLETED. Number of Results = 0 (0)

L423 = SIZE metal4 BY 0.45 UNDEROVER
------------------------------------
L423 (HIER TYP=1 CFG=0 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 211 OF 338  ELAPSED TIME = 0

L424 = L423 AND metal4
----------------------
L424 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 212 OF 338  ELAPSED TIME = 0

Layer L423 DELETED -- LVHEAP = 1/5/5

L425 = metal4 COINCIDENT EDGE L424
----------------------------------
L425 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 213 OF 338  ELAPSED TIME = 0

Layer L424 DELETED -- LVHEAP = 1/5/5

L426 = LENGTH L425 >= 2.7
-------------------------
L426 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 214 OF 338  ELAPSED TIME = 0

Layer L425 DELETED -- LVHEAP = 1/5/5

Metal4.7::<1> = EXT L426 < 0.9
-----------------------------
Metal4.7::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 215 OF 338  ELAPSED TIME = 0
```

Layer L426 DELETED -- LVHEAP = 1/5/5

Layer Metal4.7::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal4.7 COMPLETED. Number of Results = 0 (0)

L427 = SIZE metal4 BY 0.75 UNDEROVER

L427 (HIER TYP=1 CFG=0 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 216 OF 338 ELAPSED TIME = 0

L428 = L427 AND metal4

L428 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 217 OF 338 ELAPSED TIME = 0

Layer L427 DELETED -- LVHEAP = 1/5/5

L429 = metal4 COINCIDENT EDGE L428

L429 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 218 OF 338 ELAPSED TIME = 0

Layer L428 DELETED -- LVHEAP = 1/5/5

L430 = LENGTH L429 >= 4

L430 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 219 OF 338 ELAPSED TIME = 0

Layer L429 DELETED -- LVHEAP = 1/5/5

Metal4.8::<1> = EXT L430 < 1.5

Metal4.8::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 220 OF 338 ELAPSED TIME = 0

Layer L430 DELETED -- LVHEAP = 1/5/5

Layer Metal4.8::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal4.8 COMPLETED. Number of Results = 0 (0)

L515 = SIZE metal5 BY 0.135 UNDEROVER

L515 (HIER TYP=1 CFG=0 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 221 OF 338 ELAPSED TIME = 0

```
L516 = L515 AND metal5
----------------------
L516 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 222 OF 338  ELAPSED TIME = 0

Layer L515 DELETED -- LVHEAP = 1/5/5

L517 = metal5 COINCIDENT EDGE L516
----------------------------------
L517 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 223 OF 338  ELAPSED TIME = 0

Layer L516 DELETED -- LVHEAP = 1/5/5

L518 = LENGTH L517 >= 0.9
-------------------------
L518 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 224 OF 338  ELAPSED TIME = 0

Layer L517 DELETED -- LVHEAP = 1/5/5

Metal5.5::<1> = EXT L518 < 0.27
-------------------------------
Metal5.5::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 225 OF 338  ELAPSED TIME = 0

Layer L518 DELETED -- LVHEAP = 1/5/5

Layer Metal5.5::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal5.5 COMPLETED. Number of Results = 0 (0)

L519 = SIZE metal5 BY 0.25 UNDEROVER
------------------------------------
L519 (HIER TYP=1 CFG=0 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 226 OF 338  ELAPSED TIME = 0

L520 = L519 AND metal5
----------------------
L520 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 227 OF 338  ELAPSED TIME = 0

Layer L519 DELETED -- LVHEAP = 1/5/5

L521 = metal5 COINCIDENT EDGE L520
----------------------------------
L521 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 228 OF 338  ELAPSED TIME = 0
```

```
Layer L520 DELETED -- LVHEAP = 1/5/5

L522 = LENGTH L521 >= 1.8
-------------------------
L522 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 229 OF 338  ELAPSED TIME = 0

Layer L521 DELETED -- LVHEAP = 1/5/5

Metal5.6::<1> = EXT L522 < 0.5
------------------------------
Metal5.6::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 230 OF 338  ELAPSED TIME = 0

Layer L522 DELETED -- LVHEAP = 1/5/5

Layer Metal5.6::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal5.6 COMPLETED. Number of Results = 0 (0)

L523 = SIZE metal5 BY 0.45 UNDEROVER
------------------------------------
L523 (HIER TYP=1 CFG=0 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 231 OF 338  ELAPSED TIME = 0

L524 = L523 AND metal5
----------------------
L524 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 232 OF 338  ELAPSED TIME = 0

Layer L523 DELETED -- LVHEAP = 1/5/5

L525 = metal5 COINCIDENT EDGE L524
----------------------------------
L525 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 233 OF 338  ELAPSED TIME = 0

Layer L524 DELETED -- LVHEAP = 1/5/5

L526 = LENGTH L525 >= 2.7
-------------------------
L526 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 234 OF 338  ELAPSED TIME = 0

Layer L525 DELETED -- LVHEAP = 1/5/5

Metal5.7::<1> = EXT L526 < 0.9
```

```
------------------------------
Metal5.7::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 235 OF 338  ELAPSED TIME = 0

Layer L526 DELETED -- LVHEAP = 1/5/5

Layer Metal5.7::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal5.7 COMPLETED. Number of Results = 0 (0)

L527 = SIZE metal5 BY 0.75 UNDEROVER
-------------------------------------
L527 (HIER TYP=1 CFG=0 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 236 OF 338  ELAPSED TIME = 0

L528 = L527 AND metal5
----------------------
L528 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 237 OF 338  ELAPSED TIME = 0

Layer L527 DELETED -- LVHEAP = 1/5/5

L529 = metal5 COINCIDENT EDGE L528
----------------------------------
L529 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 238 OF 338  ELAPSED TIME = 0

Layer L528 DELETED -- LVHEAP = 1/5/5

L530 = LENGTH L529 >= 4
-----------------------
L530 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 239 OF 338  ELAPSED TIME = 0

Layer L529 DELETED -- LVHEAP = 1/5/5

Metal5.8::<1> = EXT L530 < 1.5
------------------------------
Metal5.8::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 240 OF 338  ELAPSED TIME = 0

Layer L530 DELETED -- LVHEAP = 1/5/5

Layer Metal5.8::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal5.8 COMPLETED. Number of Results = 0 (0)

L615 = SIZE metal6 BY 0.135 UNDEROVER
```

```
---------------------------------------
L615 (HIER TYP=1 CFG=0 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 241 OF 338  ELAPSED TIME = 0

L616 = L615 AND metal6
----------------------
L616 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 242 OF 338  ELAPSED TIME = 0

Layer L615 DELETED -- LVHEAP = 1/5/5

L617 = metal6 COINCIDENT EDGE L616
----------------------------------
L617 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 243 OF 338  ELAPSED TIME = 0

Layer L616 DELETED -- LVHEAP = 1/5/5

L618 = LENGTH L617 >= 0.9
-------------------------
L618 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 244 OF 338  ELAPSED TIME = 0

Layer L617 DELETED -- LVHEAP = 1/5/5

Metal6.5::<1> = EXT L618 < 0.27
-------------------------------
Metal6.5::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 245 OF 338  ELAPSED TIME = 0

Layer L618 DELETED -- LVHEAP = 1/5/5

Layer Metal6.5::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal6.5 COMPLETED. Number of Results = 0 (0)

L619 = SIZE metal6 BY 0.25 UNDEROVER
------------------------------------
L619 (HIER TYP=1 CFG=0 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 246 OF 338  ELAPSED TIME = 0

L620 = L619 AND metal6
----------------------
L620 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 247 OF 338  ELAPSED TIME = 0

Layer L619 DELETED -- LVHEAP = 1/5/5
```

```
L621 = metal6 COINCIDENT EDGE L620
----------------------------------
L621 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 248 OF 338  ELAPSED TIME = 0

Layer L620 DELETED -- LVHEAP = 1/5/5

L622 = LENGTH L621 >= 1.8
-------------------------
L622 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 249 OF 338  ELAPSED TIME = 0

Layer L621 DELETED -- LVHEAP = 1/5/5

Metal6.6::<1> = EXT L622 < 0.5
------------------------------
Metal6.6::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 250 OF 338  ELAPSED TIME = 0

Layer L622 DELETED -- LVHEAP = 1/5/5

Layer Metal6.6::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal6.6 COMPLETED. Number of Results = 0 (0)

L623 = SIZE metal6 BY 0.45 UNDEROVER
------------------------------------
L623 (HIER TYP=1 CFG=0 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 251 OF 338  ELAPSED TIME = 0

L624 = L623 AND metal6
----------------------
L624 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 252 OF 338  ELAPSED TIME = 0

Layer L623 DELETED -- LVHEAP = 1/5/5

L625 = metal6 COINCIDENT EDGE L624
----------------------------------
L625 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 253 OF 338  ELAPSED TIME = 0

Layer L624 DELETED -- LVHEAP = 1/5/5

L626 = LENGTH L625 >= 2.7
-------------------------
L626 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 254 OF 338  ELAPSED TIME = 0
```

```
Layer L625 DELETED -- LVHEAP = 1/5/5

Metal6.7::<1> = EXT L626 < 0.9
------------------------------
Metal6.7::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 255 OF 338  ELAPSED TIME = 0

Layer L626 DELETED -- LVHEAP = 1/5/5

Layer Metal6.7::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal6.7 COMPLETED. Number of Results = 0 (0)

L627 = SIZE metal6 BY 0.75 UNDEROVER
------------------------------------
L627 (HIER TYP=1 CFG=0 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 256 OF 338  ELAPSED TIME = 0

L628 = L627 AND metal6
----------------------
L628 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 257 OF 338  ELAPSED TIME = 0

Layer L627 DELETED -- LVHEAP = 1/5/5

L629 = metal6 COINCIDENT EDGE L628
----------------------------------
L629 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 258 OF 338  ELAPSED TIME = 0

Layer L628 DELETED -- LVHEAP = 1/5/5

L630 = LENGTH L629 >= 4
-----------------------
L630 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 259 OF 338  ELAPSED TIME = 0

Layer L629 DELETED -- LVHEAP = 1/5/5

Metal6.8::<1> = EXT L630 < 1.5
------------------------------
Metal6.8::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 260 OF 338  ELAPSED TIME = 0

Layer L630 DELETED -- LVHEAP = 1/5/5

Layer Metal6.8::<1> DELETED -- LVHEAP = 1/5/5
```

```
DRC RuleCheck Metal6.8 COMPLETED. Number of Results = 0 (0)

L719 = SIZE metal7 BY 0.25 UNDEROVER
------------------------------------
L719 (HIER TYP=1 CFG=0 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 261 OF 338  ELAPSED TIME = 0

L720 = L719 AND metal7
----------------------
L720 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 262 OF 338  ELAPSED TIME = 0

Layer L719 DELETED -- LVHEAP = 1/5/5

L721 = metal7 COINCIDENT EDGE L720
----------------------------------
L721 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 263 OF 338  ELAPSED TIME = 0

Layer L720 DELETED -- LVHEAP = 1/5/5

L722 = LENGTH L721 >= 1.8
-------------------------
L722 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 264 OF 338  ELAPSED TIME = 0

Layer L721 DELETED -- LVHEAP = 1/5/5

Metal7.5::<1> = EXT L722 < 0.5
------------------------------
Metal7.5::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 265 OF 338  ELAPSED TIME = 0

Layer L722 DELETED -- LVHEAP = 1/5/5

Layer Metal7.5::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal7.5 COMPLETED. Number of Results = 0 (0)

L723 = SIZE metal7 BY 0.45 UNDEROVER
------------------------------------
L723 (HIER TYP=1 CFG=0 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 266 OF 338  ELAPSED TIME = 0

L724 = L723 AND metal7
----------------------
L724 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
```

CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 267 OF 338 ELAPSED TIME = 0

Layer L723 DELETED -- LVHEAP = 1/5/5

L725 = metal7 COINCIDENT EDGE L724

L725 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 268 OF 338 ELAPSED TIME = 0

Layer L724 DELETED -- LVHEAP = 1/5/5

L726 = LENGTH L725 >= 2.7

L726 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 269 OF 338 ELAPSED TIME = 0

Layer L725 DELETED -- LVHEAP = 1/5/5

Metal7.6::<1> = EXT L726 < 0.9

Metal7.6::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 270 OF 338 ELAPSED TIME = 0

Layer L726 DELETED -- LVHEAP = 1/5/5

Layer Metal7.6::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal7.6 COMPLETED. Number of Results = 0 (0)

L727 = SIZE metal7 BY 0.75 UNDEROVER

L727 (HIER TYP=1 CFG=0 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 271 OF 338 ELAPSED TIME = 0

L728 = L727 AND metal7

L728 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 272 OF 338 ELAPSED TIME = 0

Layer L727 DELETED -- LVHEAP = 1/5/5

L729 = metal7 COINCIDENT EDGE L728

L729 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 273 OF 338 ELAPSED TIME = 0

Layer L728 DELETED -- LVHEAP = 1/5/5

```
L730 = LENGTH L729 >= 4
-----------------------
L730 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 274 OF 338  ELAPSED TIME = 0

Layer L729 DELETED -- LVHEAP = 1/5/5

Metal7.7::<1> = EXT L730 < 1.5
------------------------------
Metal7.7::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 275 OF 338  ELAPSED TIME = 0

Layer L730 DELETED -- LVHEAP = 1/5/5

Layer Metal7.7::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal7.7 COMPLETED. Number of Results = 0 (0)

L819 = SIZE metal8 BY 0.25 UNDEROVER
------------------------------------
L819 (HIER TYP=1 CFG=0 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 276 OF 338  ELAPSED TIME = 0

L820 = L819 AND metal8
----------------------
L820 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 277 OF 338  ELAPSED TIME = 0

Layer L819 DELETED -- LVHEAP = 1/5/5

L821 = metal8 COINCIDENT EDGE L820
----------------------------------
L821 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 278 OF 338  ELAPSED TIME = 0

Layer L820 DELETED -- LVHEAP = 1/5/5

L822 = LENGTH L821 >= 1.8
-------------------------
L822 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 279 OF 338  ELAPSED TIME = 0

Layer L821 DELETED -- LVHEAP = 1/5/5

Metal8.5::<1> = EXT L822 < 0.5
------------------------------
Metal8.5::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 280 OF 338  ELAPSED TIME = 0
```

Layer L822 DELETED -- LVHEAP = 1/5/5

Layer Metal8.5::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal8.5 COMPLETED. Number of Results = 0 (0)

L823 = SIZE metal8 BY 0.45 UNDEROVER

L823 (HIER TYP=1 CFG=0 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 281 OF 338 ELAPSED TIME = 0

L824 = L823 AND metal8

L824 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 282 OF 338 ELAPSED TIME = 0

Layer L823 DELETED -- LVHEAP = 1/5/5

L825 = metal8 COINCIDENT EDGE L824

L825 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 283 OF 338 ELAPSED TIME = 0

Layer L824 DELETED -- LVHEAP = 1/5/5

L826 = LENGTH L825 >= 2.7

L826 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 284 OF 338 ELAPSED TIME = 0

Layer L825 DELETED -- LVHEAP = 1/5/5

Metal8.6::<1> = EXT L826 < 0.9

Metal8.6::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 285 OF 338 ELAPSED TIME = 0

Layer L826 DELETED -- LVHEAP = 1/5/5

Layer Metal8.6::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal8.6 COMPLETED. Number of Results = 0 (0)

L827 = SIZE metal8 BY 0.75 UNDEROVER

L827 (HIER TYP=1 CFG=0 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 286 OF 338 ELAPSED TIME = 0

```
L828 = L827 AND metal8
----------------------
L828 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 287 OF 338  ELAPSED TIME = 0

Layer L827 DELETED -- LVHEAP = 1/5/5

L829 = metal8 COINCIDENT EDGE L828
----------------------------------
L829 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 288 OF 338  ELAPSED TIME = 0

Layer L828 DELETED -- LVHEAP = 1/5/5

L830 = LENGTH L829 >= 4
-----------------------
L830 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 289 OF 338  ELAPSED TIME = 0

Layer L829 DELETED -- LVHEAP = 1/5/5

Metal8.7::<1> = EXT L830 < 1.5
------------------------------
Metal8.7::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 290 OF 338  ELAPSED TIME = 0

Layer L830 DELETED -- LVHEAP = 1/5/5

Layer Metal8.7::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal8.7 COMPLETED. Number of Results = 0 (0)

L923 = SIZE metal9 BY 0.45 UNDEROVER
------------------------------------
L923 (HIER TYP=1 CFG=0 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 291 OF 338  ELAPSED TIME = 0

L924 = L923 AND metal9
----------------------
L924 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 292 OF 338  ELAPSED TIME = 0

Layer L923 DELETED -- LVHEAP = 1/5/5

L925 = metal9 COINCIDENT EDGE L924
----------------------------------
L925 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
```

```
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 293 OF 338  ELAPSED TIME = 0

Layer L924 DELETED -- LVHEAP = 1/5/5

L926 = LENGTH L925 >= 2.7
-------------------------
L926 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 294 OF 338  ELAPSED TIME = 0

Layer L925 DELETED -- LVHEAP = 1/5/5

Metal9.5::<1> = EXT L926 < 0.9
------------------------------
Metal9.5::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 295 OF 338  ELAPSED TIME = 0

Layer L926 DELETED -- LVHEAP = 1/5/5

Layer Metal9.5::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal9.5 COMPLETED. Number of Results = 0 (0)

L927 = SIZE metal9 BY 0.75 UNDEROVER
------------------------------------
L927 (HIER TYP=1 CFG=0 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 296 OF 338  ELAPSED TIME = 0

L928 = L927 AND metal9
----------------------
L928 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 297 OF 338  ELAPSED TIME = 0

Layer L927 DELETED -- LVHEAP = 1/5/5

L929 = metal9 COINCIDENT EDGE L928
----------------------------------
L929 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 298 OF 338  ELAPSED TIME = 0

Layer L928 DELETED -- LVHEAP = 1/5/5

L930 = LENGTH L929 >= 4
-----------------------
L930 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 299 OF 338  ELAPSED TIME = 0

Layer L929 DELETED -- LVHEAP = 1/5/5
```

```
Metal9.6::<1> = EXT L930 < 1.5
------------------------------
Metal9.6::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 300 OF 338  ELAPSED TIME = 0

Layer L930 DELETED -- LVHEAP = 1/5/5

Layer Metal9.6::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal9.6 COMPLETED. Number of Results = 0 (0)

L1023 = SIZE metal10 BY 0.45 UNDEROVER
--------------------------------------
L1023 (HIER TYP=1 CFG=0 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 301 OF 338  ELAPSED TIME = 0

L1024 = L1023 AND metal10
-------------------------
L1024 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 302 OF 338  ELAPSED TIME = 0

Layer L1023 DELETED -- LVHEAP = 1/5/5

L1025 = metal10 COINCIDENT EDGE L1024
-------------------------------------
L1025 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 303 OF 338  ELAPSED TIME = 0

Layer L1024 DELETED -- LVHEAP = 1/5/5

L1026 = LENGTH L1025 >= 2.7
---------------------------
L1026 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 304 OF 338  ELAPSED TIME = 0

Layer L1025 DELETED -- LVHEAP = 1/5/5

Metal10.5::<1> = EXT L1026 < 0.9
--------------------------------
Metal10.5::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 305 OF 338  ELAPSED TIME = 0

Layer L1026 DELETED -- LVHEAP = 1/5/5

Layer Metal10.5::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal10.5 COMPLETED. Number of Results = 0 (0)
```

```
L1027 = SIZE metal10 BY 0.75 UNDEROVER
--------------------------------------
L1027 (HIER TYP=1 CFG=0 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 306 OF 338  ELAPSED TIME = 0

L1028 = L1027 AND metal10
-------------------------
L1028 (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 307 OF 338  ELAPSED TIME = 0

Layer L1027 DELETED -- LVHEAP = 1/5/5

L1029 = metal10 COINCIDENT EDGE L1028
-------------------------------------
L1029 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 308 OF 338  ELAPSED TIME = 0

Layer L1028 DELETED -- LVHEAP = 1/5/5

L1030 = LENGTH L1029 >= 4
-------------------------
L1030 (HIER-PMF TYP=2 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 309 OF 338  ELAPSED TIME = 0

Layer L1029 DELETED -- LVHEAP = 1/5/5

Metal10.6::<1> = EXT L1030 < 1.5
--------------------------------
Metal10.6::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 310 OF 338  ELAPSED TIME = 0

Layer L1030 DELETED -- LVHEAP = 1/5/5

Layer Metal10.6::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Metal10.6 COMPLETED. Number of Results = 0 (0)

Grid.1::<1> = OFFGRID active 5
------------------------------
Grid.1::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 311 OF 338  ELAPSED TIME = 0

Layer active DELETED -- LVHEAP = 1/5/5

Layer Grid.1::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Grid.1 COMPLETED. Number of Results = 0 (0)
```

Grid.2::<1> = OFFGRID implant 5

Grid.2::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 312 OF 338 ELAPSED TIME = 0

Layer implant DELETED -- LVHEAP = 1/5/5

Layer Grid.2::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Grid.2 COMPLETED. Number of Results = 0 (0)

Grid.3::<1> = OFFGRID well 5

Grid.3::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 313 OF 338 ELAPSED TIME = 0

Layer well DELETED -- LVHEAP = 1/5/5

Layer Grid.3::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Grid.3 COMPLETED. Number of Results = 0 (0)

Grid.4::<1> = OFFGRID contact 5

Grid.4::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 314 OF 338 ELAPSED TIME = 0

Layer contact DELETED -- LVHEAP = 1/5/5

Layer Grid.4::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Grid.4 COMPLETED. Number of Results = 0 (0)

Grid.5::<1> = OFFGRID poly 5

Grid.5::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 315 OF 338 ELAPSED TIME = 0

Layer poly DELETED -- LVHEAP = 1/5/5

Layer Grid.5::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Grid.5 COMPLETED. Number of Results = 0 (0)

Grid.6::<1> = OFFGRID metal1 5

Grid.6::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 316 OF 338 ELAPSED TIME = 0

Layer metal1 DELETED -- LVHEAP = 1/5/5

Layer Grid.6::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Grid.6 COMPLETED. Number of Results = 0 (0)

Grid.7::<1> = OFFGRID via1 5

Grid.7::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 317 OF 338 ELAPSED TIME = 0

Layer via1 DELETED -- LVHEAP = 1/5/5

Layer Grid.7::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Grid.7 COMPLETED. Number of Results = 0 (0)

Grid.8::<1> = OFFGRID metal2 5

Grid.8::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 318 OF 338 ELAPSED TIME = 0

Layer metal2 DELETED -- LVHEAP = 1/5/5

Layer Grid.8::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Grid.8 COMPLETED. Number of Results = 0 (0)

Grid.9::<1> = OFFGRID via2 5

Grid.9::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 319 OF 338 ELAPSED TIME = 0

Layer via2 DELETED -- LVHEAP = 1/5/5

Layer Grid.9::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Grid.9 COMPLETED. Number of Results = 0 (0)

Grid.10::<1> = OFFGRID metal3 5

Grid.10::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 320 OF 338 ELAPSED TIME = 0

Layer metal3 DELETED -- LVHEAP = 1/5/5

Layer Grid.10::<1> DELETED -- LVHEAP = 1/5/5

```
DRC RuleCheck Grid.10 COMPLETED. Number of Results = 0 (0)

Grid.11::<1> = OFFGRID via3 5
------------------------------
Grid.11::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 321 OF 338  ELAPSED TIME = 0

Layer via3 DELETED -- LVHEAP = 1/5/5

Layer Grid.11::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Grid.11 COMPLETED. Number of Results = 0 (0)

Grid.12::<1> = OFFGRID metal4 5
-------------------------------
Grid.12::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 322 OF 338  ELAPSED TIME = 0

Layer metal4 DELETED -- LVHEAP = 1/5/5

Layer Grid.12::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Grid.12 COMPLETED. Number of Results = 0 (0)

Grid.13::<1> = OFFGRID via4 5
------------------------------
Grid.13::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 323 OF 338  ELAPSED TIME = 0

Layer via4 DELETED -- LVHEAP = 1/5/5

Layer Grid.13::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Grid.13 COMPLETED. Number of Results = 0 (0)

Grid.14::<1> = OFFGRID metal5 5
-------------------------------
Grid.14::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 324 OF 338  ELAPSED TIME = 0

Layer metal5 DELETED -- LVHEAP = 1/5/5

Layer Grid.14::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Grid.14 COMPLETED. Number of Results = 0 (0)

Grid.15::<1> = OFFGRID via5 5
```

```
------------------------------
Grid.15::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 325 OF 338  ELAPSED TIME = 0

Layer via5 DELETED -- LVHEAP = 1/5/5

Layer Grid.15::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Grid.15 COMPLETED. Number of Results = 0 (0)

Grid.16::<1> = OFFGRID metal6 5
--------------------------------
Grid.16::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 326 OF 338  ELAPSED TIME = 0

Layer metal6 DELETED -- LVHEAP = 1/5/5

Layer Grid.16::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Grid.16 COMPLETED. Number of Results = 0 (0)

Grid.17::<1> = OFFGRID via6 5
------------------------------
Grid.17::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 327 OF 338  ELAPSED TIME = 0

Layer via6 DELETED -- LVHEAP = 1/5/5

Layer Grid.17::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Grid.17 COMPLETED. Number of Results = 0 (0)

Grid.18::<1> = OFFGRID metal7 5
--------------------------------
Grid.18::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 328 OF 338  ELAPSED TIME = 0

Layer metal7 DELETED -- LVHEAP = 1/5/5

Layer Grid.18::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Grid.18 COMPLETED. Number of Results = 0 (0)

Grid.19::<1> = OFFGRID via7 5
------------------------------
Grid.19::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0  REAL TIME = 0  LVHEAP = 1/5/5  OPS COMPLETE = 329 OF 338  ELAPSED TIME = 0
```

Layer via7 DELETED -- LVHEAP = 1/5/5

Layer Grid.19::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Grid.19 COMPLETED. Number of Results = 0 (0)

Grid.20::<1> = OFFGRID metal8 5

Grid.20::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 330 OF 338 ELAPSED TIME = 0

Layer metal8 DELETED -- LVHEAP = 1/5/5

Layer Grid.20::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Grid.20 COMPLETED. Number of Results = 0 (0)

Grid.21::<1> = OFFGRID via8 5

Grid.21::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 331 OF 338 ELAPSED TIME = 0

Layer via8 DELETED -- LVHEAP = 1/5/5

Layer Grid.21::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Grid.21 COMPLETED. Number of Results = 0 (0)

Grid.22::<1> = OFFGRID metal9 5

Grid.22::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 332 OF 338 ELAPSED TIME = 0

Layer metal9 DELETED -- LVHEAP = 1/5/5

Layer Grid.22::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Grid.22 COMPLETED. Number of Results = 0 (0)

Grid.23::<1> = OFFGRID via9 5

Grid.23::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 333 OF 338 ELAPSED TIME = 0

Layer via9 DELETED -- LVHEAP = 1/5/5

Layer Grid.23::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Grid.23 COMPLETED. Number of Results = 0 (0)

Grid.24::<1> = OFFGRID metal10 5

Grid.24::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 334 OF 338 ELAPSED TIME = 0

Layer metal10 DELETED -- LVHEAP = 1/5/5

Layer Grid.24::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Grid.24 COMPLETED. Number of Results = 0 (0)

vtg = OR vtg
---
vtg (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 335 OF 338 ELAPSED TIME = 0

Original Layer vtg DELETED -- LVHEAP = 1/5/5

Grid.25::<1> = OFFGRID vtg 5

Grid.25::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 336 OF 338 ELAPSED TIME = 0

Layer vtg DELETED -- LVHEAP = 1/5/5

Layer Grid.25::<1> DELETED -- LVHEAP = 1/5/5

DRC RuleCheck Grid.25 COMPLETED. Number of Results = 0 (0)

vth = OR vth
---
vth (HIER TYP=1 CFG=1 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0 VHC=F VPC=F)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 337 OF 338 ELAPSED TIME = 0

Original Layer vth DELETED -- LVHEAP = 1/5/5

Grid.26::<1> = OFFGRID vth 5

Grid.26::<1> (HIER TYP=3 HGC=0 FGC=0 HEC=0 FEC=0 IGC=0)
CPU TIME = 0 REAL TIME = 0 LVHEAP = 1/5/5 OPS COMPLETE = 338 OF 338 ELAPSED TIME = 0

Layer vth DELETED -- LVHEAP = 1/5/5

Layer Grid.26::<1> DELETED -- LVHEAP = 1/5/5

WRITE to ASCII DRC Results Database nand2_1x.drc.results COMPLETED

```
DRC RuleCheck Grid.26 COMPLETED. Number of Results = 0 (0)

Cumulative ONE-LAYER BOOLEAN Time: CPU = 0  REAL = 0
Cumulative TWO-LAYER BOOLEAN Time: CPU = 0  REAL = 0
Cumulative SIZE Time: CPU = 0  REAL = 0
Cumulative EDGE TOPOLOGICAL Time: CPU = 0  REAL = 0
Cumulative EDGE MEASUREMENT Time: CPU = 0  REAL = 0
Cumulative ONE-LAYER DRC Time: CPU = 0  REAL = 0
Cumulative TWO-LAYER DRC Time: CPU = 0  REAL = 0
Cumulative MISCELLANEOUS Time: CPU = 0  REAL = 0
Cumulative RDB Time: CPU = 0  REAL = 0

--- CALIBRE::DRC-H EXECUTIVE MODULE COMPLETED.  CPU TIME = 0  REAL TIME = 0
--- TOTAL RULECHECKS EXECUTED = 156
--- TOTAL RESULTS GENERATED = 0 (0)
--- DRC RESULTS DATABASE FILE = nand2_1x.drc.results (ASCII)

--- CALIBRE::DRC-H COMPLETED - Fri Apr 29 20:48:26 2016
--- TOTAL CPU TIME = 0  REAL TIME = 0
--- PROCESSOR COUNT = 1
--- SUMMARY REPORT FILE = nand2_1x.drc.summary

//  Calibre v2015.2_27.20    Tue Jun 2 10:53:48 PDT 2015
//  Calibre Utility Library   v0-2_19-2015-1    Thu Feb 19 19:27:29 PST 2015
//  Litho Libraries v2015.2_27.20  Tue Jun 2 10:53:48 PDT 2015
//
//       Copyright Mentor Graphics Corporation 1996-2015
//                   All Rights Reserved.
//   THIS WORK CONTAINS TRADE SECRET AND PROPRIETARY INFORMATION
//     WHICH IS THE PROPERTY OF MENTOR GRAPHICS CORPORATION
//       OR ITS LICENSORS AND IS SUBJECT TO LICENSE TERMS.
//
//  Mentor Graphics software executing under x86-64 Linux
//
//  Running on 1 CPU
//
//
//  Graphical User-Interface startup.... Complete.
//
//  calibrepvs_s license acquired (calibreqdb requested).
//  RVE authorized.
//  Loaded ASCII database /nethome/nliu41/Documents/ece3150/nand2_1x.drc.results (size=26434) in
0.104 seconds
//
```

```
================================================================================
=== CALIBRE::DRC-H SUMMARY REPORT
===
Execution Date/Time:      Fri Apr 29 21:07:12 2016
Calibre Version:          v2015.2_27.20    Tue Jun 2 10:53:48 PDT 2015
Rule File Pathname:       /nethome/nliu41/Documents/ece3150/_calibreDRC.rul_
Rule File Title:
Layout System:            GDS
Layout Path(s):           xor2_1x.calibre.db
Layout Primary Cell:      xor2_1x
Current Directory:        /nethome/nliu41/Documents/ece3150
User Name:                nliu41
Maximum Results/RuleCheck: 1000
Maximum Result Vertices:   4096
DRC Results Database:     xor2_1x.drc.results (ASCII)
Layout Depth:             ALL
Text Depth:               PRIMARY
Summary Report File:      xor2_1x.drc.summary (REPLACE)
Geometry Flagging:        ACUTE = NO  SKEW = NO  ANGLED = NO  OFFGRID = NO
                          NONSIMPLE POLYGON = NO  NONSIMPLE PATH = NO
Excluded Cells:
CheckText Mapping:        COMMENT TEXT + RULE FILE INFORMATION
Layers:                   MEMORY-BASED
Keep Empty Checks:        YES
--------------------------------------------------------------------------------
--- RUNTIME WARNINGS
---
--------------------------------------------------------------------------------
--- ORIGINAL LAYER STATISTICS
---
LAYER pwell ...... TOTAL Original Geometry Count = 3  (3)
LAYER nwell ...... TOTAL Original Geometry Count = 3  (3)
LAYER active ..... TOTAL Original Geometry Count = 14 (21)
LAYER poly ....... TOTAL Original Geometry Count = 7  (8)
LAYER pimplant ... TOTAL Original Geometry Count = 9  (12)
LAYER nimplant ... TOTAL Original Geometry Count = 5  (9)
LAYER vth ........ TOTAL Original Geometry Count = 0  (0)
LAYER vtg ........ TOTAL Original Geometry Count = 0  (0)
LAYER metal1 ..... TOTAL Original Geometry Count = 21 (30)
LAYER metal2 ..... TOTAL Original Geometry Count = 2  (3)
LAYER metal3 ..... TOTAL Original Geometry Count = 0  (0)
LAYER metal4 ..... TOTAL Original Geometry Count = 0  (0)
LAYER metal5 ..... TOTAL Original Geometry Count = 0  (0)
LAYER metal6 ..... TOTAL Original Geometry Count = 0  (0)
LAYER metal7 ..... TOTAL Original Geometry Count = 0  (0)
LAYER metal8 ..... TOTAL Original Geometry Count = 0  (0)
```

LAYER metal9 ..... TOTAL Original Geometry Count = 0 (0)
LAYER metal10 .... TOTAL Original Geometry Count = 0 (0)
LAYER contact .... TOTAL Original Geometry Count = 6 (14)
LAYER via1 ..... TOTAL Original Geometry Count = 1 (2)
LAYER via2 ..... TOTAL Original Geometry Count = 0 (0)
LAYER via3 ..... TOTAL Original Geometry Count = 0 (0)
LAYER via4 ..... TOTAL Original Geometry Count = 0 (0)
LAYER via5 ..... TOTAL Original Geometry Count = 0 (0)
LAYER via6 ..... TOTAL Original Geometry Count = 0 (0)
LAYER via7 ..... TOTAL Original Geometry Count = 0 (0)
LAYER via8 ..... TOTAL Original Geometry Count = 0 (0)
LAYER via9 ..... TOTAL Original Geometry Count = 0 (0)

--- RULECHECK RESULTS STATISTICS

RULECHECK Well.1 ..... TOTAL Result Count = 0 (0)
RULECHECK Well.2 ..... TOTAL Result Count = 0 (0)
RULECHECK Well.4 ..... TOTAL Result Count = 0 (0)
RULECHECK Poly.1 ..... TOTAL Result Count = 0 (0)
RULECHECK Poly.2 ..... TOTAL Result Count = 0 (0)
RULECHECK Poly.3 ..... TOTAL Result Count = 0 (0)
RULECHECK Poly.4 ..... TOTAL Result Count = 0 (0)
RULECHECK Poly.5 ..... TOTAL Result Count = 0 (0)
RULECHECK Poly.6 ..... TOTAL Result Count = 0 (0)
RULECHECK Active.1 .... TOTAL Result Count = 0 (0)
RULECHECK Active.2 .... TOTAL Result Count = 0 (0)
RULECHECK Active.3 .... TOTAL Result Count = 0 (0)
RULECHECK Active.4 .... TOTAL Result Count = 0 (0)
RULECHECK Implant.1 ... TOTAL Result Count = 0 (0)
RULECHECK Implant.2 ... TOTAL Result Count = 0 (0)
RULECHECK Implant.3 ... TOTAL Result Count = 0 (0)
RULECHECK Implant.4 ... TOTAL Result Count = 0 (0)
RULECHECK Implant.6 ... TOTAL Result Count = 0 (0)
RULECHECK Contact.1 ... TOTAL Result Count = 0 (0)
RULECHECK Contact.2 ... TOTAL Result Count = 0 (0)
RULECHECK Contact.3 ... TOTAL Result Count = 0 (0)
RULECHECK Contact.4 ... TOTAL Result Count = 0 (0)
RULECHECK Contact.5 ... TOTAL Result Count = 0 (0)
RULECHECK Contact.6 ... TOTAL Result Count = 0 (0)
RULECHECK Metal1.1 .... TOTAL Result Count = 0 (0)
RULECHECK Metal1.2 .... TOTAL Result Count = 0 (0)
RULECHECK Metal1.3 .... TOTAL Result Count = 0 (0)
RULECHECK Metal1.4 .... TOTAL Result Count = 0 (0)
RULECHECK Via1.1 ..... TOTAL Result Count = 0 (0)
RULECHECK Via1.2 ..... TOTAL Result Count = 0 (0)
RULECHECK Via1.3 ..... TOTAL Result Count = 0 (0)
RULECHECK Via1.4 ..... TOTAL Result Count = 0 (0)
RULECHECK Metal2.1 .... TOTAL Result Count = 0 (0)

RULECHECK Metal2.2 .... TOTAL Result Count = 0 (0)
RULECHECK Metal2.3 .... TOTAL Result Count = 0 (0)
RULECHECK Metal2.4 .... TOTAL Result Count = 0 (0)
RULECHECK Via2.1 ..... TOTAL Result Count = 0 (0)
RULECHECK Via2.2 ..... TOTAL Result Count = 0 (0)
RULECHECK Via2.3 ..... TOTAL Result Count = 0 (0)
RULECHECK Via2.4 ..... TOTAL Result Count = 0 (0)
RULECHECK Metal3.1 .... TOTAL Result Count = 0 (0)
RULECHECK Metal3.2 .... TOTAL Result Count = 0 (0)
RULECHECK Metal3.3 .... TOTAL Result Count = 0 (0)
RULECHECK Metal3.4 .... TOTAL Result Count = 0 (0)
RULECHECK Via3.1 ..... TOTAL Result Count = 0 (0)
RULECHECK Via3.2 ..... TOTAL Result Count = 0 (0)
RULECHECK Via3.3 ..... TOTAL Result Count = 0 (0)
RULECHECK Via3.4 ..... TOTAL Result Count = 0 (0)
RULECHECK Metal4.1 .... TOTAL Result Count = 0 (0)
RULECHECK Metal4.2 .... TOTAL Result Count = 0 (0)
RULECHECK Metal4.3 .... TOTAL Result Count = 0 (0)
RULECHECK Via4.1 ..... TOTAL Result Count = 0 (0)
RULECHECK Via4.2 ..... TOTAL Result Count = 0 (0)
RULECHECK Via4.3 ..... TOTAL Result Count = 0 (0)
RULECHECK Via4.4 ..... TOTAL Result Count = 0 (0)
RULECHECK Metal5.1 .... TOTAL Result Count = 0 (0)
RULECHECK Metal5.2 .... TOTAL Result Count = 0 (0)
RULECHECK Metal5.3 .... TOTAL Result Count = 0 (0)
RULECHECK Via5.1 ..... TOTAL Result Count = 0 (0)
RULECHECK Via5.2 ..... TOTAL Result Count = 0 (0)
RULECHECK Via5.3 ..... TOTAL Result Count = 0 (0)
RULECHECK Via5.4 ..... TOTAL Result Count = 0 (0)
RULECHECK Metal6.1 .... TOTAL Result Count = 0 (0)
RULECHECK Metal6.2 .... TOTAL Result Count = 0 (0)
RULECHECK Metal6.3 .... TOTAL Result Count = 0 (0)
RULECHECK Via6.1 ..... TOTAL Result Count = 0 (0)
RULECHECK Via6.2 ..... TOTAL Result Count = 0 (0)
RULECHECK Via6.3 ..... TOTAL Result Count = 0 (0)
RULECHECK Via6.4 ..... TOTAL Result Count = 0 (0)
RULECHECK Metal7.1 .... TOTAL Result Count = 0 (0)
RULECHECK Metal7.2 .... TOTAL Result Count = 0 (0)
RULECHECK Metal7.3 .... TOTAL Result Count = 0 (0)
RULECHECK Via7.1 ..... TOTAL Result Count = 0 (0)
RULECHECK Via7.2 ..... TOTAL Result Count = 0 (0)
RULECHECK Via7.3 ..... TOTAL Result Count = 0 (0)
RULECHECK Via7.4 ..... TOTAL Result Count = 0 (0)
RULECHECK Metal8.1 .... TOTAL Result Count = 0 (0)
RULECHECK Metal8.2 .... TOTAL Result Count = 0 (0)
RULECHECK Metal8.3 .... TOTAL Result Count = 0 (0)
RULECHECK Via8.1 ..... TOTAL Result Count = 0 (0)
RULECHECK Via8.2 ..... TOTAL Result Count = 0 (0)

RULECHECK Via8.3 ..... TOTAL Result Count = 0 (0)
RULECHECK Via8.4 ..... TOTAL Result Count = 0 (0)
RULECHECK Metal9.1 .... TOTAL Result Count = 0 (0)
RULECHECK Metal9.2 .... TOTAL Result Count = 0 (0)
RULECHECK Metal9.3 .... TOTAL Result Count = 0 (0)
RULECHECK Via9.1 ..... TOTAL Result Count = 0 (0)
RULECHECK Via9.2 ..... TOTAL Result Count = 0 (0)
RULECHECK Via9.3 ..... TOTAL Result Count = 0 (0)
RULECHECK Via9.4 ..... TOTAL Result Count = 0 (0)
RULECHECK Metal10.1 ... TOTAL Result Count = 0 (0)
RULECHECK Metal10.2 ... TOTAL Result Count = 0 (0)
RULECHECK Metal10.3 ... TOTAL Result Count = 0 (0)
RULECHECK Metal1.5 .... TOTAL Result Count = 0 (0)
RULECHECK Metal1.6 .... TOTAL Result Count = 0 (0)
RULECHECK Metal1.7 .... TOTAL Result Count = 0 (0)
RULECHECK Metal1.8 .... TOTAL Result Count = 0 (0)
RULECHECK Metal1.9 .... TOTAL Result Count = 0 (0)
RULECHECK Metal2.5 .... TOTAL Result Count = 0 (0)
RULECHECK Metal2.6 .... TOTAL Result Count = 0 (0)
RULECHECK Metal2.7 .... TOTAL Result Count = 0 (0)
RULECHECK Metal2.8 .... TOTAL Result Count = 0 (0)
RULECHECK Metal2.9 .... TOTAL Result Count = 0 (0)
RULECHECK Metal3.5 .... TOTAL Result Count = 0 (0)
RULECHECK Metal3.6 .... TOTAL Result Count = 0 (0)
RULECHECK Metal3.7 .... TOTAL Result Count = 0 (0)
RULECHECK Metal3.8 .... TOTAL Result Count = 0 (0)
RULECHECK Metal3.9 .... TOTAL Result Count = 0 (0)
RULECHECK Metal4.5 .... TOTAL Result Count = 0 (0)
RULECHECK Metal4.6 .... TOTAL Result Count = 0 (0)
RULECHECK Metal4.7 .... TOTAL Result Count = 0 (0)
RULECHECK Metal4.8 .... TOTAL Result Count = 0 (0)
RULECHECK Metal5.5 .... TOTAL Result Count = 0 (0)
RULECHECK Metal5.6 .... TOTAL Result Count = 0 (0)
RULECHECK Metal5.7 .... TOTAL Result Count = 0 (0)
RULECHECK Metal5.8 .... TOTAL Result Count = 0 (0)
RULECHECK Metal6.5 .... TOTAL Result Count = 0 (0)
RULECHECK Metal6.6 .... TOTAL Result Count = 0 (0)
RULECHECK Metal6.7 .... TOTAL Result Count = 0 (0)
RULECHECK Metal6.8 .... TOTAL Result Count = 0 (0)
RULECHECK Metal7.5 .... TOTAL Result Count = 0 (0)
RULECHECK Metal7.6 .... TOTAL Result Count = 0 (0)
RULECHECK Metal7.7 .... TOTAL Result Count = 0 (0)
RULECHECK Metal8.5 .... TOTAL Result Count = 0 (0)
RULECHECK Metal8.6 .... TOTAL Result Count = 0 (0)
RULECHECK Metal8.7 .... TOTAL Result Count = 0 (0)
RULECHECK Metal9.5 .... TOTAL Result Count = 0 (0)
RULECHECK Metal9.6 .... TOTAL Result Count = 0 (0)
RULECHECK Metal10.5 ... TOTAL Result Count = 0 (0)

RULECHECK Metal10.6 ... TOTAL Result Count = 0 (0)
RULECHECK Grid.1 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.2 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.3 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.4 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.5 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.6 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.7 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.8 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.9 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.10 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.11 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.12 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.13 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.14 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.15 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.16 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.17 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.18 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.19 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.20 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.21 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.22 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.23 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.24 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.25 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.26 ..... TOTAL Result Count = 0 (0)

--- RULECHECK RESULTS STATISTICS (BY CELL)

--- SUMMARY

TOTAL CPU Time: 0
TOTAL REAL Time: 0
TOTAL Original Layer Geometries: 71 (105)
TOTAL DRC RuleChecks Executed: 156
TOTAL DRC Results Generated: 0 (0)

```
================================================================================
=== CALIBRE::DRC-H SUMMARY REPORT
===
Execution Date/Time:      Fri Apr 29 21:16:29 2016
Calibre Version:          v2015.2_27.20    Tue Jun 2 10:53:48 PDT 2015
Rule File Pathname:       /nethome/nliu41/Documents/ece3150/_calibreDRC.rul_
Rule File Title:
Layout System:            GDS
Layout Path(s):           adder_32bit.calibre.db
Layout Primary Cell:      adder_32bit
Current Directory:        /nethome/nliu41/Documents/ece3150
User Name:                nliu41
Maximum Results/RuleCheck: 1000
Maximum Result Vertices:   4096
DRC Results Database:     adder_32bit.drc.results (ASCII)
Layout Depth:             ALL
Text Depth:               PRIMARY
Summary Report File:      adder_32bit.drc.summary (REPLACE)
Geometry Flagging:        ACUTE = NO  SKEW = NO  ANGLED = NO  OFFGRID = NO
                          NONSIMPLE POLYGON = NO  NONSIMPLE PATH = NO
Excluded Cells:
CheckText Mapping:        COMMENT TEXT + RULE FILE INFORMATION
Layers:                   MEMORY-BASED
Keep Empty Checks:        YES
--------------------------------------------------------------------------------
--- RUNTIME WARNINGS
---
--------------------------------------------------------------------------------
--- ORIGINAL LAYER STATISTICS
---
LAYER pwell ...... TOTAL Original Geometry Count = 7   (1188)
LAYER nwell ...... TOTAL Original Geometry Count = 7   (1188)
LAYER active ..... TOTAL Original Geometry Count = 33  (6905)
LAYER poly ....... TOTAL Original Geometry Count = 13  (2006)
LAYER pimplant ... TOTAL Original Geometry Count = 20  (3756)
LAYER nimplant ... TOTAL Original Geometry Count = 12  (3066)
LAYER vth ........ TOTAL Original Geometry Count = 0   (0)
LAYER vtg ........ TOTAL Original Geometry Count = 0   (0)
LAYER metal1 ..... TOTAL Original Geometry Count = 150 (11520)
LAYER metal2 ..... TOTAL Original Geometry Count = 72  (2836)
LAYER metal3 ..... TOTAL Original Geometry Count = 72  (959)
LAYER metal4 ..... TOTAL Original Geometry Count = 21  (204)
LAYER metal5 ..... TOTAL Original Geometry Count = 0   (0)
LAYER metal6 ..... TOTAL Original Geometry Count = 0   (0)
LAYER metal7 ..... TOTAL Original Geometry Count = 0   (0)
LAYER metal8 ..... TOTAL Original Geometry Count = 0   (0)
```

LAYER metal9 ..... TOTAL Original Geometry Count = 0 (0)
LAYER metal10 .... TOTAL Original Geometry Count = 0 (0)
LAYER contact .... TOTAL Original Geometry Count = 6 (4880)
LAYER via1 ..... TOTAL Original Geometry Count = 1 (1590)
LAYER via2 ..... TOTAL Original Geometry Count = 1 (503)
LAYER via3 ..... TOTAL Original Geometry Count = 1 (138)
LAYER via4 ..... TOTAL Original Geometry Count = 0 (0)
LAYER via5 ..... TOTAL Original Geometry Count = 0 (0)
LAYER via6 ..... TOTAL Original Geometry Count = 0 (0)
LAYER via7 ..... TOTAL Original Geometry Count = 0 (0)
LAYER via8 ..... TOTAL Original Geometry Count = 0 (0)
LAYER via9 ..... TOTAL Original Geometry Count = 0 (0)

--- RULECHECK RESULTS STATISTICS

RULECHECK Well.1 ..... TOTAL Result Count = 0 (0)
RULECHECK Well.2 ..... TOTAL Result Count = 0 (0)
RULECHECK Well.4 ..... TOTAL Result Count = 0 (0)
RULECHECK Poly.1 ..... TOTAL Result Count = 0 (0)
RULECHECK Poly.2 ..... TOTAL Result Count = 0 (0)
RULECHECK Poly.3 ..... TOTAL Result Count = 0 (0)
RULECHECK Poly.4 ..... TOTAL Result Count = 0 (0)
RULECHECK Poly.5 ..... TOTAL Result Count = 0 (0)
RULECHECK Poly.6 ..... TOTAL Result Count = 0 (0)
RULECHECK Active.1 .... TOTAL Result Count = 0 (0)
RULECHECK Active.2 .... TOTAL Result Count = 0 (0)
RULECHECK Active.3 .... TOTAL Result Count = 0 (0)
RULECHECK Active.4 .... TOTAL Result Count = 0 (0)
RULECHECK Implant.1 ... TOTAL Result Count = 0 (0)
RULECHECK Implant.2 ... TOTAL Result Count = 0 (0)
RULECHECK Implant.3 ... TOTAL Result Count = 0 (0)
RULECHECK Implant.4 ... TOTAL Result Count = 0 (0)
RULECHECK Implant.6 ... TOTAL Result Count = 0 (0)
RULECHECK Contact.1 ... TOTAL Result Count = 0 (0)
RULECHECK Contact.2 ... TOTAL Result Count = 0 (0)
RULECHECK Contact.3 ... TOTAL Result Count = 0 (0)
RULECHECK Contact.4 ... TOTAL Result Count = 0 (0)
RULECHECK Contact.5 ... TOTAL Result Count = 0 (0)
RULECHECK Contact.6 ... TOTAL Result Count = 0 (0)
RULECHECK Metal1.1 .... TOTAL Result Count = 0 (0)
RULECHECK Metal1.2 .... TOTAL Result Count = 0 (0)
RULECHECK Metal1.3 .... TOTAL Result Count = 0 (0)
RULECHECK Metal1.4 .... TOTAL Result Count = 0 (0)
RULECHECK Via1.1 ..... TOTAL Result Count = 0 (0)
RULECHECK Via1.2 ..... TOTAL Result Count = 0 (0)
RULECHECK Via1.3 ..... TOTAL Result Count = 0 (0)
RULECHECK Via1.4 ..... TOTAL Result Count = 0 (0)
RULECHECK Metal2.1 .... TOTAL Result Count = 0 (0)

RULECHECK Metal2.2 .... TOTAL Result Count = 0 (0)
RULECHECK Metal2.3 .... TOTAL Result Count = 0 (0)
RULECHECK Metal2.4 .... TOTAL Result Count = 0 (0)
RULECHECK Via2.1 ..... TOTAL Result Count = 0 (0)
RULECHECK Via2.2 ..... TOTAL Result Count = 0 (0)
RULECHECK Via2.3 ..... TOTAL Result Count = 0 (0)
RULECHECK Via2.4 ..... TOTAL Result Count = 0 (0)
RULECHECK Metal3.1 .... TOTAL Result Count = 0 (0)
RULECHECK Metal3.2 .... TOTAL Result Count = 0 (0)
RULECHECK Metal3.3 .... TOTAL Result Count = 0 (0)
RULECHECK Metal3.4 .... TOTAL Result Count = 0 (0)
RULECHECK Via3.1 ..... TOTAL Result Count = 0 (0)
RULECHECK Via3.2 ..... TOTAL Result Count = 0 (0)
RULECHECK Via3.3 ..... TOTAL Result Count = 0 (0)
RULECHECK Via3.4 ..... TOTAL Result Count = 0 (0)
RULECHECK Metal4.1 .... TOTAL Result Count = 0 (0)
RULECHECK Metal4.2 .... TOTAL Result Count = 0 (0)
RULECHECK Metal4.3 .... TOTAL Result Count = 0 (0)
RULECHECK Via4.1 ..... TOTAL Result Count = 0 (0)
RULECHECK Via4.2 ..... TOTAL Result Count = 0 (0)
RULECHECK Via4.3 ..... TOTAL Result Count = 0 (0)
RULECHECK Via4.4 ..... TOTAL Result Count = 0 (0)
RULECHECK Metal5.1 .... TOTAL Result Count = 0 (0)
RULECHECK Metal5.2 .... TOTAL Result Count = 0 (0)
RULECHECK Metal5.3 .... TOTAL Result Count = 0 (0)
RULECHECK Via5.1 ..... TOTAL Result Count = 0 (0)
RULECHECK Via5.2 ..... TOTAL Result Count = 0 (0)
RULECHECK Via5.3 ..... TOTAL Result Count = 0 (0)
RULECHECK Via5.4 ..... TOTAL Result Count = 0 (0)
RULECHECK Metal6.1 .... TOTAL Result Count = 0 (0)
RULECHECK Metal6.2 .... TOTAL Result Count = 0 (0)
RULECHECK Metal6.3 .... TOTAL Result Count = 0 (0)
RULECHECK Via6.1 ..... TOTAL Result Count = 0 (0)
RULECHECK Via6.2 ..... TOTAL Result Count = 0 (0)
RULECHECK Via6.3 ..... TOTAL Result Count = 0 (0)
RULECHECK Via6.4 ..... TOTAL Result Count = 0 (0)
RULECHECK Metal7.1 .... TOTAL Result Count = 0 (0)
RULECHECK Metal7.2 .... TOTAL Result Count = 0 (0)
RULECHECK Metal7.3 .... TOTAL Result Count = 0 (0)
RULECHECK Via7.1 ..... TOTAL Result Count = 0 (0)
RULECHECK Via7.2 ..... TOTAL Result Count = 0 (0)
RULECHECK Via7.3 ..... TOTAL Result Count = 0 (0)
RULECHECK Via7.4 ..... TOTAL Result Count = 0 (0)
RULECHECK Metal8.1 .... TOTAL Result Count = 0 (0)
RULECHECK Metal8.2 .... TOTAL Result Count = 0 (0)
RULECHECK Metal8.3 .... TOTAL Result Count = 0 (0)
RULECHECK Via8.1 ..... TOTAL Result Count = 0 (0)
RULECHECK Via8.2 ..... TOTAL Result Count = 0 (0)

RULECHECK Via8.3 ..... TOTAL Result Count = 0 (0)
RULECHECK Via8.4 ..... TOTAL Result Count = 0 (0)
RULECHECK Metal9.1 .... TOTAL Result Count = 0 (0)
RULECHECK Metal9.2 .... TOTAL Result Count = 0 (0)
RULECHECK Metal9.3 .... TOTAL Result Count = 0 (0)
RULECHECK Via9.1 ..... TOTAL Result Count = 0 (0)
RULECHECK Via9.2 ..... TOTAL Result Count = 0 (0)
RULECHECK Via9.3 ..... TOTAL Result Count = 0 (0)
RULECHECK Via9.4 ..... TOTAL Result Count = 0 (0)
RULECHECK Metal10.1 ... TOTAL Result Count = 0 (0)
RULECHECK Metal10.2 ... TOTAL Result Count = 0 (0)
RULECHECK Metal10.3 ... TOTAL Result Count = 0 (0)
RULECHECK Metal1.5 .... TOTAL Result Count = 0 (0)
RULECHECK Metal1.6 .... TOTAL Result Count = 0 (0)
RULECHECK Metal1.7 .... TOTAL Result Count = 0 (0)
RULECHECK Metal1.8 .... TOTAL Result Count = 0 (0)
RULECHECK Metal1.9 .... TOTAL Result Count = 0 (0)
RULECHECK Metal2.5 .... TOTAL Result Count = 0 (0)
RULECHECK Metal2.6 .... TOTAL Result Count = 0 (0)
RULECHECK Metal2.7 .... TOTAL Result Count = 0 (0)
RULECHECK Metal2.8 .... TOTAL Result Count = 0 (0)
RULECHECK Metal2.9 .... TOTAL Result Count = 0 (0)
RULECHECK Metal3.5 .... TOTAL Result Count = 0 (0)
RULECHECK Metal3.6 .... TOTAL Result Count = 0 (0)
RULECHECK Metal3.7 .... TOTAL Result Count = 0 (0)
RULECHECK Metal3.8 .... TOTAL Result Count = 0 (0)
RULECHECK Metal3.9 .... TOTAL Result Count = 0 (0)
RULECHECK Metal4.5 .... TOTAL Result Count = 0 (0)
RULECHECK Metal4.6 .... TOTAL Result Count = 0 (0)
RULECHECK Metal4.7 .... TOTAL Result Count = 0 (0)
RULECHECK Metal4.8 .... TOTAL Result Count = 0 (0)
RULECHECK Metal5.5 .... TOTAL Result Count = 0 (0)
RULECHECK Metal5.6 .... TOTAL Result Count = 0 (0)
RULECHECK Metal5.7 .... TOTAL Result Count = 0 (0)
RULECHECK Metal5.8 .... TOTAL Result Count = 0 (0)
RULECHECK Metal6.5 .... TOTAL Result Count = 0 (0)
RULECHECK Metal6.6 .... TOTAL Result Count = 0 (0)
RULECHECK Metal6.7 .... TOTAL Result Count = 0 (0)
RULECHECK Metal6.8 .... TOTAL Result Count = 0 (0)
RULECHECK Metal7.5 .... TOTAL Result Count = 0 (0)
RULECHECK Metal7.6 .... TOTAL Result Count = 0 (0)
RULECHECK Metal7.7 .... TOTAL Result Count = 0 (0)
RULECHECK Metal8.5 .... TOTAL Result Count = 0 (0)
RULECHECK Metal8.6 .... TOTAL Result Count = 0 (0)
RULECHECK Metal8.7 .... TOTAL Result Count = 0 (0)
RULECHECK Metal9.5 .... TOTAL Result Count = 0 (0)
RULECHECK Metal9.6 .... TOTAL Result Count = 0 (0)
RULECHECK Metal10.5 ... TOTAL Result Count = 0 (0)

RULECHECK Metal10.6 ... TOTAL Result Count = 0 (0)
RULECHECK Grid.1 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.2 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.3 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.4 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.5 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.6 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.7 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.8 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.9 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.10 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.11 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.12 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.13 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.14 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.15 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.16 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.17 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.18 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.19 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.20 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.21 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.22 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.23 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.24 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.25 ..... TOTAL Result Count = 0 (0)
RULECHECK Grid.26 ..... TOTAL Result Count = 0 (0)

--- RULECHECK RESULTS STATISTICS (BY CELL)

--- SUMMARY

TOTAL CPU Time: 0
TOTAL REAL Time: 0
TOTAL Original Layer Geometries: 416 (40739)
TOTAL DRC RuleChecks Executed: 156
TOTAL DRC Results Generated: 0 (0)

LVS for nand, nor, xor, and adder32bit

```
##################################################
##                                              ##
##     C A L I B R E   S Y S T E M      ##
##                                              ##
##       L V S   R E P O R T          ##
##                                              ##
##################################################
```

REPORT FILE NAME: nand2_1x.lvs.report
LAYOUT NAME: /nethome/nliu41/Documents/ece3150/nand2_1x.sp ('nand2_1x')
SOURCE NAME: /nethome/nliu41/Documents/ece3150/nand2_1x.src.net ('nand_1x')
RULE FILE: /nethome/nliu41/Documents/ece3150/_calibreLVS.rul_
RULE FILE TITLE: LVS Rule File for FreePDK45
CREATION TIME: Fri Apr 29 20:52:16 2016
CURRENT DIRECTORY: /nethome/nliu41/Documents/ece3150
USER NAME: nliu41
CALIBRE VERSION: v2015.2_27.20 Tue Jun 2 10:53:48 PDT 2015

OVERALL COMPARISON RESULTS

```
   #    ####################    _ _
   #    #         #    *  *
 # #    #   CORRECT   #     |
 ##     #         #    \___/
  #     ####################
```

****

CELL SUMMARY

****

Result	Layout	Source

CORRECT nand2_1x nand_1x

****
LVS PARAMETERS
****

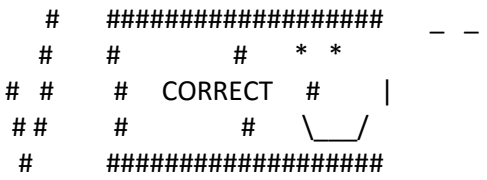
o LVS Setup:

```
LVS COMPONENT TYPE PROPERTY          element
LVS COMPONENT SUBTYPE PROPERTY       model
// LVS PIN NAME PROPERTY
LVS POWER NAME                       "VDD"
LVS GROUND NAME                      "VSS" "GROUND"
LVS CELL SUPPLY                      NO
LVS RECOGNIZE GATES                  ALL
LVS IGNORE PORTS                     NO
LVS CHECK PORT NAMES                 NO
LVS IGNORE TRIVIAL NAMED PORTS       NO
LVS BUILTIN DEVICE PIN SWAP          YES
LVS ALL CAPACITOR PINS SWAPPABLE     NO
LVS DISCARD PINS BY DEVICE           NO
LVS SOFT SUBSTRATE PINS              NO
LVS INJECT LOGIC                     YES
LVS EXPAND UNBALANCED CELLS          YES
LVS FLATTEN INSIDE CELL              NO
LVS EXPAND SEED PROMOTIONS           NO
LVS PRESERVE PARAMETERIZED CELLS     NO
LVS GLOBALS ARE PORTS                YES
LVS REVERSE WL                       NO
LVS SPICE PREFER PINS                NO
LVS SPICE SLASH IS SPACE             YES
LVS SPICE ALLOW FLOATING PINS        YES
// LVS SPICE ALLOW INLINE PARAMETERS
LVS SPICE ALLOW UNQUOTED STRINGS     NO
LVS SPICE CONDITIONAL LDD            NO
LVS SPICE CULL PRIMITIVE SUBCIRCUITS NO
LVS SPICE IMPLIED MOS AREA           NO
// LVS SPICE MULTIPLIER NAME
LVS SPICE OVERRIDE GLOBALS           NO
LVS SPICE REDEFINE PARAM             NO
LVS SPICE REPLICATE DEVICES          NO
LVS SPICE SCALE X PARAMETERS         NO
LVS SPICE STRICT WL                  NO
```

```
// LVS SPICE OPTION
LVS STRICT SUBTYPES              NO
LVS EXACT SUBTYPES               NO
LAYOUT CASE                    NO
SOURCE CASE                    NO
LVS COMPARE CASE                 NO
LVS DOWNCASE DEVICE              NO
LVS REPORT MAXIMUM               50
LVS PROPERTY RESOLUTION MAXIMUM    32
// LVS SIGNATURE MAXIMUM
// LVS FILTER UNUSED OPTION
// LVS REPORT OPTION
LVS REPORT UNITS                 YES
// LVS NON USER NAME PORT
// LVS NON USER NAME NET
// LVS NON USER NAME INSTANCE
// LVS IGNORE DEVICE PIN

// Reduction

LVS REDUCE SERIES MOS            YES
LVS REDUCE PARALLEL MOS          YES
LVS REDUCE SEMI SERIES MOS       YES
LVS REDUCE SPLIT GATES           YES
LVS REDUCE PARALLEL BIPOLAR      YES
LVS REDUCE SERIES CAPACITORS     YES
LVS REDUCE PARALLEL CAPACITORS   YES
LVS REDUCE SERIES RESISTORS      YES
LVS REDUCE PARALLEL RESISTORS    YES
LVS REDUCE PARALLEL DIODES       YES
LVS REDUCTION PRIORITY           PARALLEL

LVS SHORT EQUIVALENT NODES       NO

// Trace Property

TRACE PROPERTY  mn(nmos_vtl)  l l 4e-09 ABSOLUTE
TRACE PROPERTY  mn(nmos_vtl)  w w 4e-09 ABSOLUTE
TRACE PROPERTY  mp(pmos_vtl)  l l 4e-09 ABSOLUTE
TRACE PROPERTY  mp(pmos_vtl)  w w 4e-09 ABSOLUTE
TRACE PROPERTY  mn(nmos_vth)  l l 4e-09 ABSOLUTE
TRACE PROPERTY  mn(nmos_vth)  w w 4e-09 ABSOLUTE
TRACE PROPERTY  mp(pmos_vth)  l l 4e-09 ABSOLUTE
TRACE PROPERTY  mp(pmos_vth)  w w 4e-09 ABSOLUTE
TRACE PROPERTY  mn(nmos_vtg)  l l 4e-09 ABSOLUTE
TRACE PROPERTY  mn(nmos_vtg)  w w 4e-09 ABSOLUTE
TRACE PROPERTY  mp(pmos_vtg)  l l 4e-09 ABSOLUTE
TRACE PROPERTY  mp(pmos_vtg)  w w 4e-09 ABSOLUTE
```

TRACE PROPERTY mn(nmos_thkox) l l 4e-09 ABSOLUTE
TRACE PROPERTY mn(nmos_thkox) w w 4e-09 ABSOLUTE
TRACE PROPERTY mp(pmos_thkox) l l 4e-09 ABSOLUTE
TRACE PROPERTY mp(pmos_thkox) w w 4e-09 ABSOLUTE

CELL COMPARISON RESULTS (TOP LEVEL)



LAYOUT CELL NAME: nand2_1x
SOURCE CELL NAME: nand_1x

INITIAL NUMBERS OF OBJECTS

	Layout	Source	Component Type
Ports:	5	5	
Nets:	6	6	
Instances:	2	2	MN (4 pins)
	2	2	MP (4 pins)
Total Inst:	4	4	

NUMBERS OF OBJECTS AFTER TRANSFORMATION

	Layout	Source	Component Type
Ports:	5	5	
Nets:	5	5	

```
 Instances:        1       1       _nand2v (5 pins)
           ------  ------
 Total Inst:       1       1


*******************************************************************************
*************************
                    INFORMATION AND WARNINGS
*******************************************************************************
*************************


            Matched   Matched   Unmatched   Unmatched   Component
             Layout    Source     Layout      Source    Type
            -------   -------   ---------   ---------   ---------
  Ports:          5       5         0         0

  Nets:           5       5         0         0

  Instances:      1       1         0         0   _nand2v
            -------   -------   ---------   ---------
  Total Inst:     1       1         0         0


o Initial Correspondence Points:

  Ports:       A GND! B Z VDD!


*******************************************************************************
*************************
                         SUMMARY
*******************************************************************************
*************************

Total CPU Time:     0 sec
Total Elapsed Time:  0 sec
```

```
################################################
##                                            ##
##     C A L I B R E   S Y S T E M      ##
##                                            ##
##        L V S   R E P O R T         ##
##                                            ##
################################################
```

REPORT FILE NAME: nor2_1x.lvs.report
LAYOUT NAME: /nethome/nliu41/Documents/ece3150/nor2_1x.sp ('nor2_1x')
SOURCE NAME: /nethome/nliu41/Documents/ece3150/nor2_1x.src.net ('nor_2x')
RULE FILE: /nethome/nliu41/Documents/ece3150/_calibreLVS.rul_
RULE FILE TITLE: LVS Rule File for FreePDK45
CREATION TIME: Fri Apr 29 20:55:37 2016
CURRENT DIRECTORY: /nethome/nliu41/Documents/ece3150
USER NAME: nliu41
CALIBRE VERSION: v2015.2_27.20 Tue Jun 2 10:53:48 PDT 2015

OVERALL COMPARISON RESULTS

```
   #    ####################    _ _
  #     #         #    *  *
 #  #    #   CORRECT   #     |
 ##     #         #    \___/
 #      ####################
```

****
CELL SUMMARY
****

Result	Layout	Source
CORRECT	nor2_1x	nor_2x

****
LVS PARAMETERS
****

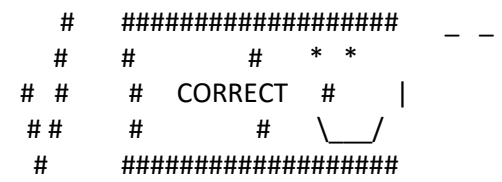
o LVS Setup:

```
LVS COMPONENT TYPE PROPERTY          element
LVS COMPONENT SUBTYPE PROPERTY       model
// LVS PIN NAME PROPERTY
LVS POWER NAME                       "VDD"
LVS GROUND NAME                      "VSS" "GROUND"
LVS CELL SUPPLY                      NO
LVS RECOGNIZE GATES                  ALL
LVS IGNORE PORTS                     NO
LVS CHECK PORT NAMES                 NO
LVS IGNORE TRIVIAL NAMED PORTS       NO
LVS BUILTIN DEVICE PIN SWAP          YES
LVS ALL CAPACITOR PINS SWAPPABLE     NO
LVS DISCARD PINS BY DEVICE           NO
LVS SOFT SUBSTRATE PINS              NO
LVS INJECT LOGIC                     YES
LVS EXPAND UNBALANCED CELLS          YES
LVS FLATTEN INSIDE CELL              NO
LVS EXPAND SEED PROMOTIONS           NO
LVS PRESERVE PARAMETERIZED CELLS     NO
LVS GLOBALS ARE PORTS                YES
LVS REVERSE WL                       NO
LVS SPICE PREFER PINS                NO
LVS SPICE SLASH IS SPACE             YES
LVS SPICE ALLOW FLOATING PINS        YES
// LVS SPICE ALLOW INLINE PARAMETERS
LVS SPICE ALLOW UNQUOTED STRINGS     NO
LVS SPICE CONDITIONAL LDD            NO
LVS SPICE CULL PRIMITIVE SUBCIRCUITS NO
LVS SPICE IMPLIED MOS AREA           NO
// LVS SPICE MULTIPLIER NAME
LVS SPICE OVERRIDE GLOBALS           NO
LVS SPICE REDEFINE PARAM             NO
LVS SPICE REPLICATE DEVICES          NO
LVS SPICE SCALE X PARAMETERS         NO
LVS SPICE STRICT WL                  NO
// LVS SPICE OPTION
LVS STRICT SUBTYPES                  NO
```

```
LVS EXACT SUBTYPES                NO
LAYOUT CASE                    NO
SOURCE CASE                    NO
LVS COMPARE CASE                NO
LVS DOWNCASE DEVICE              NO
LVS REPORT MAXIMUM               50
LVS PROPERTY RESOLUTION MAXIMUM     32
// LVS SIGNATURE MAXIMUM
// LVS FILTER UNUSED OPTION
// LVS REPORT OPTION
LVS REPORT UNITS                YES
// LVS NON USER NAME PORT
// LVS NON USER NAME NET
// LVS NON USER NAME INSTANCE
// LVS IGNORE DEVICE PIN

// Reduction

LVS REDUCE SERIES MOS            YES
LVS REDUCE PARALLEL MOS          YES
LVS REDUCE SEMI SERIES MOS       YES
LVS REDUCE SPLIT GATES           YES
LVS REDUCE PARALLEL BIPOLAR      YES
LVS REDUCE SERIES CAPACITORS     YES
LVS REDUCE PARALLEL CAPACITORS   YES
LVS REDUCE SERIES RESISTORS      YES
LVS REDUCE PARALLEL RESISTORS    YES
LVS REDUCE PARALLEL DIODES       YES
LVS REDUCTION PRIORITY           PARALLEL

LVS SHORT EQUIVALENT NODES       NO

// Trace Property

TRACE PROPERTY  mn(nmos_vtl)  l l 4e-09 ABSOLUTE
TRACE PROPERTY  mn(nmos_vtl)  w w 4e-09 ABSOLUTE
TRACE PROPERTY  mp(pmos_vtl)  l l 4e-09 ABSOLUTE
TRACE PROPERTY  mp(pmos_vtl)  w w 4e-09 ABSOLUTE
TRACE PROPERTY  mn(nmos_vth)  l l 4e-09 ABSOLUTE
TRACE PROPERTY  mn(nmos_vth)  w w 4e-09 ABSOLUTE
TRACE PROPERTY  mp(pmos_vth)  l l 4e-09 ABSOLUTE
TRACE PROPERTY  mp(pmos_vth)  w w 4e-09 ABSOLUTE
TRACE PROPERTY  mn(nmos_vtg)  l l 4e-09 ABSOLUTE
TRACE PROPERTY  mn(nmos_vtg)  w w 4e-09 ABSOLUTE
TRACE PROPERTY  mp(pmos_vtg)  l l 4e-09 ABSOLUTE
TRACE PROPERTY  mp(pmos_vtg)  w w 4e-09 ABSOLUTE
TRACE PROPERTY  mn(nmos_thkox)  l l 4e-09 ABSOLUTE
TRACE PROPERTY  mn(nmos_thkox)  w w 4e-09 ABSOLUTE
```

TRACE PROPERTY mp(pmos_thkox) l l 4e-09 ABSOLUTE
TRACE PROPERTY mp(pmos_thkox) w w 4e-09 ABSOLUTE

CELL COMPARISON RESULTS (TOP LEVEL)



LAYOUT CELL NAME: nor2_1x
SOURCE CELL NAME: nor_2x

INITIAL NUMBERS OF OBJECTS

	Layout	Source	Component Type
Ports:	5	5	
Nets:	6	6	
Instances:	2	2	MN (4 pins)
	2	2	MP (4 pins)
Total Inst:	4	4	

NUMBERS OF OBJECTS AFTER TRANSFORMATION

	Layout	Source	Component Type
Ports:	5	5	
Nets:	5	5	
Instances:	1	1	_nor2v (5 pins)

Total Inst: 1 1

****
INFORMATION AND WARNINGS
****

	Matched Layout	Matched Source	Unmatched Layout	Unmatched Source	Component Type
Ports:	5	5	0	0	
Nets:	5	5	0	0	
Instances:	1	1	0	0	_nor2v
Total Inst:	1	1	0	0	

o Initial Correspondence Points:

Ports: A VDD! B Z GND!

****
SUMMARY
****

Total CPU Time: 0 sec
Total Elapsed Time: 0 sec

```
################################################
##                                            ##
##     C A L I B R E   S Y S T E M      ##
##                                            ##
##        L V S   R E P O R T         ##
##                                            ##
################################################
```

REPORT FILE NAME: xor2_1x.lvs.report
LAYOUT NAME: /nethome/nliu41/Documents/ece3150/xor2_1x.sp ('xor2_1x')
SOURCE NAME: /nethome/nliu41/Documents/ece3150/xor2_1x.src.net ('xor2_1x')
RULE FILE: /nethome/nliu41/Documents/ece3150/_calibreLVS.rul_
RULE FILE TITLE: LVS Rule File for FreePDK45
CREATION TIME: Fri Apr 29 21:08:10 2016
CURRENT DIRECTORY: /nethome/nliu41/Documents/ece3150
USER NAME: nliu41
CALIBRE VERSION: v2015.2_27.20 Tue Jun 2 10:53:48 PDT 2015

OVERALL COMPARISON RESULTS

```
   #    ####################    _ _
  #     #         #    *  *
 # #     #   CORRECT   #     |
 ##     #         #    \___/
 #      ####################
```

****
CELL SUMMARY
****

Result	Layout	Source
CORRECT	xor2_1x	xor2_1x

```
********************************************************************************
************************
                        LVS PARAMETERS
********************************************************************************
************************
```

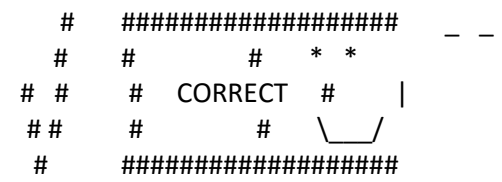
o LVS Setup:

```
  LVS COMPONENT TYPE PROPERTY          element
  LVS COMPONENT SUBTYPE PROPERTY       model
  // LVS PIN NAME PROPERTY
  LVS POWER NAME                       "VDD"
  LVS GROUND NAME                      "VSS" "GROUND"
  LVS CELL SUPPLY                    NO
  LVS RECOGNIZE GATES                  ALL
  LVS IGNORE PORTS                   NO
  LVS CHECK PORT NAMES                 NO
  LVS IGNORE TRIVIAL NAMED PORTS       NO
  LVS BUILTIN DEVICE PIN SWAP          YES
  LVS ALL CAPACITOR PINS SWAPPABLE     NO
  LVS DISCARD PINS BY DEVICE           NO
  LVS SOFT SUBSTRATE PINS              NO
  LVS INJECT LOGIC                   YES
  LVS EXPAND UNBALANCED CELLS          YES
  LVS FLATTEN INSIDE CELL              NO
  LVS EXPAND SEED PROMOTIONS           NO
  LVS PRESERVE PARAMETERIZED CELLS     NO
  LVS GLOBALS ARE PORTS                YES
  LVS REVERSE WL                     NO
  LVS SPICE PREFER PINS                NO
  LVS SPICE SLASH IS SPACE             YES
  LVS SPICE ALLOW FLOATING PINS        YES
  // LVS SPICE ALLOW INLINE PARAMETERS
  LVS SPICE ALLOW UNQUOTED STRINGS     NO
  LVS SPICE CONDITIONAL LDD            NO
  LVS SPICE CULL PRIMITIVE SUBCIRCUITS  NO
  LVS SPICE IMPLIED MOS AREA           NO
  // LVS SPICE MULTIPLIER NAME
  LVS SPICE OVERRIDE GLOBALS           NO
  LVS SPICE REDEFINE PARAM             NO
  LVS SPICE REPLICATE DEVICES          NO
  LVS SPICE SCALE X PARAMETERS         NO
  LVS SPICE STRICT WL                NO
  // LVS SPICE OPTION
  LVS STRICT SUBTYPES                  NO
```

```
LVS EXACT SUBTYPES                NO
LAYOUT CASE                    NO
SOURCE CASE                    NO
LVS COMPARE CASE                NO
LVS DOWNCASE DEVICE              NO
LVS REPORT MAXIMUM               50
LVS PROPERTY RESOLUTION MAXIMUM     32
// LVS SIGNATURE MAXIMUM
// LVS FILTER UNUSED OPTION
// LVS REPORT OPTION
LVS REPORT UNITS                YES
// LVS NON USER NAME PORT
// LVS NON USER NAME NET
// LVS NON USER NAME INSTANCE
// LVS IGNORE DEVICE PIN

// Reduction

LVS REDUCE SERIES MOS            YES
LVS REDUCE PARALLEL MOS          YES
LVS REDUCE SEMI SERIES MOS       YES
LVS REDUCE SPLIT GATES           YES
LVS REDUCE PARALLEL BIPOLAR      YES
LVS REDUCE SERIES CAPACITORS     YES
LVS REDUCE PARALLEL CAPACITORS   YES
LVS REDUCE SERIES RESISTORS      YES
LVS REDUCE PARALLEL RESISTORS    YES
LVS REDUCE PARALLEL DIODES       YES
LVS REDUCTION PRIORITY           PARALLEL

LVS SHORT EQUIVALENT NODES       NO

// Trace Property

TRACE PROPERTY  mn(nmos_vtl)  l l 4e-09 ABSOLUTE
TRACE PROPERTY  mn(nmos_vtl)  w w 4e-09 ABSOLUTE
TRACE PROPERTY  mp(pmos_vtl)  l l 4e-09 ABSOLUTE
TRACE PROPERTY  mp(pmos_vtl)  w w 4e-09 ABSOLUTE
TRACE PROPERTY  mn(nmos_vth)  l l 4e-09 ABSOLUTE
TRACE PROPERTY  mn(nmos_vth)  w w 4e-09 ABSOLUTE
TRACE PROPERTY  mp(pmos_vth)  l l 4e-09 ABSOLUTE
TRACE PROPERTY  mp(pmos_vth)  w w 4e-09 ABSOLUTE
TRACE PROPERTY  mn(nmos_vtg)  l l 4e-09 ABSOLUTE
TRACE PROPERTY  mn(nmos_vtg)  w w 4e-09 ABSOLUTE
TRACE PROPERTY  mp(pmos_vtg)  l l 4e-09 ABSOLUTE
TRACE PROPERTY  mp(pmos_vtg)  w w 4e-09 ABSOLUTE
TRACE PROPERTY  mn(nmos_thkox)  l l 4e-09 ABSOLUTE
TRACE PROPERTY  mn(nmos_thkox)  w w 4e-09 ABSOLUTE
```

TRACE PROPERTY mp(pmos_thkox) l l 4e-09 ABSOLUTE
TRACE PROPERTY mp(pmos_thkox) w w 4e-09 ABSOLUTE

CELL COMPARISON RESULTS (TOP LEVEL)



LAYOUT CELL NAME: xor2_1x
SOURCE CELL NAME: xor2_1x

INITIAL NUMBERS OF OBJECTS

	Layout	Source	Component Type
Ports:	5	5	
Nets:	7	7	
Instances:	3	3	MN (4 pins)
	3	3	MP (4 pins)
Total Inst:	6	6	

NUMBERS OF OBJECTS AFTER TRANSFORMATION

	Layout	Source	Component Type
Ports:	5	5	
Nets:	6	6	
Instances:	2	2	MN (4 pins)
	1	1	_invv (4 pins)

```
              1       1       _smp2v (4 pins)
            ------  ------
 Total Inst:       4       4


*****************************************************************************************
************************
                    INFORMATION AND WARNINGS
*****************************************************************************************
************************


            Matched   Matched   Unmatched   Unmatched   Component
             Layout    Source     Layout      Source    Type
            -------   -------   ---------   ---------   ---------
  Ports:          5       5         0         0

  Nets:           6       6         0         0

  Instances:      2       2         0         0    MN(NMOS_VTL)
                  1       1         0         0    _invv
                  1       1         0         0    _smp2v
            -------   -------   ---------   ---------
  Total Inst:     4       4         0         0


o Initial Correspondence Points:

  Ports:      Z GND! VDD! B A


*****************************************************************************************
************************
                        SUMMARY
*****************************************************************************************
************************

Total CPU Time:     0 sec
Total Elapsed Time:  0 sec
```

```
################################################
##                            ##
##     C A L I B R E   S Y S T E M      ##
##                            ##
##        L V S   R E P O R T         ##
##                            ##
################################################
```

REPORT FILE NAME: adder_32bit.lvs.report
LAYOUT NAME: /nethome/nliu41/Documents/ece3150/adder_32bit.sp ('adder_32bit')
SOURCE NAME: /nethome/nliu41/Documents/ece3150/adder_32bit.src.net ('adder_32bit')
RULE FILE: /nethome/nliu41/Documents/ece3150/_calibreLVS.rul_
RULE FILE TITLE: LVS Rule File for FreePDK45
CREATION TIME: Fri Apr 29 21:18:46 2016
CURRENT DIRECTORY: /nethome/nliu41/Documents/ece3150
USER NAME: nliu41
CALIBRE VERSION: v2015.2_27.20 Tue Jun 2 10:53:48 PDT 2015

OVERALL COMPARISON RESULTS

```
   #    ####################    _ _
  #     #         #    *  *
 # #     #   CORRECT   #     |
 ##     #         #    \___/
 #      ####################
```

****
CELL SUMMARY
****

Result	Layout	Source
CORRECT	adder_32bit	adder_32bit

****
LVS PARAMETERS
****

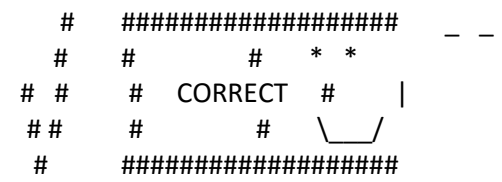
o LVS Setup:

```
LVS COMPONENT TYPE PROPERTY          element
LVS COMPONENT SUBTYPE PROPERTY       model
// LVS PIN NAME PROPERTY
LVS POWER NAME                       "VDD"
LVS GROUND NAME                      "VSS" "GROUND"
LVS CELL SUPPLY                      NO
LVS RECOGNIZE GATES                  ALL
LVS IGNORE PORTS                     NO
LVS CHECK PORT NAMES                 NO
LVS IGNORE TRIVIAL NAMED PORTS       NO
LVS BUILTIN DEVICE PIN SWAP          YES
LVS ALL CAPACITOR PINS SWAPPABLE     NO
LVS DISCARD PINS BY DEVICE           NO
LVS SOFT SUBSTRATE PINS              NO
LVS INJECT LOGIC                     YES
LVS EXPAND UNBALANCED CELLS          YES
LVS FLATTEN INSIDE CELL              NO
LVS EXPAND SEED PROMOTIONS           NO
LVS PRESERVE PARAMETERIZED CELLS     NO
LVS GLOBALS ARE PORTS                YES
LVS REVERSE WL                       NO
LVS SPICE PREFER PINS                NO
LVS SPICE SLASH IS SPACE             YES
LVS SPICE ALLOW FLOATING PINS        YES
// LVS SPICE ALLOW INLINE PARAMETERS
LVS SPICE ALLOW UNQUOTED STRINGS     NO
LVS SPICE CONDITIONAL LDD            NO
LVS SPICE CULL PRIMITIVE SUBCIRCUITS NO
LVS SPICE IMPLIED MOS AREA           NO
// LVS SPICE MULTIPLIER NAME
LVS SPICE OVERRIDE GLOBALS           NO
LVS SPICE REDEFINE PARAM             NO
LVS SPICE REPLICATE DEVICES          NO
LVS SPICE SCALE X PARAMETERS         NO
LVS SPICE STRICT WL                  NO
// LVS SPICE OPTION
LVS STRICT SUBTYPES                  NO
```

```
LVS EXACT SUBTYPES                NO
LAYOUT CASE                    NO
SOURCE CASE                    NO
LVS COMPARE CASE                NO
LVS DOWNCASE DEVICE              NO
LVS REPORT MAXIMUM               50
LVS PROPERTY RESOLUTION MAXIMUM     32
// LVS SIGNATURE MAXIMUM
// LVS FILTER UNUSED OPTION
// LVS REPORT OPTION
LVS REPORT UNITS                YES
// LVS NON USER NAME PORT
// LVS NON USER NAME NET
// LVS NON USER NAME INSTANCE
// LVS IGNORE DEVICE PIN

// Reduction

LVS REDUCE SERIES MOS            YES
LVS REDUCE PARALLEL MOS          YES
LVS REDUCE SEMI SERIES MOS       YES
LVS REDUCE SPLIT GATES           YES
LVS REDUCE PARALLEL BIPOLAR      YES
LVS REDUCE SERIES CAPACITORS     YES
LVS REDUCE PARALLEL CAPACITORS   YES
LVS REDUCE SERIES RESISTORS      YES
LVS REDUCE PARALLEL RESISTORS    YES
LVS REDUCE PARALLEL DIODES       YES
LVS REDUCTION PRIORITY           PARALLEL

LVS SHORT EQUIVALENT NODES       NO

// Trace Property

TRACE PROPERTY  mn(nmos_vtl)  l l 4e-09 ABSOLUTE
TRACE PROPERTY  mn(nmos_vtl)  w w 4e-09 ABSOLUTE
TRACE PROPERTY  mp(pmos_vtl)  l l 4e-09 ABSOLUTE
TRACE PROPERTY  mp(pmos_vtl)  w w 4e-09 ABSOLUTE
TRACE PROPERTY  mn(nmos_vth)  l l 4e-09 ABSOLUTE
TRACE PROPERTY  mn(nmos_vth)  w w 4e-09 ABSOLUTE
TRACE PROPERTY  mp(pmos_vth)  l l 4e-09 ABSOLUTE
TRACE PROPERTY  mp(pmos_vth)  w w 4e-09 ABSOLUTE
TRACE PROPERTY  mn(nmos_vtg)  l l 4e-09 ABSOLUTE
TRACE PROPERTY  mn(nmos_vtg)  w w 4e-09 ABSOLUTE
TRACE PROPERTY  mp(pmos_vtg)  l l 4e-09 ABSOLUTE
TRACE PROPERTY  mp(pmos_vtg)  w w 4e-09 ABSOLUTE
TRACE PROPERTY  mn(nmos_thkox)  l l 4e-09 ABSOLUTE
TRACE PROPERTY  mn(nmos_thkox)  w w 4e-09 ABSOLUTE
```

TRACE PROPERTY mp(pmos_thkox) l l 4e-09 ABSOLUTE
TRACE PROPERTY mp(pmos_thkox) w w 4e-09 ABSOLUTE

CELL COMPARISON RESULTS (TOP LEVEL)



LAYOUT CELL NAME: adder_32bit
SOURCE CELL NAME: adder_32bit

INITIAL NUMBERS OF OBJECTS

	Layout	Source	Component Type
Ports:	100	100	
Nets:	1006	1006	
Instances:	939	939	MN (4 pins)
	939	939	MP (4 pins)
Total Inst:	1878	1878	

NUMBERS OF OBJECTS AFTER TRANSFORMATION

	Layout	Source	Component Type
Ports:	100	100	
Nets:	693	693	
Instances:	128	128	MN (4 pins)
	313	313	_invv (4 pins)

```
            166      166       _nand2v (5 pins)
             83       83       _nor2v (5 pins)
             64       64       _smp2v (4 pins)
           ------   ------
Total Inst:      754      754
```

```
*******************************************************************************
*************************
                  INFORMATION AND WARNINGS
*******************************************************************************
*************************
```

```
           Matched   Matched   Unmatched   Unmatched   Component
            Layout    Source     Layout      Source   Type
           -------   -------   ---------   ---------   ---------
  Ports:         100      100         0         0

  Nets:          693      693         0         0

  Instances:       128      128         0         0   MN(NMOS_VTL)
                   313      313         0         0   _invv
                   166      166         0         0   _nand2v
                    83       83         0         0   _nor2v
                    64       64         0         0   _smp2v
                 -------   -------   ---------   ---------
  Total Inst:      754      754         0         0
```

o Initial Correspondence Points:

```
  Ports:      GND! COUT CIN VDD! B15 A15 S15 B14 A14 S14 B13 A13 S13 B12 A12 S12 B19 A19 S19
              B18 A18 S18 B17 A17 S17 B16 A16 S16 B11 A11 S11 B10 A10 S10 B9 A9 S9 B8 A8 S8
              B23 A23 S23 B22 A22 S22 B21 A21 S21 B20
```

```
*******************************************************************************
*************************
                        SUMMARY
*******************************************************************************
*************************

Total CPU Time:     0 sec
Total Elapsed Time:  0 sec
```