Computational Graphics: Lecture 16

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Mon, Apr 18, 2016

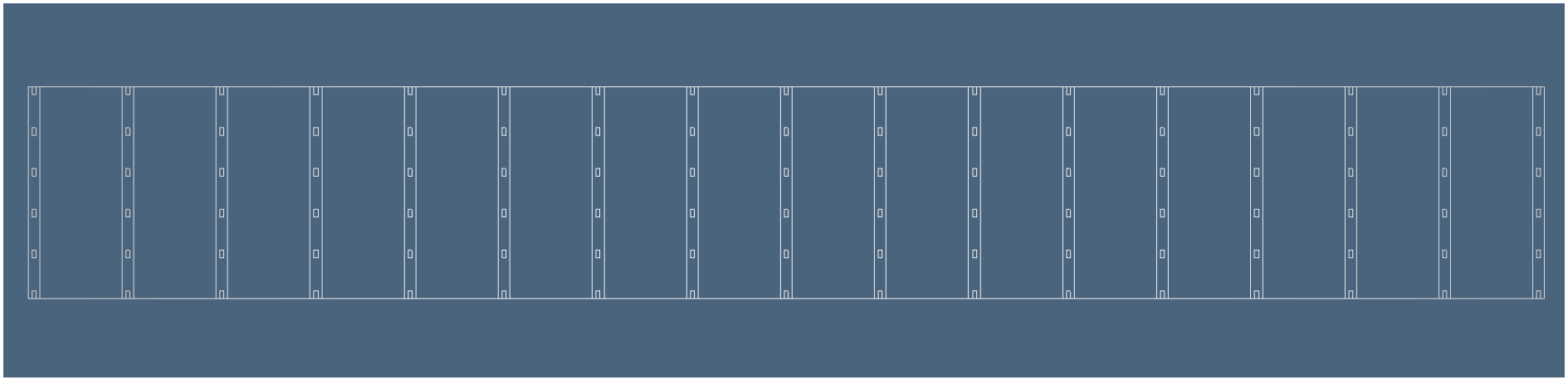
Outline: The pair of duplex apartments

1. Horizontal Boilding levels

2. Development of vertical envelope

Horizontal Boilding levels

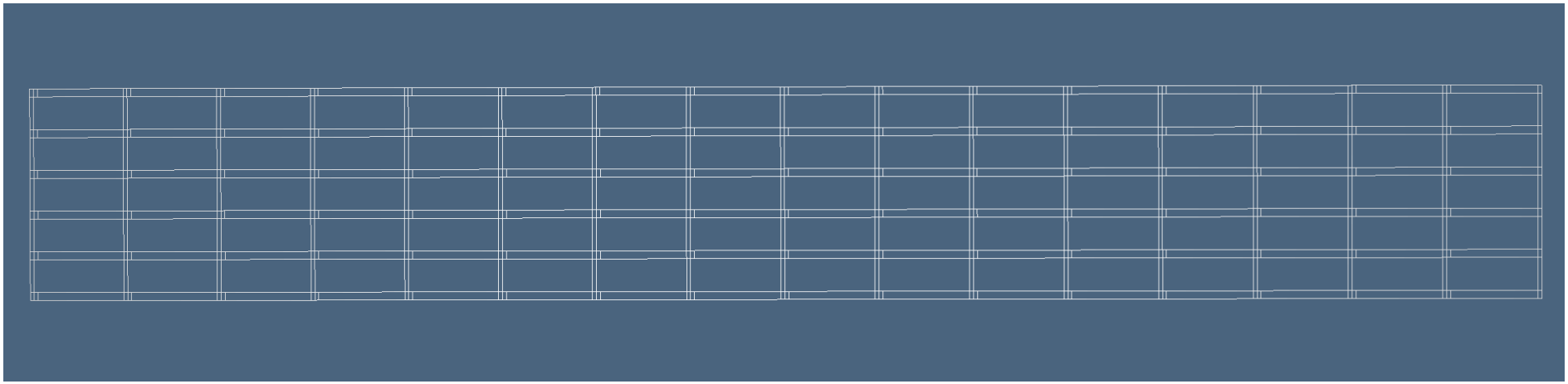
Sezione sopra il basamento



Sezione sopra il basamento

```
""" Sezione sopra il basamento """
X,CX = frame
submodel = SKEL_1(STRUCT(MKPOLS(frame)))
VIEW(larModelNumbering(1,1,1)(X,[AA(LIST)(range(len(X))),CX],
    submodel,1))

assert X[6119] == [154.4, -3.6482, 6.6074]
z0 = X[6119][2]
COX = [cell  for cell in CX if sum([ X[v][2]==z0 for v in cell
VIEW(STRUCT(MKPOLS((X,COX))))

C1X = [[v for v in cell if X[v][2]==z0]  for cell in COX]
plan = SKEL_1(STRUCT(MKPOLS((X,C1X))))
VIEW(STRUCT([STRUCT(MKPOLS(frame)),COLOR(RED)(plan)]))
```

Sezione al primo piano

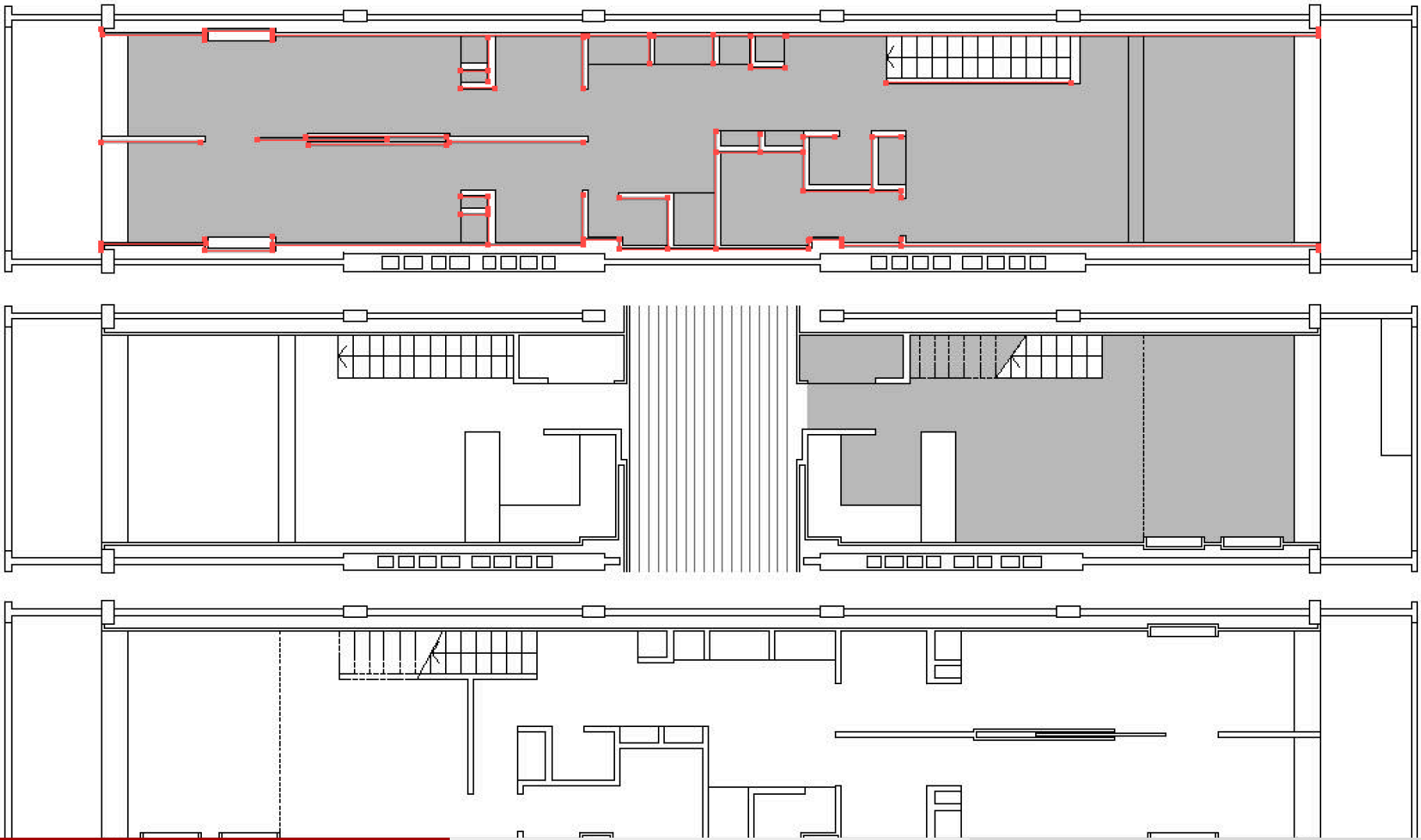


Sezione al primo piano

```
z1 = X[4002][2]
assert eval(vcode(4)([z1-z0])) == [6.3973]

COX = [cell  for cell in CX if sum([ X[v][2]==z1 for v in cell
VIEW(STRUCT(MKPOLS((X,COX))))

C1X = [[v for v in cell if X[v][2]==z1]  for cell in COX]
plan = SKEL_1(STRUCT(MKPOLS((X,C1X))))
VIEW(STRUCT([STRUCT(MKPOLS(frame)),COLOR(RED)(plan)]))

VIEW(plan)
```

Development of vertical envelope

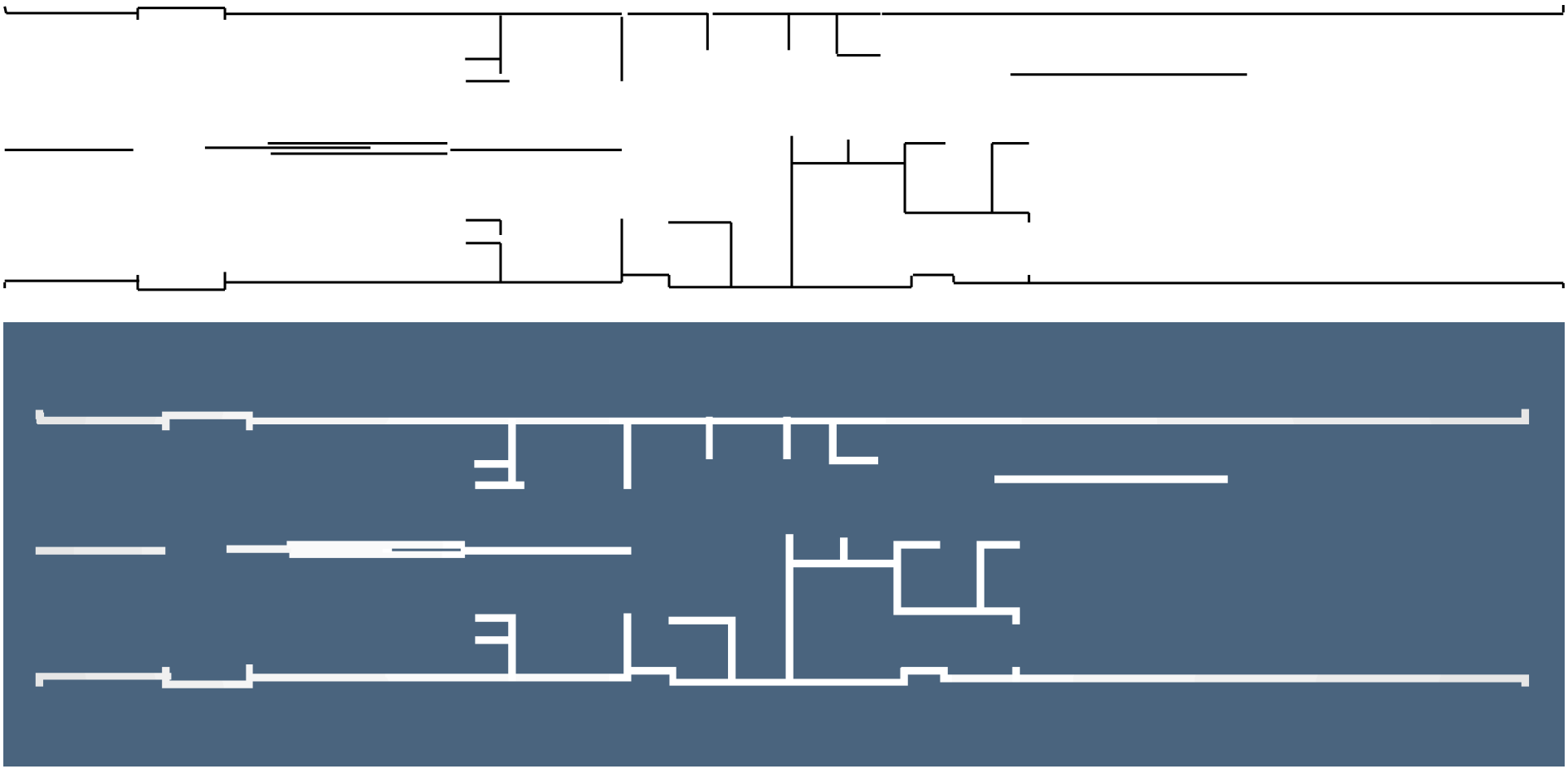
Unité d'habitation (two duplex apartments and interior street)



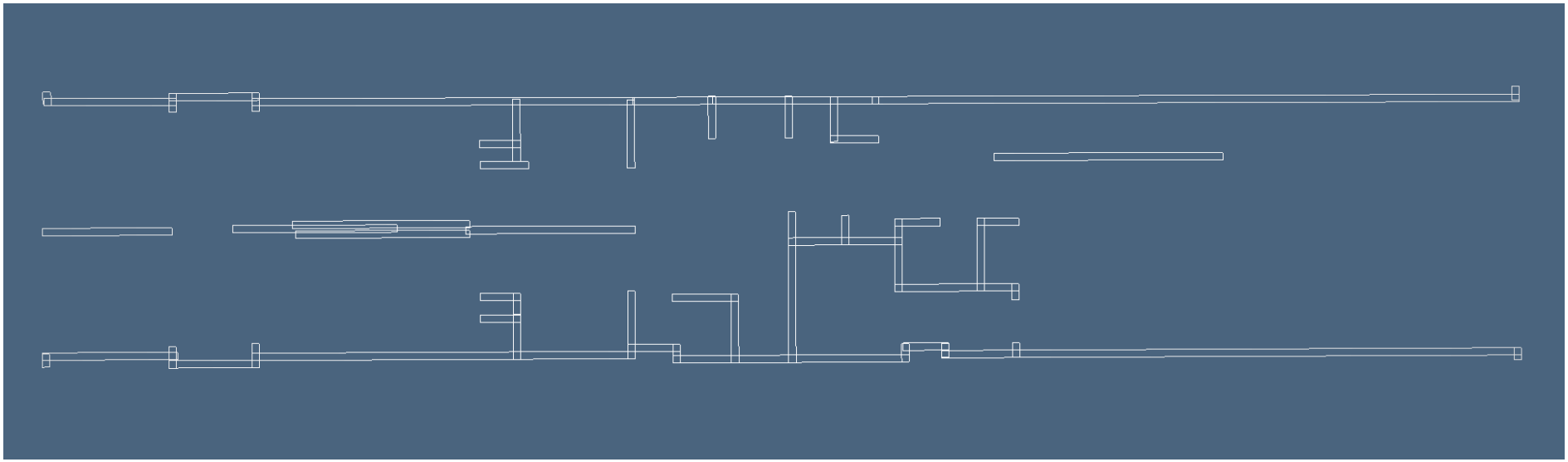
Development of vertical envelope

```
lines = lines2lines("up-level.lines")
upLevel = STRUCT(AA(POLYLINE)(lines))
VIEW(upLevel)
VIEW(OFFSET([.005,.005])(upLevel))
VIEW(SKEL_1(OFFSET([.005,.005])(upLevel)))
```

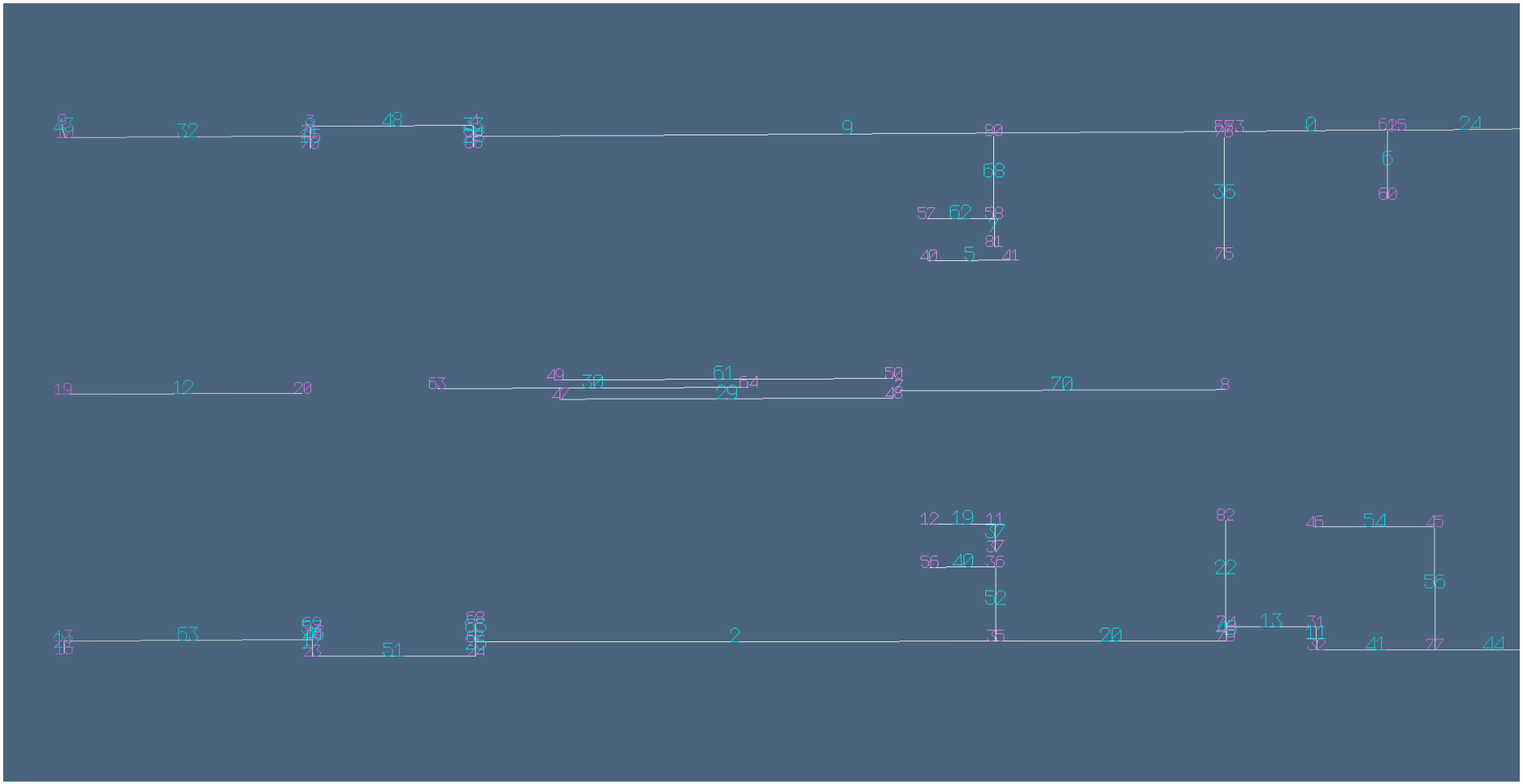
Generation of vertical walls



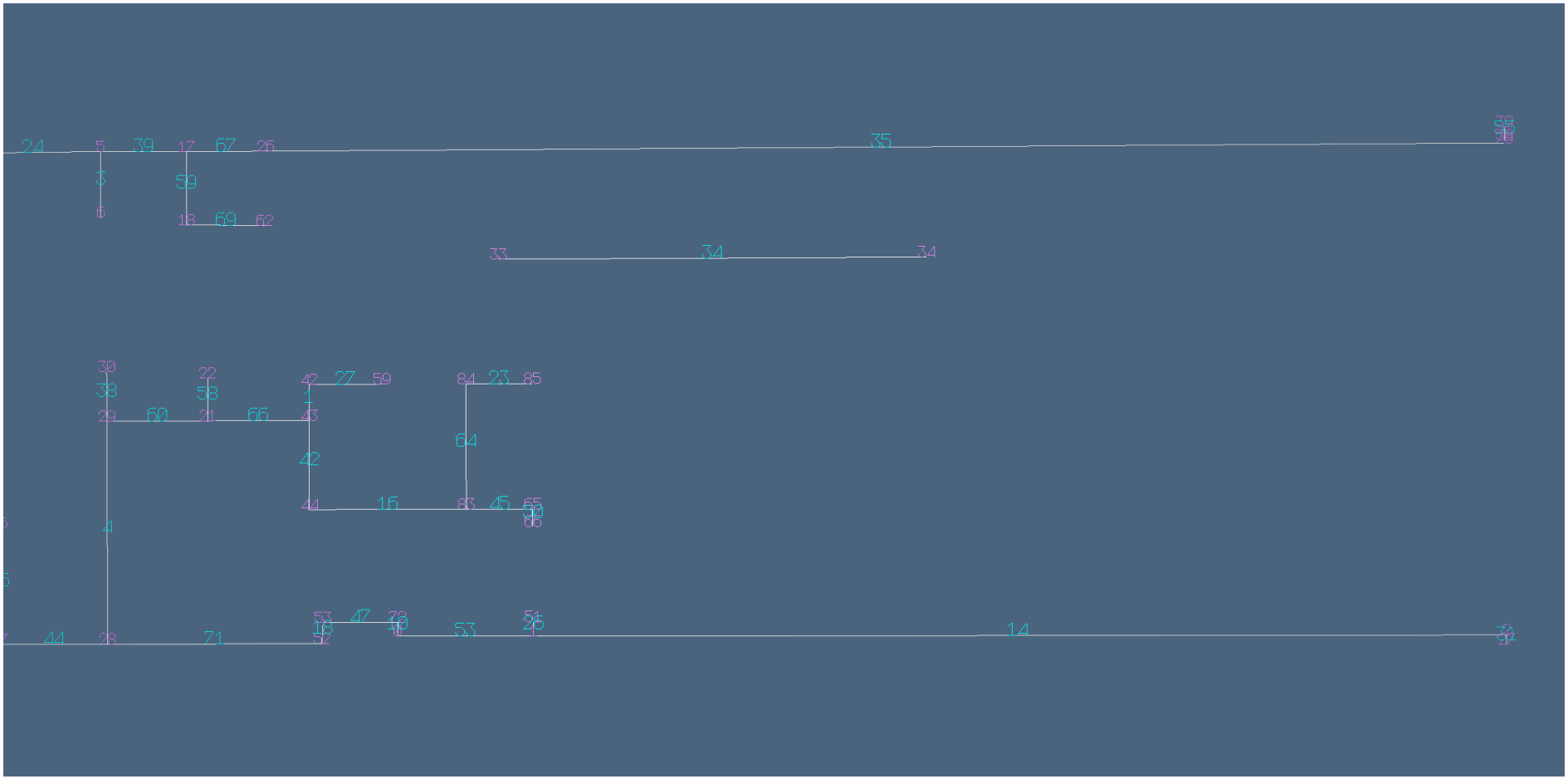
Generation of vertical walls



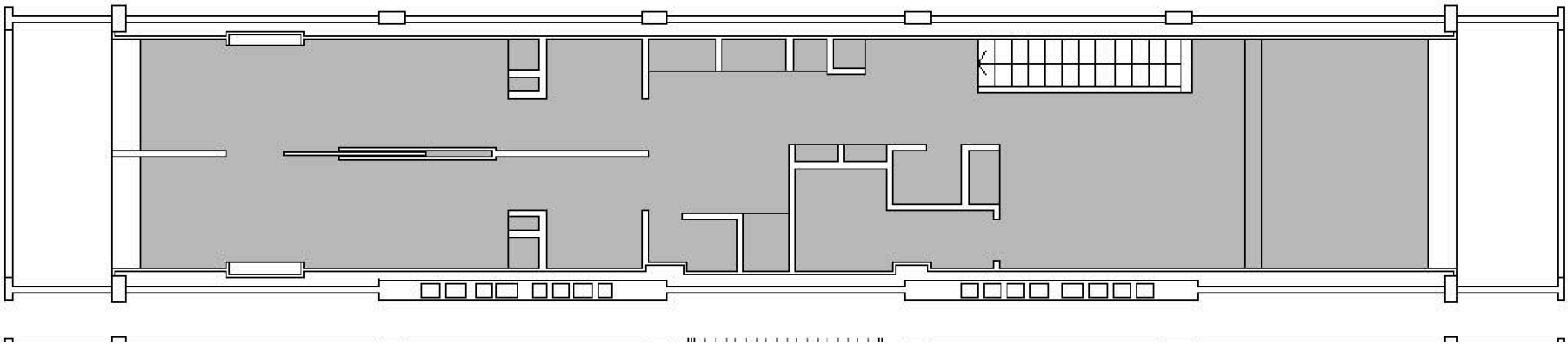
Numbering of the 1-cells (vertical panel components)

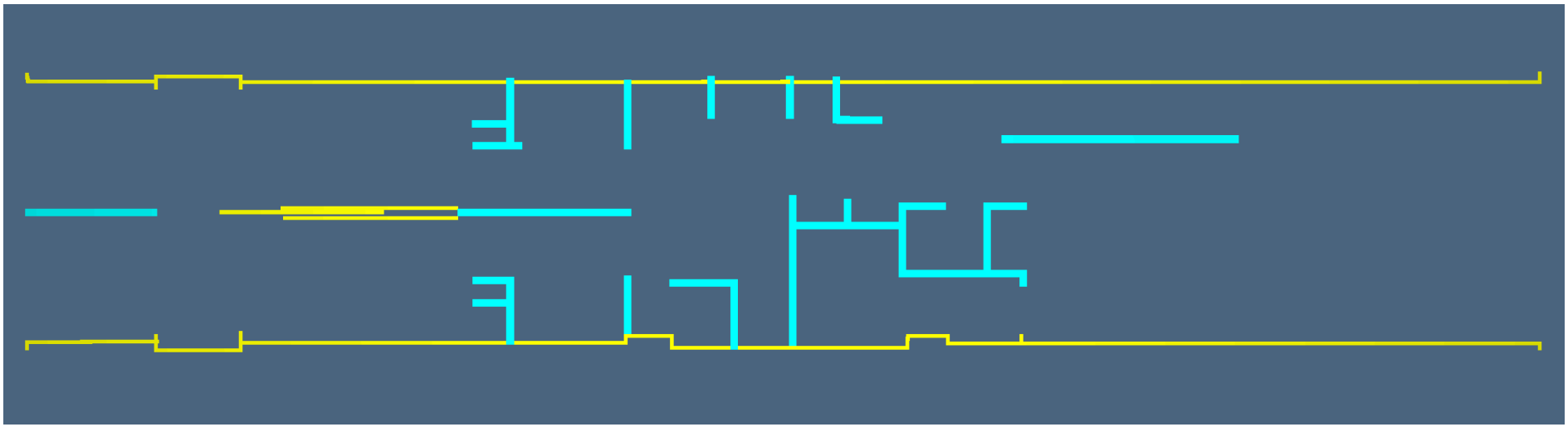


Numbering of the 1-cells (vertical panel components)

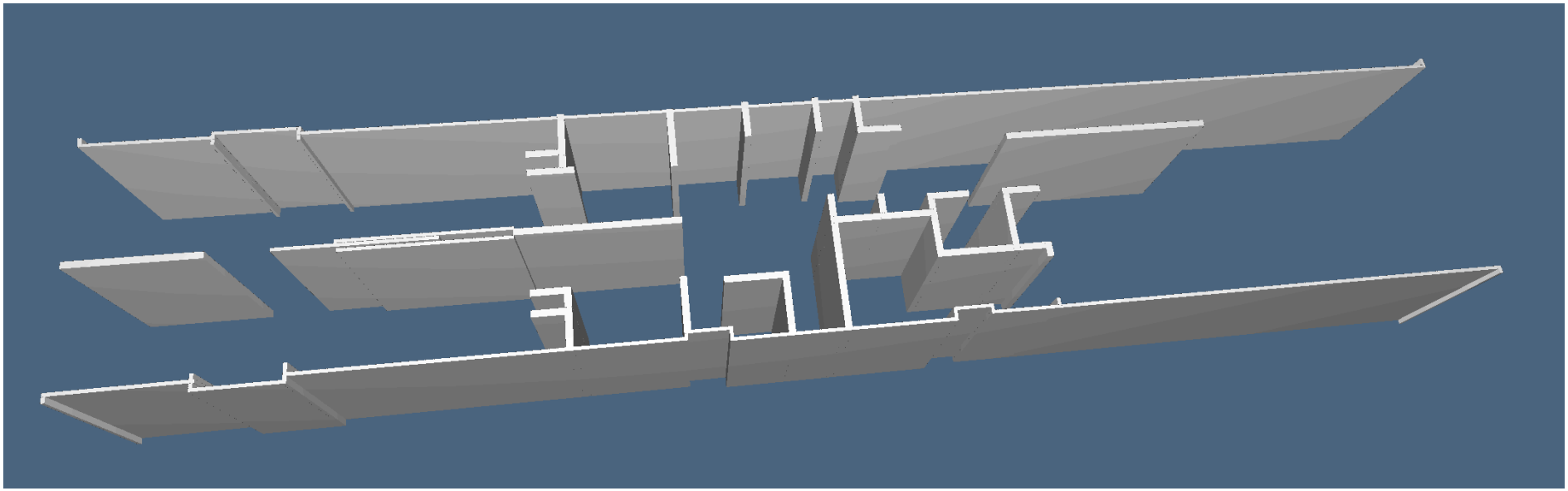


Classes of vertical components (thin & thick)

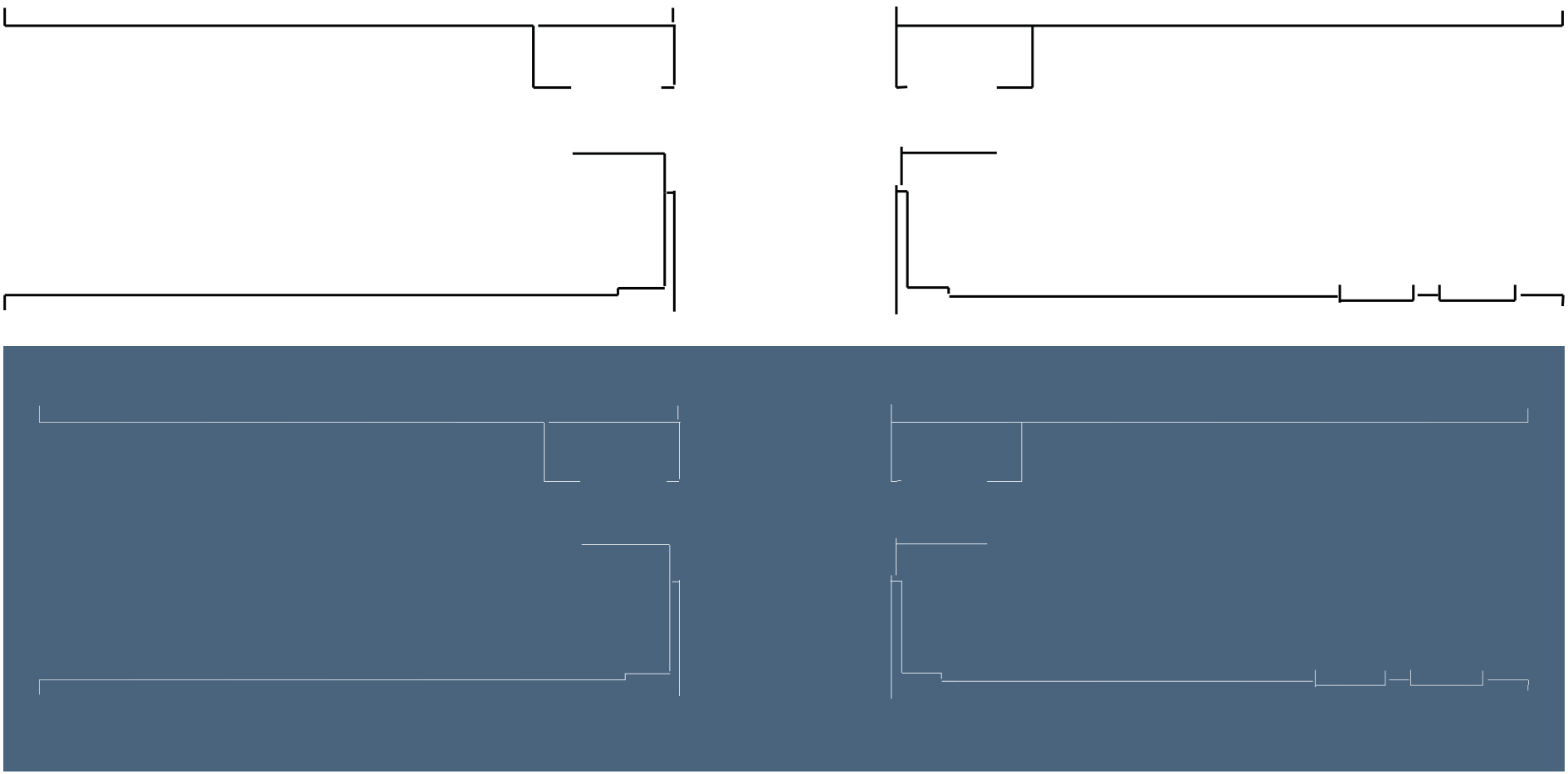




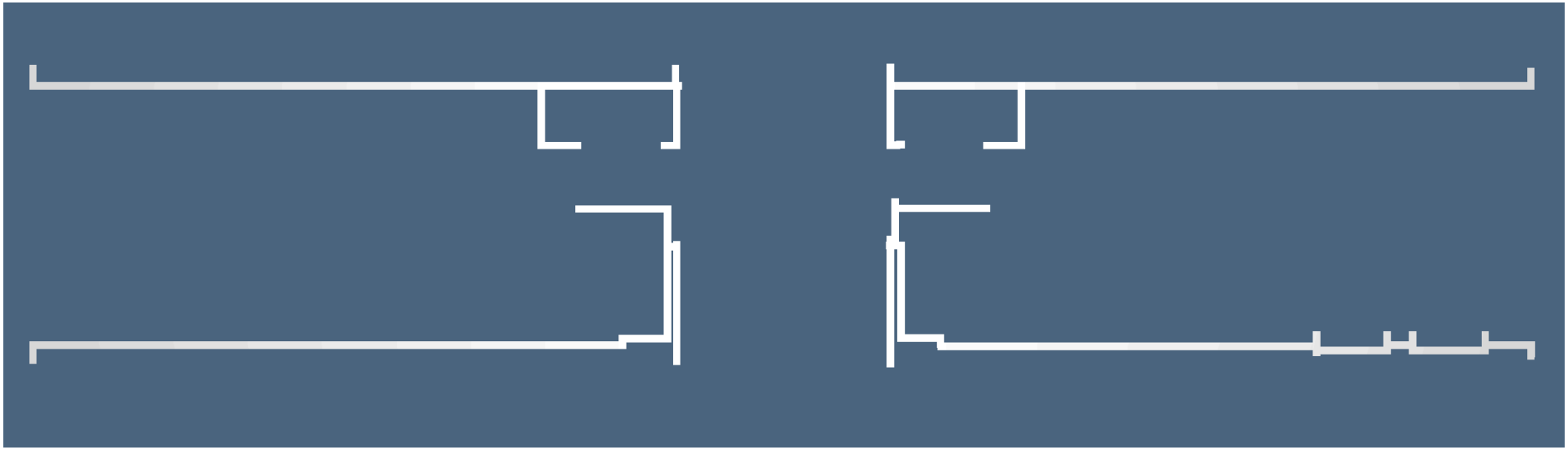
Extrusion of upper level walls

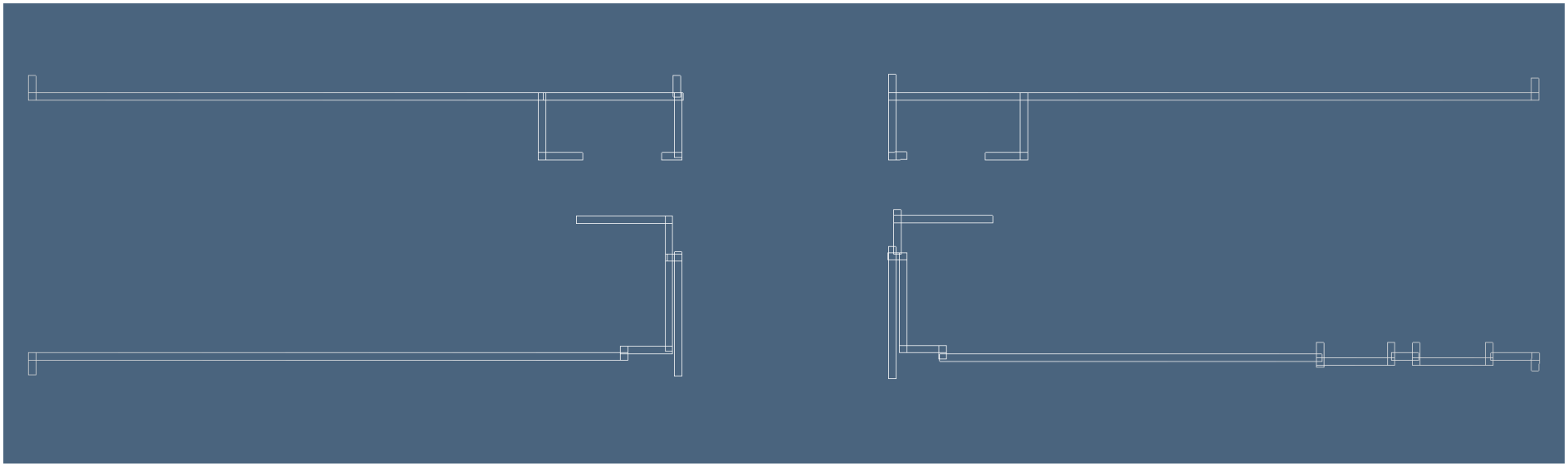


middle level flat

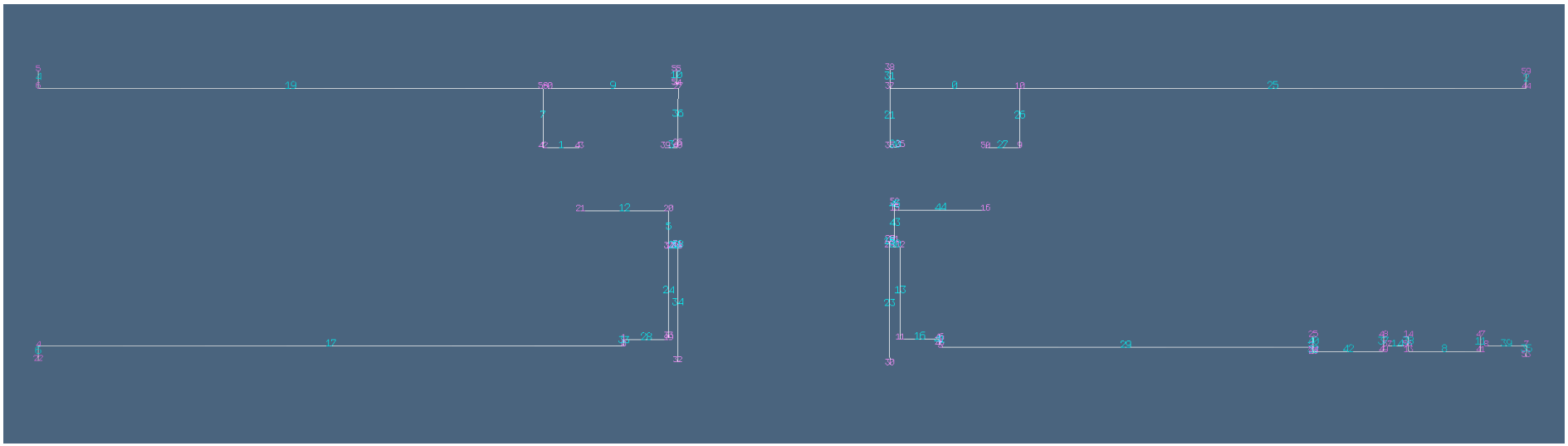


middle level flat

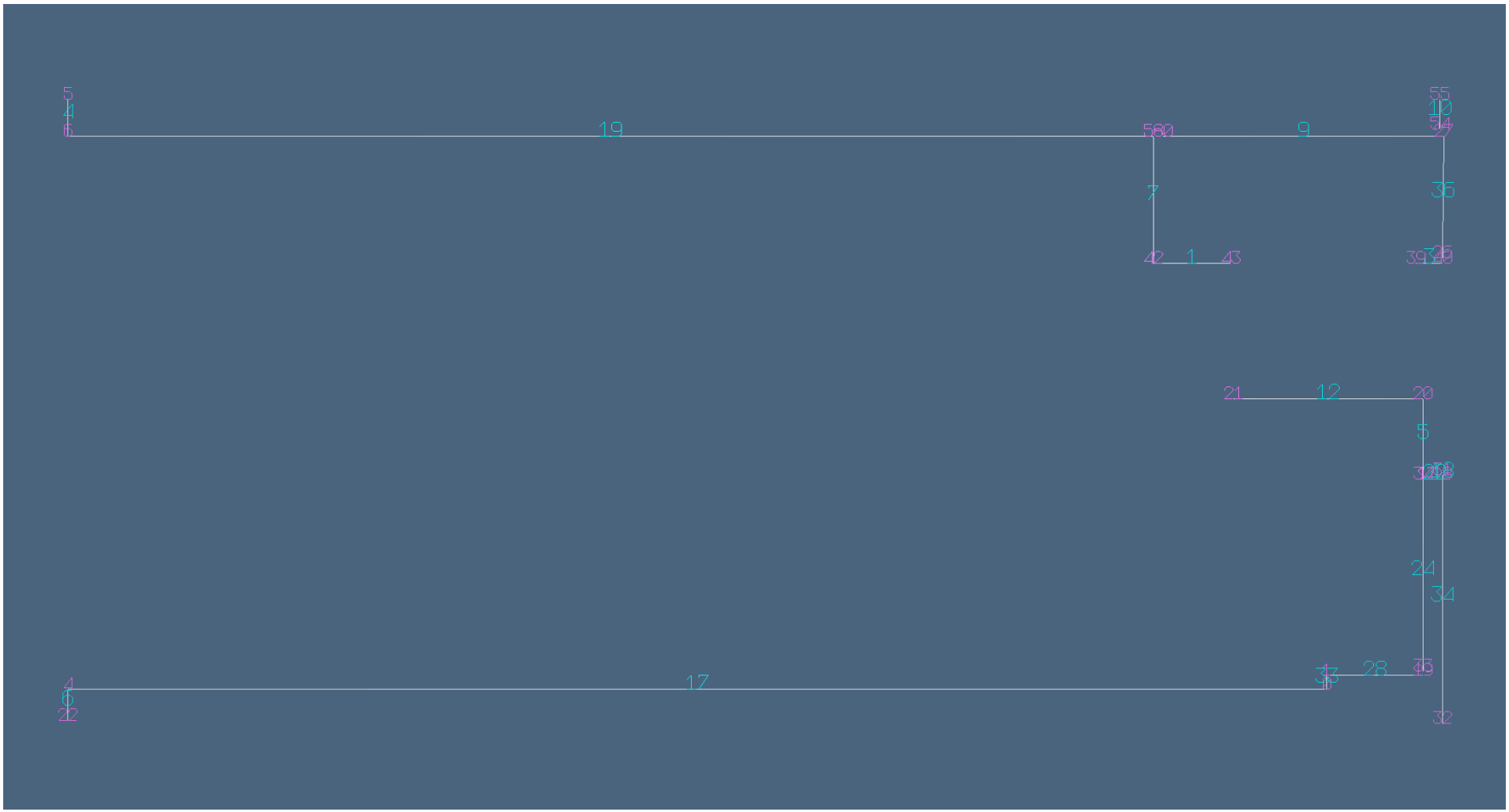




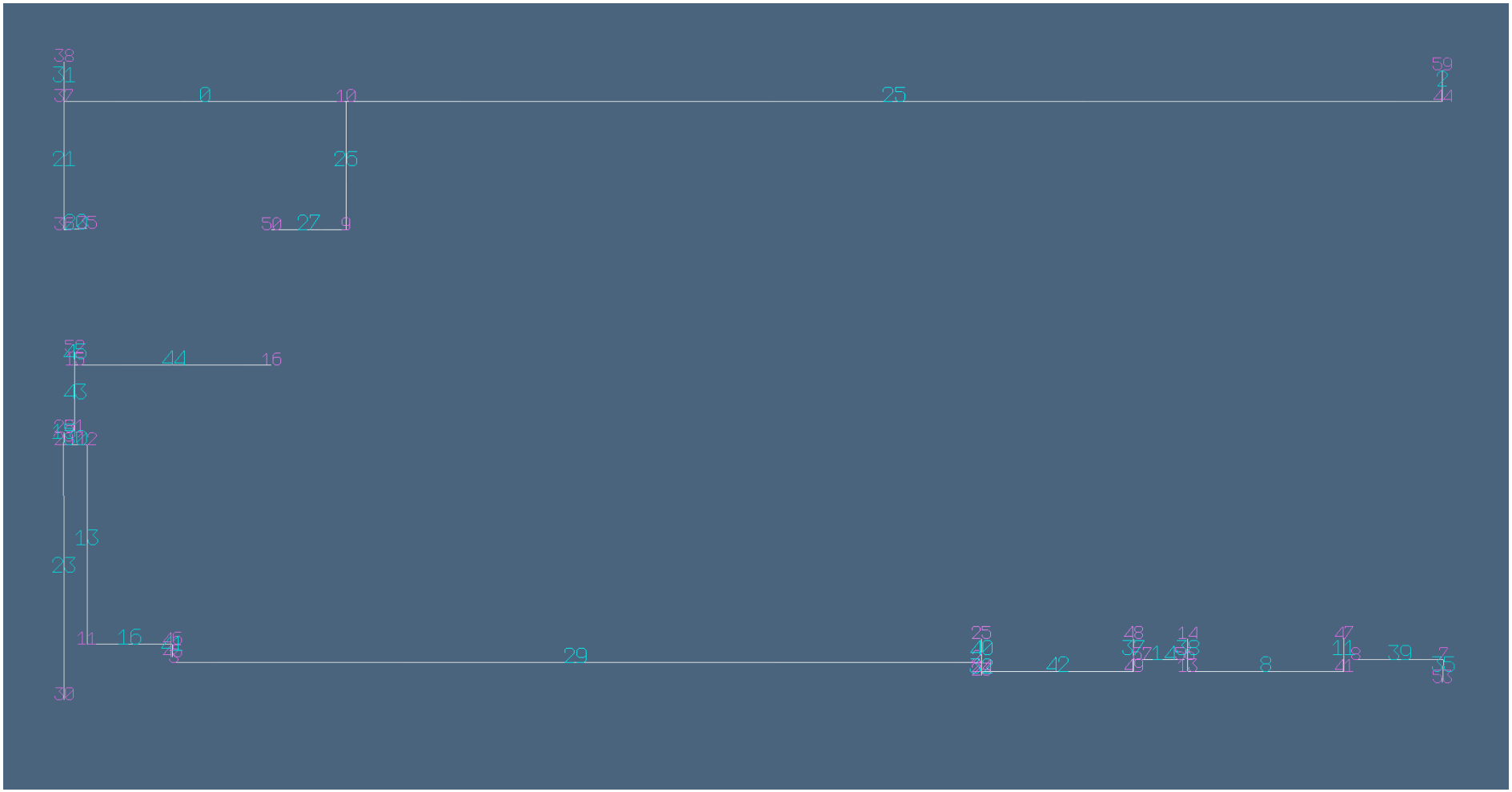
numbering of components



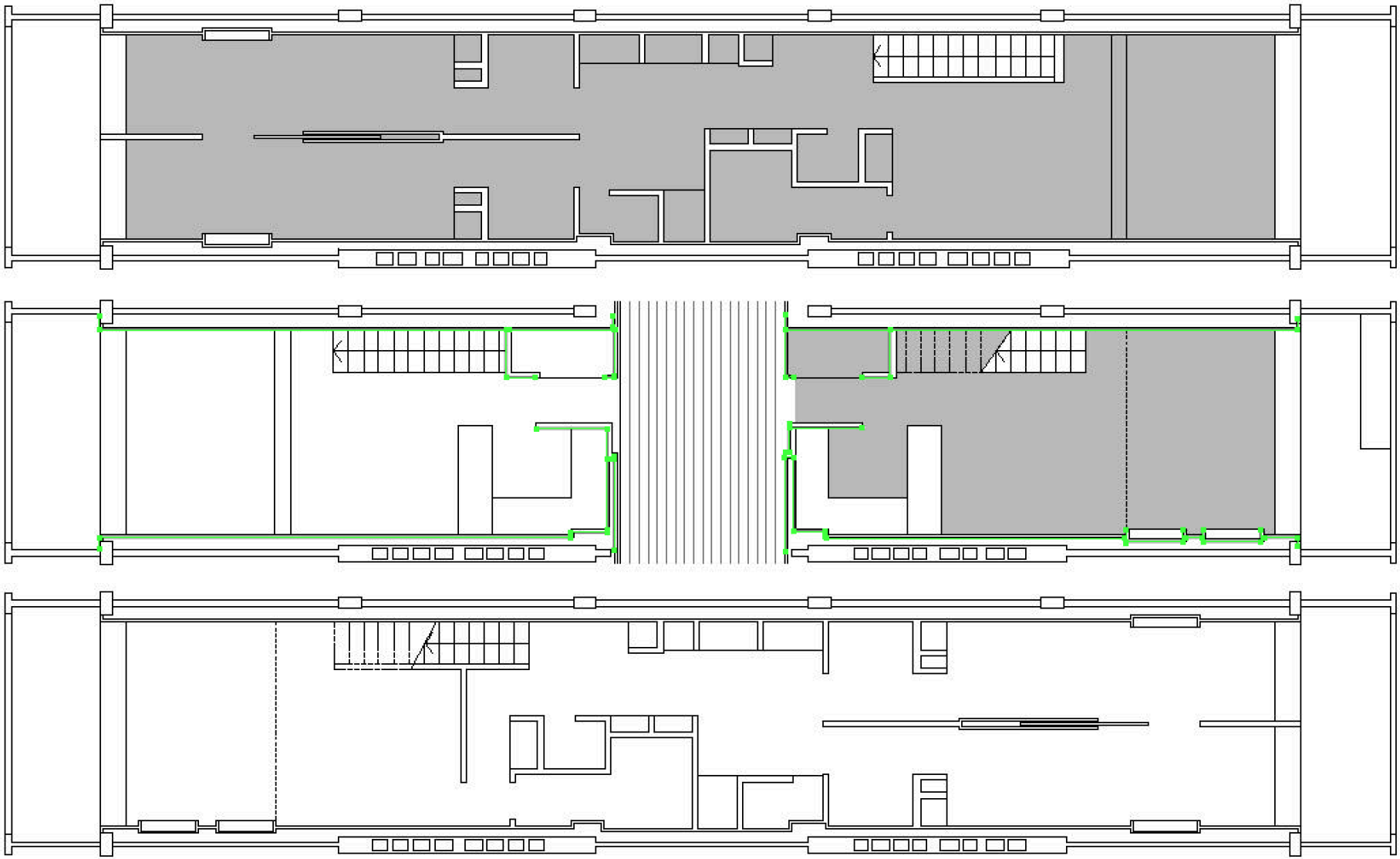
numbering of components



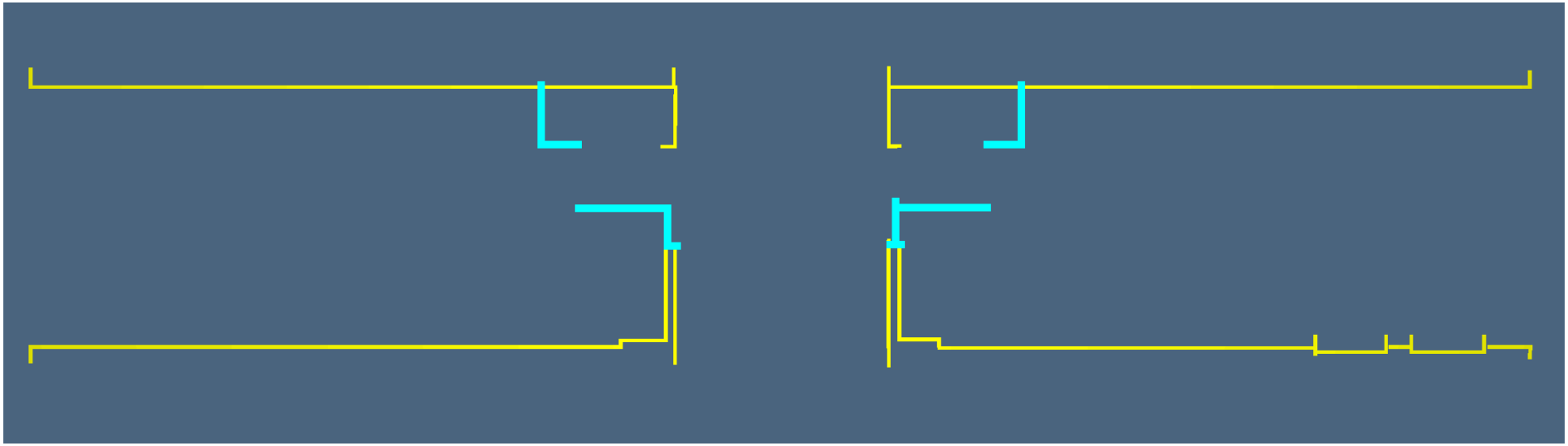
numbering of components

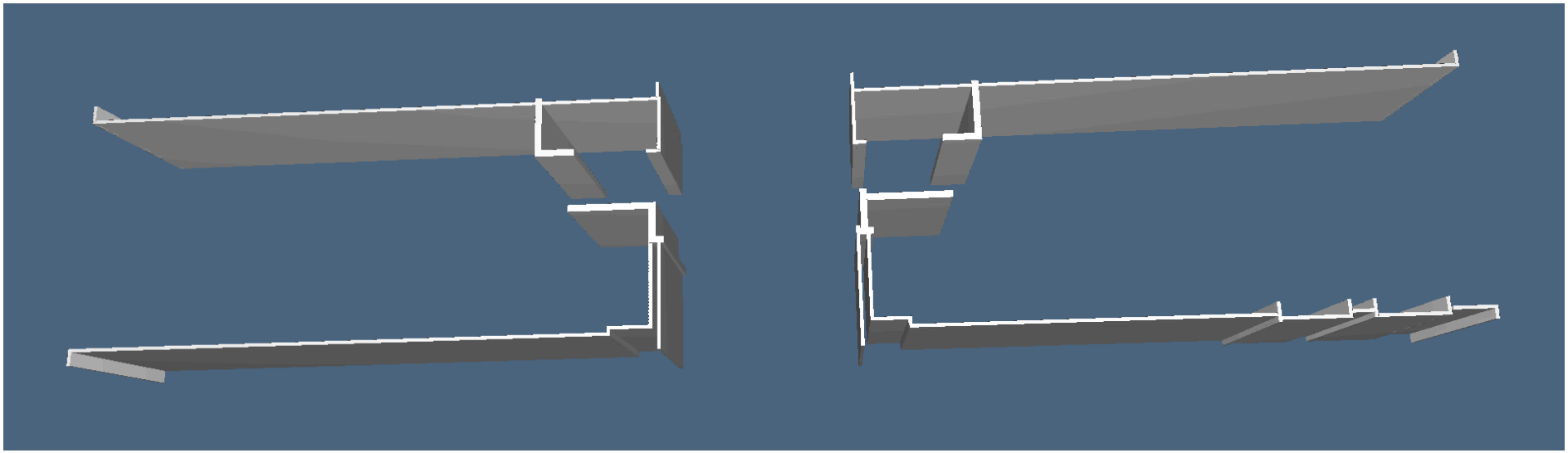


Middle-level flat



Middle-level flat





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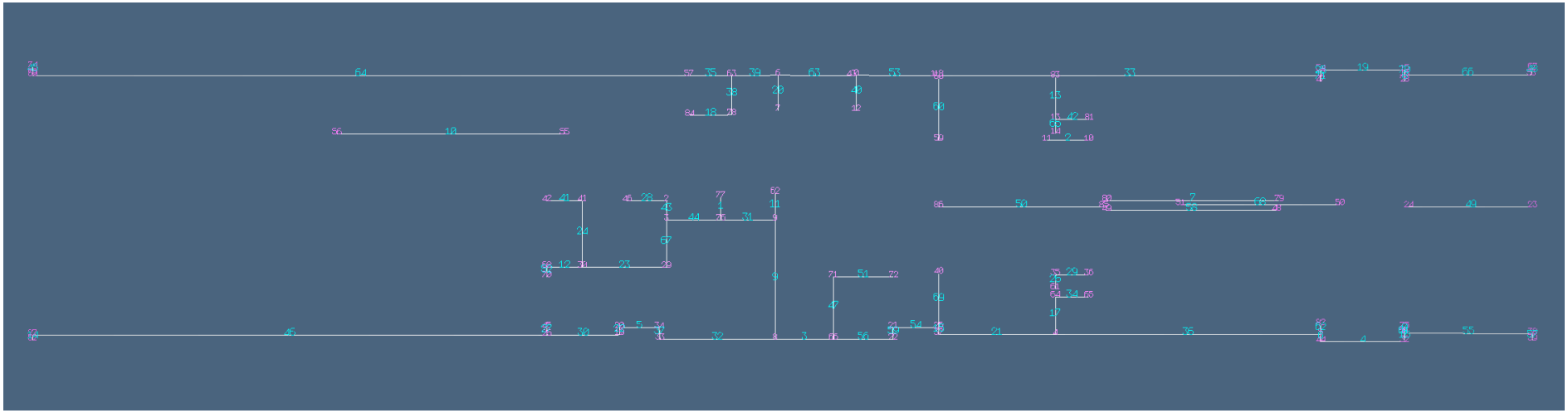

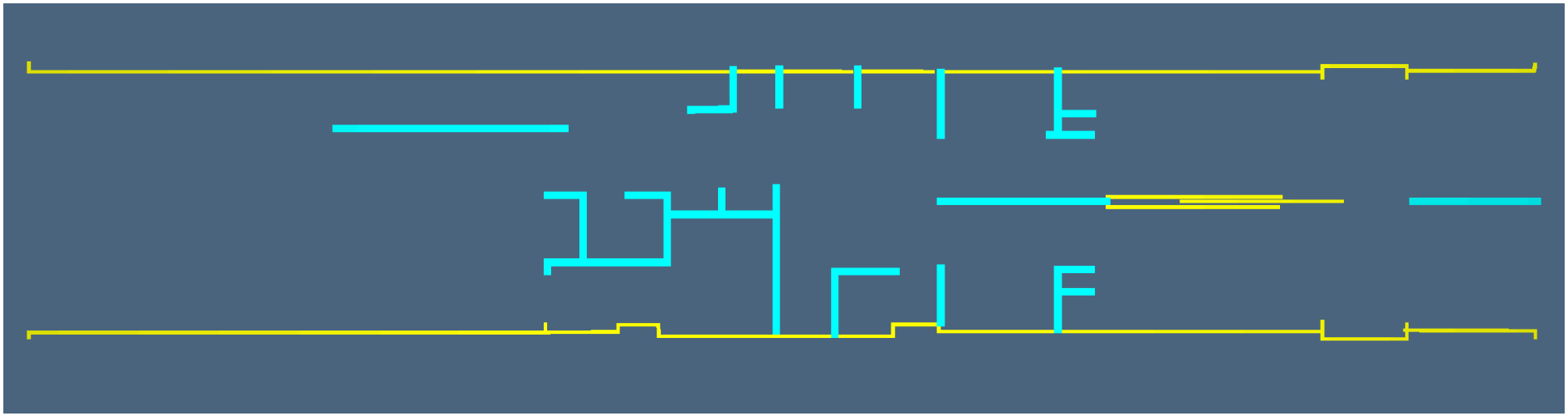

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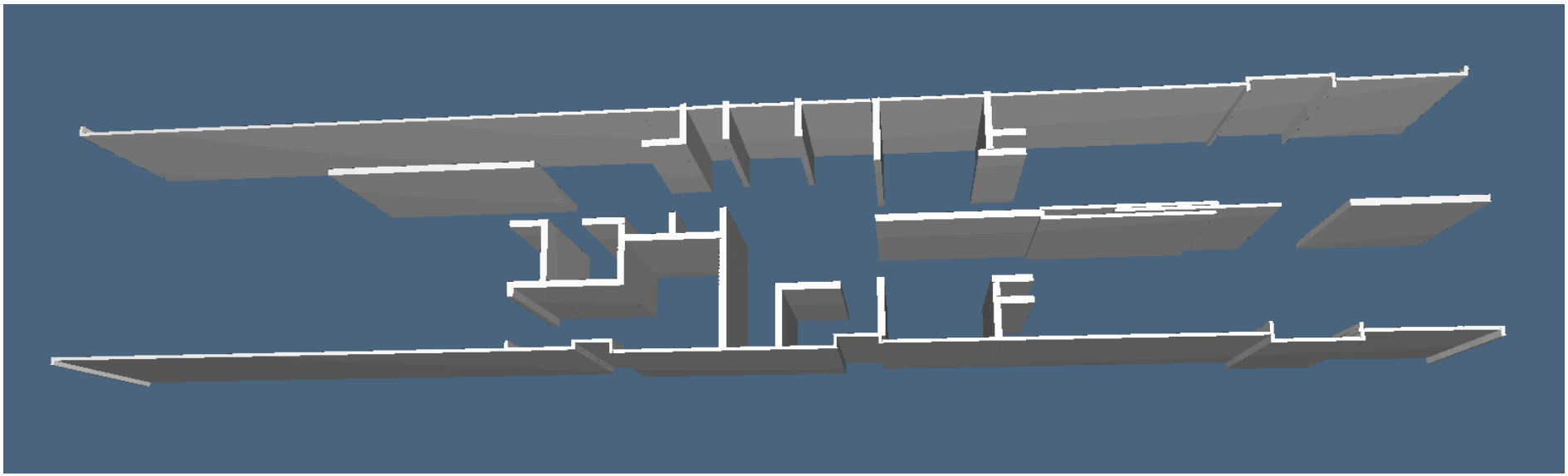

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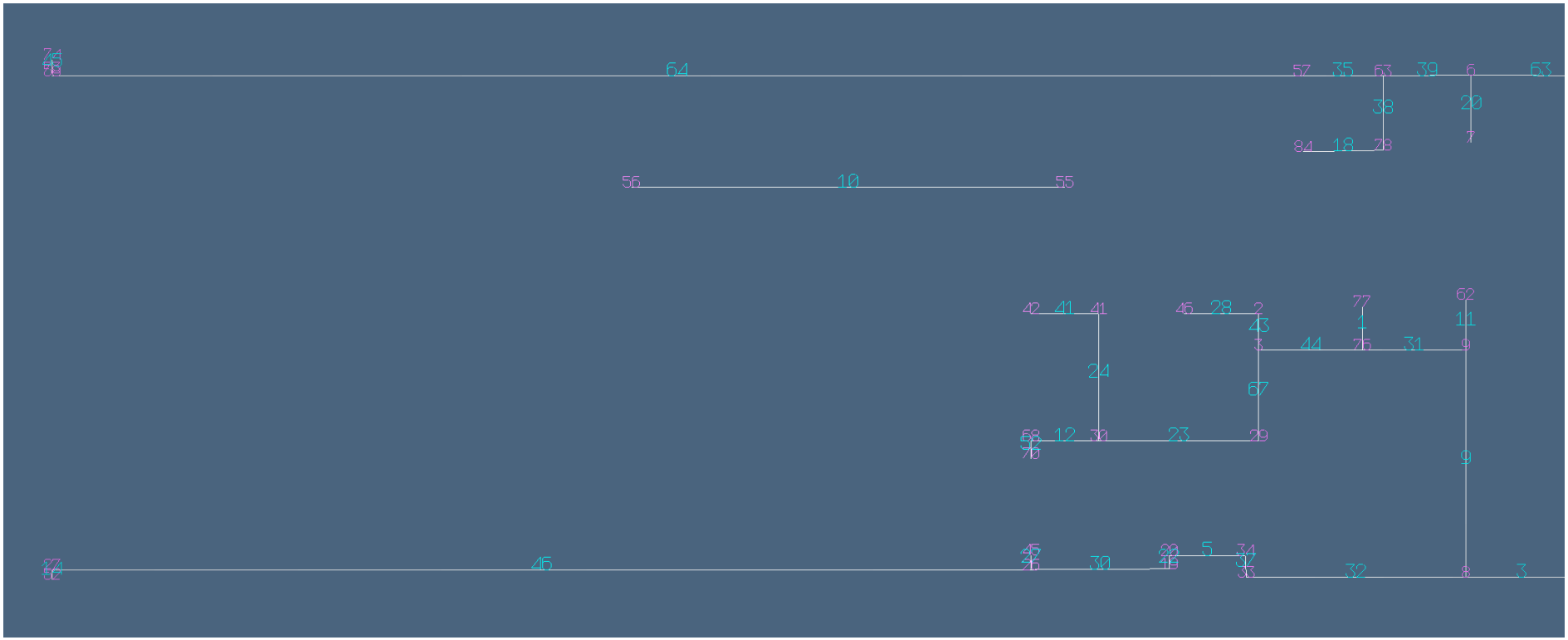
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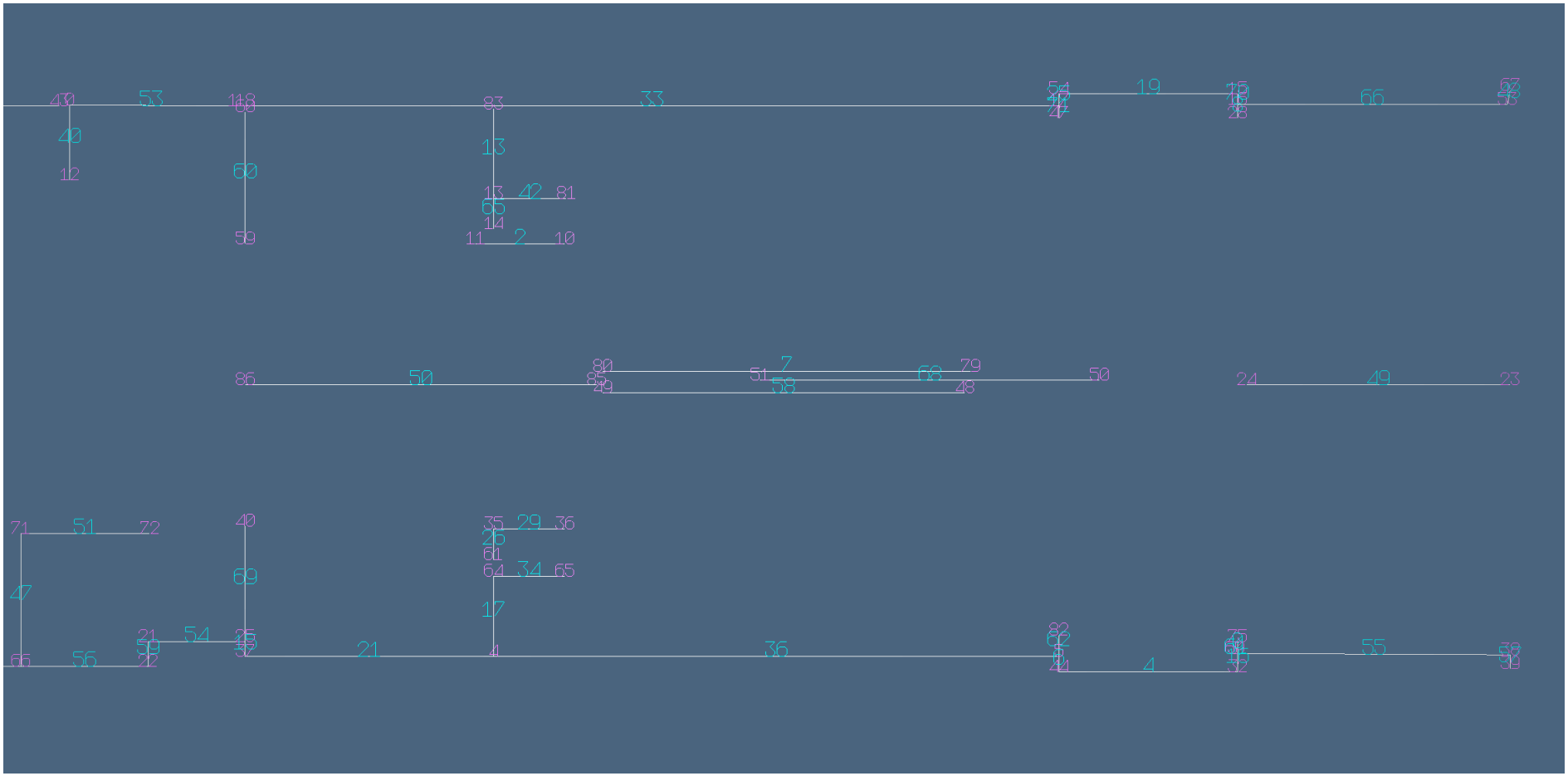

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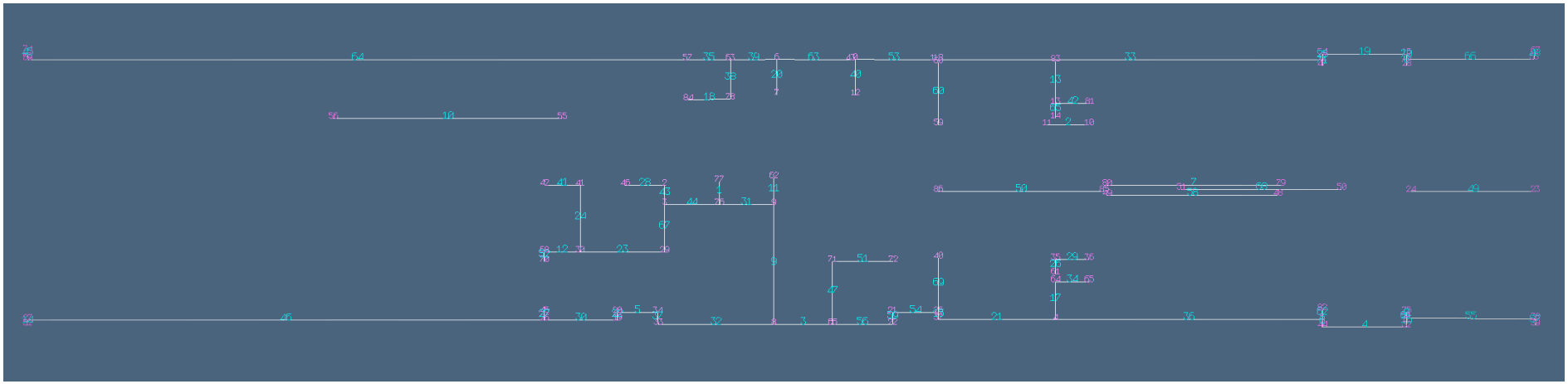

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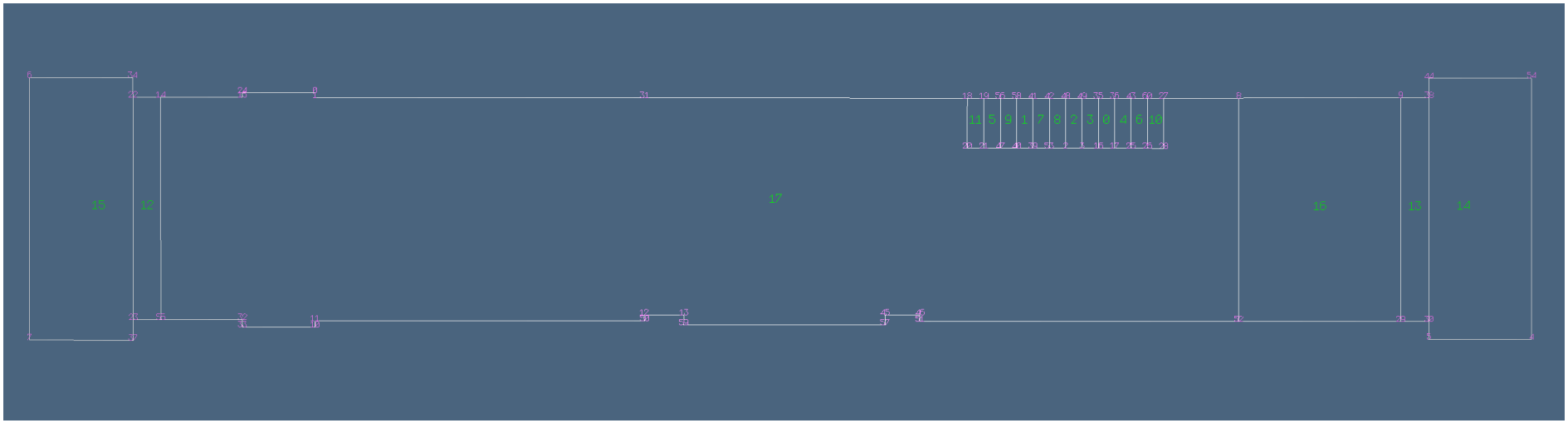

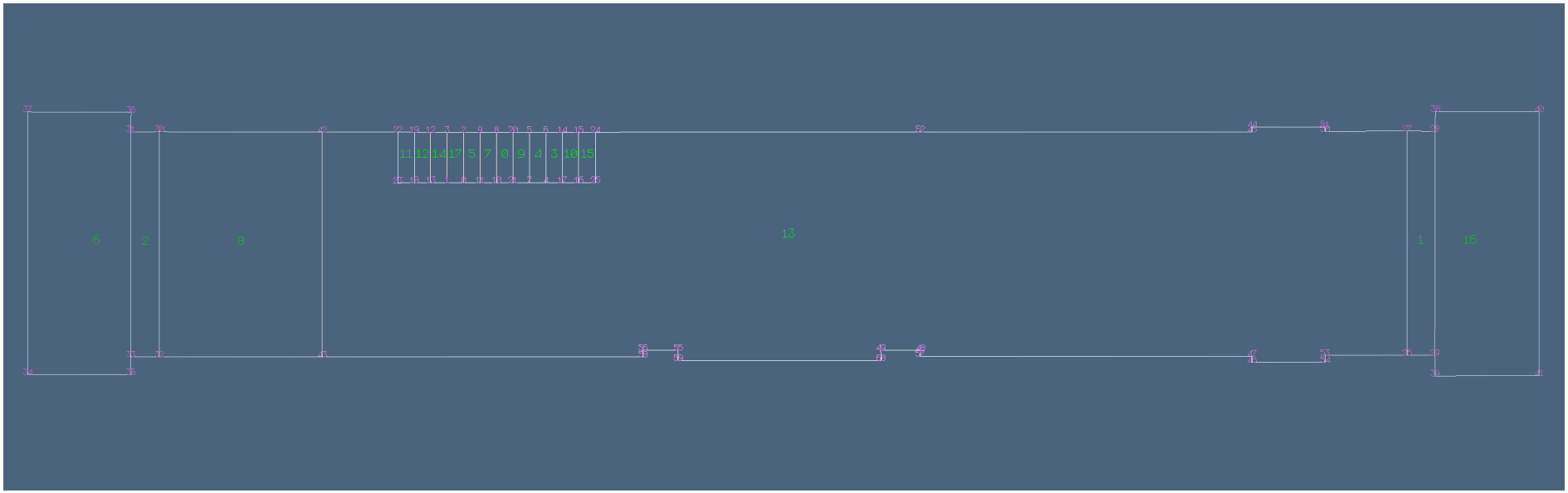

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